NEW PRODUCTS

CATALOG

INCH VERSION

(updated April 2023)

Tungaloy Accelerated Lines - Leading in Innovation

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Tungaloy
INDUSTRY 4.0

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we improve...
we evolve...
we **ADD**

TUNGALOY ADDFORCE ACCELERATED LINES

Tungaloy's Insights – Smart Manufacturing

Tungaloy, as one of the leaders in the metal removal industry, offers the latest innovations in grades and geometries for superb performance and tool life.
In a competitive world eager to embrace Industry 4.0, Tungaloy provides an extensive portfolio with the latest digital tools to support our customers in making better tooling decisions to improve their competitiveness and productivity.

Member IMC Group Tungaloy INDUSTRY 4.0

Find all product details in Tungaloy updated e-catalog.

TUNGALOY ADDFORCE ACCELERATED LINES

Tungaloy Accelerated Lines
Leading in Innovation

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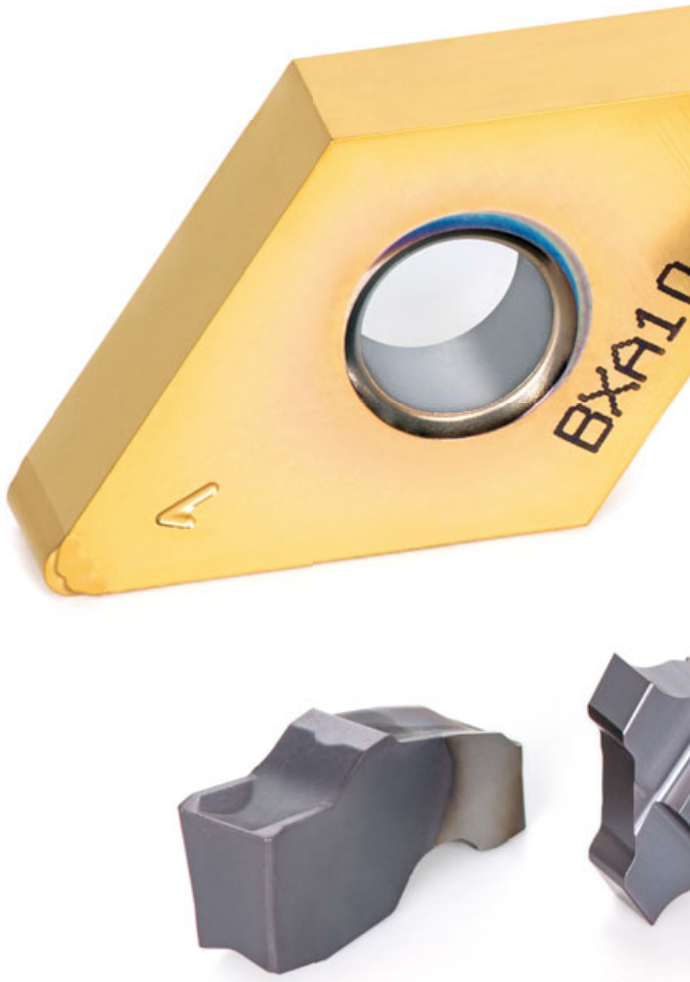
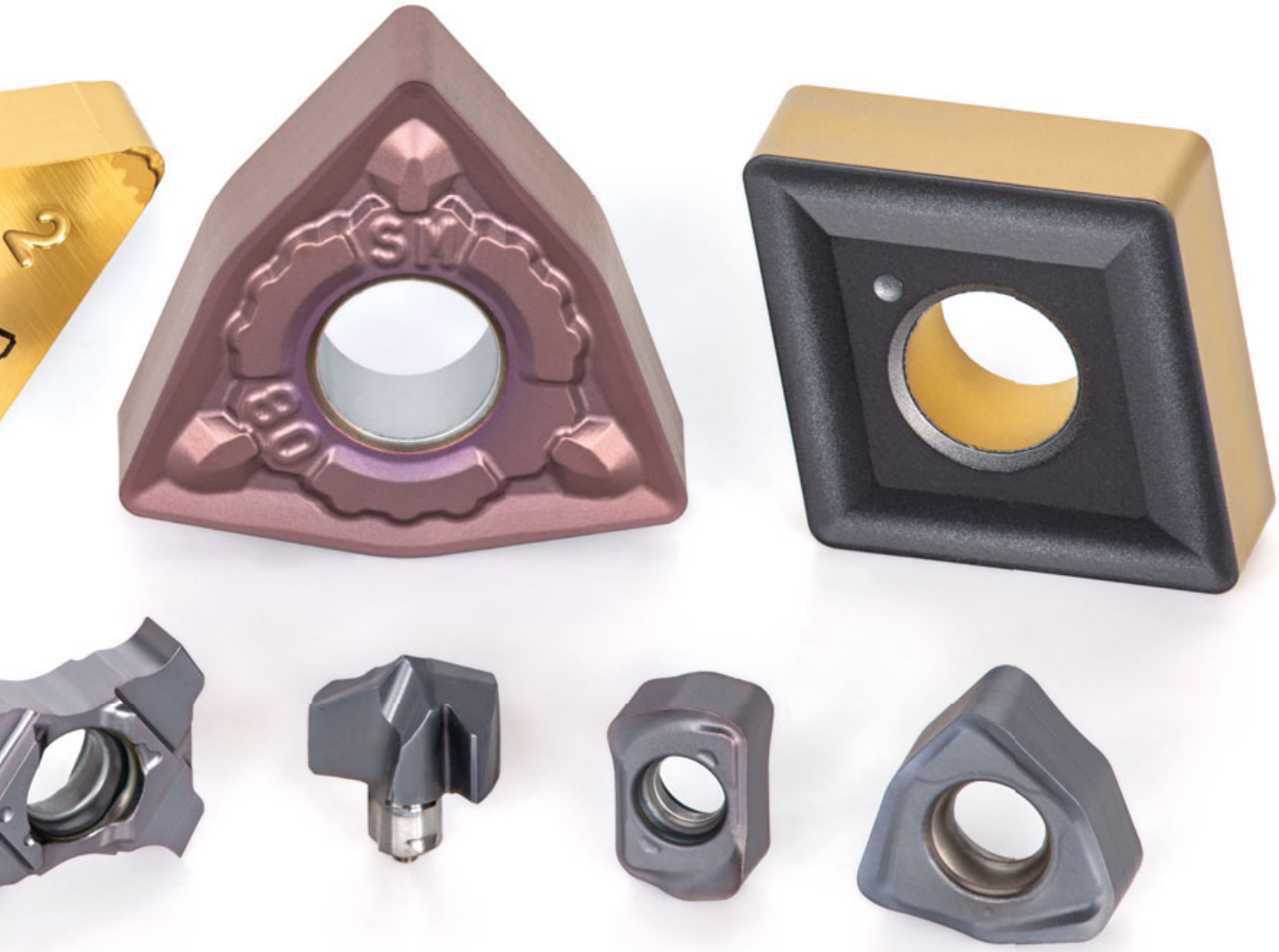
index

Grade





Coating

CVD

Grade	Coating: Main composition	Coating: Thick-ness / µm	Applica-tion	Feature	Turning	Grooving	Milling	Drilling
T6215 P10 - P30 M10 - M30	TiCN-Al_2O_3	8	P M	- Demonstrates excellent wear resistance for high speed continuous stainless steel cuts	■			
T3225 P20 - P35 M20 - M35	TiCN-Al_2O_3	10	P M	- High chipping and fracture resistance - Suitable for milling steel and stainless steel			■	
T1215 K10 - K25	TiCN-Al_2O_3	10	K	- Good balance between wear and chipping resistance - Suitable for milling cast iron			■	
T505 K05 - K20	TiCN + Al2O3	23	K	- The best grade with high wear resistance for high speed machining of cast iron	■			

PVD

Grade	Coating: Main composition	Coating: Thick-ness / µm	Applica-tion	Feature	Turning	Grooving	Milling	Drilling
AH120 P15 - P25 M15 - M25 K15 - K30 S10 - S25	(Ti, Al)N	3	P M K S	- Good balance between wear and fracture resistance - Suitable for machining steel, stainless steel, and cast iron under general cutting conditions	■		■	■
AH130 P25 - P40 M25 - M40	(Ti, Al)N	3	P M	- High chipping and fracture resistance - Designed for machining austenitic stainless steel under general cutting conditions			■	
AH715 P15 - P30 M15 - M30	(Ti, Al)N	5	P M	- Ideal grade for end milling with the latest nano-multilayered PVD coating - Exclusive substrate with a good balance of wear and fracture resistance			■	
AH725 P15 - P30 M15 - M30 K25 - K30 S15 - S25	(Ti, Al)N	2	P M K S	- Good balance between wear and chipping resistance - Suitable for machining steel and stainless steel under general cutting conditions	■	■	■	■
AH6225 P20 - P30 M20 - M30	(TiAl)N-Ti(C,N)	5.5	P M	- First choice for stainless steel - Excellent versatility for stainless steel machining, demonstrates a good combination of wear and fracture resistance	■			
AH6235 P30 - P40 M30 - M40	(TiAl)N-Ti(C,N)	5.5	P M	- Demonstrates superior fracture resistance in stainless steel - Provides high reliability for interrupted cuts and heavy-duty machining	■			
AH7025 P20 - P30 M20 - M30 S15 - S25	(Ti, Al)N	3.5	P M K S	- Excellent wear resistance and high rigidity - First choice for grooving of various materials		■		
AH750 H15 - H30	(Ti, Al)N	3	H	- High wear resistance - Designed for milling high-hardened material			■	
AH8005 M01 - M10 S01 - S10	(Al,Ti)N	3.5	M S H	- Good resistance to wear and adhesion - Excellent performance in machining heat-resistant alloy at high speed	■	■	■	
AH8015 M10 - M20 S10 - S20	(Al,Ti)N	3.5	P M K S H	- Good balance between wear and fracture resistance - First choice for machining heat-resistant alloy under general cutting conditions	■		■	■
AH3225 P20 - P35 M20 - M35	(Ti, Al)N	5	P M	- Good balance between wear and fracture resistance - Suitable for steel and stainless steel			■	

PVD

Grade	Coating: Main composition	Coating: Thickness / µm	Application	Feature	Turning	Grooving	Milling	Drilling
AH3035 P20 - P45 H20 - H30	(Ti, Al)N	5	P H	- Good balance between wear and chipping resistance - Suitable for machining high-hardened steel at high feed			■	
AH9130 P15 - P35 M25 - M35 K10 - K25 S15 - S30	(Ti, Al)N	4.5	P M K S	- High wear resistance - Designed for drilling various materials				■
SH725 P20 - P30 M20 - M30	(Ti, Al)N	2	P M N S	- High wear resistance - Designed for machining steel and stainless steel	■	■		
SH730 P20 - P35 M20 - M35 S05 - S15	(Ti, Al)N	1	P M S	- High wear resistance - Designed for machining steel, stainless steel, and difficult-to-cut material	■	■		

CBN

Grade	Hardness (Hv)	T.R.S. (GPa)	Application	Feature	Turning	Grooving	Milling	Drilling
BXA10	3200 ~ 3400	1.00 ~ 1.10	H	- Coated T-CBN for excellent performance in continuous cutting of hardened steel	■			
BXA20	3300 ~ 3500	1.30 ~ 1.50	H	- Coated T-CBN for excellent performance in machining hardened steel	■			
BR35F	xxxx ~ xxxx	x.xx ~ x.xx	H	- Coated T-CBN for heavy interrupted cuts of hardened steel parts	■			

PCD (T-DIA)

Grade	Grain size (µm)	Hardness (Hv)	T.R.S. (GPa)	Application	Feature	Turning	Grooving	Milling	Drilling
DX110	< 1	8500	1.8	N	- Excellent sharpness for high surface quality - Suitable for finishing non-ferrous metal and nonmetal	■		■	

Uncoated Cemented Carbide

Grade	Hardness (HRA)	T.R.S. (GPa)	Application	Feature	Turning	Grooving	Milling	Drilling
KS05F K05 S05 N05	93	2.9	K S N	- Fine edge sharpness with high wear resistance - Outstanding tool life for machining of non-ferrous metals	■	■	■	
KS15F N15	91.5	3	N	- Good balance between wear resistance and toughness - Incredibly reliable in milling of non-ferrous metals	■		■	

Grooving & Parting-off

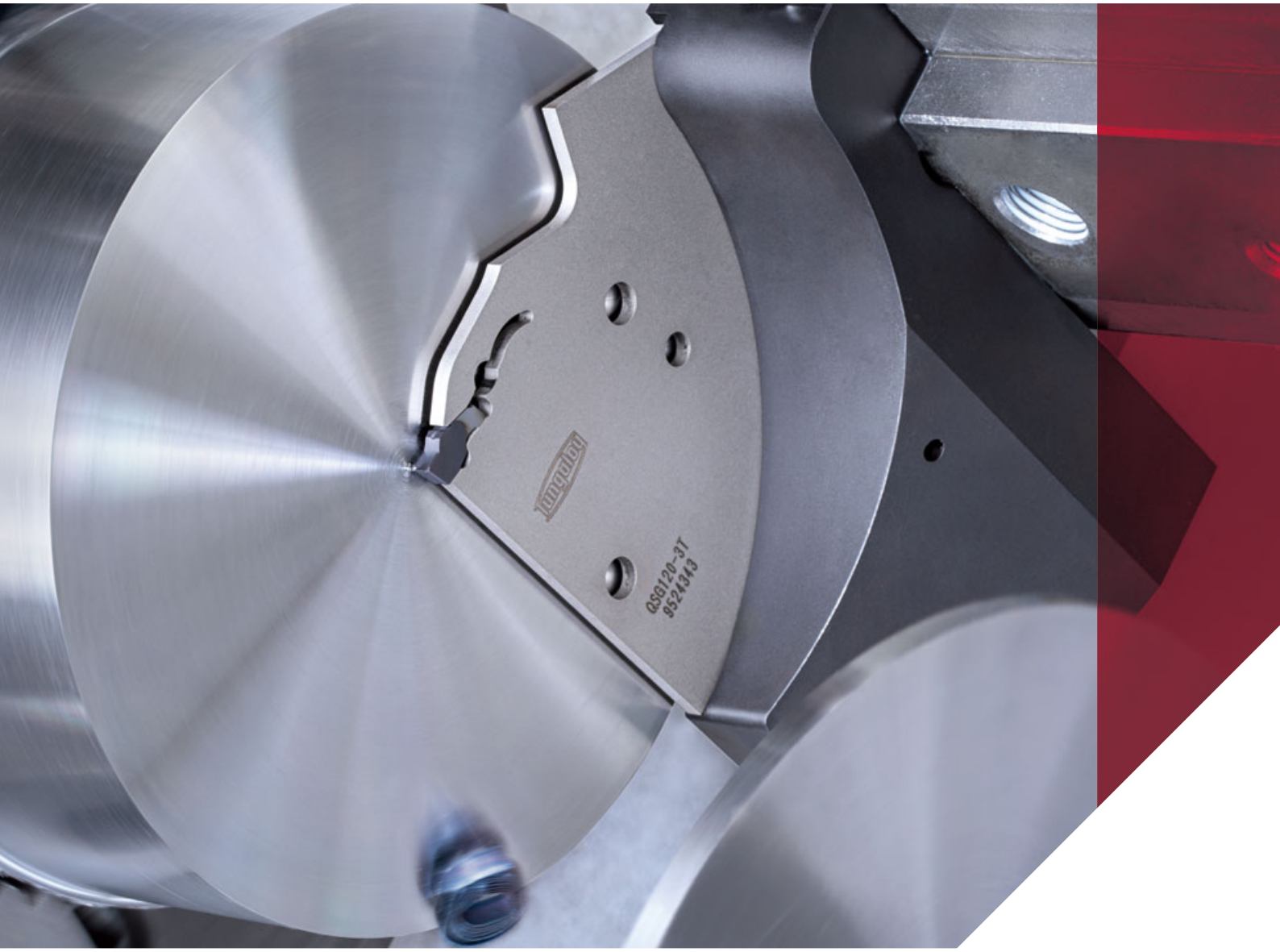

tungaloy
QSG120-3T
9524343

ADDFORCE CUT

External grooving, Parting-off

SUPERB STABILITY AND PRODUCTIVITY IN DEEP GROOVING AND PARTING-OFF OPERATIONS

ADD highly rigid self-clamping system to improve productivity in deep grooving and parting-off operations



- Single-ended **ADDForceCut** insert features a smart self-locking design requiring no clamping screw to hold the insert. This enables deep grooving and parting-off operations of large-diameter bar stocks.
- The insert is locked at three positions with the use of an insert stopper in the pocket. This design provides extremely rigid insert clamping.
- Newly designed insert profile ensures unobstructed chip flow and consistent chip evacuation.

Lineup

QGM... **QGS...**

Inserts
- **QGM...** and **QGS...**

CW = 0.079", 0.118", 0.157" and 0.197"
Max grooving depths (for monoblock shanks): CDX = 1.299"

Toolholders
- Monoblock shanks: **QSER/L...** in size 0.75" and 1.00"
- Blades: **QSP...** and **QSG...**
- Blocks: **CTBU...** and **CHTBR/L...**
- ID grooving heads for **BoreMeister**: **S25-QSIR/L...** and **S32-QSIR/L...**

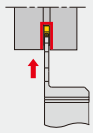
Grade
- **AH7025**: Dedicated grade for grooving applications featuring a good balance of wear and chipping resistance

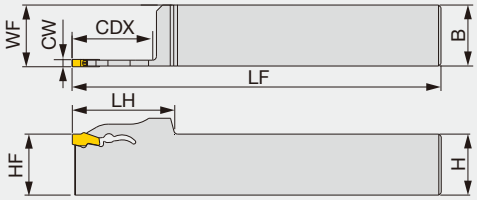
Scan this QR code to find out more about this tool!

TOOLHOLDERS

QSER/L

External toolholders for grooving and parting





Right hand (R) shown.

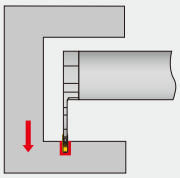
Inch	CW	CDX	Seat size	H	B	LF	LH	HF	WF
QSER/L12-2T26	0.079	1.024	2	0.750	0.750	5.000	1.417	0.750	0.756
QSER/L12-2T33	0.079	1.299	2	0.750	0.750	5.000	1.654	0.750	0.756
QSER/L16-2T26	0.079	1.024	2	1.000	1.000	6.000	1.417	1.000	1.004
QSER/L16-2T33	0.079	1.299	2	1.000	1.000	6.000	1.654	1.000	1.004
QSER/L12-3T26	0.118	1.024	3	0.750	0.750	5.000	1.417	0.750	0.764
QSER/L12-3T33	0.118	1.299	3	0.750	0.750	5.000	1.654	0.750	0.764
QSER/L16-3T26	0.118	1.024	3	1.000	1.000	6.000	1.417	1.000	1.012
QSER/L16-3T33	0.118	1.299	3	1.000	1.000	6.000	1.654	1.000	1.012
QSER/L12-4T33	0.157	1.299	4	0.750	0.750	5.000	1.654	0.750	0.768
QSER/L16-4T33	0.157	1.299	4	1.000	1.000	6.000	1.654	1.000	1.016
QSER/L16-5T33	0.197	1.299	5	1.000	1.000	6.000	1.654	1.000	1.020

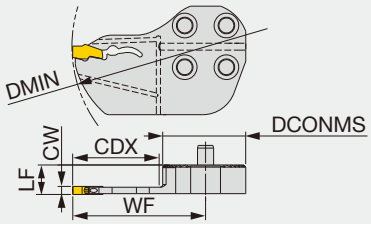
MODULAR HEAD

S-QSIR/L-H

BOREMEISTER

Exchangeable boring head, for internal grooving





Left hand (L) shown.

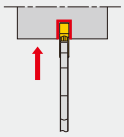
Inch	CW (in)	CW (mm)	CDX	DMIN	DCONMS	Seat Size	LF	WF	Shank
S25-QSIR/L2T26D550-H	0.079	2	26	2.165	0.984	2	0.335	1.579	D25
S25-QSIR/L3T26D550-H	0.118	3	26	2.165	0.984	3	0.354	1.579	D25
S32-QSIR/L3T32D700-H	0.118	3	32	2.756	1.26	3	0.433	1.953	D32
S32-QSIR/L4T32D700-H	0.157	4	32	2.756	1.26	4	0.453	1.953	D32

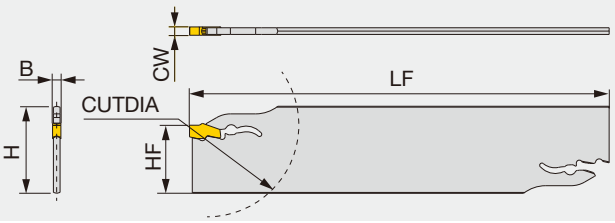
Please refer to the BoreMeister Tungaloy Report (TR517) for shank information that is applicable to the head.

BLADE

QSP

Blades for external deep grooving and parting



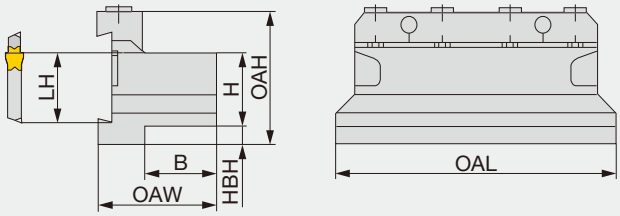


Inch	CW (in)	CW (mm)	Seat size	CUTDIA	H	B	LF	HF
QSP26-2D	0.079	2	2	1.969	1.024	0.071	5.906	0.831
QSP32-2D	0.079	2	2	2.598	1.260	0.071	5.906	0.965
QSP26-3D	0.118	3	3	2.953	1.024	0.094	5.906	0.831
QSP32-3D	0.118	3	3	4.724	1.260	0.094	5.906	0.965
QSP26-4D	0.157	4	4	3.150	1.024	0.126	5.906	0.827
QSP32-4D	0.157	4	4	4.724	1.260	0.126	5.906	0.961
QSP32-5D	0.197	5	5	4.724	1.260	0.157	5.906	0.961

TOOL BLOCK

CTBU

Tool block for QSP blades

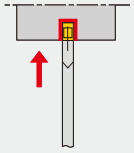


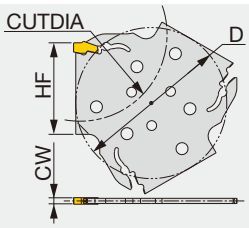
Inch	H	B	OAL	LH	HBH	OAH	OAW	Blade (Optional)
CTBU12-26-U	0.750	0.827	3.386	0.843	0.354	1.690	1.496	QSP26...
CTBU16-26-U	1.000	0.906	4.331	0.843	0.197	1.770	1.654	QSP26...
CTBU12-32-U	0.750	0.748	3.937	0.976	0.512	1.970	1.496	QSP32...
CTBU16-32-U	1.000	0.906	4.331	0.976	0.315	1.970	1.654	QSP32...
CTBU20-32-U	1.250	1.142	4.331	0.976	0.197	2.130	1.890	QSP32...

BLADE

QSG

Parting-off and external grooving blade



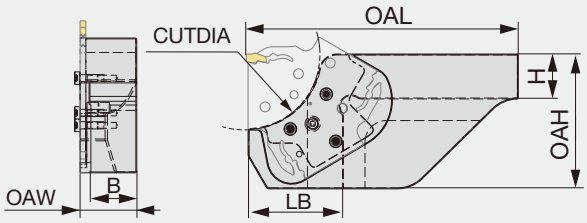


Inch	CW (in)	CW (mm)	Seat size	CUTDIA	HF	D
QSG52-2T	0.079	2	2	2.047	1.063	1.902
QSG82-2T	0.079	2	2	3.228	1.654	2.728
QSG52-3T	0.118	3	3	2.047	1.063	1.902
QSG82-3T	0.118	3	3	3.228	1.654	2.728
QSG120-3T	0.118	3	3	4.724	2.402	3.465
QSG52-4T	0.157	4	4	2.047	1.063	2.728
QSG82-4T	0.157	4	4	3.228	1.654	2.728
QSG120-4T	0.157	4	4	4.724	2.402	3.465
QSG120-5T	0.197	5	5	4.724	2.402	3.465

TOOL BLOCK

CHTBR/L

Tool block for QSG blade



Right hand (R) shown.

Inch	CUTDIA	H	B	OAL	OAH	OAW	LB
CHTBR/L12-52	2.047	0.750	0.770	4.000	1.970	1.000	1.457
CHTBR/L16-52	2.047	1.000	1.020	5.000	1.970	1.250	1.457
CHTBR/L12-82	3.228	0.750	0.770	5.500	2.950	1.000	2.087
CHTBR/L16-82	3.228	1.000	1.020	6.000	2.950	1.250	2.087
CHTBR/L16-120	4.724	1.000	1.020	6.500	3.940	1.250	2.638
CHTBR/L20-120	4.724	1.250	1.268	6.500	3.940	1.500	2.638

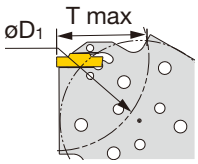
The blade clamping screw heads protrude out for as much as 0.122" over the insert cutting edge point.
Maintain the clearance from the chucking device to avoid interference.

Maximum groove depth : T max as function of workpiece diameter : øD1

Designation	øD1																	
CHTBR/L****-D52	2.087	2.126	2.165	2.205	2.283	2.362	2.441	2.559	2.677	2.835	3.071	3.307	3.622	4.016	4.528	5.236	6.260	7.795
CHTBR/L****-D82	4.094	4.252	4.409	4.567	4.764	5.000	5.276	5.591	5.945	6.378	6.929	7.559	8.346	9.331	10.630	12.323	14.764	18.425
CHTBR/L****-D120	8.071	8.425	8.819	9.252	9.724	10.276	10.945	11.693	12.559	13.583	14.803	16.299	18.189	20.551	23.661	27.913	34.055	43.780
T max	0.827	0.787	0.748	0.709	0.669	0.630	0.591	0.551	0.512	0.472	0.433	0.394	0.354	0.315	0.276	0.236	0.197	0.157

Designation	øD1												
CHTBR/L****-D82	3.268	3.307	3.307	3.346	3.386	3.425	3.504	3.543	3.622	3.701	3.780	3.858	3.976
CHTBR/L****-D120	5.669	5.787	5.906	6.024	6.142	6.299	6.457	6.614	6.811	7.008	7.244	7.480	7.756
T max	1.339	1.299	1.260	1.220	1.181	1.142	1.102	1.063	1.024	0.984	0.945	0.906	0.866

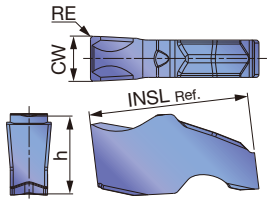
Designation	øD1																
CHTBR/L****-D120	4.764	4.803	4.843	4.882	4.921	4.961	5.000	5.039	5.079	5.118	5.157	5.236	5.276	5.354	5.433	5.512	5.591
T max	2.165	2.047	1.969	1.890	1.850	1.811	1.772	1.732	1.693	1.654	1.614	1.575	1.535	1.496	1.457	1.417	1.378



INSERTS

QGM

External deep grooving and parting



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

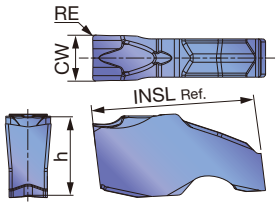
★ : First choice

Designation	Seat size	CW±0.002	RE	Coated AH7025	INSL	h
QGM2-020	2	0.079	0.008	●	0.433	0.209
QGM3-020	3	0.118	0.008	●	0.433	0.209
QGM4-030	4	0.157	0.012	●	0.512	0.287
QGM5-030	5	0.197	0.012	●	0.512	0.287

● : Line up

QGS

External deep grooving and parting



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	Seat size	CW±0.002	RE	Coated AH7025	INSL	h
QGS2-020	2	0.079	0.008	●	0.433	0.209
QGS3-020	3	0.118	0.008	●	0.433	0.209
QGS4-030	4	0.157	0.012	●	0.512	0.287
QGS5-030	5	0.197	0.012	●	0.512	0.287

● : Line up

STANDARD CUTTING CONDITIONS

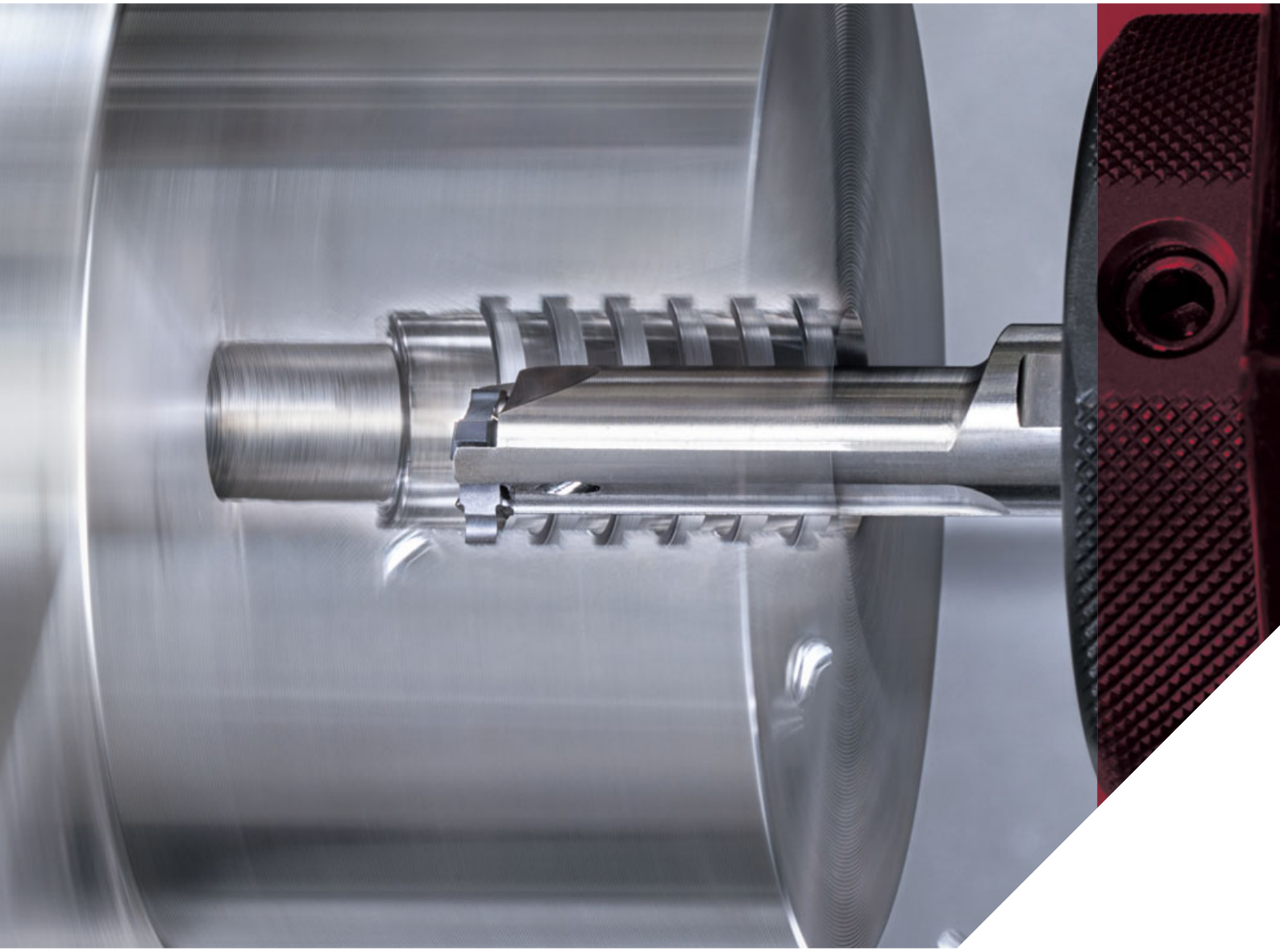
ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (mm/rev) QGM	Feed: *f* (mm/rev) QGS
P	Steels 1045, 4140, etc.	< 300 HB	AH7025	164 - 591	0.002 - 0.014	0.002 - 0.008
M	Stainless steel 304, etc.	< 200 HB	AH7025	164 - 394	0.002 - 0.014	0.002 - 0.008
K	Gray cast iron No.250B, etc.	-	AH7025	164 - 591	0.002 - 0.014	0.002 - 0.008
	Ductile cast irons 65-45-12, etc.	-	AH7025	164 - 394	0.002 - 0.014	0.002 - 0.008
S	Superalloys Inconel718, etc.	< HRC 40	AH7025	66 - 197	0.002 - 0.014	0.002 - 0.008
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	AH7025	66 - 262	0.002 - 0.014	0.002 - 0.008

ADD INTERNAL CUT

Internal grooving

UNIQUE 4-EDGED INSERT FOR SMALL INTERNAL GROOVING OPERATIONS

ADD stability and repeatability in small internal grooving operations with the unique insert clamping system



- New industry standard grooving inserts for internal grooves of retaining rings
- Unique insert clamping provides secure insert edge position for good repeatability and accuracy, ensuring high quality internal grooves.
- The innovative clamping system eliminates insert movement caused by cutting forces.
- Through-coolant holder delivers coolant from the outlet located near the insert, promoting effective chip evacuation from the cutting area.
- Neutral designed insert can be mounted on either right- or left-handed holder.

Lineup

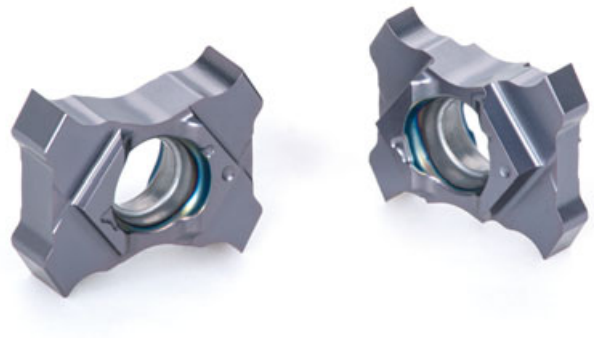
Insert

- **TCIG10...**

CW = 0.059", 0.079" and 0.098"
Max. insert cutting depth: CDX = 0.078"
Min grooving dia: DMIN = ø0.438"

- **TCIG12...**

CW = 0.059" - 0.118"
Max. insert cutting depth: CDX = 0.118"
Min grooving dia: DMIN = ø0.438"



Toolholders

- **A08-STCIR/L...** - **A10-STCIR/L...**
- **E08-STCIR/L...** - **E10-STCIR/L...**

Grade

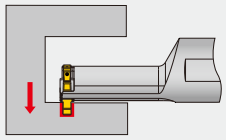
- **AH725**: General purpose grade with superior chipping resistance. Suitable in all material groups

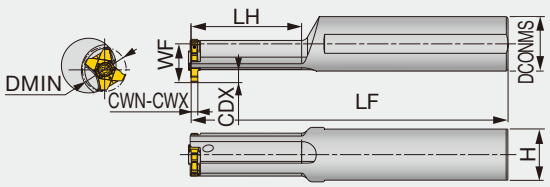
Scan this QR code to find out more about this tool!

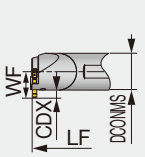
TOOLHOLDERS

A/E-STCIR/L

Internal grooving toolholder







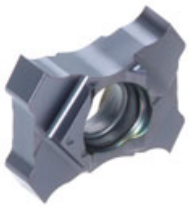
Right hand (R) shown.

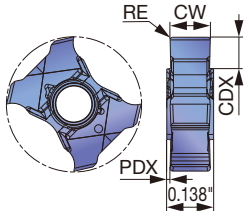
Inch	Material	CWN	CWX	DMIN	DCONMS	LH	LF	WF	H	Insert	Torque*
A08-STCIR/L10-D07U	Steel	0.059	0.098	0.438	0.500	0.945	4.000	0.339	0.475	TCIG10...	0.74
A08-STCIR/L10-D08U	Steel	0.059	0.098	0.500	0.500	1.181	4.000	0.339	0.475	TCIG10...	0.74
E08-STCIR/L10-D10U	Carbide	0.059	0.098	0.625	0.500	-	5.000	0.339	0.475	TCIG10...	0.74
A10-STCIR/L12-D09U	Steel	0.059	0.118	0.563	0.625	1.299	4.500	0.441	0.600	TCIG12...	0.96
A10-STCIR/L12-D11U	Steel	0.059	0.118	0.688	0.625	1.614	4.500	0.441	0.600	TCIG12...	0.96
E10-STCIR/L12-D13U	Carbide	0.059	0.118	0.813	0.625	-	6.000	0.441	0.600	TCIG12...	0.96

*Torque: Recommended clamping torque (lbt·ft)

INSERTS

TCIG





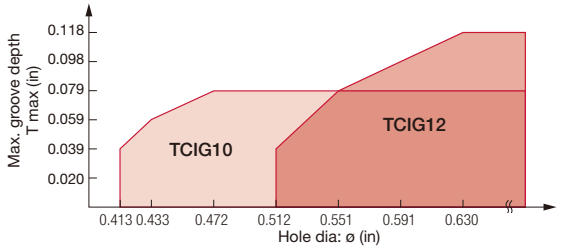
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

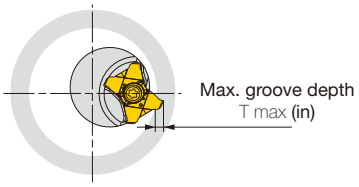
Designation	CW±0.001	RE	Coated AH725	CDX	PDX
TCIG10-050-005	0.020	0.0020	●	0.039	0.059
TCIG10-122-008	0.048	0.0031	●	0.079	0.045
TCIG10-250-020	0.056	0.0031	●	0.079	0.041
TCIG10-150-010	0.059	0.0039	●	0.079	0.039
TCIG10-172-008	0.069	0.0031	●	0.079	0.035
TCIG10-200-010	0.079	0.0039	●	0.079	0.030
TCIG10-250-020	0.098	0.0079	●	0.079	0.020
TCIG10-300-020	0.118	0.0079	●	0.079	0.010
TCIG12-100-010	0.039	0.0039	●	0.098	0.049
TCIG12-150-010	0.059	0.0039	●	0.118	0.039
TCIG12-197-008	0.078	0.0031	●	0.118	0.030
TCIG12-200-020	0.079	0.0079	●	0.118	0.030
TCIG12-224-008	0.088	0.0031	●	0.118	0.025
TCIG12-250-015	0.098	0.0079	●	0.118	0.020
TCIG12-277-015	0.109	0.0059	●	0.118	0.015
TCIG12-300-020	0.118	0.0079	●	0.118	0.010

● : Line up

Shallower groove depths (T max) for smaller bores

Maximum groove depths (T max) for TCIG10 inserts are smaller than the CDX value shown above when the grooving bore diameter is < 0.472" ; and for TCIG12, when the bore diameter is < 0.63".
See the chart below for T max values in relation to the given bore diameter.





STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steels 1045, 4140, etc.	< 300 HB	First choice	160 - 590	0.001 - 0.003
M	Stainless steel 304, 316, etc.	< 200 HB	First choice	160 - 390	0.001 - 0.003
S	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	60 - 260	0.001 - 0.003

TUNGFEED BLADE

External grooving, Parting-off

EXTREMELY RIGID POCKET DESIGN FOR THE MOST DEMANDING CUTTING CONDITIONS

ADD speed and feed to your grooving and parting-off operations

- Strong holder design ensures tool stability and productivity gain during demanding cutting conditions.
- Specially designed tool block has two contact faces to provide enhanced tool rigidity.
- The blade provides reduced tooling cost with three insert pockets, while its strong backing beneath the insert withstands heavy cutting loads during machining.
- The blades for **TungCut** series and the blades for the latest **ADDForceCut** can share the same tool block.
- The blade for **TungCut** inserts also ensures strong insert clamping, providing high tool reliability.
- The latest **ADDForceCut** blades that use a single-ended insert improves grooving /parting-off operations at increased feed rates.

Lineup

Inserts
- **DGM...**, **DGS...**, **SGM...**, **SGS...**, and **DGL...**

Blade
- **CHGP...**

CW = 2 - 4 mm
Max cut-off diameters: CUTDIA = ø2.047" and ø3.228"

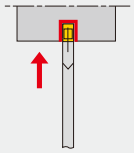
Blocks
- **CHTBR/L...** in sizes ¾", 1", 20mm, and 25mm shank.

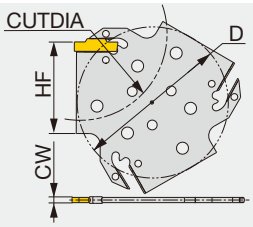
Scan this QR code to find out more about this tool!

BLADE

CHGP

Parting-off and external grooving blade





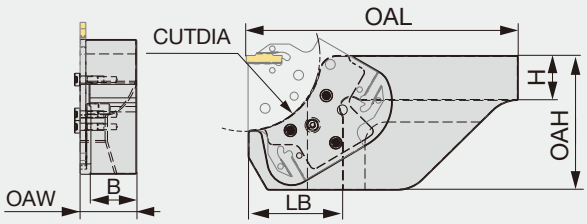
Inch	CW	Seat size	CUTDIA	HF	D
CHGP52-2T	0.079	2	2.047	1.063	1.902
CHGP52-3T	0.118	3	2.047	1.063	1.902
CHGP82-3T	0.118	3	3.228	1.654	2.728
CHGP82-4T	0.157	4	3.228	1.654	2.728

When depth is deeper than insert length - 0.059", 1 corner type is recommended.
Inserts for this blade are TungCut DGM, SGM, DGS, SGS, and DGL.

TOOL BLOCK

CHTBR/L

Tool block for CHGP blade



Right hand (R) shown.

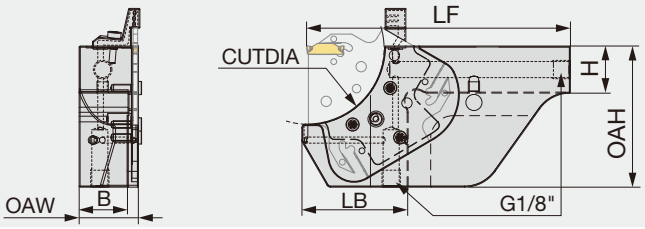
Inch	CUTDIA	H	B	OAL	OAH	OAW	LB
CHTBR/L12-52	2.047	0.750	0.770	4.000	1.970	1.000	1.457
CHTBR/L16-52	2.047	1.000	1.020	5.000	1.970	1.250	1.457
CHTBR/L12-82	3.228	0.750	0.770	5.500	2.950	1.000	2.087
CHTBR/L16-82	3.228	1.000	1.020	6.000	2.950	1.250	2.087
Metric	**CUTDIA**	**H**	**B**	**OAL**	**OAH**	**OAW**	**LB**
CHTBR/L2020-52	52	20	20.5	100	50	26.5	37
CHTBR/L2525-52	52	25	25.5	125	50	31.5	37
CHTBR/L2020-82	82	20	20.5	140	75	26.5	53
CHTBR/L2525-82	82	25	25.5	150	75	31.5	53

Note: The blade clamping screw heads protrude out for as much as 3.1 mm over the insert cutting edge point.
Maintain the clearance from the chucking device to avoid interference.

TOOL BLOCK

CHTBR/L-CHP

Tool block for CHGP blade, with high pressure coolant capability



Right hand (R) shown.

Inch	CUTDIA	H	B	LF	OAH	OAW	LB
CHTBR/L12-52-CHP	2.047	0.750	0.770	4.000	1.970	1.000	1.594
CHTBR/L16-52-CHP	2.047	1.000	1.020	5.000	1.970	1.250	1.594
CHTBR/L12-82-CHP	3.228	0.750	0.770	5.500	2.950	1.000	2.224
CHTBR/L16-82-CHP	3.228	1.000	1.020	6.000	2.950	1.250	2.224

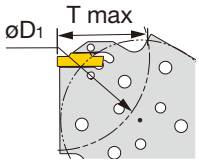
Metric	CUTDIA	H	B	LF	OAH	OAW	LB
CHTBR/L2020-52-CHP	52	20	20.5	100	50	26.5	40.5
CHTBR/L2525-52-CHP	52	25	25.5	123	50	31.5	40.5
CHTBR/L2020-82-CHP	82	20	20.5	126	75	26.5	56.5
CHTBR/L2525-82-CHP	82	25	25.5	139	75	31.5	56.5

Note: The blade clamping screw heads protrude out for as much as 3.1 mm over the insert cutting edge point.
Maintain the clearance from the chucking device to avoid interference.

Maximum groove depth : T max as function of workpiece diameter : øD1

Designation	øD1 (in)																	
CHTBR/L****-D52	2.087	2.126	2.165	2.205	2.283	2.362	2.441	2.559	2.677	2.835	3.071	3.307	3.622	4.016	4.528	5.236	6.260	7.795
CHTBR/L****-D82	4.094	4.252	4.409	4.567	4.764	5.000	5.276	5.591	5.945	6.378	6.929	7.559	8.346	9.331	10.630	12.323	14.764	18.425
T max	0.827	0.787	0.748	0.709	0.669	0.630	0.591	0.551	0.512	0.472	0.433	0.394	0.354	0.315	0.276	0.236	0.197	0.157

Designation	øD1 (in)											
CHTBR/L****-D82	3.268	3.307	3.346	3.386	3.425	3.504	3.543	3.622	3.701	3.780	3.858	3.976
T max	1.339	1.299	1.220	1.181	1.142	1.102	1.063	1.024	0.984	0.945	0.906	0.866



STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Cutting speed *Vc* (sfm)
P	Steels 1045, 4140, etc.	< 300 HB	AH7025	164 - 591
M	Stainless steel 304, etc.	< 200 HB	AH7025	164 - 394
K	Gray cast iron No.250B, etc.	-	AH7025	164 - 591
	Ductile cast irons 65-45-12, etc.	-	AH7025	164 - 394
S	Superalloys Inconel718, etc.	< HRC 40	AH7025	66 - 197
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	AH7025	66 - 262

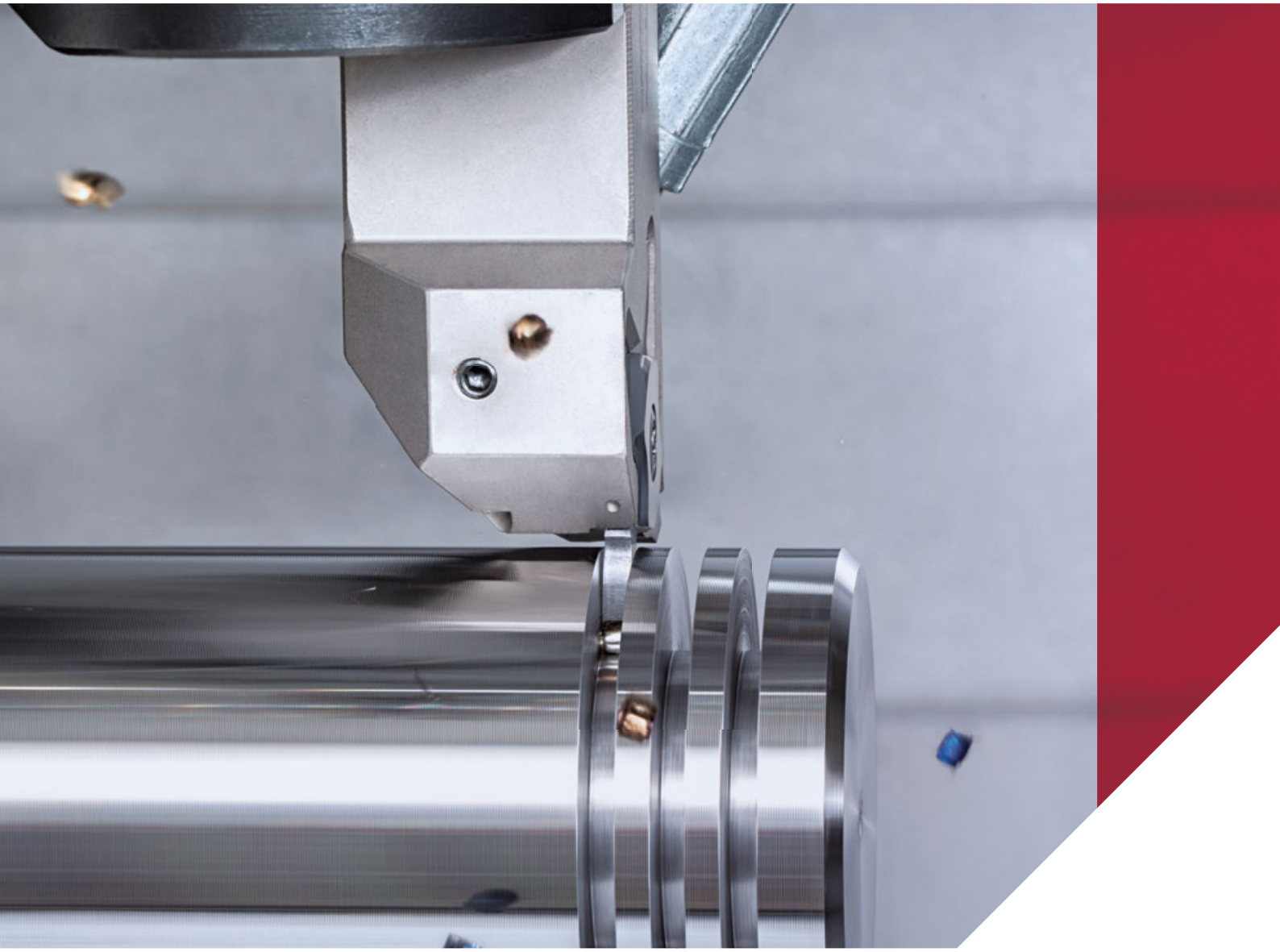
Scan this QR code to find out insert information.

TETRAFORCECUT

External grooving, Parting-off

TCL38 INSERT FOR UP TO 10 MM (0.394") GROOVE DEPTH

ADD deeper and accurate grooves
to your machining operations



- Unique insert seat design ensures secure insert clamping, providing excellent indexing accuracy and repeatability.
- Neutral design insert can be mounted on either right- or left-handed holder.
- Insert clamping screw can be operated from either side of the holder, significantly reducing tool change time.
- Newest **TCL38** insert is capable of up to 0.394" groove depth, making it an effective tool for cutting off thick-walled tubes, as well as precision grooving operations.
- Through-coolant toolholders are also available for improved chip evacuations, promoting long tool life and superior part quality.

Lineup

Insert
- **TCL38...**

CW = 0.059" - 0.157" (1.5 - 4 mm)
Max. insert cutting depth: CDX = 0.394"
Max. parting diameters: CUTDIA = ø0.787"

Toolholders
Mono block shanks:
- **STCR/L**38** in sizes ¾", 1" and 1.25"

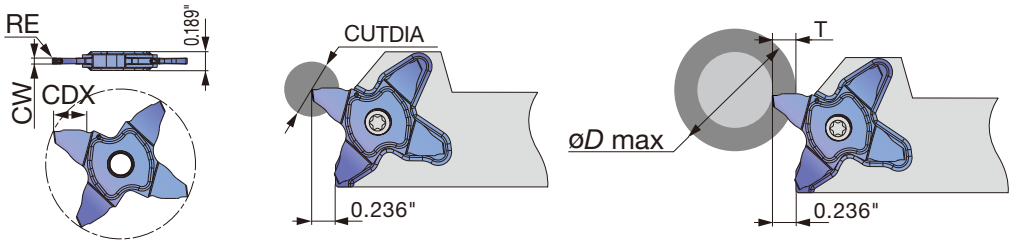
Grade
- **AH7025**: Dedicated grade for grooving applications featuring a good balance of wear and chipping resistance

Scan this QR code to find out more about this tool!

TETRAFORCE CUT

INSERTS

TCL38



P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys	★			
H	Hard materials				

★ : First choice

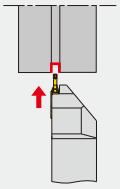
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max)					
							T ≤ 0.197"	T ≤ 0.236"	T ≤ 0.276"	T ≤ 0.315"	T ≤ 0.354"	T ≤ 0.394"
TCL38-150-020	1.5	0.059	0.008	●	0.354	0.709	∞	37.402	12.402	7.480	1.772	-
TCL38-200-020	2	0.079	0.008	●	0.354	0.709	∞	37.402	12.402	7.480	1.772	-
TCL38-300-020	3	0.118	0.008	●	0.394	0.787	∞	37.402	12.402	7.480	5.118	1.969
TCL38-400-030	4	0.157	0.012	●	0.394	0.787	∞	37.402	12.402	7.480	5.118	1.969

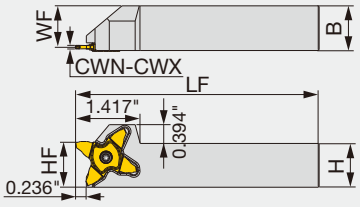
● : Line up

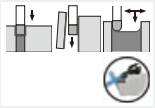
TOOLHOLDERS

STCR/L-38

External grooving and parting toolholder







Right hand (R) shown.

Inch	CWN	CWX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque*
STCR/L12-38	0.059	0.157	0.750	0.750	5.000	0.750	0.670	0.234	1.378	TCL38...	1.84
STCR/L16-38	0.059	0.157	1.000	1.000	5.500	1.000	0.920	-	-	TCL38...	1.84
STCR/L20-38	0.059	0.157	1.250	1.250	5.500	1.250	1.170	-	-	TCL38...	1.84

*Torque: Recommended clamping torque (lbt·ft)
Please refer to the Tungaloy e-Catalog for spare parts.

STANDARD CUTTING CONDITIONS

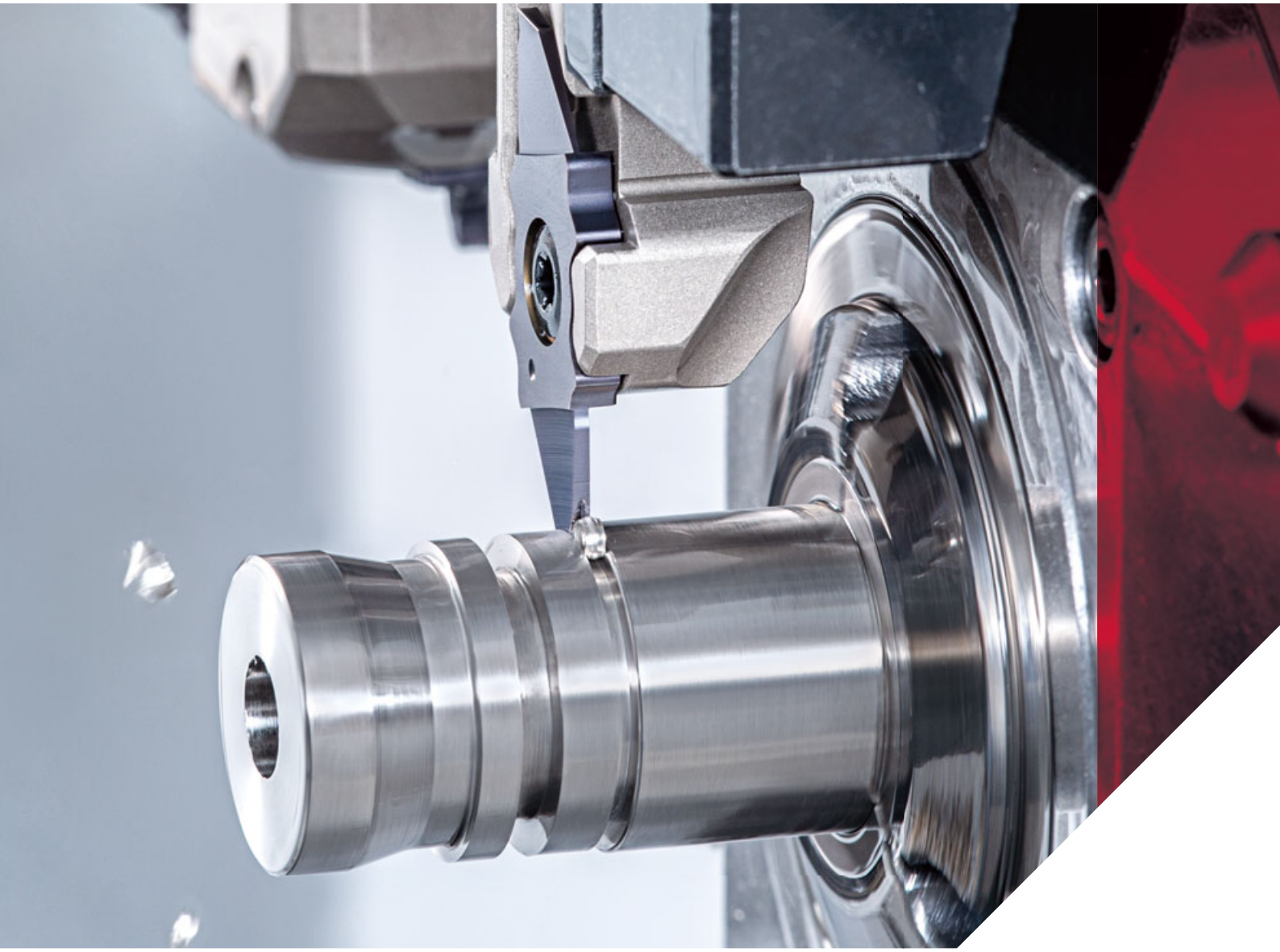
ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Carbon steel 1045, etc.	AH7025	262 - 591	0.001 - 0.007
	Alloy steel 4140, etc.	AH7025	164 - 591	0.001 - 0.007
M	Alloy steel 304SS, etc.	AH7025	164 - 492	0.001 - 0.006
K	Grey cast iron Class 25, etc.	AH7025	164 - 591	0.001 - 0.006
	Ductile cast iron 60-40-18, etc.	AH7025	164 - 394	0.001 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 197	0.001 - 0.006
	Superalloys Inconel718, etc.	AH7025	66 - 164	0.001 - 0.006

DUOJUST CUT

External grooving, Parting-off

PARTING-OFF TOOL WITH OPTIMIZED INSERT CLAMPING

ADD secure parting-off and threading operations of < ø0.787" (ø20 mm) bar stocks



- Innovative insert clamping design ensures process security in all parting operations and protects unused cutting edge from damage.
- Four different sizes of inserts fit the same cutter body, enabling the selection of optimum insert overhang for the workpiece diameter.
- Pressed-to-form 3D chipbreaker provides flexible and effective chip control. This eliminates chip re-cutting, preventing edge chipping and poor surface quality.
- 0.024" (0.6 mm) and 0.031" (0.8 mm) width inserts now have a pressed-to-form chipbreaker, saving material waste for improved tool economy for mass production.
- Offers toolholders ideal for the use on Swiss machines. In combination with TungTurn-Jet through-coolant toolholders, the inserts provide productivity gains.
- New **JXDX type** PCD-tipped grooving inserts with 3D laser-etched chipbreaker for machining of complicated aluminum parts are now available.

Lineup

Inserts

- **JXP(S/G)06R/L**

CW = 0.024" (0.6 mm) to 0.059" (1.5 mm)
Max. parting diameters: CUTDIA = 0.236" (ø6 mm)

- **JXP(S/G)R/L**

CW = 0.031" (0.8 mm) to 0.079" (2.0 mm)
Max. parting diameters: CUTDIA = 0.472" (ø12 mm)

- **JXP(S/G)16R/L**

CW = 0.050" (1.5 mm) to 0.079" (2.0 mm)
Max. parting diameters: CUTDIA = 0.630" (ø16 mm)

- **JXP(S/G)20R/L**

CW = 0.050" (1.5 mm) to 0.079" (2.0 mm)
Max. parting diameters: CUTDIA = 0.787" (ø20 mm)

- **JXDX12R..., 16R...**

CW = 0.079", 0.098" (2, 2.5 mm)
CDX = 0.276" (7 mm)

Toolholders

- **JSXXR/L...**
- **JSXXR/L**-S**
- **JSXXR/L**-CHP**
  (for precision internal coolant supply)
- **JSXXR/L**-S-CHP**
  (for precision internal coolant supply)

Grades

- **SH725** : Well balanced combination of the latest coating layer and tough carbide substrate provides long tool life
- **DX110** : Excellent cutting edge integrity that maintains sharpness over long period of time

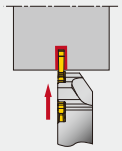
Scan this QR code to find out more about this tool!

DUOJCUT UST

TOOLHOLDERS

JSXXR/L

Parting-off and grooving tools



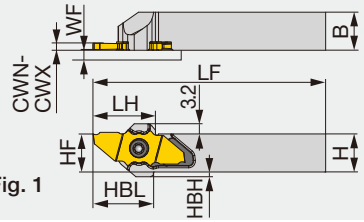


Fig. 1

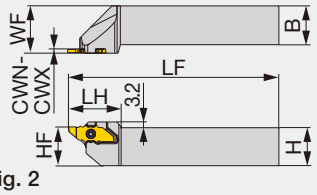


Fig. 2

Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF*	LH**	HF	WF	HBL**	HBH	Insert	Torque	Fig.
JSXXR/L063	0.039	0.079	0.375	0.375	4.750	0.774	0.375	0.008	0.748	0.12	JX*G06...,12...,16...,20...	0.890	1
JSXXR/L083	0.039	0.079	0.500	0.500	4.750	0.774	0.500	0.008	0.748	0.06	JX*G06...,12...,16...,20...	0.890	1
JSXXR/L103	0.039	0.079	0.625	0.625	4.750	0.774	0.625	0.008	-	-	JX*G06...,12...,16...,20...	0.890	1

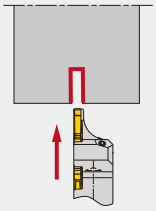
Metric	CWN	CWX	H	B	LF**	LH**	HF	WF	HBL**	HBH	Insert	Torque*	Fig.
JSXXR/L1010X09	1	2	10	10	120	19.65	10	0.2	19	3	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212F09	1	2	12	12	85	19.65	12	0.2	19	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1212X09	1	2	12	12	120	19.65	12	0.2	19	1.5	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L1616X09	1	2	16	16	120	19.65	16	0.2	-	-	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L2020H09	1	2	20	20	100	22.5	20	0.2	-	-	JX**06...,12...,16..., 20...	1.2	1
JSXXR/L2525Z09	1	2	25	25	135	34	25	30	-	-	JX**06...,12...,16..., 20...	1.2	2

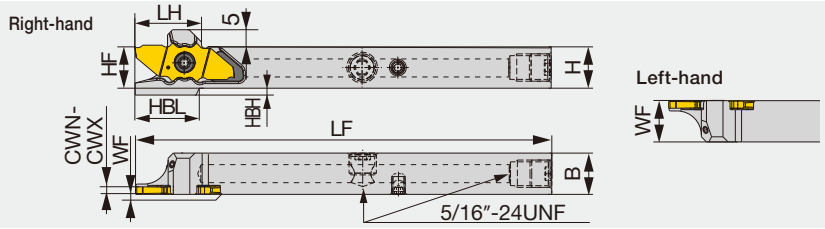
Torque: Recommended clamping torque: lbs·ft (*N·m)
LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20...inserts, and 0.157" (4 mm) shorter for JX**06... insert.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-X-CHP

TUNGTJET USA

Parting-off tool for swiss lathes, coolant-through





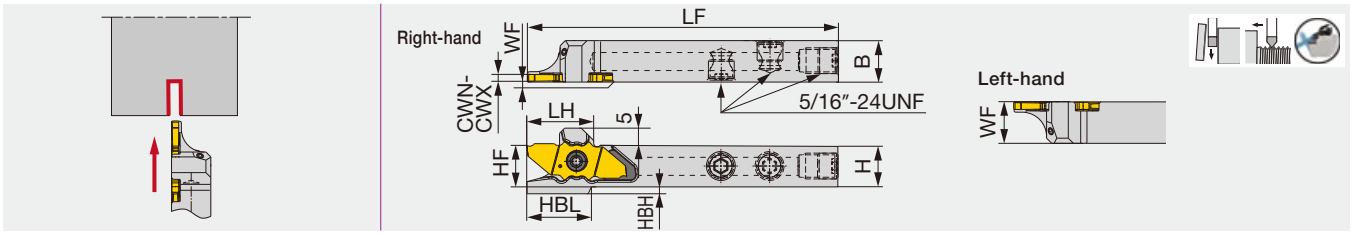
Inch	CWN	CWX	H	B	WF	LF**	HF	HBH	LH**	HBL**	Insert	Torque
JSXXR/L083X-CHP	0.039	0.079	0.500	0.500	0.008/0.492	4.750	0.500	0.051	0.764	0.736	JX*G06...,12...,16..., 20...	0.890
JSXXR/L103X-CHP	0.039	0.079	0.625	0.625	0.008/0.617	4.750	0.625	0	0.764	0	JX*G06...,12...,16..., 20...	0.890

Metric	CWN	CWX	H	B	LF**	LH**	HF	WF	HBL**	HBH	Insert	Torque*
JSXXR/L1012H09-CHP	1	2	10	12	102	19.2	10	0.2/11.8	18.7	3	JX**06...,12...,16..., 20...	1.2
JSXXR/L1212X09-CHP	1	2	12	12	120	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2
JSXXR/L1616X09-CHP***	1	2	16	16	120	19.4	16	0.2/15.8	18.7	2.5	JX**06...,12...,16..., 20...	1.2
JSXXR/L1616X09B-CHP	1	2	16	16	120	19.4	16	0.2/15.8	18.7	-	JX**06...,12...,16..., 20...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20... inserts, and 0.157" (4 mm) shorter for JX**06... insert.
***To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-F-CHP

Parting-off tool for swiss lathes



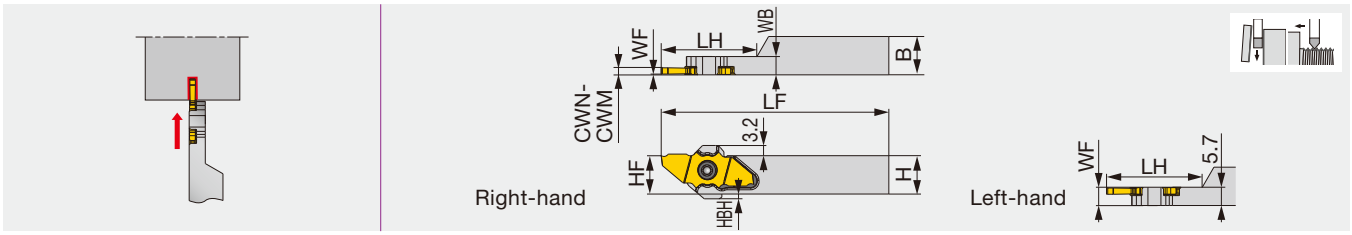
Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBL**	HBH	Insert	Torque
JSXXR/L083F-CHP	0.039	0.079	0.500	0.500	3.344	≤ 0.764	0.5	0.008/0.492	0.736	0.051	JX*G06...,12...,16..., 20...	0.890

Metric	CWN	CWX	H	B	LF**	LH**	HF	WF	HBL**	HBH	Insert	Torque*
JSXXR/L1212F09-CHP	1	2	12	12	85	19.4	12	0.2/11.8	18.8	2	JX**06...,12...,16..., 20...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JX16... insert. LF, LH, and HBL will all be 0.079" (2 mm) shorter than the above values with JX**12... and JX**20... inserts, and 0.157" (4 mm) shorter for JX**06... insert.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-S

Parting-off tool for sub spindle in swiss lathes



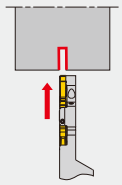
Inch	CWN	CWM	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L063-S	0.039	0.079	0.375	0.375	4.750	1.030	0.383	0.008/0.217	0.120	JX*G06...,12...,16..., 20...	0.890
JSXXR/L083-S	0.039	0.079	0.500	0.500	4.750	1.030	0.500	0.008/0.217	0.060	JX*G06...,12...,16..., 20...	0.890

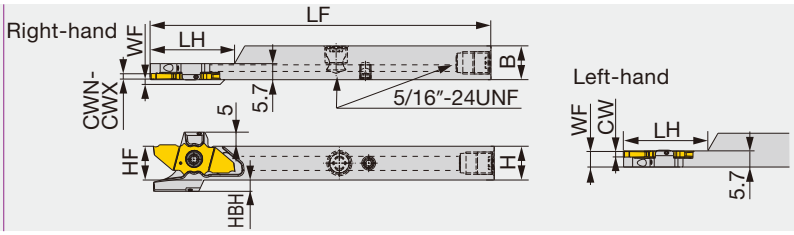
Metric	CWN	CWM	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L1010X09-S***	1	2	10	10	120	26	10	0.2/5.5	3	JX**06...,12...,16...***	1.2
JSXXR/L1212F09-S***	1	2	12	12	85	26	12	0.2/5.5	1.5	JX**06...,12...,16...***	1.2
JSXXR/L1212X09-S***	1	2	12	12	120	30	12	0.2/5.5	1.5	JX**06...,12...,16...***	1.2
JSXXR/L1616X09-S	1	2	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16..., 20...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
LF (Functional Length) and LH (Head Length) values shown above are true with JX16... insert. Both LF and LH will be 0.079" (2 mm) shorter than the above value with JX**12... and JX**20... inserts; 0.079" (4 mm) shorter with JX**06... insert.
***JX**20... insert will not fit.
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-X-S-CHP

Parting-off tool for sub spindle in swiss lathes, coolant-through





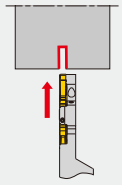
Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L083X-S-CHP	0.039	0.079	0.500	0.500	4.750	1.181	0.500	0.008/0.217	0.051	JX*G06...,12...,16..., 20...	0.890
JSXXR/L103X-S-CHP	0.039	0.079	0.625	0.625	4.750	1.181	0.625	0.008/0.217	0	JX*G06...,12...,16..., 20...	0.890

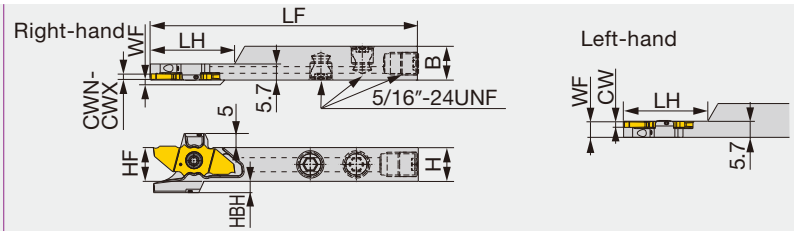
Metric	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L1212X09-S-CHP***	1	2	12	12	120	30	12	0.2/5.5	4	JX**06...,12...,16..., 20...	1.2
JSXXR/L1212X09B-S-CHP	1	2	12	12	120	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2
JSXXR/L1616X09-S-CHP***	1	2	16	16	120	30	16	0.2/5.5	1.5	JX**06...,12...,16..., 20...	1.2
JSXXR/L1616X09B-S-CHP	1	2	16	16	120	30	16	0.2/5.5	-	JX**06...,12...,16..., 20...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
LF (Functional Length) and LH (Head Length) values shown above are true with JX16... insert. Both LF and LH will be (0.079") 2 mm shorter than the above value with JX**12... and JX**20... inserts; 0.157" (4 mm) shorter with JX**06... insert.
***To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

JSXXR/L-F-S-CHP

Parting-off tool for sub spindle in swiss lathes





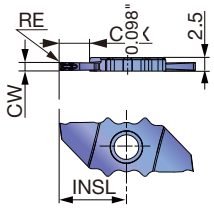
Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L083F-S-CHP	0.039	0.079	0.500	0.500	3.344	1.024	0.500	0.008/0.217	0.051	JX*G06...,12...,16..., 20...	0.890

Metric	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L1212F09-S-CHP***	1	2	12	12	85	26	12	0.2/5.5	4	JX**06...,12...,16..., 20...	1.2
JSXXR/L1212F09B-S-CHP	1	2	12	12	85	30	12	0.2/5.5	2	JX**06...,12...,16..., 20...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
LF (Functional Length) and LH (Head Length) values shown above are true with JX16... insert. Both LF and LH will be (0.079") 2 mm shorter than the above value with JX**12... and JX**20... inserts; 0.157" (4 mm) shorter with JX**06... insert.
***To be replaced with the new design
Note: Use the right-hand insert (JX****R...) for a right-hand holder (JSXXR...); the left-hand insert (JX****L...) for a left-hand holder (JSXXL...).

INSERTS

JXPS**R/L-F (with 3D chipbreaker, sharp edge)



Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

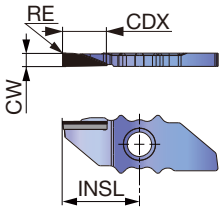
★ : First choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CUTDIA (in)	CDX* (in)	INSL (in)
JXPS06R06F	R	0.6	0.024	0.05	●	0.236	0.138	0.413
JXPS06L06F	L	0.6	0.024	0.05	●	0.236	0.138	0.413
JXPS12R08F	R	0.8	0.031	0.05	●	0.472	0.256	0.492
JXPS12L08F	L	0.8	0.031	0.05	●	0.472	0.256	0.492
JXPS12R10F	R	1	0.039	0.05	●	0.472	0.256	0.492
JXPS12L10F	L	1	0.039	0.05	●	0.472	0.256	0.492
JXPS12R15F	R	1.5	0.059	0.05	●	0.472	0.256	0.492
JXPS12L15F	L	1.5	0.059	0.05	●	0.472	0.256	0.492
JXPS16R15F	R	1.5	0.059	0.05	●	0.630	0.335	0.571
JXPS16L15F	L	1.5	0.059	0.05	●	0.630	0.335	0.571
JXPS20R20F	R	2	0.079	0.05	●	0.787	0.413	0.650
JXPS20L20F	L	2	0.079	0.05	●	0.787	0.413	0.650

*Max grooving depth (CDX) varies depending on workpiece diameters.

● : Line up

JXDX**R-F (PCD insert)



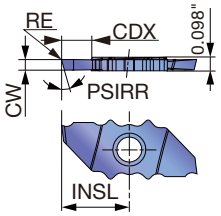
P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	PCD DX110	CDX (in)	INSL (in)
JXDX12R20F	R	2	0.079	< 0.0039	●	0.236	0.492
JXDX12R25F	R	2.5	0.098	< 0.0039	●	0.256	0.492
JXDX16R25F	R	2.5	0.098	< 0.0039	●	0.276	0.571

● : Line up

JXPG**R/L-F (Sharp edge)



Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated	CUTDIA (in)	CDX* (in)	INSL (in)	PSIRR/L**
					SH725				
JXPG06R10F	R	1	0.039	0.002	●	0.236	0.138	0.413	0°
JXPG06L10F	L	1	0.039	0.002	●	0.236	0.138	0.413	0°
JXPG06R15F	R	1.5	0.059	0.002	●	0.236	0.138	0.413	0°
JXPG06L15F	L	1.5	0.059	0.002	●	0.236	0.138	0.413	0°
JXPG06R10F-15	R	1	0.039	0.002	●	0.236	0.138	0.413	15°
JXPG06L10F-15	L	1	0.039	0.002	●	0.236	0.138	0.413	15°
JXPG06R15F-15	R	1.5	0.059	0.002	●	0.236	0.138	0.413	15°
JXPG06L15F-15	L	1.5	0.059	0.002	●	0.236	0.138	0.413	15°
JXPG12R15F	R	1.5	0.059	0.002	●	0.472	0.256	0.492	0°
JXPG12L15F	L	1.5	0.059	0.002	●	0.472	0.256	0.492	0°
JXPG12R20F	R	2	0.079	0.002	●	0.472	0.256	0.492	0°
JXPG12L20F	L	2	0.079	0.002	●	0.472	0.256	0.492	0°
JXPG12R15F-15	R	1.5	0.059	0.002	●	0.472	0.256	0.492	15°
JXPG12L15F-15	L	1.5	0.059	0.002	●	0.472	0.256	0.492	15°
JXPG12R20F-15	R	2	0.079	0.002	●	0.472	0.256	0.492	15°
JXPG12L20F-15	L	2	0.079	0.002	●	0.472	0.256	0.492	15°
JXPG16R15F	R	1.5	0.059	0.002	●	0.630	0.335	0.571	0°
JXPG16L15F	L	1.5	0.059	0.002	●	0.630	0.335	0.571	0°
JXPG16R20F	R	2	0.079	0.002	●	0.630	0.335	0.571	0°
JXPG16L20F	L	2	0.079	0.002	●	0.630	0.335	0.571	0°
JXPG16R15F-15	R	1.5	0.059	0.002	●	0.630	0.335	0.571	15°
JXPG16L15F-15	L	1.5	0.059	0.002	●	0.630	0.335	0.571	15°
JXPG16R20F-15	R	2	0.079	0.002	●	0.630	0.335	0.571	15°
JXPG16L20F-15	L	2	0.079	0.002	●	0.630	0.335	0.571	15°
JXPG20R15F	R	1.5	0.059	0.002	●	0.787	0.413	0.650	0°
JXPG20L15F	L	1.5	0.059	0.002	●	0.787	0.413	0.650	0°
JXPG20R20F	R	2	0.079	0.002	●	0.787	0.413	0.650	0°
JXPG20L20F	L	2	0.079	0.002	●	0.787	0.413	0.650	0°
JXPG20R15F-15	R	1.5	0.059	0.002	●	0.787	0.413	0.650	15°
JXPG20L15F-15	L	1.5	0.059	0.002	●	0.787	0.413	0.650	15°
JXPG20R20F-15	R	2	0.079	0.002	●	0.787	0.413	0.650	15°
JXPG20L20F-15	L	2	0.079	0.002	●	0.787	0.413	0.650	15°

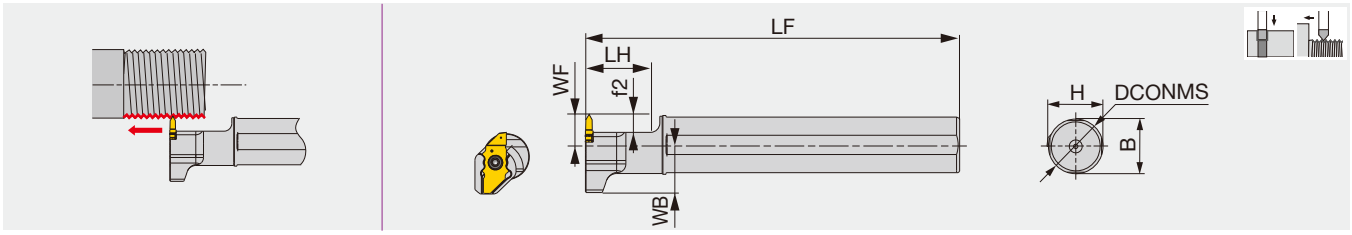
● : Line up

*Max grooving depth (CDX) varies depending on workpiece diameters.
**PSIRL for Left-hand insert.

TOOLHOLDERS

JS-SXXL09

Round shanks, for threading

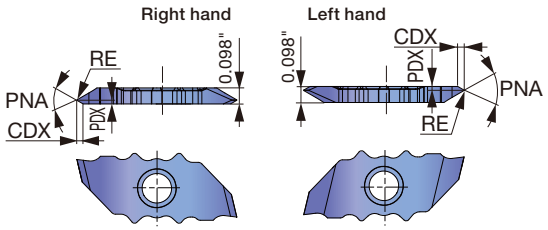


Metric	DCONMS	H	B	LF	LH	WB	WF**	f2**	Insert	Torque*
JS19G-SXXL09	19.05	18	18	90	21	15.43	10	6	JX**06,12*R	1.2
JS19X-SXXL09	19.05	18	18	120	21	15.43	10	6	JX**06,12*R	1.2
JS20G-SXXL09	20	19	19	90	21	15.4	10	6	JX**06,12*R	1.2
JS20X-SXXL09	20	19	19	120	21	15.4	10	6	JX**06,12*R	1.2
JS22X-SXXL09	22	21	21	120	21	15.4	10	6	JX**06,12*R	1.2
JS25H-SXXL09	25	24	24	100	21	15.4	10	6	JX**06,12*R	1.2
JS254X-SXXL09	25.4	24	24	120	21	15.4	10	6	JX**06,12*R	1.2

* Torque: Recommended torque (N·m) for clamping
** When using JX..06... insert, both WF and f2 sizes will be 2 mm shorter than the values provided above.
Please refer to the Tungaloy e-Catalog for spare parts

INSERTS

JXTG12FR/L-60 (For Threading / Sharp edge)



Designation	RE (in)	SH725 R	SH725 L	Pitches (in)	PDX (in)	CDX (in)	PNA (in)
JXTG12FR/L-60A-000	flat (0.002 max)	●	●	0.008 - 0.016	0.010	0.016	60°
JXTG12FR/L-60B-000	flat (0.002 max)	●	●	0.008 - 0.016	0.089	0.016	60°
JXTG12FR/L-60A-005	0.002	●	●	0.016 - 0.039	0.024	0.039	60°
JXTG12FR/L-60B-005	0.002	●	●	0.016 - 0.039	0.075	0.039	60°
JXTG12FR/L-60N-010	0.004	●	●	0.039 - 0.059	0.049	0.081	60°

● : Line up

EDGE ORIENTATION AND DESCRIPTION OF THREADING INSERTS

	Type A	Type B	Type N
Right hand	a > b	a < b	a = b
Left hand	a > b	a < b	a = b

JXTG 12 F R - 60 A - 005

- JXTG: Insert shape
- 12: Insert size
- F: sharp edge
- R: Hand
- 60: Thread angle
- A: Edge orientation
- 005: Corner radius

DUOJCUT UST

STANDARD CUTTING CONDITIONS

Parting, Grooving

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steels 1015, etc.	SH725	164 - 656	0.00039 - 0.0020
P	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 656	0.00039 - 0.0020
P	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 656	0.00039 - 0.0020
M	Stainless steels 304, etc.	SH725	164 - 656	0.00039 - 0.0020
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0020
N	Copper alloy C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0020
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0020
S	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0020

For aluminum and non-ferrous metal PCD insert

ISO	Workpiece materials	Grades	Operation	Cutting speed *Vc* (sfm)	Feed *f* (ipr)	Depth of cut *ap* (in)
N	Aluminum alloys 5056, 6061, etc.	DX110	Grooving	328 - 984	0.0012 - 0.0059	-
N		DX110	Turning	328 - 984	0.0012 - 0.0059	< 0.236"

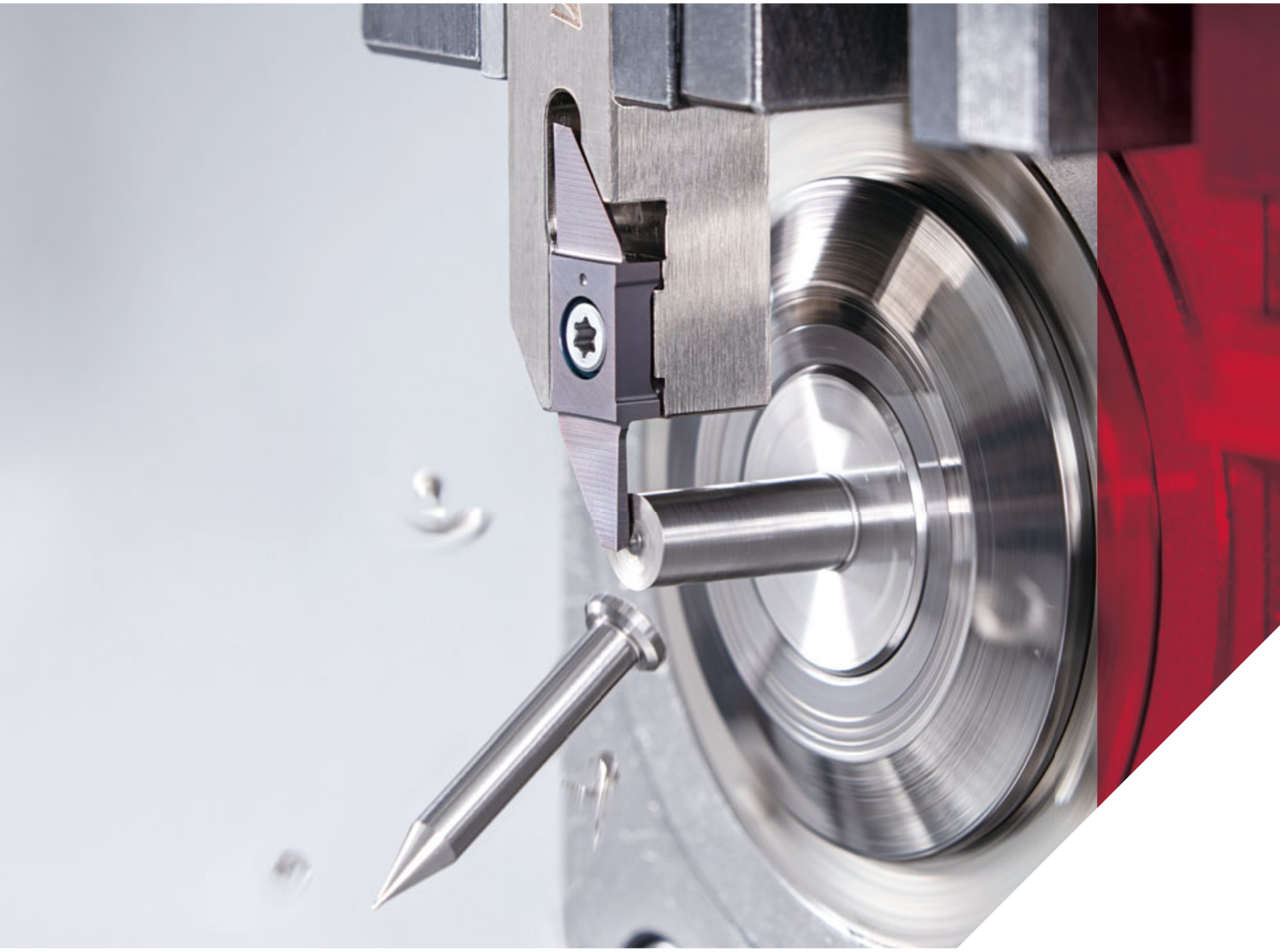
MEMO

DUOFORCE CUT

Parting-off and front turning tools

NEW FLEXIBLE TURNING TOOL SERIES FOR CNC AUTOMATIC LATHES AND CAM-DRIVEN LATHES

ADD flexible tool series with unique insert clamping system ideal for machining small parts of 0.472" (12 mm) or smaller diameters



- Minimum insert movement during machining thanks to the use of optimized screws.
- Ground contact faces provide the insert with superior edge repeatability.
- 6x6 to 10x10 mm shanks are available as standard.
- Innovative insert clamping mechanism allows the use of the same insert with all toolholders of different sizes.
- Flat toolholder design eliminates tool interference with the clamping unit, allowing free tool installations.

Lineup

Insert

- **JVPN**R/L**
CW = 0.020" (0.5mm), 0.024" (0.6mm), 0.031" (0.8mm), and 0.039" (1.0mm)
CUTDIA = 0.157", 0.275", and 0.472"

- **JVFN45R/L**

- **JVNR/L**
Max CW = 0.118"

Toolholders

- **JSXXL/R**

Grade

- **SH725**: Versatile SH725 grade provides the inserts with a good balance of wear and fracture resistance, addressing a range of material groups.

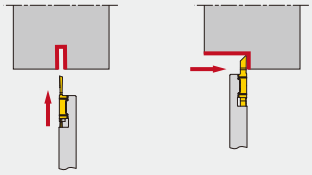
Scan this QR code to find out more about this tool!

DUOFORCE CUT

TOOLHOLDERS

JSXXR/L

Parting-off and front-turning toolholders



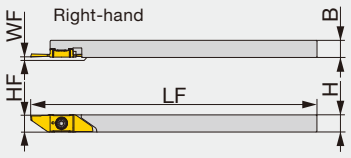


Fig. 1

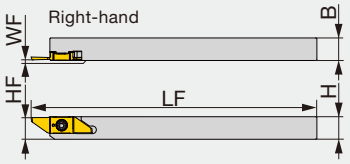
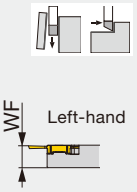


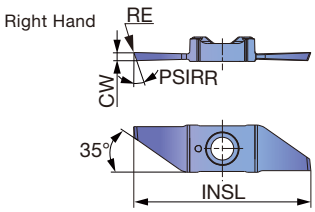
Fig. 2

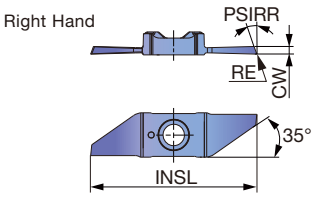


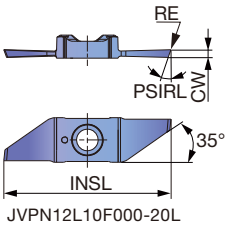
Designation	Hand	H (mm)	B (mm)	LF (mm)	HF (mm)	WF (mm)	Insert	Torque (N·m)	Fig.
JSXXL0606X05	Left	6.0	6.0	120.00	5.6	5.80	JV*N..., JVN...	1.3	1
JSXXR0707X05	Right	7.0	7.0	120.00	6.6	0.20	JV*N..., JVN...	1.3	1
JSXXL0707X05	Left	7.0	7.0	120.00	6.6	6.80	JV*N..., JVN...	1.3	1
JSXXR0808F05	Right	8.0	8.0	85.00	7.7	0.20	JV*N..., JVN...	1.3	2
JSXXL0808F05	Left	8.0	8.0	85.00	7.7	7.80	JV*N..., JVN...	1.3	2
JSXXR0808H05	Right	8.0	8.0	100.00	7.7	0.20	JV*N..., JVN...	1.3	2
JSXXL0808H05	Left	8.0	8.0	100.00	7.7	7.80	JV*N..., JVN...	1.3	2
JSXXR1010H05	Right	10.0	10.0	100.00	9.7	0.20	JV*N..., JVN...	1.3	-
JSXXL1010H05	Left	10.0	10.0	100.00	9.7	9.80	JV*N..., JVN...	1.3	-

INSERTS

JVPN**R/L (For parting off)



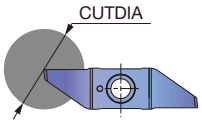




JVPN12L10F000-20L

P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	

★ : First choice

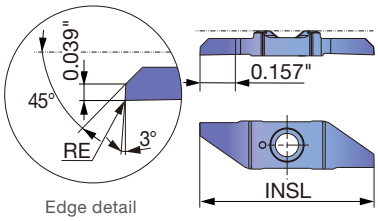


Designation	Hand	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CUTDIA (in)	INSL (in)	PSIRR	PSIRL
JVPN04R05F000-20	R	0.5	0.020	0	●	0.157	0.843	20°	-
JVPN04L05F000-20	L	0.5	0.020	0	●	0.157	0.843	20°	-
JVPN04R05F005-20	R	0.5	0.020	0.05	●	0.157	0.839	20°	-
JVPN04L05F005-20	L	0.5	0.020	0.05	●	0.157	0.839	20°	-
JVPN07R06F000-20	R	0.6	0.024	0	●	0.276	0.843	20°	-
JVPN07L06F000-20	L	0.6	0.024	0	●	0.276	0.843	20°	-
JVPN07R06F005-20	R	0.6	0.024	0.05	●	0.276	0.843	20°	-
JVPN07L06F005-20	L	0.6	0.024	0.05	●	0.276	0.843	20°	-
JVPN12R08F000-20	R	0.8	0.031	0	●	0.472	0.850	20°	-
JVPN12L08F000-20	L	0.8	0.031	0	●	0.472	0.850	20°	-
JVPN12R08F005-20	R	0.8	0.031	0.05	●	0.472	0.846	20°	-
JVPN12L08F005-20	L	0.8	0.031	0.05	●	0.472	0.846	20°	-
JVPN12R10F000-20	R	1	0.039	0	●	0.472	0.854	20°	-
JVPN12L10F000-20	L	1	0.039	0	●	0.472	0.854	20°	-
JVPN12R10F005-20	R	1	0.039	0.05	●	0.472	0.854	20°	-
JVPN12L10F005-20	L	1	0.039	0.05	●	0.472	0.854	20°	-
JVPN12L10F00-20L	R	1	0.039	0	●	0.472	0.854	-	20°

● : Line up

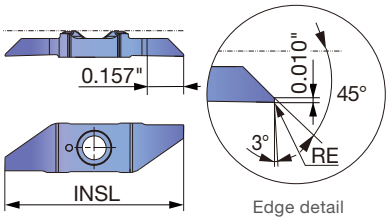
JVFN45R/L (For front turning)

Fig. 1



Edge detail

Fig. 2



Edge detail

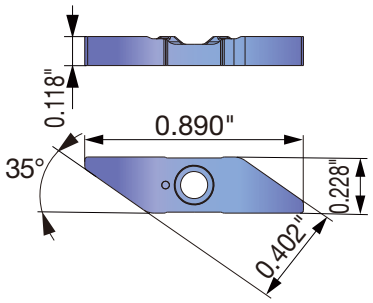
P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	Hand	RE (in)	Coated SH725	INSL (in)	Fig.
JVPN04R05F000-20	R	0	●	0.827	1
JVPN04L05F000-20	L	0	●	0.827	2

● : Line up

JVNR/L (Semi-finished blanks)



Right-hand (R) shown

P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	Hand	Uncoated KS15F
JVNR30	R	●
JVNL30	L	●

● : Line up

DUOFORCE CUT

STANDARD CUTTING CONDITIONS

Parting-off

ISO	Workpiece materials	Grade	Cutting speed *Vc* (sfm)	Feed f (ipr)
P	Low carbon steels 1015, etc.	SH725	164 - 591	0.00039 - 0.0020
P	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 591	0.00039 - 0.0020
P	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 591	0.00039 - 0.0020
M	Stainless steels 304, etc.	SH725	164 - 394	0.00039 - 0.0020
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0020
N	Copper alloys C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0020
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0020
S	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0020

STANDARD CUTTING CONDITIONS

Front turning

ISO	Workpiece materials	Grade	Cutting speed *Vc* (sfm)	Feed f (ipr)
P	Low carbon steels 1015, etc.	SH725	164 - 591	0.00039 - 0.0012
	Carbon steels, Alloy steels 1055, etc.	SH725	164 - 591	0.00039 - 0.0012
	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 591	0.00039 - 0.0012
M	Stainless steels 304, etc.	SH725	164 - 394	0.00039 - 0.0012
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 656	0.00039 - 0.0012
	Copper alloys C2600, C280C, etc.	SH725	328 - 656	0.00039 - 0.0012
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.00039 - 0.0012
	Superalloys Inconel718, etc.	SH725	98 - 262	0.00039 - 0.0012

LOCK
MINI V GROOVE

External grooving, Parting-off

HIGH PRECISION GROOVING AND THREADING TOOL SERIES FOR CNC AUTOMATIC LATHES

ADD perfect for grooving and threading bar stocks of 12mm or smaller diameters

- V-shaped insert pocket retains the insert securely, enabling high precision machining.
- Available in 8x8, 10x10, and 12x12 mm square shanks.
- IHigh-pressure through coolany directed to the rake and back faces of the cutting edge for smooth machining process and prolonged tool life.
- Same inserts for right-hand and left-hand toolholders.

Lineup

Insert
- **VGP10**

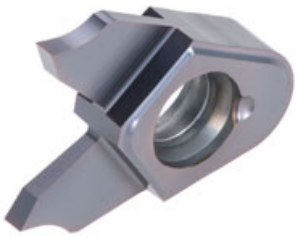
CW = 0.020" (0.5mm), 0.030" (0.75mm), and 0.039" (1.0mm)
CUTDIA = 0.197", 0.236", and 0.315"
- **VGT10**

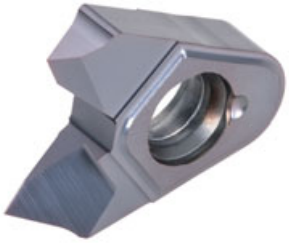
Toolholders
- **SVER/L**
- **SVER/L-CHP**

Shanks
- **QC-08**
- **QC-1212**

Modular Heads
- **QC1-SVER/L-CHP**
- **QC-1212-CHP**
- **QC-1216-F15-CHP**
- **QC-08-CHP**
- **QC-08-F10-CHP**

Grade
- **SH725**: PVD Coated Grade for general purpose of machining. Extremely wear resistant cutting edge maintains exceptional sharpness.





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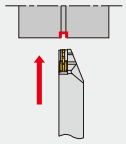
MINI LOCK GROOVE

TOOLHOLDERS

SVER/L

External grooving and threading tooholder



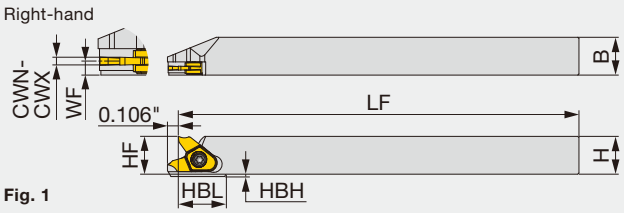


Fig. 1

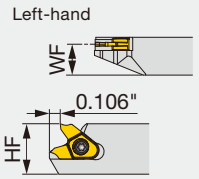
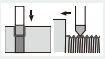


Fig. 2

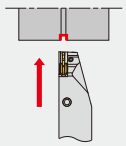


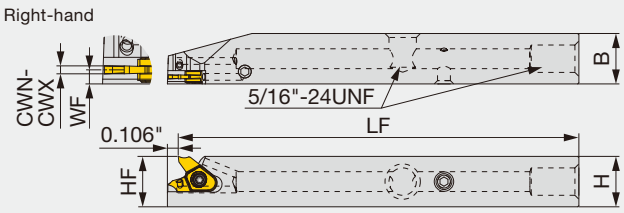
Inch	CWN	CWX	H	B	LF	HF	WF(1)	HBL	HBH	Insert	Torque*	Fig.
SVER/L06-10	0.020	0.039	0.375	0.375	4.750	0.375	0.070/0.304	0.472	0.024	VG*10...	0.96	1
SVER/L08-10	0.020	0.039	0.500	0.500	4.750	0.500	0.070/0.304	0.472	0.024	VG*10...	0.96	2

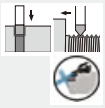
* Torque: Recommended torque lbs·ft for clamping.
(1) "WF" indicates the distance from the reference position to the center of the cutting edge width. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
Please refer to the Tungaloy e-catalog for spare parts.

SVER/L-CHP

External grooving and threading toolholder, with high pressure coolant capability







Inch	CWN	CWX	H	B	LF	HF	WF(1)	Insert	Torque*
SVER/L08-10-CHP	0.020	0.039	0.500	0.500	4.750	0.500	0.070/0.430	VG*10...	0.96

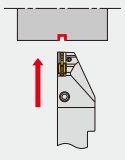
* Torque: Recommended torque lbs·ft for clamping.
Compatible to the direct internal coolant supply system without the use of external coolant hose.
(1) "WF" indicates the distance from the reference position to the center of the cutting edge width. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
Please refer to the Tungaloy e-catalog for spare parts.

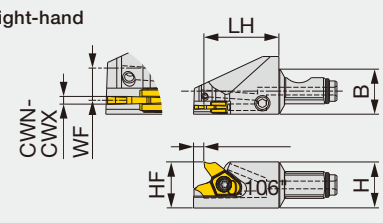
MODULAR HEAD

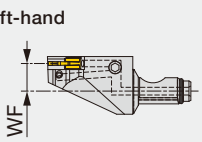
QC12-SVER/L-CHP

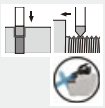
MODUMINITURN

Modular head for external grooving and threading, with high pressure coolant capability









Inch	CWN	CWX	H	B	LH	HF	WF (1)	Insert	Torque*
QC12-SVER/L10-CHP	0.020	0.039	0.472	0.472	0.768	0.472	0.165/0.283	VG*10...	0.96

Metric	CWN	CWX	H	B	LH	HF	WF (1)	Insert	Torque*
QC12-SVER/L10-CHP	0.5	1	12	12	19.5	12	4.19/7.19	VG*10...	1.3

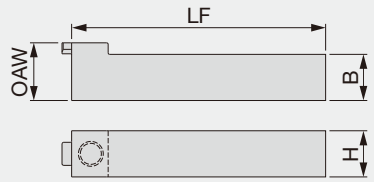
* Torque: Recommended torque lbs·ft (N·m) for clamping.
(1) "WF" indicates the distance from the reference position to the center of the cutting edge width. The first value before "/" indicates the WF for the right-hand holder and the second value after "/" for the left-hand holder.
Please refer to the Tungaloy e-catalog for spare parts.

SHANKS

QC-08 and QC-1212

MODUMINI TURN

Shank for Interchangeable Heads (All metric heads are compatible with the inch shanks)



Inch	H	B	LF	OAW	Torque (lbs·ft)
QC-08F	0.500	0.500	2.560	0.590	2.21
QC-08X	0.500	0.500	3.940	0.590	2.21
Metric	**H**	**B**	**LF**	**OAW**	**Torque (N·m)**
QC-1212F	12	12	65	15	3
QC-1212X	12	12	100	15	3

* Torque: Recommended torque lbs·ft (N·m) for clamping
Please refer to the Tungaloy e-catalog for spare parts.

QC-08-CHP and QC-1212-CHP

MODUMINI TURN

Shank for modular heads, with high pressure coolant capability

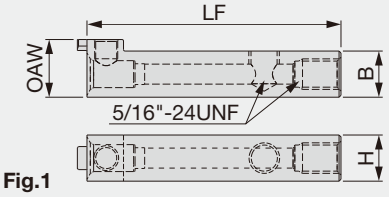


Fig.1

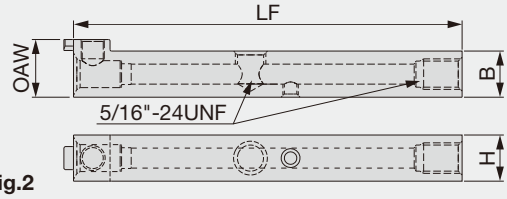


Fig.2

Inch	H	B	LF	OAW	Torque (lbs·ft)	Fig.
QC-08F-CHP	0.500	0.500	2.560	0.590	2.21	1
QC-08X-CHP (1)	0.500	0.500	3.940	0.590	2.21	2
Metric	**H**	**B**	**LF**	**OAW**	**Torque (N·m)**	**Fig.**
QC-1212F-CHP	12	12	65	15	3	1
QC-1212X-CHP (1)	12	12	100	15	3	2

* Torque: Recommended torque lbs·ft (N·m) for clamping
(1) Compatible to the direct internal coolant supply system without the use of external coolant hose. Through-coolant shank.
Please refer to the Tungaloy e-catalog for spare parts.

QC-08-F10-CHP and QC-1216-F15-CHP

MODU MINI TURN

Stepped-head shank for modular heads, with high pressure coolant capability

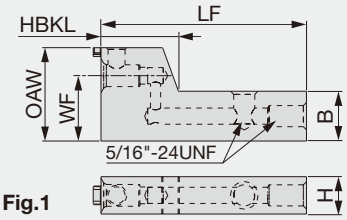


Fig.1

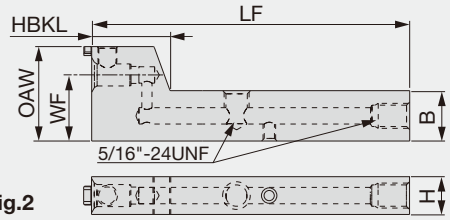


Fig.2

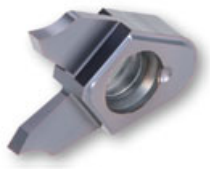
Inch	H	B	LF	WF	HBKL	OAW	Torque	Fig.
QC-08F-F10-CHP	0.500	0.625	2.560	0.861	0.980	1.220	2.21	1
QC-08X-F10-CHP (1)	0.500	0.625	3.940	0.861	0.980	1.220	2.21	2

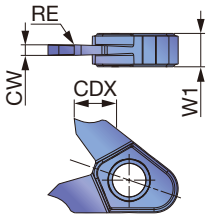
Metric	H	B	LF	WF	HBKL	OAW	Torque	Fig.
QC-1216F-F15-CHP	12	16	65	21	25	30	3	1
QC-1216X-F15-CHP (1)	12	16	100	21	25	30	3	2

* Torque: Recommended torque lbs·ft (N·m) for clamping
(1) Compatible to the direct internal coolant supply system without the use of external coolant hose.
QC12 heads only can be mounted on these shanks.

INSERTS

VGP10 (For grooving / sharp edge)





P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

★ : First choice

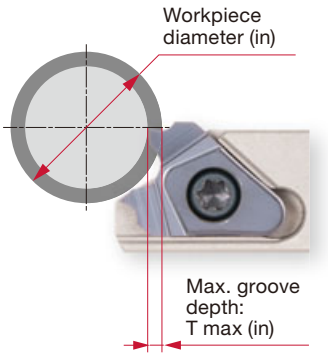
Designation	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CDX* (in)	CUTDIA (in)	W1 (in)
VGP10-050F-000	0.5	0.020	0	●	0.098	0.197	0.124
VGP10-050F-005	0.5	0.020	0.002	●	0.098	0.197	0.124
VGP10-075F-000	0.75	0.030	0	●	0.118	0.236	0.124
VGP10-075F-005	0.75	0.030	0.002	●	0.118	0.236	0.124
VGP10-100F-000	1	0.039	0	●	0.157	0.315	0.124
VGP10-100F-005	1	0.039	0.002	●	0.157	0.315	0.124

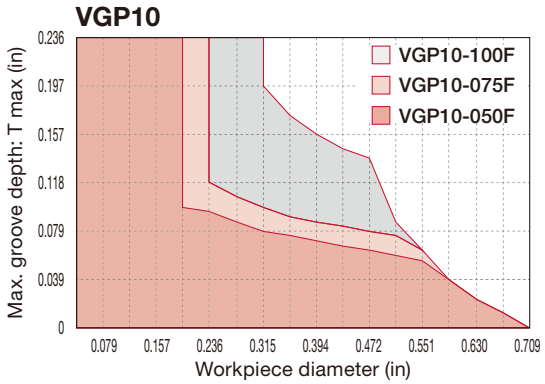
*Max grooving depth varies depending on workpiece diameters. See next page for details.

● : Line up

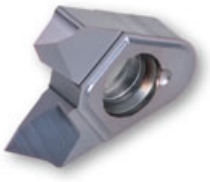
Note: Max grooving depths vs workpiece diameters

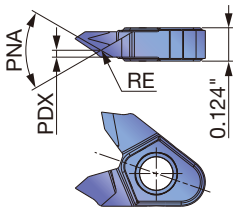
To avoid tool interference with the workpiece, max grooving depths (T max) for the insert used may be smaller than the CDX values listed above depending on the workpiece diameter.





VGT10 (For threading / sharp edge)





P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	

★ : First choice

Designation	RE (in)	Coated SH725	Pitch (mm)	TPI	PDX (in)	PNA
VGT10F-60A-005	0.002	●	0.4 - 1	64 - 25	0.026	60°
VGT10F-60A-010	0.004	●	1 - 2	25 - 12	0.038	60°
VGT10F-55A-005	0.002	●	0.6 - 1.5	40 - 16	0.033	55°

● : Line up

MINI V LOCK GROOVE

STANDARD CUTTING CONDITIONS

Grooving

ISO	Workpiece materials	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steels 1015, 1020, etc.	SH725	164 - 492	0.0002 - 0.004
P	Carbon steels, Alloy steels 1055, 4140, etc.	SH725	164 - 492	0.0002 - 0.004
P	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 492	0.0002 - 0.004
M	Stainless steels 304, etc.	SH725	164 - 328	0.0002 - 0.004
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 722	0.0002 - 0.004
N	Copper alloy C2600, C280C, etc.	SH725	328 - 656	0.0002 - 0.004
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.0002 - 0.004
S	Superalloys Inconel718, etc.	SH725	98 - 262	0.0002 - 0.004

Threading

ISO	Workpiece materials	Grade	Cutting speed *Vc* (sfm)	Pitch (mm)	TPI
P	Low carbon steels 1015, 1020, etc.	SH725	164 - 492	0.4 - 2	64 - 12
P	Carbon steels, Alloy steels 1055, 4140, etc.	SH725	164 - 492	0.4 - 2	64 - 12
P	Free cutting steels SUH22, SUH23, etc.	SH725	164 - 492	0.4 - 2	64 - 12
M	Stainless steels 304, etc.	SH725	164 - 328	0.4 - 2	64 - 12
N	Aluminum alloys 5056, 6061, etc.	SH725	492 - 722	0.4 - 2	64 - 12
N	Copper alloy C2600, C280C, etc.	SH725	328 - 656	0.4 - 2	64 - 12
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.4 - 2	64 - 12
S	Superalloys Inconel718, etc.	SH725	98 - 262	0.4 - 2	64 - 12

MEMO

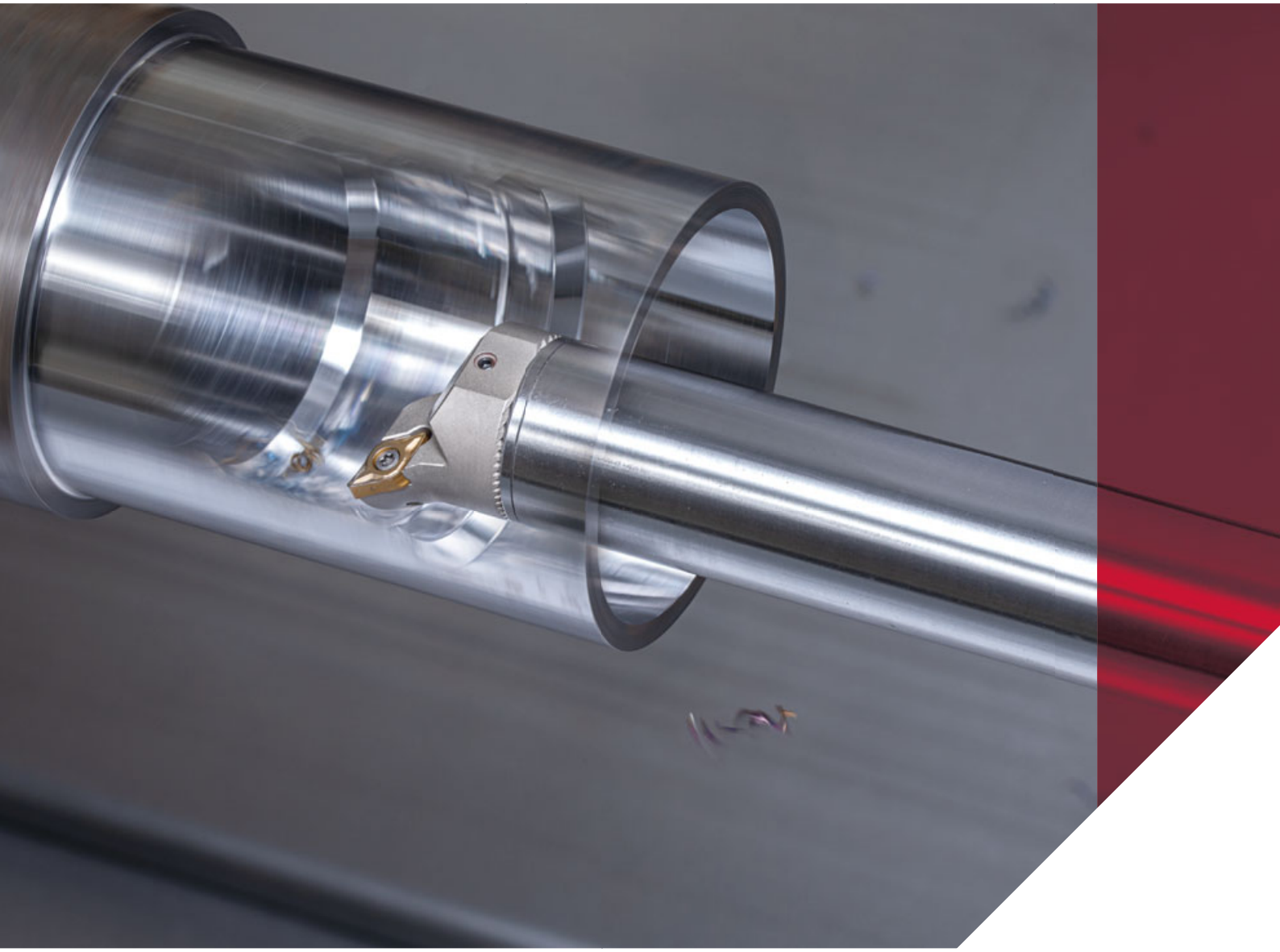
Turning

BOREMEISTER

Internal turning

VIBRATION-FREE SOLUTION FOR DEEP-HOLE BORING

ADD stability and precision



- Ultimate solution to conquer tool overhang challenges, chattering, noise and short tool life of up to 10xD.
- Exchangeable head boring tool system with serrated interfaces for high precision and high rigidity indexing.
- Through-coolant capability allows smooth chip evacuation in deep boring operations of up to 10xD.
- PSC holders are also available, allowing coupling with a range of machine tools.
- A wide range of boring heads are available, providing high parts quality in various boring operations.
- Dedicated setting device allows quick and accurate center height settings of the boring bar.

Lineup

Heads

BoreMeister heads are available for:
- **ISO-EcoTurn** economical inserts
- **MiniForce-Turn** double-sided positive inserts
- **TungBore-Mini** inserts for hole making and turning
- **TungThread** ST-style inserts for threading
- **AddForceCut**: Single corner insert for internal grooving

Shanks

- Steel shanks: 4xD, 7xD, 10xD
DCONMS = ø0.625" - ø2.500"
- Carbide shanks: 10xD
DCONMS = ø0.625" - ø2.500"
- PSC adapter: 2.5xD, 3xD, 5xD, 9xD
PSC size = C4, C6

A wide range of boring heads are available.

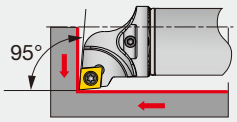
Scan this QR code to find out more about this tool!

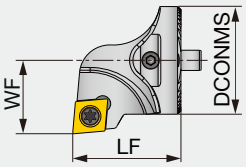
BOREMEISTER

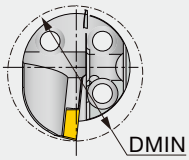
HEAD

S-SCLCR/L-H

Screw-on clamp interchangeable boring heads for positive 80° rhombic inserts







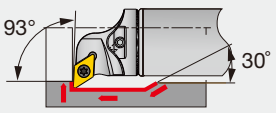
Right hand (R) shown.

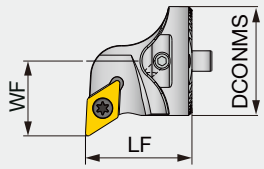
Inch	DMIN	DCONMS	WF	LF	Shank size	Insert
S16-SCLCR/L06-H	0.787	0.630	0.433	0.787	D/G.625	CC**21...
S20-SCLCR/L09-H	0.984	0.787	0.512	0.787	D/G.750	CC**32...
S25-SCLCR/L09-H	1.260	0.984	0.669	0.787	D1.00	CC**32...
S32-SCLCR/L09-H	1.575	1.260	0.866	1.260	D1.25	CC**32...
S40-SCLCR/L12T-H	1.968	1.575	1.063	1.496	D1.50, D2.00, D2.50	CC**43...

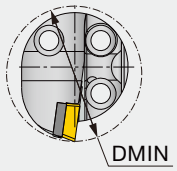
Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SCLCL** type), and the left hand insert (L) is used for the right hand toolholders (SCLCR** type).
Please reference the technical brochure for boring heads spare parts.

S-SDUCR/L-H

Screw-on clamp interchangeable boring heads for positive 55° rhombic inserts







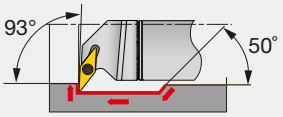
Right hand (R) shown.

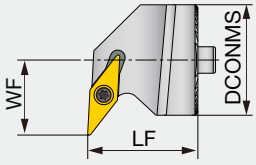
Inch	DMIN	DCONMS	WF	LF	Shank size	Insert
S16-SDUCR/L07-H	0.787	0.630	0.433	0.787	D/G.625	DC**21...
S20-SDUCR/L11-H	0.984	0.787	0.512	0.787	D/G.750	DC**32...
S25-SDUCR/L11-H	1.260	0.984	0.669	0.787	D1.00	DC**32...
S32-SDUCR/L11T-H	1.575	1.260	0.866	1.260	D1.25	DC**32...
S40-SDUCR/L11T-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	DC**32...

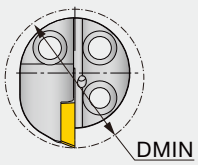
Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SDUCL** type), and the left hand insert (L) is used for the right hand toolholders (SDUCR** type).
Please reference the technical brochure for boring heads spare parts.

S-SVUCR/L-H

Screw-on clamp interchangeable boring heads for positive 35° rhombic inserts







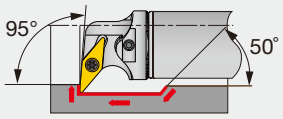
Right hand (R) shown.

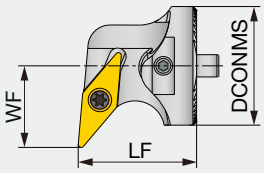
Inch	DMIN	DCONMS	WF	LF	Shank size	Insert
S20-SVUCR/L11-H	1.063	0.787	0.630	0.787	D/G.750	VC**22...
S25-SVUCR/L11-H	1.260	0.984	0.669	0.984	D1.00	VC**22...

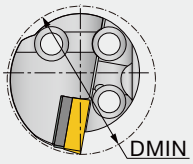
Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SVUCL** type), and the left hand insert (L) is used for the right hand toolholders (SVUCR** type).
Please reference the technical brochure for boring heads spare parts.

S-SVLCR/L-H

Screw-on clamp interchangeable boring heads for positive 35° rhombic inserts







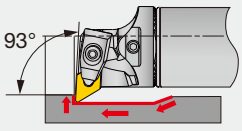
Right hand (R) shown.

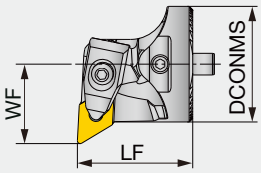
Inch	DMIN	DCONMS	WF	LF	Shank size	Insert
S32-SVLCR/L16T-H	1.575	1.260	0.866	1.260	D1.25	VC**33...
S40-SVLCR/L16T-H	1.968	1.575	1.063	1.260	D1.50, D2.00, D2.50	VC**33...

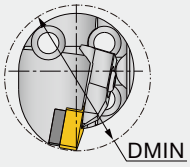
Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SVLCL** type), and the left hand insert (L) is used for the right hand toolholders (SVLCR** type).
Please reference the technical brochure for boring heads spare parts.

S-DDUNR/L-H

Double clamp interchangeable boring heads for negative 55° rhombic inserts







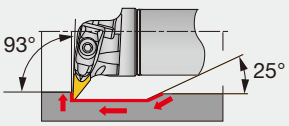
Right hand (R) shown.

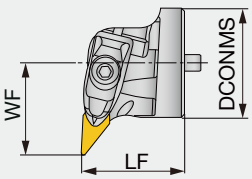
Inch	DMIN	DCONMS	WF	LF	Shank size	Insert
S32-DDUNR/L11T-H	1.575	1.260	0.866	1.260	D1.25	DN**33...
S40-DDUNR/L15T-H	1.968	1.575	1.063	1.496	D1.50, D2.00, D2.50	DN**43/44...

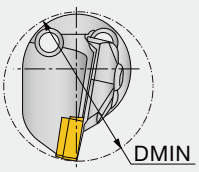
Note: When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (DDUNL** type), and the left hand insert (L) is used for the right hand toolholders (DDUNR** type).
Please reference the technical brochure for boring heads spare parts.

S-DVUNR/L-H

Double clamp interchangeable boring heads for negative 35° rhombic inserts







Right hand (R) shown.

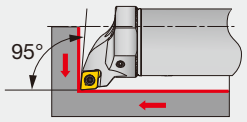
Inch	DMIN	DCONMS	WF	LF	Shank size	Insert
S40-DVUNR/L16T-H	2.205	1.575	1.339	1.496	D1.50, D2.00, D2.50	VN**33...

Please reference the technical brochure for boring heads spare parts.

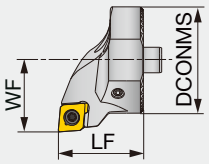
S-SCLXR/L-H

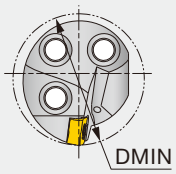
MINIFORCE TURN

Screw-on clamp exchangeable boring head, for CXMU inserts



Cutting edge style **L**





Right hand (R) shown.

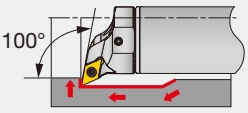
Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S25-SCLXR/L06-H	1.260	0.984	0.669	0.787	D1.00	CXMU22*L...
S32-SCLXR/L06-H	1.575	1.260	0.866	1.260	D1.25	CXMU22*L...
S40-SCLXR/L06-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	CXMU22*L...

Note: Use right-hand toolholders (SCLXR**) with left-hand inserts (L); and left-hand toolholders (SCLXL**) with right-hand inserts (R).
Please reference the technical brochure for boring heads spare parts.

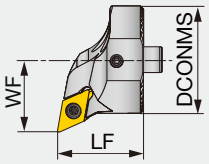
S-SDXXR/L-H

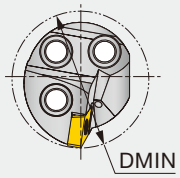
MINIFORCE TURN

Screw-on clamp exchangeable boring head, for DXG/MU inserts



Cutting edge style **X**





Right hand (R) shown.

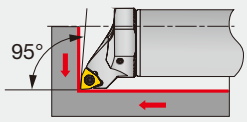
Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S25-SDXXR/L07-H	1.260	0.984	0.669	0.787	D1.00	DX*U22*L...
S32-SDXXR/L07-H	1.575	1.260	0.866	1.260	D1.25	DX*U22*L...
S40-SDXXR/L07-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	DX*U22*L...

Note: Use right-hand toolholders (SDXXR**) with left-hand inserts (L); and left-hand toolholders (SDXXL**) with right-hand inserts (R).
Please reference the technical brochure for boring heads spare parts.

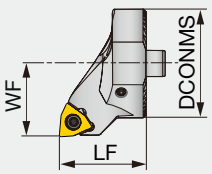
S-SWLXR/L-H

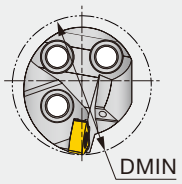
MINIFORCE TURN

Screw-on clamp exchangeable boring head, for WXGU inserts



Cutting edge style **L**





Right hand (R) shown.

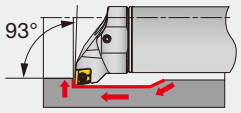
Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S25-SWLXR/L04-H	1.260	0.984	0.669	0.787	D1.00	WXGU221…
S32-SWLXR/L04-H	1.575	1.260	0.866	1.260	D1.25	WXGU221…
S40-SWLXR/L04-H	1.968	1.575	1.063	1.260	D1.50, D2.00, D2.50	WXGU221…

Note: Use right-hand toolholders (SWLXR**) with left-hand inserts (L); and left-hand toolholders (SWLXL**) with right-hand inserts (R).
Please reference the technical brochure for boring heads spare parts.

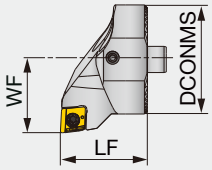
S-SXUOR05-H

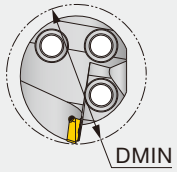
TUNGBMINI

Screw-on clamp exchangeable boring head, for XOMU inserts



Cutting edge style **U**





Right hand (R) shown.

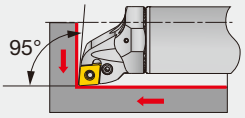
Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S20-SXUOR05-H	0.984	0.787	0.512	0.787	D.750, G.750	XOMU...
S25-SXUOR05-H	1.260	0.984	0.669	0.787	D1.00	XOMU...

Please reference the technical brochure for boring heads spare parts.

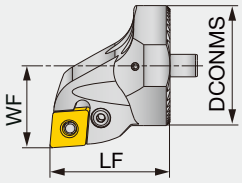
S-PCLNR/L-H

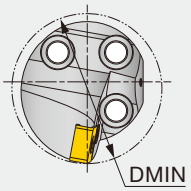
ISOETURN

Lever-lock clamp exchangeable boring head, for negative 80° rhombic inserts



Cutting edge style **L**





Right hand (R) shown.

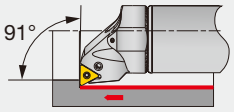
Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S32-PCLNR/L09-H	1.575	1.260	0.866	1.260	D1.25	CNMG332...
S40-PCLNR/L09-H	1.968	1.575	1.063	1.260	D1.50, D2.00, D2.50	CNMG332...

Note: Use right-hand toolholders (PCLNR**) with left-hand inserts (L); and left-hand toolholders (PCLNL**) with right-hand inserts (R).
Please reference the technical brochure for boring heads spare parts.

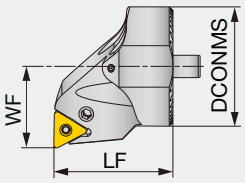
S-PTFNR/L-H

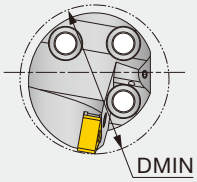
ISOETURN

Lever-lock clamp exchangeable boring head, for negative 60° triangular inserts



Cutting edge style **F**





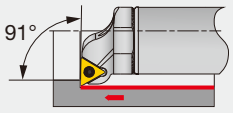
Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S32-PTFNR/L11-H	1.575	1.260	0.866	1.260	D1.25	TNMG232...
S40-PTFNR/L11-H	1.968	1.575	1.063	1.260	D1.50, D2.00, D2.50	TNMG232...

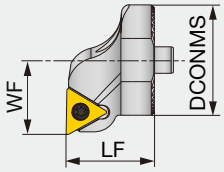
Note: Use right-hand toolholders (PTFNR**) with left-hand inserts (L); and left-hand toolholders (PTFNL**) with right-hand inserts (R).
Please reference the technical brochure for boring heads spare parts.

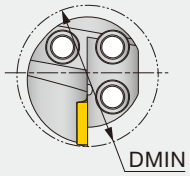
S-STFPR/L-H

Screw-on clamp exchangeable boring head, for positive 60° triangular inserts



Cutting edge style **F**





Right hand (R) shown.

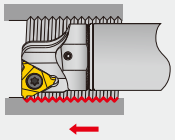
Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S16-STFPR/L09-H	0.787	0.630	0.433	0.787	D.625, G.625	TPMT731...
S16-STFPR/L11-H	0.787	0.630	0.433	0.787	D.625, G.625	TPMT21.51...
S20-STFPR/L11-H	0.984	0.787	0.512	0.787	D.750, G.750	TPMT21.51...
S25-STFPR/L11-H	1.260	0.984	0.669	0.787	D1.00	TPMT21.51...
S32-STFPR/L16-H	1.575	1.260	0.866	1.260	D1.25	TPMT32.52...
S40-STFPR/L16-H	1.968	1.575	1.063	1.260	D1.50, D2.00, D2.50	TPMT32.52...

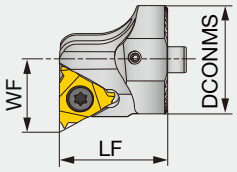
Note: Use right-hand toolholders (STFPR**) with left-hand inserts (L); and left-hand toolholders (STFPL**) with right-hand inserts (R).
Please reference the technical brochure for boring heads spare parts.

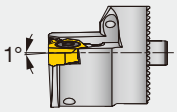
S-SNR-H

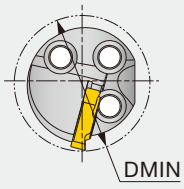
TUNGTHREAD

Screw-on clamp exchangeable boring head, for threading inserts









Right hand (R) shown.

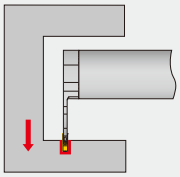
Inch	DMIN	DCONMS	WF	LF	Shank	Insert
S20-SNR16-H	0.984	0.787	0.551	0.984	D.750, G.750	16IR...
S25-SNR16-H	1.260	0.984	0.669	0.984	D1.00	16IR...
S32-SNR16-H	1.575	1.260	0.866	1.260	D1.25	16IR...
S40-SNR16-H	1.968	1.575	1.063	1.260	D1.50, D2.00, D2.50	16IR...

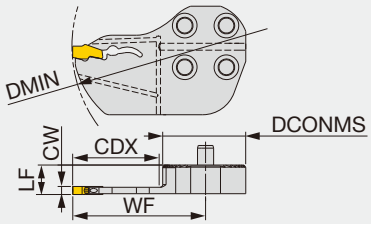
Please reference the technical brochure for boring heads spare parts.

S-QSIR/L-H

BOREMEISTER

Exchangeable boring head, for internal grooving





Left hand (L) shown.

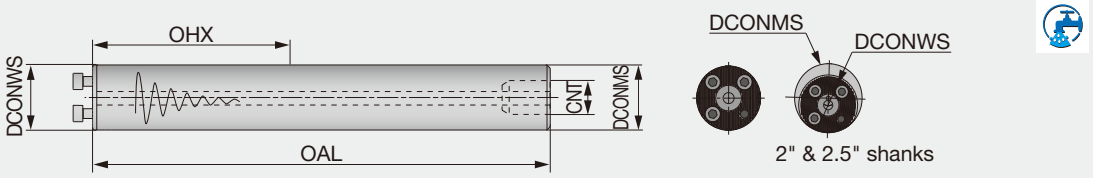
Inch	CW	CDX	DMIN	DCONMS	Seat size	LF	WF	Shank
S25-QSIR/L2T26D550-H	0.079	1.024	2.165	0.984	2	0.335	1.579	D1.00
S25-QSIR/L3T26D550-H	0.118	1.024	2.165	0.984	3	0.354	1.579	D1.00
S32-QSIR/L3T32D700-H	0.118	1.260	2.756	1.260	3	0.433	1.953	D1.25
S32-QSIR/L4T32D700-H	0.157	1.260	2.756	1.260	4	0.453	1.953	D1.25

Please refer to the BoreMeister Tungaloy Report (TR517) for shank information that is applicable to the head.
Please reference the technical brochure for boring heads spare parts.

SHANKS

Straight Shank

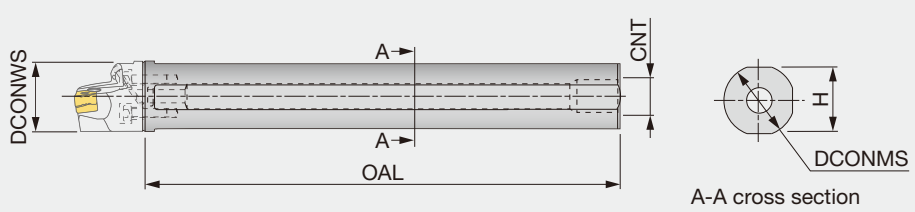
Anti-vibration bars with through coolant for interchangeable turning heads



Inch	Material	DCONWS	DCONMS	OAL	OHX	CNT
D.625-L6.14-7D-C	Steel	0.630	0.625	6.140	3.500	G1/8
G.625-L8.03-10D-E	Carbide	0.630	0.625	8.030	5.500	-
D.750-L7.87-7D-C	Steel	0.787	0.750	7.870	4.400	G1/4
G.750-L10.24-10D-E	Carbide	0.787	0.750	10.240	7.000	-
D1.00-L10.2-7D-C	Steel	0.984	1.000	10.200	6.200	G1/4
D1.00-L13.21-10D-C	Steel	0.984	1.000	13.210	9.200	G1/4
D1.25-L12.48-7D-C	Steel	1.260	1.250	12.480	7.500	G3/8
D1.25-L16.24-10D-C	Steel	1.260	1.250	16.240	11.200	G3/8
D1.50-L15.26-7D-C	Steel	1.575	1.500	15.260	9.200	G1/2
D1.50-L19.8-10D-C	Steel	1.575	1.500	19.800	13.700	G1/2
D2.00-L20.74-7D-C	Steel	1.575	2.000	20.740	12.700	G1/2
D2.00-L26.73-10D-C	Steel	1.575	2.000	26.730	18.700	G1/2
D2.50-L26.2-7D-C	Steel	1.575	2.500	26.200	16.200	G3/4
D2.50-L33.72-10D-C	Steel	1.575	2.500	33.720	23.700	G3/4

D#4D-SH

Steel shank for internal turning, with through coolant



Inch	Material	DCONWS	DCONMS	OAL	CNT	H
D1.00-L7.2-4D-SH	Steel	1.000	1.000	7.200	UNF-2B 1/2"-20	0.921
D1.25-L8.74-4D-SH	Steel	1.250	1.250	8.740	UNF-2B 1/2"-20	1.142
D1.50-L10.75-4D-SH	Steel	1.575	1.500	10.75	UNF-2B 1/2"-20	1.339
D2.00-L14.72-4D-SH	Steel	1.575	2.000	14.72	UNF-2B 1/2"-20	1.811
D2.50-L18.74-4D-SH	Steel	1.575	2.500	18.74	UNF-2B 1/2"-20	2.283

BOREMEISTER

ADAPTER

C#-SH-CHP / C#-SH-E-CHP

PSC compatible adapter with steel or carbide core

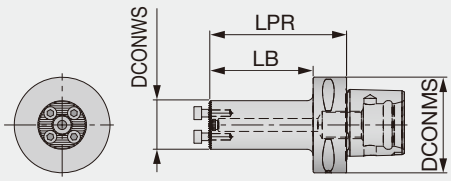


Fig. 1

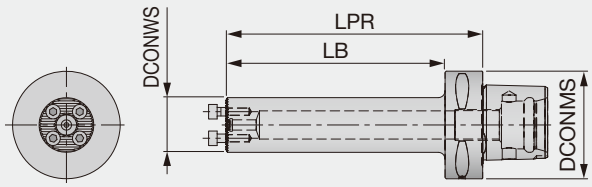
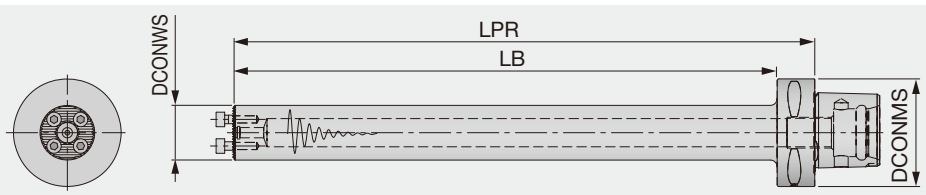


Fig. 2

Metric	Material	DCONWS	DCONMS	LPR	LB	Fig
C4-SH-D16-2.5D-CHP	Steel	16	40	40	20	1
C4-SH-D20-2.5D-CHP	Steel	20	40	50	30	1
C4-SH-D25-2.5D-CHP	Steel	25	40	55	35	1
C4-SH-D32-2.5D-CHP	Steel	32	40	75	55	1
C4-SH-D40-3D-CHP	Steel	40	40	80	80	1
C6-SH-D20-5D-E-CHP	Carbide	20	63	100	78	2
C6-SH-D25-5D-E-CHP	Carbide	25	63	115	93	2
C6-SH-D32-5D-E-CHP	Carbide	32	63	150	128	2
C6-SH-D40-5D-E-CHP	Carbide	40	63	185	163	2

C6-9D-C

PSC adapter with anti vibration, L/D = 9

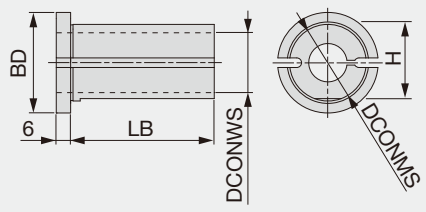


Metric	Material	DCONWS	DCONMS	LPR	LB	WT (kg)
C6-D25-L230-9D-C	Steel	25	63	230.5	200.1	1.65
C6-D32-L288-9D-C	Steel	32	63	288.5	259.5	2.73
C6-D40-L368-9D-C	Steel	40	63	368.5	339	4.45

SLEEVE

RSL sleeve

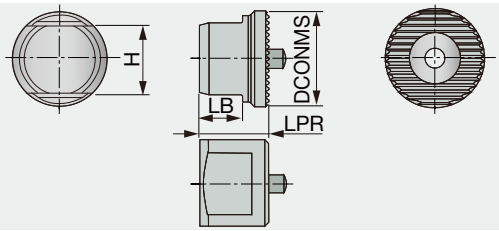
Split sleeve for anti-vibration bar



Metric	DCONWS	DCONMS	BD	LB	H
RSL-32-16-L66	16	32	42	60	31
RSL-32-20-L66	20	32	42	60	31
RSL-32-25-L66	25	32	42	60	31
RSL-40-16-L76	16	40	50	70	38.5
RSL-40-20-L76	20	40	50	70	38.5
RSL-40-25-L76	25	40	50	70	38.5

AVC-SET

Center height set up device



Inch	DCONMS	H	LPR	LB	Applicable shank
AVC-SET 16-25	0.787	0.591	0.571	0.350	ø0.625", ø0.750", ø1.000"
AVC-SET 32-60	1.142	0.630	0.689	0.450	ø1.250", ø1.500", ø2.000", ø2.500"

TINY MINI TURN

Internal turning

MINIATURE SOLID BORING TOOLS FOR HIGH ACCURACY

ADD efficiency and profitability to your small boring operations as small as ø0.6 mm (ø0.024")

- Ingenious through-coolant sleeve design optimally directs 4 streams of coolant jets close to the cutting zone, providing long tool life, controlled chips formation and evacuation for better part quality.

- **SH725** grade provides a good combination of wear and fracture resistance, ensuring long tool life and wear prediction.
- Thanks to extremely wear-resistant Ti-ceramic binder, **BX310** provides long and predictable tool life in small-diameter boring operations where high cutting speed operation is difficult.
- Expanded indexable type boring bars, and inserts with 3D chip breaker for better chip control.
- Ideal for machining extremely small diameter bores in a wide range of materials.

Lineup

Solid bars

- Available for boring, profiling, chamfering, threading, and grooving

Sleeves

- Available in sleeve that accepts both 4 mm and 7 mm diameter boring bars, dedicated sleeve for internal coolant supply, collet chuck sleeve, and sleeve with four coolant holes
- Sleeve shank diameter range: 12 - 25.4 mm (0.5" - 1")

Grade

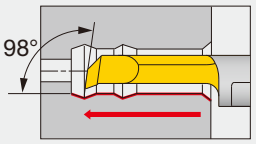
- **SH725** : Well balanced combination of the latest coating layer dedicated for boring applications and tough carbide substrate provides long tool life
- **BX310** : Long and predictable tool life in small-diameter boring operations where high cutting speed operation is difficult

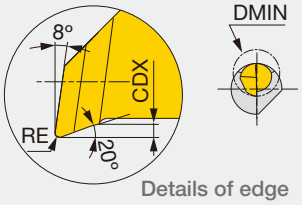
Scan this QR code to find out more about this tool!

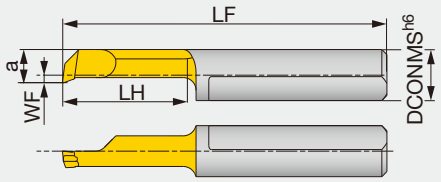
SOLID BARS

TBTR/L

Solid boring bar for boring, profiling, and chamfering







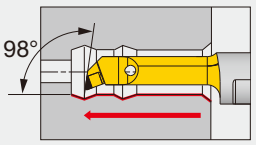
Right hand (R) shown.

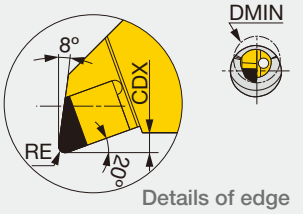
Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
TBTR04045005-D010	●	1	4	-	0.9	21	4.5	0.1	0.05
TBTR04065005-D010	●	1	4	-	0.9	23	6.5	0.1	0.05
TBTR04040005-D020	●	2	4	-	1.7	20.5	4	0.1	0.05
TBTR04090005-D020	●	2	4	-	1.7	25.5	9	0.1	0.05
TBTR04140005-D020	●	2.8	4	-	1.7	30.5	14	0.1	0.05
TBTR/L04090010-D028	●	2.8	4	0.9	2.6	25.5	9	0.2	0.1
TBTR04150010-D028	●	2.8	4	0.9	2.6	31.5	15	0.2	0.1
TBTR04190010-D028	●	2.8	4	0.9	2.6	35.5	19	0.2	0.1
TBTR04090010-D040	●	4	4	1.5	3.5	25.5	9	0.3	0.1
TBTR04150010-D040	●	4	4	1.5	3.5	31.5	15	0.3	0.1
TBTR04190010-D040	●	4	4	1.5	3.5	35.5	19	0.3	0.1
TBTR04230010-D040	●	4	4	1.5	3.5	39.5	23	0.3	0.1
TBTR04270010-D040	●	4	4	1.5	3.5	43.5	27	0.3	0.1
TBTR07090015-D050	●	5	7	0.9	4.4	25	9	0.5	0.15
TBTR07140015-D050	●	5	7	0.9	4.4	30	14	0.5	0.15
TBTR07190015-D050	●	5	7	0.9	4.4	35	19	0.5	0.15
TBTR07240015-D050	●	5	7	0.9	4.4	40	24	0.5	0.15
TBTR07290015-D050	●	5	7	0.9	4.4	45	29	0.5	0.15
TBTR07340015-D050	●	5	7	0.9	4.4	50	34	0.5	0.15
TBTR07140015-D060	●	6	7	1.8	5.3	30	14	0.5	0.15
TBTR/L07210015-D060	●	6	7	1.8	5.3	37	21	0.5	0.15
TBTR07240015-D060	●	6	7	1.8	5.3	40	24	0.5	0.15
TBTR07290015-D060	●	6	7	1.8	5.3	45	29	0.5	0.15
TBTR07340015-D060	●	6	7	1.8	5.3	50	34	0.5	0.15
TBTR07410015-D060	●	6	7	1.8	5.3	57	41	0.5	0.15
TBTR07190015-D068	●	6.8	7	2.8	6.3	35	19	0.6	0.15
TBTR07240015-D068	●	6.8	7	2.8	6.3	40	24	0.6	0.15
TBTR07290015-D068	●	6.8	7	2.8	6.3	45	29	0.6	0.15
TBTR07340015-D070	●	7	7	2.8	6.3	50	34	0.6	0.15
TBTR07390015-D070	●	7	7	2.8	6.3	55	39	0.6	0.15
TBTR07440015-D070	●	7	7	2.8	6.3	60	44	0.6	0.15
TBTR07490015-D070	●	7	7	2.8	6.3	65	49	0.6	0.15

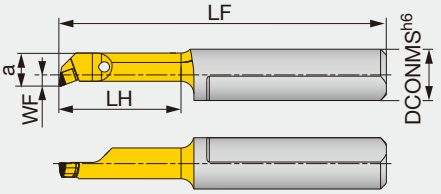
● : Line up

JBTR

For boring, profiling, and chamfering







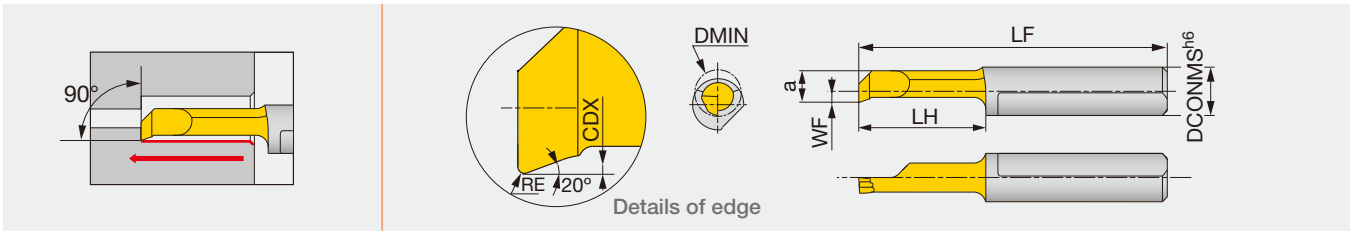
Right hand (R) shown.

Metric	BX310	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
JBTR04060010-D028ST	●	2.8	4	0.9	2.6	22	6	0.3	0.1
JBTR04095010-D028ST	●	2.8	4	0.9	2.6	25.5	9.5	0.3	0.1
JBTR04070015-D040ST	●	4	4	1.5	3.5	23	7	0.5	0.15
JBTR04110015-D040ST	●	4	4	1.5	3.5	27	11	0.5	0.15
JBTR07090020-D050ST	●	5	7	0.6	4.15	25	9	0.4	0.2
JBTR07140020-D050ST	●	5	7	0.6	4.15	30	14	0.4	0.2

● : Line up

TBPR

Solid boring bar for boring and chamfering

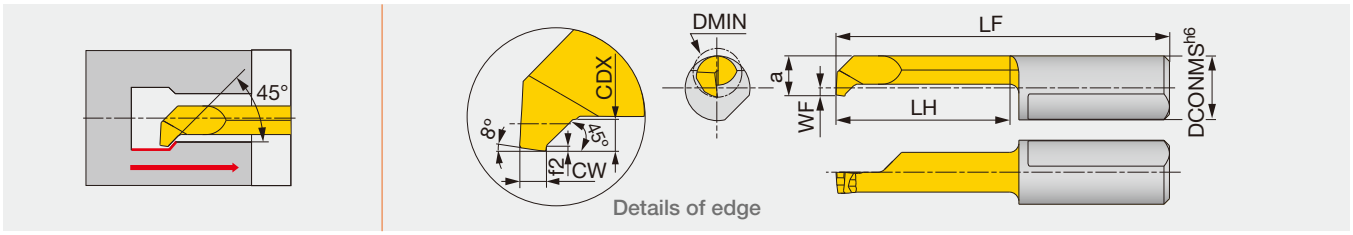


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
TBPR04090010-D028	●	2.8	4	0.9	2.6	23.5	9	0.2	0.1
TBPR04150010-D040	●	4	4	1.5	3.5	31.5	15	0.3	0.1
TBPR07140015-D050	●	5	7	0.9	4.4	30	14	0.5	0.15
TBPR07190015-D050	●	5	7	0.9	4.4	35	19	0.5	0.15

● : Line up

TBUR

Solid boring bar for back boring and chamfering

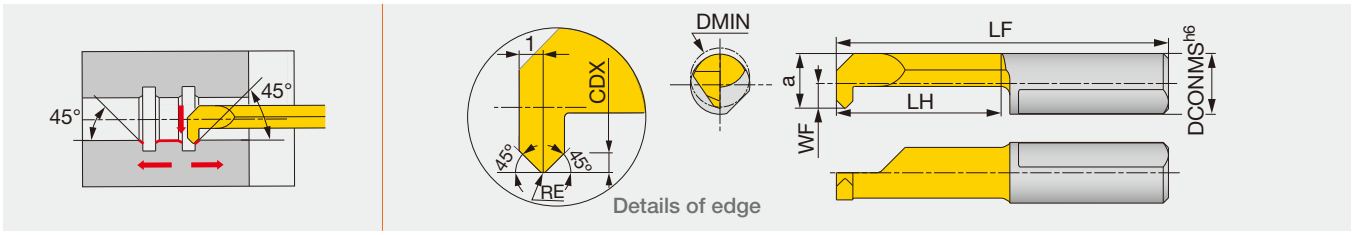


Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	f2	CDX	CW $^{+0.05}_{0}$
TBUR07140010-D050	●	5	7	0.9	4.4	30	14	0.2	1	1
TBUR07190010-D050	●	5	7	0.9	4.4	35	19	0.2	1	1

● : Line up

TBCR

Solid boring bar for boring and 45° chamfering

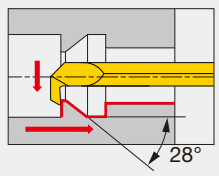


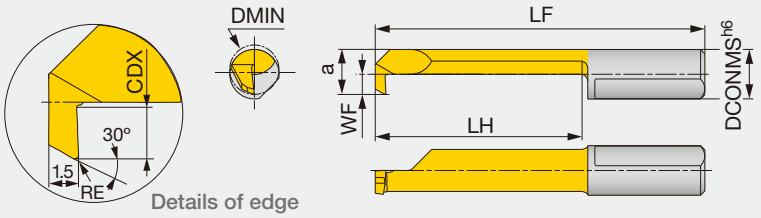
Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
TBCR07140020-D050	●	5	7	0.9	4.4	30	14	0.7	0.2
TBCR07190020-D068	●	6.8	7	2.8	6.3	35	19	0.7	0.2

● : Line up

TBBR

Solid boring bar for back boring



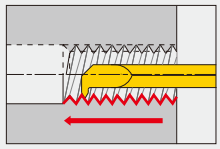


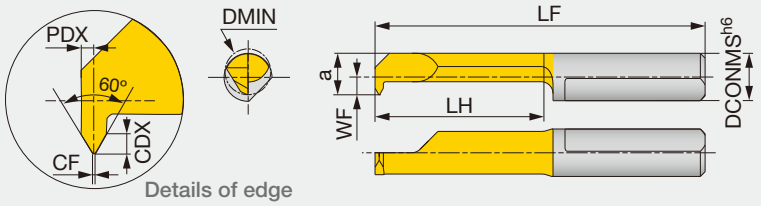
Metric	SH725	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
TBBR04140020-D030	●	3	4	0.6	2.6	30	14	0.5	0.2
TBBR04140015-D040	●	4	4	1.5	3.5	30	14	0.8	0.15
TBBR07190020-D050	●	5	7	0.9	4.4	35	19	1	0.2

● : Line up

TBIR

Solid boring bar for threading (metric)



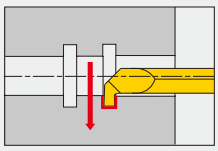


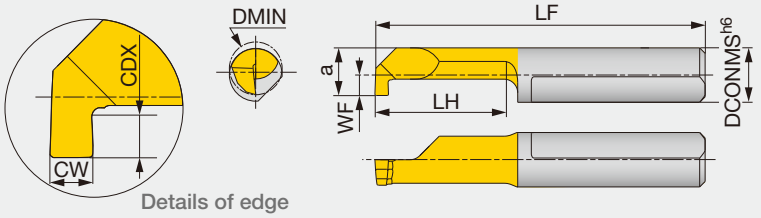
Metric	SH725	Pitch	DMIN	CF $^{0}_{-0.02}$	DCONMS	WF	a	LF	LH	CDX	PDX
TBIR04140050-D040	●	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
TBIR07140050-D050	●	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
TBIR07140075-D050	●	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
TBIR07140100-D048	●	1	4.8	0.12	7	0.9	4.4	30	14	0.6	0.55
TBIR07140100-D060	●	1	6	0.12	7	1.8	5.3	30	14	0.6	0.55
TBIR07140150-D060	●	1.5	6	0.18	7	1.8	5.3	30	14	0.8	0.75

● : Line up

TBGR

Solid boring bar for internal grooving





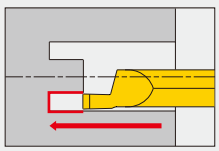
Metric	SH725	CW $^{+0.05}_{0}$	DMIN	DCONMS	WF	a	LF	LH	CDX
TBGR04100050-D020	●	0.5	2	4	0.2	1.8	26	10	0.4
TBGR04090100-D040	●	1	4	4	1.5	3.5	25.5	9	0.8
TBGR04150100-D040	●	1	4	4	1.5	3.5	31.5	15	0.8
TBGR07090200-D050	●	2	5	7	0.9	4.4	25	9	1
TBGR07090100-D060	●	1	6	7	1.8	5.3	25	9	1.8
TBGR07140100-D060	●	1	6	7	1.8	5.3	30	14	2.8
TBGR07090150-D060	●	1.5	6	7	1.8	5.3	25	9	3.8
TBGR07090200-D060	●	2	6	7	1.8	5.3	25	9	4.8
TBGR07140200-D060	●	2	6	7	1.8	5.3	30	14	5.8
TBGR07090100-D068	●	1	6.8	7	2.7	6.2	25	9	2.5
TBGR07090150-D068	●	1.5	6.8	7	2.7	6.2	25	9	2.5
TBGR07140150-D068	●	1.5	6.8	7	2.7	6.2	30	14	2.5
TBGR07090200-D068	●	2	6.8	7	2.7	6.2	25	9	2.5
TBGR07140200-D068	●	2	6.8	7	2.7	6.2	30	14	2.5
TBGR07210200-D068	●	2	6.8	7	2.7	6.2	37	21	2.5
TBGR07290200-D068	●	2	6.8	7	2.7	6.2	45	29	2.5

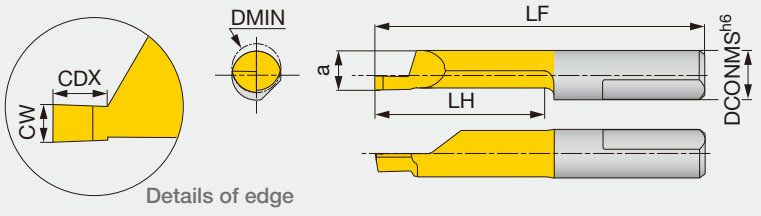
* Corner radius : less than 0.1 mm.

● : Line up

TBFR

Solid boring bar for face grooving





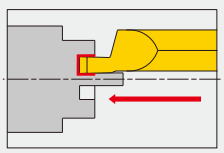
Metric	SH725	CW $^{+0.05}_{0}$	DMIN	DCONMS	a	LF	LH	CDX
TBFR07110100-D060	●	1	6	7	5.2	26	10	1.5
TBFR07110200-D060	●	2	6	7	5.2	26	10	3
TBFR07110100-D080	●	1	8	7	5.9	27	11	1.5
TBFR07110250-D080	●	2.5	8	7	5.9	27	11	3.5
TBFR07300300-D080	●	3	8	7	5.9	46	30	3.5
TBFR07200250-D150	●	2.5	15	7	5.9	36	20	20
TBFR07200300-D150	●	3	15	7	5.9	36	20	20
TBFR07300300-D150	●	3	15	7	5.9	46	30	30

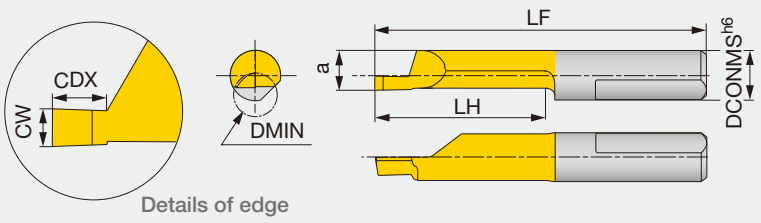
* Corner radius : less than 0.1 mm.

● : Line up

TBSR

Solid boring bar for face grooving (for shaft)





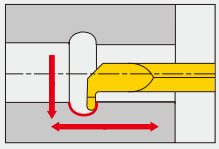
Metric	SH725	CW $^{+0.05}_{0}$	DMIN	DCONMS	a	LF	LH	CDX
TBSR07200200-D060	●	2	6	7	5.2	36	20	4

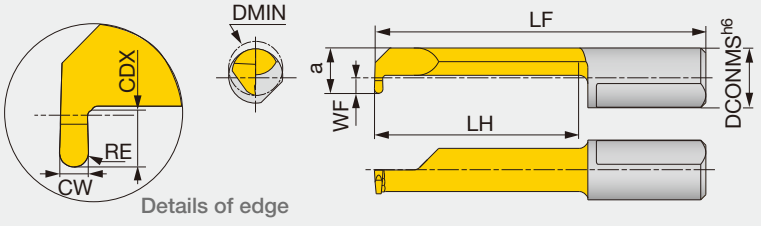
* Corner radius : less than 0.1 mm.

● : Line up

TBRR

Solid boring bar for boring and profiling



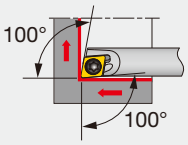


Metric	SH725	CW $^{+0.05}_{0}$	DMIN	DCONMS	WF	a	LF	LH	CDX	RE
TBRR07190050-D050	●	1	5	7	0.9	4.4	35	19	1	0.5
TBRR07240050-D060	●	1	6	7	1.8	5.3	40	24	1.8	0.5
TBRR07290050-D068	●	1	6.8	7	2.8	6.3	45	29	2.5	0.5

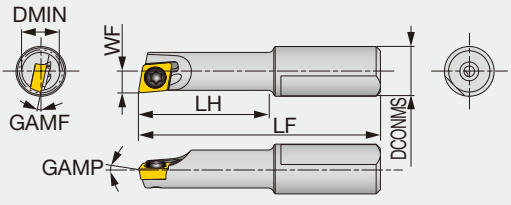
● : Line up

A/E-SEXPR

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **X**

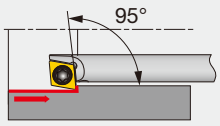


Metric	Material	DMIN	DCONMS	WF	LF	LH	GAMP	GAMF	RE**	Insert	Torque*
A07050-SEXPR03-3	Steel	5	7	2.5	31	15	0°	-13°	0.2	EPGT03X1...	0.6
A07060-SEXPR04-3	Steel	6	7	3.1	34	18	0°	-12°	0.2	EPGT0401...	0.6
E07050-SEXPR03-4	Carbide	5	7	2.5	37	20	0°	-13°	0.2	EPGT03X1...	0.6
E07050-SEXPR03-5	Carbide	5	7	2.5	42	25	0°	-13°	0.2	EPGT03X1...	0.6
E07060-SEXPR04-5	Carbide	6	7	3.1	46	30	0°	-12°	0.2	EPGT0401...	0.6

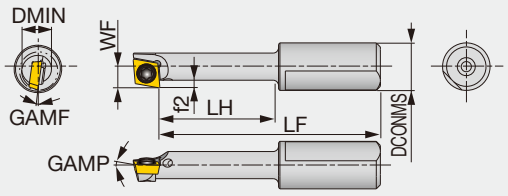
*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Please refer to the Tungaloy eCatalog for spare parts.

A/E-SEZPR

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **Z**



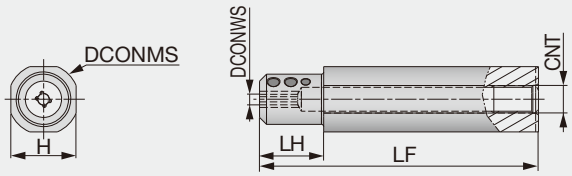
Metric	Material	DMIN	DCONMS	WF	LF	LH	f2	GAMP	GAMF	RE**	Insert	Torque*
A07055-SEZPR03-3	Steel	5.5	7	3.2	32.5	16.5	1.2	0°	-8°	0.2	EPGT03X1...	0.6
E07055-SEZPR03-5	Carbide	5.5	7	3.2	43.5	27.5	1.2	0°	-8°	0.2	EPGT03X1...	0.6

*Torque: Recommended clamping torque (N·m)
**RE : Standard corner radius
Please refer to the Tungaloy eCatalog for spare parts.

SLEEVE

JBBS-4N

Sleeve for internal coolant supply with 4 coolant holes



Metric	DCONMS	DCONWS	LF	LH	H	CNT
JBBS12-4-L80C-4N	12	4	80	10	10.3	Rc1/16
JBBS127-4-L80C-4N	12.7	4	80	10	11.6	Rc1/16
JBBS14-4-L80C-4N	14	4	80	10	12	Rc1/8
JBBS159-4-L100C-4N	15.875	4	100	10	14.58	Rc1/8
JBBS159-7-L100C-4N	15.875	7	100	10	14.58	Rc1/8
JBBS16-4-L100C-4N	16	4	100	10	15	Rc1/8
JBBS16-7-L100C-4N	16	7	100	10	15	Rc1/8
JBBS19-4-L100C-4N	19.05	4	100	20	17.2	Rc1/8
JBBS19-7-L100C-4N	19.05	7	100	20	17.2	Rc1/8
JBBS20-4-L100C-4N	20	4	100	20	18	Rc1/8
JBBS20-7-L100C-4N	20	7	100	20	18	Rc1/8
JBBS22-4-L100C-4N	22	4	100	20	20	Rc1/8
JBBS22-7-L100C-4N	22	7	100	20	20	Rc1/8
JBBS25-4-L100C-4N	25	4	100	23	23	Rc1/8
JBBS25-7-L100C-4N	25	7	100	23	23	Rc1/8
JBBS254-4-L100C-4N	25.4	4	100	23	23.4	Rc1/8
JBBS254-7-L100C-4N	25.4	7	100	23	23.4	Rc1/8

Scan this QR code for additional sleeve information.

MINIFORCE TURN / WAVYJOINT

CBN

Internal turning

UNIQUE NEW CBN INSERTS ENABLE HARD PART TURNING TO BE MORE RELIABLE, ECONOMICAL, AND PRODUCTIVE

ADD double-sided CBN inserts with WavyJoint brazing technology for light cutting action of positive inserts for hard turning applications

- Innovative insert geometry and secure insert clamping method ensures machining stability.
- Available in two grades: **BXA20** grade for general applications and **BXA10** grade suited for continuous cuts, providing reliability and long tool life from continuous to interrupted cuts.
- **HP type** chipbreaker guarantees short chips, ensuring good chip breaking and control at 0.008" (0.2 mm) and lighter d.o.c.
- Double-sided insert with six positive cutting edges for excellent cost-per-edge economy for reduced tool cost.

Lineup

Inserts

- **6QS-WXGQ...**

RE = 0.008" - 0.031" (0.2 - 0.8 mm)

- **6QS-WXGU**-HP**

RE = 0.016", 0.031" (0.4, 0.8 mm)

Chipbreaker

- **HP type**: For chatter prevention and the finest machined surfaces. Suitable for turning operations of hardened steel materials

Toolholders

- **A-SWLXR/L...**
- **E-SWLXR/L...**

DCONMS = ø0.375" - 0.750" (ø10 - ø20 mm)

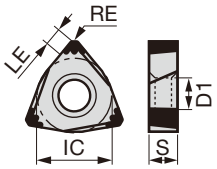
Grades

- **BXA10**: Incredible reliability in hardened steel turning. First choice for continuous to light interrupted cuts.
- **BXA20**: Incredible reliability in hardened steel turning. Covers a wide range of application areas from continuous to heavy interrupted cutting.

INSERT POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloy
H	Hard material



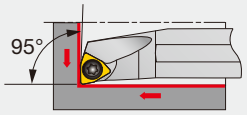
Shape	Designation Inch	Designation Metric	BXA10	BXA20	Dimension (in) No. of corners	LE	RE	IC	S	D1	Edge prep. Standard	SP	L	LF	LC	H	Wiper	Chipbreaker
6QS-WXGQ	6QS-WXGQ 220.5SPR	6QS-WXGQ040302SPR	●	●	6	0.071	0.008	0.250	0.125	0.106		○						
	6QS-WXGQ 220.5SPL	6QS-WXGQ040302SPL	●	●	6	0.071	0.008	0.250	0.125	0.106		○						
	6QS-WXGQ 221SPR	6QS-WXGQ040304SPR	●	●	6	0.071	0.016	0.250	0.125	0.106		○						
	6QS-WXGQ 221SPL	6QS-WXGQ040304SPL	●	●	6	0.071	0.016	0.250	0.125	0.106		○						
	6QS-WXGQ 222SPR	6QS-WXGQ040308SPR	●	●	6	0.067	0.031	0.250	0.125	0.106		○						
	6QS-WXGQ 222SPL	6QS-WXGQ040308SPL	●	●	6	0.067	0.031	0.250	0.125	0.106		○						
6QS-WXGU**-HP	6QS-WXGU 221R HP	6QS-WXGU040304R-HP	●	●	6	0.071	0.016	0.250	0.125	0.106								○
	6QS-WXGU 221L HP	6QS-WXGU040304L-HP	●	●	6	0.071	0.016	0.250	0.125	0.106								○
	6QS-WXGU 222R HP	6QS-WXGU040308R-HP	●	●	6	0.067	0.031	0.250	0.125	0.106								○
	6QS-WXGU 222L HP	6QS-WXGU040308L-HP	●	●	6	0.067	0.031	0.250	0.125	0.106								○

● : Line-up

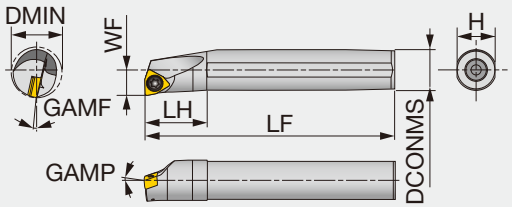
TOOLHOLDERS

A/E-SWLXR/L

For trigon insert with 6 edges



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A06-SWLXR/L2-D08	STEEL	0.500	0.375	0.281	5.000	0.750	0.350	-10	-16	0.016	WXGU0403**L/R (...)	0.66
A08-SWLXR/L2-D11	STEEL	0.688	0.500	0.406	5.000	1.000	0.475	-10	-14	0.016	WXGU0403**L/R (...)	0.66
A10-SWLXR/L2-D14	STEEL	0.875	0.625	0.531	7.000	1.250	0.600	-10	-11	0.016	WXGU0403**L/R (...)	0.66
A12-SWLXR/L2-D16	STEEL	1.000	0.750	0.593	7.000	1.438	0.725	-10	-10	0.016	WXGU0403**L/R (...)	0.66
E06-SWLXR/L2-D08	CARBIDE	0.500	0.375	0.281	5.000	1.000	0.350	-10	-16	0.016	WXGU0403**L/R (...)	0.66
E08-SWLXR/L2-D11	CARBIDE	0.688	0.500	0.406	5.000	1.063	0.475	-10	-14	0.016	WXGU0403**L/R (...)	0.66
E10-SWLXR/L2-D14	CARBIDE	0.875	0.625	0.531	7.000	1.250	0.600	-10	-11	0.016	WXGU0403**L/R (...)	0.66
E12-SWLXR/L2-D16	CARBIDE	1.000	0.750	0.593	7.000	1.438	0.725	-10	-10	0.016	WXGU0403**L/R (...)	0.66

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A10K-SWLXR/L04-D120	STEEL	12	10	6	125	20	9	-10	-16	0.4	WXGU0403**L/R (...)	0.9
A12M-SWLXR/L04-D140	STEEL	14	12	7	150	24	11	-10	-14	0.4	WXGU0403**L/R (...)	0.9
A16Q-SWLXR/L04-D180	STEEL	18	16	9	180	32	15	-10	-11	0.4	WXGU0403**L/R (...)	0.9
A20R-SWLXR/L04-D220	STEEL	22	20	11	200	36	18	-10	-10	0.4	WXGU0403**L/R (...)	0.9
E10M-SWLXR/L04-D120	CARBIDE	12	10	6	150	25	9	-10	-16	0.4	WXGU0403**L/R (...)	0.9
E12Q-SWLXR/L04-D140	CARBIDE	14	12	7	180	27	11	-10	-14	0.4	WXGU0403**L/R (...)	0.9
E16R-SWLXR/L04-D180	CARBIDE	18	16	9	200	32	15	-10	-11	0.4	WXGU0403**L/R (...)	0.9
E20S-SWLXR/L04-D220	CARBIDE	22	20	11	250	36	18	-10	-10	0.4	WXGU0403**L/R (...)	0.9

*Torque: Recommended clamping torque (lbt·ft) **RE: The holder measurements are true with this insert radius
Note: Use the right hand toolholder (R) for the left hand insert (L). Use the left hand toolholder (L) for the right hand insert (R)
Please refer to the Tungaloy eCatalog for spare parts.

STANDARD CUTTING CONDITIONS

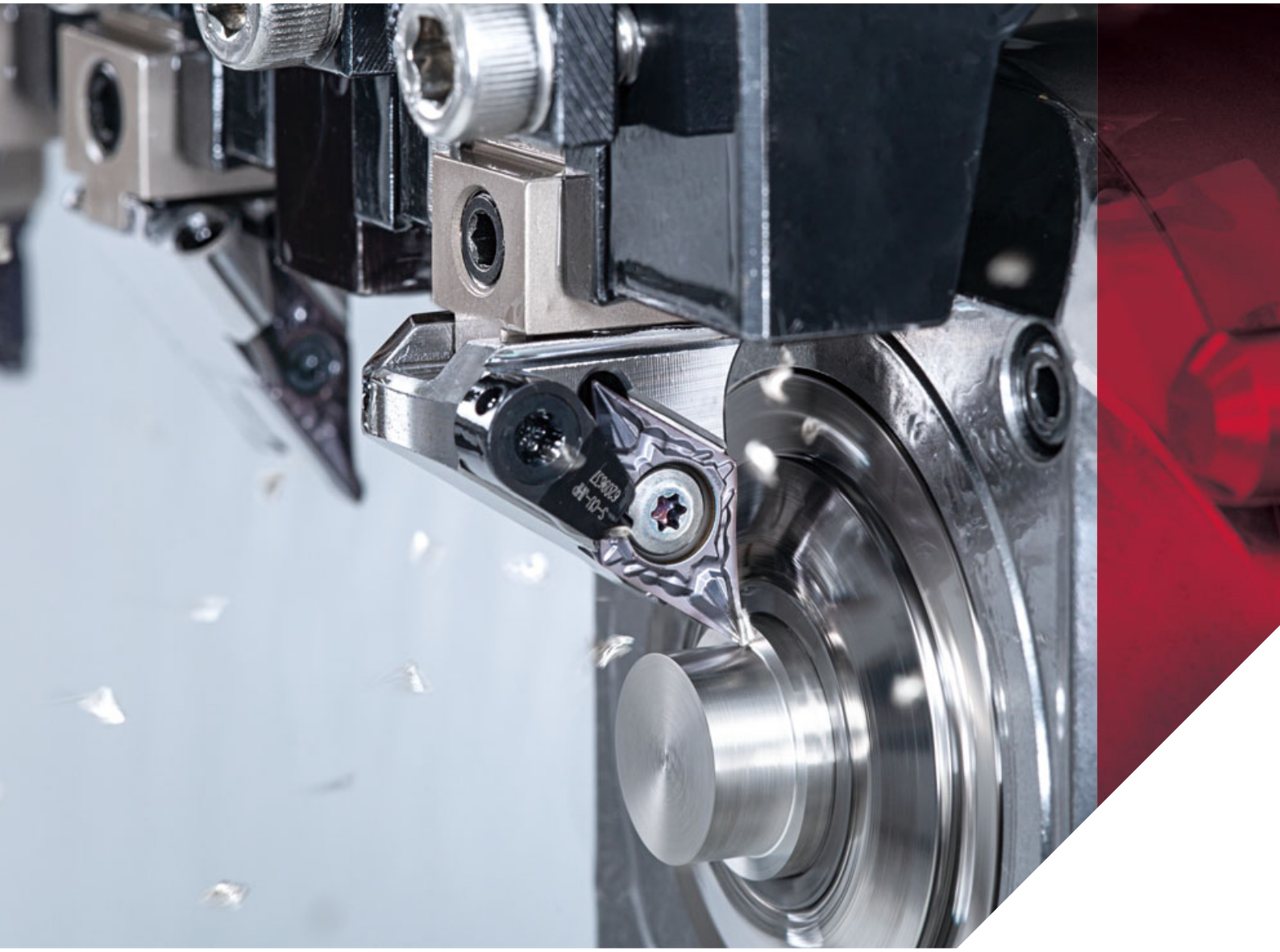
ISO	Grade	Edge preparation	Workpiece condition	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
H	BXA10	No symbol	Continuous	328 - 755	0.002 - 0.02	0.001 - 0.012
			Light interrupted	328 - 755	0.002 - 0.02	0.001 - 0.008
		-HP	Continuous	328 - 755	0.002 - 0.008	0.001 - 0.008
	BXA20	No symbol	Continuous	197 - 591	0.002 - 0.02	0.001 - 0.012
			Interrupted	197 - 591	0.002 - 0.02	0.001 - 0.008
		-HP	Continuous	197 - 591	0.002 - 0.008	0.001 - 0.008

MODUMINI TURN

External turning

INNOVATIVE MODULAR HEAD SYSTEM FOR SWISS MACHINES

ADD flexibility and productivity
to your turning operations



- Modularity and productivity with a wide selection of turning, grooving and threading heads.
- Substantially reduced setup time for maximum machine utilization.
- Quick tool change and setup is possible with simple exchanges of turning heads.
- Unique coupling method provides stable head-shank connection and secure insert edge position for good repeatability and accuracy.
- Positioning accuracy for the same insert: ±5 µm (±0.0002").
- **ModuMiniTurn** offers precision internal coolant delivery, which improves chip control and tool life.
- By feeding in the Y-axis direction, downward-facing chipbreaker directs the chip flow down and away from the cutting point.
- Many types of heads can be mounted on a single holder.

Lineup

Inserts
- **J-Series** for ISO insert
- **MiniForce-Turn** for double-sided positive inserts
- **TungCut** for grooving and parting
- Y-axis heads for **J-Series**, **MiniForce-Turn**, and **TetraMini-Cut** for grooving and threading inserts

Shanks
- **QC-08..., QC-1212...**
- **QC-08-CHP, QC-1212-CHP** (for precision internal coolant supply)
- **QC-08-F10-CHP** and **QC-1216-F15-CHP** (with high pressure coolant capability)
- **QC-10X...** (for modular heads, with high pressure coolant supply)

Heads
- **NEW QC16 16mm** (with multiple X & Y axis varieties)

Scan this QR code to find out more about this tool!

MODUMINITURN

Lineup

QC-08/10 (1/2" / 5/8" square shank) and QC-1212/1616 (12mm / 16mm square shank)

Overall length*	Without coolant hole	With coolant hole	Page
3.350" (85 mm)	✓	✓	92 93
4.750" (120 mm)	✓	✓	92 93

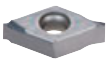
*With the head attached

QC-08/10-F10 (stepped-head shank) and QC-1216/1620F15 (stepped-head shank)

Overall length*	Without coolant hole	With coolant hole	Page
3.350" (85 mm)		✓	93
4.724" (120 mm)		✓	93

*With the head attached

Modular heads

Tool series	Insert shape	Without coolant hole	With coolant hole	Page
J-SERIES	CC**32.5... / CC**09T3... 	✓	✓	81
	DC**21.5... / DC**0702... 	✓	✓	81 82
	DC**32.5... / DC**11T3... 	✓	✓	81 82
	VB**22... / VB**1103... 	✓	✓	82
	J10ER... 	✓		83
MINIFORCETURN	WXGU22**L... / WXGU0403**L... 	✓	✓	84 90
	DXGU22**L... / DXGU0703**L... 	✓	✓	85 91
	VXGU73.5**L... / VXGU09T2**L... 	✓	✓	86
TETRAMINICUT	TC*18R/L... 	✓	✓	88 91 92
TUNGCUT	DG*... 	✓	✓	87
	DTM 	✓	✓	87
	SG*... 	✓	✓	87

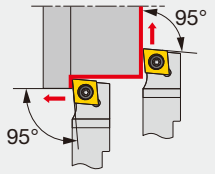
Q12 heads fit both the metric QC-12** and the inch QC08 shanks.
Q16 heads fit both the metric QC-16** and the inch QC10 shanks.

MODULAR HEADS

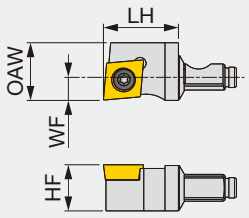
QC-JSCL2CR

J-SERIES

Screw-on modular head with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC12-JSCL2CR09	0.768	0.472	0.236	0.591	0.008	CC**32.5...	0.89	QC-08**...
QC16-JSCL2CR09	0.827	0.630	0.315	0.787	0.008	CC**32.5...	0.89	QC-10**...

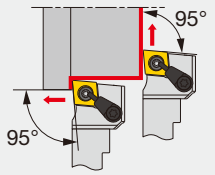
Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC12-JSCL2CR09	19.5	12	6	15	0.2	CC**09T3...	1.2	QC-12**...
QC16-JSCL2CR09	21	16	8	20	0.2	CC**09T3...	1.2	QC-16**...

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

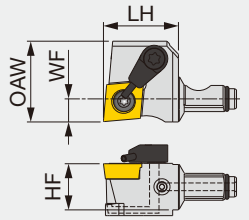
QC-JSCL2CR-CHP

J-SERIES

Screw-on modular head with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC12-JSCL2CR09-CHP	0.768	0.472	0.236	0.827	0.008	CC**32.5...	0.89	QC-08**...
QC16-JSCL2CR09-CHP	0.827	0.630	0.315	0.787	0.008	CC**32.5...	0.89	QC-10**...

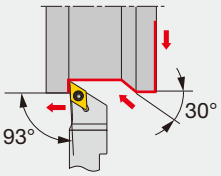
Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC12-JSCL2CR09-CHP	19.5	12	6	21	0.2	CC**09T3...	1.2	QC-12**...
QC16-JSCL2CR09-CHP	21	16	8	20	0.2	CC**09T3...	1.2	QC-16**...

Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

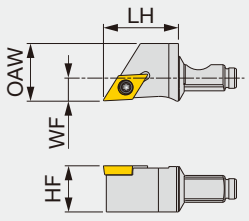
QC-JSDJ2CR

J-SERIES

Screw-on modular head with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC12-JSDJ2CR07	0.768	0.472	0.236	0.591	0.008	DC**21.5...	0.89	QC-08**...
QC12-JSDJ2CR11	0.768	0.472	0.236	0.591	0.008	DC**32.5...	0.89	QC-08**...
QC16-JSDJ2CR11	0.827	0.630	0.315	0.787	0.008	DC**32.5...	0.89	QC-10**...

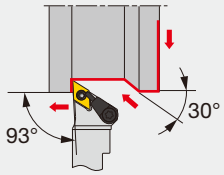
Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC12-JSDJ2CR07	19.5	12	6	15	0.2	DC**0702...	1.2	QC-12**...
QC12-JSDJ2CR11	19.5	12	6	15	0.2	DC**11T3...	1.2	QC-12**...
QC16-JSDJ2CR11	21	16	8	20	0.2	DC**11T3...	1.2	QC-16**...

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius
Please refer to the Tungaloy eCatalog for spare parts.

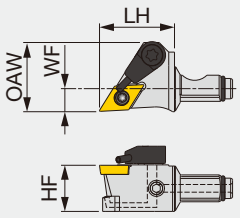
QC-JSDJ2CR-CHP

J-SERIES

Screw-on modular head with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC12-JSDJ2CR07-CHP	0.768	0.472	0.236	0.709	0.008	DC**21.5...	0.89	QC-08**...
QC12-JSDJ2CR11-CHP	0.768	0.472	0.236	0.827	0.008	DC**32.5...	0.89	QC-08**...
QC16-JSDJ2CR11-CHP	0.827	0.630	.0315	0.787	0.008	DC**32.5...	0.89	QC-10**...

Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC12-JSDJ2CR07-CHP	19.5	12	6	18	0.2	DC**0702...	1.2	QC-12**...
QC12-JSDJ2CR11-CHP	19.5	12	6	21	0.2	DC**11T3...	1.2	QC-12**...
QC16-JSDJ2CR11-CHP	21	16	8	20	0.2	DC**11T3...	1.2	QC-16**...

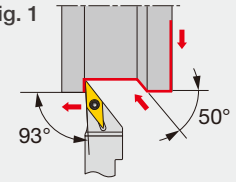
Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

QC-JSVJ2BR

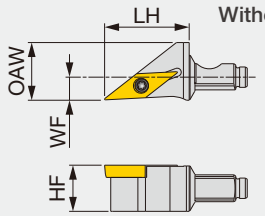
J-SERIES

Screw-on modular head with 93° approach angle, for positive 35° rhombic inserts

Fig. 1

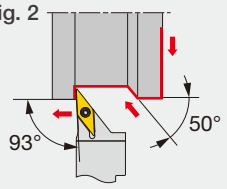


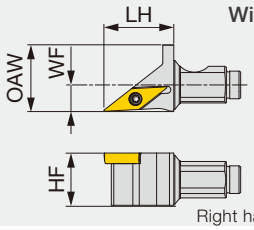
Cutting edge style **J2**



Without offset

Fig. 2





Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Fig.	Shank
QC12-JSVJ2BR11	0.827	0.472	0.236	0.591	0.008	VB**22...	0.89	1	QC-08**...
QC16-JSVJ2BR11	0.827	0.630	0.315	0.787	0.008	VB**22...	0.89	2	QC-10**...

Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Fig.	Shank
QC12-JSVJ2BR11	21	12	6	15	0.2	VB**1103...	1.2	1	QC-12**...
QC16-JSVJ2BR11	21	16	8	20	0.2	VB**1103...	1.2	2	QC-16**...

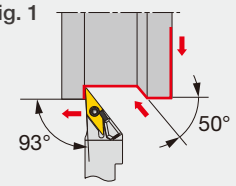
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

QC-JSVJ2BR-CHP

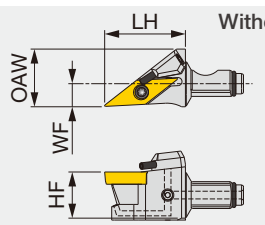
J-SERIES

Screw-on modular head with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability

Fig. 1

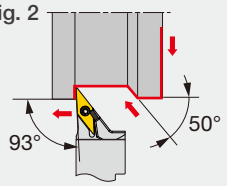


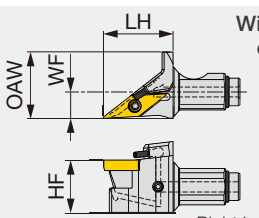
Cutting edge style **J2**



Without offset

Fig. 2





Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Fig.	Shank
QC12-JSVJ2BR11-CHP	0.827	0.472	0.236	0.591	0.008	VB**22...	0.89	1	QC-08**...
QC16-JSVJ2BR11-CHP	0.827	0.630	0.315	0.787	0.008	VB**22...	0.89	2	QC-10**...

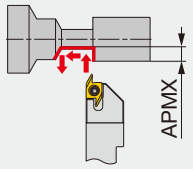
Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Fig.	Shank
QC12-JSVJ2BR11-CHP	21	12	6	15	0.2	VB**1103...	1.2	1	QC-12**...
QC16-JSVJ2BR11-CHP	21	16	8	20	0.2	VB**1103...	1.2	2	QC-16**...

Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Please refer to the Tungaloy eCatalog for spare parts.

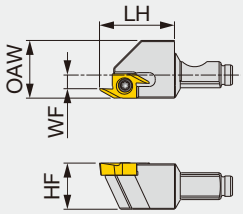
QC-JSEGR

J-SERIES

Screw-on modular head for back turning



APMX = 3 mm



Right hand (R) shown.

Inch	LH	HF	WF	OAW	Insert	Torque	Shank
QC12-JSEGR10	0.768	0.472	0.138	0.591	J10ER...	0.89	QC-08**...
QC16-JSEGR10	0.827	0.630	0.217	0.787	J10ER...	0.89	QC-10**...

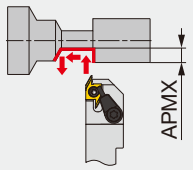
Metric	LH	HF	WF	OAW	Insert	Torque*	Shank
QC12-JSEGR10	19.5	12	3.5	15	J10ER...	1.2	QC-12**...
QC16-JSEGR10	21	16	5.5	20	J10ER...	1.2	QC-16**...

Torque: Recommended clamping torque: lbs·ft (*N·m)

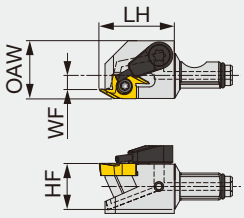
QC-JSEGR-CHP

J-SERIES

Screw-on modular head for back turning, with high pressure coolant capability



APMX = 0.118" (3 mm)



Right hand (R) shown.

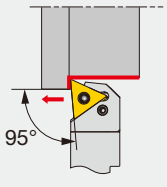
Inch	LH	HF	WF	OAW	Insert	Torque	Shank
QC12-JSEGR10-CHP	0.768	0.472	0.138	0.591	J10ER...	0.89	QC-08**...
QC16-JSEGR10-CHP	0.827	0.630	0.217	0.787	J10ER...	0.89	QC-10**...

Metric	LH	HF	WF	OAW	Insert	Torque*	Shank
QC12-JSEGR10-CHP	19.5	12	3.5	15	J10ER...	1.2	QC-12**...
QC16-JSEGR10-CHP	21	16	5.5	20	J10ER...	1.2	QC-16**...

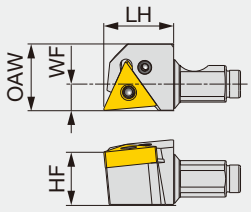
Torque: Recommended clamping torque: lbs·ft (*N·m)

QC16-PTL2NR

Lever-lock modular head with 95° approach angle, for negative 60° triangular inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

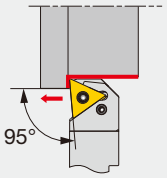
Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC16-PTL2NR16	0.827	0.630	0.315	0.787	0.016	TN**33...	1.11	QC-10**...

Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC16-PTL2NR16	21	16	8	20	0.4	TN**1604...	1.5	QC-16**...

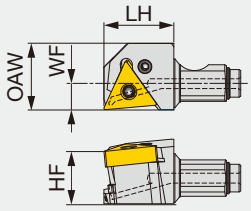
Torque*: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

QC16-PTL2NR-CHP

Lever-lock modular head with 95° approach angle, for negative 60° triangular inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC16-PTL2NR16-CHP	0.827	0.630	0.315	0.787	0.016	TN**33...	1.11	QC-10**...

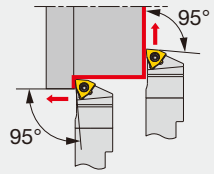
Metric	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC16-PTL2NR16-CHP	21	16	8	20	0.4	TN**1604...	1.5	QC-16**...

Torque*: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

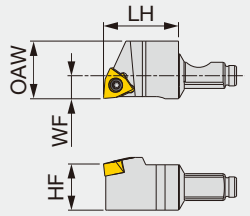
QC-JSWL2XR

MINIFORCE TURN

Screw-on modular head with 95° approach angle, for WXGU inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC12-JSWL2XR04	0.768	0.472	0.236	0.591	0.008	WXGU22**L...	0.66	QC-08**...
QC16-JSWL2XR04	0.827	0.630	0.315	0.787	0.008	WXGU22**L...	0.66	QC-10**...

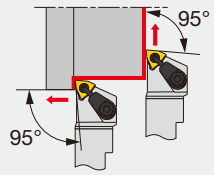
Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC12-JSWL2XR04	19.5	12	6	15	0.2	WXGU0403**L...	0.9	QC-12**...
QC16-JSWL2XR04	21	16	8	20	0.2	WGXU0403**L...	0.9	QC-16**...

Use right-hand toolholders (R) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

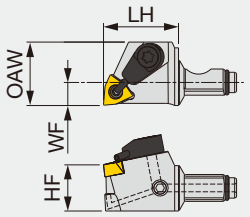
QC-JSWL2XR-CHP

MINIFORCE TURN

Screw-on modular head with 95° approach angle, for WXGU inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC12-JSWL2XR04-CHP	0.768	0.472	0.236	0.591	0.008	WXGU22**L...	0.66	QC-08**...
QC16-JSWL2XR04-CHP	0.827	0.630	0.315	0.787	0.008	WXGU22**L...	0.66	QC-10**...

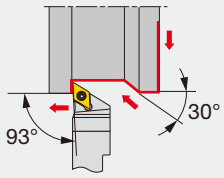
Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC12-JSWL2XR04-CHP	19.5	12	6	15	0.2	WXGU0403**L...	0.9	QC-12**...
QC16-JSWL2XR04-CHP	21	16	8	20	0.2	WGXU0403**L...	0.9	QC-16**...

Use right-hand toolholders (R) with left-hand inserts (L).
Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

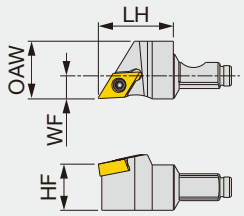
QC-JSDJ2XR

MINIFORCE TURN

Screw-on modular head with 93° approach angle, for DX*U inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC12-JSDJ2XR07	0.768	0.472	0.236	0.591	0.008	DX*U22**L...	0.66	QC-08**...
QC16-JSDJ2XR07	0.827	0.630	0.315	0.787	0.008	DX*U22**L...	0.66	QC-10**...

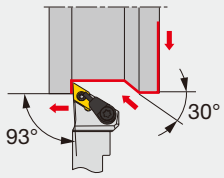
Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC12-JSDJ2XR07	19.5	12	6	15	0.2	DX*U0703**L...	0.9	QC-12**...
QC16-JSDJ2XR07	21	16	8	20	0.2	DX*U0703**L...	0.9	QC-16**...

Use right-hand toolholders (R) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

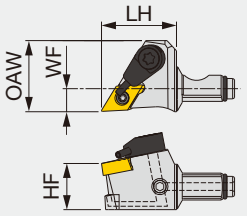
QC-JSDJ2XR-CHP

MINIFORCE TURN

Screw-on modular head with 93° approach angle, for DX*U inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC12-JSDJ2XR07-CHP	0.768	0.472	0.236	0.724	0.008	DX*U22**L...	0.66	QC-08**...
QC16-JSDJ2XR07-CHP	0.827	0.630	0.315	0.787	0.008	DX*U22**L...	0.66	QC-10**...

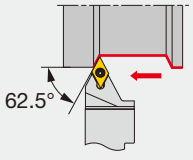
Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC12-JSDJ2XR07-CHP	19.5	12	6	18.4	0.2	DX*U0703**L...	0.9	QC-12**...
QC16-JSDJ2XR07-CHP	21	16	8	20	0.2	DX*U0703**L...	0.9	QC-16**...

Use right-hand toolholders (R) with left-hand inserts (L).
Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

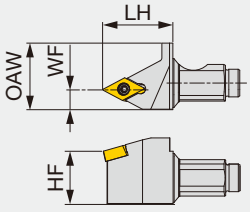
QC16-JSDNXR

MINIFORCE TURN

Screw-on modular head with 62.5° approach angle, for DX*U inserts,



Cutting edge style **N**



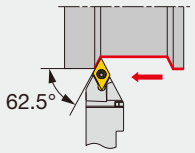
Right hand (R) shown.

Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC16-JSDNXR07	21 (0.827")	16 (0.630")	6 (0.236")	20 (0.787")	0.2 (0.008")	DX*U0703**L... (DX*U 22**L...)	0.9 (0.66)	QC-16... (16 mm) QC-10X... (0.625")

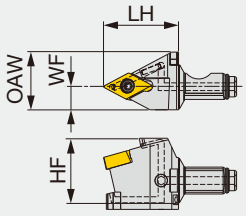
QC-JSDNXR-CHP

MINIFORCE TURN

Screw-on modular head with 62.5° approach angle, for DX*U inserts, with high pressure coolant capability



Cutting edge style **N**



Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC12-JSDNXR07-CHP	0.768	0.472	0.236	0.591	0.008	DX*U0703**L...	0.66	QC-08**...
QC16-JSDNXR07-CHP	0.827	0.630	0.236	0.787	0.008	DX*U22**L...	0.66	QC-10**...

Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC12-JSDNXR07-CHP	19.5	12	6	15	0.2	DX*U0703**L...	0.9	QC-12**...
QC16-JSDNXR07-CHP	21	16	6	20	0.2	DX*U0703**L...	0.9	QC-16**...

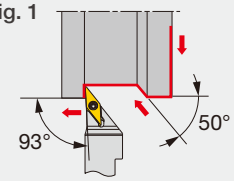
Use right-hand toolholders (R) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)
RE**: Standard corner radius

QC-JSVJ2XR

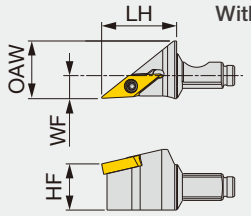
MINIFORCE TURN

Screw-on modular head with 93° approach angle, for VXGU inserts

Fig. 1



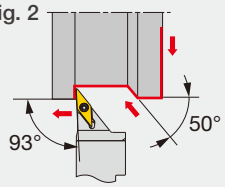
Cutting edge style **J2**

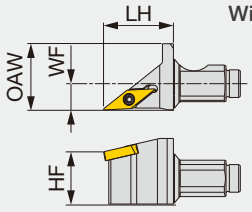


Without offset

Right hand (R) shown.

Fig. 2





Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Fig.	Shank
QC12-JSVJ2XR09	0.768	0.472	0.236	0.591	0.008	VXGU73.5**L...	0.66	1	QC-08**...
QC16-JSVJ2XR09	0.827	0.630	0.315	0.787	0.008	VXGU73.5**L...	0.66	2	QC-10**...

Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Fig.	Shank
QC12-JSVJ2XR09	19.5	12	6	15	0.2	VXGU09T2**L...	0.9	1	QC-12**...
QC16-JSVJ2XR09	21	16	8	20	0.2	VXGU09T2**L...	0.9	2	QC-16**...

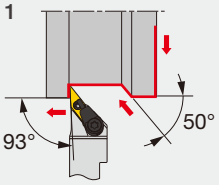
Use right-hand toolholders (R) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

QC-JSVJ2XR-CHP

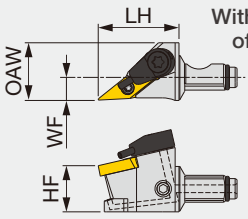
MINIFORCE TURN

Screw-on modular head with 93° approach angle, for VXGU inserts, with high pressure coolant capability

Fig. 1



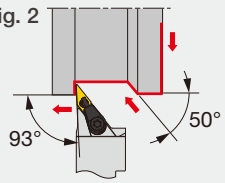
Cutting edge style **J2**

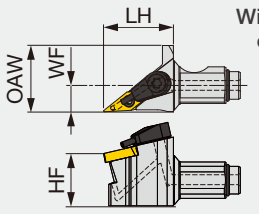


Without offset

Right hand (R) shown.

Fig. 2





Without offset

Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Fig.	Shank
QC12-JSVJ2XR09-CHP	0.827	0.472	0.236	0.591	0.008	VXGU73.5**L...	0.66	1	QC-08**...
QC16-JSVJ2XR09-CHP	0.827	0.630	0.315	0.787	0.008	VXGU73.5**L...	0.66	2	QC-10**...

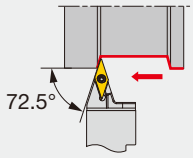
Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Fig.	Shank
QC12-JSVJ2XR09-CHP	21	12	6	15	0.2	VXGU09T2**L...	0.9	1	QC-12**...
QC16-JSVJ2XR09-CHP	21	16	8	20	0.2	VXGU09T2**L...	0.9	2	QC-16**...

Use right-hand toolholders (R) with left-hand inserts (L).
Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

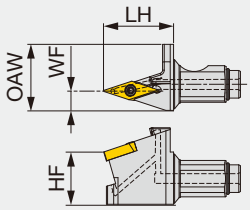
QC-JSVVXR-CHP

MINIFORCE TURN

Screw-on modular head with 72.5° approach angle, for VXGU inserts, with high pressure coolant capability



Cutting edge style **V**



Right hand (R) shown.

Inch	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC12-JSVVXR09-CHP	0.827	0.472	0.236	0.591	0.008	VXGU09T2**L...	0.66	QC-08**...
QC16-JSVVXR09-CHP	0.827	0.630	0.236	0.787	0.008	VXGU73.5**L...	0.66	QC-10**...

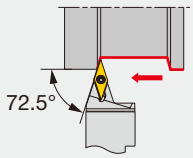
Metric	LH	HF	WF	OAW	RE**	Insert	Torque	Shank
QC12-JSVVXR09-CHP	21	12	6	15	0.2	VXGU09T2**L...	0.9	QC-12**...
QC16-JSVVXR09-CHP	21	16	6	20	0.2	VXGU09T2**L...	0.9	QC-16**...

Use right-hand toolholders (R) with left-hand inserts (L).
Torque*: Recommended clamping torque: N·m (lbs·ft)
RE**: Standard corner radius

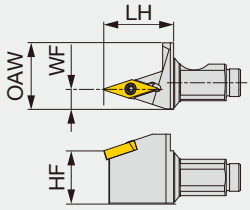
QC16-JSVVXR

MINIFORCE TURN

Screw-on modular head with 72.5° approach angle, for VXGU inserts



Cutting edge style **V**



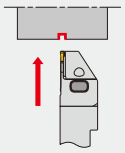
Right hand (R) shown.

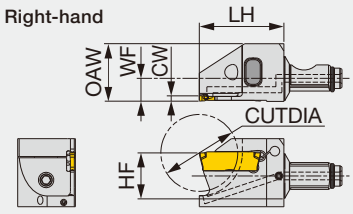
Metric	LH	HF	WF	OAW	RE**	Insert	Torque*	Shank
QC16-JSVVXR09	21 (0.827")	16 (0.630")	6 (0.236")	20 (0.787")	0.2 (0.008")	VXGU09T2**L... (VXGU 73.5**L...)	0.9 (0.66)	QC-16... (16 mm) QC-10X... (0.625")

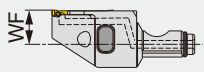
QC12-JTTER/L-CHP

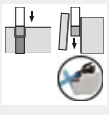
TUNGCUT

Modular head for external grooving and parting, with high pressure coolant capability









Inch	CW	Hand	Seat size (mm)	CUTDIA	LH	HF	WF	Insert	Torque	Shank
QC12-JTTER1.2D20-CHP	0.047	R	0.9	0.787	0.866	0.472	0.236	DGS...	1.11	QC-08...
QC12-JTTEL1.2D20-CHP	0.047	L	0.9	0.787	0.866	0.472	0.354	DGS...	1.11	QC-08...
QC12-JTTER1.4D20-CHP	0.055	R	1	0.787	0.866	0.472	0.236	DGS...	1.11	QC-08...
QC12-JTTEL1.4D20-CHP	0.055	L	1	0.787	0.866	0.472	0.354	DGS...	1.11	QC-08...
QC12-JTTER2D20-CHP	0.079	R	2	0.787	0.866	0.472	0.236	DGS...	1.11	QC-08...
QC12-JTTEL2D20-CHP	0.079	L	2	0.787	0.866	0.472	0.354	DGS...	1.11	QC-08...

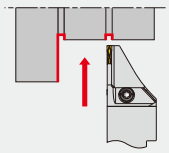
Metric	CW	Hand	Seat Size	CUTDIA	LH	HF	WF	Insert	Torque*	Shank
QC12-JTTER1.2D20-CHP	1.2	R	0.9	20	22	12	6/9	DGS...	1.5	QC-12...
QC12-JTTEL1.2D20-CHP	1.2	L	0.9	20	22	12	6/9	DGS...	1.5	QC-12...
QC12-JTTER1.4D20-CHP	1.4	R	1	20	22	12	6/9	DGS...	1.5	QC-12...
QC12-JTTEL1.4D20-CHP	1.4	L	1	20	22	12	6/9	DGS...	1.5	QC-12...
QC12-JTTER2D20-CHP	2	R	2	20	22	12	6/9	DGS...	1.5	QC-12...
QC12-JTTEL2D20-CHP	2	L	2	20	22	12	6/9	DGS...	1.5	QC-12...

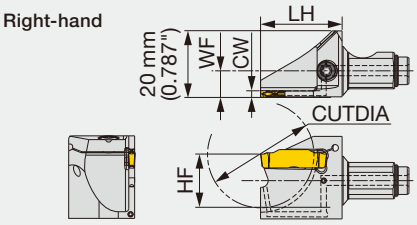
Torque: Recommended clamping torque: lbs·ft (*N·m)

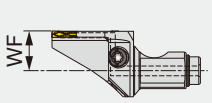
QC16-JCTER/L-CHP

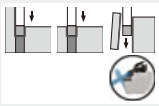
TUNGCUT

Modular head for external grooving and parting, with high pressure coolant capability









Inch	CW	Hand	Seat size (mm)	CUTDIA	LH	HF	WF	Insert	Torque	Shank
QC16-JCTER1.2D20-CHP	0.047	R	0.9	0.787	0.965	0.630	0.315	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTEL1.2D20-CHP	0.047	L	0.9	0.787	0.965	0.630	0.472	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTER1.4D20-CHP	0.055	R	1	0.787	0.965	0.630	0.315	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTEL1.4D20-CHP	0.055	L	1	0.787	0.965	0.630	0.472	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTER2D20-CHP	0.079	R	2	0.787	0.965	0.630	0.315	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTEL2D20-CHP	0.079	L	2	0.787	0.965	0.630	0.472	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTER2D26-CHP	0.079	R	2	1.024	0.965	0.630	0.315	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTEL2D26-CHP	0.079	L	2	1.024	0.965	0.630	0.472	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTER2D32-CHP	0.079	R	2	1.260	0.965	0.630	0.315	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTEL2D32-CHP	0.079	L	2	1.260	0.965	0.630	0.472	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTER3D26-CHP	0.118	R	3	1.024	0.965	0.630	0.315	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTEL3D26-CHP	0.118	L	3	1.024	0.965	0.630	0.472	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTER3D32-CHP	0.118	R	3	1.260	0.965	0.630	0.315	DG..., DTM, SG...	2.21	QC-10...
QC16-JCTEL3D32-CHP	0.118	L	3	1.260	0.965	0.630	0.472	DG..., DTM, SG...	2.21	QC-10...

Metric	CW	Hand	Seat size	CUTDIA	LH	HF	WF)	Insert	Torque*	Shank
QC16-JCTER1.2D20-CHP	1.2	R	0.9	20	24.5	16	8	DG..., DTM, SG...	3	QC-16...
QC16-JCTEL1.2D20-CHP	1.2	L	0.9	20	24.5	16	12	DG..., DTM, SG...	3	QC-16...
QC16-JCTER1.4D20-CHP	1.4	R	1	20	24.5	16	8	DG..., DTM, SG...	3	QC-16...
QC16-JCTEL1.4D20-CHP	1.4	L	1	20	24.5	16	12	DG..., DTM, SG...	3	QC-16...
QC16-JCTER2D20-CHP	2	R	2	20	24.5	16	8	DG..., DTM, SG...	3	QC-16...
QC16-JCTEL2D20-CHP	2	L	2	20	24.5	16	12	DG..., DTM, SG...	3	QC-16...
QC16-JCTER2D26-CHP	2	R	2	26	24.5	16	8	DG..., DTM, SG...	3	QC-16...
QC16-JCTEL2D26-CHP	2	L	2	26	24.5	16	12	DG..., DTM, SG...	3	QC-16...
QC16-JCTER2D32-CHP	2	R	2	32	24.5	16	8	DG..., DTM, SG...	3	QC-16...
QC16-JCTEL2D32-CHP	2	L	2	32	24.5	16	12	DG..., DTM, SG...	3	QC-16...
QC16-JCTER3D26-CHP	3	R	3	26	24.5	16	8	DG..., DTM, SG...	3	QC-16...
QC16-JCTEL3D26-CHP	3	L	3	26	24.5	16	12	DG..., DTM, SG...	3	QC-16...
QC16-JCTER3D32-CHP	3	R	3	32	24.5	16	8	DG..., DTM, SG...	3	QC-16...
QC16-JCTEL3D32-CHP	3	L	3	32	24.5	16	12	DG..., DTM, SG...	3	QC-16...

Torque: Recommended clamping torque: lbs·ft (*N·m)

QC12-STCR/L

TETRAMCUT INI

Modular head for external grooving and threading

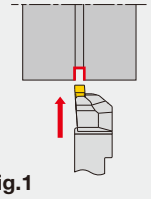
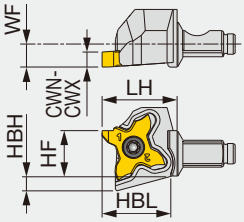


Fig.1



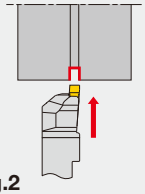
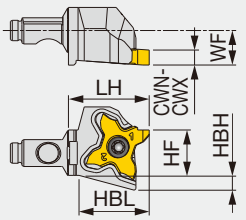


Fig.2



Inch	CWN	CWX	LH	HF	HBH	HBL	WF	Insert	Torque	Fig.	Shank
QC12-STCR18	0.013	0.118	0.768	0.472	0.154	0.705	0.236	TC*18R...	0.89	1	QC-08...
QC12-STCL18	0.013	0.118	0.827	0.472	0.154	0.720	0.354	TC*18L...	0.89	2	QC-08...

Metric	CWN	CWX	LH	HF	HBH	HBL	WF	Insert	Torque*	Fig.	Shank
QC12-STCR18	0.33	3	19.5	12	3.9	17.9	6	TC*18R...	1.2	1	QC-12...
QC12-STCL18	0.33	3	21	12	3.9	18.3	9	TC*18L...	1.2	2	QC-12...

The right hand insert (R) is used for the right hand toolholder (R).
The left hand insert (L) is used for the right hand toolholder (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)

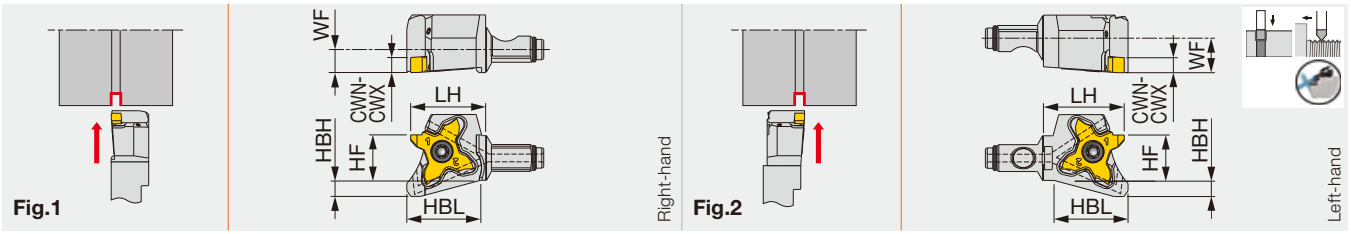
Right-hand insert
TC*18**R**...

Left-hand insert
TC*18**L**...

QC-STCR/L-CHP

TETRAMINI CUT

Modular head for external grooving and threading, with high pressure coolant capability



Inch	CWN	CWX	LH	HF	HBH	HBL	WF	Insert	Torque	Fig.	Shank
QC12-STCR18-CHP	0.013	0.118	0.768	0.472	0.165	0.760	0.236	TC*18R...	0.89	1	QC-08...
QC12-STCL18-CHP	0.013	0.118	0.472	0.472	0.165	0.760	0.354	TC*18L...	0.89	2	QC-08...
QC16-STCR18-CHP	0.013	0.118	0.827	0.630			0.315	TC*18R...	0.89	1	QC-10...
QC16-STCL18-CHP	0.013	0.118	0.827	0.630			0.512	TC*18L...	0.89	2	QC-10...

Metric	CWN	CWX	LH	HF	HBH	HBL	WF	Insert	Torque*	Fig.	Shank
QC12-STCR18-CHP	0.33	3	19.5	12	4.2	19.3	6	TC*18R...	1.2	1	QC-12...
QC12-STCL18-CHP	0.33	3	21	12	4.2	19.3	9	TC*18L...	1.2	2	QC-12...
QC16-STCR18-CHP	0.33	3	21	16			8	TC*18R...	1.2	1	QC-16...
QC16-STCL18-CHP	0.33	3	21	16			13	TC*18L...	1.2	2	QC-16...

The right hand insert (R) is used for the right hand toolholder (R).
The left-hand insert (L) is used for the left-hand toolholder (L).
Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m)
Please refer to the Tungaloy eCatalog for spare parts.

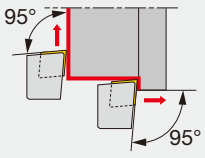
Right-hand insert TC*18**R**...

Left-hand insert TC*18**L**...

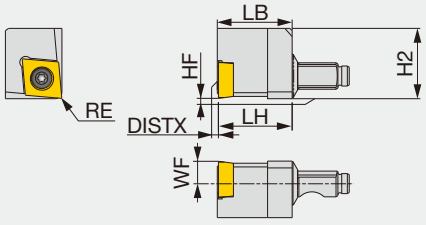
QC12-JSCL2CR-Y

J-SERIES

Screw-on Y-axis turning modular head with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque	Shank
QC12-JSCL2CR09-Y	0.768	0	0.236	0.780	0.732	0.012	0.008	CC*T32.50.5...	0.89	QC-08...

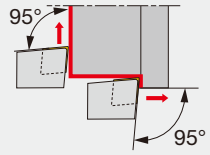
Metric	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*	Shank
QC12-JSCL2CR09-Y	19.5	0	6	19.8	18.6	0.3	0.2	CC**09T3...	1.2	QC-12...

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius
Please refer to the Tungaloy eCatalog for spare parts.

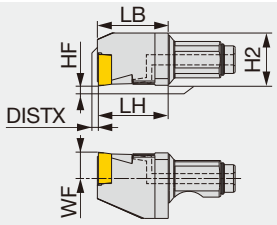
QC-JSCL2CR-Y-CHP

J-SERIES

Screw-on Y-axis turning modular head with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque	Shank
QC12-JSCL2CR09-Y-CHP	0.768	0	0.236	0.780	0.732	0.012	0.008	CC*T32.50.5...	0.89	QC-08...
QC16-JSCL2CR09-Y-CHP	0.827	0	0.315	0.839	0.630	0.012	0.008	CC*TT32.5...	0.89	QC-10...

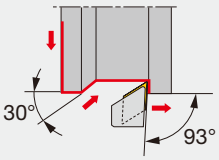
Metric	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*	Shank
QC12-JSCL2CR09-Y-CHP	19.5	0	6	19.8	18.6	0.3	0.2	CC**09T3...	1.2	QC-12...
QC16-JSCL2CR09-Y-CHP	21	0	8	21.3	16	0.3	0.2	CC**09T3...	1.2	QC-16...

Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

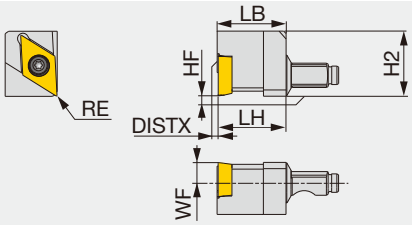
QC12-JSDJ2CR-Y

J-SERIES

Screw-on Y-axis turning modular head with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque	Shank
QC12-JSDJ2CR11-Y	0.768	0	0.236	0.780	0.736	0.012	0.008	DC*T32.50.5...	0.89	QC-08...

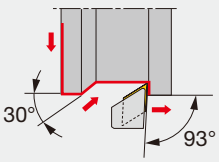
Inch	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*	Shank
QC12-JSDJ2CR11-Y	19.5	0	6	19.8	18.7	0.3	0.2	DC**11T3...	1.2	QC-12...

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

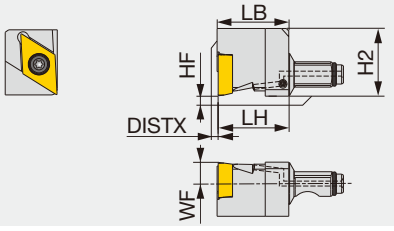
QC-JSDJ2CR-Y-CHP

J-SERIES

Screw-on Y-axis turning modular head with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque	Shank
QC12-JSDJ2CR11-Y-CHP	0.768	0	0.236	0.780	0.736	0.012	0.008	DC**32.5...	0.89	QC-08...
QC16-JSDJ2CR11-Y-CHP	0.827	0	0.315	0.839	0.736	0.012	0.008	DC**32.5...	0.89	QC-10...

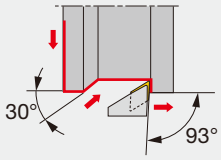
Metric	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*	Shank
QC12-JSDJ2CR11-Y-CHP	19.5	0	6	19.8	18.7	0.3	0.2	DC**11T3...	1.2	QC-12...
QC16-JSDJ2CR11-Y-CHP	21	0	8	21.3	18.7	0.3	0.2	DC**11T3...	1.2	QC-16...

Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius
Please refer to the Tungaloy eCatalog for spare parts.

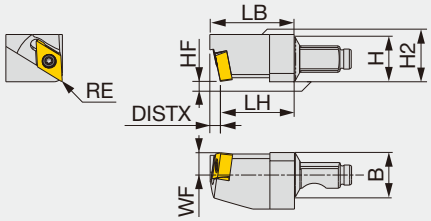
QC12-JSDJ2XR-Y

MINIFORCE TURN

Screw-on Y-axis turning modular head with 93° approach angle, for DXGU inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

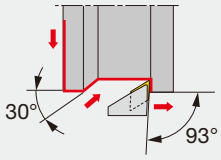
Inch	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque	Shank
QC12-JSDJ2XR07-Y	0.768	0	0.236	0.878	0.492	0.110	0.008	DXGU220.5L...	0.66	QC-08...
Metric	**LH**	**HF**	**WF**	**LB**	**H2**	**DISTX**	**RE****	**Insert**	**Torque***	**Shank**
QC12-JSDJ2XR07-Y	19.5	0	6	22.3	12.5	2.8	0.2	DXGU0703**L...	0.9	QC-12...

Use right-hand toolholders (R) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius
Please refer to the Tungaloy eCatalog for spare parts.

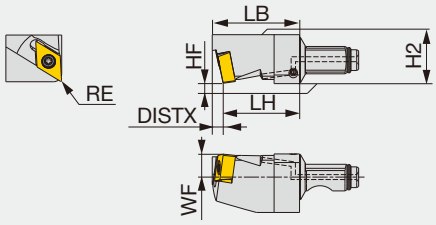
QC-JSDJ2XR-Y-CHP

MINIFORCE TURN

Screw-on Y-axis turning modular head with 93° approach angle, for DXGU inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

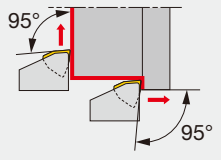
Inch	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque	Shank
QC12-JSDJ2XR07-Y-CHP	0.768	0	0.236	0.878	0.492	0.110	0.008	DXGU220.5L...	0.66	QC-08...
QC16-JSDJ2XR09-Y-CHP	0.827	0	0.315	0.937	0.630	0.110	0.008	DXG*U22**L...	0.89	QC-10...
Metric	**LH**	**HF**	**WF**	**LB**	**H2**	**DISTX**	**RE****	**Insert**	**Torque***	**Shank**
QC12-JSDJ2XR07-Y-CHP	19.5	0	6	22.3	12.5	2.8	0.2	DXGU0703**L...	0.9	QC-12...
QC16-JSDJ2XR09-Y-CHP	21	0	8	23.8	16	2.8	0.2	DXG*0703**L...	1.2	QC-16...

Use right-hand toolholders (R) with left-hand inserts (L).
Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

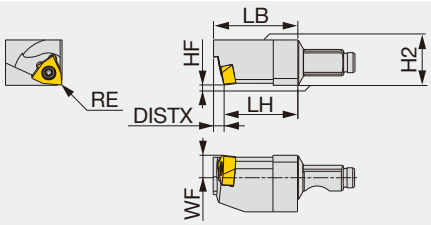
QC12-JSWL2XR-Y

MINIFORCE TURN

Screw-on Y-axis turning modular head with 95° approach angle, for WXGU inserts



Cutting edge style **L2**



Without offset

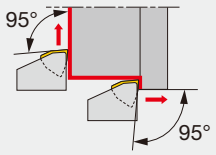
Right hand (R) shown.

Inch	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque	Shank
QC12-JSWL2XR04-Y	0.768	0	0.236	0.878	0.472	0.110	0.008	WXGU220.5L...	0.66	QC-08...
Metric	**LH**	**HF**	**WF**	**LB**	**H2**	**DISTX**	**RE****	**Insert**	**Torque***	**Shank**
QC12-JSWL2XR04-Y	19.5	0	6	22.3	12	2.8	0.2	WXGU0403**L...	0.9	QC-12...

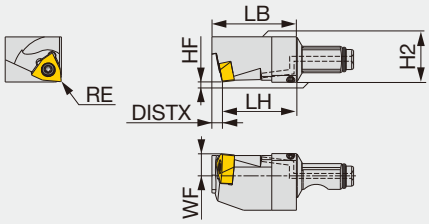
Use right-hand toolholders (R) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

QC-JSWL2XR-Y-CHP

Screw-on Y-axis turning modular head with 95° approach angle, for WXGU inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

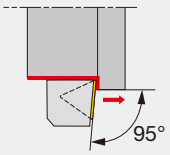
Inch	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque	Shank
QC12-JSWL2XR04-Y-CHP	0.768	0	0.236	0.878	0.472	0.110	0.008	WXGU220.5L...	0.66	QC-08...
QC16-JSWL2XR04-Y-CHP	0.827	0	0.315	0.937	0.630	0.110	0.008	WXGU22**L...	0.66	QC-10...

Metric	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*	Shank
QC12-JSWL2XR04-Y-CHP	19.5	0	6	22.3	12	2.8	0.2	WXGU0403**L...	0.9	QC-12...
QC16-JSWL2XR04-Y-CHP	21	0	8	23.8	16	2.8	0.2	WXGU0403**L...	0.9	QC-16...

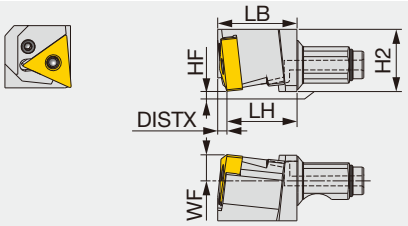
Use right-hand toolholders (R) with left-hand inserts (L).
Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

QC16-PTL2NR-Y-CHP

Lever-lock Y-axis turning modular head with 95° approach angle, for negative 60° triangular inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Metric	LH	HF	WF	LB	H2	DISTX	RE**	Insert	Torque*	Shank
QC16-PTL2NR16-Y-CHP	21 (0.827")	0	8 (0.315")	23.8 (0.937")	18.7 (0.736")	2.8 (0.110")	0.4 (0.016")	TN**1604... (TN** 33...)	1.5 (1.11)	QC-16... (16 mm) QC-10X... (0.625")

QC12-STCR/L-Y

Y-axis turning modular head for external grooving and threading

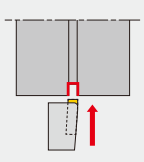
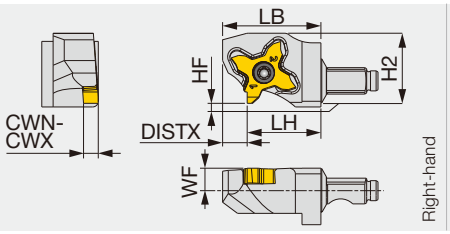


Fig.1



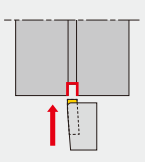
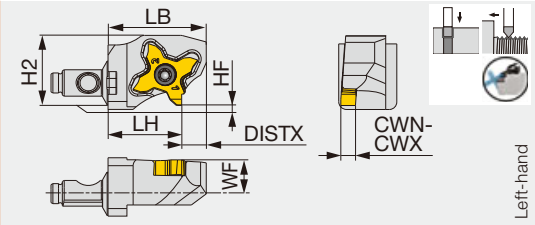


Fig.2



Inch	CWN	CWX	LH	HF	WF	LB	H2	DISTX	Insert	Torque	Fig.	Shank
QC12-STCR18-Y	0.013	0.118	0.768	0	0.236	1.024	0.732	0.256	TC*18R...	0.89	1	QC-08...
QC12-STCL18-Y	0.013	0.118	0.768	0	0.354	1.024	0.732	0.256	TC*18L...	0.89	2	QC-08...

Metric	CWN	CWX	LH	HF	WF	LB	H2	DISTX	Insert	Torque*	Fig.	Shank
QC12-STCR18-Y	0.33	3	19.5	0	6	26	18.6	6.5	TC*18R...	1.2	1	QC-12...
QC12-STCL18-Y	0.33	3	19.5	0	9	26	18.6	6.5	TC*18L...	1.2	2	QC-12...

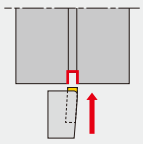
The right hand insert (R) is used for the right hand toolholder (R).
Torque: Recommended clamping torque: lbs·ft (*N·m)

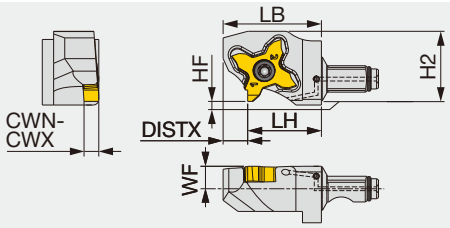
Right-hand insert TC*18**R**...

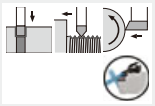
Left-hand insert TC*18**L**...

QC-STCR/L-Y-CHP

Y-axis turning modular head for external grooving and threading, with high pressure coolant capability







Right hand (R) shown.

Inch	CWN	CWX	LH	HF	WF	LB	H2	DISTX	Insert	Torque	Shank
QC12-STCR18-Y-CHP	0.013	0.118	0.768	0	0.236	1.024	0.732	0.256	TC*18R...	0.89	QC-08...
QC12-STCL18-Y-CHP	0.013	0.118	0.768	0	0.354	1.024	0.732	0.256	TC*18L...	0.89	QC-08...
QC16-STCR18-Y-CHP	0.013	0.125	0.827	0	0.315	1.083	0.732	0.256	TC*18R...	0.89	QC-10...
QC16-STCL18-Y-CHP	0.013	0.125	0.827	0	0.512	1.083	0.732	0.256	TC*18L...	0.89	QC-10...

Metric	CWN	CWX	LH	HF	WF	LB	H2	DISTX	Insert	Torque*	Shank
QC12-STCR18-Y-CHP	0.33	3	19.5	0	6	26	18.6	6.5	TC*18R...	1.2	QC-12...
QC12-STCL18-Y-CHP	0.33	3	19.5	0	9	26	18.6	6.5	TC*18L...	1.2	QC-12...
QC16-STCR18-Y-CHP	0.33	3	21	0	8	27.5	18.6	6.5	TC*18R...	1.2	QC-16...
QC16-STCL18-Y-CHP	0.33	3	21	0	13	27.5	18.6	6.5	TC*18L...	1.2	QC-16...

The right hand insert (R) is used for the right hand toolholder (R).
Through-coolant head
Torque: Recommended clamping torque: lbs·ft (*N·m)
Please refer to the Tungaloy eCatalog for spare parts.

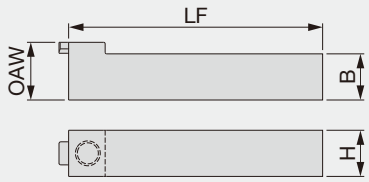
Right-hand insert
TC*18**R**...

Left-hand insert
TC*18**L**...

SHANKS

QC-08, QC-1212

Shank for Interchangeable Heads (All metric heads are compatible with the inch shanks)



Inch	H	B	LF	OAW	Torque	Head
QC-08F	0.500	0.500	2.559	0.591	2.21	QC12...
QC-08X	0.500	0.500	3.937	0.591	2.21	QC12...

Metric	H	B	LF	OAW	Torque*	Head
QC-1212F	12	12	65	15	3	QC12...
QC-1212X	12	12	100	15	3	QC12...

Torque: Recommended clamping torque: lbs·ft (*N·m)

QC-08/10-CHP, QC-1212/1616-CHP

Shank for modular heads, with high pressure coolant capability

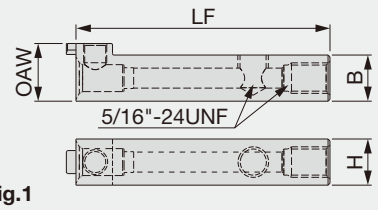


Fig.1

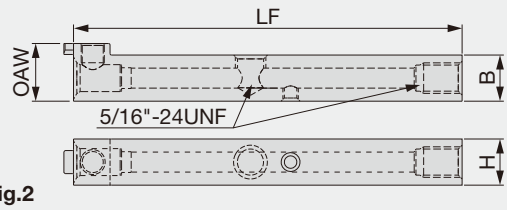


Fig.2

Inch	H	B	LF	OAW	Torque	Fig.	Head
QC-08F-CHP	0.500	0.500	2.559	0.591	2.21	1	QC12...
QC-08X-CHP (1)	0.500	0.500	3.937	0.591	2.21	2	QC12...
QC-10X-CHP(1)	0.625	0.625	3.897	0.787	6.27	2	QC16...
Metric	**H**	**B**	**LF**	**OAW**	**Torque***	**Fig.**	**Head**
QC-1212F-CHP	12	12	65	15	3	1	QC12...
QC-1212X-CHP (1)	12	12	100	15	3	2	QC12...
QC-1616X-CHP (1)	16	16	99	20	8.5	2	QC16...

(1) Compatible to the direct internal coolant supply system without the use of external coolant hose.
Through-coolant shank
Torque: Recommended clamping torque: lbs·ft (*N·m)
Please refer to the Tungaloy eCatalog for spare parts.

QC-08/10-F10-CHP and QC-1216/1620-F15-CHP

Stepped-head shank for modular heads, with high pressure coolant capability

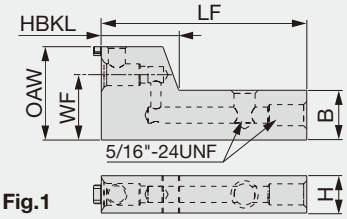


Fig.1

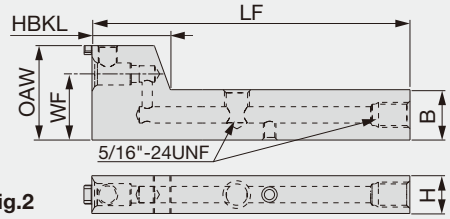


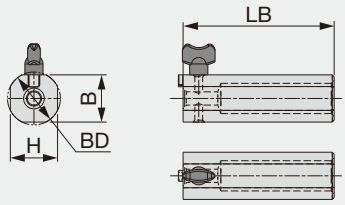
Fig.2

Inch	H	B	LF	WF	HBKL	OAW	Torque	Fig.	Head
QC-08F-F10-CHP	0.500	0.625	2.590	0.861	0.980	1.220	2.21	1	QC12...
QC-08X-F10-CHP (1)	0.500	0.625	3.940	0.861	0.980	1.220	2.21	2	QC12...
QC-10X-F10-CHP (1)	0.625	0.750	3.897	0.940	1.181	1.413	6.27	2	QC16...
Metric	**H**	**B**	**LF**	**WF**	**HBKL**	**OAW**	**Torque***	**Fig.**	**Head**
QC-1216F-F15-CHP	12	16	65	21	25	30	3	1	QC12...
QC-1216X-F15-CHP (1)	12	16	100	21	25	30	3	2	QC12...
QC-1620X-F15-CHP (1)	16	20	99	23	30	35	8.5	2	QC16...

(1) Compatible to the direct internal coolant supply system without the use of external coolant hose.
Through-coolant shank
Torque: Recommended clamping torque: lbs·ft (*N·m)
Please refer to the Tungaloy eCatalog for spare parts.

QC-D28EXC

Modular head holder for insert change



Metric	BD	LB	H	B	Head
QC-12D28EXC	28	80	25	25	QC08... QC-12...
QC-16D28EXC	28	80	25	25	QC10..., QC-16...

Note: This is a dedicated modular-head holder designed to facilitate insert changes. Do not use this holder for machining as it may cause damages to tool, workpiece, machine, and possible human injury.

ModuMini-Turn modular heads are small. When it is difficult to change inserts while holding the modular head with fingers, use the dedicated holder to facilitate insert changes.

QC-STOPPER

Protective plug for shank

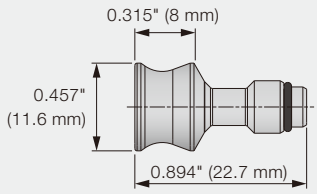


Fig.1

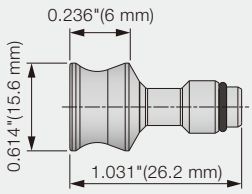


Fig.2

Designation	Shank	Fig.
QC12-STOPPER	QC-08..., QC-12...	1
QC16-STOPPER	QC-10..., QC-16...	2

Please refer to the Tungaloy eCatalog for spare parts.

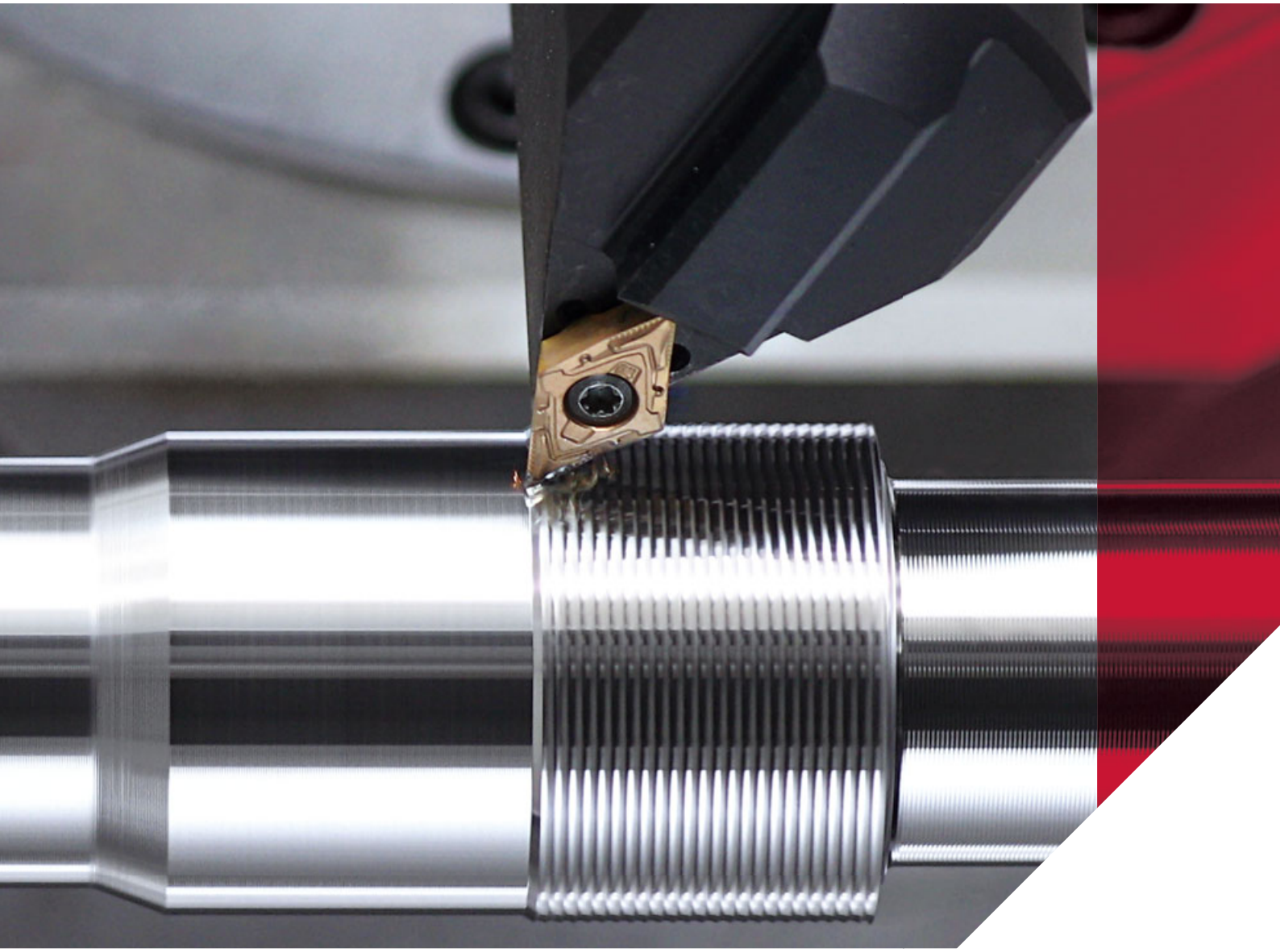
The cutting head located in the feed direction of the Y-axis tool can be removed to make room for machining larger-sized barstock. If this is the case, attach the plug to the shank to protect the coupling surface from chips, as well as prevent coolant leakage during machining.

ADDY AXIS TURN

External turning

Y-AXIS TURNING TOOL WITH PSC CONNECTION FOR MULTITASKING MACHINES

ADD high productivity combined with multiple processes & tools into a single operation



- The cutting force vector is directed in the longitudinal axis of the tool, resulting in higher stability and minimized vibration.
- No chip entanglements, chips are directed down and away from the workpiece and toolholder.
- High rigidity design PSC tool body and through-coolant supply for tool life stability.
- Y-Prism's safe lock design has a rail on the toolholder and matching slot on the insert for tight interlocking and secure clamping.
- Ideal for front turning and back turning.

Lineup

Insert
- **3C-TCMT**

3-edged insert
APMX = 0.020"
- **3C-TCMT**

2-edged insert
APMX = 0.020"

Chipbreaker
- **ZF type**:
- **TN type**:

Grades
- **T9215**: Well-balanced wear and chipping resistance. First choice for steel.

Cutter body
- **C6STECN-Y-CHP:** Screw-on Y-axis turning toolholder with TungCap connection, for positive triangular inserts.

- **C6STECN-Y-CHP:** Screw-on Y-axis turning toolholder with TungCap connection, for 55° rhombic inserts

Scan this QR code to find out more about this tool!

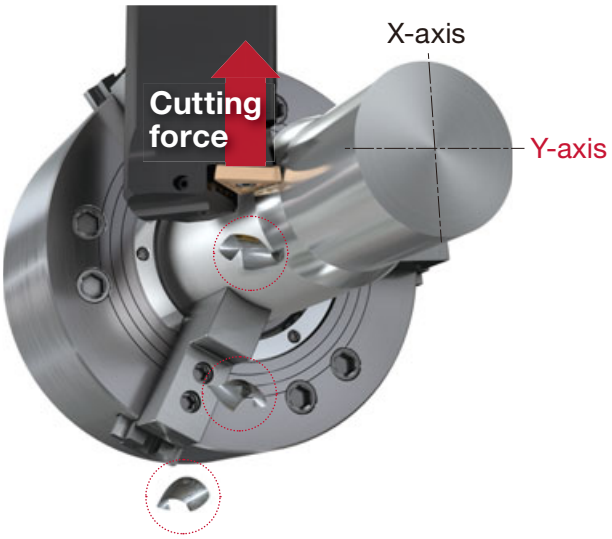
ADDY AXIS TURN

ADD high productivity combined with multiple processes & tools into a single operation

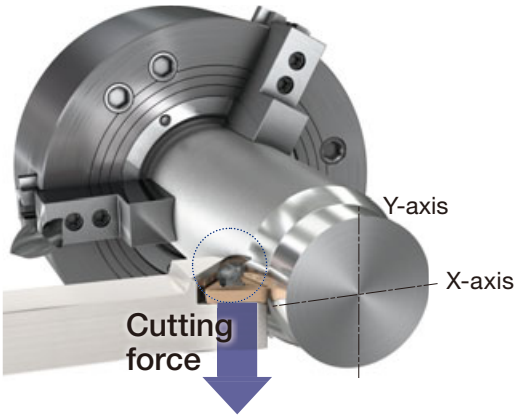
Innovative Y-axis tools provides: **High productivity, rigidity, accuracy, accessibility**

■ Y-axis machining benefits

- The cutting force vector is directed in the longitudinal axis of the tool, resulting in higher stability and minimized vibration
- No chip entanglements, chips are directed down and away from the workpiece and toolholder



Conventional X-axis feed



■ PSC Y-axis tool for multitasking machines

- High rigidity design PSC tool body and through-coolant supply for tool life stability

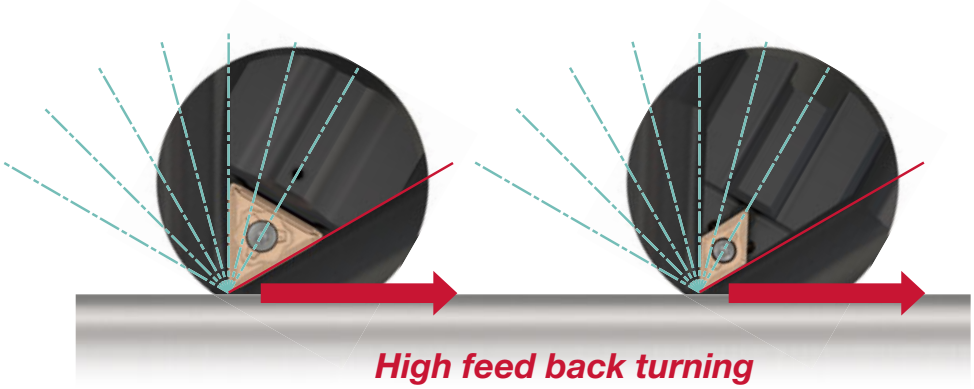
2D-DCMT
ZF chipbreaker
D-type for finishing and profiling operation

3C-TCMT
TM chipbreaker
T-type for medium cutting operation

■ Y-axis tooling concept providing small entry angle for high productivity

T-type : Max feed rate **2 mm/rev**

D-type : Max feed rate **1.2 mm/rev**

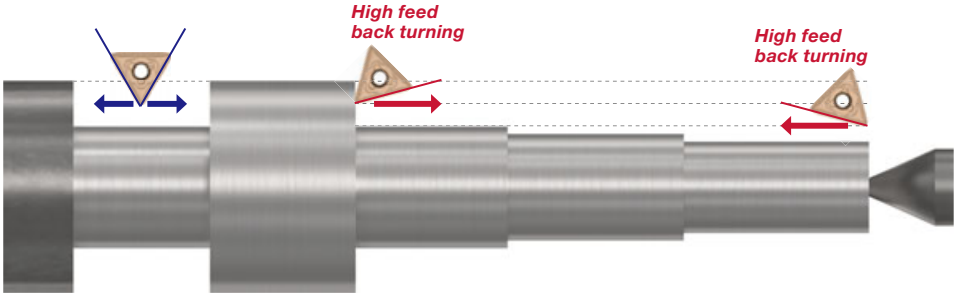


■ Tooling image of Y-axis orientation and applying high feed back turning

Medium cutting

3C-TCMT

Insert: 3C-TCMT29X608-TM
(Single-sided, 3 corners)

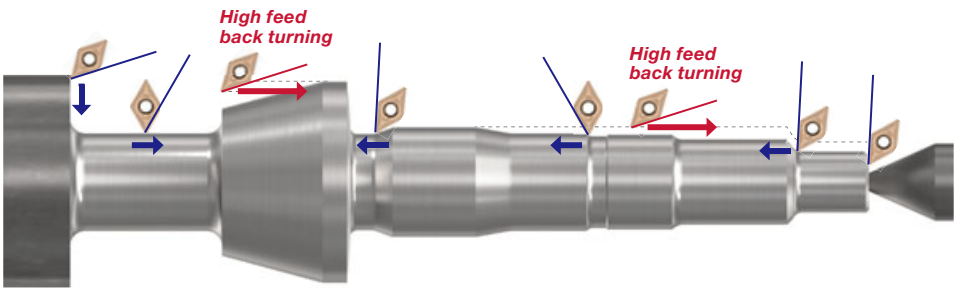


- Thanks to its high-feed geometry, **AddY-axisTurn** insert provides high productivity
- Y-axis tool orientation allows both sides of the cutting edge to be used, providing stable and long tool life

Finishing - Profiling

2D-DCMT

Insert: 2D-DCMT13T404-ZF
(Single-sided, 2 corners)

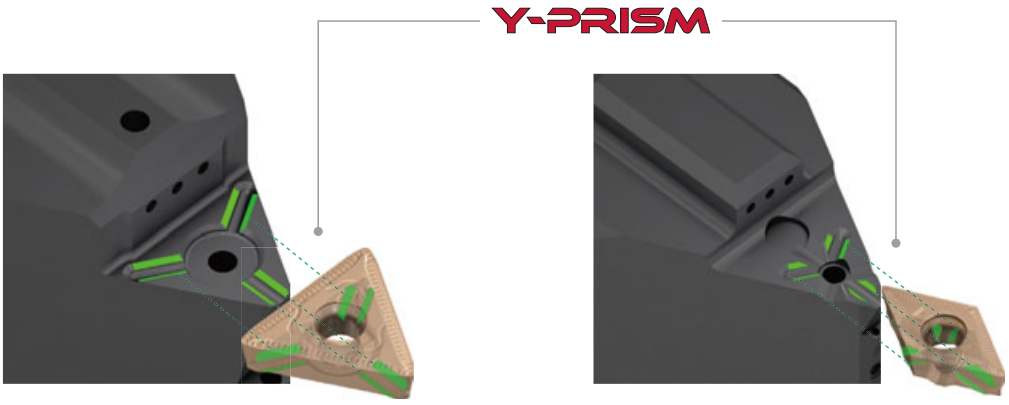


- **AddY-axisTurn** allows a precision workpiece completion with a single tool setup
- No interference with the tailstock
- Eliminates chip entanglement, promoting fully automated manufacturing

ADDYTURN

Y-PRISM Secure insert clamping system

- **Y-PRISM**'s safe lock design has a rail on the toolholder and matching slot on the insert for tight interlocking and secure clamping.
- Prevents the cutting forces from affecting the insert position in any direction and ensures high stability.



GRADE

Grade	Recommended workpiece material	Feature
PREMIUMTEC T9215	P M K	- Well-balanced wear and chipping resistance - First choice for steel - High versatility for a wide range of applications

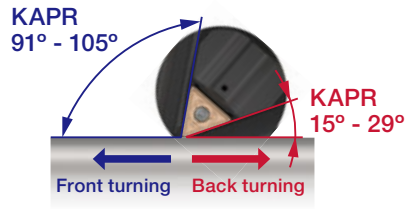
STANDARD CUTTING CONDITIONS

ISO	Operation	Chipbreaker	Grade	Cutting speed *Vc* (m/min)
P	Finishing	ZF	T9215	150 - 400
	Medium to heavy cutting	TM	T9215	150 - 400
M	Finishing	ZF	T9215	100 - 250
	Medium to heavy cutting	TM	T9215	100 - 250
K	Finishing	ZF	T9215	140 - 500
	Medium to heavy cutting	TM	T9215	140 - 500

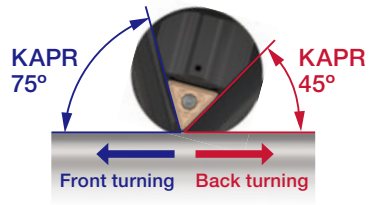
Application ranges according to tool angle orientations

3C-TCMT

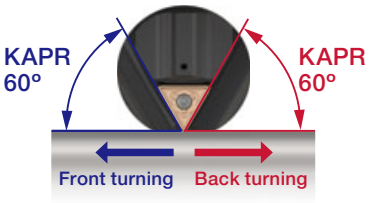
Note: When entering the cut, feed the tool at $f \leq 0.2$ mm/rev or use roll-in approach.



		D.O.C. (mm)					
		0.5	1	1.5	2	3	4
Max. feed rate (mm/rev)	Front turning	0.6				0.5	
	Back turning	2		1.8	1.4	0.8	0.6



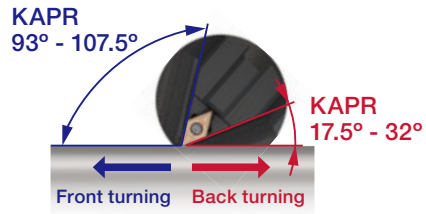
		D.O.C. (mm)					
		0.5	1	1.5	2	3	4
Max. feed rate (mm/rev)	Front turning	0.6					
	Back turning	2		1.6	1.4	0.8	0.6



		D.O.C. (mm)					
		0.5	1	1.5	2	3	4
Max. feed rate (mm/rev)	Front turning	0.6					
	Back turning	0.6					

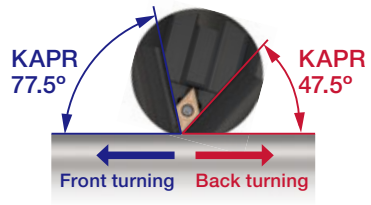
2D-DCMT

Note: When entering the cut, feed the tool at $f \leq 0.2$ mm/rev or use roll-in approach.

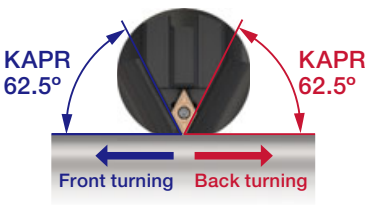


		D.O.C. (mm)				
		0.5	1	1.5	2	2.5
Max. feed rate (mm/rev)	Front turning	0.3				
	Back turning	1.2		0.3		(0.3)*

*In back turning KAPR = 17.5°, D.O.C. = 2.5 mm is not applicable
D.O.C. = 2.5 mm is applicable from KAPR ≥ 25°



		D.O.C. (mm)				
		0.5	1	1.5	2	2.5
Max. feed rate (mm/rev)	Front turning	0.3				
	Back turning	1.2	1	0.3		



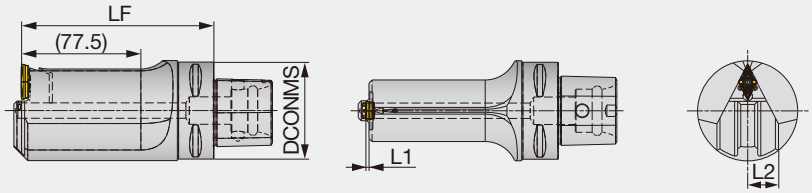
		D.O.C. (mm)				
		0.5	1	1.5	2	2.5
Max. feed rate (mm/rev)	Front turning	0.3				
	Back turning	0.3				

ADDY AXIS TURN

CUTTER

C6STECN-Y-CHP

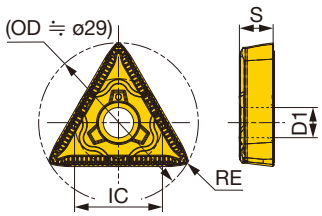
Screw-on Y-axis turning toolholder with TungCap connection, for positive triangular inserts



Inch	SS	DCONMS	LF	L1	L2	RE	Insert	Torque
C6STECN00125-29-Y-CHP	C6	2.480	4.921	0.236	0.925	0.0315	3C-TCMT29XC...	3.688

INSERT

3C-TCMT-TM



P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	
S	Superalloy	
H	Hard materials	

★ : First choice
☆ : Second choice

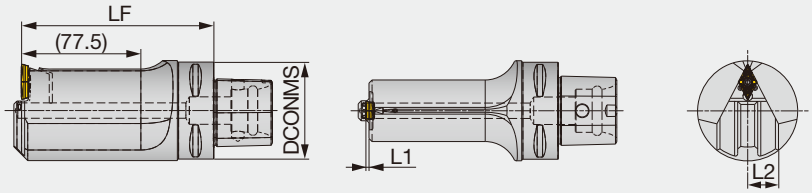
Designation	RE	Coated	IC	S	D1
		T9215			
3C-TCMT29X608-TM	0.0315	●	0.630	0.242	0.217

● : Lineup

CUTTER

C6SDNCN-Y-CHP

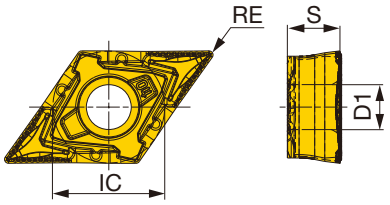
Screw-on Y-axis turning toolholder with TungCap connection, for positive 55 degree rhombic inserts



Inch	SS	DCONMS	LF	L1	L2	RE	Insert	Torque
C6SDNCN00125-29-Y-CHP	C6	2.480	4.921	0.079	0.787	0.0157	2D-DCMT13T...	3.688

INSERT

2D-DCMT-ZF



P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	
S	Superalloy	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	RE	Coated	IC	S	D1
		T9215			
2D-DCMT13T404-ZF	0.0157	●	0.433	0.203	0.173

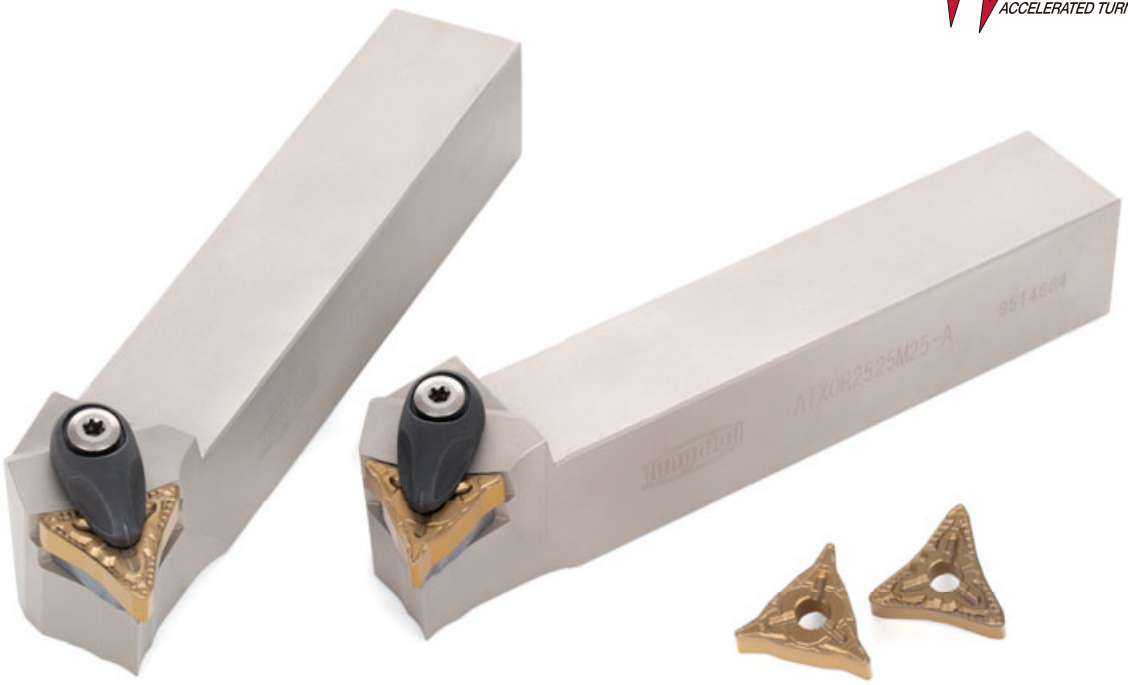
● : Lineup

ADDMULTITURN

Front Turning, Back Turning, Profiling, Face Turning

6 CORNER INSERTS FOR HIGH VERSATILITY, ECONOMY, AND PRODUCTIVITY

ADD innovative geometry for machining with high productivity and process security



- Two types of corner and cutting edge angles for versatile applications.
-

Lineup

Insert

- **6C-TOMG**

6-edged insert with 80° corner angle
APMX = 0.098"

- **6V-TOMG**

6-edged insert with 35° corner angle
APMX = 0.059"

Chipbreaker

- **TM type**:
- **TSF type**:

Grades

- **T9215**: Well-balanced wear and chipping resistance. First choice for steel.
- **T9225:** Well-balanced wear and chipping resistance. First choice for steel.
- **AH8015:** Well-balanced wear and chipping resistance. First choice for steel.

Holder

- **ATXOR/L:** Double-clamp toolholder with 95° and 117.5° approach angle, for negative 80° and 35° triangular inserts.

Scan this QR code to find out more about this tool!

ADDMULTI TURN

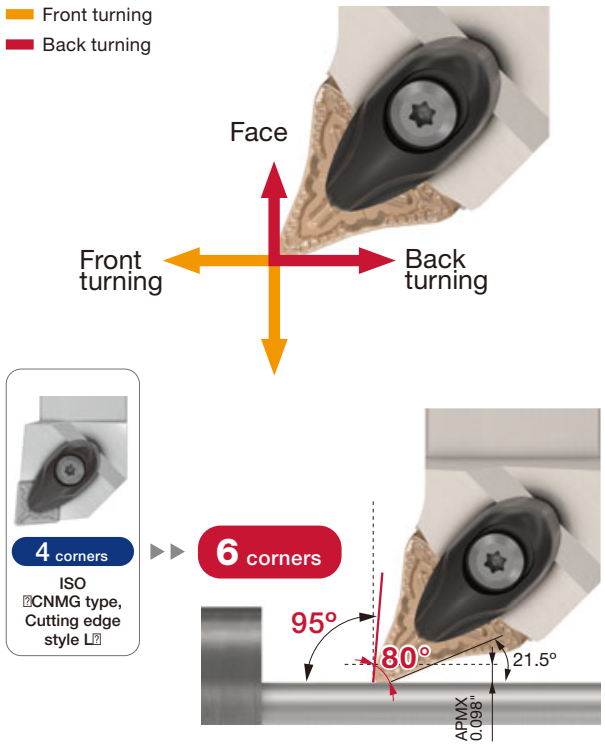
Innovative geometry for machining with high productivity and process security

Two types of corner and cutting edge angles for versatile applications

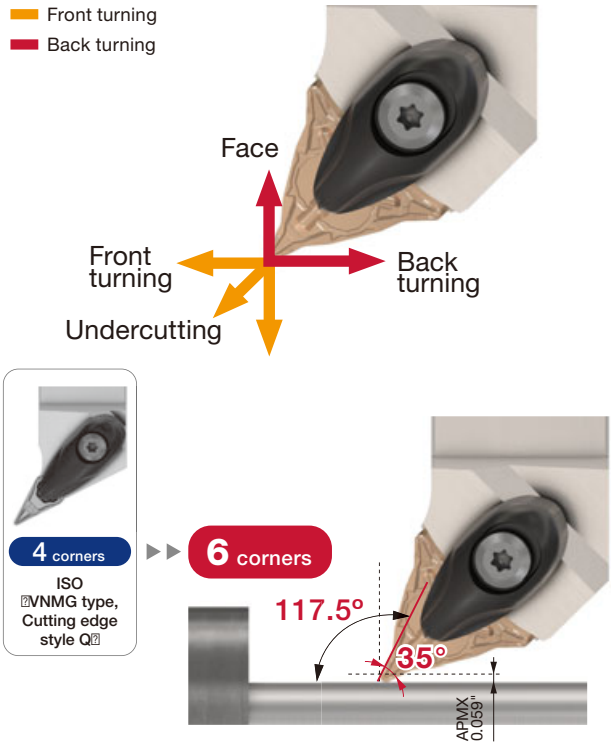
Double-sided 6-corner insert with 80° or 35° corner angle

- Back (pull) turning: High feed designed cutting edge improves productivity about 200% higher than existing ISO tools with no need for special programming.
- Front (push) turning: Same machining process is available using the same cutting edge angle as standard ISO tools.

6C-TOMG

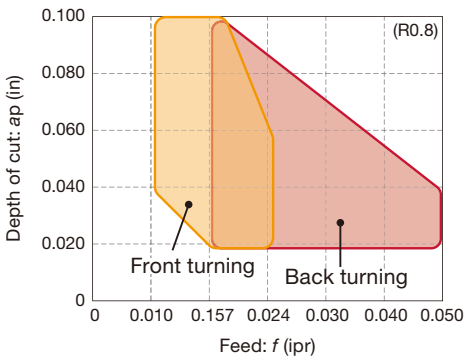


6V-TOMG

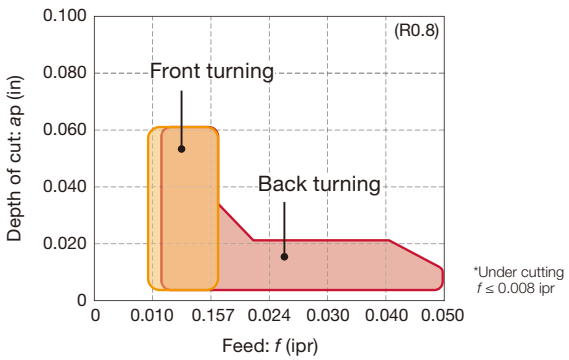


APPLICATION RANGE

Corner angle 80° + **TM** chipbreaker



Corner angle 35° + **TSF** chipbreaker



Y-PRISM safe lock design has a rail on the shim and matching slot on the insert for tight interlocking and secure clamping.

Y-PRISM

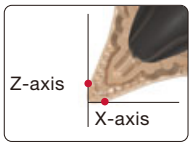
Prevents the cutting forces from affecting the tool position in any direction and ensures high stability

6C-TOMG**-TM　　6V-TOMG**-TSF

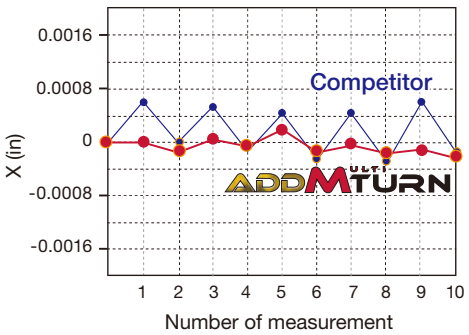
Both inserts are interchangeable on the same toolholder

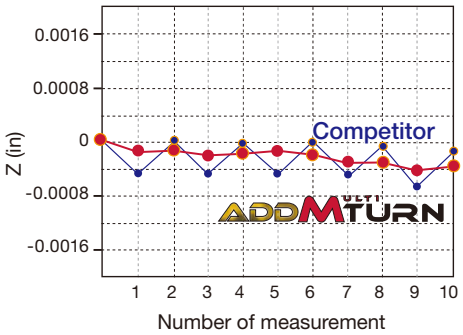
Clamp rigidity – cutting point displacements after machining (Back turning → Front turning)

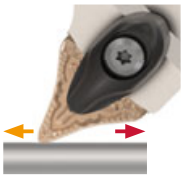
Y-PRISM achieved high accuracy cutting edge position compared with competitors' tools!!



Odd cycles: for back turning
Even cycles: for front turning







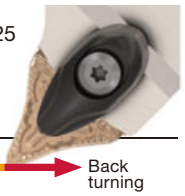
Insert　　: 6C-TOMG**-TM T9225
Workpiece material　: 1045
Cutting speed　　: *Vc* = 820 sfm

Back turning
Feed　　: *f* = 0.039 ipr
Depth of cut　: *ap* = 0.039"

Front turning
Feed　　: *f* = 0.016 ipr
Depth of cut　: *ap* = 0.059"

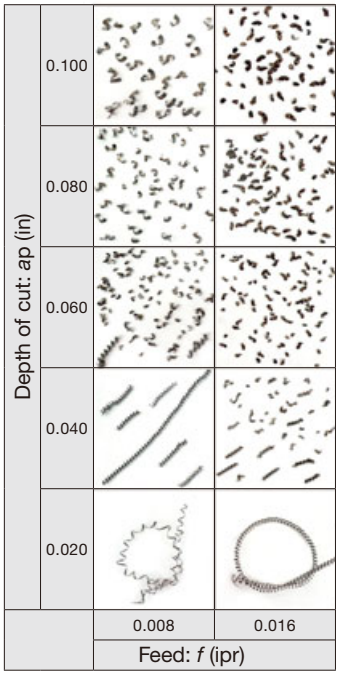
Chip control

Insert : 6C-TOMG250608M-TM T9225
Workpiece material : 1045
Cutting speed : *Vc* = 656 sfm
Coolant : Wet

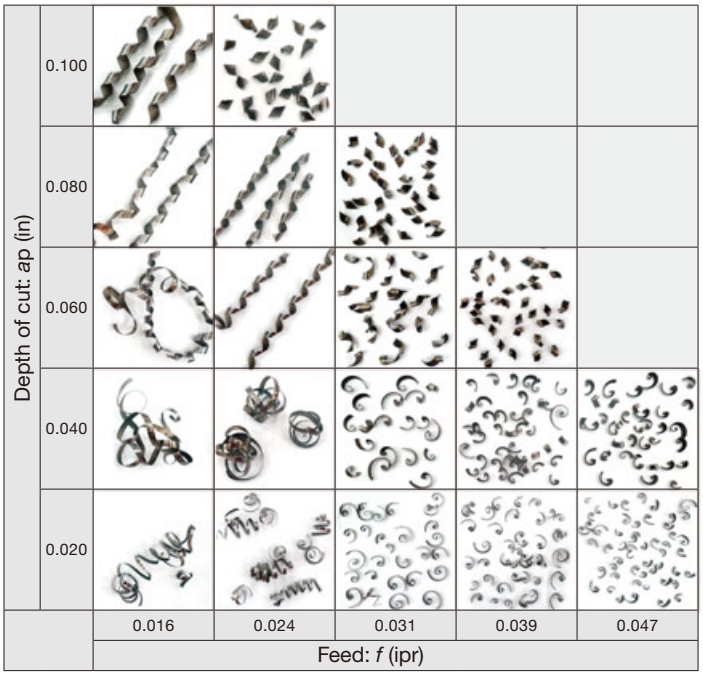


6C-TOMG**-TM

Front turning



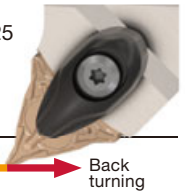
Back turning



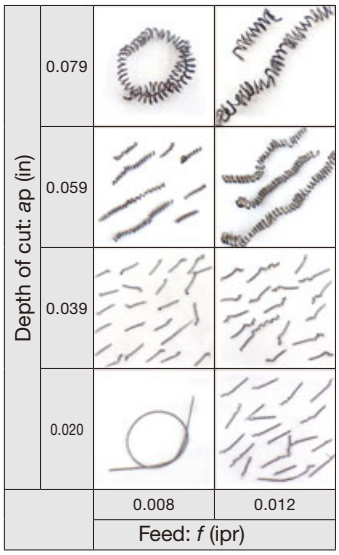
Medium operation
- Front turning: Excellent chip control
- Back turning: Excellent chip control in high feed

ADDMULTI TURN
6V-TOMG**-TSF

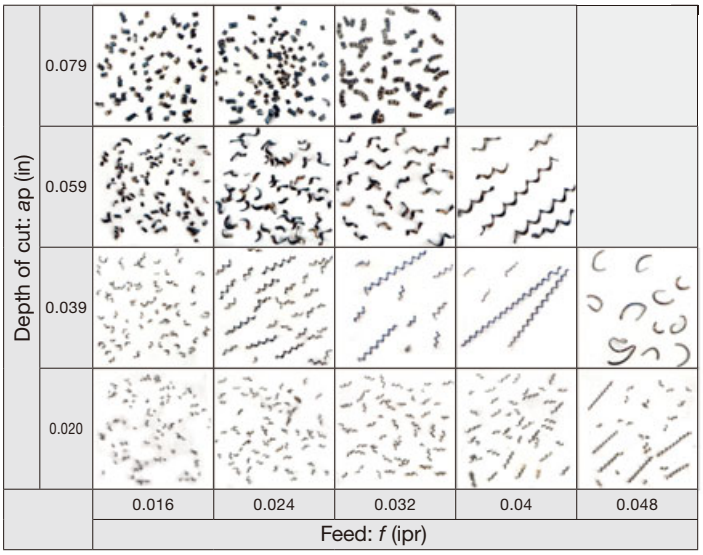
Insert : 6V-TOMG250608F-TSF T9225
Workpiece material : 1045
Cutting speed : *Vc* = 820 sfm
Coolant : Wet



Front turning

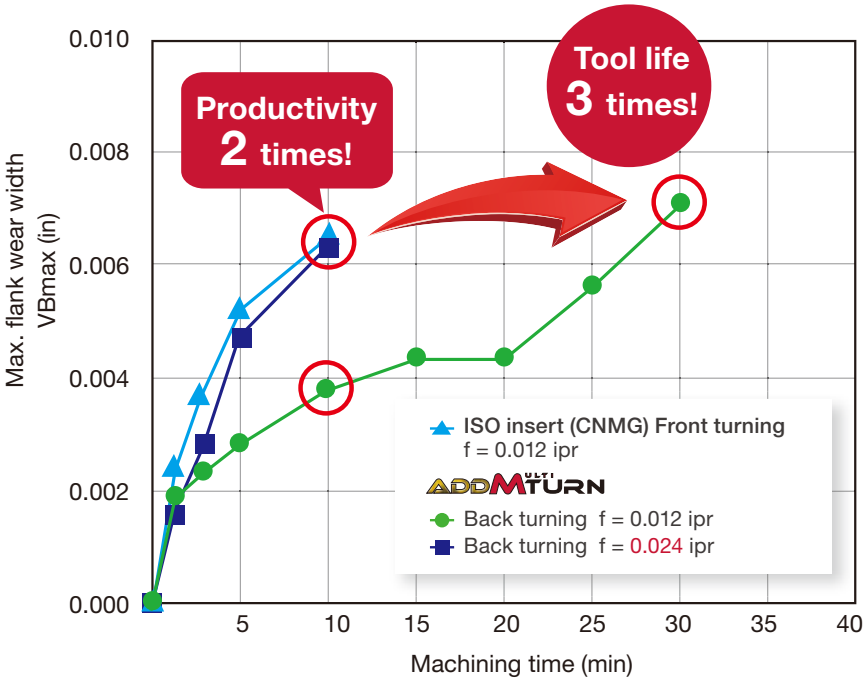


Back turning



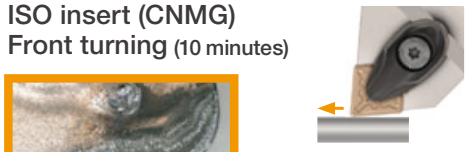
Finishing operation
- Front turning: Excellent chip control also in small D.O.C
- Back turning: Excellent chip control in high feed

Tool life



Insert : 6C-TOMG**-TM T9225
Workpiece material : 1045
Cutting speed : Vc = 820 sfm
Depth of cut : ap = 0.059"
Coolant : Wet

ISO insert (CNMG)
Front turning (10 minutes)



Feed: *f* = 0.012 ipr

ADDMULTITURN
Back turning (10 minutes)

Feed: *f* = 0.012 ipr

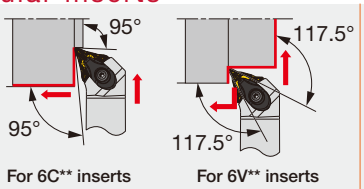
Feed: *f* = 0.024 ipr

AddMultiTurn insert provided triple tool life when fed at the same feed rate as ISO insert.
Double the feed rate with AddMultiTurn compared with ISO insert without compromising tool life.

TOOLHOLDER

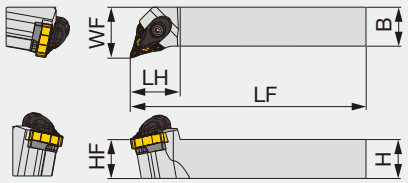
ATXOR/L

Double-clamp toolholder with 95° and 117.5° approach angle, for negative 80° and 35° triangular inserts



For 6C** inserts For 6V** inserts

Cutting edge style **X**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ATXOR/L128-A	0.750	0.750	4.500	1.260	0.750	1.000	0.031	6C/6V-TOMG2506...	2.21
ATXOR/L168-A	1.000	1.000	6.000	1.260	1.000	1.250	0.031	6C/6V-TOMG2506...	2.21
ATXOR/L208-A	1.250	1.250	7.000	1.260	1.250	1.500	0.031	6C/6V-TOMG2506...	2.21

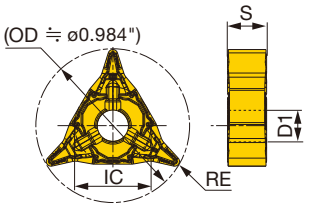
Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATXOR/L2020K25-A	20	20	125	32	20	25	0.8	6C/6V-TOMG2506...	3
ATXOR/L2525M25-A	25	25	150	32	25	32	0.8	6C/6V-TOMG2506...	3
ATXOR/L3232P25-A	32	32	170	32	32	40	0.8	6C/6V-TOMG2506...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

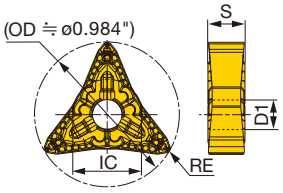
ADDMULTI TURN

INSERTS

6V-TOMG**F-TSF



6C-TOMG**M-TM



P	Steel	★	★										
M	Stainless	☆		☆									
K	Cast iron	☆											
N	Non-ferrous												
S	Superalloys			★									
H	Hard materials												

★ : First choice
☆ : Second choice

Designation	RE	Coated										IC	S	D1
		T9215	T9225	AH8015										
6V-TOMG250604F-TSF	0.016	●	●	●								0.500	0.250	0.203
6V-TOMG250608F-TSF	0.031	●	●	●								0.500	0.250	0.203
6C-TOMG250608M-TM	0.031	●	●	●								0.476	0.250	0.203
6C-TOMG250612M-TM	0.047	●	●	●								0.476	0.250	0.203

Please note that the insert may interfere with the work piece when machining outward (pulling) face turning when used with 6C** insert a work diameter of 1.181" or smaller and with 6V** insert a work diameter of 2.756" or smaller.

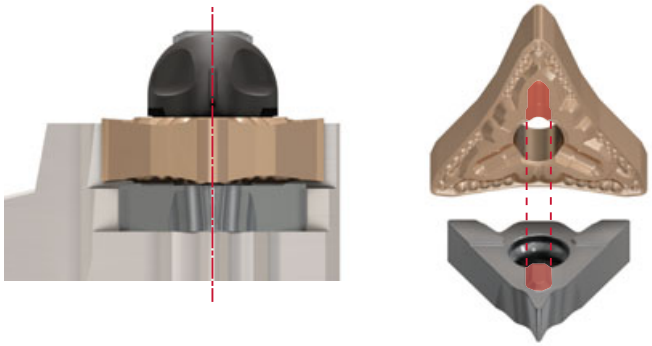
● : Line up

STANDARD CUTTING CONDITIONS

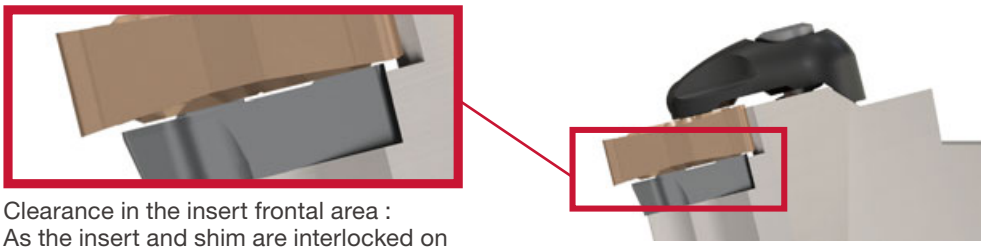
ISO	Operation	Chipbreaker	Grade	Depth of cut: *ap* (in)		Feed: *f* (ipr)		Cutting speed
				Front turning	Back turning	Front turning	Back turning	*Vc* (sfm)
P	Finishing	TSF	T9215	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	492 - 1312
		TSF	T9225	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	262 - 984
	Medium to heavy cutting	TM	T9215	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	492 - 1312
		TM	T9225	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	262 - 984
M	Finishing	TSF	T9215	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	328 - 820
		TSF	AH8015	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	295 - 623
	Medium to heavy cutting	TM	T9215	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	328 - 820
		TM	AH8015	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	295 - 623
K	Finishing	TSF	T9215	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	459 - 1640
	Medium to heavy cutting	TM	T9215	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	459 - 1640
S	Finishing	TSF	AH8015	0.008 - 0.059	0.008 - 0.059	0.003 - 0.016	0.008 - 0.047	66 - 262
	Medium to heavy cutting	TM	AH8015	0.02 - 0.098	0.02 - 0.098	0.008 - 0.024	0.016 - 0.047	66 - 262

Cautions when mounting the insert on the holder

1 Ensure that the rail on the shim is positioned on the matching slot on the insert

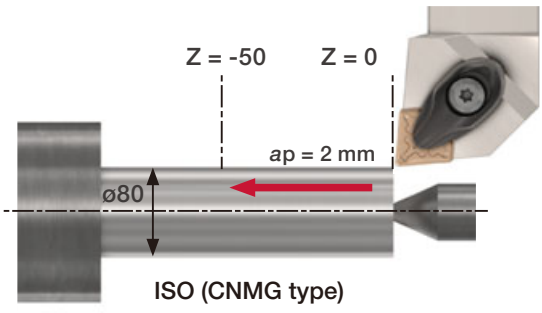


2 Ensure that the clamp is tightened on the shim and insert using the proper torque



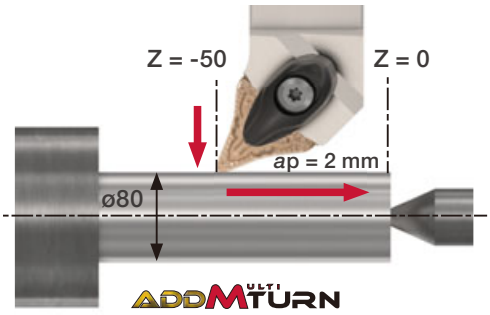
Clearance in the insert frontal area :
As the insert and shim are interlocked on the rail and slot, it is no problem to have this clearance.

3 Programming sample to change from front turning to back turning



ISO (CNMG type)

```
G90 G00  Z1.0
         X76.0
    G01  Z-50.0  F0.3
G91 X2.0 Z1.0
G90 G00  X120.0
```
(Unit: mm)



ADDMTURN

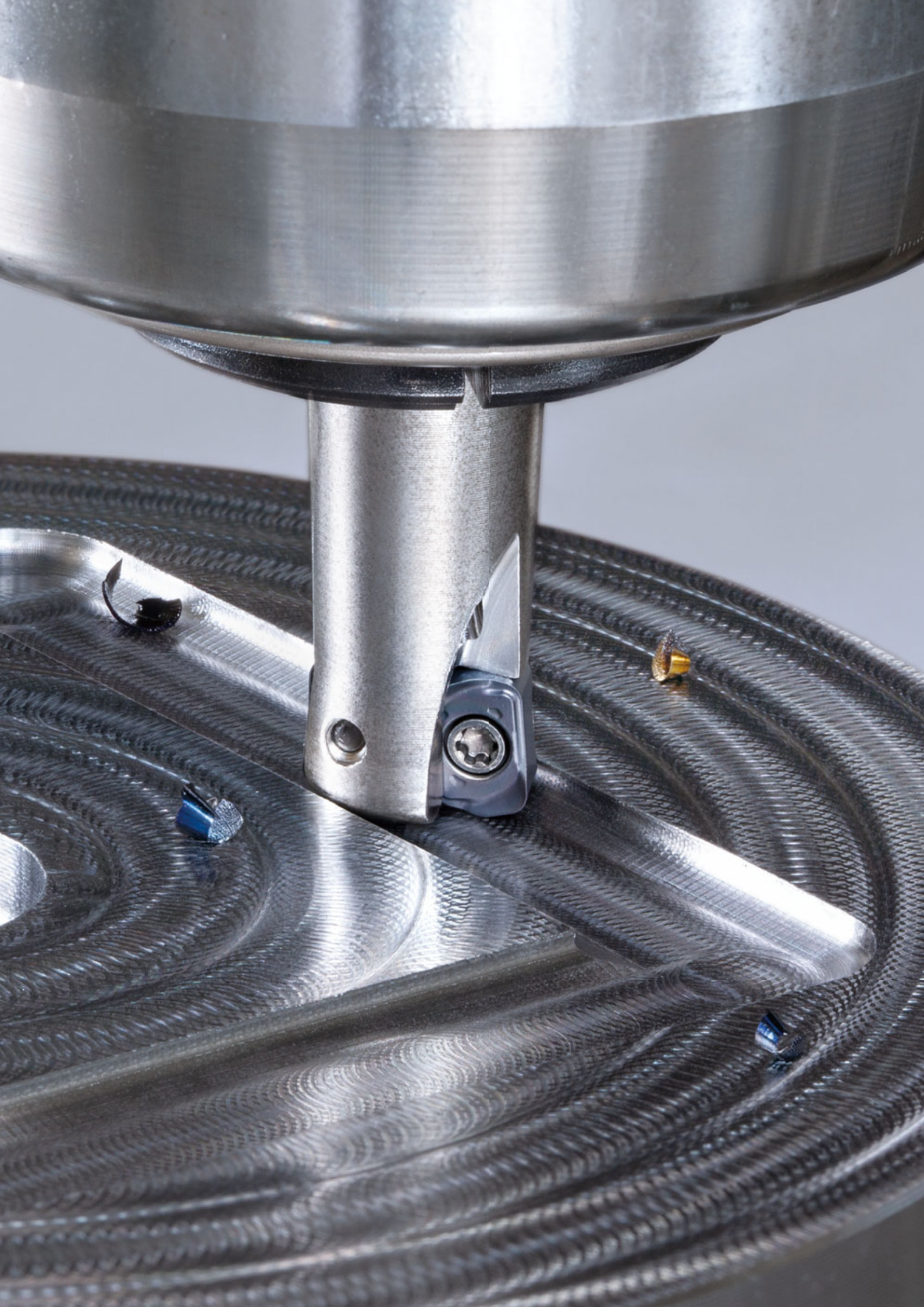
```
G90 G00  Z-50.0
         X82.0
    G01  X76.0  F0.2
         Z1.0   F0.6
G90 X120.0
```
(Unit: mm)

*When entering the cut, feed the tool at 0.2 mm/rev or use roll-in approach.
*When turning away from the main chuck, the cutting edge contact with the workpiece becomes larger, generating greater cutting load than when turning towards the chuck. Always use the tailstock support.

GRADES

Grade	Recommended workpiece material	Feature
PREMIUMTEC T9215	P M K	- Well-balanced between wear and chipping resistance - First choice for steel - High versatility for a wide range of applications
PREMIUMTEC T9225	P	- First choice for roughing to medium cutting - High fracture resistance
PREMIUMTEC AH8015	M S	- PVD coated grade with a balanced resistance to wear and fracture - First choice for stainless steel and heat-resistant superalloys

Milling

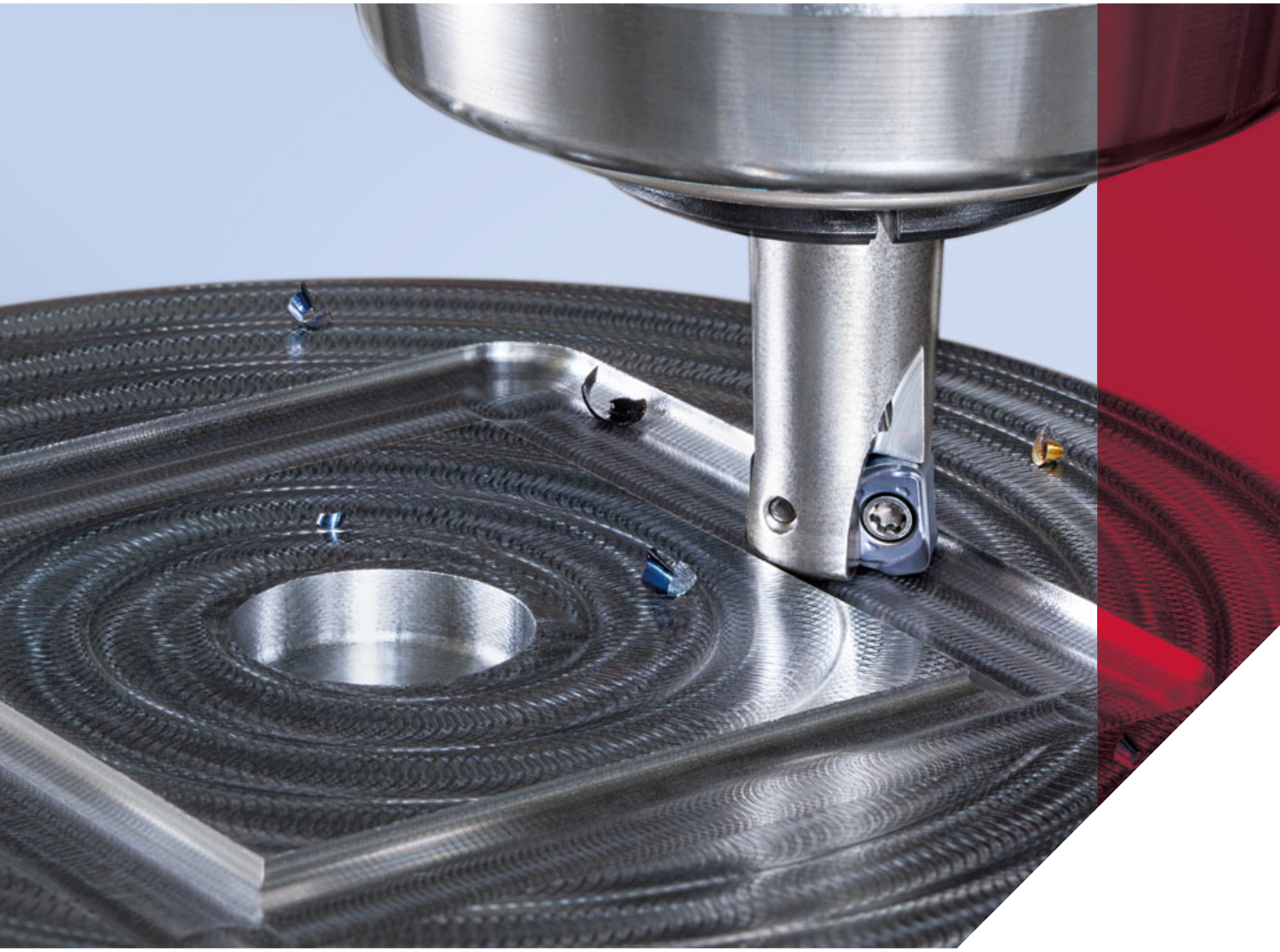


ADDFEED

High-feed milling

MAXIMUM SPEED AND EFFICIENCY AT MINIMUM SIZE

ADD more feed and speed in small milling operations for higher productivity



- Small diameter high-feed milling cutter for expanded application coverage, featuring cutter bodies as small as ø0.375".
- Close pitch cutter design enables high efficiency machining.
- Insert clamping screws are optimized to provide correct clamping force, sustaining high feed rates up to 0.047" per tooth.
- Unique insert design with cutting edge inclination provides gradual workpiece engagement for light cutting action, while guiding chips away from the cutting area.
- Ideal for slot milling and pocketing applications.

Lineup

Insert

- **LNMU02-MM**

Double-sided
4-edged insert
APMX = 0.020"

Chipbreaker

- **MM type**: Versatile geometry for low cutting forces

Grades

- **AH3225**: Wear and fracture resistant, suited for steel and stainless steel
- **AH130**: Fracture-resistant grade suited for stainless steel and Ti alloys
- **AH8015**: Wear-resistant grade ideal for hardened steel and cast iron

Cutter bodies

Shank type:

- **EXN02R...** (Short type)

DCX = ø0.375" - ø1.000"

- **EXN02R**L** (Long type)

DCX = ø0.375" - ø1.000"

Modular type:

- **HXN02R...**

DCX = ø8 - ø25 mm

Scan this QR code to find out more about this tool!

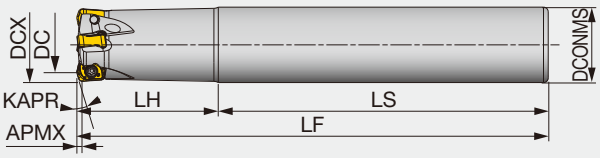
ADDFEED

CUTTER

EXN02

High feed endmill, shank type, for 4-corner double sided inserts

GAMP = +6°, GAMF = +5° ~ +11°



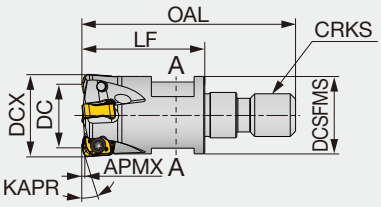
Inch	APMX	DCX	CICT	DC	DCONMS	LF	LH	LS	KAPR	WT (kg)	Air hole	Insert
EXN02R037U0037-01	0.020	0.375	1	0.212	0.375	3.000	0.750	2.250	17°	0.090	With	LNMU02…
EXN02R037U0037-01L	0.020	0.375	1	0.212	0.375	3.500	1.250	2.250	17°	0.090	With	LNMU02…
EXN02R050U0050-02	0.020	0.500	2	0.335	0.500	3.000	0.750	2.250	17°	0.150	With	LNMU02…
EXN02R050U0050-02L	0.020	0.500	2	0.335	0.500	4.250	2.000	2.250	17°	0.200	With	LNMU02…
EXN02R062U0062-03L	0.020	0.625	3	0.460	0.625	4.500	2.000	2.500	17°	0.330	With	LNMU02…
EXN02R062U0062-04	0.020	0.625	4	0.460	0.625	4.000	1.500	2.500	17°	0.310	With	LNMU02…
EXN02R075U0075-04L	0.020	0.750	4	0.585	0.750	6.500	3.500	3.000	17°	0.640	With	LNMU02…
EXN02R075U0075-05	0.020	0.750	5	0.585	0.750	5.000	2.000	3.000	17°	0.510	With	LNMU02…
EXN02R100U0100-06L	0.020	1.000	6	0.835	1.000	7.000	4.000	3.000	17°	1.280	With	LNMU02…
EXN02R100U0100-07	0.020	1.000	7	0.835	1.000	5.500	2.500	3.000	17°	1.040	With	LNMU02…

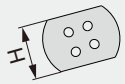
TUNGFLEX

HXN02

High feed endmill, modular type (TungFlex)

GAMP = +6°, GAMF = +5° ~ +11°



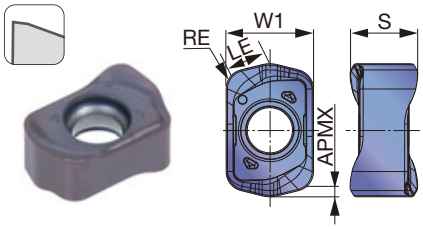


A-A cross section

Metric	APMX	DCX	CICT	DC	DCSFMS	OAL	LF	H	KAPR	CRKS	WT (kg)	Air hole	Insert
HXN02R008MM06-01	0.5	8	1	3.95	9.5	33.5	19	7	17°	M6	0.01	With	LNMU02…
HXN02R010MM06-02	0.5	10	2	5.85	9.5	31.5	17	7	17°	M6	0.01	With	LNMU02…
HXN02R012MM06-02	0.5	12	2	7.8	10	31.5	17	7	17°	M6	0.01	With	LNMU02…
HXN02R016MM08-04	0.5	16	4	11.8	14.5	40	23	10	17°	M8	0.03	With	LNMU02…
HXN02R020MM10-05	0.5	20	5	15.8	17.8	49	30	15	17°	M10	0.06	With	LNMU02…
HXN02R025MM12-07	0.5	25	7	20.8	23	52	30	17	17°	M12	0.1	With	LNMU02...

INSERT

LNMU02-MM (for general purpose)



P	Steel		★	☆
M	Stainless	★	☆	
K	Cast iron		☆	★
N	Non-ferrous			
S	Superalloy	★		★
H	Hard materials		☆	★

★ : First choice
☆ : Second choice

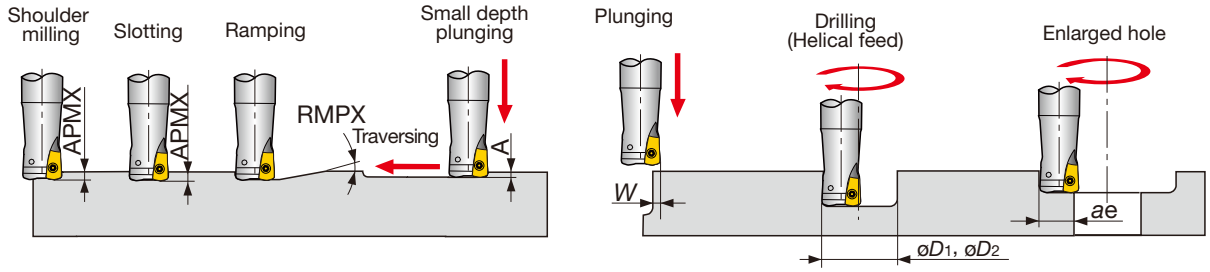
Designation	RE	APMX	Coated			LE	W1	S
			AH130	AH3225	AH8015			
LNMU0202ZER-MM	0.035	0.020	●	●	●	0.070	0.157	0.122

● : Lineup

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steels 1045, 1055, etc.		- 300HB	First choice	AH3225	330 - 980	0.008 - 0.047
			- 300HB	For wear resistance	AH8015	330 - 980	0.008 - 0.047
	Alloy steels 4140, etc.		- 300HB	First choice	AH3225	330 - 980	0.008 - 0.047
			- 300HB	For wear resistance	AH8015	330 - 980	0.008 - 0.047
	Prehardened steels NAK80, PX5, etc.		30 - 40HRC	First choice	AH8015	330 - 660	0.008 - 0.031
			30 - 40HRC	For impact resistance	AH3225	330 - 660	0.008 - 0.031
M	Stainless steels 304SS, etc.		- 200HB	First choice	AH130	330 - 490	0.008 - 0.031
K	Gray cast irons class25, etc.		150 - 250HB	First choice	AH8015	330 - 980	0.008 - 0.047
			150 - 250HB	For impact resistance	AH3225	330 - 980	0.008 - 0.047
	Ductile cast irons 80-50-06, etc.		150 - 250HB	First choice	AH8015	260 - 660	0.008 - 0.047
			150 - 250HB	For impact resistance	AH3225	260 - 660	0.008 - 0.047
S	Titanium alloy Ti-6Al-4V, etc.		- 40HRC	First choice	AH130	100 - 200	0.008 - 0.028
			- 40HRC	For wear resistance	AH8015	100 - 200	0.008 - 0.028
	Heat resistant alloy Inconel, Hastelloy, etc.		- 40HRC	First choice	AH8015	70 - 160	0.004 - 0.012
			- 40HRC	For impact resistance	AH3225	70 - 160	0.004 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	AH8015	260 - 490	0.004 - 0.020
			40 - 50HRC	For impact resistance	AH3225	260 - 490	0.004 - 0.020
		D2, etc.	50~60HRC	First choice	AH8015	160 - 230	0.004 - 0.012

APPLICATION RANGE



Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Min. machining øD1	Max. machining øD2	Max. cutting width in enlarged hole ae
EXN02R037U...	0.375	0.020	3.100	0.006	0.079	0.509	0.635	0.289
EXN02R050U...	0.500	0.020	1.780	0.006	0.079	0.760	0.886	0.413
EXN02R062U...	0.625	0.020	1.230	0.006	0.079	1.011	1.137	0.539
EXN02R075U...	0.750	0.020	0.950	0.006	0.079	1.262	1.388	0.664
EXN02R100U...	1.000	0.020	0.640	0.006	0.079	1.756	1.882	0.913

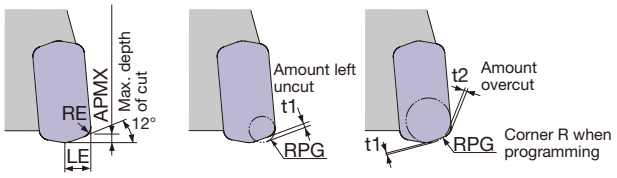
Metric	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Min. machining øD1	Max. machining øD2	Max. cutting width in enlarged hole ae
HXN02R008...	8	0.5	1.07	0.15	2	10	13.2	5.87
HXN02R010...	10	0.5	2.8	0.15	2	13.8	17	7.82
HXN02R012...	12	0.5	1.9	0.15	2	17.8	21	9.81
HXN02R016...	16	0.5	1.2	0.15	2	25.8	29	13.8
HXN02R020...	20	0.5	0.88	0.15	2	33.8	37	17.8
HXN02M025...	25	0.5	0.66	0.15	2	43.8	47	22.8

Tool dia.: DCX (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: *ap* = 0.002", Number of teeth: CICT

ø0.375", CICT = 1		ø0.500", CICT = 2		ø0.625"			ø0.750"			ø1.000"		
n	*Vf*	*n*	*Vf*	*n*	*Vf*		*n*	*Vf*		*n*	*Vf*	
					CICT = 3	CICT = 4		CICT = 4	CICT = 5		CICT = 6	CICT = 7
6,720	190	5,040	290	4,030	340	460	3,360	380	480	2,520	430	500
					Vc = 660 sfm, *fz* = 0.028 ipt							
6,720	190	5,040	290	4,030	340	460	3,360	380	480	2,520	430	500
					Vc = 660 sfm, *fz* = 0.028 ipt							
4,990	100	3,740	150	3,000	180	240	2,500	200	250	1,870	230	270
					Vc = 490 sfm, *fz* = 0.020 ipt							
4,180	90	3,130	130	2,510	160	210	2,090	170	210	1,570	190	220
					Vc = 410 sfm, *fz* = 0.020 ipt							
6,720	190	5,040	290	4,030	340	460	3,360	380	480	2,520	430	500
					Vc = 660 sfm, *fz* = 0.028 ipt							
4,990	140	3,740	210	3,000	260	340	2,500	280	350	1,870	320	370
					Vc = 490 sfm, *fz* = 0.028 ipt							
1,530	40	1,150	50	920	60	80	760	70	80	570	70	80
					Vc = 150 sfm, *fz* = 0.020 ipt							
1,220	10	920	20	730	20	30	610	20	30	460	30	30
					Vc = 120 sfm, *fz* = 0.008 ipt							
3,870	50	2,900	70	2,320	90	120	1,940	100	120	1,450	110	130
					Vc = 380 sfm, *fz* = 0.012 ipt							
2,040	20	1,530	30	1,220	30	40	1,020	40	50	760	40	50
					Vc = 200 sfm, *fz* = 0.008 ipt							

TOOL GEOMETRY ON PROGRAMMING

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 0.030". If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t1) and overcut (t2).



Max. depth of cut APMX (in)	Corner radius RE (in)	LE (in)	Corner R when programming RPG	Amount left uncut t1 (in)	Amount overcut t2 (in)
0.020	**0.035**	**0.079**	**0.030**	**0.014**	**0**
0.020	0.035	0.079	0.050	0.008	0.001
0.020	0.035	0.079	0.075	0.001	0.010

*Recommended

DOFEED TRI

High-feed milling

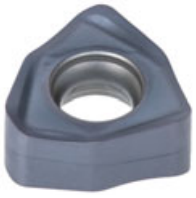
HIGH PERFORMANCE AND PROFITABILITY IN HIGH-FEED MILLING OPERATIONS

ADD more cutting edges per insert to your machining operations

- The cutter features a small approach angle, providing smooth access into the material, making it an ideal tool for long overhang setups.
- Steep ramping capability makes the cutter ideal for pocketing and cavity milling applications.
- Large effective cutter diameter leaves less uncut material.

Lineup

Insert
- **WXMU03-MM**
Double-sided
6-edged insert
APMX = 0.039"



Chipbreaker
- **MM type**: Versatile geometry for low cutting forces

Grades
- **AH3225**: Provides superior resistance to wear and fracture, ideal for steel and stainless steel
- **AH8015**: Wear resistant grade, suited for hardened steel and cast iron

Cutter bodies
Bore type:
- **TXWX03...**
DCX = ø1.500" - ø2.000"

Shank type:
- **EXWX03...** (Short type)
DCX = ø0.625" - ø1.250"
- **EXWX03**L** (Long type)
DCX = ø0.625" - ø1.250"

Modular type:
- **HXWX03...**
DCX = ø16 - ø32 mm

Scan this QR code to find out more about this tool!

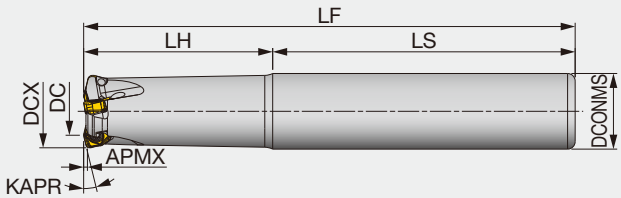
DOFEED TRI

CUTTER

EXWX03

High feed endmill, shank type, with screw clamp system, for 6-corner double sided inserts

GAMP = +23°, GAMF = -7.9° ~ -6.2°



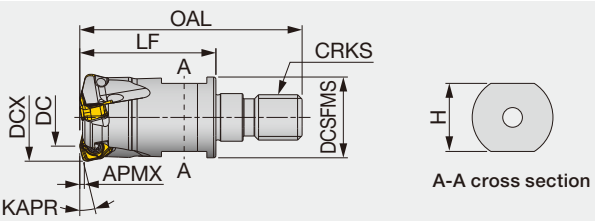
Inch	APMX	DCX	CICT	DC	DCONMS	LS	LH	LF	KAPR	WT(lb)	Air hole	Insert
EXWX03U0.62C0.62R02	0.039	0.625	2	0.3448	0.625	2.750	1.250	4.000	12°	0.31	With	WXMU03...
EXWX03U0.62C0.62R02L	0.039	0.625	2	0.3448	0.625	4.000	2.000	6.000	12°	0.46	With	WXMU03...
EXWX03U0.75C0.75R03	0.039	0.750	3	0.4645	0.750	3.000	2.000	5.000	12°	0.50	With	WXMU03...
EXWX03U0.75C0.75R03L	0.039	0.750	3	0.4645	0.750	3.000	3.500	6.500	12°	0.63	With	WXMU03...
EXWX03U1.00C1.00R04	0.039	1.000	4	0.7125	1.000	3.000	2.500	5.500	12°	1.05	With	WXMU03...
EXWX03U1.00C1.00R04L	0.039	1.000	4	0.7125	1.000	3.000	4.000	7.000	12°	1.31	With	WXMU03...
EXWX03U1.25C1.25R05	0.039	1.250	5	0.9606	1.250	3.000	3.000	6.000	12°	1.85	With	WXMU03...
EXWX03U1.25C1.25R05L	0.039	1.250	5	0.9606	1.250	3.000	5.000	8.000	12°	2.44	With	WXMU03...

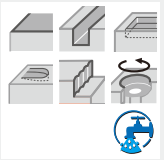
TUNGFLEX

HXWX03-M

High feed endmill, modular type (TungFlex)

GAMP = +23°, GAMF = -7.9° ~ -6.2°



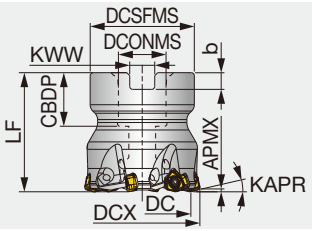


Metric	APMX	DCX	CICT	DC	OAL	LF	H	DCSFMS	KAPR	CRKS	WT(kg)	Air hole	Insert
HXWX03M016M08R02	1	16	2	8.9	42	25	10	12.8	12°	M8	0.03	With	WXMU03...
HXWX03M020M10R03	1	20	3	12.8	49	30	15	17.8	12°	M10	0.06	With	WXMU03...
HXWX03M025M12R04	1	25	4	17.8	57	35	17	20.8	12°	M12	0.1	With	WXMU03...
HXWX03M032M16R05	1	32	5	24.7	63	40	22	28.8	12°	M16	0.21	With	WXMU03...

TXWX03

High feed mill, with screw clamp system, for 6-corner double sided inserts

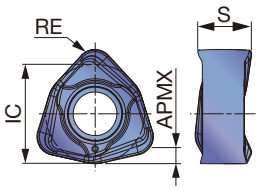
GAMP = +23°, GAMF = -6.2° ~ -6.1°



Inch	APMX	DCX	CICT	DC	DCSFMS	DCONMS	CBDP	LF	b	KWW	KAPR	WT(lb)	Air hole	Insert
TXWX03U1.50B0.50R05	0.039	1.500	6	1.217	1.457	0.500	0.630	1.575	0.157	0.258	12°	0.53	With	WXMU03...
TXWX03U2.00B0.75R08	0.039	2.000	8	1.713	1.693	0.750	0.750	1.969	0.197	0.315	12°	0.96	With	WXMU03...

INSERT

WXMU0303-MM



P	Steel	★	☆
M	Stainless	★	
K	Cast iron	☆	★
N	Non-ferrous		
S	Superalloy	☆	★
H	Hard materials		★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated		IC	S
			AH3225	AH8015		
WXMU0303ZER-MM	0.047	0.039	●	●	0.039	0.143

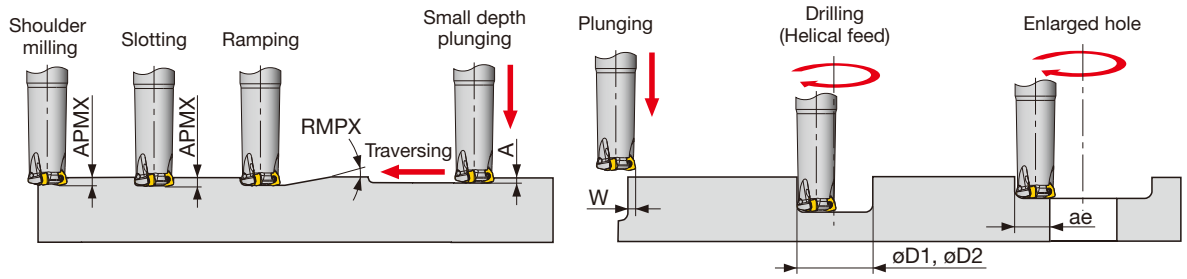
● : Lineup

DOFEED TRI

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Chipbreaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.		- 300HB	First choice	AH3225	MM	328 - 984	0.020 - 0.059
				For wear resistance	AH8015			
	Carbon steel, Alloy steel 1055, etc.		- 300HB	First choice	AH3225	MM	328 - 820	0.020 - 0.059
				For wear resistance	AH8015			
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3225	MM	328 - 656	0.020 - 0.047
				For wear resistance	AH8015			
M	Austenitic Stainless steel 304SS, 316SS, etc.		- 200HB	First choice	AH3225	MM	262 - 492	0.020 - 0.039
	Martensitic Stainless steel 420SS, etc.		- 200HB	First choice	AH3225	MM	164 - 394	0.012 - 0.039
K	Grey cast iron Class 25, Class 30, etc.		150 - 250HB	First choice	AH8015	MM	328 - 984	0.020 - 0.059
				For impact resistance	AH3225			
	Ductile cast iron 60-40-18, etc.		150 - 250HB	First choice	AH8015	MM	262 - 656	0.020 - 0.059
				For impact resistance	AH3225			
S	Titanium alloy Ti-6Al-4V, etc.		- 40HRC	First choice	AH3225	MM	98 - 197	0.012 - 0.028
	Superalloys Inconel718, etc.		- 40HRC	First choice	AH8015	MM	66 - 164	0.004 - 0.012
H	Hardened steel	H-13, etc.	40 - 50HRC	First choice	AH8015	MM	262 - 492	0.004 - 0.020
				For impact resistance	AH3225			
		D2, etc.	50 - 60HRC	First choice	AH8015	MM	164 - 230	0.001 - 0.004

APPLICATION RANGE

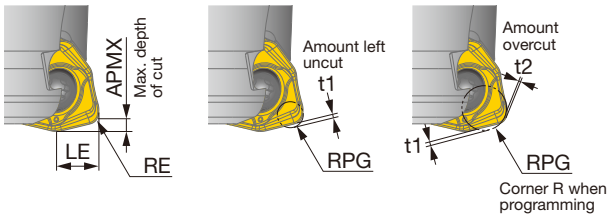


Designation	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Min. machinable hole dia. øD1	Max. machinable hole dia. øD2	Max. cutting width in enlarged hole ae
EXWX03U0.62C0.62R02	0.625	0.0394	3.600	0.012	0.157	0.979	1.176	0.468
EXWX03U0.62C0.62R02L	0.625	0.0394	3.600	0.012	0.157	0.979	1.176	0.468
EXWX03U0.75C0.75R03	0.750	0.0394	2.300	0.012	0.157	1.196	1.511	0.593
EXWX03U0.75C0.75R03L	0.750	0.0394	2.300	0.012	0.157	1.196	1.511	0.593
EXWX03U1.00C1.00R04	1.000	0.0394	1.400	0.012	0.157	1.630	1.898	0.843
EXWX03U1.00C1.00R04L	1.000	0.0394	1.400	0.012	0.157	1.630	1.898	0.843
EXWX03U1.25C1.25R05	1.250	0.0394	1.000	0.012	0.157	2.116	2.392	1.093
EXWX03U1.25C1.25R05L	1.250	0.0394	1.000	0.012	0.157	2.116	2.392	1.093
TXWS03U150W0.75R06	1.500	0.0394	0.700	0.012	0.157	2.666	2.902	1.343
TXWS03U2.00W0.75R08	2.000	0.0394	0.500	0.012	0.157	3.457	3.850	1.843

Tool dia: DCX (in), Number of revolution: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: APMX = 0.039", Number of teeth: CICT											
ø0.625", CICT = 2		ø0.750", CICT = 3		ø1.000", CICT = 4		ø1.250", CICT = 5		ø1.500", CICT = 6		ø2.000", CICT = 8	
n	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*
4034	315	3361	393	2521	393	2017	393	1681	393	1261	393
					Vc = 660 sfm, *fz* = 0.039 ipt						
4034	315	3361	393	2521	393	2017	393	1681	393	1261	393
					Vc = 660 sfm, *fz* = 0.039 ipt						
2995	168	2496	210	1872	210	1497	210	1248	210	936	210
					Vc = 490 sfm, *fz* = 0.028 ipt						
2384	95	1986	119	1490	119	1192	119	993	119	745	119
					Vc = 390 sfm, *fz* = 0.020 ipt						
2017	48	1681	61	1261	61	1008	60	840	60	630	60
					Vc = 330 sfm, *fz* = 0.012 ipt						
4034	315	3361	393	2521	393	2017	393	1681	393	1261	393
					Vc = 660 sfm, *fz* = 0.039 ipt						
2995	234	2496	292	1872	292	1497	292	1248	292	936	292
					Vc = 490 sfm, *fz* = 0.039 ipt						
801	26	667	32	500	32	400	32	334	32	250	32
					Vc = 131 sfm, *fz* = 0.016 ipt						
599	10	499	12	374	12	299	12	250	12	187	12
					Vc = 98 sfm, *fz* = 0.008 ipt						
2384	57	1986	71	1490	72	1192	72	993	71	745	72
					Vc = 390 sfm, *fz* = 0.012 ipt						
1204	10	1003	12	752	12	602	12	502	12	376	12
					Vc = 197 sfm,, *fz* = 0.004 ipt						

TOOL GEOMETRY ON PROGRAMMING

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 0.059".
If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t1) and overcut (t2).



Max. depth of cut APMX (in)	Corner radius RE (in)	LE (in)	Corner R when programming RPG	Amount left uncut t1 (in)	Amount overcut t2 (in)
0.039	0.047	0.138	0.039	0.022	-
0.039	**0.047**	**0.138**	**0.059**	**0.018**	**-**
0.039	0.047	0.138	0.079	0.014	0.006
0.039	0.047	0.138	0.098	0.008	0.020

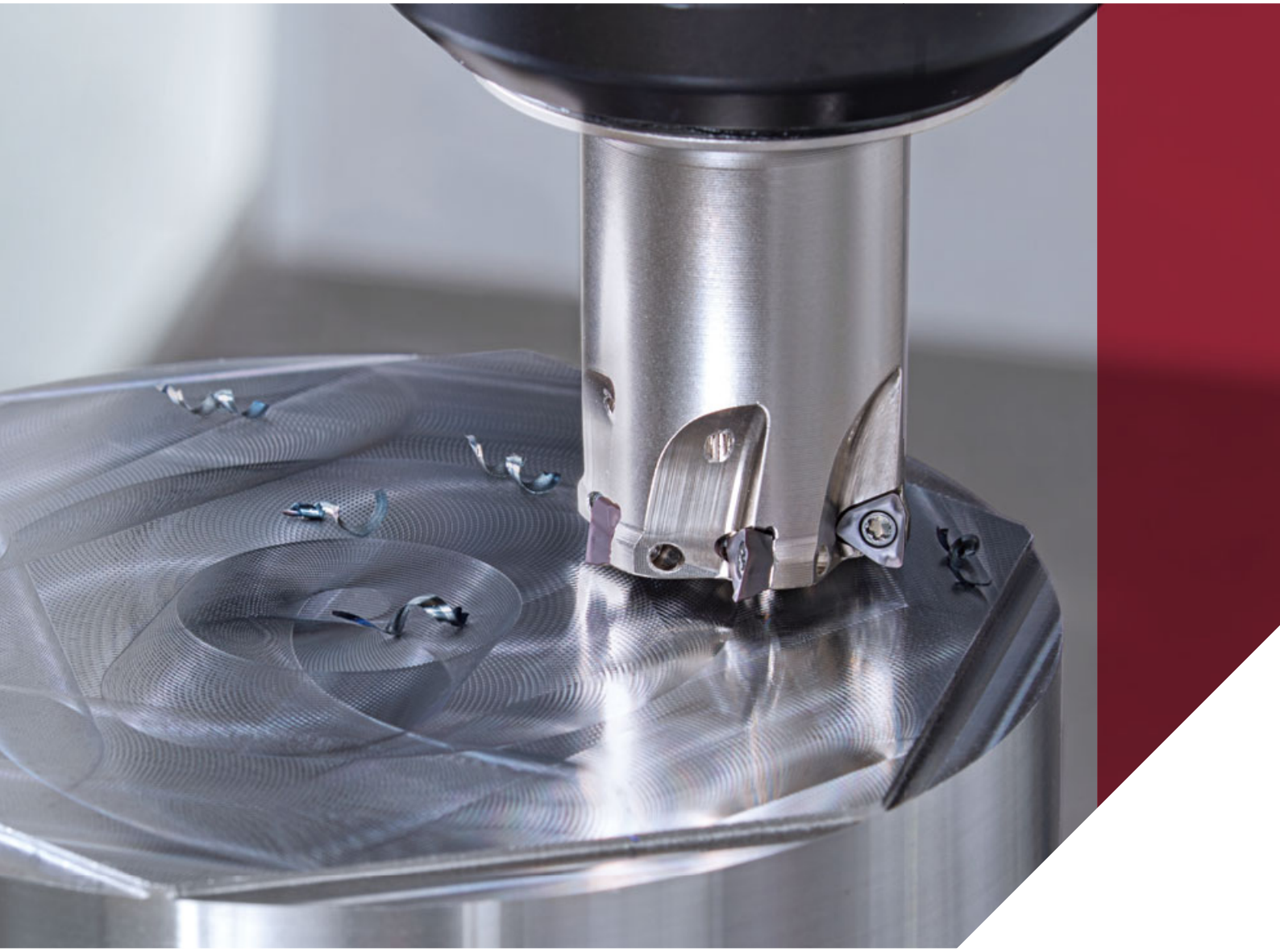
*Recommended

TUNG-TRI

Square-shoulder milling

RIGIDITY AND RELIABILITY FOR SMALL SHOULDER MILLING OPERATIONS

ADD Productivity and surface quality with optimized wiper insert design



- Small 90° shoulder milling cutter down to ø8 mm (ø0.315") for maximum performance.
- Close-pitch cutter for high efficiency machining.
- The thick core cutter diameter provides increased rigidity.

Lineup

Insert

- **TOMT04-MM**

Single-sided
3 edged insert
APMX = 0.138"
RE = 0.016", 0.031"

Chipbreaker

- **MM type**: Versatile geometry for low cutting forces

Cutter bodies

Shank type:

- **EPA04R...** (Short type)

DC = ø8 - ø25 mm

- **EPA04R**L** (Long type)

DC = ø10 - ø25 mm

Grades

- **AH3225**: Provides superior resistance to wear and fracture, ideal for steel and stainless steel
- **AH8015**: Wear resistant grade, suited for hardened steel and cast iron
- **AH120**: Provides a good balance of wear and chipping resistance, ideal grade for cast iron machining

Scan this QR code to find out more about this tool!

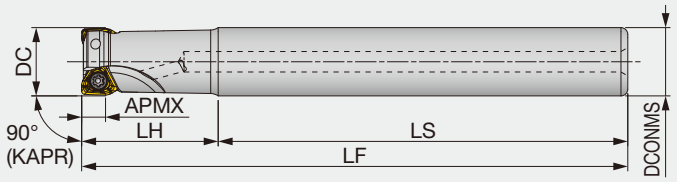
TUNG-TRI

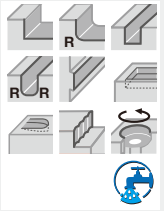
CUTTER

EPA04

High precision square shoulder endmill, shank type, with screw clamp system, for triangular inserts

GAMP = +12.1°~ +12.2°, GAMF = -14.2°~ -18.3°

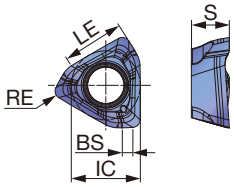




Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPA04R008M08.0-01	3.5	8	1	8	48	12	60	0.02	with	TOMT04...
EPA04R010M10.0-02	3.5	10	2	10	60	20	80	0.04	with	TOMT04...
EPA04R010M10.0-02L	3.5	10	2	10	65	35	100	0.05	with	TOMT04...
EPA04R012M12.0-02	3.5	12	2	12	60	20	80	0.06	with	TOMT04...
EPA04R012M12.0-03	3.5	12	3	12	60	20	80	0.06	with	TOMT04...
EPA04R012M12.0-02L	3.5	12	2	12	85	35	120	0.09	with	TOMT04...
EPA04R016M16.0-03	3.5	16	3	16	70	20	90	0.12	with	TOMT04...
EPA04R016M16.0-04	3.5	16	4	16	70	20	90	0.12	with	TOMT04...
EPA04R016M16.0-03L	3.5	16	3	16	105	35	140	0.19	with	TOMT04...
EPA04R020M20.0-04	3.5	20	4	20	70	30	100	0.21	with	TOMT04...
EPA04R020M20.0-05	3.5	20	5	20	70	30	100	0.21	with	TOMT04...
EPA04R020M20.0-04L	3.5	20	4	20	165	35	200	0.44	with	TOMT04...
EPA04R025M25.0-05	3.5	25	5	25	80	35	115	0.39	with	TOMT04...
EPA04R025M25.0-06	3.5	25	6	25	80	35	115	0.39	with	TOMT04...
EPA04R025M25.0-04L	3.5	25	4	25	160	40	200	0.7	with	TOMT04...

INSERTS

TOMT-MM



		AH3225	AH120	AH8015
P	Steel	★	☆	
M	Stainless	★		
K	Cast iron		★	
N	Non-ferrous			
S	Superalloys	★		★
H	Hard materials			★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH3225	Coated AH120	Coated AH8015	LE	IC	S	BS
TOMT040204PXER-MM	0.016	0.138	●	●	●	0.142	0.157	0.087	0.024
TOMT040208PXER-MM	0.031	0.138	●	●	●	0.142	0.157	0.087	0.008

● : Lineup

STANDARD CUTTING CONDITIONS

EPA04

ISO	Workpiece materials		Hardness	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.		- 200 HB	AH3225	328 - 820	0.002 - 0.005
P	Carbon steel and alloy steel 1055, etc.		- 300 HB	AH3225	328 - 755	0.002 - 0.005
P	Prehardend steel NAK80, PX5, etc.		30 - 40 HRC	AH3225	328 - 591	0.002 - 0.004
M	Stainless steel 304SS, etc.		-	AH3225	295 - 656	0.002 - 0.004
K	Grey cast iron Class 25, etc.		150 - 250 HB	AH120	328 - 984	0.002 - 0.005
K	Ductile cast iron 65-45-12, etc.		150 - 250 HB	AH120	328 - 656	0.002 - 0.005
S	Titanium alloys Ti-6Al-4V, etc.		-	AH3225	66 - 197	0.002 - 0.003
S	Heat-resistant alloys Inconel 718, etc.		-	AH8015	66 - 131	0.002 - 0.003
H	Hardened steel	H-13, etc.	40 - 50 HRC	AH8015	164 - 492	0.002 - 0.003
H		D2, etc.	50 - 60 HRC	AH8015	131 - 230	0.002 - 0.003

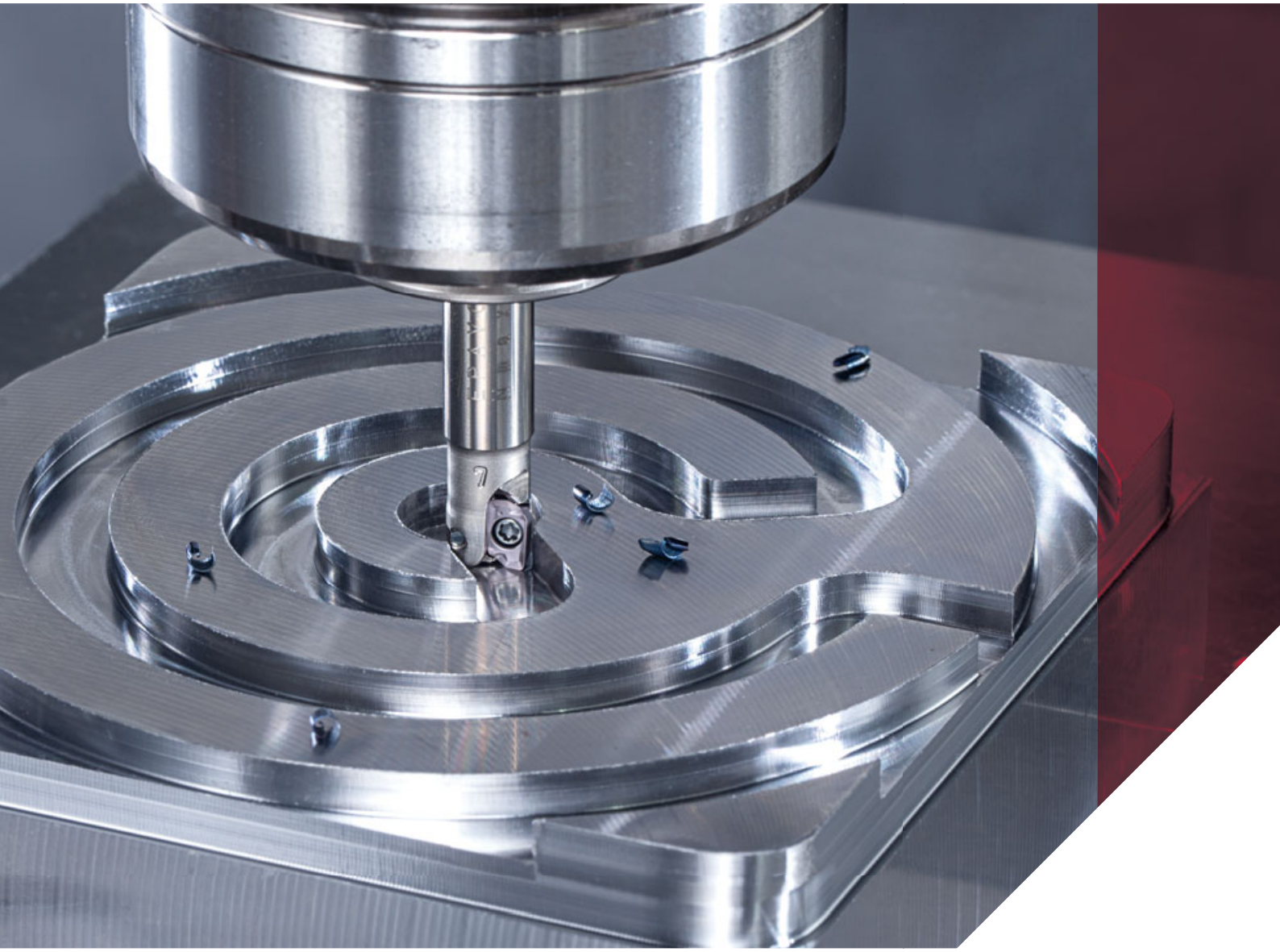
· Remove excessive chip accumulation with an air blast.
· For the operation with depth of cut which varies (ex.casting skin) and machining of workpiece materials with interrupted surface, the feed per tooth (*fz*) should be set to the lower recommended value shown in the above table.
· Cutting conditions may be limited depending on machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

TUNGFORCE TUNGFREC

Square-shoulder milling

NEW SIZE-04 AND -12 INSERTS FOR ENHANCED SHOULDER MILLING CAPABILITY

ADD a broadened range of unique V-bottom shape inserts for higher productivity



- The use of unique V-bottom shape inserts enables the cutter body to have a thicker core size and insert backing for higher tool rigidity.
- Close pitch cutter design for high efficiency milling.
- Light cutting action with high edge-line security thanks to large rake angle and strong cutting edge design.
- **Size-04 inserts** can be used for minimum cutter diameters from 0.236" (6 mm).
- Large chip pockets for excellent chip evacuation.
- **Size-06 inserts** precision ground inserts for high part quality. Creates virtually step-free wall and bottom surfaces. Inserts available in R0 nose radii.
- **Size-12 inserts** offer a variety of nose radii ranging from 0.016" (0.4 mm) to 0.118" (3 mm) and geometries including AM geometry for aluminum, covering a broader application range.

Lineup

Inserts

- **AVMT04-MM** : APMX = 0.157", RE = 0.016", 0.031"
- **AVMT12-MM** : APMX = 0.453", RE = 0.016" - 0.063"
  APMX = 0.413", RE = 0.079", 0.118"
- **AVGT12-AM** : APMX = 0.453", RE = 0.016", 0.031"

Chipbreakers

- **MM type**: Versatile geometry for low cutting forces
- **AM type**: For non-ferrous applications

Grades

- **AH3225**: Superior resistance to wear and fracture, ideal for steel and stainless steel
- **AH120**: Excellent edge chipping resistance, suited for cast iron
- **AH130**: Demonstrates high wear and machining of titanium alloy or heat resistant alloys
- **T1215**: Wear-resistant grade suitable for cast iron
- **T3225**: Wear-resistant grade suitable for steel and stainless steel
- **KS05F**: Provides excellent edge-line security and wear resistance, perfect for non-ferrous applications

Cutter bodies

Shank type:
- **EPAV04...** (Short type)
DC = ø6 - ø16 mm
- **EPAV04**L** (Long type)
DC = ø8 - ø16 mm
- **EPAV06...**
DC = ø0.313" - ø1.000"
- **EPAV12...** (Short type)
DC = ø0.625" - ø1.250"
- **EPAV12**L** (Long type)
DC = ø0.625" - ø1.250"

Bore type:
- **TPAV06...**
DC = ø40 mm
- **TPAV12...**
DC = ø1.500"

Modular type:
- **HPAV06...**
DC = ø10 - ø16 mm
- **HPAV12...**
DC = ø16 - ø40 mm

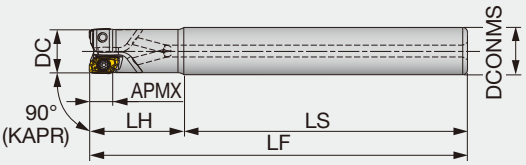
Scan this QR code to find out more about this tool!

CUTTER

EPAV04

High-end square shoulder endmill, with screw clamp system

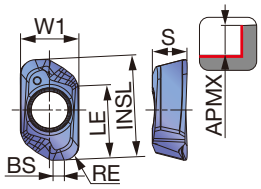
GAMP = +6.0°~ +7.6°, GAMF = -37.1°~ -32.4°



Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPAV04M006C06.0R01	4	6	1	6	48	12	60	0.01	With	AVMT04...
EPAV04M008C08.0R02	4	8	2	8	48	12	60	0.02	With	AVMT04...
EPAV04M008C08.0R02L	4	8	2	8	60	20	80	0.03	With	AVMT04...
EPAV04M010C10.0R02	4	10	2	10	60	20	80	0.04	With	AVMT04...
EPAV04M010C10.0R03	4	10	3	10	60	20	80	0.04	With	AVMT04...
EPAV04M010C10.0R02L	4	10	2	10	65	35	100	0.05	With	AVMT04...
EPAV04M012C12.0R03	4	12	3	12	60	20	80	0.06	With	AVMT04...
EPAV04M012C12.0R04	4	12	4	12	60	20	80	0.06	With	AVMT04...
EPAV04M012C12.0R03L	4	12	3	12	85	35	120	0.09	With	AVMT04...
EPAV04M016C16.0R04	4	16	4	16	70	20	90	0.12	With	AVMT04...
EPAV04M016C16.0R05	4	16	5	16	70	20	90	0.12	With	AVMT04...
EPAV04M016C16.0R04L	4	16	4	16	105	35	140	0.19	With	AVMT04...

INSERT

AVMT04-MM



		Coated	
		AH120	AH3225
P	Steel	☆	★
M	Stainless		★
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	☆
H	Hard materials	★	

★ : First choice
☆ : Second choice

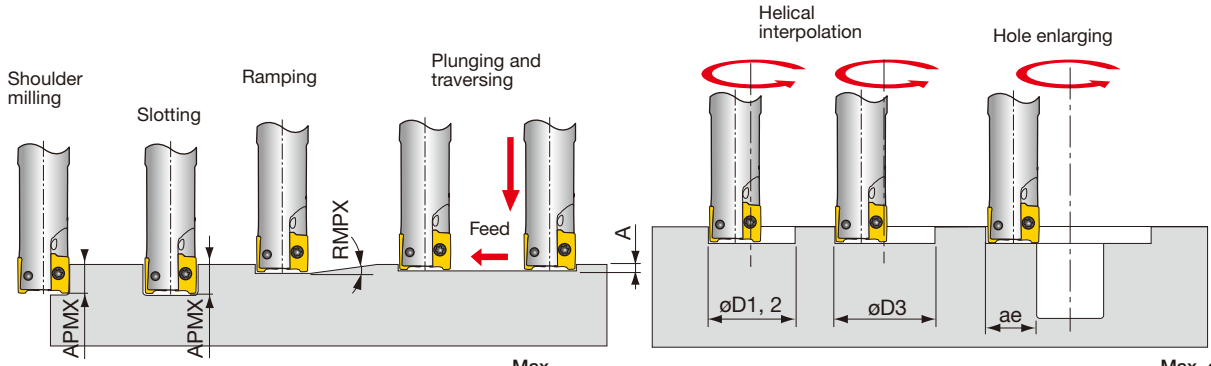
Designation	RE	APMX	W1	INSL	S	BS	LE
AVMT040204PPER-MM	0.016	0.157	0.138	0.238	0.083	0.039	0.173
AVMT040208PPER-MM	0.031	0.157	0.138	0.238	0.083	0.024	0.173

● : Lineup

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed Vc (sfm)	Feed per tooth fz (ipt)
P	Low carbon steel 1015, etc.		- 200 HB	First choice	AH3225	328 - 984	0.002 - 0.005
P	Carbon steel and alloy steel 1055, etc.		- 300 HB	First choice	AH3225	328 - 820	0.002 - 0.005
P	Prehardend steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3225	328 - 656	0.002 - 0.004
M	Stainless steel 304SS, etc.		-	First choice	AH3225	262 - 591	0.002 - 0.004
K	Grey cast iron Class 25, etc.		150 - 250 HB	First choice	AH120	328 - 984	0.002 - 0.005
K	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250 HB	First choice	AH120	328 - 820	0.002 - 0.005
S	Titanium alloys Ti-6Al-4V, etc.		-	First choice	AH3225	66 - 197	0.002 - 0.003
S	Superalloys Inconel718, etc.		-	First choice	AH120	66 - 131	0.002 - 0.003
H	Hardened Steel	H-13, etc.	40 - 50 HRC	First choice	AH120	164 - 492	0.002 - 0.003
H	Hardened Steel	D2, etc.	50 - 60 HRC	First choice	AH120	131 - 230	0.002 - 0.003

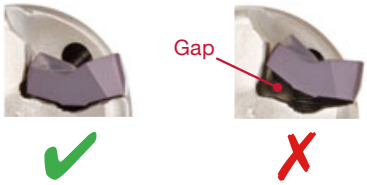
MACHINING APPLICATIONS



		Max. depth of cut	Max. ramping angle	Max. plunging	Min. machining	Max. machining		Max. cutting width in enlarging
Metric	DC	APMX	RMPX	A	øD1	øD2	øD3*	ae
EPAV04M006C06.0R01	6	4	0.4	0.03	9.3	11.6	9.9	5.5
EPAV04M008C08.0R02	8	4	0.5	0.04	12.7	15.6	13.6	7.5
EPAV04M008C08.0R02L	8	4	0.5	0.04	12.7	15.6	13.6	7.5
EPAV04M010C10.0R02	10	4	4.1	0.4	15.3	19.6	17.5	9.5
EPAV04M010C10.0R03	10	4	1.7	0.2	16.1	19.6	17.5	9.5
EPAV04M010C10.0R02L	10	4	4.1	0.4	16.1	19.6	17.5	9.5
EPAV04M012C12.0R03	12	4	2.7	0.4	19.3	23.6	21.5	11.5
EPAV04M012C12.0R04	12	4	1.3	0.2	20.1	23.6	21.5	11.5
EPAV04M012C12.0R03L	12	4	2.7	0.4	19.3	23.6	21.5	11.5
EPAV04M016C16.0R04	16	4	2	0.4	27.2	31.6	29.5	15.5
EPAV04M016C16.0R05	16	4	2	0.4	27.2	31.6	29.5	15.5
EPAV04M016C16.0R04L	16	4	2	0.4	27.2	31.6	29.5	15.5

*Flat bottom hole

When clamping the insert, please confirm that there is no gap between the cutter body and the insert as shown in the picture.



Estimation of chip thickness - calculated from feed per tooth (*fz*) and width of cut (*ae*)

Recommended chip thickness

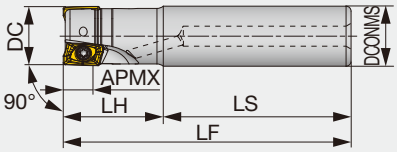
	Cutting width (%): ae (in) / Tool dia.: DC (in)														
Feed per tooth *fz* (ipt)	1%	2%	2.5%	3%	4%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50% -
0.001	0.0002	0.0003	0.0004	0.0004	0.0005	0.0005	0.0007	0.0008	0.0009	0.0010	0.0011	0.0011	0.0011	0.0012	0.0012
0.002	0.0004	0.0006	0.0006	0.0007	0.0008	0.0009	0.0012	0.0014	0.0016	0.0017	0.0018	0.0019	0.0019	0.0020	0.0020
0.003	0.0006	0.0009	0.0010	0.0011	0.0012	0.0014	0.0019	0.0022	0.0025	0.0027	0.0029	0.0030	0.0031	0.0031	0.0031
0.004	0.0008	0.0011	0.0012	0.0013	0.0015	0.0017	0.0024	0.0028	0.0031	0.0034	0.0036	0.0037	0.0039	0.0039	0.0039
0.005	0.0009	0.0013	0.0015	0.0016	0.0019	0.0020	0.0028	0.0034	0.0038	0.0041	0.0043	0.0045	0.0046	0.0047	0.0047
0.006	0.0012	0.0017	0.0019	0.0020	0.0023	0.0026	0.0035	0.0042	0.0047	0.0051	0.0054	0.0056	0.0058	0.0059	0.0059
0.007	0.0014	0.0020	0.0022	0.0024	0.0028	0.0031	0.0043	0.0051	0.0057	0.0061	0.0065	0.0068	0.0069	0.0070	0.0071
0.008	0.0016	0.0022	0.0024	0.0027	0.0031	0.0034	0.0047	0.0056	0.0063	0.0068	0.0072	0.0075	0.0077	0.0078	0.0079
0.009	0.0017	0.0024	0.0027	0.0030	0.0034	0.0038	0.0052	0.0062	0.0069	0.0075	0.0080	0.0083	0.0085	0.0086	0.0087
0.010	0.0020	0.0028	0.0031	0.0033	0.0039	0.0043	0.0059	0.0070	0.0079	0.0085	0.0090	0.0094	0.0096	0.0098	0.0098
0.011	0.0022	0.0031	0.0034	0.0038	0.0043	0.0048	0.0066	0.0079	0.0088	0.0095	0.0101	0.0105	0.0108	0.0110	0.0110
0.012	0.0024	0.0033	0.0037	0.0040	0.0046	0.0052	0.0071	0.0084	0.0094	0.0102	0.0108	0.0113	0.0116	0.0117	0.0118
0.016	0.0031	0.0044	0.0049	0.0054	0.0062	0.0069	0.0094	0.0113	0.0126	0.0136	0.0144	0.0150	0.0154	0.0157	0.0157

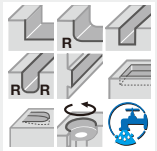
CUTTER

EPAV06

Square shoulder endmill, shank type, with screw clamp system

GAMP = +6°~ +7.7°, GAMF = -37.1°~ -30°





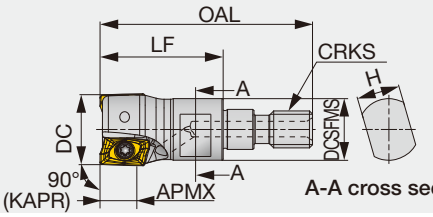
Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Insert
EPAV06U0.31C0.37R01	0.236	0.313	1	0.375	2.463	0.787	3.250	0.09	AVGT06...
EPAV06U0.37C0.37R01	0.236	0.375	1	0.375	2.463	0.787	3.250	0.09	AVGT06...
EPAV06U0.37C0.37R01L	0.236	0.375	1	0.375	2.622	1.378	4.000	0.11	AVGT06...
EPAV06U0.50C0.50R02	0.236	0.500	2	0.500	2.463	0.787	3.250	0.15	AVGT06...
EPAV06U0.50C0.50R03	0.236	0.500	3	0.500	2.463	0.787	3.250	0.15	AVGT06...
EPAV06U0.50C0.50R02L	0.236	0.500	2	0.500	3.388	1.362	4.750	0.22	AVGT06...
EPAV06U0.62C0.62R03	0.236	0.625	3	0.625	2.713	0.787	3.500	0.26	AVGT06...
EPAV06U0.62C0.62R04	0.236	0.625	4	0.625	2.713	0.787	3.500	0.26	AVGT06...
EPAV06U0.62C0.62R03L	0.236	0.625	3	0.625	4.122	1.378	5.500	0.42	AVGT06...
EPAV06U0.75C0.62R04	0.236	0.750	4	0.625	2.815	1.185	4.000	0.33	AVGT06...
EPAV06U0.75C0.75R04	0.236	0.750	4	0.750	2.815	1.185	4.000	0.44	AVGT06...
EPAV06U0.75C0.75R05	0.236	0.750	5	0.750	2.815	1.185	4.000	0.44	AVGT06...
EPAV06U0.75C0.75R04L	0.236	0.750	4	0.750	6.500	1.375	7.875	0.90	AVGT06...
EPAV06U1.00C0.75R06	0.236	1.000	6	0.750	3.125	1.375	4.500	0.55	AVGT06...
EPAV06U1.00C1.00R05	0.236	1.000	5	1.000	3.125	1.375	4.500	0.93	AVGT06...
EPAV06U1.00C1.00R06	0.236	1.000	6	1.000	3.125	1.375	4.500	0.93	AVGT06...
EPAV06U1.00C1.00R04L	0.236	1.000	4	1.000	6.425	1.575	8.000	1.68	AVGT06...

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Insert
EPAV06M008C10.0R01	6	8	1	10	60	20	80	0.04	AVGT06...
EPAV06M010C10.0R02	6	10	2	10	60	20	80	0.04	AVGT06...
EPAV06M010C10.0R02L	6	10	2	10	65	35	100	0.06	AVGT06...
EPAV06M010C08.0R02L	6	10	2	8	80	20	100	0.04	AVGT06...
EPAV06M012C12.0R02	6	12	2	12	60	20	80	0.06	AVGT06..
EPAV06M012C12.0R03	6	12	3	12	60	20	80	0.06	AVGT06...
EPAV06M012C12.0R02L	6	12	2	12	85	35	120	0.09	AVGT06...
EPAV06M012C10.0R02L	6	12	2	10	100	20	120	0.07	AVGT06...
EPAV06M012C10.0R03	6	12	3	10	60	20	80	0.04	AVGT06...
EPAV06M014C12.0R03	6	14	3	12	60	20	80	0.07	AVGT06...
EPAV06M014C12.0R03L	6	14	3	12	120	20	140	0.11	AVGT06...
EPAV06M016C16.0R03	6	16	3	16	70	20	90	0.12	AVGT06...
EPAV06M016C16.0R04	6	16	4	16	70	20	90	0.12	AVGT06...
EPAV06M016C16.0R03L	6	16	3	16	105	35	140	0.20	AVGT06...
EPAV06M018C16.0R03	6	18	3	16	70	20	90	0.13	AVGT06...
EPAV06M018C16.0R04	6	18	4	16	70	20	90	0.13	AVGT06...
EPAV06M018C16.0R03L	6	18	3	16	160	20	180	0.26	AVGT06...
EPAV06M020C20.0R04	6	20	4	20	70	30	100	0.23	AVGT06...
EPAV06M020C20.0R05	6	20	5	20	70	30	100	0.21	AVGT06...
EPAV06M020C20.0R04L	6	20	4	20	165	35	200	0.45	AVGT06...
EPAV06M020C16.0R04	6	20	4	16	80	30	110	0.17	AVGT06...
EPAV06M025C25.0R05	6	25	5	25	80	35	115	0.4	AVGT06...
EPAV06M025C25.0R06	6	25	6	25	80	35	115	0.4	AVGT06...
EPAV06M025C25.0R04L	6	25	4	25	160	40	200	0.72	AVGT06...
EPAV06M025C20.0R06	6	25	6	20	80	35	115	0.27	AVGT06...
EPAV06M032C32.0R08	6	32	8	32	80	40	120	0.7	AVGT06...
EPAV06M032C32.0R06L	6	32	6	32	155	45	200	1.2	AVGT06...

HPAV06-M

Square shoulder endmill, modular type (TungFlex), with screw clamp system

GAMP = +6.9°~ +7.6°, GAMF = -35.2°~ -32.4°



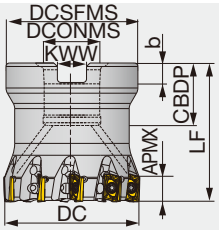
Metric	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Insert
HPAV06M010M06R02	6	10	2	34.5	20	7	9.5	M6	0.01	AVGT06...
HPAV06M012M06R02	6	12	2	34.5	20	7	10	M6	0.01	AVGT06...
HPAV06M012M06R03	6	12	3	34.5	20	7	10	M6	0.01	AVGT06...
HPAV06M016M08R03	6	16	3	42	25	10	13	M8	0.03	AVGT06...
HPAV06M016M08R04	6	16	4	42	25	10	13	M8	0.03	AVGT06...

For metric shank details, please refer to TungFlex series in

TPAV06

Square shoulder mill, bore type, with screw clamp system

GAMP = +7.7°, GAMF = -29.8°

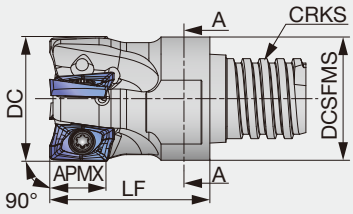


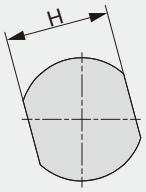
Metric	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	KWW	b	WT(kg)	Insert
TPAV06M040B16.0R10	6	40	10	38	16	18	40	8.4	5.6	0.24	AVGT06...

HPAV06-S

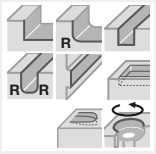
Square shoulder endmill, modular type (TungMeister), with screw clamp system

GAMP = +6.9°~ +7.6°, GAMF = -35.2°~ -32.4°





A-A cross section

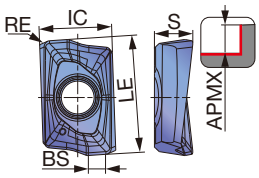


Metric	APMX	DC	CICT	LF	H	DCSFMS	CRKS	WT(kg)	Insert
HPAV06M010S05R02	6	10	2	10	8	8	S05	0.01	AVGT06...
HPAV06M010S06R02	6	10	2	16	8	9.8	S06	0.01	AVGT06...
HPAV06M012S08R02	6	12	2	18	10	11.7	S08	0.02	AVGT06...
HPAV06M012S08R03	6	12	3	18	10	11.7	S08	0.02	AVGT06...
HPAV06M016S10R03	6	16	3	20	13	15.4	S10	0.03	AVGT06...
HPAV06M016S10R04	6	16	4	20	13	15.4	S10	0.03	AVGT06...

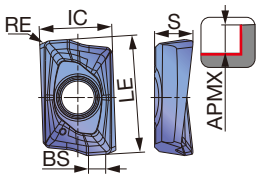
- For shank details, please refer to TR381 TungMeister
  Shank types: VSSD, VTSD, VSC, VSTD, VER
- For connections between metric shank and TungMeister thread, please use VAD-M type connector

INSERT

AVGT-MJ



AVGT-AJ



P	Steel	☆		☆	★																		
M	Stainless		☆	☆	☆																		
K	Cast iron	★																					
N	Non-ferrous					★																	
S	Superalloys	☆	★																				
H	Hard materials	★																					

★ : First choice
☆ : Second choice

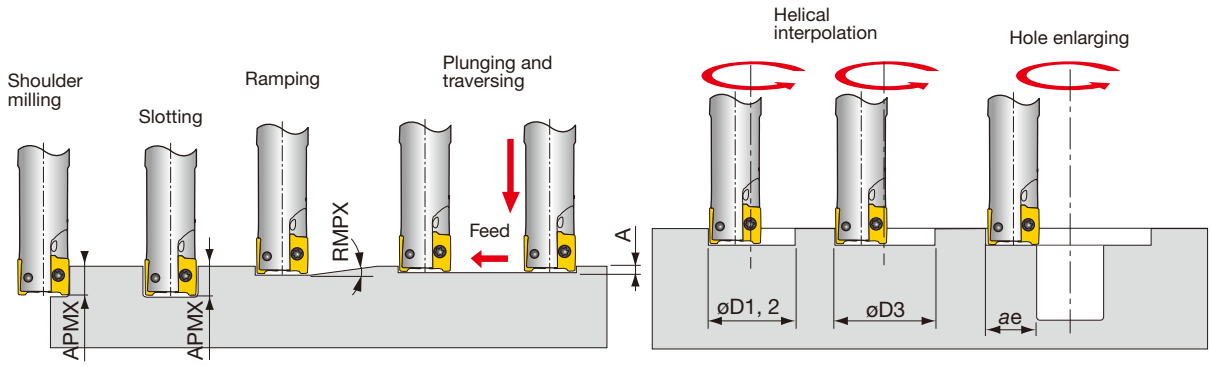
Designation	RE	APMX	Coated				Carbide										LE	IC	S	BS
			AH120	AH130	AH3135	AH3225	KS05F													
AVGT060300PBER-MJ	0.000	0.236			●	●											0.315	0.197	0.106	0.063
AVGT060302PBER-MJ	0.008	0.236	●	●	●	●											0.315	0.197	0.106	0.059
AVGT060304PBER-MJ	0.016	0.236	●	●	●	●											0.315	0.197	0.106	0.051
AVGT060308PBER-MJ	0.031	0.236	●	●	●	●											0.315	0.197	0.102	0.035
AVGT060300PBFR-AJ	0.000	0.236					●										0.315	0.197	0.106	0.063
AVGT060302PBFR-AJ	0.008	0.236					●										0.315	0.197	0.106	0.059
AVGT060304PBFR-AJ	0.016	0.236					●										0.315	0.197	0.106	0.051
AVGT060308PBFR-AJ	0.031	0.236					●										0.315	0.197	0.102	0.035

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels (1018, 1026, etc.)		- 200 HB	First choice	AH3225	755 - 1410	0.003 - 0.005
P	Carbon steel and alloy steel (1055, 4140, etc.)		- 300 HB	First choice	AH3225	490 - 1150	0.003 - 0.005
P	Prehardened steel (H-13, P-20, etc.)		30 - 40 HRC	First choice	AH3225	325 - 750	0.003 - 0.005
M	Stainless steel (304, 316, etc.)		-	First choice	AH3135	490 - 720	0.003 - 0.004
K	Gray cast iron (Class 25, Class 30, etc.)		150 - 250 HB	First choice	AH120	655 - 1080	0.003 - 0.005
K	Ductile cast iron (60-40-12, 80-55-06, etc.)		150 - 250 HB	First choice	AH120	490 - 785	0.003 - 0.005
N	Aluminum allows (Si < 13%)		-	First choice	KS05F	2130 - 3280	0.003 - 0.005
N	Aluminum alloys (Si > 13%)		-	First choice	KS05F	325 - 750	0.003 - 0.005
S	Titanium alloys (Ti-6Al-4V, etc.)		-	First choice	AH130	130 - 295	0.0016 - 0.004
S	Superalloys (Inconel718, etc.)		-	First choice	AH130	145 - 210	0.0016 - 0.004
H	Hardened steel	(H13, etc.)	40 - 50 HRC	First choice	AH120	145 - 225	0.002 - 0.004
H	Hardened steel	(H13, etc.)	50 - 60 HRC	First choice	AH120	130 - 210	0.0016 - 0.003

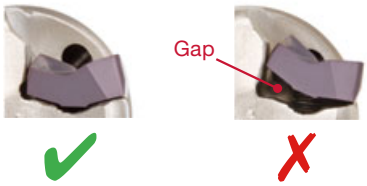
MACHINING APPLICATIONS



Designation	DC	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging A	Min. machining øD1	Max. machining øD2	Max. machining øD3*	Max. cutting width in enlarging *ae*
EPAV06U0.31...	0.313	0.236	-	-	-	-	-	-
EPAV06U0.37...	0.375	0.236	3°	0.012	0.591	0.748	0.709	0.374
EPAV06U0.50...	0.500	0.236	3°	0.012	0.709	0.906	0.866	0.453
EPAV06U0.62...	0.625	0.236	2.3°	0.012	1.026	1.220	1.181	0.610
EPAV06U0.75...	0.750	0.236	2°	0.012	1.276	1.460	1.421	0.730
EPAV06U1.00...	1.000	0.236	1.6°	0.012	1.775	1.960	1.921	0.980

*Flat bottom hole

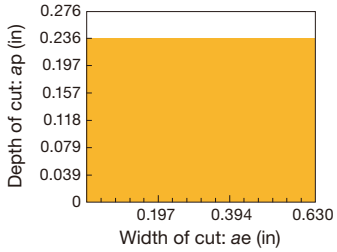
When clamping the insert, please confirm that there is no gap between the cutter body and the insert as shown in the picture.



Caution for using a large diameter cutter (over ø18 mm)

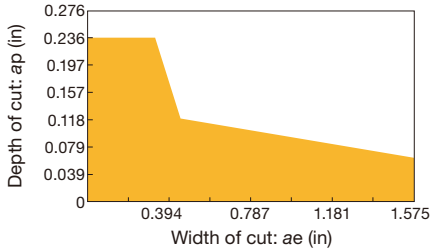
When using a cutter diameter over 18 mm, please note that the applicable range of cutting depth significantly drops as the cutting width applied increases, thus an additional finishing process may be required.

Cutting depth in relation to cutting width (for up to ø16 mm)



Cutter : EPAV06U0.62C0.62R04 (ø0.625", z = 4)
Insert : AVGT060304PBER-MJ AH3135
Workpiece material : 1055
Cutting speed : *Vc* = 820 sfm
Feed per tooth : *fz* = 0.003 ipt
Machining : Slotting
Coolant : Dry
Machine : Vertical M/C, BT40, 18.5 kW

Cutting depth in relation to cutting width (for ø18 mm and up)



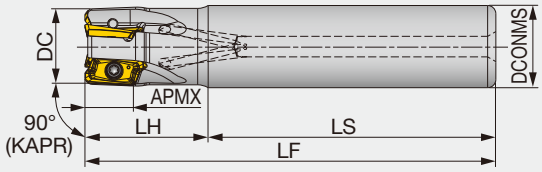
Cutter : EPAV06U1.00C1.00R06 (1.000", z = 6)
Insert : AVGT060304PBER-MJ AH3135
Workpiece material : 1055
Cutting speed : *Vc* = 820 sfm
Feed per tooth : *fz* = 0.003 ipt
Coolant : Dry
Machine : Vertical M/C, BT40, 18.5 kW

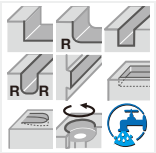
CUTTER

EPAV12

Square shoulder endmill, shank type, with screw clamp system

GAMP = +6°~ +7.6°, GAMF = -37.1°~ -32.4°





Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air Hole	Insert
EPAV12U0.62W0.62R02	0.453	0.625	2	0.625	1.906	1.000	2.906	0.220	with	AVM/GT12...
EPAV12U0.62W0.62R03	0.453	0.625	3	0.625	1.906	1.000	2.906	0.220	with	AVM/GT12...
EPAV12U0.75W0.75R03	0.453	0.750	3	0.750	2.031	1.250	3.281	0.330	with	AVM/GT12...
EPAV12U0.75W0.75R04	0.453	0.750	4	0.750	2.031	1.250	3.281	0.330	with	AVM/GT12...
EPAV12U1.00W1.00R03	0.453	1.000	3	1.000	2.281	1.500	3.781	0.710	with	AVM/GT12...
EPAV12U1.00W1.00R04	0.453	1.000	4	1.000	2.281	1.500	3.781	0.710	with	AVM/GT12...
EPAV12U1.00W1.00R06	0.453	1.000	6	1.000	2.281	1.500	3.781	0.710	with	AVM/GT12...
EPAV12U1.25W1.25R04	0.453	1.250	4	1.250	2.281	1.500	3.781	1.100	with	AVM/GT12...
EPAV12U1.25W1.25R06	0.453	1.250	6	1.250	2.281	1.500	3.781	1.120	with	AVM/GT12...
EPAV12U1.25W1.25R08	0.453	1.250	8	1.250	2.281	1.500	3.781	1.150	with	AVM/GT12...
EPAV12U0.62C0.62R02L	0.453	0.625	2	0.625	4.250	1.500	5.750	0.440	with	AVM/GT12...
EPAV12U0.75C0.75R03L	0.453	0.750	3	0.750	5.250	2.000	7.250	0.790	with	AVM/GT12...
EPAV12U1.00C1.00R03L	0.453	1.000	3	1.000	5.750	2.750	8.500	1.650	with	AVM/GT12...
EPAV12U1.25C1.25R03L	0.453	1.250	3	1.250	7.000	3.000	10.000	3.150	with	AVM/GT12...

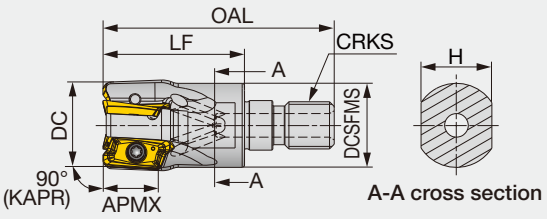
Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air Hole	Insert
EPAV12M012C12.0R01	11.5	12	1	12	60	25	85	0.06	with	AVM/GT12...
EPAV12M016C16.0R02	11.5	16	2	16	60	25	85	0.12	with	AVM/GT12...
EPAV12M016C16.0R03	11.5	16	3	16	60	25	85	0.12	with	AVM/GT12...
EPAV12M016C16.0R02L	11.5	16	2	16	105	40	145	0.20	with	AVM/GT12...
EPAV12M020C20.0R03	11.5	20	3	20	70	30	100	0.22	with	AVM/GT12...
EPAV12M020C20.0R04	11.5	20	4	20	70	30	100	0.21	with	AVM/GT12...
EPAV12M020C20.0R02L	11.5	20	2	20	135	50	185	0.41	with	AVM/GT12...
EPAV12M025C25.0R04	11.5	25	4	25	80	35	115	0.38	with	AVM/GT12...
EPAV12M025C25.0R06	11.5	25	6	25	80	35	115	0.39	with	AVM/GT12...
EPAV12M025C25.0R03L	11.5	25	3	25	150	70	220	0.74	with	AVM/GT12...
EPAV12M032C32.0R06	11.5	32	6	32	80	40	120	0.68	with	AVM/GT12...
EPAV12M032C32.0R08	11.5	32	8	32	80	40	120	0.68	with	AVM/GT12...
EPAV12M032C32.0R03L	11.5	32	3	32	175	80	255	1.47	with	AVM/GT12...

CUTTER

HPAV12-M

Square shoulder endmill, modular type (TungFlex), with screw clamp system

GAMP = +6°~ +7.6°, GAMF = -37.1°~ -32.4°

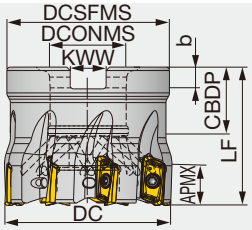


Metric	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPAV12M016M08R02	11.5	16	2	42	25	10	14.5	M8	0.03	With	AVM/GT12...
HPAV12M016M08R03	11.5	16	3	42	25	10	14.5	M8	0.03	With	AVM/GT12...
HPAV12M020M10R03	11.5	20	3	49	30	15	17.8	M10	0.06	With	AVM/GT12...
HPAV12M020M10R04	11.5	20	4	49	30	15	17.8	M10	0.05	With	AVM/GT12...
HPAV12M025M12R04	11.5	25	4	57	35	17	23	M12	0.1	With	AVM/GT12...
HPAV12M025M12R06	11.5	25	6	57	35	17	23	M12	0.1	With	AVM/GT12...
HPAV12M032M16R06	11.5	32	6	63	40	22	28.8	M16	0.21	With	AVM/GT12...
HPAV12M032M16R08	11.5	32	8	63	40	22	28.8	M16	0.21	With	AVM/GT12...
HPAV12M040M16R06	11.5	40	6	63	40	22	28.8	M16	0.25	With	AVM/GT12...
HPAV12M040M16R08	11.5	40	8	63	40	22	28.8	M16	0.24	With	AVM/GT12...

TPAV12

Square shoulder mill, bore type, with screw clamp system

GAMP = +6°~ +7.6°, GAMF = -37.1°~ -32.4°



Inch	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	KWW	b	WT(lb)	Air Hole	Insert
TPAV12U1.50B0.50R05	0.453	1.500	5	1.417	0.500	0.630	1.575	0.258	0.157	0.460	with	AVM/GT12...
TPAV12U2.00B0.75R05	0.453	2.000	5	1.772	0.750	0.750	1.575	0.315	0.197	0.770	with	AVM/GT12...
TPAV12U2.00B0.75R12	0.453	2.000	12	1.772	0.750	0.750	1.575	0.315	0.197	0.840	with	AVM/GT12...

Metric	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	KWW	b	WT(kg)	Air Hole	Insert
TPAV12M050B22.0R08	11.5	50	8	47	22	20	40	10.4	6.3	0.37	with	AVM/GT12...
TPAV12M050B22.0R12	11.5	50	12	47	22	20	40	10.4	6.3	0.37	with	AVM/GT12...
TPAV12M063B22.0R08	11.5	63	8	47	22	20	40	10.4	6.3	0.52	with	AVM/GT12...
TPAV12M063B22.0R14	11.5	63	14	47	22	20	40	10.4	6.3	0.54	with	AVM/GT12...

INSERT

AVMT-MM

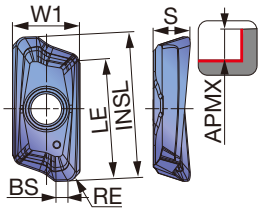


Fig. 1

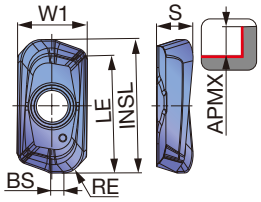


Fig. 2

AVGT-AM

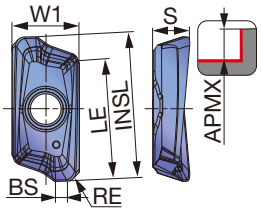


Fig. 3

		Coated				Carbide
P	Steel		★		☆	
M	Stainless		★		☆	
K	Cast iron	★		☆		
N	Non-ferrous					★
S	Superalloys	★	★			
H	Hard materials	★				

★ : First choice
☆ : Second choice

Designation	RE	APMX	AH120	AH3225	T1215	T3225	KS05F	W1	INSL	S	BS	LE	Fig.
AVMT120404PDER-MM	0.016	0.453	●	●	●	●		0.260	0.559	0.142	0.059	0.465	1
AVMT120408PDER-MM	0.031	0.453	●	●	●	●		0.260	0.559	0.142	0.043	0.465	1
AVMT120412PDER-MM	0.047	0.453	●	●	●	●		0.260	0.559	0.142	0.028	0.465	1
AVMT120416PDER-MM	0.063	0.453	●	●	●	●		0.260	0.559	0.142	0.012	0.465	1
AVMT120420PDER-MM	0.079	0.413	●	●	●	●		0.260	0.500	0.134	0.047	0.437	2
AVMT120430PDER-MM	0.118	0.413	●	●	●	●		0.260	0.500	0.134	0.008	0.437	2
AVGT120404PDFR-AM	0.016	0.453					●	0.260	0.559	0.142	0.059	0.465	3
AVGT120408PDFR-AM	0.031	0.453					●	0.260	0.559	0.142	0.043	0.465	3

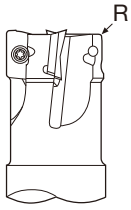
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1028, etc.		- 200 HB	First choice	AH3225	328 - 984	0.002 - 0.009
			- 200 HB	Wear resistance	T3225	656 - 1312	0.002 - 0.007
	Carbon steel and alloy steel 1045, etc.		- 300 HB	First choice	AH3225	328 - 820	0.002 - 0.009
			- 300 HB	Wear resistance	T3225	656 - 1312	0.002 - 0.007
	Prehardend steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3225	328 - 656	0.002 - 0.009
			30 - 40 HRC	Wear resistance	T3225	656 - 1312	0.002 - 0.006
M	Stainless steel 304SS, etc.		-	First choice	AH3225	262 - 591	0.003 - 0.008
K	Grey cast iron No. 250B, etc.		150 - 250 HB	First choice	AH120	328 - 984	0.002 - 0.005
			150 - 250 HB	Wear resistance	T1215	656 - 1312	0.002 - 0.007
	Ductile cast iron 60-40-18, etc.		150 - 250 HB	First choice	AH120	328 - 820	0.002 - 0.005
			150 - 250 HB	Wear resistance	T1215	492 - 984	0.002 - 0.007
N	Aluminum alloys Si < 13%		-	First choice	KS05F	984 - 4921	0.002 - 0.013
	Aluminum alloys Si ≥ 13%		-	First choice	KS05F	328 - 656	0.002 - 0.013
S	Titanium alloys Ti-6Al-4V, etc.		- 40 HRC	First choice	AH3225	66 - 197	0.002 - 0.006
	Superalloys Inconel718, etc.		- 40 HRC	First choice	AH120	66 - 131	0.002 - 0.006
H	Hardened steel	H13, etc.	40 - 50 HRC	First choice	AH120	164 - 492	0.002 - 0.003
		D2, etc.	50 - 60 HRC	First choice	AH120	131 - 230	0.002 - 0.003

CAUTIONARY POINT IN MODIFYING CUTTER BODIES

When using inserts with corner radius RE ≥ 0.039", standard cutter bodies have to be modified “R”. (EPAV12, TPAV12, HPAV12)



Corner radius RE (in)	The dimension of modifying (in)
0.016 - 0.063	Unnecessary
0.079 - 0.118	0.039

MEMO

DOMULTIREC

Milling, Drilling (Multi-function)

ULTIMATE ALL-ROUND CUTTER

ADD multifunctional milling capability from drilling to square shoulder milling and counterboring

- A single insert has cutting edges for both bottom and peripheral surfaces. Four total cutting edges for better cost per insert.
- Negative insert with robust design.
- Through using helical interpolation method, flat-bottom holes of any diameter (≥ the cutter diameter +0.079" +2 mm) can be made.
- Perfect for counterboring.

Lineup

Inserts

- **LXMU08-MM**

APMX = 0.276" (ZEFP = 1), 0.157" (ZEFP = 2)
RE = 0.016"

- **LXMU10-MM**

APMX = 0.354" (ZEFP = 1), 0.157" (ZEFP = 2)
RE = 0.031"

- **LXMU12-MM**

APMX = 0.433" (ZEFP = 1), 0.236" (ZEFP = 2)
RE = 0.031"

Chipbreaker

- **MM type:** Versatile geometry for low cutting forces

Grades

- **AH3225**: Superior resistance to wear and fracture, ideal for steel and stainless steel
- **AH8015**: Wear-resistant grade ideal for hardened steel and cast iron
- **AH120**: Excellent edge chipping resistance, suited for cast iron

Cutter bodies

Shank type:

- **EVLX08...** (Short type)

DC = ø0.625" ø16 mm

- **EVLX08**L** (Long type)

DC = ø0.625", ø16, ø17 mm

- **EVLX10...** (Short type)

DC = ø0.787", ø20 mm

- **EVLX10**L** (Long type)

DC = ø0.787", ø20, ø21 mm

- **EVLX12...** (Short type)

DC = ø1.000", ø25 mm

- **EVLX12**L** (Long type)

DC = ø1.000", ø25, ø26 mm

Modular type:

- **HVLX08...**

DC = ø16 mm, ø17 mm

- **HVLX10...**

DC = ø20 mm, ø21 mm

- **HVLX12...**

DC = ø25 mm, ø16 mm

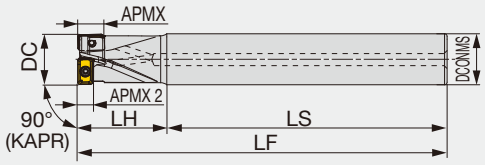
Scan this QR code to find out more about this tool!

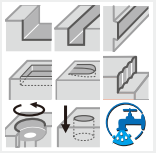
CUTTER

EVLX08/10/12

Multi-function endmill, shank type, with center cutting edge

GAMP: Central insert -2.6˚ ~ -4.4˚, Peripheral insert +6.1˚ ~ +7.1˚
GAMF: Central insert +0.2˚ ~ +1.3˚, Peripheral insert 15.7˚ ~ -15˚





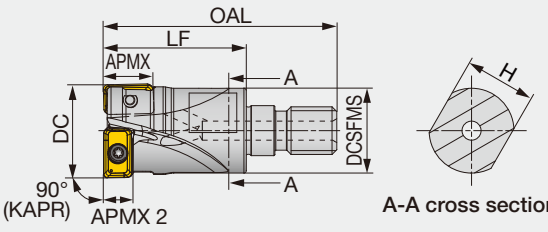
Inch	APMX	APMX 2	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EVLX08U0.62W0.62R02	0.276	0.157	0.625	2	0.625	1.910	1.250	3.160	0.10	With	LXMU08...
EVLX08U0.62C0.62R02L	0.276	0.157	0.625	2	0.625	5.000	2.000	7.000	0.24	With	LXMU08...
EVLX10U0.787W0.75R02	0.354	0.157	0.787	2	0.750	2.030	1.380	3.410	0.16	With	LXMU08...
EVLX10U0.787C0.75R02L	0.354	0.157	0.787	2	0.750	5.000	2.380	7.380	0.37	With	LXMU10...
EVLX12U1.00W1.00R02	0.433	0.236	1.000	2	1.000	2.280	1.750	4.030	0.34	With	LXMU10...
EVLX12U1.00C1.00R02L	0.433	0.236	1.000	2	1.000	6.000	3.000	9.000	0.81	With	LXMU10...

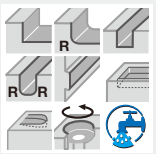
Metric	APMX	APMX 2	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EVLX08M016C16.0R02	7	4	16	2	16	100	30	130	0.18	With	LXMU08...
EVLX08M016C16.0R02L	7	4	16	2	16	130	50	180	0.25	With	LXMU08...
EVLX08M017C16.0R02L	7	4	17	2	16	155	25	180	0.26	With	LXMU08...
EVLX10M020C20.0R02	9	4	20	2	20	110	35	145	0.31	With	LXMU10...
EVLX10M020C20.0R02L	9	4	20	2	20	130	60	190	0.41	With	LXMU10...
EVLX10M021C20.0R02L	9	4	21	2	20	160	30	190	0.42	With	LXMU10...
EVLX12M025C25.0R02	11	6	25	2	25	105	45	150	0.51	With	LXMU12...
EVLX12M025C25.0R02L	11	6	25	2	25	150	75	225	0.77	With	LXMU12...
EVLX12M026C25.0R02L	11	6	26	2	25	190	35	225	0.80	With	LXMU12...

HVLX08/10/12-M

Multi-functional square shoulder modular milling cutter (TungFlex), with screwed-on inserts and center cutting edge

GAMP: Central insert -2.6˚ ~ -4.4˚, Peripheral insert +6.1˚ ~ +7.1˚
GAMF: Central insert +0.2˚ ~ +1.3˚, Peripheral insert 15.7˚ ~ -15˚

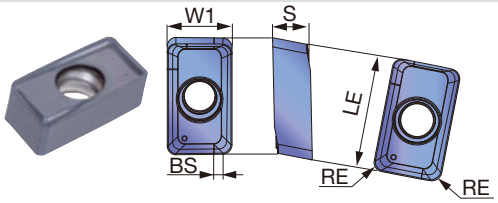




Metric	APMX	APMX 2	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HVLX08M016M08R02	7	4	16	2	42	25	10	14.5	M8	0.03	With	LXMU08...
HVLX08M017M08R02	7	4	17	2	42	25	10	14.5	M8	0.04	With	LXMU08...
HVLX10M020M10R02	9	4	20	2	49	30	15	17.8	M10	0.05	With	LXMU10...
HVLX10M021M10R02	9	4	21	2	49	30	15	17.8	M10	0.06	With	LXMU10...
HVLX12M025M12R02	11	6	25	2	57	35	17	23	M12	0.10	With	LXMU12...
HVLX12M026M12R02	11	6	26	2	57	35	17	23	M12	0.10	With	LXMU12...

INSERT

LXMU-MM



P	Steel	★	☆	
M	Stainless	★		
K	Cast iron		★	
N	Non-ferrous			
S	Superalloys	☆		★
H	Hard materials			★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH3225	Coated AH120	Coated AH8015	LE	W1	S	BS
LXMU080304PER-MM	0.016	0.276	●	●	●	0.303	0.197	0.100	0.031
LXMU10T304PER-MM	0.016	0.354	●		●	0.394	0.236	0.126	0.047
LXMU10T308PER-MM	0.031	0.354	●	●	●	0.394	0.236	0.127	0.031
LXMU120404PER-MM	0.016	0.433	●		●	0.480	0.280	0.165	0.047
LXMU120408PER-MM	0.031	0.433	●	●	●	0.480	0.280	0.165	0.031

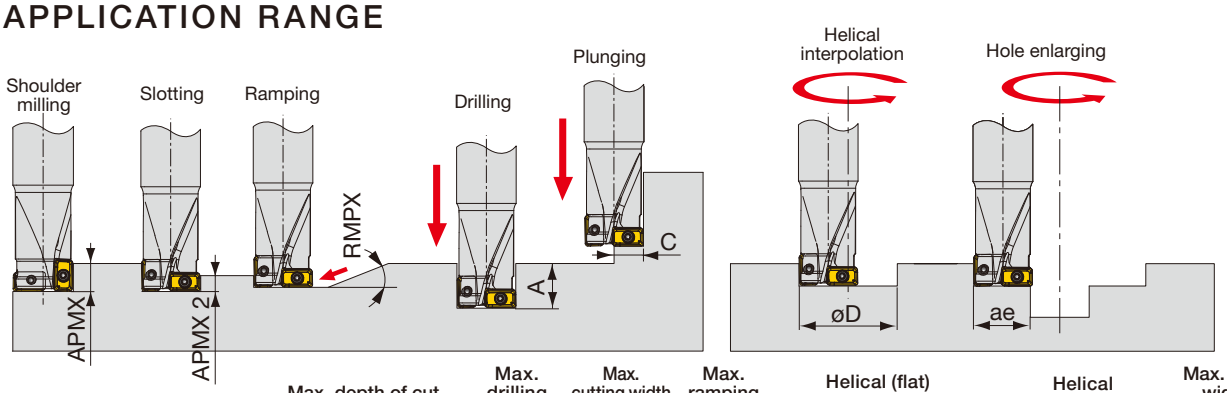
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece Materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Drilling (ZEFP = 1)* Feed per revolution *f* (ipr)	Shouldering / Helical interpolation Feed per tooth: *fz* (ipt) 08	10 / 12
P	Low carbon steel 1015, etc.		- 200 HB	First Choice	AH3225	330 - 980	0.001 - 0.003	0.002 - 0.010	0.002 - 0.012
P	Carbon steel and alloy steel 1055, etc.		- 300 HB	First Choice	AH3225	330 - 825	0.001 - 0.003	0.002 - 0.010	0.002 - 0.012
P	Prehardened steel NAK80, PX5, etc.		30 - 40 HRC	First Choice	AH3225	330 - 655	0.001 - 0.002	0.002 - 0.008	0.002 - 0.010
M	Stainless steel 304SS, etc.		-	First Choice	AH3225	260- 590	0.001 - 0.003	0.002 - 0.008	0.002 - 0.009
K	Grey cast iron Class 25, Class 30, etc.		150 - 250 HB	First Choice	AH8015	328 - 984	0.001 - 0.004	0.002 - 0.010	0.002 - 0.012
K	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250 HB	First Choice	AH8015	328 - 820	0.001 - 0.003	0.002 - 0.008	0.002 - 0.010
S	Titanium alloys Ti-6Al-4V, etc.		-	First Choice	AH3225	66 - 195	0.001 - 0.002	0.002 - 0.006	0.002 - 0.006
S	Superalloys Inconel718, etc.		-	First Choice	AH8015	66 - 130	0.001 - 0.002	0.002 - 0.006	0.002 - 0.006
H	Hardened steel	H-13, etc.	40 - 50 HRC	First Choice	AH8015	160 - 490	0.001 - 0.002	0.002 - 0.006	0.002 - 0.006
H	Hardened steel	D2, etc.	50 - 60 HRC	First Choice	AH8015	130 - 225	0.001 - 0.002	0.002 - 0.006	0.002 - 0.006

*In the following cases, feed as if the cutter has a single effective cutting edge (ZEFP = 1):
- Hole making
- Helical interpolating for holes with a hole diameter (D) < 1.25x the tool diameter (DC)
- The axial D.O.C. exceeds APMX2 (See below for APMX2)

APPLICATION RANGE



Designation	DC	Max. depth of cut APMX	APMX 2	Max. drilling depth A	Max. cutting width in plunging C	Max. ramping angle RMPX	Helical (flat) machining hole dia. øDmin	øDmax	Helical machining hole dia. øDmin	øDmax	Max. cutting width in enlarging *ae*
EVLX08U0.62…	0.625	0.276	0.157	0.469	0.313	90°	16.930	30.470	0.625	31.330	0.546
EVLX10U0.787…	0.780	0.354	0.157	0.590	0.394	90°	22.000	37.950	0.787	39.150	0.708
EVLX12U1.00…	1.000	0.433	0.236	0.750	0.500	90°	27.450	48.650	1.000	49.750	0.921

*Use pecking or dwelling method when drilling holes deeper than 0.197".

TUNGMEISTER

End milling

MORE THAN 13,000 POSSIBLE COMBINATIONS

ADD an extensive array of exchangeable milling heads for higher productivity

- Easy and accurate head-shank coupling provides reduced tool change time and high accuracy of cutting point repeatability.
- Offers solutions for square shoulder milling, high feed milling, profile milling, chamfering, hole making, and slotting.
- A flexible mix of heads and shanks allows an optimum tool assembly in all end milling applications.

Lineup

Heads

- Square: DC = ø0.250" - ø1.000", ø7.7 - ø32 mm
- Face mill: DC = ø12 - ø25 mm
- High feed: DCX = ø12 - ø16 mm
- Ball nose: DC = ø0.250" - ø1.000"
- Barrel: DC = ø8 - ø16 mm
- Bull nose: DC = ø10 - ø16 mm
- Lens: DC = ø8 - ø16 mm
- Chamfering: DC = ø0.375", ø10 - ø20 mm
- Chamfering spot drill: DC = ø8 - ø16 mm
- Center hole: DC = ø1.07 - ø6.41 mm

Grades

- **AH715**: Wear-resistant grade suited for steel and hard materials
- **AH725**: Versatile grade with a good balance of wear and fracture resistance, ideal for all material groups
- **AH750**: Fracture resistant, improves machining efficiency in ISO H materials
- **KS15F**: Designed for non-ferrous applications

Shanks

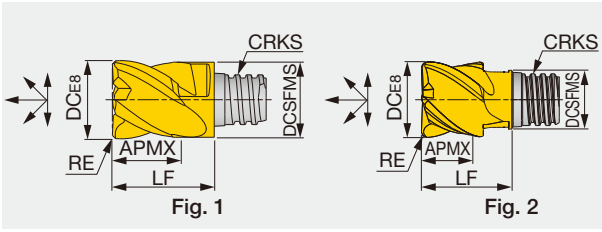
- Cylindrical shank, straight neck
DCONMS = ø0.312" - ø1.000", ø8 - ø32 mm
- Weldon shank, straight neck
DCONMS = ø0.500" - ø1.000", ø12 - ø25 mm
- Cylindrical shank, taper neck
DCONMS = ø0.500" - ø1.000", ø8 - ø40 mm
- High rigidity shank (cylindrical)
DCONMS = ø6 - ø40 mm
- Straight shank for slotting (cylindrical)
DCONMS = ø0.312" - ø0.625", ø6 - ø16 mm
- Adaptor for **TungFlex**
CRKSMS = M8 - M12
- Adaptor for **ER collet**
SS = ER11, ER16

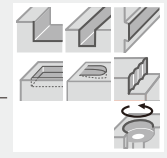
Scan this QR code to find out more about this tool!

HEADS

VEH...

4 flute, roughing - finishing, variable helix and pitch





APMX = Max. depth of cut
CRKS = Connection screw size

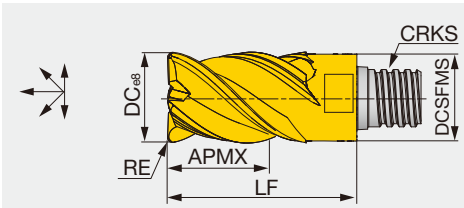
Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*	Fig.
VEH080L05.0R05I04S05		●	4	41° - 45°	8	7.7	5	0.5	S05	10	KEYV-S05	7	1
VEH080L05.0R10I04S05		●	4	41° - 45°	8	7.7	5	1	S05	10	KEYV-S05	7	1
VEH100L07.0R10I04S05	●		4	41° - 45°	10	7.7	7	1	S05	12.8	KEYV-S05	7	2
VEH100L07.0R05I04S06		●	4	41° - 45°	10	9.7	7	0.5	S06	13	KEYV-S06	10	1
VEH100L07.0R10I04S06		●	4	41° - 45°	10	9.7	7	1	S06	13	KEYV-S06	10	1
VEH120L09.0R10I04S06	●		4	41° - 45°	12	9.3	9	1	S06	14.3	KEYV-S06	10	2
VEH120L09.0R05I04S08		●	4	41° - 45°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15	1
VEH120L09.0R10I04S08		●	4	41° - 45°	12	11.7	9	1	S08	16.5	KEYV-S08	15	1
VEH160L12.0R10I04S08	●		4	41° - 45°	16	11.7	12	1	S08	20	KEYV-S08	15	2
VEH160L12.0R05I04S10		●	4	41° - 45°	16	15.3	12	0.5	S10	20.5	KEYV-S10	28	1
VEH160L12.0R10I04S10		●	4	41° - 45°	16	15.3	12	1	S10	20.5	KEYV-S10	28	1
VEH200L15.0R05I04S12		●	4	41° - 45°	20	18.3	15	0.5	S12	25.5	KEYV-S12	28	1
VEH200L15.0R10I04S12		●	4	41° - 45°	20	18.3	15	1	S12	25.5	KEYV-S12	28	1

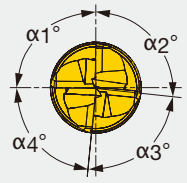
* Recommended clamping torque (N·m)
2 pieces per package

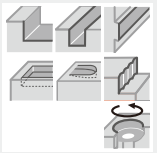
● : Line-up

VEH...

4 flute, roughing - finishing, variable helix and pitch







APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEH080L12.0R05I04S05	●	4	41° - 45°	8	7.7	12	0.5	S05	18	KEYV-S05	7
VEH080L12.0R10I04S05	●	4	41° - 45°	8	7.7	12	1	S05	18	KEYV-S05	7
VEH100L15.0R05I04S06	●	4	41° - 45°	10	9.7	15	0.5	S06	22	KEYV-S06	10
VEH100L15.0R10I04S06	●	4	41° - 45°	10	9.7	15	1	S06	22	KEYV-S06	10
VEH120L18.0R05I04S08	●	4	41° - 45°	12	11.7	18	0.5	S08	27	KEYV-S08	15
VEH120L18.0R10I04S08	●	4	41° - 45°	12	11.7	18	1	S08	27	KEYV-S08	15
VEH160L24.0R05I04S10	●	4	41° - 45°	16	15.3	24	0.5	S10	33.5	KEYV-S10	28
VEH160L24.0R10I04S10	●	4	41° - 45°	16	15.3	24	1	S10	33.5	KEYV-S10	28
VEH200L30.0R05I04S12	●	4	41° - 45°	20	18.45	30	0.5	S12	41	KEYV-S12	28
VEH200L30.0R10I04S12	●	4	41° - 45°	20	18.45	30	1	S12	41	KEYV-S12	28
VEH250L37.0R05I04S15	●	4	41° - 45°	25	23.9	37	0.5	S15	52.5	KEYV-W20	40
VEH250L37.0R10I04S15	●	4	41° - 45°	25	23.9	37	1	S15	52.5	KEYV-W20	40
VEH320L38.0R00I04S21	●	4	41° - 45°	32	30	38	-	S21	55	KS-24	110
VEH320L38.0R10I04S21	●	4	41° - 45°	32	30	38	1	S21	55	KS-24	110

* Recommended clamping torque (N·m)
VEH080 ~ VEH160: 2 pieces per package
VEH200 ~ VEH320: 1 piece per package

● : Line-up

VEE**-04..., VED**-04...

4 flute, roughing - finishing, general

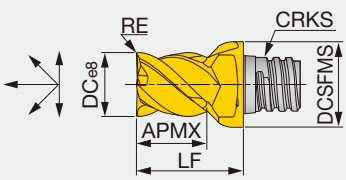


Fig. 1**

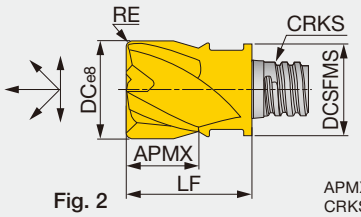
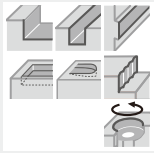


Fig. 2



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*	Fig.
VEE025L20R000-U04S05	●	4	45°	0.250	0.300	0.200	-	S05	0.390	KEYV-S05	5.16	1
VED031L20R015-U04S05	●	4	30°	0.312	0.300	0.200	0.015	S05	0.390	KEYV-S05	5.16	2
VED031L20R031-U04S05	●	4	30°	0.312	0.300	0.200	0.031	S05	0.390	KEYV-S05	5.16	2
VED031L20R062-U04S05	●	4	30°	0.312	0.300	0.200	0.062	S05	0.390	KEYV-S05	5.16	2
VEE031L20R000-U04S05	●	4	45°	0.312	0.300	0.200	-	S05	0.390	KEYV-S05	5.16	2
VEE031L20R015-U04S05	●	4	45°	0.312	0.300	0.200	0.015	S05	0.390	KEYV-S05	5.16	2
VEE031L20R031-U04S05	●	4	45°	0.312	0.300	0.200	0.031	S05	0.390	KEYV-S05	5.16	2
VEE031L20R062-U04S05	●	4	45°	0.312	0.300	0.200	0.062	S05	0.390	KEYV-S05	5.16	2
VED037L27R015-U04S06	●	4	30°	0.375	0.370	0.275	0.015	S06	0.512	KEYV-S06	7.38	2
VED037L27R031-U04S06	●	4	30°	0.375	0.370	0.275	0.031	S06	0.512	KEYV-S06	7.38	2
VEE037L27R000-U04S06	●	4	45°	0.375	0.370	0.275	-	S06	0.512	KEYV-S06	7.38	2
VEE037L27R015-U04S06	●	4	45°	0.375	0.370	0.275	0.015	S06	0.512	KEYV-S06	7.38	2
VEE037L27R030-U04S06	●	4	45°	0.375	0.370	0.275	0.031	S06	0.512	KEYV-S06	7.38	2
VEE037L27R062-U04S06	●	4	45°	0.375	0.370	0.275	0.062	S06	0.512	KEYV-S06	7.38	2
VEE037L47R000-U04S06	●	4	45°	0.375	0.370	0.470	-	S06	0.748	KEYV-S06	7.38	2
VED050L37R015-U04S08	●	4	30°	0.500	0.488	0.374	0.015	S08	0.650	KEYV-S08	11.06	2
VED050L37R031-U04S08	●	4	30°	0.500	0.488	0.374	0.031	S08	0.650	KEYV-S08	11.06	2
VEE050L37R000-U04S08	●	4	45°	0.500	0.488	0.374	-	S08	0.650	KEYV-S08	11.06	2
VEE050L37R015-U04S08	●	4	45°	0.500	0.488	0.374	0.015	S08	0.650	KEYV-S08	11.06	2
VEE050L37R031-U04S08	●	4	45°	0.500	0.488	0.374	0.031	S08	0.650	KEYV-S08	11.06	2
VEE050L37R062-U04S08	●	4	45°	0.500	0.488	0.374	0.062	S08	0.650	KEYV-S08	11.06	2
VED062L47R015-U04S10	●	4	30°	0.625	0.600	0.470	0.015	S10	0.810	KEYV-S10	20.65	2
VED062L47R031-U04S10	●	4	30°	0.625	0.600	0.470	0.031	S10	0.810	KEYV-S10	20.65	2
VED062L47R062-U04S10	●	4	30°	0.625	0.600	0.470	0.062	S10	0.810	KEYV-S10	20.65	2
VEE062L47R000-U04S10	●	4	45°	0.625	0.600	0.470	-	S10	0.810	KEYV-S10	20.65	2
VEE062L47R031-U04S10	●	4	45°	0.625	0.600	0.470	0.031	S10	0.810	KEYV-S10	20.65	2
VED075L62R015-U04S12	●	4	30°	0.750	0.720	0.620	0.015	S12	1.000	KEYV-S12	20.65	2
VED075L62R031-U04S12	●	4	30°	0.750	0.720	0.620	0.031	S12	1.000	KEYV-S12	20.65	2
VED075L62R062-U04S12	●	4	30°	0.750	0.720	0.620	0.062	S12	1.000	KEYV-S12	20.65	2
VEE075L62R000-U04S12	●	4	45°	0.750	0.720	0.620	-	S12	1.000	KEYV-S12	20.65	2
VEE075L62R031-U04S12	●	4	45°	0.750	0.720	0.620	0.031	S12	1.000	KEYV-S12	20.65	2

* Torque: Recommended clamping torque: lbs·ft

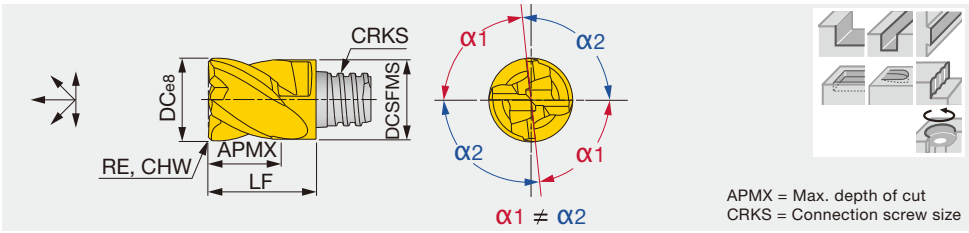
● : Line-up

**Fig. 1: Avoid interference with workpiece when using this cutting head. The shank diameter is larger than the cutter diameter when assembled.

2 pieces per package

VEE**-I...

4 flute, roughing - finishing, variable pitch



APMX = Max. depth of cut
CRKS = Connection screw size

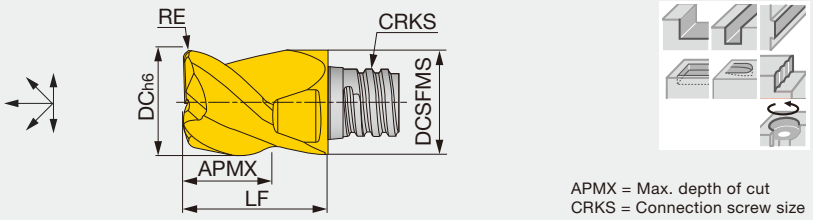
Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VEE031L22C012IU04S05	●	4	38°	0.312	0.303	0.220	-	0.012	S05	0.393	KEYV-S05	5.16
VEE037L29C016IU04S06	●	4	38°	0.375	0.370	0.299	-	0.016	S06	0.512	KEYV-S06	7.38
VEE050L37C020IU04S08	●	4	38°	0.500	0.488	0.374	-	0.020	S08	0.650	KEYV-S08	11.06
VEE062L50C024IU04S10	●	4	38°	0.625	0.602	0.500	-	0.024	S10	0.810	KEYV-S10	20.65
VEE075L62C024IU04S12	●	4	38°	0.750	0.726	0.629	-	0.024	S12	1.004	KEYV-S12	20.65
VEE100L86C024IU04S15	●	4	38°	1.000	0.94	0.863	-	0.024	S15	1.456	KEYV-W20	29.5
VEE100L86R000IU04S15	●	4	38°	1.000	0.941	0.866	-	-	S15	1.457	KEYV-W20	29.5
VEE100L86R015IU04S15	●	4	38°	1.000	0.941	0.866	0.015	-	S15	1.457	KEYV-W20	29.5
VEE100L86R031IU04S15	●	4	38°	1.000	0.941	0.866	0.031	-	S15	1.457	KEYV-W20	29.5
VEE100L86R062IU04S15	●	4	38°	1.000	0.941	0.866	0.062	-	S15	1.457	KEYV-W20	29.5
VEE100L86R125IU04S15	●	4	38°	1.000	0.941	0.866	0.125	-	S15	1.457	KEYV-W20	29.5

* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

● : Line-up

VEE**-03...

3 flute, roughing - finishing, general, for key way



APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE077L04.0R02-03S05		●	3	38°	7.7	7.7	4	0.2	S05	10	KEYV-S05	7
VEE080L05.0R00-03S05		●	3	45°	8	7.7	5	-	S05	10	KEYV-S05	7
VEE097L05.0R03-03S06		●	3	38°	9.7	9.7	5	0.3	S06	13	KEYV-S06	10
VEE100L07.0R00-03S06		●	3	45°	10	9.7	7	-	S06	13	KEYV-S06	10
VEE117L07.0R03-03S08	●	●	3	38°	11.7	11.7	7	0.3	S08	16.5	KEYV-S08	15
VEE120L09.0R00-03S08		●	3	45°	12	11.7	9	-	S08	16.5	KEYV-S08	15
VEE157L08.0R03-03S10	●	●	3	38°	15.7	15.3	8	0.3	S10	20.5	KEYV-S10	28
VEE197L12.0R04-03S12		●	3	38°	19.7	18.3	12	0.4	S12	25.5	KEYV-S12	28

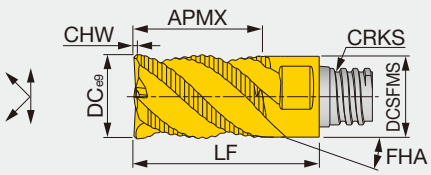
* Recommended clamping torque (N·m)
2 pieces per package

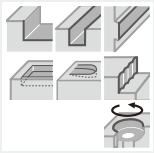
● : Line-up

VED**R...

4, 5, 6 flute, roughing, long cutting edge, serrated cutting edge

Square





APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	RMPX	Wrench	Torque*
VED080L12.0C25R04S05	●	4	47°	8	7.7	12	0.25	S05	18	5°	KEYV-S05	7
VED100L15.0C30R04S06	●	4	47°	10	9.6	15	0.3	S06	22	5°	KEYV-S06	10
VED120L18.0C35R04S08	●	4	47°	12	11.7	18	0.35	S08	27	5°	KEYV-S08	15
VED160L24.0C40R05S10	●	5	47°	16	15.3	24	0.4	S10	33.5	5°	KEYV-S10	28
VED200L30.0C40R06S12	●	6	47°	20	18.45	30	0.4	S12	41	3°	KEYV-S12	28
VED250L37.0C50I06S15	●	6	47°	25	23.9	37	0.5	S15	52.5	3°	KEYV-W20	40

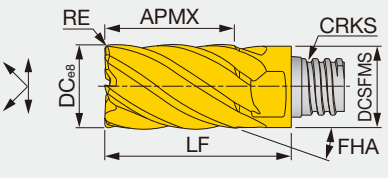
* Recommended clamping torque (N·m)
VED080 ~ VED160: 2 pieces per package
VED200, VED250: 1 piece per package

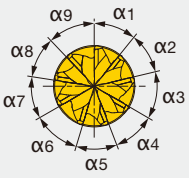
● : Line-up

VED**-07/09...

7, 9 flute, roughing - finishing, long edge, variable helix and pitch, small width of cut

Square





α1 ≠ α2 ≠ α3 ≠ α4 ≠ α5 ≠ α6 ≠ α7 ≠ α8 ≠ α9

APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VED080L12.0R05I07S05	●	7	34° - 40°	8	7.7	12	0.5	S05	18	KEYV-S05	7
VED100L15.0R05I07S06	●	7	34° - 40°	10	9.6	15	0.5	S06	22	KEYV-S06	10
VED120L18.0R05I07S08	●	7	34° - 40°	12	11.7	18	0.5	S08	27	KEYV-S08	15
VED160L24.0R08I09S10	●	9	34° - 40°	16	15.3	24	0.8	S10	33.5	KEYV-S10	28
VED200L30.0R10I09S12	●	9	34° - 40°	20	18.45	30	1	S12	41	KEYV-S12	28
VED250L37.0R10I09S15	●	9	34° - 40°	25	23.9	37	1	S15	52.5	KEYV-W20	40

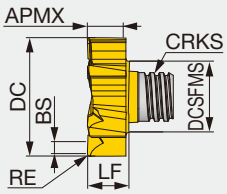
* Recommended clamping torque (N·m)
VED080 ~ VED160: 2 pieces per package
VED200, VED250: 1 piece per package

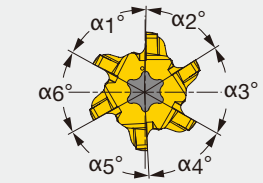
● : Line-up

TUNGMEISTER

VFM...

6 flute, roughing - finishing, for face milling





α1 ≠ α2 ≠ α3 ≠ α4 ≠ α5 ≠ α6

APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	BS	CRKS	LF	Wrench	Torque*
VFM120L03.6R02I06S05	●	6	10°	12	7.7	3.6	0.2	1.2	S05	4.4	KEYV-T20	7
VFM160L04.8R04I06S06	●	6	10°	16	9.7	4.8	0.4	2	S06	5.6	KEYV-T25	10
VFM200L06.0R04I06S08	●	6	10°	20	11.7	6	0.4	2	S08	7	KEYV-T40L	15
VFM250L07.5R04I06S10	●	6	10°	25	15.3	7.5	0.4	2	S10	8.55	KEYV-T50L	28

* Recommended clamping torque (N·m)
2 pieces per package

● : Line-up

VFX**-04/06...

4, 6 flute, roughing, with coolant hole (2 items do not have coolant hole)

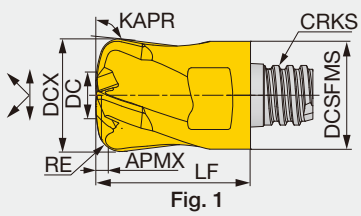


Fig. 1

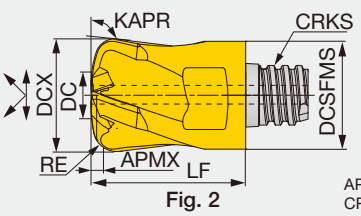


Fig. 2

APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	AH725	AH750	NOF	FHA	DCX	DC	DCSFMS	APMX	RE	KAPR	CRKS	LF	RMPX	Wrench	Torque*	Fig.
VFX120L0.60R18E04S08	●			4	20°	12	4.8	11.5	0.6	1.8	97°	S08	16.5	5°	KEYV-S08	15	2
VFX120L0.60R18H04S08		●		4	20°	12	4.8	11.5	0.6	1.8	97°	S08	16.5	5°	KEYV-S08	15	1
VFX120L0.65R12E06S08			●	6	20°	12	6.38	11.5	0.65	1.2	97°	S08	16.5	3°	KEYV-S08	15	2
VFX160L0.80R22E04S10	●			4	20°	16	5.6	15.4	0.8	2.2	97°	S10	20.5	5°	KEYV-S10	28	2
VFX160L0.80R22H04S10		●		4	20°	16	5.6	15.4	0.8	2.2	97°	S10	20.5	5°	KEYV-S10	28	1
VFX160L1.05R20E06S10			●	6	20°	16	7	15.4	1.05	2	97°	S10	20.5	3°	KEYV-S10	28	2

We don't recommend slot milling. Also max. ae < 0.4D.
* Recommended clamping torque (N·m)
2 pieces per package

● : Line-up

VBD**-BG-04..., VBE**-BG-04...

4 flute, roughing - finishing, helix cutting edge

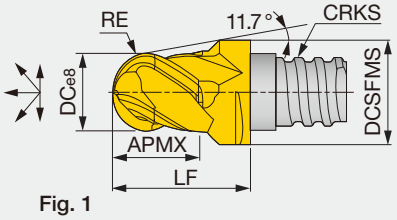


Fig. 1

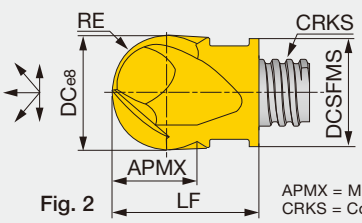


Fig. 2

APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*	Fig.
VBE0250L20-BG-U04S05		●	4	38°	0.250	0.300	0.200	0.124(1)	S05	0.390	KEYV-S05	5.16	1
VBE0312L20-BG-U04S05		●	4	38°	0.312	0.300	0.200	0.156(1)	S05	0.350	KEYV-S05	5.16	2
VBD0375L27-BG-U04S06		●	4	38°	0.375	0.360	0.275	0.188(1)	S06	0.512	KEYV-S06	7.38	2
VBD0500L37-BG-U04S08		●	4	30°	0.500	0.488	0.374	0.249(2)	S08	0.650	KEYV-S08	11.06	2
VBD0625L47-BG-U04S10		●	4	30°	0.625	0.600	0.470	0.313(2)	S10	0.800	KEYV-S10	20.65	2
VBD0750L62-BG-U04S12	●	●	4	30°	0.750	0.720	0.620	0.374(2)	S12	1.000	KEYV-S12	20.65	2
VBD100L86-BG-U04S15		●	4	30°	1.000	0.940	0.860	0.500(3)	S15	1.450	KEYV-W20	29.50	2

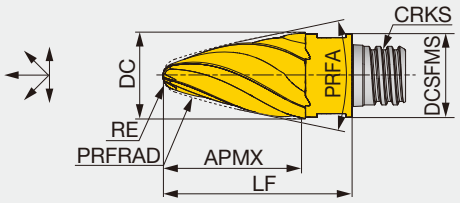
RE tolerance: (1) ± 0.0004"⊠(2) ± 0.0005"⊠(3) ± 0.0008"
* Torque: Recommended clamping torque: lbs·ft
VBE250, 0312 / VBD0375 ~ 0750: 2 pieces per package, VBD: 1 piece per package

● : Line-up

VBO...

4, 5 flute, semi finishing - finishing, long edge, high productive profiling

Barrel



APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	PRFRAD	PRFA	CRKS	LF	Wrench	Torque*
VBO080L12.0R900-4S05	●	4	30°	8	7.7	12	1	90	33.6°	S05	18	KEYV-S05	7
VBO100L15.0R850-5S06	●	5	30°	10	9.7	15	2	85	27.3°	S06	22	KEYV-S06	10
VBO120L19.0R800-5S08	●	5	30°	12	11.7	19	2	80	29.3°	S08	27	KEYV-S08	15
VBO160L25.0R750-5S10	●	5	30°	16	15.3	25	3	75	26.7°	S10	33.5	KEYV-S10	28

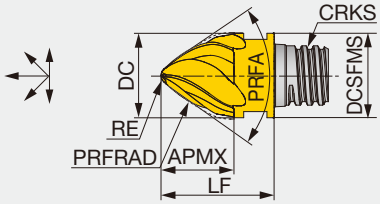
* Recommended clamping torque (N·m)
2 pieces per package

● : Line-up

VBO...

4 flute, semi finishing - finishing, short edge, high productive profiling

Barrel



APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	PRFRAD	PRFA	CRKS	LF	Wrench	Torque*
VBO100L08.0R250-4S06	●	4	30°	10	9.7	8	0.8	25	70.8°	S06	13	KEYV-S06	10
VBO120L09.0R300-4S08	●	4	30°	12	11.7	9	1.2	30	71.6°	S08	16.5	KEYV-S08	15
VBO160L13.0R400-4S10	●	4	30°	16	15.3	13	1.6	40	70.3°	S10	20.5	KEYV-S10	28

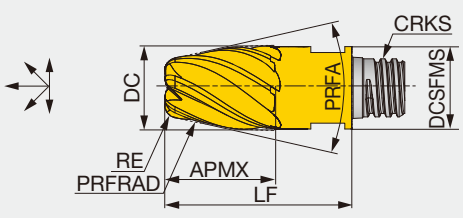
* Recommended clamping torque (N·m)
2 pieces per package

● : Line-up

VBN...

6 flute, semi finishing - finishing, high productive profiling

Bull nose



APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	RE	PRFRAD	PRFA	CRKS	LF	Wrench	Torque*
VBN100L13.0R450-6S06	●	6	35°	10	9.7	13	1.5	45	15.1°	S06	22	KEYV-S06	10
VBN120L15.0R500-6S08	●	6	35°	12	11.7	15	2	50	15.1°	S08	27	KEYV-S08	15
VBN160L18.0R600-6S10	●	6	35°	16	15.3	18	2	60	15.1°	S10	33.5	KEYV-S10	28

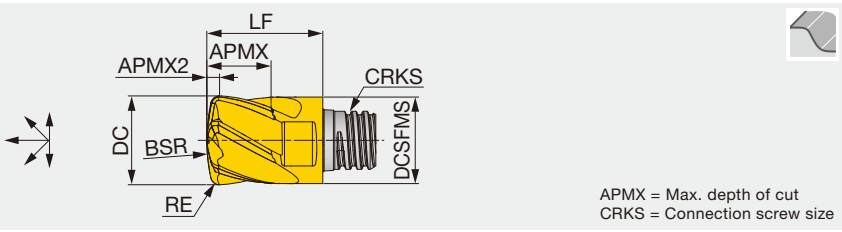
* Recommended clamping torque (N·m)
2 pieces per package

● : Line-up

TUNGMEISTER

VBL...

6 flute, semi finishing - finishing, high productive profiling



APMX = Max. depth of cut
CRKS = Connection screw size

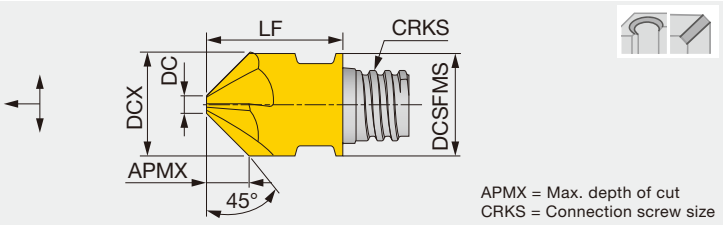
Metric	AH715	NOF	FHA	DC	DCSFMS	APMX	APMX2	RE	BSR	CRKS	LF	Wrench	Torque*
VBL080L0.90R160-6S05	●	6	30°	8	7.7	5.5	0.9	0.5	16	S05	10	KEYV-S05	7
VBL100L1.40R200-6S06	●	6	30°	10	9.7	7.5	1.42	1	20	S06	13	KEYV-S06	10
VBL120L1.50R240-6S08	●	6	30°	12	11.7	9	1.55	1	24	S08	16.5	KEYV-S08	15
VBL160L1.80R320-6S10	●	6	30°	16	15.3	12	1.8	1	32	S10	20.5	KEYV-S10	28

* Recommended clamping torque (N·m)
2 pieces per package

● : Line-up

VCA**-04/06...

4, 6 flute, chamfering angle: 45°



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DCX	DCSFMS	APMX	DC	CRKS	LF	Wrench	Torque*
VCA0375L16A45-U04S06	●	4	0°	0.375	0.375	0.150	0.073	S06	0.512	KEYV-S06	7.38

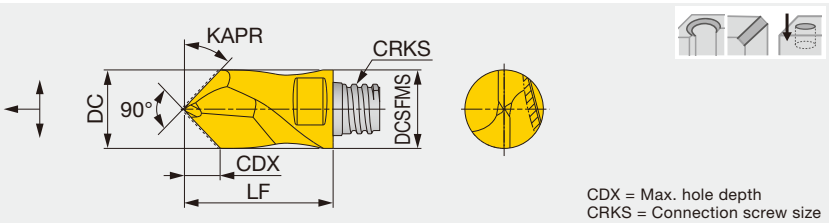
Metric	AH715	AH725	NOF	FHA	DCX	DCSFMS	APMX	DC	CRKS	LF	Wrench	Torque*
VCA100L04.0A45-04S06	●	●	4	0°	10	10	4	1.95	S06	13	KEYV-S06	10
VCA120L05.0A45-04S08	●	●	4	0°	12	12	5	1.95	S08	16.5	KEYV-S08	15
VCA127L05.3A45-04S08		●	4	0°	12.7	12.7	5.3	1.98	S08	16.5	KEYV-S08	15
VCA160L06.5A45-06S10	●	●	6	0°	16	16	6.5	3	S10	20.3	KEYV-S10	28
VCA200L07.5A45-06S12		●	6	0°	20	18.3	7.5	5	S12	25.5	KEYV-S12	28

* Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

● : Line-up

VDS...

2 flute, chamfering angle: 45°, helix cutting edge



CDX = Max. hole depth
CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC	DCSFMS	CDX	KAPR	CRKS	LF	Wrench	Torque*
VDS080A45-02S05	●	2	10°	8	7.7	3.7	45°	S05	15	KEYV-S05	7
VDS100A45-02S06	●	2	10°	10	9.7	4.4	45°	S06	19	KEYV-S06	10
VDS120A45-02S08	●	2	10°	12	11.7	5.4	45°	S08	23	KEYV-S08	15
VDS160A45-02S10	●	2	10°	16	15.3	7.1	45°	S10	28	KEYV-S10	28

* Recommended clamping torque (N·m)
2 pieces per package

● : Line-up

VDP**-02...

2 flute, A/B type center

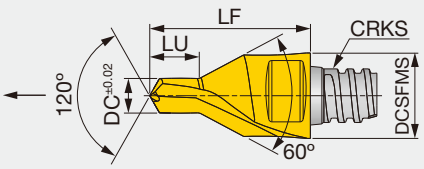


Fig. 1 Type A

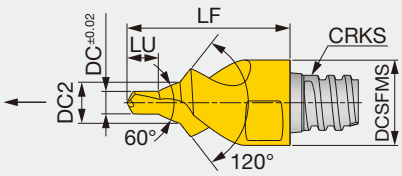


Fig. 2 Type B

CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC±0.02	DC2	DCSFMS	LU	CRKS	LF	Wrench	Torque*	Fig.
VDP107L1.60A30-02S04	●	2	0°	1.07	-	6	1.6	S04	10	KEYV-S05	4	1
VDP165L2.40A30-02S04	●	2	0°	1.65	-	6	2.4	S04	10	KEYV-S05	4	1
VDP207L2.90A30-02S04	●	2	0°	2.07	-	6	2.9	S04	10	KEYV-S05	4	1
VDP328L04.6A30-02S05	●	2	0°	3.28	-	8	4.6	S05	15	KEYV-S05	7	1
VDP412L05.9A30-02S06	●	2	0°	4.12	-	10	5.9	S06	19	KEYV-S06	10	1
VDP513L07.2A30-02S08	●	2	0°	5.13	-	12	7.2	S08	23	KEYV-S08	15	1
VDP646L08.9A30-02S10	●	2	0°	6.46	-	16	8.9	S10	28	KEYV-S10	28	1
VDP324L4.38B30-02S08	●	2	0°	3.24	6.77	12	4.4	S08	23	KEYV-S08	15	2
VDP409L5.60B30-02S08	●	2	0°	4.09	8.56	12.7	5.6	S08	23	KEYV-S08	15	2
VDP509L6.89B30-02S12	●	2	0°	5.09	10.69	18.45	6.9	S12	25.5	KEYV-S12	28	2
VDP641L8.63B30-02S12	●	2	0°	6.41	13.29	20	8.6	S12	25.5	KEYV-S12	28	2

* Recommended clamping torque (N·m)

● : Line-up

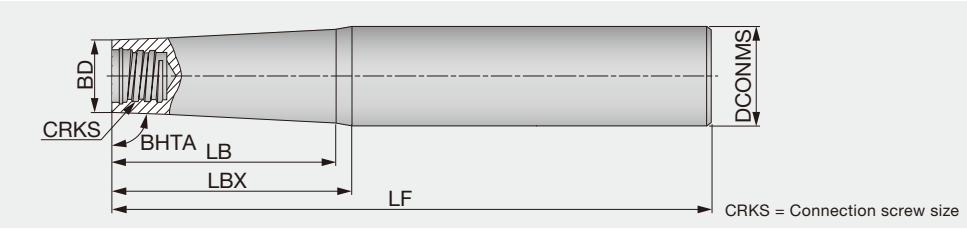
2 pieces per package

TUNGMEISTER

SHANKS

VTSD...

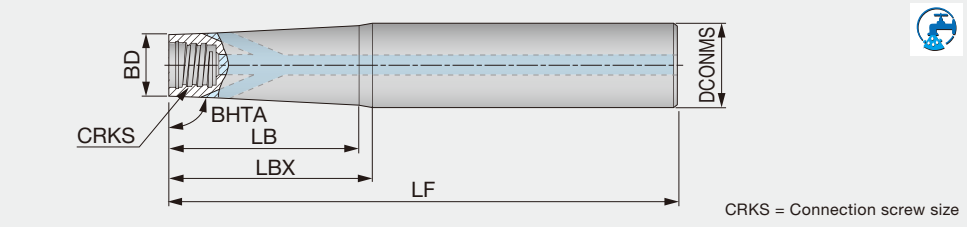
Straight shank and taper neck



Metric	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank material
VTSD08L080S04-S	87.4°	8	5.8	80	24	-	S04	Steel
VTSD12L080S05-S	85°	12	7.6	80	25	-	S05	Steel
VTSD12L100S05-S	89°	12	7.6	100	35	29	S05	Steel
VTSD12L110S05-C	89°	12	7.6	110	60	56	S05	Carbide
VTSD12L130S05-C	89°	12	7.6	130	80	77	S05	Carbide
VTSD16L125S06-S	85°	16	9.6	125	34	31	S06	Steel
VTSD16L130S08-C	89°	16	11.5	130	80	76.5	S08	Carbide
VTSD16L140S08-S	85°	16	11.5	140	22	19	S08	Steel
VTSD16L150S05-C	89°	16	7.6	150	100	91	S05	Carbide
VTSD16L150S06-C	89°	16	9.6	150	100	94.5	S06	Carbide
VTSD16L150S08-C	89°	16	11.5	150	100	98	S08	Carbide
VTSD16L160S06-S	89°	16	9.6	160	55	46.5	S06	Steel
VTSD16L170S06-C	89°	16	9.6	170	120	116.5	S06	Carbide
VTSD20L140S10-S	85°	20	15.2	140	27.5	-	S10	Steel
VTSD20L170S08-C	89°	20	11.5	170	120	112	S08	Carbide
VTSD20L170S08-S	89°	20	11.5	170	80	69.5	S08	Steel
VTSD20L170S10-C	89°	20	15.2	170	120	119	S10	Carbide
VTSD20L190S10-C	89°	20	15.2	190	140	-	S10	Carbide
VTSD20L190S10-S	89°	20	15.2	190	80	73	S10	Steel
VTSD20L210S10-C	89°	20	15.2	210	160	-	S10	Carbide
VTSD25L160S12-S	85°	25	18.3	160	40	-	S12	Steel
VTSD25L170S10-S	85°	25	15.2	170	56	-	S10	Steel
VTSD25L180S12-C	89°	25	18.3	180	120	115	S12	Carbide
VTSD25L210S12-S	89°	25	18.3	210	100	94.5	S12	Steel
VTSD25L250S12-C	89°	25	18.3	250	140	136.5	S12	Carbide
VTSD32L155S15-S	85°	32	23.9	155	45	-	S15	Steel
VTSD32L190S12-S	85°	32	18.3	190	80	-	S12	Steel
VTSD32L220S15-S	88°	32	23.9	220	100	-	S15	Steel
VTSD32L250S15-C	89°	32	23.9	250	150	145	S15	Carbide
VTSD32L300S15-C	89°	32	23.9	300	200	198	S15	Carbide
VTSD40L150S21-S	85°	40	15.2	150	57	-	S21	Steel

VTSD**-W-A...

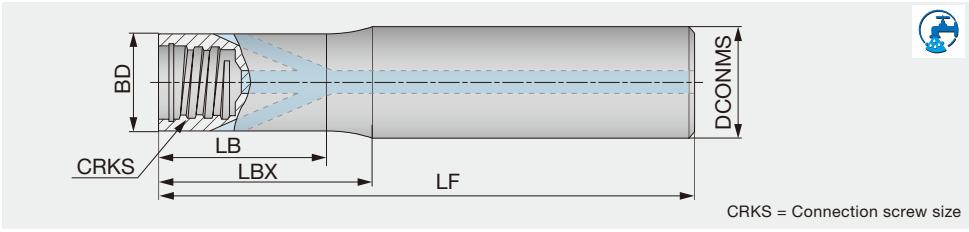
Straight shank and taper neck with coolant hole



Metric	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank material
VTSD12L110S06-W-A	89°	12	9.6	110	60	59	S06	Tungsten
VTSD16L170S06-W-A	89°	16	9.6	170	120	116	S06	Tungsten

VSSD**-W-A...

Straight shank and neck with coolant hole

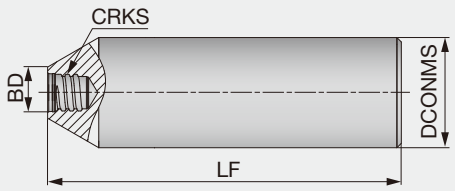


CRKS = Connection screw size

Metric	DCONMS	BD	LF	LBX	LB	CRKS	Shank material
VSSD10L070S06-W-A	10	9.6	70	20	19	S06	Tungsten
VSSD10L090S06-W-A	10	9.6	90	40	39	S06	Tungsten
VSSD10L110S06-W-A	10	9.6	110	60	59	S06	Tungsten
VSSD12L070S08-W-A	12	11.5	70	20	19	S08	Tungsten
VSSD12L090S08-W-A	12	11.5	90	40	39	S08	Tungsten
VSSD12L110S08-W-A	12	11.5	110	60	59	S08	Tungsten
VSSD12L130S08-W-A	12	11.5	130	80	79	S08	Tungsten
VSSD16L070S10-W-A	16	15.2	70	20	18.5	S10	Tungsten
VSSD16L090S10-W-A	16	15.2	90	40	36.5	S10	Tungsten
VSSD16L110S10-W-A	16	15.2	110	60	58.5	S10	Tungsten
VSSD16L130S10-W-A	16	15.2	130	80	78.5	S10	Tungsten
VSSD20L090S12-W-A	20	18.3	90	40	37	S12	Tungsten
VSSD20L130S12-W-A	20	18.3	130	80	77	S12	Tungsten

VSSD...

High rigidity shank

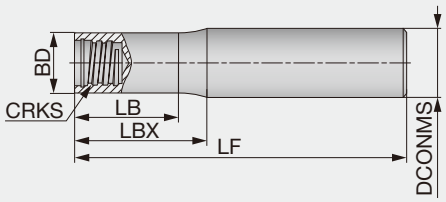


CRKS = Connection screw size

Metric	DCONMS	BD	LF	CRKS	Shank shape	Shank material
VSSD06L050S04-S	6	5.8	50	S04	Cylindrical	Steel
VSSD06L060S04-C	6	5.8	60	S04	Cylindrical	Carbide
VSSD08L050S04-S	8	5.8	50	S04	Cylindrical	Steel
VSSD08L060S04-C	8	5.8	60	S04	Cylindrical	Carbide
VSSD10L055S05-S	10	7.6	55	S05	Cylindrical	Steel
VSSD12L065S06-S	12	9.6	65	S06	Cylindrical	Steel
VSSD16L065S08-S	16	11.6	65	S08	Cylindrical	Steel
VSSD20L070S10-S	20	15.3	70	S10	Cylindrical	Steel
VSSD25L075S12-S	25	18.3	75	S12	Cylindrical	Steel
VSSD32L100S15-S	32	23.9	100	S15	Cylindrical	Steel
VSSD40L100S21-S	40	30	100	S21	Cylindrical	Steel

VSS**S...

Straight neck and cylindrical shank



CRKS = Connection screw size

Inch	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSS031L250S05US	0.312	0.300	2.500	0.590	0.510	S05	Cylindrical	Steel
VSS037L300S06US	0.375	0.364	3.000	0.787	0.768	S06	Cylindrical	Steel
VSS050L350S08US	0.500	0.480	3.540	0.630	0.530	S08	Cylindrical	Steel
VSS062L400S10US	0.625	0.598	4.000	0.780	0.680	S10	Cylindrical	Steel
VSS075L500S12US	0.750	0.720	5.000	1.000	0.880	S12	Cylindrical	Steel
VSS031L300S05UC	0.312	0.300	3.000	1.000	0.950	S05	Cylindrical	Carbide
VSS031L350S05UC	0.312	0.300	3.500	1.500	1.450	S05	Cylindrical	Carbide
VSS031L400S05UC	0.312	0.300	4.000	2.000	1.950	S05	Cylindrical	Carbide
VSS037L400S06UC	0.375	0.364	4.000	1.250	1.200	S06	Cylindrical	Carbide
VSS037L475S06UC	0.375	0.364	4.750	2.000	1.950	S06	Cylindrical	Carbide
VSS050L400S08UC	0.500	0.480	4.000	1.500	1.400	S08	Cylindrical	Carbide
VSS050L550S08UC	0.500	0.480	5.500	2.500	2.450	S08	Cylindrical	Carbide
VSS062L325S10UC	0.625	0.600	3.250	1.250	1.180	S10	Cylindrical	Carbide
VSS062L450S10UC	0.625	0.600	4.500	2.500	2.430	S10	Cylindrical	Carbide
VSS062L550S10UC	0.625	0.600	5.500	3.500	3.430	S10	Cylindrical	Carbide
VSS062L700S10UC	0.625	0.600	7.000	5.000	4.930	S10	Cylindrical	Carbide
VSS075L400S12UC	0.750	0.720	4.000	1.500	1.430	S12	Cylindrical	Carbide
VSS075L550S12UC	0.750	0.720	5.500	3.000	2.930	S12	Cylindrical	Carbide
VSS075L800S12UC	0.750	0.720	8.000	4.500	4.430	S12	Cylindrical	Carbide
VSS031L300S05UW	0.312	0.299	3.000	1.000	0.978	S05	Cylindrical	Tungsten
VSS031L450S05UW	0.312	0.299	4.500	2.000	1.978	S05	Cylindrical	Tungsten
VSS037L355S06UW	0.375	0.364	3.550	0.750	0.680	S06	Cylindrical	Tungsten
VSS050L425S08UW	0.500	0.480	4.250	0.630	0.530	S08	Cylindrical	Tungsten
VSS100L537S15US	1.000	0.957	5.375	1.375	1.313	S15	Cylindrical	Steel
VSS100L475S15UC	1.000	0.957	4.750	2.375	2.313	S15	Cylindrical	Carbide
VSS100L675S15UC	1.000	0.957	6.750	4.000	3.938	S15	Cylindrical	Carbide
VSS100L1000S15UC	1.000	0.957	10.000	6.000	5.938	S15	Cylindrical	Carbide

VSSD...

Straight neck and cylindrical shank

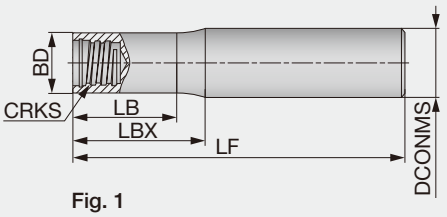


Fig. 1

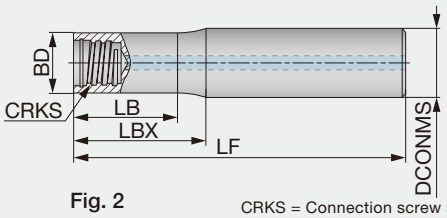


Fig. 2

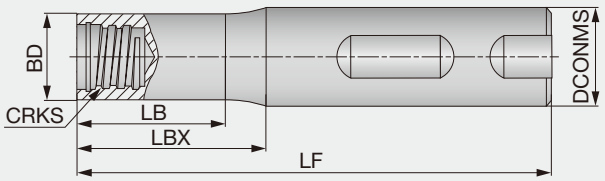
CRKS = Connection screw size

Metric	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material	Fig.
VSSD08L060S05-S	8	7.6	60	15	12.8	S05	Cylindrical	Steel	1
VSSD08L070S05-C	8	7.6	70	20	19	S05	Cylindrical	Carbide	1
VSSD08L090S05-C	8	7.6	90	40	39	S05	Cylindrical	Carbide	1
VSSD08L110S05-C	8	7.6	110	60	59	S05	Cylindrical	Carbide	1
VSSD10L070S06-C	10	9.6	70	20	18.5	S06	Cylindrical	Carbide	1
VSSD10L075S06-S	10	9.6	75	20	19.4	S06	Cylindrical	Steel	1
VSSD10L090S06-C	10	9.6	90	40	38.5	S06	Cylindrical	Carbide	1
VSSD10L110S06-C	10	9.6	110	60	58.5	S06	Cylindrical	Carbide	1
VSSD10L150S06-C	10	9.6	150	100	98.5	S06	Cylindrical	Carbide	1
VSSD12L070S08-C	12	11.5	70	20	17	S08	Cylindrical	Carbide	1
VSSD12L070S08-C-A	12	11.5	70	20	17	S08	Cylindrical	Carbide	2
VSSD12L090S08-C	12	11.5	90	40	37	S08	Cylindrical	Carbide	1
VSSD12L090S08-S	12	11.5	90	16	13.6	S08	Cylindrical	Steel	1
VSSD12L090S08-S-A	12	11.5	90	16	13.6	S08	Cylindrical	Steel	2
VSSD12L090LS08-C-A	12	11.5	90	40	37	S08	Cylindrical	Carbide	2
VSSD12L090LS08-S-A	12	11.5	90	40	37	S08	Cylindrical	Steel	2
VSSD12L110S08-C	12	11.5	110	60	58	S08	Cylindrical	Carbide	1
VSSD12L110S08-C-A	12	11.5	110	60	57	S08	Cylindrical	Carbide	2
VSSD12L130S08-C	12	11.5	130	80	78	S08	Cylindrical	Carbide	1
VSSD12L130S08-C-A	12	11.5	130	80	77	S08	Cylindrical	Carbide	2
VSSD16L090S10-C	16	15.2	90	40	38	S10	Cylindrical	Carbide	1
VSSD16L090S10-C-A	16	15.2	90	40	38	S10	Cylindrical	Carbide	2
VSSD16L100S10-S	16	15.2	100	20	18	S10	Cylindrical	Steel	1
VSSD16L100S10-S-A	16	15.2	100	20	18	S10	Cylindrical	Steel	2
VSSD16L100LS10-S-A	16	15.2	100	40	38	S10	Cylindrical	Steel	2
VSSD16L110S10-C	16	15.2	110	60	58	S10	Cylindrical	Carbide	1
VSSD16L110S10-C-A	16	15.2	110	60	58	S10	Cylindrical	Carbide	2
VSSD16L130S10-C	16	15.2	130	80	78	S10	Cylindrical	Carbide	1
VSSD16L130S10-C-A	16	15.2	130	80	78	S10	Cylindrical	Carbide	2
VSSD16L150S10-C	16	15.2	150	100	98	S10	Cylindrical	Carbide	1
VSSD20L090S12-C	20	18.3	90	40	37	S12	Cylindrical	Carbide	1
VSSD20L120S12-S	20	18.3	120	25	20.5	S12	Cylindrical	Steel	1
VSSD20L130S12-C	20	18.3	130	80	77	S12	Cylindrical	Carbide	1
VSSD20L200S12-C	20	18.3	200	120	117	S12	Cylindrical	Carbide	1
VSSD25L120S15-C	25	23.9	120	60	58	S15	Cylindrical	Carbide	1
VSSD25L135S15-S	25	23.9	135	35	33	S15	Cylindrical	Steel	1
VSSD25L170S15-C	25	23.9	170	100	98	S15	Cylindrical	Carbide	1
VSSD25L250S15-C	25	23.9	250	150	148	S15	Cylindrical	Carbide	1
VSSD32L100S21-S	32	30	100	35	32	S21	Cylindrical	Steel	1
VSSD32L150S21-S	32	30	150	54	50	S21	Cylindrical	Steel	1

TUNGMEISTER

VSS**-W..., VSSD**-W...

Straight neck and weldon shank



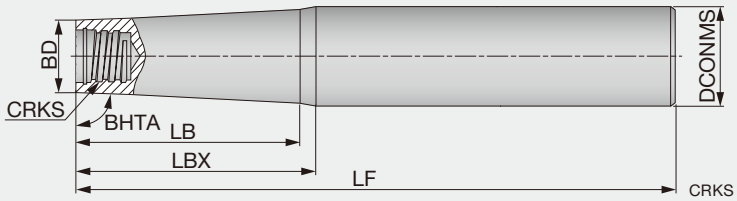
CRKS = Connection screw size

Inch	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSS050L218W05US	0.500	0.299	2.185	0.150	-	S05	Weldon	Steel
VSS062L258W06US	0.625	0.366	2.580	0.236	-	S06	Weldon	Steel
VSS062L258W08US	0.625	0.480	2.580	0.157	-	S08	Weldon	Steel
VSS075L275W10US	0.750	0.598	2.750	0.157	-	S10	Weldon	Steel
VSS100L300W12US	1.000	0.720	3.000	0.283	-	S12	Weldon	Steel

Metric	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSSD12L055W05-S	12	7.6	55	3.8	-	S05	Weldon	Steel
VSSD16L065W06-S	16	9.6	65	6	-	S06	Weldon	Steel
VSSD16L065W08-S	16	11.5	65	4	-	S08	Weldon	Steel
VSSD20L070W10-S	20	15.2	70	4	-	S10	Weldon	Steel
VSSD25L075W12-S	25	18.3	75	6	-	S12	Weldon	Steel

VTS...

Straight shank and taper neck

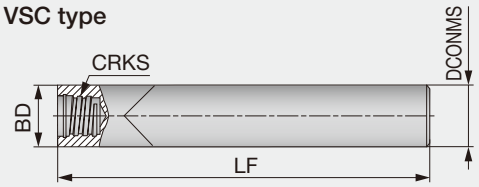


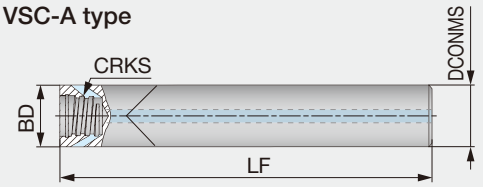
CRKS = Connection screw size

Inch	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank material
VTS050L300S05US	85°	0.500	0.300	3.000	1.000	0.930	S05	Steel
VTS050L400S05US	89°	0.500	0.300	4.000	1.500	1.300	S05	Steel
VTS062L500S06US	85°	0.625	0.370	5.000	1.380	1.283	S06	Steel
VTS062L630S06US	89°	0.625	0.364	6.300	2.170	1.750	S06	Steel
VTS062L550S08US	85°	0.625	0.480	5.500	0.870	0.770	S08	Steel
VTS075L650S08US	89°	0.750	0.480	6.500	3.150	2.770	S08	Steel
VTS075L550S10US	85°	0.750	0.598	5.500	0.880	-	S10	Steel
VTS100L670S10US	89°	1.000	0.598	6.700	2.295	-	S10	Steel
VTS075L750S10US	89°	0.750	0.600	7.500	3.150	2.950	S10	Steel
VTS100L630S12US	89°	1.000	0.720	6.300	1.600	-	S12	Steel
VTS100L800S12US	89°	1.000	0.720	8.000	3.750	3.400	S12	Steel
VTS125L600S15US	85°	1.250	0.957	6.000	1.750	1.594	S15	Steel
VTS125L750S12US	89°	1.250	0.720	7.500	3.150	-	S12	Steel
VTS037L350S05UC	89°	0.375	0.300	3.500	1.500	-	S05	Carbide
VTS050L450S05UC	89°	0.500	0.300	4.500	2.500	2.354	S05	Carbide
VTS062L600S05UC	89°	0.625	0.300	6.000	4.000	3.900	S05	Carbide
VTS050L550S06UC	89°	0.500	0.364	5.500	2.500	2.470	S06	Carbide
VTS062L650S06UC	89°	0.625	0.364	6.500	3.500	3.380	S06	Carbide
VTS062L650S08UC	89°	0.625	0.480	6.500	3.500	3.440	S08	Carbide
VTS075L700S08UC	89°	0.750	0.480	7.000	4.000	3.900	S08	Carbide
VTS075L650S10UC	89°	0.750	0.600	6.500	4.000	-	S10	Carbide
VTS075L880S10UC	89°	0.750	0.600	8.800	6.300	6.240	S10	Carbide
VTS100L1000S12UC	89°	1.000	0.720	10.000	5.500	-	S12	Carbide
VTS125L1000S15UC	89°	1.250	0.957	10.000	6.000	-	S15	Carbide
VTS125L1200S15UC	89°	1.250	0.941	12.000	8.000	-	S15	Carbide
VTS075L550S06UW	85°	0.750	0.370	5.500	2.240	-	S06	Tungsten
VTS062L670S06UW	89°	0.625	0.364	6.700	2.180	1.770	S06	Tungsten
VTS075L670S08UW	89°	0.750	0.480	6.700	3.150	2.770	S08	Tungsten

VSC...

Straight shank for VST type slotting heads





CRKS = Connection screw size

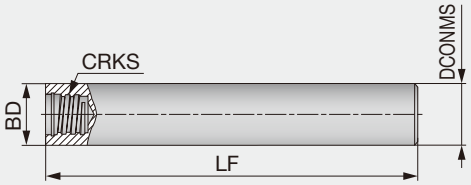
Inch	DCONMS	BD	LF	CRKS	Air hole	Shank material
VSC095L080S06-C	0.375	0.375	3.150	S06	without	Carbide
VSC127L120S08-C-A	0.500	0.500	4.724	S08	with	Carbide

Metric	DCONMS	BD	LF	CRKS	Air hole	Shank material
VSC100L100S06-C	10	10	100	S06	without	Carbide
VSC120L100S08-C-A	12	12	100	S08	with	Carbide

For VSC-C type shank, just VST slotting head is recommended.
If other heads are used on the VSC-C shank, the depth of cut must be smaller than the max. *ap* in each head.
The VSC-C type shank does not have external clearance, so the shank may interfere with the work piece.

VSTD...

Straight shank for VTB type T-slotting heads



CRKS = Connection screw size

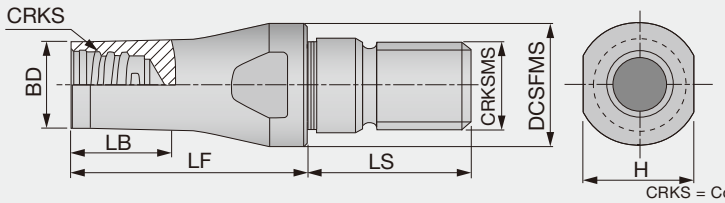
Inch	DCONMS	BD	LF	CRKS	Shank material
VST031L275S05US	0.312	0.312	2.750	S05	Steel
VST037L325S06US	0.375	0.375	3.250	S06	Steel
VST050L375S08US	0.500	0.500	3.750	S08	Steel
VST062L400S10US	0.625	0.625	4.000	S10	Steel

Metric	DCONMS	BD	LF	CRKS	Shank material
VSTD06L070S04-S	6	6	70	S04	Steel
VSTD08L070S05-S	8	8	70	S05	Steel
VSTD10L080S06-S	10	10	80	S06	Steel
VSTD12L090S08-S	12	12	90	S08	Steel
VSTD16L100S10-S	16	16	100	S10	Steel

For VSTD type shank, just VTB T-slotting head is recommended.
If other heads are used on the VSTD shank, the depth of cut must be smaller than the max. *ap* in each head.
The VSTD type shank does not have external clearance, so the shank may interfere with the work piece.

VAD**-M...

TungFlex conversion adaptor

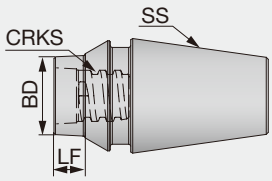


CRKS = Connection screw size

Metric	BD	DCSFMS	LF	LS	LB	CRKS	CRKSMS	H	Shank material
VAD130L016S08-S-M8	11.7	13	16	17.5	6	S08	M8	11	Steel
VAD130L025S08-S-M8	11.7	13	25	17.5	20	S08	M8	11	Steel
VAD180L020S08-S-M10	11.7	18	20	20	12	S08	M10	13	Steel
VAD180L025S08-S-M10	11.7	18	25	20	15	S08	M10	11	Steel
VAD210L020S08-S-M12	11.7	21	20	20	10	S08	M12	12.75	Steel
VAD210L025S08-S-M12	11.7	21	25	20	13	S08	M12	12.75	Steel

VER...

Straight neck with ER11/16 collet



CRKS = Connection screw size

Inch	SS	BD	LF	CRKS	Shank material
VER11AL006S04-S	ER11	0.228	0.236	S04	Steel
VER11AL006S05-S	ER11	0.311	0.236	S05	Steel
VER11AL020S05-S	ER11	0.311	0.787	S05	Steel
VER16AL012S05-S	ER11	0.311	0.472	S05	Steel
VER16AL020S05-S	ER11	0.311	0.787	S05	Steel
VER16AL010S06-S	ER16	0.390	0.394	S05	Steel
VER16AL020S06-S	ER16	0.390	0.787	S05	Steel
VER16AL006S08-S	ER16	0.457	0.236	S05	Steel
VER16AL020S08-S	ER16	0.457	0.787	S05	Steel

STANDARD CUTTING CONDITIONS

Shoulder milling

VEH, VEE: 3 flutes, VED / VEE: 4 flutes, VEE-I, VED-R

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: *øDc* (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Pick feed *Pf* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	260 - 590	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x øDc	0.25 x øDc
P	High carbon steels 4140, 5120, etc.	- 300 HB	200 - 460	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x øDc	0.25 x øDc
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	200 - 400	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x øDc	0.25 x øDc
M	Stainless steels S30400, S31600, etc.	- 200 HB	130 - 330	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x øDc	0.25 x øDc
K	Grey cast irons No.250B, No.300B, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x øDc	0.25 x øDc
K	Ductile cast irons 60-40-18, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x Dc	0.25 x øDc
N	Aluminum alloys Si < 13%	-	660 - 2297	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x øDc	0.25 x øDc
N	Aluminum alloys Si ≥13%	-	330 - 980	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x øDc	0.25 x øDc
S	Titanium alloys Ti-6Al-4V, etc.	-	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x øDc	0.05 x øDc
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 130	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x øDc	0.05 x øDc
H	Hardened steel H13, etc.	40 - 50 HRC	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x øDc	0.05 x øDc
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 200	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x øDc	0.05 x øDc

VED: 7, 9 flutes

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Width of cut *ae* (in)
S	Titanium alloys Ti-6Al-4V, etc.	-	200 - 400	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	100 - 200	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
H	Hardened steel H13, H19, etc.	40 - 50 HRC	260 - 530	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	130 - 300	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC

TUNGMEISTER

Slotting

VEH, VEE: 3 flutes, VED/VEE: 4 flutes, VEE-I,

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: *øDc* (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	260 - 590	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x øDc
	High carbon steels 4140, 5120, etc.	- 300 HB	200 - 460	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x øDc
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	200 - 400	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x øDc
M	Stainless steels S30400, S31600, etc.	- 200 HB	130 - 330	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x øDc
K	Grey cast irons No.250B, No.300B, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x øDc
	Ductile cast irons 60-40-18, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x øDc
N	Aluminum alloys Si < 13%	-	660 - 2297	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x øDc
	Aluminum alloys Si ≥13%	-	330 - 980	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x øDc
S	Titanium alloys Ti-6Al-4V, etc.	-	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x øDc
	Heat-resistant alloys Inconel 718, etc.	-	66 - 130	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x øDc
H	Hardened steel H13, etc.	40 - 50 HRC	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.2 x øDc
	Hardened steel D2, etc.	50 - 60 HRC	66 - 200	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.2 x øDc

Face milling

VFM

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC ø12 mm	ø16 mm	ø20 mm	ø25 mm	Depth of cut *ap* (in)	Width of cut *ae* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	262 - 591	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
P	High carbon steels 4140, 5120, etc.	- 300 HB	197 - 459	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	197 - 394	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
M	Stainless steels S30400, S31600, etc.	- 200 HB	131 - 328	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
K	Grey cast irons No.250B, No.300B, etc.	150 - 250 HB	262 - 656	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
K	Ductile cast irons 60-40-18, etc.	150 - 250 HB	262 - 656	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
N	Aluminum alloys Si < 13%	-	656 - 2297	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
N	Aluminum alloys Si ≥ 13%	-	328 - 984	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 262	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 131	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	131 - 262	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 197	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.039	0.7 x DC

High feed milling

VFX: 4, 6 flutes

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	ø10 mm Feed per tooth *fz* (ipt)	ø10 mm Depth of cut *ap* (in)	ø12 mm Feed per tooth *fz* (ipt)	ø12 mm Depth of cut *ap* (in)	ø16 mm Feed per tooth *fz* (ipt)	ø16 mm Depth of cut *ap* (in)	ø20 mm Feed per tooth *fz* (ipt)	ø20 mm Depth of cut *ap* (in)	Width of cut *ae* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	328 - 656	0.012 - 0.028	0.020	0.016 - 0.031	0.020	0.020 - 0.035	0.030	0.024 - 0.039	0.039	0.6 x DC
P	Alloy steel 4140, 8620, etc.	- 300 HB	262 - 591	0.008 - 0.024	0.020	0.012 - 0.028	0.020	0.016 - 0.031	0.030	0.020- 0.035	0.039	0.6 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	262 - 525	0.008 - 0.020	0.016	0.008 - 0.020	0.016	0.012 - 0.024	0.020	0.012 - 0.024	0.030	0.6 x DC
M	Stainless steels S30400, S31600, etc.	- 200 HB	197 - 328	0.008 - 0.024	0.016	0.008 - 0.024	0.016	0.012 - 0.028	0.020	0.012 - 0.028	0.030	0.6 x DC
K	Grey cast irons No.250B, No.300B, etc.	150 - 250 HB	328 - 722	0.012 - 0.028	0.020	0.016 - 0.031	0.030	0.020 - 0.035	0.030	0.024 - 0.039	0.039	0.6 x DC
K	Ductile cast irons 60-40-18, etc.	150 - 250 HB	328 - 722	0.008 - 0.024	0.020	0.012 - 0.028	0.030	0.016 - 0.031	0.030	0.020 - 0.035	0.039	0.6 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 262	0.008 - 0.020	0.016	0.008 - 0.020	0.016	0.008 - 0.024	0.020	0.008 - 0.024	0.020	0.25 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 131	0.004 - 0.012	0.012	0.004 - 0.012	0.012	0.004 - 0.012	0.016	0.004 - 0.012	0.016	0.25 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	131 - 262	0.008 - 0.016	0.012	0.008 - 0.016	0.012	0.012 - 0.020	0.016	0.012 - 0.020	0.016	0.45 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 197	0.004 - 0.008	0.008	0.004 - 0.008	0.008	0.004 - 0.012	0.012	0.004 - 0.012	0.012	0.25 x DC

Please note that the feed per tooth should not exceed the maximum feed per tooth for each product.

TUNGMEISTER

Profiling for roughing

VBD-BG, VBE-BG

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: *øDc* (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Pick feed *Pf* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	328 - 656	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	High carbon steels 4140, etc.	- 300 HB	262 - 591	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	262 - 525	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
M	Stainless steels 304, 316, etc.	- 200 HB	197 - 328	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
K	Grey cast irons 250, 300, etc.	150 - 250 HB	328 - 722	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	Ductile cast irons 400-15S, etc.	150 - 250 HB	328 - 722	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
N	Aluminum alloys Si < 13%	-	656 -2297	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	Aluminum alloys Si ≥13%	-	328 - 984	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 262	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC
	Heat-resistant alloys Inconel 718, etc.	50 - 60 HRC	66 - 131	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC
H	Hardened steel SKD61, SKT4, etc. H13, etc.	-	131 - 262	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC
	Hardened steel SKD11, SKH, etc. D2, etc.	50 - 60 HRC	66 - 197	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC

Profiling for semi-finishing and finishing

VBD-BG, VBE-BGA

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: *øDc* (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Pick feed *Pf* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	394 - 820	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	High carbon steels 4140, etc.	- 300 HB	328 - 722	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	328 - 656	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
M	Stainless steels 304, 316, etc.	- 200 HB	262 - 394	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
K	Grey cast irons 250, 300, etc.	150 - 250 HB	394 - 919	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	Ductile cast irons 400-15S, etc.	150 - 250 HB	394 -919	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
N	Aluminum alloys Si < 13%	-	984 - 3281	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	Aluminum alloys Si ≥13%	-	492 - 1312	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	164 - 328	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC
	Heat-resistant alloys Inconel 718, etc.	50 - 60 HRC	98 - 164	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC
H	Hardened steel SKD61, SKT4, etc. H13, etc.	-	164 - 328	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC
	Hardened steel SKD11, SKH, etc. D2, etc.	50 - 60 HRC	98 - 262	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC

Profiling

VBO, VBN, VBL

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC 10 mm	12 mm	16 mm	Cusp height (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	328 - 656	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
P	High carbon steel 4140, etc.	- 300 HB	262 - 591	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	262 - 525	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
M	Stainless steels 304, 316, etc.	- 200 HB	197 - 328	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
K	Gray cast irons 250, 300, etc.	150 - 250 HB	328 - 722	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
K	Ductile cast irons 400-15S, etc.	150 - 250 HB	328 - 722	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
N	Aluminum alloys Si < 13%	-	656 - 2297	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
N	Aluminum alloys Si ≥13%	-	328 - 984	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 262	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
S	Heat-resistant alloys Inconel718, etc.	-	66 - 131	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
H	Hardened steel H13, etc.	40 - 50 HRC	131 - 262	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 197	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004

TUNGMEISTER

Chamfering and countersinking (Milling, Z-feed chamfering)

VCA

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steel 1045, 1055, etc.	- 300 HB	197 - 328	0.001 - 0.002
P	Alloy steel 4140, 8620, etc.	- 300 HB	164 - 262	0.001 - 0.002
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	131 - 230	0.001 - 0.002
M	Stainless steels 304, 316, etc.	- 200 HB	98 - 164	0.001 - 0.002
K	Gray cast irons 250, 300, etc.	150 - 250 HB	262 - 394	0.001 - 0.002
K	Ductile cast irons 400-15S, etc.	150 - 250 HB	262 - 394	0.001 - 0.002
N	Aluminum alloys	-	328 - 656	0.002 - 0.003
S	Titanium alloys Ti-6Al-4V, etc.	-	98 - 164	0.001 - 0.002
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 131	0.001 - 0.002
H	Hardened steel H13, etc.	40 - 50 HRC	98 - 164	0.001 - 0.002
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 131	0.001 - 0.002

Spot drill

VDS

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Carbon steel 1045, 1055, etc.	- 300 HB	197 - 328	0.0024 - 0.0047
P	Alloy steel 4140, 8620, etc.	- 300 HB	164 - 262	0.0024 - 0.0047
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	131 - 230	0.0024 - 0.0047
M	Stainless steels 304, 316, etc.	- 200 HB	98 - 164	0.0024 - 0.0047
K	Gray cast irons 250, 300, etc.	150 - 250 HB	262 - 394	0.0024 - 0.0047
K	Ductile cast irons 400-15S, etc.	150 - 250 HB	262 - 394	0.0024 - 0.0047
N	Aluminum alloys	-	328 - 656	0.0031 - 0.0063
S	Titanium alloys Ti-6Al-4V, etc.	-	98 - 164	0.002 - 0.0039
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 131	0.0016 - 0.0031
H	Hardened steel H13, etc.	40 - 50 HRC	98 - 164	0.002 - 0.0039
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 131	0.0016 - 0.0031

Center drill

VDP

ISO	Workpiece material	Hardness	Cutting speed *Vc* (sfm)	Feed : *f* (ipt)						
				VDP107	VDP165	VDP207	VDP324 / VDP328	VDP409 / VDP412	VDP509 / VDP513	VDP641
P	Carbon steel 1045, 1055, etc.	- 300 HB	131 - 262	0.0008 - 0.0016	0.001 - 0.002	0.001 - 0.002	0.0016 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.0024 - 0.0047
	Alloy steel 4140, 8620, etc.	- 300 HB	98 - 164	0.0008 - 0.0016	0.001 - 0.002	0.001 - 0.002	0.0016 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.0024 - 0.0047
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	66 - 98	0.0008 - 0.0016	0.001 - 0.002	0.001 - 0.002	0.0016 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.0024 - 0.0047
M	Stainless steels 304, 316, etc.	- 200 HB	49 - 82	0.0006 - 0.0012	0.0008 - 0.0016	0.0008 - 0.0016	0.0016 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.0024 - 0.0047
K	Gray cast irons 250, 300, etc.	150 - 250 HB	197 - 328	0.0008 - 0.0016	0.001 - 0.002	0.001 - 0.002	0.002 - 0.0035	0.0028 - 0.0005	0.0028 - 0.0047	0.0047 - 0.0071
	Ductile cast irons 400-15S, etc.	150 - 250 HB	197 - 328	0.0008 - 0.0016	0.001 - 0.002	0.001 - 0.002	0.0016 - 0.0031	0.002 - 0.0039	0.002 - 0.0039	0.0039 - 0.0059
S	Titanium alloys Ti-6Al-4V, etc.	-	49 - 82	0.0004 - 0.0008	0.0004 - 0.0008	0.0006 - 0.0012	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028
	Heat-resistant alloys Inconel 718, etc.	-	33 - 66	0.0004 - 0.0008	0.0004 - 0.0008	0.0006 - 0.0012	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024
H	Hardened steel H13, etc.	40 - 50 HRC	49 - 82	-	-	-	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028
	Hardened steel D2, etc.	50 - 60 HRC	33 - 66	-	-	-	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024

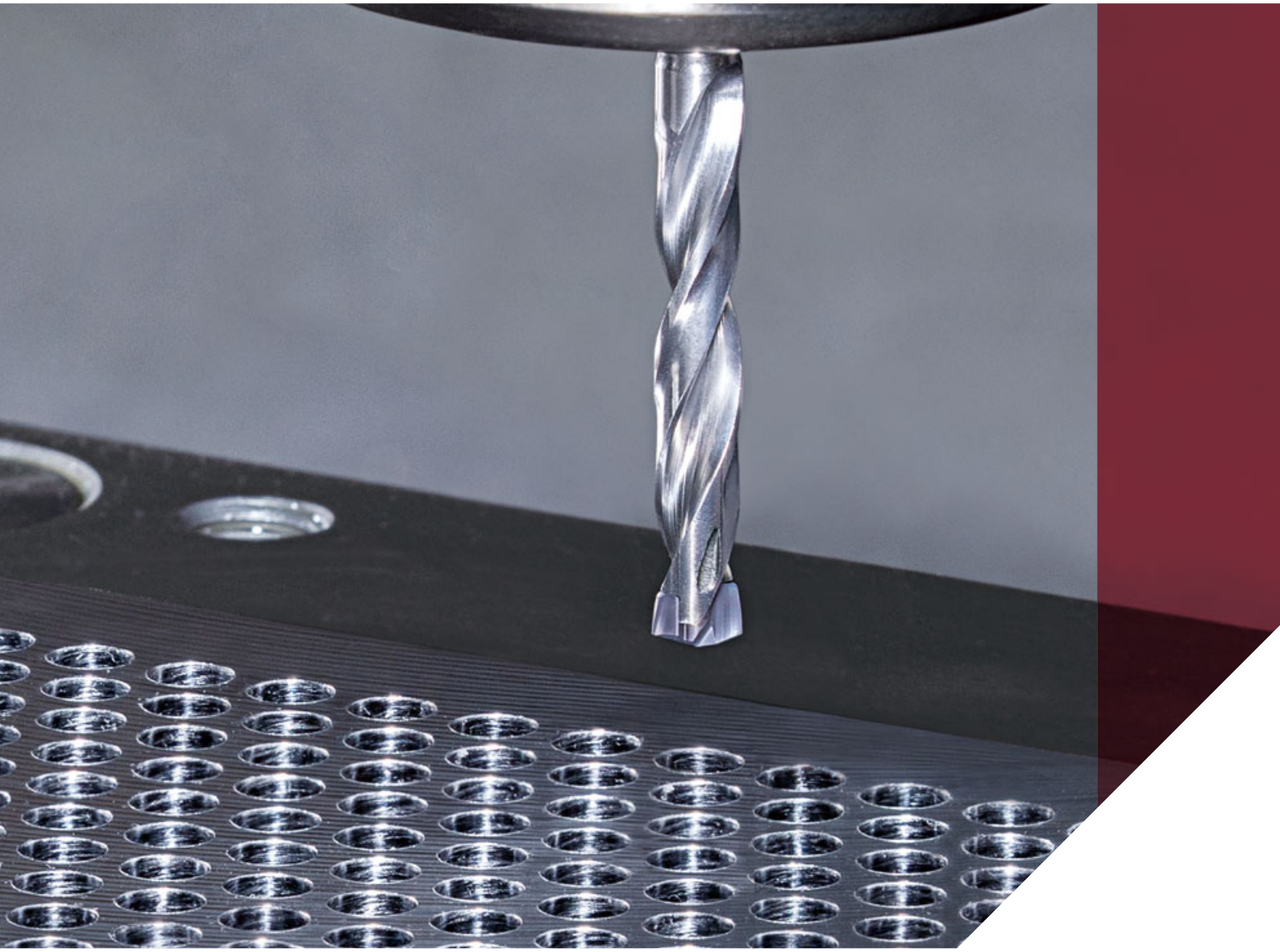
Hole making

ADDMEISTER DRILL

Drilling

WORLD'S SMALLEST EXCHANGEABLE DRILL HEADS SERIES

ADD superb performance in small drilling operations



- Through-coolant capability allows superior chip evacuation and long and predictable tool life.
- Provides even better hole tolerances than solid drills.
- Two types of drill heads are available.

Lineup

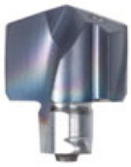
Heads

- **DMP**

General purpose drilling head ideal for various drilling applications
DC = ø0.157" - ø0.232" (ø4 - ø5.9 mm)

- **DMC**

High precision drilling head with quick centering cutting edge style
DC = ø0.157" - ø0.232" (ø4 - ø5.9 mm)



DMP

DMC

The tiny drill head is supplied in a dedicated user-friendly key, enabling easy and secure mounting with no setup time.

Drill bodies

- **TID-R**: Cylindrical shank type

Available in 3×D and 5×D

Grades

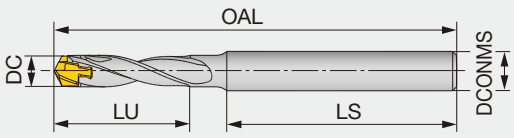
- **AH725**: Versatile grade with a good balance of wear and fracture resistance
- **AH9130**: Wear-resistant grade that enables long tool life

Scan this QR code to find out more about this tool!

DRILL SHANK

TID-R L/D=3

Head changeable drill



* Cylindrical shank

Inch	DC	DCONMS	LU	LS	OAL DMP	OAL DMC	Pocket size	Head
TID040R06-3**	0.157 - 0.173	0.236	0.497	1.378	2.272	2.288	4	DM*040 - DM*044
TID045R06-3	0.177 - 0.193	0.236	0.557	1.378	2.348	2.359	4.5	DM*045 - DM*049
TID050R06-3	0.197 - 0.213	0.236	0.619	1.378	2.415	2.433	5	DM*050 - DM*054
TID055R06-3	0.217 - 0.232	0.236	0.681	1.378	2.520	2.532	5.5	DM*055 - DM*059

**Will be released in December 2021

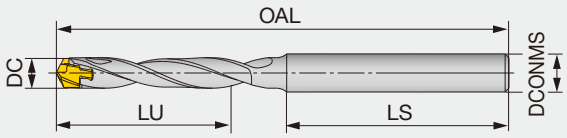
Hole diameter tolerance*

*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

TID-R L/D=5

Head changeable drill



* Cylindrical shank

Inch	DC	DCONMS	LU	LS	OAL DMP	OAL DMC	Pocket size	Head
TID040R06-5**	0.157 - 0.173	0.236	0.812	1.378	2.587	2.603	4	DM*040 - DM*044
TID045R06-5	0.177 - 0.193	0.236	0.912	1.378	2.703	2.713	4.5	DM*045 - DM*049
TID050R06-5	0.197 - 0.213	0.236	1.013	1.378	2.807	2.820	5	DM*050 - DM*054
TID055R06-5	0.217 - 0.232	0.236	1.115	1.378	2.919	2.932	5.5	DM*055 - DM*059

**Will be released in December 2021

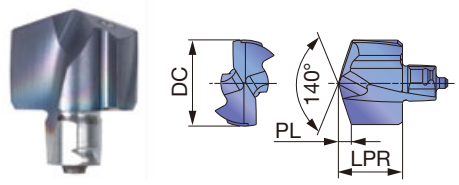
Tool diameter (inch)	Hole diameter tolerance*
ø0.157" - ø0.232"	+0.002" / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

DRILL HEAD

DMP General purpose



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH725	PL (mm)	Body
DMP040*	0.157	4	3.1	●	0.62	TID*040...
DMP041*	0.161	4.1	3.1	●	0.64	TID*040...
DMP042*	0.165	4.2	3.1	●	0.66	TID*040...
DMP043*	0.169	4.3	3.1	●	0.67	TID*040...
DMP044*	0.173	4.4	3.1	●	0.69	TID*040...
DMP045	0.177	4.5	3.55	●	0.66	TID*045...
DMP046	0.181	4.6	3.55	●	0.68	TID*045...
DMP047	0.185	4.7	3.55	●	0.70	TID*045...
DMP048	0.189	4.8	3.55	●	0.71	TID*045...
DMP049	0.193	4.9	3.55	●	0.73	TID*045...
DMP050	0.197	5	3.7	●	0.73	TID*050...
DMP051	0.201	5.1	3.7	●	0.75	TID*050...
DMP052	0.205	5.2	3.7	●	0.77	TID*050...
DMP053	0.209	5.3	3.7	●	0.78	TID*050...
DMP054	0.213	5.4	3.7	●	0.8	TID*050...
DMP055	0.217	5.5	3.85	●	0.81	TID*055...
DMP056	0.220	5.6	3.85	●	0.83	TID*055...
DMP057	0.224	5.7	3.85	●	0.85	TID*055...
DMP058	0.228	5.8	3.85	●	0.86	TID*055...
DMP059	0.232	5.9	3.85	●	0.88	TID*055...

ø0.157" - ø0.232" (ø4 - ø5.9) = 2 pieces per package

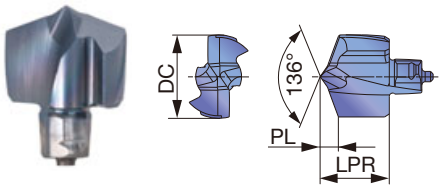
● : Line Up

*Will be released in December 2021

Tool diameter (inch)	Head diameter tolerance
ø0.157" - ø0.232"	+0.0007" / 0

Tool diameter (mm)	Head diameter tolerance
ø4 - ø5.9	+0.018 / 0

DMC High precision drilling



P	Steel	★
M	Stainless	
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH9130	PL (mm)	Body
DMC040*	0.157	4	3.51	●	0.86	TID*040...
DMC041*	0.161	4.1	3.51	●	0.88	TID*040...
DMC042*	0.165	4.2	3.51	●	0.9	TID*040...
DMC043*	0.169	4.3	3.51	●	0.92	TID*040...
DMC044*	0.173	4.4	3.51	●	0.94	TID*040...
DMC045*	0.177	4.5	3.81	●	0.97	TID*045...
DMC046*	0.181	4.6	3.81	●	0.99	TID*045...
DMC047*	0.185	4.7	3.81	●	1.01	TID*045...
DMC048*	0.189	4.8	3.81	●	1.03	TID*045...
DMC049*	0.193	4.9	3.81	●	1.05	TID*045...
DMC050	0.197	5	4.14	●	1.09	TID*050...
DMC051	0.201	5.1	4.14	●	1.11	TID*050...
DMC052	0.205	5.2	4.14	●	1.13	TID*050...
DMC053	0.209	5.3	4.14	●	1.15	TID*050...
DMC054	0.213	5.4	4.14	●	1.17	TID*050...
DMC055	0.217	5.5	4.17	●	1.22	TID*055...
DMC056	0.220	5.6	4.17	●	1.24	TID*055...
DMC057	0.224	5.7	4.17	●	1.26	TID*055...
DMC058	0.228	5.8	4.17	●	1.28	TID*055...
DMC059	0.232	5.9	4.17	●	1.3	TID*055...

ø0.157" - ø0.232" (ø4 - ø5.9) = 2 pieces per package

● : Line Up

*Will be released in December 2021

Tool diameter (inch)	Head diameter tolerance
ø0.157" - ø0.232"	+0.0007" / 0

Tool diameter (mm)	Head diameter tolerance
ø4 - ø5.9	+0.018 / 0

EISTER ADDMDRILL

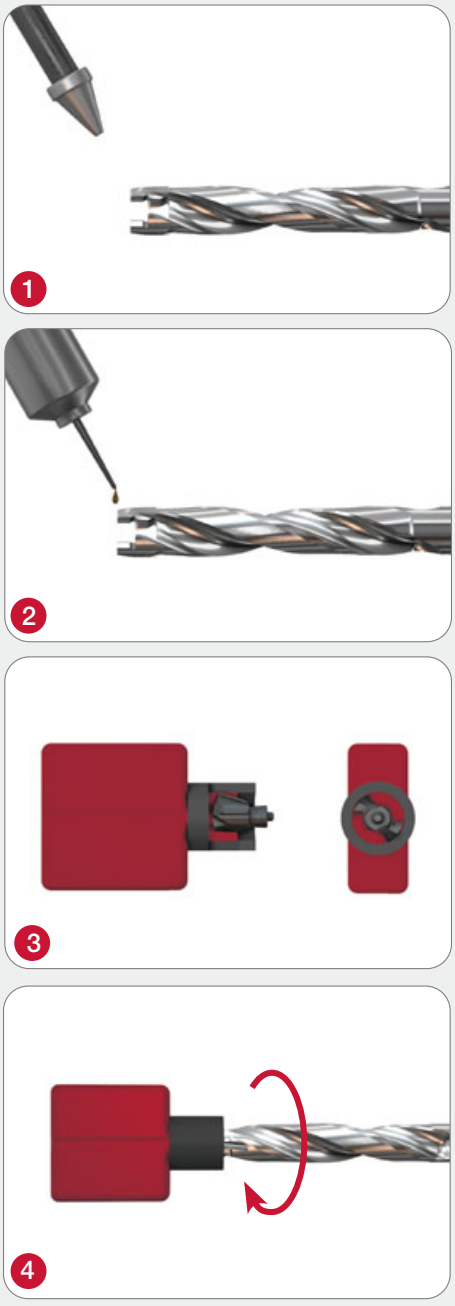
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) DC (in) ø0.157" - ø0.173"	ø0.177" - ø0.193"	ø0.197" - ø0.232"
P	Low carbon steels (C < 0.3) 1018, 1020, 1026, etc.	262 - 459	0.002 - 0.003	0.002 - 0.003	0.003 - 0.005
P	High carbon steels (C > 0.3) 1045, 1055, etc.	230 - 394	0.002 - 0.003	0.002 - 0.003	0.003 - 0.005
P	Low alloy steels 4140, etc.	230 - 394	0.002 - 0.002	0.002 - 0.003	0.003 - 0.005
P	Alloy steels 8620, etc.	131 - 295	0.002 - 0.003	0.002 - 0.003	0.003 - 0.005
M	Stainless steels 304SS, 316SS, etc.	98 - 230	-	-	0.002 - 0.003
K	Grey cast irons Class 25, etc.	262 - 591	0.002 - 0.003	0.002 - 0.003	0.004 - 0.006
K	Ductile cast irons 100-70-03, etc.	262 - 459	0.002 - 0.003	0.002 - 0.003	0.004 - 0.006
N	Aluminium alloys	262 - 722	-	-	-
S	Titanium alloys Ti-6Al-4V, etc.	66 - 164	-	-	-
S	Nickel-based alloys	66 - 164	-	-	-
H	Hardened steel	66 - 164	-	-	-

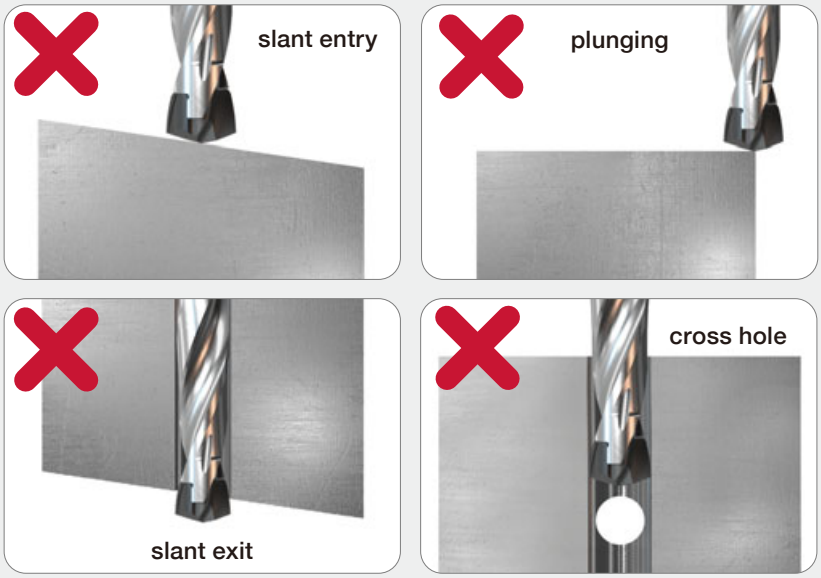
- Cutting conditions in the above table show standard cutting conditions
- Cutting conditions may change due to the rigidity and power of the machine and the workpiece material
- Machined hole diameter may change depending upon the rigidity of the machine tool or cutting conditions

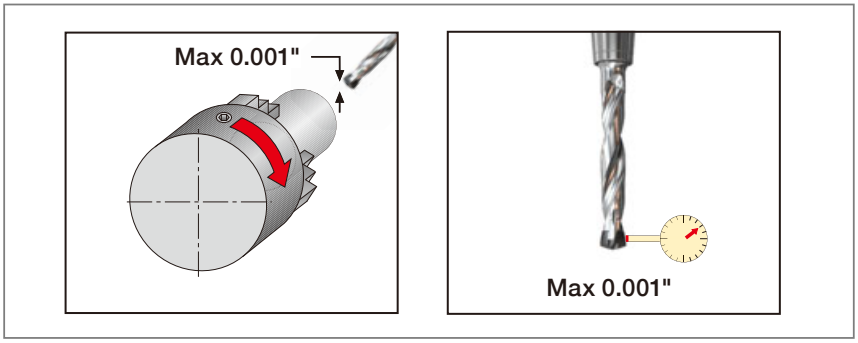
TECHNICAL GUIDELINES

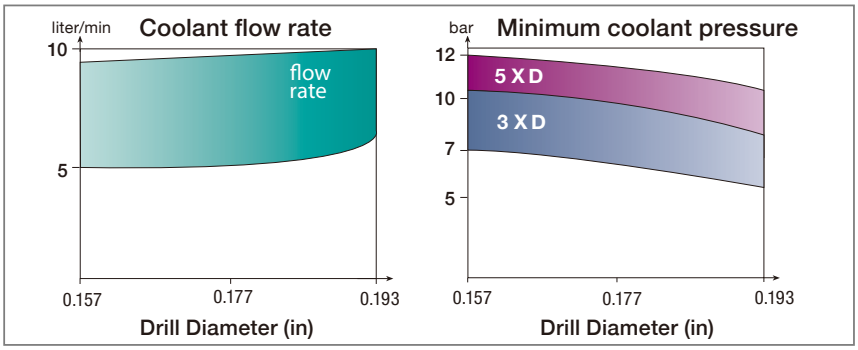
Drilling head mounting procedure



Drilling limitations







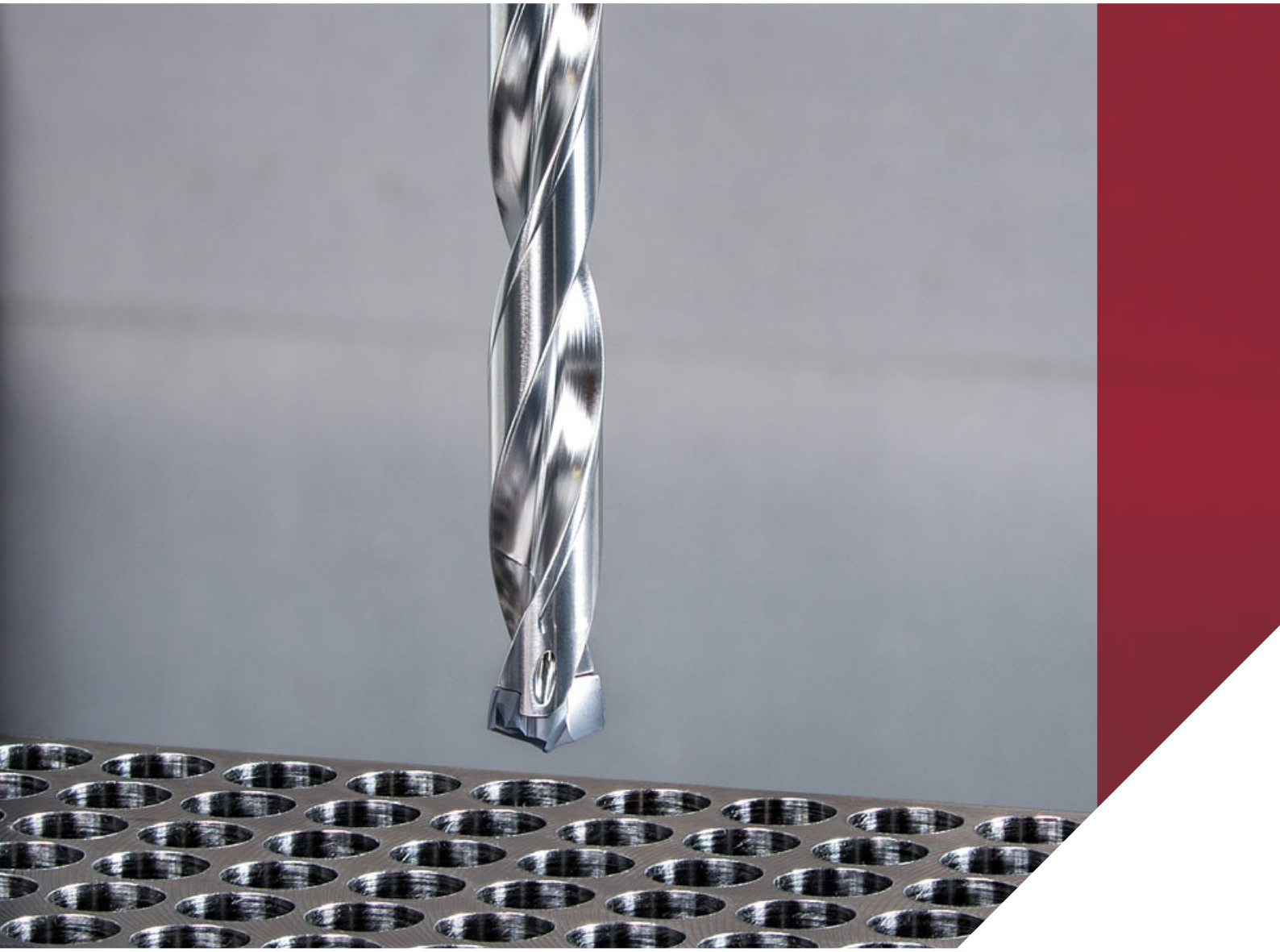
Coolant recommendations

DRILLMEISTER

Drilling

EXCHANGEABLE HEAD DRILL SYSTEM FOR SUPERIOR DRILLING PERFORMANCE AND LONG TOOL LIFE

ADD higher productivity in your drilling operations



TUNGALOY ADDFORCE DRILL
ACCELERATED HOLEMAKING

- Quick drill head change for reduced machine downtime.
- Tool inventory and management costs are significantly reduced as there is no need for regrinding.
- Drill bodies are offered in a wide range of sizes and styles, allowing optimal tool assembly for secure and productive drilling.

Lineup

Heads

- **DMP**

General purpose drilling head ideal for various drilling applications
DC = ø0.236" - ø1.020" (ø6 - ø25.9 mm)

- **DMC**

High precision drilling head with double-margined drill periphery and quick centering cutting edge style
DC = ø0.236" - ø1.020" (ø6 - ø25.9 mm)

- **DMF**

180° flat edges for counterboring and flat bottoms, also good for entry to and exit from curved surfaces
DC = ø0.236" - ø1.020" (ø6 - ø25.9 mm)

- **DMH**

General purpose head with enhanced cutting edge, heavier honed edge to avoid chipping in weak setups
DC = ø0.236" - ø1.004" (ø10 - ø19.5 mm)

- **DMN**

Drill head with sharp edges for non-ferrous materials
DC = ø0.394" - ø0.768" (ø10 - ø19.5 mm)

Drill bodies

- **TID-F**: Flange type, Available in 1.5×D, 3×D, 5×D, and 8×D
- **TID-R**: Cylindrical shank type, Available in 2xD, 3xD, 3.5×D, 5xD, 6×D, 8×D, and 12×D
- **TIDC**: Available in 3×D and 5×D suitable for use with TIDCF chamfering holders.
- **TIDCF chamfering holder**: Available with 3 types of inserts in chamfering angles of 30°, 45°, and 60°

DMP DMC

DMF DMH DMN

Scan this QR code to find out more about this tool!

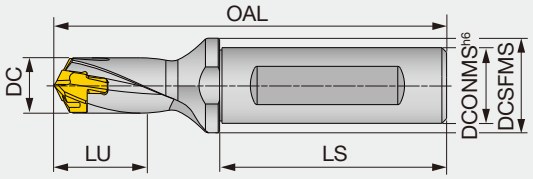
Grades

- **AH725**: Versatile grade with a good balance of wear and fracture resistance, ideal for all material groups
- **AH9130**: Wear-resistant grade that enables long tool life
- **KS15F**: Designed for non-ferrous applications

DRILL BODIES

TIUD-F L/D=1.5

Head changeable drill



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TIDU0394F0625-1.5	0.394 - 0.429	0.625	0.787	0.591	1.890	3.118	3.142	2.638	6	DM*100 - DM*109
TIDU0433F0625-1.5	0.433 - 0.468	0.625	0.787	0.669	1.890	3.193	3.217	2.678	6.5	DM*110 - DM*119
TIDU0472F0625-1.5	0.472 - 0.508	0.625	0.787	0.709	1.890	3.268	3.292	2.720	7	DM*120 - DM*129
TIDU0512F0625-1.5	0.512 - 0.547	0.625	0.787	0.787	1.890	3.350	3.381	2.749	7	DM*130 - DM*139
TIDU0551F0625-1.5	0.551 - 0.587	0.625	0.787	0.827	1.890	3.508	3.539	2.811	8	DM*140 - DM*149
TIDU0591F0750-1.5	0.591 - 0.625	0.750	0.984	0.906	1.969	3.787	3.822	2.878	9	DM*150 - DM*159
TIDU0630F0750-1.5	0.630 - 0.665	0.750	0.984	0.945	1.969	3.909	3.948	3.060	10	DM*160 - DM*169
TIDU0669F0750-1.5	0.669 - 0.705	0.750	0.984	1.024	1.969	4.031	4.07	3.126	11	DM*170 - DM*179
TIDU0709F1000-1.5	0.709 - 0.744	1.000	1.260	1.063	2.205	4.390	4.433	3.197	12	DM*180 - DM*189
TIDU0748F1000-1.5	0.748 - 0.783	1.000	1.260	1.142	2.205	4.508	4.551	3.269	13	DM*190 - DM*199
TIDU0787F1000-1.5	0.787- 0.823	1.000	1.260	1.181	2.205	4.630	4.677	3.424	14	DMP200 - DMP209
TIDU0827F1000-1.5	0.827- 0.862	1.000	1.260	1.240	2.205	4.752	4.800	3.698	15	DMP210 - DMP219
TIDU0866F1000-1.5	0.866 - 0.902	1.000	1.260	1.299	2.205	4.874	4.924	3.813	16	DMP220 - DMP229
TIDU0906F1250-1.5	0.906 - 0.941	1.250	1.654	1.358	2.362	5.150	5.204	3.923	17	DMP230 - DMP239
TIDU0945F1250-1.5	0.945 - 0.980	1.250	1.654	1.417	2.362	5.272	5.327	4.270	18	DMP240 - DMP249
TIDU0984F1250-1.5	0.984 - 1.020	1.250	1.654	1.476	2.362	5.394	5.453	4.381	19	DMP250 - DMP259

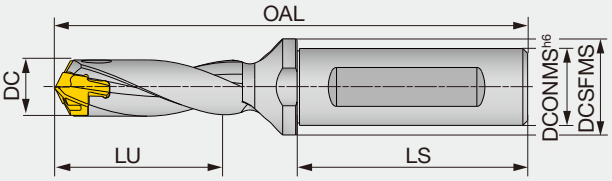
Tool diameter (in)	Hole diameter tolerance*
ø0.394 - ø1.020	+0.0020 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder).
- For drill diameters from ø0.315"- ø0.390", the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.012" shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

TIDU-F L/D=3

Head changeable drill



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TIDU0394F0625-3	0.394 - 0.409	0.625	0.787	1.181	1.890	3.709	3.733	2.993	6	DM*100 - DM*104
TIDU0413F0625-3	0.413 - 0.429	0.625	0.787	1.260	1.890	3.768	3.792	3.062	6.5	DM*105 - DM*109
TIDU0433F0625-3	0.433 - 0.449	0.625	0.787	1.299	1.890	3.843	3.867	3.133	7	DM*110 - DM*114
TIDU0453F0625-3	0.453 - 0.469	0.625	0.787	1.378	1.890	3.902	3.926	3.192	7	DM*115 - DM*119
TIDU0472F0625-3	0.472 - 0.488	0.625	0.787	1.417	1.890	3.976	4.000	3.283	8	DM*120 - DM*124
TIDU0492F0625-3	0.492 - 0.508	0.625	0.787	1.457	1.890	4.035	4.059	3.342	8	DM*125 - DM*129
TIDU0512F0625-3	0.512 - 0.528	0.625	0.787	1.535	1.890	4.118	4.149	3.410	9	DM*130 - DM*134
TIDU0532F0625-3	0.532 - 0.547	0.625	0.787	1.614	1.890	4.177	4.208	3.469	9	DM*135 - DM*139
TIDU0551F0625-3	0.551 - 0.567	0.625	0.787	1.654	1.890	4.335	4.366	3.650	10	DM*140 - DM*144
TIDU0571F0625-3	0.571 - 0.587	0.625	0.787	1.732	1.890	4.394	4.425	3.709	10	DM*145 - DM*149
TIDU0591F0750-3	0.591 - 0.626	0.750	0.984	1.772	1.969	4.673	4.708	3.776	11	DM*150 - DM*159
TIDU0630F0750-3	0.630 - 0.665	0.750	0.984	1.890	1.969	4.854	4.893	3.835	11	DM*160 - DM*169
TIDU0669F0750-3	0.669 - 0.705	0.750	0.984	2.008	1.969	5.035	5.074	3.906	12	DM*170 - DM*179
TIDU0709F1000-3	0.709 - 0.744	1.000	1.260	2.126	2.205	5.453	5.496	3.965	12	DM*180 - DM*189
TIDU0748F1000-3	0.748 - 0.783	1.000	1.260	2.244	2.205	5.630	5.673	4.037	13	DM*190 - DM*199
TIDU0787F1000-3	0.787 - 0.823	1.000	1.260	2.362	2.205	5.811	5.838	4.096	13	DMP200 - DMP209
TIDU0827F1000-3	0.827 - 0.862	1.000	1.260	2.480	2.205	5.992	6.040	4.250	14	DMP210 - DMP219
TIDU0866F1000-3	0.866 - 0.902	1.000	1.260	2.598	2.205	6.173	6.223	4.309	14	DMP220 - DMP229
TIDU0906F1250-3	0.906 - 0.941	1.250	1.654	2.718	2.362	6.508	6.562	4.584	15	DMP230 - DMP239
TIDU0945F1250-3	0.945 - 0.980	1.250	1.654	2.835	2.362	6.689	6.744	4.757	16	DMP240 - DMP249
TIDU0984F1250-3	0.984 - 1.020	1.250	1.654	2.953	2.362	6.870	6.939	4.927	17	DMP250 - DMP259

Tool diameter (in)	Hole diameter tolerance*
ø0.394 - ø1.020	+0.0020 / 0

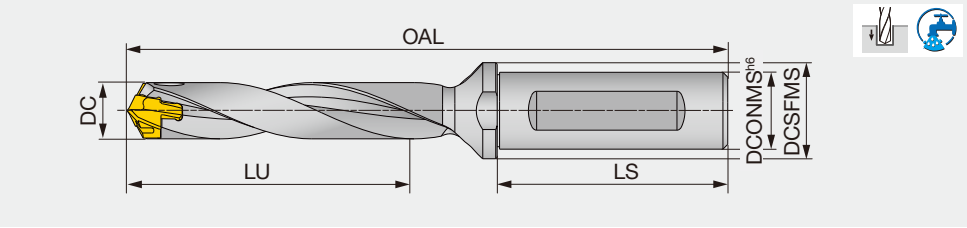
*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- For drill diameters from ø0.315"- ø0.390", the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.012" shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

DRILLMEISTER

TIDU-F L/D=5

Head changeable drill



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TIDU0394F0625-5	0.394 - 0.409	0.625	0.787	1.969	1.890	4.496	4.514	3.465	6	DM*100 - DM*104
TIDU0413F0625-5	0.413 - 0.429	0.625	0.787	2.087	1.890	4.594	4.618	3.574	6.5	DM*105 - DM*109
TIDU0433F0625-5	0.433 - 0.449	0.625	0.787	2.165	1.890	4.709	4.733	3.684	7	DM*110 - DM*114
TIDU0453F0625-5	0.453 - 0.469	0.625	0.787	2.283	1.890	4.807	4.831	3.783	7	DM*115 - DM*119
TIDU0472F0625-5	0.472 - 0.488	0.625	0.787	2.362	1.890	4.921	4.945	3.913	8	DM*120 - DM*124
TIDU0492F0625-5	0.492 - 0.508	0.625	0.787	2.441	1.890	5.020	5.044	4.011	8	DM*125 - DM*129
TIDU0512F0625-5	0.512 - 0.528	0.625	0.787	2.559	1.890	5.142	5.173	4.119	9	DM*130 - DM*134
TIDU0532F0625-5	0.532 - 0.547	0.625	0.787	2.677	1.890	5.240	5.271	4.217	9	DM*135 - DM*139
TIDU0551F0625-5	0.551 - 0.567	0.625	0.787	2.756	1.890	5.440	5.471	4.438	10	DM*140 - DM*144
TIDU0571F0625-5	0.571 - 0.587	0.625	0.787	2.874	1.890	5.539	5.570	4.536	10	DM*145 - DM*149
TIDU0591F0750-5	0.591 - 0.626	0.750	0.984	2.953	1.969	5.854	5.889	4.642	11	DM*150 - DM*159
TIDU0630F0750-5	0.630 - 0.665	0.750	0.984	3.150	1.969	6.114	6.153	4.740	11	DM*160 - DM*169
TIDU0669F0750-5	0.669 - 0.705	0.750	0.984	3.346	1.969	6.374	6.413	4.851	12	DM*170 - DM*179
TIDU0709F1000-5	0.709 - 0.744	1.000	1.260	3.543	2.205	6.870	6.913	4.949	12	DM*180 - DM*189
TIDU0748F1000-5	0.748 - 0.783	1.000	1.260	3.740	2.205	7.126	7.169	5.060	13	DM*190 - DM*199
TIDU0787F1000-5	0.787 - 0.823	1.000	1.260	3.937	2.205	7.386	7.432	5.159	13	DMP200 - DMP209
TIDU0827F1000-5	0.827 - 0.862	1.000	1.260	4.134	2.205	7.646	7.694	5.353	14	DMP210 - DMP219
TIDU0866F1000-5	0.866 - 0.902	1.000	1.260	4.331	2.205	7.906	7.956	5.451	14	DMP220 - DMP229
TIDU0906F1250-5	0.906 - 0.941	1.250	1.654	4.528	2.362	8.319	8.373	5.765	15	DMP230 - DMP239
TIDU0945F1250-5	0.945 - 0.980	1.250	1.654	4.724	2.362	8.579	8.634	6.017	16	DMP240 - DMP249
TIDU0984F1250-5	0.984 - 1.020	1.250	1.654	4.921	2.362	8.839	8.898	6.266	17	DMP250 - DMP259

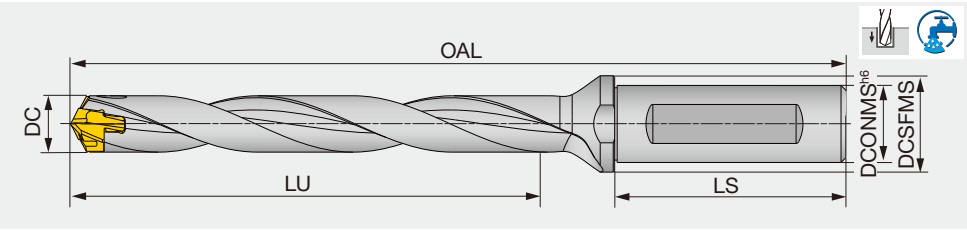
Tool diameter (in)	Hole diameter tolerance*
ø0.394 - ø0.705	+0.0024 / 0
ø0.709 - ø1.020	+0.0026 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- For drill diameters from ø0.315"- ø0.390", the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.012" shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

TIDU-F L/D=8

Head changeable drill



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TIDU0394F0625-8	0.394 - 0.409	0.625	0.787	3.150	1.890	5.677	5.701	4.511	7	DM*100 - DM*104
TIDU0413F0625-8	0.413 - 0.429	0.625	0.787	3.307	1.890	5.835	5.859	4.669	7	DM*105 - DM*109
TIDU0433F0625-8	0.433 - 0.449	0.625	0.787	3.465	1.890	6.008	6.032	4.858	8	DM*110 - DM*114
TIDU0453F0625-8	0.453 - 0.469	0.625	0.787	3.622	1.890	6.165	6.189	5.015	8	DM*115 - DM*119
TIDU0472F0625-8	0.472 - 0.488	0.625	0.787	3.780	1.890	6.339	6.363	5.181	9	DM*120 - DM*124
TIDU0492F0625-8	0.492 - 0.508	0.625	0.787	3.937	1.890	6.496	6.52	5.339	9	DM*125 - DM*129
TIDU0512F0625-8	0.512 - 0.528	0.625	0.787	4.094	1.890	6.677	6.708	5.619	10	DM*130 - DM*134
TIDU0532F0625-8	0.532 - 0.547	0.625	0.787	4.252	1.890	6.835	6.866	5.776	10	DM*135 - DM*139
TIDU0551F0625-8	0.551 - 0.567	0.625	0.787	4.409	1.890	7.091	7.122	5.941	11	DM*140 - DM*144
TIDU0571F0625-8	0.571 - 0.587	0.625	0.787	4.567	1.890	7.252	7.283	6.098	11	DM*145 - DM*149
TIDU0591F0750-8	0.591 - 0.626	0.750	0.984	4.724	1.969	7.626	7.661	6.268	12	DM*150 - DM*159
TIDU0630F0750-8	0.630 - 0.665	0.750	0.984	5.039	1.969	8.004	8.043	6.426	12	DM*160 - DM*169
TIDU0669F0750-8	0.669 - 0.705	0.750	0.984	5.354	1.969	8.382	8.421	6.596	13	DM*170 - DM*179
TIDU0709F1000-8	0.709 - 0.744	1.000	1.260	5.669	2.205	8.996	9.039	6.753	13	DM*180 - DM*189
TIDU0748F1000-8	0.748 - 0.783	1.000	1.260	5.984	2.205	9.370	9.413	7.006	14	DM*190 - DM*199
TIDU0787F1000-8	0.787 - 0.823	1.000	1.260	6.299	2.205	9.748	9.795	7.164	14	DMP200 - DMP209
TIDU0827F1000-8	0.827 - 0.862	1.000	1.260	6.614	2.205	10.126	10.174	7.537	15	DMP210 - DMP219
TIDU0866F1000-8	0.866 - 0.902	1.000	1.260	6.929	2.205	10.504	10.554	7.907	16	DMP220 - DMP229
TIDU0906F1250-8	0.906 - 0.941	1.250	1.654	7.244	2.362	11.035	11.089	8.274	17	DMP230 - DMP239
TIDU0945F1250-8	0.945 - 0.980	1.250	1.654	7.559	2.362	11.413	11.468	8.876	18	DMP240 - DMP249
TIDU0984F1250-8	0.984 - 1.020	1.250	1.654	7.874	2.362	11.791	11.850	9.244	19	DMP250 - DMP259

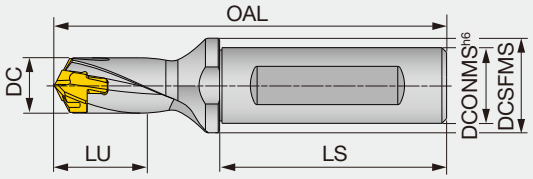
Tool diameter (in)	Hole diameter tolerance*
ø7 - ø17.9	+0.07 / 0
ø18 - ø25.9	+0.085 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- For drill diameters from ø0.315"- ø0.390", the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.012" shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

TID-F L/D=1.5

Head changeable drill



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID060F12-1.5	6 - 6.4	12	16	10	45	67.85	68	67.01	6	DM*060 - DM*064
TID065F12-1.5	6.5 - 6.9	12	16	11	45	68.9	69.05	68.03	6.5	DM*065 - DM*069
TID070F12-1.5	7 - 7.4	12	16	12	45	69.95	70.4	69.08	7	DM*070 - DM*074
TID075F12-1.5	7.5 - 7.9	12	16	13	45	70.7	71.15	69.83	7	DM*075 - DM*079
TID080F12-1.5	8 - 8.9	12	16	14	45	72.25	72.4	71.39	8	DM*080 - DM*089
TID090F12-1.5	9 - 9.9	12	16	16	45	74.15	74.3	73.11	9	DM*090 - DM*099
TID100F16-1.5	10 - 10.9	16	20	17	48	79.05	79.67	77.72	10	DM*100 - DM*109
TID110F16-1.5	11 - 11.9	16	20	19	48	80.95	81.6	79.4	11	DM*110 - DM*119
TID120F16-1.5	12 - 12.9	16	20	20	48	82.8	83.43	81.21	12	DM*120 - DM*129
TID130F16-1.5	13 - 13.9	16	20	22	48	84.9	85.65	83.03	13	DM*130 - DM*139
TID140F16-1.5	14 - 14.9	16	20	24	48	88.95	89.76	86.96	14	DM*140 - DM*149
TID150F20-1.5	15 - 15.9	20	25	26	50	96.03	96.94	93.93	15	DM*150 - DM*159
TID160F20-1.5	16 - 16.9	20	25	27	50	99.1	100.07	96.84	16	DM*160 - DM*169
TID170F20-1.5	17 - 17.9	20	25	29	50	102.2	103.18	99.65	17	DM*170 - DM*179
TID180F25-1.5	18 - 18.9	25	32	30	56	111.3	112.35	108.45	18	DM*180 - DM*189
TID190F25-1.5	19 - 19.9	25	32	33	56	114.3	115.41	111.29	19	DM*190 - DM*199
TID200F25-1.5	20 - 20.9	25	32	34	56	117.4	118.62	115.12	20	DM*200 - DM*209
TID210F25-1.5	21 - 21.9	25	32	36	56	120.48	121.7	118.04	21	DM*210 - DM*219
TID220F25-1.5	22 - 22.9	25	32	37	56	123.56	124.84	120.86	22	DM*220 - DM*229
TID230F32-1.5	23 - 23.9	32	42	39	60	130.63	132.01	127.78	23	DM*230 - DM*239
TID240F32-1.5	24 - 24.9	32	42	40	60	133.7	135.11	130.71	24	DM*240 - DM*249
TID250F32-1.5	25 - 25.9	32	42	43	60	136.8	138.28	133.65	25	DM*250 - DM*259

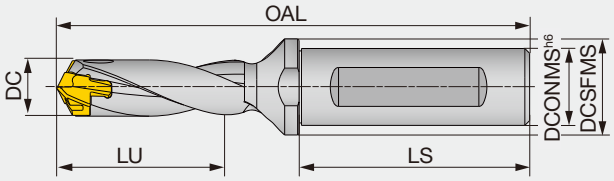
Tool diameter	Hole diameter tolerance*
ø6 - ø25.9	+0.05 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder).
- For drill diameters from ø8 mm - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

TID-F L/D=3

Head changeable drill



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID060F12-3	6 - 6.4	12	16	19	45	76.85	77	76.01	6	DM*060 - DM*064
TID065F12-3	6.5 - 6.9	12	16	21	45	78.65	78.8	77.78	6.5	DM*065 - DM*069
TID070F12-3	7 - 7.4	12	16	22	45	80.45	80.9	79.58	7	DM*070 - DM*074
TID075F12-3	7.5 - 7.9	12	16	24	45	81.95	82.4	81.08	7	DM*075 - DM*079
TID080F12-3	8 - 8.4	12	16	26	45	84.25	84.4	83.39	8	DM*080 - DM*084
TID085F12-3	8.5 - 8.9	12	16	28	45	85.75	85.9	84.89	8	DM*085 - DM*089
TID090F12-3	9 - 9.4	12	16	29	45	87.65	87.8	86.61	9	DM*090 - DM*094
TID095F12-3	9.5 - 9.9	12	16	31	45	89.15	89.3	88.11	9	DM*095 - DM*099
TID100F16-3	10 - 10.4	16	20	32	48	94.05	94.67	92.72	10	DM*100 - DM*104
TID105F16-3	10.5 - 10.9	16	20	34	48	95.55	96.17	94.22	10	DM*105 - DM*109
TID110F16-3	11 - 11.4	16	20	35	48	97.45	98.1	95.9	11	DM*110 - DM*114
TID115F16-3	11.5 - 11.9	16	20	37	48	98.95	99.6	97.4	11	DM*115 - DM*119
TID120F16-3	12 - 12.4	16	20	38	48	100.8	101.43	99.21	12	DM*120 - DM*124
TID125F16-3	12.5 - 12.9	16	20	39	48	102.3	102.93	100.71	12	DM*125 - DM*129
TID130F16-3	13 - 13.4	16	20	41	48	104.4	105.15	102.53	13	DM*130 - DM*134
TID135F16-3	13.5 - 13.9	16	20	44	48	105.9	106.65	104.03	13	DM*135 - DM*139
TID140F16-3	14 - 14.4	16	20	45	48	109.95	110.76	107.96	14	DM*140 - DM*144
TID145F16-3	14.5 - 14.9	16	20	47	48	111.45	112.26	109.46	14	DM*145 - DM*149
TID150F20-3	15 - 15.9	20	25	48	50	118.53	119.44	116.43	15	DM*150 - DM*159
TID160F20-3	16 - 16.9	20	25	51	50	123.1	124.07	120.84	16	DM*160 - DM*169
TID170F20-3	17 - 17.9	20	25	54	50	127.7	128.68	125.15	17	DM*170 - DM*179
TID180F25-3	18 - 18.9	25	32	57	56	138.3	139.35	135.45	18	DM*180 - DM*189
TID190F25-3	19 - 19.9	25	32	61	56	142.8	143.91	139.79	19	DM*190 - DM*199
TID200F25-3	20 - 20.9	25	32	64	56	147.4	148.62	145.12	20	DM*200 - DM*209
TID210F25-3	21 - 21.9	25	32	67	56	151.98	153.2	149.54	21	DM*210 - DM*219
TID220F25-3	22 - 22.9	25	32	70	56	156.56	157.84	153.86	22	DM*220 - DM*229
TID230F32-3	23 - 23.9	32	42	73	60	165.13	166.51	162.28	23	DM*230 - DM*239
TID240F32-3	24 - 24.9	32	42	76	60	169.7	171.11	166.71	24	DM*240 - DM*249
TID250F32-3	25 - 25.9	32	42	80	60	174.3	175.78	171.15	25	DM*250 - DM*259

Tool diameter	Hole diameter tolerance*
ø6 - ø25.9	+0.05 / 0

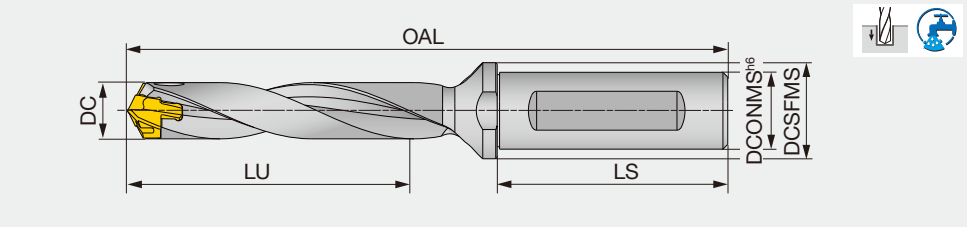
*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- For drill diameters from ø8 mm - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

DRILLMEISTER

TID-F L/D=5

Head changeable drill



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID060F12-5	6 - 6.4	12	16	31	45	88.85	89	88.01	6	DM*060 - DM*064
TID065F12-5	6.5 - 6.9	12	16	34	45	91.65	91.8	90.78	6.5	DM*065 - DM*069
TID070F12-5	7 - 7.4	12	16	36	45	94.45	94.9	93.58	7	DM*070 - DM*074
TID075F12-5	7.5 - 7.9	12	16	39	45	96.95	97.4	96.08	7	DM*075 - DM*079
TID080F12-5	8 - 8.4	12	16	42	45	100.25	100.4	99.39	8	DM*080 - DM*084
TID085F12-5	8.5 - 8.9	12	16	45	45	102.75	102.9	101.89	8	DM*085 - DM*089
TID090F12-5	9 - 9.4	12	16	47	45	105.65	105.8	104.61	9	DM*090 - DM*094
TID095F12-5	9.5 - 9.9	12	16	50	45	108.15	108.3	107.11	9	DM*095 - DM*099
TID100F16-5	10 - 10.4	16	20	52	48	114.05	114.67	112.72	10	DM*100 - DM*104
TID105F16-5	10.5 - 10.9	16	20	55	48	116.55	117.17	115.22	10	DM*105 - DM*109
TID110F16-5	11 - 11.4	16	20	57	48	119.45	120.1	117.9	11	DM*110 - DM*114
TID115F16-5	11.5 - 11.9	16	20	60	48	121.95	122.6	120.4	11	DM*115 - DM*119
TID120F16-5	12 - 12.4	16	20	62	48	124.8	125.43	123.21	12	DM*120 - DM*124
TID125F16-5	12.5 - 12.9	16	20	64	48	127.3	127.93	125.71	12	DM*125 - DM*129
TID130F16-5	13 - 13.4	16	20	67	48	130.4	131.15	128.53	13	DM*130 - DM*134
TID135F16-5	13.5 - 13.9	16	20	71	48	132.9	133.65	131.03	13	DM*135 - DM*139
TID140F16-5	14 - 14.4	16	20	73	48	137.95	138.76	135.96	14	DM*140 - DM*144
TID145F16-5	14.5 - 14.9	16	20	76	48	140.45	141.26	138.46	14	DM*145 - DM*149
TID150F20-5	15 - 15.9	20	25	78	50	148.53	149.44	146.43	15	DM*150 - DM*159
TID160F20-5	16 - 16.9	20	25	83	50	155.1	156.07	152.84	16	DM*160 - DM*169
TID170F20-5	17 - 17.9	20	25	88	50	161.7	162.68	159.15	17	DM*170 - DM*179
TID180F25-5	18 - 18.9	25	32	93	56	174.3	175.35	171.45	18	DM*180 - DM*189
TID190F25-5	19 - 19.9	25	32	99	56	180.8	181.91	177.79	19	DM*190 - DM*199
TID200F25-5	20 - 20.9	25	32	104	56	187.6	188.82	185.32	20	DM*200 - DM*209
TID210F25-5	21 - 21.9	25	32	109	56	194.2	195.42	191.76	21	DM*210 - DM*219
TID220F25-5	22 - 22.9	25	32	114	56	200.8	202.08	198.1	22	DM*220 - DM*229
TID230F32-5	23 - 23.9	32	42	119	60	211.3	212.68	208.45	23	DM*230 - DM*239
TID240F32-5	24 - 24.9	32	42	124	60	217.9	219.31	214.91	24	DM*240 - DM*249
TID250F32-5	25 - 25.9	32	42	130	60	224.5	225.98	221.35	25	DM*250 - DM*259

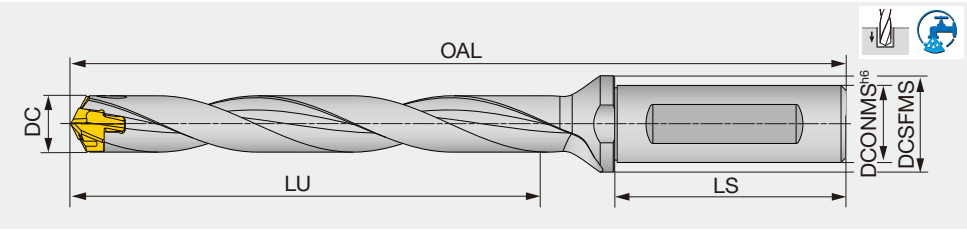
Tool diameter	Hole diameter tolerance*
ø6 - ø17.9	+0.06 / 0
ø18 - ø25.9	+0.065 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- For drill diameters from ø8 mm - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

TID-F L/D=8

Head changeable drill



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL			Pocket size	Head
						DMP/H/N	DMC	DMF		
TID070F12-8	7 - 7.4	12	16	57	45	115.45	115.90	114.58	7	DM*070 - DM*074
TID075F12-8	7.5 - 7.9	12	16	61	45	119.45	119.90	118.58	7	DM*075 - DM*079
TID080F12-8	8 - 8.4	12	16	66	45	124.25	124.40	123.39	8	DM*080 - DM*084
TID085F12-8	8.5 - 8.9	12	16	70	45	128.25	128.40	127.39	8	DM*085 - DM*089
TID090F12-8	9 - 9.4	12	16	74	45	132.65	132.80	131.61	9	DM*090 - DM*094
TID095F12-8	9.5 - 9.9	12	16	78	45	136.65	136.80	135.61	9	DM*095 - DM*099
TID100F16-8	10 - 10.4	16	20	82	48	144.05	144.67	142.72	10	DM*100 - DM*104
TID105F16-8	10.5 - 10.9	16	20	86	48	148.05	148.67	146.72	10	DM*105 - DM*109
TID110F16-8	11 - 11.4	16	20	90	48	152.45	153.10	150.90	11	DM*110 - DM*114
TID115F16-8	11.5 - 11.9	16	20	94	48	156.45	157.10	154.90	11	DM*115 - DM*119
TID120F16-8	12 - 12.4	16	20	98	48	160.80	161.43	159.21	12	DM*120 - DM*124
TID125F16-8	12.5 - 12.9	16	20	102	48	164.80	165.43	163.21	12	DM*125 - DM*129
TID130F16-8	13 - 13.4	16	20	106	48	169.40	170.15	167.53	13	DM*130 - DM*134
TID135F16-8	13.5 - 13.9	16	20	111	48	173.40	174.15	171.53	13	DM*135 - DM*139
TID140F16-8	14 - 14.4	16	20	115	48	179.95	180.76	177.96	14	DM*140 - DM*144
TID145F16-8	14.5 - 14.9	16	20	119	48	183.95	184.76	181.96	14	DM*145 - DM*149
TID150F20-8	15 - 15.9	20	25	123	50	193.53	194.44	191.43	15	DM*150 - DM*159
TID160F20-8	16 - 16.9	20	25	131	50	203.10	204.07	200.84	16	DM*160 - DM*169
TID170F20-8	17 - 17.9	20	25	139	50	212.70	213.68	210.15	17	DM*170 - DM*179
TID180F25-8	18 - 18.9	25	32	147	56	228.30	229.35	225.45	18	DM*180 - DM*189
TID190F25-8	19 - 19.9	25	32	156	56	237.80	238.91	234.79	19	DM*190 - DM*199
TID200F25-8	20 - 20.9	25	32	164	56	247.40	248.62	245.12	20	DM*200 - DM*209
TID210F25-8	21 - 21.9	25	32	172	56	256.98	258.20	254.54	21	DM*210 - DM*219
TID220F25-8	22 - 22.9	25	32	180	56	266.56	267.84	263.86	22	DM*220 - DM*229
TID230F32-8	23 - 23.9	32	42	188	60	280.13	281.51	277.28	23	DM*230 - DM*239
TID240F32-8	24 - 24.9	32	42	196	60	289.70	291.11	286.71	24	DM*240 - DM*249
TID250F32-8	25 - 25.9	32	42	205	60	299.30	300.78	296.15	25	DM*250 - DM*259

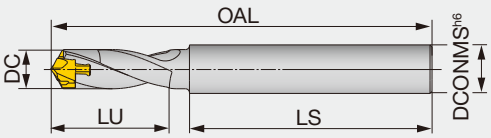
Tool diameter	Hole diameter tolerance*
ø7 - ø17.9	+0.07 / 0
ø18 - ø25.9	+0.085 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- For drill diameters from ø8 mm - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

TID-R-2E L/D=2

Head changeable drill (For external coolant supply)



* Cylindrical shank

Metric	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP	DMC	DMF		
TID060R8-2E	6 - 6.4	8	12.4	45	66.1	66.2	65.2	6	DM*060 - DM*064
TID065R8-2E	6.5 - 6.9	8	12.8	45	67.2	67.3	66.3	6.5	DM*065 - DM*069
TID070R8-2E	7 - 7.4	8	13.3	45	68	68.4	67.1	7	DM*070 - DM*074
TID075R8-2E	7.5 - 7.9	8	14.4	45	69	69.4	68.1	7	DM*075 - DM*079
TID080R10-2E	8 - 8.9	10	14.7	50	75.2	75.3	74.3	8	DM*080 - DM*089
TID090R10-2E	9 - 9.9	10	16.5	50	77.4	77.5	76.3	9	DM*090 - DM*099
TID100R12-2E	10 - 10.9	12	22.2	60	94.3	94.9	92.9	10	DM*100 - DM*109
TID110R12-2E	11 - 11.9	12	24	60	96.5	97.1	94.9	11	DM*110 - DM*119
TID120R14-2E	12 - 12.9	14	25.8	65	103.6	104.2	102.0	12	DM*120 - DM*129
TID130R14-2E	13 - 13.9	14	27.4	65	108.8	109.6	106.9	13	DM*130 - DM*139
TID140R16-2E	14 - 14.9	16	29	70	115	115.8	113.0	14	DM*140 - DM*149
TID150R16-2E	15 - 15.9	16	31.5	70	118	118.9	115.9	15	DM*150 - DM*159
TID160R18-2E	16 - 16.9	16	33.1	70	122.2	123.2	119.9	16	DM*160 - DM*169

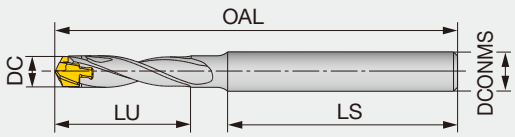
Tool diameter	Hole diameter tolerance*
ø6 - ø16.9	+0.05 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 mm - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

TID-R-2 L/D=3

Head changeable drill (For external coolant supply)



* Cylindrical shank

Inch	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TID040R06-3	0.157 - 0.173	0.236	0.497	1.378	2.272	2.288	4	DM*040 - DM*044
TID045R06-3	0.177 - 0.193	0.236	0.557	1.378	2.348	2.359	4.5	DM*045 - DM*049
TID050R06-3	0.197 - 0.213	0.236	0.619	1.378	2.415	2.433	5	DM*050 - DM*054
TID055R06-3	0.217 - 0.232	0.236	0.681	1.378	2.520	2.532	5.5	DM*055 - DM*059

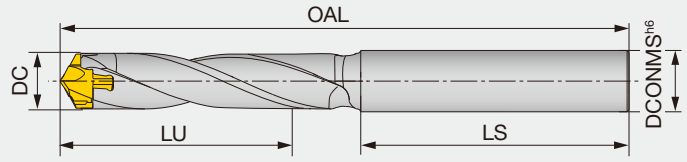
Tool diameter (inch)	Hole diameter tolerance*
ø0.157" - ø0.232"	+0.002" / 0

*Just for reference

- The overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

TID-R L/D=3.5

Head changeable drill



* Cylindrical shank

Metric	DC	DCONMS	LU	LS	OAL DMP/H/N	OAL DMC	OAL DMF	Pocket size	Head
TID060R8-3.5	6 - 6.4	8	21	45	75.64	75.79	74.8	6	DM*060 - DM*064
TID065R8-3.5	6.5 - 6.9	8	22.75	45	77.48	77.63	76.61	6.5	DM*065 - DM*069
TID070R8-3.5	7 - 7.4	8	24.5	45	79.08	79.53	78.21	7	DM*070 - DM*074
TID075R8-3.5	7.5 - 7.9	8	26.25	45	80.83	81.28	79.96	7	DM*075 - DM*079
TID080R10-3.5	8 - 8.4	10	28	50	87.75	87.9	86.89	8	DM*080 - DM*084
TID085R10-3.5	8.5 - 8.9	10	29.75	50	89.5	89.65	88.64	8	DM*085 - DM*089
TID090R10-3.5	9 - 9.4	10	31.5	50	91.42	91.57	90.38	9	DM*090 - DM*094
TID095R10-3.5	9.5 - 9.9	10	33.25	50	93.17	93.32	92.13	9	DM*095 - DM*099
TID100R12-3.5	10 - 10.4	12	42	60	114.03	114.65	112.7	10	DM*100 - DM*104
TID105R12-3.5	10.5 - 10.9	12	44	60	115.69	116.31	114.36	10	DM*105 - DM*109
TID110R12-3.5	11 - 11.4	12	46	65	123.13	123.78	121.58	11	DM*110 - DM*114
TID115R12-3.5	11.5 - 11.9	12	48	65	124.79	125.44	123.24	11	DM*115 - DM*119
TID120R14-3.5	12 - 12.4	14	50	65	127.18	127.81	125.59	12	DM*120 - DM*124
TID125R14-3.5	12.5 - 12.9	14	52	65	128.84	129.47	127.25	12	DM*125 - DM*129
TID130R14-3.5	13 - 13.4	14	54	65	132.74	133.49	130.87	13	DM*130 - DM*134
TID135R14-3.5	13.5 - 13.9	14	56	65	134.4	135.15	132.53	13	DM*135 - DM*139
TID140R16-3.5	14 - 14.4	16	58	70	142.18	142.99	140.19	14	DM*140 - DM*144
TID145R16-3.5	14.5 - 14.9	16	60	70	143.84	144.65	141.85	14	DM*145 - DM*149
TID150R16-3.5	15 - 15.9	16	64	70	148.44	149.35	146.34	15	DM*150 - DM*159
TID160R18-3.5	16 - 16.9	18	68	70	153.93	154.9	151.67	16	DM*160 - DM*169
TID170R18-3.5	17 - 17.9	18	72	70	158.46	159.44	155.91	17	DM*170 - DM*179
TID180R20-3.5	18 - 18.9	20	76	70	164.02	165.07	161.17	18	DM*180 - DM*189
TID190R20-3.5	19 - 19.9	20	80	70	168.37	169.48	165.36	19	DM*190 - DM*199

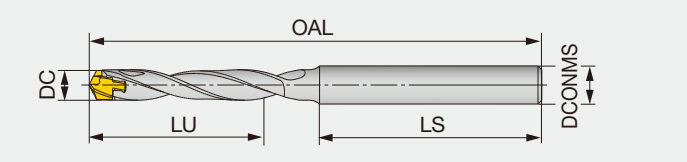
Tool diameter	Hole diameter tolerance*
ø6 - ø9.9	+0.05 / 0
ø10 - ø17.9	+0.08 / 0
ø18 - ø19.9	+0.095 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 mm - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

TID-R L/D=5

Head changeable drill



* Cylindrical shank

Inch	DC	DCONMS	LU	LS	OAL DMP	OAL DMC	Pocket size	Head
TID040R06-5	0.157 - 0.173	0.236	0.812	1.378	2.587	2.603	4	DM*040 - DM*044
TID045R06-5	0.177 - 0.193	0.236	0.912	1.378	2.703	2.713	4.5	DM*045 - DM*049
TID050R06-5	0.197 - 0.213	0.236	1.013	1.378	2.807	2.820	5	DM*050 - DM*054
TID055R06-5	0.217 - 0.232	0.236	1.115	1.378	2.919	2.932	5.5	DM*055 - DM*059

Tool diameter (inch)	Hole diameter tolerance*
ø0.157" - ø0.232"	+0.002" / 0

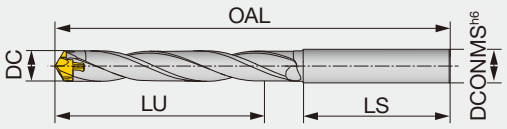
*Just for reference

- The overall length (OAL) differs based on each head geometry.
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.

DRILLMEISTER

TID-R L/D=6

Head changeable drill



* Cylindrical shank

Metric	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID060R8-6	6 - 6.4	8	36	45	91.64	91.79	90.8	6	DM*060 - DM*064
TID065R8-6	6.5 - 6.9	8	39	45	94.73	94.88	93.86	6.5	DM*065 - DM*069
TID070R8-6	7 - 7.4	8	42	45	97.58	98.03	96.71	7	DM*070 - DM*074
TID075R8-6	7.5 - 7.9	8	45	45	100.58	101.03	99.71	7	DM*075 - DM*079
TID080R10-6	8 - 8.4	10	48	50	108.75	108.9	107.89	8	DM*080 - DM*084
TID085R10-6	8.5 - 8.9	10	51	50	111.75	111.9	110.89	8	DM*085 - DM*089
TID090R10-6	9 - 9.4	10	54	50	114.92	115.07	113.88	9	DM*090 - DM*094
TID095R10-6	9.5 - 9.9	10	57	50	117.92	118.07	116.88	9	DM*095 - DM*099
TID100R12-6	10 - 10.4	12	68	60	140.03	140.65	138.7	10	DM*100 - DM*104
TID105R12-6	10.5 - 10.9	12	71	60	142.94	143.56	141.61	10	DM*105 - DM*109
TID110R12-6	11 - 11.4	12	75	65	151.63	152.28	150.08	11	DM*110 - DM*114
TID115R12-6	11.5 - 11.9	12	78	65	154.54	155.19	152.99	11	DM*115 - DM*119
TID120R14-6	12 - 12.4	14	81	65	158.18	158.81	156.59	12	DM*120 - DM*124
TID125R14-6	12.5 - 12.9	14	84	65	161.09	161.72	159.5	12	DM*125 - DM*129
TID130R14-6	13 - 13.4	14	88	65	166.24	166.99	164.37	13	DM*130 - DM*134
TID135R14-6	13.5 - 13.9	14	91	65	169.15	169.9	167.28	13	DM*135 - DM*139
TID140R16-6	14 - 14.4	16	94	70	178.18	178.99	176.19	14	DM*140 - DM*144
TID145R16-6	14.5 - 14.9	16	97	70	181.09	181.9	179.1	14	DM*145 - DM*149
TID150R16-6	15 - 15.9	16	104	70	188.19	189.1	186.09	15	DM*150 - DM*159
TID160R18-6	16 - 16.9	18	110	70	196.18	197.15	193.92	16	DM*160 - DM*169
TID170R18-6	17 - 17.9	18	117	70	203.21	204.19	200.66	17	DM*170 - DM*179
TID180R20-6	18 - 18.9	20	124	70	211.27	212.32	208.42	18	DM*180 - DM*189
TID190R20-6	19 - 19.9	20	130	70	218.12	219.23	215.11	19	DM*190 - DM*199

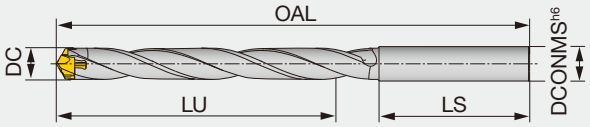
Tool diameter	Hole diameter tolerance*
ø6 - ø9.9	+0.06 / 0
ø10 - ø17.9	+0.08 / 0
ø18 - ø19.9	+0.095 / 0

*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 mm - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

TID-R L/D=8

Head changeable drill



* Cylindrical shank

Metric	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID060R8-8	6 - 6.4	8	48	45	104.44	104.59	103.6	6	DM*060 - DM*064
TID065R8-8	6.5 - 6.9	8	52	45	108.53	108.68	107.66	6.5	DM*065 - DM*069
TID070R8-8	7 - 7.4	8	56	45	112.38	112.83	111.51	7	DM*070 - DM*074
TID075R8-8	7.5 - 7.9	8	60	45	116.38	116.83	115.51	7	DM*075 - DM*079
TID080R10-8	8 - 8.4	10	64	50	125.55	125.7	124.69	8	DM*080 - DM*084
TID085R10-8	8.5 - 8.9	10	68	50	129.55	129.7	128.69	8	DM*085 - DM*089
TID090R10-8	9 - 9.4	10	72	50	133.72	133.87	132.68	9	DM*090 - DM*094
TID095R10-8	9.5 - 9.9	10	76	50	137.72	137.87	136.68	9	DM*095 - DM*099
TID100R12-8	10 - 10.4	12	89	60	160.83	161.45	159.5	10	DM*100 - DM*104
TID105R12-8	10.5 - 10.9	12	93	60	164.74	165.36	163.41	10	DM*105 - DM*109
TID110R12-8	11 - 11.4	12	98	65	174.43	175.08	172.88	11	DM*110 - DM*114
TID115R12-8	11.5 - 11.9	12	102	65	178.34	178.99	176.79	11	DM*115 - DM*119
TID120R14-8	12 - 12.4	14	106	65	182.98	183.61	181.39	12	DM*120 - DM*124
TID125R14-8	12.5 - 12.9	14	110	65	186.89	187.52	185.3	12	DM*125 - DM*129
TID130R14-8	13 - 13.4	14	115	65	193.04	193.79	191.17	13	DM*130 - DM*134
TID135R14-8	13.5 - 13.9	14	119	65	196.9	197.65	195.03	13	DM*135 - DM*139
TID140R16-8	14 - 14.4	16	123	70	206.98	207.79	204.99	14	DM*140 - DM*144
TID145R16-8	14.5 - 14.9	16	127	70	210.89	211.7	208.9	14	DM*145 - DM*149
TID150R16-8	15 - 15.9	16	136	70	219.99	220.9	217.89	15	DM*150 - DM*159
TID160R18-8	16 - 16.9	18	144	70	229.98	230.95	227.72	16	DM*160 - DM*169
TID170R18-8	17 - 17.9	18	153	70	239.01	239.99	236.46	17	DM*170 - DM*179
TID180R20-8	18 - 18.9	20	162	70	249.07	250.12	246.22	18	DM*180 - DM*189
TID190R20-8	19 - 19.9	20	170	70	257.92	259.03	254.91	19	DM*190 - DM*199

Tool diameter	Hole diameter tolerance*
ø6 - ø9.9	+0.08 / 0
ø10 - ø17.9	+0.08 / 0
ø18 - ø19.9	+0.095 / 0

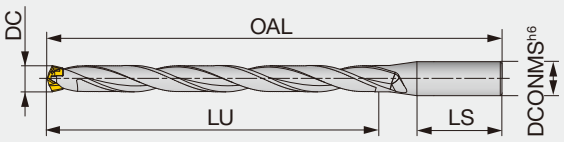
*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- When axially adjusting the shank inside the holder to obtain a required drill overhang, make sure the shank length remaining inside the holder does not come short of the minimum clamping length (LSCN) specified by the holder supplier.
- For drill diameters from ø8 mm - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

DRILLMEISTER

TID-R L/D=12

Head changeable drill



* Cylindrical shank

Metric	DC	DCONMS	LU	LS	OAL			Pocket size	Head
					DMP/H/N	DMC	DMF		
TID080R12-12	8 - 8.4	12	98	45	156.25	156.4	155.39	8	DM*080 - DM*084
TID085R12-12	8.5 - 8.9	12	104	45	162.25	162.4	161.39	8	DM*085 - DM*089
TID090R12-12	9 - 9.4	12	110	45	168.65	168.8	167.61	9	DM*090 - DM*094
TID095R12-12	9.5 - 9.9	12	116	45	174.65	174.8	173.61	9	DM*095 - DM*099
TID100R16-12	10 - 10.4	16	122	48	184.05	184.67	182.72	10	DM*100 - DM*104
TID105R16-12	10.5 - 10.9	16	128	48	190.05	190.67	188.72	10	DM*105 - DM*109
TID110R16-12	11 - 11.4	16	134	48	196.45	197.1	194.9	11	DM*110 - DM*114
TID115R16-12	11.5 - 11.9	16	140	48	202.45	203.1	200.9	11	DM*115 - DM*119
TID120R16-12	12 - 12.4	16	146	48	208.8	209.43	207.21	12	DM*120 - DM*124
TID125R16-12	12.5 - 12.9	16	152	48	214.8	215.43	213.21	12	DM*125 - DM*129
TID130R16-12	13 - 13.4	16	158	48	221.4	222.15	219.53	13	DM*130 - DM*134
TID135R16-12	13.5 - 13.9	16	165	48	227.4	228.15	225.53	13	DM*135 - DM*139
TID140R16-12	14 - 14.4	16	171	48	235.95	236.76	233.96	14	DM*140 - DM*144
TID145R16-12	14.5 - 14.9	16	177	48	241.95	242.76	239.96	14	DM*145 - DM*149
TID150R20-12	15 - 15.9	20	183	50	253.53	254.44	251.43	15	DM*150 - DM*159
TID160R20-12	16 - 16.9	20	195	50	267.1	268.07	264.84	16	DM*160 - DM*169
TID170R20-12	17 - 17.9	20	207	50	280.7	281.68	278.15	17	DM*170 - DM*179
TID180R25-12	18 - 18.9	25	219	56	300.3	301.35	297.45	18	DM*180 - DM*189
TID190R25-12	19 - 19.9	25	232	56	313.8	314.91	310.79	19	DM*190 - DM*199
TID200R25-12	20 - 20.9	25	244	56	327.4	328.62	325.12	20	DM*200 - DM*209
TID210R25-12	21 - 21.9	25	256	56	340.98	342.2	338.54	21	DM*210 - DM*219
TID220R25-12	22 - 22.9	25	267	56	354.56	355.84	351.86	22	DM*220 - DM*229
TID230R32-12	23 - 23.9	32	276	60	372.13	373.51	369.28	23	DM*230 - DM*239
TID240R32-12	24 - 24.9	32	288	60	385.7	387.11	382.71	24	DM*240 - DM*249
TID250R32-12	25 - 25.9	32	300	60	399.3	400.78	396.15	25	DM*250 - DM*259

Tool diameter	Hole diameter tolerance*
ø8 - ø17.9	+0.08 / 0
ø18 - ø25.9	+0.095 / 0

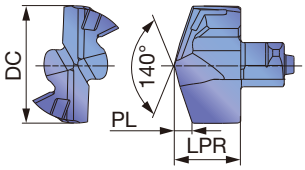
*Just for reference

- An overall length (OAL) differs based on each head geometry. (No difference for the drill shoulder)
- When using the drill at a higher feed rate, make sure to provide an axial support by placing the overhang adjusting screw at the drill shank end in the tool holder. This will prevent high thrust force from pushing the drill back into the holder during drilling.
- For drill diameters from ø8 mm - ø9.9 mm, the drill shoulder to shank bottom distance when a DMC drill head is mounted is 0.3 mm shorter when compared with a DMP head of the equivalent sizes. The distances are the same for the DMC and DMP drill heads in other diameters than the above.

Scan this QR code to find out other drill body information.

DRILL HEAD

DMP General purpose



Tool diameter (In)	Head diameter tolerance
ø0.236" - ø0.705"	+0.0007" / 0
ø0.709" - ø1.020"	+0.0008" / 0

Tool diameter (mm)	Head diameter tolerance
ø6 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	☆	★
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	☆	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

★ : First choice
☆ : Second choice

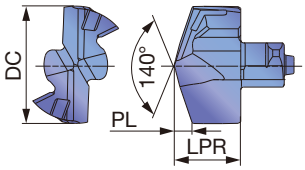
Designation	DC (in)	DC (mm)	LPR	Coated AH725	Coated AH9130	PL	Body
DMP060	0.236	6	3.85	●	●	1.09	TID*060...
DMP061	0.240	6.1	3.85	●	●	1.11	TID*060...
DMP062	0.244	6.2	3.85	●	●	1.13	TID*060...
DMP063	0.248	6.3	3.85	●	●	1.14	TID*060...
DMP064	0.252	6.4	3.85	●	●	1.16	TID*060...
DMP065	0.256	6.5	4.15	●	●	1.27	TID*065...
DMP066	0.260	6.6	4.15	●	●	1.29	TID*065...
DMP067	0.264	6.7	4.15	●	●	1.31	TID*065...
DMP068	0.268	6.8	4.15	●	●	1.33	TID*065...
DMP069	0.272	6.9	4.15	●	●	1.34	TID*065...
DMP070	0.276	7	4.45	●	●	1.03	TID*070...
DMP071	0.280	7.1	4.45	●	●	1.05	TID*070...
DMP072	0.283	7.2	4.45	●	●	1.07	TID*070...
DMP073	0.287	7.3	4.45	●	●	1.08	TID*070...
DMP074	0.291	7.4	4.45	●	●	1.1	TID*070...
DMP075	0.295	7.5	4.45	●	●	1.12	TID*075...
DMP076	0.299	7.6	4.45	●	●	1.14	TID*075...
DMP077	0.303	7.7	4.45	●	●	1.16	TID*075...
DMP078	0.307	7.8	4.45	●	●	1.18	TID*075...
DMP079	0.311	7.9	4.45	●	●	1.19	TID*075...
DMP080	0.315	8	5.25	●	●	1.2	TID*080...
DMP081	0.319	8.1	5.25	●	●	1.22	TID*080...
DMP082	0.323	8.2	5.25	●	●	1.24	TID*080...
DMP083	0.327	8.3	5.25	●	●	1.25	TID*080...
DMP084	0.331	8.4	5.25	●	●	1.27	TID*080...
DMP085	0.335	8.5	5.25	●	●	1.29	TID*085...
DMP086	0.339	8.6	5.25	●	●	1.31	TID*085...
DMP087	0.343	8.7	5.25	●	●	1.33	TID*085...
DMP088	0.346	8.8	5.25	●	●	1.35	TID*085...
DMP089	0.350	8.9	5.25	●	●	1.36	TID*085...
DMP090	0.354	9	5.65	●	●	1.37	TID*090...
DMP091	0.358	9.1	5.65	●	●	1.39	TID*090...
DMP092	0.362	9.2	5.65	●	●	1.41	TID*090...
DMP093	0.366	9.3	5.65	●	●	1.42	TID*090...
DMP094	0.370	9.4	5.65	●	●	1.44	TID*090...
DMP095	0.374	9.5	5.65	●	●	1.46	TID*095...
DMP096	0.378	9.6	5.65	●	●	1.48	TID*095...
DMP097	0.382	9.7	5.65	●	●	1.5	TID*095...
DMP098	0.386	9.8	5.65	●	●	1.52	TID*095...

Designation	DC (in)	DC (mm)	LPR	Coated AH725	Coated AH9130	PL	Body
DMP099	0.390	9.9	5.65	●	●	1.53	TID*095...
DMP100	0.394	10	6.05	●	●	1.47	TID*100...
DMP101	0.398	10.1	6.05	●	●	1.49	TID*100...
DMP102	0.402	10.2	6.05	●	●	1.51	TID*100...
DMP103	0.406	10.3	6.05	●	●	1.52	TID*100...
DMP104	0.409	10.4	6.05	●	●	1.54	TID*100...
DMP105	0.413	10.5	6.05	●	●	1.56	TID*105...
DMP106	0.417	10.6	6.05	●	●	1.58	TID*105...
DMP107	0.421	10.7	6.05	●	●	1.6	TID*105...
DMP108	0.425	10.8	6.05	●	●	1.62	TID*105...
DMP109	0.429	10.9	6.05	●	●	1.63	TID*105...
DMP110	0.433	11	6.45	●	●	1.67	TID*110...
DMP111	0.437	11.1	6.45	●	●	1.69	TID*110...
DMP112	0.441	11.2	6.45	●	●	1.71	TID*110...
DMP113	0.445	11.3	6.45	●	●	1.72	TID*110...
DMP114	0.449	11.4	6.45	●	●	1.74	TID*110...
DMP115	0.453	11.5	6.45	●	●	1.76	TID*115...
DMP116	0.457	11.6	6.45	●	●	1.78	TID*115...
DMP117	0.461	11.7	6.45	●	●	1.8	TID*115...
DMP118	0.465	11.8	6.45	●	●	1.82	TID*115...
DMP119	0.469	11.9	6.45	●	●	1.83	TID*115...
DMP120	0.472	12	6.8	●	●	1.82	TID*120...
DMP121	0.476	12.1	6.8	●	●	1.84	TID*120...
DMP122	0.480	12.2	6.8	●	●	1.86	TID*120...
DMP123	0.484	12.3	6.8	●	●	1.87	TID*120...
DMP124	0.488	12.4	6.8	●	●	1.89	TID*120...
DMP125	0.492	12.5	6.8	●	●	1.91	TID*125...
DMP126	0.496	12.6	6.8	●	●	1.93	TID*125...
DMP127	0.500	12.7	6.8	●	●	1.95	TID*125...
DMP128	0.504	12.8	6.8	●	●	1.97	TID*125...
DMP129	0.508	12.9	6.8	●	●	1.98	TID*125...
DMP130	0.512	13	7.4	●	●	1.96	TID*130...
DMP131	0.516	13.1	7.4	●	●	1.98	TID*130...
DMP132	0.520	13.2	7.4	●	●	2	TID*130...
DMP133	0.524	13.3	7.4	●	●	2.01	TID*130...
DMP134	0.528	13.4	7.4	●	●	2.03	TID*130...
DMP135	0.531	13.5	7.4	●	●	2.05	TID*135...
DMP136	0.535	13.6	7.4	●	●	2.07	TID*135...
DMP137	0.539	13.7	7.4	●	●	2.09	TID*135...

*Will be released in December 2021
ø0.236" - ø0.783" (ø6 - ø19.9) = 2 pieces per package
ø0.787" - ø1.020" (ø20 - ø25.9) = 1 piece per package

● : Line-up

DMP General purpose



Tool diameter (In)	Head diameter tolerance
ø0.236" - ø0.705"	+0.0007" / 0
ø0.709" - ø1.020"	+0.0008" / 0

Tool diameter (mm)	Head diameter tolerance
ø6 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

		AH725	AH9130
P	Steel	☆	★
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	☆	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

Designation	DC (in)	DC (mm)	LPR	Coated AH725	Coated AH9130	PL	Body
DMP138	0.543	13.8	7.4	●	●	2.11	TID*135...
DMP139	0.547	13.9	7.4	●	●	2.12	TID*135...
DMP140	0.551	14	7.95	●	●	2.12	TID*140...
DMP141	0.555	14.1	7.95	●	●	2.14	TID*140...
DMP142	0.559	14.2	7.95	●	●	2.16	TID*140...
DMP143	0.563	14.3	7.95	●	●	2.17	TID*140...
DMP144	0.567	14.4	7.95	●	●	2.19	TID*140...
DMP145	0.571	14.5	7.95	●	●	2.21	TID*145...
DMP146	0.575	14.6	7.95	●	●	2.23	TID*145...
DMP147	0.579	14.7	7.95	●	●	2.25	TID*145...
DMP148	0.583	14.8	7.95	●	●	2.27	TID*145...
DMP149	0.587	14.9	7.95	●	●	2.28	TID*145...
DMP150	0.591	15	8.53	●	●	2.27	TID*150...
DMP151	0.594	15.1	8.53	●	●	2.29	TID*150...
DMP152	0.598	15.2	8.53	●	●	2.31	TID*150...
DMP153	0.602	15.3	8.53	●	●	2.32	TID*150...
DMP154	0.606	15.4	8.53	●	●	2.34	TID*150...
DMP155	0.610	15.5	8.53	●	●	2.36	TID*150...
DMP156	0.614	15.6	8.53	●	●	2.38	TID*150...
DMP157	0.618	15.7	8.53	●	●	2.4	TID*150...
DMP158	0.622	15.8	8.53	●	●	2.42	TID*150...
DMP159	0.626	15.9	8.53	●	●	2.43	TID*150...
DMP160	0.630	16	9.1	●	●	2.42	TID*160...
DMP161	0.634	16.1	9.1	●	●	2.44	TID*160...
DMP162	0.638	16.2	9.1	●	●	2.46	TID*160...
DMP163	0.642	16.3	9.1	●	●	2.47	TID*160...
DMP164	0.646	16.4	9.1	●	●	2.49	TID*160...
DMP165	0.650	16.5	9.1	●	●	2.51	TID*160...
DMP166	0.654	16.6	9.1	●	●	2.53	TID*160...
DMP167	0.657	16.7	9.1	●	●	2.55	TID*160...
DMP168	0.661	16.8	9.1	●	●	2.57	TID*160...
DMP169	0.665	16.9	9.1	●	●	2.58	TID*160...
DMP170	0.669	17	9.7	●	●	2.59	TID*170...
DMP171	0.673	17.1	9.7	●	●	2.61	TID*170...
DMP172	0.677	17.2	9.7	●	●	2.63	TID*170...
DMP173	0.681	17.3	9.7	●	●	2.64	TID*170...
DMP174	0.685	17.4	9.7	●	●	2.66	TID*170...
DMP175	0.689	17.5	9.7	●	●	2.68	TID*170...
DMP176	0.693	17.6	9.7	●	●	2.7	TID*170...
DMP177	0.697	17.7	9.7	●	●	2.72	TID*170...
DMP178	0.701	17.8	9.7	●	●	2.74	TID*170...
DMP179	0.705	17.9	9.7	●	●	2.75	TID*170...

		AH725	AH9130
P	Steel	☆	★
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	☆	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR	Coated AH725	Coated AH9130	PL	Body
DMP180	0.709	18	10.3	●	●	2.73	TID*180...
DMP181	0.713	18.1	10.3	●	●	2.75	TID*180...
DMP182	0.717	18.2	10.3	●	●	2.77	TID*180...
DMP183	0.720	18.3	10.3	●	●	2.78	TID*180...
DMP184	0.724	18.4	10.3	●	●	2.8	TID*180...
DMP185	0.728	18.5	10.3	●	●	2.82	TID*180...
DMP186	0.732	18.6	10.3	●	●	2.84	TID*180...
DMP187	0.736	18.7	10.3	●	●	2.86	TID*180...
DMP188	0.740	18.8	10.3	●	●	2.88	TID*180...
DMP189	0.744	18.9	10.3	●	●	2.89	TID*180...
DMP190	0.748	19	10.8	●	●	2.88	TID*190...
DMP1905	0.750	19.05	10.8	●	●	2.89	TID*190...
DMP191	0.752	19.1	10.8	●	●	2.9	TID*190...
DMP192	0.756	19.2	10.8	●	●	2.92	TID*190...
DMP1927	0.759	19.27	10.8	●	●	2.93	TID*190...
DMP193	0.760	19.3	10.8	●	●	2.93	TID*190...
DMP194	0.764	19.4	10.8	●	●	2.95	TID*190...
DMP195	0.768	19.5	10.8	●	●	2.97	TID*190...
DMP196	0.772	19.6	10.8	●	●	2.99	TID*190...
DMP197	0.776	19.7	10.8	●	●	3.01	TID*190...
DMP198	0.780	19.8	10.8	●	●	3.03	TID*190...
DMP199	0.783	19.9	10.8	●	●	3.04	TID*190...
DMP200	0.787	20	11.4	●	●	3.02	TID*200...
DMP201	0.791	20.1	11.4	●	●	3.04	TID*200...
DMP202	0.795	20.2	11.4	●	●	3.06	TID*200...
DMP203	0.799	20.3	11.4	●	●	3.07	TID*200...
DMP204	0.803	20.4	11.4	●	●	3.09	TID*200...
DMP205	0.807	20.5	11.4	●	●	3.11	TID*200...
DMP206	0.811	20.6	11.4	●	●	3.13	TID*200...
DMP207	0.815	20.7	11.4	●	●	3.15	TID*200...
DMP208	0.819	20.8	11.4	●	●	3.17	TID*200...
DMP209	0.823	20.9	11.4	●	●	3.18	TID*200...
DMP210	0.827	21	11.98	●	●	3.18	TID*210...
DMP211	0.831	21.1	11.98	●	●	3.2	TID*210...
DMP212	0.835	21.2	11.98	●	●	3.22	TID*210...
DMP213	0.839	21.3	11.98	●	●	3.23	TID*210...
DMP214	0.843	21.4	11.98	●	●	3.25	TID*210...
DMP215	0.846	21.5	11.98	●	●	3.27	TID*210...
DMP216	0.850	21.6	11.98	●	●	3.29	TID*210...
DMP217	0.854	21.7	11.98	●	●	3.31	TID*210...
DMP218	0.858	21.8	11.98	●	●	3.33	TID*210...
DMP219	0.862	21.9	11.98	●	●	3.34	TID*210...

ø0.236" - ø0.783" (ø6 - ø19.9) = 2 pieces per package
ø0.787" - ø1.020" (ø20 - ø25.9) = 1 piece per package

● : Line-up

P	Steel	☆	★
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	☆	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

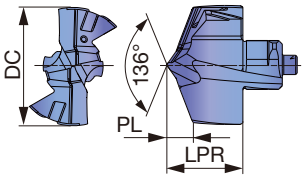
★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR	Coated		PL	Body
				AH725	AH9130		
DMP220	0.866	22	12.56	●	●	3.32	TID*220...
DMP221	0.870	22.1	12.56	●	●	3.34	TID*220...
DMP222	0.874	22.2	12.56	●	●	3.36	TID*220...
DMP223	0.878	22.3	12.56	●	●	3.37	TID*220...
DMP224	0.882	22.4	12.56	●	●	3.39	TID*220...
DMP225	0.886	22.5	12.56	●	●	3.41	TID*220...
DMP226	0.890	22.6	12.56	●	●	3.43	TID*220...
DMP227	0.894	22.7	12.56	●	●	3.45	TID*220...
DMP228	0.898	22.8	12.56	●	●	3.47	TID*220...
DMP229	0.902	22.9	12.56	●	●	3.48	TID*220...
DMP230	0.906	23	13.13	●	●	3.46	TID*230...
DMP231	0.909	23.1	13.13	●	●	3.48	TID*230...
DMP232	0.913	23.2	13.13	●	●	3.5	TID*230...
DMP233	0.917	23.3	13.13	●	●	3.51	TID*230...
DMP234	0.921	23.4	13.13	●	●	3.53	TID*230...
DMP235	0.925	23.5	13.13	●	●	3.55	TID*230...
DMP236	0.929	23.6	13.13	●	●	3.57	TID*230...
DMP237	0.933	23.7	13.13	●	●	3.59	TID*230...
DMP238	0.937	23.8	13.13	●	●	3.61	TID*230...
DMP239	0.941	23.9	13.13	●	●	3.62	TID*230...
DMP240	0.945	24	13.7	●	●	3.62	TID*240...
DMP241	0.949	24.1	13.7	●	●	3.64	TID*240...
DMP242	0.953	24.2	13.7	●	●	3.66	TID*240...
DMP243	0.957	24.3	13.7	●	●	3.67	TID*240...
DMP244	0.961	24.4	13.7	●	●	3.69	TID*240...
DMP245	0.965	24.5	13.7	●	●	3.71	TID*240...
DMP246	0.969	24.6	13.7	●	●	3.73	TID*240...
DMP247	0.972	24.7	13.7	●	●	3.75	TID*240...
DMP248	0.976	24.8	13.7	●	●	3.77	TID*240...
DMP249	0.980	24.9	13.7	●	●	3.78	TID*240...
DMP250	0.984	25	14.3	●	●	3.8	TID*250...
DMP251	0.988	25.1	14.3	●	●	3.82	TID*250...
DMP252	0.992	25.2	14.3	●	●	3.84	TID*250...
DMP253	0.996	25.3	14.3	●	●	3.85	TID*250...
DMP254	1.000	25.4	14.3	●	●	3.87	TID*250...
DMP255	1.004	25.5	14.3	●	●	3.89	TID*250...
DMP256	1.008	25.6	14.3	●	●	3.91	TID*250...
DMP2567	1.011	25.67	14.3	●	●	3.92	TID*250...
DMP257	1.012	25.7	14.3	●	●	3.93	TID*250...
DMP258	1.016	25.8	14.3	●	●	3.95	TID*250...
DMP259	1.020	25.9	14.3	●	●	3.96	TID*250...

ø0.236" - ø0.783" (ø6 - ø19.9) = 2 pieces per package
ø0.787" - ø1.020" (ø20 - ø25.9) = 1 piece per package

● : Line-up

DMC High precision drilling



Tool diameter (In)	Head diameter tolerance
ø0.236" - ø0.705"	+0.0007" / 0
ø0.709" - ø1.020"	+0.0008" / 0

Tool diameter (mm)	Head diameter tolerance
ø6 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

		Coated
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

Designation	DC (in)	DC (mm)	LPR	Coated AH9130	PL	Body
DMC040	0.157	4	3.51	●	0.86	TID*040...
DMC041	0.161	4.1	3.51	●	0.88	TID*040...
DMC042	0.165	4.2	3.51	●	0.9	TID*040...
DMC043	0.169	4.3	3.51	●	0.92	TID*040...
DMC044	0.173	4.4	3.51	●	0.94	TID*040...
DMC045	0.177	4.5	3.81	●	0.97	TID*045...
DMC046	0.181	4.6	3.81	●	0.99	TID*045...
DMC047	0.185	4.7	3.81	●	1.01	TID*045...
DMC048	0.189	4.8	3.81	●	1.03	TID*045...
DMC049	0.193	4.9	3.81	●	1.05	TID*045...
DMC050	0.197	5	4.14	●	1.09	TID*050...
DMC051	0.201	5.1	4.14	●	1.11	TID*050...
DMC052	0.205	5.2	4.14	●	1.13	TID*050...
DMC053	0.209	5.3	4.14	●	1.15	TID*050...
DMC054	0.213	5.4	4.14	●	1.17	TID*050...
DMC055	0.217	5.5	4.17	●	1.22	TID*055...
DMC056	0.220	5.6	4.17	●	1.24	TID*055...
DMC057	0.224	5.7	4.17	●	1.26	TID*055...
DMC058	0.228	5.8	4.17	●	1.28	TID*055...
DMC059	0.232	5.9	4.17	●	1.3	TID*055...
DMC060	0.236	6	4	●	1.24	TID*060...
DMC061	0.240	6.1	4	●	1.26	TID*060...
DMC062	0.244	6.2	4	●	1.28	TID*060...
DMC063	0.248	6.3	4	●	1.3	TID*060...
DMC064	0.252	6.4	4	●	1.32	TID*060...
DMC065	0.256	6.5	4.3	●	1.33	TID*065...
DMC066	0.260	6.6	4.3	●	1.35	TID*065...
DMC067	0.264	6.7	4.3	●	1.37	TID*065...
DMC068	0.268	6.8	4.3	●	1.39	TID*065...
DMC069	0.272	6.9	4.3	●	1.41	TID*065...
DMC070	0.276	7	4.9	●	1.48	TID*070...
DMC071	0.280	7.1	4.9	●	1.5	TID*070...
DMC072	0.283	7.2	4.9	●	1.52	TID*070...
DMC073	0.287	7.3	4.9	●	1.54	TID*070...
DMC074	0.291	7.4	4.9	●	1.56	TID*070...
DMC075	0.295	7.5	4.9	●	1.58	TID*075...
DMC076	0.299	7.6	4.9	●	1.6	TID*075...
DMC077	0.303	7.7	4.9	●	1.62	TID*075...
DMC078	0.307	7.8	4.9	●	1.64	TID*075...
DMC079	0.311	7.9	4.9	●	1.66	TID*075...

ø0.236" - ø0.783" (ø6 - ø19.9) = 2 pieces per package
ø0.787" - ø1.020" (ø20 - ø25.9) = 1 piece per package

		Coated
P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR	Coated AH9130	PL	Body
DMC080	0.315	8	5.4	●	1.62	TID*080...
DMC081	0.319	8.1	5.4	●	1.64	TID*080...
DMC082	0.323	8.2	5.4	●	1.66	TID*080...
DMC083	0.327	8.3	5.4	●	1.68	TID*080...
DMC084	0.331	8.4	5.4	●	1.7	TID*080...
DMC085	0.335	8.5	5.4	●	1.72	TID*085...
DMC086	0.339	8.6	5.4	●	1.74	TID*085...
DMC087	0.343	8.7	5.4	●	1.76	TID*085...
DMC088	0.346	8.8	5.4	●	1.78	TID*085...
DMC089	0.350	8.9	5.4	●	1.8	TID*085...
DMC090	0.354	9	5.8	●	1.91	TID*090...
DMC091	0.358	9.1	5.8	●	1.93	TID*090...
DMC092	0.362	9.2	5.8	●	1.95	TID*090...
DMC093	0.366	9.3	5.8	●	1.97	TID*090...
DMC094	0.370	9.4	5.8	●	1.99	TID*090...
DMC095	0.374	9.5	5.8	●	2.01	TID*095...
DMC096	0.378	9.6	5.8	●	2.03	TID*095...
DMC097	0.382	9.7	5.8	●	2.05	TID*095...
DMC098	0.386	9.8	5.8	●	2.07	TID*095...
DMC099	0.390	9.9	5.8	●	2.09	TID*095...
DMC100	0.394	10	6.67	●	2.09	TID*100...
DMC101	0.398	10.1	6.67	●	2.11	TID*100...
DMC102	0.402	10.2	6.67	●	2.13	TID*100...
DMC103	0.406	10.3	6.67	●	2.15	TID*100...
DMC104	0.409	10.4	6.67	●	2.17	TID*100...
DMC105	0.413	10.5	6.67	●	2.19	TID*105...
DMC106	0.417	10.6	6.67	●	2.21	TID*105...
DMC107	0.421	10.7	6.67	●	2.23	TID*105...
DMC108	0.425	10.8	6.67	●	2.25	TID*105...
DMC109	0.429	10.9	6.67	●	2.27	TID*105...
DMC110	0.433	11	7.1	●	2.32	TID*110...
DMC111	0.437	11.1	7.1	●	2.34	TID*110...
DMC112	0.441	11.2	7.1	●	2.36	TID*110...
DMC113	0.445	11.3	7.1	●	2.38	TID*110...
DMC114	0.449	11.4	7.1	●	2.4	TID*110...
DMC115	0.453	11.5	7.1	●	2.42	TID*115...
DMC116	0.457	11.6	7.1	●	2.44	TID*115...
DMC117	0.461	11.7	7.1	●	2.46	TID*115...
DMC118	0.465	11.8	7.1	●	2.48	TID*115...
DMC119	0.469	11.9	7.1	●	2.5	TID*115...

● : New product
● : Line-up

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

Designation	DC (in)	DC (mm)	LPR	Coated AH9130	PL	Body
DMC120	0.472	12	7.43	●	2.45	TID*120...
DMC121	0.476	12.1	7.43	●	2.47	TID*120...
DMC122	0.480	12.2	7.43	●	2.49	TID*120...
DMC123	0.484	12.3	7.43	●	2.51	TID*120...
DMC124	0.488	12.4	7.43	●	2.53	TID*120...
DMC125	0.492	12.5	7.43	●	2.55	TID*125...
DMC126	0.496	12.6	7.43	●	2.57	TID*125...
DMC127	0.500	12.7	7.43	●	2.59	TID*125...
DMC128	0.504	12.8	7.43	●	2.61	TID*125...
DMC129	0.508	12.9	7.43	●	2.63	TID*125...
DMC130	0.512	13	8.15	●	2.71	TID*130...
DMC131	0.516	13.1	8.15	●	2.73	TID*130...
DMC132	0.520	13.2	8.15	●	2.75	TID*130...
DMC133	0.524	13.3	8.15	●	2.77	TID*130...
DMC134	0.528	13.4	8.15	●	2.79	TID*130...
DMC135	0.531	13.5	8.15	●	2.81	TID*135...
DMC136	0.535	13.6	8.15	●	2.83	TID*135...
DMC137	0.539	13.7	8.15	●	2.85	TID*135...
DMC138	0.543	13.8	8.15	●	2.87	TID*135...
DMC139	0.547	13.9	8.15	●	2.89	TID*135...
DMC140	0.551	14	8.76	●	2.93	TID*140...
DMC141	0.555	14.1	8.76	●	2.95	TID*140...
DMC142	0.559	14.2	8.76	●	2.97	TID*140...
DMC143	0.563	14.3	8.76	●	2.99	TID*140...
DMC144	0.567	14.4	8.76	●	3.01	TID*140...
DMC145	0.571	14.5	8.76	●	3.03	TID*145...
DMC146	0.575	14.6	8.76	●	3.05	TID*145...
DMC147	0.579	14.7	8.76	●	3.07	TID*145...
DMC148	0.583	14.8	8.76	●	3.09	TID*145...
DMC149	0.587	14.9	8.76	●	3.11	TID*145...
DMC150	0.591	15	9.44	●	3.18	TID*150...
DMC151	0.594	15.1	9.44	●	3.2	TID*150...
DMC152	0.598	15.2	9.44	●	3.22	TID*150...
DMC153	0.602	15.3	9.44	●	3.24	TID*150...
DMC154	0.606	15.4	9.44	●	3.26	TID*150...
DMC155	0.610	15.5	9.44	●	3.28	TID*150...
DMC156	0.614	15.6	9.44	●	3.3	TID*150...
DMC157	0.618	15.7	9.44	●	3.32	TID*150...
DMC158	0.622	15.8	9.44	●	3.34	TID*150...
DMC159	0.626	15.9	9.44	●	3.36	TID*150...

ø0.236" - ø0.783" (ø6 - ø19.9) = 2 pieces per package
ø0.787" - ø1.020" (ø20 - ø25.9) = 1 piece per package

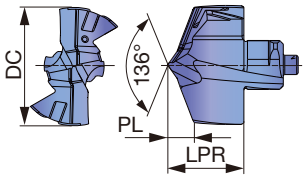
P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR	Coated AH9130	PL	Body
DMC160	0.630	16	10.07	●	3.39	TID*160...
DMC161	0.634	16.1	10.07	●	3.41	TID*160...
DMC162	0.638	16.2	10.07	●	3.43	TID*160...
DMC163	0.642	16.3	10.07	●	3.45	TID*160...
DMC164	0.646	16.4	10.07	●	3.47	TID*160...
DMC165	0.650	16.5	10.07	●	3.49	TID*160...
DMC166	0.654	16.6	10.07	●	3.51	TID*160...
DMC167	0.657	16.7	10.07	●	3.53	TID*160...
DMC168	0.661	16.8	10.07	●	3.55	TID*160...
DMC169	0.665	16.9	10.07	●	3.57	TID*160...
DMC170	0.669	17	10.68	●	3.57	TID*170...
DMC171	0.673	17.1	10.68	●	3.59	TID*170...
DMC172	0.677	17.2	10.68	●	3.61	TID*170...
DMC173	0.681	17.3	10.68	●	3.63	TID*170...
DMC174	0.685	17.4	10.68	●	3.65	TID*170...
DMC175	0.689	17.5	10.68	●	3.67	TID*170...
DMC176	0.693	17.6	10.68	●	3.69	TID*170...
DMC177	0.697	17.7	10.68	●	3.71	TID*170...
DMC178	0.701	17.8	10.68	●	3.73	TID*170...
DMC179	0.705	17.9	10.68	●	3.75	TID*170...
DMC180	0.709	18	11.35	●	3.78	TID*180...
DMC181	0.713	18.1	11.35	●	3.8	TID*180...
DMC182	0.717	18.2	11.35	●	3.82	TID*180...
DMC183	0.720	18.3	11.35	●	3.84	TID*180...
DMC184	0.724	18.4	11.35	●	3.86	TID*180...
DMC185	0.728	18.5	11.35	●	3.88	TID*180...
DMC186	0.732	18.6	11.35	●	3.9	TID*180...
DMC187	0.736	18.7	11.35	●	3.92	TID*180...
DMC188	0.740	18.8	11.35	●	3.94	TID*180...
DMC189	0.744	18.9	11.35	●	3.96	TID*180...
DMC190	0.748	19	11.91	●	3.99	TID*190...
DMC191	0.752	19.1	11.91	●	4.01	TID*190...
DMC192	0.756	19.2	11.91	●	4.03	TID*190...
DMC1927	0.759	19.27	11.91	●	4.04	TID*190...
DMC193	0.760	19.3	11.91	●	4.05	TID*190...
DMC194	0.764	19.4	11.91	●	4.07	TID*190...
DMC195	0.768	19.5	11.91	●	4.09	TID*190...
DMC196	0.772	19.6	11.91	●	4.11	TID*190...
DMC197	0.776	19.7	11.91	●	4.13	TID*190...
DMC198	0.780	19.8	11.91	●	4.15	TID*190...

● : New product
● : Line-up

DMC High precision drilling



Tool diameter (In)	Head diameter tolerance
ø0.236" - ø0.705"	+0.0007" / 0
ø0.709" - ø1.020"	+0.0008" / 0

Tool diameter (mm)	Head diameter tolerance
ø6 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

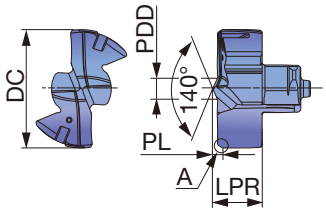
Designation	DC (in)	DC (mm)	LPR	Coated AH9130	PL	Body
DMC199	0.783	19.9	11.91	●	4.17	TID*190...
DMC200	0.787	20	12.62	●	4.24	TID*200...
DMC201	0.791	20.1	12.62	●	4.26	TID*200...
DMC202	0.795	20.2	12.62	●	4.28	TID*200...
DMC203	0.799	20.3	12.62	●	4.3	TID*200...
DMC204	0.803	20.4	12.62	●	4.32	TID*200...
DMC205	0.807	20.5	12.62	●	4.34	TID*200...
DMC206	0.811	20.6	12.62	●	4.36	TID*200...
DMC207	0.815	20.7	12.62	●	4.38	TID*200...
DMC208	0.819	20.8	12.62	●	4.4	TID*200...
DMC209	0.823	20.9	12.62	●	4.42	TID*200...
DMC210	0.827	21	13.2	●	4.4	TID*210...
DMC211	0.831	21.1	13.2	●	4.42	TID*210...
DMC212	0.835	21.2	13.2	●	4.44	TID*210...
DMC213	0.839	21.3	13.2	●	4.46	TID*210...
DMC214	0.843	21.4	13.2	●	4.48	TID*210...
DMC215	0.846	21.5	13.2	●	4.5	TID*210...
DMC216	0.850	21.6	13.2	●	4.52	TID*210...
DMC217	0.854	21.7	13.2	●	4.54	TID*210...
DMC218	0.858	21.8	13.2	●	4.56	TID*210...
DMC219	0.862	21.9	13.2	●	4.58	TID*210...
DMC220	0.866	22	13.84	●	4.6	TID*220...
DMC221	0.870	22.1	13.84	●	4.62	TID*220...
DMC222	0.874	22.2	13.84	●	4.64	TID*220...
DMC223	0.878	22.3	13.84	●	4.66	TID*220...
DMC224	0.882	22.4	13.84	●	4.68	TID*220...
DMC225	0.886	22.5	13.84	●	4.7	TID*220...
DMC226	0.890	22.6	13.84	●	4.72	TID*220...
DMC227	0.894	22.7	13.84	●	4.74	TID*220...
DMC228	0.898	22.8	13.84	●	4.76	TID*220...
DMC229	0.902	22.9	13.84	●	4.78	TID*220...
DMC230	0.906	23	14.51	●	4.84	TID*230...
DMC231	0.909	23.1	14.51	●	4.84	TID*220...
DMC232	0.913	23.2	14.51	●	4.86	TID*230...
DMC233	0.917	23.3	14.51	●	4.88	TID*220...
DMC234	0.921	23.4	14.51	●	4.9	TID*230...
DMC235	0.925	23.5	14.51	●	4.94	TID*230...
DMC236	0.929	23.6	14.51	●	4.94	TID*230...
DMC237	0.933	23.7	14.51	●	4.96	TID*230...
DMC238	0.937	23.8	14.51	●	4.98	TID*230...

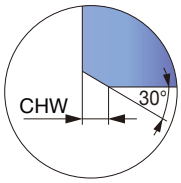
Designation	DC (in)	DC (mm)	LPR	Coated AH9130	PL	Body
DMC239	0.941	23.9	14.51	●	5	TID*230...
DMC240	0.945	24	15.11	●	5.03	TID*240...
DMC241	0.949	24.1	15.11	●	5.24	TID*240...
DMC243	0.957	24.3	15.11	●	5.28	TID*240...
DMC244	0.961	24.4	15.11	●	5.3	TID*240...
DMC245	0.965	24.5	15.11	●	5.13	TID*240...
DMC246	0.969	24.6	15.11	●	5.34	TID*240...
DMC247	0.972	24.7	15.11	●	5.36	TID*240...
DMC248	0.976	24.8	15.11	●	5.38	TID*240...
DMC249	0.980	24.9	15.11	●	5.4	TID*240...
DMC250	0.984	25	15.78	●	5.28	TID*250...
DMC251	0.988	25.1	15.78	●	5.71	TID*250...
DMC252	0.992	25.2	15.78	●	5.73	TID*250...
DMC253	0.996	25.3	15.78	●	5.34	TID*250...
DMC254	1.000	25.4	15.78	●	5.77	TID*250...
DMC255	1.004	25.5	15.78	●	5.38	TID*250...
DMC256	1.008	25.6	15.78	●	5.81	TID*250...
DMC2567	1.011	25.67	15.78	●	5.42	TID*250...
DMC257	1.012	25.7	15.78	●	5.83	TID*250...
DMC258	1.016	25.8	15.78	●	5.85	TID*250...
DMC259	1.020	25.9	15.78	●	5.46	TID*250...

● : New product
● : Line-up

ø0.236" - ø0.783" (ø6 - ø19.9) = 2 pieces per package
ø0.787" - ø1.020" (ø20 - ø25.9) = 1 piece per package

DMF Flat geometry head





Detail in A

Tool diameter (In)	Head diameter tolerance
ø0.236" - ø0.705"	+0.0007" / 0
ø0.709" - ø0.783"	+0.0008" / 0

Tool diameter (mm)	Head diameter tolerance
ø6 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous	☆		
S	Superalloys	★		
H	Hard materials	★		

★ : First choice
☆ : Second choice

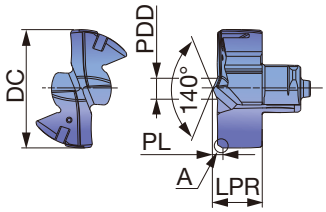
Designation	DC (in)	DC (mm)	LPR	Coated AH9130	CHW	PL	PDD	Body
DMF060	0.236	6	3.01	●	0.4	0.61	1.15	TID*060...
DMF061	0.240	6.1	3.01	●	0.4	0.61	1.15	TID*060...
DMF062	0.244	6.2	3.01	●	0.4	0.61	1.15	TID*060...
DMF063	0.248	6.3	3.01	●	0.4	0.61	1.15	TID*060...
DMF064	0.252	6.4	3.01	●	0.4	0.61	1.15	TID*060...
DMF065	0.256	6.5	3.28	●	0.4	0.68	1.54	TID*065...
DMF066	0.260	6.6	3.28	●	0.4	0.68	1.54	TID*065...
DMF067	0.264	6.7	3.28	●	0.4	0.68	1.54	TID*065...
DMF068	0.268	6.8	3.28	●	0.4	0.68	1.54	TID*065...
DMF069	0.272	6.9	3.28	●	0.4	0.68	1.54	TID*065...
DMF070	0.276	7	3.58	●	0.4	0.68	1.54	TID*070...
DMF071	0.280	7.1	3.58	●	0.4	0.68	1.54	TID*070...
DMF072	0.283	7.2	3.58	●	0.4	0.68	1.54	TID*070...
DMF073	0.287	7.3	3.58	●	0.4	0.68	1.54	TID*070...
DMF074	0.291	7.4	3.58	●	0.4	0.68	1.54	TID*070...
DMF075	0.295	7.5	3.58	●	0.4	0.68	1.54	TID*075...
DMF076	0.299	7.6	3.58	●	0.4	0.68	1.54	TID*075...
DMF078	0.307	7.8	3.58	●	0.4	0.68	1.54	TID*075...
DMF079	0.311	7.9	3.58	●	0.4	0.68	1.54	TID*075...
DMF080	0.315	8	4.39	●	0.7	1.09	2.44	TID*080...
DMF081	0.319	8.1	4.39	●	0.7	1.09	2.44	TID*080...
DMF082	0.323	8.2	4.39	●	0.7	1.09	2.44	TID*080...
DMF083	0.327	8.3	4.39	●	0.7	1.09	2.44	TID*080...
DMF084	0.331	8.4	4.39	●	0.7	1.09	2.44	TID*080...
DMF085	0.335	8.5	4.39	●	0.7	1.09	2.44	TID*085...
DMF086	0.339	8.6	4.39	●	0.7	1.09	2.44	TID*085...
DMF087	0.343	8.7	4.39	●	0.7	1.09	2.44	TID*085...
DMF088	0.346	8.8	4.39	●	0.7	1.09	2.44	TID*085...
DMF089	0.350	8.9	4.39	●	0.7	1.09	2.44	TID*085...
DMF090	0.354	9	4.61	●	0.7	1.11	2.55	TID*090...
DMF091	0.358	9.1	4.61	●	0.7	1.11	2.55	TID*090...
DMF092	0.362	9.2	4.61	●	0.7	1.11	2.55	TID*090...
DMF093	0.366	9.3	4.61	●	0.7	1.11	2.55	TID*090...
DMF094	0.370	9.4	4.61	●	0.7	1.11	2.55	TID*090...
DMF095	0.374	9.5	4.61	●	0.7	1.11	2.55	TID*095...
DMF096	0.378	9.6	4.61	●	0.7	1.11	2.55	TID*095...
DMF097	0.382	9.7	4.61	●	0.7	1.11	2.55	TID*095...
DMF098	0.386	9.8	4.61	●	0.7	1.11	2.55	TID*095...
DMF099	0.390	9.9	4.61	●	0.7	1.11	2.55	TID*095...

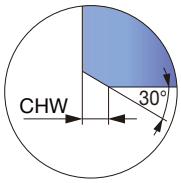
Designation	DC (in)	DC (mm)	LPR	Coated AH9130	CHW	PL	PDD	Body
DMF100	0.394	10	4.72	●	0.7	1.17	2.89	TID*100...
DMF101	0.398	10.1	4.72	●	0.7	1.17	2.89	TID*100...
DMF102	0.402	10.2	4.72	●	0.7	1.17	2.89	TID*100...
DMF103	0.406	10.3	4.72	●	0.7	1.17	2.89	TID*100...
DMF104	0.409	10.4	4.72	●	0.7	1.17	2.89	TID*100...
DMF105	0.413	10.5	4.72	●	0.7	1.17	2.89	TID*105...
DMF106	0.417	10.6	4.72	●	0.7	1.17	2.89	TID*105...
DMF107	0.421	10.7	4.72	●	0.7	1.17	2.89	TID*105...
DMF108	0.425	10.8	4.72	●	0.7	1.17	2.89	TID*105...
DMF109	0.429	10.9	4.72	●	0.7	1.17	2.89	TID*105...
DMF110	0.433	11	4.9	●	0.7	1.25	2.98	TID*110...
DMF111	0.437	11.1	4.9	●	0.7	1.25	2.98	TID*110...
DMF112	0.441	11.2	4.9	●	0.7	1.25	2.98	TID*110...
DMF113	0.445	11.3	4.9	●	0.7	1.25	2.98	TID*110...
DMF114	0.449	11.4	4.9	●	0.7	1.25	2.98	TID*110...
DMF115	0.453	11.5	4.9	●	0.7	1.25	2.98	TID*115...
DMF116	0.457	11.6	4.9	●	0.7	1.25	2.98	TID*115...
DMF117	0.461	11.7	4.9	●	0.7	1.25	2.98	TID*115...
DMF118	0.465	11.8	4.9	●	0.7	1.25	2.98	TID*115...
DMF119	0.469	11.9	4.9	●	0.7	1.25	2.98	TID*115...
DMF120	0.472	12	5.21	●	0.7	1.26	3.13	TID*120...
DMF121	0.476	12.1	5.21	●	0.7	1.26	3.13	TID*120...
DMF122	0.480	12.2	5.21	●	0.7	1.26	3.13	TID*120...
DMF123	0.484	12.3	5.21	●	0.7	1.26	3.13	TID*120...
DMF124	0.488	12.4	5.21	●	0.7	1.26	3.13	TID*120...
DMF125	0.492	12.5	5.21	●	0.7	1.26	3.13	TID*125...
DMF126	0.496	12.6	5.21	●	0.7	1.26	3.13	TID*125...
DMF127	0.500	12.7	5.21	●	0.7	1.26	3.13	TID*125...
DMF128	0.504	12.8	5.21	●	0.7	1.26	3.13	TID*125...
DMF129	0.508	12.9	5.21	●	0.7	1.26	3.13	TID*125...
DMF130	0.512	13	5.53	●	0.7	1.28	3.52	TID*130...
DMF131	0.516	13.1	5.53	●	0.7	1.28	3.52	TID*130...
DMF132	0.520	13.2	5.53	●	0.7	1.28	3.52	TID*130...
DMF133	0.524	13.3	5.53	●	0.7	1.28	3.52	TID*130...
DMF134	0.528	13.4	5.53	●	0.7	1.28	3.52	TID*130...
DMF135	0.531	13.5	5.53	●	0.7	1.28	3.52	TID*135...
DMF136	0.535	13.6	5.53	●	0.7	1.28	3.52	TID*135...
DMF137	0.539	13.7	5.53	●	0.7	1.28	3.52	TID*135...

● : Line-up

ø0.236" - ø0.783" (ø6 - ø19.9) = 2 pieces per package
ø0.787" - ø1.020" (ø20 - ø25.9) = 1 piece per package

DMF Flat geometry head





Detail in A

Tool diameter (In)	Head diameter tolerance
ø0.236" - ø0.705"	+0.0007" / 0
ø0.709" - ø0.783"	+0.0008" / 0

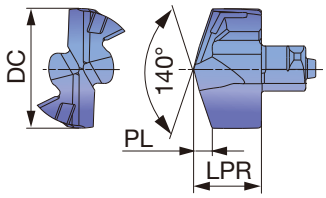
Tool diameter (mm)	Head diameter tolerance
ø6 - ø17.9	+0.018 / 0
ø18 - ø25.9	+0.021 / 0

		AH9130
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

	DC (in)	DC (mm)	LPR	AH9130	CHW	PL	PDD	
DMF138	0.543	13.8	5.53	●	0.7	1.28	3.52	TID*135...
DMF139	0.547	13.9	5.53	●	0.7	1.28	3.52	TID*135...
DMF140	0.551	14	5.96	●	0.7	1.31	3.81	TID*140...
DMF141	0.555	14.1	5.96	●	0.7	1.31	3.81	TID*140...
DMF142	0.559	14.2	5.96	●	0.7	1.31	3.81	TID*140...
DMF143	0.563	14.3	5.96	●	0.7	1.31	3.81	TID*140...
DMF144	0.567	14.4	5.96	●	0.7	1.31	3.81	TID*140...
DMF145	0.571	14.5	5.96	●	0.7	1.31	3.81	TID*145...
DMF150	0.591	15	6.43	●	0.7	1.35	4.24	TID*150...
DMF152	0.598	15.2	6.43	●	0.7	1.35	4.24	TID*150...
DMF155	0.610	15.5	6.43	●	0.7	1.35	4.24	TID*150...
DMF157	0.618	15.7	6.43	●	0.7	1.35	4.24	TID*150...
DMF158	0.622	15.8	6.43	●	0.7	1.35	4.24	TID*150...
DMF160	0.630	16	6.84	●	0.7	1.39	4.06	TID*160...
DMF161	0.634	16.1	6.84	●	0.7	1.39	4.06	TID*160...
DMF165	0.650	16.5	6.84	●	0.7	1.39	4.06	TID*160...
DMF167	0.657	16.7	6.84	●	0.7	1.39	4.06	TID*160...
DMF170	0.669	17	7.15	●	0.7	1.4	4.14	TID*170...
DMF175	0.689	17.5	7.15	●	0.7	1.4	4.14	TID*170...
DMF179	0.705	17.9	7.15	●	0.7	1.4	4.14	TID*170...
DMF180	0.709	18	7.45	●	0.7	1.42	4.16	TID*180...
DMF185	0.728	18.5	7.45	●	0.7	1.42	4.16	TID*180...
DMF190	0.748	19	7.79	●	0.7	1.44	4.25	TID*190...
DMF195	0.768	19.5	7.79	●	0.7	1.44	4.25	TID*190...
DMF198	0.780	19.8	7.79	●	0.7	1.44	4.25	TID*190...
DMF200	0.787	20	9.12	●	0.7	1.77	6.56	TID*200...
DMF205	0.807	20.5	9.12	●	0.7	1.77	6.56	TID*200...
DMF210	0.827	21	9.54	●	0.7	1.79	6.92	TID*210...
DMF215	0.846	21.5	9.54	●	0.7	1.79	6.92	TID*210...
DMF218	0.858	21.8	9.54	●	0.7	1.79	6.92	TID*210...
DMF220	0.866	22	9.86	●	0.7	1.81	7.13	TID*220...
DMF225	0.886	22.5	9.86	●	0.7	1.81	7.13	TID*220...
DMF230	0.906	23	10.28	●	0.7	1.83	7.42	TID*230...
DMF235	0.925	23.5	10.28	●	0.7	1.83	7.42	TID*230...
DMF240	0.945	24	10.71	●	0.7	1.86	7.45	TID*240...
DMF245	0.965	24.5	10.71	●	0.7	1.86	7.45	TID*240...
DMF250	0.984	25	11.15	●	0.7	1.9	7.54	TID*250...
DMF254	1.000	25.4	11.15	●	0.7	1.9	7.54	TID*250...
DMF255	1.004	25.5	11.15	●	0.7	1.9	7.54	TID*250...
DMF259	1.020	25.9	11.15	●	0.7	1.9	7.54	TID*250...

DMH High strength cutting edge



Tool diameter (inch)	Head diameter tolerance
ø0.236" - ø0.705"	+0.0007" / -0.0002"
ø0.709" - ø1.004"	+0.0008" / -0.0002"

Tool diameter (mm)	Head diameter tolerance
ø6 - ø17.9	+0.018 / -0.005
ø18 - ø25.5	+0.021 / -0.005

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	★

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	★

★ : First choice

Designation	DC (in)	DC (mm)	LPR	Coated AH9130	PL (mm)	Body
DMH060	0.236	6	3.85	●	1.09	TID*060...
DMH068	0.268	6.8	4.15	●	1.33	TID*065...
DMH070	0.276	7	4.45	●	1.03	TID*070...
DMH075	0.295	7.5	4.45	●	1.12	TID*075...
DMH080	0.315	8	5.25	●	1.2	TID*080...
DMH085	0.335	8.5	5.25	●	1.29	TID*085...
DMH086	0.339	8.6	5.25	●	1.31	TID*085...
DMH087	0.343	8.7	5.25	●	1.33	TID*085...
DMH088	0.347	8.8	5.25	●	1.35	TID*085...
DMH090	0.354	9	5.65	●	1.37	TID*090...
DMH095	0.374	9.5	5.65	●	1.46	TID*095...
DMH097	0.382	9.7	5.65	●	1.5	TID*095...
DMH100	0.394	10	6.05	●	1.47	TID*100...
DMH101	0.398	10.1	6.05	●	1.49	TID*100...
DMH103	0.406	10.3	6.05	●	1.52	TID*100...
DMH104	0.409	10.4	6.05	●	1.54	TID*100...
DMH105	0.413	10.5	6.05	●	1.56	TID*105...
DMH106	0.417	10.6	6.05	●	1.58	TID*105...
DMH107	0.421	10.7	6.05	●	1.6	TID*105...
DMH108	0.425	10.8	6.05	●	1.62	TID*105...
DMH110	0.433	11	6.45	●	1.67	TID*110...
DMH111	0.437	11.1	6.45	●	1.69	TID*110...
DMH112	0.441	11.2	6.45	●	1.71	TID*110...
DMH113	0.445	11.3	6.45	●	1.72	TID*110...
DMH114	0.449	11.4	6.45	●	1.74	TID*110...
DMH115	0.453	11.5	6.45	●	1.76	TID*115...
DMH117	0.461	11.7	6.45	●	1.8	TID*115...
DMH118	0.465	11.8	6.45	●	1.82	TID*115...
DMH119	0.469	11.9	6.45	●	1.83	TID*115...
DMH120	0.472	12	6.8	●	1.82	TID*120...
DMH121	0.476	12.1	6.8	●	1.84	TID*120...
DMH122	0.480	12.2	6.8	●	1.86	TID*120...
DMH123	0.484	12.3	6.8	●	1.87	TID*120...
DMH124	0.488	12.4	6.8	●	1.89	TID*120...
DMH125	0.492	12.5	6.8	●	1.91	TID*125...
DMH126	0.496	12.6	6.8	●	1.93	TID*125...
DMH127	0.500	12.7	6.8	●	1.95	TID*125...
DMH128	0.504	12.8	6.8	●	1.97	TID*125...
DMH129	0.508	12.9	6.8	●	1.98	TID*125...
DMH130	0.512	13	7.4	●	1.96	TID*130...

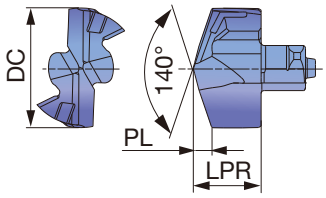
Designation	DC (in)	DC (mm)	LPR	Coated AH9130	PL (mm)	Body
DMH131	0.516	13.1	7.4	●	1.98	TID*130...
DMH132	0.520	13.2	7.4	●	2	TID*130...
DMH133	0.524	13.3	7.4	●	2.01	TID*130...
DMH134	0.528	13.4	7.4	●	2.03	TID*130...
DMH135	0.532	13.5	7.4	●	2.05	TID*135...
DMH136	0.535	13.6	7.4	●	2.07	TID*135...
DMH137	0.539	13.7	7.4	●	2.09	TID*135...
DMH138	0.543	13.8	7.4	●	2.11	TID*135...
DMH139	0.547	13.9	7.4	●	2.12	TID*135...
DMH140	0.551	14	7.95	●	2.12	TID*140...
DMH141	0.555	14.1	7.95	●	2.14	TID*140...
DMH142	0.559	14.2	7.95	●	2.16	TID*140...
DMH143	0.563	14.3	7.95	●	2.17	TID*140...
DMH144	0.567	14.4	7.95	●	2.19	TID*140...
DMH145	0.571	14.5	7.95	●	2.21	TID*145...
DMH146	0.575	14.6	7.95	●	2.23	TID*145...
DMH147	0.579	14.7	7.95	●	2.25	TID*145...
DMH150	0.591	15	8.53	●	2.27	TID*150...
DMH151	0.594	15.1	8.53	●	2.29	TID*150...
DMH152	0.598	15.2	8.53	●	2.31	TID*150...
DMH153	0.602	15.3	8.53	●	2.32	TID*150...
DMH154	0.606	15.4	8.53	●	2.34	TID*150...
DMH155	0.610	15.5	8.53	●	2.36	TID*150...
DMH156	0.614	15.6	8.53	●	2.38	TID*150...
DMH157	0.618	15.7	8.53	●	2.40	TID*150...
DMH158	0.622	15.8	8.53	●	2.42	TID*150...
DMH160	0.630	16	9.1	●	2.42	TID*160...
DMH162	0.638	16.2	9.1	●	2.46	TID*160...
DMH163	0.642	16.3	9.1	●	2.47	TID*160...
DMH165	0.650	16.5	9.1	●	2.51	TID*160...
DMH166	0.654	16.6	9.1	●	2.53	TID*160...
DMH167	0.657	16.7	9.1	●	2.55	TID*160...
DMH170	0.669	17	9.7	●	2.59	TID*170...
DMH171	0.673	17.1	9.7	●	2.61	TID*170...
DMH175	0.689	17.5	9.7	●	2.68	TID*170...
DMH177	0.697	17.7	9.7	●	2.72	TID*170...
DMH178	0.701	17.8	9.7	●	2.74	TID*170...
DMH179	0.705	17.9	9.7	●	2.75	TID*170...
DMH180	0.709	18	10.3	●	2.73	TID*180...
DMH181	0.713	18.1	10.3	●	2.75	TID*180...

Package Quantity: 0.236" - 0.780" = 2 pcs.
0.787" - 1.020" = 1 pcs.

● : Line up

DRILLMEISTER

DMH High strength cutting edge



Tool diameter (inch)	Head diameter tolerance
ø0.236" - ø0.705"	+0.0007" / -0.0002"
ø0.709" - ø1.004"	+0.0008" / -0.0002"

Tool diameter (mm)	Head diameter tolerance
ø6 - ø17.9	+0.018 / -0.005
ø18 - ø25.5	+0.021 / -0.005

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

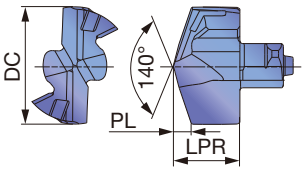
★ : First choice

Designation	DC (in)	DC (mm)	LPR	Coated AH9130	PL (mm)	Body
DMH183	0.720	18.3	10.3	●	2.78	TID*180...
DMH185	0.728	18.5	10.3	●	2.82	TID*180...
DMH187	0.736	18.7	10.3	●	2.86	TID*180...
DMH190	0.748	19	10.8	●	2.88	TID*190...
DMH191	0.752	19.1	10.8	●	2.90	TID*190...
DMH192	0.756	19.2	10.8	●	2.92	TID*190...
DMH193	0.760	19.3	10.8	●	2.93	TID*190...
DMH194	0.764	19.4	10.8	●	2.95	TID*190...
DMH195	0.768	19.5	10.8	●	2.97	TID*190...
DMH196	0.772	19.6	10.8	●	2.99	TID*190...
DMH197	0.776	19.7	10.8	●	3.01	TID*190...
DMH200	0.787	20	11.4	●	3.02	TID*200...
DMH205	0.807	20.5	11.4	●	3.11	TID*200...
DMH210	0.827	21	11.98	●	3.18	TID*210...
DMH215	0.847	21.5	11.98	●	3.27	TID*210...
DMH220	0.866	22	12.56	●	3.32	TID*220...
DMH225	0.886	22.5	12.56	●	3.41	TID*220...
DMH230	0.906	23	13.13	●	3.46	TID*230...
DMH235	0.925	23.5	13.13	●	3.55	TID*230...
DMH240	0.945	24	13.7	●	3.62	TID*240...
DMH245	0.965	24.5	13.7	●	3.71	TID*240...
DMH250	0.984	25	14.3	●	3.8	TID*250...
DMH255	1.004	25.5	14.3	●	3.89	TID*250...

Package Quantity: 0.236" - 0.780" = 2 pcs.
0.787" - 1.020" = 1 pcs.

● : Line-up

DMN Non-ferrous metals drilling



Tool diameter (In)	Head diameter tolerance
ø0.394 - ø0.689	+0.0004 / 0
ø0.709 - ø0.768	+0.0005 / 0

Tool diameter (mm)	Head diameter tolerance
ø10 - ø17.5	+0.01 / 0
ø18 - ø19.5	+0.012 / 0

P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

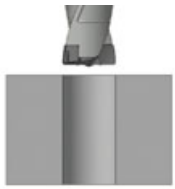
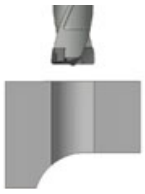
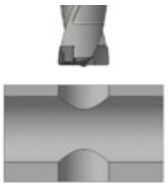
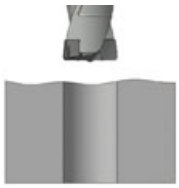
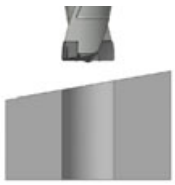
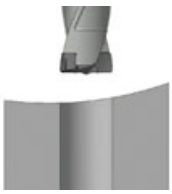
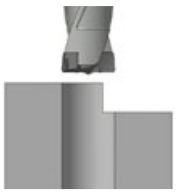
Designation	DC (in)	DC (mm)	LPR	Coated KS15F	PL	Body
DMN100	0.394	10	6.05	●	1.47	TID*100...
DMN102	0.402	10.2	6.05	●	1.51	TID*100...
DMN105	0.413	10.5	6.05	●	1.56	TID*105...
DMN108	0.425	10.8	6.05	●	1.62	TID*105...
DMN110	0.433	11	6.45	●	1.67	TID*110...
DMN115	0.453	11.5	6.45	●	1.76	TID*115...
DMN120	0.472	12	6.8	●	1.82	TID*120...
DMN123	0.484	12.3	6.8	●	1.87	TID*120...
DMN125	0.492	12.5	6.8	●	1.91	TID*125...
DMN126	0.496	12.6	6.8	●	1.93	TID*125...
DMN127	0.500	12.7	6.8	●	1.95	TID*125...
DMN130	0.512	13	7.4	●	1.96	TID*130...
DMN135	0.531	13.5	7.4	●	2.05	TID*135...
DMN138	0.543	13.8	7.4	●	2.11	TID*135...
DMN140	0.551	14	7.95	●	2.12	TID*140...
DMN142	0.559	14.2	7.95	●	2.16	TID*140...
DMN145	0.571	14.5	7.95	●	2.21	TID*145...
DMN150	0.591	15	8.53	●	2.27	TID*150...
DMN152	0.598	15.2	8.53	●	2.31	TID*150...
DMN155	0.610	15.5	8.53	●	2.36	TID*150...
DMN158	0.622	15.8	8.53	●	2.42	TID*150...
DMN159	0.626	15.9	8.53	●	2.43	TID*150...
DMN160	0.630	16	9.1	●	2.42	TID*160...
DMN163	0.642	16.3	9.1	●	2.47	TID*160...
DMN165	0.650	16.5	9.1	●	2.51	TID*160...
DMN170	0.669	17	9.7	●	2.59	TID*170...
DMN175	0.689	17.5	9.7	●	2.68	TID*170...
DMN180	0.709	18	10.3	●	2.73	TID*180...
DMN185	0.728	18.5	10.3	●	2.82	TID*180...
DMN190	0.748	19	10.8	●	2.88	TID*190...
DMN195	0.768	19.5	10.8	●	2.97	TID*190...

ø0.394" - ø0.768" (ø10 - ø19.5) = 2 pieces per package

● : Line-up

APPLICATION RANGE AND RECOMMENDED TOOL LENGTHS FOR DMF HEAD

Please use the shortest possible tool

Recommended L/D	≤ 8			
Application	Plane surface	Complex exit	Cross hole	Rough / cast surface
				
Recommended L/D	**≤ 3**		**≤ 1.5**	
Application	Slant surface	Round surface	Hole expansion	Plunging
				

- Maximum slant angle 12 degrees
- Feed rate should be decreased when drilling uneven surfaces
- Overlap should be under 30% of head dia. at hole expansion
- Plunging width should be 70% of head dia.

HEAD COMBINATIONS OF PRE-HOLE TO MAIN HOLE

		Pre-hole		
		DMP	DMC	DMF
Hole	DMP	Good 	Not good 	Not good 
	DMC	Good 	Good 	Good 
	DMF	Not good 	Not good 	Good 

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed	Feed: *f* (ipr)								
			Tool diameter: DC (in)								
		Vc (sfm)	ø0.157" - ø0.173"	ø0.177" - ø0.193"	ø0.197" - ø0.232"	ø0.236" - ø0.311"	ø0.315" - ø0.390"	ø0.394" - ø0.469"	ø0.472" - ø0.547"	ø0.551" - ø0.626"	ø0.630" - ø0.783"	ø0.787" - ø1.020"
P	Low carbon steels (C < 0.3) 1018, 1020, 1026, etc.	262 - 459	0.002 - 0.003	0.002 - 0.003	0.003 - 0.005	0.004 - 0.005	0.005 - 0.010	0.006 - 0.011	0.007 - 0.012	0.008 - 0.014	0.010 - 0.018	0.010 - 0.018
	High carbon steels (C > 0.3) 1045, 1055, etc.	230 - 394	0.002 - 0.003	0.002 - 0.003	0.003 - 0.005	0.004 - 0.005	0.005 - 0.010	0.006 - 0.011	0.007 - 0.012	0.008 - 0.014	0.010- 0.018	0.010 - 0.018
	Low alloy steels 4140, etc.	230 - 394	0.002 - 0.002	0.002 - 0.003	0.003 - 0.005	0.003 - 0.005	0.004 - 0.010	0.006 - 0.011	0.006 - 0.013	0.007 - 0.014	0.009 - 0.016	0.010 - 0.018
	Alloy steels 8620, etc.	131 - 295	0.002 - 0.003	0.002 - 0.003	0.003 - 0.005	0.003 - 0.005	0.004 - 0.010	0.006 - 0.011	0.006 - 0.013	0.007 - 0.014	0.009 - 0.016	0.010 - 0.018
M	Stainless steels 304SS, 316SS, etc.	98 - 230	-	-	0.002 - 0.003	0.003 - 0.004	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.006 - 0.009	0.006 - 0.010	0.007 - 0.012
K	Gray cast irons Class 25, etc.	262 - 591	0.002 - 0.003	0.002 - 0.003	0.004 - 0.006	0.005 - 0.007	0.006 - 0.012	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.022	0.014 - 0.024
	Ductile cast irons 100-70-03, etc.	262 - 459	0.002 - 0.003	0.002 - 0.003	0.004 - 0.006	0.005 - 0.007	0.006 - 0.012	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.022	0.014 - 0.024
N	Aluminum alloys	262 - 722	-	-	-	0.004 - 0.008	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.02	0.016 - 0.024	0.020 - 0.030
S	Titanium alloys Ti-6Al-4V, etc.	66 - 164	-	-	-	0.002 - 0.003	0.002 - 0.005	0.003 - 0.006	0.004 - 0.011	0.005 - 0.008	0.006 - 0.009	0.007 - 0.011
	Nickel-based alloys	66 - 164	-	-	-	0.002 - 0.003	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.005 - 0.009	0.006 - 0.009
H	Hardened steel	66 - 164	-	-	-	0.002 - 0.003	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.009	0.006 - 0.010

- Cutting conditions in the above table show standard cutting conditions
- Cutting conditions may change due to the rigidity and power of the machine and the workpiece material
- Machined hole diameter may change depending upon the rigidity of the machine tool or cutting conditions

MEMO

SOLID 4 FLUTES DRILL

Drilling

4-FLUTE SOLID DRILLS FOR EXCEPTIONAL PERFORMANCE

ADD 4 cutting edges for highly productive drilling and longer tool life

TUNGALOY ADD FORCE DRILL
ACCELERATED HOLEMAKING

- Optimal cutting edge and flute profiles promotes smooth chip evacuation.
- Self-centering cutting edge style provides secure drill engagement.
- 4 margins on the drill periphery provides close tolerance holes.

Lineup

Drill

- **DSQ...**

4 flutes drill
DC = ø0.236" - ø0.630" (ø6 - ø16 mm)
Available in 3xD and 5xD

Grade

- **AH9130**: Wear-resistant grade that enables long tool life

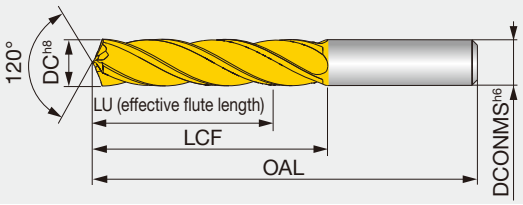
Scan this QR code to find out more about this tool!

SOLID 4 FLUTES DRILL

SOLID DRILL

DSQ-E3

Solid drill, without coolant hole, DIN shank, L/D = 3, ø0.236" - ø0.630"



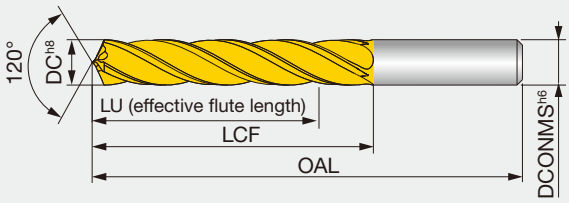
Inch	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ060-018-06E3	0.236	●	0.236	0.945	1.181	3.150
DSQ068-021-07E3	0.268	●	0.276	1.063	1.339	3.307
DSQ085-026-09E3	0.335	●	0.354	1.339	1.693	3.661
DSQ090-027-09E3	0.354	●	0.354	1.417	1.772	3.740
DSQ100-030-10E3	0.394	●	0.394	1.575	1.969	3.937
DSQ105-032-11E3	0.413	●	0.433	1.654	2.087	4.843

Inch	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ108-033-11E3	0.425	●	0.433	1.693	2.126	4.882
DSQ120-036-12E3	0.472	●	0.472	1.890	2.362	5.118
DSQ130-039-13E3	0.512	●	0.512	2.047	2.559	5.315
DSQ140-042-14E3	0.551	●	0.551	2.205	2.756	5.512
DSQ160-048-16E3	0.630	●	0.630	2.520	3.150	5.906

● : Line-up

DSQ-E5

Solid drill, without coolant hole, DIN shank, L/D = 5, ø0.236" - ø0.630"



Inch	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ060-030-06E5	0.236	●	0.236	1.417	1.654	3.622
DSQ068-034-07E5	0.268	●	0.276	1.614	1.890	3.858
DSQ085-043-09E5	0.335	●	0.354	2.008	2.362	4.331

Inch	DC	AH9130	DCONMS	LU	LCF	OAL
DSQ105-053-11E5	0.413	●	0.433	2.480	2.913	5.669
DSQ120-060-12E5	0.472	●	0.472	2.835	3.307	6.063
DSQ160-080-16E5	0.630	●	0.630	3.780	4.409	7.165

● : Line-up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Brinell hardness (HB)	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)	
				ø0.236" ~ ø0.390"	ø0.394" ~ ø0.630"
K	Grey cast irons Class 30, etc.	~ 200	197 - 394	0.008 - 0.031	0.012 - 0.039
	Ductile cast irons 65-45-12, etc.	~ 300	197 - 394	0.008 - 0.031	0.012 - 0.039

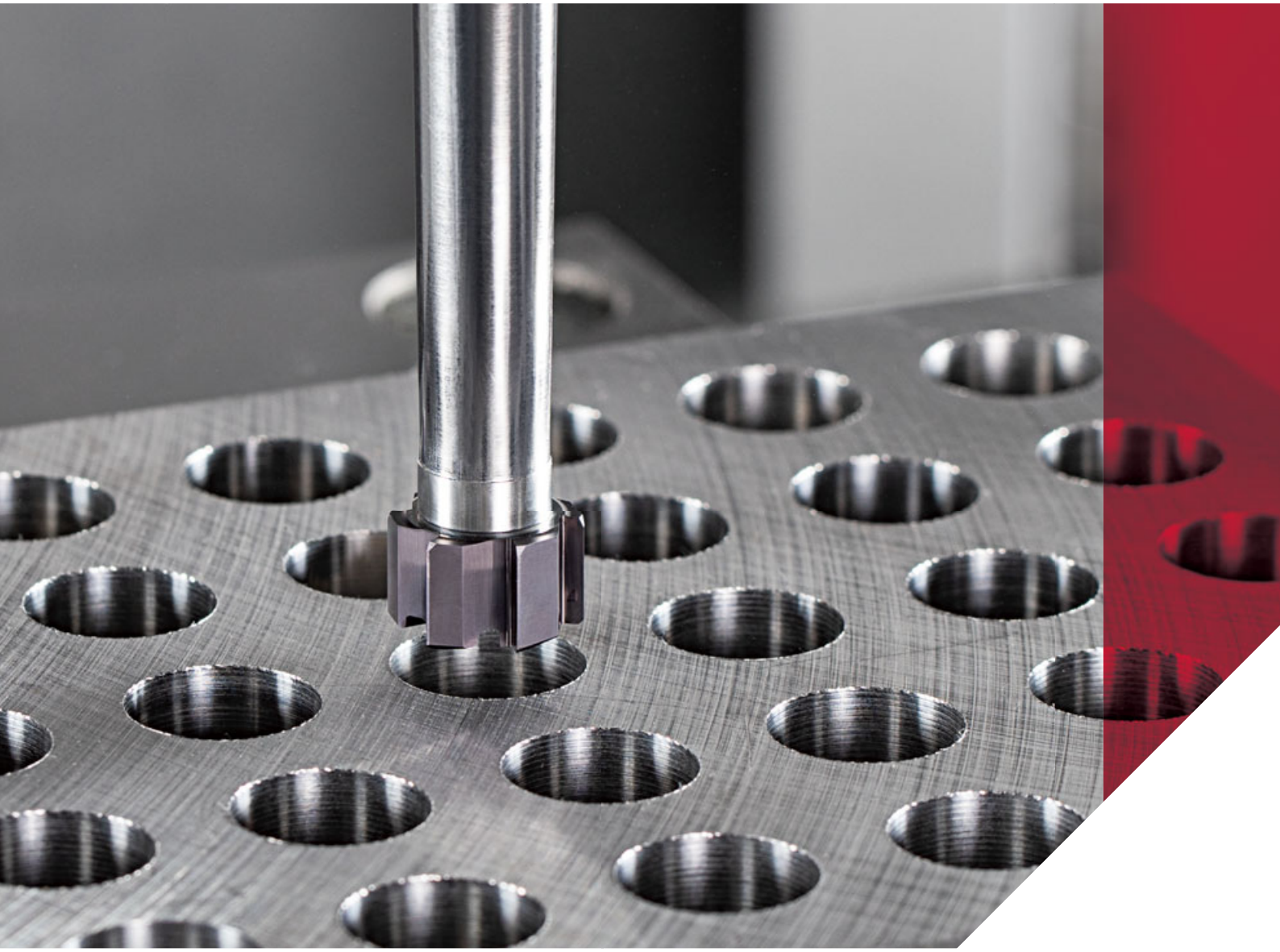
- The cutting parameters shown in the table are merely a starting guideline for general machining. Values should be varied depending on the power or rigidity of the machine to be used. Optimum conditions should be selected depending on the actual chip control or damage on edges.
- When using the smaller diameter tools in each range, set the feed "f" to the lower in recommended values.
- When drilling with a depth deeper than L/D = 3, a pecking cycle or dwell operation should be considered depending on the actual chip control or damage on edges.

REAMMEISTER

Reaming

EXCHANGEABLE HEAD REAMERS FOR MAXIMUM PRODUCTIVITY AND HIGH PRECISION

ADD exchangeable head solutions for precision reaming operations



- High precision coupling of the head and shank enables exceptional runout accuracy and repeatability.
- Precision-ground reaming heads enable high precision tolerance of H7.
- Two types of reaming heads are available for blind or through holes.
- Optimized cutting edge geometries for long tool life and wear predictability.
- Available in versatile **AH725** grade, allowing high speed and efficiency machining.

Lineup

Heads
- **HRM...**
AS type: for blind holes
BL type: for through holes
DC = ø0.4528" - ø1.260"

Reamer body
- **TRM**: Straight shank
Available in 1.5xD, 3xD, 5xD, and 8xD

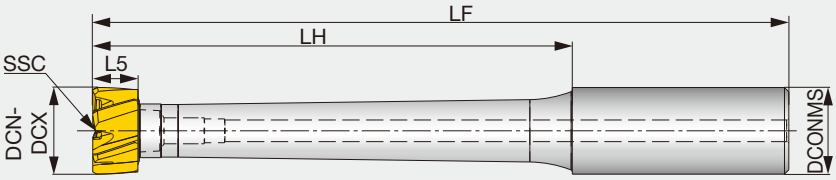
Grade
- **AH725**: Versatile grade for all material groups

Scan this QR code to find out more about this tool!

REAMER TOOL

TRM

Reamer tool



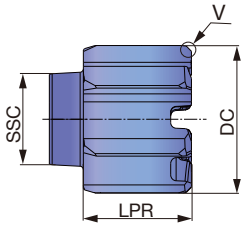
Inch	DCN	DCX	SSC	L/D	DCONMS	L5	LF	LH
TRM-T5-R16-1.5	0.45276	0.5315	T5	1.5	0.63	0.366	3.063	1.173
TRM-T6-R16-1.5	0.53154	0.62993	T6	1.5	0.63	0.37	3.209	1.319
TRM-T7-R20-1.5	0.62996	0.7874	T7	1.5	0.787	0.417	3.571	1.602
TRM-T8-R20-1.5	0.78744	1.02358	T8	1.5	0.787	0.504	3.976	2.008
TRM-T9-R32-1.5	1.02362	1.25984	T9	1.5	1.26	0.504	4.76	2.398
TRM-T5-R16-3	0.45276	0.5315	T5	3	0.63	0.366	3.85	1.961
TRM-T6-R16-3	0.53154	0.62993	T6	3	0.63	0.37	4.15	2.26
TRM-T7-R20-3	0.62996	0.7874	T7	3	0.787	0.417	4.748	2.78
TRM-T8-R20-3	0.78744	1.02358	T8	3	0.787	0.504	5.425	3.457
TRM-T9-R32-3	1.02362	1.25984	T9	3	1.26	0.504	6.579	4.217
TRM-T5-R16-5	0.45276	0.5315	T5	5	0.63	0.366	4.921	3.031
TRM-T6-R16-5	0.53154	0.62993	T6	5	0.63	0.37	5.409	3.52
TRM-T7-R20-5	0.62996	0.7874	T7	5	0.787	0.417	6.323	4.354
TRM-T8-R20-5	0.78744	1.02358	T8	5	0.787	0.504	7.394	5.425
TRM-T9-R32-5	1.02362	1.25984	T9	5	1.26	0.504	9.098	6.736
TRM-T5-R16-8	0.45276	0.5315	T5	8	0.63	0.366	6.516	4.626
TRM-T6-R16-8	0.53154	0.62993	T6	8	0.63	0.37	7.299	5.409
TRM-T7-R20-8	0.62996	0.7874	T7	8	0.787	0.417	8.685	6.717
TRM-T8-R20-8	0.78744	1.02358	T8	8	0.787	0.504	10.346	8.378
TRM-T9-R32-8	1.02362	1.25984	T9	8	1.26	0.504	12.878	10.516
TRMU-T5-R0.625-1.5	0.45276	0.5315	T5	1.5	0.625	0.366	3.06	1.17
TRMU-T6-R0.625-1.5	0.53154	0.62993	T6	1.5	0.625	0.37	3.21	1.32
TRMU-T7-R0.75-1.5	0.62996	0.7874	T7	1.5	0.75	0.417	3.57	1.6
TRMU-T8-R0.75-1.5	0.78744	1.02358	T8	1.5	0.75	0.504	3.98	2.01
TRMU-T9-R1.25-1.5	1.02362	1.25984	T9	1.5	1.25	0.504	4.76	2.4
TRMU-T5-R0.625-3	0.45276	0.5315	T5	3	0.625	0.366	3.85	1.96
TRMU-T6-R0.625-3	0.53154	0.62993	T6	3	0.625	0.37	4.15	2.26
TRMU-T7-R0.75-3	0.62996	0.7874	T7	3	0.75	0.417	4.74	2.78
TRMU-T8-R0.75-3	0.78744	1.02358	T8	3	0.75	0.504	5.42	3.45
TRMU-T9-R1.25-3	1.02362	1.25984	T9	3	1.25	0.504	6.58	4.21
TRMU-T5-R0.625-5	0.45276	0.5315	T5	5	0.625	0.366	4.92	3.03
TRMU-T6-R0.625-5	0.53154	0.62993	T6	5	0.625	0.37	5.41	3.52
TRMU-T7-R0.75-5	0.62996	0.7874	T7	5	0.75	0.417	6.32	4.35
TRMU-T8-R0.75-5	0.78744	1.02358	T8	5	0.75	0.504	7.39	5.42
TRMU-T9-R1.25-5	1.02362	1.25984	T9	5	1.25	0.504	9.1	6.74
TRMU-T5-R0.625-8	0.45276	0.5315	T5	8	0.625	0.366	6.51	4.62
TRMU-T6-R0.625-8	0.53154	0.62993	T6	8	0.625	0.37	7.3	5.41
TRMU-T7-R0.75-8	0.62996	0.7874	T7	8	0.75	0.417	8.68	6.72
TRMU-T8-R0.75-8	0.78744	1.02358	T8	8	0.75	0.504	10.35	8.38
TRMU-T9-R1.25-8	1.02362	1.25984	T9	8	1.25	0.504	12.88	10.51

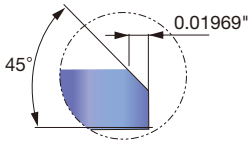
- Key and screw are included.
- Maximum effective reaming depth = Head diameter x L/D ratio.

Ex. For a reamer with ø0.5": 0.5" x 3D = 1.5"

REAMER HEAD

HRM-AS (for blind holes)



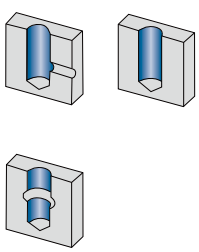


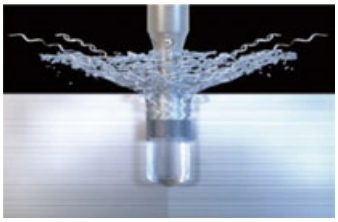
Designation	DC	AH725	SSC	LPR	CICT
HRM-11.501-AS-T5	0.4528	●	T5	0.366	6
HRM-12.000-AS-T5	0.47244	●	T5	0.366	6
HRM-12.700-AS-T5	0.51181	●	T5	0.366	6
HRM-13.000-AS-T5	0.53149	●	T5	0.366	6
HRM-13.500-AS-T5	0.55118	●	T5	0.37	6
HRM-14.000-AS-T6	0.59055	●	T6	0.37	6
HRM-15.000-AS-T6	0.62992	●	T6	0.37	6
HRM-15.875-AS-T6	0.62996	●	T6	0.417	6
HRM-16.000-AS-T6	0.66929	●	T6	0.417	6
HRM-16.001-AS-T7	0.70866	●	T7	0.417	6
HRM-17.000-AS-T7	0.74803	●	T7	0.417	6
HRM-18.000-AS-T7	0.7874	●	T7	0.417	6
HRM-19.000-AS-T7	0.78744	●	T7	0.504	6
HRM-19.050-AS-T7	0.82677	●	T7	0.504	6
HRM-20.000-AS-T7	0.86614	●	T7	0.504	6
HRM-20.001-AS-T8	0.90551	●	T8	0.504	8
HRM-21.000-AS-T8	0.94488	●	T8	0.504	8
HRM-22.000-AS-T8	0.98425	●	T8	0.504	8
HRM-23.000-AS-T8	1.02362	●	T8	0.504	8
HRM-24.000-AS-T8	1.06299	●	T8	0.504	8
HRM-25.000-AS-T8	1.10236	●	T8	0.504	8
HRM-25.400-AS-T8	1.14173	●	T8	0.504	8
HRM-26.000-AS-T9	1.1811	●	T9	0.504	8
HRM-27.000-AS-T9	1.22047	●	T9	0.504	8
HRM-28.000-AS-T9	1.25984	●	T9	0.504	8
HRM-29.000-AS-T9	0.500	●	T9	0.366	8
HRM-30.000-AS-T9	0.625	●	T9	0.37	8
HRM-31.000-AS-T9	0.750	●	T9	0.417	8
HRM-31.750-AS-T9	1.000	●	T9	0.504	8
HRM-32.000-AS-T9	1.250	●	T9	0.504	8

Head diameter range	Tolerance range of the head	Hole diameter tolerance (H7)
ø0.45276 - ø0.70866	+0.00059 / +0.00043	+0.00071 / 0
ø0.70870 - ø1.18110	+0.00067 / +0.00051	+0.00083 / 0
ø1.18114 - ø1.25984	+0.00083 / +0.00063	+0.00098 / 0

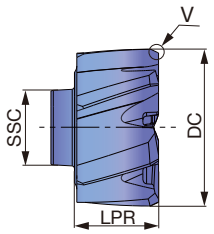
d : Line-up
Package quantity = 1 pcs.

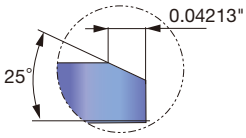
- All standard heads are designed to achieve H7 hole tolerance.
- Head diameters are produced so that the hole diameter achieved is close to the max tolerance limit.





HRM-BL (for through holes)



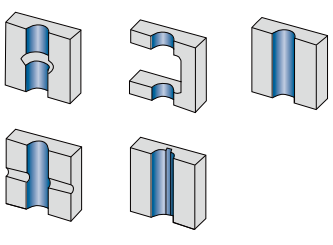


Designation	DC	AH725	SSC	LPR	CICT
HRM-11.501-BL-T5	0.4528	●	T5	0.366	6
HRM-12.000-BL-T5	0.47244	●	T5	0.366	6
HRM-12.700-BL-T5	0.51181	●	T5	0.366	6
HRM-13.000-BL-T5	0.5315	●	T5	0.366	6
HRM-13.500-BL-T5	0.53154	●	T5	0.37	6
HRM-13.501-BL-T6	0.55118	●	T6	0.37	6
HRM-14.000-BL-T6	0.59055	●	T6	0.37	6
HRM-15.000-BL-T6	0.62992	●	T6	0.37	6
HRM-15.875-BL-T6	0.62996	●	T6	0.417	6
HRM-16.000-BL-T6	0.66929	●	T6	0.417	6
HRM-16.001-BL-T7	0.70866	●	T7	0.417	6
HRM-17.000-BL-T7	0.74803	●	T7	0.417	6
HRM-18.000-BL-T7	0.7874	●	T7	0.417	6
HRM-19.000-BL-T7	0.78744	●	T7	0.504	6
HRM-19.050-BL-T7	0.82677	●	T7	0.504	6
HRM-20.000-BL-T7	0.86614	●	T7	0.504	6
HRM-20.001-BL-T8	0.90551	●	T8	0.504	8
HRM-21.000-BL-T8	0.94488	●	T8	0.504	8
HRM-22.000-BL-T8	0.98425	●	T8	0.504	8
HRM-23.000-BL-T8	1.02362	●	T8	0.504	8
HRM-24.000-BL-T8	1.06299	●	T8	0.504	8
HRM-25.000-BL-T8	1.10236	●	T8	0.504	8
HRM-25.400-BL-T8	1.14173	●	T8	0.504	8
HRM-26.000-BL-T9	1.1811	●	T9	0.504	8
HRM-27.000-BL-T9	1.22047	●	T9	0.504	8
HRM-28.000-BL-T9	1.25984	●	T9	0.504	8
HRM-29.000-BL-T9	0.500	●	T9	0.366	8
HRM-30.000-BL-T9	0.625	●	T9	0.37	8
HRM-31.000-BL-T9	0.750	●	T9	0.417	8
HRM-32.000-BL-T9	1.000	●	T9	0.504	8

Head diameter range	Tolerance range of the head	Hole diameter tolerance (H7)
ø0.45276 - ø0.70866	+0.00059 / +0.00043	+0.00071 / 0
ø0.70870 - ø1.18110	+0.00067 / +0.00051	+0.00083 / 0
ø1.18114 - ø1.25984	+0.00083 / +0.00063	+0.00098 / 0

d : Line-up
Package quantity = 1 pcs.

- All standard heads are designed to achieve H7 hole tolerance.
- Head diameters are produced so that the hole diameter achieved is close to the max tolerance limit.



STANDARD CUTTING CONDITIONS

Conversion table for feed per tooth

ISO	Workpiece materials	Cutting speed *Vc* (sfm)	Feed: *fz* (ipt)			
			AS: Straight flute (for blind holes)		BL: Left hand flute (for through holes)	
			ø0.45280 - ø0.62992	ø0.62996 - ø1.25984	ø0.45280 - ø0.62992	ø0.62996 - ø1.25984
P	Low carbon steel (C<0.3) 1018, 1020, 1026, E275A, etc.	262 - 656	0.00197 - 0.00709	0.00197 - 0.00787	0.00197 - 0.00787	0.00197 - 0.01063
P	Carbon steel (C>0.3) 1045, 1055, etc.	262 - 492	0.00197 - 0.00591	0.00197 - 0.00709	0.00197 - 0.00709	0.00197 - 0.00984
P	Low alloy steel (C<0.3) 5120, etc.	262 - 656	0.00197 - 0.00709	0.00197 - 0.00787	0.00197 - 0.00787	0.00197 - 0.01063
P	Alloy steel (C>0.3) 4140, 8620, etc.	164 - 492	0.00118 - 0.00394	0.00197 - 0.00512	0.00197 - 0.00512	0.00197 - 0.00669
M	Stainless steel (Austenitic) 304, 316, etc.	66 - 131	0.00118 - 0.00394	0.00118 - 0.00512	0.00197 - 0.00512	0.00197 - 0.00669
M	Stainless steel (Martensitic and ferritic) 410, 416, etc.	66 - 131	0.00118 - 0.00394	0.00118 - 0.00512	0.00197 - 0.00512	0.00197 - 0.00669
M	Stainless steel (Precipitation hardening) S17400, etc	66 - 131	0.00118 - 0.00394	0.00118 - 0.00512	0.00197 - 0.00512	0.00197 - 0.00669
K	Gray cast iron Class No.25, No.30, No.35, etc.	328 - 820	0.00197 - 0.00709	0.00197 - 0.00787	0.00197 - 0.00787	0.00197 - 0.01063
K	Ductile cast iron 100-70-03, etc.	262 - 656	0.00197 - 0.00591	0.00197 - 0.00709	0.00197 - 0.00709	0.00197 - 0.00984
N	Aluminum alloy	328 - 984	0.00197 - 0.00709	0.00197 - 0.00787	0.00197 - 0.00787	0.00197 - 0.01063
S	High temp. alloy Inconel718 etc.	49 - 164	0.00118 - 0.00236	0.00118 - 0.00315	0.00197 - 0.00394	0.00197 - 0.00512
S	Titanium alloy Ti-6Al-4V etc.	98 - 197	0.00118 - 0.00394	0.00118 - 0.00512	0.00197 - 0.00512	0.00197 - 0.00669
H	Hardened steel Over 40HRC etc.	164 - 328	0.00118 - 0.00315	0.00118 - 0.00394	0.00197 - 0.00472	0.00197 - 0.00591

Conversion table for feed per revolution

ISO	Workpiece materials	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)					
			AS: Straight flute (for blind holes)			BL: Left hand flute (for through holes)		
			ø0.45280 - ø0.62992	ø0.62996 - ø0.78740	ø0.78744 - ø1.25984	ø0.45280 - ø0.62992	ø0.62996 - ø0.78740	ø0.78744 - ø1.25984
			6 flutes	6 flutes	8 flutes	6 flutes	6 flutes	8 flutes
P	Low carbon steel (C<0.3) 1018, 1020, 1026, E275A, etc.	262 - 656	0.01181 - 0.04252	0.01181 - 0.04724	0.01575 - 0.06299	0.01181 - 0.04724	0.01181 - 0.06378	0.01575 - 0.08504
P	Carbon steel (C>0.3) 1045, 1055, etc.	262 - 492	0.01181 - 0.03543	0.01181 - 0.04252	0.01575 - 0.05669	0.01181 - 0.04252	0.01181 - 0.05906	0.01575 - 0.07874
P	Low alloy steel (C<0.3) 5120, etc.	262 - 656	0.01181 - 0.04252	0.01181 - 0.04724	0.01575 - 0.06299	0.01181 - 0.04724	0.01181 - 0.04724	0.01575 - 0.08504
P	Alloy steel (C>0.3) 4140, 8620, etc.	164 - 492	0.00709 - 0.02362	0.00709 - 0.03071	0.01575 - 0.04094	0.01181 - 0.03071	0.01181 - 0.04016	0.01575 - 0.05354
M	Stainless steel (Austenitic) 304, 316, etc.	66 - 131	0.00709 - 0.02362	0.00709 - 0.03071	0.00945 - 0.04094	0.01181 - 0.03071	0.01181 - 0.04016	0.01575 - 0.05354
M	Stainless steel (Martensitic and ferritic) 410, 416, etc.	66 - 131	0.00709 - 0.02362	0.00709 - 0.03071	0.00945 - 0.04094	0.01181 - 0.03071	0.01181 - 0.04016	0.01575 - 0.05354
M	Stainless steel (Precipitation hardening) S17400, etc	66 - 131	0.00709 - 0.02362	0.00709 - 0.03071	0.00945 - 0.04094	0.01181 - 0.03071	0.01181 - 0.04016	0.01575 - 0.05354
K	Gray cast iron Class No.25, No.30, No.35, etc.	328 - 820	0.01181 - 0.04252	0.01181 - 0.04724	0.01575 - 0.06299	0.01181 - 0.04724	0.01181 - 0.06378	0.01575 - 0.08504
K	Ductile cast iron 100-70-03, etc.	262 - 656	0.01181 - 0.03543	0.01181 - 0.04252	0.01575 - 0.05669	0.01181 - 0.07087	0.01181 - 0.06378	0.01575 - 0.07874
N	Aluminum alloy	328 - 984	0.01181 - 0.04252	0.01181 - 0.04724	0.01575 - 0.06299	0.01181 - 0.04724	0.01181 - 0.06378	0.01575 - 0.08504
S	High temp. alloy Inconel718 etc.	49 - 164	0.00709 - 0.01417	0.00709 - 0.01890	0.00945 - 0.02520	0.01181 - 0.02362	0.01181 - 0.03071	0.01575 - 0.04094
S	Titanium alloy Ti-6Al-4V etc.	98 - 197	0.00709 - 0.02362	0.00709 - 0.03071	0.00945- 0.04094	0.01181 - 0.03071	0.01181 - 0.04016	0.01575 - 0.05354
H	Hardened steel Over 40HRC etc.	164 - 328	0.00709 - 0.01890	0.00709 - 0.02362	0.00945 - 0.03150	0.01181 - 0.02835	0.01181 - 0.03543	0.01575 - 0.04724

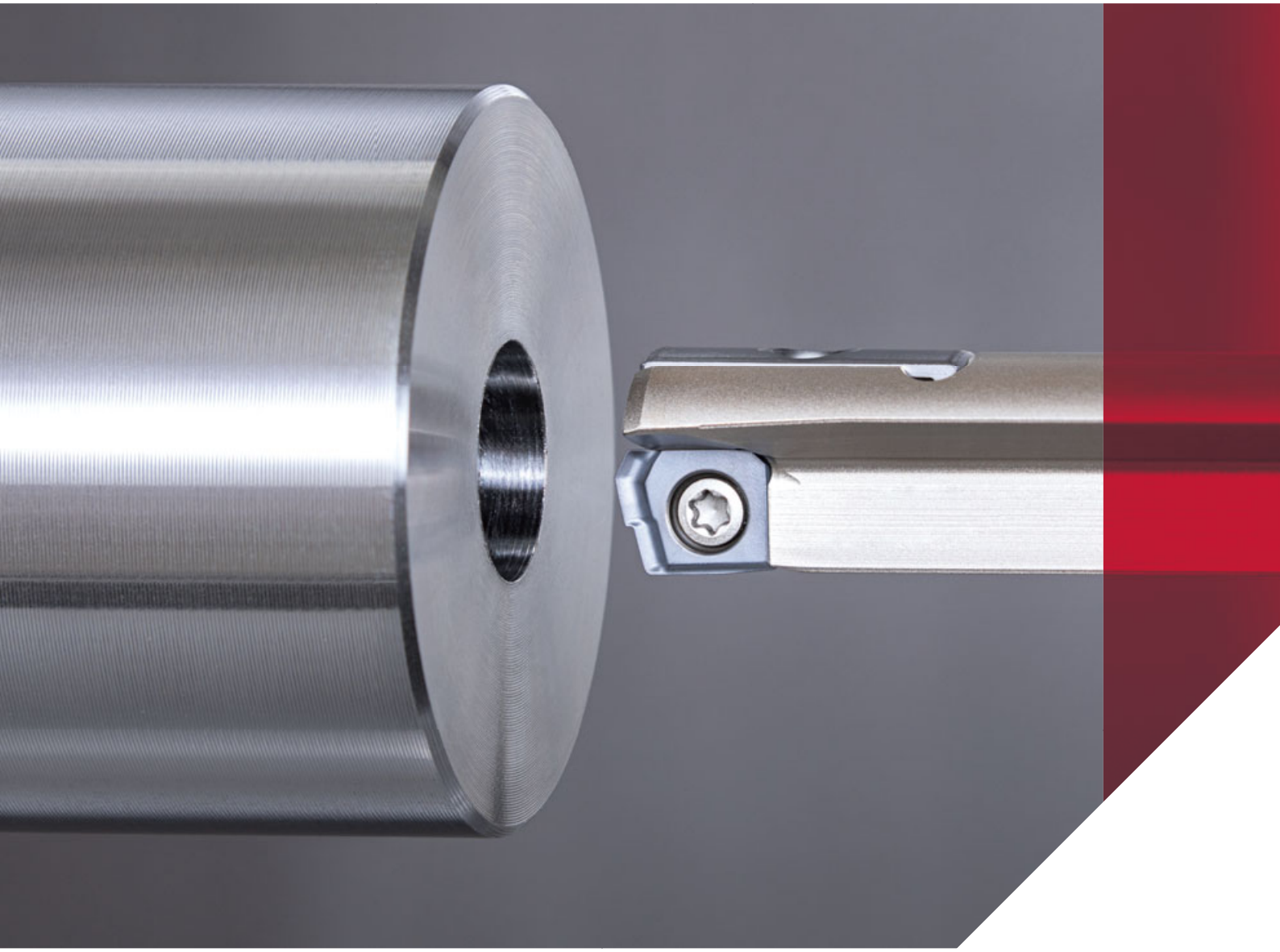
MEMO

DEEP TRI DRILL

Deep hole drilling

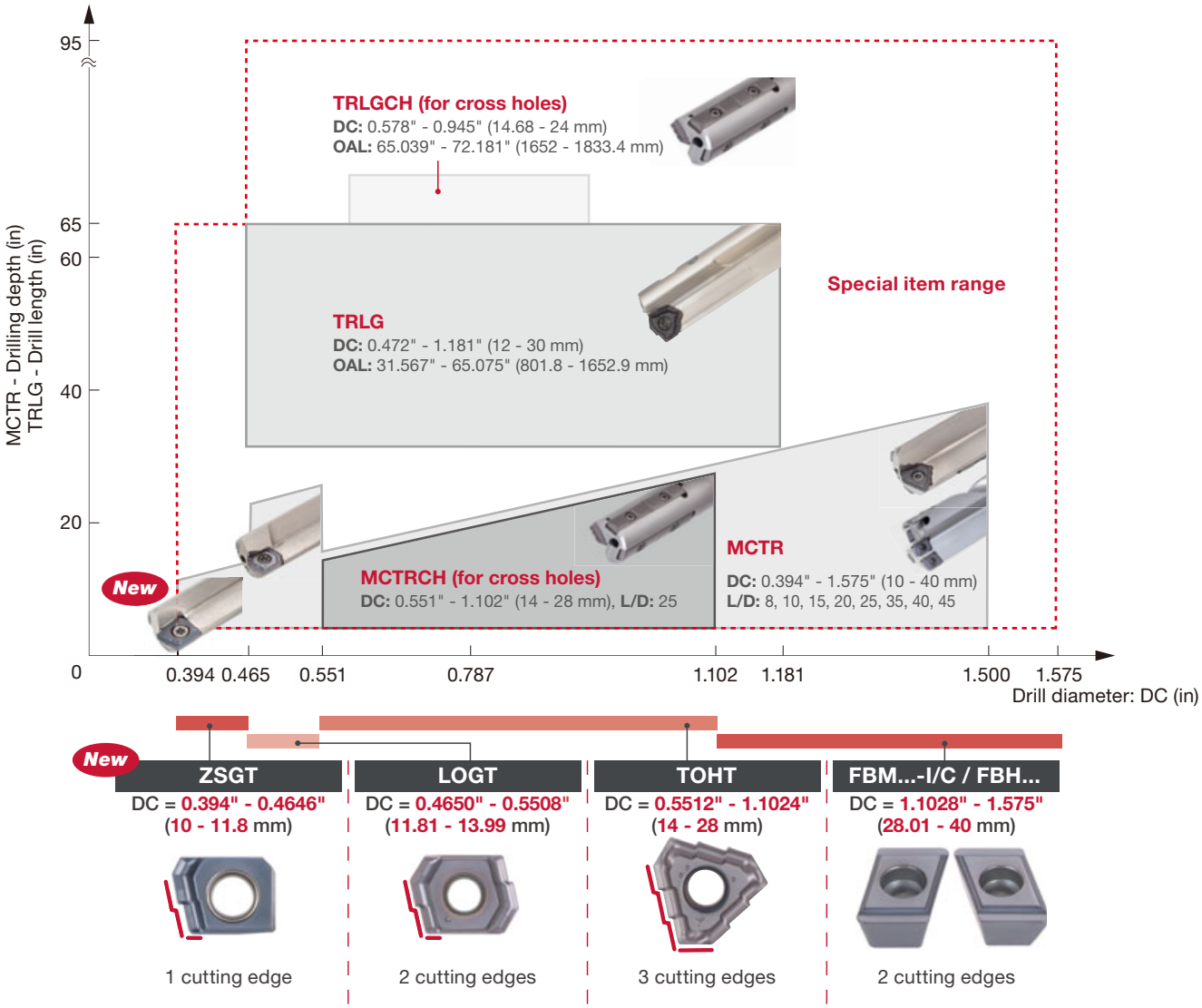
THE SMALLEST AND DEEPEST HOLES WITH AN INDEXABLE GUNDRILL

ADD a new small insert to the existing range to cover any deep drilling application



DeepTri-Drill for lathe and CNC machining centers in the diameter range ø0.394" - ø0.465" (10 - 11.8 mm)

Wide range of solutions for various deep hole applications

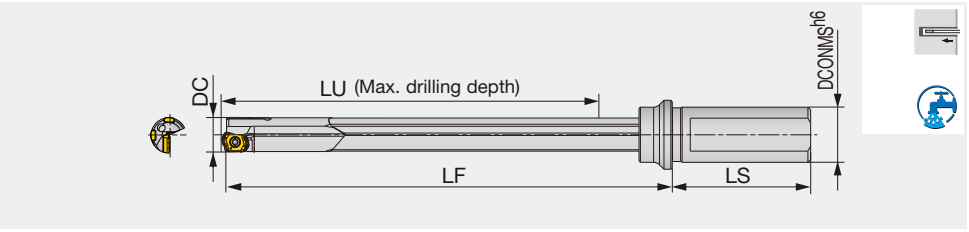


DRILL BODIES

For lathes and machining centers

MCTR L/D=15

Drill body for lathes and machining centers, L/D = 15, Tool diameter ø0.437"



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR11.11XU19.05-15	0.437	0.750	7.154	1.968	8.228	ZSGT06...	GP04-16-050-DC

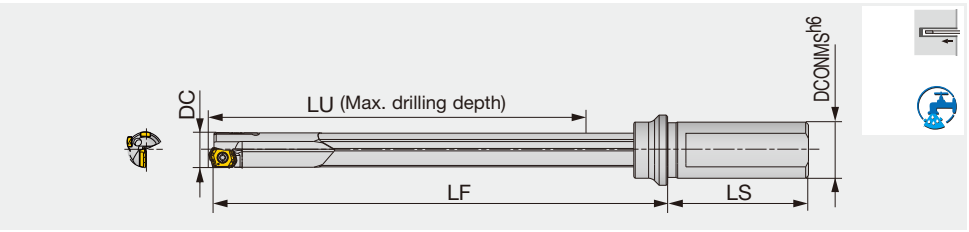
DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.437	0 / - 0.003	+ 0.002 / - 0.004

(Unit: Inch)

For lathes and machining centers

MCTR L/D=20

Drill body for lathes and machining centers, L/D = 20, Tool diameter ø0.437"



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR11.11XU19.05-20	0.437	0.750	9.516	1.968	10.591	ZSGT06...	GP04-16-050-DC

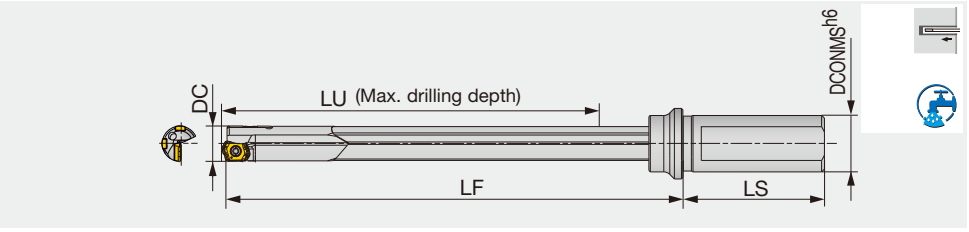
DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.437	0 / - 0.003	+ 0.002 / - 0.004

(Unit: Inch)

For lathes and machining centers

MCTR L/D=25

Drill body for lathes and machining centers, L/D = 25, Tool diameter ø0.437" and ø10 mm - ø11.5 mm



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR11.11XU19.05-25	0.437	0.750	11.878	1.968	12.953	ZSGT06...	GP04-16-050-DC

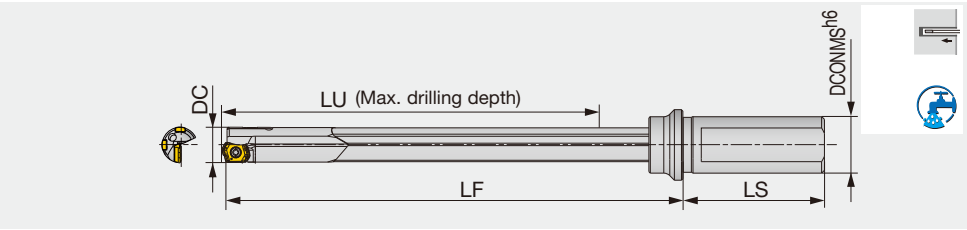
Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR10.00XM20-25	10	20	264.2	50	289.5	ZSGT06...	GP04-16-045-DC
MCTR11.00XM20-25	11	20	301.7	50	329	ZSGT06...	GP04-16-050-DC
MCTR11.50XM20-25	11.5	20	301.7	50	329	ZSGT06...	GP04-16-050-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.394 - 0.453	0 / - 0.0031	+ 0.0020 / - 0.0043

(Unit: Inch)

MCTR L/D=35, 45

Drill body for lathes and machining centers, L/D = 35, 45, Tool diameter ø0.437"



Inch	DC	L/D	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR11.11XU19.05-35	0.437	35	0.750	16.602	1.968	17.677	ZSGT06...	GP04-16-050-DC
MCTR11.11XU19.05-45	0.437	45	0.750	21.327	1.968	22.402	ZSGT06...	GP04-16-050-DC

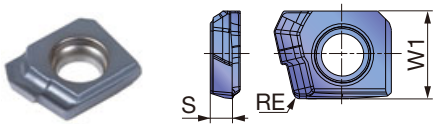
DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.437	0 / - 0.003	+ 0.002 / - 0.004

(Unit: Inch)

Please see Tungaloy eCatalog for spare parts

INSERT

ZSGT-NDJ



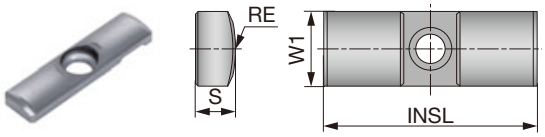
		Coated			
Designation		AH9130	W1	S	RE
ZSGT060204R-NDJ		●	0.236	0.059	0.016
P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous	★			
S	Superalloys	★			
H	Hard materials	★			

★ : First choice
☆ : Second choice

● : Line up
Package quantity = 10 pcs.

CARBIDE GUIDE PADS

GP04



		Coated				
Designation		FH3125	W1	INSL	S	RE
GP04-16-045-DC		●	0.157	0.630	0.079	0.177
GP04-16-050-DC		●	0.157	0.630	0.079	0.197
P	Steel	★				
M	Stainless	★				
K	Cast iron	★				
N	Non-ferrous	★				
S	Superalloys	★				
H	Hard materials	★				

★ : First choice
☆ : Second choice

● : Line up
Package quantity = 5 pcs.

DEEP TRI DRILL

STANDARD CUTTING CONDITIONS

Drill diameter: DC = 0.394" - 0.465"

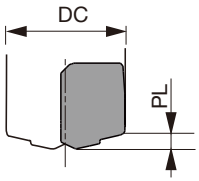
ISO	Workpiece material	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steel (C < 0.3) 70, 1025, etc.	262 - 459	0.0020 - 0.003
	Carbon steel (C > 0.3) 1045c, 1055, etc.	262 - 459	0.0020 - 0.006
	Low alloy steel (C < 0.3) 5120, etc.	262 - 459	0.0020 - 0.003
	Alloy steel (C > 0.3) 4140, etc.	262 - 394	0.0020 - 0.006
M*	Stainless steel (Austenitic) 304, 316, etc.	197 - 328	0.0020 - 0.003
	Stainless steel (Martensitic, Ferritic) 430, 416, etc.	197 - 328	0.0020 - 0.003
	Stainless steel (Precipitation hardening) S17400, etc.	197 - 328	0.0020 - 0.003
K	Gray cast iron No.250B, etc.	262 - 459	0.0020 - 0.008
	Ductile cast iron 700, etc.	262 - 459	0.0020 - 0.008
N	Aluminum alloys	328 - 656	0.0020 - 0.007
S	Heat-resistant alloys Inconel 718, etc.	66 - 164	0.0016 - 0.002
	Titanium alloys Ti-6Al-4V, etc.	98 - 197	0.0016 - 0.004
H	Hardened steel ≥ 40HRC	164 - 328	0.0016 - 0.002

*Coolant recommendations for drilling stainless steel:
- Oil coolant is first priority
- Water soluble coolant requires at least 20% oil concentration

BLIND HOLE SHAPES OF THE HOLE BOTTOM

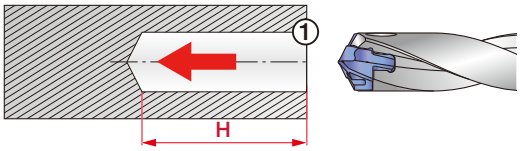
DC	Insert	Maximum difference PL
0.394 - 0.465	ZSGT06...	0.067

ZSGT06...



DRILLING PROCEDURE ON MACHINING CENTERS AND LATHES

Proceed as instructed below in order to maximize the tool performance.

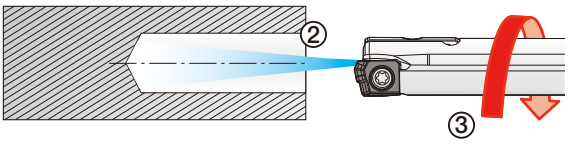


① Drill a pilot hole

Hole diameter tolerance: +0.0004" - +0.0020"
Hole depth: H = 1"

Note: Drill H = 1.8" when using an MCTRCH drill (for cross-hole).

Please use DrillMeister or DrillForce-Meister for a pilot hole.
Use a drill with 3xD or smaller.
Note: Recommend to use a drill with 5xD when using an MCTRCH drill.

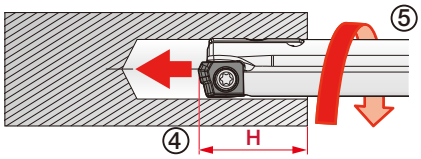


② Start coolant

③ Slowly insert DeepTri-Drill into the pilot hole

No. of revolution: n = 50 - 100 rpm
Feed rate: Vf = 4 - 12 ipm

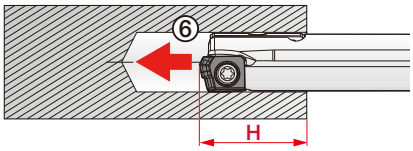
Note: Do not rotate the drill at full machining speed before engaging the pilot hole.



④ Stop the drill at H = 0.8" depth

Note: Stop at H = 1.6" when using an MCTRCH drill.

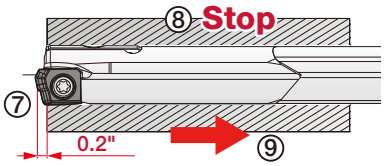
⑤ Start rotating at full machining speed



⑥ Start feeding

At the entry (H = 0.8" - 1.2") → Feed: f = 80% of programmed feed
Note: Drill H = 1.6" - 2" when using an MCTRCH drill.

Hole depth: H ≥ 1.2" → Feed: f = 100%
Note: Drill H = 2" or more when using an MCTRCH drill.



⑦ For a through hole

Continue drilling until the drill head passes through the workpiece by 0.2".

Note: When machining gummy materials such as low carbon steel, reduce the feed rate to 70% of the normal level right before exiting the material to prevent chips from scattering.

⑧ Stop the rotation and coolant

⑨ Return the drill, and operation finished