2025
HOLEMAKING TOOLS

GESAC

GESAC Profile

Xiamen Golden Egret Special Alloy Co., Ltd. (GESAC), founded in 1989, is a national high-tech enterprise with Chinese-foreign joint investment. It is also a key member of Xiamen Tungsten Co., Ltd., a state-owned listed company. GESAC is committed to the research, development and production of tungsten series products such as high-quality tungsten powder materials, cemented carbide and precision cutting tools, as well as the provision of professional solutions for the industry. It is a renowned supplier of tungsten powder, cemented carbide and cutting tools.

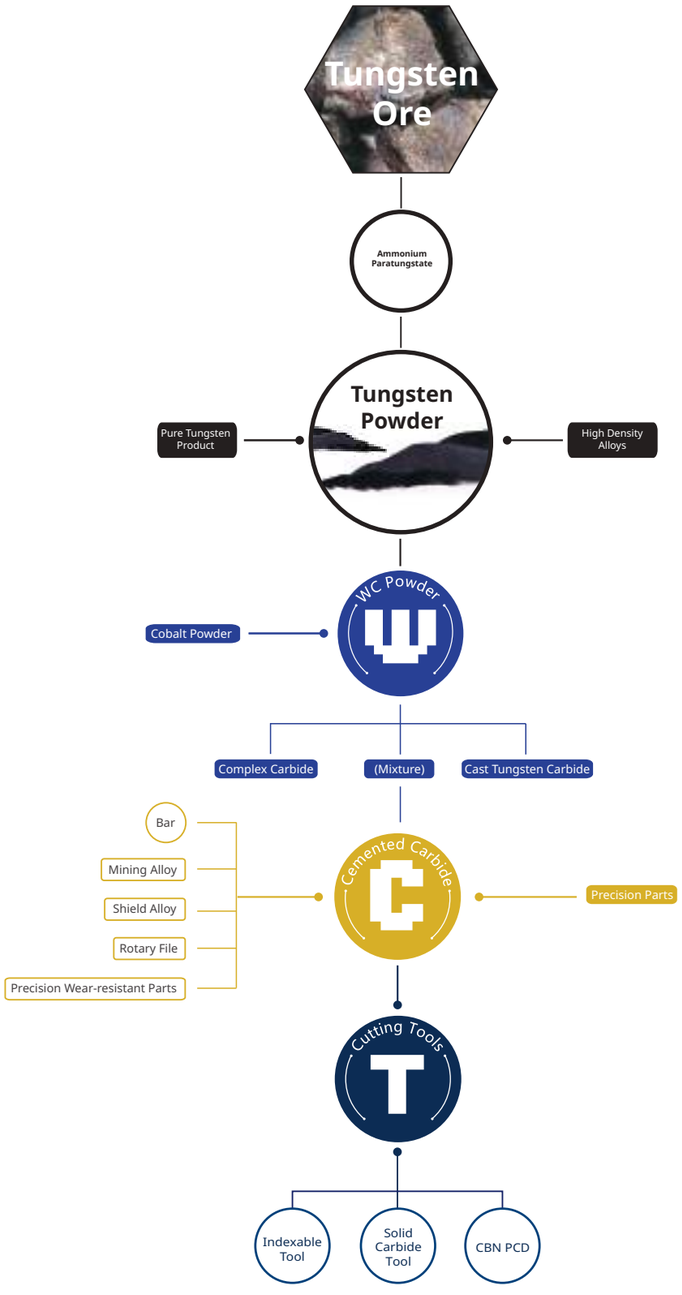
Relying on the product integration technology research and development of the complete tungsten industry chain and the practical and innovative management concepts, GESAC has always maintained a strong momentum of development. It provides global users with tungsten powder products and services with the highest cost performance, and offers excellent products and comprehensive solutions for solving the problems of high hardness, high temperature resistance and wear resistance in the modern industrial field. Its customers are distributed around the world, enjoying a high reputation both at home and abroad.

GESAC currently has more than 3,000 employees, five production bases, four overseas sales companies and one enterprise technology center. It has independently undertaken and completed a number of projects such as the "National Science and Technology Support Program Projects", the "National Science and Technology Major Projects", the "National Torch Program Projects", the "National Key New Product" development projects and key research topics at the provincial and municipal levels. It has been rated as a "Backbone Enterprise in Strategic Emerging Industries", an "Innovative Enterprise" and an "Advanced Technology Enterprise". It has won many patents and awards, including the second prize of the National Science and Technology Progress Award. Its cutting tools have obtained more than 400 patents, including invention patents, utility model patents and design patents.

GESAC Factories Distribution

Product Chain

GESAC has a complete tungsten product chain ranging from ore mining to tungsten powder, cemented carbide products and precision cutting tools.



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HOLEMAKING TOOL SELECTION GUIDE

Drilling & Boring Tool Selection Guide

Product Series	Tool Name and Outline		Drill Point Angle	Shank Type	Coating/ Grade	Holemaking Depth L/D	Cooling Form	Series Type	Range of Sizes	Hole Accuracy Grade	Size Table Page	Cutting Data		Workpiece Material															
														P			M	K		N				S		H	
														1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
														Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
														<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB 200		<HB 450	<HB400	45-55HRC	55-60HRC
D918S	3D External Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlCrN/ TiSiN	3D		D918S-A3N	D3~D20	IT9-10	P022	P121		◎	◎	○		○	○										
	3D Internal Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlCrN/ TiSiN	3D		D918S-A3C	D3~D20	IT9-10	P027	P121		◎	◎	○	○	○	○										
	5D External Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlCrN/ TiSiN	5D		D918S-A5N	D3~D20	IT9-10	P032	P121		◎	◎	○		○	○										
	5D Internal Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlCrN/ TiSiN	5D		D918S-A5C	D3~D20	IT9-10	P037	P121		◎	◎	○	○	○	○										
D968S	3D External Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlTiN nano	3D		D968S-A3N	D1~D20	IT9-10	P042	P123		○			◎							○	○				
	3D Internal Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlTiN nano	3D		D968S-A3C	D2~D20	IT9-10	P048	P123		○			◎			○	○	○		○	○				
	5D External Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlTiN nano	5D		D968S-A5N	D1~D20	IT9-10	P053	P123		○			◎												
	5D Internal Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlTiN nano	5D		D968S-A5C	D2~D20	IT9-10	P059	P123		○			◎			○	○	○		○	○				
D938	3D External Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlTiN nano	3D		D938-A3N	D1~D20	IT9-10	P064	P126		◎	◎	◎		○	○										
	3D Internal Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlTiN nano	3D		D938-A3C	D2~D20	IT9-10	P070	P126		◎	◎	◎	○	○	○										
	5D External Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlTiN nano	5D		D938-A5N	D1~D20	IT9-10	P075	P126		◎	◎	◎		○	○										
	5D Internal Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlTiN nano	5D		D938-A5C	D2~D20	IT9-10	P081	P126		◎	◎	◎	○	○	○										
	8D Internal Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlTiN nano	8D		D938-A8C	D2.8~D20	IT9-10	P087	P129		◎	◎	◎	○	○	○										
	12D Internal Coolant Twist Drill		135 °	SHANK DIN 6535HA	AlTiN nano	12D		D938-A12C	D3~D20	IT9-10	P090	P129		◎	◎	◎	○	○	○										
	15D Internal Coolant Twist Drill		135 °	SHANK DIN 6535HA	AlTiN nano	15D		D938-A15C	D3~D16	IT9-10	P093	P129		◎	◎	◎	○	○	○										
	20D Internal Coolant Twist Drill		135 °	SHANK DIN 6535HA	AlTiN nano	20D		D938-A20C	D3~D14	IT9-10	P095	P129		◎	◎	◎	○	○	○										
	25D Internal Coolant Twist Drill		135 °	SHANK DIN 6535HA	AlTiN nano	25D		D938-A25C	D3~D12	IT9-10	P097	P129		◎	◎	◎	○	○	○										
D928	3D External Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlCrN TiSiN	3D		D928-A3N	D3~D20	IT9-10	P098	P131		○				◎	◎										
	3D Internal Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlCrN TiSiN	3D		D928-A3C	D5~D20	IT9-10	P099	P131		○				◎	◎	○	○								
	5D External Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlCrN TiSiN	5D		D928-A5N	D3~D20	IT9-10	P101	P131		○				◎	◎										
	5D Internal Coolant Twist Drill		140 °	SHANK DIN 6535HA	AlCrN TiSiN	5D		D928-A5C	D3~D20	IT9-10	P103	P131		○				◎	◎	○	○								

◎ Most Suitable ○ Suitable

Drilling & Boring Tool Selection Guide

Product Series	Tool Name and Outline		Drill Point Angle	Shank Type	Coating/ Grade	Holemaking Depth L/D	Cooling Form	Series Type	Range of Sizes	Hole Accuracy Grade	Size Table Page	Cutting Data		Workpiece Material													
														P			M	K		N				S		H	
														1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
														Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
														<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB 200		<HB 450	<HB400	45-55HRC	55-60HRC
D966	3D External Coolant Twist Drill		140 °	SHANK DIN 6535HA		3D		D966-A3N	D3～D20	IT9-10	P104	P133								◎	◎	○	○				
	3D Internal Coolant Twist Drill		140 °	SHANK DIN 6535HA		3D		D966-A3C	D3～D20	IT9-10	P108	P133								◎	◎	○	○				
	5D External Coolant Twist Drill		140 °	SHANK DIN 6535HA		5D		D966-A5N	D3～D20	IT9-10	P111	P133								◎	◎	○	○				
	5D Internal Coolant Twist Drill		140 °	SHANK DIN 6535HA		5D		D966-A5C	D3～D20	IT9-10	P114	P133								◎	◎	○	○				
D998	3D External Coolant Twist Drill		140 °	SHANK h6	AlTiN nano	3D		D998-Y3N	D4～D16	IT9-10	P117	P134			○			○	○							◎	○
D101	90° NC Pilot Drill		90 °	SHANK h6	TiAlN			D101-AMN	D4～D20		P118	P135		○	○	○		◎		◎	○						
D102	120° NC Pilot Drill		120 °	SHANK h6	TiAlN			D102-ANN	D5～D20		P119	P135		○	○	○		◎		◎	○						
D103	145° NC Pilot Drill		145 °	SHANK h6	TiAlN			D103-APN	D4～D20		P120	P135		○	○	○		◎		◎	○						
GUMD	GUMD Tool Bit		140 °		GM3225 GPD7115	3D/5D/ 8D		GUMD	D10-D21.9	IT9-10	P150	P175		◎	◎	◎	○	◎	◎								
	GUMD Drill Pipe										P156																
GHDS	QPMG Shallow Hole Drill Inserts				GA4230 GM3220 GS4130			QPMG	D14-D48	IT12-13	P169	P176		◎	○	○	○	◎	○					○	○		
	GHDS Shallow Hole Drill Tool Holders					2D-5D		GHDS			P159																
GSD	MCMG Spade Drill Inserts				GM3225			MCMG	D13～D36	IT9-IT10	P172	P177		◎	○	○	○	◎	○								
	GSD Spade Drill Tool Holders					2D-26D		GSD			P173																
GBR	RB Rough Boring Tool					⩽5D	Internal cooling	RB	D20-D153		P188	P214		◎	○	○	○	◎	○								
	FB Fine Boring Tool					⩽5D	Internal cooling	FB	D20-D212		P193	P220		◎	○	○	○	◎	○								
	MB Micro-diameter Fine Boring Tool					⩽5D	External cooling	MB	D2-D50		P196	P220		◎	○	○	○	◎	○								
	LRB Bridge Type Rough Boring Tool						Internal cooling	LRB	D150-D850		P205	P214		◎	○	○	○	◎	○								
	LFB Bridge Type Fine Boring Tool						Internal cooling	LFB	D150-D850		P207	P220		◎	○	○	○	◎	○								
	HRBA Bridge Type Rough Boring Tool for Large Aluminum Alloy						Internal cooling	HRBA	D850-D3300		P209	P214		◎	○	○	○	◎	○								
	HFBA Bridge Type Fine Boring Tool for Large Aluminum Alloy						Internal cooling	HFBA	D850-D3300		P209	P220		◎	○	○	○	◎	○								

◎ Most Suitable ○ Suitable

Drilling & Boring Tool Selection Guide

Product Series	Tool Name and Outline		Drill Point Angle	Shank Type	Coating/ Grade	Holemaking Depth L/D	Cooling Form	Series Type	Range of Sizes	Hole Accuracy Grade	Size Table Page	Cutting Data		Workpiece Material															
														P			M	K		N				S		H	
														1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
														Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
														<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB 200		<HB 450	<HB400	45-55HRC	55-60HRC
	GMT-AR Universal Internal Hole Turning					⩽4D	External Cooling	GMT-AR	⩾1.0		P227	P271		○	○		◎	○						○	○	○	
	GMT-TR Durable Internal Hole Turning					⩽4D	External Cooling	GMT-TR	⩾1.0		P229	P271		○	○		◎	○						○	○	○	
	GMT-PR Profile Turning					⩽4D	External Cooling	GMT-PR	⩾1.0		P232	P271		○	○		◎	○						○	○	○	
	GMT-QR Profile Turning					⩽4D	External Cooling	GMT-QR	⩾3.0		P234	P271		○	○		◎	○						○	○	○	
	GMT-UR90° Cut-in Turning					⩽4D	External Cooling	GMT-UR	⩾3.0		P235	P271		○	○		◎	○						○	○	○	
	GMT-XR Reverse Boring					⩽4D	External Cooling	GMT-XR	⩾4.0		P236	P271		○	○		◎	○						○	○	○	
GMT	GMT-DR Internal Hole Boring Tool Chamfer Grooving					⩽4D	External Cooling	GMT-DR	⩾4.0		P237	P271		○	○		◎	○						○	○	○	
	GMT-CR Internal Hole Boring Tool and Chamfer					⩽4D	External Cooling	GMT-CR			P238	P271		○	○		◎	○						○	○	○	
	GMT-GR Grooving					⩽4D	External Cooling	GMT-GR	⩾3.0		P239	P271		○	○		◎	○						○	○	○	
	GMT-KR Arc Grooving					⩽4D	External Cooling	GMT-KR	⩾4.0		P241	P271		○	○		◎	○						○	○	○	
	GMT-FR Grooving					⩽4D	External Cooling	GMT-FR	⩾6.0		P242	P271		○	○		◎	○						○	○	○	
	GMT-IR Threading, Right-hand Thread with a 60° Angle					⩽4D	External Cooling	GMT-IR	⩾1.5		P243	P271		○	○		◎	○						○	○	○	
	GMT-IR Threading, Right-hand Thread with a 55° Angle					⩽4D	External Cooling	GMT-IR	⩾4.0		P244	P271		○	○		◎	○						○	○	○	
GPT	GPT-AR Universal Internal Hole Turning					⩽4D	External Cooling	GPT-AR	⩾1.0		P245	P271		◎	○		○					◎					○	
	GPT-TR Durable Internal Hole Turning					⩽4D	External Cooling	GPT-TR	⩾1.0		P247	P271		◎	○		○					◎					○	
	GPT-PR Profile Turning					⩽4D	External Cooling	GPT-PR	⩾1.0		P250	P271		◎	○		○					◎					○	
	GPT-GR Grooving					⩽4D	External Cooling	GPT-GR	⩾3.0		P252	P271		◎	○		○					◎					○	
	GPT-FR Grooving					⩽4D	External Cooling	GPT-FR	⩾6.0		P254	P271		◎	○		○					◎					○	
	GPT-IR Threading, Right-hand Thread with a 60° Angle					⩽4D	External Cooling	GPT-IR	⩾1.5		P255	P271		◎	○		○					◎					○	
	GPT-IR Threading, Right-hand Thread with a 55° Angle					⩽4D	External Cooling	GPT-IR	⩾4.0		P256	P271		◎	○		○					◎					○	

◎ Most Suitable ○ Suitable

Drilling & Boring Tool Selection Guide

Product Series	Tool Name and Outline		Drill Point Angle	Shank Type	Coating/ Grade	Holemaking Depth L/D	Cooling Form	Series Type	Range of Sizes	Hole Accuracy Grade	Size Table Page	Cutting Data		Workpiece Material													
														P			M	K		N				S		H	
														1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
														Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
														<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB 200		<HB 450	<HB400	45-55HRC	55-60HRC
GHT	GHT-AR Universal Internal Hole Turning					⩽4D	External Cooling	GHT-AR	⩾1.0		P257	P271		○	○		○	○						◎	○	◎	○
	GHT-TR Durable Internal Hole Turning					⩽4D	External Cooling	GHT-TR	⩾1.0		P259	P271		○	○		○	○						◎	○	◎	○
	GHT-PR Profile Turning					⩽4D	External Cooling	GHT-PR	⩾1.0		P262	P271		○	○		○	○						◎	○	◎	○
	GHT-QR Profile Turning					⩽4D	External Cooling	GHT-QR	⩾3.0		P264	P271		○	○		○	○						◎	○	◎	○
	GHT-GR Grooving					⩽4D	External Cooling	GHT-GR	⩾3.0		P265	P271		○	○		○	○						◎	○	◎	○
	GHT-FR Grooving					⩽4D	External Cooling	GHT-FR	⩾6.0		P267	P271		○	○		○	○						◎	○	◎	○
	GHT-IR Threading, Right-hand Thread with a 60° Angle					⩽4D	External Cooling	GHT-IR	⩾1.5		P268	P271		○	○		○	○						◎	○	◎	○
	GHT-IR Threading, Right-hand Thread with a 55° Angle					⩽4D	External Cooling	GHT-IR	⩾4.0		P269	P271		○	○		○	○						◎	○	◎	○

◎ Most Suitable ○ Suitable

Tap Selection Guide

Product Series	Internal Type	Tool Name and Outline	Dimensions Standard	Coating/ Grade	Suitable Machined Hole Types	Recommended Machining Depth L/D	Cooling Form	Range of Sizes	Tap Accuracy Grade	Size Table Page	Cutting Data	Workpiece Material: P 1 2 3 4 Carbon Steel, Alloy Steel <35HRC	P 5 Alloy Steel, Tool Steel 35-48HRC	P 6 7 PH and Ferritic/ Martensitic Steel	M 1 2 3 Stainless Steel	K 1 2 Gray Cast Iron, Nodular Cast Iron <35HRC	K 3 High Alloy Cast Iron 35-45HRC	N 1 2 Forged Aluminum Alloy, Cast Aluminium Alloy Si<12%	N 3 Cast Aluminum Alloy Si>12%	N 4 Copper Alloy <HB 200	N 5 Composite Material	S 1 2 3 High-temperature Alloy <HB 450	S 4 Titanium Alloy <HB400	H 1 Hardened Steel 45-55HRC	H 2 Hardened Steel 55-60HRC
T118	T118-FDN High Performance Fluteless Tap for General Machining		D371/ D376	TiAl-C		⩽2.5D		M4-M30	6HX	P276	P289	◎	○		○			◎		◎					
	T118-FDC high Performance Fluteless Tap for Internal Cooling General Machining		D371/ D376	TiAl-C		⩽2.5D		M4-M30	6HX	P280	P289	◎	○		◎			◎		◎					
	T118-FDR High Performance Fluteless Tap for Internal Cooling General Machining		D371/ D376	TiAl-C		⩽2.5D		M4-M30	6HX	P282	P289	◎	○		◎			◎		◎					
	T118-SDN High Performance Spiral Fluted Tap for General Machining		D371/ D376	TiAl-C		⩽2.5D		M4-M16	6HX	P284	P289	◎	○		○	○	○	○	○	○					
	T118-PDN High Performance Spiral Pointed Tap for General Machining		D371/ D376	TiAl-C		⩽2.5D		M4-M16	6HX	P285	P289	◎	○		○	○	○	○	○	○					
T128	T128-HDN High Performance Straight Fluted Tap for Cast Iron Machining		D371/ D376	TiAl-Si		⩽2.5D		M5-M16	6HX	P286	P289					◎	○								
	T128-HDC High Performance Straight Fluted Tap for Internal Cooling Cast Iron Machining		D371/ D376	TiAl-Si		⩽2.5D		M5-M16	6HX	P287	P289					◎	○								
	T128-HDR High Performance Straight Fluted Tap for Internal Cooling Cast Iron Machining		D371/ D376	TiAl-Si		⩽2.5D		M5-M16	6HX	P288	P289					◎	○								
ET138	ET138-FJN Economical Fluteless Tap for Steel Machining		JIS	AlCrN		⩽2.5D		M1-M16	RH4-10	P290	P323	◎			○										
	ET138-SJN Economical Spiral Tap for Steel Machining		JIS	AlCrN		⩽2.5D		M1-M16	P1-5	P294	P323	◎			○										
	ET138-PJN Economical Spiral Pointed Tap for Steel Machining		JIS	AlCrN		⩽2.5D		M1-M16	P1-5	P297	P323	◎			○										
ET168	ET168-FJN Economical Fluteless Tap for Stainless Steel Machining		JIS	TiAlN		⩽2.5D		M1-M16	RH4-10	P300	P323	○			◎										
	ET168-SJN Economical Spiral Fluted Tap for Stainless Steel Machining		JIS	TiAlN		⩽2.5D		M1-M16	P1-5	P304	P323	○			◎										
	ET168-PJN Economical Spiral Pointed Tap for Stainless Steel Machining		JIS	TiAlN		⩽2.5D		M1-M16	P1-5	P307	P323	○			◎										
ET166	ET166-FJN economical Fluteless tap for copper-aluminum machining		JIS	DLC		⩽2.5D		M1-M16	RH4-10	P310	P323							◎	○	◎					
	ET166-SJN Economical Spiral Fluted Tap for Copper-Aluminum Machining		JIS	DLC		⩽2.5D		M1-M16	P1-5	P314	P323							◎	◎	◎					
	ET166-PJN Economical Spiral Pointed Tap for Copper-Aluminum Machining		JIS	DLC		⩽2.5D		M1-M16	P1-5	P317	P323							◎	◎	◎					
ET128	ET128-HJN economical Straight fluted tap for cast iron machining		JIS	TiAl-Si		⩽2.5D		M5-M16	P3-6	P320	P323					◎	○								
	ET128-HJC economical Straight fluted tap for internal cooling cast iron machining		JIS	TiAl-Si		⩽2.5D		M5-M16	P3-6	P321	P323					◎	○								
	ET128-HJR economical Straight fluted tap for internal cooling cast iron machining		JIS	TiAl-Si		⩽2.5D		M5-M16	P3-6	P322	P323					◎	○								

◎ Most Suitable ○ Suitable

Term Definition-drilling & Boring

	Designation	Description
Shank Shape	SHANK h6	h6 Round Shank
	SHANK DIN 6535HA	DIN6535HA Shank
Coating	TiAlN	TiAlN Coating
	AlTiN nano	AlTiN Nano-coating
	AlCrN/TiSiN	AlCrN/TiSiN Multiple Coatings
Tool Types		External Coolant Twist Drill
		Internal Coolant Twist Drill
		Pilot Drill
ISO Material Classification	P	ISO Classification Steel
	M	ISO Classification Stainless Steel
	K	ISO Classification Cast Iron
	N	ISO Classification Non-ferrous material
	S	ISO Classification Heat Resistant Alloy Titanium Alloy
	H	High-hardness Material
Length-diameter Ratio	3D	3 Length/Diameter Ratio
	5D	5 Length/Diameter Ratio
	8D	8 Length/Diameter Ratio
	12D	12 Length/Diameter Ratio
	15D	15 Length/Diameter Ratio
	20D	20 Length/Diameter Ratio
	25D	25 Length/Diameter Ratio

	Designation	Description
Dimensioning Parameters	DC	Edge Diameter
	DMM	Shank Diameter
	LCF	Slot Length
	LU	Recommended Maximum Drilling Depth
	LS	Shank Length
	OAL	Total Length
	PL	Drill Point Height
	LPR	Suspension Length
	DF	Flange Diameter
	IC	Incircle Diameter
	S	Tip Height
	RE	Tip Arc Radius
	D1	Internal Hole Diameter
	B	Insert Thickness
	DCON	Boring Tool Shank Diameter
	LF	Effective Length
	DC	Range of Machining
	WF	Width of Tool Apron
	DCONWS	Boring Tool Shank Diameter (Working End)
	DCONMS	Boring Tool Shank Diameter (Connection End)
	KAPR	Tool Cutting Edge Angle of Tool Apron

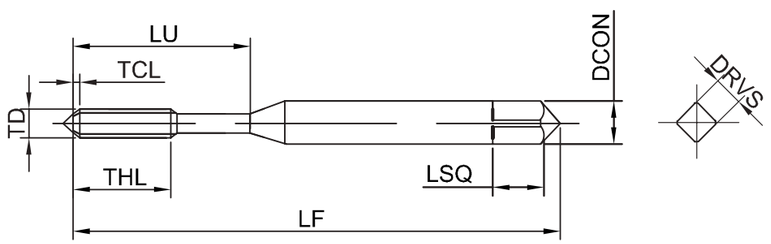
Term Definition-tap

	Icon	Meaning
Tap Material	HSS-PM	Powder Metallurgy High-speed Steel
	HSSE	Cobalt High-Speed Steel
Dimensional Standards	DIN371/DIN376	DIN371/DIN376 Dimensional Standards
	JIS	JIS Dimensional Standards
Cooling Mode		Lateral Internal Cooling
		Axial Internal Cooling
		External Cooling
Profile	60° P M	ISO Metric Coarse Thread (DIN13)
	60° P MF	ISO Metric Fine Thread (DIN13)
	60° P UNC	Unified Coarse Thread (ASME B1.1)
	60° P UNF	Unified Fine Thread (ASME B1.1)
Hole Type		Through Hole
		Blind Hole

	Icon	Meaning
Coating Type	AlCrN	Chrome-aluminum Coating
	DLC	DLC Coating
	TiAlN	Titanium-aluminum Coating
	TiAl-C	Titanium-aluminum-carbon Coating
	TiAl-Si	Titanium-aluminum-silicon
Thread Tolerance Grade	ISO 6HX	Tap Tolerance Grade ISO 6HX
	ISO 6H	Tap Tolerance Grade ISO 6H
	ISO 6H/2B	Tap Tolerance Grade ISO 6H/2B

Term Definition-tap

	Designation	Meaning
Dimensioning Parameters	TD	Thread Diameter
	TP	Thread Lead
	TPI	Number of Threads per Inch
	TCL	Cutting Tap Length
	THCHT	Cutting Tap Type
	LF	Total Length
	THL	Thread Length
	LU	Active Length
	DCON	Shank Diameter
	DRVS	Square Nose Width
	LSQ	Square Nose Length
	CZCMS	Machine Connection Size
	TDRM	Recommended Maximum Tapping Depth
	NOF	Number of Slots
	PHD	Pre-Drilled Hole Size/Bottom Hole Size
	TCTR	Tap Accuracy Grade
Standard: Adopting ISO 13399 Standard		



A

SOLID CARBIDE DRILLS

A Solid Carbide Drills

Representation Rules for Order No. of Solid Carbide Drills

D938 – ①

A 5 C – 1200 ② ③ ④ ⑤

Workpiece Material	① Drill Bit Series Number	
Plain Steel	D918S	Plain Steel Machining Twist Drill
Stainless Steel	D968S	Stainless Steel Machining Twist Drill
Plain Steel	D938	Plain Steel Machining Twist Drill
Cast Iron	D928	Cast Iron Machining Twist Drill
Aluminum Alloy	D966	Aluminum Alloy Machining Twist Drill
Hardness Steel	D998	Hardness Steel Machining Twist Drill
Plain Steel, Cast Iron, Non-ferrous Material	D101	Straight Shank 90° Pilot Drill
	D102	Straight Shank 120° Pilot Drill
	D103	Straight Shank 145° Nc Pilot Drill

② Shank Type	
A	Cylindrical Straight Shank DIN6535HA
E	Bevelled Shank DIN6535HE
B	Flatted Parallel Shank DIN6535HB
Y	Plain Cylindrical Straight Shank
M	Morse Taper Shank

③ Drilling Depth	
3	Drilling Depth≤3D
5	Drilling Depth≤ 5D
8	Drilling Depth≤ 8D
12	Drilling Depth≤ 12D
15	Drilling Depth≤ 15D
20	Drilling Depth≤ 20D
25	Drilling Depth≤ 25D
M	90° Top Angle
N	120° Top Angle
P	145° Top Angle

④ Cooling Mode	
C	Internal Cooling
N	External Cooling

⑤ Edge Diameter	
0325	Edge Diameter is Φ3.25
0600	Edge Diameter is Φ6.00
1200	Edge Diameter is Φ12.00

Introduction to Solid Carbide Drills Series

D918s High-performance Plain Steel Machining Twist Drill

- Suitable for drilling under soft steel, interrupted cut, poor cooling and other difficult conditions.
- The brand-new wavy edge design takes into account both the tip strength and cutting sharpness.
- The brand-new G-type slot design enhances the chip breaking performance and improves the tool rigidity.
- The brand-new substrate coating has been upgraded, featuring stronger adaptability to working conditions and better versatility.

D968s Efficient Stainless Steel Machining Twist Drill

- Suitable for efficient drilling and machining of stainless steel, carbon steel, alloy steel, heat-resistant alloy and titanium alloy.
- The unique end edge design has stronger chip breaking ability and larger chip space.
- The new substrate coating combination offers super-strong toughness and wear resistance.
- The super-large geometry design features excellent chip removal performance.

D938 Plain Steel Machining Twist Drill

- Suitable for the drilling of steel (⩽ 48HRC) and cast iron
- The unique cutting edge treatment technology strengthens the cutting edge strength and improves the performance stability.
- The new AlTiN-nano coating endows the tool with excellent wear resistance.
- The straight cutting edge improves the strength of the cutting edge.

D938 Deep Holemaking Twist Drill

- Suitable for efficient drilling of plain steel, cast iron and stainless steel.
- The new substrate material features a perfect balance of toughness and wear resistance.
- Adoption of AlTiN-based nano coating and unique post-coating treatment
- The optimized geometry and drill point design endow the tool with excellent self-centering performance, chip breaking performance, and good chip removal performance.

Series Introduction

D928 Cast Iron Machining Twist Drill

- Suitable for cast iron machining in automotive engines and other industries
- The wavy cutting edge reduces the machining torque.
- The four-land design improves the hole wall quality and hole accuracy.
- The wide chisel edge design enhances the strength of the drill point.

D966 Aluminum Alloy Machining Twist Drill

- Suitable for machining of non-ferrous metals, such as aluminum alloy and copper alloy
- The high-accuracy surface treatment technology enables smoother chip removal.
- The unique cutting edge design makes cutting more effortless.

D998 Hardness Steel Machining Twist Drill

- Suitable for the machining of hardness steel
- Large core thickness, small helix angle, high rigidity, high strength
- The X-shaped drill point has excellent self-centering ability.
- The circular arc tip ensures excellent hole wall quality.

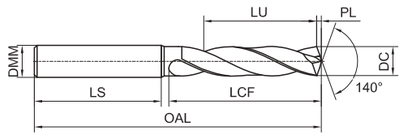
D101/D102/D103 NC Pilot Drill

- Suitable for machining center holes and chamfers on CNC machine
- Suitable for machining steel, cast iron, aluminum alloy and copper alloy

D918S-A3N

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

High-performance 3D External Coolant Twist Drill for Plain Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3N-0300	3.00	20	62	6	36	15.5	0.55	●
D918S-A3N-0305	3.05	20	62	6	36	15.4	0.56	○
D918S-A3N-0310	3.10	20	62	6	36	15.4	0.56	●
D918S-A3N-0315	3.15	20	62	6	36	15.3	0.57	○
D918S-A3N-0320	3.20	20	62	6	36	15.2	0.58	●
D918S-A3N-0325	3.25	20	62	6	36	15.1	0.59	○
D918S-A3N-0330	3.30	20	62	6	36	15.1	0.60	●
D918S-A3N-0335	3.35	20	62	6	36	15.0	0.61	○
D918S-A3N-0340	3.40	20	62	6	36	14.9	0.62	●
D918S-A3N-0350	3.50	20	62	6	36	14.8	0.64	●
D918S-A3N-0355	3.55	20	62	6	36	14.7	0.65	○
D918S-A3N-0360	3.60	20	62	6	36	14.6	0.66	●
D918S-A3N-0365	3.65	20	62	6	36	14.5	0.66	○
D918S-A3N-0370	3.70	20	62	6	36	14.5	0.67	●
D918S-A3N-0380	3.80	24	66	6	36	18.3	0.69	●
D918S-A3N-0385	3.85	24	66	6	36	18.2	0.70	○
D918S-A3N-0390	3.90	24	66	6	36	18.2	0.71	●
D918S-A3N-0395	3.95	24	66	6	36	18.1	0.72	○
D918S-A3N-0400	4.00	24	66	6	36	18.0	0.73	●
D918S-A3N-0405	4.05	24	66	6	36	17.9	0.74	○
D918S-A3N-0410	4.10	24	66	6	36	17.9	0.75	●
D918S-A3N-0415	4.15	24	66	6	36	17.8	0.76	●
D918S-A3N-0420	4.20	24	66	6	36	17.7	0.76	●
D918S-A3N-0425	4.25	24	66	6	36	17.6	0.77	○
D918S-A3N-0430	4.30	24	66	6	36	17.6	0.78	●
D918S-A3N-0435	4.35	24	66	6	36	17.5	0.79	○
D918S-A3N-0440	4.40	24	66	6	36	17.4	0.80	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3N-0445	4.45	24	66	6	36	17.3	0.81	○
D918S-A3N-0450	4.50	24	66	6	36	17.3	0.82	●
D918S-A3N-0455	4.55	24	66	6	36	17.2	0.83	○
D918S-A3N-0460	4.60	24	66	6	36	17.1	0.84	●
D918S-A3N-0465	4.65	24	66	6	36	17.0	0.85	○
D918S-A3N-0470	4.70	24	66	6	36	17.0	0.86	●
D918S-A3N-0475	4.75	28	66	6	36	20.9	0.86	○
D918S-A3N-0480	4.80	28	66	6	36	20.8	0.87	●
D918S-A3N-0485	4.85	28	66	6	36	20.7	0.88	○
D918S-A3N-0490	4.90	28	66	6	36	20.7	0.89	●
D918S-A3N-0495	4.95	28	66	6	36	20.6	0.90	○
D918S-A3N-0500	5.00	28	66	6	36	20.5	0.91	●
D918S-A3N-0505	5.05	28	66	6	36	20.4	0.92	○
D918S-A3N-0510	5.10	28	66	6	36	20.4	0.93	●
D918S-A3N-0515	5.15	28	66	6	36	20.3	0.94	○
D918S-A3N-0520	5.20	28	66	6	36	20.2	0.95	●
D918S-A3N-0525	5.25	28	66	6	36	20.1	0.96	○
D918S-A3N-0530	5.30	28	66	6	36	20.1	0.96	●
D918S-A3N-0535	5.35	28	66	6	36	20.0	0.97	○
D918S-A3N-0540	5.40	28	66	6	36	19.9	0.98	●
D918S-A3N-0545	5.45	28	66	6	36	19.8	0.99	○
D918S-A3N-0550	5.50	28	66	6	36	19.8	1.00	●
D918S-A3N-0555	5.55	28	66	6	36	19.7	1.01	○
D918S-A3N-0560	5.60	28	66	6	36	19.6	1.02	●
D918S-A3N-0565	5.65	28	66	6	36	19.5	1.03	○
D918S-A3N-0570	5.70	28	66	6	36	19.5	1.04	●
D918S-A3N-0575	5.75	28	66	6	36	19.4	1.05	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○		○	○								

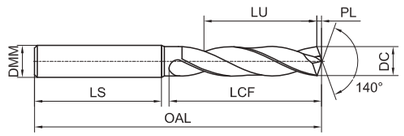
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A3N

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

High-performance 3D External Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3N-0580	5.80	28	66	6	36	19.3	1.06	●
D918S-A3N-0585	5.85	28	66	6	36	19.2	1.06	○
D918S-A3N-0590	5.90	28	66	6	36	19.2	1.07	●
D918S-A3N-0595	5.95	28	66	6	36	19.1	1.08	○
D918S-A3N-0600	6.00	28	66	6	36	19.0	1.09	●
D918S-A3N-0605	6.05	28	66	6	36	18.9	1.10	○
D918S-A3N-0610	6.10	34	79	8	36	24.9	1.11	●
D918S-A3N-0620	6.20	34	79	8	36	24.7	1.13	●
D918S-A3N-0625	6.25	34	79	8	36	24.6	1.14	○
D918S-A3N-0630	6.30	34	79	8	36	24.6	1.15	●
D918S-A3N-0635	6.35	34	79	8	36	24.5	1.16	○
D918S-A3N-0640	6.40	34	79	8	36	24.4	1.16	●
D918S-A3N-0645	6.45	34	79	8	36	24.3	1.17	○
D918S-A3N-0650	6.50	34	79	8	36	24.3	1.18	●
D918S-A3N-0655	6.55	34	79	8	36	24.2	1.19	○
D918S-A3N-0660	6.60	34	79	8	36	24.1	1.20	●
D918S-A3N-0665	6.65	34	79	8	36	24.0	1.21	○
D918S-A3N-0670	6.70	34	79	8	36	24.0	1.22	●
D918S-A3N-0675	6.75	34	79	8	36	23.9	1.23	○
D918S-A3N-0680	6.80	34	79	8	36	23.8	1.24	●
D918S-A3N-0685	6.85	34	79	8	36	23.7	1.25	○
D918S-A3N-0690	6.90	34	79	8	36	23.7	1.26	●
D918S-A3N-0695	6.95	34	79	8	36	23.6	1.26	○
D918S-A3N-0700	7.00	34	79	8	36	23.5	1.27	●
D918S-A3N-0705	7.05	34	79	8	36	23.4	1.28	○
D918S-A3N-0710	7.10	41	79	8	36	30.4	1.29	●
D918S-A3N-0720	7.20	41	79	8	36	30.2	1.31	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3N-0730	7.30	41	79	8	36	30.1	1.33	●
D918S-A3N-0735	7.35	41	79	8	36	30.0	1.34	○
D918S-A3N-0740	7.40	41	79	8	36	29.9	1.35	●
D918S-A3N-0745	7.45	41	79	8	36	29.8	1.36	○
D918S-A3N-0750	7.50	41	79	8	36	29.8	1.36	●
D918S-A3N-0755	7.55	41	79	8	36	29.7	1.37	○
D918S-A3N-0760	7.60	41	79	8	36	29.6	1.38	●
D918S-A3N-0765	7.65	41	79	8	36	29.5	1.39	○
D918S-A3N-0770	7.70	41	79	8	36	29.5	1.40	●
D918S-A3N-0775	7.75	41	79	8	36	29.4	1.41	○
D918S-A3N-0780	7.80	41	79	8	36	29.3	1.42	●
D918S-A3N-0785	7.85	41	79	8	36	29.2	1.43	○
D918S-A3N-0790	7.90	41	79	8	36	29.2	1.44	●
D918S-A3N-0795	7.95	41	79	8	36	29.1	1.45	○
D918S-A3N-0800	8.00	41	79	8	36	29.0	1.46	●
D918S-A3N-0805	8.05	41	79	8	36	28.9	1.46	○
D918S-A3N-0810	8.10	47	89	10	40	34.9	1.47	●
D918S-A3N-0815	8.15	47	89	10	40	34.8	1.48	○
D918S-A3N-0820	8.20	47	89	10	40	34.7	1.49	●
D918S-A3N-0825	8.25	47	89	10	40	34.6	1.50	○
D918S-A3N-0830	8.30	47	89	10	40	34.6	1.51	●
D918S-A3N-0840	8.40	47	89	10	40	34.4	1.53	●
D918S-A3N-0845	8.45	47	89	10	40	34.3	1.54	○
D918S-A3N-0850	8.50	47	89	10	40	34.3	1.55	●
D918S-A3N-0855	8.55	47	89	10	40	34.2	1.56	○
D918S-A3N-0860	8.60	47	89	10	40	34.1	1.57	●
D918S-A3N-0870	8.70	47	89	10	40	34.0	1.58	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○		○	○								

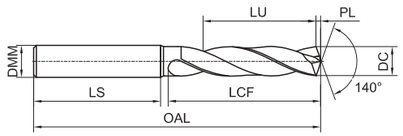
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A3N

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

High-performance 3D External Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3N-0880	8.80	47	89	10	40	33.8	1.60	●
D918S-A3N-0885	8.85	47	89	10	40	33.7	1.61	○
D918S-A3N-0890	8.90	47	89	10	40	33.7	1.62	●
D918S-A3N-0895	8.95	47	89	10	40	33.6	1.63	○
D918S-A3N-0900	9.00	47	89	10	40	33.5	1.64	●
D918S-A3N-0905	9.05	47	89	10	40	33.4	1.65	○
D918S-A3N-0910	9.10	47	89	10	40	33.4	1.66	●
D918S-A3N-0915	9.15	47	89	10	40	33.3	1.67	○
D918S-A3N-0920	9.20	47	89	10	40	33.2	1.67	●
D918S-A3N-0925	9.25	47	89	10	40	33.1	1.68	○
D918S-A3N-0930	9.30	47	89	10	40	33.1	1.69	●
D918S-A3N-0935	9.35	47	89	10	40	33.0	1.70	○
D918S-A3N-0940	9.40	47	89	10	40	32.9	1.71	●
D918S-A3N-0945	9.45	47	89	10	40	32.8	1.72	○
D918S-A3N-0950	9.50	47	89	10	40	32.8	1.73	●
D918S-A3N-0955	9.55	47	89	10	40	32.7	1.74	○
D918S-A3N-0960	9.60	47	89	10	40	32.6	1.75	●
D918S-A3N-0965	9.65	47	89	10	40	32.5	1.76	○
D918S-A3N-0970	9.70	47	89	10	40	32.5	1.77	●
D918S-A3N-0975	9.75	47	89	10	40	32.4	1.77	○
D918S-A3N-0980	9.80	47	89	10	40	32.3	1.78	●
D918S-A3N-0985	9.85	47	89	10	40	32.2	1.79	○
D918S-A3N-0990	9.90	47	89	10	40	32.2	1.80	●
D918S-A3N-0995	9.95	47	89	10	40	32.1	1.81	○
D918S-A3N-1000	10.00	47	89	10	40	32.0	1.82	●
D918S-A3N-1005	10.05	47	89	10	40	31.9	1.83	○
D918S-A3N-1010	10.10	55	102	12	45	39.9	1.84	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3N-1015	10.15	55	102	12	45	39.8	1.85	○
D918S-A3N-1020	10.20	55	102	12	45	39.7	1.86	●
D918S-A3N-1025	10.25	55	102	12	45	39.6	1.87	○
D918S-A3N-1030	10.30	55	102	12	45	39.6	1.87	●
D918S-A3N-1035	10.35	55	102	12	45	39.5	1.88	○
D918S-A3N-1040	10.40	55	102	12	45	39.4	1.89	●
D918S-A3N-1050	10.50	55	102	12	45	39.3	1.91	●
D918S-A3N-1060	10.60	55	102	12	45	39.1	1.93	●
D918S-A3N-1070	10.70	55	102	12	45	39.0	1.95	●
D918S-A3N-1080	10.80	55	102	12	45	38.8	1.97	●
D918S-A3N-1085	10.85	55	102	12	45	38.7	1.97	●
D918S-A3N-1090	10.90	55	102	12	45	38.7	1.98	●
D918S-A3N-1100	11.00	55	102	12	45	38.5	2.00	●
D918S-A3N-1105	11.05	55	102	12	45	38.4	2.01	○
D918S-A3N-1110	11.10	55	102	12	45	38.4	2.02	●
D918S-A3N-1115	11.15	55	102	12	45	38.3	2.03	○
D918S-A3N-1120	11.20	55	102	12	45	38.2	2.04	●
D918S-A3N-1125	11.25	55	102	12	45	38.1	2.05	○
D918S-A3N-1130	11.30	55	102	12	45	38.1	2.06	●
D918S-A3N-1135	11.35	55	102	12	45	38.0	2.07	○
D918S-A3N-1140	11.40	55	102	12	45	37.9	2.07	●
D918S-A3N-1145	11.45	55	102	12	45	37.8	2.08	○
D918S-A3N-1150	11.50	55	102	12	45	37.8	2.09	●
D918S-A3N-1155	11.55	55	102	12	45	37.7	2.10	○
D918S-A3N-1160	11.60	55	102	12	45	37.6	2.11	●
D918S-A3N-1170	11.70	55	102	12	45	37.5	2.13	●
D918S-A3N-1180	11.80	55	102	12	45	37.3	2.15	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○		○	○								

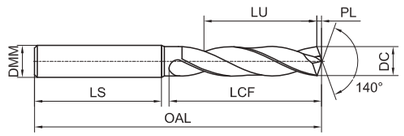
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A3N

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

High-performance 3D External Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3N-1190	11.90	55	102	12	45	37.2	2.17	●
D918S-A3N-1195	11.95	55	102	12	45	37.1	2.17	○
D918S-A3N-1200	12.00	55	102	12	45	37.0	2.18	●
D918S-A3N-1205	12.05	55	102	12	45	36.9	2.19	●
D918S-A3N-1210	12.10	60	107	14	45	41.9	2.20	●
D918S-A3N-1215	12.15	60	107	14	45	41.8	2.21	○
D918S-A3N-1220	12.20	60	107	14	45	41.7	2.22	●
D918S-A3N-1225	12.25	60	107	14	45	41.6	2.23	○
D918S-A3N-1230	12.30	60	107	14	45	41.6	2.24	●
D918S-A3N-1240	12.40	60	107	14	45	41.4	2.26	○
D918S-A3N-1245	12.45	60	107	14	45	41.3	2.27	○
D918S-A3N-1250	12.50	60	107	14	45	41.3	2.27	●
D918S-A3N-1255	12.55	60	107	14	45	41.2	2.28	○
D918S-A3N-1260	12.60	60	107	14	45	41.1	2.29	●
D918S-A3N-1270	12.70	60	107	14	45	41.0	2.31	●
D918S-A3N-1275	12.75	60	107	14	45	40.9	2.32	○
D918S-A3N-1280	12.80	60	107	14	45	40.8	2.33	●
D918S-A3N-1285	12.85	60	107	14	45	40.7	2.34	○
D918S-A3N-1290	12.90	60	107	14	45	40.7	2.35	○
D918S-A3N-1300	13.00	60	107	14	45	40.5	2.37	●
D918S-A3N-1305	13.05	60	107	14	45	40.4	2.37	○
D918S-A3N-1310	13.10	60	107	14	45	40.4	2.38	●
D918S-A3N-1315	13.15	60	107	14	45	40.3	2.39	○
D918S-A3N-1320	13.20	60	107	14	45	40.2	2.40	●
D918S-A3N-1325	13.25	60	107	14	45	40.1	2.41	○
D918S-A3N-1330	13.30	60	107	14	45	40.1	2.42	○
D918S-A3N-1335	13.35	60	107	14	45	40.0	2.43	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3N-1340	13.40	60	107	14	45	39.9	2.44	○
D918S-A3N-1350	13.50	60	107	14	45	39.8	2.46	●
D918S-A3N-1355	13.55	60	107	14	45	39.7	2.47	○
D918S-A3N-1360	13.60	60	107	14	45	39.6	2.47	○
D918S-A3N-1370	13.70	60	107	14	45	39.5	2.49	○
D918S-A3N-1375	13.75	60	107	14	45	39.4	2.50	○
D918S-A3N-1380	13.80	60	107	14	45	39.3	2.51	●
D918S-A3N-1390	13.90	60	107	14	45	39.2	2.53	○
D918S-A3N-1395	13.95	60	107	14	45	39.1	2.54	○
D918S-A3N-1400	14.00	60	107	14	45	39.0	2.55	●
D918S-A3N-1405	14.05	60	107	14	45	38.9	2.56	○
D918S-A3N-1410	14.10	65	115	16	48	43.9	2.57	●
D918S-A3N-1420	14.20	65	115	16	48	43.7	2.58	●
D918S-A3N-1425	14.25	65	115	16	48	43.6	2.59	○
D918S-A3N-1430	14.30	65	115	16	48	43.6	2.60	●
D918S-A3N-1440	14.40	65	115	16	48	43.4	2.62	○
D918S-A3N-1450	14.50	65	115	16	48	43.3	2.64	●
D918S-A3N-1460	14.60	65	115	16	48	43.1	2.66	●
D918S-A3N-1470	14.70	65	115	16	48	43.0	2.68	○
D918S-A3N-1475	14.75	65	115	16	48	42.9	2.68	○
D918S-A3N-1480	14.80	65	115	16	48	42.8	2.69	●
D918S-A3N-1490	14.90	65	115	16	48	42.7	2.71	○
D918S-A3N-1500	15.00	65	115	16	48	42.5	2.73	●
D918S-A3N-1505	15.05	65	115	16	48	42.4	2.74	○
D918S-A3N-1510	15.10	65	115	16	48	42.4	2.75	○
D918S-A3N-1515	15.15	65	115	16	48	42.3	2.76	○
D918S-A3N-1520	15.20	65	115	16	48	42.2	2.77	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon steel, alloy steel	Alloy steel, tool steel	PH and ferritic/ martensitic steel	Stainless steel	Gray cast iron, nodular cast iron	High alloy cast iron	Forged aluminum alloy, cast aluminium alloy	Cast aluminum alloy	Copper alloy	Composite material	High-temperature alloy	Titanium alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○		○	○								

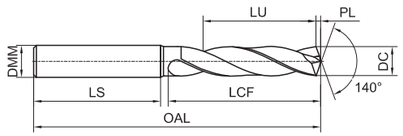
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A3N

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

High-performance 3D External Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3N-1525	15.25	65	115	16	48	42.1	2.78	○
D918S-A3N-1530	15.30	65	115	16	48	42.1	2.78	●
D918S-A3N-1535	15.35	65	115	16	48	42.0	2.79	○
D918S-A3N-1540	15.40	65	115	16	48	41.9	2.80	○
D918S-A3N-1550	15.50	65	115	16	48	41.8	2.82	●
D918S-A3N-1555	15.55	65	115	16	48	41.7	2.83	○
D918S-A3N-1560	15.60	65	115	16	48	41.6	2.84	○
D918S-A3N-1570	15.70	65	115	16	48	41.5	2.86	●
D918S-A3N-1580	15.80	65	115	16	48	41.3	2.88	○
D918S-A3N-1590	15.90	65	115	16	48	41.2	2.89	○
D918S-A3N-1600	16.00	65	115	16	48	41.0	2.91	●
D918S-A3N-1610	16.10	73	123	18	48	48.9	2.93	○
D918S-A3N-1620	16.20	73	123	18	48	48.7	2.95	○
D918S-A3N-1625	16.25	73	123	18	48	48.6	2.96	○
D918S-A3N-1630	16.30	73	123	18	48	48.6	2.97	○
D918S-A3N-1640	16.40	73	123	18	48	48.4	2.98	○
D918S-A3N-1650	16.50	73	123	18	48	48.3	3.00	○
D918S-A3N-1660	16.60	73	123	18	48	48.1	3.02	○
D918S-A3N-1670	16.70	73	123	18	48	48.0	3.04	○
D918S-A3N-1675	16.75	73	123	18	48	47.9	3.05	○
D918S-A3N-1680	16.80	73	123	18	48	47.8	3.06	○
D918S-A3N-1695	16.95	73	123	18	48	47.6	3.08	○
D918S-A3N-1700	17.00	73	123	18	48	47.5	3.09	○
D918S-A3N-1710	17.10	73	123	18	48	47.4	3.11	○
D918S-A3N-1720	17.20	73	123	18	48	47.2	3.13	○
D918S-A3N-1730	17.30	73	123	18	48	47.1	3.15	○
D918S-A3N-1740	17.40	73	123	18	48	46.9	3.17	○
D918S-A3N-1750	17.50	73	123	18	48	46.8	3.18	○
D918S-A3N-1760	17.60	73	123	18	48	46.6	3.20	○
D918S-A3N-1770	17.70	73	123	18	48	46.5	3.22	○
D918S-A3N-1780	17.80	73	123	18	48	46.3	3.24	○
D918S-A3N-1795	17.95	73	123	18	48	46.1	3.27	○
D918S-A5N-1800	18.00	93	143	18	48	66.0	3.28	○
D918S-A5N-1840	18.40	101	153	20	50	73.4	3.35	○
D918S-A5N-1850	18.50	101	153	20	50	73.3	3.37	○
D918S-A5N-1860	18.60	101	153	20	50	73.1	3.38	○
D918S-A5N-1900	19.00	101	153	20	50	72.5	3.46	○
D918S-A5N-1915	19.15	101	153	20	50	72.3	3.49	○
D918S-A5N-1950	19.50	101	153	20	50	71.8	3.55	○
D918S-A5N-2000	20.00	101	153	20	50	71.0	3.64	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○		○	○								

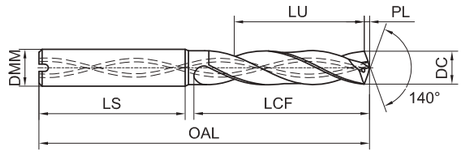
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A3C

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

High-performance 3D Internal Coolant Twist Drill for Plain Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3C-0300	3.00	20	62	6	36	15.5	0.55	●
D918S-A3C-0305	3.05	20	62	6	36	15.4	0.56	○
D918S-A3C-0310	3.10	20	62	6	36	15.4	0.56	●
D918S-A3C-0315	3.15	20	62	6	36	15.3	0.57	○
D918S-A3C-0320	3.20	20	62	6	36	15.2	0.58	●
D918S-A3C-0325	3.25	20	62	6	36	15.1	0.59	○
D918S-A3C-0330	3.30	20	62	6	36	15.1	0.60	●
D918S-A3C-0335	3.35	20	62	6	36	15.0	0.61	○
D918S-A3C-0340	3.40	20	62	6	36	14.9	0.62	●
D918S-A3C-0350	3.50	20	62	6	36	14.8	0.64	●
D918S-A3C-0355	3.55	20	62	6	36	14.7	0.65	○
D918S-A3C-0360	3.60	20	62	6	36	14.6	0.66	●
D918S-A3C-0365	3.65	20	62	6	36	14.5	0.66	○
D918S-A3C-0370	3.70	20	62	6	36	14.5	0.67	●
D918S-A3C-0380	3.80	24	66	6	36	18.3	0.69	●
D918S-A3C-0385	3.85	24	66	6	36	18.2	0.70	○
D918S-A3C-0390	3.90	24	66	6	36	18.2	0.71	●
D918S-A3C-0395	3.95	24	66	6	36	18.1	0.72	○
D918S-A3C-0400	4.00	24	66	6	36	18.0	0.73	●
D918S-A3C-0405	4.05	24	66	6	36	17.9	0.74	○
D918S-A3C-0410	4.10	24	66	6	36	17.9	0.75	●
D918S-A3C-0415	4.15	24	66	6	36	17.8	0.76	○
D918S-A3C-0420	4.20	24	66	6	36	17.7	0.76	●
D918S-A3C-0425	4.25	24	66	6	36	17.6	0.77	○
D918S-A3C-0430	4.30	24	66	6	36	17.6	0.78	●
D918S-A3C-0435	4.35	24	66	6	36	17.5	0.79	○
D918S-A3C-0440	4.40	24	66	6	36	17.4	0.80	●
D918S-A3C-0445	4.45	24	66	6	36	17.3	0.81	○
D918S-A3C-0450	4.50	24	66	6	36	17.3	0.82	●
D918S-A3C-0455	4.55	24	66	6	36	17.2	0.83	○
D918S-A3C-0460	4.60	24	66	6	36	17.1	0.84	●
D918S-A3C-0465	4.65	24	66	6	36	17.0	0.85	○
D918S-A3C-0470	4.70	24	66	6	36	17.0	0.86	●
D918S-A3C-0475	4.75	28	66	6	36	20.9	0.86	○
D918S-A3C-0480	4.80	28	66	6	36	20.8	0.87	●
D918S-A3C-0485	4.85	28	66	6	36	20.7	0.88	○
D918S-A3C-0490	4.90	28	66	6	36	20.7	0.89	●
D918S-A3C-0495	4.95	28	66	6	36	20.6	0.90	○
D918S-A3C-0500	5.00	28	66	6	36	20.5	0.91	●
D918S-A3C-0505	5.05	28	66	6	36	20.4	0.92	○
D918S-A3C-0510	5.10	28	66	6	36	20.4	0.93	●
D918S-A3C-0515	5.15	28	66	6	36	20.3	0.94	○
D918S-A3C-0520	5.20	28	66	6	36	20.2	0.95	●
D918S-A3C-0525	5.25	28	66	6	36	20.1	0.96	○
D918S-A3C-0530	5.30	28	66	6	36	20.1	0.96	●
D918S-A3C-0535	5.35	28	66	6	36	20.0	0.97	○
D918S-A3C-0540	5.40	28	66	6	36	19.9	0.98	●
D918S-A3C-0545	5.45	28	66	6	36	19.8	0.99	○
D918S-A3C-0550	5.50	28	66	6	36	19.8	1.00	●
D918S-A3C-0555	5.55	28	66	6	36	19.7	1.01	○
D918S-A3C-0560	5.60	28	66	6	36	19.6	1.02	●
D918S-A3C-0565	5.65	28	66	6	36	19.5	1.03	○
D918S-A3C-0570	5.70	28	66	6	36	19.5	1.04	●
D918S-A3C-0575	5.75	28	66	6	36	19.4	1.05	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○	○	○	○								

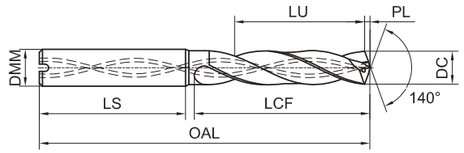
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A3C

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

High-performance 3D Internal Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3C-0580	5.80	28	66	6	36	19.3	1.06	●
D918S-A3C-0585	5.85	28	66	6	36	19.2	1.06	○
D918S-A3C-0590	5.90	28	66	6	36	19.2	1.07	●
D918S-A3C-0595	5.95	28	66	6	36	19.1	1.08	○
D918S-A3C-0600	6.00	28	66	6	36	19.0	1.09	●
D918S-A3C-0605	6.05	28	66	6	36	18.9	1.10	○
D918S-A3C-0610	6.10	34	79	8	36	24.9	1.11	●
D918S-A3C-0620	6.20	34	79	8	36	24.7	1.13	●
D918S-A3C-0625	6.25	34	79	8	36	24.6	1.14	○
D918S-A3C-0630	6.30	34	79	8	36	24.6	1.15	●
D918S-A3C-0635	6.35	34	79	8	36	24.5	1.16	○
D918S-A3C-0640	6.40	34	79	8	36	24.4	1.16	●
D918S-A3C-0645	6.45	34	79	8	36	24.3	1.17	○
D918S-A3C-0650	6.50	34	79	8	36	24.3	1.18	●
D918S-A3C-0655	6.55	34	79	8	36	24.2	1.19	○
D918S-A3C-0660	6.60	34	79	8	36	24.1	1.20	●
D918S-A3C-0665	6.65	34	79	8	36	24.0	1.21	○
D918S-A3C-0670	6.70	34	79	8	36	24.0	1.22	●
D918S-A3C-0675	6.75	34	79	8	36	23.9	1.23	○
D918S-A3C-0680	6.80	34	79	8	36	23.8	1.24	●
D918S-A3C-0685	6.85	34	79	8	36	23.7	1.25	○
D918S-A3C-0690	6.90	34	79	8	36	23.7	1.26	●
D918S-A3C-0695	6.95	34	79	8	36	23.6	1.26	○
D918S-A3C-0700	7.00	34	79	8	36	23.5	1.27	●
D918S-A3C-0705	7.05	34	79	8	36	23.4	1.28	○
D918S-A3C-0710	7.10	41	79	8	36	30.4	1.29	●
D918S-A3C-0720	7.20	41	79	8	36	30.2	1.31	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3C-0730	7.30	41	79	8	36	30.1	1.33	●
D918S-A3C-0735	7.35	41	79	8	36	30.0	1.34	○
D918S-A3C-0740	7.40	41	79	8	36	29.9	1.35	●
D918S-A3C-0745	7.45	41	79	8	36	29.8	1.36	○
D918S-A3C-0750	7.50	41	79	8	36	29.8	1.36	●
D918S-A3C-0755	7.55	41	79	8	36	29.7	1.37	○
D918S-A3C-0760	7.60	41	79	8	36	29.6	1.38	●
D918S-A3C-0765	7.65	41	79	8	36	29.5	1.39	○
D918S-A3C-0770	7.70	41	79	8	36	29.5	1.40	●
D918S-A3C-0775	7.75	41	79	8	36	29.4	1.41	○
D918S-A3C-0780	7.80	41	79	8	36	29.3	1.42	●
D918S-A3C-0785	7.85	41	79	8	36	29.2	1.43	○
D918S-A3C-0790	7.90	41	79	8	36	29.2	1.44	●
D918S-A3C-0795	7.95	41	79	8	36	29.1	1.45	○
D918S-A3C-0800	8.00	41	79	8	36	29.0	1.46	●
D918S-A3C-0805	8.05	41	79	8	36	28.9	1.46	○
D918S-A3C-0810	8.10	47	89	10	40	34.9	1.47	●
D918S-A3C-0815	8.15	47	89	10	40	34.8	1.48	○
D918S-A3C-0820	8.20	47	89	10	40	34.7	1.49	●
D918S-A3C-0825	8.25	47	89	10	40	34.6	1.50	○
D918S-A3C-0830	8.30	47	89	10	40	34.6	1.51	●
D918S-A3C-0840	8.40	47	89	10	40	34.4	1.53	●
D918S-A3C-0845	8.45	47	89	10	40	34.3	1.54	○
D918S-A3C-0850	8.50	47	89	10	40	34.3	1.55	●
D918S-A3C-0855	8.55	47	89	10	40	34.2	1.56	○
D918S-A3C-0860	8.60	47	89	10	40	34.1	1.57	●
D918S-A3C-0870	8.70	47	89	10	40	34.0	1.58	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○	○	○	○								

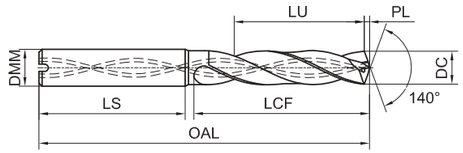
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A3C

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

High-performance 3D Internal Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3C-0880	8.80	47	89	10	40	33.8	1.60	●
D918S-A3C-0885	8.85	47	89	10	40	33.7	1.61	○
D918S-A3C-0890	8.90	47	89	10	40	33.7	1.62	●
D918S-A3C-0895	8.95	47	89	10	40	33.6	1.63	○
D918S-A3C-0900	9.00	47	89	10	40	33.5	1.64	●
D918S-A3C-0905	9.05	47	89	10	40	33.4	1.65	○
D918S-A3C-0910	9.10	47	89	10	40	33.4	1.66	●
D918S-A3C-0915	9.15	47	89	10	40	33.3	1.67	○
D918S-A3C-0920	9.20	47	89	10	40	33.2	1.67	●
D918S-A3C-0925	9.25	47	89	10	40	33.1	1.68	○
D918S-A3C-0930	9.30	47	89	10	40	33.1	1.69	●
D918S-A3C-0935	9.35	47	89	10	40	33.0	1.70	○
D918S-A3C-0940	9.40	47	89	10	40	32.9	1.71	●
D918S-A3C-0945	9.45	47	89	10	40	32.8	1.72	○
D918S-A3C-0950	9.50	47	89	10	40	32.8	1.73	●
D918S-A3C-0955	9.55	47	89	10	40	32.7	1.74	○
D918S-A3C-0960	9.60	47	89	10	40	32.6	1.75	●
D918S-A3C-0965	9.65	47	89	10	40	32.5	1.76	○
D918S-A3C-0970	9.70	47	89	10	40	32.5	1.77	●
D918S-A3C-0975	9.75	47	89	10	40	32.4	1.77	○
D918S-A3C-0980	9.80	47	89	10	40	32.3	1.78	●
D918S-A3C-0985	9.85	47	89	10	40	32.2	1.79	○
D918S-A3C-0990	9.90	47	89	10	40	32.2	1.80	●
D918S-A3C-0995	9.95	47	89	10	40	32.1	1.81	○
D918S-A3C-1000	10.00	47	89	10	40	32.0	1.82	●
D918S-A3C-1005	10.05	47	89	10	40	31.9	1.83	○
D918S-A3C-1010	10.10	55	102	12	45	39.9	1.84	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3C-1015	10.15	55	102	12	45	39.8	1.85	○
D918S-A3C-1020	10.20	55	102	12	45	39.7	1.86	●
D918S-A3C-1025	10.25	55	102	12	45	39.6	1.87	○
D918S-A3C-1030	10.30	55	102	12	45	39.6	1.87	●
D918S-A3C-1035	10.35	55	102	12	45	39.5	1.88	○
D918S-A3C-1040	10.40	55	102	12	45	39.4	1.89	●
D918S-A3C-1050	10.50	55	102	12	45	39.3	1.91	●
D918S-A3C-1060	10.60	55	102	12	45	39.1	1.93	○
D918S-A3C-1070	10.70	55	102	12	45	39.0	1.95	●
D918S-A3C-1080	10.80	55	102	12	45	38.8	1.97	●
D918S-A3C-1085	10.85	55	102	12	45	38.7	1.97	○
D918S-A3C-1090	10.90	55	102	12	45	38.7	1.98	●
D918S-A3C-1100	11.00	55	102	12	45	38.5	2.00	●
D918S-A3C-1105	11.05	55	102	12	45	38.4	2.01	○
D918S-A3C-1110	11.10	55	102	12	45	38.4	2.02	●
D918S-A3C-1115	11.15	55	102	12	45	38.3	2.03	○
D918S-A3C-1120	11.20	55	102	12	45	38.2	2.04	●
D918S-A3C-1125	11.25	55	102	12	45	38.1	2.05	○
D918S-A3C-1130	11.30	55	102	12	45	38.1	2.06	●
D918S-A3C-1135	11.35	55	102	12	45	38.0	2.07	○
D918S-A3C-1140	11.40	55	102	12	45	37.9	2.07	●
D918S-A3C-1145	11.45	55	102	12	45	37.8	2.08	○
D918S-A3C-1150	11.50	55	102	12	45	37.8	2.09	○
D918S-A3C-1155	11.55	55	102	12	45	37.7	2.10	○
D918S-A3C-1160	11.60	55	102	12	45	37.6	2.11	●
D918S-A3C-1170	11.70	55	102	12	45	37.5	2.13	●
D918S-A3C-1180	11.80	55	102	12	45	37.3	2.15	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○	○	○	○								

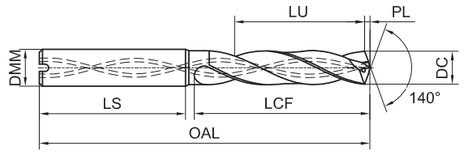
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A3C

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

High-performance 3D Internal Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3C-1190	11.90	55	102	12	45	37.2	2.17	●
D918S-A3C-1195	11.95	55	102	12	45	37.1	2.17	○
D918S-A3C-1200	12.00	55	102	12	45	37.0	2.18	●
D918S-A3C-1205	12.05	55	102	12	45	36.9	2.19	○
D918S-A3C-1210	12.10	60	107	14	45	41.9	2.20	○
D918S-A3C-1215	12.15	60	107	14	45	41.8	2.21	○
D918S-A3C-1220	12.20	60	107	14	45	41.7	2.22	●
D918S-A3C-1225	12.25	60	107	14	45	41.6	2.23	○
D918S-A3C-1230	12.30	60	107	14	45	41.6	2.24	●
D918S-A3C-1240	12.40	60	107	14	45	41.4	2.26	○
D918S-A3C-1245	12.45	60	107	14	45	41.3	2.27	○
D918S-A3C-1250	12.50	60	107	14	45	41.3	2.27	●
D918S-A3C-1255	12.55	60	107	14	45	41.2	2.28	○
D918S-A3C-1260	12.60	60	107	14	45	41.1	2.29	○
D918S-A3C-1270	12.70	60	107	14	45	41.0	2.31	○
D918S-A3C-1275	12.75	60	107	14	45	40.9	2.32	○
D918S-A3C-1280	12.80	60	107	14	45	40.8	2.33	○
D918S-A3C-1285	12.85	60	107	14	45	40.7	2.34	○
D918S-A3C-1290	12.90	60	107	14	45	40.7	2.35	○
D918S-A3C-1300	13.00	60	107	14	45	40.5	2.37	●
D918S-A3C-1305	13.05	60	107	14	45	40.4	2.37	○
D918S-A3C-1310	13.10	60	107	14	45	40.4	2.38	○
D918S-A3C-1315	13.15	60	107	14	45	40.3	2.39	○
D918S-A3C-1320	13.20	60	107	14	45	40.2	2.40	○
D918S-A3C-1325	13.25	60	107	14	45	40.1	2.41	○
D918S-A3C-1330	13.30	60	107	14	45	40.1	2.42	○
D918S-A3C-1335	13.35	60	107	14	45	40.0	2.43	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3C-1340	13.40	60	107	14	45	39.9	2.44	○
D918S-A3C-1350	13.50	60	107	14	45	39.8	2.46	●
D918S-A3C-1355	13.55	60	107	14	45	39.7	2.47	○
D918S-A3C-1360	13.60	60	107	14	45	39.6	2.47	○
D918S-A3C-1370	13.70	60	107	14	45	39.5	2.49	○
D918S-A3C-1375	13.75	60	107	14	45	39.4	2.50	○
D918S-A3C-1380	13.80	60	107	14	45	39.3	2.51	○
D918S-A3C-1390	13.90	60	107	14	45	39.2	2.53	○
D918S-A3C-1395	13.95	60	107	14	45	39.1	2.54	○
D918S-A3C-1400	14.00	60	107	14	45	39.0	2.55	●
D918S-A3C-1405	14.05	60	107	14	45	38.9	2.56	○
D918S-A3C-1410	14.10	65	115	16	48	43.9	2.57	○
D918S-A3C-1420	14.20	65	115	16	48	43.7	2.58	●
D918S-A3C-1425	14.25	65	115	16	48	43.6	2.59	○
D918S-A3C-1430	14.30	65	115	16	48	43.6	2.60	○
D918S-A3C-1440	14.40	65	115	16	48	43.4	2.62	○
D918S-A3C-1450	14.50	65	115	16	48	43.3	2.64	●
D918S-A3C-1460	14.60	65	115	16	48	43.1	2.66	○
D918S-A3C-1470	14.70	65	115	16	48	43.0	2.68	○
D918S-A3C-1475	14.75	65	115	16	48	42.9	2.68	○
D918S-A3C-1480	14.80	65	115	16	48	42.8	2.69	○
D918S-A3C-1490	14.90	65	115	16	48	42.7	2.71	○
D918S-A3C-1500	15.00	65	115	16	48	42.5	2.73	●
D918S-A3C-1505	15.05	65	115	16	48	42.4	2.74	○
D918S-A3C-1510	15.10	65	115	16	48	42.4	2.75	○
D918S-A3C-1515	15.15	65	115	16	48	42.3	2.76	○
D918S-A3C-1520	15.20	65	115	16	48	42.2	2.77	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○	○	○	○								

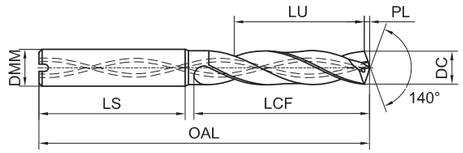
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A3C

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

High-performance 3D Internal Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3C-1525	15.25	65	115	16	48	42.1	2.78	○
D918S-A3C-1530	15.30	65	115	16	48	42.1	2.78	●
D918S-A3C-1535	15.35	65	115	16	48	42.0	2.79	○
D918S-A3C-1540	15.40	65	115	16	48	41.9	2.80	○
D918S-A3C-1550	15.50	65	115	16	48	41.8	2.82	○
D918S-A3C-1555	15.55	65	115	16	48	41.7	2.83	○
D918S-A3C-1560	15.60	65	115	16	48	41.6	2.84	○
D918S-A3C-1570	15.70	65	115	16	48	41.5	2.86	○
D918S-A3C-1580	15.80	65	115	16	48	41.3	2.88	●
D918S-A3C-1590	15.90	65	115	16	48	41.2	2.89	○
D918S-A3C-1600	16.00	65	115	16	48	41.0	2.91	●
D918S-A3C-1625	16.25	73	123	18	48	48.6	2.96	○
D918S-A3C-1650	16.50	73	123	18	48	48.3	3.00	○
D918S-A3C-1670	16.70	73	123	18	48	48.0	3.04	○
D918S-A3C-1675	16.75	73	123	18	48	47.9	3.05	○
D918S-A3C-1680	16.80	73	123	18	48	47.8	3.06	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A3C-1695	16.95	73	123	18	48	47.6	3.08	○
D918S-A3C-1700	17.00	73	123	18	48	47.5	3.09	○
D918S-A3C-1750	17.50	73	123	18	48	46.8	3.18	○
D918S-A3C-1770	17.70	73	123	18	48	46.5	3.22	○
D918S-A3C-1780	17.80	73	123	18	48	46.3	3.24	○
D918S-A3C-1795	17.95	73	123	18	48	46.1	3.27	○
D918S-A3C-1800	18.00	73	123	18	48	46.0	3.28	○
D918S-A3C-1850	18.50	79	131	20	50	51.3	3.37	○
D918S-A3C-1870	18.70	79	131	20	50	51.0	3.40	○
D918S-A3C-1880	18.80	79	131	20	50	50.8	3.42	○
D918S-A3C-1900	19.00	79	131	20	50	50.5	3.46	○
D918S-A3C-1915	19.15	79	131	20	50	50.3	3.49	○
D918S-A3C-1950	19.50	79	131	20	50	49.8	3.55	○
D918S-A3C-1960	19.60	79	131	20	50	49.6	3.57	○
D918S-A3C-1980	19.80	79	131	20	50	49.3	3.60	○
D918S-A3C-2000	20.00	79	131	20	50	49.0	3.64	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/F255+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○	○	○	○								

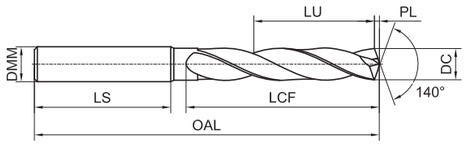
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A5N

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

High-performance 5D External Coolant Twist Drill for Plain Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5N-0300	3.00	28	66	6	36	23.5	0.55	●
D918S-A5N-0305	3.05	28	66	6	36	23.4	0.56	○
D918S-A5N-0310	3.10	28	66	6	36	23.4	0.56	●
D918S-A5N-0315	3.15	28	66	6	36	23.3	0.57	○
D918S-A5N-0320	3.20	28	66	6	36	23.2	0.58	●
D918S-A5N-0325	3.25	28	66	6	36	23.1	0.59	○
D918S-A5N-0330	3.30	28	66	6	36	23.1	0.60	●
D918S-A5N-0335	3.35	28	66	6	36	23.0	0.61	○
D918S-A5N-0340	3.40	28	66	6	36	22.9	0.62	●
D918S-A5N-0350	3.50	28	66	6	36	22.8	0.64	●
D918S-A5N-0355	3.55	28	66	6	36	22.7	0.65	○
D918S-A5N-0360	3.60	28	66	6	36	22.6	0.66	●
D918S-A5N-0365	3.65	28	66	6	36	22.5	0.66	○
D918S-A5N-0370	3.70	28	66	6	36	22.5	0.67	●
D918S-A5N-0380	3.80	36	74	6	36	30.3	0.69	●
D918S-A5N-0385	3.85	36	74	6	36	30.2	0.70	○
D918S-A5N-0390	3.90	36	74	6	36	30.2	0.71	●
D918S-A5N-0395	3.95	36	74	6	36	30.1	0.72	○
D918S-A5N-0400	4.00	36	74	6	36	30.0	0.73	●
D918S-A5N-0405	4.05	36	74	6	36	29.9	0.74	○
D918S-A5N-0410	4.10	36	74	6	36	29.9	0.75	●
D918S-A5N-0415	4.15	36	74	6	36	29.8	0.76	○
D918S-A5N-0420	4.20	36	74	6	36	29.7	0.76	●
D918S-A5N-0425	4.25	36	74	6	36	29.6	0.77	○
D918S-A5N-0430	4.30	36	74	6	36	29.6	0.78	●
D918S-A5N-0435	4.35	36	74	6	36	29.5	0.79	○
D918S-A5N-0440	4.40	36	74	6	36	29.4	0.80	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5N-0445	4.45	36	74	6	36	29.3	0.81	○
D918S-A5N-0450	4.50	36	74	6	36	29.3	0.82	●
D918S-A5N-0455	4.55	36	74	6	36	29.2	0.83	○
D918S-A5N-0460	4.60	36	74	6	36	29.1	0.84	●
D918S-A5N-0465	4.65	36	74	6	36	29.0	0.85	○
D918S-A5N-0470	4.70	36	74	6	36	29.0	0.86	●
D918S-A5N-0475	4.75	44	82	6	36	36.9	0.86	○
D918S-A5N-0480	4.80	44	82	6	36	36.8	0.87	●
D918S-A5N-0485	4.85	44	82	6	36	36.7	0.88	○
D918S-A5N-0490	4.90	44	82	6	36	36.7	0.89	●
D918S-A5N-0495	4.95	44	82	6	36	36.6	0.90	○
D918S-A5N-0500	5.00	44	82	6	36	36.5	0.91	●
D918S-A5N-0505	5.05	44	82	6	36	36.4	0.92	○
D918S-A5N-0510	5.10	44	82	6	36	36.4	0.93	●
D918S-A5N-0515	5.15	44	82	6	36	36.3	0.94	○
D918S-A5N-0520	5.20	44	82	6	36	36.2	0.95	●
D918S-A5N-0525	5.25	44	82	6	36	36.1	0.96	○
D918S-A5N-0530	5.30	44	82	6	36	36.1	0.96	●
D918S-A5N-0535	5.35	44	82	6	36	36.0	0.97	○
D918S-A5N-0540	5.40	44	82	6	36	35.9	0.98	●
D918S-A5N-0545	5.45	44	82	6	36	35.8	0.99	○
D918S-A5N-0550	5.50	44	82	6	36	35.8	1.00	●
D918S-A5N-0555	5.55	44	82	6	36	35.7	1.01	●
D918S-A5N-0560	5.60	44	82	6	36	35.6	1.02	●
D918S-A5N-0565	5.65	44	82	6	36	35.5	1.03	○
D918S-A5N-0570	5.70	44	82	6	36	35.5	1.04	●
D918S-A5N-0575	5.75	44	82	6	36	35.4	1.05	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○		○	○								

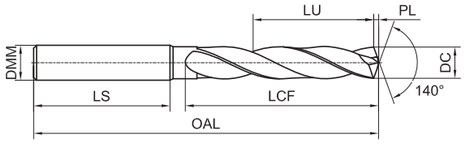
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A5N

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

High-performance 5D external coolant twist drill for plain steel machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5N-0580	5.80	44	82	6	36	35.3	1.06	●
D918S-A5N-0585	5.85	44	82	6	36	35.2	1.06	○
D918S-A5N-0590	5.90	44	82	6	36	35.2	1.07	●
D918S-A5N-0595	5.95	44	82	6	36	35.1	1.08	○
D918S-A5N-0600	6.00	44	82	6	36	35.0	1.09	●
D918S-A5N-0605	6.05	44	82	6	36	34.9	1.10	○
D918S-A5N-0610	6.10	53	91	8	36	43.9	1.11	●
D918S-A5N-0620	6.20	53	91	8	36	43.7	1.13	●
D918S-A5N-0625	6.25	53	91	8	36	43.6	1.14	○
D918S-A5N-0630	6.30	53	91	8	36	43.6	1.15	●
D918S-A5N-0635	6.35	53	91	8	36	43.5	1.16	○
D918S-A5N-0640	6.40	53	91	8	36	43.4	1.16	●
D918S-A5N-0645	6.45	53	91	8	36	43.3	1.17	○
D918S-A5N-0650	6.50	53	91	8	36	43.3	1.18	●
D918S-A5N-0655	6.55	53	91	8	36	43.2	1.19	○
D918S-A5N-0660	6.60	53	91	8	36	43.1	1.20	●
D918S-A5N-0665	6.65	53	91	8	36	43.0	1.21	○
D918S-A5N-0670	6.70	53	91	8	36	43.0	1.22	●
D918S-A5N-0675	6.75	53	91	8	36	42.9	1.23	○
D918S-A5N-0680	6.80	53	91	8	36	42.8	1.24	●
D918S-A5N-0685	6.85	53	91	8	36	42.7	1.25	○
D918S-A5N-0690	6.90	53	91	8	36	42.7	1.26	●
D918S-A5N-0695	6.95	53	91	8	36	42.6	1.26	○
D918S-A5N-0700	7.00	53	91	8	36	42.5	1.27	●
D918S-A5N-0705	7.05	53	91	8	36	42.4	1.28	○
D918S-A5N-0710	7.10	53	91	8	36	42.4	1.29	●
D918S-A5N-0720	7.20	53	91	8	36	42.2	1.31	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5N-0730	7.30	53	91	8	36	42.1	1.33	●
D918S-A5N-0735	7.35	53	91	8	36	42.0	1.34	○
D918S-A5N-0740	7.40	53	91	8	36	41.9	1.35	●
D918S-A5N-0745	7.45	53	91	8	36	41.8	1.36	○
D918S-A5N-0750	7.50	53	91	8	36	41.8	1.36	●
D918S-A5N-0755	7.55	53	91	8	36	41.7	1.37	○
D918S-A5N-0760	7.60	53	91	8	36	41.6	1.38	●
D918S-A5N-0765	7.65	53	91	8	36	41.5	1.39	○
D918S-A5N-0770	7.70	53	91	8	36	41.5	1.40	●
D918S-A5N-0775	7.75	53	91	8	36	41.4	1.41	○
D918S-A5N-0780	7.80	53	91	8	36	41.3	1.42	●
D918S-A5N-0785	7.85	53	91	8	36	41.2	1.43	○
D918S-A5N-0790	7.90	53	91	8	36	41.2	1.44	●
D918S-A5N-0795	7.95	53	91	8	36	41.1	1.45	○
D918S-A5N-0800	8.00	53	91	8	36	41.0	1.46	●
D918S-A5N-0805	8.05	53	91	8	36	40.9	1.46	○
D918S-A5N-0810	8.10	61	103	10	40	48.9	1.47	●
D918S-A5N-0815	8.15	61	103	10	40	48.8	1.48	○
D918S-A5N-0820	8.20	61	103	10	40	48.7	1.49	●
D918S-A5N-0825	8.25	61	103	10	40	48.6	1.50	○
D918S-A5N-0830	8.30	61	103	10	40	48.6	1.51	●
D918S-A5N-0840	8.40	61	103	10	40	48.4	1.53	●
D918S-A5N-0845	8.45	61	103	10	40	48.3	1.54	○
D918S-A5N-0850	8.50	61	103	10	40	48.3	1.55	●
D918S-A5N-0855	8.55	61	103	10	40	48.2	1.56	○
D918S-A5N-0860	8.60	61	103	10	40	48.1	1.57	●
D918S-A5N-0870	8.70	61	103	10	40	48.0	1.58	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○		○	○								

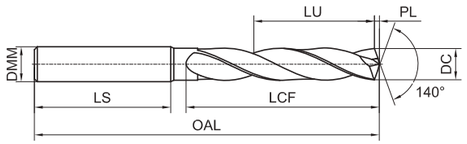
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A5N

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

High-performance 5D External Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5N-0880	8.80	61	103	10	40	47.8	1.60	●
D918S-A5N-0885	8.85	61	103	10	40	47.7	1.61	○
D918S-A5N-0890	8.90	61	103	10	40	47.7	1.62	●
D918S-A5N-0895	8.95	61	103	10	40	47.6	1.63	○
D918S-A5N-0900	9.00	61	103	10	40	47.5	1.64	●
D918S-A5N-0905	9.05	61	103	10	40	47.4	1.65	○
D918S-A5N-0910	9.10	61	103	10	40	47.4	1.66	●
D918S-A5N-0915	9.15	61	103	10	40	47.3	1.67	○
D918S-A5N-0920	9.20	61	103	10	40	47.2	1.67	●
D918S-A5N-0925	9.25	61	103	10	40	47.1	1.68	○
D918S-A5N-0930	9.30	61	103	10	40	47.1	1.69	●
D918S-A5N-0935	9.35	61	103	10	40	47.0	1.70	○
D918S-A5N-0940	9.40	61	103	10	40	46.9	1.71	○
D918S-A5N-0945	9.45	61	103	10	40	46.8	1.72	○
D918S-A5N-0950	9.50	61	103	10	40	46.8	1.73	●
D918S-A5N-0955	9.55	61	103	10	40	46.7	1.74	○
D918S-A5N-0960	9.60	61	103	10	40	46.6	1.75	●
D918S-A5N-0965	9.65	61	103	10	40	46.5	1.76	○
D918S-A5N-0970	9.70	61	103	10	40	46.5	1.77	●
D918S-A5N-0975	9.75	61	103	10	40	46.4	1.77	○
D918S-A5N-0980	9.80	61	103	10	40	46.3	1.78	●
D918S-A5N-0985	9.85	61	103	10	40	46.2	1.79	○
D918S-A5N-0990	9.90	61	103	10	40	46.2	1.80	●
D918S-A5N-0995	9.95	61	103	10	40	46.1	1.81	○
D918S-A5N-1000	10.00	61	103	10	40	46.0	1.82	●
D918S-A5N-1005	10.05	61	103	10	40	45.9	1.83	○
D918S-A5N-1010	10.10	71	118	12	45	55.9	1.84	●
D918S-A5N-1015	10.15	71	118	12	45	55.8	1.85	○
D918S-A5N-1020	10.20	71	118	12	45	55.7	1.86	●
D918S-A5N-1025	10.25	71	118	12	45	55.6	1.87	○
D918S-A5N-1030	10.30	71	118	12	45	55.6	1.87	●
D918S-A5N-1035	10.35	71	118	12	45	55.5	1.88	○
D918S-A5N-1040	10.40	71	118	12	45	55.4	1.89	●
D918S-A5N-1050	10.50	71	118	12	45	55.3	1.91	●
D918S-A5N-1060	10.60	71	118	12	45	55.1	1.93	●
D918S-A5N-1070	10.70	71	118	12	45	55.0	1.95	●
D918S-A5N-1080	10.80	71	118	12	45	54.8	1.97	○
D918S-A5N-1085	10.85	71	118	12	45	54.7	1.97	○
D918S-A5N-1090	10.90	71	118	12	45	54.7	1.98	●
D918S-A5N-1100	11.00	71	118	12	45	54.5	2.00	●
D918S-A5N-1105	11.05	71	118	12	45	54.4	2.01	○
D918S-A5N-1110	11.10	71	118	12	45	54.4	2.02	●
D918S-A5N-1115	11.15	71	118	12	45	54.3	2.03	○
D918S-A5N-1120	11.20	71	118	12	45	54.2	2.04	●
D918S-A5N-1125	11.25	71	118	12	45	54.1	2.05	○
D918S-A5N-1130	11.30	71	118	12	45	54.1	2.06	●
D918S-A5N-1135	11.35	71	118	12	45	54.0	2.07	○
D918S-A5N-1140	11.40	71	118	12	45	53.9	2.07	●
D918S-A5N-1145	11.45	71	118	12	45	53.8	2.08	○
D918S-A5N-1150	11.50	71	118	12	45	53.8	2.09	●
D918S-A5N-1155	11.55	71	118	12	45	53.7	2.10	○
D918S-A5N-1160	11.60	71	118	12	45	53.6	2.11	●
D918S-A5N-1170	11.70	71	118	12	45	53.5	2.13	●
D918S-A5N-1180	11.80	71	118	12	45	53.3	2.15	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○		○	○								

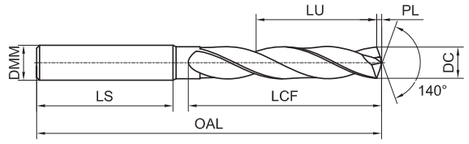
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A5N

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

High-performance 5D External Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5N-1190	11.90	71	118	12	45	53.2	2.17	●
D918S-A5N-1195	11.95	71	118	12	45	53.1	2.17	○
D918S-A5N-1200	12.00	71	118	12	45	53.0	2.18	●
D918S-A5N-1205	12.05	71	118	12	45	52.9	2.19	○
D918S-A5N-1210	12.10	77	124	14	45	58.9	2.20	○
D918S-A5N-1215	12.15	77	124	14	45	58.8	2.21	○
D918S-A5N-1220	12.20	77	124	14	45	58.7	2.22	●
D918S-A5N-1225	12.25	77	124	14	45	58.6	2.23	○
D918S-A5N-1230	12.30	77	124	14	45	58.6	2.24	●
D918S-A5N-1240	12.40	77	124	14	45	58.4	2.26	○
D918S-A5N-1245	12.45	77	124	14	45	58.3	2.27	○
D918S-A5N-1250	12.50	77	124	14	45	58.3	2.27	●
D918S-A5N-1255	12.55	77	124	14	45	58.2	2.28	○
D918S-A5N-1260	12.60	77	124	14	45	58.1	2.29	●
D918S-A5N-1270	12.70	77	124	14	45	58.0	2.31	○
D918S-A5N-1275	12.75	77	124	14	45	57.9	2.32	○
D918S-A5N-1280	12.80	77	124	14	45	57.8	2.33	●
D918S-A5N-1285	12.85	77	124	14	45	57.7	2.34	○
D918S-A5N-1290	12.90	77	124	14	45	57.7	2.35	○
D918S-A5N-1300	13.00	77	124	14	45	57.5	2.37	●
D918S-A5N-1305	13.05	77	124	14	45	57.4	2.37	○
D918S-A5N-1310	13.10	77	124	14	45	57.4	2.38	●
D918S-A5N-1315	13.15	77	124	14	45	57.3	2.39	○
D918S-A5N-1320	13.20	77	124	14	45	57.2	2.40	○
D918S-A5N-1325	13.25	77	124	14	45	57.1	2.41	○
D918S-A5N-1330	13.30	77	124	14	45	57.1	2.42	●
D918S-A5N-1335	13.35	77	124	14	45	57.0	2.43	○
D918S-A5N-1340	13.40	77	124	14	45	56.9	2.44	○
D918S-A5N-1350	13.50	77	124	14	45	56.8	2.46	●
D918S-A5N-1355	13.55	77	124	14	45	56.7	2.47	○
D918S-A5N-1360	13.60	77	124	14	45	56.6	2.47	○
D918S-A5N-1370	13.70	77	124	14	45	56.5	2.49	○
D918S-A5N-1375	13.75	77	124	14	45	56.4	2.50	○
D918S-A5N-1380	13.80	77	124	14	45	56.3	2.51	○
D918S-A5N-1390	13.90	77	124	14	45	56.2	2.53	○
D918S-A5N-1395	13.95	77	124	14	45	56.1	2.54	○
D918S-A5N-1400	14.00	77	124	14	45	56.0	2.55	●
D918S-A5N-1405	14.05	77	124	14	45	55.9	2.56	○
D918S-A5N-1410	14.10	83	133	16	48	61.9	2.57	○
D918S-A5N-1420	14.20	83	133	16	48	61.7	2.58	●
D918S-A5N-1425	14.25	83	133	16	48	61.6	2.59	○
D918S-A5N-1430	14.30	83	133	16	48	61.6	2.60	●
D918S-A5N-1440	14.40	83	133	16	48	61.4	2.62	○
D918S-A5N-1450	14.50	83	133	16	48	61.3	2.64	●
D918S-A5N-1460	14.60	83	133	16	48	61.1	2.66	●
D918S-A5N-1470	14.70	83	133	16	48	61.0	2.68	○
D918S-A5N-1475	14.75	83	133	16	48	60.9	2.68	○
D918S-A5N-1480	14.80	83	133	16	48	60.8	2.69	○
D918S-A5N-1490	14.90	83	133	16	48	60.7	2.71	●
D918S-A5N-1500	15.00	83	133	16	48	60.5	2.73	●
D918S-A5N-1505	15.05	83	133	16	48	60.4	2.74	○
D918S-A5N-1510	15.10	83	133	16	48	60.4	2.75	○
D918S-A5N-1515	15.15	83	133	16	48	60.3	2.76	○
D918S-A5N-1520	15.20	83	133	16	48	60.2	2.77	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○		○	○								

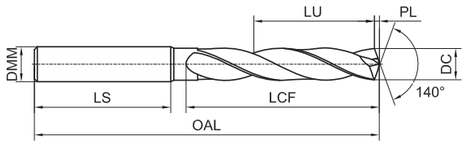
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A5N

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

High-performance 5D External Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5N-1525	15.25	83	133	16	48	60.1	2.78	○
D918S-A5N-1530	15.30	83	133	16	48	60.1	2.78	○
D918S-A5N-1535	15.35	83	133	16	48	60.0	2.79	○
D918S-A5N-1540	15.40	83	133	16	48	59.9	2.80	○
D918S-A5N-1550	15.50	83	133	16	48	59.8	2.82	○
D918S-A5N-1555	15.55	83	133	16	48	59.7	2.83	○
D918S-A5N-1560	15.60	83	133	16	48	59.6	2.84	○
D918S-A5N-1570	15.70	83	133	16	48	59.5	2.86	○
D918S-A5N-1580	15.80	83	133	16	48	59.3	2.88	○
D918S-A5N-1590	15.90	83	133	16	48	59.2	2.89	○
D918S-A5N-1600	16.00	83	133	16	48	59.0	2.91	●
D918S-A5N-1625	16.25	93	143	18	48	68.6	2.96	○
D918S-A5N-1650	16.50	93	143	18	48	68.3	3.00	○
D918S-A5N-1660	16.60	93	143	18	48	68.1	3.02	○
D918S-A5N-1675	16.75	93	143	18	48	67.9	3.05	○
D918S-A5N-1680	16.80	93	143	18	48	67.8	3.06	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5N-1695	16.95	93	143	18	48	67.6	3.08	○
D918S-A5N-1700	17.00	93	143	18	48	67.5	3.09	○
D918S-A5N-1720	17.20	93	143	18	48	67.2	3.13	○
D918S-A5N-1750	17.50	93	143	18	48	66.8	3.18	○
D918S-A5N-1770	17.70	93	143	18	48	66.5	3.22	○
D918S-A5N-1780	17.80	93	143	18	48	66.3	3.24	○
D918S-A5N-1795	17.95	93	143	18	48	66.1	3.27	○
D918S-A5N-1800	18.00	93	143	18	48	66.0	3.28	○
D918S-A5N-1840	18.40	101	153	20	50	73.4	3.35	○
D918S-A5N-1850	18.50	101	153	20	50	73.3	3.37	○
D918S-A5N-1860	18.60	101	153	20	50	73.1	3.38	○
D918S-A5N-1900	19.00	101	153	20	50	72.5	3.46	○
D918S-A5N-1915	19.15	101	153	20	50	72.3	3.49	○
D918S-A5N-1950	19.50	101	153	20	50	71.8	3.55	○
D918S-A5N-2000	20.00	101	153	20	50	71.0	3.64	○

Unit (mm)

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○		○	○								

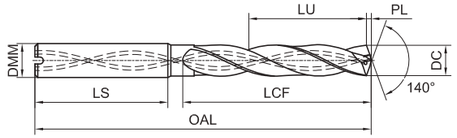
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A5C

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

High-performance 5D Internal Coolant Twist Drill for Plain Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5C-0300	3.00	28	66	6	36	23.5	0.55	●
D918S-A5C-0305	3.05	28	66	6	36	23.4	0.56	○
D918S-A5C-0310	3.10	28	66	6	36	23.4	0.56	●
D918S-A5C-0315	3.15	28	66	6	36	23.3	0.57	○
D918S-A5C-0320	3.20	28	66	6	36	23.2	0.58	●
D918S-A5C-0325	3.25	28	66	6	36	23.1	0.59	○
D918S-A5C-0330	3.30	28	66	6	36	23.1	0.60	●
D918S-A5C-0335	3.35	28	66	6	36	23.0	0.61	○
D918S-A5C-0340	3.40	28	66	6	36	22.9	0.62	●
D918S-A5C-0350	3.50	28	66	6	36	22.8	0.64	●
D918S-A5C-0355	3.55	28	66	6	36	22.7	0.65	○
D918S-A5C-0360	3.60	28	66	6	36	22.6	0.66	●
D918S-A5C-0365	3.65	28	66	6	36	22.5	0.66	○
D918S-A5C-0370	3.70	28	66	6	36	22.5	0.67	●
D918S-A5C-0380	3.80	36	74	6	36	30.3	0.69	●
D918S-A5C-0385	3.85	36	74	6	36	30.2	0.70	○
D918S-A5C-0390	3.90	36	74	6	36	30.2	0.71	●
D918S-A5C-0395	3.95	36	74	6	36	30.1	0.72	○
D918S-A5C-0400	4.00	36	74	6	36	30.0	0.73	●
D918S-A5C-0405	4.05	36	74	6	36	29.9	0.74	○
D918S-A5C-0410	4.10	36	74	6	36	29.9	0.75	●
D918S-A5C-0415	4.15	36	74	6	36	29.8	0.76	○
D918S-A5C-0420	4.20	36	74	6	36	29.7	0.76	●
D918S-A5C-0425	4.25	36	74	6	36	29.6	0.77	○
D918S-A5C-0430	4.30	36	74	6	36	29.6	0.78	●
D918S-A5C-0435	4.35	36	74	6	36	29.5	0.79	○
D918S-A5C-0440	4.40	36	74	6	36	29.4	0.80	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5C-0445	4.45	36	74	6	36	29.3	0.81	○
D918S-A5C-0450	4.50	36	74	6	36	29.3	0.82	●
D918S-A5C-0455	4.55	36	74	6	36	29.2	0.83	○
D918S-A5C-0460	4.60	36	74	6	36	29.1	0.84	●
D918S-A5C-0465	4.65	36	74	6	36	29.0	0.85	○
D918S-A5C-0470	4.70	36	74	6	36	29.0	0.86	●
D918S-A5C-0475	4.75	44	82	6	36	36.9	0.86	○
D918S-A5C-0480	4.80	44	82	6	36	36.8	0.87	●
D918S-A5C-0485	4.85	44	82	6	36	36.7	0.88	○
D918S-A5C-0490	4.90	44	82	6	36	36.7	0.89	●
D918S-A5C-0495	4.95	44	82	6	36	36.6	0.90	○
D918S-A5C-0500	5.00	44	82	6	36	36.5	0.91	●
D918S-A5C-0505	5.05	44	82	6	36	36.4	0.92	○
D918S-A5C-0510	5.10	44	82	6	36	36.4	0.93	●
D918S-A5C-0515	5.15	44	82	6	36	36.3	0.94	○
D918S-A5C-0520	5.20	44	82	6	36	36.2	0.95	●
D918S-A5C-0525	5.25	44	82	6	36	36.1	0.96	○
D918S-A5C-0530	5.30	44	82	6	36	36.1	0.96	●
D918S-A5C-0535	5.35	44	82	6	36	36.0	0.97	○
D918S-A5C-0540	5.40	44	82	6	36	35.9	0.98	●
D918S-A5C-0545	5.45	44	82	6	36	35.8	0.99	○
D918S-A5C-0550	5.50	44	82	6	36	35.8	1.00	●
D918S-A5C-0555	5.55	44	82	6	36	35.7	1.01	○
D918S-A5C-0560	5.60	44	82	6	36	35.6	1.02	●
D918S-A5C-0565	5.65	44	82	6	36	35.5	1.03	○
D918S-A5C-0570	5.70	44	82	6	36	35.5	1.04	●
D918S-A5C-0575	5.75	44	82	6	36	35.4	1.05	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○	○	○	○								

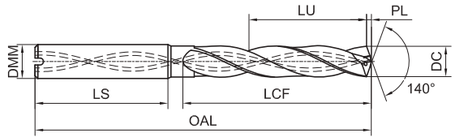
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A5C

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

High-performance 5D Internal Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5C-0580	5.80	44	82	6	36	35.3	1.06	●
D918S-A5C-0585	5.85	44	82	6	36	35.2	1.06	○
D918S-A5C-0590	5.90	44	82	6	36	35.2	1.07	●
D918S-A5C-0595	5.95	44	82	6	36	35.1	1.08	○
D918S-A5C-0600	6.00	44	82	6	36	35.0	1.09	●
D918S-A5C-0605	6.05	44	82	6	36	34.9	1.10	○
D918S-A5C-0610	6.10	53	91	8	36	43.9	1.11	●
D918S-A5C-0620	6.20	53	91	8	36	43.7	1.13	●
D918S-A5C-0625	6.25	53	91	8	36	43.6	1.14	○
D918S-A5C-0630	6.30	53	91	8	36	43.6	1.15	●
D918S-A5C-0635	6.35	53	91	8	36	43.5	1.16	○
D918S-A5C-0640	6.40	53	91	8	36	43.4	1.16	●
D918S-A5C-0645	6.45	53	91	8	36	43.3	1.17	○
D918S-A5C-0650	6.50	53	91	8	36	43.3	1.18	●
D918S-A5C-0655	6.55	53	91	8	36	43.2	1.19	○
D918S-A5C-0660	6.60	53	91	8	36	43.1	1.20	●
D918S-A5C-0665	6.65	53	91	8	36	43.0	1.21	○
D918S-A5C-0670	6.70	53	91	8	36	43.0	1.22	●
D918S-A5C-0675	6.75	53	91	8	36	42.9	1.23	○
D918S-A5C-0680	6.80	53	91	8	36	42.8	1.24	●
D918S-A5C-0685	6.85	53	91	8	36	42.7	1.25	○
D918S-A5C-0690	6.90	53	91	8	36	42.7	1.26	●
D918S-A5C-0695	6.95	53	91	8	36	42.6	1.26	○
D918S-A5C-0700	7.00	53	91	8	36	42.5	1.27	●
D918S-A5C-0705	7.05	53	91	8	36	42.4	1.28	○
D918S-A5C-0710	7.10	53	91	8	36	42.4	1.29	●
D918S-A5C-0720	7.20	53	91	8	36	42.2	1.31	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5C-0730	7.30	53	91	8	36	42.1	1.33	●
D918S-A5C-0735	7.35	53	91	8	36	42.0	1.34	○
D918S-A5C-0740	7.40	53	91	8	36	41.9	1.35	●
D918S-A5C-0745	7.45	53	91	8	36	41.8	1.36	○
D918S-A5C-0750	7.50	53	91	8	36	41.8	1.36	●
D918S-A5C-0755	7.55	53	91	8	36	41.7	1.37	○
D918S-A5C-0760	7.60	53	91	8	36	41.6	1.38	●
D918S-A5C-0765	7.65	53	91	8	36	41.5	1.39	○
D918S-A5C-0770	7.70	53	91	8	36	41.5	1.40	●
D918S-A5C-0775	7.75	53	91	8	36	41.4	1.41	○
D918S-A5C-0780	7.80	53	91	8	36	41.3	1.42	●
D918S-A5C-0785	7.85	53	91	8	36	41.2	1.43	○
D918S-A5C-0790	7.90	53	91	8	36	41.2	1.44	●
D918S-A5C-0795	7.95	53	91	8	36	41.1	1.45	○
D918S-A5C-0800	8.00	53	91	8	36	41.0	1.46	●
D918S-A5C-0805	8.05	53	91	8	36	40.9	1.46	○
D918S-A5C-0810	8.10	61	103	10	40	48.9	1.47	●
D918S-A5C-0815	8.15	61	103	10	40	48.8	1.48	○
D918S-A5C-0820	8.20	61	103	10	40	48.7	1.49	●
D918S-A5C-0825	8.25	61	103	10	40	48.6	1.50	○
D918S-A5C-0830	8.30	61	103	10	40	48.6	1.51	●
D918S-A5C-0840	8.40	61	103	10	40	48.4	1.53	●
D918S-A5C-0845	8.45	61	103	10	40	48.3	1.54	○
D918S-A5C-0850	8.50	61	103	10	40	48.3	1.55	●
D918S-A5C-0855	8.55	61	103	10	40	48.2	1.56	○
D918S-A5C-0860	8.60	61	103	10	40	48.1	1.57	●
D918S-A5C-0870	8.70	61	103	10	40	48.0	1.58	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material

P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○	○	○	○								

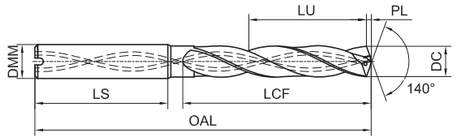
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A5C

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

High-performance 5D Internal Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5C-0880	8.80	61	103	10	40	47.8	1.60	●
D918S-A5C-0885	8.85	61	103	10	40	47.7	1.61	○
D918S-A5C-0890	8.90	61	103	10	40	47.7	1.62	●
D918S-A5C-0895	8.95	61	103	10	40	47.6	1.63	○
D918S-A5C-0900	9.00	61	103	10	40	47.5	1.64	●
D918S-A5C-0905	9.05	61	103	10	40	47.4	1.65	○
D918S-A5C-0910	9.10	61	103	10	40	47.4	1.66	●
D918S-A5C-0915	9.15	61	103	10	40	47.3	1.67	○
D918S-A5C-0920	9.20	61	103	10	40	47.2	1.67	●
D918S-A5C-0925	9.25	61	103	10	40	47.1	1.68	○
D918S-A5C-0930	9.30	61	103	10	40	47.1	1.69	●
D918S-A5C-0935	9.35	61	103	10	40	47.0	1.70	○
D918S-A5C-0940	9.40	61	103	10	40	46.9	1.71	●
D918S-A5C-0945	9.45	61	103	10	40	46.8	1.72	○
D918S-A5C-0950	9.50	61	103	10	40	46.8	1.73	●
D918S-A5C-0955	9.55	61	103	10	40	46.7	1.74	○
D918S-A5C-0960	9.60	61	103	10	40	46.6	1.75	●
D918S-A5C-0965	9.65	61	103	10	40	46.5	1.76	○
D918S-A5C-0970	9.70	61	103	10	40	46.5	1.77	●
D918S-A5C-0975	9.75	61	103	10	40	46.4	1.77	○
D918S-A5C-0980	9.80	61	103	10	40	46.3	1.78	●
D918S-A5C-0985	9.85	61	103	10	40	46.2	1.79	○
D918S-A5C-0990	9.90	61	103	10	40	46.2	1.80	●
D918S-A5C-0995	9.95	61	103	10	40	46.1	1.81	○
D918S-A5C-1000	10.00	61	103	10	40	46.0	1.82	●
D918S-A5C-1005	10.05	61	103	10	40	45.9	1.83	○
D918S-A5C-1010	10.10	71	118	12	45	55.9	1.84	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5C-1020	10.20	71	118	12	45	55.7	1.86	●
D918S-A5C-1025	10.25	71	118	12	45	55.6	1.87	○
D918S-A5C-1030	10.30	71	118	12	45	55.6	1.87	●
D918S-A5C-1035	10.35	71	118	12	45	55.5	1.88	○
D918S-A5C-1040	10.40	71	118	12	45	55.4	1.89	●
D918S-A5C-1050	10.50	71	118	12	45	55.3	1.91	●
D918S-A5C-1060	10.60	71	118	12	45	55.1	1.93	●
D918S-A5C-1070	10.70	71	118	12	45	55.0	1.95	●
D918S-A5C-1080	10.80	71	118	12	45	54.8	1.97	●
D918S-A5C-1085	10.85	71	118	12	45	54.7	1.97	○
D918S-A5C-1090	10.90	71	118	12	45	54.7	1.98	●
D918S-A5C-1100	11.00	71	118	12	45	54.5	2.00	●
D918S-A5C-1105	11.05	71	118	12	45	54.4	2.01	○
D918S-A5C-1110	11.10	71	118	12	45	54.4	2.02	●
D918S-A5C-1115	11.15	71	118	12	45	54.3	2.03	○
D918S-A5C-1120	11.20	71	118	12	45	54.2	2.04	●
D918S-A5C-1125	11.25	71	118	12	45	54.1	2.05	○
D918S-A5C-1130	11.30	71	118	12	45	54.1	2.06	○
D918S-A5C-1135	11.35	71	118	12	45	54.0	2.07	○
D918S-A5C-1140	11.40	71	118	12	45	53.9	2.07	●
D918S-A5C-1145	11.45	71	118	12	45	53.8	2.08	○
D918S-A5C-1150	11.50	71	118	12	45	53.8	2.09	●
D918S-A5C-1155	11.55	71	118	12	45	53.7	2.10	○
D918S-A5C-1160	11.60	71	118	12	45	53.6	2.11	●
D918S-A5C-1170	11.70	71	118	12	45	53.5	2.13	●
D918S-A5C-1180	11.80	71	118	12	45	53.3	2.15	●
D918S-A5C-1190	11.90	71	118	12	45	53.2	2.17	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material

P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○	○	○	○								

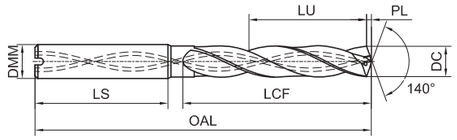
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A5C

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

High-performance 5D Internal Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5C-1195	11.95	71	118	12	45	53.1	2.17	○
D918S-A5C-1200	12.00	71	118	12	45	53.0	2.18	●
D918S-A5C-1205	12.05	71	118	12	45	52.9	2.19	○
D918S-A5C-1210	12.10	77	124	14	45	58.9	2.20	○
D918S-A5C-1215	12.15	77	124	14	45	58.8	2.21	○
D918S-A5C-1220	12.20	77	124	14	45	58.7	2.22	●
D918S-A5C-1225	12.25	77	124	14	45	58.6	2.23	○
D918S-A5C-1230	12.30	77	124	14	45	58.6	2.24	●
D918S-A5C-1240	12.40	77	124	14	45	58.4	2.26	○
D918S-A5C-1245	12.45	77	124	14	45	58.3	2.27	○
D918S-A5C-1250	12.50	77	124	14	45	58.3	2.27	●
D918S-A5C-1255	12.55	77	124	14	45	58.2	2.28	○
D918S-A5C-1260	12.60	77	124	14	45	58.1	2.29	○
D918S-A5C-1270	12.70	77	124	14	45	58.0	2.31	●
D918S-A5C-1275	12.75	77	124	14	45	57.9	2.32	○
D918S-A5C-1280	12.80	77	124	14	45	57.8	2.33	○
D918S-A5C-1285	12.85	77	124	14	45	57.7	2.34	○
D918S-A5C-1290	12.90	77	124	14	45	57.7	2.35	●
D918S-A5C-1300	13.00	77	124	14	45	57.5	2.37	●
D918S-A5C-1305	13.05	77	124	14	45	57.4	2.37	○
D918S-A5C-1310	13.10	77	124	14	45	57.4	2.38	○
D918S-A5C-1315	13.15	77	124	14	45	57.3	2.39	○
D918S-A5C-1320	13.20	77	124	14	45	57.2	2.40	○
D918S-A5C-1325	13.25	77	124	14	45	57.1	2.41	○
D918S-A5C-1330	13.30	77	124	14	45	57.1	2.42	○
D918S-A5C-1335	13.35	77	124	14	45	57.0	2.43	○
D918S-A5C-1340	13.40	77	124	14	45	56.9	2.44	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5C-1350	13.50	77	124	14	45	56.8	2.46	●
D918S-A5C-1355	13.55	77	124	14	45	56.7	2.47	○
D918S-A5C-1360	13.60	77	124	14	45	56.6	2.47	○
D918S-A5C-1370	13.70	77	124	14	45	56.5	2.49	●
D918S-A5C-1375	13.75	77	124	14	45	56.4	2.50	○
D918S-A5C-1380	13.80	77	124	14	45	56.3	2.51	●
D918S-A5C-1390	13.90	77	124	14	45	56.2	2.53	○
D918S-A5C-1395	13.95	77	124	14	45	56.1	2.54	○
D918S-A5C-1400	14.00	77	124	14	45	56.0	2.55	●
D918S-A5C-1405	14.05	77	124	14	45	55.9	2.56	○
D918S-A5C-1410	14.10	83	133	16	48	61.9	2.57	○
D918S-A5C-1420	14.20	83	133	16	48	61.7	2.58	●
D918S-A5C-1425	14.25	83	133	16	48	61.6	2.59	○
D918S-A5C-1430	14.30	83	133	16	48	61.6	2.60	○
D918S-A5C-1440	14.40	83	133	16	48	61.4	2.62	○
D918S-A5C-1450	14.50	83	133	16	48	61.3	2.64	●
D918S-A5C-1460	14.60	83	133	16	48	61.1	2.66	○
D918S-A5C-1470	14.70	83	133	16	48	61.0	2.68	○
D918S-A5C-1475	14.75	83	133	16	48	60.9	2.68	○
D918S-A5C-1480	14.80	83	133	16	48	60.8	2.69	○
D918S-A5C-1490	14.90	83	133	16	48	60.7	2.71	○
D918S-A5C-1500	15.00	83	133	16	48	60.5	2.73	●
D918S-A5C-1505	15.05	83	133	16	48	60.4	2.74	○
D918S-A5C-1510	15.10	83	133	16	48	60.4	2.75	●
D918S-A5C-1515	15.15	83	133	16	48	60.3	2.76	○
D918S-A5C-1520	15.20	83	133	16	48	60.2	2.77	●
D918S-A5C-1525	15.25	83	133	16	48	60.1	2.78	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○	○	○	○								

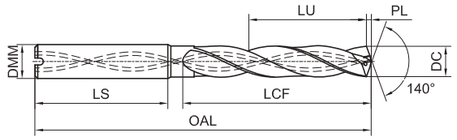
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D918S-A5C

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

High-performance 5D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5C-1530	15.30	83	133	16	48	60.1	2.78	○
D918S-A5C-1535	15.35	83	133	16	48	60.0	2.79	○
D918S-A5C-1540	15.40	83	133	16	48	59.9	2.80	○
D918S-A5C-1550	15.50	83	133	16	48	59.8	2.82	●
D918S-A5C-1555	15.55	83	133	16	48	59.7	2.83	○
D918S-A5C-1560	15.60	83	133	16	48	59.6	2.84	○
D918S-A5C-1570	15.70	83	133	16	48	59.5	2.86	○
D918S-A5C-1580	15.80	83	133	16	48	59.3	2.88	●
D918S-A5C-1590	15.90	83	133	16	48	59.2	2.89	○
D918S-A5C-1600	16.00	83	133	16	48	59.0	2.91	●
D918S-A5C-1610	16.10	93	143	18	48	68.9	2.93	○
D918S-A5C-1625	16.25	93	143	18	48	68.6	2.96	○
D918S-A5C-1650	16.50	93	143	18	48	68.3	3.00	○
D918S-A5C-1660	16.60	93	143	18	48	68.1	3.02	○
D918S-A5C-1670	16.70	93	143	18	48	68.0	3.04	○
D918S-A5C-1675	16.75	93	143	18	48	67.9	3.05	○
D918S-A5C-1680	16.80	93	143	18	48	67.8	3.06	○
D918S-A5C-1690	16.90	93	143	18	48	67.7	3.08	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D918S-A5C-1695	16.95	93	143	18	48	67.6	3.08	○
D918S-A5C-1700	17.00	93	143	18	48	67.5	3.09	○
D918S-A5C-1720	17.20	93	143	18	48	67.2	3.13	○
D918S-A5C-1750	17.50	93	143	18	48	66.8	3.18	○
D918S-A5C-1770	17.70	93	143	18	48	66.5	3.22	○
D918S-A5C-1780	17.80	93	143	18	48	66.3	3.24	○
D918S-A5C-1795	17.95	93	143	18	48	66.1	3.27	○
D918S-A5C-1800	18.00	93	143	18	48	66.0	3.28	○
D918S-A5C-1810	18.10	101	153	20	50	73.9	3.29	○
D918S-A5C-1850	18.50	101	153	20	50	73.3	3.37	○
D918S-A5C-1860	18.60	101	153	20	50	73.1	3.38	○
D918S-A5C-1880	18.80	101	153	20	50	72.8	3.42	○
D918S-A5C-1900	19.00	101	153	20	50	72.5	3.46	○
D918S-A5C-1915	19.15	101	153	20	50	72.3	3.49	○
D918S-A5C-1930	19.30	101	153	20	50	72.1	3.51	○
D918S-A5C-1950	19.50	101	153	20	50	71.8	3.55	○
D918S-A5C-1980	19.80	101	153	20	50	71.3	3.60	○
D918S-A5C-2000	20.00	101	153	20	50	71.0	3.64	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	○	○	○	○								

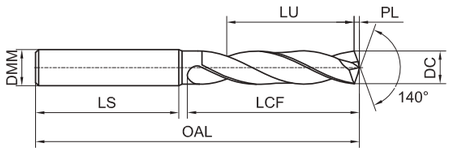
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P121

D968S-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

High-efficiency 3D External Coolant Twist Drill for Stainless Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-0100	1.00	7	45	4	30	5.5	0.18	●
D968S-A3N-0105	1.05	7	45	4	30	5.4	0.19	○
D968S-A3N-0110	1.10	7	45	4	30	5.4	0.20	●
D968S-A3N-0120	1.20	7	45	4	30	5.2	0.22	●
D968S-A3N-0125	1.25	7	45	4	30	5.1	0.23	○
D968S-A3N-0130	1.30	7	45	4	30	5.1	0.24	●
D968S-A3N-0140	1.40	7	45	4	30	4.9	0.25	●
D968S-A3N-0145	1.45	7	45	4	30	4.8	0.26	○
D968S-A3N-0150	1.50	9	55	4	38	6.8	0.27	●
D968S-A3N-0160	1.60	9	55	4	38	6.6	0.29	●
D968S-A3N-0165	1.65	9	55	4	38	6.5	0.30	○
D968S-A3N-0170	1.70	9	55	4	38	6.5	0.31	○
D968S-A3N-0175	1.75	9	55	4	38	6.4	0.32	●
D968S-A3N-0180	1.80	9	55	4	38	6.3	0.33	●
D968S-A3N-0185	1.85	9	55	4	38	6.2	0.34	○
D968S-A3N-0190	1.90	9	55	4	38	6.2	0.35	●
D968S-A3N-0195	1.95	9	55	4	38	6.1	0.35	○
D968S-A3N-0200	2.00	13	55	4	36	10.0	0.36	●
D968S-A3N-0205	2.05	13	55	4	36	9.9	0.37	○
D968S-A3N-0210	2.10	13	55	4	36	9.9	0.38	●
D968S-A3N-0215	2.15	13	55	4	36	9.8	0.39	○
D968S-A3N-0220	2.20	13	55	4	36	9.7	0.40	●
D968S-A3N-0230	2.30	13	55	4	36	9.6	0.42	●
D968S-A3N-0235	2.35	13	55	4	36	9.5	0.43	○
D968S-A3N-0240	2.40	17	55	4	33	13.4	0.44	●
D968S-A3N-0250	2.50	17	55	4	33	13.3	0.45	●
D968S-A3N-0255	2.55	17	55	4	33	13.2	0.46	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-0260	2.60	17	55	4	33	13.1	0.47	●
D968S-A3N-0270	2.70	17	55	4	33	13.0	0.49	●
D968S-A3N-0275	2.75	17	55	4	33	12.9	0.50	○
D968S-A3N-0280	2.80	17	55	4	33	12.8	0.51	●
D968S-A3N-0285	2.85	17	55	4	33	12.7	0.52	○
D968S-A3N-0290	2.90	17	55	4	33	12.7	0.53	●
D968S-A3N-0295	2.95	17	55	4	33	12.6	0.54	●
D968S-A3N-0300	3.00	20	62	6	36	15.5	0.55	●
D968S-A3N-0305	3.05	20	62	6	36	15.4	0.56	○
D968S-A3N-0310	3.10	20	62	6	36	15.4	0.56	●
D968S-A3N-0315	3.15	20	62	6	36	15.3	0.57	●
D968S-A3N-0320	3.20	20	62	6	36	15.2	0.58	●
D968S-A3N-0325	3.25	20	62	6	36	15.1	0.59	●
D968S-A3N-0330	3.30	20	62	6	36	15.1	0.60	●
D968S-A3N-0335	3.35	20	62	6	36	15.0	0.61	○
D968S-A3N-0340	3.40	20	62	6	36	14.9	0.62	●
D968S-A3N-0350	3.50	20	62	6	36	14.8	0.64	●
D968S-A3N-0355	3.55	20	62	6	36	14.7	0.65	○
D968S-A3N-0360	3.60	20	62	6	36	14.6	0.66	●
D968S-A3N-0365	3.65	20	62	6	36	14.5	0.66	○
D968S-A3N-0370	3.70	20	62	6	36	14.5	0.67	●
D968S-A3N-0380	3.80	24	66	6	36	18.3	0.69	●
D968S-A3N-0385	3.85	24	66	6	36	18.2	0.70	○
D968S-A3N-0390	3.90	24	66	6	36	18.2	0.71	●
D968S-A3N-0395	3.95	24	66	6	36	18.1	0.72	○
D968S-A3N-0400	4.00	24	66	6	36	18.0	0.73	●
D968S-A3N-0405	4.05	24	66	6	36	17.9	0.74	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎							○	○		

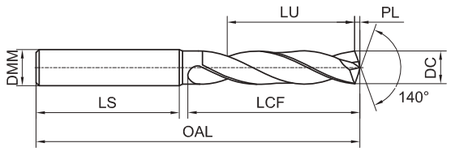
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

High-efficiency 3D External Coolant Twist Drill for Stainless Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-0410	4.10	24	66	6	36	17.9	0.75	●
D968S-A3N-0415	4.15	24	66	6	36	17.8	0.76	○
D968S-A3N-0420	4.20	24	66	6	36	17.7	0.76	●
D968S-A3N-0425	4.25	24	66	6	36	17.6	0.77	○
D968S-A3N-0430	4.30	24	66	6	36	17.6	0.78	●
D968S-A3N-0435	4.35	24	66	6	36	17.5	0.79	○
D968S-A3N-0440	4.40	24	66	6	36	17.4	0.80	●
D968S-A3N-0445	4.45	24	66	6	36	17.3	0.81	○
D968S-A3N-0450	4.50	24	66	6	36	17.3	0.82	●
D968S-A3N-0455	4.55	24	66	6	36	17.2	0.83	○
D968S-A3N-0460	4.60	24	66	6	36	17.1	0.84	●
D968S-A3N-0465	4.65	24	66	6	36	17.0	0.85	●
D968S-A3N-0470	4.70	24	66	6	36	17.0	0.86	●
D968S-A3N-0475	4.75	28	66	6	36	20.9	0.86	○
D968S-A3N-0480	4.80	28	66	6	36	20.8	0.87	●
D968S-A3N-0485	4.85	28	66	6	36	20.7	0.88	○
D968S-A3N-0490	4.90	28	66	6	36	20.7	0.89	●
D968S-A3N-0495	4.95	28	66	6	36	20.6	0.90	○
D968S-A3N-0500	5.00	28	66	6	36	20.5	0.91	●
D968S-A3N-0505	5.05	28	66	6	36	20.4	0.92	○
D968S-A3N-0510	5.10	28	66	6	36	20.4	0.93	●
D968S-A3N-0515	5.15	28	66	6	36	20.3	0.94	●
D968S-A3N-0520	5.20	28	66	6	36	20.2	0.95	●
D968S-A3N-0525	5.25	28	66	6	36	20.1	0.96	○
D968S-A3N-0530	5.30	28	66	6	36	20.1	0.96	●
D968S-A3N-0535	5.35	28	66	6	36	20.0	0.97	○
D968S-A3N-0540	5.40	28	66	6	36	19.9	0.98	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-0545	5.45	28	66	6	36	19.8	0.99	○
D968S-A3N-0550	5.50	28	66	6	36	19.8	1.00	●
D968S-A3N-0555	5.55	28	66	6	36	19.7	1.01	●
D968S-A3N-0560	5.60	28	66	6	36	19.6	1.02	●
D968S-A3N-0565	5.65	28	66	6	36	19.5	1.03	○
D968S-A3N-0570	5.70	28	66	6	36	19.5	1.04	●
D968S-A3N-0575	5.75	28	66	6	36	19.4	1.05	○
D968S-A3N-0580	5.80	28	66	6	36	19.3	1.06	●
D968S-A3N-0585	5.85	28	66	6	36	19.2	1.06	○
D968S-A3N-0590	5.90	28	66	6	36	19.2	1.07	●
D968S-A3N-0595	5.95	28	66	6	36	19.1	1.08	○
D968S-A3N-0600	6.00	28	66	6	36	19.0	1.09	●
D968S-A3N-0605	6.05	28	66	6	36	18.9	1.10	●
D968S-A3N-0610	6.10	34	79	8	36	24.9	1.11	●
D968S-A3N-0620	6.20	34	79	8	36	24.7	1.13	●
D968S-A3N-0625	6.25	34	79	8	36	24.6	1.14	○
D968S-A3N-0630	6.30	34	79	8	36	24.6	1.15	●
D968S-A3N-0635	6.35	34	79	8	36	24.5	1.16	○
D968S-A3N-0640	6.40	34	79	8	36	24.4	1.16	●
D968S-A3N-0645	6.45	34	79	8	36	24.3	1.17	○
D968S-A3N-0650	6.50	34	79	8	36	24.3	1.18	●
D968S-A3N-0655	6.55	34	79	8	36	24.2	1.19	○
D968S-A3N-0660	6.60	34	79	8	36	24.1	1.20	●
D968S-A3N-0665	6.65	34	79	8	36	24.0	1.21	○
D968S-A3N-0670	6.70	34	79	8	36	24.0	1.22	●
D968S-A3N-0675	6.75	34	79	8	36	23.9	1.23	○
D968S-A3N-0680	6.80	34	79	8	36	23.8	1.24	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎							○	○		

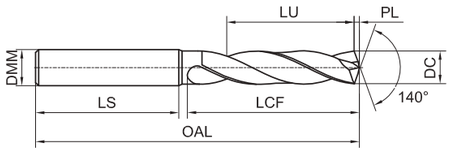
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

High-efficiency 3D External Coolant Twist Drill for Stainless Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-0685	6.85	34	79	8	36	23.7	1.25	○
D968S-A3N-0690	6.90	34	79	8	36	23.7	1.26	●
D968S-A3N-0695	6.95	34	79	8	36	23.6	1.26	○
D968S-A3N-0700	7.00	34	79	8	36	23.5	1.27	●
D968S-A3N-0705	7.05	34	79	8	36	23.4	1.28	○
D968S-A3N-0710	7.10	41	79	8	36	30.4	1.29	●
D968S-A3N-0720	7.20	41	79	8	36	30.2	1.31	●
D968S-A3N-0730	7.30	41	79	8	36	30.1	1.33	●
D968S-A3N-0735	7.35	41	79	8	36	30.0	1.34	○
D968S-A3N-0740	7.40	41	79	8	36	29.9	1.35	●
D968S-A3N-0745	7.45	41	79	8	36	29.8	1.36	●
D968S-A3N-0750	7.50	41	79	8	36	29.8	1.36	●
D968S-A3N-0755	7.55	41	79	8	36	29.7	1.37	●
D968S-A3N-0760	7.60	41	79	8	36	29.6	1.38	●
D968S-A3N-0765	7.65	41	79	8	36	29.5	1.39	○
D968S-A3N-0770	7.70	41	79	8	36	29.5	1.40	○
D968S-A3N-0775	7.75	41	79	8	36	29.4	1.41	○
D968S-A3N-0780	7.80	41	79	8	36	29.3	1.42	●
D968S-A3N-0785	7.85	41	79	8	36	29.2	1.43	○
D968S-A3N-0790	7.90	41	79	8	36	29.2	1.44	●
D968S-A3N-0795	7.95	41	79	8	36	29.1	1.45	○
D968S-A3N-0800	8.00	41	79	8	36	29.0	1.46	●
D968S-A3N-0805	8.05	41	79	8	36	28.9	1.46	○
D968S-A3N-0810	8.10	47	89	10	40	34.9	1.47	●
D968S-A3N-0815	8.15	47	89	10	40	34.8	1.48	○
D968S-A3N-0820	8.20	47	89	10	40	34.7	1.49	●
D968S-A3N-0825	8.25	47	89	10	40	34.6	1.50	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-0830	8.30	47	89	10	40	34.6	1.51	●
D968S-A3N-0840	8.40	47	89	10	40	34.4	1.53	●
D968S-A3N-0845	8.45	47	89	10	40	34.3	1.54	○
D968S-A3N-0850	8.50	47	89	10	40	34.3	1.55	●
D968S-A3N-0855	8.55	47	89	10	40	34.2	1.56	○
D968S-A3N-0860	8.60	47	89	10	40	34.1	1.57	●
D968S-A3N-0870	8.70	47	89	10	40	34.0	1.58	●
D968S-A3N-0880	8.80	47	89	10	40	33.8	1.60	●
D968S-A3N-0885	8.85	47	89	10	40	33.7	1.61	○
D968S-A3N-0890	8.90	47	89	10	40	33.7	1.62	●
D968S-A3N-0895	8.95	47	89	10	40	33.6	1.63	○
D968S-A3N-0900	9.00	47	89	10	40	33.5	1.64	●
D968S-A3N-0905	9.05	47	89	10	40	33.4	1.65	○
D968S-A3N-0910	9.10	47	89	10	40	33.4	1.66	●
D968S-A3N-0915	9.15	47	89	10	40	33.3	1.67	○
D968S-A3N-0920	9.20	47	89	10	40	33.2	1.67	●
D968S-A3N-0925	9.25	47	89	10	40	33.1	1.68	○
D968S-A3N-0930	9.30	47	89	10	40	33.1	1.69	●
D968S-A3N-0935	9.35	47	89	10	40	33.0	1.70	●
D968S-A3N-0940	9.40	47	89	10	40	32.9	1.71	●
D968S-A3N-0945	9.45	47	89	10	40	32.8	1.72	●
D968S-A3N-0950	9.50	47	89	10	40	32.8	1.73	●
D968S-A3N-0955	9.55	47	89	10	40	32.7	1.74	●
D968S-A3N-0960	9.60	47	89	10	40	32.6	1.75	●
D968S-A3N-0965	9.65	47	89	10	40	32.5	1.76	○
D968S-A3N-0970	9.70	47	89	10	40	32.5	1.77	●
D968S-A3N-0975	9.75	47	89	10	40	32.4	1.77	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material

P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎							○	○		

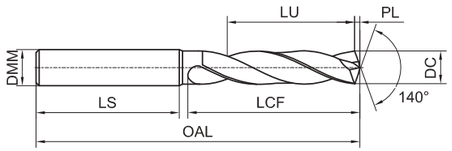
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

High-efficiency 3D External Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-0980	9.80	47	89	10	40	32.3	1.78	●
D968S-A3N-0985	9.85	47	89	10	40	32.2	1.79	○
D968S-A3N-0990	9.90	47	89	10	40	32.2	1.80	●
D968S-A3N-0995	9.95	47	89	10	40	32.1	1.81	○
D968S-A3N-1000	10.00	47	89	10	40	32.0	1.82	●
D968S-A3N-1005	10.05	47	89	10	40	31.9	1.83	○
D968S-A3N-1010	10.10	55	102	12	45	39.9	1.84	●
D968S-A3N-1015	10.15	55	102	12	45	39.8	1.85	○
D968S-A3N-1020	10.20	55	102	12	45	39.7	1.86	●
D968S-A3N-1025	10.25	55	102	12	45	39.6	1.87	●
D968S-A3N-1030	10.30	55	102	12	45	39.6	1.87	●
D968S-A3N-1035	10.35	55	102	12	45	39.5	1.88	○
D968S-A3N-1040	10.40	55	102	12	45	39.4	1.89	●
D968S-A3N-1050	10.50	55	102	12	45	39.3	1.91	●
D968S-A3N-1060	10.60	55	102	12	45	39.1	1.93	●
D968S-A3N-1070	10.70	55	102	12	45	39.0	1.95	○
D968S-A3N-1080	10.80	55	102	12	45	38.8	1.97	●
D968S-A3N-1085	10.85	55	102	12	45	38.7	1.97	○
D968S-A3N-1090	10.90	55	102	12	45	38.7	1.98	○
D968S-A3N-1100	11.00	55	102	12	45	38.5	2.00	●
D968S-A3N-1105	11.05	55	102	12	45	38.4	2.01	○
D968S-A3N-1110	11.10	55	102	12	45	38.4	2.02	●
D968S-A3N-1115	11.15	55	102	12	45	38.3	2.03	○
D968S-A3N-1120	11.20	55	102	12	45	38.2	2.04	●
D968S-A3N-1125	11.25	55	102	12	45	38.1	2.05	○
D968S-A3N-1130	11.30	55	102	12	45	38.1	2.06	●
D968S-A3N-1135	11.35	55	102	12	45	38.0	2.07	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-1140	11.40	55	102	12	45	37.9	2.07	●
D968S-A3N-1145	11.45	55	102	12	45	37.8	2.08	○
D968S-A3N-1150	11.50	55	102	12	45	37.8	2.09	●
D968S-A3N-1155	11.55	55	102	12	45	37.7	2.10	○
D968S-A3N-1160	11.60	55	102	12	45	37.6	2.11	●
D968S-A3N-1170	11.70	55	102	12	45	37.5	2.13	●
D968S-A3N-1180	11.80	55	102	12	45	37.3	2.15	●
D968S-A3N-1190	11.90	55	102	12	45	37.2	2.17	●
D968S-A3N-1195	11.95	55	102	12	45	37.1	2.17	○
D968S-A3N-1200	12.00	55	102	12	45	37.0	2.18	●
D968S-A3N-1205	12.05	55	102	12	45	36.9	2.19	○
D968S-A3N-1210	12.10	60	107	14	45	41.9	2.20	●
D968S-A3N-1215	12.15	60	107	14	45	41.8	2.21	○
D968S-A3N-1220	12.20	60	107	14	45	41.7	2.22	○
D968S-A3N-1225	12.25	60	107	14	45	41.6	2.23	○
D968S-A3N-1230	12.30	60	107	14	45	41.6	2.24	○
D968S-A3N-1240	12.40	60	107	14	45	41.4	2.26	●
D968S-A3N-1245	12.45	60	107	14	45	41.3	2.27	○
D968S-A3N-1250	12.50	60	107	14	45	41.3	2.27	●
D968S-A3N-1255	12.55	60	107	14	45	41.2	2.28	○
D968S-A3N-1260	12.60	60	107	14	45	41.1	2.29	○
D968S-A3N-1270	12.70	60	107	14	45	41.0	2.31	●
D968S-A3N-1275	12.75	60	107	14	45	40.9	2.32	○
D968S-A3N-1280	12.80	60	107	14	45	40.8	2.33	○
D968S-A3N-1285	12.85	60	107	14	45	40.7	2.34	○
D968S-A3N-1290	12.90	60	107	14	45	40.7	2.35	○
D968S-A3N-1300	13.00	60	107	14	45	40.5	2.37	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material

P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎							○	○		

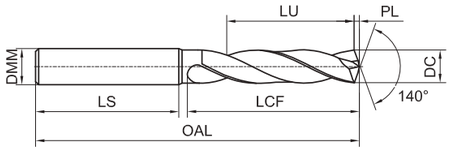
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

High-efficiency 3D External Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-1305	13.05	60	107	14	45	40.4	2.37	○
D968S-A3N-1310	13.10	60	107	14	45	40.4	2.38	●
D968S-A3N-1315	13.15	60	107	14	45	40.3	2.39	○
D968S-A3N-1320	13.20	60	107	14	45	40.2	2.40	○
D968S-A3N-1325	13.25	60	107	14	45	40.1	2.41	○
D968S-A3N-1330	13.30	60	107	14	45	40.1	2.42	○
D968S-A3N-1335	13.35	60	107	14	45	40.0	2.43	○
D968S-A3N-1340	13.40	60	107	14	45	39.9	2.44	○
D968S-A3N-1350	13.50	60	107	14	45	39.8	2.46	●
D968S-A3N-1355	13.55	60	107	14	45	39.7	2.47	○
D968S-A3N-1360	13.60	60	107	14	45	39.6	2.47	○
D968S-A3N-1370	13.70	60	107	14	45	39.5	2.49	○
D968S-A3N-1375	13.75	60	107	14	45	39.4	2.50	○
D968S-A3N-1380	13.80	60	107	14	45	39.3	2.51	○
D968S-A3N-1390	13.90	60	107	14	45	39.2	2.53	○
D968S-A3N-1395	13.95	60	107	14	45	39.1	2.54	○
D968S-A3N-1400	14.00	60	107	14	45	39.0	2.55	●
D968S-A3N-1405	14.05	60	107	14	45	38.9	2.56	○
D968S-A3N-1410	14.10	65	115	16	48	43.9	2.57	○
D968S-A3N-1420	14.20	65	115	16	48	43.7	2.58	○
D968S-A3N-1425	14.25	65	115	16	48	43.6	2.59	○
D968S-A3N-1430	14.30	65	115	16	48	43.6	2.60	○
D968S-A3N-1440	14.40	65	115	16	48	43.4	2.62	○
D968S-A3N-1450	14.50	65	115	16	48	43.3	2.64	●
D968S-A3N-1460	14.60	65	115	16	48	43.1	2.66	○
D968S-A3N-1470	14.70	65	115	16	48	43.0	2.68	○
D968S-A3N-1475	14.75	65	115	16	48	42.9	2.68	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-1480	14.80	65	115	16	48	42.8	2.69	○
D968S-A3N-1490	14.90	65	115	16	48	42.7	2.71	○
D968S-A3N-1500	15.00	65	115	16	48	42.5	2.73	●
D968S-A3N-1505	15.05	65	115	16	48	42.4	2.74	○
D968S-A3N-1510	15.10	65	115	16	48	42.4	2.75	○
D968S-A3N-1515	15.15	65	115	16	48	42.3	2.76	○
D968S-A3N-1520	15.20	65	115	16	48	42.2	2.77	●
D968S-A3N-1525	15.25	65	115	16	48	42.1	2.78	○
D968S-A3N-1530	15.30	65	115	16	48	42.1	2.78	○
D968S-A3N-1535	15.35	65	115	16	48	42.0	2.79	○
D968S-A3N-1540	15.40	65	115	16	48	41.9	2.80	○
D968S-A3N-1550	15.50	65	115	16	48	41.8	2.82	○
D968S-A3N-1555	15.55	65	115	16	48	41.7	2.83	○
D968S-A3N-1560	15.60	65	115	16	48	41.6	2.84	○
D968S-A3N-1570	15.70	65	115	16	48	41.5	2.86	○
D968S-A3N-1580	15.80	65	115	16	48	41.3	2.88	○
D968S-A3N-1590	15.90	65	115	16	48	41.2	2.89	○
D968S-A3N-1600	16.00	65	115	16	48	41.0	2.91	●
D968S-A3N-1610	16.10	73	123	18	48	48.9	2.93	○
D968S-A3N-1620	16.20	73	123	18	48	48.7	2.95	○
D968S-A3N-1625	16.25	73	123	18	48	48.6	2.96	○
D968S-A3N-1630	16.30	73	123	18	48	48.6	2.97	○
D968S-A3N-1640	16.40	73	123	18	48	48.4	2.98	○
D968S-A3N-1650	16.50	73	123	18	48	48.3	3.00	○
D968S-A3N-1660	16.60	73	123	18	48	48.1	3.02	○
D968S-A3N-1670	16.70	73	123	18	48	48.0	3.04	○
D968S-A3N-1675	16.75	73	123	18	48	47.9	3.05	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎							○	○		

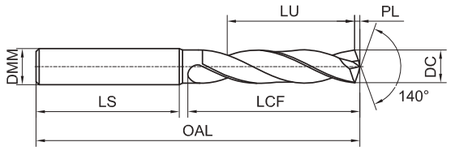
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

High-efficiency 3D External Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-1680	16.80	73	123	18	48	47.8	3.06	○
D968S-A3N-1690	16.90	73	123	18	48	47.7	3.08	○
D968S-A3N-1695	16.95	73	123	18	48	47.6	3.08	○
D968S-A3N-1700	17.00	73	123	18	48	47.5	3.09	●
D968S-A3N-1710	17.10	73	123	18	48	47.4	3.11	○
D968S-A3N-1720	17.20	73	123	18	48	47.2	3.13	○
D968S-A3N-1730	17.30	73	123	18	48	47.1	3.15	○
D968S-A3N-1740	17.40	73	123	18	48	46.9	3.17	○
D968S-A3N-1750	17.50	73	123	18	48	46.8	3.18	○
D968S-A3N-1760	17.60	73	123	18	48	46.6	3.20	○
D968S-A3N-1770	17.70	73	123	18	48	46.5	3.22	○
D968S-A3N-1780	17.80	73	123	18	48	46.3	3.24	○
D968S-A3N-1790	17.90	73	123	18	48	46.2	3.26	○
D968S-A3N-1795	17.95	73	123	18	48	46.1	3.27	○
D968S-A3N-1800	18.00	73	123	18	48	46.0	3.28	●
D968S-A3N-1810	18.10	79	131	20	50	51.9	3.29	○
D968S-A3N-1820	18.20	79	131	20	50	51.7	3.31	○
D968S-A3N-1830	18.30	79	131	20	50	51.6	3.33	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3N-1840	18.40	79	131	20	50	51.4	3.35	○
D968S-A3N-1850	18.50	79	131	20	50	51.3	3.37	○
D968S-A3N-1860	18.60	79	131	20	50	51.1	3.38	○
D968S-A3N-1870	18.70	79	131	20	50	51.0	3.40	○
D968S-A3N-1880	18.80	79	131	20	50	50.8	3.42	○
D968S-A3N-1890	18.90	79	131	20	50	50.7	3.44	○
D968S-A3N-1900	19.00	79	131	20	50	50.5	3.46	○
D968S-A3N-1910	19.10	79	131	20	50	50.4	3.48	○
D968S-A3N-1915	19.15	79	131	20	50	50.3	3.49	○
D968S-A3N-1920	19.20	79	131	20	50	50.2	3.49	○
D968S-A3N-1930	19.30	79	131	20	50	50.1	3.51	○
D968S-A3N-1940	19.40	79	131	20	50	49.9	3.53	○
D968S-A3N-1950	19.50	79	131	20	50	49.8	3.55	○
D968S-A3N-1960	19.60	79	131	20	50	49.6	3.57	○
D968S-A3N-1970	19.70	79	131	20	50	49.5	3.59	○
D968S-A3N-1980	19.80	79	131	20	50	49.3	3.60	○
D968S-A3N-1990	19.90	79	131	20	50	49.2	3.62	○
D968S-A3N-2000	20.00	79	131	20	50	49.0	3.64	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎							○	○		

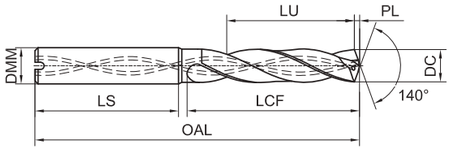
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A3C

SHANK DIN 6535HA | AlTiN nano | 3D

High-efficiency 3D Internal Coolant Twist Drill for Stainless Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3C-0200	2.00	13	55	4	36	10.0	0.36	○
D968S-A3C-0210	2.10	13	55	4	36	9.9	0.38	○
D968S-A3C-0220	2.20	13	55	4	36	9.7	0.40	○
D968S-A3C-0230	2.30	13	55	4	36	9.6	0.42	○
D968S-A3C-0240	2.40	17	55	4	33	13.4	0.44	○
D968S-A3C-0250	2.50	17	55	4	33	13.3	0.45	○
D968S-A3C-0260	2.60	17	55	4	33	13.1	0.47	○
D968S-A3C-0270	2.70	17	55	4	33	13.0	0.49	○
D968S-A3C-0280	2.80	17	55	4	33	12.8	0.51	○
D968S-A3C-0290	2.90	17	55	4	33	12.7	0.53	○
D968S-A3C-0300	3.00	20	62	6	36	15.5	0.55	●
D968S-A3C-0305	3.05	20	62	6	36	15.4	0.56	○
D968S-A3C-0310	3.10	20	62	6	36	15.4	0.56	●
D968S-A3C-0315	3.15	20	62	6	36	15.3	0.57	○
D968S-A3C-0320	3.20	20	62	6	36	15.2	0.58	○
D968S-A3C-0325	3.25	20	62	6	36	15.1	0.59	●
D968S-A3C-0330	3.30	20	62	6	36	15.1	0.60	●
D968S-A3C-0335	3.35	20	62	6	36	15.0	0.61	○
D968S-A3C-0340	3.40	20	62	6	36	14.9	0.62	●
D968S-A3C-0350	3.50	20	62	6	36	14.8	0.64	●
D968S-A3C-0355	3.55	20	62	6	36	14.7	0.65	○
D968S-A3C-0360	3.60	20	62	6	36	14.6	0.66	●
D968S-A3C-0365	3.65	20	62	6	36	14.5	0.66	○
D968S-A3C-0370	3.70	20	62	6	36	14.5	0.67	●
D968S-A3C-0380	3.80	24	66	6	36	18.3	0.69	●
D968S-A3C-0385	3.85	24	66	6	36	18.2	0.70	○
D968S-A3C-0390	3.90	24	66	6	36	18.2	0.71	●
D968S-A3C-0395	3.95	24	66	6	36	18.1	0.72	○
D968S-A3C-0400	4.00	24	66	6	36	18.0	0.73	●
D968S-A3C-0405	4.05	24	66	6	36	17.9	0.74	○
D968S-A3C-0410	4.10	24	66	6	36	17.9	0.75	●
D968S-A3C-0415	4.15	24	66	6	36	17.8	0.76	○
D968S-A3C-0420	4.20	24	66	6	36	17.7	0.76	●
D968S-A3C-0425	4.25	24	66	6	36	17.6	0.77	○
D968S-A3C-0430	4.30	24	66	6	36	17.6	0.78	○
D968S-A3C-0435	4.35	24	66	6	36	17.5	0.79	○
D968S-A3C-0440	4.40	24	66	6	36	17.4	0.80	●
D968S-A3C-0445	4.45	24	66	6	36	17.3	0.81	○
D968S-A3C-0450	4.50	24	66	6	36	17.3	0.82	●
D968S-A3C-0455	4.55	24	66	6	36	17.2	0.83	○
D968S-A3C-0460	4.60	24	66	6	36	17.1	0.84	●
D968S-A3C-0465	4.65	24	66	6	36	17.0	0.85	●
D968S-A3C-0470	4.70	24	66	6	36	17.0	0.86	●
D968S-A3C-0475	4.75	28	66	6	36	20.9	0.86	○
D968S-A3C-0480	4.80	28	66	6	36	20.8	0.87	●
D968S-A3C-0485	4.85	28	66	6	36	20.7	0.88	○
D968S-A3C-0490	4.90	28	66	6	36	20.7	0.89	●
D968S-A3C-0495	4.95	28	66	6	36	20.6	0.90	○
D968S-A3C-0500	5.00	28	66	6	36	20.5	0.91	●
D968S-A3C-0505	5.05	28	66	6	36	20.4	0.92	○
D968S-A3C-0510	5.10	28	66	6	36	20.4	0.93	●
D968S-A3C-0515	5.15	28	66	6	36	20.3	0.94	●
D968S-A3C-0520	5.20	28	66	6	36	20.2	0.95	●
D968S-A3C-0525	5.25	28	66	6	36	20.1	0.96	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎			○	○	○		○	○		

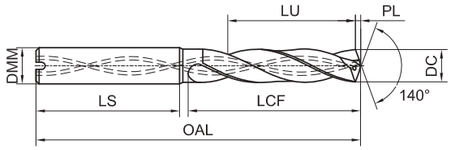
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A3C

SHANK DIN 6535HA | AlTiN nano | 3D

High-efficiency 3D Internal Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3C-0530	5.30	28	66	6	36	20.1	0.96	●
D968S-A3C-0535	5.35	28	66	6	36	20.0	0.97	○
D968S-A3C-0540	5.40	28	66	6	36	19.9	0.98	●
D968S-A3C-0545	5.45	28	66	6	36	19.8	0.99	○
D968S-A3C-0550	5.50	28	66	6	36	19.8	1.00	●
D968S-A3C-0555	5.55	28	66	6	36	19.7	1.01	●
D968S-A3C-0560	5.60	28	66	6	36	19.6	1.02	●
D968S-A3C-0565	5.65	28	66	6	36	19.5	1.03	○
D968S-A3C-0570	5.70	28	66	6	36	19.5	1.04	●
D968S-A3C-0575	5.75	28	66	6	36	19.4	1.05	○
D968S-A3C-0580	5.80	28	66	6	36	19.3	1.06	●
D968S-A3C-0585	5.85	28	66	6	36	19.2	1.06	○
D968S-A3C-0590	5.90	28	66	6	36	19.2	1.07	●
D968S-A3C-0595	5.95	28	66	6	36	19.1	1.08	○
D968S-A3C-0600	6.00	28	66	6	36	19.0	1.09	●
D968S-A3C-0605	6.05	28	66	6	36	18.9	1.10	○
D968S-A3C-0610	6.10	34	79	8	36	24.9	1.11	●
D968S-A3C-0620	6.20	34	79	8	36	24.7	1.13	●
D968S-A3C-0625	6.25	34	79	8	36	24.6	1.14	○
D968S-A3C-0630	6.30	34	79	8	36	24.6	1.15	●
D968S-A3C-0635	6.35	34	79	8	36	24.5	1.16	○
D968S-A3C-0640	6.40	34	79	8	36	24.4	1.16	●
D968S-A3C-0645	6.45	34	79	8	36	24.3	1.17	○
D968S-A3C-0650	6.50	34	79	8	36	24.3	1.18	●
D968S-A3C-0655	6.55	34	79	8	36	24.2	1.19	○
D968S-A3C-0660	6.60	34	79	8	36	24.1	1.20	○
D968S-A3C-0665	6.65	34	79	8	36	24.0	1.21	○
D968S-A3C-0670	6.70	34	79	8	36	24.0	1.22	●
D968S-A3C-0675	6.75	34	79	8	36	23.9	1.23	○
D968S-A3C-0680	6.80	34	79	8	36	23.8	1.24	●
D968S-A3C-0685	6.85	34	79	8	36	23.7	1.25	○
D968S-A3C-0690	6.90	34	79	8	36	23.7	1.26	●
D968S-A3C-0695	6.95	34	79	8	36	23.6	1.26	○
D968S-A3C-0700	7.00	34	79	8	36	23.5	1.27	●
D968S-A3C-0705	7.05	34	79	8	36	23.4	1.28	○
D968S-A3C-0710	7.10	41	79	8	36	30.4	1.29	●
D968S-A3C-0720	7.20	41	79	8	36	30.2	1.31	○
D968S-A3C-0730	7.30	41	79	8	36	30.1	1.33	●
D968S-A3C-0735	7.35	41	79	8	36	30.0	1.34	○
D968S-A3C-0740	7.40	41	79	8	36	29.9	1.35	●
D968S-A3C-0745	7.45	41	79	8	36	29.8	1.36	●
D968S-A3C-0750	7.50	41	79	8	36	29.8	1.36	○
D968S-A3C-0755	7.55	41	79	8	36	29.7	1.37	●
D968S-A3C-0760	7.60	41	79	8	36	29.6	1.38	●
D968S-A3C-0765	7.65	41	79	8	36	29.5	1.39	○
D968S-A3C-0770	7.70	41	79	8	36	29.5	1.40	●
D968S-A3C-0775	7.75	41	79	8	36	29.4	1.41	●
D968S-A3C-0780	7.80	41	79	8	36	29.3	1.42	●
D968S-A3C-0785	7.85	41	79	8	36	29.2	1.43	○
D968S-A3C-0790	7.90	41	79	8	36	29.2	1.44	●
D968S-A3C-0795	7.95	41	79	8	36	29.1	1.45	○
D968S-A3C-0800	8.00	41	79	8	36	29.0	1.46	●
D968S-A3C-0805	8.05	41	79	8	36	28.9	1.46	○
D968S-A3C-0810	8.10	47	89	10	40	34.9	1.47	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎			○	○	○		○	○		

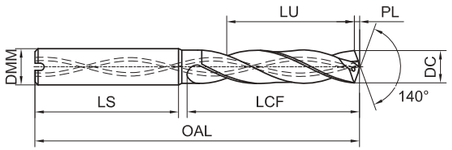
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A3C

SHANK DIN 6535HA | AlTiN nano | 3D

High-efficiency 3D Internal Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3C-0815	8.15	47	89	10	40	34.8	1.48	●
D968S-A3C-0820	8.20	47	89	10	40	34.7	1.49	●
D968S-A3C-0825	8.25	47	89	10	40	34.6	1.50	○
D968S-A3C-0830	8.30	47	89	10	40	34.6	1.51	●
D968S-A3C-0840	8.40	47	89	10	40	34.4	1.53	●
D968S-A3C-0845	8.45	47	89	10	40	34.3	1.54	○
D968S-A3C-0850	8.50	47	89	10	40	34.3	1.55	●
D968S-A3C-0855	8.55	47	89	10	40	34.2	1.56	○
D968S-A3C-0860	8.60	47	89	10	40	34.1	1.57	○
D968S-A3C-0870	8.70	47	89	10	40	34.0	1.58	●
D968S-A3C-0880	8.80	47	89	10	40	33.8	1.60	●
D968S-A3C-0885	8.85	47	89	10	40	33.7	1.61	○
D968S-A3C-0890	8.90	47	89	10	40	33.7	1.62	○
D968S-A3C-0895	8.95	47	89	10	40	33.6	1.63	○
D968S-A3C-0900	9.00	47	89	10	40	33.5	1.64	●
D968S-A3C-0905	9.05	47	89	10	40	33.4	1.65	○
D968S-A3C-0910	9.10	47	89	10	40	33.4	1.66	●
D968S-A3C-0915	9.15	47	89	10	40	33.3	1.67	○
D968S-A3C-0920	9.20	47	89	10	40	33.2	1.67	●
D968S-A3C-0925	9.25	47	89	10	40	33.1	1.68	●
D968S-A3C-0930	9.30	47	89	10	40	33.1	1.69	●
D968S-A3C-0935	9.35	47	89	10	40	33.0	1.70	●
D968S-A3C-0940	9.40	47	89	10	40	32.9	1.71	●
D968S-A3C-0945	9.45	47	89	10	40	32.8	1.72	○
D968S-A3C-0950	9.50	47	89	10	40	32.8	1.73	●
D968S-A3C-0955	9.55	47	89	10	40	32.7	1.74	●
D968S-A3C-0960	9.60	47	89	10	40	32.6	1.75	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3C-0965	9.65	47	89	10	40	32.5	1.76	○
D968S-A3C-0970	9.70	47	89	10	40	32.5	1.77	●
D968S-A3C-0975	9.75	47	89	10	40	32.4	1.77	○
D968S-A3C-0980	9.80	47	89	10	40	32.3	1.78	●
D968S-A3C-0985	9.85	47	89	10	40	32.2	1.79	○
D968S-A3C-0990	9.90	47	89	10	40	32.2	1.80	●
D968S-A3C-0995	9.95	47	89	10	40	32.1	1.81	○
D968S-A3C-1000	10.00	47	89	10	40	32.0	1.82	●
D968S-A3C-1005	10.05	47	89	10	40	31.9	1.83	○
D968S-A3C-1010	10.10	55	102	12	45	39.9	1.84	●
D968S-A3C-1015	10.15	55	102	12	45	39.8	1.85	○
D968S-A3C-1020	10.20	55	102	12	45	39.7	1.86	●
D968S-A3C-1025	10.25	55	102	12	45	39.6	1.87	○
D968S-A3C-1030	10.30	55	102	12	45	39.6	1.87	●
D968S-A3C-1035	10.35	55	102	12	45	39.5	1.88	○
D968S-A3C-1040	10.40	55	102	12	45	39.4	1.89	○
D968S-A3C-1050	10.50	55	102	12	45	39.3	1.91	●
D968S-A3C-1060	10.60	55	102	12	45	39.1	1.93	○
D968S-A3C-1070	10.70	55	102	12	45	39.0	1.95	●
D968S-A3C-1080	10.80	55	102	12	45	38.8	1.97	●
D968S-A3C-1085	10.85	55	102	12	45	38.7	1.97	○
D968S-A3C-1090	10.90	55	102	12	45	38.7	1.98	●
D968S-A3C-1100	11.00	55	102	12	45	38.5	2.00	●
D968S-A3C-1105	11.05	55	102	12	45	38.4	2.01	○
D968S-A3C-1110	11.10	55	102	12	45	38.4	2.02	○
D968S-A3C-1115	11.15	55	102	12	45	38.3	2.03	○
D968S-A3C-1120	11.20	55	102	12	45	38.2	2.04	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎			○	○	○		○	○		

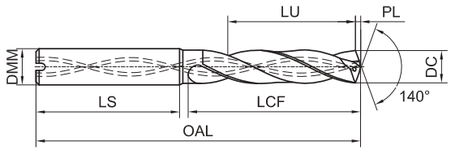
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A3C

SHANK DIN 6535HA | AlTiN nano | 3D

High-efficiency 3D Internal Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3C-1125	11.25	55	102	12	45	38.1	2.05	○
D968S-A3C-1130	11.30	55	102	12	45	38.1	2.06	●
D968S-A3C-1135	11.35	55	102	12	45	38.0	2.07	○
D968S-A3C-1140	11.40	55	102	12	45	37.9	2.07	●
D968S-A3C-1145	11.45	55	102	12	45	37.8	2.08	○
D968S-A3C-1150	11.50	55	102	12	45	37.8	2.09	●
D968S-A3C-1155	11.55	55	102	12	45	37.7	2.10	○
D968S-A3C-1160	11.60	55	102	12	45	37.6	2.11	●
D968S-A3C-1170	11.70	55	102	12	45	37.5	2.13	●
D968S-A3C-1180	11.80	55	102	12	45	37.3	2.15	●
D968S-A3C-1190	11.90	55	102	12	45	37.2	2.17	○
D968S-A3C-1195	11.95	55	102	12	45	37.1	2.17	○
D968S-A3C-1200	12.00	55	102	12	45	37.0	2.18	●
D968S-A3C-1205	12.05	55	102	12	45	36.9	2.19	○
D968S-A3C-1210	12.10	60	107	14	45	41.9	2.20	●
D968S-A3C-1215	12.15	60	107	14	45	41.8	2.21	○
D968S-A3C-1220	12.20	60	107	14	45	41.7	2.22	●
D968S-A3C-1225	12.25	60	107	14	45	41.6	2.23	○
D968S-A3C-1230	12.30	60	107	14	45	41.6	2.24	○
D968S-A3C-1240	12.40	60	107	14	45	41.4	2.26	●
D968S-A3C-1245	12.45	60	107	14	45	41.3	2.27	○
D968S-A3C-1250	12.50	60	107	14	45	41.3	2.27	●
D968S-A3C-1255	12.55	60	107	14	45	41.2	2.28	○
D968S-A3C-1260	12.60	60	107	14	45	41.1	2.29	●
D968S-A3C-1270	12.70	60	107	14	45	41.0	2.31	○
D968S-A3C-1275	12.75	60	107	14	45	40.9	2.32	○
D968S-A3C-1280	12.80	60	107	14	45	40.8	2.33	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3C-1285	12.85	60	107	14	45	40.7	2.34	○
D968S-A3C-1290	12.90	60	107	14	45	40.7	2.35	○
D968S-A3C-1300	13.00	60	107	14	45	40.5	2.37	●
D968S-A3C-1305	13.05	60	107	14	45	40.4	2.37	○
D968S-A3C-1310	13.10	60	107	14	45	40.4	2.38	○
D968S-A3C-1315	13.15	60	107	14	45	40.3	2.39	○
D968S-A3C-1325	13.25	60	107	14	45	40.1	2.41	○
D968S-A3C-1335	13.35	60	107	14	45	40.0	2.43	○
D968S-A3C-1340	13.40	60	107	14	45	39.9	2.44	○
D968S-A3C-1350	13.50	60	107	14	45	39.8	2.46	●
D968S-A3C-1355	13.55	60	107	14	45	39.7	2.47	○
D968S-A3C-1360	13.60	60	107	14	45	39.6	2.47	○
D968S-A3C-1370	13.70	60	107	14	45	39.5	2.49	○
D968S-A3C-1375	13.75	60	107	14	45	39.4	2.50	○
D968S-A3C-1380	13.80	60	107	14	45	39.3	2.51	○
D968S-A3C-1395	13.95	60	107	14	45	39.1	2.54	○
D968S-A3C-1400	14.00	60	107	14	45	39.0	2.55	●
D968S-A3C-1405	14.05	60	107	14	45	38.9	2.56	○
D968S-A3C-1420	14.20	65	115	16	48	43.7	2.58	●
D968S-A3C-1425	14.25	65	115	16	48	43.6	2.59	○
D968S-A3C-1430	14.30	65	115	16	48	43.6	2.60	○
D968S-A3C-1440	14.40	65	115	16	48	43.4	2.62	○
D968S-A3C-1450	14.50	65	115	16	48	43.3	2.64	●
D968S-A3C-1460	14.60	65	115	16	48	43.1	2.66	●
D968S-A3C-1470	14.70	65	115	16	48	43.0	2.68	○
D968S-A3C-1475	14.75	65	115	16	48	42.9	2.68	○
D968S-A3C-1480	14.80	65	115	16	48	42.8	2.69	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎			○	○	○		○	○		

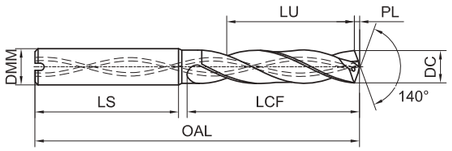
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A3C

SHANK DIN 6535HA | AlTiN nano | 3D

High-efficiency 3D Internal Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A3C-1490	14.90	65	115	16	48	42.7	2.71	○
D968S-A3C-1500	15.00	65	115	16	48	42.5	2.73	●
D968S-A3C-1505	15.05	65	115	16	48	42.4	2.74	○
D968S-A3C-1510	15.10	65	115	16	48	42.4	2.75	○
D968S-A3C-1515	15.15	65	115	16	48	42.3	2.76	○
D968S-A3C-1520	15.20	65	115	16	48	42.2	2.77	○
D968S-A3C-1525	15.25	65	115	16	48	42.1	2.78	○
D968S-A3C-1530	15.30	65	115	16	48	42.1	2.78	○
D968S-A3C-1535	15.35	65	115	16	48	42.0	2.79	○
D968S-A3C-1550	15.50	65	115	16	48	41.8	2.82	○
D968S-A3C-1555	15.55	65	115	16	48	41.7	2.83	○
D968S-A3C-1570	15.70	65	115	16	48	41.5	2.86	○
D968S-A3C-1580	15.80	65	115	16	48	41.3	2.88	○
D968S-A3C-1590	15.90	65	115	16	48	41.2	2.89	○
D968S-A3C-1600	16.00	65	115	16	48	41.0	2.91	○
D968S-A3C-1610	16.10	73	123	18	48	48.9	2.93	○
D968S-A3C-1625	16.25	73	123	18	48	48.6	2.96	○
D968S-A3C-1630	16.30	73	123	18	48	48.6	2.97	○
D968S-A3C-1650	16.50	73	123	18	48	48.3	3.00	○
D968S-A3C-1660	16.60	73	123	18	48	48.1	3.02	○
D968S-A3C-1675	16.75	73	123	18	48	47.9	3.05	○
D968S-A3C-1680	16.80	73	123	18	48	47.8	3.06	○
D968S-A3C-1695	16.95	73	123	18	48	47.6	3.08	○
D968S-A3C-1700	17.00	73	123	18	48	47.5	3.09	○
D968S-A3C-1730	17.30	73	123	18	48	47.1	3.15	○
D968S-A3C-1750	17.50	73	123	18	48	46.8	3.18	○
D968S-A3C-1760	17.60	73	123	18	48	46.6	3.20	○
D968S-A3C-1770	17.70	73	123	18	48	46.5	3.22	○
D968S-A3C-1780	17.80	73	123	18	48	46.3	3.24	○
D968S-A3C-1795	17.95	73	123	18	48	46.1	3.27	○
D968S-A3C-1800	18.00	73	123	18	48	46.0	3.28	○
D968S-A3C-1810	18.10	79	131	20	50	51.9	3.29	○
D968S-A3C-1840	18.40	79	131	20	50	51.4	3.35	○
D968S-A3C-1850	18.50	79	131	20	50	51.3	3.37	○
D968S-A3C-1880	18.80	79	131	20	50	50.8	3.42	○
D968S-A3C-1900	19.00	79	131	20	50	50.5	3.46	○
D968S-A3C-1915	19.15	79	131	20	50	50.3	3.49	○
D968S-A3C-1930	19.30	79	131	20	50	50.1	3.51	○
D968S-A3C-1950	19.50	79	131	20	50	49.8	3.55	○
D968S-A3C-1960	19.60	79	131	20	50	49.6	3.57	○
D968S-A3C-1980	19.80	79	131	20	50	49.3	3.60	○
D968S-A3C-2000	20.00	79	131	20	50	49.0	3.64	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎			○	○	○		○	○		

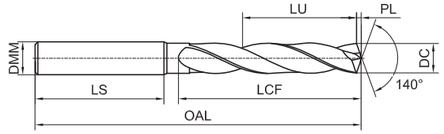
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

High-efficiency 5D External Coolant Twist Drill for Stainless Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5N-0100	1.00	9	45	4	28	7.5	0.18	○
D968S-A5N-0105	1.05	9	45	4	28	7.4	0.19	○
D968S-A5N-0110	1.10	9	45	4	28	7.4	0.20	○
D968S-A5N-0120	1.20	9	45	4	28	7.2	0.22	○
D968S-A5N-0125	1.25	9	45	4	28	7.1	0.23	○
D968S-A5N-0130	1.30	9	45	4	28	7.1	0.24	○
D968S-A5N-0140	1.40	9	45	4	28	6.9	0.25	○
D968S-A5N-0145	1.45	9	45	4	28	6.8	0.26	○
D968S-A5N-0150	1.50	12	55	4	35	9.8	0.27	○
D968S-A5N-0160	1.60	12	55	4	35	9.6	0.29	○
D968S-A5N-0165	1.65	12	55	4	35	9.5	0.30	○
D968S-A5N-0170	1.70	12	55	4	35	9.5	0.31	●
D968S-A5N-0175	1.75	12	55	4	35	9.4	0.32	○
D968S-A5N-0180	1.80	12	55	4	35	9.3	0.33	●
D968S-A5N-0185	1.85	12	55	4	35	9.2	0.34	○
D968S-A5N-0190	1.90	12	55	4	35	9.2	0.35	○
D968S-A5N-0200	2.00	18	62	4	38	15.0	0.36	●
D968S-A5N-0205	2.05	18	62	4	38	14.9	0.37	●
D968S-A5N-0210	2.10	18	62	4	38	14.9	0.38	○
D968S-A5N-0220	2.20	18	62	4	38	14.7	0.40	●
D968S-A5N-0230	2.30	18	62	4	38	14.6	0.42	○
D968S-A5N-0235	2.35	18	62	4	38	14.5	0.43	○
D968S-A5N-0240	2.40	22	62	4	34	18.4	0.44	○
D968S-A5N-0250	2.50	22	62	4	34	18.3	0.45	●
D968S-A5N-0255	2.55	22	62	4	34	18.2	0.46	○
D968S-A5N-0260	2.60	22	62	4	34	18.1	0.47	●
D968S-A5N-0270	2.70	22	62	4	34	18.0	0.49	○
D968S-A5N-0275	2.75	22	62	4	34	17.9	0.50	○
D968S-A5N-0280	2.80	22	62	4	34	17.8	0.51	○
D968S-A5N-0290	2.90	22	62	4	34	17.7	0.53	○
D968S-A5N-0295	2.95	22	62	4	34	17.6	0.54	○
D968S-A5N-0300	3.00	28	66	6	36	23.5	0.55	●
D968S-A5N-0305	3.05	28	66	6	36	23.4	0.56	○
D968S-A5N-0310	3.10	28	66	6	36	23.4	0.56	●
D968S-A5N-0315	3.15	28	66	6	36	23.3	0.57	○
D968S-A5N-0320	3.20	28	66	6	36	23.2	0.58	●
D968S-A5N-0325	3.25	28	66	6	36	23.1	0.59	○
D968S-A5N-0330	3.30	28	66	6	36	23.1	0.60	●
D968S-A5N-0335	3.35	28	66	6	36	23.0	0.61	○
D968S-A5N-0340	3.40	28	66	6	36	22.9	0.62	●
D968S-A5N-0350	3.50	28	66	6	36	22.8	0.64	●
D968S-A5N-0355	3.55	28	66	6	36	22.7	0.65	○
D968S-A5N-0360	3.60	28	66	6	36	22.6	0.66	●
D968S-A5N-0365	3.65	28	66	6	36	22.5	0.66	○
D968S-A5N-0370	3.70	28	66	6	36	22.5	0.67	●
D968S-A5N-0380	3.80	36	74	6	36	30.3	0.69	●
D968S-A5N-0385	3.85	36	74	6	36	30.2	0.70	○
D968S-A5N-0390	3.90	36	74	6	36	30.2	0.71	○
D968S-A5N-0395	3.95	36	74	6	36	30.1	0.72	○
D968S-A5N-0400	4.00	36	74	6	36	30.0	0.73	●
D968S-A5N-0405	4.05	36	74	6	36	29.9	0.74	○
D968S-A5N-0410	4.10	36	74	6	36	29.9	0.75	○
D968S-A5N-0415	4.15	36	74	6	36	29.8	0.76	○
D968S-A5N-0420	4.20	36	74	6	36	29.7	0.76	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎										

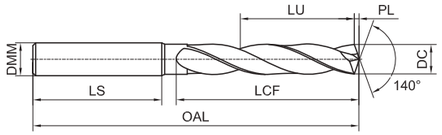
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

High-efficiency 5D External Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5N-0425	4.25	36	74	6	36	29.6	0.77	○
D968S-A5N-0430	4.30	36	74	6	36	29.6	0.78	●
D968S-A5N-0435	4.35	36	74	6	36	29.5	0.79	○
D968S-A5N-0440	4.40	36	74	6	36	29.4	0.80	○
D968S-A5N-0445	4.45	36	74	6	36	29.3	0.81	○
D968S-A5N-0450	4.50	36	74	6	36	29.3	0.82	●
D968S-A5N-0455	4.55	36	74	6	36	29.2	0.83	○
D968S-A5N-0460	4.60	36	74	6	36	29.1	0.84	○
D968S-A5N-0465	4.65	36	74	6	36	29.0	0.85	○
D968S-A5N-0470	4.70	36	74	6	36	29.0	0.86	○
D968S-A5N-0475	4.75	44	82	6	36	36.9	0.86	○
D968S-A5N-0480	4.80	44	82	6	36	36.8	0.87	●
D968S-A5N-0485	4.85	44	82	6	36	36.7	0.88	○
D968S-A5N-0490	4.90	44	82	6	36	36.7	0.89	●
D968S-A5N-0495	4.95	44	82	6	36	36.6	0.90	○
D968S-A5N-0500	5.00	44	82	6	36	36.5	0.91	●
D968S-A5N-0505	5.05	44	82	6	36	36.4	0.92	○
D968S-A5N-0510	5.10	44	82	6	36	36.4	0.93	●
D968S-A5N-0515	5.15	44	82	6	36	36.3	0.94	○
D968S-A5N-0520	5.20	44	82	6	36	36.2	0.95	○
D968S-A5N-0525	5.25	44	82	6	36	36.1	0.96	○
D968S-A5N-0530	5.30	44	82	6	36	36.1	0.96	○
D968S-A5N-0535	5.35	44	82	6	36	36.0	0.97	○
D968S-A5N-0540	5.40	44	82	6	36	35.9	0.98	●
D968S-A5N-0545	5.45	44	82	6	36	35.8	0.99	○
D968S-A5N-0550	5.50	44	82	6	36	35.8	1.00	●
D968S-A5N-0555	5.55	44	82	6	36	35.7	1.01	○
D968S-A5N-0560	5.60	44	82	6	36	35.6	1.02	●
D968S-A5N-0565	5.65	44	82	6	36	35.5	1.03	○
D968S-A5N-0570	5.70	44	82	6	36	35.5	1.04	○
D968S-A5N-0575	5.75	44	82	6	36	35.4	1.05	○
D968S-A5N-0580	5.80	44	82	6	36	35.3	1.06	○
D968S-A5N-0585	5.85	44	82	6	36	35.2	1.06	○
D968S-A5N-0590	5.90	44	82	6	36	35.2	1.07	○
D968S-A5N-0595	5.95	44	82	6	36	35.1	1.08	○
D968S-A5N-0600	6.00	44	82	6	36	35.0	1.09	●
D968S-A5N-0605	6.05	44	82	6	36	34.9	1.10	○
D968S-A5N-0610	6.10	53	91	8	36	43.9	1.11	○
D968S-A5N-0615	6.15	53	91	8	36	43.8	1.12	○
D968S-A5N-0620	6.20	53	91	8	36	43.7	1.13	○
D968S-A5N-0625	6.25	53	91	8	36	43.6	1.14	○
D968S-A5N-0630	6.30	53	91	8	36	43.6	1.15	○
D968S-A5N-0635	6.35	53	91	8	36	43.5	1.16	○
D968S-A5N-0640	6.40	53	91	8	36	43.4	1.16	○
D968S-A5N-0645	6.45	53	91	8	36	43.3	1.17	○
D968S-A5N-0650	6.50	53	91	8	36	43.3	1.18	●
D968S-A5N-0655	6.55	53	91	8	36	43.2	1.19	○
D968S-A5N-0660	6.60	53	91	8	36	43.1	1.20	●
D968S-A5N-0665	6.65	53	91	8	36	43.0	1.21	○
D968S-A5N-0670	6.70	53	91	8	36	43.0	1.22	●
D968S-A5N-0675	6.75	53	91	8	36	42.9	1.23	○
D968S-A5N-0680	6.80	53	91	8	36	42.8	1.24	●
D968S-A5N-0685	6.85	53	91	8	36	42.7	1.25	○
D968S-A5N-0690	6.90	53	91	8	36	42.7	1.26	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎										

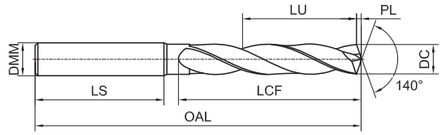
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

High-efficiency 5D External Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5N-0695	6.95	53	91	8	36	42.6	1.26	○
D968S-A5N-0700	7.00	53	91	8	36	42.5	1.27	●
D968S-A5N-0705	7.05	53	91	8	36	42.4	1.28	○
D968S-A5N-0710	7.10	53	91	8	36	42.4	1.29	○
D968S-A5N-0720	7.20	53	91	8	36	42.2	1.31	○
D968S-A5N-0730	7.30	53	91	8	36	42.1	1.33	○
D968S-A5N-0735	7.35	53	91	8	36	42.0	1.34	○
D968S-A5N-0740	7.40	53	91	8	36	41.9	1.35	○
D968S-A5N-0745	7.45	53	91	8	36	41.8	1.36	○
D968S-A5N-0750	7.50	53	91	8	36	41.8	1.36	○
D968S-A5N-0755	7.55	53	91	8	36	41.7	1.37	○
D968S-A5N-0760	7.60	53	91	8	36	41.6	1.38	○
D968S-A5N-0765	7.65	53	91	8	36	41.5	1.39	○
D968S-A5N-0770	7.70	53	91	8	36	41.5	1.40	○
D968S-A5N-0775	7.75	53	91	8	36	41.4	1.41	○
D968S-A5N-0780	7.80	53	91	8	36	41.3	1.42	○
D968S-A5N-0785	7.85	53	91	8	36	41.2	1.43	○
D968S-A5N-0790	7.90	53	91	8	36	41.2	1.44	○
D968S-A5N-0795	7.95	53	91	8	36	41.1	1.45	○
D968S-A5N-0800	8.00	53	91	8	36	41.0	1.46	●
D968S-A5N-0805	8.05	53	91	8	36	40.9	1.46	○
D968S-A5N-0810	8.10	61	103	10	40	48.9	1.47	○
D968S-A5N-0815	8.15	61	103	10	40	48.8	1.48	○
D968S-A5N-0820	8.20	61	103	10	40	48.7	1.49	●
D968S-A5N-0825	8.25	61	103	10	40	48.6	1.50	○
D968S-A5N-0830	8.30	61	103	10	40	48.6	1.51	○
D968S-A5N-0840	8.40	61	103	10	40	48.4	1.53	○
D968S-A5N-0845	8.45	61	103	10	40	48.3	1.54	○
D968S-A5N-0850	8.50	61	103	10	40	48.3	1.55	●
D968S-A5N-0855	8.55	61	103	10	40	48.2	1.56	○
D968S-A5N-0860	8.60	61	103	10	40	48.1	1.57	●
D968S-A5N-0870	8.70	61	103	10	40	48.0	1.58	○
D968S-A5N-0880	8.80	61	103	10	40	47.8	1.60	○
D968S-A5N-0885	8.85	61	103	10	40	47.7	1.61	○
D968S-A5N-0890	8.90	61	103	10	40	47.7	1.62	○
D968S-A5N-0895	8.95	61	103	10	40	47.6	1.63	○
D968S-A5N-0900	9.00	61	103	10	40	47.5	1.64	●
D968S-A5N-0905	9.05	61	103	10	40	47.4	1.65	○
D968S-A5N-0910	9.10	61	103	10	40	47.4	1.66	○
D968S-A5N-0915	9.15	61	103	10	40	47.3	1.67	○
D968S-A5N-0920	9.20	61	103	10	40	47.2	1.67	○
D968S-A5N-0925	9.25	61	103	10	40	47.1	1.68	○
D968S-A5N-0930	9.30	61	103	10	40	47.1	1.69	○
D968S-A5N-0935	9.35	61	103	10	40	47.0	1.70	○
D968S-A5N-0940	9.40	61	103	10	40	46.9	1.71	○
D968S-A5N-0945	9.45	61	103	10	40	46.8	1.72	○
D968S-A5N-0950	9.50	61	103	10	40	46.8	1.73	●
D968S-A5N-0955	9.55	61	103	10	40	46.7	1.74	○
D968S-A5N-0960	9.60	61	103	10	40	46.6	1.75	○
D968S-A5N-0965	9.65	61	103	10	40	46.5	1.76	○
D968S-A5N-0970	9.70	61	103	10	40	46.5	1.77	○
D968S-A5N-0975	9.75	61	103	10	40	46.4	1.77	○
D968S-A5N-0980	9.80	61	103	10	40	46.3	1.78	●
D968S-A5N-0985	9.85	61	103	10	40	46.2	1.79	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎										

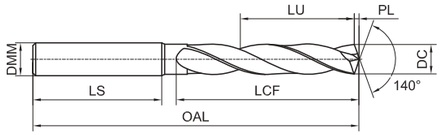
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

High-efficiency 5D External Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5N-0990	9.90	61	103	10	40	46.2	1.80	○
D968S-A5N-0995	9.95	61	103	10	40	46.1	1.81	○
D968S-A5N-1000	10.00	61	103	10	40	46.0	1.82	●
D968S-A5N-1005	10.05	61	103	10	40	45.9	1.83	○
D968S-A5N-1010	10.10	71	118	12	45	55.9	1.84	○
D968S-A5N-1015	10.15	71	118	12	45	55.8	1.85	○
D968S-A5N-1020	10.20	71	118	12	45	55.7	1.86	●
D968S-A5N-1025	10.25	71	118	12	45	55.6	1.87	○
D968S-A5N-1030	10.30	71	118	12	45	55.6	1.87	●
D968S-A5N-1035	10.35	71	118	12	45	55.5	1.88	○
D968S-A5N-1040	10.40	71	118	12	45	55.4	1.89	○
D968S-A5N-1050	10.50	71	118	12	45	55.3	1.91	●
D968S-A5N-1060	10.60	71	118	12	45	55.1	1.93	○
D968S-A5N-1070	10.70	71	118	12	45	55.0	1.95	○
D968S-A5N-1080	10.80	71	118	12	45	54.8	1.97	○
D968S-A5N-1085	10.85	71	118	12	45	54.7	1.97	○
D968S-A5N-1090	10.90	71	118	12	45	54.7	1.98	○
D968S-A5N-1100	11.00	71	118	12	45	54.5	2.00	●
D968S-A5N-1105	11.05	71	118	12	45	54.4	2.01	○
D968S-A5N-1110	11.10	71	118	12	45	54.4	2.02	○
D968S-A5N-1115	11.15	71	118	12	45	54.3	2.03	○
D968S-A5N-1120	11.20	71	118	12	45	54.2	2.04	○
D968S-A5N-1125	11.25	71	118	12	45	54.1	2.05	○
D968S-A5N-1130	11.30	71	118	12	45	54.1	2.06	○
D968S-A5N-1135	11.35	71	118	12	45	54.0	2.07	○
D968S-A5N-1140	11.40	71	118	12	45	53.9	2.07	○
D968S-A5N-1145	11.45	71	118	12	45	53.8	2.08	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5N-1150	11.50	71	118	12	45	53.8	2.09	○
D968S-A5N-1155	11.55	71	118	12	45	53.7	2.10	○
D968S-A5N-1160	11.60	71	118	12	45	53.6	2.11	○
D968S-A5N-1170	11.70	71	118	12	45	53.5	2.13	○
D968S-A5N-1180	11.80	71	118	12	45	53.3	2.15	●
D968S-A5N-1190	11.90	71	118	12	45	53.2	2.17	○
D968S-A5N-1195	11.95	71	118	12	45	53.1	2.17	○
D968S-A5N-1200	12.00	71	118	12	45	53.0	2.18	●
D968S-A5N-1205	12.05	71	118	12	45	52.9	2.19	○
D968S-A5N-1210	12.10	77	124	14	45	58.9	2.20	○
D968S-A5N-1215	12.15	77	124	14	45	58.8	2.21	○
D968S-A5N-1220	12.20	77	124	14	45	58.7	2.22	○
D968S-A5N-1225	12.25	77	124	14	45	58.6	2.23	○
D968S-A5N-1230	12.30	77	124	14	45	58.6	2.24	○
D968S-A5N-1240	12.40	77	124	14	45	58.4	2.26	○
D968S-A5N-1245	12.45	77	124	14	45	58.3	2.27	○
D968S-A5N-1250	12.50	77	124	14	45	58.3	2.27	○
D968S-A5N-1255	12.55	77	124	14	45	58.2	2.28	○
D968S-A5N-1260	12.60	77	124	14	45	58.1	2.29	○
D968S-A5N-1270	12.70	77	124	14	45	58.0	2.31	○
D968S-A5N-1275	12.75	77	124	14	45	57.9	2.32	○
D968S-A5N-1280	12.80	77	124	14	45	57.8	2.33	○
D968S-A5N-1285	12.85	77	124	14	45	57.7	2.34	○
D968S-A5N-1290	12.90	77	124	14	45	57.7	2.35	○
D968S-A5N-1300	13.00	77	124	14	45	57.5	2.37	●
D968S-A5N-1305	13.05	77	124	14	45	57.4	2.37	○
D968S-A5N-1310	13.10	77	124	14	45	57.4	2.38	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material

P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎										

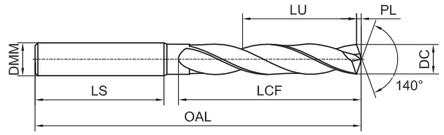
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

High-efficiency 5D External Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5N-1315	13.15	77	124	14	45	57.3	2.39	○
D968S-A5N-1320	13.20	77	124	14	45	57.2	2.40	○
D968S-A5N-1325	13.25	77	124	14	45	57.1	2.41	○
D968S-A5N-1330	13.30	77	124	14	45	57.1	2.42	○
D968S-A5N-1335	13.35	77	124	14	45	57.0	2.43	○
D968S-A5N-1340	13.40	77	124	14	45	56.9	2.44	○
D968S-A5N-1350	13.50	77	124	14	45	56.8	2.46	○
D968S-A5N-1355	13.55	77	124	14	45	56.7	2.47	○
D968S-A5N-1360	13.60	77	124	14	45	56.6	2.47	○
D968S-A5N-1370	13.70	77	124	14	45	56.5	2.49	○
D968S-A5N-1375	13.75	77	124	14	45	56.4	2.50	○
D968S-A5N-1380	13.80	77	124	14	45	56.3	2.51	○
D968S-A5N-1390	13.90	77	124	14	45	56.2	2.53	○
D968S-A5N-1395	13.95	77	124	14	45	56.1	2.54	○
D968S-A5N-1400	14.00	77	124	14	45	56.0	2.55	●
D968S-A5N-1405	14.05	77	124	14	45	55.9	2.56	○
D968S-A5N-1410	14.10	83	133	16	48	61.9	2.57	○
D968S-A5N-1415	14.15	83	133	16	48	61.8	2.58	○
D968S-A5N-1420	14.20	83	133	16	48	61.7	2.58	○
D968S-A5N-1425	14.25	83	133	16	48	61.6	2.59	○
D968S-A5N-1430	14.30	83	133	16	48	61.6	2.60	○
D968S-A5N-1440	14.40	83	133	16	48	61.4	2.62	○
D968S-A5N-1450	14.50	83	133	16	48	61.3	2.64	○
D968S-A5N-1460	14.60	83	133	16	48	61.1	2.66	○
D968S-A5N-1470	14.70	83	133	16	48	61.0	2.68	○
D968S-A5N-1475	14.75	83	133	16	48	60.9	2.68	○
D968S-A5N-1480	14.80	83	133	16	48	60.8	2.69	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5N-1490	14.90	83	133	16	48	60.7	2.71	○
D968S-A5N-1500	15.00	83	133	16	48	60.5	2.73	○
D968S-A5N-1505	15.05	83	133	16	48	60.4	2.74	○
D968S-A5N-1510	15.10	83	133	16	48	60.4	2.75	○
D968S-A5N-1515	15.15	83	133	16	48	60.3	2.76	○
D968S-A5N-1520	15.20	83	133	16	48	60.2	2.77	○
D968S-A5N-1525	15.25	83	133	16	48	60.1	2.78	○
D968S-A5N-1530	15.30	83	133	16	48	60.1	2.78	○
D968S-A5N-1535	15.35	83	133	16	48	60.0	2.79	○
D968S-A5N-1540	15.40	83	133	16	48	59.9	2.80	○
D968S-A5N-1550	15.50	83	133	16	48	59.8	2.82	○
D968S-A5N-1555	15.55	83	133	16	48	59.7	2.83	○
D968S-A5N-1560	15.60	83	133	16	48	59.6	2.84	○
D968S-A5N-1570	15.70	83	133	16	48	59.5	2.86	○
D968S-A5N-1580	15.80	83	133	16	48	59.3	2.88	○
D968S-A5N-1590	15.90	83	133	16	48	59.2	2.89	○
D968S-A5N-1600	16.00	83	133	16	48	59.0	2.91	○
D968S-A5N-1610	16.10	93	143	18	48	68.9	2.93	○
D968S-A5N-1620	16.20	93	143	18	48	68.7	2.95	○
D968S-A5N-1625	16.25	93	143	18	48	68.6	2.96	○
D968S-A5N-1630	16.30	93	143	18	48	68.6	2.97	○
D968S-A5N-1640	16.40	93	143	18	48	68.4	2.98	○
D968S-A5N-1650	16.50	93	143	18	48	68.3	3.00	○
D968S-A5N-1660	16.60	93	143	18	48	68.1	3.02	○
D968S-A5N-1670	16.70	93	143	18	48	68.0	3.04	○
D968S-A5N-1675	16.75	93	143	18	48	67.9	3.05	○
D968S-A5N-1680	16.80	93	143	18	48	67.8	3.06	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material

P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎										

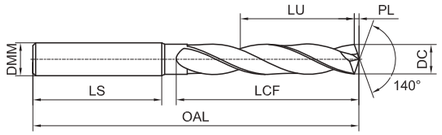
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

High-efficiency 5D External Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5N-1690	16.90	93	143	18	48	67.7	3.08	○
D968S-A5N-1695	16.95	93	143	18	48	67.6	3.08	○
D968S-A5N-1700	17.00	93	143	18	48	67.5	3.09	○
D968S-A5N-1710	17.10	93	143	18	48	67.4	3.11	○
D968S-A5N-1720	17.20	93	143	18	48	67.2	3.13	○
D968S-A5N-1730	17.30	93	143	18	48	67.1	3.15	○
D968S-A5N-1740	17.40	93	143	18	48	66.9	3.17	○
D968S-A5N-1750	17.50	93	143	18	48	66.8	3.18	○
D968S-A5N-1760	17.60	93	143	18	48	66.6	3.20	○
D968S-A5N-1770	17.70	93	143	18	48	66.5	3.22	○
D968S-A5N-1780	17.80	93	143	18	48	66.3	3.24	○
D968S-A5N-1790	17.90	93	143	18	48	66.2	3.26	○
D968S-A5N-1795	17.95	93	143	18	48	66.1	3.27	○
D968S-A5N-1800	18.00	93	143	18	48	66.0	3.28	○
D968S-A5N-1810	18.10	101	153	20	50	73.9	3.29	○
D968S-A5N-1820	18.20	101	153	20	50	73.7	3.31	○
D968S-A5N-1830	18.30	101	153	20	50	73.6	3.33	○
D968S-A5N-1840	18.40	101	153	20	50	73.4	3.35	○
D968S-A5N-1850	18.50	101	153	20	50	73.3	3.37	○
D968S-A5N-1860	18.60	101	153	20	50	73.1	3.38	○
D968S-A5N-1870	18.70	101	153	20	50	73.0	3.40	○
D968S-A5N-1880	18.80	101	153	20	50	72.8	3.42	○
D968S-A5N-1890	18.90	101	153	20	50	72.7	3.44	○
D968S-A5N-1900	19.00	101	153	20	50	72.5	3.46	○
D968S-A5N-1910	19.10	101	153	20	50	72.4	3.48	○
D968S-A5N-1915	19.15	101	153	20	50	72.3	3.49	○
D968S-A5N-1920	19.20	101	153	20	50	72.2	3.49	○
D968S-A5N-1930	19.30	101	153	20	50	72.1	3.51	○
D968S-A5N-1940	19.40	101	153	20	50	71.9	3.53	○
D968S-A5N-1950	19.50	101	153	20	50	71.8	3.55	○
D968S-A5N-1960	19.60	101	153	20	50	71.6	3.57	○
D968S-A5N-1970	19.70	101	153	20	50	71.5	3.59	○
D968S-A5N-1980	19.80	101	153	20	50	71.3	3.60	○
D968S-A5N-1990	19.90	101	153	20	50	71.2	3.62	○
D968S-A5N-2000	20.00	101	153	20	50	71.0	3.64	○

Unit (mm)

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Range of Sizes	DC(m7)	DMM(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎										

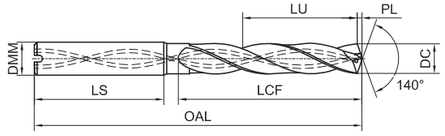
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A5C

SHANK DIN 6535HA | AlTiN nano | 5D

High-efficiency 5D Internal Coolant Twist Drill for Stainless Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5C-0200	2.00	18	62	4	38	15.0	0.36	○
D968S-A5C-0210	2.10	18	62	4	38	14.9	0.38	○
D968S-A5C-0220	2.20	18	62	4	38	14.7	0.40	○
D968S-A5C-0230	2.30	18	62	4	38	14.6	0.42	○
D968S-A5C-0240	2.40	22	62	4	35	18.4	0.44	○
D968S-A5C-0250	2.50	22	62	4	35	18.3	0.45	○
D968S-A5C-0260	2.60	22	62	4	35	18.1	0.47	○
D968S-A5C-0270	2.70	22	62	4	35	18.0	0.49	○
D968S-A5C-0280	2.80	22	62	4	35	17.8	0.51	○
D968S-A5C-0290	2.90	22	62	4	35	17.7	0.53	○
D968S-A5C-0300	3.00	28	66	6	36	23.5	0.55	●
D968S-A5C-0305	3.05	28	66	6	36	23.4	0.56	○
D968S-A5C-0310	3.10	28	66	6	36	23.4	0.56	●
D968S-A5C-0315	3.15	28	66	6	36	23.3	0.57	○
D968S-A5C-0320	3.20	28	66	6	36	23.2	0.58	●
D968S-A5C-0325	3.25	28	66	6	36	23.1	0.59	○
D968S-A5C-0330	3.30	28	66	6	36	23.1	0.60	●
D968S-A5C-0335	3.35	28	66	6	36	23.0	0.61	○
D968S-A5C-0340	3.40	28	66	6	36	22.9	0.62	●
D968S-A5C-0350	3.50	28	66	6	36	22.8	0.64	●
D968S-A5C-0355	3.55	28	66	6	36	22.7	0.65	○
D968S-A5C-0360	3.60	28	66	6	36	22.6	0.66	●
D968S-A5C-0365	3.65	28	66	6	36	22.5	0.66	○
D968S-A5C-0370	3.70	28	66	6	36	22.5	0.67	●
D968S-A5C-0380	3.80	36	74	6	36	30.3	0.69	●
D968S-A5C-0385	3.85	36	74	6	36	30.2	0.70	○
D968S-A5C-0390	3.90	36	74	6	36	30.2	0.71	●
D968S-A5C-0395	3.95	36	74	6	36	30.1	0.72	○
D968S-A5C-0400	4.00	36	74	6	36	30.0	0.73	●
D968S-A5C-0405	4.05	36	74	6	36	29.9	0.74	○
D968S-A5C-0410	4.10	36	74	6	36	29.9	0.75	●
D968S-A5C-0415	4.15	36	74	6	36	29.8	0.76	○
D968S-A5C-0420	4.20	36	74	6	36	29.7	0.76	●
D968S-A5C-0425	4.25	36	74	6	36	29.6	0.77	○
D968S-A5C-0430	4.30	36	74	6	36	29.6	0.78	●
D968S-A5C-0435	4.35	36	74	6	36	29.5	0.79	○
D968S-A5C-0440	4.40	36	74	6	36	29.4	0.80	●
D968S-A5C-0445	4.45	36	74	6	36	29.3	0.81	○
D968S-A5C-0455	4.55	36	74	6	36	29.2	0.83	○
D968S-A5C-0450	4.50	36	74	6	36	29.3	0.82	●
D968S-A5C-0460	4.60	36	74	6	36	29.1	0.84	●
D968S-A5C-0465	4.65	36	74	6	36	29.0	0.85	○
D968S-A5C-0470	4.70	36	74	6	36	29.0	0.86	○
D968S-A5C-0475	4.75	44	82	6	36	36.9	0.86	○
D968S-A5C-0480	4.80	44	82	6	36	36.8	0.87	●
D968S-A5C-0485	4.85	44	82	6	36	36.7	0.88	○
D968S-A5C-0490	4.90	44	82	6	36	36.7	0.89	●
D968S-A5C-0495	4.95	44	82	6	36	36.6	0.90	○
D968S-A5C-0500	5.00	44	82	6	36	36.5	0.91	●
D968S-A5C-0505	5.05	44	82	6	36	36.4	0.92	○
D968S-A5C-0510	5.10	44	82	6	36	36.4	0.93	●
D968S-A5C-0515	5.15	44	82	6	36	36.3	0.94	○
D968S-A5C-0520	5.20	44	82	6	36	36.2	0.95	●
D968S-A5C-0525	5.25	44	82	6	36	36.1	0.96	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎			○	○	○		○	○		

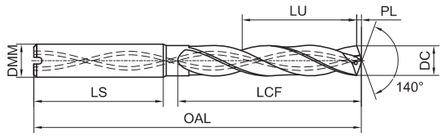
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A5C

SHANK DIN 6535HA | AlTiN nano | 5D

High-efficiency 5D Internal Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5C-0530	5.30	44	82	6	36	36.1	0.96	●
D968S-A5C-0535	5.35	44	82	6	36	36.0	0.97	○
D968S-A5C-0540	5.40	44	82	6	36	35.9	0.98	●
D968S-A5C-0545	5.45	44	82	6	36	35.8	0.99	○
D968S-A5C-0550	5.50	44	82	6	36	35.8	1.00	●
D968S-A5C-0555	5.55	44	82	6	36	35.7	1.01	●
D968S-A5C-0560	5.60	44	82	6	36	35.6	1.02	●
D968S-A5C-0565	5.65	44	82	6	36	35.5	1.03	○
D968S-A5C-0570	5.70	44	82	6	36	35.5	1.04	●
D968S-A5C-0575	5.75	44	82	6	36	35.4	1.05	○
D968S-A5C-0580	5.80	44	82	6	36	35.3	1.06	●
D968S-A5C-0585	5.85	44	82	6	36	35.2	1.06	○
D968S-A5C-0590	5.90	44	82	6	36	35.2	1.07	●
D968S-A5C-0595	5.95	44	82	6	36	35.1	1.08	○
D968S-A5C-0600	6.00	44	82	6	36	35.0	1.09	●
D968S-A5C-0605	6.05	44	82	6	36	34.9	1.10	○
D968S-A5C-0610	6.10	53	91	8	36	43.9	1.11	○
D968S-A5C-0620	6.20	53	91	8	36	43.7	1.13	●
D968S-A5C-0625	6.25	53	91	8	36	43.6	1.14	○
D968S-A5C-0630	6.30	53	91	8	36	43.6	1.15	●
D968S-A5C-0635	6.35	53	91	8	36	43.5	1.16	○
D968S-A5C-0640	6.40	53	91	8	36	43.4	1.16	●
D968S-A5C-0645	6.45	53	91	8	36	43.3	1.17	○
D968S-A5C-0650	6.50	53	91	8	36	43.3	1.18	●
D968S-A5C-0655	6.55	53	91	8	36	43.2	1.19	○
D968S-A5C-0660	6.60	53	91	8	36	43.1	1.20	●
D968S-A5C-0665	6.65	53	91	8	36	43.0	1.21	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5C-0670	6.70	53	91	8	36	43.0	1.22	●
D968S-A5C-0675	6.75	53	91	8	36	42.9	1.23	○
D968S-A5C-0680	6.80	53	91	8	36	42.8	1.24	●
D968S-A5C-0685	6.85	53	91	8	36	42.7	1.25	○
D968S-A5C-0690	6.90	53	91	8	36	42.7	1.26	●
D968S-A5C-0695	6.95	53	91	8	36	42.6	1.26	○
D968S-A5C-0700	7.00	53	91	8	36	42.5	1.27	●
D968S-A5C-0705	7.05	53	91	8	36	42.4	1.28	○
D968S-A5C-0710	7.10	53	91	8	36	42.4	1.29	●
D968S-A5C-0720	7.20	53	91	8	36	42.2	1.31	●
D968S-A5C-0730	7.30	53	91	8	36	42.1	1.33	●
D968S-A5C-0735	7.35	53	91	8	36	42.0	1.34	●
D968S-A5C-0740	7.40	53	91	8	36	41.9	1.35	●
D968S-A5C-0745	7.45	53	91	8	36	41.8	1.36	○
D968S-A5C-0750	7.50	53	91	8	36	41.8	1.36	●
D968S-A5C-0755	7.55	53	91	8	36	41.7	1.37	○
D968S-A5C-0760	7.60	53	91	8	36	41.6	1.38	●
D968S-A5C-0765	7.65	53	91	8	36	41.5	1.39	○
D968S-A5C-0770	7.70	53	91	8	36	41.5	1.40	●
D968S-A5C-0775	7.75	53	91	8	36	41.4	1.41	○
D968S-A5C-0780	7.80	53	91	8	36	41.3	1.42	●
D968S-A5C-0785	7.85	53	91	8	36	41.2	1.43	○
D968S-A5C-0790	7.90	53	91	8	36	41.2	1.44	●
D968S-A5C-0795	7.95	53	91	8	36	41.1	1.45	○
D968S-A5C-0800	8.00	53	91	8	36	41.0	1.46	●
D968S-A5C-0805	8.05	53	91	8	36	40.9	1.46	○
D968S-A5C-0810	8.10	61	103	10	40	48.9	1.47	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎			○	○	○		○	○		

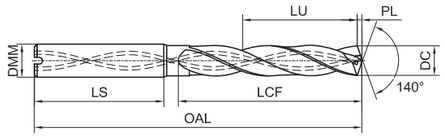
◎Most Suitable ○Suitable

Recommended Cutting Data ※P123

D968S-A5C

SHANK DIN 6535HA | AlTiN nano | 5D

High-efficiency 5D Internal Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5C-0815	8.15	61	103	10	40	48.8	1.48	○
D968S-A5C-0820	8.20	61	103	10	40	48.7	1.49	●
D968S-A5C-0825	8.25	61	103	10	40	48.6	1.50	○
D968S-A5C-0830	8.30	61	103	10	40	48.6	1.51	○
D968S-A5C-0840	8.40	61	103	10	40	48.4	1.53	○
D968S-A5C-0845	8.45	61	103	10	40	48.3	1.54	○
D968S-A5C-0850	8.50	61	103	10	40	48.3	1.55	●
D968S-A5C-0855	8.55	61	103	10	40	48.2	1.56	○
D968S-A5C-0860	8.60	61	103	10	40	48.1	1.57	●
D968S-A5C-0870	8.70	61	103	10	40	48.0	1.58	●
D968S-A5C-0880	8.80	61	103	10	40	47.8	1.60	●
D968S-A5C-0885	8.85	61	103	10	40	47.7	1.61	○
D968S-A5C-0890	8.90	61	103	10	40	47.7	1.62	●
D968S-A5C-0895	8.95	61	103	10	40	47.6	1.63	○
D968S-A5C-0900	9.00	61	103	10	40	47.5	1.64	●
D968S-A5C-0905	9.05	61	103	10	40	47.4	1.65	○
D968S-A5C-0910	9.10	61	103	10	40	47.4	1.66	●
D968S-A5C-0915	9.15	61	103	10	40	47.3	1.67	○
D968S-A5C-0920	9.20	61	103	10	40	47.2	1.67	●
D968S-A5C-0925	9.25	61	103	10	40	47.1	1.68	○
D968S-A5C-0930	9.30	61	103	10	40	47.1	1.69	●
D968S-A5C-0935	9.35	61	103	10	40	47.0	1.70	○
D968S-A5C-0940	9.40	61	103	10	40	46.9	1.71	●
D968S-A5C-0945	9.45	61	103	10	40	46.8	1.72	○
D968S-A5C-0950	9.50	61	103	10	40	46.8	1.73	●
D968S-A5C-0955	9.55	61	103	10	40	46.7	1.74	○
D968S-A5C-0960	9.60	61	103	10	40	46.6	1.75	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5C-0965	9.65	61	103	10	40	46.5	1.76	○
D968S-A5C-0970	9.70	61	103	10	40	46.5	1.77	●
D968S-A5C-0975	9.75	61	103	10	40	46.4	1.77	○
D968S-A5C-0980	9.80	61	103	10	40	46.3	1.78	●
D968S-A5C-0985	9.85	61	103	10	40	46.2	1.79	○
D968S-A5C-0990	9.90	61	103	10	40	46.2	1.80	●
D968S-A5C-0995	9.95	61	103	10	40	46.1	1.81	○
D968S-A5C-1000	10.00	61	103	10	40	46.0	1.82	●
D968S-A5C-1005	10.05	61	103	10	40	45.9	1.83	○
D968S-A5C-1010	10.10	71	118	12	45	55.9	1.84	○
D968S-A5C-1015	10.15	71	118	12	45	55.8	1.85	○
D968S-A5C-1020	10.20	71	118	12	45	55.7	1.86	●
D968S-A5C-1025	10.25	71	118	12	45	55.6	1.87	●
D968S-A5C-1030	10.30	71	118	12	45	55.6	1.87	●
D968S-A5C-1035	10.35	71	118	12	45	55.5	1.88	○
D968S-A5C-1040	10.40	71	118	12	45	55.4	1.89	○
D968S-A5C-1050	10.50	71	118	12	45	55.3	1.91	●
D968S-A5C-1060	10.60	71	118	12	45	55.1	1.93	●
D968S-A5C-1070	10.70	71	118	12	45	55.0	1.95	●
D968S-A5C-1080	10.80	71	118	12	45	54.8	1.97	●
D968S-A5C-1085	10.85	71	118	12	45	54.7	1.97	○
D968S-A5C-1090	10.90	71	118	12	45	54.7	1.98	●
D968S-A5C-1100	11.00	71	118	12	45	54.5	2.00	●
D968S-A5C-1105	11.05	71	118	12	45	54.4	2.01	○
D968S-A5C-1110	11.10	71	118	12	45	54.4	2.02	●
D968S-A5C-1115	11.15	71	118	12	45	54.3	2.03	○
D968S-A5C-1120	11.20	71	118	12	45	54.2	2.04	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎			○	○	○		○	○		

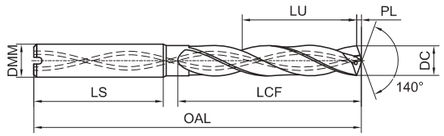
◎Most Suitable ○Suitable

Recommended Cutting Data ※P123

D968S-A5C

SHANK DIN 6535HA | AlTiN nano | 5D

High-efficiency 5D Internal Coolant Twist Drill for Stainless Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5C-1125	11.25	71	118	12	45	54.1	2.05	○
D968S-A5C-1130	11.30	71	118	12	45	54.1	2.06	○
D968S-A5C-1135	11.35	71	118	12	45	54.0	2.07	○
D968S-A5C-1140	11.40	71	118	12	45	53.9	2.07	○
D968S-A5C-1145	11.45	71	118	12	45	53.8	2.08	○
D968S-A5C-1150	11.50	71	118	12	45	53.8	2.09	●
D968S-A5C-1155	11.55	71	118	12	45	53.7	2.10	○
D968S-A5C-1160	11.60	71	118	12	45	53.6	2.11	○
D968S-A5C-1170	11.70	71	118	12	45	53.5	2.13	●
D968S-A5C-1180	11.80	71	118	12	45	53.3	2.15	○
D968S-A5C-1190	11.90	71	118	12	45	53.2	2.17	●
D968S-A5C-1195	11.95	71	118	12	45	53.1	2.17	○
D968S-A5C-1200	12.00	71	118	12	45	53.0	2.18	●
D968S-A5C-1205	12.05	71	118	12	45	52.9	2.19	○
D968S-A5C-1210	12.10	77	124	14	45	58.9	2.20	●
D968S-A5C-1215	12.15	77	124	14	45	58.8	2.21	○
D968S-A5C-1220	12.20	77	124	14	45	58.7	2.22	●
D968S-A5C-1225	12.25	77	124	14	45	58.6	2.23	○
D968S-A5C-1230	12.30	77	124	14	45	58.6	2.24	●
D968S-A5C-1240	12.40	77	124	14	45	58.4	2.26	○
D968S-A5C-1245	12.45	77	124	14	45	58.3	2.27	○
D968S-A5C-1250	12.50	77	124	14	45	58.3	2.27	●
D968S-A5C-1255	12.55	77	124	14	45	58.2	2.28	○
D968S-A5C-1260	12.60	77	124	14	45	58.1	2.29	●
D968S-A5C-1270	12.70	77	124	14	45	58.0	2.31	○
D968S-A5C-1275	12.75	77	124	14	45	57.9	2.32	○
D968S-A5C-1280	12.80	77	124	14	45	57.8	2.33	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5C-1285	12.85	77	124	14	45	57.7	2.34	○
D968S-A5C-1290	12.90	77	124	14	45	57.7	2.35	○
D968S-A5C-1300	13.00	77	124	14	45	57.5	2.37	●
D968S-A5C-1305	13.05	77	124	14	45	57.4	2.37	○
D968S-A5C-1310	13.10	77	124	14	45	57.4	2.38	●
D968S-A5C-1315	13.15	77	124	14	45	57.3	2.39	○
D968S-A5C-1320	13.20	77	124	14	45	57.2	2.40	○
D968S-A5C-1325	13.25	77	124	14	45	57.1	2.41	○
D968S-A5C-1330	13.30	77	124	14	45	57.1	2.42	○
D968S-A5C-1335	13.35	77	124	14	45	57.0	2.43	○
D968S-A5C-1340	13.40	77	124	14	45	56.9	2.44	○
D968S-A5C-1350	13.50	77	124	14	45	56.8	2.46	○
D968S-A5C-1355	13.55	77	124	14	45	56.7	2.47	○
D968S-A5C-1360	13.60	77	124	14	45	56.6	2.47	○
D968S-A5C-1370	13.70	77	124	14	45	56.5	2.49	○
D968S-A5C-1375	13.75	77	124	14	45	56.4	2.50	○
D968S-A5C-1380	13.80	77	124	14	45	56.3	2.51	○
D968S-A5C-1390	13.90	77	124	14	45	56.2	2.53	○
D968S-A5C-1395	13.95	77	124	14	45	56.1	2.54	○
D968S-A5C-1400	14.00	77	124	14	45	56.0	2.55	●
D968S-A5C-1405	14.05	77	124	14	45	55.9	2.56	○
D968S-A5C-1410	14.10	83	133	16	48	61.9	2.57	●
D968S-A5C-1420	14.20	83	133	16	48	61.7	2.58	●
D968S-A5C-1425	14.25	83	133	16	48	61.6	2.59	○
D968S-A5C-1430	14.30	83	133	16	48	61.6	2.60	●
D968S-A5C-1450	14.50	83	133	16	48	61.3	2.64	●
D968S-A5C-1460	14.60	83	133	16	48	61.1	2.66	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎			○	○	○		○	○		

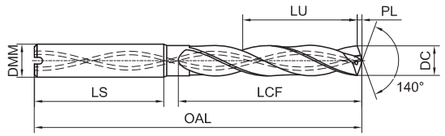
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D968S-A5C

SHANK DIN 6535HA | AlTiN nano | 5D

High-efficiency 5D Internal Coolant Twist Drill for Stainless Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5C-1470	14.70	83	133	16	48	61.0	2.68	○
D968S-A5C-1475	14.75	83	133	16	48	60.9	2.68	○
D968S-A5C-1480	14.80	83	133	16	48	60.8	2.69	○
D968S-A5C-1490	14.90	83	133	16	48	60.7	2.71	○
D968S-A5C-1500	15.00	83	133	16	48	60.5	2.73	●
D968S-A5C-1505	15.05	83	133	16	48	60.4	2.74	○
D968S-A5C-1510	15.10	83	133	16	48	60.4	2.75	○
D968S-A5C-1515	15.15	83	133	16	48	60.3	2.76	○
D968S-A5C-1520	15.20	83	133	16	48	60.2	2.77	○
D968S-A5C-1525	15.25	83	133	16	48	60.1	2.78	○
D968S-A5C-1530	15.30	83	133	16	48	60.1	2.78	○
D968S-A5C-1535	15.35	83	133	16	48	60.0	2.79	○
D968S-A5C-1550	15.50	83	133	16	48	59.8	2.82	○
D968S-A5C-1555	15.55	83	133	16	48	59.7	2.83	○
D968S-A5C-1570	15.70	83	133	16	48	59.5	2.86	○
D968S-A5C-1580	15.80	83	133	16	48	59.3	2.88	○
D968S-A5C-1600	16.00	83	133	16	48	59.0	2.91	●
D968S-A5C-1625	16.25	93	143	18	48	68.6	2.96	○
D968S-A5C-1650	16.50	93	143	18	48	68.3	3.00	○
D968S-A5C-1675	16.75	93	143	18	48	67.9	3.05	○
D968S-A5C-1680	16.80	93	143	18	48	67.8	3.06	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D968S-A5C-1690	16.90	93	143	18	48	67.7	3.08	○
D968S-A5C-1695	16.95	93	143	18	48	67.6	3.08	○
D968S-A5C-1700	17.00	93	143	18	48	67.5	3.09	○
D968S-A5C-1710	17.10	93	143	18	48	67.4	3.11	○
D968S-A5C-1720	17.20	93	143	18	48	67.2	3.13	○
D968S-A5C-1750	17.50	93	143	18	48	66.8	3.18	○
D968S-A5C-1770	17.70	93	143	18	48	66.5	3.22	○
D968S-A5C-1780	17.80	93	143	18	48	66.3	3.24	○
D968S-A5C-1795	17.95	93	143	18	48	66.1	3.27	○
D968S-A5C-1800	18.00	93	143	18	48	66.0	3.28	○
D968S-A5C-1810	18.10	101	153	20	50	73.9	3.29	○
D968S-A5C-1850	18.50	101	153	20	50	73.3	3.37	○
D968S-A5C-1860	18.60	101	153	20	50	73.1	3.38	○
D968S-A5C-1880	18.80	101	153	20	50	72.8	3.42	○
D968S-A5C-1890	18.90	101	153	20	50	72.7	3.44	○
D968S-A5C-1900	19.00	101	153	20	50	72.5	3.46	○
D968S-A5C-1915	19.15	101	153	20	50	72.3	3.49	○
D968S-A5C-1950	19.50	101	153	20	50	71.8	3.55	○
D968S-A5C-1980	19.80	101	153	20	50	71.3	3.60	○
D968S-A5C-2000	20.00	101	153	20	50	71.0	3.64	○

Unit (mm)

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Range of Sizes	DC(m7)	DMM(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎			○	○	○		○	○		

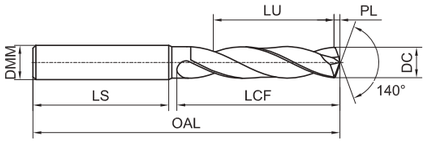
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P123

D938-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

3D External Coolant Twist Drill for Plain Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-0100	1.00	7	45	4	30	5.5	0.18	●
D938-A3N-0105	1.05	7	45	4	30	5.4	0.19	○
D938-A3N-0110	1.10	7	45	4	30	5.4	0.20	●
D938-A3N-0120	1.20	7	45	4	30	5.2	0.22	●
D938-A3N-0130	1.30	7	45	4	30	5.1	0.24	●
D938-A3N-0140	1.40	7	45	4	30	4.9	0.25	●
D938-A3N-0145	1.45	7	45	4	30	4.8	0.26	○
D938-A3N-0150	1.50	9	55	4	38	6.8	0.27	●
D938-A3N-0160	1.60	9	55	4	38	6.6	0.29	●
D938-A3N-0165	1.65	9	55	4	38	6.5	0.30	○
D938-A3N-0170	1.70	9	55	4	38	6.5	0.31	●
D938-A3N-0175	1.75	9	55	4	38	6.4	0.32	○
D938-A3N-0180	1.80	9	55	4	38	6.3	0.33	●
D938-A3N-0185	1.85	9	55	4	38	6.2	0.34	○
D938-A3N-0190	1.90	9	55	4	38	6.2	0.35	●
D938-A3N-0200	2.00	13	55	4	36	10.0	0.36	●
D938-A3N-0205	2.05	13	55	4	36	9.9	0.37	○
D938-A3N-0210	2.10	13	55	4	36	9.9	0.38	●
D938-A3N-0220	2.20	13	55	4	36	9.7	0.40	●
D938-A3N-0230	2.30	13	55	4	36	9.6	0.42	●
D938-A3N-0235	2.35	13	55	4	36	9.5	0.43	○
D938-A3N-0240	2.40	17	55	4	33	13.4	0.44	●
D938-A3N-0250	2.50	17	55	4	33	13.3	0.45	●
D938-A3N-0260	2.60	17	55	4	33	13.1	0.47	●
D938-A3N-0270	2.70	17	55	4	33	13.0	0.49	●
D938-A3N-0275	2.75	17	55	4	33	12.9	0.50	○
D938-A3N-0280	2.80	17	55	4	33	12.8	0.51	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-0285	2.85	17	55	4	33	12.7	0.52	○
D938-A3N-0290	2.90	17	55	4	33	12.7	0.53	●
D938-A3N-0295	2.95	17	55	4	33	12.6	0.54	○
D938-A3N-0300	3.00	20	62	6	36	15.5	0.55	●
D938-A3N-0305	3.05	20	62	6	36	15.4	0.56	●
D938-A3N-0310	3.10	20	62	6	36	15.4	0.56	●
D938-A3N-0315	3.15	20	62	6	36	15.3	0.57	○
D938-A3N-0320	3.20	20	62	6	36	15.2	0.58	●
D938-A3N-0325	3.25	20	62	6	36	15.1	0.59	●
D938-A3N-0330	3.30	20	62	6	36	15.1	0.60	●
D938-A3N-0335	3.35	20	62	6	36	15.0	0.61	○
D938-A3N-0340	3.40	20	62	6	36	14.9	0.62	●
D938-A3N-0350	3.50	20	62	6	36	14.8	0.64	●
D938-A3N-0355	3.55	20	62	6	36	14.7	0.65	○
D938-A3N-0360	3.60	20	62	6	36	14.6	0.66	●
D938-A3N-0365	3.65	20	62	6	36	14.5	0.66	○
D938-A3N-0370	3.70	20	62	6	36	14.5	0.67	●
D938-A3N-0380	3.80	24	66	6	36	18.3	0.69	●
D938-A3N-0385	3.85	24	66	6	36	18.2	0.70	○
D938-A3N-0390	3.90	24	66	6	36	18.2	0.71	●
D938-A3N-0395	3.95	24	66	6	36	18.1	0.72	○
D938-A3N-0400	4.00	24	66	6	36	18.0	0.73	●
D938-A3N-0405	4.05	24	66	6	36	17.9	0.74	○
D938-A3N-0410	4.10	24	66	6	36	17.9	0.75	●
D938-A3N-0415	4.15	24	66	6	36	17.8	0.76	●
D938-A3N-0420	4.20	24	66	6	36	17.7	0.76	●
D938-A3N-0425	4.25	24	66	6	36	17.6	0.77	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

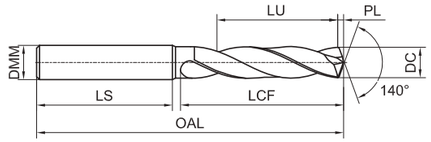
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

3D External Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-0430	4.30	24	66	6	36	17.6	0.78	●
D938-A3N-0435	4.35	24	66	6	36	17.5	0.79	○
D938-A3N-0440	4.40	24	66	6	36	17.4	0.80	●
D938-A3N-0445	4.45	24	66	6	36	17.3	0.81	○
D938-A3N-0450	4.50	24	66	6	36	17.3	0.82	●
D938-A3N-0455	4.55	24	66	6	36	17.2	0.83	○
D938-A3N-0460	4.60	24	66	6	36	17.1	0.84	●
D938-A3N-0465	4.65	24	66	6	36	17.0	0.85	●
D938-A3N-0470	4.70	24	66	6	36	17.0	0.86	●
D938-A3N-0475	4.75	28	66	6	36	20.9	0.86	○
D938-A3N-0480	4.80	28	66	6	36	20.8	0.87	●
D938-A3N-0485	4.85	28	66	6	36	20.7	0.88	○
D938-A3N-0490	4.90	28	66	6	36	20.7	0.89	●
D938-A3N-0495	4.95	28	66	6	36	20.6	0.90	○
D938-A3N-0500	5.00	28	66	6	36	20.5	0.91	●
D938-A3N-0505	5.05	28	66	6	36	20.4	0.92	○
D938-A3N-0510	5.10	28	66	6	36	20.4	0.93	●
D938-A3N-0515	5.15	28	66	6	36	20.3	0.94	○
D938-A3N-0520	5.20	28	66	6	36	20.2	0.95	●
D938-A3N-0525	5.25	28	66	6	36	20.1	0.96	○
D938-A3N-0530	5.30	28	66	6	36	20.1	0.96	●
D938-A3N-0535	5.35	28	66	6	36	20.0	0.97	○
D938-A3N-0540	5.40	28	66	6	36	19.9	0.98	●
D938-A3N-0545	5.45	28	66	6	36	19.8	0.99	○
D938-A3N-0550	5.50	28	66	6	36	19.8	1.00	●
D938-A3N-0555	5.55	28	66	6	36	19.7	1.01	●
D938-A3N-0560	5.60	28	66	6	36	19.6	1.02	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-0565	5.65	28	66	6	36	19.5	1.03	○
D938-A3N-0570	5.70	28	66	6	36	19.5	1.04	●
D938-A3N-0575	5.75	28	66	6	36	19.4	1.05	○
D938-A3N-0580	5.80	28	66	6	36	19.3	1.06	●
D938-A3N-0585	5.85	28	66	6	36	19.2	1.06	○
D938-A3N-0590	5.90	28	66	6	36	19.2	1.07	●
D938-A3N-0595	5.95	28	66	6	36	19.1	1.08	○
D938-A3N-0600	6.00	28	66	6	36	19.0	1.09	●
D938-A3N-0605	6.05	28	66	6	36	18.9	1.10	○
D938-A3N-0610	6.10	34	79	8	36	24.9	1.11	●
D938-A3N-0620	6.20	34	79	8	36	24.7	1.13	●
D938-A3N-0625	6.25	34	79	8	36	24.6	1.14	○
D938-A3N-0630	6.30	34	79	8	36	24.6	1.15	●
D938-A3N-0635	6.35	34	79	8	36	24.5	1.16	○
D938-A3N-0640	6.40	34	79	8	36	24.4	1.16	●
D938-A3N-0645	6.45	34	79	8	36	24.3	1.17	○
D938-A3N-0650	6.50	34	79	8	36	24.3	1.18	●
D938-A3N-0655	6.55	34	79	8	36	24.2	1.19	○
D938-A3N-0660	6.60	34	79	8	36	24.1	1.20	●
D938-A3N-0665	6.65	34	79	8	36	24.0	1.21	○
D938-A3N-0670	6.70	34	79	8	36	24.0	1.22	●
D938-A3N-0675	6.75	34	79	8	36	23.9	1.23	○
D938-A3N-0680	6.80	34	79	8	36	23.8	1.24	●
D938-A3N-0685	6.85	34	79	8	36	23.7	1.25	○
D938-A3N-0690	6.90	34	79	8	36	23.7	1.26	●
D938-A3N-0695	6.95	34	79	8	36	23.6	1.26	○
D938-A3N-0700	7.00	34	79	8	36	23.5	1.27	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

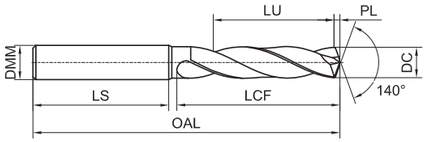
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

3D External Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-0705	7.05	34	79	8	36	23.4	1.28	○
D938-A3N-0710	7.10	41	79	8	36	30.4	1.29	●
D938-A3N-0720	7.20	41	79	8	36	30.2	1.31	●
D938-A3N-0730	7.30	41	79	8	36	30.1	1.33	●
D938-A3N-0735	7.35	41	79	8	36	30.0	1.34	○
D938-A3N-0740	7.40	41	79	8	36	29.9	1.35	●
D938-A3N-0745	7.45	41	79	8	36	29.8	1.36	●
D938-A3N-0750	7.50	41	79	8	36	29.8	1.36	●
D938-A3N-0755	7.55	41	79	8	36	29.7	1.37	●
D938-A3N-0760	7.60	41	79	8	36	29.6	1.38	●
D938-A3N-0765	7.65	41	79	8	36	29.5	1.39	○
D938-A3N-0770	7.70	41	79	8	36	29.5	1.40	●
D938-A3N-0775	7.75	41	79	8	36	29.4	1.41	○
D938-A3N-0780	7.80	41	79	8	36	29.3	1.42	●
D938-A3N-0785	7.85	41	79	8	36	29.2	1.43	○
D938-A3N-0790	7.90	41	79	8	36	29.2	1.44	●
D938-A3N-0795	7.95	41	79	8	36	29.1	1.45	○
D938-A3N-0800	8.00	41	79	8	36	29.0	1.46	●
D938-A3N-0805	8.05	41	79	8	36	28.9	1.46	○
D938-A3N-0810	8.10	47	89	10	40	34.9	1.47	●
D938-A3N-0815	8.15	47	89	10	40	34.8	1.48	○
D938-A3N-0820	8.20	47	89	10	40	34.7	1.49	●
D938-A3N-0825	8.25	47	89	10	40	34.6	1.50	○
D938-A3N-0830	8.30	47	89	10	40	34.6	1.51	●
D938-A3N-0840	8.40	47	89	10	40	34.4	1.53	●
D938-A3N-0845	8.45	47	89	10	40	34.3	1.54	○
D938-A3N-0850	8.50	47	89	10	40	34.3	1.55	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-0855	8.55	47	89	10	40	34.2	1.56	○
D938-A3N-0860	8.60	47	89	10	40	34.1	1.57	●
D938-A3N-0870	8.70	47	89	10	40	34.0	1.58	●
D938-A3N-0880	8.80	47	89	10	40	33.8	1.60	●
D938-A3N-0885	8.85	47	89	10	40	33.7	1.61	○
D938-A3N-0890	8.90	47	89	10	40	33.7	1.62	●
D938-A3N-0895	8.95	47	89	10	40	33.6	1.63	○
D938-A3N-0900	9.00	47	89	10	40	33.5	1.64	●
D938-A3N-0905	9.05	47	89	10	40	33.4	1.65	○
D938-A3N-0910	9.10	47	89	10	40	33.4	1.66	●
D938-A3N-0915	9.15	47	89	10	40	33.3	1.67	○
D938-A3N-0920	9.20	47	89	10	40	33.2	1.67	●
D938-A3N-0925	9.25	47	89	10	40	33.1	1.68	○
D938-A3N-0930	9.30	47	89	10	40	33.1	1.69	●
D938-A3N-0935	9.35	47	89	10	40	33.0	1.70	●
D938-A3N-0940	9.40	47	89	10	40	32.9	1.71	●
D938-A3N-0945	9.45	47	89	10	40	32.8	1.72	○
D938-A3N-0950	9.50	47	89	10	40	32.8	1.73	●
D938-A3N-0955	9.55	47	89	10	40	32.7	1.74	●
D938-A3N-0960	9.60	47	89	10	40	32.6	1.75	●
D938-A3N-0965	9.65	47	89	10	40	32.5	1.76	○
D938-A3N-0970	9.70	47	89	10	40	32.5	1.77	●
D938-A3N-0975	9.75	47	89	10	40	32.4	1.77	○
D938-A3N-0980	9.80	47	89	10	40	32.3	1.78	●
D938-A3N-0985	9.85	47	89	10	40	32.2	1.79	○
D938-A3N-0990	9.90	47	89	10	40	32.2	1.80	●
D938-A3N-0995	9.95	47	89	10	40	32.1	1.81	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

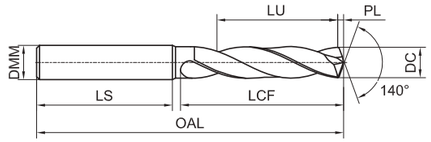
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

3D External Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-1000	10.00	47	89	10	40	32.0	1.82	●
D938-A3N-1005	10.05	47	89	10	40	31.9	1.83	○
D938-A3N-1010	10.10	55	102	12	45	39.9	1.84	●
D938-A3N-1015	10.15	55	102	12	45	39.8	1.85	○
D938-A3N-1020	10.20	55	102	12	45	39.7	1.86	●
D938-A3N-1025	10.25	55	102	12	45	39.6	1.87	●
D938-A3N-1030	10.30	55	102	12	45	39.6	1.87	●
D938-A3N-1035	10.35	55	102	12	45	39.5	1.88	●
D938-A3N-1040	10.40	55	102	12	45	39.4	1.89	●
D938-A3N-1050	10.50	55	102	12	45	39.3	1.91	●
D938-A3N-1060	10.60	55	102	12	45	39.1	1.93	●
D938-A3N-1070	10.70	55	102	12	45	39.0	1.95	●
D938-A3N-1080	10.80	55	102	12	45	38.8	1.97	●
D938-A3N-1085	10.85	55	102	12	45	38.7	1.97	●
D938-A3N-1090	10.90	55	102	12	45	38.7	1.98	●
D938-A3N-1100	11.00	55	102	12	45	38.5	2.00	●
D938-A3N-1105	11.05	55	102	12	45	38.4	2.01	○
D938-A3N-1110	11.10	55	102	12	45	38.4	2.02	●
D938-A3N-1115	11.15	55	102	12	45	38.3	2.03	○
D938-A3N-1120	11.20	55	102	12	45	38.2	2.04	●
D938-A3N-1125	11.25	55	102	12	45	38.1	2.05	○
D938-A3N-1130	11.30	55	102	12	45	38.1	2.06	●
D938-A3N-1135	11.35	55	102	12	45	38.0	2.07	○
D938-A3N-1140	11.40	55	102	12	45	37.9	2.07	●
D938-A3N-1145	11.45	55	102	12	45	37.8	2.08	○
D938-A3N-1150	11.50	55	102	12	45	37.8	2.09	●
D938-A3N-1155	11.55	55	102	12	45	37.7	2.10	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-1160	11.60	55	102	12	45	37.6	2.11	●
D938-A3N-1170	11.70	55	102	12	45	37.5	2.13	●
D938-A3N-1180	11.80	55	102	12	45	37.3	2.15	●
D938-A3N-1190	11.90	55	102	12	45	37.2	2.17	●
D938-A3N-1195	11.95	55	102	12	45	37.1	2.17	○
D938-A3N-1200	12.00	55	102	12	45	37.0	2.18	●
D938-A3N-1205	12.05	55	102	12	45	36.9	2.19	○
D938-A3N-1210	12.10	60	107	14	45	41.9	2.20	●
D938-A3N-1215	12.15	60	107	14	45	41.8	2.21	○
D938-A3N-1220	12.20	60	107	14	45	41.7	2.22	●
D938-A3N-1225	12.25	60	107	14	45	41.6	2.23	○
D938-A3N-1230	12.30	60	107	14	45	41.6	2.24	●
D938-A3N-1240	12.40	60	107	14	45	41.4	2.26	●
D938-A3N-1245	12.45	60	107	14	45	41.3	2.27	○
D938-A3N-1250	12.50	60	107	14	45	41.3	2.27	●
D938-A3N-1255	12.55	60	107	14	45	41.2	2.28	○
D938-A3N-1260	12.60	60	107	14	45	41.1	2.29	●
D938-A3N-1270	12.70	60	107	14	45	41.0	2.31	●
D938-A3N-1275	12.75	60	107	14	45	40.9	2.32	○
D938-A3N-1280	12.80	60	107	14	45	40.8	2.33	●
D938-A3N-1285	12.85	60	107	14	45	40.7	2.34	○
D938-A3N-1290	12.90	60	107	14	45	40.7	2.35	○
D938-A3N-1300	13.00	60	107	14	45	40.5	2.37	●
D938-A3N-1305	13.05	60	107	14	45	40.4	2.37	○
D938-A3N-1310	13.10	60	107	14	45	40.4	2.38	●
D938-A3N-1315	13.15	60	107	14	45	40.3	2.39	○
D938-A3N-1320	13.20	60	107	14	45	40.2	2.40	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

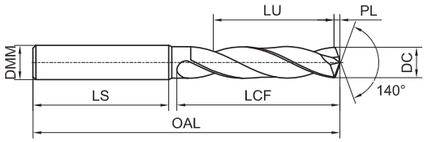
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

3D External Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-1325	13.25	60	107	14	45	40.1	2.41	○
D938-A3N-1330	13.30	60	107	14	45	40.1	2.42	○
D938-A3N-1335	13.35	60	107	14	45	40.0	2.43	○
D938-A3N-1340	13.40	60	107	14	45	39.9	2.44	●
D938-A3N-1350	13.50	60	107	14	45	39.8	2.46	●
D938-A3N-1355	13.55	60	107	14	45	39.7	2.47	○
D938-A3N-1360	13.60	60	107	14	45	39.6	2.47	○
D938-A3N-1370	13.70	60	107	14	45	39.5	2.49	○
D938-A3N-1375	13.75	60	107	14	45	39.4	2.50	○
D938-A3N-1380	13.80	60	107	14	45	39.3	2.51	●
D938-A3N-1390	13.90	60	107	14	45	39.2	2.53	○
D938-A3N-1395	13.95	60	107	14	45	39.1	2.54	○
D938-A3N-1400	14.00	60	107	14	45	39.0	2.55	●
D938-A3N-1405	14.05	60	107	14	45	38.9	2.56	○
D938-A3N-1410	14.10	65	115	16	48	43.9	2.57	●
D938-A3N-1420	14.20	65	115	16	48	43.7	2.58	●
D938-A3N-1425	14.25	65	115	16	48	43.6	2.59	○
D938-A3N-1430	14.30	65	115	16	48	43.6	2.60	●
D938-A3N-1440	14.40	65	115	16	48	43.4	2.62	●
D938-A3N-1450	14.50	65	115	16	48	43.3	2.64	●
D938-A3N-1460	14.60	65	115	16	48	43.1	2.66	●
D938-A3N-1470	14.70	65	115	16	48	43.0	2.68	●
D938-A3N-1475	14.75	65	115	16	48	42.9	2.68	○
D938-A3N-1480	14.80	65	115	16	48	42.8	2.69	●
D938-A3N-1490	14.90	65	115	16	48	42.7	2.71	○
D938-A3N-1500	15.00	65	115	16	48	42.5	2.73	●
D938-A3N-1505	15.05	65	115	16	48	42.4	2.74	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-1510	15.10	65	115	16	48	42.4	2.75	●
D938-A3N-1515	15.15	65	115	16	48	42.3	2.76	○
D938-A3N-1520	15.20	65	115	16	48	42.2	2.77	●
D938-A3N-1525	15.25	65	115	16	48	42.1	2.78	○
D938-A3N-1530	15.30	65	115	16	48	42.1	2.78	●
D938-A3N-1535	15.35	65	115	16	48	42.0	2.79	○
D938-A3N-1540	15.40	65	115	16	48	41.9	2.80	○
D938-A3N-1550	15.50	65	115	16	48	41.8	2.82	●
D938-A3N-1555	15.55	65	115	16	48	41.7	2.83	○
D938-A3N-1560	15.60	65	115	16	48	41.6	2.84	○
D938-A3N-1570	15.70	65	115	16	48	41.5	2.86	●
D938-A3N-1580	15.80	65	115	16	48	41.3	2.88	●
D938-A3N-1590	15.90	65	115	16	48	41.2	2.89	○
D938-A3N-1600	16.00	65	115	16	48	41.0	2.91	●
D938-A3N-1610	16.10	73	123	18	48	48.9	2.93	●
D938-A3N-1620	16.20	73	123	18	48	48.7	2.95	●
D938-A3N-1625	16.25	73	123	18	48	48.6	2.96	○
D938-A3N-1630	16.30	73	123	18	48	48.6	2.97	○
D938-A3N-1640	16.40	73	123	18	48	48.4	2.98	●
D938-A3N-1650	16.50	73	123	18	48	48.3	3.00	●
D938-A3N-1660	16.60	73	123	18	48	48.1	3.02	●
D938-A3N-1670	16.70	73	123	18	48	48.0	3.04	○
D938-A3N-1675	16.75	73	123	18	48	47.9	3.05	○
D938-A3N-1680	16.80	73	123	18	48	47.8	3.06	○
D938-A3N-1690	16.90	73	123	18	48	47.7	3.08	●
D938-A3N-1695	16.95	73	123	18	48	47.6	3.08	○
D938-A3N-1700	17.00	73	123	18	48	47.5	3.09	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

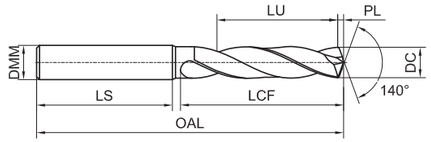
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A3N

SHANK DIN 6535HA | AlTiN nano | 3D

3D External Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-1710	17.10	73	123	18	48	47.4	3.11	○
D938-A3N-1720	17.20	73	123	18	48	47.2	3.13	●
D938-A3N-1730	17.30	73	123	18	48	47.1	3.15	○
D938-A3N-1740	17.40	73	123	18	48	46.9	3.17	●
D938-A3N-1750	17.50	73	123	18	48	46.8	3.18	●
D938-A3N-1760	17.60	73	123	18	48	46.6	3.20	●
D938-A3N-1770	17.70	73	123	18	48	46.5	3.22	○
D938-A3N-1780	17.80	73	123	18	48	46.3	3.24	○
D938-A3N-1790	17.90	73	123	18	48	46.2	3.26	○
D938-A3N-1795	17.95	73	123	18	48	46.1	3.27	○
D938-A3N-1800	18.00	73	123	18	48	46.0	3.28	●
D938-A3N-1810	18.10	79	131	20	50	51.9	3.29	○
D938-A3N-1820	18.20	79	131	20	50	51.7	3.31	●
D938-A3N-1830	18.30	79	131	20	50	51.6	3.33	○
D938-A3N-1840	18.40	79	131	20	50	51.4	3.35	○
D938-A3N-1850	18.50	79	131	20	50	51.3	3.37	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3N-1860	18.60	79	131	20	50	51.1	3.38	○
D938-A3N-1870	18.70	79	131	20	50	51.0	3.40	○
D938-A3N-1880	18.80	79	131	20	50	50.8	3.42	○
D938-A3N-1890	18.90	79	131	20	50	50.7	3.44	○
D938-A3N-1900	19.00	79	131	20	50	50.5	3.46	●
D938-A3N-1910	19.10	79	131	20	50	50.4	3.48	○
D938-A3N-1915	19.15	79	131	20	50	50.3	3.49	○
D938-A3N-1920	19.20	79	131	20	50	50.2	3.49	○
D938-A3N-1930	19.30	79	131	20	50	50.1	3.51	○
D938-A3N-1940	19.40	79	131	20	50	49.9	3.53	○
D938-A3N-1950	19.50	79	131	20	50	49.8	3.55	●
D938-A3N-1960	19.60	79	131	20	50	49.6	3.57	○
D938-A3N-1970	19.70	79	131	20	50	49.5	3.59	○
D938-A3N-1980	19.80	79	131	20	50	49.3	3.60	○
D938-A3N-1990	19.90	79	131	20	50	49.2	3.62	○
D938-A3N-2000	20.00	79	131	20	50	49.0	3.64	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

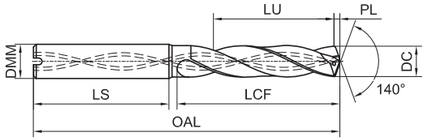
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A3C

SHANK DIN 6535HA | AlTiN nano | 3D

3D Internal Coolant Twist Drill for Plain Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3C-0200	2.00	13	55	4	36	10.0	0.36	●
D938-A3C-0205	2.05	13	55	4	36	9.9	0.37	○
D938-A3C-0210	2.10	13	55	4	36	9.9	0.38	●
D938-A3C-0220	2.20	13	55	4	36	9.7	0.40	●
D938-A3C-0230	2.30	13	55	4	36	9.6	0.42	●
D938-A3C-0235	2.35	13	55	4	36	9.5	0.43	○
D938-A3C-0240	2.40	17	55	4	33	13.4	0.44	●
D938-A3C-0250	2.50	17	55	4	33	13.3	0.45	●
D938-A3C-0255	2.55	17	55	4	33	13.2	0.46	○
D938-A3C-0260	2.60	17	55	4	33	13.1	0.47	●
D938-A3C-0270	2.70	17	55	4	33	13.0	0.49	●
D938-A3C-0275	2.75	17	55	4	33	12.9	0.50	○
D938-A3C-0280	2.80	17	55	4	33	12.8	0.51	●
D938-A3C-0290	2.90	17	55	4	33	12.7	0.53	●
D938-A3C-0295	2.95	17	55	4	33	12.6	0.54	○
D938-A3C-0300	3.00	20	62	6	36	15.5	0.55	●
D938-A3C-0305	3.05	20	62	6	36	15.4	0.56	○
D938-A3C-0310	3.10	20	62	6	36	15.4	0.56	●
D938-A3C-0315	3.15	20	62	6	36	15.3	0.57	○
D938-A3C-0320	3.20	20	62	6	36	15.2	0.58	●
D938-A3C-0325	3.25	20	62	6	36	15.1	0.59	●
D938-A3C-0330	3.30	20	62	6	36	15.1	0.60	●
D938-A3C-0335	3.35	20	62	6	36	15.0	0.61	○
D938-A3C-0340	3.40	20	62	6	36	14.9	0.62	●
D938-A3C-0350	3.50	20	62	6	36	14.8	0.64	●
D938-A3C-0355	3.55	20	62	6	36	14.7	0.65	○
D938-A3C-0360	3.60	20	62	6	36	14.6	0.66	●
D938-A3C-0365	3.65	20	62	6	36	14.5	0.66	○
D938-A3C-0370	3.70	20	62	6	36	14.5	0.67	●
D938-A3C-0380	3.80	24	66	6	36	18.3	0.69	●
D938-A3C-0385	3.85	24	66	6	36	18.2	0.70	○
D938-A3C-0390	3.90	24	66	6	36	18.2	0.71	●
D938-A3C-0395	3.95	24	66	6	36	18.1	0.72	○
D938-A3C-0400	4.00	24	66	6	36	18.0	0.73	●
D938-A3C-0405	4.05	24	66	6	36	17.9	0.74	○
D938-A3C-0410	4.10	24	66	6	36	17.9	0.75	●
D938-A3C-0415	4.15	24	66	6	36	17.8	0.76	○
D938-A3C-0420	4.20	24	66	6	36	17.7	0.76	●
D938-A3C-0425	4.25	24	66	6	36	17.6	0.77	○
D938-A3C-0430	4.30	24	66	6	36	17.6	0.78	●
D938-A3C-0435	4.35	24	66	6	36	17.5	0.79	○
D938-A3C-0440	4.40	24	66	6	36	17.4	0.80	●
D938-A3C-0445	4.45	24	66	6	36	17.3	0.81	○
D938-A3C-0450	4.50	24	66	6	36	17.3	0.82	●
D938-A3C-0455	4.55	24	66	6	36	17.2	0.83	○
D938-A3C-0460	4.60	24	66	6	36	17.1	0.84	●
D938-A3C-0465	4.65	24	66	6	36	17.0	0.85	●
D938-A3C-0470	4.70	24	66	6	36	17.0	0.86	●
D938-A3C-0475	4.75	28	66	6	36	20.9	0.86	○
D938-A3C-0480	4.80	28	66	6	36	20.8	0.87	●
D938-A3C-0485	4.85	28	66	6	36	20.7	0.88	○
D938-A3C-0490	4.90	28	66	6	36	20.7	0.89	●
D938-A3C-0495	4.95	28	66	6	36	20.6	0.90	○
D938-A3C-0500	5.00	28	66	6	36	20.5	0.91	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

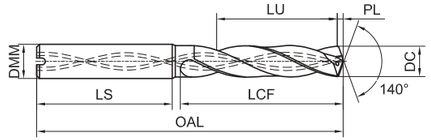
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A3C

SHANK DIN 6535HA | AlTiN nano | 3D

3D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3C-0505	5.05	28	66	6	36	20.4	0.92	○
D938-A3C-0510	5.10	28	66	6	36	20.4	0.93	●
D938-A3C-0515	5.15	28	66	6	36	20.3	0.94	○
D938-A3C-0520	5.20	28	66	6	36	20.2	0.95	●
D938-A3C-0525	5.25	28	66	6	36	20.1	0.96	○
D938-A3C-0530	5.30	28	66	6	36	20.1	0.96	●
D938-A3C-0535	5.35	28	66	6	36	20.0	0.97	○
D938-A3C-0540	5.40	28	66	6	36	19.9	0.98	●
D938-A3C-0545	5.45	28	66	6	36	19.8	0.99	○
D938-A3C-0550	5.50	28	66	6	36	19.8	1.00	●
D938-A3C-0555	5.55	28	66	6	36	19.7	1.01	●
D938-A3C-0560	5.60	28	66	6	36	19.6	1.02	●
D938-A3C-0565	5.65	28	66	6	36	19.5	1.03	○
D938-A3C-0570	5.70	28	66	6	36	19.5	1.04	●
D938-A3C-0575	5.75	28	66	6	36	19.4	1.05	○
D938-A3C-0580	5.80	28	66	6	36	19.3	1.06	●
D938-A3C-0585	5.85	28	66	6	36	19.2	1.06	○
D938-A3C-0590	5.90	28	66	6	36	19.2	1.07	●
D938-A3C-0595	5.95	28	66	6	36	19.1	1.08	○
D938-A3C-0600	6.00	28	66	6	36	19.0	1.09	●
D938-A3C-0605	6.05	28	66	6	36	18.9	1.10	●
D938-A3C-0610	6.10	34	79	8	36	24.9	1.11	●
D938-A3C-0620	6.20	34	79	8	36	24.7	1.13	●
D938-A3C-0625	6.25	34	79	8	36	24.6	1.14	○
D938-A3C-0630	6.30	34	79	8	36	24.6	1.15	●
D938-A3C-0635	6.35	34	79	8	36	24.5	1.16	○
D938-A3C-0640	6.40	34	79	8	36	24.4	1.16	●
D938-A3C-0645	6.45	34	79	8	36	24.3	1.17	○
D938-A3C-0650	6.50	34	79	8	36	24.3	1.18	●
D938-A3C-0655	6.55	34	79	8	36	24.2	1.19	○
D938-A3C-0660	6.60	34	79	8	36	24.1	1.20	●
D938-A3C-0665	6.65	34	79	8	36	24.0	1.21	○
D938-A3C-0670	6.70	34	79	8	36	24.0	1.22	●
D938-A3C-0675	6.75	34	79	8	36	23.9	1.23	○
D938-A3C-0680	6.80	34	79	8	36	23.8	1.24	●
D938-A3C-0685	6.85	34	79	8	36	23.7	1.25	○
D938-A3C-0690	6.90	34	79	8	36	23.7	1.26	●
D938-A3C-0695	6.95	34	79	8	36	23.6	1.26	○
D938-A3C-0700	7.00	34	79	8	36	23.5	1.27	●
D938-A3C-0705	7.05	34	79	8	36	23.4	1.28	○
D938-A3C-0710	7.10	41	79	8	36	30.4	1.29	●
D938-A3C-0720	7.20	41	79	8	36	30.2	1.31	●
D938-A3C-0730	7.30	41	79	8	36	30.1	1.33	●
D938-A3C-0735	7.35	41	79	8	36	30.0	1.34	○
D938-A3C-0740	7.40	41	79	8	36	29.9	1.35	●
D938-A3C-0745	7.45	41	79	8	36	29.8	1.36	●
D938-A3C-0750	7.50	41	79	8	36	29.8	1.36	●
D938-A3C-0755	7.55	41	79	8	36	29.7	1.37	●
D938-A3C-0760	7.60	41	79	8	36	29.6	1.38	●
D938-A3C-0765	7.65	41	79	8	36	29.5	1.39	○
D938-A3C-0770	7.70	41	79	8	36	29.5	1.40	●
D938-A3C-0775	7.75	41	79	8	36	29.4	1.41	●
D938-A3C-0780	7.80	41	79	8	36	29.3	1.42	●
D938-A3C-0785	7.85	41	79	8	36	29.2	1.43	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material

P | M | K | N | S | H

1 2 3 4 | 5 | 6 7 | 1 2 3 | 1 2 | 3 | 1 2 | 3 | 4 | 5 | 1 2 3 | 4 | 1 | 2

Carbon Steel, Alloy Steel | Alloy Steel, Tool Steel | PH and Ferritic/ Martensitic Steel | Stainless Steel | Gray Cast Iron, Nodular Cast Iron | High Alloy Cast Iron | Forged Aluminum Alloy, Cast Aluminium Alloy | Cast Aluminum Alloy | Copper Alloy | Composite Material | High-temperature Alloy | Titanium Alloy | Hardened Steel | Hardened Steel

<35HRC | 35-48HRC | | | <32HRC | 35-45HRC | Si<12% | Si>12% | <HB200 | | <HB450 | <HB400 | 45-55HRC | 55-60HRC

◎ | ◎ | ◎ | ○ | ○ | ○ | | | | | | | | |

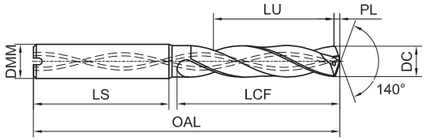
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A3C

SHANK DIN 6535HA | AlTiN nano | 3D

3D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3C-0790	7.90	41	79	8	36	29.2	1.44	●
D938-A3C-0795	7.95	41	79	8	36	29.1	1.45	○
D938-A3C-0800	8.00	41	79	8	36	29.0	1.46	●
D938-A3C-0805	8.05	41	79	8	36	28.9	1.46	○
D938-A3C-0810	8.10	47	89	10	40	34.9	1.47	●
D938-A3C-0815	8.15	47	89	10	40	34.8	1.48	○
D938-A3C-0820	8.20	47	89	10	40	34.7	1.49	●
D938-A3C-0825	8.25	47	89	10	40	34.6	1.50	●
D938-A3C-0830	8.30	47	89	10	40	34.6	1.51	●
D938-A3C-0840	8.40	47	89	10	40	34.4	1.53	●
D938-A3C-0845	8.45	47	89	10	40	34.3	1.54	○
D938-A3C-0850	8.50	47	89	10	40	34.3	1.55	●
D938-A3C-0855	8.55	47	89	10	40	34.2	1.56	○
D938-A3C-0860	8.60	47	89	10	40	34.1	1.57	●
D938-A3C-0870	8.70	47	89	10	40	34.0	1.58	●
D938-A3C-0880	8.80	47	89	10	40	33.8	1.60	●
D938-A3C-0885	8.85	47	89	10	40	33.7	1.61	○
D938-A3C-0890	8.90	47	89	10	40	33.7	1.62	●
D938-A3C-0895	8.95	47	89	10	40	33.6	1.63	○
D938-A3C-0900	9.00	47	89	10	40	33.5	1.64	●
D938-A3C-0905	9.05	47	89	10	40	33.4	1.65	○
D938-A3C-0910	9.10	47	89	10	40	33.4	1.66	●
D938-A3C-0915	9.15	47	89	10	40	33.3	1.67	○
D938-A3C-0920	9.20	47	89	10	40	33.2	1.67	●
D938-A3C-0925	9.25	47	89	10	40	33.1	1.68	●
D938-A3C-0930	9.30	47	89	10	40	33.1	1.69	○
D938-A3C-0935	9.35	47	89	10	40	33.0	1.70	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3C-0940	9.40	47	89	10	40	32.9	1.71	●
D938-A3C-0945	9.45	47	89	10	40	32.8	1.72	○
D938-A3C-0950	9.50	47	89	10	40	32.8	1.73	●
D938-A3C-0955	9.55	47	89	10	40	32.7	1.74	●
D938-A3C-0960	9.60	47	89	10	40	32.6	1.75	●
D938-A3C-0965	9.65	47	89	10	40	32.5	1.76	○
D938-A3C-0970	9.70	47	89	10	40	32.5	1.77	●
D938-A3C-0975	9.75	47	89	10	40	32.4	1.77	○
D938-A3C-0980	9.80	47	89	10	40	32.3	1.78	●
D938-A3C-0985	9.85	47	89	10	40	32.2	1.79	○
D938-A3C-0990	9.90	47	89	10	40	32.2	1.80	●
D938-A3C-0995	9.95	47	89	10	40	32.1	1.81	○
D938-A3C-1000	10.00	47	89	10	40	32.0	1.82	●
D938-A3C-1005	10.05	47	89	10	40	31.9	1.83	○
D938-A3C-1010	10.10	55	102	12	45	39.9	1.84	●
D938-A3C-1015	10.15	55	102	12	45	39.8	1.85	○
D938-A3C-1020	10.20	55	102	12	45	39.7	1.86	●
D938-A3C-1025	10.25	55	102	12	45	39.6	1.87	●
D938-A3C-1030	10.30	55	102	12	45	39.6	1.87	●
D938-A3C-1035	10.35	55	102	12	45	39.5	1.88	○
D938-A3C-1040	10.40	55	102	12	45	39.4	1.89	●
D938-A3C-1050	10.50	55	102	12	45	39.3	1.91	●
D938-A3C-1060	10.60	55	102	12	45	39.1	1.93	●
D938-A3C-1070	10.70	55	102	12	45	39.0	1.95	●
D938-A3C-1080	10.80	55	102	12	45	38.8	1.97	●
D938-A3C-1085	10.85	55	102	12	45	38.7	1.97	●
D938-A3C-1090	10.90	55	102	12	45	38.7	1.98	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon steel, alloy steel	Alloy steel, tool steel	PH and ferritic/ martensitic steel	Stainless steel	Gray cast iron, nodular cast iron	High alloy cast iron	Forged aluminum alloy, cast aluminium alloy	Cast aluminum alloy	Copper alloy	Composite material	High-temperature alloy	Titanium alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

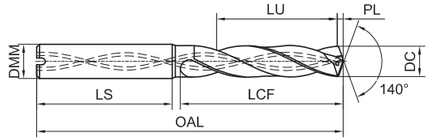
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A3C

SHANK DIN 6535HA | AlTiN nano | 3D

3D Internal Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3C-1100	11.00	55	102	12	45	38.5	2.00	●
D938-A3C-1105	11.05	55	102	12	45	38.4	2.01	○
D938-A3C-1110	11.10	55	102	12	45	38.4	2.02	●
D938-A3C-1115	11.15	55	102	12	45	38.3	2.03	○
D938-A3C-1120	11.20	55	102	12	45	38.2	2.04	●
D938-A3C-1125	11.25	55	102	12	45	38.1	2.05	○
D938-A3C-1130	11.30	55	102	12	45	38.1	2.06	●
D938-A3C-1135	11.35	55	102	12	45	38.0	2.07	○
D938-A3C-1140	11.40	55	102	12	45	37.9	2.07	●
D938-A3C-1145	11.45	55	102	12	45	37.8	2.08	○
D938-A3C-1150	11.50	55	102	12	45	37.8	2.09	●
D938-A3C-1155	11.55	55	102	12	45	37.7	2.10	○
D938-A3C-1160	11.60	55	102	12	45	37.6	2.11	○
D938-A3C-1170	11.70	55	102	12	45	37.5	2.13	●
D938-A3C-1180	11.80	55	102	12	45	37.3	2.15	●
D938-A3C-1190	11.90	55	102	12	45	37.2	2.17	○
D938-A3C-1195	11.95	55	102	12	45	37.1	2.17	○
D938-A3C-1200	12.00	55	102	12	45	37.0	2.18	●
D938-A3C-1205	12.05	55	102	12	45	36.9	2.19	○
D938-A3C-1210	12.10	60	107	14	45	41.9	2.20	○
D938-A3C-1215	12.15	60	107	14	45	41.8	2.21	○
D938-A3C-1220	12.20	60	107	14	45	41.7	2.22	●
D938-A3C-1225	12.25	60	107	14	45	41.6	2.23	○
D938-A3C-1230	12.30	60	107	14	45	41.6	2.24	○
D938-A3C-1240	12.40	60	107	14	45	41.4	2.26	○
D938-A3C-1245	12.45	60	107	14	45	41.3	2.27	○
D938-A3C-1250	12.50	60	107	14	45	41.3	2.27	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3C-1255	12.55	60	107	14	45	41.2	2.28	○
D938-A3C-1260	12.60	60	107	14	45	41.1	2.29	○
D938-A3C-1270	12.70	60	107	14	45	41.0	2.31	○
D938-A3C-1275	12.75	60	107	14	45	40.9	2.32	○
D938-A3C-1280	12.80	60	107	14	45	40.8	2.33	●
D938-A3C-1285	12.85	60	107	14	45	40.7	2.34	○
D938-A3C-1300	13.00	60	107	14	45	40.5	2.37	●
D938-A3C-1305	13.05	60	107	14	45	40.4	2.37	○
D938-A3C-1310	13.10	60	107	14	45	40.4	2.38	○
D938-A3C-1315	13.15	60	107	14	45	40.3	2.39	○
D938-A3C-1320	13.20	60	107	14	45	40.2	2.40	○
D938-A3C-1325	13.25	60	107	14	45	40.1	2.41	○
D938-A3C-1335	13.35	60	107	14	45	40.0	2.43	○
D938-A3C-1340	13.40	60	107	14	45	39.9	2.44	○
D938-A3C-1350	13.50	60	107	14	45	39.8	2.46	●
D938-A3C-1355	13.55	60	107	14	45	39.7	2.47	○
D938-A3C-1360	13.60	60	107	14	45	39.6	2.47	○
D938-A3C-1370	13.70	60	107	14	45	39.5	2.49	○
D938-A3C-1375	13.75	60	107	14	45	39.4	2.50	○
D938-A3C-1380	13.80	60	107	14	45	39.3	2.51	○
D938-A3C-1390	13.90	60	107	14	45	39.2	2.53	○
D938-A3C-1395	13.95	60	107	14	45	39.1	2.54	○
D938-A3C-1400	14.00	60	107	14	45	39.0	2.55	●
D938-A3C-1405	14.05	60	107	14	45	38.9	2.56	○
D938-A3C-1420	14.20	65	115	16	48	43.7	2.58	●
D938-A3C-1425	14.25	65	115	16	48	43.6	2.59	○
D938-A3C-1430	14.30	65	115	16	48	43.6	2.60	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

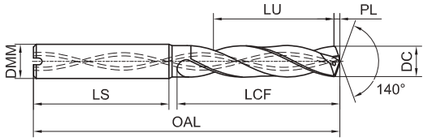
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A3C

SHANK DIN 6535HA | AlTiN nano | 3D

3D Internal Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3C-1450	14.50	65	115	16	48	43.3	2.64	●
D938-A3C-1460	14.60	65	115	16	48	43.1	2.66	○
D938-A3C-1470	14.70	65	115	16	48	43.0	2.68	○
D938-A3C-1475	14.75	65	115	16	48	42.9	2.68	○
D938-A3C-1480	14.80	65	115	16	48	42.8	2.69	●
D938-A3C-1500	15.00	65	115	16	48	42.5	2.73	●
D938-A3C-1505	15.05	65	115	16	48	42.4	2.74	○
D938-A3C-1510	15.10	65	115	16	48	42.4	2.75	○
D938-A3C-1515	15.15	65	115	16	48	42.3	2.76	○
D938-A3C-1520	15.20	65	115	16	48	42.2	2.77	○
D938-A3C-1525	15.25	65	115	16	48	42.1	2.78	○
D938-A3C-1530	15.30	65	115	16	48	42.1	2.78	●
D938-A3C-1535	15.35	65	115	16	48	42.0	2.79	○
D938-A3C-1550	15.50	65	115	16	48	41.8	2.82	○
D938-A3C-1555	15.55	65	115	16	48	41.7	2.83	○
D938-A3C-1570	15.70	65	115	16	48	41.5	2.86	●
D938-A3C-1580	15.80	65	115	16	48	41.3	2.88	●
D938-A3C-1600	16.00	65	115	16	48	41.0	2.91	●
D938-A3C-1610	16.10	73	123	18	48	40.9	2.93	○
D938-A3C-1625	16.25	73	123	18	48	48.6	2.96	○
D938-A3C-1650	16.50	73	123	18	48	48.3	3.00	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A3C-1675	16.75	73	123	18	48	47.9	3.05	○
D938-A3C-1680	16.80	73	123	18	48	47.8	3.06	○
D938-A3C-1690	16.90	73	123	18	48	47.7	3.08	○
D938-A3C-1695	16.95	73	123	18	48	47.6	3.08	○
D938-A3C-1700	17.00	73	123	18	48	47.5	3.09	●
D938-A3C-1750	17.50	73	123	18	48	46.8	3.18	●
D938-A3C-1770	17.70	73	123	18	48	46.5	3.22	○
D938-A3C-1780	17.80	73	123	18	48	46.3	3.24	○
D938-A3C-1795	17.95	73	123	18	48	46.1	3.27	○
D938-A3C-1800	18.00	73	123	18	48	46.0	3.28	●
D938-A3C-1830	18.30	79	131	20	50	51.6	3.33	○
D938-A3C-1850	18.50	79	131	20	50	51.3	3.37	○
D938-A3C-1880	18.80	79	131	20	50	50.8	3.42	○
D938-A3C-1900	19.00	79	131	20	50	50.5	3.46	○
D938-A3C-1915	19.15	79	131	20	50	50.3	3.49	○
D938-A3C-1930	19.30	79	131	20	50	50.1	3.51	○
D938-A3C-1950	19.50	79	131	20	50	49.8	3.55	○
D938-A3C-1960	19.60	79	131	20	50	49.6	3.57	○
D938-A3C-1970	19.70	79	131	20	50	49.5	3.59	○
D938-A3C-1980	19.80	79	131	20	50	49.3	3.60	○
D938-A3C-2000	20.00	79	131	20	50	49.0	3.64	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

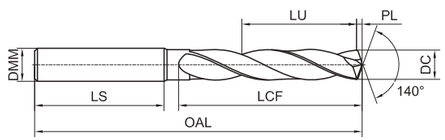
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

5D External Coolant Twist Drill for Plain Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5N-0100	1.00	9	45	4	28	7.5	0.18	●
D938-A5N-0105	1.05	9	45	4	28	7.4	0.19	○
D938-A5N-0110	1.10	9	45	4	28	7.4	0.20	○
D938-A5N-0120	1.20	9	45	4	28	7.2	0.22	○
D938-A5N-0130	1.30	9	45	4	28	7.1	0.24	○
D938-A5N-0140	1.40	9	45	4	28	6.9	0.25	○
D938-A5N-0145	1.45	9	45	4	28	6.8	0.26	○
D938-A5N-0150	1.50	12	55	4	35	9.8	0.27	○
D938-A5N-0155	1.55	12	55	4	35	9.7	0.28	○
D938-A5N-0160	1.60	12	55	4	35	9.6	0.29	●
D938-A5N-0165	1.65	12	55	4	35	9.5	0.30	●
D938-A5N-0170	1.70	12	55	4	35	9.5	0.31	○
D938-A5N-0175	1.75	12	55	4	35	9.4	0.32	○
D938-A5N-0180	1.80	12	55	4	35	9.3	0.33	○
D938-A5N-0185	1.85	12	55	4	35	9.2	0.34	○
D938-A5N-0190	1.90	12	55	4	35	9.2	0.35	●
D938-A5N-0195	1.95	12	55	4	35	9.1	0.35	○
D938-A5N-0200	2.00	18	62	4	38	15.0	0.36	●
D938-A5N-0205	2.05	18	62	4	38	14.9	0.37	○
D938-A5N-0210	2.10	18	62	4	38	14.9	0.38	●
D938-A5N-0215	2.15	18	62	4	38	14.8	0.39	○
D938-A5N-0220	2.20	18	62	4	38	14.7	0.40	○
D938-A5N-0230	2.30	18	62	4	38	14.6	0.42	●
D938-A5N-0235	2.35	18	62	4	38	14.5	0.43	●
D938-A5N-0240	2.40	22	62	4	35	18.4	0.44	●
D938-A5N-0250	2.50	22	62	4	35	18.3	0.45	●
D938-A5N-0255	2.55	22	62	4	35	18.2	0.46	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5N-0260	2.60	22	62	4	35	18.1	0.47	●
D938-A5N-0265	2.65	22	62	4	35	18.0	0.48	○
D938-A5N-0270	2.70	22	62	4	35	18.0	0.49	●
D938-A5N-0275	2.75	22	62	4	35	17.9	0.50	○
D938-A5N-0280	2.80	22	62	4	35	17.8	0.51	●
D938-A5N-0290	2.90	22	62	4	35	17.7	0.53	●
D938-A5N-0295	2.95	22	62	4	35	17.6	0.54	○
D938-A5N-0300	3.00	28	66	6	36	23.5	0.55	●
D938-A5N-0305	3.05	28	66	6	36	23.4	0.56	○
D938-A5N-0310	3.10	28	66	6	36	23.4	0.56	●
D938-A5N-0315	3.15	28	66	6	36	23.3	0.57	●
D938-A5N-0320	3.20	28	66	6	36	23.2	0.58	●
D938-A5N-0325	3.25	28	66	6	36	23.1	0.59	○
D938-A5N-0330	3.30	28	66	6	36	23.1	0.60	●
D938-A5N-0335	3.35	28	66	6	36	23.0	0.61	○
D938-A5N-0340	3.40	28	66	6	36	22.9	0.62	●
D938-A5N-0350	3.50	28	66	6	36	22.8	0.64	●
D938-A5N-0355	3.55	28	66	6	36	22.7	0.65	○
D938-A5N-0360	3.60	28	66	6	36	22.6	0.66	●
D938-A5N-0365	3.65	28	66	6	36	22.5	0.66	●
D938-A5N-0370	3.70	28	66	6	36	22.5	0.67	●
D938-A5N-0380	3.80	36	74	6	36	30.3	0.69	●
D938-A5N-0385	3.85	36	74	6	36	30.2	0.70	○
D938-A5N-0390	3.90	36	74	6	36	30.2	0.71	●
D938-A5N-0395	3.95	36	74	6	36	30.1	0.72	○
D938-A5N-0400	4.00	36	74	6	36	30.0	0.73	●
D938-A5N-0405	4.05	36	74	6	36	29.9	0.74	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

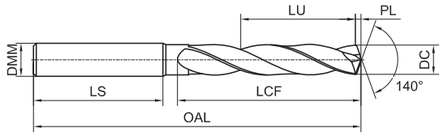
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

5D External Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5N-0410	4.10	36	74	6	36	29.9	0.75	●
D938-A5N-0415	4.15	36	74	6	36	29.8	0.76	○
D938-A5N-0420	4.20	36	74	6	36	29.7	0.76	●
D938-A5N-0425	4.25	36	74	6	36	29.6	0.77	○
D938-A5N-0430	4.30	36	74	6	36	29.6	0.78	●
D938-A5N-0435	4.35	36	74	6	36	29.5	0.79	○
D938-A5N-0440	4.40	36	74	6	36	29.4	0.80	●
D938-A5N-0445	4.45	36	74	6	36	29.3	0.81	○
D938-A5N-0450	4.50	36	74	6	36	29.3	0.82	●
D938-A5N-0455	4.55	36	74	6	36	29.2	0.83	○
D938-A5N-0460	4.60	36	74	6	36	29.1	0.84	●
D938-A5N-0465	4.65	36	74	6	36	29.0	0.85	●
D938-A5N-0470	4.70	36	74	6	36	29.0	0.86	●
D938-A5N-0475	4.75	44	82	6	36	36.9	0.86	○
D938-A5N-0480	4.80	44	82	6	36	36.8	0.87	●
D938-A5N-0485	4.85	44	82	6	36	36.7	0.88	○
D938-A5N-0490	4.90	44	82	6	36	36.7	0.89	●
D938-A5N-0495	4.95	44	82	6	36	36.6	0.90	○
D938-A5N-0500	5.00	44	82	6	36	36.5	0.91	●
D938-A5N-0505	5.05	44	82	6	36	36.4	0.92	●
D938-A5N-0510	5.10	44	82	6	36	36.4	0.93	●
D938-A5N-0515	5.15	44	82	6	36	36.3	0.94	○
D938-A5N-0520	5.20	44	82	6	36	36.2	0.95	●
D938-A5N-0525	5.25	44	82	6	36	36.1	0.96	○
D938-A5N-0530	5.30	44	82	6	36	36.1	0.96	●
D938-A5N-0535	5.35	44	82	6	36	36.0	0.97	○
D938-A5N-0540	5.40	44	82	6	36	35.9	0.98	●
D938-A5N-0545	5.45	44	82	6	36	35.8	0.99	○
D938-A5N-0550	5.50	44	82	6	36	35.8	1.00	●
D938-A5N-0555	5.55	44	82	6	36	35.7	1.01	●
D938-A5N-0560	5.60	44	82	6	36	35.6	1.02	●
D938-A5N-0565	5.65	44	82	6	36	35.5	1.03	○
D938-A5N-0570	5.70	44	82	6	36	35.5	1.04	●
D938-A5N-0575	5.75	44	82	6	36	35.4	1.05	○
D938-A5N-0580	5.80	44	82	6	36	35.3	1.06	●
D938-A5N-0585	5.85	44	82	6	36	35.2	1.06	○
D938-A5N-0590	5.90	44	82	6	36	35.2	1.07	●
D938-A5N-0595	5.95	44	82	6	36	35.1	1.08	○
D938-A5N-0600	6.00	44	82	6	36	35.0	1.09	●
D938-A5N-0605	6.05	44	82	6	36	34.9	1.10	○
D938-A5N-0610	6.10	53	91	8	36	43.9	1.11	●
D938-A5N-0620	6.20	53	91	8	36	43.7	1.13	●
D938-A5N-0625	6.25	53	91	8	36	43.6	1.14	○
D938-A5N-0630	6.30	53	91	8	36	43.6	1.15	●
D938-A5N-0635	6.35	53	91	8	36	43.5	1.16	○
D938-A5N-0640	6.40	53	91	8	36	43.4	1.16	●
D938-A5N-0645	6.45	53	91	8	36	43.3	1.17	○
D938-A5N-0650	6.50	53	91	8	36	43.3	1.18	●
D938-A5N-0655	6.55	53	91	8	36	43.2	1.19	○
D938-A5N-0660	6.60	53	91	8	36	43.1	1.20	●
D938-A5N-0665	6.65	53	91	8	36	43.0	1.21	○
D938-A5N-0670	6.70	53	91	8	36	43.0	1.22	●
D938-A5N-0675	6.75	53	91	8	36	42.9	1.23	○
D938-A5N-0680	6.80	53	91	8	36	42.8	1.24	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

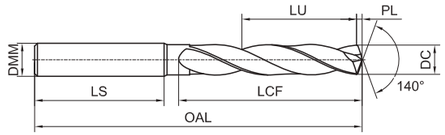
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

5D External Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5N-0685	6.85	53	91	8	36	42.7	1.25	○
D938-A5N-0690	6.90	53	91	8	36	42.7	1.26	●
D938-A5N-0695	6.95	53	91	8	36	42.6	1.26	○
D938-A5N-0700	7.00	53	91	8	36	42.5	1.27	●
D938-A5N-0705	7.05	53	91	8	36	42.4	1.28	○
D938-A5N-0710	7.10	53	91	8	36	42.4	1.29	●
D938-A5N-0720	7.20	53	91	8	36	42.2	1.31	●
D938-A5N-0730	7.30	53	91	8	36	42.1	1.33	●
D938-A5N-0735	7.35	53	91	8	36	42.0	1.34	○
D938-A5N-0740	7.40	53	91	8	36	41.9	1.35	●
D938-A5N-0745	7.45	53	91	8	36	41.8	1.36	●
D938-A5N-0750	7.50	53	91	8	36	41.8	1.36	●
D938-A5N-0755	7.55	53	91	8	36	41.7	1.37	●
D938-A5N-0760	7.60	53	91	8	36	41.6	1.38	●
D938-A5N-0765	7.65	53	91	8	36	41.5	1.39	○
D938-A5N-0770	7.70	53	91	8	36	41.5	1.40	●
D938-A5N-0775	7.75	53	91	8	36	41.4	1.41	○
D938-A5N-0780	7.80	53	91	8	36	41.3	1.42	●
D938-A5N-0785	7.85	53	91	8	36	41.2	1.43	○
D938-A5N-0790	7.90	53	91	8	36	41.2	1.44	●
D938-A5N-0795	7.95	53	91	8	36	41.1	1.45	○
D938-A5N-0800	8.00	53	91	8	36	41.0	1.46	●
D938-A5N-0805	8.05	53	91	8	36	40.9	1.46	○
D938-A5N-0810	8.10	61	103	10	40	48.9	1.47	●
D938-A5N-0815	8.15	61	103	10	40	48.8	1.48	●
D938-A5N-0820	8.20	61	103	10	40	48.7	1.49	●
D938-A5N-0825	8.25	61	103	10	40	48.6	1.50	○
D938-A5N-0830	8.30	61	103	10	40	48.6	1.51	●
D938-A5N-0840	8.40	61	103	10	40	48.4	1.53	●
D938-A5N-0845	8.45	61	103	10	40	48.3	1.54	○
D938-A5N-0850	8.50	61	103	10	40	48.3	1.55	●
D938-A5N-0855	8.55	61	103	10	40	48.2	1.56	○
D938-A5N-0860	8.60	61	103	10	40	48.1	1.57	●
D938-A5N-0870	8.70	61	103	10	40	48.0	1.58	●
D938-A5N-0880	8.80	61	103	10	40	47.8	1.60	●
D938-A5N-0885	8.85	61	103	10	40	47.7	1.61	○
D938-A5N-0890	8.90	61	103	10	40	47.7	1.62	●
D938-A5N-0895	8.95	61	103	10	40	47.6	1.63	○
D938-A5N-0900	9.00	61	103	10	40	47.5	1.64	●
D938-A5N-0905	9.05	61	103	10	40	47.4	1.65	○
D938-A5N-0910	9.10	61	103	10	40	47.4	1.66	●
D938-A5N-0915	9.15	61	103	10	40	47.3	1.67	○
D938-A5N-0920	9.20	61	103	10	40	47.2	1.67	●
D938-A5N-0925	9.25	61	103	10	40	47.1	1.68	●
D938-A5N-0930	9.30	61	103	10	40	47.1	1.69	●
D938-A5N-0935	9.35	61	103	10	40	47.0	1.70	●
D938-A5N-0940	9.40	61	103	10	40	46.9	1.71	●
D938-A5N-0945	9.45	61	103	10	40	46.8	1.72	○
D938-A5N-0950	9.50	61	103	10	40	46.8	1.73	●
D938-A5N-0955	9.55	61	103	10	40	46.7	1.74	●
D938-A5N-0960	9.60	61	103	10	40	46.6	1.75	●
D938-A5N-0965	9.65	61	103	10	40	46.5	1.76	○
D938-A5N-0970	9.70	61	103	10	40	46.5	1.77	●
D938-A5N-0975	9.75	61	103	10	40	46.4	1.77	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material

P | M | K | N | S | H

1 2 3 4 | 5 | 6 7 | 1 2 3 | 1 2 | 3 | 1 2 | 3 | 4 | 5 | 1 2 3 | 4 | 1 | 2

Carbon Steel, Alloy Steel | Alloy Steel, Tool Steel | PH and Ferritic/ Martensitic Steel | Stainless Steel | Gray Cast Iron, Nodular Cast Iron | High Alloy Cast Iron | Forged Aluminum Alloy, Cast Aluminium Alloy | Cast Aluminum Alloy | Copper Alloy | Composite Material | High-temperature Alloy | Titanium Alloy | Hardened Steel | Hardened Steel

<35HRC | 35-48HRC | | | <32HRC | 35-45HRC | Si<12% | Si>12% | <HB200 | | <HB450 | <HB400 | 45-55HRC | 55-60HRC

◎ | ◎ | ◎ | | ○ | ○ | | | | | | | | |

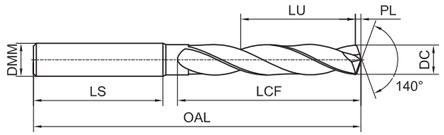
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

5D External Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5N-0980	9.80	61	103	10	40	46.3	1.78	●
D938-A5N-0985	9.85	61	103	10	40	46.2	1.79	○
D938-A5N-0990	9.90	61	103	10	40	46.2	1.80	●
D938-A5N-0995	9.95	61	103	10	40	46.1	1.81	○
D938-A5N-1000	10.00	61	103	10	40	46.0	1.82	●
D938-A5N-1005	10.05	61	103	10	40	45.9	1.83	●
D938-A5N-1010	10.10	71	118	12	45	55.9	1.84	●
D938-A5N-1015	10.15	71	118	12	45	55.8	1.85	○
D938-A5N-1020	10.20	71	118	12	45	55.7	1.86	●
D938-A5N-1025	10.25	71	118	12	45	55.6	1.87	●
D938-A5N-1030	10.30	71	118	12	45	55.6	1.87	●
D938-A5N-1035	10.35	71	118	12	45	55.5	1.88	○
D938-A5N-1040	10.40	71	118	12	45	55.4	1.89	●
D938-A5N-1050	10.50	71	118	12	45	55.3	1.91	●
D938-A5N-1060	10.60	71	118	12	45	55.1	1.93	●
D938-A5N-1070	10.70	71	118	12	45	55.0	1.95	●
D938-A5N-1080	10.80	71	118	12	45	54.8	1.97	●
D938-A5N-1085	10.85	71	118	12	45	54.7	1.97	●
D938-A5N-1090	10.90	71	118	12	45	54.7	1.98	●
D938-A5N-1100	11.00	71	118	12	45	54.5	2.00	●
D938-A5N-1105	11.05	71	118	12	45	54.4	2.01	○
D938-A5N-1110	11.10	71	118	12	45	54.4	2.02	●
D938-A5N-1115	11.15	71	118	12	45	54.3	2.03	○
D938-A5N-1120	11.20	71	118	12	45	54.2	2.04	●
D938-A5N-1125	11.25	71	118	12	45	54.1	2.05	○
D938-A5N-1130	11.30	71	118	12	45	54.1	2.06	●
D938-A5N-1135	11.35	71	118	12	45	54.0	2.07	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5N-1140	11.40	71	118	12	45	53.9	2.07	●
D938-A5N-1145	11.45	71	118	12	45	53.8	2.08	○
D938-A5N-1150	11.50	71	118	12	45	53.8	2.09	●
D938-A5N-1155	11.55	71	118	12	45	53.7	2.10	○
D938-A5N-1160	11.60	71	118	12	45	53.6	2.11	●
D938-A5N-1170	11.70	71	118	12	45	53.5	2.13	●
D938-A5N-1180	11.80	71	118	12	45	53.3	2.15	●
D938-A5N-1190	11.90	71	118	12	45	53.2	2.17	●
D938-A5N-1195	11.95	71	118	12	45	53.1	2.17	○
D938-A5N-1200	12.00	71	118	12	45	53.0	2.18	●
D938-A5N-1205	12.05	71	118	12	45	52.9	2.19	○
D938-A5N-1210	12.10	77	124	14	45	58.9	2.20	○
D938-A5N-1215	12.15	77	124	14	45	58.8	2.21	○
D938-A5N-1220	12.20	77	124	14	45	58.7	2.22	●
D938-A5N-1225	12.25	77	124	14	45	58.6	2.23	○
D938-A5N-1230	12.30	77	124	14	45	58.6	2.24	●
D938-A5N-1240	12.40	77	124	14	45	58.4	2.26	○
D938-A5N-1245	12.45	77	124	14	45	58.3	2.27	○
D938-A5N-1250	12.50	77	124	14	45	58.3	2.27	●
D938-A5N-1255	12.55	77	124	14	45	58.2	2.28	○
D938-A5N-1260	12.60	77	124	14	45	58.1	2.29	●
D938-A5N-1270	12.70	77	124	14	45	58.0	2.31	●
D938-A5N-1275	12.75	77	124	14	45	57.9	2.32	○
D938-A5N-1280	12.80	77	124	14	45	57.8	2.33	●
D938-A5N-1285	12.85	77	124	14	45	57.7	2.34	○
D938-A5N-1290	12.90	77	124	14	45	57.7	2.35	●
D938-A5N-1300	13.00	77	124	14	45	57.5	2.37	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

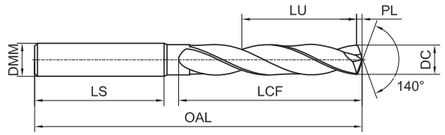
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

5D External Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5N-1305	13.05	77	124	14	45	57.4	2.37	○
D938-A5N-1310	13.10	77	124	14	45	57.4	2.38	○
D938-A5N-1315	13.15	77	124	14	45	57.3	2.39	○
D938-A5N-1320	13.20	77	124	14	45	57.2	2.40	●
D938-A5N-1325	13.25	77	124	14	45	57.1	2.41	○
D938-A5N-1330	13.30	77	124	14	45	57.1	2.42	○
D938-A5N-1335	13.35	77	124	14	45	57.0	2.43	○
D938-A5N-1340	13.40	77	124	14	45	56.9	2.44	○
D938-A5N-1350	13.50	77	124	14	45	56.8	2.46	●
D938-A5N-1355	13.55	77	124	14	45	56.7	2.47	○
D938-A5N-1360	13.60	77	124	14	45	56.6	2.47	○
D938-A5N-1370	13.70	77	124	14	45	56.5	2.49	●
D938-A5N-1375	13.75	77	124	14	45	56.4	2.50	●
D938-A5N-1380	13.80	77	124	14	45	56.3	2.51	●
D938-A5N-1390	13.90	77	124	14	45	56.2	2.53	●
D938-A5N-1395	13.95	77	124	14	45	56.1	2.54	○
D938-A5N-1400	14.00	77	124	14	45	56.0	2.55	●
D938-A5N-1405	14.05	77	124	14	45	55.9	2.56	○
D938-A5N-1410	14.10	83	133	16	48	61.9	2.57	○
D938-A5N-1420	14.20	83	133	16	48	61.7	2.58	●
D938-A5N-1425	14.25	83	133	16	48	61.6	2.59	○
D938-A5N-1430	14.30	83	133	16	48	61.6	2.60	○
D938-A5N-1440	14.40	83	133	16	48	61.4	2.62	○
D938-A5N-1450	14.50	83	133	16	48	61.3	2.64	●
D938-A5N-1460	14.60	83	133	16	48	61.1	2.66	●
D938-A5N-1470	14.70	83	133	16	48	61.0	2.68	○
D938-A5N-1475	14.75	83	133	16	48	60.9	2.68	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5N-1480	14.80	83	133	16	48	60.8	2.69	●
D938-A5N-1490	14.90	83	133	16	48	60.7	2.71	○
D938-A5N-1500	15.00	83	133	16	48	60.5	2.73	●
D938-A5N-1505	15.05	83	133	16	48	60.4	2.74	○
D938-A5N-1510	15.10	83	133	16	48	60.4	2.75	○
D938-A5N-1515	15.15	83	133	16	48	60.3	2.76	○
D938-A5N-1520	15.20	83	133	16	48	60.2	2.77	○
D938-A5N-1525	15.25	83	133	16	48	60.1	2.78	○
D938-A5N-1530	15.30	83	133	16	48	60.1	2.78	○
D938-A5N-1535	15.35	83	133	16	48	60.0	2.79	○
D938-A5N-1540	15.40	83	133	16	48	59.9	2.80	○
D938-A5N-1550	15.50	83	133	16	48	59.8	2.82	●
D938-A5N-1555	15.55	83	133	16	48	59.7	2.83	○
D938-A5N-1560	15.60	83	133	16	48	59.6	2.84	○
D938-A5N-1570	15.70	83	133	16	48	59.5	2.86	●
D938-A5N-1580	15.80	83	133	16	48	59.3	2.88	●
D938-A5N-1590	15.90	83	133	16	48	59.2	2.89	○
D938-A5N-1600	16.00	83	133	16	48	59.0	2.91	●
D938-A5N-1605	16.05	83	133	16	48	58.9	2.92	○
D938-A5N-1610	16.10	93	143	18	48	68.9	2.93	○
D938-A5N-1620	16.20	93	143	18	48	68.7	2.95	○
D938-A5N-1625	16.25	93	143	18	48	68.6	2.96	○
D938-A5N-1630	16.30	93	143	18	48	68.6	2.97	○
D938-A5N-1640	16.40	93	143	18	48	68.4	2.98	○
D938-A5N-1650	16.50	93	143	18	48	68.3	3.00	●
D938-A5N-1660	16.60	93	143	18	48	68.1	3.02	●
D938-A5N-1670	16.70	93	143	18	48	68.0	3.04	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D1-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

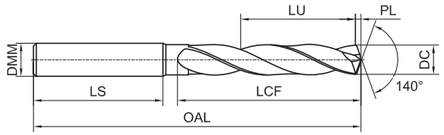
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5N

SHANK DIN 6535HA | AlTiN nano | 5D

5D External Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5N-1675	16.75	93	143	18	48	67.9	3.05	○
D938-A5N-1680	16.80	93	143	18	48	67.8	3.06	○
D938-A5N-1690	16.90	93	143	18	48	67.7	3.08	○
D938-A5N-1695	16.95	93	143	18	48	67.6	3.08	●
D938-A5N-1700	17.00	93	143	18	48	67.5	3.09	●
D938-A5N-1710	17.10	93	143	18	48	67.4	3.11	○
D938-A5N-1720	17.20	93	143	18	48	67.2	3.13	○
D938-A5N-1730	17.30	93	143	18	48	67.1	3.15	○
D938-A5N-1740	17.40	93	143	18	48	66.9	3.17	○
D938-A5N-1750	17.50	93	143	18	48	66.8	3.18	●
D938-A5N-1760	17.60	93	143	18	48	66.6	3.20	○
D938-A5N-1770	17.70	93	143	18	48	66.5	3.22	○
D938-A5N-1780	17.80	93	143	18	48	66.3	3.24	○
D938-A5N-1790	17.90	93	143	18	48	66.2	3.26	○
D938-A5N-1795	17.95	93	143	18	48	66.1	3.27	○
D938-A5N-1800	18.00	93	143	18	48	66.0	3.28	●
D938-A5N-1810	18.10	101	153	20	50	73.9	3.29	○
D938-A5N-1820	18.20	101	153	20	50	73.7	3.31	○
D938-A5N-1830	18.30	101	153	20	50	73.6	3.33	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5N-1840	18.40	101	153	20	50	73.4	3.35	○
D938-A5N-1850	18.50	101	153	20	50	73.3	3.37	●
D938-A5N-1860	18.60	101	153	20	50	73.1	3.38	●
D938-A5N-1870	18.70	101	153	20	50	73.0	3.40	○
D938-A5N-1880	18.80	101	153	20	50	72.8	3.42	○
D938-A5N-1890	18.90	101	153	20	50	72.7	3.44	○
D938-A5N-1900	19.00	101	153	20	50	72.5	3.46	●
D938-A5N-1910	19.10	101	153	20	50	72.4	3.48	○
D938-A5N-1915	19.15	101	153	20	50	72.3	3.49	○
D938-A5N-1920	19.20	101	153	20	50	72.2	3.49	○
D938-A5N-1930	19.30	101	153	20	50	72.1	3.51	○
D938-A5N-1940	19.40	101	153	20	50	71.9	3.53	○
D938-A5N-1950	19.50	101	153	20	50	71.8	3.55	●
D938-A5N-1960	19.60	101	153	20	50	71.6	3.57	○
D938-A5N-1970	19.70	101	153	20	50	71.5	3.59	○
D938-A5N-1980	19.80	101	153	20	50	71.3	3.60	○
D938-A5N-1990	19.90	101	153	20	50	71.2	3.62	○
D938-A5N-2000	20.00	101	153	20	50	71.0	3.64	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎		○	○								

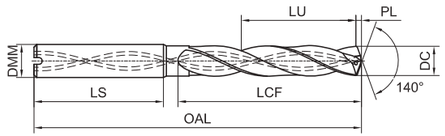
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5C

SHANK DIN 6535HA | AlTiN nano | 5D

5D Internal Coolant Twist Drill for Plain Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5C-0170	1.70	12	55	4	36	9.5	0.31	○
D938-A5C-0180	1.80	12	55	4	36	9.3	0.33	○
D938-A5C-0200	2.00	18	62	4	38	15.0	0.36	●
D938-A5C-0205	2.05	18	62	4	38	14.9	0.37	○
D938-A5C-0210	2.10	18	62	4	38	14.9	0.38	○
D938-A5C-0220	2.20	18	62	4	38	14.7	0.40	○
D938-A5C-0230	2.30	18	62	4	38	14.6	0.42	○
D938-A5C-0235	2.35	18	62	4	38	14.5	0.43	○
D938-A5C-0240	2.40	22	62	4	35	18.4	0.44	○
D938-A5C-0250	2.50	22	62	4	35	18.3	0.45	●
D938-A5C-0255	2.55	22	62	4	35	18.2	0.46	○
D938-A5C-0260	2.60	22	62	4	35	18.1	0.47	●
D938-A5C-0270	2.70	22	62	4	35	18.0	0.49	○
D938-A5C-0275	2.75	22	62	4	35	17.9	0.50	○
D938-A5C-0280	2.80	22	62	4	35	17.8	0.51	●
D938-A5C-0290	2.90	22	62	4	35	17.7	0.53	○
D938-A5C-0295	2.95	22	62	4	35	17.6	0.54	○
D938-A5C-0300	3.00	28	66	6	36	23.5	0.55	●
D938-A5C-0305	3.05	28	66	6	36	23.4	0.56	●
D938-A5C-0310	3.10	28	66	6	36	23.4	0.56	●
D938-A5C-0315	3.15	28	66	6	36	23.3	0.57	○
D938-A5C-0320	3.20	28	66	6	36	23.2	0.58	●
D938-A5C-0325	3.25	28	66	6	36	23.1	0.59	●
D938-A5C-0330	3.30	28	66	6	36	23.1	0.60	●
D938-A5C-0335	3.35	28	66	6	36	23.0	0.61	○
D938-A5C-0340	3.40	28	66	6	36	22.9	0.62	●
D938-A5C-0350	3.50	28	66	6	36	22.8	0.64	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5C-0355	3.55	28	66	6	36	22.7	0.65	○
D938-A5C-0360	3.60	28	66	6	36	22.6	0.66	●
D938-A5C-0365	3.65	28	66	6	36	22.5	0.66	○
D938-A5C-0370	3.70	28	66	6	36	22.5	0.67	●
D938-A5C-0380	3.80	36	74	6	36	30.3	0.69	●
D938-A5C-0385	3.85	36	74	6	36	30.2	0.70	○
D938-A5C-0390	3.90	36	74	6	36	30.2	0.71	●
D938-A5C-0395	3.95	36	74	6	36	30.1	0.72	○
D938-A5C-0400	4.00	36	74	6	36	30.0	0.73	●
D938-A5C-0405	4.05	36	74	6	36	29.9	0.74	●
D938-A5C-0410	4.10	36	74	6	36	29.9	0.75	●
D938-A5C-0415	4.15	36	74	6	36	29.8	0.76	○
D938-A5C-0420	4.20	36	74	6	36	29.7	0.76	●
D938-A5C-0425	4.25	36	74	6	36	29.6	0.77	○
D938-A5C-0430	4.30	36	74	6	36	29.6	0.78	●
D938-A5C-0435	4.35	36	74	6	36	29.5	0.79	○
D938-A5C-0440	4.40	36	74	6	36	29.4	0.80	●
D938-A5C-0445	4.45	36	74	6	36	29.3	0.81	○
D938-A5C-0450	4.50	36	74	6	36	29.3	0.82	●
D938-A5C-0455	4.55	36	74	6	36	29.2	0.83	○
D938-A5C-0460	4.60	36	74	6	36	29.1	0.84	●
D938-A5C-0465	4.65	36	74	6	36	29.0	0.85	●
D938-A5C-0470	4.70	36	74	6	36	29.0	0.86	●
D938-A5C-0475	4.75	44	82	6	36	36.9	0.86	○
D938-A5C-0480	4.80	44	82	6	36	36.8	0.87	●
D938-A5C-0485	4.85	44	82	6	36	36.7	0.88	○
D938-A5C-0490	4.90	44	82	6	36	36.7	0.89	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

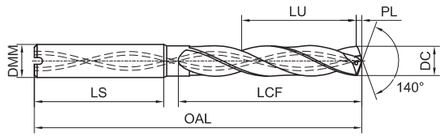
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5C

SHANK DIN 6535HA | AlTiN nano | 5D

5D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5C-0495	4.95	44	82	6	36	36.6	0.90	○
D938-A5C-0500	5.00	44	82	6	36	36.5	0.91	●
D938-A5C-0505	5.05	44	82	6	36	36.4	0.92	●
D938-A5C-0510	5.10	44	82	6	36	36.4	0.93	●
D938-A5C-0515	5.15	44	82	6	36	36.3	0.94	○
D938-A5C-0520	5.20	44	82	6	36	36.2	0.95	●
D938-A5C-0525	5.25	44	82	6	36	36.1	0.96	○
D938-A5C-0530	5.30	44	82	6	36	36.1	0.96	●
D938-A5C-0535	5.35	44	82	6	36	36.0	0.97	○
D938-A5C-0538	5.38	44	82	6	36	35.9	0.98	○
D938-A5C-0540	5.40	44	82	6	36	35.9	0.98	●
D938-A5C-0545	5.45	44	82	6	36	35.8	0.99	○
D938-A5C-0550	5.50	44	82	6	36	35.8	1.00	●
D938-A5C-0555	5.55	44	82	6	36	35.7	1.01	●
D938-A5C-0560	5.60	44	82	6	36	35.6	1.02	●
D938-A5C-0565	5.65	44	82	6	36	35.5	1.03	○
D938-A5C-0570	5.70	44	82	6	36	35.5	1.04	●
D938-A5C-0575	5.75	44	82	6	36	35.4	1.05	○
D938-A5C-0580	5.80	44	82	6	36	35.3	1.06	●
D938-A5C-0585	5.85	44	82	6	36	35.2	1.06	○
D938-A5C-0590	5.90	44	82	6	36	35.2	1.07	●
D938-A5C-0595	5.95	44	82	6	36	35.1	1.08	○
D938-A5C-0600	6.00	44	82	6	36	35.0	1.09	●
D938-A5C-0605	6.05	44	82	6	36	34.9	1.10	○
D938-A5C-0610	6.10	53	91	8	36	43.9	1.11	●
D938-A5C-0620	6.20	53	91	8	36	43.7	1.13	●
D938-A5C-0625	6.25	53	91	8	36	43.6	1.14	○
D938-A5C-0630	6.30	53	91	8	36	43.6	1.15	●
D938-A5C-0635	6.35	53	91	8	36	43.5	1.16	○
D938-A5C-0640	6.40	53	91	8	36	43.4	1.16	●
D938-A5C-0645	6.45	53	91	8	36	43.3	1.17	○
D938-A5C-0650	6.50	53	91	8	36	43.3	1.18	●
D938-A5C-0655	6.55	53	91	8	36	43.2	1.19	○
D938-A5C-0660	6.60	53	91	8	36	43.1	1.20	●
D938-A5C-0665	6.65	53	91	8	36	43.0	1.21	○
D938-A5C-0670	6.70	53	91	8	36	43.0	1.22	●
D938-A5C-0675	6.75	53	91	8	36	42.9	1.23	○
D938-A5C-0680	6.80	53	91	8	36	42.8	1.24	●
D938-A5C-0685	6.85	53	91	8	36	42.7	1.25	○
D938-A5C-0690	6.90	53	91	8	36	42.7	1.26	●
D938-A5C-0695	6.95	53	91	8	36	42.6	1.26	○
D938-A5C-0700	7.00	53	91	8	36	42.5	1.27	●
D938-A5C-0705	7.05	53	91	8	36	42.4	1.28	●
D938-A5C-0710	7.10	53	91	8	36	42.4	1.29	●
D938-A5C-0720	7.20	53	91	8	36	42.2	1.31	●
D938-A5C-0730	7.30	53	91	8	36	42.1	1.33	●
D938-A5C-0735	7.35	53	91	8	36	42.0	1.34	○
D938-A5C-0740	7.40	53	91	8	36	41.9	1.35	●
D938-A5C-0745	7.45	53	91	8	36	41.8	1.36	●
D938-A5C-0750	7.50	53	91	8	36	41.8	1.36	●
D938-A5C-0755	7.55	53	91	8	36	41.7	1.37	●
D938-A5C-0760	7.60	53	91	8	36	41.6	1.38	●
D938-A5C-0765	7.65	53	91	8	36	41.5	1.39	○
D938-A5C-0770	7.70	53	91	8	36	41.5	1.40	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

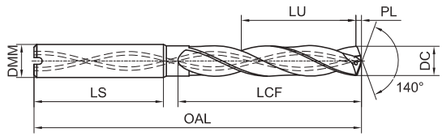
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5C

SHANK DIN 6535HA | AlTiN nano | 5D

5D Internal Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5C-0775	7.75	53	91	8	36	41.4	1.41	○
D938-A5C-0780	7.80	53	91	8	36	41.3	1.42	●
D938-A5C-0785	7.85	53	91	8	36	41.2	1.43	○
D938-A5C-0790	7.90	53	91	8	36	41.2	1.44	●
D938-A5C-0795	7.95	53	91	8	36	41.1	1.45	○
D938-A5C-0800	8.00	53	91	8	36	41.0	1.46	●
D938-A5C-0805	8.05	53	91	8	36	40.9	1.46	●
D938-A5C-0810	8.10	61	103	10	40	48.9	1.47	●
D938-A5C-0815	8.15	61	103	10	40	48.8	1.48	○
D938-A5C-0820	8.20	61	103	10	40	48.7	1.49	●
D938-A5C-0825	8.25	61	103	10	40	48.6	1.50	○
D938-A5C-0830	8.30	61	103	10	40	48.6	1.51	●
D938-A5C-0840	8.40	61	103	10	40	48.4	1.53	●
D938-A5C-0845	8.45	61	103	10	40	48.3	1.54	○
D938-A5C-0850	8.50	61	103	10	40	48.3	1.55	●
D938-A5C-0855	8.55	61	103	10	40	48.2	1.56	○
D938-A5C-0860	8.60	61	103	10	40	48.1	1.57	●
D938-A5C-0870	8.70	61	103	10	40	48.0	1.58	●
D938-A5C-0880	8.80	61	103	10	40	47.8	1.60	●
D938-A5C-0885	8.85	61	103	10	40	47.7	1.61	○
D938-A5C-0890	8.90	61	103	10	40	47.7	1.62	●
D938-A5C-0895	8.95	61	103	10	40	47.6	1.63	○
D938-A5C-0900	9.00	61	103	10	40	47.5	1.64	●
D938-A5C-0905	9.05	61	103	10	40	47.4	1.65	○
D938-A5C-0910	9.10	61	103	10	40	47.4	1.66	●
D938-A5C-0915	9.15	61	103	10	40	47.3	1.67	○
D938-A5C-0920	9.20	61	103	10	40	47.2	1.67	●
D938-A5C-0925	9.25	61	103	10	40	47.1	1.68	●
D938-A5C-0930	9.30	61	103	10	40	47.1	1.69	●
D938-A5C-0935	9.35	61	103	10	40	47.0	1.70	●
D938-A5C-0940	9.40	61	103	10	40	46.9	1.71	●
D938-A5C-0945	9.45	61	103	10	40	46.8	1.72	○
D938-A5C-0950	9.50	61	103	10	40	46.8	1.73	●
D938-A5C-0955	9.55	61	103	10	40	46.7	1.74	●
D938-A5C-0960	9.60	61	103	10	40	46.6	1.75	●
D938-A5C-0965	9.65	61	103	10	40	46.5	1.76	○
D938-A5C-0970	9.70	61	103	10	40	46.5	1.77	●
D938-A5C-0975	9.75	61	103	10	40	46.4	1.77	○
D938-A5C-0980	9.80	61	103	10	40	46.3	1.78	●
D938-A5C-0985	9.85	61	103	10	40	46.2	1.79	○
D938-A5C-0990	9.90	61	103	10	40	46.2	1.80	●
D938-A5C-0992	9.92	61	103	10	40	46.1	1.81	○
D938-A5C-0995	9.95	61	103	10	40	46.1	1.81	○
D938-A5C-1000	10.00	61	103	10	40	46.0	1.82	●
D938-A5C-1005	10.05	61	103	10	40	45.9	1.83	●
D938-A5C-1010	10.10	71	118	12	45	55.9	1.84	●
D938-A5C-1015	10.15	71	118	12	45	55.8	1.85	○
D938-A5C-1020	10.20	71	118	12	45	55.7	1.86	●
D938-A5C-1025	10.25	71	118	12	45	55.6	1.87	●
D938-A5C-1030	10.30	71	118	12	45	55.6	1.87	●
D938-A5C-1035	10.35	71	118	12	45	55.5	1.88	○
D938-A5C-1040	10.40	71	118	12	45	55.4	1.89	●
D938-A5C-1050	10.50	71	118	12	45	55.3	1.91	●
D938-A5C-1060	10.60	71	118	12	45	55.1	1.93	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

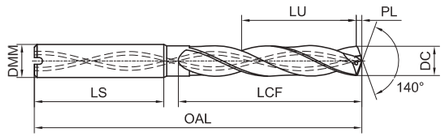
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5C

SHANK DIN 6535HA | AlTiN nano | 5D

5D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5C-1070	10.70	71	118	12	45	55.0	1.95	●
D938-A5C-1080	10.80	71	118	12	45	54.8	1.97	●
D938-A5C-1085	10.85	71	118	12	45	54.7	1.97	●
D938-A5C-1090	10.90	71	118	12	45	54.7	1.98	●
D938-A5C-1100	11.00	71	118	12	45	54.5	2.00	●
D938-A5C-1105	11.05	71	118	12	45	54.4	2.01	○
D938-A5C-1110	11.10	71	118	12	45	54.4	2.02	●
D938-A5C-1115	11.15	71	118	12	45	54.3	2.03	○
D938-A5C-1120	11.20	71	118	12	45	54.2	2.04	●
D938-A5C-1125	11.25	71	118	12	45	54.1	2.05	○
D938-A5C-1130	11.30	71	118	12	45	54.1	2.06	●
D938-A5C-1135	11.35	71	118	12	45	54.0	2.07	○
D938-A5C-1140	11.40	71	118	12	45	53.9	2.07	●
D938-A5C-1145	11.45	71	118	12	45	53.8	2.08	○
D938-A5C-1150	11.50	71	118	12	45	53.8	2.09	●
D938-A5C-1155	11.55	71	118	12	45	53.7	2.10	○
D938-A5C-1160	11.60	71	118	12	45	53.6	2.11	●
D938-A5C-1170	11.70	71	118	12	45	53.5	2.13	●
D938-A5C-1180	11.80	71	118	12	45	53.3	2.15	●
D938-A5C-1190	11.90	71	118	12	45	53.2	2.17	●
D938-A5C-1195	11.95	71	118	12	45	53.1	2.17	○
D938-A5C-1200	12.00	71	118	12	45	53.0	2.18	●
D938-A5C-1205	12.05	71	118	12	45	52.9	2.19	●
D938-A5C-1210	12.10	77	124	14	45	58.9	2.20	●
D938-A5C-1215	12.15	77	124	14	45	58.8	2.21	○
D938-A5C-1220	12.20	77	124	14	45	58.7	2.22	●
D938-A5C-1225	12.25	77	124	14	45	58.6	2.23	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5C-1230	12.30	77	124	14	45	58.6	2.24	○
D938-A5C-1240	12.40	77	124	14	45	58.4	2.26	○
D938-A5C-1245	12.45	77	124	14	45	58.3	2.27	○
D938-A5C-1250	12.50	77	124	14	45	58.3	2.27	●
D938-A5C-1255	12.55	77	124	14	45	58.2	2.28	○
D938-A5C-1260	12.60	77	124	14	45	58.1	2.29	●
D938-A5C-1270	12.70	77	124	14	45	58.0	2.31	●
D938-A5C-1275	12.75	77	124	14	45	57.9	2.32	○
D938-A5C-1280	12.80	77	124	14	45	57.8	2.33	○
D938-A5C-1285	12.85	77	124	14	45	57.7	2.34	●
D938-A5C-1290	12.90	77	124	14	45	57.7	2.35	○
D938-A5C-1300	13.00	77	124	14	45	57.5	2.37	●
D938-A5C-1305	13.05	77	124	14	45	57.4	2.37	○
D938-A5C-1310	13.10	77	124	14	45	57.4	2.38	○
D938-A5C-1315	13.15	77	124	14	45	57.3	2.39	○
D938-A5C-1320	13.20	77	124	14	45	57.2	2.40	○
D938-A5C-1325	13.25	77	124	14	45	57.1	2.41	○
D938-A5C-1330	13.30	77	124	14	45	57.1	2.42	●
D938-A5C-1335	13.35	77	124	14	45	57.0	2.43	○
D938-A5C-1350	13.50	77	124	14	45	56.8	2.46	●
D938-A5C-1355	13.55	77	124	14	45	56.7	2.47	○
D938-A5C-1360	13.60	77	124	14	45	56.6	2.47	○
D938-A5C-1370	13.70	77	124	14	45	56.5	2.49	●
D938-A5C-1375	13.75	77	124	14	45	56.4	2.50	○
D938-A5C-1380	13.80	77	124	14	45	56.3	2.51	●
D938-A5C-1390	13.90	77	124	14	45	56.2	2.53	○
D938-A5C-1395	13.95	77	124	14	45	56.1	2.54	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

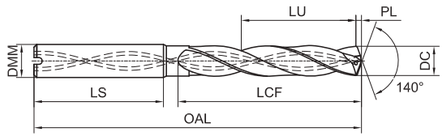
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5C

SHANK DIN 6535HA | AlTiN nano | 5D

5D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5C-1400	14.00	77	124	14	45	56.0	2.55	●
D938-A5C-1405	14.05	77	124	14	45	55.9	2.56	○
D938-A5C-1410	14.10	83	133	16	48	61.9	2.57	○
D938-A5C-1420	14.20	83	133	16	48	61.7	2.58	●
D938-A5C-1425	14.25	83	133	16	48	61.6	2.59	○
D938-A5C-1430	14.30	83	133	16	48	61.6	2.60	●
D938-A5C-1440	14.40	83	133	16	48	61.4	2.62	○
D938-A5C-1450	14.50	83	133	16	48	61.3	2.64	●
D938-A5C-1460	14.60	83	133	16	48	61.1	2.66	○
D938-A5C-1470	14.70	83	133	16	48	61.0	2.68	○
D938-A5C-1475	14.75	83	133	16	48	60.9	2.68	○
D938-A5C-1480	14.80	83	133	16	48	60.8	2.69	○
D938-A5C-1500	15.00	83	133	16	48	60.5	2.73	●
D938-A5C-1505	15.05	83	133	16	48	60.4	2.74	○
D938-A5C-1510	15.10	83	133	16	48	60.4	2.75	●
D938-A5C-1515	15.15	83	133	16	48	60.3	2.76	○
D938-A5C-1520	15.20	83	133	16	48	60.2	2.77	●
D938-A5C-1525	15.25	83	133	16	48	60.1	2.78	○
D938-A5C-1530	15.30	83	133	16	48	60.1	2.78	○
D938-A5C-1535	15.35	83	133	16	48	60.0	2.79	○
D938-A5C-1550	15.50	83	133	16	48	59.8	2.82	●
D938-A5C-1555	15.55	83	133	16	48	59.7	2.83	○
D938-A5C-1570	15.70	83	133	16	48	59.5	2.86	○
D938-A5C-1580	15.80	83	133	16	48	59.3	2.88	●
D938-A5C-1590	15.90	83	133	16	48	59.2	2.89	○
D938-A5C-1600	16.00	83	133	16	48	59.0	2.91	●
D938-A5C-1610	16.10	93	143	18	48	68.9	2.93	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5C-1620	16.20	93	143	18	48	68.7	2.95	○
D938-A5C-1625	16.25	93	143	18	48	68.6	2.96	○
D938-A5C-1630	16.30	93	143	18	48	68.6	2.97	○
D938-A5C-1650	16.50	93	143	18	48	68.3	3.00	●
D938-A5C-1660	16.60	93	143	18	48	68.1	3.02	○
D938-A5C-1670	16.70	93	143	18	48	68.0	3.04	○
D938-A5C-1675	16.75	93	143	18	48	67.9	3.05	○
D938-A5C-1680	16.80	93	143	18	48	67.8	3.06	○
D938-A5C-1690	16.90	93	143	18	48	67.7	3.08	○
D938-A5C-1695	16.95	93	143	18	48	67.6	3.08	○
D938-A5C-1700	17.00	93	143	18	48	67.5	3.09	●
D938-A5C-1710	17.10	93	143	18	48	67.4	3.11	○
D938-A5C-1720	17.20	93	143	18	48	67.2	3.13	○
D938-A5C-1730	17.30	93	143	18	48	67.1	3.15	○
D938-A5C-1740	17.40	93	143	18	48	66.9	3.17	○
D938-A5C-1750	17.50	93	143	18	48	66.8	3.18	●
D938-A5C-1770	17.70	93	143	18	48	66.5	3.22	○
D938-A5C-1780	17.80	93	143	18	48	66.3	3.24	○
D938-A5C-1795	17.95	93	143	18	48	66.1	3.27	○
D938-A5C-1800	18.00	93	143	18	48	66.0	3.28	●
D938-A5C-1805	18.05	93	143	18	48	65.9	3.28	○
D938-A5C-1810	18.10	101	153	20	50	73.9	3.29	○
D938-A5C-1820	18.20	101	153	20	50	73.7	3.31	○
D938-A5C-1850	18.50	101	153	20	50	73.3	3.37	●
D938-A5C-1860	18.60	101	153	20	50	73.1	3.38	○
D938-A5C-1870	18.70	101	153	20	50	73.0	3.40	○
D938-A5C-1880	18.80	101	153	20	50	72.8	3.42	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

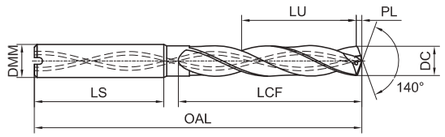
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A5C

SHANK DIN 6535HA | AlTiN nano | 5D

5D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A5C-1900	19.00	101	153	20	50	72.5	3.46	●
D938-A5C-1915	19.15	101	153	20	50	72.3	3.49	○
D938-A5C-1950	19.50	101	153	20	50	71.8	3.55	●
D938-A5C-1960	19.60	101	153	20	50	71.6	3.57	○
D938-A5C-1970	19.70	101	153	20	50	71.5	3.59	○
D938-A5C-1980	19.80	101	153	20	50	71.3	3.60	○
D938-A5C-2000	20.00	101	153	20	50	71.0	3.64	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

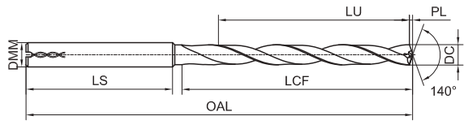
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P126

D938-A8C

SHANK DIN 6535HA | AlTiN nano | 8D

8D Internal Coolant Twist Drill for Plain Steel Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A8C-0205	2.05	26	66	4	34	22.9	0.37	○
D938-A8C-0215	2.15	26	66	4	34	22.8	0.39	○
D938-A8C-0250	2.50	31	66	4	30	27.3	0.45	○
D938-A8C-0255	2.55	31	66	4	30	27.2	0.46	○
D938-A8C-0280	2.80	31	66	4	30	26.8	0.51	●
D938-A8C-0290	2.90	31	66	4	30	26.7	0.53	●
D938-A8C-0300	3.00	34	72	6	36	29.5	0.55	●
D938-A8C-0305	3.05	34	72	6	36	29.4	0.56	○
D938-A8C-0310	3.10	34	72	6	36	29.4	0.56	●
D938-A8C-0320	3.20	34	72	6	36	29.2	0.58	●
D938-A8C-0325	3.25	34	72	6	36	29.1	0.59	●
D938-A8C-0330	3.30	34	72	6	36	29.1	0.60	●
D938-A8C-0340	3.40	34	72	6	36	28.9	0.62	●
D938-A8C-0350	3.50	34	72	6	36	28.8	0.64	●
D938-A8C-0360	3.60	34	72	6	36	28.6	0.66	●
D938-A8C-0365	3.65	34	72	6	36	28.5	0.66	○
D938-A8C-0370	3.70	34	72	6	36	28.5	0.67	●
D938-A8C-0380	3.80	43	81	6	36	37.3	0.69	○
D938-A8C-0390	3.90	43	81	6	36	37.2	0.71	●
D938-A8C-0400	4.00	43	81	6	36	37.0	0.73	●
D938-A8C-0410	4.10	43	81	6	36	36.9	0.75	●
D938-A8C-0415	4.15	43	81	6	36	36.8	0.76	○
D938-A8C-0420	4.20	43	81	6	36	36.7	0.76	●
D938-A8C-0425	4.25	43	81	6	36	36.6	0.77	○
D938-A8C-0430	4.30	43	81	6	36	36.6	0.78	●
D938-A8C-0440	4.40	43	81	6	36	36.4	0.80	●
D938-A8C-0450	4.50	43	81	6	36	36.3	0.82	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A8C-0455	4.55	43	81	6	36	36.2	0.83	○
D938-A8C-0460	4.60	43	81	6	36	36.1	0.84	●
D938-A8C-0470	4.70	43	81	6	36	36.0	0.86	●
D938-A8C-0480	4.80	57	95	6	36	49.8	0.87	●
D938-A8C-0490	4.90	57	95	6	36	49.7	0.89	●
D938-A8C-0500	5.00	57	95	6	36	49.5	0.91	●
D938-A8C-0510	5.10	57	95	6	36	49.4	0.93	●
D938-A8C-0520	5.20	57	95	6	36	49.2	0.95	●
D938-A8C-0530	5.30	57	95	6	36	49.1	0.96	●
D938-A8C-0540	5.40	57	95	6	36	48.9	0.98	●
D938-A8C-0550	5.50	57	95	6	36	48.8	1.00	●
D938-A8C-0560	5.60	57	95	6	36	48.6	1.02	●
D938-A8C-0570	5.70	57	95	6	36	48.5	1.04	●
D938-A8C-0580	5.80	57	95	6	36	48.3	1.06	●
D938-A8C-0590	5.90	57	95	6	36	48.2	1.07	●
D938-A8C-0600	6.00	57	95	6	36	48.0	1.09	●
D938-A8C-0610	6.10	76	114	8	36	66.9	1.11	●
D938-A8C-0620	6.20	76	114	8	36	66.7	1.13	●
D938-A8C-0630	6.30	76	114	8	36	66.6	1.15	●
D938-A8C-0640	6.40	76	114	8	36	66.4	1.16	●
D938-A8C-0650	6.50	76	114	8	36	66.3	1.18	●
D938-A8C-0660	6.60	76	114	8	36	66.1	1.20	●
D938-A8C-0670	6.70	76	114	8	36	66.0	1.22	●
D938-A8C-0680	6.80	76	114	8	36	65.8	1.24	●
D938-A8C-0690	6.90	76	114	8	36	65.7	1.26	●
D938-A8C-0700	7.00	76	114	8	36	65.5	1.27	●
D938-A8C-0710	7.10	76	114	8	36	65.4	1.29	●

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

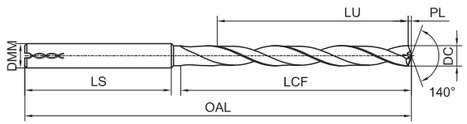
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D938-A8C

SHANK DIN 6535HA | AlTiN nano | 8D

8D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A8C-0720	7.20	76	114	8	36	65.2	1.31	●
D938-A8C-0730	7.30	76	114	8	36	65.1	1.33	●
D938-A8C-0740	7.40	76	114	8	36	64.9	1.35	○
D938-A8C-0750	7.50	76	114	8	36	64.8	1.36	●
D938-A8C-0760	7.60	76	114	8	36	64.6	1.38	●
D938-A8C-0770	7.70	76	114	8	36	64.5	1.40	●
D938-A8C-0780	7.80	76	114	8	36	64.3	1.42	●
D938-A8C-0790	7.90	76	114	8	36	64.2	1.44	●
D938-A8C-0800	8.00	76	114	8	36	64.0	1.46	●
D938-A8C-0805	8.05	76	114	8	36	63.9	1.46	○
D938-A8C-0810	8.10	95	142	10	40	82.9	1.47	●
D938-A8C-0820	8.20	95	142	10	40	82.7	1.49	●
D938-A8C-0830	8.30	95	142	10	40	82.6	1.51	●
D938-A8C-0840	8.40	95	142	10	40	82.4	1.53	●
D938-A8C-0850	8.50	95	142	10	40	82.3	1.55	●
D938-A8C-0860	8.60	95	142	10	40	82.1	1.57	●
D938-A8C-0870	8.70	95	142	10	40	82.0	1.58	●
D938-A8C-0880	8.80	95	142	10	40	81.8	1.60	●
D938-A8C-0890	8.90	95	142	10	40	81.7	1.62	●
D938-A8C-0900	9.00	95	142	10	40	81.5	1.64	●
D938-A8C-0910	9.10	95	142	10	40	81.4	1.66	●
D938-A8C-0920	9.20	95	142	10	40	81.2	1.67	●
D938-A8C-0930	9.30	95	142	10	40	81.1	1.69	●
D938-A8C-0940	9.40	95	142	10	40	80.9	1.71	●
D938-A8C-0950	9.50	95	142	10	40	80.8	1.73	●
D938-A8C-0960	9.60	95	142	10	40	80.6	1.75	○
D938-A8C-0970	9.70	95	142	10	40	80.5	1.77	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A8C-0980	9.80	95	142	10	40	80.3	1.78	●
D938-A8C-0990	9.90	95	142	10	40	80.2	1.80	●
D938-A8C-1000	10.00	95	142	10	40	80.0	1.82	●
D938-A8C-1010	10.10	114	162	12	45	98.9	1.84	○
D938-A8C-1020	10.20	114	162	12	45	98.7	1.86	●
D938-A8C-1030	10.30	114	162	12	45	98.6	1.87	●
D938-A8C-1040	10.40	114	162	12	45	98.4	1.89	●
D938-A8C-1050	10.50	114	162	12	45	98.3	1.91	●
D938-A8C-1060	10.60	114	162	12	45	98.1	1.93	●
D938-A8C-1070	10.70	114	162	12	45	98.0	1.95	○
D938-A8C-1080	10.80	114	162	12	45	97.8	1.97	●
D938-A8C-1090	10.90	114	162	12	45	97.7	1.98	●
D938-A8C-1100	11.00	114	162	12	45	97.5	2.00	●
D938-A8C-1110	11.10	114	162	12	45	97.4	2.02	○
D938-A8C-1120	11.20	114	162	12	45	97.2	2.04	●
D938-A8C-1130	11.30	114	162	12	45	97.1	2.06	○
D938-A8C-1140	11.40	114	162	12	45	96.9	2.07	●
D938-A8C-1150	11.50	114	162	12	45	96.8	2.09	●
D938-A8C-1160	11.60	114	162	12	45	96.6	2.11	●
D938-A8C-1170	11.70	114	162	12	45	96.5	2.13	●
D938-A8C-1180	11.80	114	162	12	45	96.3	2.15	●
D938-A8C-1190	11.90	114	162	12	45	96.2	2.17	●
D938-A8C-1200	12.00	114	162	12	45	96.0	2.18	●
D938-A8C-1210	12.10	133	182	14	45	114.9	2.20	●
D938-A8C-1220	12.20	133	182	14	45	114.7	2.22	○
D938-A8C-1230	12.30	133	182	14	45	114.6	2.24	○
D938-A8C-1240	12.40	133	182	14	45	114.4	2.26	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

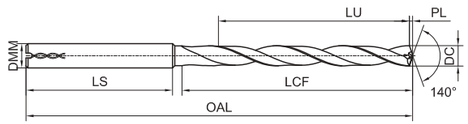
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D938-A8C

SHANK DIN 6535HA | AlTiN nano | 8D

8D Internal Coolant Twist Drill for Plain Steel Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A8C-1250	12.50	133	182	14	45	114.3	2.27	●
D938-A8C-1260	12.60	133	182	14	45	114.1	2.29	○
D938-A8C-1270	12.70	133	182	14	45	114.0	2.31	○
D938-A8C-1280	12.80	133	182	14	45	113.8	2.33	○
D938-A8C-1290	12.90	133	182	14	45	113.7	2.35	○
D938-A8C-1300	13.00	133	182	14	45	113.5	2.37	●
D938-A8C-1320	13.20	133	182	14	45	113.2	2.40	○
D938-A8C-1330	13.30	133	182	14	45	113.1	2.42	○
D938-A8C-1350	13.50	133	182	14	45	112.8	2.46	●
D938-A8C-1360	13.60	133	182	14	45	112.6	2.47	○
D938-A8C-1370	13.70	133	182	14	45	112.5	2.49	○
D938-A8C-1380	13.80	133	182	14	45	112.3	2.51	○
D938-A8C-1390	13.90	133	182	14	45	112.2	2.53	○
D938-A8C-1400	14.00	133	182	14	45	112.0	2.55	●
D938-A8C-1405	14.05	133	182	14	45	111.9	2.56	○
D938-A8C-1410	14.10	152	203	16	48	130.9	2.57	○
D938-A8C-1420	14.20	152	203	16	48	130.7	2.58	○
D938-A8C-1430	14.30	152	203	16	48	130.6	2.60	○
D938-A8C-1450	14.50	152	203	16	48	130.3	2.64	●
D938-A8C-1460	14.60	152	203	16	48	130.1	2.66	○
D938-A8C-1470	14.70	152	203	16	48	130.0	2.68	○
D938-A8C-1480	14.80	152	203	16	48	129.8	2.69	○
D938-A8C-1500	15.00	152	203	16	48	129.5	2.73	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A8C-1510	15.10	152	203	16	48	129.4	2.75	○
D938-A8C-1520	15.20	152	203	16	48	129.2	2.77	○
D938-A8C-1530	15.30	152	203	16	48	129.1	2.78	○
D938-A8C-1550	15.50	152	203	16	48	128.8	2.82	●
D938-A8C-1570	15.70	152	203	16	48	128.5	2.86	○
D938-A8C-1580	15.80	152	203	16	48	128.3	2.88	○
D938-A8C-1590	15.90	152	203	16	48	128.2	2.89	○
D938-A8C-1600	16.00	152	203	16	48	128.0	2.91	●
D938-A8C-1610	16.10	171	222	18	48	146.9	2.93	○
D938-A8C-1615	16.15	171	222	18	48	146.8	2.94	○
D938-A8C-1650	16.50	171	222	18	48	146.3	3.00	●
D938-A8C-1670	16.70	171	222	18	48	146.0	3.04	○
D938-A8C-1700	17.00	171	222	18	48	145.5	3.09	●
D938-A8C-1740	17.40	171	222	18	48	144.9	3.17	○
D938-A8C-1750	17.50	171	222	18	48	144.8	3.18	○
D938-A8C-1780	17.80	171	222	18	48	144.3	3.24	○
D938-A8C-1800	18.00	171	222	18	48	144.0	3.28	●
D938-A8C-1850	18.50	190	243	20	50	162.3	3.37	○
D938-A8C-1900	19.00	190	243	20	50	161.5	3.46	○
D938-A8C-1950	19.50	190	243	20	50	160.8	3.55	○
D938-A8C-1980	19.80	190	243	20	50	160.3	3.60	○
D938-A8C-2000	20.00	190	243	20	50	160.0	3.64	○

Unit (mm)

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Range of Sizes	DC(m7)	DMM(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

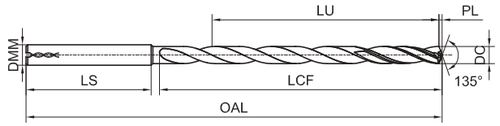
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D938-A12C

SHANK DIN 6535HA | AlTiN nano | 12D

D938 12D Deep Hole Twist Drill for Plain Steel Machining



Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A12C-0300	3.00	54	92	6	36	49.5	0.62	●
D938-A12C-0310	3.10	54	92	6	36	49.4	0.64	○
D938-A12C-0320	3.20	54	92	6	36	49.2	0.66	○
D938-A12C-0330	3.30	54	92	6	36	49.1	0.68	●
D938-A12C-0340	3.40	54	92	6	36	48.9	0.70	○
D938-A12C-0350	3.50	54	92	6	36	48.8	0.72	●
D938-A12C-0360	3.60	54	92	6	36	48.6	0.75	○
D938-A12C-0370	3.70	54	92	6	36	48.5	0.77	○
D938-A12C-0380	3.80	64	102	6	36	58.3	0.79	●
D938-A12C-0390	3.90	64	102	6	36	58.2	0.81	●
D938-A12C-0400	4.00	64	102	6	36	58.0	0.83	●
D938-A12C-0410	4.10	64	102	6	36	57.9	0.85	○
D938-A12C-0420	4.20	64	102	6	36	57.7	0.87	●
D938-A12C-0430	4.30	64	102	6	36	57.6	0.89	●
D938-A12C-0440	4.40	64	102	6	36	57.4	0.91	○
D938-A12C-0450	4.50	64	102	6	36	57.3	0.93	●
D938-A12C-0460	4.60	64	102	6	36	57.1	0.95	○
D938-A12C-0470	4.70	64	102	6	36	57.0	0.97	●
D938-A12C-0480	4.80	83	121	6	36	75.8	0.99	●
D938-A12C-0490	4.90	83	121	6	36	75.7	1.01	○
D938-A12C-0500	5.00	83	121	6	36	75.5	1.04	●
D938-A12C-0510	5.10	83	121	6	36	75.4	1.06	○
D938-A12C-0520	5.20	83	121	6	36	75.2	1.08	○
D938-A12C-0530	5.30	83	121	6	36	75.1	1.10	○
D938-A12C-0540	5.40	83	121	6	36	74.9	1.12	○

Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A12C-0550	5.50	83	121	6	36	74.8	1.14	●
D938-A12C-0560	5.60	83	121	6	36	74.6	1.16	○
D938-A12C-0570	5.70	83	121	6	36	74.5	1.18	○
D938-A12C-0580	5.80	83	121	6	36	74.3	1.20	○
D938-A12C-0590	5.90	83	121	6	36	74.2	1.22	○
D938-A12C-0600	6.00	83	121	6	36	74.0	1.24	●
D938-A12C-0610	6.10	110	148	8	36	100.9	1.26	●
D938-A12C-0620	6.20	110	148	8	36	100.7	1.28	○
D938-A12C-0630	6.30	110	148	8	36	100.6	1.30	○
D938-A12C-0640	6.40	110	148	8	36	100.4	1.33	○
D938-A12C-0650	6.50	110	148	8	36	100.3	1.35	●
D938-A12C-0660	6.60	110	148	8	36	100.1	1.37	○
D938-A12C-0670	6.70	110	148	8	36	100.0	1.39	○
D938-A12C-0680	6.80	110	148	8	36	99.8	1.41	●
D938-A12C-0690	6.90	110	148	8	36	99.7	1.43	○
D938-A12C-0700	7.00	110	148	8	36	99.5	1.45	●
D938-A12C-0710	7.10	110	148	8	36	99.4	1.47	○
D938-A12C-0720	7.20	110	148	8	36	99.2	1.49	○
D938-A12C-0730	7.30	110	148	8	36	99.1	1.51	○
D938-A12C-0740	7.40	110	148	8	36	98.9	1.53	○
D938-A12C-0750	7.50	110	148	8	36	98.8	1.55	○
D938-A12C-0760	7.60	110	148	8	36	98.6	1.57	○
D938-A12C-0770	7.70	110	148	8	36	98.5	1.59	○
D938-A12C-0780	7.80	110	148	8	36	98.3	1.62	○
D938-A12C-0790	7.90	110	148	8	36	98.2	1.64	○

●Stock ○Available Upon Order Notes: Non-standard customization is available for D3-D20 tools Unit (mm)

Notes: The depth drill uses a drill bit of the same specification as D938-A3C as a pilot drill.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

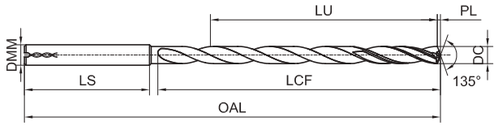
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D938-A12C

SHANK DIN 6535HA | AlTiN nano | 12D

D938 12D Deep Hole Twist Drill for Plain Steel Machining



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Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A12C-0800	8.00	110	148	8	36	98.0	1.66	●
D938-A12C-0810	8.10	138	180	10	40	125.9	1.68	○
D938-A12C-0820	8.20	138	180	10	40	125.7	1.70	○
D938-A12C-0830	8.30	138	180	10	40	125.6	1.72	○
D938-A12C-0840	8.40	138	180	10	40	125.4	1.74	○
D938-A12C-0850	8.50	138	180	10	40	125.3	1.76	●
D938-A12C-0860	8.60	138	180	10	40	125.1	1.78	○
D938-A12C-0870	8.70	138	180	10	40	125.0	1.80	●
D938-A12C-0880	8.80	138	180	10	40	124.8	1.82	○
D938-A12C-0890	8.90	138	180	10	40	124.7	1.84	○
D938-A12C-0900	9.00	138	180	10	40	124.5	1.86	●
D938-A12C-0910	9.10	138	180	10	40	124.4	1.88	○
D938-A12C-0920	9.20	138	180	10	40	124.2	1.91	○
D938-A12C-0930	9.30	138	180	10	40	124.1	1.93	○
D938-A12C-0940	9.40	138	180	10	40	123.9	1.95	○
D938-A12C-0950	9.50	138	180	10	40	123.8	1.97	●
D938-A12C-0960	9.60	138	180	10	40	123.6	1.99	○
D938-A12C-0970	9.70	138	180	10	40	123.5	2.01	○
D938-A12C-0980	9.80	138	180	10	40	123.3	2.03	○
D938-A12C-0990	9.90	138	180	10	40	123.2	2.05	○
D938-A12C-1000	10.00	138	180	10	40	123.0	2.07	●
D938-A12C-1010	10.10	158	206	12	45	142.9	2.09	○
D938-A12C-1020	10.20	158	206	12	45	142.7	2.11	○
D938-A12C-1030	10.30	158	206	12	45	142.6	2.13	○
D938-A12C-1050	10.50	158	206	12	45	142.3	2.17	●

Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A12C-1060	10.60	158	206	12	45	142.1	2.20	○
D938-A12C-1080	10.80	158	206	12	45	141.8	2.24	○
D938-A12C-1100	11.00	158	206	12	45	141.5	2.28	○
D938-A12C-1120	11.20	158	206	12	45	141.2	2.32	○
D938-A12C-1150	11.50	158	206	12	45	140.8	2.38	○
D938-A12C-1160	11.60	158	206	12	45	140.6	2.40	○
D938-A12C-1180	11.80	158	206	12	45	140.3	2.44	○
D938-A12C-1190	11.90	158	206	12	45	140.2	2.46	○
D938-A12C-1200	12.00	158	206	12	45	140.0	2.49	●
D938-A12C-1210	12.10	182	230	14	45	163.9	2.51	○
D938-A12C-1220	12.20	182	230	14	45	163.7	2.53	○
D938-A12C-1230	12.30	182	230	14	45	163.6	2.55	○
D938-A12C-1240	12.40	182	230	14	45	163.4	2.57	○
D938-A12C-1250	12.50	182	230	14	45	163.3	2.59	○
D938-A12C-1260	12.60	182	230	14	45	163.1	2.61	○
D938-A12C-1270	12.70	182	230	14	45	163.0	2.63	○
D938-A12C-1280	12.80	182	230	14	45	162.8	2.65	○
D938-A12C-1300	13.00	182	230	14	45	162.5	2.69	○
D938-A12C-1310	13.10	182	230	14	45	162.4	2.71	○
D938-A12C-1320	13.20	182	230	14	45	162.2	2.73	○
D938-A12C-1350	13.50	182	230	14	45	161.8	2.80	○
D938-A12C-1380	13.80	182	230	14	45	161.3	2.86	○
D938-A12C-1400	14.00	182	230	14	45	161.0	2.90	○
D938-A12C-1420	14.20	208	260	16	48	186.7	2.94	○
D938-A12C-1450	14.50	208	260	16	48	186.3	3.00	○

●Stock ○Available Upon Order Notes: Non-standard customization is available for D3-D20 tools Unit (mm)

Notes: The depth drill uses a drill bit of the same specification as D938-A3C as a pilot drill.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

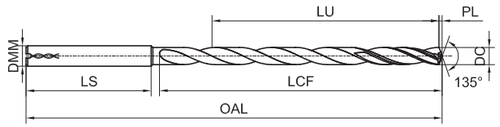
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D938-A12C

SHANK DIN 6535HA | AlTiN nano | 12D

D938 12D deep hole twist drill for plain steel machining



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Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A12C-1480	14.80	208	260	16	48	185.8	3.07	○
D938-A12C-1500	15.00	208	260	16	48	185.5	3.11	○
D938-A12C-1550	15.50	208	260	16	48	184.8	3.21	○
D938-A12C-1580	15.80	208	260	16	48	184.3	3.27	○
D938-A12C-1600	16.00	208	260	16	48	184.0	3.31	○
D938-A12C-1750	17.50	234	285	18	48	207.8	3.62	○
D938-A12C-1900	19.00	258	310	20	50	229.5	3.94	○

●Stock ○Available Upon Order Notes: Non-standard customization is available for D3-D20 tools Unit (mm)

Notes: The depth drill uses a drill bit of the same specification as D938-A3C as a pilot drill.

Range of Sizes	DC(h7)	DMM(h6)
=3	0.000/-0.010	0.000/-0.006
>3—6	0.000/-0.012	0.000/-0.008
>6—10	0.000/-0.015	0.000/-0.009
>10—18	0.000/-0.018	0.000/-0.011
>18—20	0.000/-0.021	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

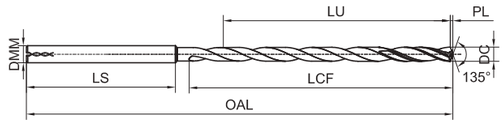
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D938-A15C

SHANK DIN 6535HA | AlTiN nano | 15D

D938 15D Deep Hole Twist Drill for Plain Steel Machining



Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A15C-0300	3.00	55	95	6	36	50.5	0.62	●
D938-A15C-0310	3.10	67	106	6	36	62.4	0.64	○
D938-A15C-0320	3.20	67	106	6	36	62.2	0.66	○
D938-A15C-0330	3.30	67	106	6	36	62.1	0.68	○
D938-A15C-0340	3.40	67	106	6	36	61.9	0.70	○
D938-A15C-0350	3.50	76	116	6	36	70.8	0.72	●
D938-A15C-0360	3.60	76	116	6	36	70.6	0.75	○
D938-A15C-0370	3.70	76	116	6	36	70.5	0.77	○
D938-A15C-0380	3.80	76	116	6	36	70.3	0.79	○
D938-A15C-0390	3.90	76	116	6	36	70.2	0.81	○
D938-A15C-0400	4.00	76	116	6	36	70.0	0.83	●
D938-A15C-0410	4.10	93	133	6	36	86.9	0.85	○
D938-A15C-0420	4.20	93	133	6	36	86.7	0.87	●
D938-A15C-0430	4.30	93	133	6	36	86.6	0.89	○
D938-A15C-0440	4.40	93	133	6	36	86.4	0.91	○
D938-A15C-0450	4.50	93	133	6	36	86.3	0.93	●
D938-A15C-0460	4.60	93	133	6	36	86.1	0.95	○
D938-A15C-0470	4.70	93	133	6	36	86.0	0.97	○
D938-A15C-0480	4.80	93	133	6	36	85.8	0.99	○
D938-A15C-0490	4.90	93	133	6	36	85.7	1.01	○
D938-A15C-0500	5.00	93	133	6	36	85.5	1.04	●
D938-A15C-0510	5.10	110	150	6	36	102.4	1.06	●
D938-A15C-0520	5.20	110	150	6	36	102.2	1.08	○
D938-A15C-0530	5.30	110	150	6	36	102.1	1.10	○
D938-A15C-0540	5.40	110	150	6	36	101.9	1.12	○

Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A15C-0550	5.50	110	150	6	36	101.8	1.14	●
D938-A15C-0560	5.60	110	150	6	36	101.6	1.16	○
D938-A15C-0570	5.70	110	150	6	36	101.5	1.18	○
D938-A15C-0580	5.80	110	150	6	36	101.3	1.20	○
D938-A15C-0590	5.90	110	150	6	36	101.2	1.22	○
D938-A15C-0600	6.00	110	150	6	36	101.0	1.24	●
D938-A15C-0610	6.10	127	167	8	36	117.9	1.26	○
D938-A15C-0620	6.20	127	167	8	36	117.7	1.28	○
D938-A15C-0630	6.30	127	167	8	36	117.6	1.30	○
D938-A15C-0640	6.40	127	167	8	36	117.4	1.33	○
D938-A15C-0650	6.50	127	167	8	36	117.3	1.35	●
D938-A15C-0660	6.60	127	167	8	36	117.1	1.37	○
D938-A15C-0670	6.70	127	167	8	36	117.0	1.39	○
D938-A15C-0680	6.80	127	167	8	36	116.8	1.41	○
D938-A15C-0690	6.90	127	167	8	36	116.7	1.43	○
D938-A15C-0700	7.00	127	167	8	36	116.5	1.45	●
D938-A15C-0710	7.10	143	183	8	36	132.4	1.47	○
D938-A15C-0720	7.20	143	183	8	36	132.2	1.49	○
D938-A15C-0730	7.30	143	183	8	36	132.1	1.51	○
D938-A15C-0740	7.40	143	183	8	36	131.9	1.53	○
D938-A15C-0750	7.50	143	183	8	36	131.8	1.55	●
D938-A15C-0760	7.60	143	183	8	36	131.6	1.57	○
D938-A15C-0770	7.70	143	183	8	36	131.5	1.59	○
D938-A15C-0780	7.80	143	183	8	36	131.3	1.62	○
D938-A15C-0790	7.90	143	183	8	36	131.2	1.64	○

●Stock ○Available Upon Order Notes: Non-standard customization is available for D3-D16 tools Unit (mm)

Notes: The depth drill uses a drill bit of the same specification as D938-A3C as a pilot drill.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

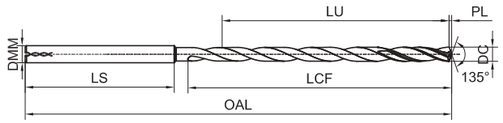
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D938-A15C

SHANK DIN 6535HA | AlTiN nano | 15D

D938 15D Deep Hole Twist Drill for Plain Steel Machining



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Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A15C-0800	8.00	143	183	8	36	131.0	1.66	●
D938-A15C-0810	8.10	160	204	10	40	147.9	1.68	○
D938-A15C-0820	8.20	160	204	10	40	147.7	1.70	○
D938-A15C-0830	8.30	160	204	10	40	147.6	1.72	○
D938-A15C-0840	8.40	160	204	10	40	147.4	1.74	○
D938-A15C-0850	8.50	160	204	10	40	147.3	1.76	●
D938-A15C-0860	8.60	160	204	10	40	147.1	1.78	○
D938-A15C-0870	8.70	160	204	10	40	147.0	1.80	○
D938-A15C-0880	8.80	160	204	10	40	146.8	1.82	○
D938-A15C-0890	8.90	160	204	10	40	146.7	1.84	○
D938-A15C-0900	9.00	160	204	10	40	146.5	1.86	●
D938-A15C-0910	9.10	177	221	10	40	163.4	1.88	○
D938-A15C-0920	9.20	177	221	10	40	163.2	1.91	○
D938-A15C-0930	9.30	177	221	10	40	163.1	1.93	○
D938-A15C-0940	9.40	177	221	10	40	162.9	1.95	○
D938-A15C-0950	9.50	177	221	10	40	162.8	1.97	○
D938-A15C-0960	9.60	177	221	10	40	162.6	1.99	○
D938-A15C-0970	9.70	177	221	10	40	162.5	2.01	○
D938-A15C-0980	9.80	177	221	10	40	162.3	2.03	○
D938-A15C-0990	9.90	177	221	10	40	162.2	2.05	○
D938-A15C-1000	10.00	177	221	10	40	162.0	2.07	●
D938-A15C-1010	10.10	198	247	12	45	182.9	2.09	○
D938-A15C-1020	10.20	198	247	12	45	182.7	2.11	○
D938-A15C-1030	10.30	198	247	12	45	182.6	2.13	○
D938-A15C-1040	10.40	198	247	12	45	182.4	2.15	○
D938-A15C-1050	10.50	198	247	12	45	182.3	2.17	●
D938-A15C-1080	10.80	198	247	12	45	181.8	2.24	○
D938-A15C-1100	11.00	198	247	12	45	181.5	2.28	●
D938-A15C-1120	11.20	214	263	12	45	197.2	2.32	○
D938-A15C-1150	11.50	214	263	12	45	196.8	2.38	○
D938-A15C-1160	11.60	214	263	12	45	196.6	2.40	○
D938-A15C-1170	11.70	214	263	12	45	196.5	2.42	○
D938-A15C-1180	11.80	214	263	12	45	196.3	2.44	○
D938-A15C-1200	12.00	214	263	12	45	196.0	2.49	○
D938-A15C-1210	12.10	248	297	14	45	229.9	2.51	○
D938-A15C-1220	12.20	248	297	14	45	229.7	2.53	○
D938-A15C-1250	12.50	248	297	14	45	229.3	2.59	●
D938-A15C-1280	12.80	248	297	14	45	228.8	2.65	○
D938-A15C-1300	13.00	248	297	14	45	228.5	2.69	○
D938-A15C-1350	13.50	248	297	14	45	227.8	2.80	○
D938-A15C-1380	13.80	248	297	14	45	227.3	2.86	○
D938-A15C-1400	14.00	248	297	14	45	227.0	2.90	○
D938-A15C-1500	15.00	278	330	16	48	255.5	3.11	○

Unit (mm)

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D16 tools

Notes: The depth drill uses a drill bit of the same specification as D938-A3C as a pilot drill.

Range of Sizes	DC(h7)	DMM(h6)
=3	0.000/-0.010	0.000/-0.006
>3—6	0.000/-0.012	0.000/-0.008
>6—10	0.000/-0.015	0.000/-0.009
>10—18	0.000/-0.018	0.000/-0.011
>18—20	0.000/-0.021	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

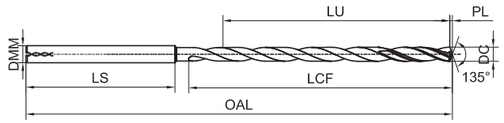
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D938-A20C

SHANK DIN 6535HA | AlTiN nano | 20D

D938 20D Internal Coolant Twist Drill for Plain Steel Machining



Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A20C-0300	3.00	70	110	6	36	65.5	0.62	○
D938-A20C-0310	3.10	83	123	6	36	78.4	0.64	○
D938-A20C-0320	3.20	83	123	6	36	78.2	0.66	○
D938-A20C-0330	3.30	83	123	6	36	78.1	0.68	○
D938-A20C-0350	3.50	96	136	6	36	90.8	0.72	○
D938-A20C-0370	3.70	96	136	6	36	90.5	0.77	○
D938-A20C-0375	3.75	96	136	6	36	90.4	0.78	○
D938-A20C-0380	3.80	96	136	6	36	90.3	0.79	○
D938-A20C-0390	3.90	96	136	6	36	90.2	0.81	○
D938-A20C-0400	4.00	96	136	6	36	90.0	0.83	●
D938-A20C-0410	4.10	118	158	6	36	111.9	0.85	○
D938-A20C-0420	4.20	118	158	6	36	111.7	0.87	○
D938-A20C-0450	4.50	118	158	6	36	111.3	0.93	●
D938-A20C-0500	5.00	118	158	6	36	110.5	1.04	●
D938-A20C-0510	5.10	140	180	6	36	132.4	1.06	○
D938-A20C-0520	5.20	140	180	6	36	132.2	1.08	○
D938-A20C-0530	5.30	140	180	6	36	132.1	1.10	○
D938-A20C-0550	5.50	140	180	6	36	131.8	1.14	●
D938-A20C-0580	5.80	140	180	6	36	131.3	1.20	○
D938-A20C-0595	5.95	140	180	6	36	131.1	1.23	○
D938-A20C-0600	6.00	140	180	6	36	131.0	1.24	●
D938-A20C-0635	6.35	162	202	8	36	152.5	1.32	○
D938-A20C-0650	6.50	162	202	8	36	152.3	1.35	●
D938-A20C-0675	6.75	162	202	8	36	151.9	1.40	○
D938-A20C-0680	6.80	162	202	8	36	151.8	1.41	○
D938-A20C-0700	7.00	162	202	8	36	151.5	1.45	○
D938-A20C-0710	7.10	183	223	8	36	172.4	1.47	○
D938-A20C-0750	7.50	183	223	8	36	171.8	1.55	○
D938-A20C-0770	7.70	183	223	8	36	171.5	1.59	○
D938-A20C-0780	7.80	183	223	8	36	171.3	1.62	○
D938-A20C-0790	7.90	183	223	8	36	171.2	1.64	○
D938-A20C-0800	8.00	183	223	8	36	171.0	1.66	●
D938-A20C-0820	8.20	205	249	10	40	192.7	1.70	○
D938-A20C-0830	8.30	205	249	10	40	192.6	1.72	○
D938-A20C-0840	8.40	205	249	10	40	192.4	1.74	○
D938-A20C-0850	8.50	205	249	10	40	192.3	1.76	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D14 tools

Unit (mm)

Notes: The depth drill uses a drill bit of the same specification as D938-A3C as a pilot drill.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

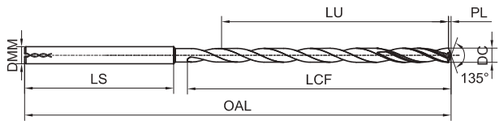
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D938-A20C NEW

SHANK DIN 6535HA | AlTiN nano | 20D

D938 20D Internal Coolant Twist Drill for Plain Steel Machining



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Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A20C-0870	8.70	205	249	10	40	192.0	1.80	○
D938-A20C-0900	9.00	205	249	10	40	191.5	1.86	○
D938-A20C-0910	9.10	227	271	10	40	213.4	1.88	○
D938-A20C-0950	9.50	227	271	10	40	212.8	1.97	○
D938-A20C-1000	10.00	227	271	10	40	212.0	2.07	●
D938-A20C-1100	11.00	253	302	12	45	236.5	2.28	○
D938-A20C-1150	11.50	274	323	12	45	256.8	2.38	○
D938-A20C-1200	12.00	274	323	12	45	256.0	2.49	●
D938-A20C-1250	12.50	318	367	14	45	299.3	2.59	○
D938-A20C-1380	13.80	318	367	14	45	297.3	2.86	○
D938-A20C-1400	14.00	318	367	14	45	297.0	2.90	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D14 tools

Unit (mm)

Notes: The depth drill uses a drill bit of the same specification as D938-A3C as a pilot drill.

Range of Sizes	DC(h7)	DMM(h6)
=3	0.000/-0.010	0.000/-0.006
>3—6	0.000/-0.012	0.000/-0.008
>6—10	0.000/-0.015	0.000/-0.009
>10—18	0.000/-0.018	0.000/-0.011
>18—20	0.000/-0.021	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

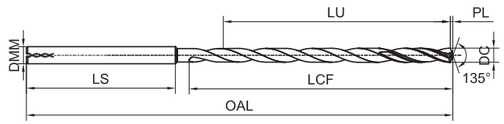
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D938-A25C NEW

SHANK DIN 6535HA | AlTiN nano | 25D

D938 25D Deep Hole Twist Drill for Plain Steel Machining



Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A25C-0300	3.00	85	125	6	36	80.5	0.62	○
D938-A25C-0310	3.10	101	141	6	36	96.4	0.64	○
D938-A25C-0350	3.50	116	156	6	36	110.8	0.72	○
D938-A25C-0380	3.80	116	156	6	36	110.3	0.79	○
D938-A25C-0400	4.00	116	156	6	36	110.0	0.83	●
D938-A25C-0420	4.20	143	183	6	36	136.7	0.87	○
D938-A25C-0450	4.50	143	183	6	36	136.3	0.93	○
D938-A25C-0500	5.00	143	183	6	36	135.5	1.04	●
D938-A25C-0510	5.10	170	210	6	36	162.4	1.06	○
D938-A25C-0550	5.50	170	210	6	36	161.8	1.14	●
D938-A25C-0595	5.95	170	210	6	36	161.1	1.23	○
D938-A25C-0600	6.00	170	210	6	36	161.0	1.24	●
D938-A25C-0630	6.30	197	237	8	36	187.6	1.30	○
D938-A25C-0635	6.35	197	237	8	36	187.5	1.32	○
D938-A25C-0650	6.50	197	237	8	36	187.3	1.35	●

Order No.	DC (h7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D938-A25C-0675	6.75	197	237	8	36	186.9	1.40	○
D938-A25C-0700	7.00	197	237	8	36	186.5	1.45	●
D938-A25C-0750	7.50	223	263	8	36	211.8	1.55	○
D938-A25C-0800	8.00	223	263	8	36	211.0	1.66	●
D938-A25C-0820	8.20	250	294	10	40	237.7	1.70	○
D938-A25C-0850	8.50	250	294	10	40	237.3	1.76	○
D938-A25C-0900	9.00	250	294	10	40	236.5	1.86	○
D938-A25C-0910	9.10	277	321	10	40	263.4	1.88	○
D938-A25C-0950	9.50	277	321	10	40	262.8	1.97	○
D938-A25C-1000	10.00	277	321	10	40	262.0	2.07	○
D938-A25C-1050	10.50	310	359	12	45	294.3	2.17	○
D938-A25C-1080	10.80	310	359	12	45	293.8	2.24	○
D938-A25C-1100	11.00	310	359	12	45	293.5	2.28	○
D938-A25C-1150	11.50	337	386	12	45	319.8	2.38	○
D938-A25C-1200	12.00	337	386	12	45	319.0	2.49	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D12 tools

Unit (mm)

Notes: The depth drill uses a drill bit of the same specification as D938-A3C as a pilot drill.

Range of Sizes	DC(h7)	DMM(h6)
=3	0.000/-0.010	0.000/-0.006
>3—6	0.000/-0.012	0.000/-0.008
>6—10	0.000/-0.015	0.000/-0.009
>10—18	0.000/-0.018	0.000/-0.011
>18—20	0.000/-0.021	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	◎	◎	○	○	○								

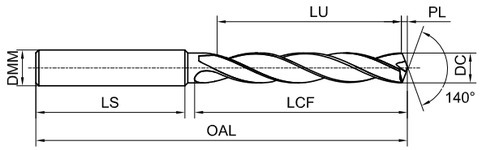
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P129

D928-A3N

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

3D External Coolant Twist Drill for Cast Iron Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D928-A3N-0300	3.00	20	62	6	36	15.5	0.55	○
D928-A3N-0330	3.30	20	62	6	36	15.1	0.60	○
D928-A3N-0380	3.80	24	66	6	36	18.3	0.69	○
D928-A3N-0400	4.00	24	66	6	36	18.0	0.73	○
D928-A3N-0420	4.20	24	66	6	36	17.7	0.76	○
D928-A3N-0440	4.40	24	66	6	36	17.4	0.80	○
D928-A3N-0500	5.00	28	66	6	36	20.5	0.91	○
D928-A3N-0510	5.10	28	66	6	36	20.4	0.93	○
D928-A3N-0600	6.00	28	66	6	36	19.0	1.09	○
D928-A3N-0650	6.50	34	79	8	36	24.3	1.18	○
D928-A3N-0670	6.70	34	79	8	36	24.0	1.22	○
D928-A3N-0680	6.80	34	79	8	36	23.8	1.24	○
D928-A3N-0690	6.90	34	79	8	36	23.7	1.26	○
D928-A3N-0700	7.00	34	79	8	36	23.5	1.27	○
D928-A3N-0720	7.20	41	79	8	36	30.2	1.31	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D928-A3N-0770	7.70	41	79	8	36	29.5	1.40	○
D928-A3N-0780	7.80	41	79	8	36	29.3	1.42	○
D928-A3N-0800	8.00	41	79	8	36	29.0	1.46	○
D928-A3N-0810	8.10	47	89	10	40	34.9	1.47	○
D928-A3N-0850	8.50	47	89	10	40	34.3	1.55	○
D928-A3N-0870	8.70	47	89	10	40	34.0	1.58	○
D928-A3N-0880	8.80	47	89	10	40	33.8	1.60	○
D928-A3N-0900	9.00	47	89	10	40	33.5	1.64	○
D928-A3N-0910	9.10	47	89	10	40	33.4	1.66	○
D928-A3N-0980	9.80	47	89	10	40	32.3	1.78	○
D928-A3N-1000	10.00	47	89	10	40	32.0	1.82	○
D928-A3N-1020	10.20	55	102	12	45	39.7	1.86	○
D928-A3N-1025	10.25	55	102	12	45	39.6	1.87	○
D928-A3N-1030	10.30	55	102	12	45	39.6	1.87	○
D928-A3N-1040	10.40	55	102	12	45	39.4	1.89	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○				◎	◎								

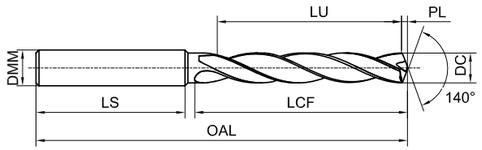
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P131

D928-A3N

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

3D External Coolant Twist Drill for Cast Iron Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D928-A3N-1050	10.50	55	102	12	45	39.3	1.91	○
D928-A3N-1060	10.60	55	102	12	45	39.1	1.93	○
D928-A3N-1070	10.70	55	102	12	45	39.0	1.95	○
D928-A3N-1080	10.80	55	102	12	45	38.8	1.97	○
D928-A3N-1100	11.00	55	102	12	45	38.5	2.00	○
D928-A3N-1120	11.20	55	102	12	45	38.2	2.04	○
D928-A3N-1150	11.50	55	102	12	45	37.8	2.09	○
D928-A3N-1170	11.70	55	102	12	45	37.5	2.13	○
D928-A3N-1200	12.00	55	102	12	45	37.0	2.18	○
D928-A3N-1250	12.50	60	107	14	45	41.3	2.27	○
D928-A3N-1270	12.70	60	107	14	45	41.0	2.31	○
D928-A3N-1300	13.00	60	107	14	45	40.5	2.37	○
D928-A3N-1400	14.00	60	107	14	45	39.0	2.55	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D928-A3N-1450	14.50	65	115	16	48	43.3	2.64	○
D928-A3N-1500	15.00	65	115	16	48	42.5	2.73	○
D928-A3N-1570	15.70	65	115	16	48	41.5	2.86	○
D928-A3N-1600	16.00	65	115	16	48	41.0	2.91	○
D928-A3N-1610	16.10	73	123	18	48	48.9	2.93	○
D928-A3N-1650	16.50	73	123	18	48	48.3	3.00	○
D928-A3N-1660	16.60	73	123	18	48	48.1	3.02	○
D928-A3N-1700	17.00	73	123	18	48	47.5	3.09	○
D928-A3N-1800	18.00	73	123	18	48	46.0	3.28	○
D928-A3N-1850	18.50	79	131	20	50	51.3	3.37	○
D928-A3N-1900	19.00	79	131	20	50	50.5	3.46	○
D928-A3N-2000	20.00	79	131	20	50	49.0	3.64	○

Unit (mm)

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Range of Sizes	DC(m7)	DMM(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○				◎	◎								

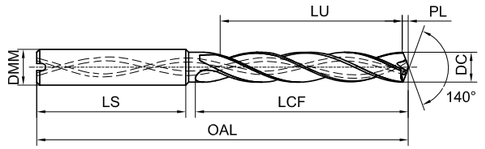
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P131

D928-A3C

SHANK DIN 6535HA | AlCrN/TiSiN | 3D

3D Internal Coolant Twist Drill for Cast Iron Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D928-A3C-0500	5.00	28	66	6	36	20.5	0.91	○
D928-A3C-0520	5.20	28	66	6	36	20.2	0.95	○
D928-A3C-0600	6.00	28	66	6	36	19.0	1.09	○
D928-A3C-0680	6.80	34	79	8	36	23.8	1.24	○
D928-A3C-0700	7.00	34	79	8	36	23.5	1.27	○
D928-A3C-0800	8.00	41	79	8	36	29.0	1.46	○
D928-A3C-0850	8.50	47	89	10	40	34.3	1.55	○
D928-A3C-0900	9.00	47	89	10	40	33.5	1.64	○
D928-A3C-1000	10.00	47	89	10	40	32.0	1.82	○
D928-A3C-1025	10.25	55	102	12	45	39.6	1.87	○
D928-A3C-1050	10.50	55	102	12	45	39.3	1.91	○
D928-A3C-1100	11.00	55	102	12	45	38.5	2.00	○
D928-A3C-1130	11.30	55	102	12	45	38.1	2.06	○
D928-A3C-1200	12.00	55	102	12	45	37.0	2.18	○
D928-A3C-1230	12.30	60	107	14	45	41.6	2.24	○
D928-A3C-1250	12.50	60	107	14	45	41.3	2.27	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D928-A3C-1280	12.80	60	107	14	45	40.8	2.33	○
D928-A3C-1300	13.00	60	107	14	45	40.5	2.37	○
D928-A3C-1330	13.30	60	107	14	45	40.1	2.42	○
D928-A3C-1400	14.00	60	107	14	45	39.0	2.55	○
D928-A3C-1430	14.30	65	115	16	48	43.6	2.60	○
D928-A3C-1450	14.50	65	115	16	48	43.3	2.64	○
D928-A3C-1480	14.80	65	115	16	48	42.8	2.69	○
D928-A3C-1500	15.00	65	115	16	48	42.5	2.73	○
D928-A3C-1510	15.10	65	115	16	48	42.4	2.75	○
D928-A3C-1600	16.00	65	115	16	48	41.0	2.91	○
D928-A3C-1630	16.30	73	123	18	48	48.6	2.97	○
D928-A3C-1700	17.00	73	123	18	48	47.5	3.09	○
D928-A3C-1800	18.00	73	123	18	48	46.0	3.28	○
D928-A3C-1850	18.50	79	131	20	50	51.3	3.37	○
D928-A3C-1900	19.00	79	131	20	50	50.5	3.46	○
D928-A3C-2000	20.00	79	131	20	50	49.0	3.64	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○				◎	◎	○	○						

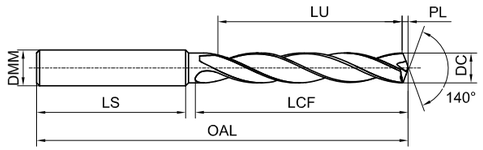
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P131

D928-A5N

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

5D External Coolant Twist Drill for Cast Iron Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D928-A5N-0300	3.00	28	66	6	36	23.5	0.55	●
D928-A5N-0330	3.30	28	66	6	36	23.1	0.60	●
D928-A5N-0340	3.40	28	66	6	36	22.9	0.62	○
D928-A5N-0400	4.00	36	74	6	36	30.0	0.73	○
D928-A5N-0420	4.20	36	74	6	36	29.7	0.76	○
D928-A5N-0430	4.30	36	74	6	36	29.6	0.78	○
D928-A5N-0480	4.80	44	82	6	36	36.8	0.87	○
D928-A5N-0500	5.00	44	82	6	36	36.5	0.91	●
D928-A5N-0505	5.05	44	82	6	36	36.4	0.92	○
D928-A5N-0510	5.10	44	82	6	36	36.4	0.93	○
D928-A5N-0530	5.30	44	82	6	36	36.1	0.96	○
D928-A5N-0580	5.80	44	82	6	36	35.3	1.06	○
D928-A5N-0600	6.00	44	82	6	36	35.0	1.09	●
D928-A5N-0670	6.70	53	91	8	36	43.0	1.22	○
D928-A5N-0680	6.80	53	91	8	36	42.8	1.24	●
D928-A5N-0700	7.00	53	91	8	36	42.5	1.27	●
D928-A5N-0750	7.50	53	91	8	36	41.8	1.36	○
D928-A5N-0780	7.80	53	91	8	36	41.3	1.42	○
D928-A5N-0800	8.00	53	91	8	36	41.0	1.46	○
D928-A5N-0850	8.50	61	103	10	40	48.3	1.55	○
D928-A5N-0860	8.60	61	103	10	40	48.1	1.57	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D928-A5N-0870	8.70	61	103	10	40	48.0	1.58	○
D928-A5N-0900	9.00	61	103	10	40	47.5	1.64	○
D928-A5N-0910	9.10	61	103	10	40	47.5	1.66	●
D928-A5N-0970	9.70	61	103	10	40	46.5	1.77	○
D928-A5N-0980	9.80	61	103	10	40	46.3	1.78	○
D928-A5N-1000	10.00	61	103	10	40	46.0	1.82	○
D928-A5N-1025	10.25	71	118	12	45	55.6	1.87	●
D928-A5N-1030	10.30	71	118	12	45	55.6	1.87	○
D928-A5N-1050	10.50	71	118	12	45	55.3	1.91	●
D928-A5N-1070	10.70	71	118	12	45	55.0	1.95	○
D928-A5N-1080	10.80	71	118	12	45	54.8	1.97	○
D928-A5N-1100	11.00	71	118	12	45	54.5	2.00	●
D928-A5N-1110	11.10	71	118	12	45	54.4	2.02	○
D928-A5N-1120	11.20	71	118	12	45	54.2	2.04	○
D928-A5N-1140	11.40	71	118	12	45	53.9	2.07	○
D928-A5N-1180	11.80	71	118	12	45	53.3	2.15	○
D928-A5N-1200	12.00	71	118	12	45	53.0	2.18	○
D928-A5N-1250	12.50	77	124	14	45	58.3	2.27	●
D928-A5N-1300	13.00	77	124	14	45	57.5	2.37	○
D928-A5N-1350	13.50	77	124	14	45	56.8	2.46	○
D928-A5N-1380	13.80	77	124	14	45	57.5	2.51	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○				◎	◎								

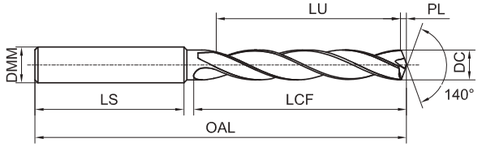
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P131

D928-A5N

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

5D External Coolant Twist Drill for Cast Iron Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D928-A5N-1400	14.00	77	124	14	45	56.0	2.55	○
D928-A5N-1450	14.50	83	133	16	48	61.3	2.64	○
D928-A5N-1500	15.00	83	133	16	48	60.5	2.73	○
D928-A5N-1600	16.00	83	133	16	48	59.0	2.91	○
D928-A5N-1700	17.00	93	143	18	48	67.5	3.09	○
D928-A5N-1800	18.00	93	143	18	48	66	3.28	○
D928-A5N-1900	19.00	101	153	20	50	72.5	3.46	○
D928-A5N-2000	20.00	101	153	20	50	71	3.64	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○				◎	◎								

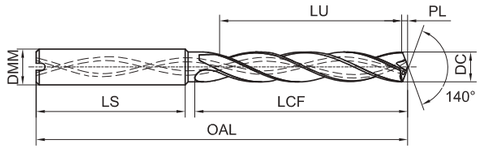
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P131

D928-A5C

SHANK DIN 6535HA | AlCrN/TiSiN | 5D

5D Internal Coolant Twist Drill for Cast Iron Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D928-A5C-0250	2.50	22	62	4	35	18.3	0.45	○
D928-A5C-0260	2.60	22	62	4	35	18.1	0.47	○
D928-A5C-0330	3.30	28	66	6	36	23.1	0.60	○
D928-A5C-0340	3.40	28	66	6	36	22.9	0.62	○
D928-A5C-0420	4.20	36	74	6	36	29.7	0.76	○
D928-A5C-0430	4.30	36	74	6	36	29.6	0.78	○
D928-A5C-0500	5.00	44	82	6	36	36.5	0.91	●
D928-A5C-0510	5.10	44	82	6	36	36.4	0.93	○
D928-A5C-0600	6.00	44	82	6	36	35.0	1.09	●
D928-A5C-0680	6.80	53	91	8	36	42.8	1.24	●
D928-A5C-0690	6.90	53	91	8	36	42.7	1.26	○
D928-A5C-0700	7.00	53	91	8	36	42.5	1.27	●
D928-A5C-0800	8.00	53	91	8	36	41.0	1.46	●
D928-A5C-0850	8.50	61	103	10	40	48.3	1.55	●
D928-A5C-0860	8.60	61	103	10	40	48.3	1.57	○
D928-A5C-0900	9.00	61	103	10	40	47.5	1.64	●
D928-A5C-1000	10.00	61	103	10	40	46	1.82	●
D928-A5C-1020	10.20	71	118	12	45	55.7	1.86	○
D928-A5C-1025	10.25	71	118	12	45	55.6	1.87	●
D928-A5C-1030	10.30	71	118	12	45	55.6	1.87	○
D928-A5C-1050	10.50	71	118	12	45	55.25	1.91	●

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D928-A5C-1100	11.00	71	118	12	45	54.5	2.00	●
D928-A5C-1110	11.10	71	118	12	45	54.4	2.02	○
D928-A5C-1150	11.50	71	118	12	45	53.8	2.09	○
D928-A5C-1200	12.00	71	118	12	45	53	2.18	●
D928-A5C-1210	12.10	77	124	14	45	58.9	2.20	○
D928-A5C-1220	12.20	77	124	14	45	58.7	2.22	○
D928-A5C-1250	12.50	77	124	14	45	58.25	2.27	○
D928-A5C-1270	12.70	77	124	14	45	58.0	2.31	○
D928-A5C-1300	13.00	77	124	14	45	57.5	2.37	○
D928-A5C-1355	13.55	77	124	14	45	56.7	2.47	○
D928-A5C-1400	14.00	77	124	14	45	56	2.55	○
D928-A5C-1450	14.50	83	133	16	48	61.3	2.64	○
D928-A5C-1500	15.00	83	133	16	48	60.5	2.73	○
D928-A5C-1600	16.00	83	133	16	48	59.0	2.91	○
D928-A5C-1700	17.00	93	143	18	48	67.5	3.09	○
D928-A5C-1750	17.50	93	143	18	48	66.8	3.18	○
D928-A5C-1800	18.00	93	143	18	48	66.0	3.28	○
D928-A5C-1810	18.10	101	153	20	50	73.9	3.29	○
D928-A5C-1900	19.00	101	153	20	50	72.5	3.46	○
D928-A5C-1950	19.50	101	153	20	50	71.8	3.55	○
D928-A5C-2000	20.00	101	153	20	50	71.0	3.64	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○				◎	◎	○	○						

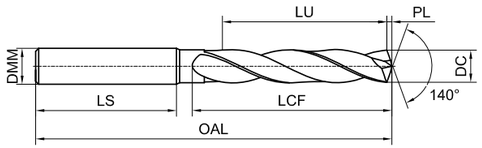
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P131

D966-A3N

SHANK DIN 6535HA 3D

3D External Coolant Twist Drill for Aluminum Alloy Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A3N-0220	2.20	13	55	4	36	9.7	0.40	○
D966-A3N-0250	2.50	17	55	4	33	13.3	0.45	○
D966-A3N-0300	3.00	20	62	6	36	15.5	0.55	○
D966-A3N-0305	3.05	20	62	6	36	15.4	0.56	○
D966-A3N-0310	3.10	20	62	6	36	15.4	0.56	○
D966-A3N-0320	3.20	20	62	6	36	15.2	0.58	○
D966-A3N-0330	3.30	20	62	6	36	15.1	0.60	○
D966-A3N-0340	3.40	20	62	6	36	14.9	0.62	○
D966-A3N-0350	3.50	20	62	6	36	14.8	0.64	○
D966-A3N-0360	3.60	20	62	6	36	14.6	0.66	○
D966-A3N-0370	3.70	20	62	6	36	14.5	0.67	○
D966-A3N-0380	3.80	24	66	6	36	18.3	0.69	○
D966-A3N-0390	3.90	24	66	6	36	18.2	0.71	○
D966-A3N-0400	4.00	24	66	6	36	18.0	0.73	○
D966-A3N-0410	4.10	24	66	6	36	17.9	0.75	○
D966-A3N-0420	4.20	24	66	6	36	17.7	0.76	○
D966-A3N-0430	4.30	24	66	6	36	17.6	0.78	○
D966-A3N-0440	4.40	24	66	6	36	17.4	0.80	○
D966-A3N-0450	4.50	24	66	6	36	17.3	0.82	○
D966-A3N-0455	4.55	24	66	6	36	17.2	0.83	○
D966-A3N-0460	4.60	24	66	6	36	17.1	0.84	○
D966-A3N-0470	4.70	24	66	6	36	17.0	0.86	○
D966-A3N-0480	4.80	28	66	6	36	20.8	0.87	○
D966-A3N-0490	4.90	28	66	6	36	20.7	0.89	○
D966-A3N-0500	5.00	28	66	6	36	20.5	0.91	○
D966-A3N-0510	5.10	28	66	6	36	20.4	0.93	○
D966-A3N-0520	5.20	28	66	6	36	20.2	0.95	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A3N-0530	5.30	28	66	6	36	20.1	0.96	○
D966-A3N-0540	5.40	28	66	6	36	19.9	0.98	○
D966-A3N-0550	5.50	28	66	6	36	19.8	1.00	○
D966-A3N-0560	5.60	28	66	6	36	19.6	1.02	○
D966-A3N-0570	5.70	28	66	6	36	19.5	1.04	○
D966-A3N-0580	5.80	28	66	6	36	19.3	1.06	○
D966-A3N-0590	5.90	28	66	6	36	19.2	1.07	○
D966-A3N-0600	6.00	28	66	6	36	19.0	1.09	○
D966-A3N-0610	6.10	34	79	8	36	24.9	1.11	○
D966-A3N-0620	6.20	34	79	8	36	24.7	1.13	○
D966-A3N-0625	6.25	34	79	8	36	24.6	1.14	○
D966-A3N-0630	6.30	34	79	8	36	24.6	1.15	○
D966-A3N-0640	6.40	34	79	8	36	24.4	1.16	○
D966-A3N-0650	6.50	34	79	8	36	24.3	1.18	○
D966-A3N-0660	6.60	34	79	8	36	24.1	1.20	○
D966-A3N-0670	6.70	34	79	8	36	24.0	1.22	○
D966-A3N-0680	6.80	34	79	8	36	23.8	1.24	○
D966-A3N-0690	6.90	34	79	8	36	23.7	1.26	○
D966-A3N-0700	7.00	34	79	8	36	23.5	1.27	○
D966-A3N-0710	7.10	41	79	8	36	30.4	1.29	○
D966-A3N-0720	7.20	41	79	8	36	30.2	1.31	○
D966-A3N-0730	7.30	41	79	8	36	30.1	1.33	○
D966-A3N-0740	7.40	41	79	8	36	29.9	1.35	○
D966-A3N-0750	7.50	41	79	8	36	29.8	1.36	○
D966-A3N-0760	7.60	41	79	8	36	29.6	1.38	○
D966-A3N-0770	7.70	41	79	8	36	29.5	1.40	○
D966-A3N-0780	7.80	41	79	8	36	29.3	1.42	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

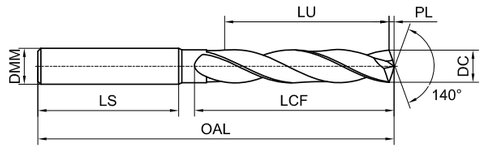
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A3N

SHANK DIN 6535HA 3D

3D External Coolant Twist Drill for Aluminum Alloy Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A3N-0790	7.90	41	79	8	36	29.2	1.44	○
D966-A3N-0800	8.00	41	79	8	36	29.0	1.46	○
D966-A3N-0810	8.10	47	89	10	40	34.9	1.47	○
D966-A3N-0820	8.20	47	89	10	40	34.7	1.49	○
D966-A3N-0830	8.30	47	89	10	40	34.6	1.51	○
D966-A3N-0840	8.40	47	89	10	40	34.4	1.53	○
D966-A3N-0850	8.50	47	89	10	40	34.3	1.55	○
D966-A3N-0860	8.60	47	89	10	40	34.1	1.57	○
D966-A3N-0870	8.70	47	89	10	40	34.0	1.58	○
D966-A3N-0880	8.80	47	89	10	40	33.8	1.60	○
D966-A3N-0890	8.90	47	89	10	40	33.7	1.62	○
D966-A3N-0900	9.00	47	89	10	40	33.5	1.64	○
D966-A3N-0910	9.10	47	89	10	40	33.4	1.66	○
D966-A3N-0920	9.20	47	89	10	40	33.2	1.67	○
D966-A3N-0930	9.30	47	89	10	40	33.1	1.69	○
D966-A3N-0940	9.40	47	89	10	40	32.9	1.71	○
D966-A3N-0950	9.50	47	89	10	40	32.8	1.73	○
D966-A3N-0960	9.60	47	89	10	40	32.6	1.75	○
D966-A3N-0970	9.70	47	89	10	40	32.5	1.77	○
D966-A3N-0980	9.80	47	89	10	40	32.3	1.78	○
D966-A3N-0990	9.90	47	89	10	40	32.2	1.80	○
D966-A3N-1000	10.00	47	89	10	40	32.0	1.82	○
D966-A3N-1010	10.10	55	102	12	45	39.9	1.84	○
D966-A3N-1020	10.20	55	102	12	45	39.7	1.86	○
D966-A3N-1030	10.30	55	102	12	45	39.6	1.87	○
D966-A3N-1040	10.40	55	102	12	45	39.4	1.89	○
D966-A3N-1050	10.50	55	102	12	45	39.3	1.91	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A3N-1060	10.60	55	102	12	45	39.1	1.93	○
D966-A3N-1070	10.70	55	102	12	45	39.0	1.95	○
D966-A3N-1080	10.80	55	102	12	45	38.8	1.97	○
D966-A3N-1090	10.90	55	102	12	45	38.7	1.98	○
D966-A3N-1100	11.00	55	102	12	45	38.5	2.00	○
D966-A3N-1110	11.10	55	102	12	45	38.4	2.02	○
D966-A3N-1120	11.20	55	102	12	45	38.2	2.04	○
D966-A3N-1130	11.30	55	102	12	45	38.1	2.06	○
D966-A3N-1140	11.40	55	102	12	45	37.9	2.07	○
D966-A3N-1150	11.50	55	102	12	45	37.8	2.09	○
D966-A3N-1160	11.60	55	102	12	45	37.6	2.11	○
D966-A3N-1170	11.70	55	102	12	45	37.5	2.13	○
D966-A3N-1180	11.80	55	102	12	45	37.3	2.15	○
D966-A3N-1190	11.90	55	102	12	45	37.2	2.17	○
D966-A3N-1200	12.00	55	102	12	45	37.0	2.18	○
D966-A3N-1210	12.10	60	107	14	45	41.9	2.20	○
D966-A3N-1220	12.20	60	107	14	45	41.7	2.22	○
D966-A3N-1230	12.30	60	107	14	45	41.6	2.24	○
D966-A3N-1240	12.40	60	107	14	45	41.4	2.26	○
D966-A3N-1250	12.50	60	107	14	45	41.3	2.27	○
D966-A3N-1260	12.60	60	107	14	45	41.1	2.29	○
D966-A3N-1270	12.70	60	107	14	45	41.0	2.31	○
D966-A3N-1280	12.80	60	107	14	45	40.8	2.33	○
D966-A3N-1290	12.90	60	107	14	45	40.7	2.35	○
D966-A3N-1300	13.00	60	107	14	45	40.5	2.37	○
D966-A3N-1310	13.10	60	107	14	45	40.4	2.38	○
D966-A3N-1320	13.20	60	107	14	45	40.2	2.40	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

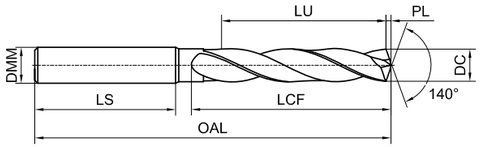
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A3N

SHANK DIN 6535HA 3D

3D External Coolant Twist Drill for Aluminum Alloy Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A3N-1330	13.30	60	107	14	45	40.1	2.42	○
D966-A3N-1340	13.40	60	107	14	45	39.9	2.44	○
D966-A3N-1350	13.50	60	107	14	45	39.8	2.46	○
D966-A3N-1370	13.70	60	107	14	45	39.5	2.49	○
D966-A3N-1380	13.80	60	107	14	45	39.3	2.51	○
D966-A3N-1400	14.00	60	107	14	45	39.0	2.55	○
D966-A3N-1410	14.10	65	115	16	48	43.9	2.57	○
D966-A3N-1420	14.20	65	115	16	48	43.7	2.58	○
D966-A3N-1430	14.30	65	115	16	48	43.6	2.60	○
D966-A3N-1440	14.40	65	115	16	48	43.4	2.62	○
D966-A3N-1450	14.50	65	115	16	48	43.3	2.64	○
D966-A3N-1460	14.60	65	115	16	48	43.1	2.66	○
D966-A3N-1470	14.70	65	115	16	48	43.0	2.68	○
D966-A3N-1480	14.80	65	115	16	48	42.8	2.69	○
D966-A3N-1490	14.90	65	115	16	48	42.7	2.71	○
D966-A3N-1500	15.00	65	115	16	48	42.5	2.73	○
D966-A3N-1510	15.10	65	115	16	48	42.4	2.75	○
D966-A3N-1520	15.20	65	115	16	48	42.2	2.77	○
D966-A3N-1530	15.30	65	115	16	48	42.1	2.78	○
D966-A3N-1540	15.40	65	115	16	48	41.9	2.80	○
D966-A3N-1550	15.50	65	115	16	48	41.8	2.82	○
D966-A3N-1570	15.70	65	115	16	48	41.5	2.86	○
D966-A3N-1580	15.80	65	115	16	48	41.3	2.88	○
D966-A3N-1590	15.90	65	115	16	48	41.2	2.89	○
D966-A3N-1600	16.00	65	115	16	48	41.0	2.91	○
D966-A3N-1620	16.20	73	123	18	48	48.7	2.95	○
D966-A3N-1630	16.30	73	123	18	48	48.6	2.97	○
D966-A3N-1640	16.40	73	123	18	48	48.4	2.98	○
D966-A3N-1650	16.50	73	123	18	48	48.3	3.00	○
D966-A3N-1660	16.60	73	123	18	48	48.1	3.02	○
D966-A3N-1670	16.70	73	123	18	48	48.0	3.04	○
D966-A3N-1680	16.80	73	123	18	48	47.8	3.06	○
D966-A3N-1700	17.00	73	123	18	48	47.5	3.09	○
D966-A3N-1720	17.20	73	123	18	48	47.2	3.13	○
D966-A3N-1730	17.30	73	123	18	48	47.1	3.15	○
D966-A3N-1740	17.40	73	123	18	48	46.9	3.17	○
D966-A3N-1750	17.50	73	123	18	48	46.8	3.18	○
D966-A3N-1760	17.60	73	123	18	48	46.6	3.20	○
D966-A3N-1770	17.70	73	123	18	48	46.5	3.22	○
D966-A3N-1780	17.80	73	123	18	48	46.3	3.24	○
D966-A3N-1800	18.00	73	123	18	48	46.0	3.28	○
D966-A3N-1840	18.40	79	131	20	50	51.4	3.35	○
D966-A3N-1850	18.50	79	131	20	50	51.3	3.37	○
D966-A3N-1860	18.60	79	131	20	50	51.1	3.38	○
D966-A3N-1880	18.80	79	131	20	50	50.8	3.42	○
D966-A3N-1900	19.00	79	131	20	50	50.5	3.46	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

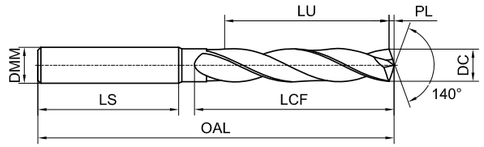
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A3N

SHANK DIN 6535HA 3D

3D External Coolant Twist Drill for Aluminum Alloy Machining



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Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A3N-1910	19.10	79	131	20	50	50.4	3.48	○
D966-A3N-1950	19.50	79	131	20	50	49.8	3.55	○
D966-A3N-1980	19.80	79	131	20	50	49.3	3.60	○
D966-A3N-1990	19.90	79	131	20	50	49.2	3.62	○
D966-A3N-2000	20.00	79	131	20	50	49.0	3.64	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

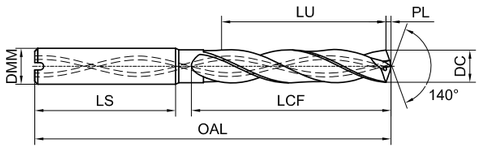
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A3C

SHANK DIN 6535HA 3D

3D Internal Coolant Twist Drill for Aluminum Alloy Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A3C-0300	3.00	20	62	6	36	15.5	0.55	○
D966-A3C-0310	3.10	20	62	6	36	15.4	0.56	○
D966-A3C-0320	3.20	20	62	6	36	15.2	0.58	○
D966-A3C-0330	3.30	20	62	6	36	15.1	0.60	○
D966-A3C-0340	3.40	20	62	6	36	14.9	0.62	○
D966-A3C-0350	3.50	20	62	6	36	14.8	0.64	○
D966-A3C-0360	3.60	20	62	6	36	14.6	0.66	○
D966-A3C-0370	3.70	20	62	6	36	14.5	0.67	○
D966-A3C-0380	3.80	24	66	6	36	18.3	0.69	○
D966-A3C-0390	3.90	24	66	6	36	18.2	0.71	○
D966-A3C-0400	4.00	24	66	6	36	18.0	0.73	○
D966-A3C-0410	4.10	24	66	6	36	17.9	0.75	○
D966-A3C-0420	4.20	24	66	6	36	17.7	0.76	○
D966-A3C-0430	4.30	24	66	6	36	17.6	0.78	○
D966-A3C-0440	4.40	24	66	6	36	17.4	0.80	○
D966-A3C-0450	4.50	24	66	6	36	17.3	0.82	○
D966-A3C-0460	4.60	24	66	6	36	17.1	0.84	○
D966-A3C-0470	4.70	24	66	6	36	17.0	0.86	○
D966-A3C-0480	4.80	28	66	6	36	20.8	0.87	○
D966-A3C-0490	4.90	28	66	6	36	20.7	0.89	○
D966-A3C-0500	5.00	28	66	6	36	20.5	0.91	○
D966-A3C-0510	5.10	28	66	6	36	20.4	0.93	○
D966-A3C-0520	5.20	28	66	6	36	20.2	0.95	○
D966-A3C-0530	5.30	28	66	6	36	20.1	0.96	○
D966-A3C-0540	5.40	28	66	6	36	19.9	0.98	○
D966-A3C-0550	5.50	28	66	6	36	19.8	1.00	○
D966-A3C-0560	5.60	28	66	6	36	19.6	1.02	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A3C-0570	5.70	28	66	6	36	19.5	1.04	○
D966-A3C-0580	5.80	28	66	6	36	19.3	1.06	○
D966-A3C-0590	5.90	28	66	6	36	19.2	1.07	○
D966-A3C-0600	6.00	28	66	6	36	19.0	1.09	○
D966-A3C-0610	6.10	34	79	8	36	24.9	1.11	○
D966-A3C-0620	6.20	34	79	8	36	24.7	1.13	○
D966-A3C-0630	6.30	34	79	8	36	24.6	1.15	○
D966-A3C-0640	6.40	34	79	8	36	24.4	1.16	○
D966-A3C-0650	6.50	34	79	8	36	24.3	1.18	○
D966-A3C-0660	6.60	34	79	8	36	24.1	1.20	○
D966-A3C-0670	6.70	34	79	8	36	24.0	1.22	○
D966-A3C-0680	6.80	34	79	8	36	23.8	1.24	○
D966-A3C-0690	6.90	34	79	8	36	23.7	1.26	○
D966-A3C-0700	7.00	34	79	8	36	23.5	1.27	○
D966-A3C-0710	7.10	41	79	8	36	30.4	1.29	○
D966-A3C-0720	7.20	41	79	8	36	30.2	1.31	○
D966-A3C-0730	7.30	41	79	8	36	30.1	1.33	○
D966-A3C-0740	7.40	41	79	8	36	29.9	1.35	○
D966-A3C-0750	7.50	41	79	8	36	29.8	1.36	○
D966-A3C-0755	7.55	41	79	8	36	29.7	1.37	○
D966-A3C-0760	7.60	41	79	8	36	29.6	1.38	○
D966-A3C-0770	7.70	41	79	8	36	29.5	1.40	○
D966-A3C-0780	7.80	41	79	8	36	29.3	1.42	○
D966-A3C-0790	7.90	41	79	8	36	29.2	1.44	○
D966-A3C-0800	8.00	41	79	8	36	29.0	1.46	○
D966-A3C-0810	8.10	47	89	10	40	34.9	1.47	○
D966-A3C-0820	8.20	47	89	10	40	34.7	1.49	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

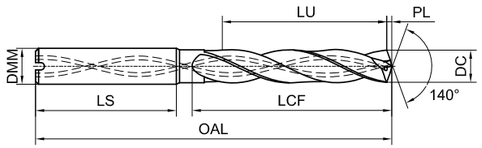
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A3C

SHANK DIN 6535HA 3D

3D Internal Coolant Twist Drill for Aluminum Alloy Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A3C-0830	8.30	47	89	10	40	34.6	1.51	○
D966-A3C-0840	8.40	47	89	10	40	34.4	1.53	○
D966-A3C-0850	8.50	47	89	10	40	34.3	1.55	○
D966-A3C-0860	8.60	47	89	10	40	34.1	1.57	○
D966-A3C-0870	8.70	47	89	10	40	34.0	1.58	○
D966-A3C-0880	8.80	47	89	10	40	33.8	1.60	○
D966-A3C-0890	8.90	47	89	10	40	33.7	1.62	○
D966-A3C-0900	9.00	47	89	10	40	33.5	1.64	○
D966-A3C-0910	9.10	47	89	10	40	33.4	1.66	○
D966-A3C-0920	9.20	47	89	10	40	33.2	1.67	○
D966-A3C-0930	9.30	47	89	10	40	33.1	1.69	○
D966-A3C-0940	9.40	47	89	10	40	32.9	1.71	○
D966-A3C-0950	9.50	47	89	10	40	32.8	1.73	○
D966-A3C-0960	9.60	47	89	10	40	32.6	1.75	○
D966-A3C-0970	9.70	47	89	10	40	32.5	1.77	○
D966-A3C-0980	9.80	47	89	10	40	32.3	1.78	○
D966-A3C-0990	9.90	47	89	10	40	32.2	1.80	○
D966-A3C-1000	10.00	47	89	10	40	32.0	1.82	○
D966-A3C-1010	10.10	55	102	12	45	39.9	1.84	○
D966-A3C-1020	10.20	55	102	12	45	39.7	1.86	○
D966-A3C-1025	10.25	55	102	12	45	39.6	1.87	○
D966-A3C-1030	10.30	55	102	12	45	39.6	1.87	○
D966-A3C-1035	10.35	55	102	12	45	39.5	1.88	○
D966-A3C-1040	10.40	55	102	12	45	39.4	1.89	○
D966-A3C-1050	10.50	55	102	12	45	39.3	1.91	○
D966-A3C-1060	10.60	55	102	12	45	39.1	1.93	○
D966-A3C-1070	10.70	55	102	12	45	39.0	1.95	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A3C-1080	10.80	55	102	12	45	38.8	1.97	○
D966-A3C-1090	10.90	55	102	12	45	38.7	1.98	○
D966-A3C-1100	11.00	55	102	12	45	38.5	2.00	○
D966-A3C-1110	11.10	55	102	12	45	38.4	2.02	○
D966-A3C-1120	11.20	55	102	12	45	38.2	2.04	○
D966-A3C-1130	11.30	55	102	12	45	38.1	2.06	○
D966-A3C-1140	11.40	55	102	12	45	37.9	2.07	○
D966-A3C-1150	11.50	55	102	12	45	37.8	2.09	○
D966-A3C-1160	11.60	55	102	12	45	37.6	2.11	○
D966-A3C-1170	11.70	55	102	12	45	37.5	2.13	○
D966-A3C-1180	11.80	55	102	12	45	37.3	2.15	○
D966-A3C-1190	11.90	55	102	12	45	37.2	2.17	○
D966-A3C-1200	12.00	55	102	12	45	37.0	2.18	○
D966-A3C-1210	12.10	60	107	14	45	41.9	2.20	○
D966-A3C-1220	12.20	60	107	14	45	41.7	2.22	○
D966-A3C-1230	12.30	60	107	14	45	41.6	2.24	○
D966-A3C-1250	12.50	60	107	14	45	41.3	2.27	○
D966-A3C-1260	12.60	60	107	14	45	41.1	2.29	○
D966-A3C-1270	12.70	60	107	14	45	41.0	2.31	○
D966-A3C-1280	12.80	60	107	14	45	40.8	2.33	○
D966-A3C-1300	13.00	60	107	14	45	40.5	2.37	○
D966-A3C-1340	13.40	60	107	14	45	39.9	2.44	○
D966-A3C-1350	13.50	60	107	14	45	39.8	2.46	○
D966-A3C-1360	13.60	60	107	14	45	39.6	2.47	○
D966-A3C-1370	13.70	60	107	14	45	39.5	2.49	○
D966-A3C-1380	13.80	60	107	14	45	39.3	2.51	○
D966-A3C-1400	14.00	60	107	14	45	39.0	2.55	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

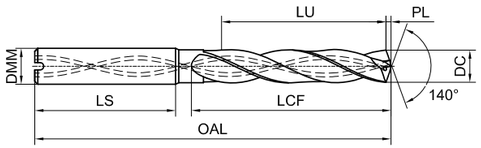
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A3C

SHANK DIN 6535HA 3D

3D Internal Coolant Twist Drill for Aluminum Alloy Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A3C-1420	14.20	65	115	16	48	43.7	2.58	○
D966-A3C-1430	14.30	65	115	16	48	43.6	2.60	○
D966-A3C-1450	14.50	65	115	16	48	43.3	2.64	○
D966-A3C-1460	14.60	65	115	16	48	43.1	2.66	○
D966-A3C-1470	14.70	65	115	16	48	43.0	2.68	○
D966-A3C-1480	14.80	65	115	16	48	42.8	2.69	○
D966-A3C-1500	15.00	65	115	16	48	42.5	2.73	○
D966-A3C-1520	15.20	65	115	16	48	42.2	2.77	○
D966-A3C-1530	15.30	65	115	16	48	42.1	2.78	○
D966-A3C-1550	15.50	65	115	16	48	41.8	2.82	○
D966-A3C-1570	15.70	65	115	16	48	41.5	2.86	○
D966-A3C-1580	15.80	65	115	16	48	41.3	2.88	○
D966-A3C-1600	16.00	65	115	16	48	41.0	2.91	○
D966-A3C-1650	16.50	73	123	18	48	48.3	3.00	○
D966-A3C-1680	16.80	73	123	18	48	47.8	3.06	○
D966-A3C-1700	17.00	73	123	18	48	47.5	3.09	○
D966-A3C-1750	17.50	73	123	18	48	46.8	3.18	○
D966-A3C-1770	17.70	73	123	18	48	46.5	3.22	○
D966-A3C-1780	17.80	73	123	18	48	46.3	3.24	○
D966-A3C-1800	18.00	73	123	18	48	46.0	3.28	○
D966-A3C-1850	18.50	79	131	20	50	51.3	3.37	○
D966-A3C-1880	18.80	79	131	20	50	50.8	3.42	○
D966-A3C-1900	19.00	79	131	20	50	50.5	3.46	○
D966-A3C-1950	19.50	79	131	20	50	49.8	3.55	○
D966-A3C-1960	19.60	79	131	20	50	49.6	3.57	○
D966-A3C-1980	19.80	79	131	20	50	49.3	3.60	○
D966-A3C-2000	20.00	79	131	20	50	49.0	3.64	○

Unit (mm)

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

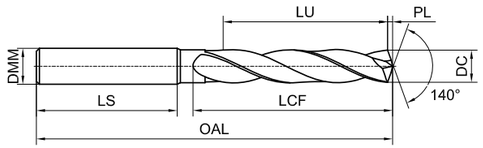
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A5N

SHANK DIN 6535HA 5D

5D External Coolant Twist Drill for Aluminum Alloy Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A5N-0200	2.00	18	62	4	38	15.0	0.36	○
D966-A5N-0250	2.50	22	62	4	34	18.3	0.45	○
D966-A5N-0270	2.70	22	62	4	34	18.0	0.49	○
D966-A5N-0290	2.90	22	62	4	34	17.7	0.53	○
D966-A5N-0300	3.00	28	66	6	36	23.5	0.55	●
D966-A5N-0310	3.10	28	66	6	36	23.4	0.56	○
D966-A5N-0320	3.20	28	66	6	36	23.2	0.58	○
D966-A5N-0330	3.30	28	66	6	36	23.1	0.60	●
D966-A5N-0340	3.40	28	66	6	36	22.9	0.62	○
D966-A5N-0350	3.50	28	66	6	36	22.8	0.64	○
D966-A5N-0360	3.60	28	66	6	36	22.6	0.66	○
D966-A5N-0370	3.70	28	66	6	36	22.5	0.67	○
D966-A5N-0380	3.80	36	74	6	36	30.3	0.69	○
D966-A5N-0390	3.90	36	74	6	36	30.2	0.71	○
D966-A5N-0400	4.00	36	74	6	36	30.0	0.73	●
D966-A5N-0410	4.10	36	74	6	36	29.9	0.75	○
D966-A5N-0420	4.20	36	74	6	36	29.7	0.76	●
D966-A5N-0430	4.30	36	74	6	36	29.6	0.78	○
D966-A5N-0440	4.40	36	74	6	36	29.4	0.80	○
D966-A5N-0450	4.50	36	74	6	36	29.3	0.82	○
D966-A5N-0460	4.60	36	74	6	36	29.1	0.84	○
D966-A5N-0470	4.70	36	74	6	36	29.0	0.86	○
D966-A5N-0475	4.75	44	82	6	36	36.9	0.86	○
D966-A5N-0480	4.80	44	82	6	36	36.8	0.87	○
D966-A5N-0490	4.90	44	82	6	36	36.7	0.89	○
D966-A5N-0500	5.00	44	82	6	36	36.5	0.91	●
D966-A5N-0510	5.10	44	82	6	36	36.4	0.93	○
D966-A5N-0520	5.20	44	82	6	36	36.2	0.95	○
D966-A5N-0530	5.30	44	82	6	36	36.1	0.96	○
D966-A5N-0540	5.40	44	82	6	36	35.9	0.98	○
D966-A5N-0550	5.50	44	82	6	36	36.5	1.00	●
D966-A5N-0560	5.60	44	82	6	36	35.6	1.02	○
D966-A5N-0570	5.70	44	82	6	36	35.5	1.04	○
D966-A5N-0580	5.80	44	82	6	36	35.3	1.06	○
D966-A5N-0590	5.90	44	82	6	36	35.2	1.07	○
D966-A5N-0595	5.95	44	82	6	36	35.1	1.08	○
D966-A5N-0600	6.00	44	82	6	36	35.0	1.09	●
D966-A5N-0610	6.10	53	91	8	36	43.9	1.11	○
D966-A5N-0620	6.20	53	91	8	36	43.7	1.13	○
D966-A5N-0630	6.30	53	91	8	36	43.6	1.15	○
D966-A5N-0635	6.35	53	91	8	36	43.5	1.16	○
D966-A5N-0640	6.40	53	91	8	36	43.4	1.16	○
D966-A5N-0650	6.50	53	91	8	36	43.3	1.18	○
D966-A5N-0660	6.60	53	91	8	36	43.1	1.20	○
D966-A5N-0670	6.70	53	91	8	36	43.0	1.22	○
D966-A5N-0675	6.75	53	91	8	36	42.9	1.23	○
D966-A5N-0680	6.80	53	91	8	36	42.8	1.24	●
D966-A5N-0685	6.85	53	91	8	36	42.7	1.25	○
D966-A5N-0690	6.90	53	91	8	36	42.7	1.26	○
D966-A5N-0700	7.00	53	91	8	36	42.5	1.27	●
D966-A5N-0710	7.10	53	91	8	36	42.4	1.29	○
D966-A5N-0720	7.20	53	91	8	36	42.2	1.31	○
D966-A5N-0730	7.30	53	91	8	36	42.1	1.33	○
D966-A5N-0740	7.40	53	91	8	36	41.9	1.35	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

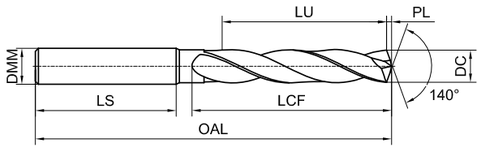
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A5N

SHANK DIN 6535HA 5D

5D External Coolant Twist Drill for Aluminum Alloy Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A5N-0750	7.50	53	91	8	36	41.8	1.36	○
D966-A5N-0760	7.60	53	91	8	36	41.6	1.38	○
D966-A5N-0770	7.70	53	91	8	36	41.5	1.40	○
D966-A5N-0780	7.80	53	91	8	36	41.3	1.42	○
D966-A5N-0790	7.90	53	91	8	36	41.2	1.44	○
D966-A5N-0800	8.00	53	91	8	36	41.0	1.46	○
D966-A5N-0810	8.10	61	103	10	40	48.9	1.47	○
D966-A5N-0820	8.20	61	103	10	40	48.7	1.49	○
D966-A5N-0830	8.30	61	103	10	40	48.6	1.51	○
D966-A5N-0840	8.40	61	103	10	40	48.4	1.53	○
D966-A5N-0850	8.50	61	103	10	40	48.3	1.55	●
D966-A5N-0860	8.60	61	103	10	40	48.1	1.57	○
D966-A5N-0870	8.70	61	103	10	40	48.0	1.58	○
D966-A5N-0880	8.80	61	103	10	40	47.8	1.60	○
D966-A5N-0890	8.90	61	103	10	40	47.7	1.62	○
D966-A5N-0900	9.00	61	103	10	40	47.5	1.64	●
D966-A5N-0910	9.10	61	103	10	40	47.4	1.66	○
D966-A5N-0920	9.20	61	103	10	40	47.2	1.67	○
D966-A5N-0930	9.30	61	103	10	40	47.1	1.69	○
D966-A5N-0940	9.40	61	103	10	40	46.9	1.71	○
D966-A5N-0950	9.50	61	103	10	40	46.8	1.73	○
D966-A5N-0960	9.60	61	103	10	40	46.6	1.75	○
D966-A5N-0970	9.70	61	103	10	40	46.5	1.77	○
D966-A5N-0980	9.80	61	103	10	40	46.3	1.78	○
D966-A5N-0990	9.90	61	103	10	40	46.2	1.80	○
D966-A5N-1000	10.00	61	103	10	40	46.0	1.82	○
D966-A5N-1010	10.10	71	118	12	45	55.9	1.84	○
D966-A5N-1020	10.20	71	118	12	45	55.7	1.86	○
D966-A5N-1030	10.30	71	118	12	45	55.6	1.87	○
D966-A5N-1040	10.40	71	118	12	45	55.4	1.89	○
D966-A5N-1050	10.50	71	118	12	45	55.3	1.91	●
D966-A5N-1060	10.60	71	118	12	45	55.1	1.93	○
D966-A5N-1070	10.70	71	118	12	45	55.0	1.95	○
D966-A5N-1080	10.80	71	118	12	45	54.8	1.97	○
D966-A5N-1090	10.90	71	118	12	45	54.7	1.98	○
D966-A5N-1100	11.00	71	118	12	45	54.5	2.00	●
D966-A5N-1110	11.10	71	118	12	45	54.4	2.02	○
D966-A5N-1120	11.20	71	118	12	45	54.2	2.04	○
D966-A5N-1130	11.30	71	118	12	45	54.1	2.06	○
D966-A5N-1140	11.40	71	118	12	45	53.9	2.07	○
D966-A5N-1150	11.50	71	118	12	45	53.8	2.09	○
D966-A5N-1160	11.60	71	118	12	45	53.6	2.11	○
D966-A5N-1170	11.70	71	118	12	45	53.5	2.13	○
D966-A5N-1180	11.80	71	118	12	45	53.3	2.15	○
D966-A5N-1190	11.90	71	118	12	45	53.2	2.17	○
D966-A5N-1200	12.00	71	118	12	45	53.0	2.18	○
D966-A5N-1210	12.10	77	124	14	45	58.9	2.20	○
D966-A5N-1220	12.20	77	124	14	45	58.7	2.22	○
D966-A5N-1230	12.30	77	124	14	45	58.6	2.24	○
D966-A5N-1240	12.40	77	124	14	45	58.4	2.26	○
D966-A5N-1250	12.50	77	124	14	45	58.3	2.27	○
D966-A5N-1260	12.60	77	124	14	45	58.1	2.29	○
D966-A5N-1270	12.70	77	124	14	45	58.0	2.31	○
D966-A5N-1280	12.80	77	124	14	45	57.8	2.33	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

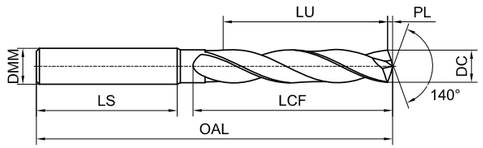
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A5N

SHANK DIN 6535HA 5D

5D External Coolant Twist Drill for Aluminum Alloy Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A5N-1290	12.90	77	124	14	45	57.7	2.35	○
D966-A5N-1300	13.00	77	124	14	45	57.5	2.37	○
D966-A5N-1320	13.20	77	124	14	45	57.2	2.40	○
D966-A5N-1350	13.50	77	124	14	45	56.8	2.46	○
D966-A5N-1370	13.70	77	124	14	45	56.5	2.49	○
D966-A5N-1380	13.80	77	124	14	45	56.3	2.51	○
D966-A5N-1390	13.90	77	124	14	45	56.2	2.53	○
D966-A5N-1400	14.00	77	124	14	45	56.0	2.55	○
D966-A5N-1420	14.20	83	133	16	48	61.7	2.58	○
D966-A5N-1430	14.30	83	133	16	48	61.6	2.60	○
D966-A5N-1450	14.50	83	133	16	48	61.3	2.64	○
D966-A5N-1460	14.60	83	133	16	48	61.1	2.66	○
D966-A5N-1480	14.80	83	133	16	48	60.8	2.69	○
D966-A5N-1500	15.00	83	133	16	48	60.5	2.73	○
D966-A5N-1510	15.10	83	133	16	48	60.4	2.75	○
D966-A5N-1550	15.50	83	133	16	48	59.8	2.82	○
D966-A5N-1570	15.70	83	133	16	48	59.5	2.86	○
D966-A5N-1580	15.80	83	133	16	48	59.3	2.88	○
D966-A5N-1600	16.00	83	133	16	48	59.0	2.91	○
D966-A5N-1650	16.50	93	143	18	48	68.3	3.00	○
D966-A5N-1660	16.60	93	143	18	48	68.1	3.02	○
D966-A5N-1680	16.80	93	143	18	48	67.8	3.06	○
D966-A5N-1700	17.00	93	143	18	48	67.5	3.09	○
D966-A5N-1750	17.50	93	143	18	48	66.8	3.18	○
D966-A5N-1780	17.80	93	143	18	48	66.3	3.24	○
D966-A5N-1800	18.00	93	143	18	48	66.0	3.28	○
D966-A5N-1850	18.50	101	153	20	50	73.3	3.37	○
D966-A5N-1860	18.60	101	153	20	50	73.1	3.38	○
D966-A5N-1900	19.00	101	153	20	50	72.5	3.46	○
D966-A5N-1950	19.50	101	153	20	50	71.8	3.55	○
D966-A5N-2000	20.00	101	153	20	50	71.0	3.64	○

Unit (mm)

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D2-D20 tools

Range of Sizes	DC(m7)	DMM(h6)
≥2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

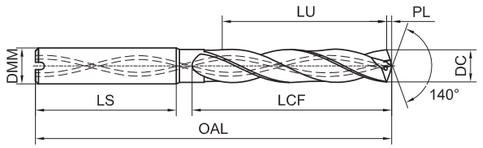
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A5C

SHANK DIN 6535HA 5D

5D Internal Coolant Twist Drill for Aluminum Alloy Machining



Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A5C-0300	3.00	28	66.0	6	36	23.5	0.55	●
D966-A5C-0310	3.10	28	66.0	6	36	23.4	0.56	○
D966-A5C-0320	3.20	28	66.0	6	36	23.2	0.58	○
D966-A5C-0330	3.30	28	66.0	6	36	23.1	0.60	●
D966-A5C-0340	3.40	28	66.0	6	36	22.9	0.62	○
D966-A5C-0350	3.50	28	66.0	6	36	22.8	0.64	○
D966-A5C-0360	3.60	28	66.0	6	36	22.6	0.66	○
D966-A5C-0370	3.70	28	66.0	6	36	22.5	0.67	○
D966-A5C-0380	3.80	36	74.0	6	36	30.3	0.69	○
D966-A5C-0390	3.90	36	74.0	6	36	30.2	0.71	○
D966-A5C-0400	4.00	36	74.0	6	36	30.0	0.73	●
D966-A5C-0410	4.10	36	74.0	6	36	29.9	0.75	○
D966-A5C-0420	4.20	36	74.0	6	36	29.7	0.76	●
D966-A5C-0430	4.30	36	74.0	6	36	29.6	0.78	○
D966-A5C-0440	4.40	36	74.0	6	36	29.4	0.80	○
D966-A5C-0450	4.50	36	74.0	6	36	29.3	0.82	○
D966-A5C-0460	4.60	36	74.0	6	36	29.1	0.84	○
D966-A5C-0465	4.65	36	74.0	6	36	29.0	0.85	○
D966-A5C-0470	4.70	36	74.0	6	36	29.0	0.86	○
D966-A5C-0480	4.80	44	82.0	6	36	36.8	0.87	○
D966-A5C-0490	4.90	44	82.0	6	36	36.7	0.89	○
D966-A5C-0500	5.00	44	82.0	6	36	36.5	0.91	●
D966-A5C-0510	5.10	44	82.0	6	36	36.4	0.93	○
D966-A5C-0520	5.20	44	82.0	6	36	36.2	0.95	○
D966-A5C-0530	5.30	44	82.0	6	36	36.1	0.96	○
D966-A5C-0540	5.40	44	82.0	6	36	35.9	0.98	○
D966-A5C-0550	5.50	44	82.0	6	36	35.8	1.00	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A5C-0560	5.60	44	82.0	6	36	35.6	1.02	○
D966-A5C-0570	5.70	44	82.0	6	36	35.5	1.04	○
D966-A5C-0580	5.80	44	82.0	6	36	35.3	1.06	○
D966-A5C-0590	5.90	44	82.0	6	36	35.2	1.07	○
D966-A5C-0600	6.00	44	82.0	6	36	35.0	1.09	●
D966-A5C-0610	6.10	53	91.0	8	36	43.9	1.11	○
D966-A5C-0620	6.20	53	91.0	8	36	43.7	1.13	○
D966-A5C-0630	6.30	53	91.0	8	36	43.6	1.15	○
D966-A5C-0640	6.40	53	91.0	8	36	43.4	1.16	○
D966-A5C-0650	6.50	53	91.0	8	36	43.3	1.18	○
D966-A5C-0660	6.60	53	91.0	8	36	43.1	1.20	○
D966-A5C-0670	6.70	53	91.0	8	36	43.0	1.22	○
D966-A5C-0680	6.80	53	91.0	8	36	42.8	1.24	●
D966-A5C-0690	6.90	53	91.0	8	36	42.7	1.26	○
D966-A5C-0700	7.00	53	91.0	8	36	42.5	1.27	●
D966-A5C-0710	7.10	53	91.0	8	36	42.4	1.29	○
D966-A5C-0720	7.20	53	91.0	8	36	42.2	1.31	○
D966-A5C-0730	7.30	53	91.0	8	36	42.1	1.33	○
D966-A5C-0740	7.40	53	91.0	8	36	41.9	1.35	○
D966-A5C-0750	7.50	53	91.0	8	36	41.8	1.36	○
D966-A5C-0760	7.60	53	91.0	8	36	41.6	1.38	○
D966-A5C-0770	7.70	53	91.0	8	36	41.5	1.40	○
D966-A5C-0780	7.80	53	91.0	8	36	41.3	1.42	○
D966-A5C-0790	7.90	53	91.0	8	36	41.2	1.44	○
D966-A5C-0800	8.00	53	91.0	8	36	41.0	1.46	●
D966-A5C-0810	8.10	61	103.0	10	40	48.9	1.47	○
D966-A5C-0820	8.20	61	103.0	10	40	48.7	1.49	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

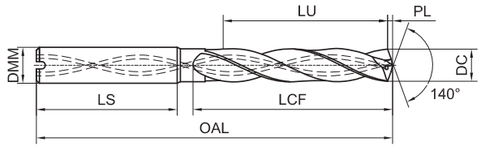
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A5C

SHANK DIN 6535HA 5D

5D Internal Coolant Twist Drill for Aluminum Alloy Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A5C-0830	8.30	61	103.0	10	40	48.6	1.51	○
D966-A5C-0840	8.40	61	103.0	10	40	48.4	1.53	○
D966-A5C-0850	8.50	61	103.0	10	40	48.3	1.55	○
D966-A5C-0860	8.60	61	103.0	10	40	48.1	1.57	○
D966-A5C-0870	8.70	61	103.0	10	40	48.0	1.58	○
D966-A5C-0880	8.80	61	103.0	10	40	47.8	1.60	○
D966-A5C-0890	8.90	61	103.0	10	40	47.7	1.62	○
D966-A5C-0900	9.00	61	103.0	10	40	47.5	1.64	●
D966-A5C-0910	9.10	61	103.0	10	40	47.4	1.66	○
D966-A5C-0920	9.20	61	103.0	10	40	47.2	1.67	○
D966-A5C-0930	9.30	61	103.0	10	40	47.1	1.69	○
D966-A5C-0940	9.40	61	103.0	10	40	46.9	1.71	○
D966-A5C-0950	9.50	61	103.0	10	40	46.8	1.73	○
D966-A5C-0960	9.60	61	103.0	10	40	46.6	1.75	○
D966-A5C-0970	9.70	61	103.0	10	40	46.5	1.77	○
D966-A5C-0980	9.80	61	103.0	10	40	46.3	1.78	○
D966-A5C-0990	9.90	61	103.0	10	40	46.2	1.80	○
D966-A5C-1000	10.00	61	103.0	10	40	46.0	1.82	●
D966-A5C-1010	10.10	71	118.0	12	45	55.9	1.84	○
D966-A5C-1020	10.20	71	118.0	12	45	55.7	1.86	○
D966-A5C-1025	10.25	71	118.0	12	45	55.6	1.87	○
D966-A5C-1030	10.30	71	118.0	12	45	55.6	1.87	○
D966-A5C-1040	10.40	71	118.0	12	45	55.4	1.89	○
D966-A5C-1050	10.50	71	118.0	12	45	55.3	1.91	●
D966-A5C-1060	10.60	71	118.0	12	45	55.1	1.93	○
D966-A5C-1070	10.70	71	118.0	12	45	55.0	1.95	○
D966-A5C-1080	10.80	71	118.0	12	45	54.8	1.97	○

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A5C-1090	10.90	71	118.0	12	45	54.7	1.98	○
D966-A5C-1100	11.00	71	118.0	12	45	54.5	2.00	●
D966-A5C-1110	11.10	71	118.0	12	45	54.4	2.02	○
D966-A5C-1120	11.20	71	118.0	12	45	54.2	2.04	○
D966-A5C-1130	11.30	71	118.0	12	45	54.1	2.06	○
D966-A5C-1140	11.40	71	118.0	12	45	53.9	2.07	○
D966-A5C-1150	11.50	71	118.0	12	45	53.8	2.09	○
D966-A5C-1160	11.60	71	118.0	12	45	53.6	2.11	○
D966-A5C-1170	11.70	71	118.0	12	45	53.5	2.13	○
D966-A5C-1180	11.80	71	118.0	12	45	53.3	2.15	○
D966-A5C-1190	11.90	71	118.0	12	45	53.2	2.17	○
D966-A5C-1200	12.00	71	118.0	12	45	53.0	2.18	●
D966-A5C-1205	12.05	71	118.0	12	45	52.9	2.19	○
D966-A5C-1210	12.10	77	124.0	14	45	58.9	2.20	○
D966-A5C-1220	12.20	77	124.0	14	45	58.7	2.22	○
D966-A5C-1230	12.30	77	124.0	14	45	58.6	2.24	○
D966-A5C-1240	12.40	77	124.0	14	45	58.4	2.26	○
D966-A5C-1250	12.50	77	124.0	14	45	58.3	2.27	○
D966-A5C-1260	12.60	77	124.0	14	45	58.1	2.29	○
D966-A5C-1270	12.70	77	124.0	14	45	58.0	2.31	○
D966-A5C-1280	12.80	77	124.0	14	45	57.8	2.33	○
D966-A5C-1300	13.00	77	124.0	14	45	57.5	2.37	○
D966-A5C-1310	13.10	77	124.0	14	45	57.4	2.38	○
D966-A5C-1320	13.20	77	124.0	14	45	57.2	2.40	○
D966-A5C-1350	13.50	77	124.0	14	45	56.8	2.46	○
D966-A5C-1360	13.60	77	124.0	14	45	56.6	2.47	○
D966-A5C-1370	13.70	77	124.0	14	45	56.5	2.49	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

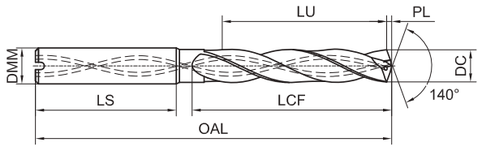
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D966-A5C

SHANK DIN 6535HA | 5D

5D Internal Coolant Twist Drill for Aluminum Alloy Machining



Continued

Order No.	DC (m7)	LCF	OAL	DMM (h6)	LS	LU	PL	In Stock
D966-A5C-1380	13.80	77	124.0	14	45	56.3	2.51	○
D966-A5C-1390	13.90	77	124.0	14	45	56.2	2.53	○
D966-A5C-1400	14.00	77	124.0	14	45	56.0	2.55	○
D966-A5C-1410	14.10	83	133.0	16	48	61.9	2.57	○
D966-A5C-1420	14.20	83	133.0	16	48	61.7	2.58	○
D966-A5C-1430	14.30	83	133.0	16	48	61.6	2.60	○
D966-A5C-1450	14.50	83	133.0	16	48	61.3	2.64	○
D966-A5C-1460	14.60	83	133.0	16	48	61.1	2.66	○
D966-A5C-1470	14.70	83	133.0	16	48	61.0	2.68	○
D966-A5C-1480	14.80	83	133.0	16	48	60.8	2.69	○
D966-A5C-1500	15.00	83	133.0	16	48	60.5	2.73	○
D966-A5C-1510	15.10	83	133.0	16	48	60.4	2.75	○
D966-A5C-1520	15.20	83	133.0	16	48	60.2	2.77	○
D966-A5C-1530	15.30	83	133.0	16	48	60.1	2.78	○
D966-A5C-1550	15.50	83	133.0	16	48	59.8	2.82	○
D966-A5C-1570	15.70	83	133.0	16	48	59.5	2.86	○
D966-A5C-1580	15.80	83	133.0	16	48	59.3	2.88	○
D966-A5C-1600	16.00	83	133.0	16	48	59.0	2.91	○
D966-A5C-1630	16.30	93	143.0	18	48	68.6	2.97	○
D966-A5C-1650	16.50	93	143.0	18	48	68.3	3.00	○
D966-A5C-1680	16.80	93	143.0	18	48	67.8	3.06	○
D966-A5C-1690	16.90	93	143.0	18	48	67.7	3.08	○
D966-A5C-1700	17.00	93	143.0	18	48	67.5	3.09	○
D966-A5C-1720	17.20	93	143.0	18	48	67.2	3.13	○
D966-A5C-1750	17.50	93	143.0	18	48	66.8	3.18	○
D966-A5C-1770	17.70	93	143.0	18	48	66.5	3.22	○
D966-A5C-1780	17.80	93	143.0	18	48	66.3	3.24	○
D966-A5C-1800	18.00	93	143.0	18	48	66.0	3.28	○
D966-A5C-1810	18.10	101	153.0	20	50	73.9	3.29	○
D966-A5C-1850	18.50	101	153.0	20	50	73.3	3.37	○
D966-A5C-1860	18.60	101	153.0	20	50	73.1	3.38	○
D966-A5C-1880	18.80	101	153.0	20	50	72.8	3.42	○
D966-A5C-1900	19.00	101	153.0	20	50	72.5	3.46	○
D966-A5C-1950	19.50	101	153.0	20	50	71.8	3.55	○
D966-A5C-1980	19.80	101	153.0	20	50	71.3	3.60	○
D966-A5C-2000	20.00	101	153.0	20	50	71.0	3.64	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Range of Sizes	DC(m7)	DMM(h6)
⩾2—3	+0.002/+0.012	0.000/-0.006
>3—6	+0.004/+0.016	0.000/-0.008
>6—10	+0.006/+0.021	0.000/-0.009
>10—18	+0.007/+0.025	0.000/-0.011
>18—20	+0.008/+0.029	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	○	○				

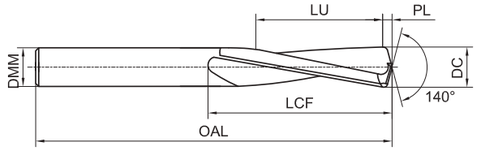
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P133

D998-Y3N

SHANK h6 | AlTiN nano | 3D

3D External Coolant Twist Drill for Hardness Steel Machining



Order No.	DC (h7)	LCF	OAL	DMM (h6)	LU	PL	In Stock
D998-Y3N-0400	4.00	22	55	4	16.0	0.73	●
D998-Y3N-0500	5.00	26	62	5	18.5	0.91	●
D998-Y3N-0600	6.00	28	66	6	19.0	1.09	●
D998-Y3N-0700	7.00	34	74	7	23.5	1.27	●
D998-Y3N-0800	8.00	37	79	8	25.0	1.46	●
D998-Y3N-0900	9.00	40	84	9	26.5	1.64	●
D998-Y3N-1000	10.00	43	89	10	28.0	1.82	●
D998-Y3N-1100	11.00	47	95	11	30.5	2.00	○
D998-Y3N-1200	12.00	51	102	12	33.0	2.18	●
D998-Y3N-1300	13.00	51	102	13	31.5	2.37	○
D998-Y3N-1400	14.00	54	107	14	33.0	2.55	●
D998-Y3N-1500	15.00	56	111	15	33.5	2.73	○
D998-Y3N-1600	16.00	58	115	16	34.0	2.91	○

●Stock ○Available Upon Order

Notes: Non-standard customization is available for D3-D20 tools

Unit (mm)

Range of Sizes	DC(h7)	DMM(h6)
⩾2—3	0.000/-0.010	0.000/-0.006
⩾3—6	0.000/-0.012	0.000/-0.008
>6—10	0.000/-0.015	0.000/-0.009
>10—18	0.000/-0.018	0.000/-0.011
>18—20	0.000/-0.021	0.000/-0.013

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
	○			○	○							◎	○

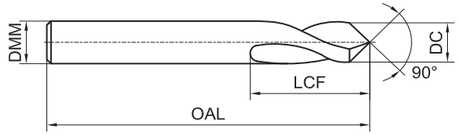
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P134

D101-AMN

SHANK h6 | TiAlN

90°NC Pilot Drill



Order No.	DC	LCF	OAL	DMM (h6)	In Stock
D101-AMN-0400	4	8	50	4	●
D101-AMN-0500	5	10	62	5	●
D101-AMN-0600	6	15	66	6	●
D101-AMN-0800	8	17	79	8	●
D101-AMN-1000	10	20	89	10	●
D101-AMN-1200	12	25	102	12	●
D101-AMN-1400	14	30	107	14	●
D101-AMN-1600	16	35	115	16	●
D101-AMN-1800	18	38	123	18	○
D101-AMN-2000	20	40	131	20	●

●Stock ○Available Upon Order Notes: Non-standard customization is available for D3-D20 tools Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		◎		◎	○						

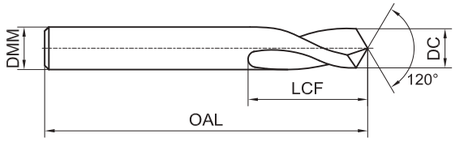
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P135

D102-ANN

SHANK h6 | TiAlN

120 °NC Pilot Drill



Order No.	DC	LCF	OAL	DMM (h6)	In Stock
D102-ANN-0500	5	10	62	5	●
D102-ANN-0600	6	15	66	6	●
D102-ANN-0800	8	17	79	8	●
D102-ANN-1000	10	20	89	10	●
D102-ANN-1200	12	25	102	12	●
D102-ANN-1400	14	30	107	14	○
D102-ANN-1600	16	35	115	16	●
D102-ANN-2000	20	40	131	20	●

●Stock ○Available Upon Order Notes: Non-standard customization is available for D3-D20 tools Unit (mm)

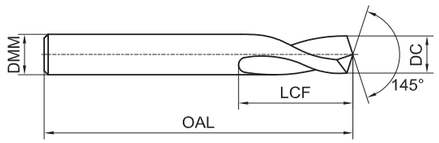
Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<32HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○	○	○		◎		◎	○						

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P135

D103-APN

145 °NC Pilot Drill



Order No.	DC	LCF	OAL	DMM (h6)	In Stock
D103-APN-0400	4	8	50	4	○
D103-APN-0500	5	10	62	5	●
D103-APN-0600	6	15	66	6	●
D103-APN-0800	8	17	79	8	●
D103-APN-1000	10	20	89	10	●
D103-APN-1200	12	25	102	12	●
D103-APN-1400	14	30	107	14	○
D103-APN-1600	16	35	115	16	○
D103-APN-2000	20	40	131	20	○

●Stock ○Available Upon Order　Notes: Non-standard customization is available for D3-D20 tools　Unit (mm)

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC			＜32HRC	35-45HRC	Si＜12%	Si＞12%	＜HB200		＜HB450	＜HB400	45-55HRC	55-60HRC
○	○	○		◎		◎	○						

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P135

Recommended Cutting Data

D918S High-performance Plain Steel Machining Twist Drill

Workpiece Material		Cutting Speed Vc (m/min)		Feed Fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
P	Low-carbon Steel, Long Chips (＜125HB)	100-80-50	140-100-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Low-carbon Steel, Short Chips, Free Cutting Steel (＜125HB)	100-75-50	140-100-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	High-carbon Steel and Medium-carbon Steel (＜25HRC)	90-70-45	120-80-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Alloy Steel, Tool Steel (＜35HRC)	90-70-45	110-80-50	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Alloy Steel, Tool Steel (35-48HRC)	80-60-40	90-60-40	0.09-0.13-0.16	0.10-0.14-0.17	0.13-0.17-0.22	0.17-0.23-0.29	0.21-0.28-0.35
M	Austenitic Stainless Steels (130- 200HB)	—	80-60-40	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.12-0.14	0.08-0.13-0.18	0.09-0.15-0.20
	High Strength Austenitic and Cast Stainless Steel (＜25HRC)	—	80-60-40	0.03-0.06-0.08	0.04-0.08-0.10	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.11-0.14
	Duplex Stainless Steel (<30HRC)	—	60-45-30	0.03-0.06-0.08	0.04-0.08-0.10	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.11-0.14
K	Gray Cast Iron, Nodular Cast Iron (<28HRC)	100-80-60	140-120-60	0.13-0.17-0.20	0.15-0.20-0.23	0.17-0.25-0.30	0.20-0.27-0.35	0.23-0.30-0.40
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (＜28HRC)	100-80-60	140-120-60	0.11-0.15-0.18	0.13-0.17-0.20	0.15-0.20-0.25	0.17-0.25-0.32	0.20-0.28-0.36
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (＜45HRC)	90-70-60	100-90-60	0.06-0.09-0.11	0.08-0.10-0.13	0.10-0.13-0.16	0.12-0.16-0.20	0.14-0.20-0.26

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D918S High-performance Plain Steel Machining Twist Drill

Workpiece Material		Cutting speed Vc (m/min)		Feed Fn (mm/rev)				
				Φ12	Φ14	Φ16	Φ18	Φ20
P	Low-carbon Steel, Long Chips (<125HB)	100-80-50	140-100-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	100-75-50	140-100-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	High-carbon Steel and Medium-carbon Steel (<25HRC)	90-70-45	120-80-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Alloy Steel, Tool Steel (<35HRC)	90-70-45	110-80-50	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Alloy Steel, Tool Steel (35-48HRC)	80-60-40	90-60-40	0.22-0.30-0.37	0.26-0.35-0.41	0.28-0.37-0.44	0.31-0.38-0.46	0.31-0.39-0.47
M	Austenitic Stainless Steels (130- 200HB)	—	80-60-40	0.10-0.17-0.22	0.11-0.18-0.24	0.12-0.20-0.24	0.13-0.22-0.26	0.14-0.24-0.28
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	—	80-60-40	0.08-0.13-0.16	0.09-0.13-0.18	0.10-0.14-0.18	0.10-0.14-0.20	0.12-0.16-0.22
	Duplex Stainless Steel (<30HRC)	—	60-45-30	0.08-0.13-0.16	0.09-0.13-0.18	0.10-0.14-0.18	0.10-0.14-0.20	0.12-0.16-0.22
K	Gray Cast Iron, Nodular Cast Iron (<28HRC)	100-80-60	140-120-60	0.25-0.33-0.45	0.28-0.36-0.48	0.30-0.40-0.50	0.32-0.42-0.52	0.35-0.45-0.55
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	100-80-60	140-120-60	0.22-0.30-0.42	0.24-0.33-0.45	0.25-0.35-0.48	0.28-0.38-0.48	0.30-0.40-0.50
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	90-70-60	100-90-60	0.16-0.22-0.28	0.18-0.24-0.30	0.20-0.26-0.32	0.22-0.28-0.34	0.23-0.28-0.35

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D968S Stainless Steel Machining Twist Drill

Workpiece Material		Cutting Speed Vc (m/min)		Feed Fn (mm/rev)			
				Φ1	Φ1.5	Φ2	Φ2.5
P	Low-carbon Steel, Long Chips (<125HB)	100-80-50	140-100-60	0.06-0.10-0.13	0.08-0.12-14	0.09-0.13-0.16	0.09-0.13-0.16
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	100-75-50	140-100-60	0.06-0.10-0.13	0.08-0.12-14	0.09-0.13-0.16	0.09-0.13-0.16
	High-carbon Steel and Medium-carbon Steel (<25HRC)	90-70-45	120-80-60	0.06-0.10-0.13	0.08-0.12-14	0.09-0.13-0.16	0.09-0.13-0.16
	Alloy Steel, Tool Steel (<35HRC)	90-70-45	110-80-50	0.06-0.10-0.13	0.08-0.12-14	0.09-0.13-0.16	0.09-0.13-0.16
	Austenitic Stainless Steels (130- 200HB)	40-30-20	80-60-40	0.02-0.04-0.06	0.03-0.05-0.07	0.03-0.06-0.08	0.03-0.06-0.08
M	High Strength Austenitic and Cast Stainless Steel (<25HRC)	40-30-20	80-60-40	0.02-0.04-0.06	0.03-0.05-0.07	0.03-0.06-0.08	0.03-0.06-0.08
	Duplex Stainless Steel (<30HRC)	35-25-20	60-45-30	0.02-0.04-0.06	0.03-0.05-0.07	0.03-0.06-0.08	0.03-0.06-0.08
	Iron-based High-temperature Alloy (160-260HB)	25-15-10	35-25-15	0.02-0.03-0.05	0.03-0.04-0.06	0.03-0.04-0.06	0.03-0.04-0.06
S	Cobalt-based High-temperature Alloy (250-450HB)	25-15-10	35-25-15	0.02-0.03-0.05	0.03-0.04-0.06	0.03-0.04-0.06	0.03-0.04-0.06
	Nickel-based High-temperature Alloy (160-450HB)	25-15-10	35-25-15	0.02-0.03-0.05	0.03-0.04-0.06	0.03-0.04-0.06	0.03-0.04-0.06
	Titanium-based Titanium Alloy (300-400HB)	40-30-15	50-40-25	0.02-0.03-0.05	0.03-0.04-0.06	0.03-0.04-0.06	0.03-0.05-0.08

Notes: The 5D external cooling drill bit is not suitable for machining Workpiece Materials of type S.

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D968S Stainless Steel Machining Twist Drill

Workpiece Material		Cutting Speed Vc (m/min)		Feed Fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
P	Low-carbon Steel, Long Chips (<125HB)	100-80-50	140-100-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	100-75-50	140-100-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	High-carbon Steel and medium-carbon Steel (<25HRC)	90-70-45	120-80-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Alloy Steel, Tool Steel (<35HRC)	90-70-45	110-80-50	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Austenitic Stainless Steels (130- 200HB)	40-30-20	80-60-40	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.12-0.14	0.08-0.13-0.18	0.09-0.15-0.20
M	High Strength Austenitic and Cast Stainless Steel (<25HRC)	40-30-20	80-60-40	0.03-0.06-0.08	0.04-0.08-0.10	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.11-0.14
	Duplex Stainless Steel (<30HRC)	35-25-20	60-45-30	0.03-0.06-0.08	0.04-0.08-0.10	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.11-0.14
	Iron-based high-Temperature Alloy (160-260HB)	25-15-10	35-25-15	0.03-0.04-0.06	0.04-0.06-0.08	0.05-0.08-0.10	0.06-0.09-0.11	0.07-0.10-0.12
S	Cobalt-Based high-Temperature Alloy (250-450HB)	25-15-10	35-25-15	0.03-0.04-0.06	0.04-0.06-0.08	0.05-0.08-0.10	0.06-0.09-0.11	0.07-0.10-0.12
	Nickel-Based High-temperature Alloy (160-450HB)	25-15-10	35-25-15	0.03-0.04-0.06	0.04-0.06-0.08	0.05-0.08-0.10	0.06-0.09-0.11	0.07-0.10-0.12
	Titanium-based Titanium Alloy (300-400HB)	40-30-15	50-40-25	0.03-0.05-0.08	0.04-0.07-0.10	0.05-0.09-0.10	0.06-0.10-0.12	0.07-0.12-0.14

Notes: The 5D external cooling drill bit is not suitable for machining Workpiece Materials of type S.

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D968S Stainless Steel Machining Twist Drill

Workpiece Material		Cutting Speed Vc (m/min)		Feed Fn (mm/rev)				
				Φ12	Φ14	Φ16	Φ18	Φ20
P	Low-carbon Steel, Long Chips (<125HB)	100-80-50	140-100-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	100-75-50	140-100-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	High-carbon Steel and medium-carbon Steel (<25HRC)	90-70-45	120-80-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Alloy Steel, Tool Steel (<35HRC)	90-70-45	110-80-50	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Austenitic Stainless Steels (130- 200HB)	40-30-20	80-60-40	0.10-0.17-0.22	0.11-0.18-0.24	0.12-0.20-0.24	0.13-0.22-0.26	0.14-0.24-0.28
M	High Strength Austenitic and Cast Stainless Steel (<25HRC)	40-30-20	80-60-40	0.08-0.13-0.16	0.09-0.13-0.18	0.10-0.14-0.18	0.10-0.14-0.20	0.12-0.16-0.22
	Duplex Stainless Steel (<30HRC)	35-25-20	60-45-30	0.08-0.13-0.16	0.09-0.13-0.18	0.10-0.14-0.18	0.10-0.14-0.20	0.12-0.16-0.22
	Iron-based high-Temperature Alloy (160-260HB)	25-15-10	35-25-15	0.08-0.12-0.14	0.09-0.13-0.16	0.10-0.14-0.16	0.10-0.15-0.18	0.12-0.16-0.20
S	Cobalt-Based high-Temperature Alloy (250-450HB)	25-15-10	35-25-15	0.08-0.12-0.14	0.09-0.13-0.16	0.10-0.14-0.16	0.10-0.15-0.18	0.12-0.16-0.20
	Nickel-Based High-temperature Alloy (160-450HB)	25-15-10	35-25-15	0.08-0.12-0.14	0.09-0.13-0.16	0.10-0.14-0.16	0.10-0.15-0.18	0.12-0.16-0.20
	Titanium-based Titanium Alloy (300-400HB)	40-30-15	50-40-25	0.08-0.14-0.16	0.09-0.15-0.18	0.10-0.17-0.18	0.10-0.16-0.20	0.12-0.18-0.22

Notes: The 5D external cooling drill bit is not suitable for machining Workpiece Materials of type S.

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D938 Plain Steel Machining Twist Drill 3D/5D

Workpiece Material		Cutting speed Vc (m/min)		Feed fn (mm/rev)			
				Φ1	Φ1.5	Φ2	Φ2.5
P	Low-carbon Steel, Long Chips (<125HB)	120-80-50	140-100-60	0.06-0.08-0.12	0.08-0.15-0.18	0.10-0.15-0.20	0.10-0.15-0.20
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	120-75-50	140-100-60	0.06-0.08-0.12	0.08-0.15-0.18	0.10-0.15-0.20	0.10-0.15-0.20
	High-carbon Steel and Medium-carbon Steel (<25HRC)	120-70-45	120-80-60	0.06-0.08-0.12	0.08-0.15-0.18	0.10-0.15-0.20	0.10-0.15-0.20
	Alloy Steel, Tool Steel (<35HRC)	100-70-45	110-80-60	0.05-0.07-0.11	0.08-0.13-0.16	0.08-0.13-0.16	0.09-0.13-0.16
	Alloy Steel, Tool Steel (35-48HRC)	80-60-35	90-60-35	0.05-0.07-0.11	0.08-0.10-0.14	0.08-0.11-0.14	0.08-0.11-0.14
	PH and Ferritic, Martensitic Steel (<35HRC)	70-50-30	90-60-30	0.04-0.07-0.10	0.05-0.08-0.11	0.05-0.08-0.11	0.05-0.08-0.11
	High Strength PH and Ferritic, Martensitic Steel (35-48HRC)	70-45-25	80-50-30	0.03-0.05-0.07	0.04-0.06-0.08	0.04-0.06-0.08	0.04-0.06-0.08
M	Austenitic Stainless Steels (130- 200HB)	—	80-60-40	0.02-0.04-0.06	0.03-0.05-0.07	0.03-0.06-0.08	0.03-0.06-0.08
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	—	80-60-40	0.02-0.04-0.06	0.03-0.05-0.07	0.03-0.06-0.08	0.03-0.06-0.08
	Duplex Stainless Steel (<30HRC)	—	60-45-30	0.03-0.04-0.07	0.03-0.05-0.07	0.03-0.06-0.08	0.03-0.06-0.08
K	Gray Cast Iron (<32HRC)	140-100-60	160-120-60	0.08-0.10-0.14	0.10-0.13-0.16	0.12-0.15-0.18	0.13-0.17-0.20
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	120-80-60	140-100-60	0.06-0.09-0.13	0.09-0.12-0.15	0.11-0.14-0.17	0.11-0.15-0.18
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	100-70-50	100-80-50	0.04-0.07-0.09	0.05-0.08-0.10	0.06-0.09-0.11	0.06-0.09-0.11

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D938 Plain Steel Machining Twist Drill 3D/5D

Workpiece Material		Cutting speed Vc (m/min)		Feed fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
P	Low-carbon Steel, Long Chips (<125HB)	120-80-50	140-100-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.32	0.16-0.22-0.35
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	120-75-50	140-100-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.32	0.16-0.22-0.35
	High-carbon Steel and Medium-carbon Steel (<25HRC)	120-70-45	120-80-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.30	0.16-0.22-0.32
	Alloy Steel, Tool Steel (<35HRC)	100-70-45	110-80-60	0.09-0.13-0.16	0.09-0.13-0.16	0.12-0.17-0.23	0.14-0.20-0.28	0.14-0.20-0.30
	Alloy Steel, Tool Steel (35-48HRC)	80-60-35	90-60-35	0.08-0.11-0.14	0.08-0.11-0.14	0.08-0.14-0.20	0.09-0.16-0.25	0.09-0.16-0.28
	PH and Ferritic, Martensitic Steel (<35HRC)	70-50-30	90-60-30	0.05-0.08-0.11	0.05-0.08-0.11	0.07-0.12-0.17	0.08-0.14-0.20	0.08-0.14-0.23
	High Strength PH and Ferritic, Martensitic Steel (35-48HRC)	70-45-25	80-50-30	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.10-0.14	0.08-0.13-0.18	0.08-0.13-0.20
M	Austenitic Stainless Steels (130-200HB)	—	80-60-40	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.12-0.14	0.08-0.13-0.18	0.09-0.15-0.20
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	—	80-60-40	0.03-0.06-0.08	0.04-0.08-0.10	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.11-0.14
	Duplex Stainless Steel (<30HRC)	—	60-45-30	0.03-0.06-0.08	0.04-0.08-0.10	0.05-0.08-0.10	0.06-0.10-0.12	0.07-0.11-0.14
K	Gray Cast Iron (<32HRC)	140-100-60	160-120-60	0.13-0.17-0.20	0.15-0.20-0.23	0.17-0.25-0.30	0.20-0.27-0.35	0.23-0.30-0.40
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	120-80-60	140-100-60	0.11-0.15-0.18	0.13-0.17-0.20	0.15-0.20-0.25	0.17-0.25-0.32	0.20-0.28-0.36
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	100-70-50	100-80-50	0.06-0.09-0.11	0.08-0.10-0.13	0.10-0.13-0.16	0.12-0.16-0.20	0.14-0.20-0.26

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D938 Plain Steel Machining Twist Drill 3D/5D

Workpiece Material		Cutting speed Vc (m/min)		Feed fn (mm/rev)				
				Φ12	Φ14	Φ16	Φ18	Φ20
P	Low-carbon Steel, Long Chips (<125HB)	120-80-50	140-100-60	0.18-0.28-0.40	0.22-0.32-0.45	0.22-0.32-0.45	0.25-0.38-0.50	0.25-0.38-0.50
	Low-carbon Steel, Short Chips, Free Cutting steel (<125HB)	120-75-50	140-100-60	0.18-0.28-0.40	0.22-0.32-0.45	0.22-0.32-0.45	0.25-0.38-0.50	0.25-0.38-0.50
	High-carbon Steel and Medium-carbon Steel (<25HRC)	120-70-45	120-80-60	0.18-0.28-0.38	0.22-0.32-0.45	0.22-0.32-0.45	0.25-0.38-0.50	0.25-0.38-0.50
	Alloy Steel, Tool Steel (<35HRC)	100-70-45	110-80-60	0.15-0.23-0.34	0.18-0.25-0.38	0.18-0.25-0.38	0.20-0.30-0.40	0.20-0.30-0.40
	Alloy Steel, Tool Steel (35-48HRC)	80-60-35	90-60-35	0.11-0.19-0.30	0.12-0.22-0.32	0.12-0.22-0.32	0.14-0.24-0.34	0.14-0.24-0.34
	PH and Ferritic, Martensitic Steel (<35HRC)	70-50-30	90-60-30	0.10-0.18-0.28	0.12-0.20-0.30	0.12-0.20-0.30	0.14-0.24-0.32	0.14-0.24-0.32
	High strength PH and Ferritic, Martensitic Steel (35-48HRC)	70-45-25	80-50-30	0.10-0.18-0.28	0.12-0.20-0.30	0.12-0.20-0.30	0.14-0.24-0.32	0.14-0.24-0.32
M	Austenitic Stainless Steels (130- 200HB)	—	80-60-40	0.10-0.17-0.22	0.11-0.18-0.24	0.12-0.20-0.24	0.13-0.22-0.26	0.14-0.24-0.28
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	—	80-60-40	0.08-0.13-0.16	0.09-0.13-0.18	0.10-0.14-0.18	0.10-0.14-0.20	0.12-0.16-0.22
	Duplex Stainless Steel (<30HRC)	—	60-45-30	0.08-0.13-0.16	0.09-0.13-0.18	0.10-0.14-0.18	0.10-0.14-0.20	0.12-0.16-0.22
K	Gray Cast Iron (<32HRC)	140-100-60	160-120-60	0.25-0.33-0.45	0.28-0.36-0.48	0.30-0.40-0.50	0.32-0.42-0.52	0.35-0.45-0.55
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	120-80-60	140-100-60	0.22-0.30-0.42	0.24-0.33-0.45	0.25-0.35-0.48	0.28-0.38-0.48	0.30-0.40-0.50
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	100-70-50	100-80-50	0.16-0.22-0.28	0.18-0.24-0.30	0.20-0.26-0.32	0.22-0.28-0.34	0.23-0.28-0.35

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D938 Deep Holemaking Twist Drill 8D/12D/15D/20D/25D

Workpiece Material		Cutting Speed Vc (m/min)	Feed Fn (mm/rev)			
			Φ3	Φ4	Φ6	Φ8
P	Low-carbon Steel, Long Chips (<125HB)	140-100-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.32
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	140-100-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.32
	High-carbon Steel and Medium-carbon Steel (<25HRC)	120-80-60	0.10-0.15-0.20	0.10-0.15-0.20	0.14-0.19-0.25	0.16-0.22-0.30
	Alloy Steel, Tool Steel (<35HRC)	110-80-60	0.09-0.13-0.16	0.09-0.13-0.16	0.12-0.17-0.23	0.14-0.20-0.28
	Alloy Steel, Tool Steel (35-48HRC)	90-60-35	0.08-0.11-0.14	0.08-0.11-0.14	0.08-0.14-0.20	0.09-0.16-0.25
	PH and Ferritic, Martensitic Steel (<35HRC)	90-60-30	0.05-0.08-0.11	0.05-0.08-0.11	0.07-0.12-0.17	0.08-0.14-0.20
	High Strength PH and Ferritic, Martensitic Steel (35-48HRC)	80-50-30	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.10-0.14	0.08-0.13-0.18
M	Austenitic Stainless Steels (130- 200HB)	60-50-40	0.04-0.08-0.10	0.04-0.08-0.10	0.06-0.10-0.12	0.06-0.10-0.12
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	60-50-40	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.08-0.10	0.06-0.08-0.10
	Duplex Stainless Steel (<30HRC)	50-40-30	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.08-0.10	0.06-0.08-0.10
K	Gray cast iron (<32HRC)	160-120-60	0.13-0.17-0.20	0.15-0.20-0.23	0.17-0.25-0.30	0.20-0.27-0.35
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	140-100-60	0.11-0.15-0.18	0.13-0.17-0.20	0.15-0.20-0.25	0.17-0.25-0.32
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	100-80-50	0.06-0.09-0.11	0.08-0.10-0.13	0.10-0.13-0.16	0.12-0.16-0.20

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D938 Deep Holemaking Twist Drill 8D/12D/15D/20D/25D

Workpiece Material		Cutting Speed Vc (m/min)	Feed Fn (mm/rev)			
			Φ10	Φ12	Φ14	Φ16
P	Low-carbon Steel, Long Chips (<125HB)	140-100-60	0.16-0.22-0.35	0.18-0.28-0.40	0.22-0.32-0.45	0.22-0.32-0.45
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	140-100-60	0.16-0.22-0.35	0.18-0.28-0.40	0.22-0.32-0.45	0.22-0.32-0.45
	High-carbon Steel and medium-carbon Steel (<25HRC)	120-80-60	0.16-0.22-0.32	0.18-0.28-0.38	0.22-0.32-0.45	0.22-0.32-0.45
	Alloy Steel, Tool Steel (<35HRC)	110-80-60	0.14-0.20-0.30	0.15-0.23-0.34	0.18-0.25-0.38	0.18-0.25-0.38
	Alloy Steel, Tool Steel (35-48HRC)	90-60-35	0.09-0.16-0.28	0.11-0.19-0.30	0.12-0.22-0.32	0.12-0.22-0.32
	Ph and Ferritic, Martensitic Steel (<35HRC)	90-60-30	0.08-0.14-0.23	0.10-0.18-0.28	0.12-0.20-0.30	0.12-0.20-0.30
	High Strength PH and Ferritic, Martensitic Steel (35-48HRC)	80-50-30	0.08-0.13-0.20	0.10-0.18-0.28	0.12-0.20-0.30	0.12-0.20-0.30
M	Austenitic Stainless Steels (130- 200HB)	60-50-40	0.08-0.12-0.16	0.08-0.12-0.16	0.10-0.14-0.18	0.10-0.14-0.18
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	60-50-40	0.08-0.10-0.12	0.08-0.10-0.12	0.10-0.12-0.14	0.10-0.12-0.14
	Duplex Stainless Steel (<30HRC)	50-40-30	0.08-0.10-0.12	0.08-0.10-0.12	0.10-0.12-0.14	0.10-0.12-0.14
K	Gray Cast Iron (<32HRC)	160-120-60	0.23-0.30-0.40	0.25-0.33-0.45	0.28-0.36-0.48	0.30-0.40-0.50
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	140-100-60	0.20-0.28-0.36	0.22-0.30-0.42	0.24-0.33-0.45	0.25-0.35-0.48
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	100-80-50	0.14-0.20-0.26	0.16-0.22-0.28	0.18-0.24-0.30	0.20-0.26-0.32

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D928 Cast Iron Machining Twist Drill

Workpiece Material		Cutting Speed Vc (m/min)		Feed Fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
P	Low-carbon Steel, Long Chips (<125HB)	100-80-50	140-100-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	100-75-50	140-100-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	High-carbon Steel and medium-carbon Steel (<25HRC)	90-70-45	100-80-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
	Alloy Steel, Tool Steel (<35HRC)	90-70-45	100-80-60	0.09-0.13-0.16	0.11-0.15-0.19	0.14-0.19-0.23	0.19-0.25-0.31	0.23-0.30-0.38
K	Gray Cast Iron (<32HRC)	100-80-60	160-140-60	0.13-0.17-0.21	0.15-0.20-0.26	0.17-0.26-0.32	0.20-0.32-0.40	0.25-0.36-0.42
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	100-80-60	140-120-60	0.11-0.15-0.18	0.13-0.18-0.22	0.15-0.23-0.27	0.17-0.26-0.38	0.22-0.28-0.38
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	90-70-60	100-90-60	0.06-0.09-0.11	0.08-0.10-0.13	0.10-0.13-0.16	0.13-0.17-0.21	0.15-0.20-0.26
N	Forged Aluminum Alloy (Si<12%)	-	315-230-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38
	Cast Aluminum Alloy (Si<12%)	-	315-230-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38
	Cast Aluminum Alloy (Si>12%)	-	270-180-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D928 Cast Iron Machining Twist Drill

Workpiece Material		Cutting Speed Vc (m/min)		Feed Fn (mm/rev)				
				Φ12	Φ14	Φ16	Φ18	Φ20
P	Low-carbon Steel, Long Chips (<125HB)	100-80-50	140-100-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	100-75-50	140-100-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	High-carbon Steel and Medium-carbon Steel (<25HRC)	90-70-45	100-80-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
	Alloy Steel, Tool Steel (<35HRC)	90-70-45	100-80-60	0.24-0.33-0.41	0.28-0.38-0.45	0.30-0.42-0.50	0.33-0.42-0.50	0.34-0.43-0.51
K	Gray Cast Iron (<32HRC)	100-80-60	160-140-60	0.26-0.38-0.46	0.28-0.40-0.50	0.30-0.42-0.52	0.32-0.44-0.54	0.36-0.48-0.56
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	100-80-60	140-120-60	0.22-0.34-0.42	0.24-0.35-0.44	0.26-0.40-0.48	0.30-0.40-0.46	0.34-0.43-0.50
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	90-70-60	100-90-60	0.17-0.22-0.28	0.19-0.26-0.31	0.20-0.27-0.33	0.23-0.28-0.34	0.23-0.29-0.35
N	Forged Aluminum Alloy (Si<12%)	-	315-230-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48
	Cast Aluminum Alloy (Si<12%)	-	315-230-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48
	Cast Aluminum Alloy (Si>12%)	-	270-180-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D966 Aluminum Alloy Machining Twist Drill

Workpiece Material		Cutting Speed Vc (m/min)		Feed Fn (mm/rev)				
				Φ3	Φ4	Φ6	Φ8	Φ10
N	Forged Aluminum Alloy (Si<12%)	250-150-80	315-230-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38
	Cast Aluminum Alloy (Si<12%)	230-150-80	315-230-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38
	Cast Aluminum Alloy (Si>12%)	230-150-80	270-180-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38
	Copper, Copper Alloy (<200HB)	160-120-70	180-135-90	0.06-0.09-0.11	0.13-0.20-0.26	0.16-0.22-0.28	0.18-0.26-0.32	0.20-0.30-0.38

Workpiece Material		Cutting Speed Vc (m/min)		Feed Fn (mm/rev)				
				Φ12	Φ14	Φ16	Φ18	Φ20
N	Forged Aluminum Alloy (Si<12%)	250-150-80	315-230-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48
	Cast Aluminum Alloy (Si<12%)	230-150-80	315-230-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48
	Cast Aluminum Alloy (Si>12%)	230-150-80	270-180-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48
	Copper, Copper Alloy (<200HB)	160-120-70	180-135-90	0.22-0.34-0.42	0.24-0.36-0.44	0.28-0.38-0.46	0.32-0.40-0.48	0.34-0.42-0.48

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D998 Hardness Steel Machining Twist Drill

Workpiece Material		Cutting Speed Vc (m/min)	Feed Fn (mm/rev)				
			Φ3	Φ4	Φ6	Φ8	Φ10
P	Alloy Steel, Tool Steel (35-48HRC)	80-60-30	0.09-0.13-0.16	0.10-0.14-0.17	0.13-0.17-0.22	0.17-0.23-0.29	0.21-0.28-0.35
K	Gray Cast Iron, Nodular Cast Iron (<28HRC)	100-80-60	0.13-0.17-0.20	0.15-0.20-0.23	0.17-0.25-0.30	0.20-0.27-0.35	0.23-0.30-0.40
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	100-80-60	0.11-0.15-0.18	0.13-0.17-0.20	0.15-0.20-0.25	0.17-0.25-0.32	0.20-0.28-0.36
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	90-70-60	0.06-0.09-0.11	0.08-0.10-0.13	0.10-0.13-0.16	0.12-0.16-0.20	0.14-0.20-0.26
H	Hardened Steel (45-55HRC)	40-30-20	0.04-0.06-0.08	0.05-0.08-0.10	0.06-0.10-0.13	0.08-0.12-0.15	0.09-0.14-0.16
	Hardened Steel (55-60HRC)	30-20-15	0.03-0.05-0.07	0.03-0.06-0.08	0.04-0.08-0.12	0.06-0.10-0.13	0.08-0.12-0.15

Workpiece Material		Cutting Speed Vc (m/min)	Feed Fn (mm/rev)				
			Φ12	Φ14	Φ16	_	_
P	Alloy Steel, Tool Steel (35-48HRC)	80-60-30	0.22-0.30-0.37	0.26-0.35-0.41	0.28-0.37-0.44	_	_
K	Gray Cast Iron, Nodular Cast Iron (<28HRC)	100-80-60	0.25-0.33-0.45	0.28-0.36-0.48	0.30-0.40-0.50	_	_
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	100-80-60	0.22-0.30-0.42	0.24-0.33-0.45	0.25-0.35-0.48	_	_
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	90-70-60	0.16-0.22-0.28	0.18-0.24-0.30	0.20-0.26-0.32	_	_
H	Hardened Steel (45-55HRC)	40-30-20	0.10-0.15-0.17	0.10-0.16-0.20	0.10-0.16-0.20	_	_
	Hardened Steel (55-60HRC)	30-20-15	0.09-0.13-0.16	0.10-0.14-0.17	0.10-0.14-0.17	_	_

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D101/D102/D103 Series NC Pilot Drill

Workpiece Material		Cutting Speed Vc (m/min)	Feed Fn (mm/rev)			
			Φ4	Φ6	Φ8	Φ10
P	Low-carbon Steel, Long Chips (<125HB)	130-100-60	0.12-0.15-0.18	0.14-0.17-0.20	0.16-0.20-0.26	0.18-0.24-0.3
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	120-100-60	0.10-0.14-0.18	0.14-0.16-0.20	0.16-0.20-0.24	0.18-0.24-0.3
	High-carbon Steel and Medium-carbon Steel (<25HRC)	110-80-60	0.10-0.13-0.16	0.12-0.15-0.18	0.14-0.18-0.22	0.16-0.20-0.24
	Alloy Steel, Tool Steel (<35HRC)	110-80-60	0.10-0.13-0.16	0.12-0.15-0.18	0.14-0.18-0.22	0.16-0.20-0.24
	Alloy Steel, Tool Steel (35-48HRC)	100-80-60	0.10-0.12-0.16	0.12-0.14-0.18	0.14-0.16-0.20	0.16-0.20-0.24
	PH and Ferritic, Martensitic Steel (<35HRC)	100-80-60	0.10-0.12-0.16	0.12-0.14-0.18	0.14-0.16-0.20	0.16-0.20-0.24
K	Gray Cast Iron (<32HRC)	140-120-60	0.12-0.20-0.26	0.17-0.26-0.32	0.20-0.32-0.40	0.25-0.30-0.36
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	130-105-60	0.12-0.18-0.24	0.15-0.20-0.27	0.17-0.22-0.30	0.20-0.26-0.32
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	120-90-60	0.10-0.16-0.22	0.10-0.13-0.16	0.13-0.17-0.21	0.15-0.20-0.26
N	Forged Aluminum Alloy (Si<12%)	150-120-60	0.12-0.20-0.26	0.17-0.26-0.32	0.20-0.32-0.40	0.25-0.30-0.36
	Cast Aluminum Alloy (Si<12%)	150-120-60	0.12-0.18-0.24	0.15-0.20-0.27	0.17-0.22-0.30	0.20-0.26-0.32
	Cast Aluminum Alloy (Si>12%)	150-120-60	0.10-0.13-0.16	0.12-0.15-0.18	0.14-0.18-0.22	0.16-0.20-0.24
	Copper, Copper Alloy (<200HB)	150-120-60	0.10-0.12-0.16	0.12-0.14-0.18	0.14-0.16-0.20	0.16-0.20-0.24

[Notes]
1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

Recommended Cutting Data

D101/D102/D103 Series NC Pilot Drill

Workpiece Material		Cutting Speed Vc (m/min)	Feed Fn (mm/rev)			
			Φ12	Φ14	Φ16	Φ20
P	Low-carbon Steel, Long Chips (<125HB)	130-100-60	0.20-0.26-0.32	0.24-0.30-0.35	0.28-0.34-0.4	0.32-0.38-0.45
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	120-100-60	0.20-0.26-0.32	0.24-0.28-0.34	0.28-0.34-0.4	0.32-0.38-0.45
	High-carbon Steel and Medium-carbon Steel (<25HRC)	110-80-60	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40
	Alloy Steel, Tool Steel (<35HRC)	110-80-60	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40
	Alloy Steel, Tool Steel (35-48HRC)	100-80-60	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40
	PH and Ferritic, Martensitic Steel (<35HRC)	100-80-60	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40
K	Gray cast iron (<32HRC)	140-120-60	0.26-0.32-0.38	0.28-0.32-0.40	0.30-0.36-0.42	0.32-0.38-0.44
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	130-105-60	0.22-0.28-0.34	0.24-0.30-0.36	0.26-0.32-0.38	0.30-0.36-0.42
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	120-90-60	0.17-0.22-0.28	0.19-0.26-0.31	0.20-0.27-0.33	0.28-0.29-0.35
N	Forged aluminum alloy (Si<12%)	150-120-60	0.26-0.32-0.38	0.28-0.32-0.40	0.30-0.36-0.42	0.32-0.38-0.44
	Cast Aluminum Alloy (Si<12%)	150-120-60	0.22-0.28-0.34	0.24-0.30-0.36	0.26-0.32-0.38	0.30-0.36-0.42
	Cast Aluminum Alloy (Si>12%)	150-120-60	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40
	Copper, Copper Alloy (<200HB)	150-120-60	0.18-0.24-0.30	0.20-0.26-0.30	0.22-0.28-0.32	0.26-0.32-0.40

[Notes]

1. Please use a machine with relatively high rigidity. It is recommended to adopt hydraulic tool holders, thermal expansion tool holders and powerful handles with spring collets.
2. When installing the tool, it is necessary to ensure that the radial bounce of the drill bit tip is less than 0.02mm.
3. This standard cutting condition table is suitable for water-soluble cutting fluids
4. For the tool edge diameter specifications not listed in the table, please refer to the closest edge diameter specifications in the table to select the cutting data. Meanwhile, during the machining process, please adjust the cutting data appropriately according to the actual machining situation.

MEMO

B

INDEXABLE DRILL BIT

Representation Rules for Gumd Tool Holder Order No.

GUMD − 210 − 3D − F − 25 − S

① ② ③ ④ ⑤ ⑥

① Drill Bit Type	
GUMD	Replaceable Drill Bit

② Drill Body Diameter	
210	The Diameter of the Drill Body is Φ21.0mm

③ Length-diameter Ratio	
3D	Effective Drilling Depth is 3D

④ Shank Type	
F	Flange-plane Side-fixed Type

⑤ Shank Diameter	
25	Φ25.0mm

⑥ Internal Cooling Mode	
S	Double Helix Internal Cooling
A	Y-type Internal Cooling

Representation Rules for Gumd Tool Bit Order No.

GUMD – 210 – PKM – GM3225

① ② ③ ④

① Drill Bit Type	
GUMD	Replaceable Drill Bit

② Tool Bit Diameter	
210	The Diameter of the Tool Bit is Φ21.0mm

③ Geometry	
PKM	The Machining Material Suitable for This Geometry is Pkm

④ Grade
GM3225

Representation Rules for Indexable Shallow Hole Drill Body Order No.

GHD–210–3D–FC 25–Q 06 S

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Drill Bit Type	
GHD	Indexable Shallow Hole Drill

② Diameter of Drill Bit	
210	Φ21.0mm

③ Length-diameter Ratio	
3D	Effective Drilling Depth is 3D

④ Shank Type	
FC	Flange-plane Side-fixed Type

⑤ Shank Diameter	
25	Φ25.0mm

⑥ Insert Series	
Q	The Inserts are Q Series

⑦ Cutting Edge Length Code	
06	Cutting Edge Length Code is 06

⑧ Internal Cooling Mode	
S	Double Helix Internal Cooling

Representation Rules for Indexable Shallow Hole Drill Insert Order No.

Q P M G 06 02 04-DP-GA4230

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Shape	
Q	
S	
W	80°

② Relief Angle	
C	7 °
P	11 °

③ Tolerance
M grade

④ Chip Breaker Hole Code	
G	Double-sided
T	Partial Cylindrical Hole-Single-Sided

⑤ Cutting Edge Length Code	
06	6.5 mm

⑥ Thickness	
02	2.38 mm

⑦ Tip Code	
04	0.4 mm

⑧ Chip Breaker Geometry Code
Indicate the Machining and Cutting Characteristics of the Inserts as Well as the Chip Breaker Geometry.

⑨ Grade
GA4230

Representation Rules for Indexable Shallow Hole Drill Insert Order No.

S O M G 06 02 04-C-DP-GM4240

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① Shape	
Q	
S	
W	80°

② Relief Angle	
C	7 °
P	11 °
O	Others

③ Tolerance
M Grade

④ Chip Breaker Hole Code	
G	Double-sided
T	Partial Cylindrical Hole-single-sided

⑤ Cutting Edge Length Code	
06	6.5 mm

⑥ Thickness	
02	2.38 mm

⑦ Tip Code	
04	0.4 mm

⑧ Insert Code	
C	Dedicated for Inner Insert
P	Dedicated for External Insert

⑨ Chip Breaker Geometry Code
Indicates the Insert Machining Chip Breaker Geometry

⑩ Grade
GM4240

Representation Rules for Spade Drill Body Order No.

GSD – 125 – 08D – FC 20 –(S)

① ② ③ ④ ⑤ ⑥

① Drill Bit Type	
GSD	Indexable Spade Drill

② Drill Body Diameter	
125	The Diameter of the Insert Mounting Part is Φ12.5mm.

③ Length-diameter Ratio	
08D	Effective Drilling Depth is 8D

④ Shank Type	
FC	Flange-plane Side-fixed Type

⑤ Shank Diameter	
20	Φ20.0mm

⑥ Flute Type	
-	Helical Slot
S	Straight Slot

Representation Rules for Spade Drill Insert Order No.

M C M G 0200 T3-DS-GM3225

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Shape	
M	

② Relief angle	
C	7 °

③ Tolerance
M grade

④ Chip Breaker Hole Code	
G	Double-sided

⑤ Diameter	
0200	20.0 mm

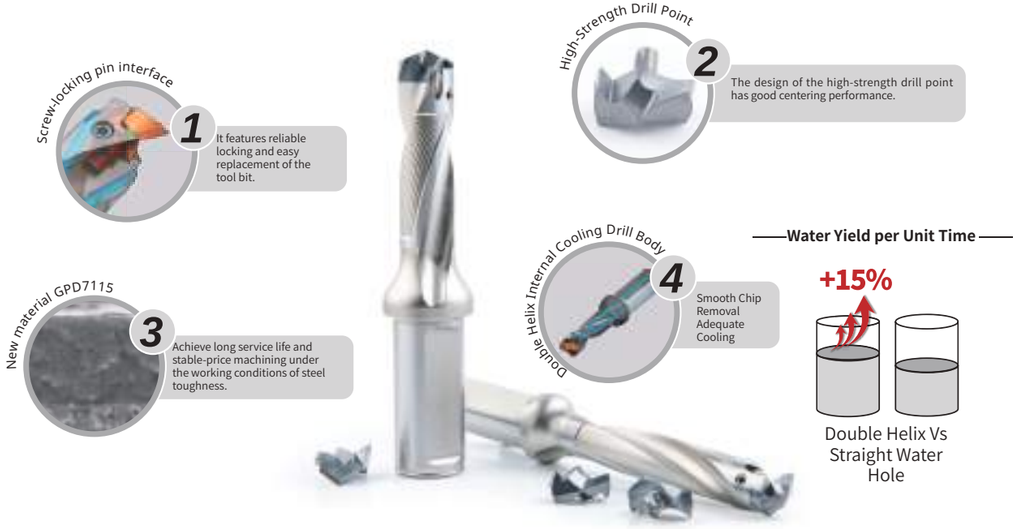
⑥ Thickness	
T3	3.97 mm

⑦ Chip Breaker Geometry Code
Indicate the machining and cutting characteristics of the inserts as well as the chip breaker geometry.

⑧ Grade
GM3225

Introduction to Gumd Modular Drill

Product Introduction



Scope of Application

Diameter of Drill Bit — Φ10~Φ21.9

The standard products have an interval of 0.1mm, and non-standard sizes can be customized.

Diameter of Drill Bit — 3D & 5D & 8D

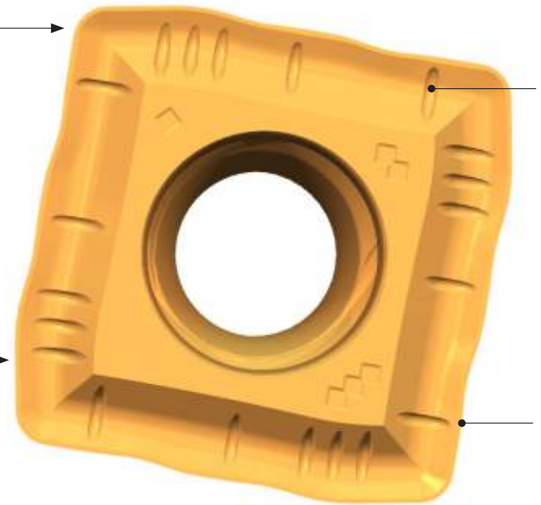
Machining Accuracy — IT9 ~IT11

Accuracy of Drill Bit — K7

Edge Type	Material	Materials Being Machined		
		P	M	K
PKM	GM3225	◎ Wear-resistant	○	○
	GPD7115	◎ Toughness		

- Material GM3225
  It is suitable for general materials and performs excellently under working conditions with high wear resistance requirements.
- New material GPD7115
  It has excellent performance in working conditions with high requirements for steel toughness.

QPMG Drilling Insert



Fist-shaped Cutting Edge
- Provide Better Chip Handling and Stability

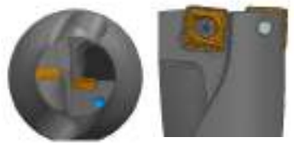
The Internal and External Inserts are Interchangeable
- Easy Tool Management and Use

Cooling Slot Design
- Good Heat Dissipation Performance

Design of Local Large Edge Width and Small Rake Angle
- Increase chipping resistance of central area

GHDS Indexable Shallow Hole Drill

Optimized Design of the Internal and External Insert Structures
--The internal and external inserts are in a balanced force state, with better stability.



Double Helix Internal Cooling Structure
--Increase the displacement of the cooling fluid to improve the chip removal effect

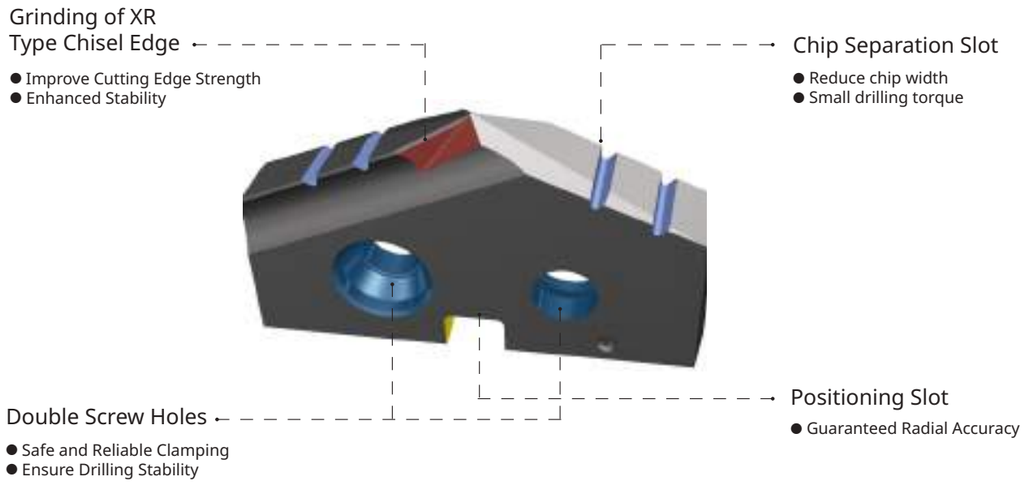
The design of the direct injection on the rake face through the central water outlet hole
--Cooling and chip removal are more sufficient, and the support of the outer tool apron is strengthened.

Optimized Design of Flute
--Smooth chip removal and good rigidity

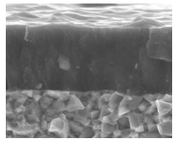
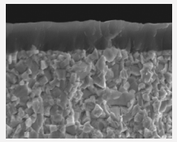
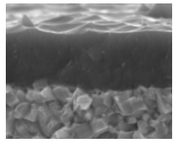
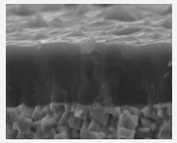
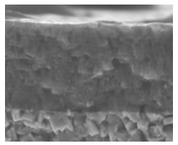
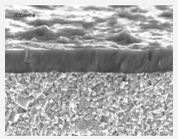
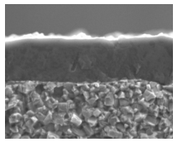
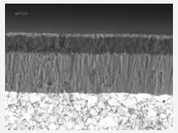
Advanced Surface Treatment Technology
--Eliminate the surface stress of the drill body and be environmentally friendly

B Indexable Drill Bit

MCMG Spade Drill Inserts



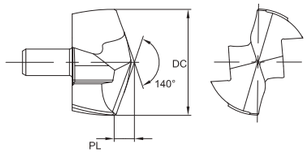
Introduction to Indexable Holemaking Grades

Grade	Color	Coating Composition	Features
GM3325	Golden Yellow		• The newly upgraded PVD AlTiN coating paired with a high-Co fine-grained cemented carbide substrate provides excellent wear resistance and chipping resistance, and can be used for machining at multiple cutting speeds and feeds. • Suitable for general machining of stainless steel and other steel under unstable working conditions.
GM3220	Bronze		• The brand-new double-layer nanostructure PVD coating, paired with a high-Co submicron-fine-grained cemented carbide substrate, improves wear resistance and heat resistance. • Suitable for machining stainless steel and soft steel at medium and low speeds under continuous ~ slightly interrupted ~ medium interrupted working conditions
GA4230	Purplish Red		• The PVD TiAlN coating combined with the cemented carbide substrate with high resistance to damage has excellent heat resistance and edge-chipping resistance, enabling stable machining under different working conditions.
GS4130	Purple Grey		• The latest nano-TiAlN coating, paired with a high-toughness fine-grained cemented carbide substrate, combines good wear resistance and toughness. • Suitable for drilling working conditions of difficult-to-machine materials such as stainless steel and titanium alloy.
GPD7115	Purple Grey		• The high-strength and high-toughness sub-microcrystalline cemented carbide substrate, combined with the new nano-composite multi-layer structure PVD coating, brings excellent wear resistance and heat resistance. Special surface treatment can effectively suppress the formation of built-up edge. • Suitable for medium and low speed machining of steel.
GM4240	Blue-gray		• It adopts a new generation of wear-resistant PVD coating and is paired with a high-cobalt substrate with high strength and toughness. It combines wear resistance and chipping resistance, endowing it with ultra-high cutting stability. • It is suitable for the internal edge machining of steel workpieces and is the top choice for quenched and tempered steel machining.
GA4225B	Blue-gray		• The specially designed high-cobalt substrate with high strength and toughness, combined with the PVD coating featuring a nano-structure, endows the tool with excellent durability. • It is suitable for the internal edge machining of steel workpieces and is the top choice for soft steel machining.
GP1135D	Yellow		• The combination of fine-grained MT-TiCN, Al_2O_3 and smooth-surface TiN coatings, together with a high-cobalt sub-micro-grained cemented carbide substrate, exhibits excellent wear resistance in the external edge machining of steel drilling. • Suitable for external edge machining of quenched and tempered steel, soft steel and other steel parts

B Indexable Drill Bit

GUMD-PKM

GUMD Modular Drill Tool Bit



Order No.	Dimensions		Coated Cemented Carbide		Matching Tool Holder
	DC (k7)	PL	GM3225	GPD7115	
GUMD100-PKM	10.0	1.82	●	●	GUMD-100-3D-F16S GUMD-100-5D-F16S GUMD-100-8D-F16A
GUMD101-PKM	10.1	1.84	●	●	
GUMD102-PKM	10.2	1.86	●	●	
GUMD103-PKM	10.3	1.87	●	●	
GUMD104-PKM	10.4	1.89	●	●	
GUMD105-PKM	10.5	1.91	●	●	GUMD-105-3D-F16S GUMD-105-5D-F16S GUMD-105-8D-F16A
GUMD106-PKM	10.6	1.93	●	●	
GUMD107-PKM	10.7	1.95	●	●	
GUMD108-PKM	10.8	1.97	●	●	
GUMD109-PKM	10.9	1.98	●	●	
GUMD110-PKM	11.0	2.00	●	●	GUMD-110-3D-F16S GUMD-110-5D-F16S GUMD-110-8D-F16A
GUMD111-PKM	11.1	2.02	●	●	
GUMD112-PKM	11.2	2.04	●	●	
GUMD113-PKM	11.3	2.06	●	●	
GUMD114-PKM	11.4	2.07	●	●	
GUMD115-PKM	11.5	2.09	●	●	GUMD-115-3D-F16S GUMD-115-5D-F16S GUMD-115-8D-F16A
GUMD116-PKM	11.6	2.11	●	●	
GUMD117-PKM	11.7	2.13	○	○	
GUMD118-PKM	11.8	2.15	●	●	
GUMD119-PKM	11.9	2.17	●	●	

●Stock ○Available Upon Order

Notes: The cutting edge diameter accepts non-standard customization.

Unit (mm)

DC	Tolerance (k7)
DC=10	+0.001 +0.016
10＜DC≤18	+0.001 +0.019
18＜DC≤21.9	+0.002 +0.023

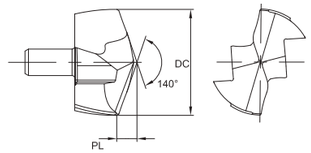
Workpiece Material						
	P			M	K	
	1 2 3	4	5	1 2 3	1 2	3
	Carbon Steel l	Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron
	＜25HRC	＜35HRC	35-48HRC		＜35HRC	35-45HRC
GM3225	○	◎	◎	○	◎	◎
GPD7115	◎	○				

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P175

GUMD-PKM

GUMD Modular Drill Tool Bit



Order No.	Dimensions		Coated Cemented Carbide		Matching Tool Holder
	DC (k7)	PL	GM3225	GPD7115	
GUMD120-PKM	12.0	2.18	●	●	GUMD-120-3D-F16S GUMD-120-5D-F16S GUMD-120-8D-F16A
GUMD121-PKM	12.1	2.20	●	●	
GUMD122-PKM	12.2	2.22	●	●	
GUMD123-PKM	12.3	2.24	●	●	
GUMD124-PKM	12.4	2.26	○	○	
GUMD125-PKM	12.5	2.27	●	●	GUMD-125-3D-F16S GUMD-125-5D-F16S GUMD-125-8D-F16A
GUMD126-PKM	12.6	2.29	●	●	
GUMD127-PKM	12.7	2.31	○	○	
GUMD128-PKM	12.8	2.33	●	●	
GUMD129-PKM	12.9	2.35	○	○	
GUMD130-PKM	13.0	2.37	●	●	GUMD-130-3D-F16S GUMD-130-5D-F16S GUMD-130-8D-F16A
GUMD131-PKM	13.1	2.38	●	●	
GUMD132-PKM	13.2	2.40	●	●	
GUMD133-PKM	13.3	2.42	○	○	
GUMD134-PKM	13.4	2.44	○	○	
GUMD135-PKM	13.5	2.46	●	●	GUMD-135-3D-F16S GUMD-135-5D-F16S GUMD-135-8D-F16A
GUMD136-PKM	13.6	2.47	○	○	
GUMD137-PKM	13.7	2.49	●	●	
GUMD138-PKM	13.8	2.51	●	●	
GUMD139-PKM	13.9	2.53	○	○	

●Stock ○Available Upon Order

Notes: The cutting edge diameter accepts non-standard customization.

Unit (mm)

DC	Tolerance (k7)
DC=10	+0.001 +0.016
10＜DC≤18	+0.001 +0.019
18＜DC≤21.9	+0.002 +0.023

Workpiece Material						
	P			M	K	
	1 2 3	4	5	1 2 3	1 2	3
	Carbon Steel l	Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron
	＜25HRC	＜35HRC	35-48HRC		＜35HRC	35-45HRC
GM3225	○	◎	◎	○	◎	◎
GPD7115	◎	○				

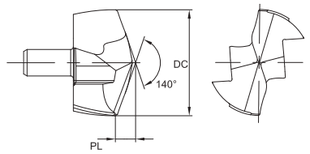
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P175

B Indexable Drill Bit

GUMD-PKM

GUMD Modular Drill Tool Bit



Order No.	Dimensions		Coated Cemented Carbide		Matching Tool Holder
	DC (k7)	PL	GM3225	GPD7115	
GUMD140-PKM	14.0	2.55	●	●	GUMD-140-3D-F16S GUMD-140-5D-F16S GUMD-140-8D-F16A
GUMD141-PKM	14.1	2.57	●	●	
GUMD142-PKM	14.2	2.58	●	●	
GUMD143-PKM	14.3	2.60	○	○	
GUMD144-PKM	14.4	2.62	○	○	
GUMD145-PKM	14.5	2.64	●	●	GUMD-145-3D-F16S GUMD-145-5D-F16S GUMD-145-8D-F16A
GUMD146-PKM	14.6	2.66	●	●	
GUMD147-PKM	14.7	2.68	○	○	
GUMD148-PKM	14.8	2.69	●	●	
GUMD149-PKM	14.9	2.71	○	○	
GUMD150-PKM	15.0	2.73	●	●	GUMD-150-3D-F20S GUMD-150-5D-F20S GUMD-150-8D-F20A
GUMD151-PKM	15.1	2.75	●	●	
GUMD152-PKM	15.2	2.77	●	●	
GUMD153-PKM	15.3	2.78	●	●	
GUMD154-PKM	15.4	2.80	○	○	
GUMD155-PKM	15.5	2.82	●	●	
GUMD156-PKM	15.6	2.84	○	○	
GUMD157-PKM	15.7	2.86	○	○	
GUMD158-PKM	15.8	2.88	●	●	
GUMD159-PKM	15.9	2.89	○	○	

●Stock ○Available Upon Order

Notes: The cutting edge diameter accepts non-standard customization.

Unit (mm)

DC	Tolerance (k7)
DC=10	+0.001 +0.016
10＜DC≤18	+0.001 +0.019
18＜DC≤21.9	+0.002 +0.023

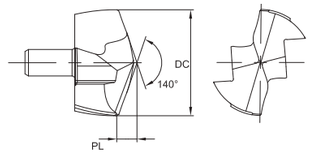
Workpiece Material						
	P			M	K	
	1 2 3	4	5	1 2 3	1 2	3
	Carbon Steel l	Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron
	＜25HRC	＜35HRC	35-48HRC		＜35HRC	35-45HRC
GM3225	○	◎	◎	○	◎	◎
GPD7115	◎	○				

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P175

GUMD-PKM

GUMD Modular Drill Tool Bit



Order No.	Dimensions		Coated Cemented Carbide		Matching Tool Holder
	DC (k7)	PL	GM3225	GPD7115	
GUMD160-PKM	16	2.91	●	●	GUMD-160-3D-F20S GUMD-160-5D-F20S GUMD-160-8D-F20A
GUMD161-PKM	16.1	2.93	●	●	
GUMD162-PKM	16.2	2.95	●	●	
GUMD163-PKM	16.3	2.97	○	○	
GUMD164-PKM	16.4	2.98	○	○	
GUMD165-PKM	16.5	3.00	●	●	
GUMD166-PKM	16.6	3.02	○	○	
GUMD167-PKM	16.7	3.04	○	○	
GUMD168-PKM	16.8	3.06	●	●	
GUMD169-PKM	16.9	3.08	○	○	
GUMD170-PKM	17	3.09	●	●	GUMD-170-3D-F20S GUMD-170-5D-F20S GUMD-170-8D-F20A
GUMD171-PKM	17.1	3.11	●	●	
GUMD172-PKM	17.2	3.13	●	●	
GUMD173-PKM	17.3	3.15	○	○	
GUMD174-PKM	17.4	3.17	○	○	
GUMD175-PKM	17.5	3.18	●	●	
GUMD176-PKM	17.6	3.20	○	○	
GUMD177-PKM	17.7	3.22	○	○	
GUMD178-PKM	17.8	3.24	●	●	
GUMD179-PKM	17.9	3.26	○	○	

●Stock ○Available Upon Order

Notes: The cutting edge diameter accepts non-standard customization.

Unit (mm)

DC	Tolerance (k7)
DC=10	+0.001 +0.016
10＜DC≤18	+0.001 +0.019
18＜DC≤21.9	+0.002 +0.023

Workpiece Material						
	P			M	K	
	1 2 3	4	5	1 2 3	1 2	3
	Carbon Steel l	Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron
	＜25HRC	＜35HRC	35-48HRC		＜35HRC	35-45HRC
GM3225	○	◎	◎	○	◎	◎
GPD7115	◎	○				

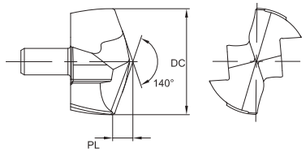
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P175

B Indexable Drill Bit

GUMD-PKM

GUMD Modular Drill Tool Bit



Order No.	Dimensions		Coated Cemented Carbide		Matching Tool Holder
	DC (k7)	PL	GM3225	GPD7115	
GUMD180-PKM	18	3.28	●	●	GUMD-180-3D-F25S GUMD-180-5D-F25S GUMD-180-8D-F25A
GUMD181-PKM	18.1	3.29	●	●	
GUMD182-PKM	18.2	3.31	●	●	
GUMD183-PKM	18.3	3.33	○	○	
GUMD184-PKM	18.4	3.35	○	○	
GUMD185-PKM	18.5	3.37	●	●	
GUMD186-PKM	18.6	3.38	○	○	
GUMD187-PKM	18.7	3.40	○	○	
GUMD188-PKM	18.8	3.42	●	●	
GUMD189-PKM	18.9	3.44	○	○	
GUMD190-PKM	19	3.46	●	●	GUMD-190-3D-F25S GUMD-190-5D-F25S GUMD-190-8D-F25A
GUMD191-PKM	19.1	3.48	●	●	
GUMD192-PKM	19.2	3.49	●	●	
GUMD193-PKM	19.3	3.51	○	○	
GUMD194-PKM	19.4	3.53	○	○	
GUMD195-PKM	19.5	3.55	●	●	
GUMD196-PKM	19.6	3.57	○	○	
GUMD197-PKM	19.7	3.59	○	○	
GUMD198-PKM	19.8	3.60	●	●	
GUMD199-PKM	19.9	3.62	○	○	

●Stock ○Available Upon Order

Notes: The cutting edge diameter accepts non-standard customization.

Unit (mm)

DC	Tolerance (k7)
DC=10	+0.001 +0.016
10＜DC≤18	+0.001 +0.019
18＜DC≤21.9	+0.002 +0.023

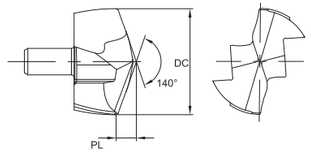
Workpiece Material						
	P			M	K	
	1 2 3	4	5	1 2 3	1 2	3
	Carbon Steel l	Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron
	＜25HRC	＜35HRC	35-48HRC		＜35HRC	35-45HRC
GM3225	○	◎	◎	○	◎	◎
GPD7115	◎	○				

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P175

GUMD-PKM

GUMD Modular Drill Tool Bit



Order No.	Dimensions		Coated Cemented Carbide		Matching Tool Holder
	DC (k7)	PL	GM3225	GPD7115	
GUMD200-PKM	20	3.64	●	●	GUMD-200-3D-F25S GUMD-200-5D-F25S GUMD-200-8D-F25A
GUMD201-PKM	20.1	3.66	○	○	
GUMD202-PKM	20.2	3.68	●	●	
GUMD203-PKM	20.3	3.69	●	●	
GUMD204-PKM	20.4	3.71	●	●	
GUMD205-PKM	20.5	3.73	●	●	
GUMD206-PKM	20.6	3.75	●	●	
GUMD207-PKM	20.7	3.77	●	●	
GUMD208-PKM	20.8	3.79	●	●	
GUMD209-PKM	20.9	3.80	●	●	
GUMD210-PKM	21	3.82	●	●	GUMD-210-3D-F25S GUMD-210-5D-F25S GUMD-210-8D-F25A
GUMD211-PKM	21.1	3.84	○	○	
GUMD212-PKM	21.2	3.86	○	○	
GUMD213-PKM	21.3	3.88	●	●	
GUMD214-PKM	21.4	3.89	○	○	
GUMD215-PKM	21.5	3.91	●	●	
GUMD216-PKM	21.6	3.93	○	○	
GUMD217-PKM	21.7	3.95	○	○	
GUMD218-PKM	21.8	3.97	○	○	
GUMD219-PKM	21.9	3.99	○	○	

●Stock ○Available Upon Order

Notes: The cutting edge diameter accepts non-standard customization.

Unit (mm)

DC	Tolerance (k7)
DC=10	+0.001 +0.016
10＜DC≤18	+0.001 +0.019
18＜DC≤21.9	+0.002 +0.023

Workpiece Material						
	P			M	K	
	1 2 3	4	5	1 2 3	1 2	3
	Carbon Steel l	Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron
	＜25HRC	＜35HRC	35-48HRC		＜35HRC	35-45HRC
GM3225	○	◎	◎	○	◎	◎
GPD7115	◎	○				

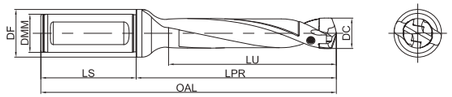
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P175

B Indexable Drill Bit

GUMD-3D

GUMD-3D Modular Drill Tool Holder



Order No.	Dimensions						Net Weight (kg)	In Stock	Matching Tool Bit Size	
	DMM(h6)	DF	LS	LU	LPR	OAL			Dc min	Dc max
GUMD-100-3D-F16S	16	20	48	33	48	96	0.09	●	10.0	10.4
GUMD-105-3D-F16S	16	20	48	34.5	49.5	97.5	0.10	●	10.5	10.9
GUMD-110-3D-F16S	16	20	48	36	51	99	0.10	●	11.0	11.4
GUMD-115-3D-F16S	16	20	48	37.5	52.5	100.5	0.10	●	11.5	11.9
GUMD-120-3D-F16S	16	20	48	39	54	102	0.10	●	12.0	12.4
GUMD-125-3D-F16S	16	20	48	40.5	55.5	103.5	0.10	●	12.5	12.9
GUMD-130-3D-F16S	16	20	48	42	57	105	0.11	●	13.0	13.4
GUMD-135-3D-F16S	16	20	48	43.5	58.5	106.5	0.11	●	13.5	13.9
GUMD-140-3D-F16S	16	20	48	45	60	108	0.11	●	14.0	14.4
GUMD-145-3D-F16S	16	20	48	46.5	61.5	109.5	0.11	●	14.5	14.9
GUMD-150-3D-F20S	20	25	50	50	67	117	0.18	●	15.0	15.9
GUMD-160-3D-F20S	20	25	50	53	70	120	0.18	●	16.0	16.9
GUMD-170-3D-F20S	20	25	50	56	73	123	0.19	●	17.0	17.9
GUMD-180-3D-F25S	25	32	56	62	86	142	0.34	●	18.0	18.9
GUMD-190-3D-F25S	25	32	56	65	89	145	0.35	●	19.0	19.9
GUMD-200-3D-F25S	25	32	56	68	92	148	0.36	●	20.0	20.9
GUMD-210-3D-F25S	25	32	56	71	95	151	0.37	●	21.0	21.9

●Stock ○Available Upon Order

Unit (mm)

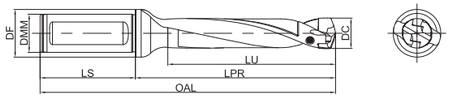
DMM	Tolerance (h6)
16	0 -0.011
20	0 -0.013
25	0 -0.013

List of Tool Accessories

Tool Specifications	Screw		Spoon Wrench (Can be Purchased Separately)		
	Order No.	Schematic Diagram	Order No.	Schematic Diagram	Torque Value
GUMD-100~120	SCCM022038B		TI06KB		0.6
GUMD-125~150	SCCM025046B		TI07KB		0.9
GUMD-160~190	SCCM030058B		TI08KB		1.1
GUMD-200~210	SCCM035072B		TI09KB		1.3

GUMD-5D

GUMD-5D Modular Drill Tool Holder



Order No.	Dimensions						Net Weight (kg)	In Stock	Matching Tool Bit Size	
	DMM(h6)	DF	LS	LU	LPR	OAL			Dc min	Dc max
GUMD-100-5D-F16S	16	20	48	53	68	116	0.10	●	10.0	10.4
GUMD-105-5D-F16S	16	20	48	55.5	70.5	118.5	0.10	●	10.5	10.9
GUMD-110-5D-F16S	16	20	48	58	73	121	0.11	●	11.0	11.4
GUMD-115-5D-F16S	16	20	48	60.5	75.5	123.5	0.11	●	11.5	11.9
GUMD-120-5D-F16S	16	20	48	63	78	126	0.11	●	12.0	12.4
GUMD-125-5D-F16S	16	20	48	65.5	80.5	128.5	0.12	●	12.5	12.9
GUMD-130-5D-F16S	16	20	48	68	83	131	0.12	●	13.0	13.4
GUMD-135-5D-F16S	16	20	48	70.5	85.5	133.5	0.13	●	13.5	13.9
GUMD-140-5D-F16S	16	20	48	73	88	136	0.13	●	14.0	14.4
GUMD-145-5D-F16S	16	20	48	75.5	90.5	138.5	0.13	●	14.5	14.9
GUMD-150-5D-F20S	20	25	50	83	100	150	0.20	●	15.0	15.9
GUMD-160-5D-F20S	20	25	50	88	105	155	0.21	●	16.0	16.9
GUMD-170-5D-F20S	20	25	50	93	110	160	0.23	●	17.0	17.9
GUMD-180-5D-F25S	25	32	56	100	124	180	0.38	●	18.0	18.9
GUMD-190-5D-F25S	25	32	56	105	129	185	0.40	●	19.0	19.9
GUMD-200-5D-F25S	25	32	56	110	134	190	0.41	●	20.0	20.9
GUMD-210-5D-F25S	25	32	56	115	139	195	0.44	●	21.0	21.9

●Stock ○Available Upon Order

Unit (mm)

DMM	Tolerance (h6)
16	0 -0.011
20	0 -0.013
25	0 -0.013

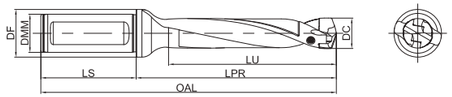
List of tool accessories

Tool Specifications	Screw		Spoon Wrench (can be purchased separately)		
	Order No.	Schematic Diagram	Order No.	Schematic Diagram	Torque Value
GUMD-100~120	SCCM022038B		TI06KB		0.6
GUMD-125~150	SCCM025046B		TI07KB		0.9
GUMD-160~190	SCCM030058B		TI08KB		1.1
GUMD-200~210	SCCM035072B		TI09KB		1.3

B Indexable Drill Bit

GUMD-8D

GUMD-8D Modular Drill Tool Holder



Order No.	Dimensions						In Stock	Matching Tool Bit Size	
	DMM	DF	LS	LU	LPR	OAL		Dc min	Dc max
GUMD-100-8D-F16A	16	20	48	85	100	148	●	10.0	10.4
GUMD-105-8D-F16A	16	20	48	89	104	152	●	10.5	10.9
GUMD-110-8D-F16A	16	20	48	93	108	156	●	11.0	11.4
GUMD-115-8D-F16A	16	20	48	97	112	160	●	11.5	11.9
GUMD-120-8D-F16A	16	20	48	101	116	164	●	12.0	12.4
GUMD-125-8D-F16A	16	20	48	105	120	168	●	12.5	12.9
GUMD-130-8D-F16A	16	20	48	109	124	172	●	13.0	13.4
GUMD-135-8D-F16A	16	20	48	113	128	176	●	13.5	13.9
GUMD-140-8D-F16A	16	20	48	117	132	180	●	14.0	14.4
GUMD-145-8D-F16A	16	20	48	121	136	184	●	14.5	14.9
GUMD-150-8D-F20A	20	25	50	130	147	197	●	15.0	15.9
GUMD-160-8D-F20A	20	25	50	138	155	205	●	16.0	16.9
GUMD-170-8D-F20A	20	25	50	146	163	213	●	17.0	17.9
GUMD-180-8D-F25A	25	32	56	156	180	236	●	18.0	18.9
GUMD-190-8D-F25A	25	32	56	164	188	244	●	19.0	19.9
GUMD-200-8D-F25A	25	32	56	172	196	252	●	20.0	20.9
GUMD-210-8D-F25A	25	32	56	180	204	260	●	21.0	21.9

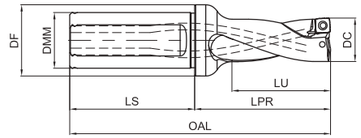
●Stock ○Available Upon Order

Unit (mm)

DMM	Tolerance (h6)
16	0 -0.011
20	0 -0.013
25	0 -0.013

GHDS-2D

GHDS-2D Internal Cooling Shallow Hole Drill



Diameter	Drill Body Type	Dimensions							Net Weight (kg)	In Stock	Insert Type	
		DC	DMM	DF	LS	LU	LPR	OAL			Inner Insert	External Insert
14	GHD-140-2D-FC20-Q04S	14	20	25	50	31	44	94	0.16	●	QPMG040204 SOMG040204-C	QPMG040204 QPMG040204-P
14.5	GHD-145-2D-FC20-Q04S	14.5	20	25	50	33	46	96	0.16	●		
15	GHD-150-2D-FC20-Q04S	15	20	25	50	35	47	97	0.16	●		
15.5	GHD-155-2D-FC20-Q04S	15.5	20	25	50	37	49	99	0.17	●		
16	GHD-160-2D-FC20-Q05S	16	20	25	50	37	51	101	0.17	●	QPMG050204 SOMG050204-C	QPMG050204 QPMG050204-P
16.5	GHD-165-2D-FC20-Q05S	16.5	20	25	50	38	52	102	0.17	●		
17	GHD-170-2D-FC25-Q05S	17	25	32	56	38	53	109	0.28	●		
17.5	GHD-175-2D-FC25-Q05S	17.5	25	32	56	39	55	111	0.29	●		
18	GHD-180-2D-FC25-Q05S	18	25	32	56	41	56	112	0.29	●		
18.5	GHD-185-2D-FC25-Q05S	18.5	25	32	56	42	57	113	0.29	●		
19	GHD-190-2D-FC25-Q06S	19	25	32	56	42	58	114	0.30	●	QPMG060204 SOMG060204-C	QPMG060204 QPMG060204-P
19.5	GHD-195-2D-FC25-Q06S	19.5	25	32	56	44	60	116	0.30	●		
20	GHD-200-2D-FC25-Q06S	20	25	32	56	44	61	117	0.31	●		
20.5	GHD-205-2D-FC25-Q06S	20.5	25	32	56	45	62	118	0.32	●		
21	GHD-210-2D-FC25-Q06S	21	25	32	56	47	64	120	0.32	●		
21.5	GHD-215-2D-FC25-Q06S	21.5	25	32	56	48	65	121	0.32	●		
22	GHD-220-2D-FC25-Q06S	22	25	32	56	49	66	122	0.32	●		
22.5	GHD-225-2D-FC25-Q06S	22.5	25	32	56	51	68	124	0.33	●		
23	GHD-230-2D-FC25-Q07S	23	25	32	56	50	69	125	0.34	●	QPMG07T306 SOMG07T306-C	QPMG07T306 QPMG07T306-P
23.5	GHD-235-2D-FC25-Q07S	23.5	25	32	56	51	70	126	0.35	●		
24	GHD-240-2D-FC25-Q07S	24	25	32	56	53	71	127	0.35	●		
24.5	GHD-245-2D-FC25-Q07S	24.5	25	32	56	55	73	129	0.36	●		
25	GHD-250-2D-FC25-Q07S	25	25	32	56	54	74	130	0.37	●		
25.5	GHD-255-2D-FC32-Q07S	25.5	32	40	60	55	76	136	0.58	●		
26	GHD-260-2D-FC32-Q07S	26	32	40	60	56	77	137	0.58	●		
26.5	GHD-265-2D-FC32-Q07S	26.5	32	40	60	58	78	138	0.59	●		
27	GHD-270-2D-FC32-Q07S	27	32	40	60	59	79	139	0.60	●		

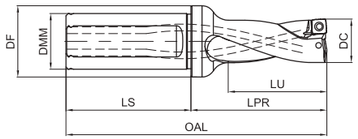
●Stock ○Available Upon Order

Unit (mm)

B Indexable Drill Bit

GHDS-2D

GHDS-2D Internal Cooling Shallow Hole Drill



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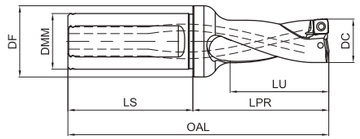
Diameter	Drill Body Type	Dimensions							Net Weight (kg)	In Stock	Insert Type	
		DC	DMM	DF	LS	LU	LPR	OAL			Inner Insert	External Insert
27.5	GHD-275-2D-FC32-Q09S	27.5	32	40	60	61	81	141	0.59	●	QPMG09T308 SOMG09T308-C	QPMG09T308 QPMG09T308-P
28	GHD-280-2D-FC32-Q09S	28	32	40	60	60	82	142	0.61	●		
28.5	GHD-285-2D-FC32-Q09S	28.5	32	40	60	62	83	143	0.62	●		
29	GHD-290-2D-FC32-Q09S	29	32	40	60	63	84	144	0.63	●		
29.5	GHD-295-2D-FC32-Q09S	29.5	32	40	60	65	86	146	0.64	●		
30	GHD-300-2D-FC32-Q09S	30	32	40	60	65	87	147	0.64	●		
30.5	GHD-305-2D-FC32-Q09S	30.5	32	40	60	68	89	149	0.66	●		
31	GHD-310-2D-FC40-Q09S	31	40	48	70	67	90	160	1.00	●		
31.5	GHD-315-2D-FC40-Q09S	31.5	40	48	70	68	91	161	1.01	●		
32	GHD-320-2D-FC40-Q09S	32	40	48	70	70	92	162	1.02	●		
32.5	GHD-325-2D-FC40-Q09S	32.5	40	48	70	72	94	164	1.04	●		
33	GHD-330-2D-FC40-Q09S	33	40	48	70	71	95	165	1.05	●		
33.5	GHD-335-2D-FC40-Q11S	33.5	40	48	70	73	97	167	1.06	●	QPMG110408 SOMG110408-C	QPMG110408 QPMG110408-P
34	GHD-340-2D-FC40-Q11S	34	40	48	70	75	98	168	1.07	●		
34.5	GHD-345-2D-FC40-Q11S	34.5	40	48	70	76	99	169	1.09	●		
35	GHD-350-2D-FC40-Q11S	35	40	48	70	78	101	171	1.11	●		
35.5	GHD-355-2D-FC40-Q11S	35.5	40	48	70	79	102	172	1.12	●		
36	GHD-360-2D-FC40-Q11S	36	40	48	70	78	104	174	1.14	●		
36.5	GHD-365-2D-FC40-Q11S	36.5	40	48	70	80	105	175	1.15	●		
37	GHD-370-2D-FC40-Q11S	37	40	48	70	80	105	175	1.16	●		
37.5	GHD-375-2D-FC40-Q11S	37.5	40	48	70	81	106	176	1.17	●		
38	GHD-380-2D-FC40-Q11S	38	40	48	70	82	108	178	1.20	●		
38.5	GHD-385-2D-FC40-Q11S	38.5	40	48	70	84	109	179	1.22	●		
39	GHD-390-2D-FC40-Q11S	39	40	48	70	85	110	180	1.23	●		
39.5	GHD-395-2D-FC40-Q11S	39.5	40	48	70	85	112	182	1.25	●		
40	GHD-400-2D-FC40-Q11S	40	40	48	70	86	113	183	1.27	●		

●Stock ○Available Upon Order

Unit (mm)

GHDS-2D

GHDS-2D Internal Cooling Shallow Hole Drill



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Diameter	Drill Body Type	Dimensions							Net Weight (kg)	In Stock	Insert Type	
		DC	DMM	DF	LS	LU	LPR	OAL			Inner Insert	External Insert
40.5	GHD-405-2D-FC40-Q13S	40.5	40	48	70	89	115	185	1.91	●	QPMG130408 SOMG130408-C	QPMG130408 QPMG130408-P
41	GHD-410-2D-FC40-Q13S	41	40	48	70	92	117	187	1.91	●		
41.5	GHD-415-2D-FC40-Q13S	41.5	40	48	70	94	118	188	1.91	○		
42	GHD-420-2D-FC40-Q13S	42	40	48	70	92	119	189	1.91	●		
42.5	GHD-425-2D-FC40-Q13S	42.5	40	48	70	92	121	191	1.91	○		
43	GHD-430-2D-FC40-Q13S	43	40	48	70	94	122	192	1.91	●		
43.5	GHD-435-2D-FC40-Q13S	43.5	40	48	70	96	123	193	1.91	●		
44	GHD-440-2D-FC40-Q13S	44	40	48	70	98	124	194	1.91	○		
44.5	GHD-445-2D-FC40-Q13S	44.5	40	48	70	99	125	195	1.91	○		
45	GHD-450-2D-FC40-Q13S	45	40	48	70	103	127	197	1.91	●		
45.5	GHD-455-2D-FC40-Q15S	45.5	40	48	70	97	128	198	1.79	●	QPMG150512 SOMG150512-C	QPMG150512 QPMG150512-P
46	GHD-460-2D-FC40-Q15S	46	40	48	70	102	130	200	1.79	●		
46.5	GHD-465-2D-FC40-Q15S	46.5	40	48	70	100	131	201	1.79	○		
47	GHD-470-2D-FC40-Q15S	47	40	48	70	102	132	202	1.79	●		
47.5	GHD-475-2D-FC40-Q15S	47.5	40	48	70	106	133	203	1.79	○		
48	GHD-480-2D-FC40-Q15S	48	40	48	70	110	135	205	1.79	●		

●Stock ○Available Upon Order

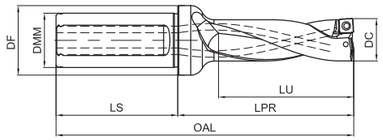
Unit (mm)

Range of Sizes	Aperture Accuracy	
	2D-3D	4D-5D
14-30	-0.1/+0.25	-0.13/+0.28
30-40	-0.1/+0.28	-0.15/+0.3
40-48	-0.1/0.3	-0.17/+0.32

B Indexable Drill Bit

GHDS-3D

GHDS-3D Internal Cooling Shallow Hole Drill



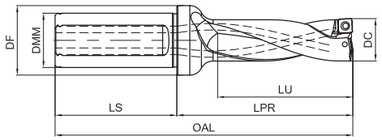
Diameter	Drill Body Type	Dimensions							Net Weight (kg)	In Stock	Insert Type	
		DC	DMM	DF	LS	LU	LPR	OAL			Inner Insert	External Insert
14	GHD-140-3D-FC20-Q04S	14	20	25	50	45	58	108	0.16	●	QPMG040204 SOMG040204-C	QPMG040204 QPMG040204-P
14.5	GHD-145-3D-FC20-Q04S	14.5	20	25	50	47	60	110	0.17	●		
15	GHD-150-3D-FC20-Q04S	15	20	25	50	50	62	112	0.17	●		
15.5	GHD-155-3D-FC20-Q04S	15.5	20	25	50	52	64	114	0.18	●		
16	GHD-160-3D-FC20-Q05S	16	20	25	50	51	66	116	0.18	●	QPMG050204 SOMG050204-C	QPMG050204 QPMG050204-P
16.5	GHD-165-3D-FC20-Q05S	16.5	20	25	50	53	68	118	0.18	●		
17	GHD-170-3D-FC25-Q05S	17	25	32	56	54	69	125	0.29	●		
17.5	GHD-175-3D-FC25-Q05S	17.5	25	32	56	56	72	128	0.30	●		
18	GHD-180-3D-FC25-Q05S	18	25	32	56	58	73	129	0.30	●		
18.5	GHD-185-3D-FC25-Q05S	18.5	25	32	56	60	75	131	0.31	●		
19	GHD-190-3D-FC25-Q06S	19	25	32	56	60	76	132	0.32	●	QPMG060204 SOMG060204-C	QPMG060204 QPMG060204-P
19.5	GHD-195-3D-FC25-Q06S	19.5	25	32	56	62	79	135	0.33	●		
20	GHD-200-3D-FC25-Q06S	20	25	32	56	64	81	137	0.34	●		
20.5	GHD-205-3D-FC25-Q06S	20.5	25	32	56	65	82	138	0.34	●		
21	GHD-210-3D-FC25-Q06S	21	25	32	56	67	84	140	0.34	●		
21.5	GHD-215-3D-FC25-Q06S	21.5	25	32	56	69	86	142	0.35	●		
22	GHD-220-3D-FC25-Q06S	22	25	32	56	69	87	143	0.35	●		
22.5	GHD-225-3D-FC25-Q06S	22.5	25	32	56	72	90	146	0.36	●		
23	GHD-230-3D-FC25-Q07S	23	25	32	56	72	91	147	0.36	●	QPMG07T306 SOMG07T306-C	QPMG07T306 QPMG07T306-P
23.5	GHD-235-3D-FC25-Q07S	23.5	25	32	56	75	93	149	0.38	●		
24	GHD-240-3D-FC25-Q07S	24	25	32	56	76	95	151	0.39	●		
24.5	GHD-245-3D-FC25-Q07S	24.5	25	32	56	77	97	153	0.41	●		
25	GHD-250-3D-FC25-Q07S	25	25	32	56	79	99	155	0.41	●		
25.5	GHD-255-3D-FC32-Q07S	25.5	32	40	60	80	100	160	0.62	●		
26	GHD-260-3D-FC32-Q07S	26	32	40	60	81	102	162	0.63	●		
26.5	GHD-265-3D-FC32-Q07S	26.5	32	40	60	84	104	164	0.65	●		
27	GHD-270-3D-FC32-Q07S	27	32	40	60	85	105	165	0.66	●		

●Stock ○Available Upon Order

Unit (mm)

GHDS-3D

GHDS-3D Internal Cooling Shallow Hole Drill



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Diameter	Drill Body Type	Dimensions							Net Weight (kg)	In Stock	Insert Type	
		DC	DMM	DF	LS	LU	LPR	OAL			Inner Insert	External Insert
27.5	GHD-275-3D-FC32-Q09S	27.5	32	40	60	88	108	168	0.68	●	QPMG09T308 SOMG09T308-C	QPMG09T308 QPMG09T308-P
28	GHD-280-3D-FC32-Q09S	28	32	40	60	87	109	169	0.69	●		
28.5	GHD-285-3D-FC32-Q09S	28.5	32	40	60	90	111	171	0.69	●		
29	GHD-290-3D-FC32-Q09S	29	32	40	60	91	112	172	0.71	●		
29.5	GHD-295-3D-FC32-Q09S	29.5	32	40	60	93	115	175	0.72	●		
30	GHD-300-3D-FC32-Q09S	30	32	40	60	95	117	177	0.73	●		
30.5	GHD-305-3D-FC32-Q09S	30.5	32	40	60	97	118	178	0.74	●		
31	GHD-310-3D-FC40-Q09S	31	40	48	70	98	121	191	1.09	●		
31.5	GHD-315-3D-FC40-Q09S	31.5	40	48	70	98	122	192	1.11	●		
32	GHD-320-3D-FC40-Q09S	32	40	48	70	101	124	194	1.12	●		
32.5	GHD-325-3D-FC40-Q09S	32.5	40	48	70	103	126	196	1.14	●		
33	GHD-330-3D-FC40-Q09S	33	40	48	70	104	128	198	1.16	●		
33.5	GHD-335-3D-FC40-Q11S	33.5	40	48	70	106	130	200	1.15	●	QPMG110408 SOMG110408-C	QPMG110408 QPMG110408-P
34	GHD-340-3D-FC40-Q11S	34	40	48	70	108	131	201	1.17	●		
34.5	GHD-345-3D-FC40-Q11S	34.5	40	48	70	109	134	204	1.22	●		
35	GHD-350-3D-FC40-Q11S	35	40	48	70	112	135	205	1.24	●		
35.5	GHD-355-3D-FC40-Q11S	35.5	40	48	70	114	137	207	1.26	●		
36	GHD-360-3D-FC40-Q11S	36	40	48	70	113	139	209	1.27	●		
36.5	GHD-365-3D-FC40-Q11S	36.5	40	48	70	116	141	211	1.30	●		
37	GHD-370-3D-FC40-Q11S	37	40	48	70	117	142	212	1.31	●		
37.5	GHD-375-3D-FC40-Q11S	37.5	40	48	70	118	144	214	1.34	●		
38	GHD-380-3D-FC40-Q11S	38	40	48	70	122	146	216	1.37	●		
38.5	GHD-385-3D-FC40-Q11S	38.5	40	48	70	122	148	218	1.40	●		
39	GHD-390-3D-FC40-Q11S	39	40	48	70	125	149	219	1.42	●		
39.5	GHD-395-3D-FC40-Q11S	39.5	40	48	70	124	151	221	1.43	●		
40	GHD-400-3D-FC40-Q11S	40	40	48	70	126	153	223	1.45	●		

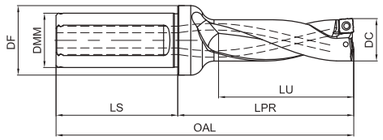
●Stock ○Available Upon Order

Unit (mm)

B Indexable Drill Bit

GHDS-3D

GHDS-3D Internal Cooling Shallow Hole Drill



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Diameter	Drill Body Type	Dimensions							Net Weight (kg)	In Stock	Insert Type	
		DC	DMM	DF	LS	LU	LPR	OAL			Inner Insert	External Insert
40.5	GHD-405-3D-FC40-Q13S	40.5	40	48	70	126	155	225	1.91	●	QPMG130408 SOMG130408-C	QPMG130408 QPMG130408-P
41	GHD-410-3D-FC40-Q13S	41	40	48	70	129	157	227	1.91	●		
41.5	GHD-415-3D-FC40-Q13S	41.5	40	48	70	132	156	226.1	1.91	●		
42	GHD-420-3D-FC40-Q13S	42	40	48	70	133	160	230	1.91	●		
42.5	GHD-425-3D-FC40-Q13S	42.5	40	48	70	133	162	232	1.91	●		
43	GHD-430-3D-FC40-Q13S	43	40	48	70	135	164	234	1.91	●		
43.5	GHD-435-3D-FC40-Q13S	43.5	40	48	70	136	166	236	1.91	●		
44	GHD-440-3D-FC40-Q13S	44	40	48	70	137	167	237	1.91	●		
44.5	GHD-445-3D-FC40-Q13S	44.5	40	48	70	139	170	240	1.91	●		
45	GHD-450-3D-FC40-Q13S	45	40	48	70	142	172	242	1.79	●		
45.5	GHD-455-3D-FC40-Q15S	45.5	40	48	70	143	174	244	1.79	○	QPMG150512 SOMG150512-C	QPMG150512 QPMG150512-P
46	GHD-460-3D-FC40-Q15S	46	40	48	70	146	176	246	1.79	●		
46.5	GHD-465-3D-FC40-Q15S	46.5	40	48	70	150	178	248	1.79	○		
47	GHD-470-3D-FC40-Q15S	47	40	48	70	152	179	249	1.79	○		
47.5	GHD-475-3D-FC40-Q15S	47.5	40	48	70	155	181	251	1.79	○		
48	GHD-480-3D-FC40-Q15S	48	40	48	70	159	183	253	1.79	●		

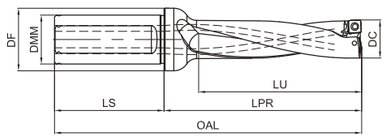
●Stock ○Available Upon Order

Unit (mm)

Range of Sizes	Aperture Accuracy	
	2D-3D	4D-5D
14-30	-0.1/+0.25	-0.13/+0.28
30-40	-0.1/+0.28	-0.15/+0.3
40-48	-0.1/0.3	-0.17/+0.32

GHDS-4D

GHDS-4D Internal Cooling Shallow Hole Drill



Diameter	Drill Body Type	Dimensions							Net Weight (kg)	In Stock	Insert type	
		DC	DMM	DF	LS	LU	LPR	OAL			Inner Insert	External Insert
14	GHD-140-4D-FC20-Q04S	14	20	25	50	59	72	122	0.17	●	QPMG040204 SOMG040204-C	QPMG040204 QPMG040204-P
14.5	GHD-145-4D-FC20-Q04S	14.5	20	25	50	63	75	125	0.18	●		
15	GHD-150-4D-FC20-Q04S	15	20	25	50	64	77	127	0.19	●		
15.5	GHD-155-4D-FC20-Q04S	15.5	20	25	50	66	79	129	0.19	●		
16	GHD-160-4D-FC20-Q05S	16	20	25	50	67	82	132	0.19	●	QPMG050204 SOMG050204-C	QPMG050204 QPMG050204-P
16.5	GHD-165-4D-FC20-Q05S	16.5	20	25	50	70	84	134	0.20	●		
17	GHD-170-4D-FC25-Q05S	17	25	32	56	71	86	142	0.31	●		
17.5	GHD-175-4D-FC25-Q05S	17.5	25	32	56	74	89	145	0.22	●		
18	GHD-180-4D-FC25-Q05S	18	25	32	56	76	91	147	0.32	●		
18.5	GHD-185-4D-FC25-Q05S	18.5	25	32	56	78	93	149	0.33	●		
19	GHD-190-4D-FC25-Q06S	19	25	32	56	79	95	151	0.34	●	QPMG060204 SOMG060204-C	QPMG060204 QPMG060204-P
19.5	GHD-195-4D-FC25-Q06S	19.5	25	32	56	83	99	155	0.35	●		
20	GHD-200-4D-FC25-Q06S	20	25	32	56	84	101	157	0.36	●		
20.5	GHD-205-4D-FC25-Q06S	20.5	25	32	56	87	103	159	0.37	●		
21	GHD-210-4D-FC25-Q06S	21	25	32	56	88	105	161	0.37	●		
21.5	GHD-215-4D-FC25-Q06S	21.5	25	32	56	90	107	163	0.38	●		
22	GHD-220-4D-FC25-Q06S	22	25	32	56	92	109	165	0.39	●		
22.5	GHD-225-4D-FC25-Q06S	22.5	25	32	56	95	112	168	0.40	●		
23	GHD-230-4D-FC25-Q07S	23	25	32	56	99	114	170	0.39	●	QPMG07T306 SOMG07T306-C	QPMG07T306 QPMG07T306-P
23.5	GHD-235-4D-FC25-Q07S	23.5	25	32	56	102	117	173	0.41	●		
24	GHD-240-4D-FC25-Q07S	24	25	32	56	101	119	175	0.44	●		
24.5	GHD-245-4D-FC25-Q07S	24.5	25	32	56	104	122	178	0.45	●		
25	GHD-250-4D-FC25-Q07S	25	25	32	56	104	124	180	0.47	●		
25.5	GHD-255-4D-FC32-Q07S	25.5	32	40	60	107	126	186	0.68	●		
26	GHD-260-4D-FC32-Q07S	26	32	40	60	108	128	188	0.70	●		
26.5	GHD-265-4D-FC32-Q07S	26.5	32	40	60	110	130	190	0.71	●		
27	GHD-270-4D-FC32-Q07S	27	32	40	60	112	132	192	0.74	●		
27.5	GHD-275-4D-FC32-Q09S	27.5	32	40	60	113	135	195	0.75	●	QPMG09T308 SOMG09T308-C	QPMG09T308 QPMG09T308-P
28	GHD-280-4D-FC32-Q09S	28	32	40	60	115	137	197	0.73	●		
28.5	GHD-285-4D-FC32-Q09S	28.5	32	40	60	118	139	199	0.76	●		
29	GHD-290-4D-FC32-Q09S	29	32	40	60	120	141	201	0.79	●		
29.5	GHD-295-4D-FC32-Q09S	29.5	32	40	60	123	144	204	0.81	●		

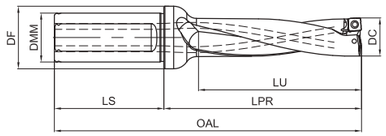
●Stock ○Available Upon Order

Unit (mm)

B Indexable Drill Bit

GHDS-4D

GHDS-4D Internal Cooling Shallow Hole Drill



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Diameter	Drill Body Type	Dimensions							Net Weight (kg)	In Stock	Insert type	
		DC	DMM	DF	LS	LU	LPR	OAL			Inner Insert	External Insert
30	GHD-300-4D-FC32-Q09S	30	32	40	60	125	147	207	0.83	●	QPMG09T308 SOMG09T308-C	QPMG09T308 QPMG09T308-P
30.5	GHD-305-4D-FC32-Q09S	30.5	32	40	60	126	148	208	0.85	○		
31	GHD-310-4D-FC40-Q09S	31	40	48	70	129	152	222	1.19	●		
31.5	GHD-315-4D-FC40-Q09S	31.5	40	48	70	131	154	224	1.21	○		
32	GHD-320-4D-FC40-Q09S	32	40	48	70	134	156	226	1.23	●		
32.5	GHD-325-4D-FC40-Q09S	32.5	40	48	70	137	159	229	1.25	●		
33	GHD-330-4D-FC40-Q09S	33	40	48	70	138	161	231	1.30	●		
33.5	GHD-335-4D-FC40-Q11S	33.5	40	48	70	142	163	233	1.32	●	QPMG110408 SOMG110408-C	QPMG110408 QPMG110408-P
34	GHD-340-4D-FC40-Q11S	34	40	48	70	142	165	235	1.32	●		
34.5	GHD-345-4D-FC40-Q11S	34.5	40	48	70	142	168	238	1.35	○		
35	GHD-350-4D-FC40-Q11S	35	40	48	70	146	170	240	1.38	●		
35.5	GHD-355-4D-FC40-Q11S	35.5	40	48	70	146	173	243	1.41	○		
36	GHD-360-4D-FC40-Q11S	36	40	48	70	150	175	245	1.43	●		
36.5	GHD-365-4D-FC40-Q11S	36.5	40	48	70	152	177	247	1.46	○		
37	GHD-370-4D-FC40-Q11S	37	40	48	70	154	179	249	1.54	●		
37.5	GHD-375-4D-FC40-Q11S	37.5	40	48	70	158	182	252	1.57	●		
38	GHD-380-4D-FC40-Q11S	38	40	48	70	157	184	254	1.59	●		
38.5	GHD-385-4D-FC40-Q11S	38.5	40	48	70	160	186	256	1.62	○		
39	GHD-390-4D-FC40-Q11S	39	40	48	70	165	188	258	1.66	●		
39.5	GHD-395-4D-FC40-Q11S	39.5	40	48	70	166	191	261	1.70	●		
40	GHD-400-4D-FC40-Q11S	40	40	48	70	164	193	263	1.71	●		
40.5	GHD-405-4D-FC40-Q13S	40.5	40	48	70	167	195	265	1.91	○	QPMG130408 SOMG130408-C	QPMG130408 QPMG130408-P
41	GHD-410-4D-FC40-Q13S	41	40	48	70	169	198	268	1.91	○		
41.5	GHD-415-4D-FC40-Q13S	41.5	40	48	70	171	200	270	1.91	○		
42	GHD-420-4D-FC40-Q13S	42	40	48	70	174	202	272	1.91	○		
42.5	GHD-425-4D-FC40-Q13S	42.5	40	48	70	175	204	274	1.91	○		
43	GHD-430-4D-FC40-Q13S	43	40	48	70	177	207	277	1.91	○		
43.5	GHD-435-4D-FC40-Q13S	43.5	40	48	70	179	209	279	1.91	○		
44	GHD-440-4D-FC40-Q13S	44	40	48	70	181	211	281	1.91	○		

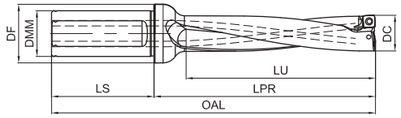
●Stock ○Available Upon Order

Unit (mm)

Range of Sizes	Aperture Accuracy	
	2D-3D	4D-5D
14-30	-0.1/+0.25	-0.13/+0.28
30-40	-0.1/+0.28	-0.15/+0.3
40-48	-0.1/0.3	-0.17/+0.32

GHDS-5D

GHDS-5D Internal Cooling Shallow Hole Drill



Diameter	Drill Body Type	Dimensions							Net Weight (kg)	In Stock	Insert type	
		DC	DMM	DF	LS	LU	LPR	OAL			Inner Insert	External Insert
14	GHD-140-5D-FC20-Q04S	14	20	25	50	73	86	136	0.18	●	QPMG040204 SOMG040204-C	QPMG040204 QPMG040204-P
14.5	GHD-145-5D-FC20-Q04S	14.5	20	25	50	77	90	140	0.19	●		
15	GHD-150-5D-FC20-Q04S	15	20	25	50	79	92	142	0.20	●		
15.5	GHD-155-5D-FC20-Q04S	15.5	20	25	50	81	95	145	0.20	●		
16	GHD-160-5D-FC20-Q05S	16	20	25	50	83	98	148	0.20	●	QPMG050204 SOMG050204-C	QPMG050204 QPMG050204-P
16.5	GHD-165-5D-FC20-Q05S	16.5	20	25	50	87	101	151	0.21	●		
17	GHD-170-5D-FC25-Q05S	17	25	32	56	90	104	160	0.33	●		
17.5	GHD-175-5D-FC25-Q05S	17.5	25	32	56	93	107	163	0.34	●		
18	GHD-180-5D-FC25-Q05S	18	25	32	56	94	109	165	0.34	●		
18.5	GHD-185-5D-FC25-Q05S	18.5	25	32	56	97	112	168	0.35	●		
19	GHD-190-5D-FC25-Q06S	19	25	32	56	99	114	170	0.36	●	QPMG060204 SOMG060204-C	QPMG060204 QPMG060204-P
19.5	GHD-195-5D-FC25-Q06S	19.5	25	32	56	103	118	174	0.37	●		
20	GHD-200-5D-FC25-Q06S	20	25	32	56	104	121	177	0.39	●		
20.5	GHD-205-5D-FC25-Q06S	20.5	25	32	56	107	124	180	0.40	●		
21	GHD-210-5D-FC25-Q06S	21	25	32	56	109	126	182	0.40	●		
21.5	GHD-215-5D-FC25-Q06S	21.5	25	32	56	112	129	185	0.41	●		
22	GHD-220-5D-FC25-Q06S	22	25	32	56	113	131	187	0.42	●		
22.5	GHD-225-5D-FC25-Q06S	22.5	25	32	56	116	134	190	0.43	●		
23	GHD-230-5D-FC32-Q07S	23	32	40	60	120	138	198	0.63	●	QPMG07T306 SOMG07T306-C	QPMG07T306 QPMG07T306-P
23.5	GHD-235-5D-FC32-Q07S	23.5	32	40	60	122	140	200	0.64	●		
24	GHD-240-5D-FC32-Q07S	24	32	40	60	124	143	203	0.67	●		
24.5	GHD-245-5D-FC32-Q07S	24.5	32	40	60	127	146	206	0.69	●		
25	GHD-250-5D-FC32-Q07S	25	32	40	60	129	149	209	0.71	●		
25.5	GHD-255-5D-FC32-Q07S	25.5	32	40	60	133	153	213	0.73	●		
26	GHD-260-5D-FC32-Q07S	26	32	40	60	137	157	217	0.76	●		
26.5	GHD-265-5D-FC32-Q07S	26.5	32	40	60	138	158	218	0.77	●		
27	GHD-270-5D-FC32-Q07S	27	32	40	60	139	159	219	0.81	●		

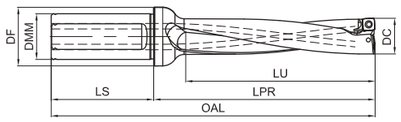
●Stock ○Available Upon Order

Unit (mm)

B Indexable Drill Bit

GHDS-5D

GHDS-5D Internal Cooling Shallow Hole Drill



Continued

Diameter	Drill Body Type	Dimensions							Net Weight (kg)	In Stock	Insert type	
		DC	DMM	DF	LS	LU	LPR	OAL			Inner Insert	External Insert
27.5	GHD-275-5D-FC32-Q09S	27.5	32	40	60	142	162	222	0.82	●	QPMG09T308 SOMG09T308-C	QPMG09T308 QPMG09T308-P
28	GHD-280-5D-FC32-Q09S	28	32	40	60	143	165	225	0.81	●		
28.5	GHD-285-5D-FC32-Q09S	28.5	32	40	60	147	169	229	0.83	●		
29	GHD-290-5D-FC32-Q09S	29	32	40	60	150	171	231	0.87	●		
29.5	GHD-295-5D-FC32-Q09S	29.5	32	40	60	153	174	234	0.89	●		
30	GHD-300-5D-FC32-Q09S	30	32	40	60	155	177	237	0.90	●		
30.5	GHD-305-5D-FC32-Q09S	30.5	32	40	60	158	180	240	0.93	●		
31	GHD-310-5D-FC40-Q09S	31	40	48	70	160	183	253	1.29	●		
31.5	GHD-315-5D-FC40-Q09S	31.5	40	48	70	163	186	256	1.31	●		
32	GHD-320-5D-FC40-Q09S	32	40	48	70	166	188	258	1.33	●		
32.5	GHD-325-5D-FC40-Q09S	32.5	40	48	70	170	192	262	1.37	●		
33	GHD-330-5D-FC40-Q09S	33	40	48	70	171	194	264	1.43	●		
33.5	GHD-335-5D-FC40-Q11S	33.5	40	48	70	175	199	269	1.43	○	QPMG110408 SOMG110408-C	QPMG110408 QPMG110408-P
34	GHD-340-5D-FC40-Q11S	34	40	48	70	176	199	269	1.55	●		
34.5	GHD-345-5D-FC40-Q11S	34.5	40	48	70	176	199	269	1.55	○		
35	GHD-350-5D-FC40-Q11S	35	40	48	70	181	205	275	1.61	●		
35.5	GHD-355-5D-FC40-Q11S	35.5	40	48	70	182	205	275	1.61	○		
36	GHD-360-5D-FC40-Q11S	36	40	48	70	186	211	281	1.66	●		
36.5	GHD-365-5D-FC40-Q11S	36.5	40	48	70	189	214	284	1.66	○		
37	GHD-370-5D-FC40-Q11S	37	40	48	70	191	216	286	1.77	●		
37.5	GHD-375-5D-FC40-Q11S	37.5	40	48	70	195	220	290	1.77	○		
38	GHD-380-5D-FC40-Q11S	38	40	48	70	195	222	292	1.82	●		
38.5	GHD-385-5D-FC40-Q11S	38.5	40	48	70	198	225	295	1.82	○		
39	GHD-390-5D-FC40-Q11S	39	40	48	70	204	227	297	1.89	●		
39.5	GHD-395-5D-FC40-Q11S	39.5	40	48	70	207	233	303	1.89	○		
40	GHD-400-5D-FC40-Q11S	40	40	48	70	204	233	303	1.91	●		

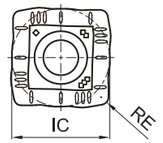
●Stock ○Available Upon Order

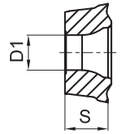
Unit (mm)

Range of Sizes	Aperture Accuracy	
	2D-3D	4D-5D
14-30	-0.1/+0.25	-0.13/+0.28
30-40	-0.1/+0.28	-0.15/+0.3
40-48	-0.1/0.3	-0.17/+0.32

QPMG

QPMG Shallow Hole Drill Inserts-General for Internal and Outer Inserts





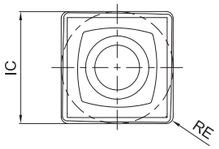
Model	Grade			Dimensions (mm)				Drilling Diameter
	GA4230	GM3220	GS4130	IC	S	RE	D1	
QPMG040204-DP	●	○	○	4.7	2.3	0.4	2.2	Φ14.0~Φ15.9
QPMG050204-DP	●	○	●	5.7	2.5	0.4	2.6	Φ16.0~Φ18.9
QPMG060204-DP	●	●	●	6.5	2.5	0.4	2.6	Φ19.0~Φ22.5
QPMG07T306-DP	●	○	●	7.94	3.5	0.6	2.85	Φ22.6~Φ27.0
QPMG09T308-DP	●	○	●	9.7	3.97	0.8	3.5	Φ27.1~Φ33.0
QPMG110408-DP	●	○	○	11.5	4.76	0.8	4.4	Φ33.1~Φ40.0
QPMG130408-DP	●	●	●	13.2	4.76	0.8	4.4	Φ40.1~Φ45.0
QPMG150512-DP	●	●	●	15.2	5.2	1.2	5.5	Φ45.1~Φ51.0

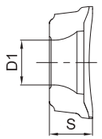
GA4230-general grade
GM3220-stainless steel machining
GS4130-difficult-to-machine materials and unstable working conditions

●Stock ○Available Upon Order

SOMG-C

SOMG-C Shallow Hole Drill Inserts-Dedicated for Inner Inserts





Model	Grade		Dimensions (mm)				Drilling Diameter
	GM4240	GA4225B	IC	S	RE	D1	
SOMG040204-C-DP	●	●	4.7	2.3	0.4	2.2	Φ14.0~Φ15.9
SOMG050204-C-DP	●	●	5.7	2.5	0.4	2.6	Φ16.0~Φ18.9
SOMG060204-C-DP	●	●	6.5	2.5	0.4	2.6	Φ19.0~Φ22.5
SOMG07T306-C-DP	●	●	7.94	3.5	0.6	2.85	Φ22.6~Φ27.0
SOMG09T308-C-DP	●	●	9.7	3.97	0.8	3.5	Φ27.1~Φ33.0
SOMG110408-C-DP	●	●	11.5	4.76	0.8	4.4	Φ33.1~Φ40.0
SOMG130408-C-DP	●	○	13.2	4.76	0.8	4.4	Φ40.1 ～ Φ45
SOMG150512-C-DP	○	○	15.2	5.2	1.2	5.5	Φ45.1~Φ51.0

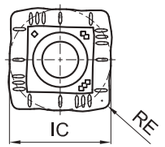
GM4240-inner inserts for hardened and tempered steel machining
GA4225B-inner inserts for soft steel machining

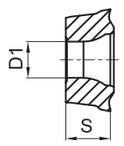
●Stock ○Available Upon Order

B Indexable Drill Bit

QPMG-P

QPMG-P Shallow Hole Drill Inserts-Dedicated for Outer Inserts



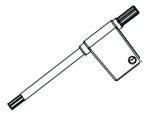


Model	Grade	Dimensions (mm)				Drilling Diameter
	GP1135D	IC	S	RE	D1	
QPMG040204-P-DP	●	4.7	2.3	0.4	2.2	Φ14.0~Φ15.9
QPMG050204-P-DP	●	5.7	2.5	0.4	2.6	Φ16.0~Φ18.9
QPMG060204-P-DP	●	6.5	2.5	0.4	2.6	Φ19.0~Φ22.5
QPMG07T306-P-DP	●	7.94	3.5	0.6	2.85	Φ22.6~Φ27.0
QPMG09T308-P-DP	●	9.7	3.97	0.8	3.5	Φ27.1~Φ33.0
QPMG110408-P-DP	●	11.5	4.76	0.8	4.4	Φ33.1~Φ40.0
QPMG130408-P-DP	●	13.2	4.76	0.8	4.4	Φ40.1 ～ Φ45
QPMG150512-P-DP	●	15.2	5.2	1.2	5.5	Φ45.1~Φ51.0

GP1135D-outer inserts for steel machining to improve wear resistance

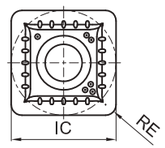
●Stock ○Available Upon Order

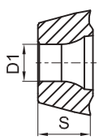
List of Tool Accessories

Insert Specifications	Screw		Wrench		Torque Value
	Order No.	Schematic Diagram	Order No.	Schematic Diagram	
QPMG040204	SI60M020050-02704B		TT05IPB		0.6
QPMG040204-P					
SOMG040204-C					
QPMG050204	SI60M022055-03107B		TT06IPB		0.8
QPMG050204-P					
SOMG050204-C					
QPMG060204	SI60M022055-03107B		TT06IPB		0.8
QPMG060204-P					
SOMG060204-C					
QPMG07T306	SI60M025070-03509B		TT07IPB		0.8
QPMG07T306-P					
SOMG07T306-C					
QPMG09T308	SI60M030080-04210B		TT09IPB		1.4
QPMG09T308-P					
SOMG09T308-C					
QPMG110408	SI60M040100-05510B		TT15IPB		2
QPMG110408-P					
SOMG110408-C					
QPMG130408	SI60M040100-05510B		TT15IPB		2
QPMG130408-P					
SOMG130408-C					
QPMG150512	SI60M050110-07212B		TI20TB		3
QPMG150512-P					
SOMG150512-C					

SPMG

General Indexable Drilling Insert





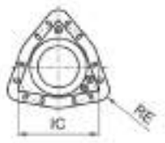
Insert Type	Dimension (mm)				Grade		Drilling Dia
	IC	S	RE	D1	GA4230	GS4130	
SPMG050204-DM	5	2.38	2.2	0.4	●	●	Φ13.0～Φ15.0
SPMG060204-DM	6	2.38	2.6	0.4	●	●	Φ15.5～Φ21.5
SPMG07T308-DM	7.94	3.97	2.8	0.8	●	●	Φ22.0～Φ27.5
SPMG090408-DM	9.8	4.3	4.2	0.8	●	●	Φ28.0～Φ33.0
SPMG110408-DM	11.5	4.76	4.4	0.8	●	●	Φ33.0～Φ41.0
SPMG140512-DM	14.3	5.2	5.8	1.2	●	●	Φ42.0～Φ50.0

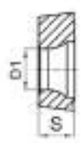
GA4230—General Grade
GS4130—Difficult to process material and unstable condition

●Stock ○Available Upon Order

WCMT

General Indexable Drilling Insert





Insert Type	Dimension (mm)				Grade		Drilling Dia
	IC	S	RE	D1	GA4230	GS4130	
WCMT030208-DU	5.56	2.38	2.8	0.8	●	●	Φ15.0～Φ20.5
WCMT040208-DU	6.35	2.38	2.9	0.8	●	●	Φ21.0～Φ24.5
WCMT050308-DU	7.94	3.18	3.4	0.8	●	●	Φ25.0～Φ30.0
WCMT06T308-DU	9.52	3.97	3.8	0.8	●	●	Φ30.5～Φ39.5
WCMT080412-DU	12.7	4.76	4.4	1.2	●	●	Φ40.0～Φ60.0

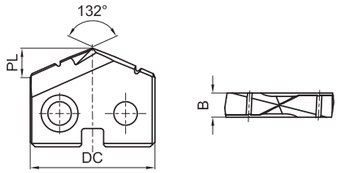
GA4230—General Grade
GS4130—Difficult to process material and unstable condition

●Stock ○Available Upon Order

B Indexable Drill Bit

MCMG

Spade Drill Inserts



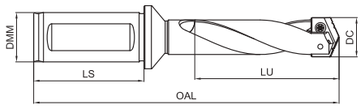
Order No.	Dimensions (mm)			Grade
	DC	B	PL	GM3225
MCMG013003-DS	13	3.18	2.86	●
MCMG013503-DS	13.5		2.97	●
MCMG014003-DS	14		3.08	●
MCMG014503-DS	14.5		3.19	●
MCMG015003-DS	15		3.3	●
MCMG015503-DS	15.5		3.41	●
MCMG016003-DS	16		3.52	●
MCMG016503-DS	16.5		3.63	●
MCMG017003-DS	17		3.74	●
MCMG017503-DS	17.5		3.85	●
MCMG0180T3-DS	18	3.97	3.96	●
MCMG0185T3-DS	18.5		4.07	●
MCMG0190T3-DS	19		4.18	●
MCMG0195T3-DS	19.5		4.29	●
MCMG0200T3-DS	20		4.4	●
MCMG0205T3-DS	20.5		4.51	●
MCMG0210T3-DS	21		4.62	●
MCMG0215T3-DS	21.5		4.73	●
MCMG0220T3-DS	22		4.84	●
MCMG0225T3-DS	22.5		4.95	●
MCMG0230T3-DS	23		5.06	●
MCMG0235T3-DS	23.5		5.17	●
MCMG0240T3-DS	24		5.28	●
MCMG0245T3-DS	24.5		5.39	●

Order No.	Dimensions (mm)			Grade
	DC	B	PL	GM3225
MCMG025004-DS	25	4.76	5.5	●
MCMG025504-DS	25.5		5.61	●
MCMG026004-DS	26		5.72	●
MCMG026504-DS	26.5		5.83	●
MCMG027004-DS	27		5.94	●
MCMG027504-DS	27.5		6.05	●
MCMG028004-DS	28		6.16	●
MCMG028504-DS	28.5		6.27	●
MCMG029004-DS	29		6.38	●
MCMG029504-DS	29.5		6.49	●
MCMG030004-DS	30		6.6	●
MCMG030504-DS	30.5		6.71	●
MCMG031004-DS	31		6.82	●
MCMG031504-DS	31.5		6.93	●
MCMG032004-DS	32		7.04	●
MCMG032504-DS	32.5		7.15	●
MCMG033004-DS	33		7.26	●
MCMG033504-DS	33.5		7.37	●
MCMG034004-DS	34		7.48	●
MCMG034504-DS	34.5		7.59	●
MCMG035004-DS	35		7.7	●
MCMG035504-DS	35.5		7.81	●
MCMG036004-DS	36		7.92	●

●Stock ○Available Upon Order

GSD

Side-fixed Type Flange Shank Helical Slot Tool Holder



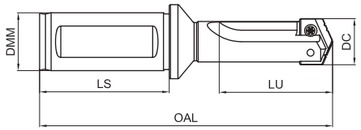
Order No.	Dimensions (mm)					Net Weight (kg)	In Stock	Screw	Wrench
	DC	LU	OAL	DMM	LS				
GSD-125-04D-FC20	13.0 ~ 15.0	63.5	142.1	20	50	0.24	●	SI52M025060-03712C	TT08PC
GSD-125-07D-FC20		114.3	192.9			0.27	●		
GSD-125-11D-FC20		177.8	256.4			0.32	○		
GSD-150-03D-FC20	15.5 ~ 17.5	63.5	142.1			0.27	●		
GSD-150-06D-FC20		114.3	192.9			0.31	●		
GSD-150-10D-FC20		177.8	256.4			0.37	●		
GSD-175-05D-FC25	18.0 ~ 21.5	117.5	210.8	25	56	0.51	●	SI52M030075-04212C	TT09PC
GSD-175-07D-FC25		168.3	261.6			0.57	●		
GSD-175-12D-FC25		269.9	363.2			0.75	●		
GSD-215-04D-FC25	22.0 ~ 24.5	117.5	210.8			0.60	○		
GSD-215-07D-FC25		168.3	261.6			0.69	●		
GSD-215-11D-FC25		269.9	363.2			0.94	●		
GSD-245-04D-FC32	25.0 ~ 29.0	136.5	239.4	32	60	0.93	●	SI52M040095-05218C	TT15PC
GSD-245-06D-FC32		187.3	290.2			1.05	●		
GSD-245-09D-FC32		288.9	391.8			1.41	○		
GSD-295-03D-FC32	30.0 ~ 36.0	136.5	239.4			1.07	○		
GSD-295-05D-FC32		187.3	290.2			1.28	●		
GSD-295-08D-FC32		288.9	391.8			1.75	○		

●Stock ○Available Upon Order

B Indexable Drill Bit

GSD

Side-fixed Type Flange Shank Straight Slot Tool Holder



Order No.	Dimensions (mm)					Net Weight (kg)	In Stock	Screw	Wrench
	DC	LU	OAL	DMM	LS				
GSD-125-01D-FC20-S	13.0 ~ 15.0	22.2	97.6	20	50	0.22	○	SI52M025060-03712C	TT08PC
GSD-125-02D-FC20-S		34.9	113.5			0.23	●		
GSD-125-19D-FC20-S		295	373.9			0.47	○		
GSD-125-25D-FC20-S		387	466			0.52	○		
GSD-150-01D-FC20-S	15.5 ~ 17.5	22.2	97.6			0.23	○		
GSD-150-02D-FC20-S		34.9	113.5			0.24	○		
GSD-150-16D-FC20-S		295	373.9			0.56	○		
GSD-150-22D-FC20-S		387	466			0.64	○		
GSD-175-02D-FC25-S	18.0 ~ 21.5	47.6	131.8	25	56	0.39	○	SI52M030075-04212C	TT09PC
GSD-175-03D-FC25-S		66.7	163.2			0.54	●		
GSD-175-21D-FC25-S		457	550.5			0.98	○		
GSD-175-26D-FC25-S		569	658.5			0.96	○		
GSD-215-01D-FC25-S	22.0 ~ 24.5	47.6	131.8			0.43	○		
GSD-215-02D-FC25-S		66.7	163.2			0.49	●		
GSD-215-19D-FC25-S		457	550.5			1.29	○		
GSD-215-23D-FC25-S		569	658.5			1.34	○		
GSD-245-01D-FC32-S	25.0 ~ 29.0	57.2	148.5	32	60	0.75	○	SI52M040095-05218C	TT15PC
GSD-245-02D-FC32-S		85.7	188.6			1.01	○		
GSD-245-17D-FC32-S		511	614.1			1.92	○		
GSD-245-23D-FC32-S		692	795.1			2.07	○		
GSD-295-01D-FC32-S	30.0 ~ 36.0	57.2	148.5			0.84	○		
GSD-295-02D-FC32-S		85.7	188.6			0.95	●		
GSD-295-14D-FC32-S		511	614.1			2.23	○		
GSD-295-19D-FC32-S		692	795.1			2.83	○		

●Stock ○Available Upon Order

List of tool accessories

Insert Diameter DC	Screw		Wrench		
	Order No.	Schematic Diagram	Order No.	Schematic Diagram	Torque Value
Φ13.0 – Φ17.5	SI52M025060-03712C		TT08PC		1
Φ18.0 – Φ24.5	SI52M030075-04212C		TT09PC		1
Φ25.0 – Φ36.0	SI52M040095-05218C		TT15PC		1.5

Recommended Cutting Data

GUMD Bit-replaceable Drill Bit Series

Workpiece Material		Cutting Speed Vc (m/min)	Machining Diameter (Mm)				
			Ø11	Ø13	Ø15	Ø18	Ø21
P	Low-carbon Steel, Long Chips (<125HB)	60 -100-140	0.14-0.2-0.28	0.16-0.24-0.3	0.18-0.26-0.33	0.20-0.28-0.35	0.25-0.34-0.42
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	60 -100-140	0.14-0.2-0.28	0.16-0.24-0.3	0.18-0.26-0.33	0.20-0.28-0.35	0.25-0.34-0.42
	High-carbon Steel and Medium-carbon Steel (<25HRC)	60-80-120	0.14-0.2-0.28	0.16-0.24-0.3	0.18-0.26-0.33	0.20-0.28-0.35	0.25-0.34-0.42
	Alloy Steel, Tool Steel (<35HRC)	60-80-110	0.14-0.2-0.24	0.16-0.22-0.26	0.16-0.22-0.26	0.18-0.24-0.28	0.18-0.26-0.30
	Alloy Steel, Tool Steel (35-48HRC)	35-60-90	0.10-0.14-0.18	0.12-0.16-0.20	0.12-0.16-0.20	0.14-0.18-0.22	0.14-0.18-0.22
	Ph and Ferritic, Martensitic Steel (<35HRC)	30-60-90	0.10-0.14-0.18	0.12-0.16-0.20	0.12-0.16-0.20	0.14-0.18-0.22	0.14-0.18-0.22
	High Strength PH and Ferritic, Martensitic Steel (35-48HRC)	30-50-80	0.10-0.14-0.18	0.12-0.16-0.20	0.12-0.16-0.20	0.14-0.18-0.22	0.14-0.18-0.22
M	Austenitic Stainless Steels (130- 200HB)	40-60-80	0.12-0.16-0.18	0.13-0.16-0.2	0.14-0.18-0.24	0.14-0.2-0.26	0.15-0.22-0.3
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	40-60-80	0.08-0.1-0.13	0.09-0.11-0.13	0.10-0.12-0.14	0.10-0.12-0.14	0.12-0.14-0.16
	Duplex Stainless Steel (<30HRC)	30-45-60	0.08-0.1-0.13	0.09-0.11-0.13	0.10-0.12-0.14	0.10-0.12-0.14	0.12-0.14-0.16
K	Gray Cast Iron (<HRC32)	60-120-160	0.14-0.22-0.28	0.14-0.26-0.35	0.18-0.28-0.38	0.2-0.3-0.4	0.22-0.32-0.45
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<HRC28)	60-100-140	0.14-0.2-0.25	0.14-0.22-0.3	0.16-0.26-0.35	0.18-0.3-0.4	0.2-0.3-0.42
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	50-80-100	0.10-0.14-0.16	0.12-0.15-0.18	0.14-0.18-0.20	0.16-0.2-0.22	0.18-0.22-0.24

B Indexable Drill Bit

Recommended Cutting Data

GHDS double helix internal cooling shallow hole drill

Workpiece Material		Cutting Speed Vc (m/min)	Feed (mm/rev) * Reference to Drill Bit Diameter *			
			Φ14.0 – 22.5	Φ23.0 – 27.0	Φ27.5 – 33.0	Φ33.5 – 40.0
P	Low-carbon Steel, Long Chips (<125HB)	160—240—300	0.04-0.06	0.04-0.06	0.04-0.08	0.04-0.08
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	140—180—220	0.04-0.10	0.04-0.12	0.06-0.16	0.08-0.18
	High-carbon Steel and Medium-carbon Steel (<25HRC)	140—180—220	0.04-0.10	0.04-0.12	0.06-0.16	0.08-0.18
	Alloy Steel, Tool Steel (<35HRC)	100—160—200	0.04-0.10	0.06-0.12	0.08-0.16	0.08-0.18
	Alloy Steel, Tool Steel (35-48HRC)	80—160—200	0.04-0.10	0.06-0.12	0.08-0.16	0.08-0.18
	Ph and Ferritic, Martensitic Steel (<35HRC)	80—160—200	0.03-0.08	0.04-0.12	0.08-0.14	0.08-0.16
	High Strength PH and Ferritic, Martensitic Steel (35-48HRC)	60—140—180	0.03-0.08	0.04-0.12	0.06-0.14	0.06-0.16
M	Austenitic Stainless Steels (130- 200HB)	100—140—200	0.04-0.10	0.06-0.12	0.06-0.14	0.06-0.16
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	60—140—180	0.03-0.08	0.04-0.12	0.06-0.14	0.06-0.16
	Duplex Stainless Steel (<30HRC)	60—140—180	0.03-0.08	0.04-0.12	0.06-0.14	0.06-0.16
K	Gray Cast Iron (<32HRC)	140—180—230	0.04-0.10	0.06-0.14	0.06-0.16	0.08-0.20
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	120—160—200	0.04-0.10	0.06-0.14	0.06-0.16	0.08-0.20
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	100—160—200	0.04-0.10	0.06-0.12	0.08-0.16	0.08-0.18
S	Nickel-Based/Iron-Based/Cobalt-Based Heat-Resistant Alloy	30—50—80	0.03-0.06	0.04-0.08	0.04-0.10	0.06-0.12
	Titanium Base + Heat-Resistant Alloy	30—50—70	0.03-0.08	0.04-0.10	0.04-0.10	0.06-0.12

Recommended Cutting Data

GSD Spade Drill

Workpiece Material		Cutting Speed Vc (m/min)	Feed (mm/rev) * Reference to Drill Bit Diameter *		
			Ø13.0 – 17.5	Ø18.0 – 24.0	Ø25.0 – 35.0
P	Low-carbon Steel, Long Chips (<125HB)	80—100—120	0.14-0.26	0.18-0.28	0.22-0.32
	Low-carbon Steel, Short Chips, Free Cutting Steel (<125HB)	80—90—105	0.14-0.26	0.18-0.28	0.22-0.32
	High-carbon Steel and Medium-carbon Steel (<25HRC)	60—80—100	0.12-0.18	0.16-0.24	0.22-0.30
	Alloy Steel, Tool Steel (<35HRC)	60—80—100	0.12-0.16	0.16-0.22	0.22-0.28
	Alloy Steel, Tool Steel (35-48HRC)	50—70—90	0.12-0.16	0.15-0.20	0.20-0.25
	Ph and Ferritic, Martensitic Steel (<35HRC)	40—60—70	0.12-0.16	0.16-0.20	0.18-0.25
	High Strength PH and Ferritic, Martensitic Steel (35-48HRC)	30—50—80	0.10-0.14	0.14-0.20	0.16-0.22
M	Austenitic Stainless Steels (130- 200HB)	30—40—50	0.08-0.14	0.12-0.20	0.14-0.22
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	20—40—50	0.08-0.14	0.12-0.20	0.14-0.22
	Duplex Stainless Steel (<30HRC)	20—40—50	0.08-0.14	0.12-0.20	0.14-0.22
K	Gray cast iron (<32HRC)	80—100—120	0.18-0.25	0.25-0.30	0.30-0.35
	Alloy Cast Iron with Medium Machining Difficulty, Nodular Cast Iron (<28HRC)	80—100—120	0.15-0.20	0.18-0.26	0.22-0.32
	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron (<45HRC)	60—80—100	0.15-0.20	0.18-0.26	0.22-0.32

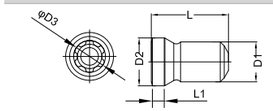
Tool Holders of Different Lengths					
Data	Various Tool Holder Lengths				
	Drilling Depth<8D	8D≥Drilling Depth<12D	12D≥Drilling Depth<16D	16D≥Drilling Depth<20D	20D≥Drilling Depth
Cutting Speed	Refer to the Table Above	0.9	0.85	0.8	0.75
Feed	Refer to the Table Above	0.95		0.9	

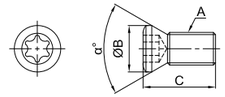
Notes: The parameters recommended in the table are based on the premise of perfect equipment and efficiency. When in application, reduce the speed and feed according to the actual situation of the equipment (reduce the speed by 20% and the feed by 10%).

B Indexable Drill Bit

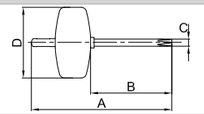
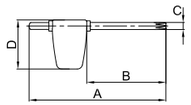
Summary of Indexable Drill Bit Accessories

Screw

Shape	Order No.	Torque	Dimensions					Applicable Tool
		N•m	D1(mm)	D2(mm)	D3(mm)	L(mm)	L1(mm)	
	SCCM022038B	0.6	2.2	2.7	1.8	3.8	0.7	GUMD
	SCCM025046B	0.9	2.5	3.0	2.0	4.6	0.9	GUMD
	SCCM030058B	1.1	3.0	3.6	2.4	5.8	1.0	GUMD
	SCCM035072B	1.3	3.5	4.0	2.6	7.2	1.7	GUMD

Shape	Order No.	Torque	Dimensions				Applicable Tool
		N•m	A(mm)	ΦB(mm)	C(mm)	α°	
	SI60M020050-02704B	0.6	2.0	2.7	5.0	60	GHDS
	SI60M022055-03107B	0.8	2.2	3.1	5.5	60	GHDS
	SI60M025070-03509B	0.8	2.5	3.5	7.0	60	GHDS
	SI60M030080-04210B	1.4	3.0	4.2	8.0	60	GHDS
	SI60M040100-05510B	2.0	4.0	5.5	10.0	60	GHDS
	SI60M050110-07212B	3.0	5.0	7.2	11.0	60	GHDS
	SI52M025060-03712C	1.0	2.5	3.7	6.0	52	GSD
	SI52M030075-04212C	1.0	3.0	4.2	7.5	52	GSD
	SI52M040095-05218C	1.5	4.0	5.2	9.5	52	GSD

Wrench

Shape	Order No.	Dimensions				Applicable Tool
		A(mm)	B(mm)	C(mm)	D(mm)	
	TI06KB	70	35	2	40	GUMD
	TI07KB	70	35	2.5	40	GUMD
	TI08KB	75	40	2.5	40	GUMD
	TI09KB	75	75	3	40	GUMD
	TT05IPB	67	35	2	15	GHDS, GUMD
	TT06IPB	67	35	2	15	GHDS, GUMD
	TT07IPB	67	35	2.5	19	GHDS, GUMD
	TT08IPB	72	40	2.5	19	GUMD
	TT09IPB	74	40	3	24	GHDS, GUMD
	TT15IPB	80	45	3.5	28	GHDS
	TT20IPB	80	45	4	28	GHDS
	TT08PC	72	40	2.5	19	GSD
	TT09PC	74	40	3	24	GSD
	TT15PC	80	45	3.5	28	GSD

MEMO

C

BORING SYSTEM

Rules for Order No. of Modular Boring System

GBR – RB C19 L22 R1

① ② ③ ④ ⑤

① Series Name	
GBR	Gbr Boring System

② Product Type	
RB	Modular Rough Boring Tool
FB	Modular Fine Boring Tool

③ Interface Rod Diameter	
C19	Rod Diameter: 19mm
C25	Rod Diameter: 25mm
...	...

④ Active Length	
L22	Effective Length 22mm
L40	Effective Length 40mm
...	...

⑤ Type of Matched Tool Apron	
R1	Matching R1 Rough Boring Tool Apron
R2	Matching R2 Rough Boring Tool Apron
F1	Matching F1 Fine Boring Tool Apron
...	...

Representation Rules for Small-Diameter Boring Tool Type (Order No.)

G	M	T	(B)	–	T	R	40	R20	L10	(A)	(-IC)
①	②	③	④		⑤	⑥	⑦	⑧	⑨	⑩	⑪

① GESAC

② Machining Material
P-Plain Steel
M-stainless Steel
H-Hardness Steel

⑤ Machining Type
A-Universal (Without Chip Breaker)
T-boring
P-profile Machining (22°)
Q-profile Machining (52°)
U-90° Cut-in Profile Machining
C-double Chamfers
G-radial Square Slot
K-Radial Circular Slot
F-axial Square Slot
I-thread
D-Internal Hole Boring & Chamfer & Grooving
X-back Boring
V-deep Axial Square Slot

③ Tool Type
T-small-diameter Boring

④ Positioning Mode
B-inclined Surface Positioning
Omit-flat Shank

⑥ Left/right-handed
R-right-handed
L-left-hand

⑦ Minimum Machining Diameter
25-D2.5
30-D3
40-D4
50-D5
60-D6

⑧ Filleted Corner/Slot Width/Thread Angle
1. Boring, Circular Slot
R00-omit
R05-R0.05
R20-R0.2
R40-R0.4
2. Square slot
W15-1.5mm
W20-2.0mm
3. Thread
A60-partial Tooth Shape 60°
A55-partial Tooth Shape 55°
ISO-Metric System ISO
UN-American Standard UN

⑨ Machining Length or Pitch
L05-5mm
L10-10mm
125-pitch 1.25

⑩ Feature Code
A-upgrade Code
Omitted-regular Product

⑪ Cooling Mode
IC-Internal Cooling
Omitted-external Cooling

Boring System Selection Logic

Determine the Bore Diameter ▶ Determine the Machining Precision ▶ Determine the Hole Depth ▶ Determine the Machine Interface ▶ Determine the Machining Material

Boring Tool Series	Boring Tool Type	Length Range (Extension Bar)	Shank Type	Tip Seat + Insert
Small-diameter boring tool MB: D2-50 mm	Select rough boring or fine boring according to the requirements of the wall of hole and bore diameter tolerance.	The maximum hole depth is within 5D. If it exceeds 5D, a damping tool holder is generally required.	BT	Insert shape, to determine the tip seat
Boring tool RB/FB: D20-D212 mm	The adjustment precision of the rough boring bore diameter is approximately 0.5mm.		HSK	Insert grade + geometry
Bridge type boring tool LRB/LFB: D150-D850 mm	The adjustment precision of the fine boring bore diameter is 0.01mm.			
Large bridge-type boring tool HRBA/HFBA: D850-D3,300 mm				

Bore Diameter Range of the Boring Tool System

Product Category	Machine Interface	Range of Machining	Subdivision of Product Category	Range of Machining	Corresponding Page Number in the Product Catalog	Machining Depth	Adjustment Precision
Rough Boring	BT30/BT40/BT50 HSK63/HSK100	ISO50/60 Mandrel	Rough Boring Tool Bit RB	Φ20-Φ3300mm	P188	2.5D-5D	0.5 mm
	BT40/BT50 HSK100		Bridge Type Rough Boring Tool LRB	Φ20-Φ3300mm	P205	89mm-125mm	
	ISO50/60 mandrel		Bridge Type Rough Boring Tool for Large Aluminum Alloy HRBA	Φ20-Φ3300mm	P209	169mm-219mm	
Fine Boring	BT30/BT40/BT50 HSK63/HSK100	Φ2-Φ3300 mm	Miniature Diameter Fine Boring Head MB	Φ2-Φ50mm	P196	20mm-110mm	0.01 mm
			Fine Boring Tool Head FB	Φ20-Φ212mm	P193	2.5D-5D	
	BT40/BT50 HSK100		Bridge Type Fine Boring Tool LFB	Φ150-Φ850mm	P207	87mm-125mm	
	ISO50/60 mandrel		Bridge Type Fine Boring Tool for Large Aluminum Alloy HRBA	Φ850-Φ3300mm	P209	167mm-217mm	

Combination Instructions of the Boring System

Shank (See P201)

Equal Diameter Extension Bar (See P199)

Unequal Diameter Extension Bar (See P200)

Rough Boring Head (See P188)

Fine Boring Head (See P193)

Miniature Diameter Fine Boring Tool Bit (See P196)

Rough Boring Inserts Holder (See P189)

Fine Boring Inserts Holder (See P194)

Miniature Diameter Fine Boring Tool Holder (See P197)

Rough Boring Inserts (See P212)

Fine Boring Inserts (See P212)

Fine Boring Inserts (See P212)

Combination Instructions of the Boring System

Bridge Boring Tool Shank (See P210)

Mandrel (See P211)

Bridge-type Rough Boring Tool (See P205)

Bridge-type Fine Boring Tool (See P207)

Bridge-type Rough Boring Tool for Large Aluminum Alloy (See P209)

Bridge-type Fine Boring Tool for Large Aluminum Alloy (See P209)

Bridge-type Rough Boring Tool Apron (See P206)

Fine Boring Tool Apron (See P194)

Bridge-type Rough Boring Tool Apron (See P206)

Fine Boring Tool Apron (See P194)

Rough Boring Inserts (See P212)

Fine Boring Inserts (See P212)

Fine Boring Inserts (See P212)

Fine Boring Inserts (See P212)

Insert Selection Table for Boring System

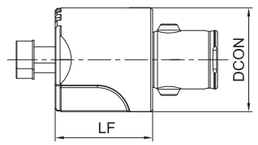
Insert Type	Order No.	Tip Radius R Angle	Geometry Selection		Grade	
			ap<2mm,f<0.2mm/r	ap<3mm,f<0.3mm/r	P/K	M/S
Rough Boring Inserts	CCMT060202	0.2	MM	GP	GM3225	GM3225/GM3220
	CCMT060204	0.4	MM	GP		
	CCMT060208	0.8	MM	GP		
	CCMT09T302	0.2	MM	GP		
	CCMT09T304	0.4	MM	GP		
	CCMT09T308	0.8	MM	GP		
	CCMT120404	0.4	GP	GP		
	CCMT120408	0.8	GP	GP		
	TCMT110202	0.2	MM	GP		
	TCMT110204	0.4	MM	GP		
	TCMT110208	0.8	MM	GP		
	TCMT16T304	0.4	MM	GP		
	TCMT16T308	0.8	MM	GP		
	TCMT220408	0.8	GP	GP		
	SCMT09T304	0.4	MM	GP		
	SCMT09T304	0.4	MM	GP		
	SCMT09T308	0.8	MM	GP		
	SCMT120404	0.4	GP	GP		
	SCMT120408	0.8	GP	GP		

Insert Type	Order No.	Tip Radius R Angle	Geometry Selection		Grade	
			ap<2mm,f<0.2mm/r	ap<3mm,f<0.3mm/r	P/K	M/S
Fine Boring Inserts	TBGT060102	0.2	P	/	GAT7115/GAT7120/GAT7125	
	TBGT060104	0.4	P	/		
	TPGH090202	0.2	P	/		
	TPGH090204	0.4	P	/		
	TPGH110301	0.1	P	/		
	TPGH110302	0.2	P	/		
	TPGH110304	0.4	P	/		
	CCGT060201	0.1	G	/		
	CCGT060202	0.2	G	/		
	CCGT060204	0.4	G	/		
	CCGT09T301	0.1	G	/		
	CCGT09T302	0.2	G	/		
	CCGT09T304	0.4	G	/		
Miniature Diameter Fine Boring Inserts	TPGH090202	0.2	P	/		
	TPGH090204	0.4	P	/		
	TPGH110302	0.2	P	/		
	TPGH110304	0.4	P	/		
	WBGT060102	0.2	BRG	/	GAT7110B	
	WBGT060102	0.2	BRN	/	GNT7110B	
	WBGT060102	0.2	BRP	/	GPT7110B	

C Boring System

Rough Boring Tool Bit

RB



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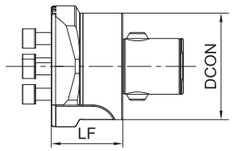


B

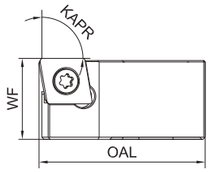
Order No.	Diagram	Shank Diameter (mm) DCON	Effective Length (mm) LF	Forward Boring Machining Range (mm)	Forward Boring Tool Apron	Back Boring Machining Range (Mm)	Back Boring Tool Apron	Tool Apron Locking Screw	Disc Spring Washer	Locking Wrench	Weight (kg)	In Stock
GBR-RBC19L22R1	A	19	22	20-24	DZR1D020-024	30-35	DZFR1D030-035-CC0690	SCA-M040160-GBR	DSD4-GBR	TH30L-GBR	0.05	●
		19	22	23-27	DZR1D023-027			SCA-M040160-GBR	DSD4-GBR	TH30L-GBR	0.05	
GBR-RBC25L25R2	A	25	25	26-35	DZR2D026-035	33-41	DZFR2D033-041-CC0690	SCA-M040160-GBR	DSD4-GBR	TH30L-GBR	0.09	●
						40-48	DZFR2D040-048-CC0690	SCA-M040160-GBR	DSD4-GBR	TH30L-GBR	0.09	
GBR-RBC32L30R3	A	32	30	33-41	DZR3D033-041	42-52	DZFR3D042-052-CC0690	SCA-M050160-GBR	DSD5-GBR	TH40L-GBR	0.19	●
						51-61	DZFR3D051-061-CC0690	SCA-M050160-GBR	DSD5-GBR	TH40L-GBR	0.19	
GBR-RBC40L30R4	A	40	30	41-55	DZR4D041-055	-	-	SCA-M060200-GBR	DSD6-GBR	TH50L-GBR	0.25	●
GBR-RBC40L52R4	A	40	52	41-55	DZR4D041-055	53-65	DZFR4D053-065-CC0990	SCA-M060200-GBR	DSD6-GBR	TH50L-GBR	0.47	●
						64-76	DZFR4D064-076-CC0990	SCA-M060200-GBR	DSD6-GBR	TH50L-GBR	0.47	
GBR-RBC50L57R5	A	50	57	55-70	DZR5D055-070	53-69	DZFR5D053-069-CC0990	SCA-M060200-GBR	DSD6-GBR	TH50L-GBR	0.86	●
						68-84	DZFR5D068-084-CC0990	SCA-M060200-GBR	DSD6-GBR	TH50L-GBR	0.86	
						83-99	DZFR5D083-099-CC0990	SCA-M060200-GBR	DSD6-GBR	TH50L-GBR	0.86	
GBR-RBC63L55R6	A	63	55	70-90	DZR6D070-090	68-89	DZFR6D068-089-CC0990	SCA-M080250-GBR	DSD8-GBR	TH60L-GBR	1.49	●
						88-109	DZFR6D088-109-CC0990	SCA-M080250-GBR	DSD8-GBR	TH60L-GBR	1.49	
GBR-RBC63L55R7	B	63	55	90-110	DZR7D090-110	88-110	DZFR7D088-110-CC1290	SCA-M100300-GBR	DSD10-GBR	TH80L-GBR	1.73	●
						108-130	DZFR7D108-130-CC1290	SCA-M100300-GBR	DSD10-GBR	TH80L-GBR	1.73	
GBR-RBC90L55R7	A	88	55	90-110	DZR7D090-110	88-110	DZFR7D088-110-CC1290	SCA-M100300-GBR	DSD10-GBR	TH80L-GBR	2.77	●
						108-130	DZFR7D108-130-CC1290	SCA-M100300-GBR	DSD10-GBR	TH80L-GBR	2.77	
GBR-RBC63L55R8	B	63	55	110-133	DZR8D110-133	108-132	DZFR8D108-132-CC1290	SCA-M100300-GBR	DSD10-GBR	TH80L-GBR	2.03	●
		63	55	130-153	DZR8D130-153	128-152	DZFR8D128-152-CC1290	SCA-M100300-GBR	DSD10-GBR	TH80L-GBR	2.03	
GBR-RBC90L55R8	B	88	55	110-133	DZR8D110-133	108-132	DZFR8D108-132-CC1290	SCA-M100300-GBR	DSD10-GBR	TH80L-GBR	3.06	●
		88	55	130-153	DZR8D130-153	128-152	DZFR8D128-152-CC1290	SCA-M100300-GBR	DSD10-GBR	TH80L-GBR	3.06	

The suitable tool apron needs to be ordered separately (see P189).
The suitable shank needs to be ordered separately (see P201).

●Stock ○Available Upon Order

Rough Boring Inserts Tip Seat

DZ



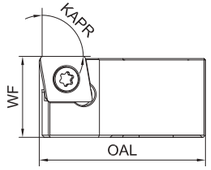
Order No.	Range of Machining (mm)	Tool Cutting Edge Angle (°) KAPR	Width of Tool Apron (mm)WF	Total Length (mm) OAL	Matched Insert	Tool Apron Adjusting Screw	Tip Seat Adjusting Wrench	Insert Locking Screw	Insert Locking Wrench	Net Weight (kg)	In Stock
GBR-DZR1D020-024-CC0690	20-24	90	13.6	16	CCMT0602	SE-M025050-GBR	TH13L-GBR	SL-M025053-GBR	TT07P-GBR	0.01	●
GBR-DZR1D023-027-CC0690	23-27	90	13.6	17	CCMT0602	SE-M025060-GBR	TH13L-GBR	SL-M025053-GBR	TT07P-GBR	0.01	●
GBR-DZR2D026-035-CC0690	26-35	90	13.6	20	CCMT0602	SE-M025060-GBR	TH13L-GBR	SL-M025053-GBR	TT07P-GBR	0.01	●
GBR-DZR3D033-041-CC0690	33-41	90	15	26	CCMT0602	SE-M030080-GBR	TH15L-GBR	SL-M025053-GBR	TT07P-GBR	0.02	●
GBR-DZR4D041-055-CC0990	41-55	90	18	32	CCMT09T3	SE-M030100-GBR	TH15L-GBR	SL-M040095-GBR	TT15P-GBR	0.03	●
GBR-DZR5D055-070-CC0990	55-70	90	18	45	CCMT09T3	SE-M040100-GBR	TH20L-GBR	SL-M040095-GBR	TT15P-GBR	0.05	●
GBR-DZR6D070-090-CC1290	70-90	90	30	59	CCMT1204	SE-M050120-GBR	TH25L-GBR	SL-M050128-GBR	TT20P-GBR	0.15	●
GBR-DZR7D090-110-CC1290	90-110	90	30	74	CCMT1204	SE-M050160-GBR	TH25L-GBR	SL-M050128-GBR	TT20P-GBR	0.21	●
GBR-DZR8D110-133-CC1290	110-133	90	30	85	CCMT1204	SE-M050160-GBR	TH25L-GBR	SL-M050128-GBR	TT20P-GBR	0.25	●
GBR-DZR8D130-153-CC1290	130-153	90	30	96	CCMT1204	SE-M050160-GBR	TH25L-GBR	SL-M050128-GBR	TT20P-GBR	0.3	●
GBR-DZR3D033-041-TC1190	33-41	90	15	26	TCMT1102	SE-M030080-GBR	TH15L-GBR	SW-M025060-GBR	TT08P-GBR	0.02	●
GBR-DZR4D041-055-TC1190	41-55	90	18	32	TCMT1102	SE-M030100-GBR	TH15L-GBR	SW-M025060-GBR	TT08P-GBR	0.03	●
GBR-DZR5D055-070-TC1190	55-70	90	18	45	TCMT1102	SE-M040100-GBR	TH20L-GBR	SW-M025060-GBR	TT08P-GBR	0.05	●

●Stock ○Available Upon Order

C Boring System

Rough Boring Inserts Tip Seat

DZ

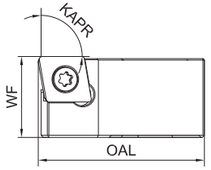


Order No.	Range of Machining (mm)	Tool Cutting Edge Angle (°) KAPR	Width of Tool Apron (mm)WF	Total Length (mm) OAL	Matched Insert	Tool Apron Adjusting Screw	Tip Seat Adjusting Wrench	Insert Locking Screw	Insert Locking Wrench	Net Weight (kg)	In Stock
GBR-DZR6D070-090-TC1690	70-90	90	30	59	TCMT16T3	SE-M050120-GBR	TH25L-GBR	SL-M040095-GBR	TT15P-GBR	0.15	●
GBR-DZR7D090-110-TC1690	90-110	90	30	74	TCMT16T3	SE-M050160-GBR	TH25L-GBR	SL-M040095-GBR	TT15P-GBR	0.21	●
GBR-DZR8D110-133-TC1690	110-133	90	30	85	TCMT16T3	SE-M050160-GBR	TH25L-GBR	SL-M040095-GBR	TT15P-GBR	0.25	●
GBR-DZR8D130-153-TC1690	130-153	90	30	96	TCMT16T3	SE-M050160-GBR	TH25L-GBR	SL-M040095-GBR	TT15P-GBR	0.3	●
GBR-DZR1D023-027-CC0645	23-27	45	13.6	17	CCMT0602	SE-M025060-GBR	TH13L-GBR	SL-M025053-GBR	TT07P-GBR	0.01	○
GBR-DZR2D026-035-CC0645	26-35	45	13.6	20	CCMT0602	SE-M025060-GBR	TH13L-GBR	SL-M025053-GBR	TT07P-GBR	0.01	○
GBR-DZR3D033-041-CC0645	33-41	45	15	25	CCMT0602	SE-M030080-GBR	TH15L-GBR	SL-M025053-GBR	TT07P-GBR	0.02	○
GBR-DZR4D041-055-SC0945	41-55	45	18	30	SCMT09T3	SE-M030100-GBR	TH15L-GBR	SL-M040095-GBR	TT15P-GBR	0.03	○
GBR-DZR5D055-070-SC0945	55-70	45	30	45	SCMT09T3	SE-M040100-GBR	TH20L-GBR	SL-M040095-GBR	TT15P-GBR	0.04	○
GBR-DZR6D070-090-SC0945	70-90	45	30	59	SCMT09T3	SE-M050120-GBR	TH25L-GBR	SL-M040095-GBR	TT15P-GBR	0.13	○
GBR-DZR7D090-110-SC0945	90-110	45	30	75	SCMT09T3	SE-M050160-GBR	TH25L-GBR	SL-M040095-GBR	TT15P-GBR	0.21	○
GBR-DZR8D110-133-SC0945	110-133	45	30	85	SCMT09T3	SE-M050160-GBR	TH25L-GBR	SL-M040095-GBR	TT15P-GBR	0.25	○
GBR-DZR8D130-153-SC0945	130-153	45	30	93	SCMT09T3	SE-M050160-GBR	TH25L-GBR	SL-M040095-GBR	TT15P-GBR	0.27	○

●Stock ○Available Upon Order

Enlarged Rough Boring Tool Apron

DZ



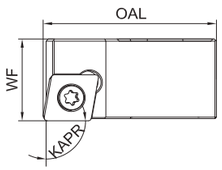
Order No.	Range of Machining (mm)	Tool Cutting Edge Angle (°) KAPR	Width of Tool Apron (mm)WF	Total Length (mm) OAL	Matched Insert	Tool Apron Adjusting Screw	Tip Seat Adjusting Wrench	Insert Locking Screw	Insert Locking Wrench	Net Weight (kg)	In Stock
GBR-DZR1D026-030-CC0690	26-30	90	13.6	19	CCMT0602	SE-M025050-GBR	TH13L-GBR	SL-M025053-GBR	TT07P-GBR	0.01	○
GBR-DZR2D033-042-CC0690	33-42	90	13.6	24	CCMT0602	SE-M025060-GBR	TH13L-GBR	SL-M025053-GBR	TT07P-GBR	0.01	○
GBR-DZR3D039-047-CC0990	39-47	90	15	29	CCMT09T3	SE-M030080-GBR	TH15L-GBR	SL-M040095-GBR	TT15P-GBR	0.02	○
GBR-DZR4D053-067-CC0990	53-67	90	18	38	CCMT09T3	SE-M030100-GBR	TH15L-GBR	SL-M040095-GBR	TT15P-GBR	0.05	○
GBR-DZR5D068-083-CC1290	68-83	90	20	52	CCMT1204	SE-M040100-GBR	TH20L-GBR	SL-M050128-GBR	TT20P-GBR	0.07	○
GBR-DZR6D088-108-CC1290	88-108	90	30	68	CCMT1204	SE-M050120-GBR	TH25L-GBR	SL-M050128-GBR	TT20P-GBR	0.19	○
GBR-DZR7D108-128-CC1290	108-128	90	30	83	CCMT1204	SE-M050160-GBR	TH25L-GBR	SL-M050128-GBR	TT20P-GBR	0.26	○
GBR-DZR2D033-042-TC1190	33-42	90	13.6	24	TCMT1102	SE-M025060-GBR	TH13L-GBR	SW-M025060-GBR	TT08P-GBR	0.01	○
GBR-DZR3D039-047-TC1190	39-47	90	15	29	TCMT1102	SE-M030080-GBR	TH15L-GBR	SW-M025060-GBR	TT08P-GBR	0.02	○
GBR-DZR4D053-067-TC1190	53-67	90	18	38	TCMT1102	SE-M030100-GBR	TH15L-GBR	SW-M025060-GBR	TT08P-GBR	0.05	○
GBR-DZR5D068-083-TC1690	68-83	90	20	52	TCMT16T3	SE-M040100-GBR	TH20L-GBR	SL-M040095-GBR	TT15P-GBR	0.07	○
GBR-DZR6D088-108-TC1690	88-108	90	30	68	TCMT16T3	SE-M050120-GBR	TH25L-GBR	SL-M040095-GBR	TT15P-GBR	0.19	○
GBR-DZR7D108-128-TC1690	108-128	90	30	83	TCMT16T3	SE-M050160-GBR	TH25L-GBR	SL-M040095-GBR	TT15P-GBR	0.26	○

●Stock ○Available Upon Order

C Boring System

Rough Boring Back Boring Tool Apron

DZF

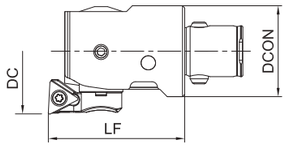


Order No.	Range of Machining (mm)	Tool Cutting Edge Angle (°) KAPR	Width of Tool Apron (mm)WF	Total Length (mm) OAL	Insert Type	Insert Locking Screw	Insert Locking Wrench	Net Weight (kg)	In Stock
GBR-DZFR1D030-035-CC0690	30-35	90	10.3	21	CCMT0602	SL-M025053-GBR	TT07P-GBR	0.01	●
GBR-DZFR2D033-041-CC0690	33-41	90	10.3	23	CCMT0602	SL-M025053-GBR	TT07P-GBR	0.01	●
GBR-DZFR2D040-048-CC0690	40-48	90	10.3	26.6	CCMT0602	SL-M025053-GBR	TT07P-GBR	0.02	●
GBR-DZFR3D042-052-CC0690	42-52	90	10.3	30.2	CCMT0602	SL-M025053-GBR	TT07P-GBR	0.02	●
GBR-DZFR3D051-061-CC0690	51-61	90	10.3	35	CCMT0602	SL-M025053-GBR	TT07P-GBR	0.03	●
GBR-DZFR4D053-065-CC0990	53-65	90	16.6	36.6	CCMT09T3	SL-M040095-GBR	TT15P-GBR	0.06	●
GBR-DZFR4D064-076-CC0990	64-76	90	16.6	42.3	CCMT09T3	SL-M040095-GBR	TT15P-GBR	0.07	●
GBR-DZFR5D053-069-CC0990	53-69	90	16.6	45	CCMT09T3	SL-M040095-GBR	TT15P-GBR	0.06	●
GBR-DZFR5D068-084-CC0990	68-84	90	16.6	52.8	CCMT09T3	SL-M040095-GBR	TT15P-GBR	0.08	●
GBR-DZFR5D083-099-CC0990	83-99	90	16.6	62	CCMT09T3	SL-M040095-GBR	TT15P-GBR	0.1	●
GBR-DZFR6D068-089-CC0990	68-89	90	16.6	57.3	CCMT09T3	SL-M040095-GBR	TT15P-GBR	0.12	●
GBR-DZFR6D088-109-CC0990	88-109	90	16.6	67.3	CCMT09T3	SL-M040095-GBR	TT15P-GBR	0.16	●
GBR-DZFR7D088-110-CC1290	88-110	90	25.6	70.4	CCMT1204	SL-M050128-GBR	TT20P-GBR	0.25	●
GBR-DZFR7D108-130-CC1290	108-130	90	25.6	82.4	CCMT1204	SL-M050128-GBR	TT20P-GBR	0.31	●
GBR-DZFR8D108-132-CC1290	108-132	90	25.6	82.3	CCMT1204	SL-M050128-GBR	TT20P-GBR	0.29	●
GBR-DZFR8D128-152-CC1290	128-152	90	25.6	92.1	CCMT1204	SL-M050128-GBR	TT20P-GBR	0.36	●

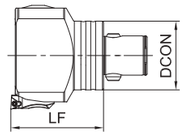
●Stock ○Available Upon Order

Fine Boring Tool Head

FB



A



B

Order No.	Diagram	Shank Diameter (mm) DCON	Effective Length (mm) LF	Forward Boring Machining Range (mm)	Forward Boring Tool Apron	Back Boring Machining Range (mm)	Back Boring Tool Apron	Weight (kg)	In Stock
GBR-FBC19L34F1	A	19	34	20-26	DZFBF1A	-	-	0.07	●
		19	34	25-31	DZFBF1B	-	-	0.07	
		19	34	30-36	DZFBF1C	30-36	DZFBF1C	0.07	
GBR-FBC25L37F2	A	25	37	26-34	DZFBF2A	-	-	0.13	●
		25	37	33-41	DZFBF2B	36-41	DZFBF2B	0.13	
		25	37	40-48	DZFBF2C	40-48	DZFBF2C	0.13	
GBR-FBC32L43F3	A	32	43	33-43	DZFBF3A			0.25	●
		32	43	42-52	DZFBF3B	47-52	DZFBF3B	0.25	
		32	43	51-61	DZFBF3C	51-61	DZFBF3C	0.25	
GBR-FBC40L48F4	A	40	48	42-54	DZFBF4A			0.45	●
		40	48	53-65	DZFBF4B	-	-	0.45	
		40	48	64-76	DZFBF4C			0.45	
GBR-FBC40L70F4	A	40	70	42-54	DZFBF4A	-	-	0.65	●
		40	70	53-65	DZFBF4B	55-65	DZFBF4B	0.65	
		40	70	64-76	DZFBF4C	64-76	DZFBF4C	0.65	
GBR-FBC50L75F5	A	50	75	53-69	DZFBF5A	62-69	DZFBF5A	1.12	●
		50	75	68-84	DZFBF5B	68-84	DZFBF5B	1.12	
		50	75	83-99	DZFBF5C	83-99	DZFBF5C	1.12	
GBR-FBC63L85F6	A	63	85	68-100	DZFBF6-F7A	80-100	DZFBF6-F7A	2.1	●
		63	85	98-130	DZFBF6-F7B	98-130	DZFBF6-F7B	2.1	
		63	85	128-160	DZFBF6-F7C	128-160	DZFBF6-F7C	2.1	
GBR-FBC63L85F7	B	63	85	100-152	DZFBF6-F7A	112-152	DZFBF6-F7A	2.97	●
		63	85	130-182	DZFBF6-F7B	130-182	DZFBF6-F7B	2.97	
		63	85	160-212	DZFBF6-F7C	160-212	DZFBF6-F7C	2.97	
GBR-FBC90L85F7	B	88	85	100-152	DZFBF6-F7A	112-152	DZFBF6-F7A	4.35	●
		88	85	130-182	DZFBF6-F7B	130-182	DZFBF6-F7B	4.35	
		88	85	160-212	DZFBF6-F7C	160-212	DZFBF6-F7C	4.35	

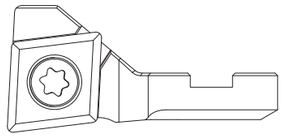
The suitable tool apron needs to be ordered separately (see P194)
The suitable shank needs to be ordered separately (see P201)
The spindle needs to rotate in reverse during back boring machining.

●Stock ○Available Upon Order

C Boring System

Fine Boring Tool Apron

DZFB



Order No.	Matched Insert	Insert Locking Screw	Insert Locking Wrench	In Stock
GBR-DZFBF1ATB06	TBGT0601L	SW-M020037-GBR	TT06P-GBR	●
GBR-DZFBF1BTB06	TBGT0601L	SW-M020037-GBR	TT06P-GBR	●
GBR-DZFBF1CTB06	TBGT0601L	SW-M020037-GBR	TT06P-GBR	●
GBR-DZFBF2ATP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF2BTP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF2CTP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF3ATP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF3BTP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF3CTP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF4ATP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF4BTP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF4CTP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF5ATP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF5BTP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF5CTP09	TPGH0902L	SJ-M025060-GBR	TT08P-GBR	●
GBR-DZFBF6-F7ATP11	TPGH1103L	SJ-M030080-GBR	TT08P-GBR	●
GBR-DZFBF6-F7BTP11	TPGH1103L	SJ-M030080-GBR	TT08P-GBR	●
GBR-DZFBF6-F7CTP11	TPGH1103L	SJ-M030080-GBR	TT08P-GBR	●
GBR-DZFBF2ACC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	●
GBR-DZFBF2BCC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	○
GBR-DZFBF2CCC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	○
GBR-DZFBF3ACC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	●
GBR-DZFBF3BCC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	○
GBR-DZFBF3CCC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	○
GBR-DZFBF4ACC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	●
GBR-DZFBF4BCC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	○
GBR-DZFBF4CCC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	○
GBR-DZFBF5ACC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	●
GBR-DZFBF5BCC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	○
GBR-DZFBF5CCC06	CCGT0602L	SL-M025053-GBR	TT07P-GBR	○
GBR-DZFBF6-F7ACC09	CCGT09T3L	SL-M040095-GBR	TT15P-GBR	●
GBR-DZFBF6-F7BCC09	CCGT09T3L	SL-M040095-GBR	TT15P-GBR	○
GBR-DZFBF6-F7CCC09	CCGT09T3L	SL-M040095-GBR	TT15P-GBR	○

●Stock ○Available Upon Order

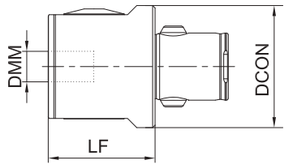
Matching Table of Fine Boring Accessories

Order No.	LOCK screw	Adjusting Wrench	Dial Locking Screw	Tool Apron Locking Screw	Tool Apron Locking Wrench
GBR-FBC19L34F1	STA-M040040-GBR	TH20L-GBR	SE-M040060xD2-GBR	SW-M040060-F-GBR	TT15P-GBR
GBR-FBC25L37F2	STA-M040060-GBR	TH20L-GBR	SE-M040060xD2-GBR	SW-M040080-F-GBR	TT15P-GBR
GBR-FBC32L43F3	STA-M050080-GBR	TH25L-GBR	SE-M050080xD2.5-GBR	SSB-M050100-GBR	TH30L-GBR
GBR-FBC40L48F4	STA-M060100-GBR	TH30L-GBR	SE-M060100xD3.2-GBR	SSB-M050120-GBR	TH30L-GBR
GBR-FBC40L70F4	STA-M060100-GBR	TH30L-GBR	SE-M060100xD3.2-GBR	SSB-M050120-GBR	TH30L-GBR
GBR-FBC50L75F5	STA-M060120-GBR	TH30L-GBR	SE-M060100xD3.2-GBR	SSB-M060160-GBR	TH40L-GBR
GBR-FBC63L85F6	STA-M100160-GBR	TH50L-GBR	SE-M100160xD6-GBR	SSB-M080200-GBR	TH50L-GBR
GBR-FBC63L85F7	STA-M100160-GBR	TH50L-GBR	SE-M100160xD6-GBR	SSB-M080250-GBR	TH50L-GBR
GBR-FBC90L85F7	STA-M100200-GBR	TH50L-GBR	SE-M100200xD6-GBR	SSB-M080250-GBR	TH50L-GBR

C Boring System

Miniature Diameter Fine Boring Head

MB



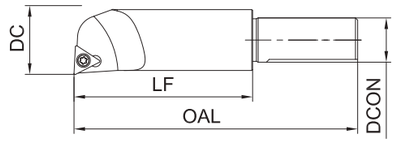
Order No.	Machining Range (mm) DC	Effective Length (mm) LF	Shank Diameter (mm) DCON	Suitable Tool Holder Shank Diameter (mm) DMM	Matching Tool Holder	Tool Holder Locking Screw	LOCK Screw	Adjusting Wrench	Weight (kg)	In Stock
GBR-MBD02-22-C40L35	2-22	35	40	10	MB10-MB06+MB06	STA-M060100-GBR	STA-M060100-GBR	TH30L-GBR	0.35	●
					MB10	STA-M060100-GBR	STA-M060100-GBR	TH30L-GBR		
GBR-MBD06-50-C50L50	6-50	50	50	16	MB16	STA-M100160-GBR	STA-M100160-GBR	TH50L-GBR	1.09	●
GBR-MBD06-50-C63L50	6-50	50	63	16	MB16	STA-M100160-GBR	STA-M100160-GBR	TH50L-GBR	1.25	○

The suitable tool holder needs to be ordered separately (see P197)
The suitable shank needs to be ordered separately (see P201)

●Stock ○Available Upon Order

Miniature Diameter Fine Boring Bar

MB



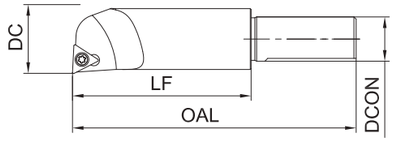
Order No.	Machining Range (mm) DC	Shank Diameter (mm) DCON	Total Length (mm) OAL	Effective Length (mm) LF	Matched Insert	In Stock
GBR-MB10D06-08L23WB06	06-08	10	53	20	WBGT0601	●
GBR-MB10D08-10L25WB06	08-10	10	55	23	WBGT0601	●
GBR-MB10D10-12L30WB06	10-12	10	60	30	WBGT0601	●
GBR-MB10D12-14L36TP09	12-14	10	66	36	TPGH0902	●
GBR-MB10D14-16L42TP09	14-16	10	72	42	TPGH0902	●
GBR-MB10D16-18L48TP11	16-18	10	78	48	TPGH1103	●
GBR-MB10D18-20L54TP11	18-20	10	84	54	TPGH1103	●
GBR-MB10D20-22L60TP11	20-22	10	90	60	TPGH1103	●
GBR-MB16D06-08L23WB06	06-08	16	63	23	WBGT0601	●
GBR-MB16D08-11L28WB06	8-11	16	68	28	WBGT0601	●
GBR-MB16D10-13L36WB06	10-13	16	76	36	WBGT0601	●
GBR-MB16D12-16L50TP09	12-16	16	90	50	TPGH0902	●
GBR-MB16D15-21L60TP09	15-21	16	100	60	TPGH0902	●
GBR-MB16D20-26L64TP11	20-26	16	104	64	TPGH1103	●
GBR-MB16D25-31L64TP11	25-31	16	104	64	TPGH1103	●
GBR-MB16D30-36L72TP11	30-36	16	112	72	TPGH1103	●
GBR-MB16D35-41L72TP11	35-41	16	112	72	TPGH1103	●
GBR-MB16D40-46L72TP11	40-46	16	112	72	TPGH1103	●
GBR-MB16D44-50L72TP11	44-50	16	112	72	TPGH1103	●

●Stock ○Available Upon Order

C Boring System

Vibration-resistant Miniature Diameter Fine Boring Bar

MB



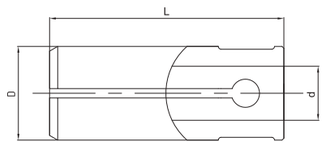
Order No.	Machining Range (mm) DC	Shank Diameter (mm) DCON	Total Length (mm) OAL	Effective Length (mm) LF	Matched Insert	In Stock
GBR-MB06D02-03L10K	02-03	6	35	10	-	○
GBR-MB06D03-04L15K	03-04	6	40	15	-	○
GBR-MB06D04-06L20K	04-06	6	45	20	-	○
GBR-MB10D06-08L40WB06K	06-08	10	70	40	WBGT0601	○
GBR-MB10D08-10L60WB06K	08-10	10	90	60	WBGT0601	○
GBR-MB10D10-12L75WB06K	10-12	10	105	75	WBGT0601	○
GBR-MB16D06-08L45WB06K	06-08	16	85	45	WBGT0601	○
GBR-MB16D08-11L60WB06K	08-11	16	100	60	WBGT0601	○
GBR-MB16D10-12L75WB06K	10-12	16	115	75	WBGT0601	○
GBR-MB16D12-14L90TP09K	12-14	16	130	90	TPGH0902	○
GBR-MB16D14-16L105TP09K	14-16	16	145	105	TPGH0902	○
GBR-MB16D16-18L120TP09K	16-18	16	160	120	TPGH0902	○
GBR-MB16D18-20L135TP09K	18-20	16	175	135	TPGH0902	○

The minimum order quantity of D2-D6 solid cemented carbide boring tool holders is 5 pieces per order.
MB06 must be clamped with the reducing sleeve MB10-MB06.

●Stock ○Available Upon Order

Reducing Sleeve for Miniature Diameter Fine Boring Tool Holder

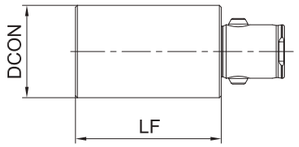
MB



Order No.	D	d	LF	In Stock
GBR-MB10-MB06	10	6	35	○

Equal Diameter Extension Bar

EX



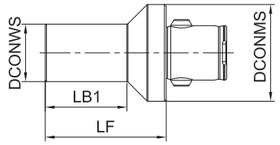
Order No.	Shank Diameter (mm) DCON	Effective Length (mm) LF	Weight (kg)	In Stock
GBR-EXC19L20	19	20	0.04	●
GBR-EXC19L30	19	30	0.06	●
GBR-EXC25L30	25	30	0.1	●
GBR-EXC25L45	25	45	0.16	●
GBR-EXC32L30	32	30	0.17	●
GBR-EXC32L45	32	45	0.25	●
GBR-EXC40L45	40	45	0.39	●
GBR-EXC40L60	40	60	0.53	●
GBR-EXC50L60	50	60	0.83	●
GBR-EXC50L90	50	90	1.25	●
GBR-EXC63L60	63	60	1.32	●
GBR-EXC63L100	63	100	2.22	●
GBR-EXC90L105	88	105	4.59	●

●Stock ○Available Upon Order

C Boring System

Unequal Diameter Extension Bar

EX

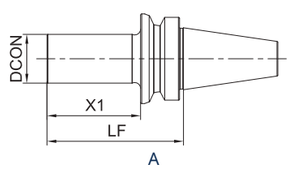


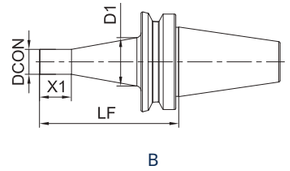
Order No.	Shank Diameter of the Connecting End (mm) DCONMS	Shank Diameter of the Working End (mm) DCONWS	Effective Length (mm) LF	LB1	Weight (kg)	In Stock
GBR-EXC25-C19L40	25	19	40	26.5	0.1	●
GBR-EXC32-C19L40	32	19	40	27	0.14	●
GBR-EXC32-C25L35	32	25	35	22	0.16	●
GBR-EXC40-C19L50	40	19	50	35	0.25	●
GBR-EXC40-C25L50	40	25	50	38	0.28	●
GBR-EXC40-C32L50	40	32	50	38	0.32	●
GBR-EXC50-C19L60	50	19	60	40	0.38	●
GBR-EXC50-C25L50	50	25	50	33	0.4	●
GBR-EXC50-C25L80	50	25	80	63	0.51	●
GBR-EXC50-C32L50	50	32	50	33	0.54	●
GBR-EXC50-C32L80	50	32	80	63	0.64	●
GBR-EXC50-C40L40	50	40	40	23	0.47	●
GBR-EXC50-C40L70	50	40	70	53	0.82	●
GBR-EXC63-C19L70	63	19	70	36	0.84	●
GBR-EXC63-C25L70	63	25	70	54	0.69	●
GBR-EXC63-C25L95	63	25	95	79	0.98	●
GBR-EXC63-C32L60	63	32	60	44	0.75	●
GBR-EXC63-C32L90	63	32	90	74	1.12	●
GBR-EXC63-C40L50	63	40	50	34	0.8	●
GBR-EXC63-C40L85	63	40	85	69	1.28	●
GBR-EXC63-C50L40	63	50	40	24	0.92	●
GBR-EXC63-C50L75	63	50	75	59	1.33	●
GBR-EXC90-C63L105	88	63	105	88	3.1	●

●Stock ○Available Upon Order

Shank

BT30/40/50



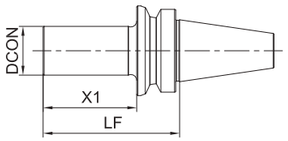


Order No.	Diagram	Interface Standards ISO	D1	Shank Diameter (mm) DCON	Effective Length (mm) LF	X1	Rivet	Weight (kg)	In Stock
GBR-BT30-C19L70	B	30	31	19	70	38	M12	0.49	●
GBR-BT30-C25L70	A	30	-	25	70	48	M12	0.52	●
GBR-BT30-C32L75	A	30	-	32	75	53	M12	0.64	●
GBR-BT30-C40L50	A	30	-	40	50	28	M12	0.55	●
GBR-BT30-C50L50	A	30	-	50	50	28	M12	0.65	●
GBR-BT40-C19L70	B	40	31	19	70	38	M16	1.07	●
GBR-BT40-C25L50	A	40	-	25	50	23	M16	1.01	●
GBR-BT40-C25L85	A	40	-	25	85	58	M16	1.14	●
GBR-BT40-C25L100	A	40	-	25	100	73	M16	1.16	●
GBR-BT40-C32L50	A	40	-	32	50	23	M16	1.05	●
GBR-BT40-C32L90	A	40	-	32	90	63	M16	1.28	●
GBR-BT40-C32L115	A	40	-	32	115	88	M16	1.4	●
GBR-BT40-C40L50	A	40	-	40	50	23	M16	1.09	●
GBR-BT40-C40L100	A	40	-	40	100	73	M16	1.54	●
GBR-BT40-C40L140	A	40	-	40	140	113	M16	1.89	●
GBR-BT40-C50L50	A	40	-	50	50	23	M16	1.2	●
GBR-BT40-C50L100	A	40	-	50	100	73	M16	1.87	●
GBR-BT40-C50L150	A	40	-	50	150	123	M16	2.25	●
GBR-BT40-C63L60	A	40	-	63	60	33	M16	1.45	●
GBR-BT40-C63L120	A	40	-	63	120	93	M16	2.74	●
GBR-BT40-C63L165	A	40	-	63	165	138	M16	3.76	●
GBR-BT50-C19L100	B	50	31	19	100	42	M24	3.65	●
GBR-BT50-C25L70	B	50	50	25	70	22	M24	6.66	●
GBR-BT50-C25L110	B	50	50	25	110	62	M24	3.76	●
GBR-BT50-C25L140	B	50	50	25	140	32	M24	4.17	●
GBR-BT50-C32L70	A	50	-	32	70	32	M24	6.64	●
GBR-BT50-C32L120	A	50	-	32	120	82	M24	3.93	●
GBR-BT50-C32L160	B	50	60	32	160	42	M24	4.8	●

●Stock ○Available Upon Order

Shank

BT30/40/50



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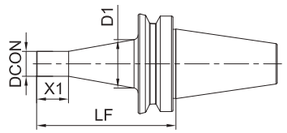


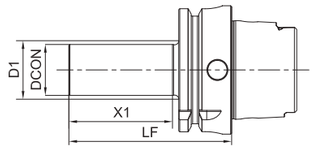
B

Order No.	Diagram	Interface Standards ISO	D1	Shank Diameter (mm) DCON	Effective Length (mm) LF	X1	Rivet	Weight (kg)	In Stock
GBR-BT50-C40L70	A	50	-	40	70	32	M24	3.71	●
GBR-BT50-C40L110	A	50	-	40	110	72	M24	4.07	●
GBR-BT50-C40L160	A	50	-	40	160	122	M24	4.53	●
GBR-BT50-C40L200	A	50	-	40	200	162	M24	4.83	●
GBR-BT50-C50L70	A	50	-	50	70	32	M24	3.86	●
GBR-BT50-C50L110	A	50	-	50	110	72	M24	4.42	●
GBR-BT50-C50L160	A	50	-	50	160	122	M24	5.13	●
GBR-BT50-C50L210	A	50	-	50	210	172	M24	5.89	●
GBR-BT50-C50L230	A	50	-	50	230	192	M24	6.06	●
GBR-BT50-C50L250	A	50	-	50	250	212	M24	6.34	●
GBR-BT50-C63L80	A	50	-	63	80	42	M24	4.12	●
GBR-BT50-C63L12	A	50	-	63	120	82	M24	5.02	●
GBR-BT50-C63L160	A	50	-	63	160	122	M24	5.94	●
GBR-BT50-C63L230	A	50	-	63	230	192	M24	7.52	●
GBR-BT50-C63L260	A	50	-	63	260	222	M24	8.16	●
GBR-BT50-C63L280	A	50	-	63	280	242	M24	8.6	●
GBR-BT50-C63L300	A	50	-	63	300	262	M24	9.05	●
GBR-BT50-C90L100	A	50	-	88	100	62	M24	5.61	●
GBR-BT50-C90L180	A	50	-	88	180	142	M24	9.2	●
GBR-BT50-C90L250	A	50	-	88	250	212	M24	12.34	●
GBR-BT50-C90L320	A	50	-	88	320	282	M24	15.48	●
GBR-BT50-C90L350	A	50	-	88	350	312	M24	16.84	●

●Stock ○Available Upon Order

Shank

HSK63/100



Order No.	Interface Standards ISO	D1	Shank Diameter (mm) DCON	Effective Length (mm) LF	X1	Rivet	Weight (kg)	In Stock
GBR-HSKA63-C19L80	63	31	19	80	40	M18x1	0.9	●
GBR-HSKA63-C25L80	63	-	25	80	54	M18x1	1	●
GBR-HSKA63-C32L85	63	-	32	85	59	M18x1	1.1	●
GBR-HSKA63-C32L120	63	-	32	120	94	M18x1	1.13	○
GBR-HSKA63-C40L80	63	-	40	80	54	M18x1	1.2	●
GBR-HSKA63-C40L120	63	-	40	120	94	M18x1	1.42	○
GBR-HSKA63-C50L60	63	-	50	60	34	M18x1	1.3	●
GBR-HSKA63-C50L115	63	-	50	115	89	M18x1	1.78	○
GBR-HSKA63-C63L70	63	-	63	70	44	M18x1	1.5	●
GBR-HSKA63-C63L110	63	-	63	110	84	M18x1	2.02	○
GBR-HSKA100-C19L100	100	31	19	100	40	M24x1.5	2.4	●
GBR-HSKA100-C25L115	100	50	25	115	70	M24x1.5	2.6	●
GBR-HSKA100-C32L110	100	-	32	110	76	M24x1.5	2.8	●
GBR-HSKA100-C40L105	100	-	40	105	76	M24x1.5	3	●
GBR-HSKA100-C40L150	100	-	40	150	121	M24x1.5	3	○
GBR-HSKA100-C50L75	100	-	50	75	46	M24x1.5	3.3	●
GBR-HSKA100-C50L140	100	-	50	140	111	M24x1.5	3.43	●
GBR-HSKA100-C50L185	100	-	50	185	156	M24x1.5	4.1	○
GBR-HSKA100-C63L75	100	-	63	75	46	M24x1.5	3.4	●
GBR-HSKA100-C63L165	100	-	63	165	136	M24x1.5	4.79	○
GBR-HSKA100-C63L215	100	-	63	215	186	M24x1.5	5.94	○
GBR-HSKA100-C90L125	100	-	88	125	96	M24x1.5	5.8	●
GBR-HSKA100-C90L215	100	-	88	215	186	M24x1.5	9.82	○
GBR-HSKA100-C90L275	100	-	88	275	246	M24x1.5	12.58	○

●Stock ○Available Upon Order

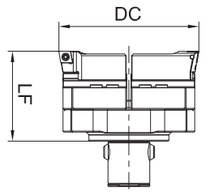
C Boring System

Matching Table of Modular Boring Tool Accessories

Shank Standard DCON	Torque Bolt	Rubber Ring	Locking Screw	Locking Wrench
C19	TPD4X13.5-GBR	RRD4-1-GBR	STC-M040050-F-GBR	TH20L-GBR
C25	TPD5X17-GBR	RRD5-1-GBR	STC-M050065-F-GBR	TH25L-GBR
C32	TPD7X22-GBR	RRD7-1-GBR	STC-M060090-F-GBR	TH30L-GBR
C40	TPD8.5X26.5-GBR	RRD8.5-1.5-GBR	STC-M080110-F-GBR	TH40L-GBR
C50	TPD11X33-GBR	RRD11-1.5-GBR	STC-M100140-F-GBR	TH50L-GBR
C63	TPD14X43-GBR	RRD14-1.5-GBR	STC-M120180-F-GBR	TH60L-GBR
C90	TPD18X56-GBR	RRD16-1.5-GBR	STC-M200280-F-GBR	TH100L-GBR

Bridge Type Rough Boring Tool

LRB



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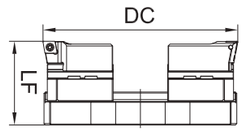


B

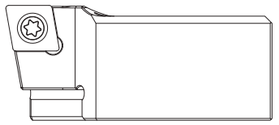
Order No.	Diagram	Machining Range (mm) DC	Effective Length (mm) LF	Main Shank interface	Weight (kg)	Tip seat	In Stock
GBR-LRBD150-210C63	A	150-210	99	C63	5.1	LDZD150	○
GBR-LRBD150-210C90	A	150-210	99	C90	5.4	LDZD150	○
GBR-LRBD210-290C32	B	210-290	89	LBC32	4.83	LDZD150	○
GBR-LRBD290-370C32	B	290-370	89	LBC32	6.13	LDZD150	○
GBR-LRBD370-490C32	B	370-490	100	LBC32	12.64	LDZD370	○
GBR-LRBD490-610C32	B	490-610	115	LBC32	17.22	LDZD370	○
GBR-LRBD610-730C40	B	610-730	120	LBC40	22.6	LDZD370	○
GBR-LRBD730-850C40	B	730-850	125	LBC40	26.83	LDZD370	○
GBR-LRBAD210-290C32	B	210-290	89	LBC32	2.92	LDZD150	○
GBR-LRBAD290-370C32	B	290-370	89	LBC32	2.37	LDZD150	○
GBR-LRBAD370-490C32	B	370-490	100	LBC32	6.95	LDZD370	○
GBR-LRBAD490-610C32	B	490-610	115	LBC32	8.98	LDZD370	○
GBR-LRBAD610-730C40	B	610-730	120	LBC40	10.43	LDZD370	○
GBR-LRBAD730-850C40	B	730-850	125	LBC40	11.91	LDZD370	○

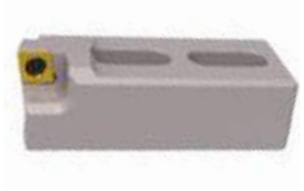
●Stock ○Available Upon Order

The suitable tool apron needs to be ordered separately (see P206)
The suitable shank needs to be ordered separately (see P201/P210)
If there is a problem of overweight quality during machining and weight reduction is required, the letter "A" can be added after the series name, and a bridge-type boring tool with an aluminum alloy tool bridge can be selected.
For example: The Order No. GBR-LRBD730-850C40 indicates a bridge-type boring tool with a common steel tool bridge.
The Order No. GBR-LRBAD730-850C40 indicates a bridge-type boring tool with an aluminum alloy tool bridge.

Bridge-type Rough Boring Tool Apron

LDZ





Order No.	Matched Insert	Insert Locking Screw	Insert Locking Wrench	Tool Apron Adjusting Screw	Tool Apron Adjusting Wrench	Weight (kg)	In Stock
GBR-LDZD150CC1290	CCMT1204	SL-M050128-GBR	TT20P-GBR	SE-M050200-GBR	TH25L-GBR	0.31	○
GBR-LDZD150TC1690	TCMT16T3	SL-M040095-GBR	TT15P-GBR	SE-M050200-GBR	TH25L-GBR	0.31	○
GBR-LDZD150TC2290	TCMT2204	SL-M050128-GBR	TT20P-GBR	SE-M050200-GBR	TH25L-GBR	0.34	○
GBR-LDZD150SC1245	SCMT1204	SL-M050128-GBR	TT20P-GBR	SE-M050200-GBR	TH25L-GBR	0.34	○
GBR-LDZD370CC1290	CCMT1204	SL-M050128-GBR	TT20P-GBR	SE-M050200-GBR	TH25L-GBR	0.74	○
GBR-LDZD370TC1690	TCMT16T3	SL-M040095-GBR	TT15P-GBR	SE-M050200-GBR	TH25L-GBR	0.74	○
GBR-LDZD370TC2290	TCMT2204	SL-M050128-GBR	TT20P-GBR	SE-M050200-GBR	TH25L-GBR	0.79	○
GBR-LDZD370SC1245	SCMT1204	SL-M050128-GBR	TT20P-GBR	SE-M050200-GBR	TH25L-GBR	0.79	○

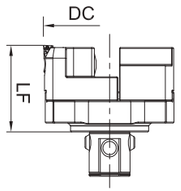
●Stock ○Available Upon Order

Matching Information Table of LRB Bridge-type Rough Boring Accessories

Range of Machining (mm) DC	Tool Bridge	Slider	Slider Locking Screw	Tool Apron Locking Screw	Locking Wrench
150-210	BG150-210C63-GBR	SL150-GBR	SCA-M080350-GBR	SCA-M080300-GBR	TH60L-GBR
	BG150-210C90-GBR	SL150-GBR	SCA-M080350-GBR	SCA-M080300-GBR	TH60L-GBR
210-290	BG210-290-GBR	SL150-GBR	SCA-M080350-GBR	SCA-M080300-GBR	TH60L-GBR
290-370	BG290-370-GBR	SL150-GBR	SCA-M080350-GBR	SCA-M080300-GBR	TH60L-GBR
370-490	BG370-490-GBR	SL370-GBR	SCA-M080350-GBR	SCA-M080250-GBR	TH60L-GBR
490-610	BG490-610-GBR	SL370-GBR	SCA-M080350-GBR	SCA-M080250-GBR	TH60L-GBR
610-730	BG610-730-GBR	SL370-GBR	SCA-M080350-GBR	SCA-M080250-GBR	TH60L-GBR
730-850	BG730-850-GBR	SL370-GBR	SCA-M080350-GBR	SCA-M080250-GBR	TH60L-GBR

Bridge Type Fine Boring Tool

LFB



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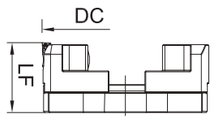


B

Order No.	Diagram	Machining Range (mm) DC	Effective Length (mm) LF	Main Shank Interface	Tip Seat	Weight (kg)	In Stock
GBR-LFBD150-210C63	A	150-210	97	C63	GBR-DZFBF5A	5.5	○
GBR-LFBD150-210C90	A	150-210	97	C90	GBR-DZFBF5A	5.8	○
GBR-LFBD210-290C32	B	210-290	89	LBC32	GBR-DZFBF5A	6	○
GBR-LFBD290-370C32	B	290-370	89	LBC32	GBR-DZFBF5A	7.3	○
GBR-LFBD370-490C32	B	370-490	100	LBC32	GBR-DZFBF6-F7A	12.64	○
GBR-LFBD490-610C32	B	490-610	115	LBC32	GBR-DZFBF6-F7A	17.22	○
GBR-LFBD610-730C40	B	610-730	120	LBC40	GBR-DZFBF6-F7A	22.6	○
GBR-LFBD730-850C40	B	730-850	125	LBC40	GBR-DZFBF6-F7A	26.83	○
GBR-LFBAD210-290C32	B	210-290	89	LBC32	GBR-DZFBF5A	4.01	○
GBR-LFBAD290-370C32	B	290-370	89	LBC32	GBR-DZFBF5A	4.49	○
GBR-LFBAD370-490C32	B	370-490	100	LBC32	GBR-DZFBF6-F7A	8.9	○
GBR-LFBAD490-610C32	B	490-610	115	LBC32	GBR-DZFBF6-F7A	10.93	○
GBR-LFBAD610-730C40	B	610-730	120	LBC40	GBR-DZFBF6-F7A	13.26	○
GBR-LFBAD730-850C40	B	730-850	125	LBC40	GBR-DZFBF6-F7A	15.3	○

●Stock ○Available Upon Order

The suitable tool apron needs to be ordered separately (see P194)
The suitable shank needs to be ordered separately (see P201/P210)
If there is a problem of overweight quality during machining and weight reduction is required, a bridge-type boring tool with an aluminum alloy tool bridge can be selected, and the letter "A" can be added after the series name.
For example: The Order No. GBR-LFBD730-850C40 indicates a bridge-type boring tool with a common steel tool bridge.
The Order No. GBR-LFBAD730-850C40 indicates a bridge-type boring tool with an aluminum alloy tool bridge.

C Boring System

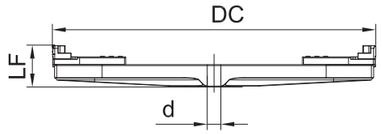
Matching Information Table of LFB Bridge-type Fine Boring Accessories

Range of Machining (mm) DC	Tool Bridge	Fine Adjustment Module	Counterweight Module	Slider Locking Screw	Tool Apron Locking Screw	LOCK Screw
150-210	BG150-210C63-GBR	TM150-GBR	CW150-GBR	SCA-M080350-GBR	SSB-M060160-GBR	STA-M060120-GBR
	BG150-210C90-GBR	TM150-GBR	CW150-GBR	SCA-M080350-GBR	SSB-M060160-GBR	STA-M060120-GBR
210-290	BG210-290-GBR	TM150-GBR	CW210-GBR	SCA-M080350-GBR	SSB-M060160-GBR	STA-M060120-GBR
290-370	BG290-370-GBR	TM150-GBR	CW210-GBR	SCA-M080350-GBR	SSB-M060160-GBR	STA-M060120-GBR
370-490	BG370-490-GBR	TM370-GBR	CW370-GBR	SCA-M080350-GBR	SSB-M080250-GBR	STA-M100200-GBR
490-610	BG490-610-GBR	TM370-GBR	CW370-GBR	SCA-M080350-GBR	SSB-M080250-GBR	STA-M100200-GBR
610-730	BG610-730-GBR	TM370-GBR	CW370-GBR	SCA-M080350-GBR	SSB-M080250-GBR	STA-M100200-GBR
730-850	BG730-850-GBR	TM370-GBR	CW370-GBR	SCA-M080350-GBR	SSB-M080250-GBR	STA-M100200-GBR

Screw	Wrench
SCA-M080350-GBR	TH60L-GBR
STA-M060120-GBR	TH30L-GBR
STA-M100200-GBR	TH50L-GBR
SSB-M060160-GBR	TH40L-GBR
SSB-M080250-GBR	TH50L-GBR

Large Aluminum Alloy Bridge-type Rough/fine Boring Tool

HRBA Rough Boring Tool



Order No.	Machining Range (mm) DC	Effective Length (mm) LF	d	Tool bridge	Extension Block	Adjusting Block	Tip Seat	Weight (kg)	In Stock
GBR-HRBAD850-1250	850-1250	169	60	BGA850-GBR	EBA400-GBR	SL150-GBR	GBR-LDZD150	30	○
GBR-HRBAD1200-1600	1200-1600	179	60	BGA1200-GBR	EBA400-GBR	SL150-GBR	GBR-LDZD150	41	○
GBR-HRBAD1450-1850	1450-1850	189	60	BGA1450-GBR	EBA400-GBR	SL150-GBR	GBR-LDZD150	61	○
GBR-HRBAD1450-2090	1450-2090	199	60	BGA1450-GBR	EBA640-GBR	SL150-GBR	GBR-LDZD150	71	○
GBR-HRBAD2050-2690	2050-2690	209	60	BGA2050-GBR	EBA640-GBR	SL150-GBR	GBR-LDZD150	111	○
GBR-HRBAD2660-3300	2660-3300	219	60	BGA2660-GBR	EBA640-GBR	SL150-GBR	GBR-LDZD150	171	○

The suitable tool apron needs to be ordered separately.

●Stock ○Available Upon Order

HFBA Fine Boring Tool

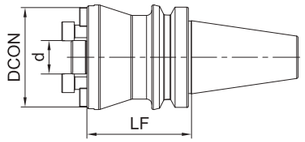
Order No.	Machining Range (mm) DC	Effective Length (mm) LF	d	Tool Bridge	Extension Block	Fine Adjustment Module	Counterweight Module	Tip Seat	Weight (kg)	In Stock
GBR-HFBAD850-1250	850-1250	167	60	BGA850-GBR	EBA400-GBR	TM150-GBR	CW210-GBR	GBR-DZFBF5A	31	○
GBR-HFBAD1200-1600	1200-1600	177	60	BGA1200-GBR	EBA400-GBR	TM150-GBR	CW210-GBR	GBR-DZFBF5A	42	○
GBR-HFBAD1450-1850	1450-1850	187	60	BGA1450-GBR	EBA400-GBR	TM150-GBR	CW210-GBR	GBR-DZFBF5A	62	○
GBR-HFBAD1450-2090	1450-2090	197	60	BGA1450-GBR	EBA640-GBR	TM150-GBR	CW210-GBR	GBR-DZFBF5A	72	○
GBR-HFBAD2050-2690	2050-2690	207	60	BGA2050-GBR	EBA640-GBR	TM150-GBR	CW210-GBR	GBR-DZFBF5A	112	○
GBR-HFBAD2660-3300	2660-3300	217	60	BGA2660-GBR	EBA640-GBR	TM150-GBR	CW210-GBR	GBR-DZFBF5A	172	○

The suitable tool apron needs to be ordered separately.

●Stock ○Available Upon Order

Bridge-type Boring Tool Shank

BT40/50

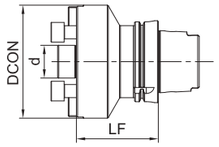


Order No.	Shank Standard ISO	Effective Length (mm) LF	d	Shank Diameter (mm) DCON	Tool Locking Screw	Flat Key	Weight (kg)	In Stock
GBR-BT40LB-C32L60	BT40	60	32	100	SCAM120350-GBR	FK10-16X14-GBR	2.52	○
GBR-BT50LB-C32L100	BT50	100	32	100	SCAM120350-GBR	FK10-16X14-GBR	6.65	○
GBR-BT50LB-C32L150	BT50	150	32	100	SCAM120350-GBR	FK10-16X14-GBR	8.74	○
GBR-BT50LB-C32L200	BT50	200	32	100	SCAM120350-GBR	FK10-16X14-GBR	10.44	○
GBR-BT50LB-C32L250	BT50	250	32	100	SCAM120350-GBR	FK10-16X14-GBR	12.32	○
GBR-BT50LB-C32L300	BT50	300	32	100	SCAM120350-GBR	FK10-16X14-GBR	14.21	○
GBR-BT50LB-C32L350	BT50	350	32	100	SCAM120350-GBR	FK10-16X14-GBR	16.1	○
GBR-BT50LB-C40L100	BT50	100	40	136	SCAM160500-GBR	FK10-25X18-GBR	9.8	○
GBR-BT50LB-C40L250	BT50	250	40	136	SCAM160500-GBR	FK10-25X18-GBR	17	○

●Stock ○Available Upon Order

Bridge-type Boring Tool Shank

HSK100

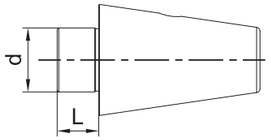


Order No.	Shank Standard ISO	Effective Length (mm) LF	d	Shank Diameter (mm) DCON	Tool Locking Screw	Flat Key	Weight (kg)	In Stock
GBR-HSKA100LB-C32L100	HSKA100	100	32	100	SCAM120350-GBR	FK10-16X14-GBR	5.87	○
GBR-HSKA100LB-C32L150	HSKA100	150	32	100	SCAM120350-GBR	FK10-16X14-GBR	7.81	○
GBR-HSKA100LB-C32L200	HSKA100	200	32	100	SCAM120350-GBR	FK10-16X14-GBR	9.95	○
GBR-HSKA100LB-C40L100	HSKA100	100	40	136	SCAM160500-GBR	FK10-25X18-GBR	8.8	○
GBR-HSKA100LB-C40L250	HSKA100	250	40	136	SCAM160500-GBR	FK10-25X18-GBR	15.7	○

●Stock ○Available Upon Order

Positioning mandrel

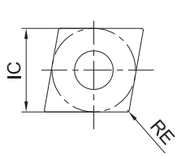
ISO



Order No.	Shank Standard ISO	d	L	Weight (kg)	In Stock
GBR-ISO50C40	50	40	26	1.94	○
GBR-ISO50C60	50	60	39	2.53	○
GBR-ISO60C40	60	40	27	6.87	○
GBR-ISO60C60	60	60	43	7.54	○

●Stock ○Available Upon Order

Boring System Insert Sizes and Specifications Information

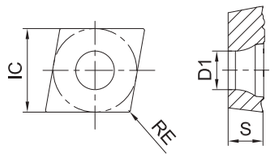


Insert Type	Diagram	Specifications	Dimension Information				Grade	
			IC	S	RE	D1	GM3220	GM3225
Rough Boring Inserts		CCMT060202-MM	6.35	2.38	0.2	2.8	●	●
		CCMT060204-MM	6.35	2.38	0.4	2.8	●	●
		CCMT060208-MM	6.35	2.38	0.8	2.8	●	●
		CCMT09T302-MM	9.525	3.97	0.2	4.4	●	●
		CCMT09T304-MM	9.525	3.97	0.4	4.4	●	●
		CCMT09T308-MM	9.525	3.97	0.8	4.4	●	●
		CCMT060202-GP	6.35	2.38	0.2	2.8		
		CCMT060204-GP	6.35	2.38	0.4	2.8	●	
		CCMT060208-GP	6.35	2.38	0.8	2.8	●	
		CCMT09T302-GP	9.525	3.97	0.2	4.4		
		CCMT09T304-GP	9.525	3.97	0.4	4.4	●	
		CCMT09T308-GP	9.525	3.97	0.8	4.4	●	
		CCMT120404-GP	12.7	4.76	0.4	5.5	●	
		CCMT120408-GP	12.7	4.76	0.8	5.5	●	
		CCMT120412-GP	12.7	4.76	1.2	5.5		
		TCMT110202-MM	6.35	2.38	0.2	2.8	●	●
		TCMT110204-MM	6.35	2.38	0.4	2.8	●	●
		TCMT110208-MM	6.35	2.38	0.8	2.8	●	●
		TCMT16T304-MM	9.525	3.97	0.4	4.4	●	●
		TCMT16T308-MM	9.525	3.97	0.8	4.4	●	●
		TCMT110202-GP	6.35	2.38	0.2	2.8		
		TCMT110204-GP	6.35	2.38	0.4	2.8	●	
		TCMT110208-GP	6.35	2.38	0.8	2.8	●	
		TCMT16T304-GP	9.525	3.97	0.4	4.4	●	
		TCMT16T308-GP	9.525	3.97	0.8	4.4	●	
		TCMT16T312-GP	9.525	3.97	1.2	4.4		
		TCMT220408-GP	12.7	4.76	0.8	5.5		
		SCMT09T304-MM	9.525	3.97	0.4	4.4	●	●
		SCMT09T308-MM	9.525	3.97	0.8	4.4	●	●
		SCMT09T304-GP	9.525	3.97	0.4	4.4		
		SCMT09T308-GP	9.525	3.97	0.8	4.4	○	
		SCMT120404-GP	12.7	4.76	0.4	5.56	○	
		SCMT120408-GP	12.7	4.76	0.8	5.56	○	

Notes: A blank grade indicates that this grade is not available for this specification, but other grades can be selected. Please confirm with the salesperson before placing an order.

●Stock ○Available Upon Order

Boring System Insert Sizes and Specifications Information



Insert type	Diagram	Specifications	Dimension Information				Grade		
			IC	S	RE	D1	GAT7115	GAT7120	GAT7125
Fine Boring Inserts		TBGT060102L-P	3.97	1.59	0.2	2.3		●	
		TBGT060104L-P	3.97	1.59	0.4	2.3		●	
		TPGH090202L-P	5.56	2.38	0.2	2.5		●	
		TPGH090204L-P	5.56	2.38	0.4	2.5		●	
		TPGH110301L-P	6.35	3.18	0.1	3.4	●	●	
		TPGH110302L-P	6.35	3.18	0.2	3.4	●	●	
		TPGH110304L-P	6.35	3.18	0.4	3.4		●	
		CCGT060201L-G	6.365	2.38	0.1	2.8		●	
		CCGT060202L-G	6.35	2.38	0.2	2.8		●	
		CCGT060204L-G	6.365	2.38	0.4	2.8		○	
		CCGT09T301L-G	9.54	3.97	0.1	4.4		●	
		CCGT09T302L-G	9.525	3.97	0.2	4.4		●	
		CCGT09T304L-G	9.54	3.97	0.4	4.4		●	

Insert Type	Diagram	Specifications	Dimension Information				Grade		
			IC	S	RE	D1	GAT7110B	GNT7110B	GPT7110B
Fine Boring Inserts		WBGT060102-BRG	3.97	1.59	0.2	2.24	●		
		WBGT060102-BRN	3.97	1.59	0.2	2.24		●	
		WBGT060102-BRP	3.97	1.59	0.2	2.24			●

●Stock ○Available Upon Order

C Boring System

Recommended Table of Rough Boring Cutting Data

Machined material		Overhang (L/D)	Boring range	D20-D35		D35-D55			D55-D70		D70-D110		D110-D150		D150-	
			Cutting depth Ap(mm)	0.5-1.2	1.2-2.5	0.8-1.5	1.5-2.5		0.8-1.5	1.5-3.0	0.8-1.5	1.5-3.5	0.8-2.0	2.0-3.5	0.8-2.0	2.0-4.0
			Tip radius angle RE(mm)	0.2	0.4	0.2-0.4	0.4		0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8
P	Low-carbon Steel, Long Cutting (<125HB)	2.5	Vc(m/min)	150-180	120-150	160-200	140-170		160-200	140-180	160-200	150-180	180-250	160-200	220-280	200-220
			fz(mm/z)	0.1-0.2	0.08- 0.2	0.15- 0.2	0.1- 0.175		0.15- 0.25	0.08- 0.2	0.15- 0.25	0.08- 0.2	0.15- 0.3	0.1-0.2	0.15- 0.3	0.1-0.15
		4	Vc(m/min)	140-160	100-140	160-180	120-150		160-180	120-150	140-180	120-150	160-200	140-180	-	-
			fz (mm/z)	0.1-0.18	0.08- 0.15	0.1-0.12	0.08- 0.1		0.1-0.12	0.08- 0.1	0.08- 0.2	0.08- 0.15	0.1-0.2	0.08- 0.15	-	-
		6	Vc(m/min)	60-80	40-60	60-90	50-60		70-90	50-70	70-100	50-70	-	-	-	-
			fz (mm/z)	0.06- 0.12	0.06- 0.1	0.06- 0.12	0.06- 0.1		0.06- 0.1	0.06- 0.1	0.06- 0.1	0.06- 0.1	-	-	-	-
	High-carbon Steel and Medium-Carbon Steel (<25HRC)	2.5	Vc(m/min)	130-160	100-130	140-180	120-160		140-180	120-160	140-180	120-160	150-170	100-140	100-140	80-120
			fz (mm/z)	0.08- 0.15	0.08- 0.12	0.08- 0.2	0.06- 0.12		0.08- 0.25	0.08- 0.18	0.15- 0.3	0.12- 0.2	0.15- 0.25	0.1-0.2	0.15- 0.3	0.1-0.2
		4	Vc(m/min)	110-140	80-110	100-140	80-120		100-140	80-120	120-150	100-140	100-130	80-110	-	-
			fz (mm/z)	0.08- 0.12	0.08- 0.1	0.08- 0.15	0.06- 0.15		0.08- 0.2	0.06- 0.15	0.1-0.2	0.1-0.18	0.08- 0.2	0.08- 0.12	-	-
		6	Vc(m/min)	70-90	60-70	80-100	60-80		80-100	60-80	80-100	60-80	-	-	-	-
			fz (mm/z)	0.08- 0.1	0.06- 0.08	0.06- 0.1	0.06- 0.08		0.08- 0.15	0.06- 0.1	0.08- 0.12	0.08- 0.12	-	-	-	-
	Alloy Steel, Tool Steel (<35HRC)	2.5	Vc(m/min)	140-160	90-120	150-180	100-130		160-200	140-180	160-220	140-180	160-220	140-180	160-220	140-180
			fz (mm/z)	0.08- 0.18	0.08- 0.15	0.08- 0.2	0.08- 0.18		0.1-0.25	0.1-0.15	0.1-0.3	0.1-0.25	0.1-0.3	0.1-0.25	0.1-0.35	0.1-0.3
		4	Vc(m/min)	100-130	70-100	110-150	90-120		140-180	100-130	150-200	120-160	120-160	120-160	-	-
			fz (mm/z)	0.08- 0.15	0.06- 0.12	0.08- 0.18	0.08- 0.15		0.08- 0.18	0.08- 0.12	0.1-0.2	0.08- 0.18	0.1-0.2	0.08- 0.18	-	-
		6	Vc(m/min)	80-100	60-90	80-100	70-90		100-140	80-120	100-140	100-140	-	-	-	-
			fz (mm/z)	0.08- 0.15	0.06- 0.1	0.06- 0.12	0.06- 0.12		0.06- 0.15	0.08- 0.1	0.08- 0.18	0.08- 0.15	-	-	-	-
	Alloy Steel, Tool Steel (35-48HRC)	2.5	Vc(m/min)	130-150	120-140	130-150	120-140		140-170	120-150	160-200	140-180	140-200	140-180	140-200	140-180
			fz (mm/z)	0.08- 0.18	0.06- 0.15	0.08- 0.18	0.06- 0.15		0.08- 0.2	0.08- 0.18	0.1-0.3	0.1-0.25	0.1-0.35	0.1-0.3	0.1-0.35	0.1-0.3
		4	Vc(m/min)	100-130	100-120	100-130	100-120		120-150	100-120	140-160	120-140	150-180	120-140	-	-
			fz (mm/z)	0.08- 0.15	0.06- 0.13	0.08- 0.15	0.06- 0.13		0.08- 0.18	0.08- 0.15	0.08- 0.2	0.08- 0.15	0.08- 0.12	0.08- 0.12	-	-
		6	Vc(m/min)	80-100	70-90	80-100	70-90		100-120	70-90	100-120	70-90	-	-	-	-
			fz (mm/z)	0.08- 0.12	0.06- 0.11	0.08- 0.12	0.06- 0.11		0.08- 0.12	0.06- 0.11	0.08- 0.16	0.08- 0.12	-	-	-	-
	PH and Ferritic, Martensitic Steel	2.5	Vc(m/min)	100-150	110-130	120-160	100-150		120-160	110-160	120-220	120-200	140-220	120-180	150-220	120-200
			fz (mm/z)	0.08-0.15	0.06- 0.12	0.08- 0.18	0.06- 0.12		0.08- 0.25	0.08- 0.18	0.08- 0.3	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.3	0.08- 0.25
		4	Vc(m/min)	90-130	90-120	100-140	90-140		100-150	80-120	100-160	90-140	120-180	90-140	-	-
			fz (mm/z)	0.08- 0.12	0.06- 0.1	0.08- 0.12	0.06- 0.1		0.08- 0.18	0.08- 0.12	0.08- 0.25	0.08- 0.18	0.08-0.25	0.08- 0.18	-	-
		6	Vc(m/min)	60-90	50-70	60-90	50-70		70-100	50-70	70-100	50-70	-	-	-	-
			fz (mm/z)	0.06-0.1	0.06- 0.1	0.06- 0.12	0.06- 0.1		0.06- 0.15	0.08- 0.1	0.08-0.2	0.08-0.15	-	-	-	-

Recommended Table of Rough Boring Cutting Data

Machined Material		Overhang (L/D)	Boring Range	D20-D35		D35-D55			D55-D70		D70-D110		D110-D150		D150-	
			Cutting Depth Ap(mm)	0.5-1.2	1.2-2.5	0.8-1.5	1.5-2.5		0.8-1.5	1.5-3.0	0.8-1.5	1.5-3.5	0.8-2.0	2.0-3.5	0.8-2.0	2.0-4.0
			Tip Radius Angle RE(mm)	0.2	0.4	0.2-0.4	0.4		0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8
M	Austenitic Stainless Steels (130-200HB)	2.5	Vc(m/min)	110-130	100-130	120-150	110-140		110-160	100-150	120-200	100-160	120-200	100-160	120-200	100-180
			fz (mm/z)	0.08-0.15	0.06- 0.12	0.08- 0.18	0.06- 0.12		0.08- 0.25	0.06- 0.12	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.3	0.08- 0.25
		4	Vc(m/min)	80-110	80-110	90-130	90-120		100-150	90-130	100-150	90-140	100-160	90-140	-	-
			fz (mm/z)	0.08-0.12	0.06- 0.1	0.08- 0.12	0.06- 0.1		0.08- 0.18	0.06- 0.1	0.08- 0.25	0.08-0.18	0.08-0.25	0.08-0.18	-	-
		6	Vc(m/min)	60-90	50-70	60-90	50-70		70-100	50-70	70-100	50-70	-	-	-	-
			fz (mm/z)	0.06-0.1	0.06- 0.1	0.06- 0.12	0.06- 0.1		0.06- 0.15	0.06- 0.1	0.08-0.2	0.08-0.15	-	-	-	-
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	2.5	Vc(m/min)	90-130	100-130	120-150	110-140		120-160	100-150	130-200	120-180	140-200	120-160	140-200	120-180
			fz (mm/z)	0.08-0.15	0.06- 0.12	0.08- 0.18	0.06- 0.12		0.08- 0.25	0.06- 0.12	0.08- 0.3	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.3	0.08- 0.25
		4	Vc(m/min)	70-110	80-110	90-130	90-120		100-150	90-130	110-150	90-150	100-160	90-140	-	-
			fz (mm/z)	0.08-0.12	0.06- 0.1	0.08- 0.12	0.06- 0.1		0.08- 0.18	0.06- 0.1	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18	-	-
		6	Vc(m/min)	60-90	50-70	60-90	50-70		70-100	50-70	70-100	50-70	-	-	-	-
			fz (mm/z)	0.06-0.1	0.06- 0.1	0.06- 0.12	0.06- 0.1		0.06- 0.15	0.06- 0.1	0.08-0.2	0.08-0.15	-	-	-	-
	Duplex Stainless Steel (<30HRC)	2.5	Vc(m/min)	80-120	70-110	100-150	90-140		110-150	100-150	130-180	120-180	120-200	100-160	120-200	100-180
			fz (mm/z)	0.08-0.15	0.06- 0.12	0.08- 0.18	0.06- 0.12		0.08- 0.25	0.06- 0.12	0.08- 0.3	0.08-0.25	0.08-0.3	0.08- 0.25	0.08- 0.3	0.08- 0.25
		4	Vc(m/min)	70-100	70-100	80-130	70-120		90-140	90-130	100-140	90-140	100-160	90-140	-	-
			fz (mm/z)	0.08-0.12	0.06- 0.1	0.08- 0.12	0.06- 0.1		0.08- 0.18	0.06- 0.1	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18	-	-
		6	Vc(m/min)	60-90	50-70	60-90	50-70		70-100	50-70	70-90	50-70	-	-	-	-
			fz (mm/z)	0.06-0.1	0.06-0.1	0.06- 0.12	0.06- 0.1		0.06- 0.15	0.06-0.1	0.08-0.2	0.08-0.15	-	-	-	-

C Boring System

Recommended Table of Rough Boring Cutting Data

Machined Material		Overhang (L/D)	Boring Range	D20-D35		D35-D55			D55-D70		D70-D110		D110-D150		D150-	
			Cutting Depth Ap(mm)	0.5-1.2	1.2-2.5	0.8-1.5	1.5-2.5		0.8-1.5	1.5-3.0	0.8-1.5	1.5-3.5	0.8-2.0	2.0-3.5	0.8-2.0	2.0-4.0
			Tip Radius Angle RE(mm)	0.2	0.4	0.2-0.4	0.4		0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8
K	Gray Cast Iron GG10-25 HB<200	2.5	Vc(m/min)	120-160	100-140	120-180	110-150		120-180	110-150	120-200	110-150	150-250	180-280	150-250	180-280
			fz (mm/z)	0.06-0.15	0.06-0.18	0.06- 0.15	0.06- 0.12		0.08-0.2	0.08-0.12	0.08- 0.25	0.08-0.3	0.08-0.25	0.08-0.35	0.08-0.25	0.08-0.35
		4	Vc(m/min)	100-140	80-120	100-150	80-120		100-150	80-120	100-150	80-120	120-170	120-170	-	-
			fz (mm/z)	0.06- 0.12	0.06- 0.1	0.06- 0.12	0.06- 0.1		0.08- 0.12	0.08-0.1	0.08- 0.18	0.08- 0.2	0.08-0.18	0.08-0.25	-	-
		6	Vc(m/min)	70-100	60-90	70-100	60-90		70-100	60-90	70-100	60-90	-	-	-	-
			fz (mm/z)	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1		0.08-0.1	0.08-0.1	0.08-0.15	0.08-0.12	-	-	-	-
	Gray Cast Iron GG25-40	2.5	Vc(m/min)	140-200	140-200	140-220	160-250		180-220	220-280	250-300	250-350	250-350	250-350	250-350	250-350
			fz (mm/z)	0.06- 0.15	0.06- 0.18	0.06- 0.15	0.06- 0.18		0.08- 0.2	0.1-0.25	0.12- 0.35	0.12- 0.35	0.15-0.3	0.15-0.4	0.15-0.3	0.15-0.4
		4	Vc(m/min)	120-160	120-160	120-180	140-200		140-180	180-220	200-270	230-300	200-300	200-270	-	-
			fz (mm/z)	0.06- 0.12	0.06-0.14	0.06- 0.12	0.06- 0.14		0.08-0.12	0.08-0.2	0.1-0.25	0.12-0.3	0.15-0.3	0.15-0.35	-	-
		6	Vc(m/min)	70-100	60-90	70-100	60-90		60-100	60-120	70-150	60-120	-	-	-	-
			fz (mm/z)	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1		0.08-0.1	0.08-0.1	0.1-0.15	0.12-0.25	-	-	-	-
	Nodular Cast Iron	2.5	Vc(m/min)	120-180	120-180	120-200	140-220		180-220	180-240	200-240	200-280	200-280	220-300	220-300	220-300
			fz (mm/z)	0.06- 0.15	0.06- 0.18	0.06- 0.15	0.06- 0.18		0.08- 0.18	0.1-0.2	0.12- 0.3	0.12- 0.3	0.15-0.3	0.15-0.35	0.15-0.3	0.15-0.35
		4	Vc(m/min)	120-160	120-160	120-180	140-200		140-200	160-220	160-220	180-240	180-250	200-270	-	-
			fz (mm/z)	0.06- 0.12	0.06- 0.14	0.06- 0.12	0.06- 0.14		0.08- 0.12	0.08-0.18	0.1-0.2	0.12- 0.25	0.15-0.25	0.15-0.35	-	-
		6	Vc(m/min)	60-100	60-90	60-100	60-90		60-90	60-100	60-100	60-100	-	-	-	-
			fz (mm/z)	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1		0.08-0.1	0.08-0.1	0.1-0.15	0.12-0.2	-	-	-	-
N	Cast Aluminum Alloy Si>12%	2.5	Vc(m/min)	200-300	240-350	200-300	240-350		200-300	240-350	200-300	240-350	200-300	240-350	200-300	240-350
			fz (mm/z)	0.06-0.2	0.06-0.25	0.06-0.2	0.06-0.25		0.06-0.25	0.06-0.3	0.06-0.25	0.06-0.3	0.06-0.25	0.06-0.4	0.06-0.25	0.06-0.4
		4	Vc(m/min)	150-220	150-220	150-220	150-220		150-220	150-220	150-220	150-220	150-220	150-220	-	-
			fz (mm/z)	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2		0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2	-	-
		6	Vc(m/min)	60-100	60-100	60-100	60-100		60-100	60-100	60-100	60-100	-	-	-	-
			fz (mm/z)	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1		0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	-	-	-	-
	Cast Aluminum Alloy Si<12%	2.5	Vc(m/min)	180-250	220-280	180-250	220-280		180-250	220-280	180-250	220-280	180-250	220-280	180-250	220-280
			fz (mm/z)	0.06-0.2	0.06-0.25	0.06-0.25	0.06-0.25		0.06-0.25	0.06-0.3	0.06-0.25	0.06-0.3	0.06-0.3	0.06-0.4	0.06-0.3	0.06-0.4
		4	Vc(m/min)	120-220	120-220	120-220	120-220		120-220	120-220	120-220	120-220	120-220	120-220	-	-
			fz (mm/z)	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2		0.06-0.2	0.06-0.25	0.06-0.2	0.06-0.25	0.06-0.2	0.06-0.25	-	-
		6	Vc(m/min)	60-100	60-100	60-100	60-100		60-100	60-100	60-100	60-100	-	-	-	-
			fz (mm/z)	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1		0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	-	-	-	-

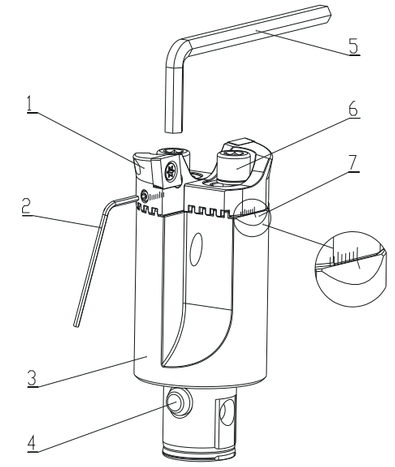
C Boring System

Recommended Table of Fine Boring Cutting Data

Machined material		Overhang (L/D)	Cutting speed Vc(m/min)	Feed f(mm/rev)		Cutting Depth Ap(mm)
				Tip radius angle RE(mm)		
				R=0.2	R=0.4	
P	Low-carbon Steel, Long Cutting (<125HB)	2.5	200-300	0.05-0.08	0.08-0.1	0.1-0.25
		4	160-250	0.05-0.08	0.08-0.1	
		6	70-100	0.05-0.08	-	
	High-carbon Steel and Medium-carbon steel (<25HRC)	2.5	160-250	0.05-0.08	0.08-0.1	0.1-0.25
		4	150-200	0.05-0.08	0.08-0.1	
		6	70-100	0.05-0.08	-	
	Alloy Steel, Tool Steel (<35HRC)	2.5	150-200	0.05-0.08	0.08-0.1	0.1-0.25
		4	120-160	0.05-0.08	0.08-0.1	
		6	70-80	0.05-0.08	-	
	Alloy Steel, Tool Steel (35-48HRC)	2.5	120-160	0.05-0.08	0.08-0.1	0.1-0.25
		4	100-140	0.05-0.08	0.08-0.1	
		6	70-100	0.05-0.08	-	
M	Stainless Steel	2.5	160-210	0.05-0.08	0.08-0.1	0.1-0.25
		4	120-160	0.05-0.08	0.08-0.1	
		6	70-90	0.05-0.08		
K	Cast Iron	2.5	120-160	0.05-0.08	0.08-0.1	0.1-0.25
		4	100-140	0.05-0.08	0.08-0.1	
		6	70-100	0.05-0.08	-	
N	Aluminum Alloy	2.5	300-400	0.05-0.08	0.08-0.1	0.1-0.25
		4	250-350	0.05-0.08	0.08-0.1	
		6	100-150	0.05-0.08	-	

Instruction Manual for RB Rough Boring Tool

Various instructions:
1. Rough Boring Tool Apron
2. Adjusting Wrench
3. Tool
4. Torque Bolt
5. Locking Wrench
6. Tool Apron Locking Screw
7. Rough Adjustment Scale Line



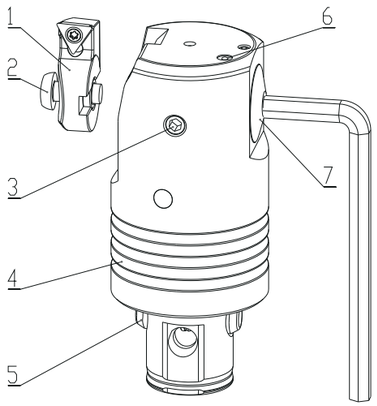
Adjustment steps:

1. Loosen the 6# tool apron locking screw.
2. Roughly adjust the two tool aprons to be symmetrical according to the scale line. The size of the two tool tips should be about 0.5mm smaller than the size to be machined.
3. Tighten the 6# tool apron locking screw to lock the tool apron. Turn the 2# adjusting screw and press it tightly against the 6# tool apron locking screw to prevent tool deflection.
4. Conduct a trial boring, measure the size of the machined hole, compare it with the required size, and calculate the smaller value.
5. Slightly loosen the 6# locking screw so that the 2# adjusting screw can push the tool apron to move.
6. Press the 2# adjusting screw tightly and compare it with a dial indicator to make the movement amount reach the calculated smaller value.
7. Press the 6# locking screw tightly and machine the workpiece to the required size.

C Boring System

Instruction Manual for FB Fine Boring Tool

Various instructions:
1. Fine Boring Inserts Holder
2. Tip Seat Locking Screw
3. Locking Screw
4. Fine Boring Tool
5. Torque Bolt for K Interface
6. Oil Nozzle
7. Dial

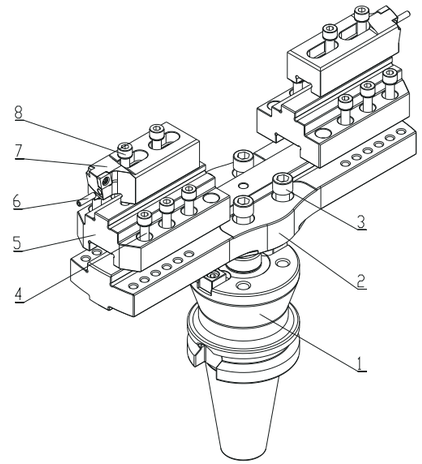


Adjustment steps:

1. Align the slot of the 1# fine boring tool apron in the correct direction and snap it into the boring head. First, lock the 3# locking screw, and then lock the 2# tool bit locking screw.
2. Rotate counterclockwise to loosen the 3# locking screw. Use an Allen key to turn the dial to adjust the tip seat to the required position for the cutting diameter. Then, rotate the 3# locking screw clockwise to lock the tool. Each grid rotation of the dial represents a diameter change of 0.01mm (clockwise rotation-increase, counterclockwise rotation-decrease).
3. Check the marking on the tool for the boring range of the tool bit. (Do not rotate the dial beyond the range.)
4. Conduct regular maintenance and inject lubricating oil (inject from the 6# oil nozzle).
5. Do not disassemble the parts sealed with red paint, otherwise, the accuracy of the boring head will be damaged.
6. When performing back boring machining, the rotation direction of the tool must be reversed.

Instruction Manual for LRB Bridge-type Rough Boring Tool

Various instructions:
1. Shank
2. Tool Bridge
3. Tool Bridge Locking Screw
4. Slider Locking Screw
5. Slider
6. Tool Apron Adjusting Screw
7. Tool Apron
8. Tool Apron Locking Screw

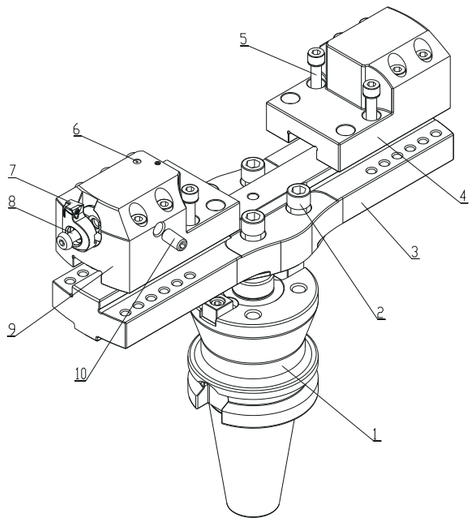


Adjustment steps:

1. Loosen the 4# slider locking screw.
2. Roughly adjust the 5# slider and the 7# tool apron according to the scale line. The size of the tool tip should be about 0.5mm smaller than the size to be machined. [Note: Ensure the rough adjustment size by comprehensively adjusting the positions of the 5# slider and the 7# tool apron and the position of the 4# slider locking screw.]
3. Tighten the 4# slider locking screw and the 8# tool apron locking screw. Turn the 6# tool apron adjusting screw and press it tightly against the shank of the 8# locking screw to prevent tool deflection.
4. Conduct a trial boring, measure the size of the machined hole, compare it with the required size, and calculate the smaller value.
5. Slightly loosen the 8# tool apron locking screw so that the 6# tool apron adjusting screw can push the 7# tool apron to move.
6. Use a wrench to turn the 6# tool apron adjusting screw and compare it with a dial indicator to make the movement amount reach the calculated smaller value.
7. Use a wrench to lock the 8# tool apron locking screw and machine the workpiece to the required size.

Instruction Manual for LFB Bridge-type Fine Boring Tool

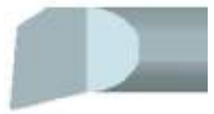
Various instructions:
1. Shank
2. Tool Bridge Locking Screw
3. Tool Bridge
4. Counterweight Block
5. Locking Screw
6. Oil Nozzle
7. Fine Boring Inserts Holder
8. Tool Apron Locking Screw
9. Fine Boring Tool
10. Lock Locking Screw



Adjustment steps:

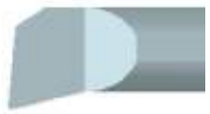
1. Loosen the 5# locking screw.
2. Roughly adjust the 9# fine boring tool according to the scale line. The size of the tool tip should be about 0.5mm smaller than the size to be machined. [Note: Ensure the rough adjustment size and the fine adjustment size by comprehensively adjusting the 7# fine boring inserts holder and the 9# fine boring tool.]
3. Tighten the 5# locking screw.
4. Adjust the 4# counterweight block in the same way to adjust the dynamic balance.
5. Lock the 10# locking screw, conduct a trial boring, measure the size of the machined hole, compare it with the required size, and calculate the smaller value.
6. Loosen the 10# locking screw, rotate the dial (each small grid rotation of the dial represents a diameter cutting depth change of 0.01mm), and make the movement amount reach the calculated smaller value.
7. Lock the 10# locking screw and machine the workpiece to the required size.
8. Conduct regular maintenance and inject lubricating oil (inject from the 6# oil nozzle).

Small Diameter Boring Tool-GMT Stainless Steel Series

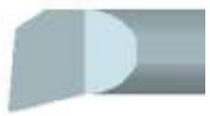
GMT-AR	GMT-TR	GMT-PR	GMT-QR
P227	P229	P232	P234
			
GMT-UR	GMT-XR	GMT-DR	GMT-CR
P235	P236	P237	P238
			
GMT-GR	GMT-KR	GMT-FR	GMT-IR
P239	P241	P242	P243
			

C Boring System

Small Diameter Boring Tool-GPT Common Steel Series

GPT-AR	GPT-TR	GPT-PR	GPT-GR
P245	P247	P250	P252
			
GPT-FR	GPT-IR		
P254	P255		
			

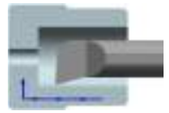
Small Diameter Boring Tool-GHT Hardness Steel Series

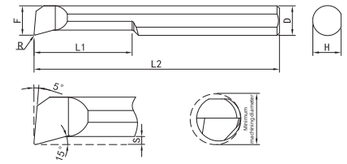
GHT-AR	GHT-TR	GHT-PR	GHT-QR
P257	P259	P262	P264
			
GHT-GR	GHT-FR	GHT-IR	
P265	P267	P268	
			

GMT Stainless Steel Series

GMT-AR

Universal Type-internal Hole Turning





Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-AR10R05L03	0.8	3	0.2	0.05	D4	40	3.7	1	●
GMT-AR15R10L05	1.2	5	0.2	0.1	D4	40	3.7	1.5	●
GMT-AR20R10L07	1.7	7	0.2	0.1	D4	40	3.7	2	●
GMT-AR25R10L07	2.3	7	0.4	0.1	D4	40	3.7	2.5	●
GMT-AR25R10L12		12							●
GMT-AR30R10L10	2.7	10	0.4	0.1	D4	50	3.7	3	●
GMT-AR30R10L15		15							●
GMT-AR35R15L10	3.2	10	0.5	0.15	D4	50	3.7	3.5	●
GMT-AR35R15L15		15							●
GMT-AR40R15L10	3.7	10	0.5	0.15	D4	50	3.7	4	●
GMT-AR40R15L15		15							●
GMT-AR40R15L20		20							●
GMT-AR45R15L15	3.98	15	0.7	0.15	D4	50	3.7	4.5	●
GMT-AR45R15L20		20							○
GMT-AR50R20L10	4.7	10	0.9	0.2	D6	50	5.7	5	●
GMT-AR50R20L15		15							●
GMT-AR50R20L20		20							●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-AR60R20L20

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC		＜35HRC	Si＜12%	＜HB200	＜HB450	＜HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

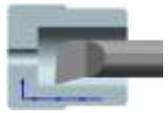
◎Most Suitable ○Suitable

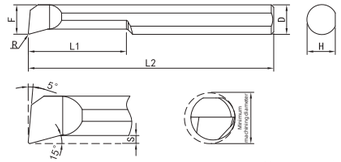
C Boring System

GMT Stainless Steel Series

GMT-AR

Universal Type-internal hole turning





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Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-AR55R20L10	5.2	10	0.9	0.2	D6	50	5.7	5.5	●
GMT-AR55R20L15		15							●
GMT-AR55R20L20		20							●
GMT-AR60R20L10	5.7	10	0.9	0.2	D6	50	5.7	6	●
GMT-AR60R20L15		15							●
GMT-AR60R20L20		20							●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-AR60R20L20

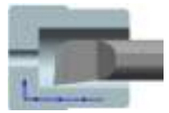
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

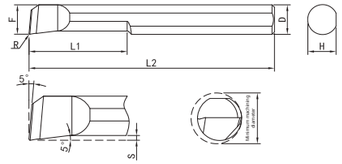
◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-TR

Durable Type-internal Hole Turning





Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-TR10R00L04	0.85	4	0.15	0	D4	40	3.7	1	●
GMT-TR10R10L04				0.1					●
GMT-TR15R05L05	1.3	5	0.2	0.05	D4	40	3.7	1.5	●
GMT-TR15R10L05				0.1					●
GMT-TR20R05L06	1.8	6	0.25	0.05	D4	40	3.7	2	●
GMT-TR20R10L06				0.1					●
GMT-TR25R05L07	2.3	7	0.3	0.05	D4	40	3.7	2.5	●
GMT-TR25R10L07				0.1					●
GMT-TR30R05L06	2.7	6	0.3	0.05	D4	50	3.7	3	●
GMT-TR30R10L06				0.1					●
GMT-TR30R20L06				0.2					●
GMT-TR30R05L10		10		0.05					●
GMT-TR30R10L10				0.1					●
GMT-TR30R20L10				0.2					●
GMT-TR30R10L15		15		0.1					●
GMT-TR30R20L15				0.2					●
GMT-TR35R10L12	3.3	12	0.3	0.1	D4	50	3.7	3.5	●
GMT-TR35R20L12				0.2					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-AR60R20L20

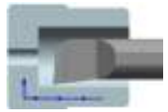
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

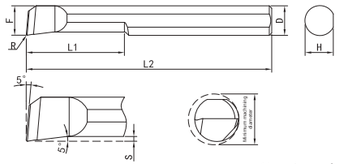
◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-TR

Durable Type-internal Hole Turning





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Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-TR40R05L08	3.7	8	0.4	0.05	D4	50	3.7	4	●
GMT-TR40R10L08				0.1					●
GMT-TR40R20L08				0.2					●
GMT-TR40R10L10		10		0.1					●
GMT-TR40R20L10				0.2					●
GMT-TR40R05L15		15		0.05					●
GMT-TR40R10L15				0.1					●
GMT-TR40R20L15				0.2					●
GMT-TR40R10L22		22		0.1					●
GMT-TR40R20L22				0.2					●
GMT-TR50R10L12	4.7	12	0.5	0.1	D5	50	4.7	5	●
GMT-TR50R20L12				0.2					●
GMT-TR50R10L20	4.7	20		0.1	D5	50	4.7	5	●
GMT-TR50R20L20				0.2					●
GMT-TR50R10L22		22		0.1					●
GMT-TR50R20L22				0.2					●
GMT-TR60R10L12	5.7	12	0.5	0.1	D6	50	4.7	5	●
GMT-TR60R20L12				0.2					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-AR60R20L20

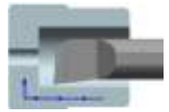
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

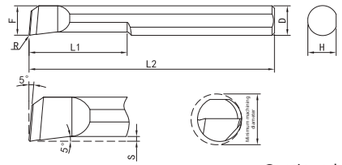
◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-TR

Durable Type-internal Hole Turning





Continued

Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-TR60R10L20	5.7	20	0.5	0.1	D6	50	5.7	6	●
GMT-TR60R20L20				0.2					●
GMT-TR60R40L20				0.4					●
GMT-TR60R10L22		22		0.1	D6	50	5.7	6	○
GMT-TR60R20L22				0.2					●
GMT-TR70R20L25	6.5	25	0.5	0.2	D7	50	6.7	7	●
GMT-TR80R20L30	7.5	30	0.5	0.2	D8	60	7.6	8	●
GMT-TR80R40L30				0.4					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-AR60R20L20

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

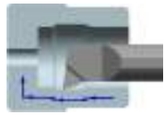
◎ Most Suitable ○ Suitable

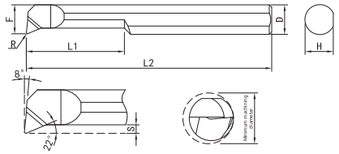
C Boring System

GMT Stainless Steel Series

GMT-PR

Profile Turning





Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-PR10R00L04	0.85	4	0.15	0	D4	40	3.7	1	●
GMT-PR10R05L04				0.05					●
GMT-PR20R05L06	1.8	5	0.3	0.05	D4	40	3.7	2	●
GMT-PR20R10L06				0.1					○
GMT-PR30R05L06	2.7	6	0.3	0.05	D4	50	3.7	3	●
GMT-PR30R10L06				0.1					○
GMT-PR30R20L06				0.2					●
GMT-PR30R05L10	2.7	10	0.3	0.05	D4	50	3.7	3	●
GMT-PR30R10L10				0.1					●
GMT-PR30R20L10				0.2					●
GMT-PR30R10L15		15		0.1					●
GMT-PR30R20L15				0.2					●
GMT-PR40R05L08	3.7	8	0.7	0.05	D4	50	3.7	4	●
GMT-PR40R10L08				0.1					●
GMT-PR40R20L08				0.2					●
GMT-PR40R05L15	3.7	15	0.7	0.05	D4	50	3.7	4	●
GMT-PR40R10L15				0.1					●
GMT-PR40R20L15				0.2					●
GMT-PR40R10L22		22		0.1					●
GMT-PR40R20L22				0.2					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-PR60R20L22

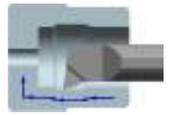
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

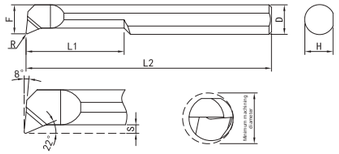
◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-PR

Profile Turning





Continued

Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-PR50R10L15	4.7	15	1.2	0.1	D5	50	4.7	5	●
GMT-PR50R20L15				0.2					●
GMT-PR50R05L20	4.7	20		0.05					●
GMT-PR50R10L20				0.1					●
GMT-PR50R20L20				0.2					●
GMT-PR50R10L22		22		0.1					●
GMT-PR50R20L22				0.2					○
GMT-PR60R10L15	5.7	15	1.2	0.1	D6	50	5.7	6	●
GMT-PR60R20L15				0.2					●
GMT-PR60R05L20	5.7	20		0.05					●
GMT-PR60R10L20				0.1					●
GMT-PR60R20L20				0.2					●
GMT-PR60R10L22		22		0.1					○
GMT-PR60R20L22				0.2					○
GMT-PR70R15L25	6.5	25	1.5	0.15	D7	50	6.7	7	●
GMT-PR80R20L22	7.5	22	1.5	0.2	D8	60	7.6	8	○
GMT-PR80R15L30		30		0.15					●
GMT-PR80R30L30				0.3					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-PR60R20L22

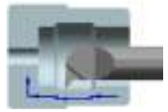
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

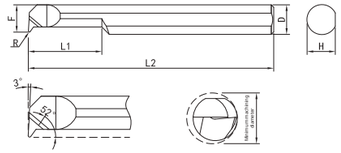
◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-QR

Profile Turning





Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-QR30R10L10	2.9	10	0.6	0.1	D4	50	3.7	3	●
GMT-QR30R20L10				0.2					●
GMT-QR40R10L10	3.9	10	0.8	0.1	D4	50	3.7	4	●
GMT-QR40R20L10				0.2					●
GMT-QR50R10L15	4.9	15	1.0	0.1	D5	50	4.7	5	●
GMT-QR50R20L15				0.2					●
GMT-QR60R10L15	5.9	15	1.0	0.1	D6	50	5.7	6	●
GMT-QR60R20L15				0.2					●
GMT-QR70R20L20	6.5	20	1.5	0.2	D7	50	6.7	7	●
GMT-QR80R10L25	7.5	25	2.0	0.1	D8	60	7.6	8	●
GMT-QR80R20L25				0.2					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-QR60R20L15

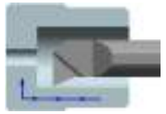
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

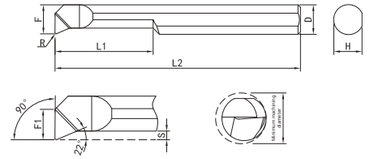
◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-UR

90° In-cut Profile Turning





Order No.	F	L1	F1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-UR30R10L10	2.7	10	1.3	0.4	0.1	D4	50	3.7	3	●
GMT-UR40R10L15	3.7	15	1.7	0.5	0.1	D4	50	3.7	4	●
GMT-UR50R20L20	4.7	20	2.1	0.7	0.2	D5	50	4.7	5	●
GMT-UR60R20L20	5.7	20	2.8	1	0.2	D6	50	5.7	6	●
GMT-UR70R20L25	6.7	25	3.2	1	0.2	D7	50	6.7	7	●
GMT-UR80R20L30	7.7	30	3.8	1	0.2	D8	60	7.6	8	●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-UR60R20L20

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

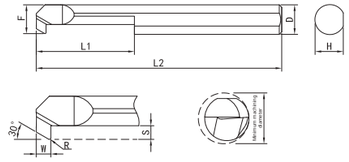
◎ Most Suitable ○ Suitable

C Boring System

GMT Stainless Steel Series

GMT-XR

Reverse Boring



Order No.	F	W	S	L1	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-XR40R10L10	3.8	1.5	1.0	10.0	0.10	D4	50	3.7	4	●
GMT-XR50R15L15	4.8	2.0	1.5	15.0	0.15	D5	50	4.7	5	●
GMT-XR60R20L20	5.8	2.0	2.0	20.0	0.20	D6	50	5.7	6	●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-XR60R10L20

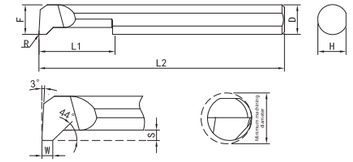
Workpiece Material										
P		M	K	N		S		H		
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC	
○	○	◎	○			○	○	○		

◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-DR

Internal Hole Boring Tool Chamfer Grooving



Order No.	F	L1	S	R	D	L2	H	W	Minimum Machining Diameter	In Stock
GMT-DR40R20L10	3.8	10	0.8	0.2	D4	50	3.7	1.5	4	○
GMT-DR50R20L15	4.8	15	1.2	0.2	D5	50	4.7	1.5	5	○
GMT-DR60R20L15	5.8	15	1.4	0.2	D6	50	5.7	1.5	6	○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-DR60R20L15

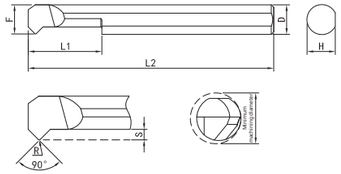
Workpiece Material										
P		M	K	N		S		H		
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC	
○	○	◎	○			○	○	○		

◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-CR

Internal Hole Boring Tool and Chamfer



Order No.	F	L1	S	R	D	L2	H	In Stock
GMT-CR40R20L10	2.8	10.0	0.5	0.2	D4	50	3.7	●
GMT-CR40R20L15	3.7	15.0	0.8	0.2	D4	50	3.7	●
GMT-CR50R20L15	4.7	15.0	1.2	0.2	D5	50	4.7	●
GMT-CR60R20L15	5.7	15.0	1.5	0.2	D6	50	5.7	●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-CR60R20L15

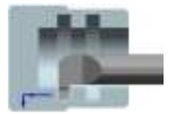
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

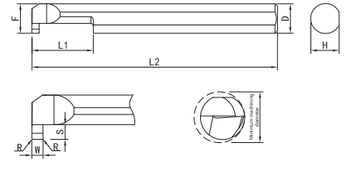
◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-GR

Grooving





Order No.	W	S	L1	R	F	D	L2	H	Minimum Machining Diameter	In Stock
GMT-GR30W05L05	0.5	1.0	5	0.05	2.8	D3	40	2.7	3	●
GMT-GR30W08L05	0.8	1.0								●
GMT-GR30W10L05	1.0	1.0								●
GMT-GR30W15L05	1.5	1.0								●
GMT-GR40W05L05	0.5	1.0	5	0.05	3.8	D4	40	3.7	4	●
GMT-GR40W08L05	0.8	1.0								●
GMT-GR40W10L05	1.0	1.5								●
GMT-GR40W15L05	1.5	1.5								●
GMT-GR50W10L05	1.0	1.5	5	0.1	4.8	D5	40	4.7	5	●
GMT-GR50W12L05	1.2	1.5								●
GMT-GR50W15L05	1.5	2.0								●
GMT-GR50W20L05	2.0	2.0								●
GMT-GR60W10L06	1.0	2.0	6	0.15	5.8	D6	40	5.7	6	●
GMT-GR60W15L06	1.5	2.0								●
GMT-GR60W20L06	2.0	2.0								●
GMT-GR60W25L06	2.5	2.5								●
GMT-GR80W10L10	1.0	3.0	10	0.15	7.8	D8	50	7.6	8	●
GMT-GR80W15L10	1.5	3.0								●
GMT-GR80W20L10	2.0	3.0								●
GMT-GR80W25L10	2.5	3.0								●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-GR60B15L12

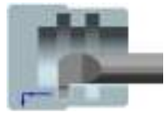
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

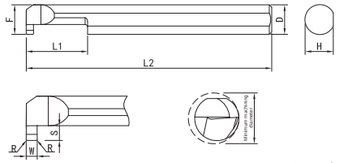
◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-GR

Grooving





Continued

Order No.	W	S	L1	R	F	D	L2	H	Minimum Machining Diameter	In Stock
GMT-GR40W05L10	0.5	1.0	10	0.05	3.8	D4	50	3.7	4	●
GMT-GR40W08L10	0.8	1.0								●
GMT-GR40W10L10	1.0	1.5								●
GMT-GR40W15L10	1.5	1.5								●
GMT-GR50W10L10	1.0	1.5	10	0.1	4.8	D5	50	4.7	5	●
GMT-GR50W12L10	1.2	1.5								●
GMT-GR50W15L10	1.5	2.0								●
GMT-GR50W20L10	2.0	2.0								●
GMT-GR60W10L12	1.0	2.0	12	0.15	5.8	D6	50	5.7	6	●
GMT-GR60W15L12	1.5	2.0								●
GMT-GR60W20L12	2.0	2.0								●
GMT-GR60W25L16	2.5	2.5	16							●
GMT-GR80W10L16	1.0	3.0	16	0.15	7.8	D8	50	7.6	8	●
GMT-GR80W15L16	1.5	3.0								●
GMT-GR80W20L16	2.0	3.0								●
GMT-GR80W25L16	2.5	3.0								●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-GR60B15L12

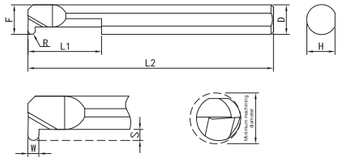
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-KR

Arc Grooving



Order No.	F	S	L1	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-KR40R50L10	3.8	1.0	10.0	0.5	D4	50	3.7	4	●
GMT-KR40R75L10	3.8	1.0	10.0	0.75					●
GMT-KR60R50L15	5.8	1.5	15.0	0.5	D6	50	5.7	6	●
GMT-KR60R75L15	5.8	1.5	15.0	0.75					●
GMT-KR60R100L15	5.8	1.5	15.0	1.0					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-KR60R75L15

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

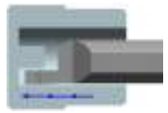
◎ Most Suitable ○ Suitable

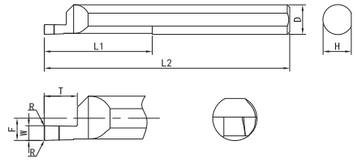
C Boring System

GMT Stainless Steel Series

GMT-FR

Grooving





Order No.	F	L1	T	W	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-FR40W05L15	1.95	15	1.0	0.50	0.05	D4	50	3.5	6.0	●
GMT-FR40W08L15			1.5	0.75						●
GMT-FR40W10L15			1.5	1.00						●
GMT-FR40W15L15			2.8	1.50						●
GMT-FR50W08L22	2.45	22	1.5	0.75	0.1	D5	50	4.5	6.0	●
GMT-FR50W10L22			1.5	1.00						●
GMT-FR50W15L22			2.5	1.50						●
GMT-FR50W20L22			4.0	2.00						●
GMT-FR60W08L22	2.95	22	1.5	0.75	0.1	D6	50	5.5	8.0	●
GMT-FR60W10L22			2.0	1.00						●
GMT-FR60W15L22			3.0	1.50						●
GMT-FR60W20L22			4.0	2.00						●
GMT-FR60W25L22			5.0	2.50						●
GMT-FR80W15L20	3.95	20	4.0	1.50	0.2	D8	50	7.5	10.0	●
GMT-FR80W20L20			4.0	2.00						●
GMT-FR80W25L20			5.0	2.50						●
GMT-FR80W30L20			6.0	3.00						●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-FR60B15L22

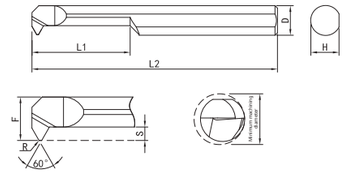
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

◎ Most Suitable ○ Suitable

GMT Stainless Steel Series

GMT-IR

Threading for 60° Tool Alignment



Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-IR15A60L05	1.4	5.0	0.4	0.0	D4	50	3.7	1.5	●
GMT-IR20A60L07	1.8	7.0	0.6	0.0	D4	50	3.7	2	●
GMT-IR25A60L07	2.4	7.0	0.6	0.0	D4	50	3.7	2.5	●
GMT-IR31A60L12	3.0	12.0	0.8	0.03	D4	50	3.7	3.1	●
GMT-IR40A60L10	3.85	10.0	1.0	0.05	D4	50	3.7	4	○
GMT-IR40A60L15	3.85	15.0	1.0	0.05	D4	50	3.7	4	●
GMT-IR50A60L15	4.8	15.0	1.5	0.08	D5	50	4.7	5	●
GMT-IR50A60L22	4.8	22.0	1.5	0.08	D5	50	4.7	5	○
GMT-IR60A60L15	5.6	15.0	1.8	0.10	D6	50	5.7	6	○
GMT-IR60A60L20	5.6	20.0	1.8	0.10	D6	50	5.7	6	●
GMT-IR80A60L22	7.8	22.0	2.2	0.10	D8	50	7.6	8	●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-IR50A60L22

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

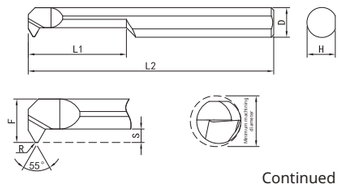
◎ Most Suitable ○ Suitable

C Boring System

GMT Stainless Steel Series

GMT-IR

Threading for 55° Tool Alignment



Continued

Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GMT-IR40A55L15	3.85	15	1.0	0.05	D4	50	3.7	4	●
GMT-IR50A55L15	4.8	15	1.5	0.08	D5	50	4.7	5	●
GMT-IR60A55L20	5.6	20	1.8	0.10	D6	50	5.7	6	●
GMT-IR80A55L22	7.8	22	2.2	0.10	D8	50	7.6	8	●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GMT-IR60A55L20

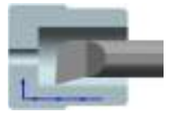
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	◎	○			○	○	○	

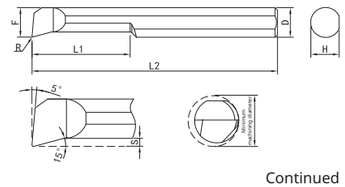
◎ Most Suitable ○ Suitable

GPT Steel Parts Series

GPT-AR

Universal Type-internal Hole Turning





Continued

Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GPT-AR10R05L03	0.8	3	0.2	0.05	D4	40	3.7	1	●
GPT-AR15R10L05	1.2	5	0.2	0.1	D4	40	3.7	1.5	●
GPT-AR20R10L07	1.7	7	0.2	0.1	D4	40	3.7	2	●
GPT-AR25R10L07	2.3	7	0.4	0.1	D4	40	3.7	2.5	○
GPT-AR25R10L12		12							○
GPT-AR30R10L10	2.7	10	0.4	0.1	D4	50	3.7	3	○
GPT-AR30R10L15		15							○
GPT-AR35R15L10	3.2	10	0.5	0.15	D4	50	3.7	3.5	○
GPT-AR35R15L15		15							●
GPT-AR40R15L10	3.7	10	0.5	0.15	D4	50	3.7	4	●
GPT-AR40R15L15		15							●
GPT-AR40R15L20		20							○
GPT-AR45R15L15	3.98	15	0.7	0.15	D4	50	3.7	4.5	○
GPT-AR45R15L20		20							○
GPT-AR50R20L15	4.7	15	0.9	0.2	D6	50	5.7	5	●
GPT-AR50R20L20		20							●
GPT-AR50R20L25		25							○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-AR60R20L20

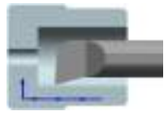
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

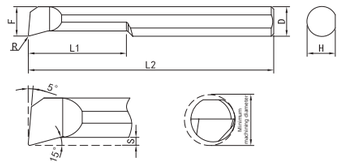
◎ Most Suitable ○ Suitable

GPT Steel Parts Series

GPT-AR

Universal Type-internal Hole Turning





Continued

Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GPT-AR55R20L15	5.2	15	0.9	0.2	D6	50	5.7	5.5	●
GPT-AR55R20L20		20							○
GPT-AR55R20L25		25							○
GPT-AR60R20L15	5.7	15	0.9	0.2	D6	50	5.7	6	○
GPT-AR60R20L20		20							●
GPT-AR60R20L25		25							●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-AR60R20L20

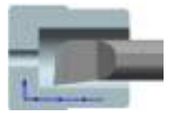
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

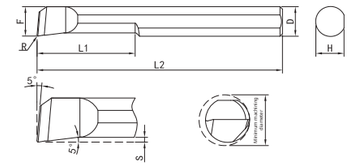
◎ Most Suitable ○ Suitable

GPT steel parts series

GPT-TR

Durable Type-internal Hole Turning





Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GPT-TR10R00L04	0.85	4	0.15	0	D4	40	3.7	1	○
GPT-TR10R10L04				0.1					○
GPT-TR15R05L05	1.3	5	0.2	0.05	D4	40	3.7	1.5	○
GPT-TR15R10L05				0.1					●
GPT-TR20R05L06	1.8	6	0.25	0.05	D4	40	3.7	2	○
GPT-TR20R10L06				0.1					●
GPT-TR25R05L07	2.3	7	0.3	0.05	D4	40	3.7	2.5	○
GPT-TR25R10L07				0.1					●
GPT-TR30R05L06	2.7	6	0.3	0.05	D4	50	3.7	3	○
GPT-TR30R10L06				0.1					○
GPT-TR30R20L06				0.2					○
GPT-TR30R05L10		10	0.3	0.05	D4	50	3.7		○
GPT-TR30R10L10				0.1					●
GPT-TR30R20L10				0.2					●
GPT-TR30R10L15		15	0.3	0.1	D4	50	3.7		●
GPT-TR30R20L15				0.2					○
GPT-TR35R10L12	3.3	12	0.3	0.1	D4	50	3.7	3.5	○
GPT-TR35R20L12				0.2					○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-TR60R20L20

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

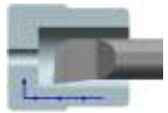
◎ Most Suitable ○ Suitable

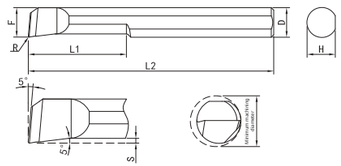
C Boring System

GPT Steel Parts Series

GPT-TR

Durable Type-internal Hole Turning





Continued

Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GPT-TR40R05L08	3.7	8	0.4	0.05	D4	50	3.7	4	○
GPT-TR40R10L08				0.1					○
GPT-TR40R20L08				0.2					○
GPT-TR40R10L10		10		0.1	D4	50	3.7		●
GPT-TR40R20L10				0.2					●
GPT-TR40R05L15	3.7	15	0.4	0.05	D4	50	3.7	4	○
GPT-TR40R10L15				0.1					●
GPT-TR40R20L15				0.2					●
GPT-TR40R10L22		22		0.1					○
GPT-TR40R20L22				0.2					○
GPT-TR50R10L12	4.7	12	0.5	0.1	D5	50	4.7	5	○
GPT-TR50R20L12				0.2					○
GPT-TR50R10L20	4.7	20	0.5	0.1	D5	50	4.7	5	●
GPT-TR50R20L20				0.2					●
GPT-TR50R10L22		22		0.1					○
GPT-TR50R20L22				0.2					○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-TR60R20L20

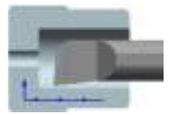
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

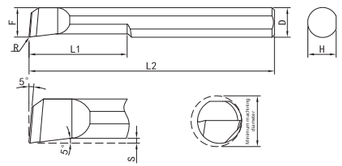
◎ Most Suitable ○ Suitable

GPT Steel Parts Series

GPT-TR

Durable Type-internal Hole Turning





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Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GPT-TR60R10L12	5.7	12	0.5	0.1	D6	50	5.7	6	○
GPT-TR60R20L12				0.2					●
GPT-TR60R10L20	5.7	20	0.5	0.1	D6	50	5.7	6	●
GPT-TR60R20L20				0.2					●
GPT-TR60R40L20				0.4					●
GPT-TR60R10L22		22		0.1					○
GPT-TR60R20L22				0.2					●
GPT-TR70R20L25	6.5	25	0.5	0.2	D7	50	6.7	7	●
GPT-TR80R20L30	7.5	30	0.5	0.2	D8	60	7.6	8	●
GPT-TR80R40L30				0.4					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-TR60R20L20

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

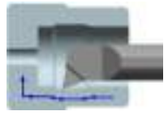
◎ Most Suitable ○ Suitable

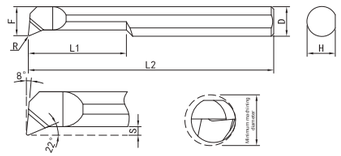
C Boring System

GPT Steel Parts Series

GPT-PR

Profile Turning





Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GPT-PR10R00L04	0.85	4	0.15	0	D4	40	3.7	1	○
GPT-PR10R05L04				0.05					○
GPT-PR20R05L06	1.8	6	0.3	0.05	D4	40	3.7	2	○
GPT-PR20R10L06				0.1					●
GPT-PR30R05L06	2.7	6	0.3	0.05	D4	50	3.7	3	○
GPT-PR30R10L06				0.1					●
GPT-PR30R20L06				0.2					○
GPT-PR30R05L10	2.7	10	0.3	0.05	D4	50	3.7	3	○
GPT-PR30R10L10				0.1					●
GPT-PR30R20L10				0.2					○
GPT-PR30R10L15		15		0.1					○
GPT-PR30R20L15				0.2					○
GPT-PR40R05L08	3.7	8	0.7	0.05	D4	50	3.7	4	○
GPT-PR40R10L08				0.1					○
GPT-PR40R20L08				0.2					●
GPT-PR40R05L15	3.7	15	0.7	0.05	D4	50	3.7	4	●
GPT-PR40R10L15				0.1					●
GPT-PR40R20L15				0.2					●
GPT-PR40R10L22		22	0.7	0.1	D4	50	3.7	4	○
GPT-PR40R20L22				0.2					○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-PR60R20L20

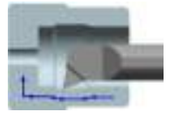
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

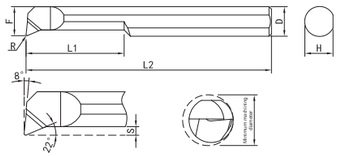
◎ Most Suitable ○ Suitable

GPT Steel Parts Series

GPT-PR

Profile Turning





Continued

Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GPT-PR50R10L15	4.7	15	1.2	0.1	D5	50	4.7	5	○
GPT-PR50R20L15				0.2					○
GPT-PR50R05L20		20		0.05					○
GPT-PR50R10L20				0.1					○
GPT-PR50R20L20				0.2					●
GPT-PR50R10L22		22		0.1					○
GPT-PR50R20L22				0.2					○
GPT-PR60R10L15	5.7	15	1.2	0.1	D6	50	5.7	6	○
GPT-PR60R20L15				0.2					●
GPT-PR60R05L20		20		0.05					○
GPT-PR60R10L20				0.1					○
GPT-PR60R20L20				0.2					○
GPT-PR60R10L22		22		0.1					○
GPT-PR60R20L22				0.2					○
GPT-PR70R15L25	6.5	25	1.5	0.15	D7	50	6.7	7	○
GPT-PR80R20L22	7.5	22	1.5	0.2	D8	60	7.6	8	○
GPT-PR80R15L30		30		0.15					○
GPT-PR80R30L30				0.3					○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-PR60R20L20

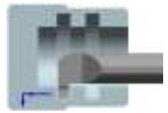
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

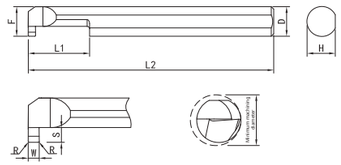
◎ Most Suitable ○ Suitable

GPT Steel Parts Series

GPT-GR

Grooving





Order No.	W	S	L1	R	F	D	L2	H	Minimum Machining Diameter	In Stock
GPT-GR30W05L05	0.5	1.0	5	0.05	2.8	D3	40	2.7	3	●
GPT-GR30W08L05	0.8	1.0								○
GPT-GR30W10L05	1.0	1.0								○
GPT-GR30W15L05	1.5	1.0								○
GPT-GR40W05L05	0.5	1.0	5	0.05	3.8	D4	40	3.7	4	●
GPT-GR40W08L05	0.8	1.0								○
GPT-GR40W10L05	1.0	1.5								○
GPT-GR40W15L05	1.5	1.5								○
GPT-GR50W10L05	1.0	1.5	5	0.1	4.8	D5	40	4.7	5	●
GPT-GR50W12L05	1.2	1.5								○
GPT-GR50W15L05	1.5	2.0								○
GPT-GR50W20L05	2.0	2.0								○
GPT-GR60W10L06	1.0	2.0	6	0.15	5.8	D6	40	5.7	6	○
GPT-GR60W15L06	1.5	2.0								○
GPT-GR60W20L06	2.0	2.0								○
GPT-GR60W25L06	2.5	2.5								○
GPT-GR80W10L10	1.0	3.0	10	0.15	7.8	D8	50	7.6	8	○
GPT-GR80W15L10	1.5	3.0								○
GPT-GR80W20L10	2.0	3.0								○
GPT-GR80W25L10	2.5	3.0								○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-GR60B15L12

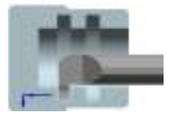
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC		＜35HRC	Si＜12%	＜HB200	＜HB450	＜HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

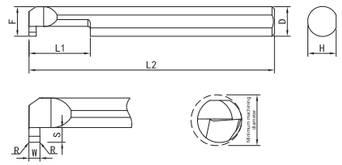
◎ Most Suitable ○ Suitable

GPT Steel Parts Series

GPT-GR

Grooving





Continued

Order No.	W	S	L1	R	F	D	L2	H	Minimum Machining Diameter	In Stock
GPT-GR40W05L10	0.5	1.0	10	0.05	3.8	D4	50	3.7	4	●
GPT-GR40W08L10	0.8	1.0								●
GPT-GR40W10L10	1.0	1.5								●
GPT-GR40W15L10	1.5	1.5								○
GPT-GR50W10L10	1.0	1.5	10	0.1	4.8	D5	50	4.7	5	○
GPT-GR50W12L10	1.2	1.5								○
GPT-GR50W15L10	1.5	2.0								●
GPT-GR50W20L10	2.0	2.0								○
GPT-GR60W10L12	1.0	2.0	12	0.15	5.8	D6	50	5.7	6	●
GPT-GR60W15L12	1.5	2.0								●
GPT-GR60W20L12	2.0	2.0								○
GPT-GR60W25L16	2.5	2.5	16							○
GPT-GR80W10L16	1.0	3.0	16	0.15	7.8	D8	50	7.6	8	○
GPT-GR80W15L16	1.5	3.0								○
GPT-GR80W20L16	2.0	3.0								●
GPT-GR80W25L16	2.5	3.0								○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-GR60B15L12

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC		＜35HRC	Si＜12%	＜HB200	＜HB450	＜HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

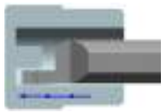
◎ Most Suitable ○ Suitable

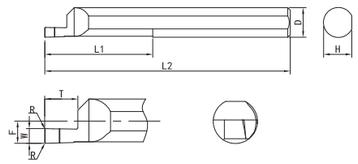
C Boring System

GPT Steel Parts Series

GPT-FR

Grooving





Order No.	F	L1	T	W	R	D	L2	H	Minimum Machining Diameter	In Stock
GPT-FR40W05L15	1.95	15	1.0	0.5	0.05	D4	50	3.5	6	●
GPT-FR40W08L15			1.5	0.75						○
GPT-FR40W10L15			1.5	1.0						○
GPT-FR40W15L15			2.8	1.5						○
GPT-FR50W08L22	2.45	22	1.5	0.75	0.1	D5	50	4.5	6	○
GPT-FR50W10L22			1.5	1.0						○
GPT-FR50W15L22			2.5	1.5						○
GPT-FR50W20L22			4.0	2.0						○
GPT-FR60W08L22	2.95	22	1.5	0.75	0.1	D6	50	5.5	8	●
GPT-FR60W10L22			2.0	1.0						●
GPT-FR60W15L22			3.0	1.5						○
GPT-FR60W20L22			4.0	2.0						○
GPT-FR60W25L22			5.0	2.5						○
GPT-FR80W15L20	3.95	20	4.0	1.5	0.2	D8	50	7.5	10	○
GPT-FR80W20L20			4.0	2.0						○
GPT-FR80W25L20			5.0	2.5						○
GPT-FR80W30L20			6.0	3.0						○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-FR80B15L22

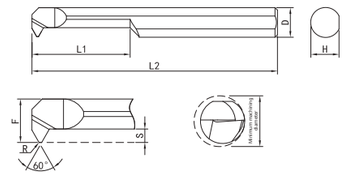
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

◎ Most Suitable ○ Suitable

GPT Steel Parts Series

GPT-IR

Threading for 60° Tool Alignment



Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GPT-IR15A60L05	1.4	5	0.4	0	D4	50	3.7	1.5	○
GPT-IR20A60L07	1.8	7	0.6	0	D4	50	3.7	2	○
GPT-IR25A60L07	2.4	7	0.6	0	D4	50	3.7	2.5	○
GPT-IR31A60L12	3.0	12	0.8	0.03	D4	50	3.7	3.1	○
GPT-IR40A60L10	3.85	10	1.0	0.05	D4	50	3.7	4	○
GPT-IR40A60L15		15	1.0	0.05	D4	50	3.7	4	○
GPT-IR50A60L15	4.8	15	1.5	0.08	D5	50	4.7	5	○
GPT-IR50A60L22		22	1.5	0.08	D5	50	4.7	5	○
GPT-IR60A60L15	5.6	15	1.8	0.1	D6	50	5.7	6	○
GPT-IR60A60L20		20							○
GPT-IR80A60L22	7.8	22	2.2	0.1	D8	50	7.6	8	○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-IR60A60L20

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

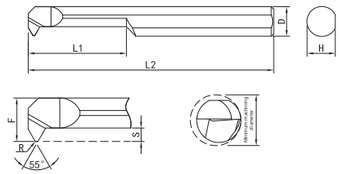
◎ Most Suitable ○ Suitable

C Boring System

GPT Steel Parts Series

GPT-IR

Threading for 55° Tool Alignment



Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GPT-IR40A55L15	3.85	15	1.0	0.05	D4	50	3.7	4	○
GPT-IR50A55L15	4.8	15	1.5	0.08	D5	50	4.7	5	○
GPT-IR60A55L20	5.6	20	1.8	0.1	D6	50	5.7	6	○
GPT-IR80A55L22	7.8	22	2.2	0.1	D8	50	7.6	8	○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-IR60A55L20

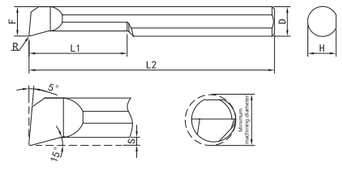
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
◎	○	○			◎			○	

◎ Most Suitable ○ Suitable

GHT Hardness Steel Series

GHT-AR

Universal Type-internal Hole Turning



Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GHT-AR10R05L03	0.8	3	0.2	0.05	D4	40	3.7	1	●
GHT-AR15R10L05	1.2	5	0.2	0.1	D4	40	3.7	1.5	●
GHT-AR20R10L07	1.7	7	0.2	0.1	D4	40	3.7	2	●
GHT-AR25R10L07	2.3	7	0.4	0.1	D4	40	3.7	2.5	○
GHT-AR25R10L12		12							○
GHT-AR30R10L10	2.7	10	0.4	0.1	D4	50	3.7	3	○
GHT-AR30R10L15		15							○
GHT-AR35R15L10	3.2	10	0.5	0.15	D4	50	3.7	3.5	○
GHT-AR35R15L15		15							●
GHT-AR40R15L10	3.7	10	0.5	0.15	D4	50	3.7	4	●
GHT-AR40R15L15		15							●
GHT-AR40R15L20		20							○
GHT-AR45R15L15	3.98	15	0.7	0.15	D4	50	3.7	4.5	○
GHT-AR45R15L20		20							○
GHT-AR50R20L15	4.7	15	0.9	0.2	D6	50	5.7	5	●
GHT-AR50R20L20		20							●
GHT-AR50R20L25		25							○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-AR60R20L20

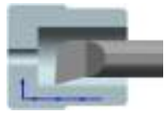
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

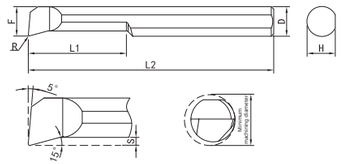
◎ Most Suitable ○ Suitable

GHT Hardness Steel Series

GHT-AR

Universal Type-internal Hole Turning





Continued

Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GHT-AR55R20L15	5.2	15	0.9	0.2	D6	50	5.7	5.5	●
GHT-AR55R20L20		20							○
GHT-AR55R20L25		25							○
GHT-AR60R20L15	5.7	15	0.9	0.2	D6	50	5.7	6	○
GHT-AR60R20L20		20							●
GHT-AR60R20L25		25							●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-AR60R20L20

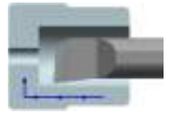
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

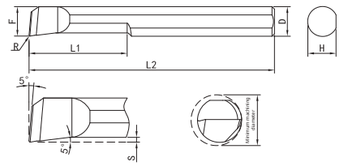
◎ Most Suitable ○ Suitable

GHT Hardness Steel Series

GHT-TR

Durable Type-internal Hole Turning





Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GHT-TR10R00L04	0.85	4	0.15	0	D4	40	3.7	1	○
GHT-TR10R10L04				0.1					●
GHT-TR15R05L05	1.3	5	0.2	0.05	D4	40	3.7	1.5	●
GHT-TR15R10L05				0.1					●
GHT-TR20R05L06	1.8	6	0.25	0.05	D4	40	3.7	2	●
GHT-TR20R10L06				0.1					●
GHT-TR25R05L07	2.3	7	0.3	0.05	D4	40	3.7	2.5	●
GHT-TR25R10L07				0.1					●
GHT-TR30R05L06	2.7	6	0.3	0.05	D4	50	3.7	3	●
GHT-TR30R10L06				0.1					●
GHT-TR30R20L06				0.2					●
GHT-TR30R05L10	2.7	10	0.3	0.05	D4	50	3.7	3	●
GHT-TR30R10L10				0.1					●
GHT-TR30R20L10				0.2					●
GHT-TR30R10L15	2.7	15	0.3	0.1	D4	50	3.7	3	●
GHT-TR30R20L15				0.2					●
GHT-TR35R10L12	3.3	12	0.3	0.1	D4	50	3.7	3.5	●
GHT-TR35R20L12				0.2					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-TR60R20L20

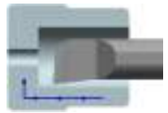
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

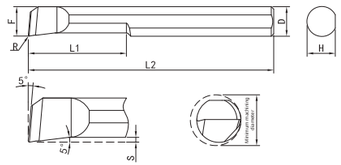
◎ Most Suitable ○ Suitable

GHT Hardness Steel Series

GHT-TR

Durable Type-internal Hole Turning





Continued

Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GHT-TR40R05L08	3.7	8	0.4	0.05	D4	50	3.7	4	●
GHT-TR40R10L08				0.1					●
GHT-TR40R20L08				0.2					●
GHT-TR40R10L10	3.7	10	0.4	0.1	D4	50	3.7	4	●
GHT-TR40R20L10				0.2					●
GHT-TR40R05L15	3.7	15	0.4	0.05	D4	50	3.7	4	●
GHT-TR40R10L15				0.1					●
GHT-TR40R20L15				0.2					●
GHT-TR40R10L22	3.7	22	0.4	0.1	D4	50	3.7	4	●
GHT-TR40R20L22				0.2					●
GHT-TR50R10L12	4.7	12	0.5	0.1	D5	50	4.7	5	●
GHT-TR50R20L12				0.2					●
GHT-TR50R10L20	4.7	20	0.5	0.1	D5	50	4.7	5	●
GHT-TR50R20L20				0.2					●
GHT-TR50R10L22	4.7	22	0.5	0.1	D5	50	4.7	5	●
GHT-TR50R20L22				0.2					●
GHT-TR60R10L12	5.7	12	0.5	0.1	D6	50	5.7	6	●
GHT-TR60R20L12				0.2					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-TR60R20L20

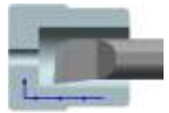
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC		＜35HRC	Si＜12%	＜HB200	＜HB450	＜HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

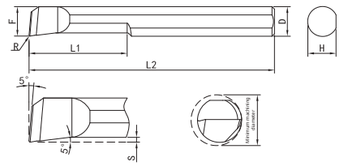
◎ Most Suitable ○ Suitable

GHT Hardness Steel Series

GHT-TR

Durable Type-internal Hole Turning





Continued

Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GHT-TR60R10L20	5.7	20	0.5	0.1	D6	50	5.7	6	●
GHT-TR60R20L20				0.2					●
GHT-TR60R40L20				0.4					●
GHT-TR60R10L22		22	0.5	0.1	D6	50	5.7	6	●
GHT-TR60R20L22				0.2					●
GHT-TR70R20L25	6.5	25	0.5	0.2	D7	50	6.7	7	●
GHT-TR80R20L30	7.5	30	0.5	0.2	D8	60	7.6	8	●
GHT-TR80R40L30				0.4					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GPT-TR60R20L20

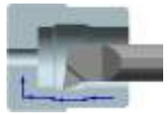
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC		＜35HRC	Si＜12%	＜HB200	＜HB450	＜HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

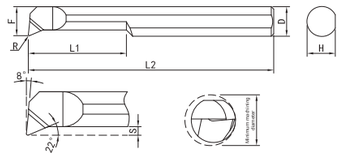
◎ Most Suitable ○ Suitable

GHT Hardness Steel Series

GHT-PR

Profile Turning





Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GHT-PR10R00L04	0.85	4	0.15	0	D4	40	3.7	1	●
GHT-PR10R05L04				0.05					●
GHT-PR20R05L06	1.8	6	0.3	0.05	D4	40	3.7	2	●
GHT-PR20R10L06				0.1					○
GHT-PR30R05L06	2.7	6	0.3	0.05	D4	50	3.7	3	●
GHT-PR30R10L06				0.1					○
GHT-PR30R20L06				0.2					●
GHT-PR30R05L10	2.7	10	0.3	0.05	D4	50	3.7	3	●
GHT-PR30R10L10				0.1					●
GHT-PR30R20L10				0.2					●
GHT-PR30R10L15		15		0.1					●
GHT-PR30R20L15				0.2					●
GHT-PR40R05L08	3.7	8	0.7	0.05	D4	50	3.7	4	●
GHT-PR40R10L08				0.1					●
GHT-PR40R20L08				0.2					●
GHT-PR40R05L15	3.7	15	0.7	0.05	D4	50	3.7	4	○
GHT-PR40R10L15				0.1					●
GHT-PR40R20L15				0.2					●
GHT-PR40R10L22		22		0.1					●
GHT-PR40R20L22				0.2					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GHT-PR60R20L20

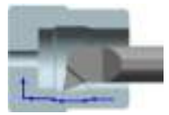
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC		＜35HRC	Si＜12%	＜HB200	＜HB450	＜HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

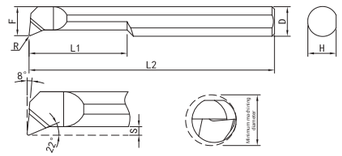
◎ Most Suitable ○ Suitable

GHT Hardness Steel Series

GHT-PR

Profile Turning





Continued

Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GHT-PR50R10L15	4.7	15	1.2	0.1	D5	50	4.7	5	●
GHT-PR50R20L15				0.2					●
GHT-PR50R05L20		20		0.05					●
GHT-PR50R10L20				0.1					●
GHT-PR50R20L20				0.2					●
GHT-PR50R10L22		22		0.1					●
GHT-PR50R20L22				0.2					●
GHT-PR60R10L15	5.7	15	1.2	0.1	D6	50	5.7	6	●
GHT-PR60R20L15				0.2					●
GHT-PR60R05L20		20		0.05					●
GHT-PR60R10L20				0.1					●
GHT-PR60R20L20				0.2					●
GHT-PR60R10L22		22		0.1					●
GHT-PR60R20L22				0.2					●
GHT-PR70R15L25	6.5	25	1.5	0.15	D7	50	6.7	7	●
GHT-PR80R20L22	7.5	22	1.5	0.2	D8	60	7.6	8	●
GHT-PR80R15L30		30		0.15					●
GHT-PR80R30L30				0.3					●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GHT-PR60R20L20

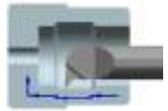
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC		＜35HRC	Si＜12%	＜HB200	＜HB450	＜HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

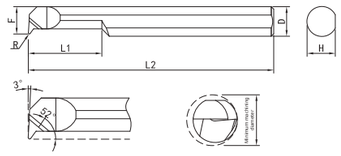
◎ Most Suitable ○ Suitable

GHT Hardness Steel Series

GHT-QR

Profile Turning





Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GHT-QR30R10L10	2.9	10	0.6	0.1	D4	50	3.7	3	○
GHT-QR30R20L10				0.2					○
GHT-QR40R10L10	3.9	10	0.8	0.1	D4	50	3.7	4	○
GHT-QR40R20L10				0.2					○
GHT-QR50R10L15	4.9	15	1.0	0.1	D5	50	4.7	5	○
GHT-QR50R20L15				0.2					○
GHT-QR60R10L15	5.9	15	1.0	0.1	D6	50	5.7	6	○
GHT-QR60R20L15				0.2					○
GHT-QR70R20L20	6.5	20	1.5	0.2	D7	50	6.7	7	○
GHT-QR80R10L25	7.5	25	2.0	0.1	D8	60	7.6	8	○
GHT-QR80R20L25				0.2					○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GHT-QR60R20L15

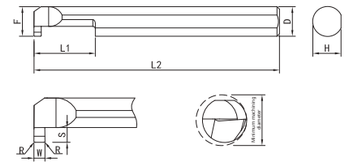
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

◎ Most Suitable ○ Suitable

GHT Hardness Steel Series

GHT-GR

Grooving



Order No.	W	S	L1	R	F	D	L2	H	Minimum Machining Diameter	In Stock
GHT-GR30W05L05	0.5	1.0	5	0.05	2.8	D3	40	2.7	3	●
GHT-GR30W08L05	0.8	1.0								●
GHT-GR30W10L05	1.0	1.0								●
GHT-GR30W15L05	1.5	1.0								●
GHT-GR40W05L05	0.5	1.0	5	0.05	3.8	D4	40	3.7	4	●
GHT-GR40W08L05	0.8	1.0								●
GHT-GR40W10L05	1.0	1.5								●
GHT-GR40W15L05	1.5	1.5								●
GHT-GR50W10L05	1.0	1.5	5	0.1	4.8	D5	40	4.7	5	●
GHT-GR50W12L05	1.2	1.5								●
GHT-GR50W15L05	1.5	2.0								●
GHT-GR50W20L05	2.0	2.0								●
GHT-GR60W10L06	1.0	2.0	6	0.15	5.8	D6	40	5.7	6	●
GHT-GR60W15L06	1.5	2.0								●
GHT-GR60W20L06	2.0	2.0								●
GHT-GR60W25L06	2.5	2.5								●
GHT-GR80W10L10	1.0	3.0	10	0.15	7.8	D8	50	7.6	8	●
GHT-GR80W15L10	1.5	3.0								●
GHT-GR80W20L10	2.0	3.0								●
GHT-GR80W25L10	2.5	3.0								○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GHT-GR60B15L12

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

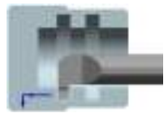
◎ Most Suitable ○ Suitable

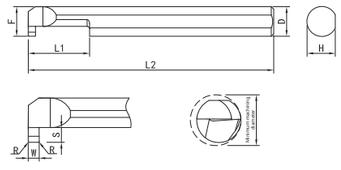
C Boring System

GHT Hardness Steel Series

GHT-GR

Grooving





Order No.	W	S	L1	R	F	D	L2	H	Minimum Machining Diameter	In Stock
GHT-GR40W05L10	0.5	1.0	10	0.05	3.8	D4	50	3.7	4	●
GHT-GR40W08L10	0.8	1.0								●
GHT-GR40W10L10	1.0	1.5								●
GHT-GR40W15L10	1.5	1.5								●
GHT-GR50W10L10	1.0	1.5	10	0.1	4.8	D5	50	4.7	5	○
GHT-GR50W12L10	1.2	1.5								●
GHT-GR50W15L10	1.5	2.0								●
GHT-GR50W20L10	2.0	2.0								●
GHT-GR60W10L12	1.0	2.0	12	0.15	5.8	D6	50	5.7	6	●
GHT-GR60W15L12	1.5	2.0								●
GHT-GR60W20L12	2.0	2.0								●
GHT-GR60W25L16	2.5	2.5	16							●
GHT-GR80W10L16	1.0	3.0	16	0.15	7.8	D8	50	7.6	8	●
GHT-GR80W15L16	1.5	3.0								●
GHT-GR80W20L16	2.0	3.0								●
GHT-GR80W25L16	2.5	3.0								●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GHT-GR60B15L12

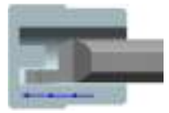
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

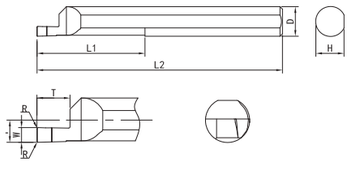
◎ Most Suitable ○ Suitable

GHT Hardness Steel Series

GHT-FR

Grooving





Order No.	F	L1	T	W	R	D	L2	H	Minimum Machining Diameter	In Stock
GHT-FR40W05L15	1.95	15	1.0	0.5	0.05	D4	50	3.5	6	●
GHT-FR40W08L15			1.5	0.75						●
GHT-FR40W10L15			1.5	1.0						●
GHT-FR40W15L15			2.8	1.5						●
GHT-FR50W08L22	2.45	22	1.5	0.75	0.1	D5	50	4.5	6	●
GHT-FR50W10L22			1.5	1.0						●
GHT-FR50W15L22			2.5	1.5						●
GHT-FR50W20L22			4.0	2.0						●
GHT-FR60W08L22	2.95	22	1.5	0.75	0.1	D6	50	5.5	8	●
GHT-FR60W10L22			2.0	1.0						●
GHT-FR60W15L22			3.0	1.5						●
GHT-FR60W20L22			4.0	2.0						●
GHT-FR60W25L22			5.0	2.5						●
GHT-FR80W15L20	3.95	20	4.0	1.5	0.2	D8	50	7.5	10	●
GHT-FR80W20L20			4.0	2.0						●
GHT-FR80W25L20			5.0	2.5						●
GHT-FR80W30L20			6.0	3.0						●

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GHT-FR80B15L22

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC		<35HRC	Si<12%	<HB200	<HB450	<HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

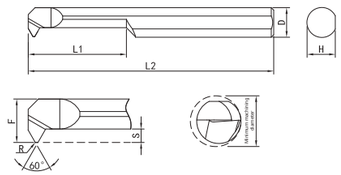
◎ Most Suitable ○ Suitable

C Boring System

GHT Hardness Steel Series

GHT-IR

Threading for 60° Tool Alignment



Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GHT-IR15A60L05	1.4	5	0.4	0	D4	50	3.7	1.5	○
GHT-IR20A60L07	1.8	7	0.6	0	D4	50	3.7	2	○
GHT-IR25A60L07	2.4	7	0.6	0	D4	50	3.7	2.5	○
GHT-IR31A60L12	3.0	12	0.8	0.03	D4	50	3.7	3.1	○
GHT-IR40A60L10	3.85	10	1.0	0.05	D4	50	3.7	4	○
GHT-IR40A60L15	3.85	15	1.0	0.05	D4	50	3.7	4	○
GHT-IR50A60L15	4.8	15	1.5	0.08	D5	50	4.7	5	○
GHT-IR50A60L22	4.8	22	1.5	0.08	D5	50	4.7	5	○
GHT-IR60A60L15	5.6	15	1.8	0.10	D6	50	5.7	6	○
GHT-IR60A60L20	5.6	20	1.8	0.10	D6	50	5.7	6	○
GHT-IR80A60L22	7.8	22	2.2	0.10	D8	50	7.6	8	○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GHT-IR60A60L20

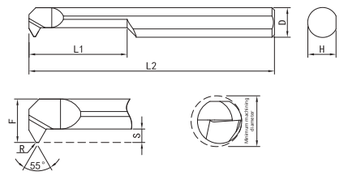
Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon steel, alloy steel	Alloy steel, tool steel	Stainless steel	Gray cast iron, nodular cast iron	Forged aluminum alloy, cast aluminium alloy	Copper alloy	High-temperature alloy	Titanium alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC		＜35HRC	Si＜12%	＜HB200	＜HB450	＜HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

◎ Most Suitable ○ Suitable

GHT Hardness Steel Series

GHT-IR

Threading for 55° Tool Alignment



Order No.	F	L1	S	R	D	L2	H	Minimum Machining Diameter	In Stock
GHT-IR40A55L15	3.85	15	1.0	0.05	D4	50	3.7	4	○
GHT-IR50A55L15	4.8	15	1.5	0.08	D5	50	4.7	5	○
GHT-IR60A55L20	5.6	20	1.8	0.10	D6	50	5.7	6	○
GHT-IR80A55L22	7.8	22	2.2	0.10	D8	50	7.6	8	○

●Stock ○Available Upon Order

Unit (mm)

Ordering example: GHT-IR60A55L20

Workpiece Material									
P		M	K	N		S		H	
1 2 3 4	5	1 2 3	1 2	1 2	4	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Copper Alloy	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC		＜35HRC	Si＜12%	＜HB200	＜HB450	＜HB400	45-55HRC	55-60HRC
○	○	○	○			◎	○	◎	○

◎ Most Suitable ○ Suitable

C Boring System

SIT Flat-shank Positioning Sleeve

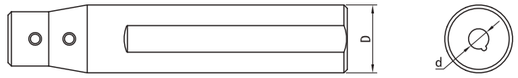
SIT 2000 – 04

① ② ③

①SIT-series Name

② Sleeve Shank Diameter
2000-20mm
2540-25.4mm

③ Tool Shank Diameter
04-4mm
10-10mm



Order No.	D	d
SIT1600-03	16	3
SIT1600-04		4
SIT1600-05		5
SIT1600-06		6
SIT1600-07		7

Order No.	D	d
SIT2000-03	20	3
SIT2000-04		4
SIT2000-05		5
SIT2000-06		6
SIT2000-07		7
SIT2000-08		8

Order No.	D	d
SIT2500-03	25	3
SIT2500-04		4
SIT2500-05		5
SIT2500-06		6
SIT2500-07		7
SIT2500-08		8

Order No.	D	d
SIT1905-03	19.05	3
SIT1905-04		4
SIT1905-05		5
SIT1905-06		6
SIT1905-07		7
SIT1905-08		8

Order No.	D	d
SIT2200-03	22	3
SIT2200-04		4
SIT2200-05		5
SIT2200-06		6
SIT2200-07		7
SIT2200-08		8

Order No.	D	d
SIT2540-03	25.4	3
SIT2540-04		4
SIT2540-05		5
SIT2540-06		6
SIT2540-07		7
SIT2540-08		8

Recommended Cutting Data

Machining Type		Machined Material	Cutting Speed Vc (m/min)	Feed f (mm/rev)	Cutting Depth Ap (mm)
Boring	P	Plain Steel	40-140	0.01-0.08	0-0.05
	M	Stainless Steel	40-140	0.01-0.08	0-0.03
	N	Aluminum Alloy	90-200	0.01-0.08	0-0.06
	S	Difficult-to-machine Materials	30-100	0.01-0.08	0-0.02
Threading	P	Plain Steel	40-140	0.01-0.08	0-0.05
	M	Stainless Steel	40-140	0.01-0.08	0-0.03
	N	Aluminum Alloy	90-200	0.01-0.08	0-0.06
Internal Diameter Slot	P	Plain Steel	40-140	0.01-0.03	/
	M	Stainless Steel	40-140	0.01-0.03	/
	N	Aluminum Alloy	90-200	0.01-0.03	/
	S	Difficult-to-machine Materials	30-100	0.01-0.03	/
End Face Slot	P	Plain Steel	40-140	0.01-0.05	/
	M	Stainless Steel	40-140	0.01-0.05	/
	N	Aluminum Alloy	90-200	0.01-0.05	/
	S	Difficult-to-machine Materials	30-100	0.01-0.05	/

C Boring System

D

TAP

Tap Product Application List

Series Positioning	Dimensional Standards	Threaded Tool Type	Cooling Mode	Tap Diameter Range	P	M	N	K
High performance	DIN	Fluteless Tap	External Cooling	M4-M30	T118-FDN			—
	DIN	Fluteless Tap	Internal Cooling	M4-M30	T118-FDC T118-FDR			—
	DIN	Spiral Fluted Tap	External Cooling	M4-M16	T118-SDN			—
	DIN	Spiral Pointed Tap	External Cooling	M4-M16	T118-PDN			—
	DIN	Straight Fluted Tap	External Cooling	M5-M16	—	—	—	T128-HDN
	DIN	Straight Fluted Tap	Internal Cooling	M5-M16	—	—	—	T128-HDC T128-HDR
Economical	JIS	Fluteless Tap	External Cooling	M1-M16	ET138-FJN	ET168-FJN	ET166-FJN	—
	JIS	Spiral Fluted Tap	External Cooling	M1-M16	ET138-SJN	ET168-SJN	ET166-SJN	—
	JIS	Spiral Pointed Tap	External Cooling	M1-M16	ET138-PJN	ET168-PJN	ET166-PJN	—
	JIS	Straight Fluted Tap	External Cooling	M5-M16	—	—	—	ET128-HJN
	JIS	Straight Fluted Tap	Internal Cooling	M5-M16	—	—	—	ET128-HJC ET128-HJR

Representation Rules for Tap Order No.

T	118	–	S	D	C	030	050	C	–	6HX
①	②		③	④	⑤	⑥	⑦	⑧		⑨

① Tap Category	
T	High-performance Tap
ET	Economic Tap

② Tap Series Number	
118	General Machining Series, Mainly for Machining PKM
128	Cast Iron Machining Series
138	Steel Machining Series
166	Copper Aluminum Alloy Machining Series
168	Stainless Steel Machining Series

③ Tap Type	
S	Spiral Fluted Tap
P	Spiral Pointed Tap
H	Straight Fluted Tap
F	Fluteless Tap

④ Tap Size Standard	
D	German DIN Standard
J	Japanese JIS Standard

⑤ Cooling Mode	
N	External Cooling
C	Internal Cooling of Central Outlet Water
R	Internal Cooling of Side Outlet Water

⑥ Thread Diameter	
030	Metric Tap Diameter M3 mm
U0	American Standard No.0
U916	American System 9/16 Inch

⑦ Pitch (Metric)/Number of Threads per Inch (Imperial)	
030	Metric Tap Pitch 0.5 mm
12	American System 12 Threads per Inch

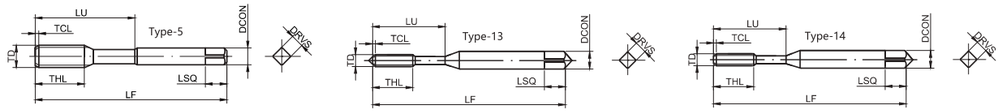
⑨ Tap Accuracy Grade	
6hx	Tap Accuracy Grade
P2	Tap Accuracy Grade
Rh10	Tap Accuracy Grade

⑧ Cutting tap length	
A	Cutting tap length of straight fluted tap 6-8P (pitch)
B	Cutting tap length of spiral pointed tap 3.5-5.5P (pitch)
C	Cutting tap length of straight fluted tap or spiral fluted tap 2-3P (pitch), or extrusion tap length of fluteless tap 2-3P (pitch)
D	Cutting tap length of straight fluted tap or spiral fluted tap 3.5-5P (pitch), or extrusion tap length of fluteless tap 3-5.5P (pitch)
E	Cutting tap length of straight fluted tap or spiral fluted tap 1.5-2P (pitch), or extrusion tap length of fluteless tap 1.5-2P (pitch)
F	Cutting tap length of straight fluted tap or spiral fluted tap 1-1.5P (pitch), or extrusion tap length of fluteless tap 1-1.5P (pitch)

T118-FDN

M | MF | HSS-PM | DIN371/DIN376 | DIN374 | ISO 6HX | TiAl-C

High-performance General Machining Fluteless Tap



Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T118-FDN-040070D-6HX	M4×0.7	4	0.7	6HX	4P	D	13	63	9	21	4.5	3.4	6	4.5×3.4	10.0	4	3.70	○
T118-FDN-040070C-6HX	M4×0.7	4	0.7	6HX	2.5P	C	14	63	9	21	4.5	3.4	6	4.5×3.4	10.0	4	3.70	●
T118-FDN-050080D-6HX	M5×0.8	5	0.8	6HX	4P	D	13	70	10	25	6	4.9	8	6×4.9	12.5	4	4.64	○
T118-FDN-050080C-6HX	M5×0.8	5	0.8	6HX	2.5P	C	14	70	10	25	6	4.9	8	6×4.9	12.5	4	4.64	●
T118-FDN-060100D-6HX	M6×1	6	1	6HX	4P	D	13	80	10	30	6	4.9	8	6×4.9	15.0	4	5.53	○
T118-FDN-060100C-6HX	M6×1	6	1	6HX	2.5P	C	14	80	10	30	6	4.9	8	6×4.9	15.0	4	5.53	●
T118-FDN-070100D-6HX	M7×1	7	1	6HX	4P	D	5	80	10	30	7	5.5	8	7×5.5	17.5	4	6.53	○
T118-FDN-070100C-6HX	M7×1	7	1	6HX	2.5P	C	5	80	10	30	7	5.5	8	7×5.5	17.5	4	6.53	○
T118-FDN-080125D-6HX	M8×1.25	8	1.25	6HX	4P	D	5	90	13	35	8	6.2	9	8×6.2	20.0	8	7.40	○
T118-FDN-080125C-6HX	M8×1.25	8	1.25	6HX	2.5P	C	5	90	13	35	8	6.2	9	8×6.2	20.0	8	7.40	●
T118-FDN-080100D-6HX	M8×1	8	1	6HX	4P	D	5	90	13	35	8	6.2	9	8×6.2	20.0	8	7.53	○
T118-FDN-080100C-6HX	M8×1	8	1	6HX	2.5P	C	5	90	13	35	8	6.2	9	8×6.2	20.0	8	7.53	○
T118-FDN-100150D-6HX	M10×1.5	10	1.5	6HX	4P	D	5	100	15	39	10	8	11	10×8	25.0	10	9.26	○
T118-FDN-100150C-6HX	M10×1.5	10	1.5	6HX	2.5P	C	5	100	15	39	10	8	11	10×8	25.0	10	9.26	●
T118-FDN-100125D-6HX	M10×1.25	10	1.25	6HX	4P	D	5	100	15	39	10	8	11	10×8	25.0	10	9.40	○
T118-FDN-100125C-6HX	M10×1.25	10	1.25	6HX	2.5P	C	5	100	15	39	10	8	11	10×8	25.0	10	9.40	●
T118-FDN-100100D-6HX	M10×1	10	1	6HX	4P	D	5	100	15	39	10	8	11	10×8	25.0	10	9.53	○
T118-FDN-100100C-6HX	M10×1	10	1	6HX	2.5P	C	5	100	15	39	10	8	11	10×8	25.0	10	9.53	○
T118-FDN-120175D-6HX	M12×1.75	12	1.75	6HX	4P	D	5	110	17	49	9	7	10	9×7	30.0	10	11.13	○
T118-FDN-120175C-6HX	M12×1.75	12	1.75	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	10	11.13	●
T118-FDN-120150D-6HX	M12×1.5	12	1.5	6HX	4P	D	5	110	17	49	9	7	10	9×7	30.0	10	11.26	○
T118-FDN-120150C-6HX	M12×1.5	12	1.5	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	10	11.26	●

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	○		○			◎		◎					

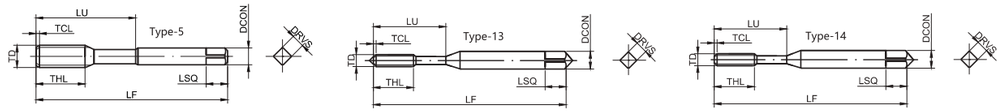
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P289

T118-FDN

M | MF | HSS-PM | DIN371/DIN376 | DIN374 | ISO 6HX | TiAl-C

High-performance General Machining Fluteless Tap



Continued

Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T118-FDN-120125D-6HX	M12×1.25	12	1.25	6HX	4P	D	5	110	17	49	9	7	10	9×7	30.0	10	11.40	○
T118-FDN-120125C-6HX	M12×1.25	12	1.25	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	10	11.40	●
T118-FDN-120100D-6HX	M12×1	12	1	6HX	4P	D	5	110	17	49	9	7	10	9×7	30.0	10	11.53	○
T118-FDN-120100C-6HX	M12×1	12	1	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	10	11.53	○
T118-FDN-140200D-6HX	M14×2	14	2	6HX	4P	D	5	110	20	53	11	9	12	11×9	35.0	10	12.99	○
T118-FDN-140200C-6HX	M14×2	14	2	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	10	12.99	●
T118-FDN-140150D-6HX	M14×1.5	14	1.5	6HX	4P	D	5	110	20	53	11	9	12	11×9	35.0	10	13.26	○
T118-FDN-140150C-6HX	M14×1.5	14	1.5	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	10	13.26	●
T118-FDN-140125D-6HX	M14×1.25	14	1.25	6HX	4P	D	5	110	20	53	11	9	12	11×9	35.0	10	13.40	○
T118-FDN-140125C-6HX	M14×1.25	14	1.25	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	10	13.40	○
T118-FDN-140100D-6HX	M14×1	14	1	6HX	4P	D	5	110	20	53	11	9	12	11×9	35.0	10	13.53	○
T118-FDN-140100C-6HX	M14×1	14	1	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	10	13.53	○
T118-FDN-160200D-6HX	M16×2	16	2	6HX	4P	D	5	110	20	54	12	9	12	12×9	40.0	12	14.99	○
T118-FDN-160200C-6HX	M16×2	16	2	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	12	14.99	●
T118-FDN-160150D-6HX	M16×1.5	16	1.5	6HX	4P	D	5	110	20	54	12	9	12	12×9	40.0	12	15.26	○
T118-FDN-160150C-6HX	M16×1.5	16	1.5	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	12	15.26	●
T118-FDN-160125D-6HX	M16×1.25	16	1.25	6HX	4P	D	5	110	20	54	12	9	12	12×9	40.0	12	15.40	○
T118-FDN-160125C-6HX	M16×1.25	16	1.25	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	12	15.40	○
T118-FDN-160100D-6HX	M16×1	16	1	6HX	4P	D	5	110	20	54	12	9	12	12×9	40.0	12	15.53	○
T118-FDN-160100C-6HX	M16×1	16	1	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	12	15.53	○
T118-FDN-180250D-6HX	M18×2.5	18	2.5	6HX	4P	D	5	125	25	61	14	11	14	14×11	45.0	12	16.72	○
T118-FDN-180250C-6HX	M18×2.5	18	2.5	6HX	2.5P	C	5	125	25	61	14	11	14	14×11	45.0	12	16.72	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	○		○			◎		◎					

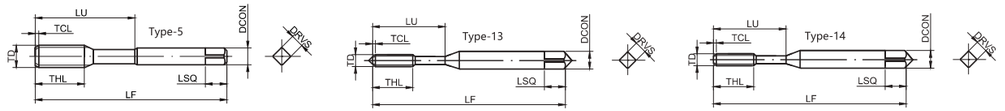
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P289

D Tap

T118-FDN

High-performance General Machining Fluteless Tap



Continued

Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T118-FDN-180200D-6HX	M18×2	18	2	6HX	4P	D	5	125	25	61	14	11	14	14×11	45.0	12	16.99	○
T118-FDN-180200C-6HX	M18×2	18	2	6HX	2.5P	C	5	125	25	61	14	11	14	14×11	45.0	12	16.99	○
T118-FDN-180150D-6HX	M18×1.5	18	1.5	6HX	4P	D	5	125	25	61	14	11	14	14×11	45.0	12	17.26	○
T118-FDN-180150C-6HX	M18×1.5	18	1.5	6HX	2.5P	C	5	125	25	61	14	11	14	14×11	45.0	12	17.26	○
T118-FDN-200250D-6HX	M20×2.5	20	2.5	6HX	4P	D	5	140	25	69	16	12	15	16×12	50.0	12	18.72	○
T118-FDN-200250C-6HX	M20×2.5	20	2.5	6HX	2.5P	C	5	140	25	69	16	12	15	16×12	50.0	12	18.72	○
T118-FDN-200200D-6HX	M20×2	20	2	6HX	4P	D	5	140	25	69	16	12	15	16×12	50.0	12	18.99	○
T118-FDN-200200C-6HX	M20×2	20	2	6HX	2.5P	C	5	140	25	69	16	12	15	16×12	50.0	12	18.99	○
T118-FDN-200150D-6HX	M20×1.5	20	1.5	6HX	4P	D	5	140	25	69	16	12	15	16×12	50.0	12	19.26	○
T118-FDN-200150C-6HX	M20×1.5	20	1.5	6HX	2.5P	C	5	140	25	69	16	12	15	16×12	50.0	12	19.26	○
T118-FDN-220250D-6HX	M22×2.5	22	2.5	6HX	4P	D	5	140	25	69	18	14.5	17	18×14.5	55.0	12	20.72	○
T118-FDN-220250C-6HX	M22×2.5	22	2.5	6HX	2.5P	C	5	140	25	69	18	14.5	17	18×14.5	55.0	12	20.72	○
T118-FDN-220200D-6HX	M22×2	22	2	6HX	4P	D	5	140	25	69	18	14.5	17	18×14.5	55.0	12	20.99	○
T118-FDN-220200C-6HX	M22×2	22	2	6HX	2.5P	C	5	140	25	69	18	14.5	17	18×14.5	55.0	12	20.99	○
T118-FDN-220150D-6HX	M22×1.5	22	1.5	6HX	4P	D	5	140	25	69	18	14.5	17	18×14.5	55.0	12	21.26	○
T118-FDN-220150C-6HX	M22×1.5	22	1.5	6HX	2.5P	C	5	140	25	69	18	14.5	17	18×14.5	55.0	12	21.26	○
T118-FDN-240300D-6HX	M24×3	24	3	6HX	4P	D	5	160	30	78	18	14.5	17	18×14.5	60.0	12	22.45	○
T118-FDN-240300C-6HX	M24×3	24	3	6HX	2.5P	C	5	160	30	78	18	14.5	17	18×14.5	60.0	12	22.45	○
T118-FDN-240250D-6HX	M24×2.5	24	2.5	6HX	4P	D	5	160	30	78	18	14.5	17	18×14.5	60.0	12	22.72	○
T118-FDN-240250C-6HX	M24×2.5	24	2.5	6HX	2.5P	C	5	160	30	78	18	14.5	17	18×14.5	60.0	12	22.72	○
T118-FDN-240200D-6HX	M24×2	24	2	6HX	4P	D	5	160	30	78	18	14.5	17	18×14.5	60.0	12	22.99	○
T118-FDN-240200C-6HX	M24×2	24	2	6HX	2.5P	C	5	160	30	78	18	14.5	17	18×14.5	60.0	12	22.99	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

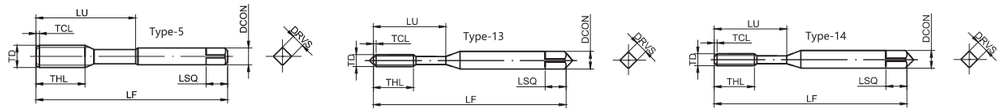
Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	○		○			◎		◎					

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P289

T118-FDN

High-performance General Machining Fluteless Tap



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Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T118-FDN-270300D-6HX	M27×3	27	3	6HX	4P	D	5	160	30	78	20	16	19	20×16	67.5	12	25.45	○
T118-FDN-270300C-6HX	M27×3	27	3	6HX	2.5P	C	5	160	30	78	20	16	19	20×16	67.5	12	25.45	○
T118-FDN-270250D-6HX	M27×2.5	27	2.5	6HX	4P	D	5	160	30	78	20	16	19	20×16	67.5	12	25.72	○
T118-FDN-270250C-6HX	M27×2.5	27	2.5	6HX	2.5P	C	5	160	30	78	20	16	19	20×16	67.5	12	25.72	○
T118-FDN-270200D-6HX	M27×2	27	2	6HX	4P	D	5	160	30	78	20	16	19	20×16	67.5	12	25.99	○
T118-FDN-270200C-6HX	M27×2	27	2	6HX	2.5P	C	5	160	30	78	20	16	19	20×16	67.5	12	25.99	○
T118-FDN-300350D-6HX	M30×3.5	30	3.5	6HX	4P	D	5	180	35	88	22	18	21	22×18	75.0	12	28.18	○
T118-FDN-300350C-6HX	M30×3.5	30	3.5	6HX	2.5P	C	5	180	35	88	22	18	21	22×18	75.0	12	28.18	○
T118-FDN-300300D-6HX	M30×3	30	3	6HX	4P	D	5	180	35	88	22	18	21	22×18	75.0	12	28.45	○
T118-FDN-300300C-6HX	M30×3	30	3	6HX	2.5P	C	5	180	35	88	22	18	21	22×18	75.0	12	28.45	○
T118-FDN-300250D-6HX	M30×2.5	30	2.5	6HX	4P	D	5	180	35	88	22	18	21	22×18	75.0	12	28.72	○
T118-FDN-300250C-6HX	M30×2.5	30	2.5	6HX	2.5P	C	5	180	35	88	22	18	21	22×18	75.0	12	28.72	○
T118-FDN-300200D-6HX	M30×2	30	2	6HX	4P	D	5	180	35	88	22	18	21	22×18	75.0	12	28.99	○
T118-FDN-300200C-6HX	M30×2	30	2	6HX	2.5P	C	5	180	35	88	22	18	21	22×18	75.0	12	28.99	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	○		○			◎		◎					

◎ Most Suitable ○ Suitable

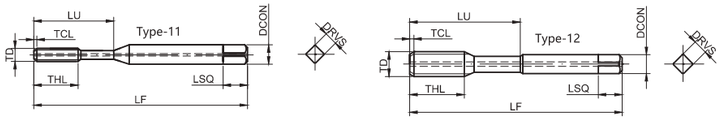
Recommended Cutting Data ※ P289

D Tap

T118-FDC

M | MF | HSS-PM | DIN371/DIN376 | DIN374 | ISO 6HX | TiAl-C

High-performance Internal Cooling General Machining Fluteless Tap



Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T118-FDC-040070C-6HX	M4×0.7	4	0.7	6HX	2.5P	C	11	63	9	21	4.5	3.4	6	4.5×3.4	10.0	4	3.70	○
T118-FDC-050080C-6HX	M5×0.8	5	0.8	6HX	2.5P	C	11	70	10	25	6	4.9	8	6×4.9	12.5	4	4.64	○
T118-FDC-060100C-6HX	M6×1	6	1	6HX	2.5P	C	11	80	10	30	6	4.9	8	6×4.9	15.0	4	5.53	●
T118-FDC-070100C-6HX	M7×1	7	1	6HX	2.5P	C	12	80	10	30	7	5.5	8	7×5.5	17.5	4	6.53	○
T118-FDC-080125C-6HX	M8×1.25	8	1.25	6HX	2.5P	C	12	90	13	35	8	6.2	9	8×6.2	20.0	8	7.40	●
T118-FDC-080100C-6HX	M8×1	8	1	6HX	2.5P	C	12	90	13	35	8	6.2	9	8×6.2	20.0	8	7.53	○
T118-FDC-100150C-6HX	M10×1.5	10	1.5	6HX	2.5P	C	12	100	15	39	10	8	11	10×8	25.0	10	9.26	●
T118-FDC-100125C-6HX	M10×1.25	10	1.25	6HX	2.5P	C	12	100	15	39	10	8	11	10×8	25.0	10	9.40	○
T118-FDC-100100C-6HX	M10×1	10	1	6HX	2.5P	C	12	100	15	39	10	8	11	10×8	25.0	10	9.53	○
T118-FDC-120175C-6HX	M12×1.75	12	1.75	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30.0	10	11.13	●
T118-FDC-120150C-6HX	M12×1.5	12	1.5	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30.0	10	11.26	○
T118-FDC-120125C-6HX	M12×1.25	12	1.25	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30.0	10	11.40	○
T118-FDC-120100C-6HX	M12×1	12	1	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30.0	10	11.53	○
T118-FDC-140200C-6HX	M14×2	14	2	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35.0	10	12.99	○
T118-FDC-140150C-6HX	M14×1.5	14	1.5	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35.0	10	13.26	○
T118-FDC-140125C-6HX	M14×1.25	14	1.25	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35.0	10	13.40	○
T118-FDC-140100C-6HX	M14×1	14	1	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35.0	10	13.53	○
T118-FDC-160200C-6HX	M16×2	16	2	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40.0	12	14.99	○
T118-FDC-160150C-6HX	M16×1.5	16	1.5	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40.0	12	15.26	○
T118-FDC-160125C-6HX	M16×1.25	16	1.25	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40.0	12	15.40	○
T118-FDC-160100C-6HX	M16×1	16	1	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40.0	12	15.53	○
T118-FDC-180250C-6HX	M18×2.5	18	2.5	6HX	2.5P	C	12	125	25	61	14	11	14	14×11	45.0	12	16.72	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	○		◎			◎		◎					

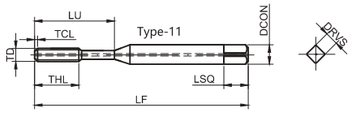
◎ Most Suitable ○ Suitable

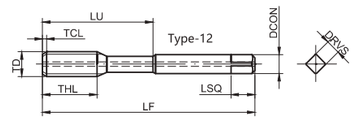
Recommended Cutting Data ※ P289

T118-FDC

M | MF | HSS-PM | DIN371/DIN376 | DIN374 | ISO 6HX | TiAl-C

High-performance Internal Cooling General Machining Fluteless Tap





Continued

Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T118-FDC-180200C-6HX	M18×2	18	2	6HX	2.5P	C	12	125	25	61	14	11	14	14×11	45.0	12	16.99	○
T118-FDC-180150C-6HX	M18×1.5	18	1.5	6HX	2.5P	C	12	125	25	61	14	11	14	14×11	45.0	12	17.26	○
T118-FDC-200250C-6HX	M20×2.5	20	2.5	6HX	2.5P	C	12	140	25	69	16	12	15	16×12	50.0	12	18.72	○
T118-FDC-200200C-6HX	M20×2	20	2	6HX	2.5P	C	12	140	25	69	16	12	15	16×12	50.0	12	18.99	○
T118-FDC-200150C-6HX	M20×1.5	20	1.5	6HX	2.5P	C	12	140	25	69	16	12	15	16×12	50.0	12	19.26	○
T118-FDC-220250C-6HX	M22×2.5	22	2.5	6HX	2.5P	C	12	140	25	69	18	14.5	17	18×14.5	55.0	12	20.72	○
T118-FDC-220200C-6HX	M22×2	22	2	6HX	2.5P	C	12	140	25	69	18	14.5	17	18×14.5	55.0	12	20.99	○
T118-FDC-220150C-6HX	M22×1.5	22	1.5	6HX	2.5P	C	12	140	25	69	18	14.5	17	18×14.5	55.0	12	21.26	○
T118-FDC-240300C-6HX	M24×3	24	3	6HX	2.5P	C	12	160	30	78	18	14.5	17	18×14.5	60.0	12	22.45	○
T118-FDC-240250C-6HX	M24×2.5	24	2.5	6HX	2.5P	C	12	160	30	78	18	14.5	17	18×14.5	60.0	12	22.72	○
T118-FDC-240200C-6HX	M24×2	24	2	6HX	2.5P	C	12	160	30	78	18	14.5	17	18×14.5	60.0	12	22.99	○
T118-FDC-270300C-6HX	M27×3	27	3	6HX	2.5P	C	12	160	30	78	20	16	19	20×16	67.5	12	25.45	○
T118-FDC-270250C-6HX	M27×2.5	27	2.5	6HX	2.5P	C	12	160	30	78	20	16	19	20×16	67.5	12	25.72	○
T118-FDC-270200C-6HX	M27×2	27	2	6HX	2.5P	C	12	160	30	78	20	16	19	20×16	67.5	12	25.99	○
T118-FDC-300350C-6HX	M30×3.5	30	3.5	6HX	2.5P	C	12	180	35	88	22	18	21	22×18	75.0	12	28.18	○
T118-FDC-300300C-6HX	M30×3	30	3	6HX	2.5P	C	12	180	35	88	22	18	21	22×18	75.0	12	28.45	○
T118-FDC-300250C-6HX	M30×2.5	30	2.5	6HX	2.5P	C	12	180	35	88	22	18	21	22×18	75.0	12	28.72	○
T118-FDC-300200C-6HX	M30×2	30	2	6HX	2.5P	C	12	180	35	88	22	18	21	22×18	75.0	12	28.99	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	○		◎			◎		◎					

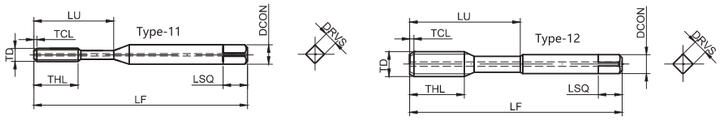
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P289

D Tap

T118-FDR

High-performance Internal Cooling General Machining Fluteless Tap



Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T118-FDR-040070D-6HX	M4×0.7	4	0.7	6HX	4P	D	11	63	9	21	4.5	3.4	6	4.5×3.4	10.0	4	3.70	○
T118-FDR-050080D-6HX	M5×0.8	5	0.8	6HX	4P	D	11	70	10	25	6	4.9	8	6×4.9	12.5	4	4.64	○
T118-FDR-060100D-6HX	M6×1	6	1	6HX	4P	D	11	80	10	30	6	4.9	8	6×4.9	15.0	4	5.53	○
T118-FDR-070100D-6HX	M7×1	7	1	6HX	4P	D	12	80	10	30	7	5.5	8	7×5.5	17.5	4	6.53	○
T118-FDR-080125D-6HX	M8×1.25	8	1.25	6HX	4P	D	12	90	13	35	8	6.2	9	8×6.2	20.0	8	7.40	○
T118-FDR-080100D-6HX	M8×1	8	1	6HX	4P	D	12	90	13	35	8	6.2	9	8×6.2	20.0	8	7.53	○
T118-FDR-100150D-6HX	M10×1.5	10	1.5	6HX	4P	D	12	100	15	39	10	8	11	10×8	25.0	10	9.26	○
T118-FDR-100125D-6HX	M10×1.25	10	1.25	6HX	4P	D	12	100	15	39	10	8	11	10×8	25.0	10	9.40	○
T118-FDR-100100D-6HX	M10×1	10	1	6HX	4P	D	12	100	15	39	10	8	11	10×8	25.0	10	9.53	○
T118-FDR-120175D-6HX	M12×1.75	12	1.75	6HX	4P	D	12	110	17	49	9	7	10	9×7	30.0	10	11.13	○
T118-FDR-120150D-6HX	M12×1.5	12	1.5	6HX	4P	D	12	110	17	49	9	7	10	9×7	30.0	10	11.26	○
T118-FDR-120125D-6HX	M12×1.25	12	1.25	6HX	4P	D	12	110	17	49	9	7	10	9×7	30.0	10	11.40	○
T118-FDR-120100D-6HX	M12×1	12	1	6HX	4P	D	12	110	17	49	9	7	10	9×7	30.0	10	11.53	○
T118-FDR-140200D-6HX	M14×2	14	2	6HX	4P	D	12	110	20	53	11	9	12	11×9	35.0	10	12.99	○
T118-FDR-140150D-6HX	M14×1.5	14	1.5	6HX	4P	D	12	110	20	53	11	9	12	11×9	35.0	10	13.26	○
T118-FDR-140125D-6HX	M14×1.25	14	1.25	6HX	4P	D	12	110	20	53	11	9	12	11×9	35.0	10	13.40	○
T118-FDR-140100D-6HX	M14×1	14	1	6HX	4P	D	12	110	20	53	11	9	12	11×9	35.0	10	13.53	○
T118-FDR-160200D-6HX	M16×2	16	2	6HX	4P	D	12	110	20	54	12	9	12	12×9	40.0	12	14.99	○
T118-FDR-160150D-6HX	M16×1.5	16	1.5	6HX	4P	D	12	110	20	54	12	9	12	12×9	40.0	12	15.26	○
T118-FDR-160125D-6HX	M16×1.25	16	1.25	6HX	4P	D	12	110	20	54	12	9	12	12×9	40.0	12	15.40	○
T118-FDR-160100D-6HX	M16×1	16	1	6HX	4P	D	12	110	20	54	12	9	12	12×9	40.0	12	15.53	○
T118-FDR-180250D-6HX	M18×2.5	18	2.5	6HX	4P	D	12	125	25	61	14	11	14	14×11	45.0	12	16.72	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

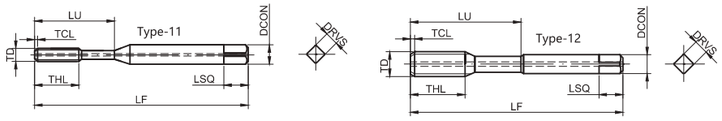
Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon steel, alloy steel	Alloy steel, tool steel	PH and ferritic/ martensitic steel	Stainless steel	Gray cast iron, nodular cast iron	High alloy cast iron	Forged aluminum alloy, cast aluminium alloy	Cast aluminum alloy	Copper alloy	Composite material	High-temperature alloy	Titanium alloy	Hardened steel	Hardened steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
◎	○		◎			◎		◎						

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P289

T118-FDR

High-performance Internal Cooling General Machining Fluteless Tap



Continued

Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T118-FDR-180200D-6HX	M18×2	18	2	6HX	4P	D	12	125	25	61	14	11	14	14×11	45.0	12	16.99	○
T118-FDR-180150D-6HX	M18×1.5	18	1.5	6HX	4P	D	12	125	25	61	14	11	14	14×11	45.0	12	17.26	○
T118-FDR-200250D-6HX	M20×2.5	20	2.5	6HX	4P	D	12	140	25	69	16	12	15	16×12	50.0	12	18.72	○
T118-FDR-200200D-6HX	M20×2	20	2	6HX	4P	D	12	140	25	69	16	12	15	16×12	50.0	12	18.99	○
T118-FDR-200150D-6HX	M20×1.5	20	1.5	6HX	4P	D	12	140	25	69	16	12	15	16×12	50.0	12	19.26	○
T118-FDR-220250D-6HX	M22×2.5	22	2.5	6HX	4P	D	12	140	25	69	18	14.5	17	18×14.5	55.0	12	20.72	○
T118-FDR-220200D-6HX	M22×2	22	2	6HX	4P	D	12	140	25	69	18	14.5	17	18×14.5	55.0	12	20.99	○
T118-FDR-220150D-6HX	M22×1.5	22	1.5	6HX	4P	D	12	140	25	69	18	14.5	17	18×14.5	55.0	12	21.26	○
T118-FDR-240300D-6HX	M24×3	24	3	6HX	4P	D	12	160	30	78	18	14.5	17	18×14.5	60.0	12	22.45	○
T118-FDR-240250D-6HX	M24×2.5	24	2.5	6HX	4P	D	12	160	30	78	18	14.5	17	18×14.5	60.0	12	22.72	○
T118-FDR-240200D-6HX	M24×2	24	2	6HX	4P	D	12	160	30	78	18	14.5	17	18×14.5	60.0	12	22.99	○
T118-FDR-270300D-6HX	M27×3	27	3	6HX	4P	D	12	160	30	78	20	16	19	20×16	67.5	12	25.45	○
T118-FDR-270250D-6HX	M27×2.5	27	2.5	6HX	4P	D	12	160	30	78	20	16	19	20×16	67.5	12	25.72	○
T118-FDR-270200D-6HX	M27×2	27	2	6HX	4P	D	12	160	30	78	20	16	19	20×16	67.5	12	25.99	○
T118-FDR-300350D-6HX	M30×3.5	30	3.5	6HX	4P	D	12	180	35	88	22	18	21	22×18	75.0	12	28.18	○
T118-FDR-300300D-6HX	M30×3	30	3	6HX	4P	D	12	180	35	88	22	18	21	22×18	75.0	12	28.45	○
T118-FDR-300250D-6HX	M30×2.5	30	2.5	6HX	4P	D	12	180	35	88	22	18	21	22×18	75.0	12	28.72	○
T118-FDR-300200D-6HX	M30×2	30	2	6HX	4P	D	12	180	35	88	22	18	21	22×18	75.0	12	28.99	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
◎	○		◎			◎		◎						

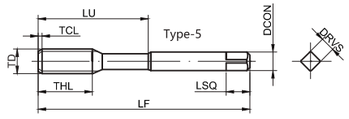
◎ Most Suitable ○ Suitable

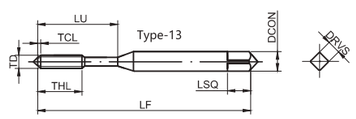
Recommended Cutting Data ※ P289

D Tap

T118-SDN

High-performance General Machining Spiral Fluted Tap





Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T118-SDN-040070C-6HX	M4×0.7	4	0.7	6HX	2.5P	C	13	63	9	21	4.5	3.4	6	4.5×3.4	10.0	3	3.30	●
T118-SDN-050080C-6HX	M5×0.8	5	0.8	6HX	2.5P	C	13	70	10	25	6	4.9	8	6×4.9	12.5	3	4.20	●
T118-SDN-060100C-6HX	M6×1	6	1	6HX	2.5P	C	13	80	10	30	6	4.9	8	6×4.9	15.0	3	5.00	●
T118-SDN-070100C-6HX	M7×1	7	1	6HX	2.5P	C	5	80	10	30	7	5.5	8	7×5.5	17.5	3	6.00	○
T118-SDN-080125C-6HX	M8×1.25	8	1.25	6HX	2.5P	C	5	90	13	35	8	6.2	9	8×6.2	20.0	3	6.75	●
T118-SDN-080100C-6HX	M8×1	8	1	6HX	2.5P	C	5	90	13	35	8	6.2	9	8×6.2	20.0	3	7.00	●
T118-SDN-100150C-6HX	M10×1.5	10	1.5	6HX	2.5P	C	5	100	15	39	10	8	11	10×8	25.0	3	8.50	●
T118-SDN-100125C-6HX	M10×1.25	10	1.25	6HX	2.5P	C	5	100	15	39	10	8	11	10×8	25.0	3	8.75	●
T118-SDN-100100C-6HX	M10×1	10	1	6HX	2.5P	C	5	100	15	39	10	8	11	10×8	25.0	3	9.00	○
T118-SDN-120175C-6HX	M12×1.75	12	1.75	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	3	10.25	●
T118-SDN-120150C-6HX	M12×1.5	12	1.5	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	3	10.50	●
T118-SDN-120125C-6HX	M12×1.25	12	1.25	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	3	10.75	●
T118-SDN-120100C-6HX	M12×1	12	1	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	3	11.00	○
T118-SDN-140200C-6HX	M14×2	14	2	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	4	12.00	●
T118-SDN-140150C-6HX	M14×1.5	14	1.5	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	4	12.50	●
T118-SDN-140125C-6HX	M14×1.25	14	1.25	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	4	12.75	○
T118-SDN-140100C-6HX	M14×1	14	1	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	4	13.00	○
T118-SDN-160200C-6HX	M16×2	16	2	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	4	14.00	●
T118-SDN-160150C-6HX	M16×1.5	16	1.5	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	4	14.50	●
T118-SDN-160125C-6HX	M16×1.25	16	1.25	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	4	14.75	○
T118-SDN-160100C-6HX	M16×1	16	1	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	4	15.00	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is for reference only.

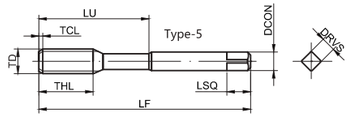
Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	○		○	○	○	○	○	○					

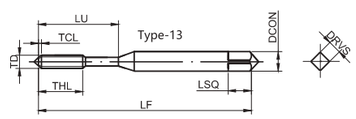
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P289

T118-PDN

High-performance General Machining Spiral Pointed Tap





Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T118-PDN-040070B-6HX	M4×0.7	4	0.7	6HX	5P	B	13	63	9	21	4.5	3.4	6	4.5×3.4	10.0	3	3.30	●
T118-PDN-050080B-6HX	M5×0.8	5	0.8	6HX	5P	B	13	70	10	25	6	4.9	8	6×4.9	12.5	3	4.20	●
T118-PDN-060100B-6HX	M6×1	6	1	6HX	5P	B	13	80	10	30	6	4.9	8	6×4.9	15.0	3	5.00	●
T118-PDN-070100B-6HX	M7×1	7	1	6HX	5P	B	5	80	10	30	7	5.5	8	7×5.5	17.5	3	6.00	○
T118-PDN-080125B-6HX	M8×1.25	8	1.25	6HX	5P	B	5	90	13	35	8	6.2	9	8×6.2	20.0	3	6.75	●
T118-PDN-080100B-6HX	M8×1	8	1	6HX	5P	B	5	90	13	35	8	6.2	9	8×6.2	20.0	3	7.00	●
T118-PDN-100150B-6HX	M10×1.5	10	1.5	6HX	5P	B	5	100	15	39	10	8	11	10×8	25.0	3	8.50	●
T118-PDN-100125B-6HX	M10×1.25	10	1.25	6HX	5P	B	5	100	15	39	10	8	11	10×8	25.0	3	8.75	●
T118-PDN-100100B-6HX	M10×1	10	1	6HX	5P	B	5	100	15	39	10	8	11	10×8	25.0	3	9.00	○
T118-PDN-120175B-6HX	M12×1.75	12	1.75	6HX	5P	B	5	110	17	49	9	7	10	9×7	30.0	4	10.25	●
T118-PDN-120150B-6HX	M12×1.5	12	1.5	6HX	5P	B	5	110	17	49	9	7	10	9×7	30.0	4	10.50	●
T118-PDN-120125B-6HX	M12×1.25	12	1.25	6HX	5P	B	5	110	17	49	9	7	10	9×7	30.0	4	10.75	●
T118-PDN-120100B-6HX	M12×1	12	1	6HX	5P	B	5	110	17	49	9	7	10	9×7	30.0	4	11.00	○
T118-PDN-140200B-6HX	M14×2	14	2	6HX	5P	B	5	110	20	53	11	9	12	11×9	35.0	4	12.00	●
T118-PDN-140150B-6HX	M14×1.5	14	1.5	6HX	5P	B	5	110	20	53	11	9	12	11×9	35.0	4	12.50	●
T118-PDN-140125B-6HX	M14×1.25	14	1.25	6HX	5P	B	5	110	20	53	11	9	12	11×9	35.0	4	12.75	○
T118-PDN-140100B-6HX	M14×1	14	1	6HX	5P	B	5	110	20	53	11	9	12	11×9	35.0	4	13.00	○
T118-PDN-160200B-6HX	M16×2	16	2	6HX	5P	B	5	110	20	54	12	9	12	12×9	40.0	4	14.00	●
T118-PDN-160150B-6HX	M16×1.5	16	1.5	6HX	5P	B	5	110	20	54	12	9	12	12×9	40.0	4	14.50	●
T118-PDN-160125B-6HX	M16×1.25	16	1.25	6HX	5P	B	5	110	20	54	12	9	12	12×9	40.0	4	14.75	○
T118-PDN-160100B-6HX	M16×1	16	1	6HX	5P	B	5	110	20	54	12	9	12	12×9	40.0	4	15.00	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎	○		○	○	○	○	○	○					

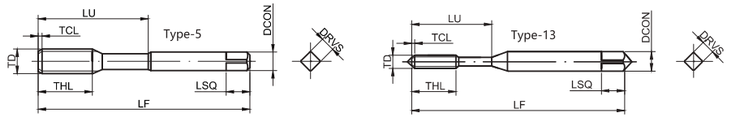
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P289

D Tap

T128-HDN

High-performance Cast Iron Machining Straight Fluted Tap



Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T128-HDN-050080C-6HX	M5×0.8	5	0.8	6HX	2.5P	C	13	70	10	25	6	4.9	8	6×4.9	12.5	3	4.20	●
T128-HDN-060100C-6HX	M6×1	6	1	6HX	2.5P	C	13	80	10	30	6	4.9	8	6×4.9	15.0	3	5.00	●
T128-HDN-070100C-6HX	M7×1	7	1	6HX	2.5P	C	13	80	10	30	7	5.5	8	7×5.5	17.5	3	6.00	○
T128-HDN-080125C-6HX	M8×1.25	8	1.25	6HX	2.5P	C	5	90	13	35	8	6.2	9	8×6.2	20.0	4	6.75	●
T128-HDN-080100C-6HX	M8×1	8	1	6HX	2.5P	C	5	90	13	35	8	6.2	9	8×6.2	20.0	4	7.00	○
T128-HDN-100150C-6HX	M10×1.5	10	1.5	6HX	2.5P	C	5	100	15	39	10	8	11	10×8	25.0	4	8.50	●
T128-HDN-100125C-6HX	M10×1.25	10	1.25	6HX	2.5P	C	5	100	15	39	10	8	11	10×8	25.0	4	8.75	●
T128-HDN-100100C-6HX	M10×1	10	1	6HX	2.5P	C	5	100	15	39	10	8	11	10×8	25.0	4	9.00	○
T128-HDN-120175C-6HX	M12×1.75	12	1.75	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	4	10.25	●
T128-HDN-120150C-6HX	M12×1.5	12	1.5	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	4	10.50	●
T128-HDN-120125C-6HX	M12×1.25	12	1.25	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	4	10.75	○
T128-HDN-120100C-6HX	M12×1	12	1	6HX	2.5P	C	5	110	17	49	9	7	10	9×7	30.0	4	11.00	○
T128-HDN-140200C-6HX	M14×2	14	2	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	4	12.00	●
T128-HDN-140150C-6HX	M14×1.5	14	1.5	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	4	12.50	●
T128-HDN-140125C-6HX	M14×1.25	14	1.25	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	4	12.75	○
T128-HDN-140100C-6HX	M14×1	14	1	6HX	2.5P	C	5	110	20	53	11	9	12	11×9	35.0	4	13.00	○
T128-HDN-160200C-6HX	M16×2	16	2	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	4	14.00	●
T128-HDN-160150C-6HX	M16×1.5	16	1.5	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	4	14.50	●
T128-HDN-160125C-6HX	M16×1.25	16	1.25	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	4	14.75	○
T128-HDN-160100C-6HX	M16×1	16	1	6HX	2.5P	C	5	110	20	54	12	9	12	12×9	40.0	4	15.00	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is for reference only.

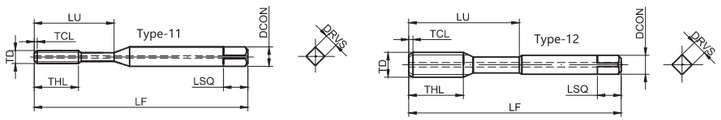
Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
				◎	○								

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P289

T128-HDC

High-performance Straight Fluted Tap for Internal Cooling Cast Iron Machining



Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T128-HDC-050080C-6HX	M5×0.8	5.000	0.8	6HX	2.5P	C	11	70	10	25	6	4.9	8	6×4.9	12.5	3	4.20	○
T128-HDC-060100C-6HX	M6×1	6.000	1	6HX	2.5P	C	11	80	10	30	6	4.9	8	6×4.9	15	3	5.00	○
T128-HDC-070100C-6HX	M7×1	7.000	1	6HX	2.5P	C	11	80	10	30	7	5.5	8	7×5.5	17.5	3	6.00	○
T128-HDC-080125C-6HX	M8×1.25	8.000	1.25	6HX	2.5P	C	12	90	13	35	8	6.2	9	8×6.2	20	4	6.75	○
T128-HDC-080100C-6HX	M8×1	8.000	1	6HX	2.5P	C	12	90	13	35	8	6.2	9	8×6.2	20	4	7.00	○
T128-HDC-100150C-6HX	M10×1.5	10.000	1.5	6HX	2.5P	C	12	100	15	39	10	8	11	10×8	25	4	8.50	○
T128-HDC-100125C-6HX	M10×1.25	10.000	1.25	6HX	2.5P	C	12	100	15	39	10	8	11	10×8	25	4	8.75	○
T128-HDC-100100C-6HX	M10×1	10.000	1	6HX	2.5P	C	12	100	15	39	10	8	11	10×8	25	4	9.00	○
T128-HDC-120175C-6HX	M12×1.75	12.000	1.75	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30	4	10.25	○
T128-HDC-120150C-6HX	M12×1.5	12.000	1.5	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30	4	10.50	○
T128-HDC-120125C-6HX	M12×1.25	12.000	1.25	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30	4	10.75	○
T128-HDC-120100C-6HX	M12×1	12.000	1	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30	4	11.00	○
T128-HDC-140200C-6HX	M14×2	14.000	2	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35	4	12.00	○
T128-HDC-140150C-6HX	M14×1.5	14.000	1.5	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35	4	12.50	○
T128-HDC-140125C-6HX	M14×1.25	14.000	1.25	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35	4	12.75	○
T128-HDC-140100C-6HX	M14×1	14.000	1	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35	4	13.00	○
T128-HDC-160200C-6HX	M16×2	16.000	2	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40	4	14.00	○
T128-HDC-160150C-6HX	M16×1.5	16.000	1.5	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40	4	14.50	○
T128-HDC-160125C-6HX	M16×1.25	16.000	1.25	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40	4	14.75	○
T128-HDC-160100C-6HX	M16×1	16.000	1	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40	4	15.00	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
				◎	○								

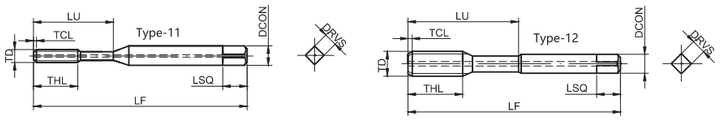
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P289

D Tap

T128-HDR

High-performanceStraight Fluted Tap for Internal Cooling Cast Iron Machining



Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
T128-HDR-050080C-6HX	M5×0.8	5	0.8	6HX	2.5P	C	11	70	10	25	6	4.9	8	6×4.9	12.5	3	4.20	○
T128-HDR-060100C-6HX	M6×1	6	1	6HX	2.5P	C	11	80	10	30	6	4.9	8	6×4.9	15.0	3	5.00	○
T128-HDR-070100C-6HX	M7×1	7	1	6HX	2.5P	C	11	80	10	30	7	5.5	8	7×5.5	17.5	3	6.00	○
T128-HDR-080125C-6HX	M8×1.25	8	1.25	6HX	2.5P	C	12	90	13	35	8	6.2	9	8×6.2	20.0	4	6.75	○
T128-HDR-080100C-6HX	M8×1	8	1	6HX	2.5P	C	12	90	13	35	8	6.2	9	8×6.2	20.0	4	7.00	○
T128-HDR-100150C-6HX	M10×1.5	10	1.5	6HX	2.5P	C	12	100	15	39	10	8	11	10×8	25.0	4	8.50	○
T128-HDR-100125C-6HX	M10×1.25	10	1.25	6HX	2.5P	C	12	100	15	39	10	8	11	10×8	25.0	4	8.75	○
T128-HDR-100100C-6HX	M10×1	10	1	6HX	2.5P	C	12	100	15	39	10	8	11	10×8	25.0	4	9.00	○
T128-HDR-120175C-6HX	M12×1.75	12	1.75	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30.0	4	10.25	○
T128-HDR-120150C-6HX	M12×1.5	12	1.5	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30.0	4	10.50	○
T128-HDR-120125C-6HX	M12×1.25	12	1.25	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30.0	4	10.75	○
T128-HDR-120100C-6HX	M12×1	12	1	6HX	2.5P	C	12	110	17	49	9	7	10	9×7	30.0	4	11.00	○
T128-HDR-140200C-6HX	M14×2	14	2	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35.0	4	12.00	○
T128-HDR-140150C-6HX	M14×1.5	14	1.5	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35.0	4	12.50	○
T128-HDR-140125C-6HX	M14×1.25	14	1.25	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35.0	4	12.75	○
T128-HDR-140100C-6HX	M14×1	14	1	6HX	2.5P	C	12	110	20	53	11	9	12	11×9	35.0	4	13.00	○
T128-HDR-160200C-6HX	M16×2	16	2	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40.0	4	14.00	○
T128-HDR-160150C-6HX	M16×1.5	16	1.5	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40.0	4	14.50	○
T128-HDR-160125C-6HX	M16×1.25	16	1.25	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40.0	4	14.75	○
T128-HDR-160100C-6HX	M16×1	16	1	6HX	2.5P	C	12	110	20	54	12	9	12	12×9	40.0	4	15.00	○

●Stock ○Available Upon Order

Unit (mm)

Notes:
Pre-hole size is for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
				◎	○									

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P289

Recommended Cutting Data-high-performance Taps

Workpiece Material		T118-FDN	T118-FDC T118-FDR	T118-SDN	T118-PDN	T128-HDN	T128-HDC T128-HDR
		External Cooling	Internal Cooling	External Cooling			Internal Cooling
P	Low-carbon Steel (<125HB)	10-25	15-30	15-25	15-25		
	High-carbon Steel and Alloy Steel (<35HRC)	8-20	15-25	10-20	10-20		
	Quenched and Tempered Steel and Tool Steel (35-48HRC)	5-12	5-15	5-15	5-15		5-20
M	Austenitic Stainless Steels (130-200HB)	10-25	15-30	10-25	10-25		
	High Strength Austenitic and Cast Stainless Steel (<25HRC)	8-20	15-25	10-25	10-25		
	Duplex Stainless Steel (<30HRC)	5-12	5-15	5-12	5-12		
K	Gray Cast Iron and Nodular Cast Iron (<35HRC)			10-20	10-20	20-40	30-50
	High Alloy Cast Iron (<43HRC)			5-15	5-15	10-25	15-35
N	Forged Aluminum Alloy and Cast Aluminium Alloy (Si<12%)	20-50	30-60	20-50	20-50		
	Cast Aluminum Alloy (Si>12%)			10-35	10-35		
	Copper Alloy (<HB200)	20-50	30-60	20-50	20-50		

Unit (m/min)

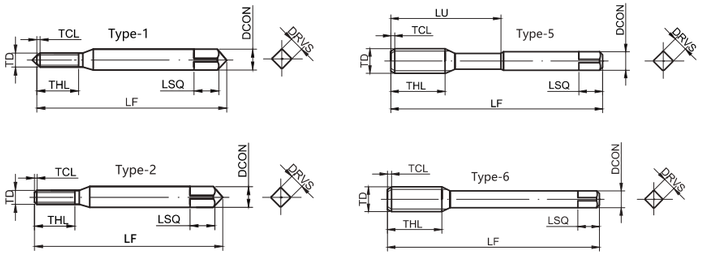
Notes:
1. It is recommended to use a machine with high rigidity for machining.
2. It is recommended to use a special tap shank for machining.
3. The cutting data in the table are recommended data. Please adjust the cutting data according to the actual machining situation.

D Tap

ET138-FJN

M | MF | UNC | UNF | HSSE | JIS | ISO 6H/2B | AlCrN

Economical Fluteless Tap for Steel Machining



Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET138-FJN-010025D-RH4	M1×0.25	1	0.25	RH4	4P	D	1	32	4.5	—	3	2.5	3	3×2.5	2.5	—	0.92	○
ET138-FJN-010025E-RH4	M1×0.25	1	0.25	RH4	2P	E	2	31	3.5	—	3	2.5	3	3×2.5	2.5	—	0.92	○
ET138-FJN-012025D-RH4	M1.2×0.25	1.2	0.25	RH4	4P	D	1	32	4.5	—	3	2.5	3	3×2.5	3.0	—	1.12	○
ET138-FJN-012025E-RH4	M1.2×0.25	1.2	0.25	RH4	2P	E	2	31	3.5	—	3	2.5	3	3×2.5	3.0	—	1.12	○
ET138-FJN-014030D-RH4	M1.4×0.3	1.4	0.3	RH4	4P	D	1	37	6.5	—	3	2.5	3	3×2.5	3.5	—	1.29	○
ET138-FJN-014030E-RH4	M1.4×0.3	1.4	0.3	RH4	2P	E	2	36	6.5	—	3	2.5	3	3×2.5	3.5	—	1.29	○
ET138-FJN-016035D-RH4	M1.6×0.35	1.6	0.35	RH4	4P	D	1	37	8	—	3	2.5	3	3×2.5	4.0	—	1.46	○
ET138-FJN-016035E-RH4	M1.6×0.35	1.6	0.35	RH4	2P	E	2	35.5	8	—	3	2.5	3	3×2.5	4.0	—	1.46	○
ET138-FJN-017035D-RH4	M1.7×0.35	1.7	0.35	RH4	4P	D	1	37	8	—	3	2.5	3	3×2.5	4.3	—	1.56	○
ET138-FJN-017035E-RH4	M1.7×0.35	1.7	0.35	RH4	2P	E	2	35.5	8	—	3	2.5	3	3×2.5	4.3	—	1.56	○
ET138-FJN-020040D-RH5	M2×0.4	2	0.4	RH5	4P	D	1	45	10	—	3	2.5	3	3×2.5	5.0	—	1.85	●
ET138-FJN-020040E-RH5	M2×0.4	2	0.4	RH5	2P	E	2	43.5	10	—	3	2.5	3	3×2.5	5.0	—	1.85	●
ET138-FJN-023040D-RH5	M2.3×0.4	2.3	0.4	RH5	4P	D	1	45	10	—	3	2.5	3	3×2.5	5.8	—	2.15	○
ET138-FJN-023040E-RH5	M2.3×0.4	2.3	0.4	RH5	2P	E	2	43.5	10	—	3	2.5	3	3×2.5	5.8	—	2.15	○
ET138-FJN-025045D-RH5	M2.5×0.45	2.5	0.45	RH5	4P	D	1	45	13	—	3	2.5	3	3×2.5	6.3	—	2.32	●
ET138-FJN-025045E-RH5	M2.5×0.45	2.5	0.45	RH5	2P	E	2	43.5	13	—	3	2.5	3	3×2.5	6.3	—	2.32	●
ET138-FJN-026045D-RH5	M2.6×0.45	2.6	0.45	RH5	4P	D	1	45	13	—	3	2.5	3	3×2.5	6.5	—	2.42	○
ET138-FJN-026045E-RH5	M2.6×0.45	2.6	0.45	RH5	2P	E	2	43.5	13	—	3	2.5	3	3×2.5	6.5	—	2.42	●
ET138-FJN-030050D-RH7	M3×0.5	3	0.5	RH7	4P	D	1	50	16	—	4	3.2	6	4×3.2	7.5	—	2.82	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
◎			○											

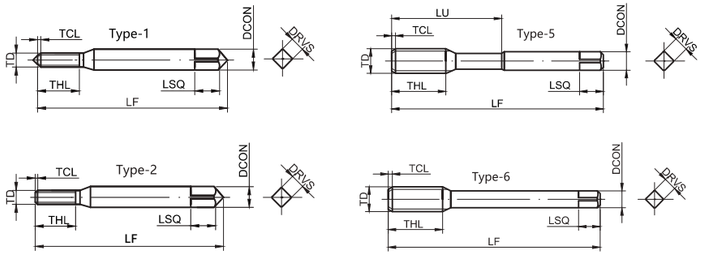
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

ET138-FJN

M | MF | UNC | UNF | HSSE | JIS | ISO 6H/2B | AlCrN

Economical Fluteless Tap for Steel Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET138-FJN-030050E-RH7	M3×0.5	3	0.5	RH7	2P	E	2	48	16	—	4	3.2	6	4×3.2	7.5	—	2.82	●
ET138-FJN-035060D-RH7	M3.5×0.6	3.5	0.6	RH7	4P	D	1	50	16	—	4	3.2	6	4×3.2	8.8	—	3.26	●
ET138-FJN-035060E-RH7	M3.5×0.6	3.5	0.6	RH7	2P	E	2	48	16	—	4	3.2	6	4×3.2	8.8	—	3.26	●
ET138-FJN-040070D-RH7	M4×0.7	4	0.7	RH7	4P	D	1	57	18	—	5	4	7	5×4	10.0	—	3.71	●
ET138-FJN-040070E-RH7	M4×0.7	4	0.7	RH7	2P	E	2	55	18	—	5	4	7	5×4	10.0	—	3.71	●
ET138-FJN-050080D-RH7	M5×0.8	5	0.8	RH7	4P	D	1	66	20	—	5.5	4.5	7	5.5×4.5	12.5	—	4.65	●
ET138-FJN-050080E-RH7	M5×0.8	5	0.8	RH7	2P	E	2	63.5	20	—	5.5	4.5	7	5.5×4.5	12.5	—	4.65	●
ET138-FJN-060100D-RH7	M6×1	6	1	RH7	4P	D	1	69	27	—	6	4.5	7	6×4.5	15.0	2	5.55	●
ET138-FJN-060100E-RH7	M6×1	6	1	RH7	2P	E	2	66.5	27	—	6	4.5	7	6×4.5	15.0	2	5.55	●
ET138-FJN-070100D-RH7	M7×1	7	1	RH7	4P	D	5	70	13	23	6.2	5	8	6.2×5	17.5	2	6.55	○
ET138-FJN-070100E-RH7	M7×1	7	1	RH7	2P	E	5	70	13	23	6.2	5	8	6.2×5	17.5	2	6.55	○
ET138-FJN-080125D-RH7	M8×1.25	8	1.25	RH7	4P	D	5	70	13	36	6.2	5	8	6.2×5	20.0	3	7.41	●
ET138-FJN-080125E-RH7	M8×1.25	8	1.25	RH7	2P	E	5	70	13	36	6.2	5	8	6.2×5	20.0	3	7.41	●
ET138-FJN-100150D-RH8	M10×1.5	10	1.5	RH8	4P	D	5	75	15	43	7	5.5	8	7×5.5	25.0	6	9.29	○
ET138-FJN-100150E-RH8	M10×1.5	10	1.5	RH8	2P	E	5	75	15	43	7	5.5	8	7×5.5	25.0	6	9.29	●
ET138-FJN-120175D-RH9	M12×1.75	12	1.75	RH9	4P	D	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	6	11.16	○
ET138-FJN-120175E-RH9	M12×1.75	12	1.75	RH9	2P	E	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	6	11.16	●
ET138-FJN-140200D-RH10	M14×2	14	2	RH10	4P	D	5	88	20	51	10.5	8	11	10.5×8	35.0	6	13.04	○
ET138-FJN-140200E-RH10	M14×2	14	2	RH10	2P	E	5	88	20	51	10.5	8	11	10.5×8	35.0	6	13.04	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
◎			○											

◎ Most Suitable ○ Suitable

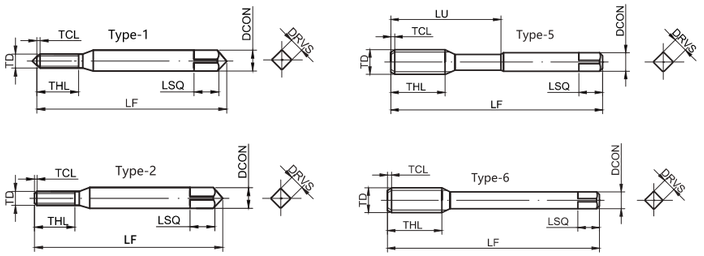
Recommended Cutting Data ※ P323

D Tap

ET138-FJN

M MF UNC UNF HSSE JIS ISO 6H/2B AlCrN

Economical Fluteless Tap for Steel Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET138-FJN-160200D-RH10	M16×2	16	2	RH10	4P	D	5	95	20	52	12.5	10	13	12.5×10	40.0	6	15.04	○
ET138-FJN-160200E-RH10	M16×2	16	2	RH10	2P	E	5	95	20	52	12.5	10	13	12.5×10	40.0	6	15.04	●
ET138-FJN-U164D-RH4	NO.1-64UNC	1.854	64	RH4	4P	D	1	37	9	—	3	2.5	3	3×2.5	4.6	—	1.69	○
ET138-FJN-U164E-RH4	NO.1-64UNC	1.854	64	RH4	2P	E	2	35.5	9	—	3	2.5	3	3×2.5	4.6	—	1.69	○
ET138-FJN-U256D-RH4	NO.2-56UNC	2.184	56	RH4	4P	D	1	45	12	—	3	2.5	3	3×2.5	5.5	—	1.99	○
ET138-FJN-U256E-RH4	NO.2-56UNC	2.184	56	RH4	2P	E	2	43.5	12	—	3	2.5	3	3×2.5	5.5	—	1.99	○
ET138-FJN-U348D-RH4	NO.3-48UNC	2.515	48	RH4	4P	D	1	45	15	—	3	2.5	3	3×2.5	6.3	—	2.28	○
ET138-FJN-U348E-RH4	NO.3-48UNC	2.515	48	RH4	2P	E	2	43.5	15	—	3	2.5	3	3×2.5	6.3	—	2.28	○
ET138-FJN-U440D-RH4	NO.4-40UNC	2.845	40	RH4	4P	D	1	45	15	—	3	2.5	3	3×2.5	7.1	—	2.55	○
ET138-FJN-U440E-RH4	NO.4-40UNC	2.845	40	RH4	2P	E	2	43.5	15	—	3	2.5	3	3×2.5	7.1	—	2.55	●
ET138-FJN-U540D-RH4	NO.5-40UNC	3.175	40	RH4	4P	D	1	50	15	—	4	3.2	6	4×3.2	7.9	—	2.88	○
ET138-FJN-U540E-RH4	NO.5-40UNC	3.175	40	RH4	2P	E	2	48	15	—	4	3.2	6	4×3.2	7.9	—	2.88	●
ET138-FJN-U632D-RH7	NO.6-32UNC	3.505	32	RH7	4P	D	1	50	16	—	4	3.2	6	4×3.2	8.8	—	3.16	●
ET138-FJN-U632E-RH7	NO.6-32UNC	3.505	32	RH7	2P	E	2	48	16	—	4	3.2	6	4×3.2	8.8	—	3.16	●
ET138-FJN-U832D-RH7	NO.8-32UNC	4.166	32	RH7	4P	D	1	57	18	—	5	4	7	5×4	10.4	—	3.82	●
ET138-FJN-U832E-RH7	NO.8-32UNC	4.166	32	RH7	2P	E	2	54.5	18	—	5	4	7	5×4	10.4	—	3.82	●
ET138-FJN-U1024D-RH7	NO.10-24UNC	4.826	24	RH7	4P	D	1	66	20	—	5.5	4.5	7	5.5×4.5	12.1	—	4.34	●
ET138-FJN-U1024E-RH7	NO.10-24UNC	4.826	24	RH7	2P	E	2	63.5	20	—	5.5	4.5	7	5.5×4.5	12.1	—	4.34	●
ET138-FJN-U1224D-RH7	NO.12-24UNC	5.486	24	RH7	4P	D	1	66	23	—	5.5	4.5	7	5.5×4.5	13.7	—	5.00	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
◎			○											

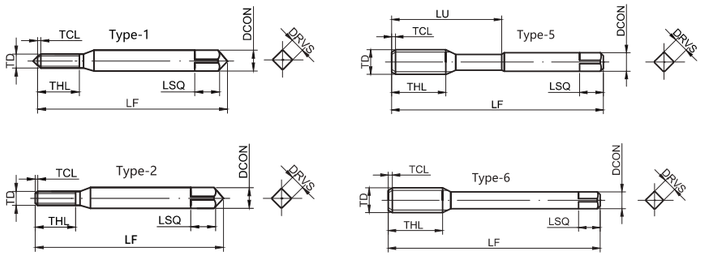
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

ET138-FJN

M MF UNC UNF HSSE JIS ISO 6H/2B AlCrN

Economical Fluteless Tap for Steel Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET138-FJN-U1224E-RH7	NO.12-24UNC	5.486	24	RH7	2P	E	2	63.5	23	—	5.5	4.5	7	5.5×4.5	13.7	—	5.00	●
ET138-FJN-U1420D-RH7	1/4-20UNC	6.350	20	RH7	4P	D	6	62	27	—	6	4.5	7	6×4.5	15.9	2	5.75	●
ET138-FJN-U1420E-RH7	1/4-20UNC	6.350	20	RH7	2P	E	6	62	27	—	6	4.5	7	6×4.5	15.9	2	5.75	●
ET138-FJN-U51618D-RH8	5/16-18UNC	7.938	18	RH8	4P	D	5	70	15	30	6.1	5	8	6.1×5	19.8	3	7.27	●
ET138-FJN-U51618E-RH8	5/16-18UNC	7.938	18	RH8	2P	E	5	70	15	30	6.1	5	8	6.1×5	19.8	3	7.27	●
ET138-FJN-U3816D-RH8	3/8-16UNC	9.525	16	RH8	4P	D	5	75	16	43	7	5.5	8	7×5.5	23.8	6	8.77	●
ET138-FJN-U3816E-RH8	3/8-16UNC	9.525	16	RH8	2P	E	5	75	16	43	7	5.5	8	7×5.5	23.8	6	8.77	●
ET138-FJN-U71614D-RH8	7/16-14UNC	11.113	14	RH8	4P	D	5	80	20	40	8	6	9	8×6	27.8	6	10.23	○
ET138-FJN-U71614E-RH8	7/16-14UNC	11.113	14	RH8	2P	E	5	80	20	40	8	6	9	8×6	27.8	6	10.23	○
ET138-FJN-U1213D-RH8	1/2-13UNC	12.700	13	RH8	4P	D	5	85	21	48	9	7	10	9×7	31.8	6	11.74	○
ET138-FJN-U1213E-RH8	1/2-13UNC	12.700	13	RH8	2P	E	5	85	21	48	9	7	10	9×7	31.8	6	11.74	●
ET138-FJN-U91612D-RH9	9/16-12UNC	14.288	12	RH9	4P	D	5	90	21	50	10.5	8	11	10.5×8	35.7	6	13.25	○
ET138-FJN-U91612E-RH9	9/16-12UNC	14.288	12	RH9	2P	E	5	90	21	50	10.5	8	11	10.5×8	35.7	6	13.25	○
ET138-FJN-U5811D-RH10	5/8-11UNC	15.875	11	RH10	4P	D	5	95	23	48	12	9	12	12×9	39.7	6	14.75	○
ET138-FJN-U5811E-RH10	5/8-11UNC	15.875	11	RH10	2P	E	5	95	23	48	12	9	12	12×9	39.7	6	14.75	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
◎			○											

◎ Most Suitable ○ Suitable

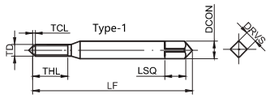
Recommended Cutting Data ※ P323

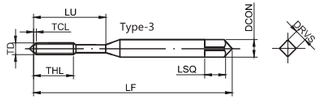
D Tap

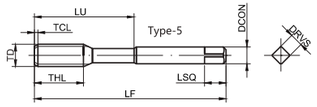
ET138-SJN

M MF UNC UNF HSSE JIS ISO 6H/2B AlCrN

Economical Spiral Tap for Steel Machining







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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET138-SJN-025045C-P2	M2.5×0.45	2.5	0.45	P2	2.5P	C	1	45	12	—	3	2.5	3	3×2.5	6.3	2	2.05	●
ET138-SJN-030050C-P2	M3×0.5	3	0.5	P2	2.5P	C	3	50	5	18	4	3.2	6	4×3.2	7.5	3	2.50	●
ET138-SJN-035060C-P2	M3.5×0.6	3.5	0.6	P2	2.5P	C	3	50	6	19	4	3.2	6	4×3.2	8.8	3	2.90	○
ET138-SJN-040070C-P2	M4×0.7	4	0.7	P2	2.5P	C	3	57	9	20	5	4	7	5×4	10.0	3	3.30	●
ET138-SJN-050080C-P2	M5×0.8	5	0.8	P2	2.5P	C	3	66	8	25	5.5	4.5	7	5.5×4.5	12.5	3	4.20	●
ET138-SJN-060100C-P2	M6×1	6	1	P2	2.5P	C	3	69	12	24	6	4.5	7	6×4.5	15.0	3	5.00	●
ET138-SJN-070100C-P3	M7×1	7	1	P3	2.5P	C	3	78	13	23	6.2	5	8	6.2×5	17.5	3	6.00	●
ET138-SJN-080125C-P3	M8×1.25	8	1.25	P3	2.5P	C	5	70	13	36	6.2	5	8	6.2×5	20.0	3	6.75	●
ET138-SJN-080100C-P3	M8×1	8	1	P3	2.5P	C	5	70	13	36	6.2	5	8	6.2×5	20.0	3	7.00	●
ET138-SJN-100150C-P4	M10×1.5	10	1.5	P4	2.5P	C	5	75	15	43	7	5.5	8	7×5.5	25.0	3	8.50	●
ET138-SJN-100125C-P3	M10×1.25	10	1.25	P3	2.5P	C	5	75	13	43	7	5.5	8	7×5.5	25.0	3	8.75	●
ET138-SJN-100100C-P3	M10×1	10	1	P3	2.5P	C	5	75	13	43	7	5.5	8	7×5.5	25.0	3	9.00	○
ET138-SJN-120175C-P4	M12×1.75	12	1.75	P4	2.5P	C	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	3	10.25	●
ET138-SJN-120150C-P4	M12×1.5	12	1.5	P4	2.5P	C	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	3	10.50	●
ET138-SJN-120125C-P4	M12×1.25	12	1.25	P4	2.5P	C	5	82	13	42	8.5	6.5	9	8.5×6.5	30.0	3	10.75	●
ET138-SJN-120100C-P3	M12×1	12	1	P3	2.5P	C	5	82	13	42	8.5	6.5	9	8.5×6.5	30.0	3	11.00	○
ET138-SJN-140200C-P5	M14×2	14	2	P5	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.00	●
ET138-SJN-140150C-P4	M14×1.5	14	1.5	P4	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.50	●
ET138-SJN-140125C-P4	M14×1.25	14	1.25	P4	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.75	○
ET138-SJN-140100C-P3	M14×1	14	1	P3	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	13.00	○
ET138-SJN-160200C-P5	M16×2	16	2	P5	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.00	●
ET138-SJN-160150C-P4	M16×1.5	16	1.5	P4	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.50	●
ET138-SJN-160125C-P4	M16×1.25	16	1.25	P4	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.75	○

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎			○										

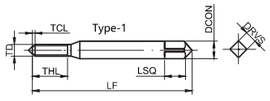
◎ Most Suitable ○ Suitable

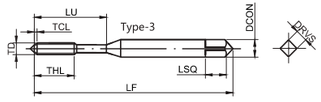
Recommended Cutting Data ※ P323

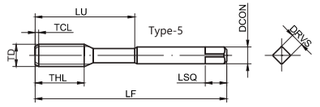
ET138-SJN

M MF UNC UNF HSSE JIS ISO 6H/2B AlCrN

Economical Spiral Tap for Steel Machining







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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET138-SJN-160100C-P3	M16×1	16	1	P3	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	15.00	○
ET138-SJN-U080F-P1	NO.0-80UNF	1.524	80	P1	1.5P	F	1	37	10	—	3	2.5	3	3×2.5	3.8	2	1.21	○
ET138-SJN-U164F-P1	NO.1-64UNC	1.854	64	P1	1.5P	F	1	37	11	—	3	2.5	3	3×2.5	4.6	2	1.46	○
ET138-SJN-U256C-P1	NO.2-56UNC	2.184	56	P1	2.5P	C	1	45	12	—	3	2.5	3	3×2.5	5.5	2	1.73	○
ET138-SJN-U348C-P1	NO.3-48UNC	2.515	48	P1	2.5P	C	1	45	14	—	3	2.5	3	3×2.5	6.3	2	1.99	○
ET138-SJN-U440C-P2	NO.4-40UNC	2.845	40	P2	2.5P	C	1	45	6	16	3	2.5	3	3×2.5	7.1	3	2.21	●
ET138-SJN-U540C-P2	NO.5-40UNC	3.175	40	P2	2.5P	C	3	50	7	19	4	3.2	6	4×3.2	7.9	3	2.54	○
ET138-SJN-U632C-P2	NO.6-32UNC	3.505	32	P2	2.5P	C	3	50	8	20	4	3.2	6	4×3.2	8.8	3	2.71	●
ET138-SJN-U640C-P2	NO.6-40UNF	3.505	40	P2	2.5P	C	3	50	8	20	4	3.2	6	4×3.2	8.8	3	2.87	○
ET138-SJN-U832C-P2	NO.8-32UNC	4.166	32	P2	2.5P	C	3	57	8	21.5	5	4	7	5×4	10.4	3	3.37	●
ET138-SJN-U836C-P2	NO.8-36UNF	4.166	36	P2	2.5P	C	3	57	8	21.5	5	4	7	5×4	10.4	3	3.46	○
ET138-SJN-U1024C-P2	NO.10-24UNC	4.826	24	P2	2.5P	C	3	66	10	26	5.5	4.5	7	5.5×4.5	12.1	3	3.77	●
ET138-SJN-U1224C-P2	NO.12-24UNC	5.486	24	P2	2.5	C	3	66	10	26	5.5	4.5	7	5.5×4.5	13.7	3	4.43	○
ET138-SJN-U1420C-P2	1/4-20UNC	6.350	20	P2	2.5P	C	3	69	12	29	6	4.5	7	6×4.5	15.9	3	5.08	●
ET138-SJN-U1428C-P2	1/4-28UNF	6.350	28	P2	2.5P	C	3	69	12	29	6	4.5	7	6×4.5	15.9	3	5.44	●
ET138-SJN-U51618C-P3	5/16-18UNC	7.938	18	P3	2.5P	C	5	70	15	30	6.1	5	8	6.1×5	19.8	3	6.53	●
ET138-SJN-U51624C-P3	5/16-24UNF	7.938	24	P3	2.5P	C	5	70	11	30	6.1	5	8	6.1×5	19.8	3	6.88	●
ET138-SJN-U3816C-P3	3/8-16UNC	9.525	16	P3	2.5P	C	5	75	16	43	7	5.5	8	7×5.5	23.8	3	7.94	●
ET138-SJN-U3824C-P3	3/8-24UNF	9.525	24	P3	2.5P	C	5	75	11	43	7	5.5	8	7×5.5	23.8	3	8.47	●
ET138-SJN-U71614C-P4	7/16-14UNC	11.113	14	P4	2.5P	C	5	80	20	40	8	6	9	8×6	27.8	3	9.30	○
ET138-SJN-U71620C-P3	7/16-20UNF	11.113	20	P3	2.5P	C	5	80	13	40	8	6	9	8×6	27.8	3	9.84	○
ET138-SJN-U1213C-P4	1/2-13UNC	12.700	13	P4	2.5P	C	5	85	21	48	9	7	10	9×7	31.8	3	10.75	○
ET138-SJN-U1220C-P3	1/2-20UNF	12.700	20	P3	2.5P	C	5	85	13	48	9	7	10	9×7	31.8	3	11.43	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎			○										

◎ Most Suitable ○ Suitable

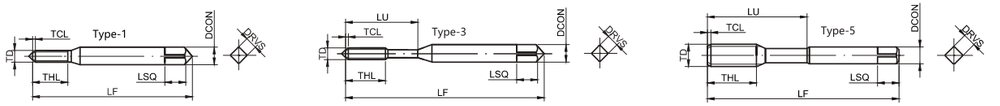
Recommended Cutting Data ※ P323

D Tap

ET138-SJN

M MF UNC UNF HSSE JIS ISO 6H/2B AlCrN

Economical Spiral Tap for Steel Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET138-SJN-U91612C-P4	9/16-12UNC	14.288	12	P4	2.5P	C	5	90	21	50	10.5	8	11	10.5×8	35.7	3	12.17	○
ET138-SJN-U91618C-P3	9/16-18UNF	14.288	18	P3	2.5P	C	5	90	15	50	10.5	8	11	10.5×8	35.7	3	12.88	○
ET138-SJN-U5811C-P4	5/8-11UNC	15.875	11	P4	2.5P	C	5	95	23	48	12	9	12	12×9	39.7	3	13.57	○
ET138-SJN-U5818C-P3	5/8-18UNF	15.875	18	P3	2.5P	C	5	95	23	48	12	9	12	12×9	39.7	3	14.46	○

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
◎			○											

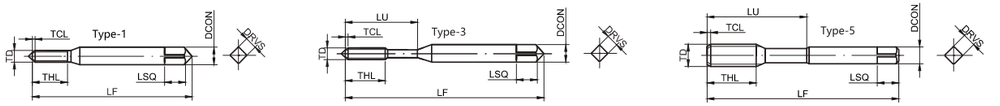
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

ET138-PJN

M MF UNC UNF HSSE JIS ISO 6H/2B AlCrN

Economical Spiral Pointed Tap for Steel Machining



Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET138-PJN-010025B-P1	M1×0.25	1	0.25	P1	5P	B	1	37	4.5	—	3	2.5	3	3×2.5	2.5	2	0.75	○
ET138-PJN-012025B-P1	M1.2×0.25	1.2	0.25	P1	5P	B	1	37	5.5	—	3	2.5	3	3×2.5	3.0	2	0.95	○
ET138-PJN-014030B-P1	M1.4×0.3	1.4	0.3	P1	5P	B	1	37	9	—	3	2.5	3	3×2.5	3.5	2	1.10	○
ET138-PJN-016035B-P2	M1.6×0.35	1.6	0.35	P2	5P	B	1	37	8	—	3	2.5	3	3×2.5	4.0	2	1.25	○
ET138-PJN-020040B-P2	M2×0.4	2	0.4	P2	5P	B	1	45	11	—	3	2.5	3	3×2.5	5.0	2	1.60	●
ET138-PJN-025045B-P2	M2.5×0.45	2.5	0.45	P2	5P	B	1	45	12	—	3	2.5	3	3×2.5	6.3	2	2.05	●
ET138-PJN-030050B-P2	M3×0.5	3	0.5	P2	5P	B	3	50	12	19	4	3.2	6	4×3.2	7.5	3	2.50	●
ET138-PJN-035060B-P2	M3.5×0.6	3.5	0.6	P2	5P	B	3	50	13	20	4	3.2	6	4×3.2	8.8	3	2.90	○
ET138-PJN-040070B-P2	M4×0.7	4	0.7	P2	5P	B	3	57	14	21	5	4	7	5×4	10.0	3	3.30	●
ET138-PJN-050080B-P2	M5×0.8	5	0.8	P2	5P	B	3	66	16	25	5.5	4.5	7	5.5×4.5	12.5	3	4.20	●
ET138-PJN-060100B-P2	M6×1	6	1	P2	5P	B	3	69	19.5	29	6	4.5	7	6×4.5	15.0	3	5.00	●
ET138-PJN-070100B-P3	M7×1	7	1	P3	5P	B	3	78	13	23	6.2	5	8	6.2×5	17.5	3	6.00	●
ET138-PJN-080125B-P3	M8×1.25	8	1.25	P3	5P	B	5	70	22	37	6.2	5	8	6.2×5	20.0	3	6.75	●
ET138-PJN-080100B-P3	M8×1	8	1	P3	5P	B	5	70	22	37	6.2	5	8	6.2×5	20.0	3	7.00	●
ET138-PJN-100150B-P4	M10×1.5	10	1.5	P4	5P	B	5	75	24	43	7	5	8	7×5	25.0	3	8.50	●
ET138-PJN-100125B-P3	M10×1.25	10	1.25	P3	5P	B	5	75	24	43	7	5	8	7×5	25.0	3	8.75	●
ET138-PJN-100100B-P3	M10×1	10	1	P3	5P	B	5	75	24	43	7	5	8	7×5	25.0	3	9.00	○
ET138-PJN-120175B-P4	M12×1.75	12	1.75	P4	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.25	●
ET138-PJN-120150B-P4	M12×1.5	12	1.5	P4	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.50	●
ET138-PJN-120125B-P4	M12×1.25	12	1.25	P4	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.75	●
ET138-PJN-120100B-P3	M12×1	12	1	P3	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	11.00	○
ET138-PJN-140200B-P5	M14×2	14	2	P5	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.00	●
ET138-PJN-140150B-P4	M14×1.5	14	1.5	P4	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.50	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
◎			○											

◎ Most Suitable ○ Suitable

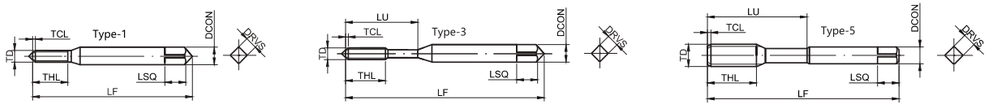
Recommended Cutting Data ※ P323

D Tap

ET138-PJN

M MF UNC UNF HSSE JIS ISO 6H/2B AlCrN

Economical Spiral Pointed Tap for Steel Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET138-PJN-140125B-P4	M14×1.25	14	1.25	P4	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.75	○
ET138-PJN-140100B-P3	M14×1	14	1	P3	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	13.00	○
ET138-PJN-160200B-P5	M16×2	16	2	P5	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.00	●
ET138-PJN-160150B-P4	M16×1.5	16	1.5	P4	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.50	●
ET138-PJN-160125B-P4	M16×1.25	16	1.25	P4	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.75	○
ET138-PJN-160100B-P3	M16×1	16	1	P3	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	15.00	○
ET138-PJN-U080B-P1	NO.0-80UNF	1.524	80	P1	5P	B	1	37	10	—	3	2.5	3	3×2.5	3.8	2	1.21	○
ET138-PJN-U164B-P1	NO.1-64UNC	1.854	64	P1	5P	B	1	37	11	—	3	2.5	3	3×2.5	4.6	2	1.46	○
ET138-PJN-U256B-P1	NO.2-56UNC	2.184	56	P1	5P	B	1	45	12	—	3	2.5	3	3×2.5	5.5	2	1.73	○
ET138-PJN-U348B-P1	NO.3-48UNC	2.515	48	P1	5P	B	1	45	14	—	3	2.5	3	3×2.5	6.3	2	1.99	○
ET138-PJN-U440B-P2	NO.4-40UNC	2.845	40	P2	5P	B	1	45	13	—	3	2.5	3	3×2.5	7.1	3	2.21	●
ET138-PJN-U540B-P2	NO.5-40UNC	3.175	40	P2	5P	B	3	50	12	19	4	3.2	6	4×3.2	7.9	3	2.54	○
ET138-PJN-U632B-P2	NO.6-32UNC	3.505	32	P2	5P	B	3	50	13	20	4	3.2	6	4×3.2	8.8	3	2.71	●
ET138-PJN-U832B-P2	NO.8-32UNC	4.166	32	P2	5P	B	3	57	13.5	21.5	5	4	7	5×4	10.4	3	3.37	●
ET138-PJN-U1024B-P2	NO.10-24UNC	4.826	24	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	12.1	3	3.77	●
ET138-PJN-U1032B-P2	NO.10-32UNF	4.826	32	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	12.1	3	4.03	○
ET138-PJN-U1224B-P2	NO.12-24UNC	5.486	24	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	13.7	3	4.43	○
ET138-PJN-U1228B-P2	NO.12-28UNF	5.486	28	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	13.7	3	4.58	○
ET138-PJN-U1420B-P2	1/4-20UNC	6.350	20	P2	5P	B	3	69	19.5	29	6	4.5	7	6×4.5	15.9	3	5.08	●
ET138-PJN-U1428B-P2	1/4-28UNF	6.350	28	P2	5P	B	3	69	19.5	29	6	4.5	7	6×4.5	15.9	3	5.44	●
ET138-PJN-U51618B-P3	5/16-18UNC	7.938	18	P3	5P	B	5	70	23	38	6.1	5	8	6.1×5	19.8	3	6.53	●
ET138-PJN-U51624B-P3	5/16-24UNF	7.938	24	P3	5P	B	5	70	23	38	6.1	5	8	6.1×5	19.8	3	6.88	●
ET138-PJN-U3816B-P3	3/8-16UNC	9.525	16	P3	5P	B	5	75	25	43	7	5.5	8	7×5.5	23.8	3	7.94	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is for reference only.

Workpiece Material

P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎			○										

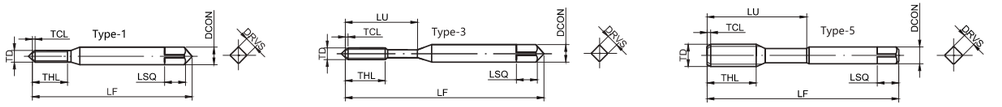
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

ET138-PJN

M MF UNC UNF HSSE JIS ISO 6H/2B AlCrN

Economical Spiral Pointed Tap for Steel Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET138-PJN-U3824B-P3	3/8-24UNF	9.525	24	P3	5P	B	5	75	25	43	7	5.5	8	7×5.5	23.8	3	8.47	●
ET138-PJN-U71614B-P4	7/16-14UNC	11.113	14	P4	5P	B	5	80	29	45	8	6	9	8×6	27.8	3	9.30	○
ET138-PJN-U71620B-P3	7/16-20UNF	11.113	20	P3	5P	B	5	80	29	45	8	6	9	8×6	27.8	3	9.84	○
ET138-PJN-U1213B-P4	1/2-13UNC	12.700	13	P4	5P	B	5	85	30	48	9	7	10	9×7	31.8	3	10.75	○
ET138-PJN-U1220B-P3	1/2-20UNF	12.700	20	P3	5P	B	5	85	30	48	9	7	10	9×7	31.8	3	11.43	●
ET138-PJN-U91612B-P4	9/16-12UNC	14.288	12	P4	5P	B	5	90	30	50	10.5	8	11	10.5×8	35.7	3	12.17	○
ET138-PJN-U91618B-P3	9/16-18UNF	14.288	18	P3	5P	B	5	90	30	50	10.5	8	11	10.5×8	35.7	3	12.88	○
ET138-PJN-U5811B-P4	5/8-11UNC	15.875	11	P4	5P	B	5	95	23	48	12	9	12	12×9	39.7	3	13.57	○
ET138-PJN-U5818B-P3	5/8-18UNF	15.875	18	P3	5P	B	5	95	23	48	12	9	12	12×9	39.7	3	14.46	○

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is for reference only.

Workpiece Material

P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎			○										

◎ Most Suitable ○ Suitable

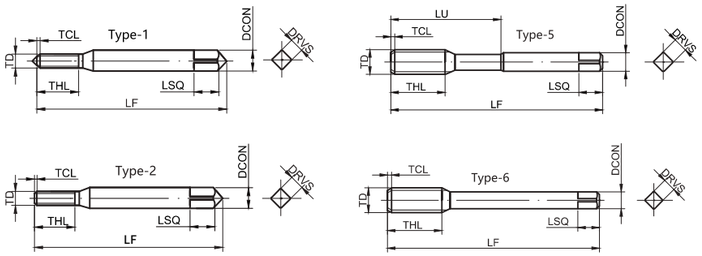
Recommended Cutting Data ※ P323

D Tap

ET168-FJN

M MF UNC UNF HSSE JIS ISO 6H/2B TiAlN

Economical Fluteless Tap for Stainless Steel Machining



Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET168-FJN-010025D-RH4	M1×0.25	1	0.25	RH4	4P	D	1	32	4.5	–	3	2.5	3	3×2.5	2.5	–	0.92	○
ET168-FJN-010025E-RH4	M1×0.25	1	0.25	RH4	2P	E	2	31	3.5	–	3	2.5	3	3×2.5	2.5	–	0.92	○
ET168-FJN-012025D-RH4	M1.2×0.25	1.2	0.25	RH4	4P	D	1	32	4.5	–	3	2.5	3	3×2.5	3.0	–	1.12	○
ET168-FJN-012025E-RH4	M1.2×0.25	1.2	0.25	RH4	2P	E	2	31	3.5	–	3	2.5	3	3×2.5	3.0	–	1.12	○
ET168-FJN-014030D-RH4	M1.4×0.3	1.4	0.3	RH4	4P	D	1	37	6.5	–	3	2.5	3	3×2.5	3.5	–	1.29	○
ET168-FJN-014030E-RH4	M1.4×0.3	1.4	0.3	RH4	2P	E	2	36	6.5	–	3	2.5	3	3×2.5	3.5	–	1.29	○
ET168-FJN-016035D-RH4	M1.6×0.35	1.6	0.35	RH4	4P	D	1	37	8	–	3	2.5	3	3×2.5	4.0	–	1.46	○
ET168-FJN-016035E-RH4	M1.6×0.35	1.6	0.35	RH4	2P	E	2	35.5	8	–	3	2.5	3	3×2.5	4.0	–	1.46	○
ET168-FJN-017035D-RH4	M1.7×0.35	1.7	0.35	RH4	4P	D	1	37	8	–	3	2.5	3	3×2.5	4.3	–	1.56	○
ET168-FJN-017035E-RH4	M1.7×0.35	1.7	0.35	RH4	2P	E	2	35.5	8	–	3	2.5	3	3×2.5	4.3	–	1.56	○
ET168-FJN-020040D-RH5	M2×0.4	2	0.4	RH5	4P	D	1	45	10	–	3	2.5	3	3×2.5	5.0	–	1.85	●
ET168-FJN-020040E-RH5	M2×0.4	2	0.4	RH5	2P	E	2	43.5	10	–	3	2.5	3	3×2.5	5.0	–	1.85	●
ET168-FJN-023040D-RH5	M2.3×0.4	2.3	0.4	RH5	4P	D	1	45	10	–	3	2.5	3	3×2.5	5.8	–	2.15	○
ET168-FJN-023040E-RH5	M2.3×0.4	2.3	0.4	RH5	2P	E	2	43.5	10	–	3	2.5	3	3×2.5	5.8	–	2.15	○
ET168-FJN-025045D-RH5	M2.5×0.45	2.5	0.45	RH5	4P	D	1	45	13	–	3	2.5	3	3×2.5	6.3	–	2.32	●
ET168-FJN-025045E-RH5	M2.5×0.45	2.5	0.45	RH5	2P	E	2	43.5	13	–	3	2.5	3	3×2.5	6.3	–	2.32	●
ET168-FJN-026045D-RH5	M2.6×0.45	2.6	0.45	RH5	4P	D	1	45	13	–	3	2.5	3	3×2.5	6.5	–	2.42	○
ET168-FJN-026045E-RH5	M2.6×0.45	2.6	0.45	RH5	2P	E	2	43.5	13	–	3	2.5	3	3×2.5	6.5	–	2.42	●
ET168-FJN-030050D-RH7	M3×0.5	3	0.5	RH7	4P	D	1	50	16	–	4	3.2	6	4×3.2	7.5	–	2.82	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎			○										

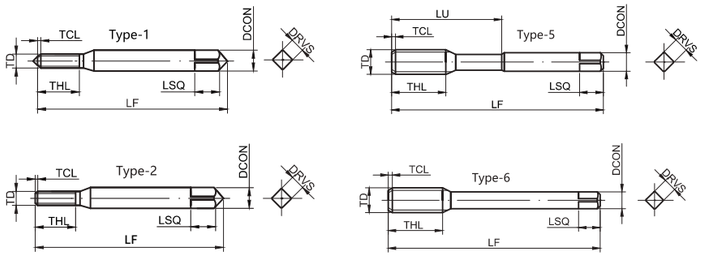
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

ET168-FJN

M MF UNC UNF HSSE JIS ISO 6H/2B TiAlN

Economical Fluteless Tap for Stainless Steel Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET168-FJN-030050E-RH7	M3×0.5	3	0.5	RH7	2P	E	2	48	16	–	4	3.2	6	4×3.2	7.5	–	2.82	●
ET168-FJN-035060D-RH7	M3.5×0.6	3.5	0.6	RH7	4P	D	1	50	16	–	4	3.2	6	4×3.2	8.8	–	3.26	●
ET168-FJN-035060E-RH7	M3.5×0.6	3.5	0.6	RH7	2P	E	2	48	16	–	4	3.2	6	4×3.2	8.8	–	3.26	●
ET168-FJN-040070D-RH7	M4×0.7	4	0.7	RH7	4P	D	1	57	18	–	5	4	7	5×4	10.0	–	3.71	●
ET168-FJN-040070E-RH7	M4×0.7	4	0.7	RH7	2P	E	2	55	18	–	5	4	7	5×4	10.0	–	3.71	●
ET168-FJN-050080D-RH7	M5×0.8	5	0.8	RH7	4P	D	1	66	20	–	5.5	4.5	7	5.5×4.5	12.5	–	4.65	●
ET168-FJN-050080E-RH7	M5×0.8	5	0.8	RH7	2P	E	2	63.5	20	–	5.5	4.5	7	5.5×4.5	12.5	–	4.65	●
ET168-FJN-060100D-RH7	M6×1	6	1	RH7	4P	D	1	69	27	–	6	4.5	7	6×4.5	15.0	2	5.55	●
ET168-FJN-060100E-RH7	M6×1	6	1	RH7	2P	E	2	66.5	27	–	6	4.5	7	6×4.5	15.0	2	5.55	●
ET168-FJN-070100D-RH7	M7×1	7	1	RH7	4P	D	5	70	13	23	6.2	5	8	6.2×5	17.5	2	6.55	○
ET168-FJN-070100E-RH7	M7×1	7	1	RH7	2P	E	5	70	13	23	6.2	5	8	6.2×5	17.5	2	6.55	○
ET168-FJN-080125D-RH7	M8×1.25	8	1.25	RH7	4P	D	5	70	13	36	6.2	5	8	6.2×5	20.0	3	7.41	●
ET168-FJN-080125E-RH7	M8×1.25	8	1.25	RH7	2P	E	5	70	13	36	6.2	5	8	6.2×5	20.0	3	7.41	●
ET168-FJN-100150D-RH8	M10×1.5	10	1.5	RH8	4P	D	5	75	15	43	7	5.5	8	7×5.5	25.0	6	9.29	○
ET168-FJN-100150E-RH8	M10×1.5	10	1.5	RH8	2P	E	5	75	15	43	7	5.5	8	7×5.5	25.0	6	9.29	●
ET168-FJN-120175D-RH9	M12×1.75	12	1.75	RH9	4P	D	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	6	11.16	○
ET168-FJN-120175E-RH9	M12×1.75	12	1.75	RH9	2P	E	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	6	11.16	●
ET168-FJN-140200D-RH10	M14×2	14	2	RH10	4P	D	5	88	20	51	10.5	8	11	10.5×8	35.0	6	13.04	○
ET168-FJN-140200E-RH10	M14×2	14	2	RH10	2P	E	5	88	20	51	10.5	8	11	10.5×8	35.0	6	13.04	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎			○										

◎ Most Suitable ○ Suitable

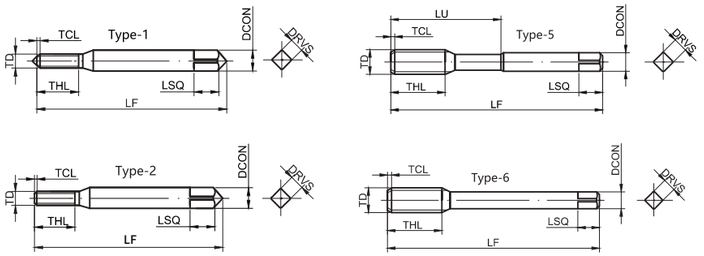
Recommended Cutting Data ※ P323

D Tap

ET168-FJN

M MF UNC UNF HSSE JIS ISO 6H/2B TiAlN

Economical Fluteless Tap for Stainless Steel Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET168-FJN-160200D-RH10	M16×2	16	2	RH10	4P	D	5	95	20	52	12.5	10	13	12.5×10	40.0	6	15.04	○
ET168-FJN-160200E-RH10	M16×2	16	2	RH10	2P	E	5	95	20	52	12.5	10	13	12.5×10	40.0	6	15.04	●
ET168-FJN-U164D-RH4	NO.1-64UNC	1.854	64	RH4	4P	D	1	37	9	–	3	2.5	3	3×2.5	4.6	–	1.69	○
ET168-FJN-U164E-RH4	NO.1-64UNC	1.854	64	RH4	2P	E	2	35.5	9	–	3	2.5	3	3×2.5	4.6	–	1.69	○
ET168-FJN-U256D-RH4	NO.2-56UNC	2.184	56	RH4	4P	D	1	45	12	–	3	2.5	3	3×2.5	5.5	–	1.99	○
ET168-FJN-U256E-RH4	NO.2-56UNC	2.184	56	RH4	2P	E	2	43.5	12	–	3	2.5	3	3×2.5	5.5	–	1.99	○
ET168-FJN-U348D-RH4	NO.3-48UNC	2.515	48	RH4	4P	D	1	45	15	–	3	2.5	3	3×2.5	6.3	–	2.28	○
ET168-FJN-U348E-RH4	NO.3-48UNC	2.515	48	RH4	2P	E	2	43.5	15	–	3	2.5	3	3×2.5	6.3	–	2.28	○
ET168-FJN-U440D-RH4	NO.4-40UNC	2.845	40	RH4	4P	D	1	45	15	–	3	2.5	3	3×2.5	7.1	–	2.55	○
ET168-FJN-U440E-RH4	NO.4-40UNC	2.845	40	RH4	2P	E	2	43.5	15	–	3	2.5	3	3×2.5	7.1	–	2.55	●
ET168-FJN-U540D-RH4	NO.5-40UNC	3.175	40	RH4	4P	D	1	50	15	–	4	3.2	6	4×3.2	7.9	–	2.88	○
ET168-FJN-U540E-RH4	NO.5-40UNC	3.175	40	RH4	2P	E	2	48	15	–	4	3.2	6	4×3.2	7.9	–	2.88	●
ET168-FJN-U632D-RH7	NO.6-32UNC	3.505	32	RH7	4P	D	1	50	16	–	4	3.2	6	4×3.2	8.8	–	3.16	●
ET168-FJN-U632E-RH7	NO.6-32UNC	3.505	32	RH7	2P	E	2	48	16	–	4	3.2	6	4×3.2	8.8	–	3.16	●
ET168-FJN-U832D-RH7	NO.8-32UNC	4.166	32	RH7	4P	D	1	57	18	–	5	4	7	5×4	10.4	–	3.82	●
ET168-FJN-U832E-RH7	NO.8-32UNC	4.166	32	RH7	2P	E	2	54.5	18	–	5	4	7	5×4	10.4	–	3.82	●
ET168-FJN-U1024D-RH7	NO.10-24UNC	4.826	24	RH7	4P	D	1	66	20	–	5.5	4.5	7	5.5×4.5	12.1	–	4.34	●
ET168-FJN-U1024E-RH7	NO.10-24UNC	4.826	24	RH7	2P	E	2	63.5	20	–	5.5	4.5	7	5.5×4.5	12.1	–	4.34	●
ET168-FJN-U1224D-RH7	NO.12-24UNC	5.486	24	RH7	4P	D	1	66	23	–	5.5	4.5	7	5.5×4.5	13.7	–	5.00	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
◎			○											

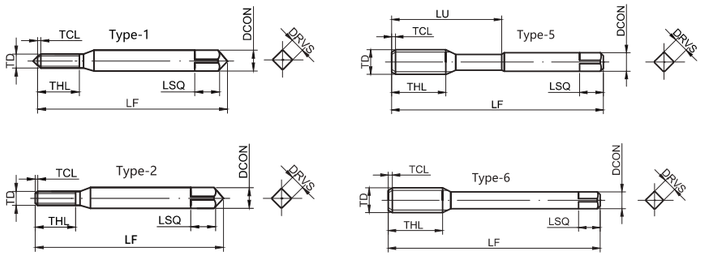
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

ET168-FJN

M MF UNC UNF HSSE JIS ISO 6H/2B TiAlN

Economical Fluteless Tap for Stainless Steel Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Sche-matic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET168-FJN-U1224E-RH7	NO.12-24UNC	5.486	24	RH7	2P	E	2	63.5	23	–	5.5	4.5	7	5.5×4.5	13.7	–	5.00	●
ET168-FJN-U1420D-RH7	1/4-20UNC	6.350	20	RH7	4P	D	6	62	27	–	6	4.5	7	6×4.5	15.9	2	5.75	●
ET168-FJN-U1420E-RH7	1/4-20UNC	6.350	20	RH7	2P	E	6	62	27	–	6	4.5	7	6×4.5	15.9	2	5.75	●
ET168-FJN-U51618D-RH8	5/16-18UNC	7.938	18	RH8	4P	D	5	70	15	30	6.1	5	8	6.1×5	19.8	3	7.27	●
ET168-FJN-U51618E-RH8	5/16-18UNC	7.938	18	RH8	2P	E	5	70	15	30	6.1	5	8	6.1×5	19.8	3	7.27	●
ET168-FJN-U3816D-RH8	3/8-16UNC	9.525	16	RH8	4P	D	5	75	16	43	7	5.5	8	7×5.5	23.8	6	8.77	●
ET168-FJN-U3816E-RH8	3/8-16UNC	9.525	16	RH8	2P	E	5	75	16	43	7	5.5	8	7×5.5	23.8	6	8.77	●
ET168-FJN-U71614D-RH8	7/16-14UNC	11.113	14	RH8	4P	D	5	80	20	40	8	6	9	8×6	27.8	6	10.23	○
ET168-FJN-U71614E-RH8	7/16-14UNC	11.113	14	RH8	2P	E	5	80	20	40	8	6	9	8×6	27.8	6	10.23	○
ET168-FJN-U1213D-RH8	1/2-13UNC	12.700	13	RH8	4P	D	5	85	21	48	9	7	10	9×7	31.8	6	11.74	○
ET168-FJN-U1213E-RH8	1/2-13UNC	12.700	13	RH8	2P	E	5	85	21	48	9	7	10	9×7	31.8	6	11.74	●
ET168-FJN-U91612D-RH9	9/16-12UNC	14.288	12	RH9	4P	D	5	90	21	50	10.5	8	11	10.5×8	35.7	6	13.25	○
ET168-FJN-U91612E-RH9	9/16-12UNC	14.288	12	RH9	2P	E	5	90	21	50	10.5	8	11	10.5×8	35.7	6	13.25	○
ET168-FJN-U5811D-RH10	5/8-11UNC	15.875	11	RH10	4P	D	5	95	23	48	12	9	12	12×9	39.7	6	14.75	○
ET168-FJN-U5811E-RH10	5/8-11UNC	15.875	11	RH10	2P	E	5	95	23	48	12	9	12	12×9	39.7	6	14.75	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
◎			○											

◎ Most Suitable ○ Suitable

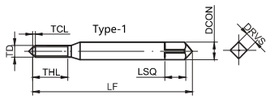
Recommended Cutting Data ※ P323

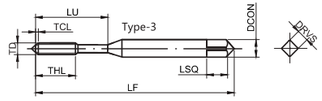
D Tap

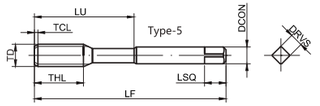
ET168-SJN

M MF UNC UNF HSSE JIS ISO 6H/2B TiAlN

Economical Spiral Fluted Tap for Stainless Steel Machining







Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET168-SJN-010025F-P1	M1×0.25	1	0.25	P1	1.5P	F	1	37	4.5	—	3	2.5	3	3×2.5	2.5	2	0.75	○
ET168-SJN-012025F-P1	M1.2×0.25	1.2	0.25	P1	1.5P	F	1	37	5.5	—	3	2.5	3	3×2.5	3.0	2	0.95	○
ET168-SJN-014030F-P1	M1.4×0.3	1.4	0.3	P1	1.5P	F	1	37	6.5	—	3	2.5	3	3×2.5	3.5	2	1.10	○
ET168-SJN-016035F-P1	M1.6×0.35	1.6	0.35	P1	1.5P	F	1	37	8	—	3	2.5	3	3×2.5	4.0	2	1.25	○
ET168-SJN-020040C-P2	M2×0.4	2	0.4	P2	2.5P	C	1	45	11	—	3	2.5	3	3×2.5	5.0	2	1.60	○
ET168-SJN-025045C-P2	M2.5×0.45	2.5	0.45	P2	2.5P	C	1	45	12	—	3	2.5	3	3×2.5	6.3	2	2.05	○
ET168-SJN-030050C-P2	M3×0.5	3	0.5	P2	2.5P	C	3	50	5	18	4	3.2	6	4×3.2	7.5	3	2.50	●
ET168-SJN-035060C-P2	M3.5×0.6	3.5	0.6	P2	2.5P	C	3	50	6	19	4	3.2	6	4×3.2	8.8	3	2.90	○
ET168-SJN-040070C-P2	M4×0.7	4	0.7	P2	2.5P	C	3	57	9	20	5	4	7	5×4	10.0	3	3.30	●
ET168-SJN-050080C-P2	M5×0.8	5	0.8	P2	2.5P	C	3	66	8	25	5.5	4.5	7	5.5×4.5	12.5	3	4.20	●
ET168-SJN-060100C-P2	M6×1	6	1	P2	2.5P	C	3	69	12	24	6	4.5	7	6×4.5	15.0	3	5.00	●
ET168-SJN-070100C-P3	M7×1	7	1	P3	2.5P	C	3	78	13	23	6.2	5	8	6.2×5	17.5	3	6.00	○
ET168-SJN-080125C-P3	M8×1.25	8	1.25	P3	2.5P	C	5	70	13	36	6.2	5	8	6.2×5	20.0	3	6.75	●
ET168-SJN-080100C-P3	M8×1	8	1	P3	2.5P	C	5	70	13	36	6.2	5	8	6.2×5	20.0	3	7.00	○
ET168-SJN-100150C-P4	M10×1.5	10	1.5	P4	2.5P	C	5	75	15	43	7	5.5	8	7×5.5	25.0	3	8.50	●
ET168-SJN-100125C-P3	M10×1.25	10	1.25	P3	2.5P	C	5	75	13	43	7	5.5	8	7×5.5	25.0	3	8.75	○
ET168-SJN-100100C-P3	M10×1	10	1	P3	2.5P	C	5	75	13	43	7	5.5	8	7×5.5	25.0	3	9.00	○
ET168-SJN-120175C-P4	M12×1.75	12	1.75	P4	2.5P	C	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	3	10.25	●
ET168-SJN-120150C-P4	M12×1.5	12	1.5	P4	2.5P	C	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	3	10.50	○
ET168-SJN-120125C-P4	M12×1.25	12	1.25	P4	2.5P	C	5	82	13	42	8.5	6.5	9	8.5×6.5	30.0	3	10.75	○
ET168-SJN-120100C-P3	M12×1	12	1	P3	2.5P	C	5	82	13	42	8.5	6.5	9	8.5×6.5	30.0	3	11.00	○
ET168-SJN-140200C-P5	M14×2	14	2	P5	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.00	●
ET168-SJN-140150C-P4	M14×1.5	14	1.5	P4	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.50	●

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
○			◎										

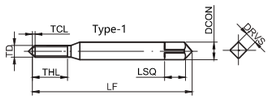
◎ Most Suitable ○ Suitable

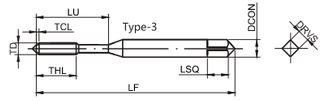
Recommended Cutting Data ※ P323

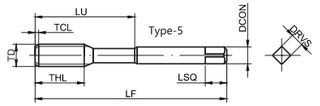
ET168-SJN

M MF UNC UNF HSSE JIS ISO 6H/2B TiAlN

Economical Spiral Fluted Tap for Stainless Steel Machining







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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET168-SJN-140125C-P4	M14×1.25	14	1.25	P4	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.75	○
ET168-SJN-140100C-P3	M14×1	14	1	P3	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	13.00	○
ET168-SJN-160200C-P5	M16×2	16	2	P5	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.00	●
ET168-SJN-160150C-P4	M16×1.5	16	1.5	P4	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.50	○
ET168-SJN-160125C-P4	M16×1.25	16	1.25	P4	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.75	○
ET168-SJN-160100C-P3	M16×1	16	1	P3	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	15.00	○
ET168-SJN-U080F-P1	NO.0-80UNF	1.524	80	P1	1.5P	F	1	37	10	—	3	2.5	3	3×2.5	3.8	2	1.21	○
ET168-SJN-U164F-P1	NO.1-64UNC	1.854	64	P1	1.5P	F	1	37	11	—	3	2.5	3	3×2.5	4.6	2	1.46	○
ET168-SJN-U256C-P1	NO.2-56UNC	2.184	56	P1	2.5P	C	1	45	12	—	3	2.5	3	3×2.5	5.5	2	1.73	○
ET168-SJN-U348C-P1	NO.3-48UNC	2.515	48	P1	2.5P	C	1	45	14	—	3	2.5	3	3×2.5	6.3	2	1.99	○
ET168-SJN-U440C-P2	NO.4-40UNC	2.845	40	P2	2.5P	C	3	45	6	16	3	2.5	3	3×2.5	7.1	3	2.21	○
ET168-SJN-U540C-P2	NO.5-40UNC	3.175	40	P2	2.5P	C	3	50	7	19	4	3.2	6	4×3.2	7.9	3	2.54	○
ET168-SJN-U632C-P2	NO.6-32UNC	3.505	32	P2	2.5P	C	3	50	8	20	4	3.2	6	4×3.2	8.8	3	2.71	○
ET168-SJN-U832C-P2	NO.8-32UNC	4.166	32	P2	2.5P	C	3	57	8	21.5	5	4	7	5×4	10.4	3	3.37	○
ET168-SJN-U1024C-P2	NO.10-24UNC	4.826	24	P2	2.5P	C	3	66	10	26	5.5	4.5	7	5.5×4.5	12.1	3	3.77	○
ET168-SJN-U1032C-P2	NO.10-32UNF	4.826	32	P2	2.5P	C	3	66	10	26	5.5	4.5	7	5.5×4.5	12.1	3	4.03	○
ET168-SJN-U1224C-P2	NO.12-24UNC	5.486	24	P2	2.5P	C	3	66	10	26	5.5	4.5	7	5.5×4.5	13.7	3	4.43	○
ET168-SJN-U1228C-P2	NO.12-28UNF	5.486	28	P2	2.5P	C	3	66	10	26	5.5	4.5	7	5.5×4.5	13.7	3	4.58	○
ET168-SJN-U1420C-P2	1/4-20UNC	6.350	20	P2	2.5P	C	3	69	12	29	6	4.5	7	6×4.5	15.9	3	5.08	○
ET168-SJN-U1428C-P2	1/4-28UNF	6.350	28	P2	2.5P	C	3	69	12	29	6	4.5	7	6×4.5	15.9	3	5.44	○
ET168-SJN-U51618C-P3	5/16-18UNC	7.938	18	P3	2.5P	C	5	70	15	30	6.1	5	8	6.1×5	19.8	3	6.53	○
ET168-SJN-U51624C-P3	5/16-24UNF	7.938	24	P3	2.5P	C	5	70	11	30	6.1	5	8	6.1×5	19.8	3	6.88	○
ET168-SJN-U3816C-P3	3/8-16UNC	9.525	16	P3	2.5P	C	5	75	16	43	7	5.5	8	7×5.5	23.8	3	7.94	○

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is calculated based on an 85% percentage of thread engagement, for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎			○										

◎ Most Suitable ○ Suitable

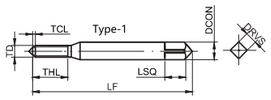
Recommended Cutting Data ※ P323

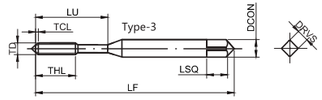
D Tap

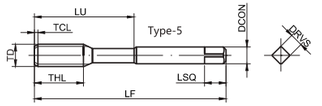
ET168-SJN

M MF UNC UNF HSSE JIS ISO 6H/2B TiAlN

Economical Spiral Fluted Tap for Stainless Steel Machining







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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET168-SJN-U3824C-P3	3/8-24UNF	9.525	24	P3	2.5P	C	5	75	11	43	7	5.5	8	7×5.5	23.8	3	8.47	○
ET168-SJN-U71614C-P4	7/16-14UNC	11.113	14	P4	2.5P	C	5	80	20	40	8	6	9	8×6	27.8	3	9.30	○
ET168-SJN-U71620C-P3	7/16-20UNF	11.113	20	P3	2.5P	C	5	80	13	40	8	6	9	8×6	27.8	3	9.84	○
ET168-SJN-U1213C-P4	1/2-13UNC	12.700	13	P4	2.5P	C	5	85	21	48	9	7	10	9×7	31.8	3	10.75	○
ET168-SJN-U1220C-P3	1/2-20UNF	12.700	20	P3	2.5P	C	5	85	13	48	9	7	10	9×7	31.8	3	11.43	○
ET168-SJN-U91612C-P4	9/16-12UNC	14.288	12	P4	2.5P	C	5	90	21	50	10.5	8	11	10.5×8	35.7	3	12.17	○
ET168-SJN-U91618C-P3	9/16-18UNF	14.288	18	P3	2.5P	C	5	90	15	50	10.5	8	11	10.5×8	35.7	3	12.88	○
ET168-SJN-U5811C-P4	5/8-11UNC	15.875	11	P4	2.5P	C	5	95	23	48	12	9	12	12×9	39.7	3	13.57	○
ET168-SJN-U5818C-P3	5/8-18UNF	15.875	18	P3	2.5P	C	5	95	23	48	12	9	12	12×9	39.7	3	14.46	○

●Stock ○Available Upon Order

Unit (mm)

Notes: Pre-hole size is for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
○			◎											

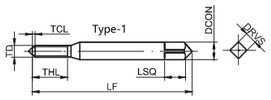
◎ Most Suitable ○ Suitable

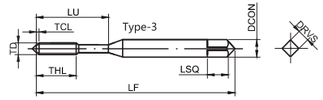
Recommended Cutting Data ※ P323

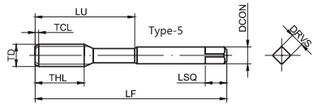
ET168-PJN

M MF UNC UNF HSSE JIS ISO 6H/2B TiAlN

Economical Spiral Pointed Tap for Stainless Steel Machining







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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET168-PJN-010025B-P1	M1×0.25	1	0.25	P1	5P	B	1	37	4.5	—	3	2.5	3	3×2.5	2.5	2	0.75	○
ET168-PJN-012025B-P1	M1.2×0.25	1.2	0.25	P1	5P	B	1	37	5.5	—	3	2.5	3	3×2.5	3.0	2	0.95	○
ET168-PJN-014030B-P1	M1.4×0.3	1.4	0.3	P1	5P	B	1	37	9	—	3	2.5	3	3×2.5	3.5	2	1.10	○
ET168-PJN-016035B-P2	M1.6×0.35	1.6	0.35	P2	5P	B	1	37	8	—	3	2.5	3	3×2.5	4.0	2	1.25	○
ET168-PJN-020040B-P2	M2×0.4	2	0.4	P2	5P	B	1	45	11	—	3	2.5	3	3×2.5	5.0	2	1.60	○
ET168-PJN-025045B-P2	M2.5×0.45	2.5	0.45	P2	5P	B	1	45	12	—	3	2.5	3	3×2.5	6.3	2	2.05	○
ET168-PJN-030050B-P2	M3×0.5	3	0.5	P2	5P	B	3	50	12	19	4	3.2	6	4×3.2	7.5	3	2.50	●
ET168-PJN-035060B-P2	M3.5×0.6	3.5	0.6	P2	5P	B	3	50	13	20	4	3.2	6	4×3.2	8.8	3	2.90	○
ET168-PJN-040070B-P2	M4×0.7	4	0.7	P2	5P	B	3	57	14	21	5	4	7	5×4	10.0	3	3.30	●
ET168-PJN-050080B-P2	M5×0.8	5	0.8	P2	5P	B	3	66	16	25	5.5	4.5	7	5.5×4.5	12.5	3	4.20	●
ET168-PJN-060100B-P2	M6×1	6	1	P2	5P	B	3	69	19.5	29	6	4.5	7	6×4.5	15.0	3	5.00	●
ET168-PJN-070100B-P3	M7×1	7	1	P3	5P	B	3	78	13	23	6.2	5	8	6.2×5	17.5	3	6.00	○
ET168-PJN-080125B-P3	M8×1.25	8	1.25	P3	5P	B	5	70	22	37	6.2	5	8	6.2×5	20.0	3	6.75	●
ET168-PJN-080100B-P3	M8×1	8	1	P3	5P	B	5	70	22	37	6.2	5	8	6.2×5	20.0	3	7.00	○
ET168-PJN-100150B-P4	M10×1.5	10	1.5	P4	5P	B	5	75	24	43	7	5.5	8	7×5.5	25.0	3	8.50	●
ET168-PJN-100125B-P3	M10×1.25	10	1.25	P3	5P	B	5	75	24	43	7	5.5	8	7×5.5	25.0	3	8.75	○
ET168-PJN-100100B-P3	M10×1	10	1	P3	5P	B	5	75	24	43	7	5.5	8	7×5.5	25.0	3	9.00	○
ET168-PJN-120175B-P4	M12×1.75	12	1.75	P4	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.25	●
ET168-PJN-120150B-P4	M12×1.5	12	1.5	P4	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.50	○
ET168-PJN-120125B-P4	M12×1.25	12	1.25	P4	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.75	○
ET168-PJN-120100B-P3	M12×1	12	1	P3	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	11.00	○
ET168-PJN-140200B-P5	M14×2	14	2	P5	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.00	●
ET168-PJN-140150B-P4	M14×1.5	14	1.5	P4	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.50	●

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
◎			○											

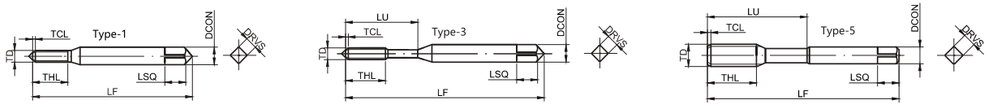
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

D Tap

ET168-PJN

Economical Spiral Pointed Tap for Stainless Steel Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET168-PJN-140125B-P4	M14×1.25	14	1.25	P4	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.75	○
ET168-PJN-140100B-P3	M14×1	14	1	P3	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	13.00	○
ET168-PJN-160200B-P5	M16×2	16	2	P5	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.00	●
ET168-PJN-160150B-P4	M16×1.5	16	1.5	P4	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.50	○
ET168-PJN-160125B-P4	M16×1.25	16	1.25	P4	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.75	○
ET168-PJN-160100B-P3	M16×1	16	1	P3	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	15.00	○
ET168-PJN-U080B-P1	NO.0-80UNF	1.524	80	P1	5P	B	1	37	10	—	3	2.5	3	3×2.5	3.8	2	1.21	○
ET168-PJN-U164B-P1	NO.1-64UNC	1.854	64	P1	5P	B	1	37	11	—	3	2.5	3	3×2.5	4.6	2	1.46	○
ET168-PJN-U256B-P1	NO.2-56UNC	2.184	56	P1	5P	B	1	45	12	—	3	2.5	3	3×2.5	5.5	2	1.73	○
ET168-PJN-U348B-P1	NO.3-48UNC	2.515	48	P1	5P	B	1	45	14	—	3	2.5	3	3×2.5	6.3	2	1.99	○
ET168-PJN-U440B-P2	NO.4-40UNC	2.845	40	P2	5P	B	1	45	13	—	3	2.5	3	3×2.5	7.1	2	2.21	○
ET168-PJN-U540B-P2	NO.5-40UNC	3.175	40	P2	5P	B	3	50	12	19	4	3.2	6	4×3.2	7.9	3	2.54	○
ET168-PJN-U632B-P2	NO.6-32UNC	3.505	32	P2	5P	B	3	50	13	20	4	3.2	6	4×3.2	8.8	3	2.71	○
ET168-PJN-U832B-P2	NO.8-32UNC	4.166	32	P2	5P	B	3	57	13.5	21.5	5	4	7	5×4	10.4	3	3.37	○
ET168-PJN-U1024B-P2	NO.10-24UNC	4.826	24	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	12.1	3	3.77	○
ET168-PJN-U1032B-P2	NO.10-32UNF	4.826	32	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	12.1	3	4.03	○
ET168-PJN-U1224B-P2	NO.12-24UNC	5.486	24	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	13.7	3	4.43	○
ET168-PJN-U1228B-P2	NO.12-28UNF	5.486	28	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	13.7	3	4.58	○
ET168-PJN-U1420B-P2	1/4-20UNC	6.350	20	P2	5P	B	3	69	19.5	29	6	4.5	7	6×4.5	15.9	3	5.08	○
ET168-PJN-U1428B-P2	1/4-28UNF	6.350	28	P2	5P	B	3	69	19.5	29	6	4.5	7	6×4.5	15.9	3	5.44	○
ET168-PJN-U51618B-P3	5/16-18UNC	7.938	18	P3	5P	B	5	70	23	38	6.1	5	8	6.1×5	19.8	3	6.53	○
ET168-PJN-U51624B-P3	5/16-24UNF	7.938	24	P3	5P	B	5	70	23	38	6.1	5	8	6.1×5	19.8	3	6.88	○
ET168-PJN-U3816B-P3	3/8-16UNC	9.525	16	P3	5P	B	5	75	25	43	7	5.5	8	7×5.5	23.8	3	7.94	○

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

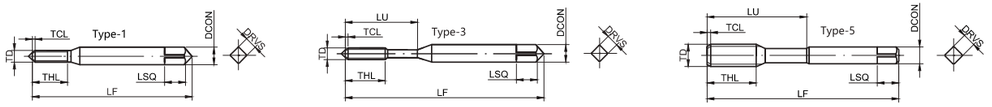
Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎			○										

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

ET168-PJN

Economical Spiral Pointed Tap for Stainless Steel Machining



Continued

Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET168-PJN-U3824B-P3	3/8-24UNF	9.525	24	P3	5P	B	5	75	25	43	7	5.5	8	7×5.5	23.8	3	8.47	○
ET168-PJN-U71614B-P4	7/16-14UNC	11.113	14	P4	5P	B	5	80	29	45	8	6	9	8×6	27.8	3	9.30	○
ET168-PJN-U71620B-P3	7/16-20UNF	11.113	20	P3	5P	B	5	80	29	45	8	6	9	8×6	27.8	3	9.84	○
ET168-PJN-U1213B-P4	1/2-13UNC	12.700	13	P4	5P	B	5	85	30	48	9	7	10	9×7	31.8	3	10.75	○
ET168-PJN-U1220B-P3	1/2-20UNF	12.700	20	P3	5P	B	5	85	30	48	9	7	10	9×7	31.8	3	11.43	○
ET168-PJN-U91612B-P4	9/16-12UNC	14.288	12	P4	5P	B	5	90	30	50	10.5	8	11	10.5×8	35.7	3	12.17	○
ET168-PJN-U91618B-P3	9/16-18UNF	14.288	18	P3	5P	B	5	90	30	50	10.5	8	11	10.5×8	35.7	3	12.88	○
ET168-PJN-U5811B-P4	5/8-11UNC	15.875	11	P4	5P	B	5	95	23	48	12	9	12	12×9	39.7	3	13.57	○
ET168-PJN-U5818B-P3	5/8-18UNF	15.875	18	P3	5P	B	5	95	23	48	12	9	12	12×9	39.7	3	14.46	○

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
◎			○										

◎ Most Suitable ○ Suitable

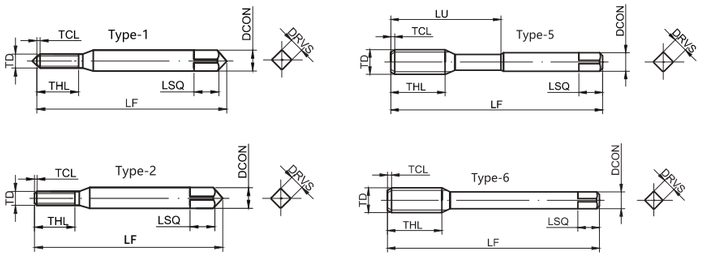
Recommended Cutting Data ※ P323

D Tap

ET166-FJN

M MF UNC UNF HSSE JIS ISO 6H/2B DLC

Economical Fluteless Tap for copper-aluminum Machining



Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET166-FJN-010025D-RH4	M1×0.25	1	0.25	RH4	4P	D	1	32	4.5	—	3	2.5	3	3×2.5	2.5	—	0.92	○
ET166-FJN-010025E-RH4	M1×0.25	1	0.25	RH4	2P	E	2	31	3.5	—	3	2.5	3	3×2.5	2.5	—	0.92	○
ET166-FJN-012025D-RH4	M1.2×0.25	1.2	0.25	RH4	4P	D	1	32	4.5	—	3	2.5	3	3×2.5	3.0	—	1.12	○
ET166-FJN-012025E-RH4	M1.2×0.25	1.2	0.25	RH4	2P	E	2	31	3.5	—	3	2.5	3	3×2.5	3.0	—	1.12	○
ET166-FJN-014030D-RH4	M1.4×0.3	1.4	0.3	RH4	4P	D	1	37	6.5	—	3	2.5	3	3×2.5	3.5	—	1.29	○
ET166-FJN-014030E-RH4	M1.4×0.3	1.4	0.3	RH4	2P	E	2	36	6.5	—	3	2.5	3	3×2.5	3.5	—	1.29	○
ET166-FJN-016035D-RH4	M1.6×0.35	1.6	0.35	RH4	4P	D	1	37	8	—	3	2.5	3	3×2.5	4.0	—	1.46	○
ET166-FJN-016035E-RH4	M1.6×0.35	1.6	0.35	RH4	2P	E	2	35.5	8	—	3	2.5	3	3×2.5	4.0	—	1.46	○
ET166-FJN-017035D-RH4	M1.7×0.35	1.7	0.35	RH4	4P	D	1	37	8	—	3	2.5	3	3×2.5	4.3	—	1.56	○
ET166-FJN-017035E-RH4	M1.7×0.35	1.7	0.35	RH4	2P	E	2	35.5	8	—	3	2.5	3	3×2.5	4.3	—	1.56	○
ET166-FJN-020040D-RH5	M2×0.4	2	0.4	RH5	4P	D	1	45	10	—	3	2.5	3	3×2.5	5.0	—	1.85	●
ET166-FJN-020040E-RH5	M2×0.4	2	0.4	RH5	2P	E	2	43.5	10	—	3	2.5	3	3×2.5	5.0	—	1.85	●
ET166-FJN-023040D-RH5	M2.3×0.4	2.3	0.4	RH5	4P	D	1	45	10	—	3	2.5	3	3×2.5	5.8	—	2.15	○
ET166-FJN-023040E-RH5	M2.3×0.4	2.3	0.4	RH5	2P	E	2	43.5	10	—	3	2.5	3	3×2.5	5.8	—	2.15	○
ET166-FJN-025045D-RH5	M2.5×0.45	2.5	0.45	RH5	4P	D	1	45	13	—	3	2.5	3	3×2.5	6.3	—	2.32	●
ET166-FJN-025045E-RH5	M2.5×0.45	2.5	0.45	RH5	2P	E	2	43.5	13	—	3	2.5	3	3×2.5	6.3	—	2.32	●
ET166-FJN-026045D-RH5	M2.6×0.45	2.6	0.45	RH5	4P	D	1	45	13	—	3	2.5	3	3×2.5	6.5	—	2.42	○
ET166-FJN-026045E-RH5	M2.6×0.45	2.6	0.45	RH5	2P	E	2	43.5	13	—	3	2.5	3	3×2.5	6.5	—	2.42	●
ET166-FJN-030050D-RH7	M3×0.5	3	0.5	RH7	4P	D	1	50	16	—	4	3.2	6	4×3.2	7.5	—	2.82	●

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	○	◎					

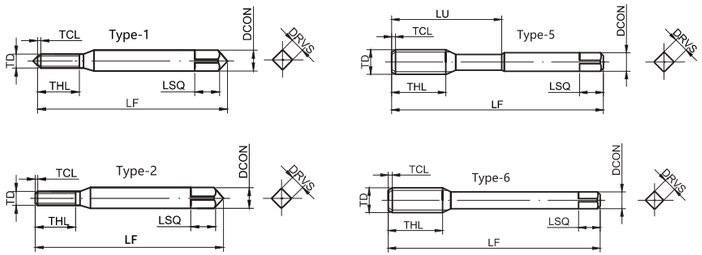
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

ET166-FJN

M MF UNC UNF HSSE JIS ISO 6H/2B DLC

Economical Fluteless Tap for Copper-aluminum Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET166-FJN-030050E-RH7	M3×0.5	3	0.5	RH7	2P	E	2	48	16	—	4	3.2	6	4×3.2	7.5	—	2.82	●
ET166-FJN-035060D-RH7	M3.5×0.6	3.5	0.6	RH7	4P	D	1	50	16	—	4	3.2	6	4×3.2	8.8	—	3.26	●
ET166-FJN-035060E-RH7	M3.5×0.6	3.5	0.6	RH7	2P	E	2	48	16	—	4	3.2	6	4×3.2	8.8	—	3.26	●
ET166-FJN-040070D-RH7	M4×0.7	4	0.7	RH7	4P	D	1	57	18	—	5	4	7	5×4	10.0	—	3.71	●
ET166-FJN-040070E-RH7	M4×0.7	4	0.7	RH7	2P	E	2	55	18	—	5	4	7	5×4	10.0	—	3.71	●
ET166-FJN-050080D-RH7	M5×0.8	5	0.8	RH7	4P	D	1	66	20	—	5.5	4.5	7	5.5×4.5	12.5	—	4.65	●
ET166-FJN-050080E-RH7	M5×0.8	5	0.8	RH7	2P	E	2	63.5	20	—	5.5	4.5	7	5.5×4.5	12.5	—	4.65	●
ET166-FJN-060100D-RH7	M6×1	6	1	RH7	4P	D	1	69	27	—	6	4.5	7	6×4.5	15.0	2	5.55	●
ET166-FJN-060100E-RH7	M6×1	6	1	RH7	2P	E	2	66.5	27	—	6	4.5	7	6×4.5	15.0	2	5.55	●
ET166-FJN-070100D-RH7	M7×1	7	1	RH7	4P	D	5	70	13	23	6.2	5	8	6.2×5	17.5	2	6.55	○
ET166-FJN-070100E-RH7	M7×1	7	1	RH7	2P	E	5	70	13	23	6.2	5	8	6.2×5	17.5	2	6.55	○
ET166-FJN-080125D-RH7	M8×1.25	8	1.25	RH7	4P	D	5	70	13	36	6.2	5	8	6.2×5	20.0	3	7.41	●
ET166-FJN-080125E-RH7	M8×1.25	8	1.25	RH7	2P	E	5	70	13	36	6.2	5	8	6.2×5	20.0	3	7.41	●
ET166-FJN-100150D-RH8	M10×1.5	10	1.5	RH8	4P	D	5	75	15	43	7	5.5	8	7×5.5	25.0	6	9.29	○
ET166-FJN-100150E-RH8	M10×1.5	10	1.5	RH8	2P	E	5	75	15	43	7	5.5	8	7×5.5	25.0	6	9.29	●
ET166-FJN-120175D-RH9	M12×1.75	12	1.75	RH9	4P	D	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	6	11.16	○
ET166-FJN-120175E-RH9	M12×1.75	12	1.75	RH9	2P	E	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	6	11.16	●
ET166-FJN-140200D-RH10	M14×2	14	2	RH10	4P	D	5	88	20	51	10.5	8	11	10.5×8	35.0	6	13.04	○

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	○	◎					

◎ Most Suitable ○ Suitable

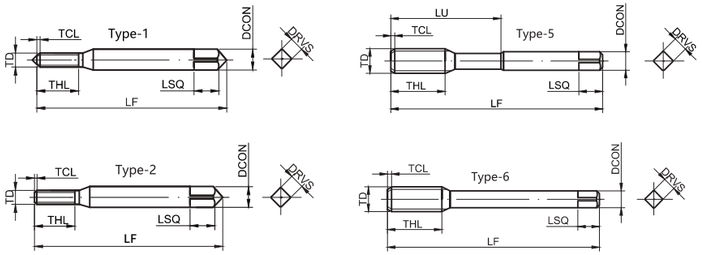
Recommended Cutting Data ※ P323

D Tap

ET166-FJN

M MF UNC UNF HSSE JIS ISO 6H/2B DLC

Economical Fluteless Tap for Copper-aluminum Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET166-FJN-140200E-RH10	M14×2	14	2	RH10	2P	E	5	88	20	51	10.5	8	11	10.5×8	35.0	6	13.04	●
ET166-FJN-160200D-RH10	M16×2	16	2	RH10	4P	D	5	95	20	52	12.5	10	13	12.5×10	40.0	6	15.04	○
ET166-FJN-160200E-RH10	M16×2	16	2	RH10	2P	E	5	95	20	52	12.5	10	13	12.5×10	40.0	6	15.04	●
ET166-FJN-U164D-RH4	NO.1-64UNC	1.854	64	RH4	4P	D	1	37	9	—	3	2.5	3	3×2.5	4.6	—	1.69	○
ET166-FJN-U164E-RH4	NO.1-64UNC	1.854	64	RH4	2P	E	2	35.5	9	—	3	2.5	3	3×2.5	4.6	—	1.69	○
ET166-FJN-U256D-RH4	NO.2-56UNC	2.184	56	RH4	4P	D	1	45	12	—	3	2.5	3	3×2.5	5.5	—	1.99	○
ET166-FJN-U256E-RH4	NO.2-56UNC	2.184	56	RH4	2P	E	2	43.5	12	—	3	2.5	3	3×2.5	5.5	—	1.99	○
ET166-FJN-U348D-RH4	NO.3-48UNC	2.515	48	RH4	4P	D	1	45	15	—	3	2.5	3	3×2.5	6.3	—	2.28	○
ET166-FJN-U348E-RH4	NO.3-48UNC	2.515	48	RH4	2P	E	2	43.5	15	—	3	2.5	3	3×2.5	6.3	—	2.28	○
ET166-FJN-U440D-RH4	NO.4-40UNC	2.845	40	RH4	4P	D	1	45	15	—	3	2.5	3	3×2.5	7.1	—	2.55	○
ET166-FJN-U440E-RH4	NO.4-40UNC	2.845	40	RH4	2P	E	2	43.5	15	—	3	2.5	3	3×2.5	7.1	—	2.55	●
ET166-FJN-U540D-RH4	NO.5-40UNC	3.175	40	RH4	4P	D	1	50	15	—	4	3.2	6	4×3.2	7.9	—	2.88	○
ET166-FJN-U540E-RH4	NO.5-40UNC	3.175	40	RH4	2P	E	2	48	15	—	4	3.2	6	4×3.2	7.9	—	2.88	●
ET166-FJN-U632D-RH7	NO.6-32UNC	3.505	32	RH7	4P	D	1	50	16	—	4	3.2	6	4×3.2	8.8	—	3.16	●
ET166-FJN-U632E-RH7	NO.6-32UNC	3.505	32	RH7	2P	E	2	48	16	—	4	3.2	6	4×3.2	8.8	—	3.16	●
ET166-FJN-U832D-RH7	NO.8-32UNC	4.166	32	RH7	4P	D	1	57	18	—	5	4	7	5×4	10.4	—	3.82	●
ET166-FJN-U832E-RH7	NO.8-32UNC	4.166	32	RH7	2P	E	2	54.5	18	—	5	4	7	5×4	10.4	—	3.82	●
ET166-FJN-U1024D-RH7	NO.10-24UNC	4.826	24	RH7	4P	D	1	66	20	—	5.5	4.5	7	5.5×4.5	12.1	—	4.34	●

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
						◎	○	◎						

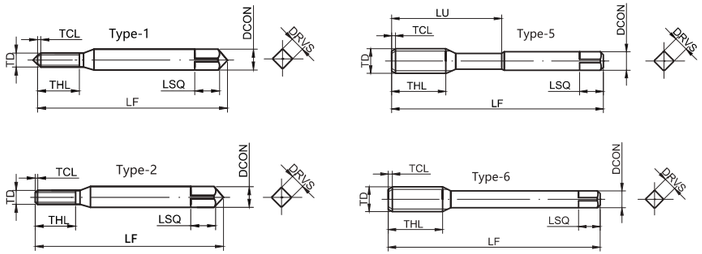
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

ET166-FJN

M MF UNC UNF HSSE JIS ISO 6H/2B DLC

Economical Fluteless Tap for Copper-aluminum Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET166-FJN-U1024E-RH7	NO.10-24UNC	4.826	24	RH7	2P	E	2	63.5	20	—	5.5	4.5	7	5.5×4.5	12.1	—	4.34	●
ET166-FJN-U1224D-RH7	NO.12-24UNC	5.486	24	RH7	4P	D	1	66	23	—	5.5	4.5	7	5.5×4.5	13.7	—	5.00	●
ET166-FJN-U1224E-RH7	NO.12-24UNC	5.486	24	RH7	2P	E	2	63.5	23	—	5.5	4.5	7	5.5×4.5	13.7	—	5.00	●
ET166-FJN-U1420D-RH7	1/4-20UNC	6.350	20	RH7	4P	D	6	62	27	—	6	4.5	7	6×4.5	15.9	2	5.75	●
ET166-FJN-U1420E-RH7	1/4-20UNC	6.350	20	RH7	2P	E	6	62	27	—	6	4.5	7	6×4.5	15.9	2	5.75	●
ET166-FJN-U51618D-RH8	5/16-18UNC	7.938	18	RH8	4P	D	5	70	15	30	6.1	5	8	6.1×5	19.8	3	7.27	●
ET166-FJN-U51618E-RH8	5/16-18UNC	7.938	18	RH8	2P	E	5	70	15	30	6.1	5	8	6.1×5	19.8	3	7.27	●
ET166-FJN-U3816D-RH8	3/8-16UNC	9.525	16	RH8	4P	D	5	75	16	43	7	5.5	8	7×5.5	23.8	6	8.77	●
ET166-FJN-U3816E-RH8	3/8-16UNC	9.525	16	RH8	2P	E	5	75	16	43	7	5.5	8	7×5.5	23.8	6	8.77	●
ET166-FJN-U71614D-RH8	7/16-14UNC	11.113	14	RH8	4P	D	5	80	20	40	8	6	9	8×6	27.8	6	10.23	○
ET166-FJN-U71614E-RH8	7/16-14UNC	11.113	14	RH8	2P	E	5	80	20	40	8	6	9	8×6	27.8	6	10.23	○
ET166-FJN-U1213D-RH8	1/2-13UNC	12.700	13	RH8	4P	D	5	85	21	48	9	7	10	9×7	31.8	6	11.74	○
ET166-FJN-U1213E-RH8	1/2-13UNC	12.700	13	RH8	2P	E	5	85	21	48	9	7	10	9×7	31.8	6	11.74	●
ET166-FJN-U91612D-RH9	9/16-12UNC	14.288	12	RH9	4P	D	5	90	21	50	10.5	8	11	10.5×8	35.7	6	13.25	○
ET166-FJN-U91612E-RH9	9/16-12UNC	14.288	12	RH9	2P	E	5	90	21	50	10.5	8	11	10.5×8	35.7	6	13.25	○
ET166-FJN-U5811D-RH10	5/8-11UNC	15.875	11	RH10	4P	D	5	95	23	48	12	9	12	12×9	39.7	6	14.75	○
ET166-FJN-U5811E-RH10	5/8-11UNC	15.875	11	RH10	2P	E	5	95	23	48	12	9	12	12×9	39.7	6	14.75	●

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material														
P			M	K		N				S		H		
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2	
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel	
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC	
						◎	○	◎						

◎ Most Suitable ○ Suitable

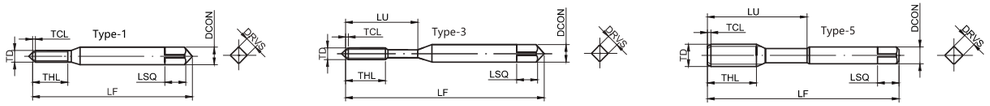
Recommended Cutting Data ※ P323

D Tap

ET166-SJN

M MF UNC UNF HSSE JIS ISO 6H/2B DLC

Economical Spiral Fluted Tap for Copper-aluminum Machining



Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET166-SJN-010025F-P1	M1×0.25	1	0.25	P1	1.5P	F	1	37	4.5	—	3	2.5	3	3×2.5	2.5	2	0.75	○
ET166-SJN-012025F-P1	M1.2×0.25	1.2	0.25	P1	1.5P	F	1	37	5.5	—	3	2.5	3	3×2.5	3.0	2	0.95	○
ET166-SJN-014030F-P1	M1.4×0.3	1.4	0.3	P1	1.5P	F	1	37	6.5	—	3	2.5	3	3×2.5	3.5	2	1.10	○
ET166-SJN-016035F-P2	M1.6×0.35	1.6	0.35	P2	1.5P	F	1	37	8	—	3	2.5	3	3×2.5	4.0	2	1.25	○
ET166-SJN-020040C-P2	M2×0.4	2	0.4	P2	2.5P	C	1	45	11	—	3	2.5	3	3×2.5	5.0	2	1.60	●
ET166-SJN-025045C-P2	M2.5×0.45	2.5	0.45	P2	2.5P	C	1	45	12	—	3	2.5	3	3×2.5	6.3	2	2.05	●
ET166-SJN-030050C-P2	M3×0.5	3	0.5	P2	2.5P	C	3	50	5	18	4	3.2	6	4×3.2	7.5	3	2.50	●
ET166-SJN-035060C-P2	M3.5×0.6	3.5	0.6	P2	2.5P	C	3	50	6	19	4	3.2	6	4×3.2	8.8	3	2.90	○
ET166-SJN-040070C-P2	M4×0.7	4	0.7	P2	2.5P	C	3	57	9	20	5	4	7	5×4	10.0	3	3.30	●
ET166-SJN-050080C-P2	M5×0.8	5	0.8	P2	2.5P	C	3	66	8	25	5.5	4.5	7	5.5×4.5	12.5	3	4.20	●
ET166-SJN-060100C-P2	M6×1	6	1	P2	2.5P	C	3	69	12	24	6	4.5	7	6×4.5	15.0	3	5.00	●
ET166-SJN-070100C-P3	M7×1	7	1	P3	2.5P	C	3	78	13	23	6.2	5	8	6.2×5	17.5	3	6.00	○
ET166-SJN-080125C-P3	M8×1.25	8	1.25	P3	2.5P	C	5	70	13	36	6.2	5	8	6.2×5	20.0	3	6.75	●
ET166-SJN-080100C-P3	M8×1	8	1	P3	2.5P	C	5	70	13	36	6.2	5	8	6.2×5	20.0	3	7.00	●
ET166-SJN-100150C-P4	M10×1.5	10	1.5	P4	2.5P	C	5	75	15	43	7	5.5	8	7×5.5	25.0	3	8.50	●
ET166-SJN-100125C-P3	M10×1.25	10	1.25	P3	2.5P	C	5	75	13	43	7	5.5	8	7×5.5	25.0	3	8.75	●
ET166-SJN-100100C-P3	M10×1	10	1	P3	2.5P	C	5	75	13	43	7	5.5	8	7×5.5	25.0	3	9.00	○
ET166-SJN-120175C-P4	M12×1.75	12	1.75	P4	2.5P	C	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	3	10.25	●
ET166-SJN-120150C-P4	M12×1.5	12	1.5	P4	2.5P	C	5	82	17	42	8.5	6.5	9	8.5×6.5	30.0	3	10.50	●
ET166-SJN-120125C-P4	M12×1.25	12	1.25	P4	2.5P	C	5	82	13	42	8.5	6.5	9	8.5×6.5	30.0	3	10.75	○
ET166-SJN-120100C-P3	M12×1	12	1	P3	2.5P	C	5	82	13	42	8.5	6.5	9	8.5×6.5	30.0	3	11.00	○
ET166-SJN-140200C-P5	M14×2	14	2	P5	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.00	●
ET166-SJN-140150C-P4	M14×1.5	14	1.5	P4	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.50	●

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	◎					

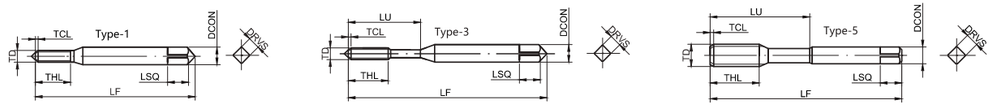
◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

ET166-SJN

M MF UNC UNF HSSE JIS ISO 6H/2B DLC

Economical Spiral Fluted Tap for Copper-aluminum Machining



Continued

Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET166-SJN-140125C-P4	M14×1.25	14	1.25	P4	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.75	○
ET166-SJN-140100C-P3	M14×1	14	1	P3	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	13.00	○
ET166-SJN-160200C-P5	M16×2	16	2	P5	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.00	●
ET166-SJN-160150C-P4	M16×1.5	16	1.5	P4	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.50	●
ET166-SJN-160125C-P4	M16×1.25	16	1.25	P4	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.75	○
ET166-SJN-160100C-P3	M16×1	16	1	P3	2.5P	C	5	95	20	52	12.5	10	13	12.5×10	40.0	3	15.00	○
ET166-SJN-U080F-P1	NO.0-80UNF	1.524	80	P1	1.5P	F	1	37	10	—	3	2.5	3	3×2.5	3.8	2	1.21	○
ET166-SJN-U164F-P1	NO.1-64UNC	1.854	64	P1	1.5P	F	1	37	11	—	3	2.5	3	3×2.5	4.6	2	1.46	○
ET166-SJN-U256C-P1	NO.2-56UNC	2.184	56	P1	2.5P	C	1	45	12	—	3	2.5	3	3×2.5	5.5	2	1.73	○
ET166-SJN-U348C-P1	NO.3-48UNC	2.515	48	P1	2.5P	C	1	45	14	—	3	2.5	3	3×2.5	6.3	2	1.99	○
ET166-SJN-U440C-P2	NO.4-40UNC	2.845	40	P2	2.5P	C	3	45	6	16	3	2.5	3	3×2.5	7.1	3	2.21	●
ET166-SJN-U540C-P2	NO.5-40UNC	3.175	40	P2	2.5P	C	3	50	7	19	4	3.2	6	4×3.2	7.9	3	2.54	○
ET166-SJN-U632C-P2	NO.6-32UNC	3.505	32	P2	2.5P	C	3	50	8	20	4	3.2	6	4×3.2	8.8	3	2.71	●
ET166-SJN-U832C-P2	NO.8-32UNC	4.166	32	P2	2.5P	C	3	57	8	21.5	5	4	7	5×4	10.4	3	3.37	●
ET166-SJN-U1024C-P2	NO.10-24UNC	4.826	24	P2	2.5P	C	3	66	10	26	5.5	4.5	7	5.5×4.5	12.1	3	3.77	●
ET166-SJN-U1032C-P2	NO.10-32UNF	4.826	32	P2	2.5P	C	3	66	10	26	5.5	4.5	7	5.5×4.5	12.1	3	4.03	○
ET166-SJN-U1224C-P2	NO.12-24UNC	5.486	24	P2	2.5P	C	3	66	10	26	5.5	4.5	7	5.5×4.5	13.7	3	4.43	○
ET166-SJN-U1228C-P2	NO.12-28UNF	5.486	28	P2	2.5P	C	3	66	10	26	5.5	4.5	7	5.5×4.5	13.7	3	4.58	○
ET166-SJN-U1420C-P2	1/4-20UNC	6.350	20	P2	2.5P	C	3	69	12	29	6	4.5	7	6×4.5	15.9	3	5.08	●
ET166-SJN-U1428C-P2	1/4-28UNF	6.350	28	P2	2.5P	C	3	69	12	29	6	4.5	7	6×4.5	15.9	3	5.44	●
ET166-SJN-U51618C-P3	5/16-18UNC	7.938	18	P3	2.5P	C	5	70	15	30	6.1	5	8	6.1×5	19.8	3	6.53	●
ET166-SJN-U51624C-P3	5/16-24UNF	7.938	24	P3	2.5P	C	5	70	11	30	6.1	5	8	6.1×5	19.8	3	6.88	●

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	◎					

◎ Most Suitable ○ Suitable

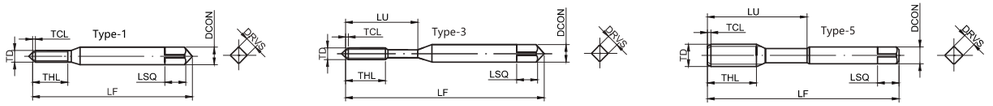
Recommended Cutting Data ※ P323

D Tap

ET166-SJN

M | MF | UNC | UNF | HSSE | JIS | ISO 6H/2B | DLC

Economical Spiral Fluted Tap for Copper-aluminum Machining



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Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET166-SJN-U3816C-P3	3/8-16UNC	9.525	16	P3	2.5P	C	5	75	16	43	7	5.5	8	7×5.5	23.8	3	7.94	●
ET166-SJN-U3824C-P3	3/8-24UNF	9.525	24	P3	2.5P	C	5	75	11	43	7	5.5	8	7×5.5	23.8	3	8.47	●
ET166-SJN-U71614C-P4	7/16-14UNC	11.113	14	P4	2.5P	C	5	80	20	40	8	6	9	8×6	27.8	3	9.30	○
ET166-SJN-U71620C-P3	7/16-20UNF	11.113	20	P3	2.5P	C	5	80	13	40	8	6	9	8×6	27.8	3	9.84	○
ET166-SJN-U1213C-P4	1/2-13UNC	12.700	13	P4	2.5P	C	5	85	21	48	9	7	10	9×7	31.8	3	10.75	○
ET166-SJN-U1220C-P3	1/2-20UNF	12.700	20	P3	2.5P	C	5	85	13	48	9	7	10	9×7	31.8	3	11.43	○
ET166-SJN-U91612C-P4	9/16-12UNC	14.288	12	P4	2.5P	C	5	90	21	50	10.5	8	11	10.5×8	35.7	3	12.17	○
ET166-SJN-U91618C-P3	9/16-18UNF	14.288	18	P3	2.5P	C	5	90	15	50	10.5	8	11	10.5×8	35.7	3	12.88	○
ET166-SJN-U5811C-P4	5/8-11UNC	15.875	11	P4	2.5P	C	5	95	23	48	12	9	12	12×9	39.7	3	13.57	○
ET166-SJN-U5818C-P3	5/8-18UNF	15.875	18	P3	2.5P	C	5	95	23	48	12	9	12	12×9	39.7	3	14.46	○

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC			＜35HRC	35-45HRC	Si＜12%	Si＞12%	＜HB200		＜HB450	＜HB400	45-55HRC	55-60HRC
						◎	◎	◎					

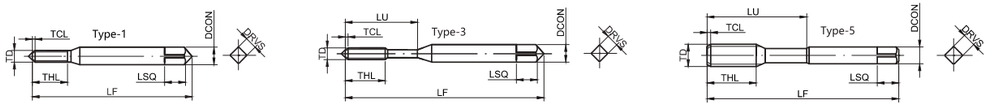
◎Most Suitable ○Suitable

Recommended Cutting Data ※ P323

ET166-PJN

M | MF | UNC | UNF | HSSE | JIS | ISO 6H/2B | DLC

Economical Spiral Pointed Tap for Copper-aluminum Machining



Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET166-PJN-010025B-P1	M1×0.25	1	0.25	P1	5P	B	1	37	4.5	—	3	2.5	3	3×2.5	2.5	2	0.75	○
ET166-PJN-012025B-P1	M1.2×0.25	1.2	0.25	P1	5P	B	1	37	5.5	—	3	2.5	3	3×2.5	3.0	2	0.95	○
ET166-PJN-014030B-P1	M1.4×0.3	1.4	0.3	P1	5P	B	1	37	9	—	3	2.5	3	3×2.5	3.5	2	1.10	○
ET166-PJN-016035B-P2	M1.6×0.35	1.6	0.35	P2	5P	B	1	37	8	—	3	2.5	3	3×2.5	4.0	2	1.25	○
ET166-PJN-020040B-P2	M2×0.4	2	0.4	P2	5P	B	1	45	11	—	3	2.5	3	3×2.5	5.0	2	1.60	●
ET166-PJN-025045B-P2	M2.5×0.45	2.5	0.45	P2	5P	B	1	45	12	—	3	2.5	3	3×2.5	6.3	2	2.05	●
ET166-PJN-030050B-P2	M3×0.5	3	0.5	P2	5P	B	3	50	12	19	4	3.2	6	4×3.2	7.5	3	2.50	●
ET166-PJN-035060B-P2	M3.5×0.6	3.5	0.6	P2	5P	B	3	50	13	20	4	3.2	6	4×3.2	8.8	3	2.90	○
ET166-PJN-040070B-P2	M4×0.7	4	0.7	P2	5P	B	3	57	14	21	5	4	7	5×4	10.0	3	3.30	●
ET166-PJN-050080B-P2	M5×0.8	5	0.8	P2	5P	B	3	66	16	25	5.5	4.5	7	5.5×4.5	12.5	3	4.20	●
ET166-PJN-060100B-P2	M6×1	6	1	P2	5P	B	3	69	19.5	29	6	4.5	7	6×4.5	15.0	3	5.00	●
ET166-PJN-070100B-P3	M7×1	7	1	P3	5P	B	3	78	13	23	6.2	5	8	6.2×5	17.5	3	6.00	○
ET166-PJN-080125B-P3	M8×1.25	8	1.25	P3	5P	B	5	70	22	37	6.2	5	8	6.2×5	20.0	3	6.75	●
ET166-PJN-080100B-P3	M8×1	8	1	P3	5P	B	5	70	22	37	6.2	5	8	6.2×5	20.0	3	7.00	●
ET166-PJN-100150B-P4	M10×1.5	10	1.5	P4	5P	B	5	75	24	43	7	5.5	8	7×5.5	25.0	3	8.50	●
ET166-PJN-100125B-P3	M10×1.25	10	1.25	P3	5P	B	5	75	24	43	7	5.5	8	7×5.5	25.0	3	8.75	●
ET166-PJN-100100B-P3	M10×1	10	1	P3	5P	B	5	75	24	43	7	5.5	8	7×5.5	25.0	3	9.00	○
ET166-PJN-120175B-P4	M12×1.75	12	1.75	P4	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.25	●
ET166-PJN-120150B-P4	M12×1.5	12	1.5	P4	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.50	●
ET166-PJN-120125B-P4	M12×1.25	12	1.25	P4	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.75	○
ET166-PJN-120100B-P3	M12×1	12	1	P3	5P	B	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	11.00	○
ET166-PJN-140200B-P5	M14×2	14	2	P5	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.00	●

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC			＜35HRC	35-45HRC	Si＜12%	Si＞12%	＜HB200		＜HB450	＜HB400	45-55HRC	55-60HRC
						◎	◎	◎					

◎Most Suitable ○Suitable

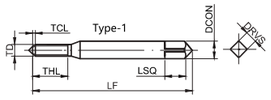
Recommended Cutting Data ※ P323

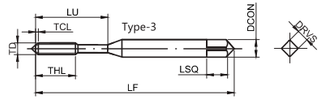
D Tap

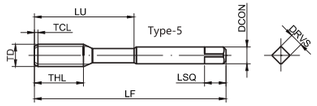
ET166-PJN

M | MF | UNC | UNF | HSSE | JIS | ISO 6H/2B | DLC

Economical Spiral Pointed Tap for Copper-aluminum Machining







Continued

Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET166-PJN-140150B-P4	M14×1.5	14	1.5	P4	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.50	●
ET166-PJN-140125B-P4	M14×1.25	14	1.25	P4	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.75	○
ET166-PJN-140100B-P3	M14×1	14	1	P3	5P	B	5	88	20	51	10.5	8	11	10.5×8	35.0	3	13.00	○
ET166-PJN-160200B-P5	M16×2	16	2	P5	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.00	●
ET166-PJN-160150B-P4	M16×1.5	16	1.5	P4	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.50	●
ET166-PJN-160125B-P4	M16×1.25	16	1.25	P4	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	14.75	○
ET166-PJN-160100B-P3	M16×1	16	1	P3	5P	B	5	95	20	52	12.5	10	13	12.5×10	40.0	3	15.00	○
ET166-PJN-U080B-P1	NO.0-80UNF	1.524	80	P1	5P	B	1	37	10	—	3	2.5	3	3×2.5	3.8	2	1.21	○
ET166-PJN-U164B-P1	NO.1-64UNC	1.854	64	P1	5P	B	1	37	11	—	3	2.5	3	3×2.5	4.6	2	1.46	○
ET166-PJN-U256B-P1	NO.2-56UNC	2.184	56	P1	5P	B	1	45	12	—	3	2.5	3	3×2.5	5.5	2	1.73	○
ET166-PJN-U348B-P1	NO.3-48UNC	2.515	48	P1	5P	B	1	45	14	—	3	2.5	3	3×2.5	6.3	2	1.99	○
ET166-PJN-U440B-P2	NO.4-40UNC	2.845	40	P2	5P	B	1	45	13	—	3	2.5	3	3×2.5	7.1	2	2.21	●
ET166-PJN-U540B-P2	NO.5-40UNC	3.175	40	P2	5P	B	3	50	12	19	4	3.2	6	4×3.2	7.9	3	2.54	○
ET166-PJN-U632B-P2	NO.6-32UNC	3.505	32	P2	5P	B	3	50	13	20	4	3.2	6	4×3.2	8.8	3	2.71	●
ET166-PJN-U832B-P2	NO.8-32UNC	4.166	32	P2	5P	B	3	57	13.5	21.5	5	4	7	5×4	10.4	3	3.37	●
ET166-PJN-U1024B-P2	NO.10-24UNC	4.826	24	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	12.1	3	3.77	●
ET166-PJN-U1032B-P2	NO.10-32UNF	4.826	32	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	12.1	3	4.03	○
ET166-PJN-U1224B-P2	NO.12-24UNC	5.486	24	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	13.7	3	4.43	○
ET166-PJN-U1228B-P2	NO.12-28UNF	5.486	28	P2	5P	B	3	66	16.5	26	5.5	4.5	7	5.5×4.5	13.7	3	4.58	○
ET166-PJN-U1420B-P2	1/4-20UNC	6.350	20	P2	5P	B	3	69	19.5	29	6	4.5	7	6×4.5	15.9	3	5.08	●

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	◎					

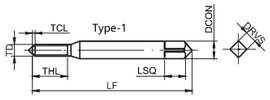
◎ Most Suitable ○ Suitable

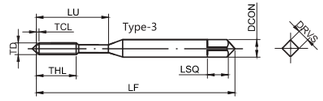
Recommended Cutting Data ※ P323

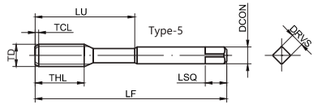
ET166-PJN

M | MF | UNC | UNF | HSSE | JIS | ISO 6H/2B | DLC

Economical Spiral Pointed Tap for Copper-aluminum Machining







Continued

Order No.	Thread Size	TD	TP/TPI	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET166-PJN-U1428B-P2	1/4-28UNF	6.350	28	P2	5P	B	3	69	19.5	29	6	4.5	7	6×4.5	15.9	3	5.44	●
ET166-PJN-U51618B-P3	5/16-18UNC	7.938	18	P3	5P	B	5	70	23	38	6.1	5	8	6.1×5	19.8	3	6.53	●
ET166-PJN-U51624B-P3	5/16-24UNF	7.938	24	P3	5P	B	5	70	23	38	6.1	5	8	6.1×5	19.8	3	6.88	●
ET166-PJN-U3816B-P3	3/8-16UNC	9.525	16	P3	5P	B	5	75	25	43	7	5.5	8	7×5.5	23.8	3	7.94	●
ET166-PJN-U3824B-P3	3/8-24UNF	9.525	24	P3	5P	B	5	75	25	43	7	5.5	8	7×5.5	23.8	3	8.47	●
ET166-PJN-U71614B-P4	7/16-14UNC	11.113	14	P4	5P	B	5	80	29	45	8	6	9	8×6	27.8	3	9.30	○
ET166-PJN-U71620B-P3	7/16-20UNF	11.113	20	P3	5P	B	5	80	29	45	8	6	9	8×6	27.8	3	9.84	○
ET166-PJN-U1213B-P4	1/2-13UNC	12.700	13	P4	5P	B	5	85	30	48	9	7	10	9×7	31.8	3	10.75	○
ET166-PJN-U1220B-P3	1/2-20UNF	12.700	20	P3	5P	B	5	85	30	48	9	7	10	9×7	31.8	3	11.43	○
ET166-PJN-U91612B-P4	9/16-12UNC	14.288	12	P4	5P	B	5	90	30	50	10.5	8	11	10.5×8	35.7	3	12.17	○
ET166-PJN-U91618B-P3	9/16-18UNF	14.288	18	P3	5P	B	5	90	30	50	10.5	8	11	10.5×8	35.7	3	12.88	○
ET166-PJN-U5811B-P4	5/8-11UNC	15.875	11	P4	5P	B	5	95	23	48	12	9	12	12×9	39.7	3	13.57	○
ET166-PJN-U5818B-P3	5/8-18UNF	15.875	18	P3	5P	B	5	95	23	48	12	9	12	12×9	39.7	3	14.46	○

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
						◎	◎	◎					

◎ Most Suitable ○ Suitable

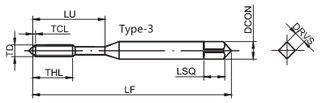
Recommended Cutting Data ※ P323

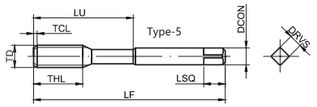
D Tap

ET128-HJN

M | MF | HSSE | JIS | ISO 6H | TiAl-Si

Economical Straight Fluted Tap for Cast Iron Machining





Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET128-HJN-050080C-P3	M5×0.8	5	0.8	P3	2.5P	C	3	66	16	25	5.5	4.5	7	5.5×4.5	12.5	3	4.20	○
ET128-HJN-060100C-P3	M6×1	6	1	P3	2.5P	C	3	69	19.5	29	6	4.5	7	6×4.5	15.0	3	5.00	○
ET128-HJN-070100C-P3	M7×1	7	1	P3	2.5P	C	3	78	13	23	6.2	5	8	6.2×5	17.5	3	6.00	○
ET128-HJN-080125C-P4	M8×1.25	8	1.25	P4	2.5P	C	5	70	22	37	6.2	5	8	6.2×5	20.0	3	6.75	○
ET128-HJN-080100C-P4	M8×1	8	1	P4	2.5P	C	5	70	22	37	6.2	5	8	6.2×5	20.0	3	7.00	○
ET128-HJN-100150C-P5	M10×1.5	10	1.5	P5	2.5P	C	5	75	24	43	7	5.5	8	7×5.5	25.0	3	8.50	○
ET128-HJN-100125C-P4	M10×1.25	10	1.25	P4	2.5P	C	5	75	24	43	7	5.5	8	7×5.5	25.0	3	8.75	○
ET128-HJN-100100C-P4	M10×1	10	1	P4	2.5P	C	5	75	24	43	7	5.5	8	7×5.5	25.0	3	9.00	○
ET128-HJN-120175C-P5	M12×1.75	12	1.75	P5	2.5P	C	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.25	○
ET128-HJN-120150C-P5	M12×1.5	12	1.5	P5	2.5P	C	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.50	○
ET128-HJN-120125C-P5	M12×1.25	12	1.25	P5	2.5P	C	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.75	○
ET128-HJN-120100C-P4	M12×1	12	1	P4	2.5P	C	5	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	11.00	○
ET128-HJN-140200C-P6	M14×2	14	2	P6	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.00	○
ET128-HJN-140150C-P5	M14×1.5	14	1.5	P5	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.50	○
ET128-HJN-140125C-P5	M14×1.25	14	1.25	P5	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	12.75	○
ET128-HJN-140100C-P4	M14×1	14	1	P4	2.5P	C	5	88	20	51	10.5	8	11	10.5×8	35.0	3	13.00	○
ET128-HJN-160200C-P6	M16×2	16	2	P6	2.5P	C	5	90	20	52	12.5	10	13	12.5×10	40.0	3	14.00	○
ET128-HJN-160150C-P5	M16×1.5	16	1.5	P5	2.5P	C	5	90	20	52	12.5	10	13	12.5×10	40.0	3	14.50	○
ET128-HJN-160125C-P5	M16×1.25	16	1.25	P5	2.5P	C	5	90	20	52	12.5	10	13	12.5×10	40.0	3	14.75	○
ET128-HJN-160100C-P4	M16×1	16	1	P4	2.5P	C	5	90	20	52	12.5	10	13	12.5×10	40.0	3	15.00	○

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon steel, alloy steel	Alloy steel, tool steel	PH and ferritic/ martensitic steel	Stainless steel	Gray cast iron, nodular cast iron	High alloy cast iron	Forged aluminum alloy, cast aluminium alloy	Cast aluminum alloy	Copper alloy	Composite material	High-temperature alloy	Titanium alloy	Hardened steel	Hardened steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
				◎	○								

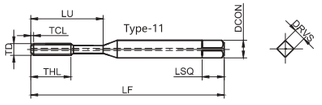
◎ Most Suitable ○ Suitable

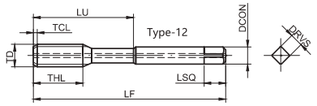
Recommended Cutting Data ※ P323

ET128-HJC

M | MF | HSSE | JIS | ISO 6H | TiAl-Si

Economical Straight Fluted Tap for Internal Cooling Cast Iron Machining





Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET128-HJC-050080C-P3	M5×0.8	5	0.8	P3	2.5P	C	11	61	16	25	5.5	4.5	7	5.5×4.5	12.5	3	4.20	○
ET128-HJC-060100C-P3	M6×1	6	1	P3	2.5P	C	11	63	19.5	29	6	4.5	7	6×4.5	15.0	3	5.00	○
ET128-HJC-070100C-P3	M7×1	7	1	P3	2.5P	C	11	72	13	23	6.2	5	8	6.2×5	17.5	3	6.00	○
ET128-HJC-080125C-P4	M8×1.25	8	1.25	P4	2.5P	C	12	70	22	37	6.2	5	8	6.2×5	20.0	3	6.75	○
ET128-HJC-080100C-P4	M8×1	8	1	P4	2.5P	C	12	70	22	37	6.2	5	8	6.2×5	20.0	3	7.00	○
ET128-HJC-100150C-P5	M10×1.5	10	1.5	P5	2.5P	C	12	75	24	43	7	5.5	8	7×5.5	25.0	3	8.50	○
ET128-HJC-100125C-P4	M10×1.25	10	1.25	P4	2.5P	C	12	75	24	43	7	5.5	8	7×5.5	25.0	3	8.75	○
ET128-HJC-100100C-P4	M10×1	10	1	P4	2.5P	C	12	75	24	43	7	5.5	8	7×5.5	25.0	3	9.00	○
ET128-HJC-120175C-P5	M12×1.75	12	1.75	P5	2.5P	C	12	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.25	○
ET128-HJC-120150C-P5	M12×1.5	12	1.5	P5	2.5P	C	12	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.50	○
ET128-HJC-120125C-P5	M12×1.25	12	1.25	P5	2.5P	C	12	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.75	○
ET128-HJC-120100C-P4	M12×1	12	1	P4	2.5P	C	12	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	11.00	○
ET128-HJC-140200C-P6	M14×2	14	2	P6	2.5P	C	12	88	20	51	10.5	8	11	10.5×8	35.0	3	12.00	○
ET128-HJC-140150C-P5	M14×1.5	14	1.5	P5	2.5P	C	12	88	20	51	10.5	8	11	10.5×8	35.0	3	12.50	○
ET128-HJC-140125C-P5	M14×1.25	14	1.25	P5	2.5P	C	12	88	20	51	10.5	8	11	10.5×8	35.0	3	12.75	○
ET128-HJC-140100C-P4	M14×1	14	1	P4	2.5P	C	12	88	20	51	10.5	8	11	10.5×8	35.0	3	13.00	○
ET128-HJC-160200C-P6	M16×2	16	2	P6	2.5P	C	12	95	20	52	12.5	10	13	12.5×10	40.0	3	14.00	○
ET128-HJC-160150C-P5	M16×1.5	16	1.5	P5	2.5P	C	12	95	20	52	12.5	10	13	12.5×10	40.0	3	14.50	○
ET128-HJC-160125C-P5	M16×1.25	16	1.25	P5	2.5P	C	12	95	20	52	12.5	10	13	12.5×10	40.0	3	14.75	○
ET128-HJC-160100C-P4	M16×1	16	1	P4	2.5P	C	12	95	20	52	12.5	10	13	12.5×10	40.0	3	15.00	○

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
<35HRC	35-48HRC			<35HRC	35-45HRC	Si<12%	Si>12%	<HB200		<HB450	<HB400	45-55HRC	55-60HRC
				◎	○								

◎ Most Suitable ○ Suitable

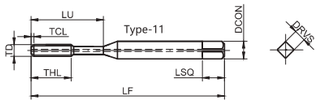
Recommended Cutting Data ※ P323

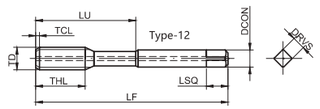
D Tap

ET128-HJR

M | MF | HSSE | JIS | ISO 6H | TiAl-Si

Economical Straight Fluted Tap for Internal Cooling Cast Iron Machining





Order No.	Thread Size	TD	TP	TCTR	TCL	THCHT	Schematic Diagram	LF	THL	LU	DCON	DRVS	LSQ	CZCMS	TDRM	NOF	PHD	In Stock
ET128-HJR-050080C-P3	M5×0.8	5	0.8	P3	2.5P	C	11	61	16	25	5.5	4.5	7	5.5×4.5	12.5	3	4.20	○
ET128-HJR-060100C-P3	M6×1	6	1	P3	2.5P	C	11	63	19.5	29	6	4.5	7	6×4.5	15.0	3	5.00	○
ET128-HJR-070100C-P3	M7×1	7	1	P3	2.5P	C	11	72	13	23	6.2	5	8	6.2×5	17.5	3	6.00	○
ET128-HJR-080125C-P4	M8×1.25	8	1.25	P4	2.5P	C	12	70	22	37	6.2	5	8	6.2×5	20.0	3	6.75	○
ET128-HJR-080100C-P4	M8×1	8	1	P4	2.5P	C	12	70	22	37	6.2	5	8	6.2×5	20.0	3	7.00	○
ET128-HJR-100150C-P5	M10×1.5	10	1.5	P5	2.5P	C	12	75	24	43	7	5.5	8	7×5.5	25.0	3	8.50	○
ET128-HJR-100125C-P4	M10×1.25	10	1.25	P4	2.5P	C	12	75	24	43	7	5.5	8	7×5.5	25.0	3	8.75	○
ET128-HJR-100100C-P4	M10×1	10	1	P4	2.5P	C	12	75	24	43	7	5.5	8	7×5.5	25.0	3	9.00	○
ET128-HJR-120175C-P5	M12×1.75	12	1.75	P5	2.5P	C	12	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.25	○
ET128-HJR-120150C-P5	M12×1.5	12	1.5	P5	2.5P	C	12	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.50	○
ET128-HJR-120125C-P5	M12×1.25	12	1.25	P5	2.5P	C	12	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	10.75	○
ET128-HJR-120100C-P4	M12×1	12	1	P4	2.5P	C	12	82	29	46	8.5	6.5	9	8.5×6.5	30.0	3	11.00	○
ET128-HJR-140200C-P6	M14×2	14	2	P6	2.5P	C	12	88	20	51	10.5	8	11	10.5×8	35.0	3	12.00	○
ET128-HJR-140150C-P5	M14×1.5	14	1.5	P5	2.5P	C	12	88	20	51	10.5	8	11	10.5×8	35.0	3	12.50	○
ET128-HJR-140125C-P5	M14×1.25	14	1.25	P5	2.5P	C	12	88	20	51	10.5	8	11	10.5×8	35.0	3	12.75	○
ET128-HJR-140100C-P4	M14×1	14	1	P4	2.5P	C	12	88	20	51	10.5	8	11	10.5×8	35.0	3	13.00	○
ET128-HJR-160200C-P6	M16×2	16	2	P6	2.5P	C	12	95	20	52	12.5	10	13	12.5×10	40.0	3	14.00	○
ET128-HJR-160150C-P5	M16×1.5	16	1.5	P5	2.5P	C	12	95	20	52	12.5	10	13	12.5×10	40.0	3	14.50	○
ET128-HJR-160125C-P5	M16×1.25	16	1.25	P5	2.5P	C	12	95	20	52	12.5	10	13	12.5×10	40.0	3	14.75	○
ET128-HJR-160100C-P4	M16×1	16	1	P4	2.5P	C	12	95	20	52	12.5	10	13	12.5×10	40.0	3	15.00	○

●Stock ○Available Upon Order

Unit (mm)

Pre-hole size is for reference only.

Workpiece Material													
P			M	K		N				S		H	
1 2 3 4	5	6 7	1 2 3	1 2	3	1 2	3	4	5	1 2 3	4	1	2
Carbon Steel, Alloy Steel	Alloy Steel, Tool Steel	PH and Ferritic/ Martensitic Steel	Stainless Steel	Gray Cast Iron, Nodular Cast Iron	High Alloy Cast Iron	Forged Aluminum Alloy, Cast Aluminium Alloy	Cast Aluminum Alloy	Copper Alloy	Composite Material	High-temperature Alloy	Titanium Alloy	Hardened Steel	Hardened Steel
＜35HRC	35-48HRC			＜35HRC	35-45HRC	Si＜12%	Si＞12%	＜HB200		＜HB450	＜HB400	45-55HRC	55-60HRC
				◎	○								

◎ Most Suitable ○ Suitable

Recommended Cutting Data ※ P323

Recommended Cutting Data-economical Taps

Workpiece Material		ET138-FJN	ET166-FJN	ET168-FJN	ET138-SJN	ET166-SJN	ET168-SJN	ET138-PJN	ET166-PJN	ET168-PJN	ET128-HJN	ET128-HJC ET128-HJR
		External Cooling										Internal Cooling
P	Low-carbon Steel (＜125HB)	5-15		5-10	5-15		5-10	5-15		5-10		
	High-carbon Steel and Alloy Steel (＜35HRC)	5-10		5-10	5-10		5-10	5-10		5-10		
	Quenched and Tempered Steel and Tool Steel (35-48HRC)											
M	Austenitic Stainless Steels (130-200HB)	5-10		5-15	5-10		5-15	5-10		5-15		
	High Strength Austenitic and Cast Stainless Steel (＜25HRC)	5-10		5-15	5-10		5-15	5-10		5-15		
	Duplex Stainless Steel (＜30HRC)	4-8		5-10	4-8		5-10	4-8		5-10		
K	Gray Cast Iron and Nodular Cast Iron (＜35HRC)										15-30	20-40
	High Alloy Cast Iron (＜43HRC)										10-20	15-25
N	Forged Aluminum Alloy and Cast Aluminum Alloy (Si＜12%)		5-10			5-10			5-10			
	Cast Aluminum Alloy (Si＞12%)		4-8			4-8			4-8			
	Copper Alloy (＜HB200)		5-10			5-10			5-10			

Unit (m/min)

Notes:
1. It is recommended to use a special tap shank for machining.
2. The cutting data in the table are recommended data. Please adjust the cutting data according to the actual machining situation.

D Tap

Tap Inquiry Information Form

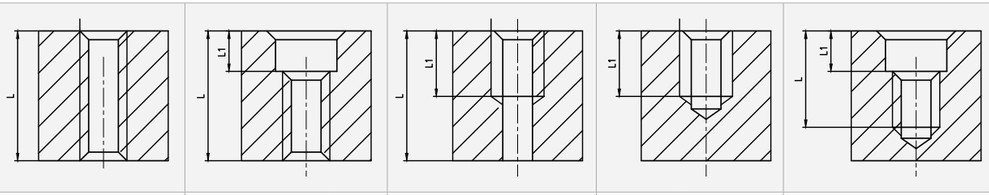
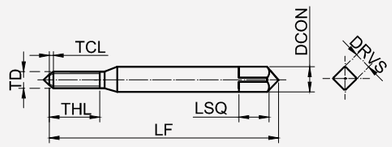
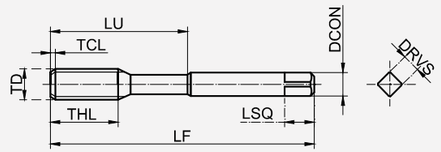
Tap Desired Form				
1. Hole Type				
Specifications:	Tolerance:			
Thread hole characteristics:				
				
☐	☐	☐	☐	☐
2. Machining Type				
Machine model:	Machining characteristics:			
Materials being machined:	Material hardness:	HB	HRC	
Machining parameters:	Cooling mode:			
3. Tool Types				
☐ New project sampling	☐ Replacing/optimizing existing competitive products			
Tap types:	Additional:			
Desired tool size:	Current brand/specification:			
				
TD*TP:	TCL:	THL:		
DCON:	LSQ:	LF:		
Other size requirements:				
4. Notes:				

Table of Thread Bottom Hole Diameters for Fluteless Taps

Metric Screw Thread — Unit: mm

Thread Size	Bottom-hole Diameter for 1-class thread		Bottom-hole Diameter for 2-class thread	
	RH Accuracy	Minimum to Maximum (percentage of thread engagement, %)	RH Accuracy	Minimum to Maximum (percentage of thread engagement, %)
M1×0.25	2	0.87~0.89(100~85)	4	0.90~0.92(100~80)
M1.2×0.25	2	1.07~1.09 (100~85)	4	1.10~1.12 (100~80)
M1.4×0.3	2	1.244~1.263(100~85)	4	1.270~1.294(100~80)
M1.6×0.35	2	1.40~1.44 (100~80)	4	1.44 ~1.48 (100~75)
M1.7×0.35	2	1.51~1.54 (100~80)	4	1.54 ~1.58 (100~75)
M2×0.4	2	1.78~1.82(100~80)	4	1.81~1.85(100~75)
M2.3×0.4	2	2.08~2.12 (100~80)	4	2.11~2.15(100~75)
M2.5×0.45	2	2.25~2.29 (100~80)	4	2.28~2.33(100~75)
M2.6×0.45	2	2.35~2.39 (100~80)	4	2.38~2.43(100~75)
M3×0.5	3	2.74~2.78 (100~80)	5	2.76~2.81(100~75)
M3.5×0.6	3	3.18 ~3.21 (100~85)	5	3.20~3.26 (100~75)
M4×0.7	4	3.63~3.67(100~85)	6	3.65~3.70(100~85)
M5×0.8	4	4.57~4.62(100~85)	6	4.59~4.66 (100~80)
M6×1.0	4	5.45~5.51(100~85)	7	5.48~5.57(100~80)
M7×1.0	4	6.45~6.51(100~85)	7	6.48~6.57(100~80)
M8 ×1.25	5	7.31~7.38 (100~85)	7	7.34~7.41 (100~85)
M10×1.5	5	9.16~9.22 (100~90)	7	9.18~9.28 (100~85)
M12×1.75	5	11.01~11.08 (100~90)	8	11.05~11.15 (100~85)
M14×2.0	6	12.83~12.95 (100~90)	10	12.92~13.04 (100~85)
M16×2.0	6	14.87~14.95 (100~90)	10	14.92~15.04 (100~85)

D Tap

Table of Thread Bottom Hole Diameters for Fluteless Taps

American Thread — Unit: mm

Thread Size	Bottom-hole Diameter for 2B-class Thread				Bottom-hole Diameter for 3B-class Thread	
	Outer Diameter	Pitch	RH Accuracy	Minimum to Maximum (percentage of thread engagement, %)	RH Accuracy	Minimum to Maximum (percentage of thread engagement, %)
NO.0~80UNF	1.524	0.3175	4	1.38~1.41(100~65)	3	1.36~1.40(100~65)
1~72UNF	1.854	0.3528	4	1.68~1.72(100~65)	3	1.67~1.71(100~65)
1~64UNC	1.854	0.3969	4	1.66~1.70(100~65)	3	1.65~1.69(100~65)
2~56UNC	2.184	0.4536	4	1.96~2.02(100~65)	3	1.95~2.01 (100~65)
2~64UNF	2.184	0.3969	4	1.98~2.04 (100~65)	3	1.97~2.03 (100~65)
3~48UNC	2.514	0.5292	4	2.25~2.32(100~65)	3	2.23~2.31(100~65)
3~56UNF	2.514	0.4536	4	2.29~2.35 (100~65)	3	2.28~2.34 (100~65)
4~40UNC	2.844	0.635	5	2.52~2.60 (100~70)	3	2.50~2.58 (100~70)
4~48UNF	2.844	0.5292	4	2.57~2.64 (100~70)	3	2.56~2.63 (100~70)
6~32UNC	3.504	0.7938	5	3.09~3.17 (100~75)	3	3.06~3.14 (100~75)
6~40UNF	3.504	0.635	5	3.19~3.26(100~70)	3	3.16~3.22 (100~75)
8~32UNC	4.164	0.7938	6	3.75~3.83 (100~75)	4	3.74~3.82(100~75)
8~36UNF	4.164	0.7056	5	3.80~3.88 (100~75)	4	3.79~3.86 (100~75)
10~24UNC	4.824	1.0583	6	4.26~4.35 (100~80)	4	4.24~4.32(100~80)
10~32UNF	4.824	0.7938	5	4.41~4.48 (100~80)	4	4.40~4.46 (100~80)
12~24UNC	5.484	1.0583	6	4.92~5.01 (100~8O)	4	4.90~4.96(100~85)
12~28UNF	5.484	0.9071	5	5.00~5.08 (100~80)	4	4.99~5.06(100~80)
1/4~20UNC	6.35	1.27	6	5.66~5.76(100~80)	4	5.64~5.74 (100~80)
1/4~28UNF	6.35	0.9071	5	5.86~5.93 (100~80)	4	5.85~5.92 (100~80)
5/16~18UNC	7.9375	1.4111	7	7.18~7.29 (100~80)	5	7.15~7.24 (100~85)
5/16~24UNF	7.9375	1.0583	6	7.38~7.46(100~80)	5	7.36~7.43 (100~85)
3/8~16UNC	9.525	1.5875	7	8.66~8.78 (100~80)	5	8.63~8.73 (100~85)
3/8~24UNF	9.525	1.0583	6	8.96~9.05 (100~80)	5	8.95~9.02 (100~85)
7/16~14UNC	11.1125	1.814	7	10.11~10.25(100~80)	5	10.08~10.19[100~85)
7/16~20UNF	11.1125	1.27	7	10.44~10.54 (100~80)	5	10.41~10.49(100~85)
1/2~13UNC	12.7	1.9538	8	11.62~11.78 (100~80)	6	11.60~11.68 (100~90)
1/2~20UNF	12.7	1.27	7	12.02~12.12(100~80)	5	12.00~12.05 (100~90)
5/8~11UNC	15.875	2.3091	11	14.62~14.76(100~85)	8	14.58~14.67(100~90)
5/8~18UNF	15.875	1.4111	9	15.14~15.25 (100~80)	7	15.11~15.17 (100~90)

Table of Thread Bottom Hole Diameters for Cutting Taps

Metric Screw Thread — Unit: mm

Thread Size		Standard Diameter	Drilling Diameter for 2-class Thread	
			Max.	Min.
M1	0.25	0.75	0.785	0.729
M1.1	0.25	0.85	0.885	0.829
M1.2	0.25	0.95	0.985	0.929
M1.4	0.3	1.1	1.142	1.075
M1.6	0.35	1.25	1.321	1.221
M1.7	0.35	1.35	1.421	1.321
M1.8	0.35	1.45	1.521	1.421
M2	0.4	1.6	1.679	1.567
M2.2	0.45	1.75	1.838	1.713
M2.3	0.4	1.9	1.979	1.867
M2.5	0.45	2.1	2.138	2.013
M2.6	0.45	2.2	2.238	2.113
M3	0.5	2.5	2.599	2.459
M3.5	0.6	2.9	3.01	2.85
M4	0.7	3.3	3.422	3.242
M4.5	0.75	3.8	3.878	3.688
M5	0.8	4.2	4.334	4.134
M6	1	5	5.153	4.917
M7	1	6	6.153	5.917
M8	1.25	6.8	6.912	6.647
M8	1	7	7.153	6.917
M9	1.25	7.8	7.912	7.647
M10	1.5	8.5	8.676	8.376
M10	1.25	8.8	8.912	8.647
M10	1	9	9.153	8.917
M11	1.5	9.5	9.676	9.376
M12	1.75	10.3	10.441	10.106
M12	1.5	10.5	10.676	10.376
M12	1.25	10.8	10.912	10.647
M12	1	11	11.153	10.917
M14	2	12	12.21	11.835
M14	1.5	12.5	12.676	12.376
M14	1	13	13.153	12.917
M16	2	14	14.21	13.835
M16	1.5	14.5	14.676	14.376
M16	1	15	15.15	14.917

D Tap

Table of Thread Bottom Hole Diameters for Cutting Taps

Metric Screw Thread				Unit: mm
American Coarse Thread Specifications		Standard Diameter	Drilling Diameter for 2-class Thread	
			Max.	Min.
NO.1	-64	1.55	1.582	1.425
NO.2	-56	1.8	1.871	1.695
NO.3	-48	2.05	2.146	1.941
NO.4	-40	2.3	2.385	2.157
NO.5	-40	2.6	2.697	2.487
NO.6	-32	2.8	2.895	2.642
NO.8	-32	3.4	3.53	3.302
NO.10	-24	3.9	3.962	3.683
N0.12	-24	4.5	4.597	4.344
1/4	-20	5.1	5.257	4.979
5/16	-18	6.6	6.731	6.401
3/8	-16	8	8.153	7.798
7/16	-14	9.4	9.55	9.144
1/2	-13	10.9	11.023	10.592
9/16	-12	12.2	12.466	11.989
5/8	-11	13.6	13.868	13.386
American Fine Thread Specifications		Standard Diameter	Drilling Diameter for 2-class Thread	
			Max.	Min.
NO.0	-80	1.25	1.305	1.182
NO.1	-72	1.55	1.612	1.474
NO.2	-64	1.85	1.912	1.756
NO.3	-56	2.1	2.197	2.025
NO.4	-48	2.4	2.458	2.271
NO.5	-44	2.7	2.74	2.551
NO.6	-40	2.9	3.022	2.82
NO.8	-36	3.5	3.606	3.404
NO.10	-32	4.1	4.165	3.963
NO.12	-28	4.6	4.724	4.496
1/4	-28	5.5	5.588	5.36
5/16	-24	6.9	7.035	6.782
3/8	-24	8.5	8.636	8.382
7/16	-20	9.90	10.033	9.729
1/2	-20	11.5	11.607	11.329
9/16	-18	12.9	13.081	12.751
5/8	-18	14.5	14.681	14.351

E

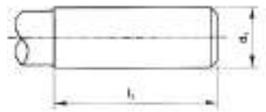
APPENDIX

Workpiece Material Table

Material Group	MC	Workpiece Material	Content	Tensile Strength	Brinell Hardness	Rockwell Hardness
P Steel	P1	Low-carbon Steel, Long Chips	C<0.25%	<530	<125	
	P2	Low-carbon Steel, Short Chips, Free Cutting Steel	C<0.25%	<530	<125	
	P3	High-carbon Steel and medium-carbon Steel	C>0.25%	>530	<220	<25
	P4	Alloy Steel, Tool Steel	C>0.25%	600-850	<330	<35
	P5	Alloy Steel, Tool Steel	C>0.25%	850-1400	340-450	35-48
	P6	Ferritic Stainless Steel, Martensitic Stainless Steel, PH Stainless Steel	C=(0-0.4)%	600-900	<330	<35
	P7	High-strength Ferritic Stainless Steel, Martensitic Stainless Steel, PH Stainless Steel	C=(0.1-0.6)%	900-1350	330-450	35-48
M Stainless Steel	M1	Austenitic Stainless Steels	C=(0.05-0.15)%	<600	130-200	
	M2	High Strength Austenitic and Cast Stainless Steel	C=(0.05-0.15)%	600-800	150-230	<25
	M3	Duplex Stainless Steel	C=(0.05-0.20)%	<800	135-275	<30
K Cast Iron	K1	Gray Cast Iron		125-500	120-290	＜ 32
	K2	Alloy Cast Iron With Medium Machining Difficulty, Nodular Cast Iron		<600	130-260	＜ 28
	K3	Difficult-to-machine High Alloy Cast Iron, Nodular Cast Iron		>600	180-350	＜ 43
N Non-ferrous Materials	N1	Forged Aluminum Alloy		<520	60-90	
	N2	Cast Aluminum Alloy	Si<12%	<350	70-100	
	N3	Cast Aluminum Alloy	Si>12%	200-320	60-120	
	N4	Copper, Copper Alloy		200-650	60-200	
	N5	Graphite, Composite Materials		600-1500		
	N6	Aluminum-matrix Composite Materials (MMCs)		<700	<210	
S Heat-resistant Alloys, Titanium Alloys	S1	Iron-based High-temperature Alloy		500-1200	160-260	25-48
	S2	Cobalt-based High-temperature Alloy		1000-1450	250-450	25-48
	S3	Nickel-based High-temperature Alloy		600-1700	160-450	<48
	S4	Titanium and Titanium Alloys		900-1600	300-400	33-48
H High-hardness Hard Materials	H1	Hardened Steel				45-55
	H2	Hardened Steel				55-60
	H3	Hardened Steel				60-65
	H4	Hardened Steel				>65

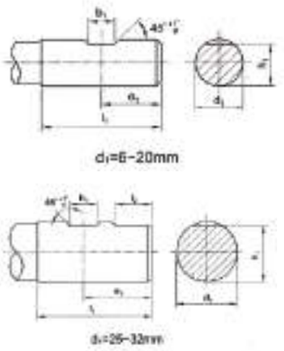
Shank Standard-DIN Standard

DIN 6535-HA



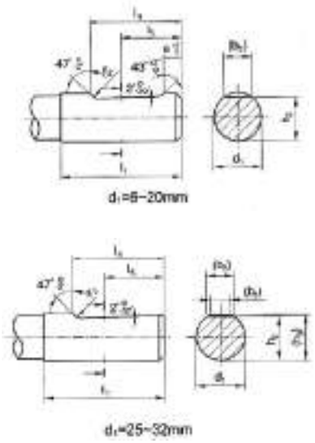
d_1h_6	2	3	4	5	6	8	10	12	14	16	18	20	25	32
l_1 +2 0	28				36		40	45		48		50	56	60

DIN 6535-HB



d_1 h_6	b_1 +0.05 0	e_1 0 -1	h_1 h_{11}	l_1 +2 0	l_2 +1 0
6.0	4.2	18.0	5.1	36.0	
8.0	5.5		6.9		
10	7.0	20.0	8.5	40.0	
12	8.0	22.5	10.4	45.0	
14			12.7		
16	10.0	24.0	14.2	48.0	
18			16.2		
20	11.0	25.0	18.2	50.0	
25	12.0	32.0	23.0	56.0	17.0
32	14.0	36.0	30.0	60.0	19.0

DIN 6535-HE



d_1	(b_2)	(b_3)	(h_2)	(h_3)	l_1	l_4	l_5	r_2
6.0	4.3		5.1		36.0	25.0	18.0	1.2
8.0	5.5		6.9					
10	7.1		8.5		40.0	28.0	20.0	
12	8.2		10.4		45.0	33.0	22.5	
14	8.1		12.7					
16	10.1		14.2		48.0	36.0	24.0	1.6
18	10.8		16.2					
20	11.4		18.2		50.0	38.0	25.0	
25	13.6	9.3	23.0	24.1	56.0	44.0	32.0	
32	15.5	9.9	30.0	31.2	60.0	48.0	35.0	

E Appendix

Cutting Definition and Calculation

Common Parameters and Their Units			
D Tool Diameter	(mm)	fn Feed per Revolution (mm/rev)	
ap Depth of Cut	(mm)	fz Feed per Tooth (mm/tooth)	
ae Cutting Width	(mm)	Z Number of Teeth	
Vf Feed Rate	(mm/min)	n Spindle Rotation Speed (rev/min)	
Vc Cutting Speed (workpiece length + mill diameter: l+D)	(m/min)	L Workbench Total Feed Length (mm)	
Q Metal Cutting Rate	(cm^3/min)	Tc Machining Time (min)	

General Calculation Formulas	
n Spindle Rotation Speed	$n = \frac{Vc \cdot 1000}{\pi \cdot D}$ (rev/min)
Vc Cutting Speed	$Vc = \frac{\pi \cdot D \cdot n}{1000}$ (m/min)
Vf Feed Speed	$V_f = f_z \cdot z \cdot n$ (mm/min)
fz Feed per Tooth	$f_z = \frac{V_f}{z \cdot n}$ (mm)
Q Metal Cutting Rate	$Q = \frac{ae \cdot ap \cdot Vf}{1000}$ (cm^3/min)
Tc Machining Time	$T_c = \frac{L}{V_f}$ (min)

Comparison Table of Tensile Strength, Brinell Hardness and Rockwell Hardness

N/mm2	HV10	HB	HRC
240	75	71	
255	80	76	
270	85	81	
285	90	86	
305	95	90	
320	100	95	
335	105	100	
350	110	105	
370	115	109	
385	120	114	
400	125	119	
415	130	124	
430	135	128	
450	140	133	
465	145	138	
480	150	143	
495	155	147	
510	160	152	
530	165	157	
545	170	162	
560	175	166	
575	180	171	
595	185	176	
610	190	181	
625	195	185	
640	200	190	
660	205	195	
675	210	199	
690	215	204	
705	220	209	
720	225	214	
740	230	219	
755	235	223	
770	240	228	
785	245	233	
800	250	238	22
820	255	242	23
835	260	247	24
860	268	255	25
870	272	258	26
900	280	266	27

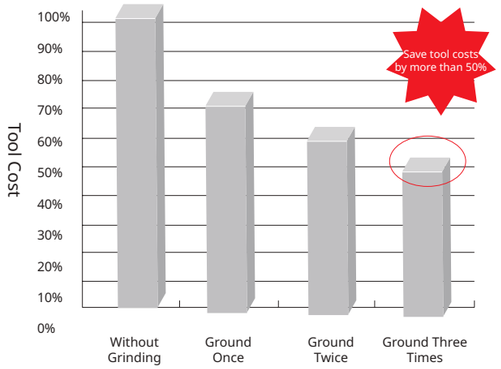
N/mm2	HV10	HB	HRC
920	287	273	28
940	293	278	29
970	302	287	30
995	310	295	31
1020	317	301	32
1050	327	311	33
1080	336	319	34
1110	345	328	35
1140	355	337	36
1170	364	346	37
1200	373	354	38
1230	382	363	39
1260	392	372	40
1260	403	383	41
1330	413	393	42
1360	423	402	43
1400	434	413	44
1440	446	424	45
1480	458	435	46
1530	473	449	47
1570	484	460	48
1620	497	472	49
1680	514	488	50
1730	527	501	51
1790	544	517	52
1845	560	632	53
1910	578	549	54
1980	596	567	55
2050	615	584	56
2140	639	607	57
	655	622	58
	675		59
	698		60
	720		61
	745		62
	773		63
	800		64
	829		65
	864		66
	900		67
	940		68

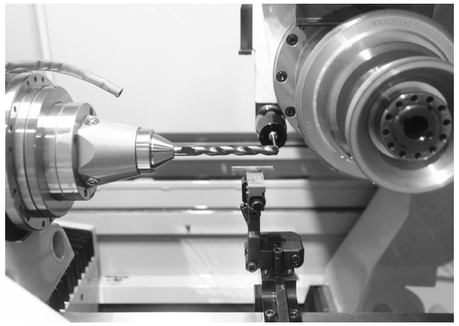
E Appendix

Tool Grinding Service

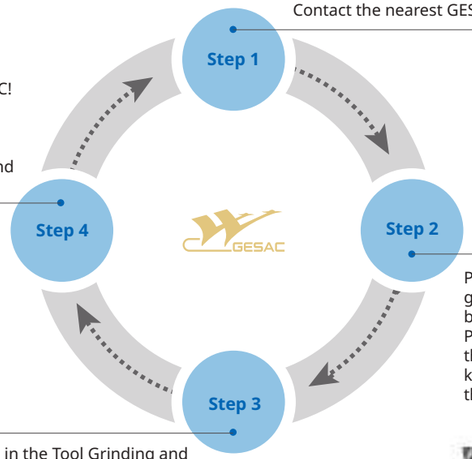
Through a systematic grinding process and strict quality control during the process, GESAC can restore your worn tools to a brand-new state. Each grinding and refurbishment extends the tool's service life. Practical data shows that reasonable tool grinding can save you more than 50% of the total investment cost of tools.

Tool grinding not only helps you save on investment and reduce the tools in stock, but also effectively avoids material waste, saves resources, and protects the environment.
The tool grinding service provided by GESAC helps you easily achieve your dreams!
You just need to contact the nearest GESAC agent, and your tools can be restored to their original state!





► Please follow the steps below:



► GESAC provides grinding services for a variety of tool products, including:

- Solid carbide drills
- Solid carbide endmills
- Solid cemented carbide step drills

MEMO

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