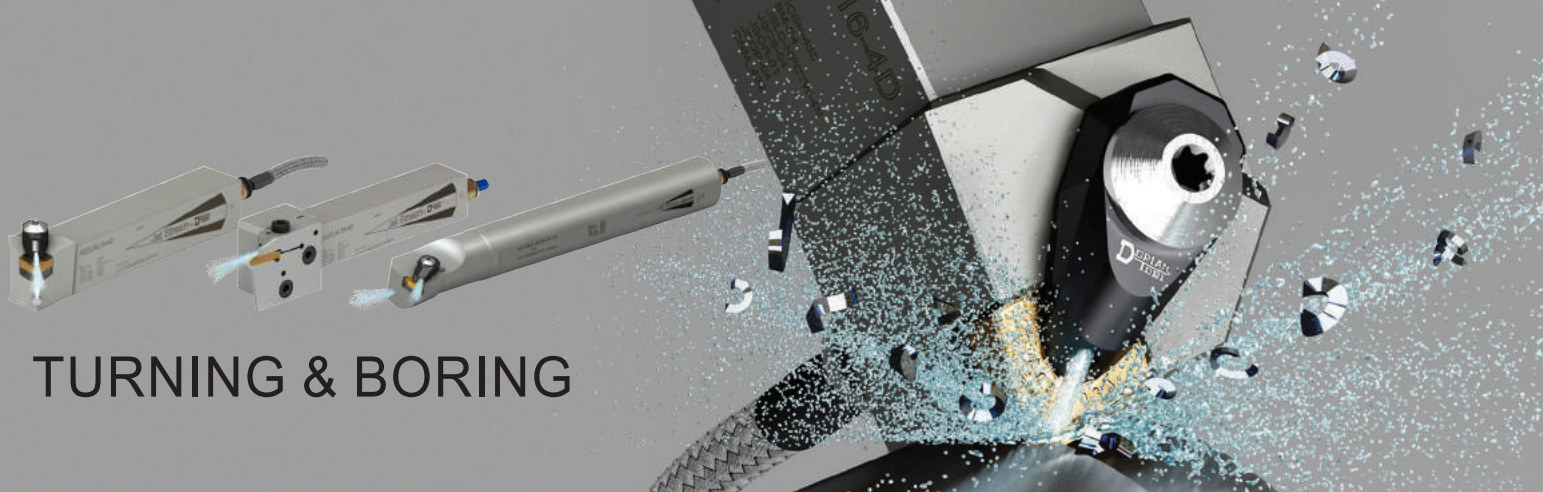
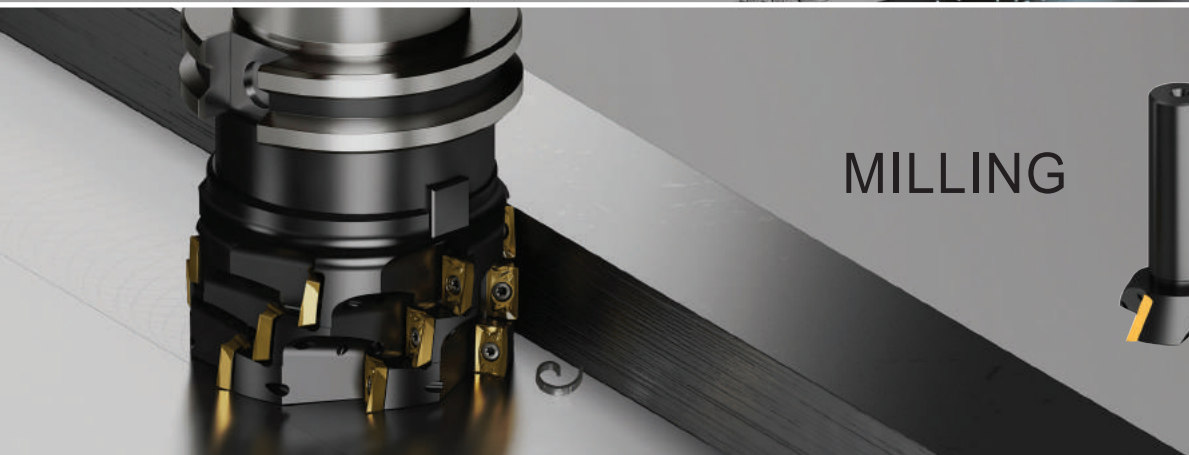




TURNING & BORING



MILLING

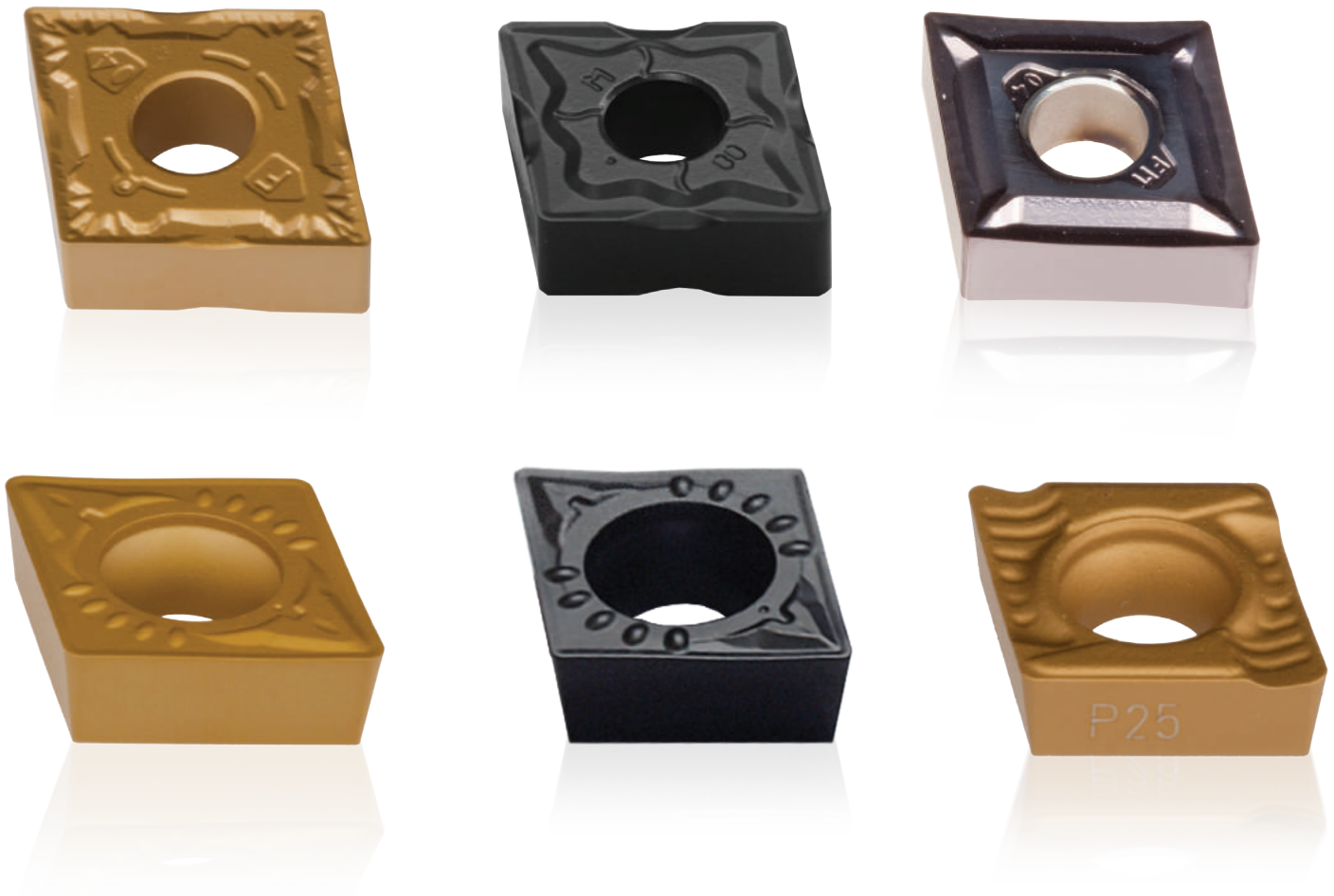


DORIAN[®]
INTERNATIONAL
TOOL 2017
METRIC
TOOL GUIDE
FOR EVERYDAY MACHINING



KNURLING TOOLS

CARBIDE INSERTS & TURNING TOOLS



TECHNOLOGY, QUALITY & PERFORMANCE
WILL TURN MACHINING INTO **PROFIT!**

Insert Grades

- 1 If inserts wear, reduce Spindle Speed RPM (n) increase Feed (fn) or change to a harder insert grade.
- 2 If inserts chip, increase Spindle Speed (n), decrease Feed (fn), or change to tougher insert grade.
- 3 For uninterrupted, continuous cuts, use hard and wear resistant insert.
- 4 For forgings, castings and interrupted cuts, use tough and impact resistant insert with larger nose radius.

DPP30GT

General Purpose for Alloy Steels. Second choice for Stainless Steels
P30 (P15-P35) Substrate
Thermal deformation and abrasion resistant substrate with PVD TiN

DPC15HT

For high speed turning of Alloy Steels, up to 305 + V_c
Most wear resistant steel grade
Second choice for machining cast irons
Second choice for finishing operation on Duplex, 316 and 316L (positive geometries only)
P15 (P10-P25) Fine Grain Substrate (1600 Vickers)
Not for interrupted cuts
CVD Al₂O₃/TiN/TiCN/Alpha Al₂O₃/Nano-TiCN/MT-TiCN/TiN Nanolock Coating Technology (22 microns)

DPC25UT

Universal Turning Grade for Alloy Steels and easy to machine Stainless Steels (316, 316L)
Medium Cutting Speeds, ideally at 122 - 250 V_c
For light interrupted and continuous cuts
P25 (P15-P35) Substrate (1550 Vickers)
CVD Al₂O₃/TiN/TiCN/Alpha-Al₂O₃/Nano-TiCN/MT-TiCN/TiN Nanolock Coating Technology (22 microns)

DPC35RT

For heavily interrupted cuts, forgings, castings and uneven surfaces
Tough and impact resistant substrate
Slow cutting speeds, ideally at 49 - 149 V_c
P40 (P25-P40) Substrate (1450 Vickers)
For Steels and Stainless Steels
CVD TiN/Al₂O₃/TiCN Nanolock Technology Coating

DMC20HT

High Performance Machining of austenitic stainless steels at higher SFM
M20 (M10-M25) Substrate
Not for interrupted cuts
High cutting speeds, ideally at 160 - 219 V_c
Nanolock black MT-CVD Al₂O₃/TiCN/TiN

DMC30UT

Tougher alternative to DMC20UT grade for stainless steels
General Purpose for interrupted and continuous cuts
For medium cutting speeds, ideally at 119 - 171 V_c
M30 (M25-M40) Substrate (1475 Vickers)
CVD TiN/TiCN/TiN Coating

DKU10HT

Wear and abrasion resistant, uncoated substrate
Not for interrupted cuts
K10 Substrate
For hardened materials, and abrasive materials
For very fine cuts

DKC10UT

Most wear resistant substrate for Nodular, Ductile and Gray Cast Irons and Hardened Steels
K10 (K05-K15) Substrate (1700 Vickers)
Up to 396 V_c on Gray Cast Iron (GG)
For high cutting speeds, 305 V_c and above
TAG-Turbo CVD Al₂O₃/TiC/TiCN/TiN Coating with special adhesion interlocking layer
For uninterrupted cuts

DKC15RT

Tougher alternative to DKC10UT, for cast irons
Optimal grade for Nodular Cast Iron (GG) and Gray Cast Iron (GGG)
K15 (K10-K20) Substrate (1600 Vickers)
CVD Al₂O₃/TiC/TiCN/TiN Coating
Suitable for interrupted cuts in cast irons

DNU10GT

Uncoated, high wear resistant grade for aluminum, non-ferrous metals and plastics
K25 Micrograin Substrate

DNU25GT

Uncoated, high wear resistant grade for aluminum, non-ferrous metals and plastics
K25 Micrograin Substrate
For continuous and light interrupted cuts

DNX10UT

Coated version of DNU10GT
High wear resistant grade for machining aluminum, non-ferrous metals and plastics
Micro-pulse Plasma TiAlN coating, ideal for finish machining (fine cuts) of stainless steels and high temp alloys

DNP25GT

Universal grade for high temp alloys, aluminum, non-ferrous and ferrous materials
S25 Substrate with PVD TiN Coating
Not for interrupted cuts

DSP10HT

For Titanium and Titanium Alloys (unalloyed Ti, alpha-alloys, alpha-beta alloys, beta-alloys)
S10 Substrate (1700 Vickers) with CVD TiB₂/TiN coating
For cutting speeds 30 - 70 V_c

DSP15HT

Hardest grade for High Temp Alloys
Medium to rough machining of high temp alloys and finish machining of stainless steels
With SER chip-breaker, also suitable for Interrupted machining of high temp alloys
With SEF & SEM chip-breakers, also use on aluminum, non-ferrous metals and plastics
Sub micron K30 Substrate with 3 micron PVD Super-Nitride AlTiN Coating

DSP20HT

Tougher alternative to DSP15HT grade
For high temp alloys Inconel 718, Inconel 625, Nimonic, Udimet, Hastelloy, Waspaloy
Submicron S20 Substrate (1700 Vickers) with 8 micron PVD AlTiN coating
For cutting speeds 30 - 67 V_c

DUP15VT

Hard & wear resistant for high temp alloys, aluminum, non-ferrous and ferrous materials
S15 Substrate with PVD AlCrN Coating
Not for interrupted cuts

DUP25GT

Universal grade for high temp alloys, aluminum, non-ferrous and ferrous materials
S25 Substrate with PVD TiAlN/WC/C Coating
Not for interrupted cuts

Steel Chip Breakers

PEF Finishing

Depth of Cut	Min: 0,10mm	Max: 2,00mm
Feed Rate	Min: 0,05mm/rev	Max: 0,20mm/rev

Small chip-breaker for finishing applications. Very light honed, sharp cutting edge. Optimum chip breaking achieved at small depth of cuts and small feed rates.

UEM Precision Finishing to Light Roughing

Depth of Cut	Min: 0,50mm	Max: 4,00mm
Feed Rate	Min: 0,07mm/rev	Max: 0,33mm/rev

Small-Medium (intermediate) chip-breaker for both finishing and medium applications. Small honed, relatively sharp cutting edge, positive rake ensures lower cutting pressure than PEM chip breaker for boring applications. Optimum chip breaking achieved at small-medium depth of cut and small-medium feed rates.

PEM Light Roughing to Finishing

Depth of Cut	Min: 0,80mm	Max: 5,00mm
Feed Rate	Min: 0,15mm/rev	Max: 0,40mm/rev

Medium chip-breaker for finishing, medium and roughing applications. Medium honed, safe cutting edge for most cutting conditions with a wide range of depth of cut and feed rates. Most general purpose chip breaker for alloy steels.

PEU Chip Breaker

Depth of Cut	Min: 0,50mm	Max: 4,00mm
Feed Rate	Min: 0,07mm/rev	Max: 0,33mm/rev

Small-Medium chip breaker for finishing and medium applications. Small honed, relatively sharp cutting edge on 11 degree positive inserts for alloy steels and stainless steel materials

PER Roughing

Depth of Cut	Min: 1,20mm	Max: 8,00mm
Feed Rate	Min: 0,33mm/rev	Max: 0,76mm/rev

Large chip breaker for roughing and heavy roughing applications. Large honed, strong cutting edge for large depth of cuts and heavy feed rates allows for high material removal rates. Strong cutting edge ideal for interrupted cuts.

PEX Wiper

Depth of Cut	Min: 1,50mm	Max: 4,00mm
Feed Rate	Min: 0,20mm/rev	Max: 0,78mm/rev

Wiper nose with varying nose radii for better surface finish or higher feed rates, preferably on alloy steel materials.

PSH & PSS Roughing

Depth of Cut	Min: 2,00mm	Max: 12,5mm
Feed Rate	Min: 0,40mm/rev	Max: 1,60mm/rev

Large chip breaker for heavy roughing on single sided (flat bottom) negative inserts. Flat bottom of the insert provides the most rigid clamping due to maximum surface area on the tool-holder's insert pocket. Positive rake, negative land and heavily honed cutting edge for heavy roughing applications with large depth of cut and high feed rate (very high material removal rate). For continuous, varying and interrupted cuts. PSS chip breaker also suitable for heavy duty roughing of cast irons.

PST Extra Heavy Roughing

Depth of Cut	Min: 2,50mm	Max: 12,5mm
Feed Rate	Min: 0,78mm/rev	Max: 1,60mm/rev

Large chip breaker and very strong cutting edge for extra heavy duty roughing on single sided (flat bottom) negative inserts. Flat bottom of the insert provides the most rigid clamping due to maximum surface area on the tool-holder's insert pocket. Positive rake, negative land and heavily honed cutting edge for extra heavy duty roughing applications with large depth of cut and very high feed rate (very high material removal rate). For continuous, varying and interrupted cuts.

UEXR/UEXL High Performance Chip Breaker

Depth of Cut	Min: 1,00mm	Max: 3,20mm
Feed Rate	Min: 0,20mm/rev	Max: 0,45mm/rev

High positive and large scoop chip breaker allows free flowing chips with minimal cutting tool pressure. Ideal for boring applications or whenever chatter is a problem. The precise ground periphery, sharp cutting edge and deep chip channel makes this insert perfect on thin walled tubes or long, slender parts or deep bores. Also, use this insert on applications where chip breaking and chip control is a problem. Directional chip breaker (right hand – left hand), not good for facing.

UEN Chip Breaker

Depth of Cut	Min: 0,07mm	Max: 4,00mm
Feed Rate	Min: 0,07mm/rev	Max: 0,40mm/rev

General purpose, very light honed, positive cutting edge for finishing and general purpose machining of various materials.

Stainless Steel Chip Breakers

MEF Finishing

Depth of Cut	Min: 0,50mm	Max: 4,00mm
Feed Rate	Min: 0,10mm/rev	Max: 0,33mm/rev

Small chip-breaker for finishing applications. Very light honed, sharp cutting edge allows machining without work hardening on austenitic or precipitation hardening stainless steels. Optimum chip breaking achieved at small depth of cuts and small feed rates.

MEH High Performance

Depth of Cut	Min: 1,00mm	Max: 4,00mm
Feed Rate	Min: 0,17mm/rev	Max: 0,43mm/rev

Newly developed, high-performance chip breaker for finishing, medium and roughing applications. Sharp, positive edge prevents work hardening; ideal for stainless steels. Innovative Chip-Impact-Protector design prevents chip-damage to the cutting when machining up to shoulders.

MEM Medium

Depth of Cut	Min: 1,20mm	Max: 5,50mm
Feed Rate	Min: 0,15mm/rev	Max: 0,40mm/rev

Medium, general purpose chip-breaker for finishing, medium and roughing applications. Sharp, positive edge prevents work hardening; ideal for stainless steels.

MER Roughing

Depth of Cut	Min: 1,20mm	Max: 7,80mm
Feed Rate	Min: 0,33mm/rev	Max: 0,78mm/rev

Roughing chip-breaker for stainless steels for heavy material removal rate. Relatively sharp but strong cutting edge for large depth of cut and high feed rate. Use for interrupted cuts or heavy machining of stainless steels with heavy feed.

UEFR / UEFL Chip Breaker

Depth of Cut	Min: 0,05mm	Max: 1,00mm
Feed Rate	Min: 0,05mm/rev	Max: 0,20mm/rev

High positive and very sharp cutting edge with small chip breaker allows free cutting and chip breaking with small depth of cut and small feed rates. Ideal for boring applications or whenever chatter is a problem. The precise ground periphery, and sharp cutting edge makes this insert perfect on thin walled tubes or small, long and slender parts, or deep small bores. Also, use this insert on applications where chip breaking and chip control is a problem due to very small feed rates. Directional chip breaker (right hand – left hand), not good for facing.

High Temp Alloy Chip Breakers

SEF Finishing

Depth of Cut	Min: 0,50mm	Max: 4,00mm
Feed Rate	Min: 0,07mm/rev	Max: 0,25mm/rev

Precision ground periphery with small, upsharp cutting edge and small chip breaker. Ideal for finishing applications on high temp alloys. Also use on aluminum and non-ferrous materials.

SEH High Performance

Depth of Cut	Min: 1,00mm	Max: 3,50mm
Feed Rate	Min: 0,07/rev	Max: 0,45mm/rev

High Performance, sharp cutting edge with medium chip breaker and high edge security, ideal for medium and rough machining of high temp alloys and titanium alloys.

SEM Finishing to Light Roughing

Depth of Cut	Min: 1,00mm	Max: 3,50mm
Feed Rate	Min: 0,10mm/rev	Max: 0,33mm/rev

Upsharp cutting edge with medium chip breaker, ideal for finishing, medium and light roughing of high temp alloys. Also use on aluminum and non-ferrous materials.

SER Roughing

Depth of Cut	Min: 1,20mm	Max: 6,00mm
Feed Rate	Min: 0,15mm/rev	Max: 0,40mm/rev

Sharp cutting edge with large chip breaker, ideal for rough machining of high temp alloys with higher depth of cut and feed rate.

Cast Iron Chip Breakers

KEF Finishing

Depth of Cut	Min: 0,10mm	Max: 2,00mm
Feed Rate	Min: 0,50mm/rev	Max: 0,30mm/rev

Small chip-breaker for finishing applications. Very light honed, sharp cutting edge. Optimum chip breaking achieved at small depth of cuts and small feed rates.

KEU Medium

Flat top, no chip breaker, ideal for cast irons. General purpose.

KEM Medium

Depth of Cut	Min: 0,20mm	Max: 3,20mm
Feed Rate	Min: 0,50mm/rev	Max: 0,30mm/rev

Medium chip-breaker for finishing, medium and light roughing applications on cast irons.

KER Roughing

Depth of Cut	Min: 0,80mm	Max: 12,0mm
Feed Rate	Min: 0,30mm/rev	Max: 0,60mm/rev

Large chip-breaker with a strong cutting edge for medium to rough machining of cast irons at large depth of cut and heavy feeds. Also use for interrupted cuts.

NFU High Performance Chip Breaker

Depth of Cut	Min: 1,00mm	Max: 8,00mm
Feed Rate	Min: 0,07mm/rev	Max: 0,99mm/rev

Very upsharp, high positive, precision ground and polished cutting edge for aluminum, non-ferrous metals and plastics. Use for finishing, medium or rough machining of aluminums, non-ferrous metals and plastics. Large, ridged chip breaker alloys free flow evacuation of chips with little cutting pressure. Also, use for very fine cuts with small feed rate on stainless steels and high temp alloys for superb surface finish.

UEU High Performance Chip Breaker

Depth of Cut	Min: 0,50mm	Max: 1,00mm
Feed Rate	Min: 0,50mm/rev	Max: 0,20mm/rev

Precision ground periphery and positive, sharp cutting edge with small chip breaker. Best for finishing and medium machining of various materials.

Negative Inserts

Material	Application	Chip Breaker	Insert	Grade ← Harder Tougher →		V _c Meters per minute	a _p Depth of Cut mm	f _n Feed Rate mm per Rev
P Steel & Alloy Steel	Finishing	PEF		DPC15HT		330 1188	0,10mm - 2,0mm	0,05mm - 0,20mm
				DPC25UT		281 1010		
	Medium	PEM		DPC15HT		330 1188	0,80mm - 5,0mm	0,15mm - 0,40mm
				DPC25UT		281 1010		
				DPC35RT		165 594		
	Roughing	PER		DPC15HT		330 1188	1,20mm - 8,00mm	0,33mm - 0,76mm
				DPC25UT		281 1010		
				DPC35RT		165 594		
	Wiper (High Surface Finish)	PEX		DPC15HT		330 1188	1,52mm - 4,0mm	0,20mm - 0,80mm
				DPC25UT		281 1010		
	Medium and Precision Finishing	UEM		DPC15HT		330 1188	0,50mm - 4,0mm	0,08mm - 0,33mm
				DPC25UT		281 1010		
				DPC35RT		165 594		
	For Thin Wall Tubing & Deep Boring	UEX		DPC15HT		330 1188	1,0mm - 3,2mm	0,20mm - 0,45mm
				DPC25UT		281 1010		
				DPC35RT		165 594		
	Roughing	PSH		DPC15HT		330 1188	2,00mm - 12,50mm	0,41mm - 1,60mm
				DPC25UT		281 1010		
				DPC35RT		165 594		
	Heavy Roughing	PSS		DPC15HT		330 1188	2,00mm - 12,50mm	0,41mm - 1,60mm
				DPC25UT		281 1010		
				DPC35RT		165 594		
	Extra Heavy Duty Roughing	PST		DPC15HT		330 1188	2,5mm - 12,50mm	0,80mm - 1,60mm
				DPC25UT		281 1010		
				DPC35RT		165 594		
M Stainless Steel	High Performance	MEH		DMC20HT		429 759	1,0mm - 3,75mm	0,18mm - 0,43mm
	Finishing	MEF		DMC30UT		238 594	0,50mm - 4,00mm	0,10mm - 0,33mm
	Medium	MEM		DMC30UT			1,20mm - 5,51mm	1,52mm - 0,40mm
	Roughing	MER		DMC30UT			1,20mm - 7,75mm	0,33mm - 7,9mm
K Cast Iron	Finishing	KEF		DKC10UT		376 891	0,10mm - 2,03mm	0,05mm - 0,30mm
	Roughing	KER		DKC10UT		376 891	0,80mm - 12,00mm	0,30mm - 0,60mm
				DKC15RT		314 743		
S Titanium & Super Alloy	High Performance	SEH		DSP10HT (Titanium Only)		230 100	1,00mm - 3,5mm	0,08mm - 0,045mm
				DSP20HT		200 100		
S Titanium - Super Alloy & Multi-Material	Finishing	SEF		DSP15HT		100 1066	0,50mm - 4,0mm	0,08mm - 0,25mm
	Medium	SEM		DSP15HT			1,00mm - 3,50mm	0,10mm - 0,33mm
	Roughing	SER		DSP15HT			1,20mm - 6,0mm	0,15mm - 0,40mm

Positive Inserts

Material	Application	Chip Breaker	Insert	Grade		V _c Meters per minute	a _p Depth of Cut mm	f _n Feed Rate mm per Rev
				Harder	Tougher			
S Multi-Material	General Purpose	UEF		DNU25GT		83 545	0,05mm - 2,0mm	0,05mm - 0,20mm
	Universal			DUP25GT		96 1123		
	Unstable Condition			DUP35RT		92 1066		
	General Purpose	UEU		DUP15VT		119 1403	0,05mm - 2,0mm	0,05mm - 0,20mm
	Universal			DUP25GT		96 1123		
	Unstable Condition			DPC35RT		92 1066		
P Steel & Alloy Steel	Finishing	PEF		DPC15HT		330 1188	0,10mm - 2,0mm	0,05mm - 0,20mm
				DPC25UT		281 1010		
				DPC35RT		165 594		
	Medium	PEM		DPC15HT		330 1188	0,080mm - 5,0mm	0,15mm - 0,40mm
				DPC25UT		281 1010		
				DPC35RT		165 594		
	Universal	PEU		DPC15HT		330 1188	0,50mm - 4,0mm	0,15mm - 0,40mm
				DPC25UT		281 1010		
				DPC35RT		165 594		
	High Performance	UEX		DPC15HT		330 1188	1,0mm - 3,2mm	0,20mm - 4,6mm
	Universal			DPC25UT		281 1010		
	Unstable Condition			DPC35RT		165 594		
M Stainless Steel	High Performance	MEH		DMC20HT		429 759	1,0mm - 3,8mm	0,18mm - 0,43mm
	Universal	MEM		DCM30UT		238 594	1,20mm - 5,5mm	0,15mm - 4,0mm
K Cast Iron	General Application	KEM		DKC15RT		59 743	0,20mm - 3,18mm	0,05mm - 0,30mm
N Aluminum	General Purpose	NFU		DNU10GT		446 6353	0,99mm - 8,0mm	0,08mm - 1,0mm
	High Performance			DNX10UT		581 7623		
S Titanium & Super Alloy	High Performance	SEH		DSP10HT (Titanium Only)		230 100	1,0mm - 3,5mm	0,08mm - 0,46mm
				DSP20HT		200 100		

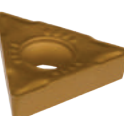
Multi-Material Applications Positive Precision Ground Inserts

Description	ISO	Grade DNU25GT	Grade DUP25GT	Grade DUP35RT
CDGX-UEFR 80° Diamond Universal Right Hand 	CDGX-040102-UEFR	68562	68563	68564
	CDGX-040104-UEFR	68572	68573	68574
CDGX-UEFL 80° Diamond Universal Left Hand 	CDGX-040102-UEFL	68567	68568	
	CDGX-040104-UEFL	68577	68578	
CCGX-UEFR 80° Diamond Universal Right Hand 	CCGX-060204-UEFR	68592	68593	68594
CCGX-UEFL 80° Diamond Universal Left Hand 	CCGX-060204-UEFL	68597	68598	
DCGX-UEFR 55° Diamond Universal Right Hand 	DCGX-060204-UEFR	68712	68713	68714
DCGX-UEFL 55° Diamond Universal Left Hand 	DCGX-070204-UEFL	68717	68718	68719
TCGX-UEFR 60° Triangle Universal Right Hand 	TCGX-110202-UEFR	68762	68763	68764
	TCGX-110204-UEFR	68772	68773	68774
VBGX-UEFR 35° Diamond Universal Right Hand 	VBGX-110304-UEFR	68902	68903	
VBGX-UEFL 35° Diamond Universal Left Hand 	VBGX-110304-UEFL	68907	68908	68909
VCGX-UEFR 35° Diamond Universal Right Hand 	VCGX-110304-UEFR	68962	68963	68964
VCGX-UEFL 35° Diamond Universal Left Hand 	VCGX-110304-UEFL	68967	68968	68969

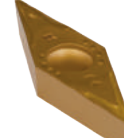
Multi-Material Applications Positive Precision Ground Inserts

Description	ISO	Grade DNU10GT	Grade DUP15VT	Grade DUP25GT	Grade DUP35RT
CCGT-UEU 80° Diamond Universal 	CCGT-060201-UEU	79450	79451		
	CCGT-060202-UEU			79453	79454
	CCGT-060204-UEU	79455	79456	79458	79459
	CCGT-09T302-UEU			79463	79464
	CCGT-09T304-UEU	79465	79466	79468	79469
	CCGT-120404-UEU	79475	79476	79478	79479
CPGT-UEU 80° Diamond Universal 	CCGT-120408-UEU	79480	79481	79483	79484
	CPGT-05T102-UEU	79485	79486	79488	79489
	CPGT-05T104-UEU	79490	79491	79493	79494
	CPGT-060204-UEU	79500	79501	79503	79504
	CCGT-09T302-UEU	79507		79508	79509
DCGT-UEU 55° Diamond Universal 	CCGT-09T304-UEU	79510	79511	79513	79514
	DCGT-070201-UEU	79530	79531		
	DCGT-070202-UEU			79533	79534
	DCGT-070204-UEU	79535	79536	79538	79539
	DCGT-11T301-UEU	79540	79541		
TCGT-UEU 60° Triangle Universal 	DCGT-11T302-UEU			79543	79544
	DCGT-11T304-UEU	79545	79546	79548	79549
	DCGT-11T308-UEU	79550	79551	79553	79554
	DCGT-150404-UEU	79555	79556	79558	79559
	DCGT-150408-UEU	79560	79561	79563	79564
TPGT-UEU 60° Triangle Universal 	TCGT-110201-UEU	79585	79586	79588	79589
	TCGT-110202-UEU			79593	79594
	TCGT-110204-UEU	79595	79596	79598	79599
	TCGT-16T302-UEU			79608	79609
	TCGT-16T304-UEU	79610	79611	79613	79614
	TCGT-16T308-UEU	79615	79616	79618	79619
VBGT-UEU 35° Diamond Universal 	TPGT-110201-UEU			79623	79624
	TPGT-110202-UEU			79628	79629
	TPGT-110204-UEU	79630	79631	79633	79634
	TPGT-16T302-UEU			79643	79644
	TPGT-16T304-UEU	79645	79646	79648	79649
	TPGT-16T308-UEU	79650	79651	79653	79654
VCGT-UEU 35° Diamond Universal 	VBGT-110304-UEU	79660	79661	79663	79664
	VBGT-160404-UEU	79670	79671	79673	79674
	VBGT-160408-UEU	79675	79676	79678	79679
	VCGT-110301-UEU	79680	79681		
	VCGT-110302-UEU			79683	79684
WCGT-UEU 80° Trigon Universal 	VCGT-110304-UEU	79685	79686	79688	79689
	VCGT-160402-UEU			79698	79699
	VCGT-160404-UEU	79700	79701	79703	79704
	VCGT-160408-UEU	79705	79706	79708	79709
	WCGT-S30201-UEU	79710	79711	79713	79714
WCGT-UEU 80° Trigon Universal 	WCGT-S30202-UEU	79715	79716	79718	79719
	WCGT-040204-UEU	79725	79726	79728	79729
	WCGT-06T304-UEU	79735	79736	79738	79739
	WCGT-06T308-UEU		79741	79743	79744

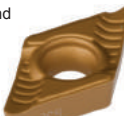
Alloy Steel Applications Positive Inserts

Description	ISO	Grade DPC15HT	Grade DPC25UT	Grade DPC35RT
CCMT-PEF 80° Diamond Finishing 	CCMT-060202-PEF	71873	71874	
	CCMT-060204-PEF	71877	71878	
	CCMT-060208-PEF	71879	71880	
	CCMT-09T304-PEF	71883	71884	
	CCMT-09T308-PEF	71885	71886	
	CCMT-120404-PEF	71889	71890	
CCMT-PEM 80° Diamond Medium 	CCMT-060202-PEM	71875	71876	
	CCMT-060204-PEM	71933	71934	
	CCMT-060208-PEM	71881	71882	
	CCMT-09T304-PEM	71935	71936	
	CCMT-09T308-PEM	71887	71888	
	CCMT-120404-PEM	71937	71938	
	CCMT-120408-PEM	71891	71892	
DCMT-PEF 55° Diamond Finishing 	DCMT-070204-PEF	71893	71894	
	DCMT-11T304-PEF	71897	71898	
DCMT-PEM 55° Diamond Medium 	DCMT-070204-PEM	71895	71896	
	DCMT-11T304-PEM	71899	71900	
	DCMT-11T308-PEM	71901	71902	
RCMX-UEX Metric Round 	RCMX-1003MO-UEX			71957
	RCMX-1204MO-UEX		71958	71959
	RCMX-1606MO-UEX		71962	71963
	RCMX-2006MO-UEX		71967	71968
	RCMX-2507MO-UEX		71972	71973
	RCMX-3209MO-UEX		71976	71977
RCMT-UM Inch Round 	RCMT-120400-UM		79926	
	RCMT-190600-UM		79929	
	RCMT-250600-UM		79931	
SCMT-PEF Square Finishing 	SCMT-09T304-PEF	71903	71904	
SCMT-PEM Square Medium 	SCMT-09T308-PEM	71905	71906	
	SCMT-120408-PEM	71907	71908	
	SCMT-120412-PEM	71939	71940	
TCMT-PEF 60° Triangle Finishing 	TCMT-06T102-PEF		80249	
	TCMT-110202-PEF	71909	71910	
	TCMT-110204-PEF	71911	71912	
TCMT-PEM 60° Triangle Medium 	TCMT-110204-PEM	71941	71942	
	TCMT-110208-PEM	71913	71914	
	TCMT-16T304-PEM	71915	71916	
	TCMT-16T308-PEM	71917	71918	
TPMR-PEU 60° Triangle Medium 	TPMR-110304-PEU	71945	71946	71947
	TPMR-110308-PEU	71948	71949	71950
	TPMR-160304-PEU	71951	71952	71953
	TPMR-160308-PEU	71954	71955	71956
VBMT-PEF 35° Diamond Finishing 	VBMT-160404-PEF	71919	71920	
	VBMT-160408-PEF	71921	71922	
	VBMT-160412-PEF	71923	71924	

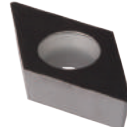
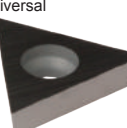
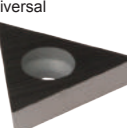
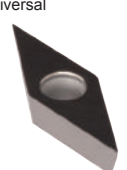
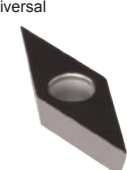
Alloy Steel Applications Positive Inserts

Description	ISO	Grade DPC15HT	Grade DPC25UT	Grade DPC35RT
VCMT-PEF 35° Diamond Finishing 	VCMT-110304-PEF	71925	71926	
	VCMT-160404-PEF	71927	71928	
	VCMT-160408-PEF	71931	71932	
VCMT-PEM 35° Diamond Medium 	VCMT-160404-PEM	71943	71944	
	VCMT-160408-PEM	71929	71930	
WCMT-PEF 80° Trigon Finishing 	WCMT-020102-PEF		80251	

Alloy Steel & Stainless Steel Applications (for lower cutting pressure) Positive Precision Ground Inserts

Description	ISO	Alloy Steel DPC25UT	Alloy Steel DPC35RT	Stainless Steel DMC30UT
CCGT-UEXL 80° Diamond Universal Left Hand 	CCGT-060204 UEXL	70676	70677	70678
	CCGT-060208 UEXL	70682	70683	70684
	CCGT-09T304 UEXL	70688	70689	70690
	CCGT-09T308 UEXL	70694	70695	70696
	CCGT-120408 UEXL	70700	70701	70702
	CCGT-120412 UEXL	70706	70707	70708
CCGT-UEXR 80° Diamond Universal Right Hand 	CCGT-060204 UEXR	70679	70680	70681
	CCGT-060208 UEXR	70685	70686	70687
	CCGT-09T304 UEXR	70691	70692	70693
	CCGT-09T308 UEXR	70697	70698	70699
	CCGT-120408 UEXR	70703	70704	70705
	CCGT-120412 UEXR	70709	70710	70711
DCGT-UEXL 55° Diamond Medium Left Hand 	DCGT-070204 UEXL	70712	70713	70714
	DCGT-11T304 UEXL	70718	70719	70720
	DCGT-11T308 UEXL	70725	70726	70727
DCGT-UEXR 55° Diamond Roughing Right Hand 	DCGT-070204 UEXR	70715	70716	70717
	DCGT-11T304 UEXR	70721	70722	70723
	DCGT-11T308 UEXR	70729	70730	70731
TCGT-UEXL 60° Triangle Universal Left Hand 	TCGT-110204 UEXL	70732	70733	70734
	TCGT-16T304 UEXL	70738	70739	70740
	TCGT-16T308 UEXL	70744	70745	70746
TCGT-UEXR 60° Triangle Finishing/ Medium Right Hand 	TCGT-110204 UEXR	70735	70736	70737
	TCGT-16T304 UEXR	70741	70742	70743
	TCGT-16T308 UEXR	70747	70748	70749

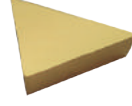
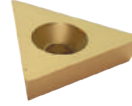
Multi-Material Applications Positive Precision Ground Inserts

Description	ISO	Grade DKU10HT	Grade DUP15VT	Grade DUP35RT
CDGW-KEU 80° Diamond Universal 	CCDGW-S4T001-KEU	79340	79341	79343
	CCDGW-S4T002-KEU	79344	79345	79347
	CDGW-040102-KEU	79348	79349	79351
	CDGW-040104-KEU	79352	79353	79355
CCGW-KEU 80° Diamond Universal 	CCGW-060204-KEU	79356	79357	79359
	CCGW-09T308-KEU	79364	79365	79367
CPGW-KEU 80° Diamond Universal 	CPGW-05T102-KEU	79368	79369	79371
	CPGW-05T104-KEU	79372	79373	79375
	CPGW-060204-KEU	79376	79377	79379
	CPGW-09T304-KEU	79380	79381	79383
	CPGW-09T308-KEU	79384	79385	79387
DCGW-KEU DCMW-KEU 55° Diamond Universal 	DCGW-070204-KEU	79388	79389	79391
	DCMW-11T304-KEU	70770	79392	
	DCMW-11T308-KEU	70771	79393	
TCGW-KEU 60° Triangle Universal 	TCGW-110204-KEU	79400	79401	79403
	TCGW-16T308-KEU	79408	79409	79411
TPGW-KEU 60° Triangle Universal 	TPGW-110204-KEU	79412	79413	79415
	TPGW-16T304-KEU	79416	79417	79419
	TPGW-16T308-KEU	79420	79421	79423
VBGW-KEU 35° Diamond Universal 	VBGW-110304-KEU	79424	79425	79427
	VBGW-160404-KEU	79428	79429	79431
	VBGW-160408-KEU	79432	79433	79435
VCGW-KEU 35° Diamond Universal 	VCGW-110304-KEU	79436	79437	79439
	VCGW-160404-KEU	79440	79441	79443
	VCGW-160408-KEU	79444	79445	79447

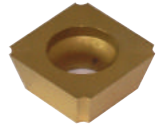
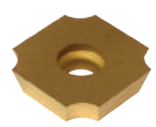
Titanium & High Temp Alloy Applications Positive Inserts

Description	ISO	Titanium Grade DSP10HT	High Temp Grade DSP20HT
CCMT-SEH 80° Diamond Universal 	CCMT-093T04-SEH	69725	69722
DCMT-SEH 55° Diamond Universal 	DCMT-11T04-SEH	69728	69729
RCMT-SEH Round Roughing 	RCMT-1606-MO-SEH	69732	
	RCMT-2006-MO-SEH	69734	

Alloy Steel Applications Positive Ground Inserts

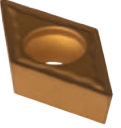
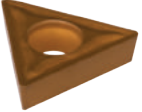
Description	ISO	Grade DNU25GT	Grade DNP25GT	Grade DPP30GT
TPG-UEN 60° Triangle General Purpose 	TPG-110304-UEN		71607	71608
	TPG-110308-UEN	71611	71613	
	TPG-160304-UEN	71617	71619	71620
	TPG-160308-UEN	71623	71625	71626
	TPG-220404-UEN	71629	71631	71632
	TPG-220408-UEN	71635	71637	71638
TPGB-UEN 60° Triangle General Purpose 	TPG-270612-UEN			71650
	TPGB-110204-UEN	71652		71654
	TPGB-110208-UEN	71655		71657
	TPGB-160404-UEN	71659		71661
	TPGB-160408-UEN	71662		71664
	TPGB-220404-UEN	71673		71675
TPGH-UEN 60° Triangle General Purpose 	TPGB-220408-UEN	71676		71678
	TPGH-110204-UEN	71700	71703	71704
	TPGH-110208-UEN	71706	71709	71708
	TPGH-160304-UEN	71712	71716	71715
	TPGH-160308-UEN	71718	71720	71722
	TPGH-220404-UEN	71726	71728	71730
TPHT-UEN 60° Triangle General Purpose 	TPGH-220408-UEN	71734	71737	71736
	TPHT-16T304-UEN	71748	71750	71751
	TPHT-16T308-UEN	71753	71755	71756

Positive Convex Radius Inserts for Multi-Material Applications

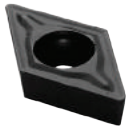
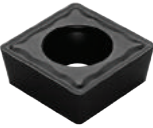
Description	ISO	Radius	Grade DNU25GT	Grade DUP25GT
SDGX-UEN 9,5mm Square Convex Radius 	SDGX-09T3C04-E	0,40 mm		95299
	SDGX-09T3C12-E	1,19 mm	95305	95307
	SDGX-09T3C16-E	1,57 mm	95309	95311
SDGX-UEN 19mm Square Convex Radius 	SDGX-1904C05-E	2,00 mm		95250
	SDGX-1904C06-E	2,38 mm	95253	95254
	SDGX-1904C07-E	2,76 mm	95257	95258
	SDGX-1904C08-E	3,17 mm	95261	95262
	SDGX-1904C09-E	10,5 mm		95266
	SDGX-1904C10-E	3,96 mm	95269	95270
	SDGX-1904C11-E	4,52 mm		95274
	SDGX-1904C12-E	4,77 mm	95277	95278
	SDGX-1904C13-E	5,15 mm		95282
	SDGX-1904C14-E	5,56 mm	95285	95286
	SDGX-1904C15-E*	5,94 mm	95289	95290
	SDGX-1904C16-E*	6,35 mm	95293	95294

*All SDGX inserts have 4 cutting edges, except 5,94mm & 6,35mm radius inserts that have 2 cutting edges.

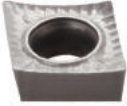
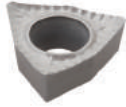
Stainless Steel Applications Positive Inserts

Description	ISO	Grade DMC20HT	Grade DMC30UT
CCMT-MEM 80° Diamond Finishing/Medium 	CCMT-09T304-MEM		70750
	CCMT-09T308-MEM		70751
	CCMT-120404-MEM		70752
	CCMT-120408-MEM		70756
CCMT-MEH 80° Diamond High Performance 	CCMT-09T304-MEH	70786	
	CCMT-09T308-MEH	70787	
DCMT-MEM 55° Diamond Finishing / Medium 	DCMT-11T304-MEM		70760
	DCMT-11T308-MEM		70761
DCMT-MEH 55° Diamond High Performance 	DCMT-11T304-MEH	70788	
	DCMT-11T308-MEH	70789	
SCMT-MEM Square Medium 	SCMT-120408-MEM		70772
TCMT-MEM 60° Triangle Medium 	TCMT-110204-MEM		70776
	TCMT-110208-MEM		70777
	TCMT-16T304-MEM		70778
	TCMT-16T308-MEM		70779
VCMT-MEM 35° Diamond Medium 	VCMT-160404-MEM		70783
	VCMT-160408-MEM		70784
	VCMT-160412-MEM		70785

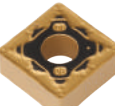
Cast Iron Applications Positive Inserts

Description	ISO	Grade DKC10UT	Grade DKC15RT
CCMT-KEM 80° Diamond Finishing/Medium 	CCMT-09T304-KEM		70753
	CCMT-09T308-KEM		70754
	CCMT-120408-KEM		70755
DCMT-KEM 55° Diamond Finishing/Medium 	DCMT-070204-KEM	70762	70763
	DCMT-070208-KEM	70764	70765
	DCMT-11T304-KEM	70766	70767
	DCMT-11T308-KEM	70768	70769
SCMT-KEM Square Medium 	SCMT-120408-KEM		70773

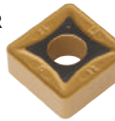
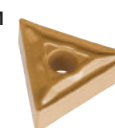
Aluminum Applications Ground & Polished Inserts

Description	ISO	Grade DNU10GT	Grade DNX10UT
CCGT-NFU 80° Diamond Universal 	CCGT-060202-NFU	80020	80021
	CCGT-060204-NFU	80024	80025
	CCGT-09T302-NFU	80028	80029
	CCGT-09T304-NFU	80032	80033
	CCGT-09T308-NFU	80036	80037
	CCGT-120404-NFU	80040	80041
	CCGT-120408-NFU	80044	80045
DCGT-NFU 55° Diamond Universal 	DCGT-070202-NFU	80048	80049
	DCGT-070204-NFU	80052	80053
	DCGT-11T302-NFU	80056	80057
	DCGT-11T304-NFU	80060	80061
	DCGT-11T308-NFU	80064	80065
RCMT-NFU Round Universal 	RCMT-0602MO-NFU	70798	
RCGT-NFU Round Universal 	RCGT-0602MO-NFU	80068	80069
	RCGT-0803MO-NFU	80072	80073
	RCGT-1003MO-NFU	80076	80077
SCGT-NFU Square Universal 	SCGT-120408-NFU	80084	80085
TCGT-NFU 60° Triangle Universal 	TCGT-110204-NFU	80089	80090
	TCGT-16T304-NFU	80093	80094
VCGT-NFU 35° Triangle Universal 	VCGT-110302-NFU	80098	80099
	VCGT-110304-NFU	80103	80104
	VCGT-160402-NFU	80107	80108
	VCGT-160404-NFU	80111	80112
	VCGT-160408-NFU	80115	80116
	VCGT-160412-NFU	80119	80120
	VCGT-220530-NFU	80123	80124
VPGT-NFU 35° Triangle Universal 	VPGT-110304-NFU	80127	80128
	VPGT-160412-NFU	80131	80133
	VPGT-220516-NFU	80135	80136
WCGT-NFU 80° Trigon Universal 	WCGT-06T302-NFU	80140	80141
	WCGT-06T304-NFU	80144	80145
	WCGT-06T308-NFU	80148	80149
	WCGT-080404-NFU	80152	80153
	WCGT-080408-NFU	80156	80157

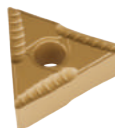
Alloy Steel Applications Negative Inserts

Description	ISO	DPC15HT	Grade DPC25UT	DPC35RT
CNMG-PEF 80° Diamond Finishing 	CNMG-120404-PEF	69250	69251	
	CNMG-120408-PEF	69252	69253	
CNMG-UEM 80° Diamond Universal 	CNMG-120404-UEM	69826	69828	
	CNMG-120408-UEM	69832	69833	69834
CNMG-PEM 80° Diamond Medium 	CNMG-090308-PEM	69491	69276	69277
	CNMG-120408-PEM	69408	69278	69279
	CNMG-120412-PEM	69280	69281	69282
	CNMG-160608-PEM	69283	69284	69285
	CNMG-160612-PEM	69286	69287	69288
	CNMG-160616-PEM	69492	69289	69290
	CNMG-190612-PEM	69409	69291	69292
	CNMG-190616-PEM	69410	69293	69294
CNMG-PER 80° Diamond Roughing 	CNMG-120408-PER	69351	69352	69353
	CNMG-120412-PER	69354	69355	69356
	CNMG-160608-PER	69357	69358	69359
	CNMG-160612-PER	69360	69361	69362
	CNMG-160616-PER	69363	69364	69365
	CNMG-190612-PER	69366	69367	69368
	CNMG-190616-PER	69369	69370	69371
	CNMG-190624-PER	69372	69373	69374
DNMG-PEF 55° Diamond Finishing 	DNMG-110404-PEF	69254	69255	
	DNMG-110408-PEF	69256	69257	
	DNMG-150404-PEF	69258	69259	
	DNMG-150408-PEF	69260	69261	
	DNMG-150604-PEF	69262	69263	
	DNMG-150608-PEF	69264	69265	
DNMG-UEM 55° Diamond Universal 	DNMG-110404-UEM	69835	69836	69837
	DNMG-110408-UEM	69840	69841	
	DNMG-150408-UEM		69844	
	DNMG-150604-UEM	69845	69846	69847
	DNMG-150608-UEM	69848	69849	69850
DNMG-PEM 55° Diamond Medium 	DNMG-110408-PEM	69295	69296	69297
	DNMG-150408-PEM	69298	69299	69300
	DNMG-150412-PEM	69301	69302	69303
	DNMG-150608-PEM	69304	69305	69306
	DNMG-150612-PEM	69307	69308	69309
	DNMG-150616-PEM	69310	69311	69312
DNMG-PER 55° Diamond Roughing 	DNMG-150408-PER	69375	69376	69377
	DNMG-150412-PER	69378	69379	69380
	DNMG-150608-PER	69381	69382	69383
	DNMG-150612-PER	69384	69385	69386
	DNMG-150616-PER	69387	69388	69389
SNMG-PEF Square Finishing 	SNMG-120404-PEF	69266	69267	
SNMG-UEM Square Universal 	SNMG-090304-UEM	69851	69852	
SNMG-PEM Square Medium 	SNMG-120408-PEM	69313	69314	69315
	SNMG-120412-PEM	69316	69317	69318
	SNMG-150608-PEM	69319	69320	69321
	SNMG-190612-PEM	69322	69323	69324

Alloy Steel Applications Negative Inserts

Description	ISO	DPC15HT	Grade DPC25UT	DPC35RT
SNMG-PER Square Roughing 	SNMG-120408-PER	69390	69391	69392
	SNMG-120412-PER	69393	69394	69395
	SNMG 190612-PER	69396	69397	69398
	SNMG-190616-PER	69399	69400	69401
TNMG-PEF 60° Triangle Finishing 	TNMG-160404-PEF	69268	69269	
	TNMG-160408-PEF	69270	69271	
TNMG-UEM 60° Triangle Universal 	TNMG-160404-UEM	69853	69854	69855
	TNMG-160408-UEM	69856	69857	69858
TNMG-PEM 60° Triangle Medium 	TNMG-160408-PEM	69325	69326	69327
	TNMG-160412-PEM	69328	69329	69330
	TNMG-220408-PEM	69331	69332	69333
	TNMG-220412-PEM	69334	69335	
VNMG-PEF 35° Diamond Finishing 	VNMG-160404-PEF	69272	69273	
	VNMG-160408-PEF	69274	69275	
VNMG-UEM 35° Diamond Universal 	VNMG-160408-UEM	69859	69860	
VNMG-PEM 35° Diamond Finishing 	VNMG-160408-PEM	69336	69337	69338
	VNMG-160412-PEM	69339	69340	69341
WNMG-UEM 80° Trigon Universal 	WNMG-060404-UEM	69861	69862	69863
	WNMG-060408-UEM	69864	69865	69866
	WNMG-080404-UEM	69867	69868	69869
	WNMG 080408-UEM	69870	69871	69872
	WNMG 080412-UEM		69873	
WNMG-PEM 80° Trigon Medium 	WNMG-060408-PEM	69342	69343	69344
	WNMG-080408-PEM	69345	69346	69347
	WNMG-080412-PEM	69348	69349	69350
WNMG-PER 80° Trigon Roughing 	WNMG-080408-PER	69402	69403	69404
	WNMG-080412-PER	69405	69406	69407

Alloy Steel & Stainless Steel Applications Negative Inserts (for lower cutting pressure)

Description	ISO	Alloy Steel DPC15HT	Alloy Steel DPC25UT	Alloy Steel DPC35RT	Stainless Steel DMC30UT
CNMX-UEXL 80° Diamond Left Hand 	CNMX-120404-UEXL		69411	69412	69413
	CNMX-120408-UEXL		69417	69418	69419
CNMX-UEXR 80° Diamond Right Hand 	CNMX-120404-UEXR		69414	69415	69416
	CNMX-120408-UEXR		69420	69421	69422
DNMX-UEXL 55° Diamond Left Hand 	DNMX-110404-UEXL	69429	69430	69431	
	DNMX-110408-UEXL	69435	69436	69437	
	DNMX-150404-UEXL		69441		
	DNMX-150408-UEXL		69447		
	DNMX-150604-UEXL	69453	69454	69455	69456
	DNMX-150608-UEXL	69461	69462	69463	69464
DNMX-UEXR 55° Diamond Right Hand 	DNMX-110404-UEXR	69432	69433	69434	
	DNMX-110408-UEXR	69438	69439	69440	
	DNMX-150404-UEXR		69444		
	DNMX-150408-UEXR		69450		
	DNMX-150604-UEXR	69457	69458	69459	69460
	DNMX-150608-UEXR	69465	69466	69467	69468
TNMX-UEL 60° Triangle Left Hand 	TNMX-160404-UEXL	69469	69470	69471	69472
	TNMX-160408-UEXL	69477	69478	69479	69480
TNMX-UEXR 60° Triangle Right Hand 	TNMX-160404-UEXR	69473	69474	69475	69476
	TNMX-160408-UEXR	69481	69482	69483	69484

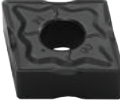
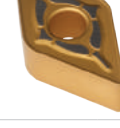
Heavy Duty Roughing Steel Applications Single Sided Negative Inserts

Description	ISO	DPC15HT	Grade DPC25UT	DPC35RT
CNMM-PSH 80° Diamond Roughing 	CNMM-120408-PSH	70160	70161	70162
	CNMM-120412-PSH	70163	70164	70165
	CNMM-160612-PSH	70166	70167	70168
	CNMM-160616-PSH	70169	70170	70171
	CNMM-190612-PSH	70172	70173	70174
	CNMM-190616-PSH	70175	70176	70177
	CNMM-190624-PSH	70178	70179	70180
CNMM-PSS 80° Diamond Heavy Roughing 	CNMM-190616-PSS	70205	70206	70207
CNMM-PST 80° Diamond X Heavy Roughing 	CNMM-250724-PST	70216	70217	70218
	CNMM-250924-PST	70220	70221	70222
SNMM-PHS Square Roughing 	SNMM-120408-PSH	70181	70182	70183
	SNMM-120412-PSH	70184	70185	70186
	SNMM-150612-PSH	70187	70188	70189
	SNMM-150616-PSH	70190	70191	70192
	SNMM-190612-PSH	70193	70194	70195
	SNMM-190616-PSH	70196	70197	70198
	SNMM-190624-PSH	70199	70200	70201
	SNMM-190632-PSH	70202	70203	70204
SNMM-PSS Square Heavy Roughing 	SNMM-190616-PSS	70210	70211	70212
	SNMM-190624-PSS	70213	70214	70215
SNMM-PST Square X Heavy Roughing 	SNMM-250724-PST	70224	70225	70226
	SNMM-250924-PST	70228	70229	70230

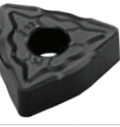
Wiper Inserts for Alloy Steel & Stainless Steel Applications

Description	ISO	Grade DPC15HT	Grade DPC25UT
CNMG-PEX 80° Diamond High Performance 	CNMG-120408-PEX	69485	69486
	CNMG-120412-PEX	69489	69490
DNMG-PEX 55° Diamond High Performance 	DNMG-150612-PEX	69487	69488

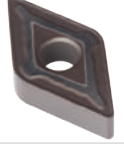
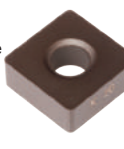
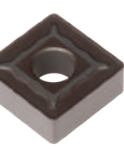
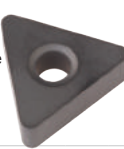
Stainless Steel Applications Negative Inserts

Description	ISO	Grade DMC20HT	Grade DMC30UT
CNMG-MEF 80° Diamond Finishing 	CNMG-090304-MEF		69964
	CNMG-120404-MEF		69965
	CNMG-120408-MEF		69966
	CNMG-120412-MEF		69967
CNMG-MEM 80° Diamond Medium 	CNMG-120408-MEM		69968
	CNMG-120412-MEM		69969
CNMG-MEH 80° Diamond High Performance 	CNMG-120408-MEH	70020	
	CNMG-120412-MEH	70021	
	CNMG-160612-MEH	70022	
	CNMG-160616-MEH	70023	
	CNMG-190612-MEH	70024	
	CNMG-190616-MEH	70028	
CNMG-MER 80° Diamond Roughing 	CNMG-120412-MER		69970
	CNMG-160612-MER		69971
	CNMG-190612-MER		69972
DNMG-MEF 55° Diamond Finishing 	DNMG-110404-MEF		69973
	DNMG-150604-MEF		69974
	DNMG-150608-MEF		69975
DNMG-MEM 55° Diamond Medium 	DNMG-110408-MEM		69976
	DNMG-150408-MEM		69977
	DNMG-150608-MEM		69978
	DNMG-150612-MEM		69979
DNMG-MEH 55° Diamond High Performance 	DNMG-150608-MEH	70037	
	DNMG-150612-MEH	70038	
DNMG-MER 55° Diamond Medium 	DNMG-150608-MER		69980
	DNMG-150612-MER		69981
SNMG-MEF Square Finishing 	SNMG-090304-MEF		69982
SNMG-MEH Square High Performance 	SNMG-150612-MEH	70041	
	SNMG-150616-MEH	70044	
	SNMG-190612-MEH	70052	
	SNMG-190616-MEH	70053	
SNMG-MER Square Roughing 	SNMG-120408-MER		69983
	SNMG-120412-MER		69984
	SNMG-190612-MER		69985

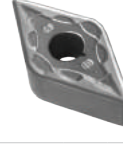
Stainless Steel Applications Negative Inserts

Description	ISO	Grade DMC20HT	Grade DMC30UT
TNMG-MEM 60° Triangle Medium 	TNMG-160408-MEM		69986
	TNMG-220408-MEM		69987
	TNMG-220412-MEM		69988
WNMG-MEF 80° Trigon Finishing 	WNMG-060404-MEF		69989
	WNMG-080404-MEF		69990
	WNMG-080408-MEF		69991
WNMG-MEH 80° Trigon High Performance 	WNMG-080412-MEH	70056	
WNMG-MEM 80° Trigon Medium 	WNMG-060408-MEM		69992
	WNMG-080408-MEM		69993
	WNMG-080412-MEM		69994
	WNMG-080416-MEM		69995
WNMG-MER 80° Trigon Roughing 	WNMG-080408-MER		69996
	WNMG-080412-MER		69997

Cast Iron Applications Negative Inserts

Description	ISO	DKC10UT	DKC15RT
CNMG-KEF 80° Diamond Finishing 	CNMG-120404-KEF	67052	67053
CNMA-KEU 80° Diamond General Purpose 	CNMA-120408-KEU CNMA-120412-KEU CNMA-190616-KEU CNMA-250924-KEU	69874 69876 69879	69875 69877 69878 69879
CNMG-KER 80° Diamond Roughing 	CNMG-120408-KER CNMG-120412-KER CNMG-120416-KER CNMG-160612-KER CNMG-160616-KER	69904 69906 69908 69910 69912	69905 69907 69909 69911 69913
DNMG-KEF 55° Diamond Finishing 	DNMG-110404-KEF DNMG-110408-KEF	67054 67056	67055
DNMA-KEU 55° Diamond General Purpose 	DNMA-150608-KEU		69880
DNMG-KER 55° Diamond Roughing 	DNMG-150408-KER DNMG-150412-KER DNMG-150608-KER DNMG-150612-KER	69914 69916 69918 69920	69915 69917 69919 69921
SNMA-KEU Square General Purpose 	SNMA-120408-KEU SNMA-120412-KEU SNMA-120416-KEU SNMA-190616-KEU SNMA-250724-KEU	69882 69884 69886 69889	69883 69885 69887 69888 69889
SNMG-KER Square Roughing 	SNMG-120408-KER SNMG-120412-KER SNMG-190612-KER SNMG-190616-KER	69922 69924 69927	69923 69925 69926 69928
TNMA-KEU Triangle General Purpose 	TNMA-160408-KEU TNMA-160412-KEU TNMA-220416-KEU	69890 69892 69894	69891 69893 69895
WNMA-KEU 80° Trigon General Purpose 	WNMA-080408-KEU WNMA-080412-KEU	69896 69898	69897 69899
WNMA-KER 80° Trigon Roughing 	WNMG-080408-KER WNMG-080412-KER	69929 69931	69930 69931

Titanium & High Temp Alloy Applications Negative Inserts

Description	ISO	Titanium Grade DSP10HT	High TempGrade DSP15HT	High TempGrade DSP20HT
CNMG-SEF 80° Diamond Finishing 	CNMG-120404-SEF CNMG-120408-SEF CNMG-120412-SEF		67058 67059 67060	
CNMG/GG-SEM 80° Diamond Medium 	CNMG-120404-SEM CNMG-120408-SEM CNMG-120412-SEM CNMG-120404-SEM CNMG-120408-SEM		67061 67065 67066 67067 67068	
CNMG-SER 80° Diamond Roughing 	CNMG-120408-SER CNMG-120412-SER		67069 67070	
CNMG-SEH 80° Diamond Roughing 	CNMG-120408-SEH	69726		69727
DNMG-SEF 55° Diamond Finishing 	DNMG-150404-SEF DNMG-150408-SEF DNMG-150412-SEF DNMG-150604-SEF DNMG-150608-SEF DNMG-150612-SEF		67071 67072 67073 67074 67082 67083	
DNMG-SEM 55° Diamond Medium 	DNMG-150404-SEM DNMG-150408-SEM DNMG-150412-SEM DNMG-150604-SEM DNMG-150608-SEM DNMG-150612-SEM		67084 67085 67086 67087 67088 67089	
DNMG-SEH 55° Diamond Roughing 	DNMG-150608-SEH	69730		69731
VNMG-SEF 35° Diamond Finishing 	VNMG-160404-SEF VNMG-160408-SEF		67095 67096	
WNGG-SEF 80° Trigon Finishing 	WNGG-080404-SEF WNGG-080408-SEF WNGG-080412-SEF		67097 67098 67099	
WNGG-SEM 80° Trigon Medium 	WNGG-080404-SEM WNGG-080408-SEM WNGG-080404-SEM WNGG-080408-SEM WNGG-080412-SEM		67100 67101 67102 67103 67104	
WNGG-SEH 80° Trigon Medium 	WNGG-080408-SEH	69736		69737

Jet-Stream™ THRU COOLANT SYSTEM

Turning-Boring-Threading



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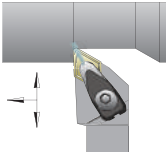
- Performance
- Quality and surface finish
- Insert life
- Chip control



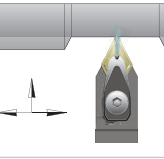
ADCLN R/L Tool holder Style L - 5° end or side cutting lead angle for negative 80° diamond CNM_inserts

Turning 	UPC #			Shank							
	Description	Right Hand	Left Hand	Height	Length	CNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Bottom Port Nozzle
	ADCLNR/L-2020-K12	52828	52829	20	125	120408	JC-432	SM-M4-6	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039
	ADCLNR/L-2525-M12	52830	52831	25	150	120408	JC-432	SM-M4-8	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039
	ADCLNR/L-3232-P12	52832	52833	32	170	120408	JC-432	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSBPE-M4-039
	ADCLNR/L-3232-P16	52834	52835	32	170	160612	JC-533	SM-M6	JSLC-HPC5	JSCS-04	JSBPE-M4-039
	ADCLNR/L-4040-S12	52836	52837	40	250	120408	JC-432	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSBPE-M4-039
ADCLNR/L-4040-S16	52838	52839	40	250	160612	JC-533	SM-M6	JSLC-HPC5	JSCS-04	JSBPE-M4-039	

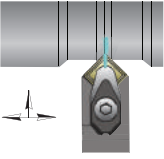
ADDJN R/L Tool holder Style J - 3° side cutting lead angle for negative 55° diamond DNM_inserts

Turning 	UPC #		Shank		DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Bottom Port Nozzle	
	Description	Right Hand	Left Hand	Height							Length
	ADDJNR/L-2020-K11	52842	52843	20	125	110408	S5511P	SM-M3	JSLC-HPD3	JSCS-04	JSBP-M4-039
	ADDJNR/L-2020-K15	52844	52845	20	125	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSBP-M4-039
	ADDJNR/L-2525-M15	52846	52847	25	150	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSBPE-M4-039
	ADDJNR/L-3232-P15	52848	52849	32	170	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSBPE-M4-039
	ADDJNR/L-4040-S15	52850	52851	40	250	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSBPE-M4-039

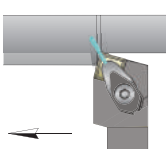
ADDPNN Tool holder Style P - 27.5° side cutting lead angle for negative 55° diamond DNM_inserts

Turning	UPC #		Shank		DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Bottom Port Nozzle
	Description	Neutral	Height	Length						
	ADDPNN-2020-K11	52854	20	125	110408	S5511P	SM-M3	JSLC-HPD3	JSCS-04	JSBP-M4-039
	ADDPNN-2020-K15	52855	20	125	150608	IDSN-423	SM-M4	JSLC-HPD4	JSCS-04	JSBP-M4-039
	ADDPNN-2525-M11	52856	25	150	110408	S5511P	SM-M3	JSLC-HPD3	JSCS-04	JSBPE-M4-039
	ADDPNN-2525-M15	52857	25	150	150608	IDSN-423	SM-M4	JSLC-HPD4	JSCS-04	JSBPE-M4-039
	ADDPNN-3232-P15	52858	32	170	150608	IDSN-423	SM-M4	JSLC-HPD4	JSCS-04	JSBPE-M4-039
	ADDPNN-4040-S15	52859	40	250	150608	IDSN-423	SM-M4	JSLC-HPD4	JSCS-04	JSBPE-M4-039

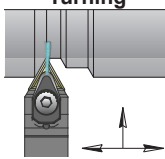
ADSDNN Tool holder Style D - 45° side cutting lead angle for negative square SNM_inserts

Turning	UPC #		Shank		SNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Bottom Port Nozzle
	Description	Neutral	Height	Length						
	ADSDNN-2020-M12	52871	20	150	120408	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039
	ADSDNN-2525-M12	52872	25	150	120408	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSBPE-M4-039
	ADSDNN-3232-P12	52873	32	170	120408	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSBPE-M4-039
	ADSDNN-3232-P15	52874	32	170	150612	JS-533	SM-M6	JSLC-HPC5	JSCS-04	JSBPE-M4-039
	ADSDNN-4040-S15	52875	40	250	150612	JS-533	SM-M6	JSLC-HPC5	JSCS-04	JSBPE-M4-039

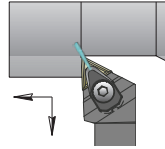
ADSRN R/L Tool holder Style R - 15° side cutting lead angle for negative square SNM_inserts

Turning	UPC #		Shank		SNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Bottom Port Nozzle	
	Description	Right Hand	Left Hand	Height							Length
	ADSRNR/L-2020-K12	52862	52863	20	125	120408	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039
	ADSRNR/L-2525-M12	52864	52865	25	150	120408	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSBPE-M4-039
	ADSRNR/L-3232-P15	52866	52867	32	170	150612	JS-533	SM-M6	JSLC-HPC5	JSCS-04	JSBPE-M4-039
	ADSRNR/L-4040-S15	52868	52869	40	250	150612	JS-533	SM-M6	JSLC-HPC5	JSCS-04	JSBPE-M4-039

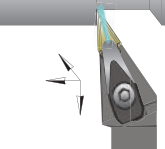
ADTENN Tool holder Style E - 30° side cutting lead angle for negative triangle TNM_inserts

Turning	UPC #		Shank		TNM_	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Bottom Port Nozzle
	Description	Neutral	Height	Length	Gage Insert					
	ADTENN-2020-K16	52892	20	125	160408	JT-322	SM-M3-T	JSLC-HPTW3N	JSCS-04	JSBP-M4-039
	ADTENN-2020-K22	52893	20	125	220408	JT-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039
	ADTENN-2525-M16	52894	25	150	160408	JT-322	SM-M3-T	JSLC-HPTW3N	JSCS-04	JSBP-M4-039
	ADTENN-2525-M22	52895	25	150	220408	JT-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039
	ADTENN-3232-P22	52896	32	170	220408	JT-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039
	ADTENN-4040-S22	52897	40	250	220408	JT-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039

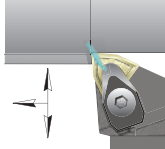
ADTJN R/L Tool holder Style J - 3° side cutting lead angle for negative triangle TNM_inserts

Turning	UPC #			Shank		TNM_	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Bottom Port Nozzle
	Description	Right Hand	Left Hand	Height	Length	Gage Insert					
	ADTJNR/L-2020-K16	52878	52879	20	125	160408	JT-322	SM-M3-T	JSLC-HPTW3N	JSCS-04	JSBP-M4-039
	ADTJNR/L-2020-K22	52880	52881	20	125	220408	JT-433	SM-M4-8	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039
	ADTJNR/L-2525-M16	52882	52883	25	150	160408	JT-322	SM-M3-T	JSLC-HPTW3N	JSCS-04	JSBP-M4-039
	ADTJNR/L-2525-M22	52884	52885	25	150	220408	JT-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039
	ADTJNR/L-3232-P22	52886	52887	32	170	220408	JT-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039
	ADTJNR/L-4040-S22	52888	25889	40	250	220408	JT-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSBP-M4-039

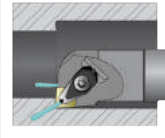
ADVJN R/L Tool holder Style J - Negative 3° side cutting lead angle for negative 35° diamond VNM_inserts

Turning	UPC #			Shank		VNM_	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Bottom Port Nozzle
	Description	Right Hand	Left Hand	Height	Length	Gage Insert					
	ADVJNR/L-2020-K16	52900	52901	20	125	160408	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSBP-M4-039
	ADVJNR/L-2525-M16	52902	52903	25	150	160408	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSBP-M4-039
	ADVJNR/L-3232-P16	52904	52905	32	170	160408	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSBP-M4-039

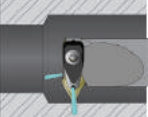
ADWLN R/L Tool holder Style L - Negative 5° end or side cutting lead angle for negative 80° trigon WNM_inserts

Turning	UPC #			Shank		WNM_	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Bottom Port Nozzle
	Description	Right Hand	Left Hand	Height	Length	Gage Insert					
	ADWLNRL-2020-K06	52909	52910	20	125	060408	IWSN-322	SM-M3	JSLC-HPTW3R/L	JSCS-04	JSBP-M4-039
	ADWLNRL-2020-K08	52911	52912	20	125	080408	IWSN-423	SM-S4	JSLC-HPTW4R/L	JSCS-04	JSBP-M4-039
	ADWLNRL-2525-M06	52913	52914	25	150	060408	IWSN-322	SM-M3	JSLC-HPTW3R/L	JSCS-04	JSBP-M4-039
	ADWLNRL-2525-M08	52915	52916	25	150	080408	IWSN-433	SM-S4	JSLC-HPTW4R/L	JSCS-04	JSBP-M4-039
	ADWLNRL-3232-P08	52917	52918	32	170	080408	IWSN-423	SM-S4	JSLC-HPTW4R/L	JSCS-04	JSBP-M4-039
	ADWLNRL-4040-S08	52919	52920	40	250	080408	IWSN-423	SM-S4	JSLC-HPTW4R/L	JSCS-04	JSBP-M4-039

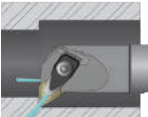
AS-ADCLN R/L Boring Bar Style L - Negative 5° side & end cutting lead angle for negative 80° diamond CNM_inserts

Boring	UPC #			Min. Bore	Bar Size	CNM_	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Chip Flush Plug
	Description	Right Hand	Left Hand			Gage Insert					
	AS-20R-ADCLNR/L-09	52925	52926	25	20	090308	N/A	N/A	JSLC-HP3C-B	JSCS-03	JSPN-M3
	AS-25R-ADCLNR/L-12	52927	52928	32	25	120408	NA	NA	JSLC-HPCTW-4N	JSCS-04	JSPN-M6
	AS-32S-ADCLNR/L-12	52929	52930	40	32	120408	S8012P	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSPN-M6
	AS-40S-ADCLNR/L-12	52931	52932	45	40	120408	S8012P	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSPN-M6
	AS-50T-ADCLNR/L-12	52933	52934	65	50	120408	DC-432	5.8-10M1	JSLC-HPCTW-4N	JSCS-04	JSPN-M6

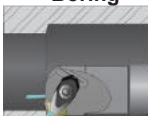
AS-ADDPN R/L Boring Bar Style P- Negative 27.5° end cutting lead angle for negative 55° diamond DNM_ inserts

Boring	Description	UPC #		Min. Bore	Bar Size	DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Chip Flush Plug
		Right Hand	Left Hand								
	AS-32S-ADDPNR/L-15	52939	-	39	32	150608	DD-422	TS5.8-10M2	JSLC-HPD4	JSCS-04	JSPN-M6

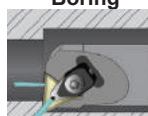
AS-ADDUN R/L Boring Bar Style U - Negative 3° end cutting lead angle for negative 55° diamond DNM_ inserts

Boring	Description	UPC #		Min. Bore	Bar Size	DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Chip Flush Plug
		Right Hand	Left Hand								
	AS-25R-ADDUNR/L-11	52946	52947	33	25	110408	S5511P	SM-M3	JSLC-HPDT3R/L	JSCS-03	JSPN-M3
	AS-32S-ADDUNR/L-15	52948	52949	50	32	150608	DD-422	TS5.8-10M2	JSLC-HPD4	JSCS-04	JSPN-M6
	AS-40S-ADDUNR/L-15	52950	-	57	40	150608	DD-422	TS5.8-10M2	JSLC-HPD4	JSCS-04	JSPN-M6
	AS-50T-ADDUNR/L-15	52952	52953	76	50	150608	DD-422	TS5.8-10M2	JSLC-HPD4	JSCS-04	JSPN-M6

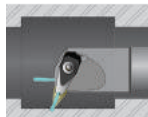
AS-ADSKN R/L Boring Bar Style K - 15° End cutting lead angle for negative square SNM_ inserts

Boring	Description	UPC #		Min. Bore	Bar Size	SNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Chip Flush Plug
		Right Hand	Left Hand								
	AS-32S-ADSKNR/L-12	52958	-	45	32	120408	S9012P	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSPN-M6

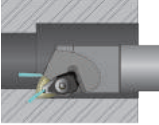
AS-ADTUN R/L Boring Bar Style U - Negative 3° end cutting lead angle for negative triangle TNM_ inserts

Boring	Description	UPC #		Min. Bore	Bar Size	TNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Chip Flush Plug
		Right Hand	Left Hand								
	AS-20R-ADTUNR/L-16	52967	52968	25	20	160308	N/A	N/A	JSLC-HPDT3R/L	JSCS-03	JSPN-M3
	AS-25R-ADTUNR/L-16	52969	52970	33	25	160408	JT-322	SM-M3-T	JSLC-HPDT3R/L	JSCS-03	JSPN-M3
	AS-32S-ADTUNR/L-22	52971	-	39	32	220408	JT-433	SM-S4	JSLC-HPTW4R/L	JSCS-04	JSPN-M6
	AS-40S-ADTUNR/L-22	52973	-	53	40	220408	JT-433	SM-S4	JSLC-HPTW4R/L	JSCS-04	JSPN-M6

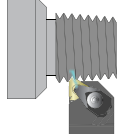
AS-ADVUN R/L Boring Bar Style U - Negative 3° side cutting lead angle for negative 35° diamond VNM_ inserts

Boring	Description	UPC #		Min. Bore	Bar Size	VNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Chip Flush Plug
		Right Hand	Left Hand								
	AS-32R-ADVUNR/L-16	52980	-	58	32	160408	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSPN-M6
	AS-40S-ADVUNR/L-16	52982	-	64	40	160408	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSPN-M6

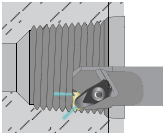
AS-ADWLN R/L Boring Bar Style L - Negative 5° end & side cutting lead angle for negative 80° trigon WNM_inserts

Boring	Description	UPC #		Min. Bore	Bar Size	WNM_Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Chip Flush Plug
		Right Hand	Left Hand								
	AS-20R-ADWLN/L-06	52986	52987	26	20	60408	N/A	N/A	JSLC-HPW3-B	JSCS-03	JSPN-M3
	AS-25R-ADWLN/L-08	52988	52989	33	25	80408	IWSN-423	SM-S4	JSLC-HPTW-4R/L	JSCS-04	JSPN-M6
	AS-32S-ADWLN/L-08	52990	52991	38	32	80408	IWSN-423	SM-S4	JSLC-HPTW-4R/L	JSCS-04	JSPN-M6
	AS-40S-ADWLN/L-08	52992	52993	46	40	80408	IWSN-423	SM-S4	JSLC-HPTW-4R/L	JSCS-04	JSPN-M6

ADLE Qualified Laydown Threading Tool holder Style E - offset head for Laydown inserts

Turning	Description	UPC #		Min. Bore	Bar Size	Gage Insert	Seat	Insert Screw	Dor-Lock Clamp	Clamp Screw
		Right Hand	Left Hand							
	ADLER/L2020-16Q-K	53587	53588	20	125	16-G60	GXE/I-16	TS-35.6-14M1	JSLC-HP16R-N JSLC-HP16L-N	JSCS-03
	ADLER/L2525-16Q-M	53589	53590	25	150					
	ADLER/L2525-22Q-M	53593	-	25	150	22-N60	NXE/I-22	TS-45.75-15M1	JSLC-HP22N	JSCS-04

AS-ADLN R/L Threading Bar Style N - Internal Laydown bar for Laydown threading

Boring	Description	UPC #		Min. Bore B	D	Gage Insert	Seat	Insert Screw	Dor-Lock Clamp	Clamp Screw	Chip Flush Plug
		R.H.	L.H.								
	AS-20R-ADLN/L-16	53600	53601	28	20	16-G60	GXE/I-16	TS-35.6-14M1	JSLC-HP16R-N JSLC-HP16L-N	JSCS-03	JSPN-M3
	AS-25R-ADLN/L-16	53602	53603	35	25						
	AS-32S-ADLN/L-16	53604	53605	41	32						
	AS-40S-ADLN/L-16	53606	53607	47	40						
	AS-32S-ADLN/L-22	-	53609	44	32	22-N60	NXE/I-22	TS-45.75-15M1	JSLC-HP22N	JSCS-04	JSPN-M6

Standard Pressure Coolant Connection 3 Pcs. Kit

Working Pressure



up to 400 psi (30 bar)

Item	Part #	UPC #	Description	Bar	PSI
	JSPLPCK-062-250	53303	1/16" NPT Standard Pressure Quick Release Coolant 3 pcs Kit	30	400
1	JS-T250-1200	53349	1/4" OD, 30cm Long Standard Pressure Tubing		
2	JS-MC062-250	53346	1/16" NPT-1/4" Bore, Straight Std Pressure Quick Release Connector		
3	JS-MC125-250	53347	1/8" NPT-1/4" Bore, Straight Std Pressure Quick Release Connector		
	JSPLPCK-125-250	53304	1/8" NPT Standard Pressure Quick Release Coolant 3 pcs Kit	30	400
1	JS-T250-1200	53349	1/4" OD, 30cm Long Standard Pressure Tubing		
2	JS-MC125-250	53347	1/8" NPT-1/4" Bore, Straight Std Pressure Quick Release Connector		
3	JS-MC125-250	53347	1/8" NPT-1/4" Bore, Straight Std Pressure Quick Release Connector		
	JSPLPCK-250-250	53305	1/4" NPT Standard Pressure Quick Release Coolant 3 pcs Kit	30	400
1	JS-T250-1200	53349	1/4" OD, 30cm Long Standard Pressure Tubing		
2	JS-MC125-250	53347	1/8" NPT-1/4" Bore, Straight Std Pressure Quick Release Connector		
3	JS-MC250-250	53348	1/4" NPT-1/4" Bore, Straight Std Pressure Quick Release Connector		

High Pressure Coolant Connection 5 Pcs. Kit

Working Pressure



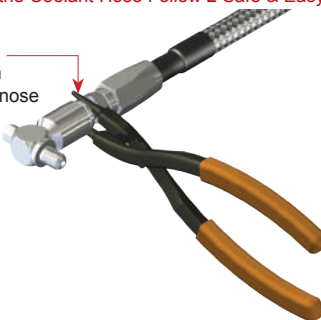
over 400 psi (30 bar)

Item	Part #	UPC #	Description	Bar	PSI
	DT-1/8 HP-QRCK	60473	1/8" NPT High Pressure Quick Release Coolant 5 pcs Kit	200	2800
1	DT-HPTU-8X4	60477	8mm High Pressure Coolant Tubing		
2	DT-HP90C-1/8x6	60479	High Pressure Quick Release Straight Intake		
3	DT-HP90C-1/8x6	60479	High Pressure Quick Release Straight Intake		
4	DT-HP90C-1/8x6	60490	1/8" NPT Straight High Pressure Quick Release Connector		
5	DT-HP90C-1/8x6	60489	1/8" NPT 90° Elbow High Pressure Quick Release Connector		
	DT-1/4 HP-QRCK	60474	1/4" NPT High Pressure Quick Release Coolant 5 pcs Kit	200	2800
1	DT-HPTU-8X4	60477	8mm High Pressure Coolant Tubing		
2	DT-HP90C-1/8x6	60479	High Pressure Quick Release Straight Intake		
3	DT-HP90C-1/8x6	60479	High Pressure Quick Release Straight Intake		
4	DT-HPOSC-1/4x6	60478	1/4" NPT Straight High Pressure Quick Release Connector		
5	DT-HP90C-1/8x6	60489	1/8" NPT 90° Elbow High Pressure Quick Release Connector		

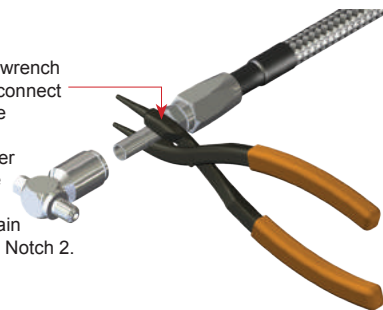
Item	Part #	UPC #	Description
	DT-HP-PLIERS	60476	High Pressure Disconnecting Pliers

To Disconnect the Coolant Hose Follow 2 Safe & Easy Steps:

1. Place the thinner section of the wrench-nose between the coolant hose and the connector.



2. Close the wrench and it will disconnect Notch 1 of the coolant hose. Use the thicker section of the wrench-nose and close again to disconnect Notch 2.



Ball-Type Coolant Nozzles Sold Separately

Acetal Material	Brass Material	Ball-Type Coolant Nozzles Size	Acetal (Hard Plastic) Material		Brass Material	
			Description	UPC #	Description	UPC #
		12mm OD, 1/8NPT ID	JSCNA-12	53354	JSCNB-12	53365
		14mm OD, 1/8NPT ID	JSCNA-14	53355	JSCNB-14	53366
		15mm OD, 1/8NPT ID	JSCNA-15	53356	JSCNB-15	53367
		22mm OD, 1/8NPT ID	JSCNA-22	53357	JSCNB-22	53368
		1/2" OD, 1/8NPT ID	JSCNA-50	53358	JSCNB-50	53369
		5/8" OD, 1/8NPT ID	JSCNA-62	53359	JSCNB-62	53370

Note: For machines that have turrets with 1/8 NPT tapped coolant holes, you do not need a ball type coolant nozzle. Ball type coolant nozzles are sold separately.

Jet-Stream™ Thru Coolant System Spare Parts

Image	Description	UPC #
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Dor-Lock Clamps for Laydown Threading holders

60° PARTIAL PROFILE INSERT STYLE 	JSLC-HP16R-N	53242
	JSLC-HP16L-N	53243
	JSLC-HP22N	53232
	JSLC-HP27N	53234

Includes upper and lower o-rings

Dor-Lock Clamps for DorNotch Threading holders

NT & NTP 60° INSERT STYLE 	JSLC-HP72	53350
	JSLC-HP73	53351
	JSLC-HP76	53352
	JSLC-HP77	53353

Includes upper and lower o-rings

Dor-Lock Clamps for CNMG & SNMG holders

CNMG & SNMG INSERT STYLES 	JSLC-HPC3-B	53250
	JSLC-HPCTW-4N	53289
	JSLC-HPC5	53252
	JSLC-HPC6	53248

Includes upper and lower o-rings

Dor-Lock Clamps for DNMG & TNMG holders

DNMG INSERT STYLES 	JSLC-HPD3	53253
	JSLC-HPD4	53254
TNMG INSERT STYLES 	JSLC-HPDT3-BR	53268
	JSLC-HPDT3-BL	53269

Includes upper and lower o-rings

Dor-Lock Clamps for TNMG & WNMG holders

TNMG & WNMG INSERT STYLES 	JSLC-HPTW3N	53261
	JSLC-HPTW3R	53262
	JSLC-HPTW3L	53263
	JSLC-HPCTW-4N	53289
	JSLC-HPTW4R	53265
	JSLC-HPTW4L	53266
	JSLC-HPW3-B	53270

Includes upper and lower o-rings

Dor-Lock Clamps for VNMG holders

VNMG INSERT STYLE 	JSLC-HPV3	53267
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Includes upper and lower o-rings

NEW High Volume Turning Dor-Lock Clamp

CNMG / TNMG / WNMG INSERT STYLES 	JSLC-HPCTW-4N-HPV	53290
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Includes upper and lower o-rings

Image	Description	UPC #
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Jet-Stream™ Shim Seats

80° DIAMOND 	JC-432	90111
	JC-533	90112
	JC-633	90118
55° DIAMOND 	JD-432	90113
	IDSN-423	90118
35° DIAMOND 	IDSN-322	90016
	JV-322	90119
SQUARE 	JS-432	90114
	JS-533	90115
	ISSN-423	90056
TRIANGLE 	JT-322	90117
	JT-433	90116
TRIGON 	IWSN-322	90070
	IWSN-423	90074
	IWSN-433	90072
LAYDOWN SHIM SEAT 	GXE/I-16	92070
	NXE/I-22	92071
	VXE/I-27	92074
DORNOTCH SHIM SEAT 	SM-420	90400

Insert Torx Screws/ Shim Screws

INSERT SCREWS 	GTS-1M	90964
	GTS-2	90966
	GTS-3	90967
	TS-35.6-9M1	90973
	TS-35.6-14M1	91303
	TS-45.75-15M1	91319
	TS-5.8-22M1	91302
	SL-344	91008
	SM-M3	53318
	SM-M3-T	53302
SHIM SCREWS 	SM-M6	53320
	SM-M66	53317
	SM-S4	53316
	SM-M4-245	53311
	SM-M4-6	53224
	SM-M4-8	53227
	SM-M4-6-245	53228

Image	Description	UPC #
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Jet-Stream™ Clamp Screws

CLAMP SCREWS 	JSCS-03	53323
	JSCS-04	53324
	JSCS-06	53326
	JSCS-04-HPV	53321

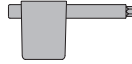
Jet-Stream™ Clamp O-Ring Seals

UPPER "O" RINGS 	JSOR-01	53315
	JSOR-03	53328
LOWER "O" RINGS 	JSOR-04	53314
	JSOR-06	53330
	JSOR-07	53327
	JSOR-08	53329
	JSOR-202	53335

Jet-Stream™ Flush Nozzle/Plug

BORING BAR CHIP FLUSH PLUG 	JSPN-M3	53339
	JSPN-M6	53334
	JSFN-M6	53313

Torx Keys

TORX KEYS 	T-10	92005
	T-20	92007

Jet-Stream™ Clamp Alignment Pin

ALIGNMENT PIN 	JSCAP-01	53325
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Jet-Stream™ Underport Nozzle

Underport Nozzle 	JSBP-M4-039	53244
	JSB PE-M4-039	53246

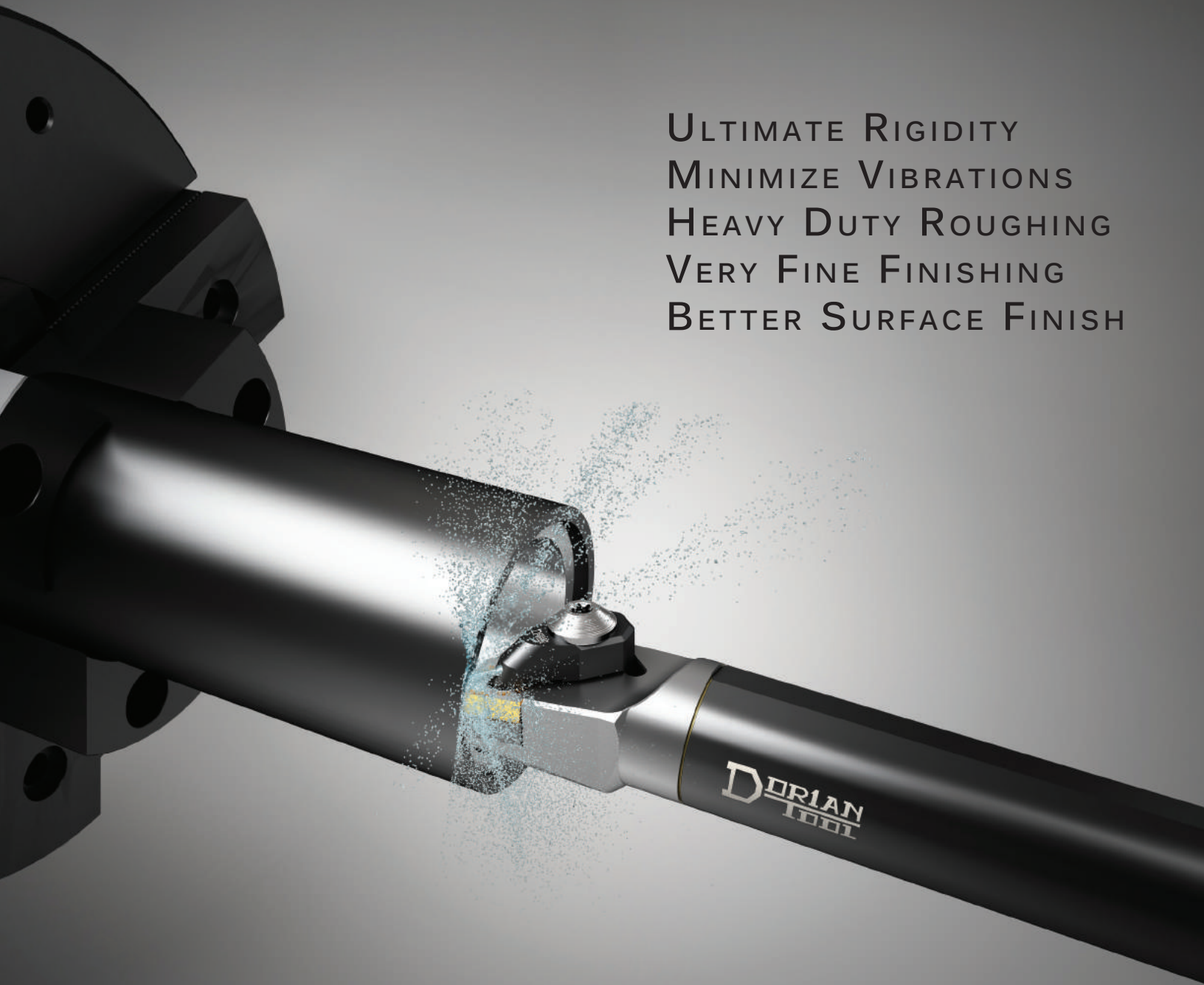
Jet-Stream™ Underport Seal

UNDERPORT SEAL 	JSBPS-M4-039	53245
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CARBIDE BORING BARS

Thru Coolant - High Performance

ULTIMATE RIGIDITY
MINIMIZE VIBRATIONS
HEAVY DUTY ROUGHING
VERY FINE FINISHING
BETTER SURFACE FINISH



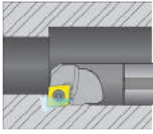
6xD Boring Ratio (8xD for softer materials)

Superior surface finish compared to steel boring bars

All Thru Coolant Bars (Negative Insert boring bars are Jet-Stream)

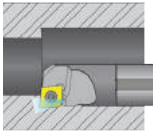
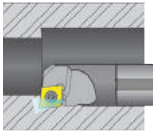
12mm and above sizes have threaded ends for coolant connector

E_SCLD R/L Thru Coolant Integral Carbide Boring Bar Style L - Negative 5° End & Side Cutting Edge Angle for 15° positive 80° diamond CD__ inserts

	UPC #						
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore Length	CD__ Insert
	E04M-H-SCLDR/L-03	59577	59578	6:1	4	4,45	100
	E05M-H-SCLDR/L-03	59581	59582		5	5,21	
	E06M-H-SCLDR/L-03	59585	59586		6	6,22	
	E07M-H-SCLDR/L-04	59589	59590	6:1	7	8,00	100
	E08M-K-SCLDR/L-04	59593	59594		8	8,51	

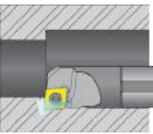
Inserts used: all CD__ series (CDGX, CDMT, CDGW, CDGB).

E_SCLC R/L Thru Coolant Integral Carbide Boring Bar Style L - Negative 5° End & Side Cutting Edge Angle for 7° positive 80° diamond CC__ inserts

	UPC #						
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore Length	CC__ Insert
	E10M-M-SCLCR/L-06	59597	59598	6:1	10	10,06	150
	E12M-K-SCLCR/L-06	59601	59602		12	13,97	
	E12M-R-SCLCR/L-06	59605	59606		12	13,97	
	E16M-M-SCLCR/L-06	59609	59610	6:1	16	18,80	200
	E16M-S-SCLCR/L-06	59613	59614		16	18,80	
	E12M-K-SCLCR/L-09	59617	59618		12	13,97	125
	E12M-R-SCLCR/L-09	59621	59622	6:1	12	13,97	
	E16M-M-SCLCR/L-09	59625	59626		16	18,80	
	E16M-S-SCLCR/L-09	59629	59630	6:1	16	18,80	250
	E20M-Q-SCLCR/L-09	59977	59978		20	23,6	180
	E20M-S-SCLCR/L-09	59979	59980		20	23,6	
	E25M-R-SCLCR/L-09	59981	59982	6:1	25	30,5	200
	E25M-T-SCLCR/L-09	59983	59984		25	30,5	
	E32M-U-SCLCR/L-12	59985	59986		32	37,3	350
							120408

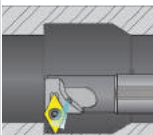
Inserts used: all CC__ series (CCGX, CCGT, CCMT, CCGW).

E_SCLP R/L Thru Coolant Integral Carbide Solid Boring Bars - Style L - Negative 5° End & Side Cutting Edge Angle for 11° positive 80° diamond CP__ inserts

	UPC #						
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore Length	CP__ Insert
	E10M-M-SCLPR/L-06	59637	59638	6:1	10	10,06	150
	E12M-K-SCLPR/L-06	59641	59642		12	13,97	
	E12M-R-SCLPR/L-06	59645	59646		12	13,97	
	E16M-M-SCLPR/L-06	59649	59650	6:1	16	18,80	150
	E16M-S-SCLPR/L-06	59653	59654		16	18,80	
	E12M-K-SCLPR/L-09	59657	59658		12	13,97	125
	E12M-R-SCLPR/L-09	59661	59662	6:1	12	13,97	
	E16M-M-SCLPR/L-09	59665	59666		16	18,80	
	E16M-S-SCLPR/L-09	59669	59670		16	18,80	250

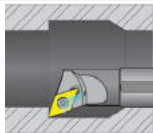
Inserts used: all CP__ series (CPGX, CPGT, CPGW, CPMT).

E_SDNC R/L Thru Coolant Integral Carbide Boring Bar Style N - Negative 27.5° End & Side Cutting Edge Angle for 7° positive 55° diamond DC__ inserts

	UPC #						
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore Length	DC__ Insert
	E10M-M-SDNCR/L-07	59673	59674	6:1	10	14,76	150
	E12M-K-SDNCR/L-07	59677	59678		12	19,69	
	E12M-R-SDNCR/L-07	59681	59682		12	19,69	
	E16M-M-SDNCR/L-07	59685	59686		16	24,61	
	E16M-S-SDNCR/L-07	59689	59690		16	24,61	

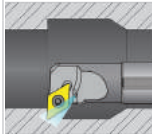
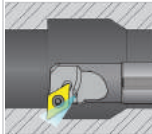
Inserts used: all DC__ series (DCMT, DCGW, DCMT, DCGX, DCGT).

E_SDQC R/L Thru Coolant Integral Carbide Solid Boring Bars Style N - Negative 17.5° End Cutting Edge Angle for 7° positive 55° diamond DC__ inserts

	UPC #						
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore Length	DC__ Insert
	E10M-M-SDQCR/L-07	59693	59694	6:1	10	12,38	150
	E12M-K-SDQCR/L-07	59697	59698		12	16,51	
	E12M-R-SDQCR/L-07	59701	59702		12	16,51	
	E16M-M-SDQCR/L-07	59705	59706		16	19,83	
	E16M-S-SDQCR/L-07	59709	59710		16	19,83	

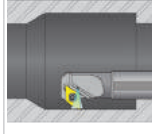
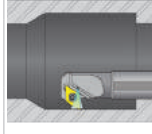
Inserts used: all DC__ series (DCMT, DCGW, DCMT, DCGX, DCGT).

E_SDUC R/L Thru Coolant Integral Carbide Boring Bar Style U - Negative 3° End Cutting Edge Angle for 7° positive 55° diamond DC__ inserts

	UPC #						
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore Length	DC__ Insert
	E10M-M-SDUCR/L-07	59713	59714	6:1	10	14,76	150
	E12M-K-SDUCR/L-07	59717	59718		12	18,08	
	E12M-R-SDUCR/L-07	59721	59722		12	18,08	
	E16M-M-SDUCR/L-07	59725	59726		16	21,43	
	E16M-S-SDUCR/L-07	59729	59730	6:1	16	21,43	250
	E20M-Q-SDUCR/L-11	59997	59998		20	26,7	
	E20M-S-SDUCR/L-11	59999	60000		20	26,7	
	E25M-R-SDUCR/L-11	60001	60002		25	33,0	
	E25M-T-SDUCR/L-11	60003	60004		25	33,0	
	E32M-U-SDUCR/L-11	60005	60006		32	44,5	
							11T308

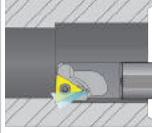
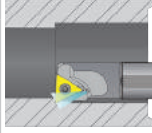
Inserts used: all DC__ series (DCMT, DCGW, DCMT, DCGX, DCGT).

E_SDXC R/L Thru Coolant Integral Carbide Boring Bar Style X - Negative 5° Back Boring Cutting Edge Angle for 7° positive 55° diamond DC__ inserts

	UPC #						
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore Length	DC__ Insert
	E10M-M-SDXCR/L-07	59733	59734	6:1	10	14,76	141,36
	E12M-K-SDXCR/L-07	59737	59738		12	18,08	
	E12M-R-SDXCR/L-07	59741	59742		12	18,08	
	E16M-M-SDXCR/L-07	59745	59746		16	21,43	
	E16M-S-SDXCR/L-07	59749	59750	6:1	16	21,43	241,36
	E20M-Q-SDXCR/L-11	60017	60018		20	24,9	
	E20M-S-SDXCR/L-11	60019	60020		20	24,9	
	E25M-R-SDXCR/L-11	60021	60022		25	33,0	
	E25M-T-SDXCR/L-11	60023	60024		25	33,0	
	E32M-U-SDXCR/L-11	60025	60026		32	40,6	
							11T308

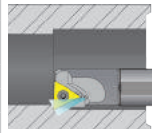
Inserts used: all DC__ series (DCMT, DCGW, DCMT, DCGX, DCGT).

E_STUC R/L Thru Coolant Integral Carbide Boring Bar Style U - Negative 3° End Cutting Edge Angle for 7° positive triangle TC__ inserts

	UPC #						
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore Length	TC__ Insert
	E07M-H-STUCR/L-06	59753	59754	6:1	7	7,14	100
	E08M-K-STUCR/L-06	59757	59758		8	8,60	
	E10M-M-STUCR/L-06	59761	59762		10	10,39	
	E10M-M-STUCR/L-11	59765	59766		10	11,59	150
	E12M-K-STUCR/L-11	59769	59770	6:1	12	14,91	
	E12M-R-STUCR/L-11	59773	59774		12	14,91	
	E16M-M-STUCR/L-11	59777	59778		16	19,04	
	E16M-S-STUCR/L-11	59781	59782		16	19,04	250
	E20M-Q-STUCR/L-16	60037	60038		20	23,6	
	E20M-S-STUCR/L-16	60039	60040		20	23,6	
	E25M-R-STUCR/L-16	60041	60042		25	30,5	200
	E25M-T-STUCR/L-16	60043	60044		25	30,5	
	E32M-U-STUCR/L-16	60045	60046		32	37,3	

Inserts used: all TC__ series (TCMT, TCGW, TCGT, TCGX).

E_STUP R/L Thru Coolant Integral Carbide Boring Bar Style U - Negative 3° End Cutting Edge Angle for 11° positive triangle TP__ inserts

	UPC #						
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore Length	TP__ Insert
	E10M-M-STUPR/L-11	59785	59786	6:1	10	11,59	150
	E12M-K-STUPR/L-11	59789	59790		12	14,91	
	E12M-R-STUPR/L-11	59793	59794		12	14,91	
	E16M-M-STUPR/L-11	59797	59798		16	19,04	
	E16M-S-STUPR/L-11	59801	59802		16	19,04	

Inserts used: all TP__ series (TPMT, TPGT, TPMR, TPGW, TPGH, TPGB, TPHT).

E_SVMC R/L Thru Coolant Integral Carbide Boring Bar Style M - Negative 50° Side Cutting Edge Angle for 7° positive 35° diamond VC__ inserts

	UPC #							VC__ Insert
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore	Length	
	E12M-K-SVMCR/L-11	59805	59806	6:1	12	14,910	130,84	110304
	E12M-R-SVMCR/L-11	59809	59810		12	14,910	205,84	
	E16M-M-SVMCR/L-11	59813	59814		16	19,044	154,06	
	E16M-S-SVMCR/L-11	59817	59818		16	19,044	254,06	

Inserts used: all VC__ series (VCMT, VCGT, VCGW, VCGX).

E_SVXP R/L Thru Coolant Integral Carbide Boring Bar Style X - Negative 5° Back Boring Cutting Edge Angle for 11° positive 35° diamond VP__ inserts

	UPC #							VP__ Insert
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore	Length	
	E16M-M-SVXPR/L-11	59861	59862	6:1	16	25,4	143,90	110304
	E16M-S-SVXPR/L-11	59865	59866		16	25,4	143,90	

Inserts used: all VP__ series (VPMT, VPGT).

E_SVQC R/L Thru Coolant Integral Carbide Boring Bar Style Q - Negative 17.5° End Cutting Edge Angle for 7° positive 35° diamond VC__ inserts

	UPC #							VC__ Insert
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore	Length	
	E16M-M-SVQCR/L-11	59821	59822	6:1	16	21,43	150	110304
	E16M-S-SVQCR/L-11	59825	59826		16	21,43	250	

Inserts used: all VC__ series (VCMT, VCGT, VCGW, VCGX).

E_SVUC R/L Thru Coolant Integral Carbide Boring Bar Style Q - Negative 3° End Cutting Edge Angle for 7° positive 35° diamond VC__ inserts

	UPC #							VC__ Insert
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore	Length	
	E16M-M-SVUCR/L-11	59829	59830	6:1	16	21,43	150	110304
	E16M-S-SVUCR/L-11	59833	59834		16	21,43	150	

Inserts used: all VC__ series (VCMT, VCGT, VCGW, VCGX).

E_SVXC R/L Thru Coolant Integral Carbide Boring Bar Style X - Negative 5° Back Boring Cutting Edge Angle for 7° positive 35° diamond VC__ inserts

	UPC #							VC__ Insert
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore	Length	
	E16M-M-SVXCR/L-11	59837	59838	6:1	16	25,40	143,90	110304
	E16M-S-SVXCR/L-11	59841	59842		16	25,40	143,90	

Inserts used: all VC__ series (VCMT, VCGT, VCGW, VCGX).

E_SVQP R/L Thru Coolant Integral Carbide Boring Bar Style Q - Negative 17.5° End Cutting Edge Angle for 11° positive 35° diamond VP__ inserts

	UPC #							VP__ Insert
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore	Length	
	E16M-M-SVQPR/L-11	59845	59846	6:1	16	21,43	150	110304
	E16M-S-SVQPR/L-11	59849	59850		16	21,43	250	

Inserts used: all VP__ series (VPMT, VPGT).

E_SVUP R/L Thru Coolant Integral Carbide Boring Bar Style U - Negative 3° End Cutting Edge Angle for 11° positive 35° diamond VP__ inserts

	UPC #							VP__ Insert
	Description	Right Hand	Left Hand	Boring Ratio	Dia.	Min. Bore	Length	
	E16M-M-SVUPR/L-11	59853	59854	6:1	16	21,43	150	110304
	E16M-S-SVUPR/L-11	59857	59858	6:1	16	21,43	250	

Inserts used: all VP__ series (VPMT, VPGT).

E_SWLC R/L Thru Coolant Integral Carbide Boring Bar Style L - Negative 5° End Cutting Edge Angle for 7° positive 80° trigon WC__ inserts

	UPC #							WC__ Insert
	Description	Right Hand	Left Hand	Boring Ratio	D	Min. Bore	Length	
	E05M-H-SWLCR/L-02	59869	59870	6:1	5	5,21	100	S20101
	E06M-H-SWLCR/L-02	59873	59874		6	6,22	100	
	E07M-H-SWLCR/L-02	59877	59878		7	8,00	100	
	E08M-K-SWLCR/L-02	59881	59882		8	8,51	125	
	E10M-M-SWLCR/L-04	59885	59886	6:1	10	10,06	150	040204
	E12M-K-SWLCR/L-04	59889	59890		12	13,97	125	
	E12M-R-SWLCR/L-04	59893	59894		12	13,97	200	
	E16M-M-SWLCR/L-04	59897	59898		16	18,80	150	
	E16M-S-SWLCR/L-04	59901	59902		16	18,80	250	
	E12M-K-SWLCR/L-06	59905	59906	6:1	12	13,97	125	06T308
	E12M-R-SWLCR/L-06	59909	59910		12	13,97	200	
	E16M-M-SWLCR/L-06	59913	59914		16	18,80	150	
	E16M-S-SWLCR/L-06	59917	59918		16	18,80	250	
	E20M-Q-SWLCR/L-06	60057	60058		20	23,6	180	
	E20M-S-SWLCR/L-06	60059	60060		20	23,6	250	
	E25M-R-SWLCR/L-06	60061	60062	6:1	25	30,5	200	080408
	E25M-T-SWLCR/L-06	60063	60064		25	30,5	300	
	E32M-U-SWLCR/L-08	60065	60066		32	38,9	350	

Inserts used: all WC__ series (WCMT, WCGT).

E_SN R/L Thru Coolant Integral Carbide Threading Bar Internal Laydown Bar for Laydown Inserts

	UPC #							Laydown Insert
	Description	Right Hand	Left Hand	Threading Ratio	Dia.	Min. Bore	Length	
	E06M-H-SNR/L-06	59921	59922	3:1	6	6,32	100	06-A60
	E07M-H-SNR/L-06	59925	59926		7	7,80	100	
	E08M-K-SNR/L-08	59929	59930		8	9,60	125	08-A60
	E10M-M-SNR/L-H11	59933	59934		10	12,70	150	
	E12M-K-SNR/L-H11	59937	59938		12	14,99	125	11-A60
	E12M-R-SNR/L-H11	59941	59942		12	14,99	200	
	E16M-M-SNR/L-H16	59945	59946	6:1	16	19,04	150	16-A60
	E16M-S-SNR/L-H16	59949	59950		16	19,04	250	

E_NE R/L Thru Coolant Integral Carbide Solid Threading & Grooving Bar-Style E- Internal DorNotch Bar for threading and grooving DorNotch inserts

	Threading	Description	UPC #		Threading Ratio*	Dia.	Min. Bore	Length	Dor-Notch Insert
			Right Hand	Left Hand					
	Grooving	E12M-K-NER/L-2	59953	59954	3:1	12	21,08	128,05	*NG-2L **NG-2R
		E12M-R-NER/L-2	59957	59958		12	21,08	203,05	
		E16M-M-NER/L-2	59961	59962		16	25,40	150	
		E16M-S-NER/L-2	59965	59966		16	25,40	250	
		E20M-Q-NER/L-2	60179	60180		20	28,6	180	
		E20M-S-NER/L-2	60181	60182		20	28,6	250	
*For right hand tool. ** For left hand tool									

*For right hand tool. ** For left hand tool

E_ADCLN R/L Thru Coolant Jet-Stream™ Carbide Boring Bar Style L- Negative 5° side & end cutting lead angle for negative 80° diamond CN__ inserts

Description	UPC #			Boring Ratio	Dia.	Min. Bore	Length	CN__ Insert
	Right Hand	Left Hand						
E25M-R-ADCLNR/L-12	60073	60074			25	32,5	200	
E25M-T-ADCLNR/L-12	60075	60076	6:1		25	32,5	300	120408
E32M-U-ADCLNR/L-12	60077	60078			32	38,9	350	

Inserts used: all CN__ series (CNMG, CNMP, CNGG, CNMX, CNMM, CNMA).

E_ADWLN R/L Thru Coolant Jet-Stream™ Carbide Boring Bar Style L - Negative 5° end & side cutting lead angle for negative 80° trigon WN__ inserts

Description	UPC #			Boring Ratio	Dia.	Min. Bore	Length	WN__ Insert
	Right Hand	Left Hand						
E25M-R-ADWLNLR/L-08	60131	60132			25	32,5	200	
E25M-T-ADWLNLR/L-08	60133	60134	6:1		25	32,5	300	080408
E32M-U-ADWLNLR/L-08	60135	60136			32	38,9	350	

Inserts used: all WN__ series (WNMG, WNMA, WNGG, WNGP).

E_ADTUN R/L Thru Coolant Jet-Stream™ Carbide Boring Bar Style U- Negative 3° end cutting lead angle for negative triangle TN__ inserts

Description	UPC #			Boring Ratio	Dia.	Min. Bore	Length	TN__ Insert
	Right Hand	Left Hand						
E25M-R-ADTUNR/L-16	60085	60086			25	32,5	200	
E25M-T-ADTUNR/L-16	60087	60088	6:1		25	32,5	300	160408
E32M-U-ADTUNR/L-16	60089	60090			32	38,9	350	

Inserts used: all TN__ series (TNMG, TNMP, TNMX, TNMA).

E-ADNE R/L Thru Coolant Jet-Stream™ Carbide Threading Bar Style E- For DorNotch Threading Inserts

Description	UPC #			Threading Ratio	Dia.	Min. Bore	Length	Dor-Notch Insert
	Right Hand	Left Hand						
E25M-R-ADNER/L-3	60183	60184			25	35,1	200	
E25M-T-ADNER/L-3	60185	60186	3:1		25	35,1	300	NG-3L* NG-3R**
E32M-U-ADNER/L-3	60187	60188			32	44,5	350	

* For right hand bar ** For left hand bar

E_ADDUN R/L Thru Coolant Jet-Stream™ Carbide Boring Bar Style U- Negative 3° end cutting lead angle for negative 55° diamond DN__ inserts

Description	UPC #			Boring Ratio	Dia.	Min. Bore	Length	DN__ Insert
	Right Hand	Left Hand						
E25M-R-ADDUNR/L-11	60099	60100		6:1	25	33,0	200	110408
E25M-T-ADDUNR/L-11	60101	60102			25	33,0	300	
E32M-U-ADDUNR/L-15	60107	60108	6:1		32	50,8	350	150602

Inserts used: all DN__ series (DNMG, DNMP, DNMX, DNMA, DNGG).

E-ADLN R/L Thru Coolant Jet-Stream™ Carbide Threading Bar Style N- for LayDown Threading Inserts

Description	UPC #			Threading Ratio	Dia.	Min. Bore	Length	Lay-Down Insert
	Right Hand	Left Hand						
E20M-Q-ADLNR/L-16	60157	60158			20	28,4	180	
E20M-S-ADLNR/L-16	60159	60160			20	28,4	250	
E25M-R-ADLNR/L-16	60161	60162		3:1	25	34,9	200	16-G60
E25M-T-ADLNR/L-16	60163	60164			25	34,9	300	
E32M-U-ADLNR/L-16	60165	60166			32	41,1	350	
E32M-U-ADLNR/L-22	60167	60168			32	44,5	350	22-N60

* For right hand bar ** For left hand bar

E_ADDPN R/L Thru Coolant Jet-Stream™ Carbide Boring Bar Style P- Negative 27.5° end cutting lead angle for negative 55° diamond DN__ inserts

Description	UPC #			Boring Ratio	Dia.	Min. Bore	Length	DN__ Insert
	Right Hand	Left Hand						
E25M-R-ADDPNR/L-11	60115	60116		6:1	25	38,1	200	110408
E25M-T-ADDPNR/L-11	60117	60118			25	38,1	300	
E32M-U-ADDPNR/L-15	60119	60120	6:1		32	44,5	350	150602

Inserts used: all DN__ series (DNMG, DNMP, DNMX, DNMA, DNGG).

E_ADVUN R/L Thru Coolant Jet-Stream™ Carbide Boring Bar Style U - Negative 3° side cutting lead angle for negative 35° diamond VN__ inserts

Description	UPC #			Boring Ratio	Dia.	Min. Bore	Length	VN__ Gage Insert
	Right Hand	Left Hand						
E32M-U-ADVUNR/L-16	60123	60124	6:1		32	45,0	350	160408

Inserts used: all VN__ series (VNMG, VNMA, VNMP, VNGG).

High Performance Quick Change Carbide Boring Bars Body & Boring Heads

for Multi Boring and Threading Operation

1 SCLC
R/L Quick Change
Boring Bar Head
With Thru Coolant



2 SDNC
R/L Quick Change
Boring Bar Head
With Thru Coolant



3 SDQC
R/L Quick Change
Boring Bar Head
With Thru Coolant



4 SDUC
R/L Quick Change
Boring Bar Head
With Thru Coolant



5 SDXC
R/L Quick Change
Boring Bar Head
With Thru Coolant



6 STUC
R/L Quick Change
Boring Bar Head
With Thru Coolant



7 SVUC
R/L Quick Change
Boring Bar Head
With Thru Coolant



8 SWLC
R/L Quick Change
Boring Bar Head
With Thru Coolant



9 SN
R/L Quick Change
Threading Bar Head
With Thru Coolant



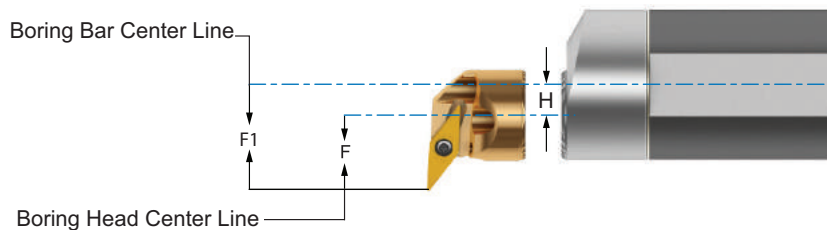
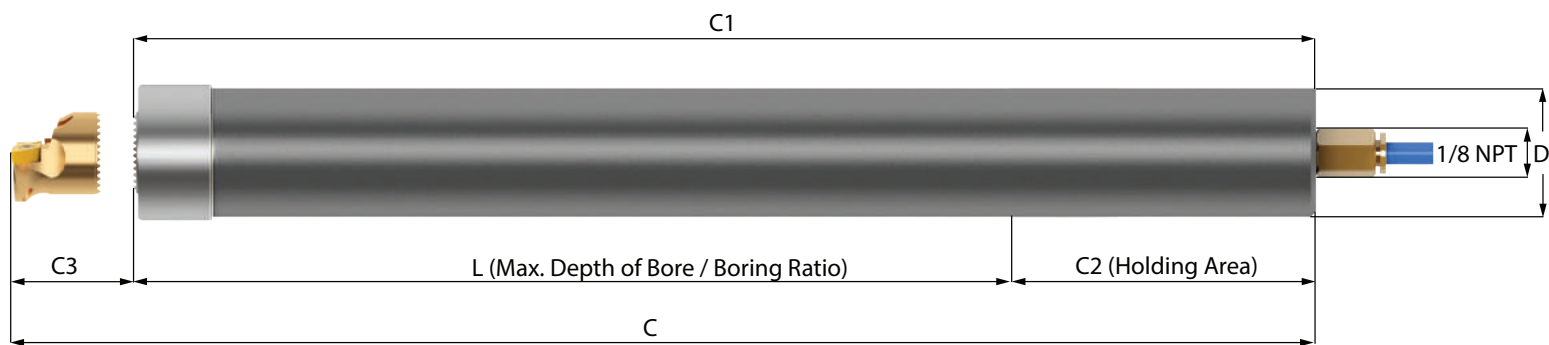
9 Interchangeable Heads



One Quick Change Carbide Body

Note: Quick Change Boring Heads will fit the Quick Change Carbide Boring Bar Body, and the Solution Tool Quick Change Boring Bar Body. For technical information see pages 34 and 35.

Thru Coolant Quick Change Carbide Boring Bar Body



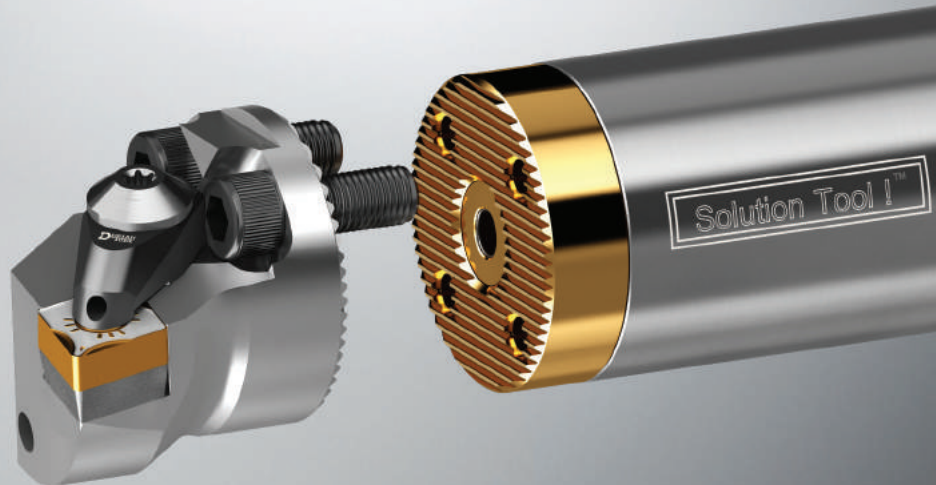
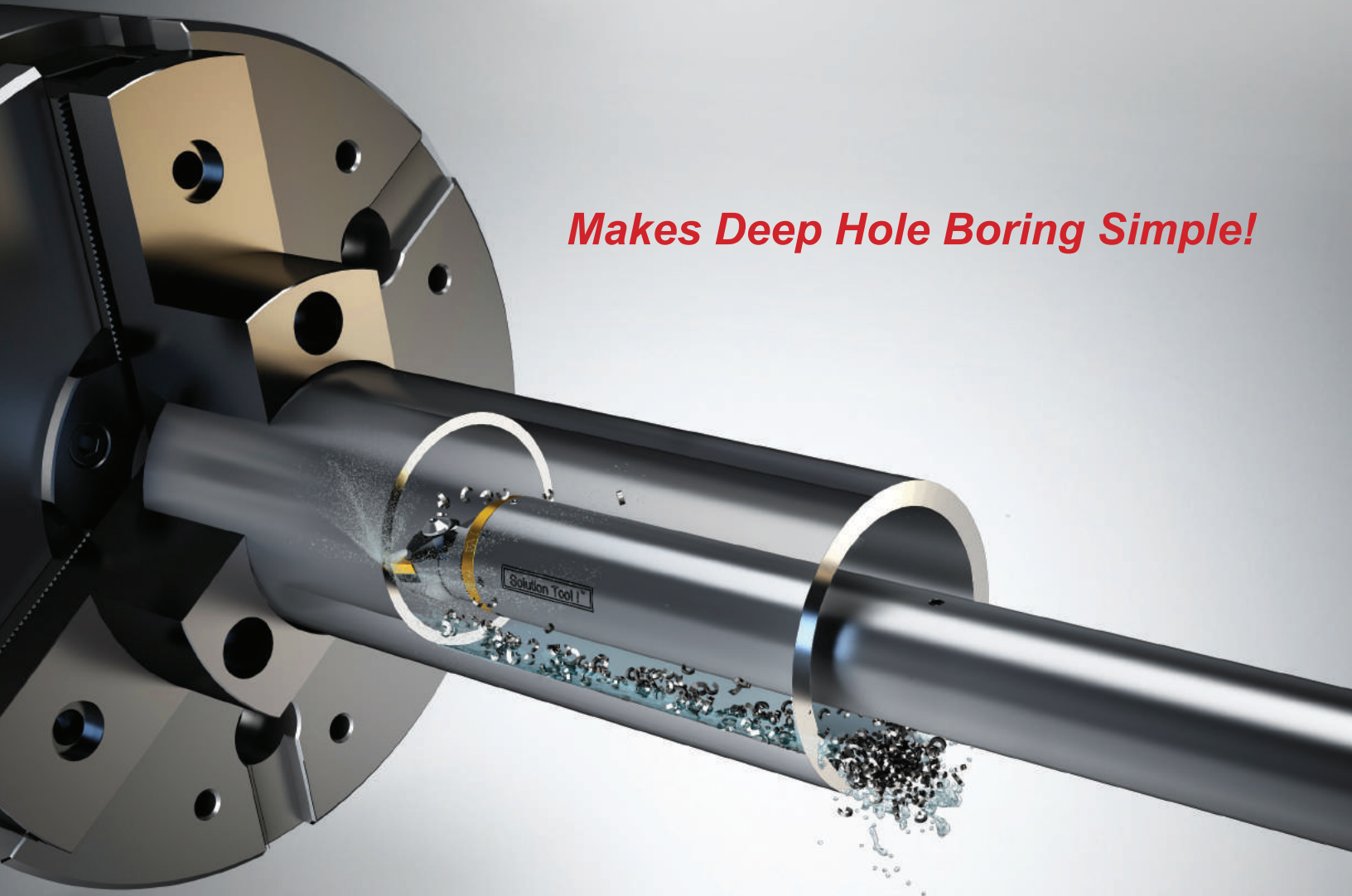
Bar Description	UPC # Neutral	Boring Ratio	Construction	Bar Dia.	Actual Min. Bore B	F1	H	L	C	C1	C2	C3	C4	Quick Change Head
AE20M-Q-QCCBB	60581	4 x Dia.	Carbide Body	20	F + H + (1/2 Bar Dia)	F1=F+H	0	80	176	156	96	20.3	59.7	DBOMH-12/20M
AE25M-R-QCCBB	60583			25			2,5	100	197	177	97	20.3	79.7	
AE20M-S-QCCBB	60582	6 x Dia.		20	Note: Leave enough room for chip evacuation		0	120	246	226	126	20.3	99.7	DBOMH-12/20M
AE25M-T-QCCBB	60584			25			2,5	150	297	277	147	20.3	129.7	
AE32M-U-QCCBB	60585			32			6	192	345	325	153	20.3	171.7	

8 x Dia. Boring Ratio can be achieved under favorable conditions.

Solution Tool!™

THE NO! VIBRATION RE-TUNABLE BORING BAR

Makes Deep Hole Boring Simple!



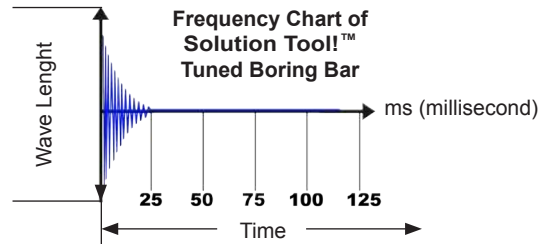
Solution Tool!™ The No! Vibration Re-Tunable Threading & Boring Bar OUTPERFORMS THE BEST



To maximize performance in deep boring operations, Solution Tool!™ is offered in 2 versions:

Steel Body: The steel body for boring depth up to 12 x Boring Bar Diameter

Carbide Body: The carbide body rigidity and stability, allows to bore at higher cutting rate and material removal, and longer depth of cut up to 14xD.



Boring Bar
TUNED - TESTED - CERTIFIED
Ready to Operate



Re-tunable Key



When to Re-tune the Bar?
Re-tune to optimize the Bar performance

How The Solution Tool!™ The NO! Vibration Re-Tunable Boring Bar Works?

The Solution Tool!™ is dynamically tuned, tested and certified to meet Dorian Tool Quality control standards and performance and ready to be used.

Re-Tuning The Solution Tool!™ Can be re-tuned on the machine to optimize the boring bar performance when:

- Extreme and exotic materials change from very soft to very hard.
- Thin wall material
- Changing the boring depth. Ex: a boring bar with a 12 x Dia. Boring Ratio will be used for a shorter boring Ratio like 6 x Dia..
- Improving performance for specific machining operations such as finishing, roughing boring, threading, and grooving.

Solution Tool!™ The No! Vibration Re-Tunable Boring Bar

BEST

Split Collar Holding System Boring Bar Holding System

Locks the boring bar at 360° on the diameter, assuring the most rigid and precise boring bar positioning *Without scarring or damaging the bar surface.*

GOOD

Split Bushing Holding System

With a solid boring bar holder

The split bushing embraces the boring bar at 360° on the diameter. The boring bar holder screws will squeeze the bushing around the boring bar *Without scarring or damaging the bar surface with precise positioning.*

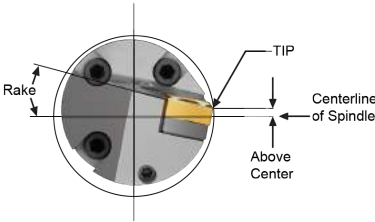
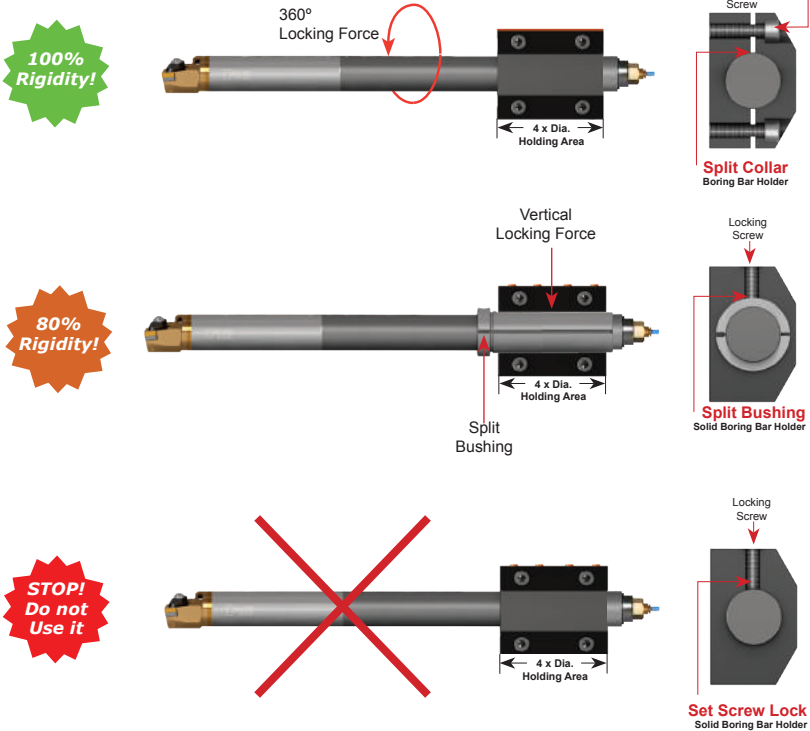
DO NOT USE IT

Set Screw Lock Holding System

Solid boring bar holder

Without bushing

Never lock the screws directly on the boring bar. Locking a screw over the boring bar will create only one point of contact causing very poor rigidity. Additionally, the *screw will damage the boring bar surface and make positioning difficult.*



Insert Center Line Set-Up

Due to the cutting pressure placed on the insert during deep boring, the bar flexes downward. Place the insert cutting edge above the center line by 10% of bar diameter to compensate bar deflection and to reduce vibration. Example: 1" inch bar 1% = .010"z

Important Recommendations

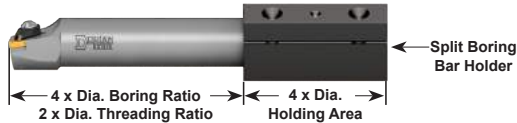
For a Roughing operation with a large depth of cut and a high feed rate, low RPM is recommended. For a Finishing operation with a small depth of cut and a low feed rate, high RPM is recommended. Minimum depth of cut is 1/2 of the insert radius. Maximum feed rate is 1/2 of the insert radius. When wrong cutting parameters are used for the specific material to be bored, and for the operation to be executed, the boring bar will not perform properly, generating poor surface finish and/or vibration.

Maximum Boring & Threading Ratio for Steel, Carbide and Solution Tool! Boring Bars

Steel Bars

4 x Dia. Boring Ratio 2 x Dia. Threading & Grooving Ratio

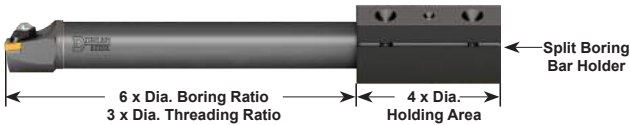
- General boring bar applications
- Roughing to Finishing



Carbide Bars

6 x Dia. Boring Ratio 3 x Dia. Threading & Grooving Ratio

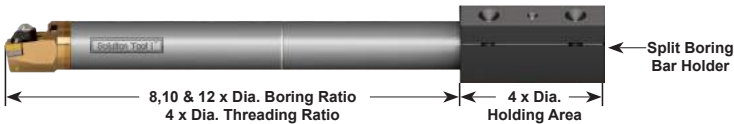
- Best for boring small holes
- Rigid for close tolerances and good surface finish
- Rigid for heavy material removal at high depth of cut and feed rate.



Solution Tool!™ (Steel Body)

8 x Dia., 10 x Dia., 12 x Dia. Boring Ratio 4 x Dia. Threading & Grooving Ratio

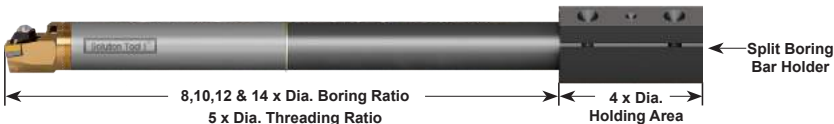
- For deep hole boring applications



Solution Tool!™ (Carbide Body)

8 x Dia., 10 x Dia., 12 x Dia., 14 x Dia. Boring Ratio 5 x Dia. Threading & Grooving Ratio

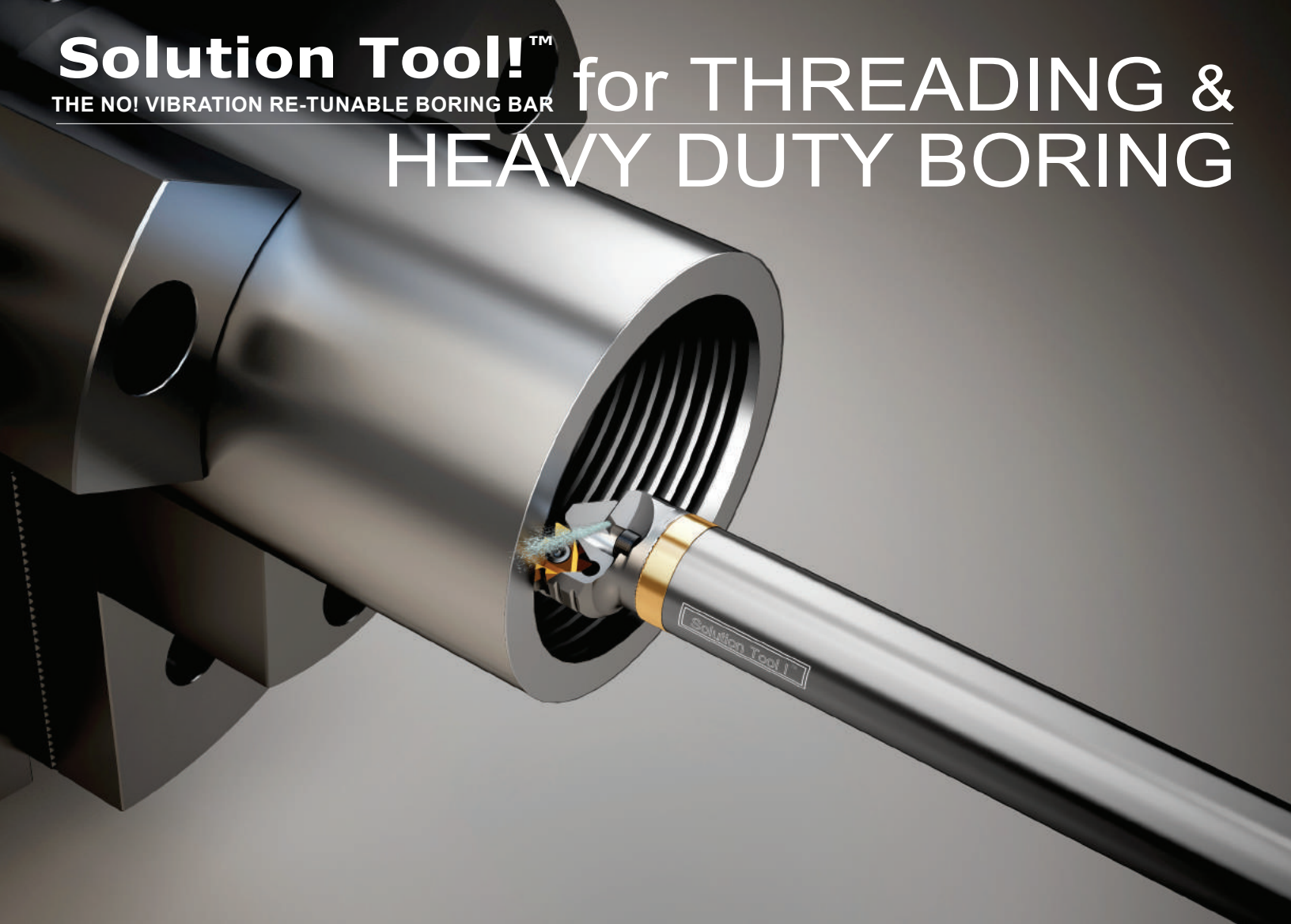
- High performance deep hole boring applications for higher material removal rate.



Solution Tool!™

THE NO! VIBRATION RE-TUNABLE BORING BAR

for THREADING & HEAVY DUTY BORING



Integral Threading & Boring

- 12mm X 6 Dia.
- 16mm X 6 Dia.



Quick Change Threading & Boring

- 20mm X 6 Dia.
- 25mm X 6 Dia.
- 32mm X 6 Dia.



Will fit all the Quick Change Boring Heads on page 34-35



Modular Jet-Stream Threading & Boring

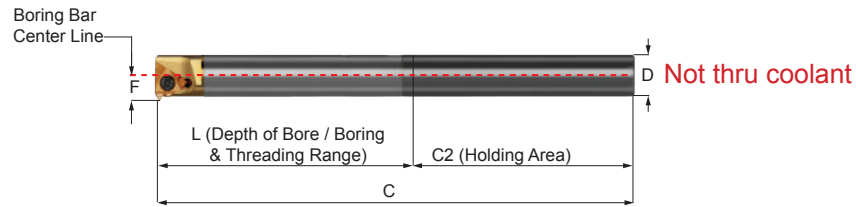
- 40mm X 6 Dia.
- 50mm X 6 Dia.
- 60mm X 6 Dia.
- 60mm X 6 Dia.
- 80mm X 6 Dia.
- 100mm X 6 Dia.



Will fit all the Modular Boring Heads on page 37-39

Solution Tool!™ The No! Vibration Re-Tunable Integral Threading & Heavy Duty Boring

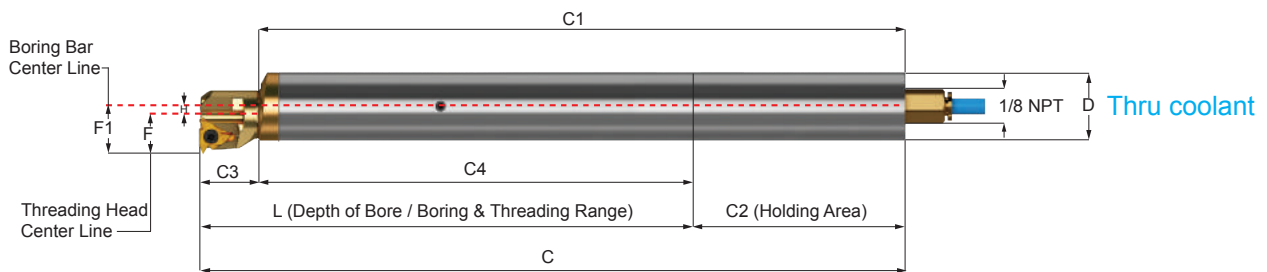
NEW
4 - 6 x Dia.



Bar Description	UPC # R.H. L.H.	Boring & Threading Ratio	Holding Ratio	Construction	Bar Dia. D	Actual Min. Bore B	F	L	C	C2	Gage Insert	Insert Screw
STM12X-06-ITBNL-11-CB	60380 60379	4 to 6 x Dia.	6 to 4	Carbide Body	12	18	9.5	48 to 72	120	72 to 48	11-A60	TS-25.4-6M2
STM16X-06-ITBNL-16-CB	60382 60381				16	22	12.5	64 to 96	160	96 to 64	16-G60	TS-35.6-9M1

Solution Tool!™ The No! Vibration Re-Tunable Quick Change Threading & Heavy Duty Boring

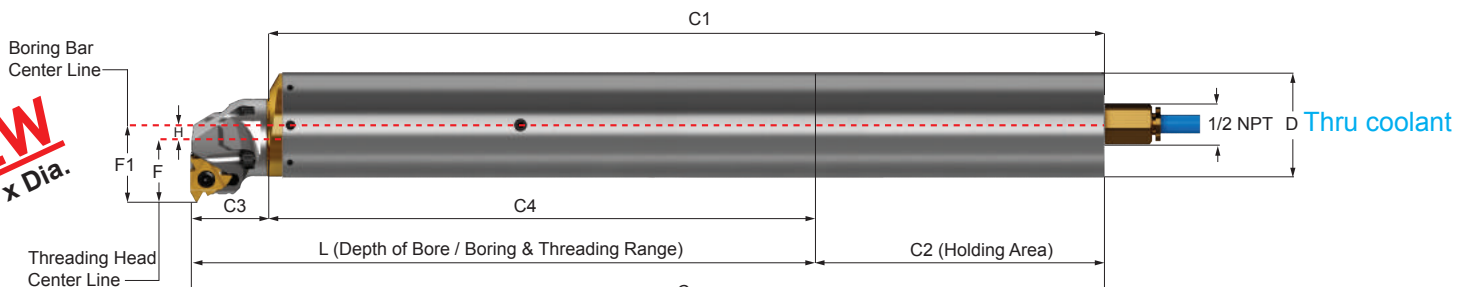
NEW
4 - 6 x Dia.



Bar Description	UPC # R.H. L.H.	Threading Boring Ratio	Holding Ratio	Construction	Bar Dia. D	Actual Min. Bore B	F1	H	L	C	C1	C2	C3	C4	Threading Head
STM20X-06-QTB120-SB	60386 -	4 to 6 x Dia.	4 to 2	Steel Body	20	$F + H + (1/2 \text{ Bar Dia})$	$F1 = F + H$	0	80 to 120	200	180	80 to 40	20	100	DBOMH-12/20M-SNR/L-16
STM25X-06-QTB150-SB	60387 -				25	Note: Leave enough room for chip evacuation		2.5	100 to 150	250	230	100 to 50	20	130	
STM32X-06-QTB200-SB	60388 -				32			6	128 to 192	320	300	128 to 64	20	172	

Solution Tool!™ The No! Vibration Re-Tunable Modular Jet-Stream Threading & Heavy Duty Boring

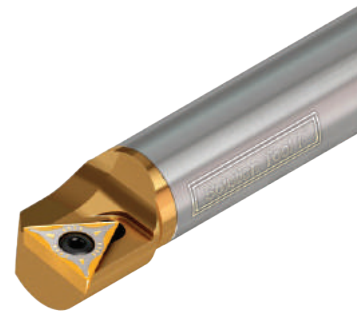
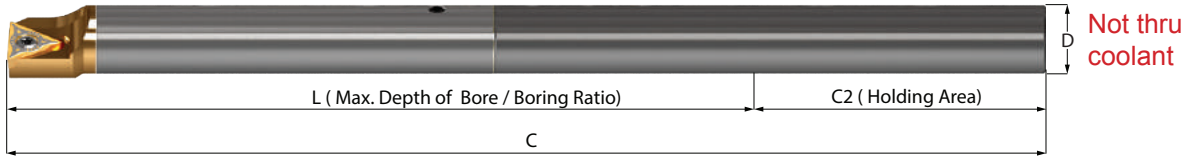
NEW
4 - 6 x Dia.



Bar Description	UPC # R.H. L.H.	Boring Ratio	Holding Ratio	Construction	Bar Dia. D	Actual Min. Bore B	F1	H	L	C	C1	C2	C3	C4	Threading Head
STM40X-06-MTB360-SB	60395	4 to 6 x Dia.	4 to 2	Steel Body	40	$B = F + H + (1/2 \text{ Bar Dia})$ Note: Leave enough room for chip evacuation	$F1 = F + H$	0	160 to 240	400	360	160 to 80	40	200	DBOMH-24/40M-ADLNR/L-16
STM50X-06-MTB450-SB	60396				50			5	200 to 300	500	460	200 to 100	40	260	DBOMH-24/40M-ADLNR/L-22
STM60X-06-MTB540-SB	60397				60			10	240 to 360	600	560	240 to 120	40	320	DBOMH-24/40M-ADLNR/L-27
STM80X-06-MTB720-SB	60398				80			20	320 to 480	800	760	320 to 160	40	440	DBOMH-24/40M-ADNER/L-3
STM100X-06-MTB900-SB	60399				100			30	400 to 600	1000	960	400 to 200	40	560	DBOMH-24/40M-ADTHOR/L-4

Solution Tool!™ The No! Vibration Re-Tunable Integral Boring Bar

Small Diameters 12mm and 16mm



- Deep hole boring made simple
- 8xD, 10xD, 12xD and 14xD boring (overhang) ratios
- For high material removal rate, high surface finish and tight tolerances
- Bars are pre-tuned at the factory to the specific boring ratio
- Bars can be Re-tuned on the machine to optimize boring performance in challenging application

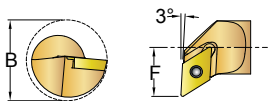
Min Bore (B) in the charts below includes chip clearance.

Actual minimum bore = $F + (1/2 \text{ Bar Dia.})$

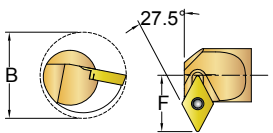
Always allow enough room for chip evacuation.



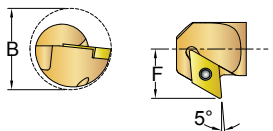
Bar Description	UPC #		Boring Ratio	Construction	Bar Dia.	Min. Bore				Gage Insert			
	R.H.	L.H.				D	B	F	C	L	C2	CC	Insert Screw
DVM10X-08-SCLCR-06-CB	59068	-	8 x Dia.	Carbide Body	10	12,00	5.59	150	80	70	060204	TS-25.45-6M2	
DVM12X-08-SCLCR/L-06-CB	59414	59415			12	14,50	7.92	168	96	72	060204	TS-25.45-6M2	
DVM16X-08-SCLCR/L-09-CB	59418	59419			16	19,50	10.31	208	128	80	09T304	TS-4.7-8M1	
DVM10X-10-SCLCR-06-CB	59070	-	10 x Dia.		10	12,00	5.59	170	100	70	060204	TS-25.45-6M2	
DVM12X-10-SCLCR/L-06-CB	59076	59077			12	14,50	7.92	192	120	72	060204	TS-25.45-6M2	
DVM16X-10-SCLCR/L-09-CB	59088	59089			16	19,50	10.31	240	160	80	09T304	09T304	
DVM10X-12-SCLCR-06-CB	59072	-	12 x Dia.		10	12,00	5.59	190	120	70	060204	TS-25.45-6M2	
DVM12X-12-SCLCR/L-06-CB	59078	59079			12	14,50	7.92	216	144	72	060204	TS-25.45-6M2	
DVM16X-12-SCLCR/L-09-CB	59090	59091			16	19,50	10.31	272	192	80	09T304	TS-4.7-8M1	
DVM10X-14-SCLCR-06-CB	59074	-	14 xDia.		10	12,00	5.59	210	140	70	060204	TS-25.45-6M2	
DVM12X-14-SCLCR/L-06-CB	59080	59081			12	14,50	7.92	240	168	72	060204	TS-25.45-6M2	
DVM16X-14-SCLCR/L-09-CB	59092	59093			16	19,50	10.31	304	224	80	09T304	TS-4.7-8M1	



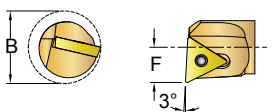
Bar Description	UPC #		Boring Ratio	Construction	Bar Dia.	Min. Bore				Gage Insert		
	R.H.	L.H.			D	B	F	C	L	C2	DC__	Insert Screw
DVM10X-08-SDUCR-07-CB	59162	-	8 x Dia.	Carbide Body	10	16	9.53	150	80	70	070204	TS-25.45-6M2
DVM12X-08-SDUCR/L-07-CB	59420	59421			12	19	11.10	168	96	72		
DVM16X-08-SDUCR/L-07-CB	59422	59423			16	22	12.70	208	128	80		
DVM10X-10-SDUCR-07-CB	59170	-	10 x Dia.		10	16	9.53	170	100	70	070204	TS-25.45-6M2
DVM12X-10-SDUCR/L-07-CB	59164	59165			12	19	11.10	192	120	72		
DVM16X-10-SDUCR/L-07-CB	59176	59177			16	22	12.70	240	160	80		
DVM10X-12-SDUCR-07-CB	59172	-	12 x Dia.		10	16	9.53	190	120	70	070204	TS-25.45-6M2
DVM12X-12-SDUCR/L-07-CB	59166	59167			12	19	11.10	216	144	72		
DVM16X-12-SDUCR/L-07-CB	59178	59179			16	22	12.70	272	192	80		
DVM10X-14-SDUCR-07-CB	59174	-	14 x Dia.		10	16	9.53	210	140	70	070204	TS-25.45-6M2
DVM12X-14-SDUCR/L-07-CB	59168	59169			12	19	11.10	240	168	72		
DVM16X-14-SDUCR/L-07-CB	59180	59181			16	22	12.70	304	224	80		



Bar Description	UPC # R.H.	Boring Ratio	Construction	Bar Dia. D	Min. Bore B	F	C	L	C2	Gage Insert DC__	Insert Screw
DVM10X-08-SDNCR-07-CB	59118	8 x Dia.	Carbide Body	10	16	9.5	150	80	70	070204	TS-25.45-6M2
DVM12X-08-SDNCR-07-CB	59126			12	20	12.7	150	80	70		
DVM16X-08-SDNCR-07-CB	59134			16	24	14.3	208	128	80		
DVM10X-10-SDNCR-07-CB	59120			10	16	9.5	170	100	70		
DVM12X-10-SDNCR-07-CB	59128	10 x Dia.		12	20	12.7	192	120	72	070204	TS-25.45-6M2
DVM16X-10-SDNCR-07-CB	59136			16	24	14.3	240	160	80		
DVM10X-12-SDNCR-07-CB	59122			10	16	9.5	190	120	70		
DVM12X-12-SDNCR-07-CB	59130			12	20	12.7	190	120	70		
DVM16X-12-SDNCR-07-CB	59138	12 x Dia.		16	24	14.3	272	192	80	070204	TS-25.45-6M2
DVM10X-14-SDNCR-07-CB	59124			10	16	9.5	210	140	70		
DVM12X-14-SDNCR-07-CB	59132			12	20	12.7	240	168	72		
DVM16X-14-SDNCR-07-CB	59140			16	24	14.3	304	224	80		



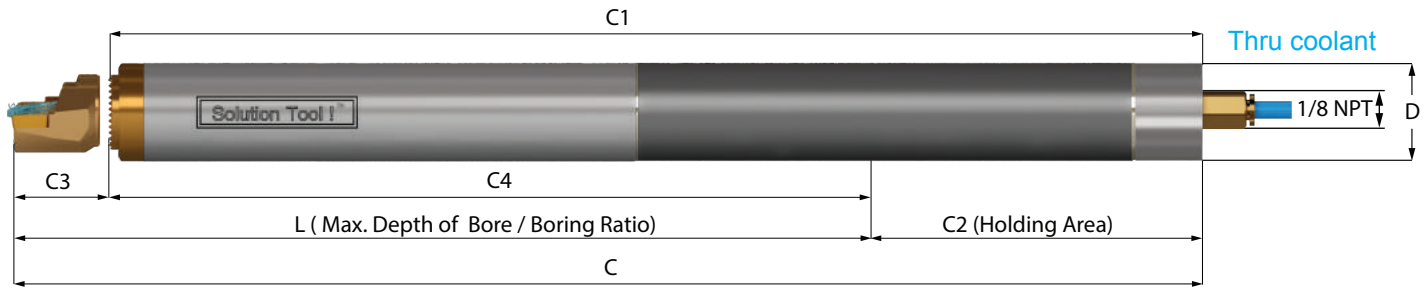
Bar Description	UPC # R.H.	Boring Ratio	Construction	Bar Dia. D	Min. Bore B	F	C	L	C2	Gage Insert DC__	Insert Screw
DVM10X-08-SDXCR-07-CB	59206	8 x Dia.	Carbide Body	10	17	9.53	150	80	70	070204	TS-25.45-6M2
DVM12X-08-SDXCR-07-CB	59214			12	21	11.10	168	96	72		
DVM16X-08-SDXCR-07-CB	59222			16	22	12.70	208	128	80		
DVM10X-10-SDXCR-07-CB	59208			10	17	9.53	170	100	70		
DVM12X-10-SDXCR-07-CB	59216	10 x Dia.		12	21	11.10	192	120	72	070204	TS-25.45-6M2
DVM16X-10-SDXCR-07-CB	59224			16	22	12.70	240	160	80		
DVM10X-12-SDXCR-07-CB	59210			10	17	9.53	190	120	70		
DVM12X-12-SDXCR-07-CB	59218			12	21	11.10	216	144	72		
DVM16X-12-SDXCR-07-CB	59226	12 x Dia.		16	22	12.70	272	192	80	070204	TS-25.45-6M2
DVM10X-14-SDXCR-07-CB	59212			10	17	9.53	210	140	70		
DVM12X-14-SDXCR-07-CB	59220			12	21	11.10	240	168	72		
DVM16X-14-SDXCR-07-CB	59228			16	22	12.70	304	224	80		



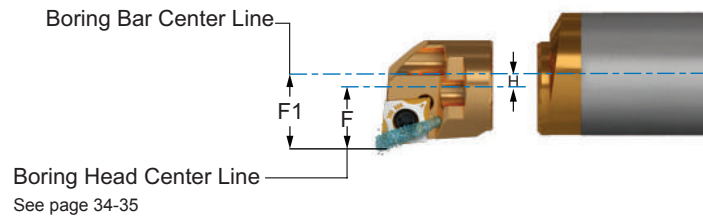
Bar Description	UPC #		Boring Ratio	Construction	Bar Dia.	Min. Bore				Gage Insert		
	R.H.	L.H.			D	B	F	C	L	C2	TC__	Insert Screw
DVM10X-08-STUCR-11-CB	59290	-	8 x Dia.	Carbide Body	10	12	5.59	150	80	70	110204	TS-25.45-6M2
DVM12X-08-STUCR/L-11-CB	59424	59425			12	16	7.92	168	96	72		
DVM16X-08-STUCR/L-11-CB	59426	59427			16	20	10.31	208	128	80		
DVM10X-10-STUCR-11-CB	59292	-	10 x Dia.		10	12	5.59	170	100	70	110204	TS-25.45-6M2
DVM12X-10-STUCR/L-11-CB	59306	59307			12	16	7.92	192	120	72		
DVM16X-10-STUCR/L-11-CB	59312	59313			16	20	10.31	240	160	80		
DVM10X-12-STUCR-11-CB	59294	-	12 x Dia.		10	12	5.59	190	120	70	110204	TS-25.45-6M2
DVM12X-12-STUCR/L-11-CB	59308	59309			12	16	7.92	216	144	72		
DVM16X-12-STUCR/L-11-CB	59314	59315			16	20	10.31	272	192	80		
DVM10X-14-STUCR-11-CB	59296	-	14 x Dia.		10	12	5.59	210	140	70	110204	TS-25.45-6M2
DVM12X-14-STUCR/L-11-CB	59310	59311			12	16	7.92	240	168	72		
DVM16X-14-STUCR/L-11-CB	59316	59317			16	20	10.31	304	224	80		

Solution Tool!™ The No! Vibration Re-Tunable Quick Change Boring Bar

Medium Diameters 20mm, 25mm and 32mm

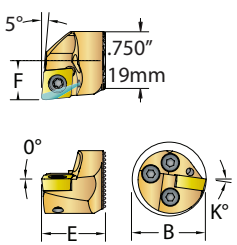
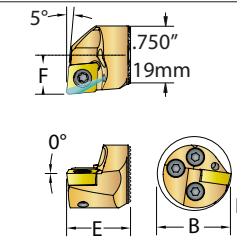
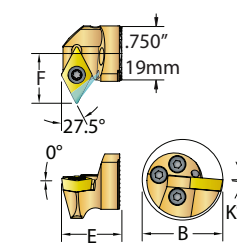
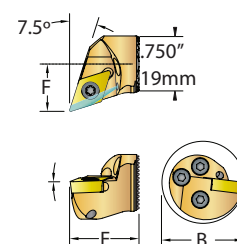
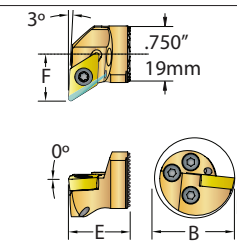
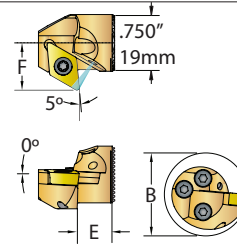


- Deep hole boring made simple
- 8xD, 10xD, 12xD and 14xD boring (overhang) ratios
- For high material removal rate, high surface finish and tight tolerances
- Bars are pre-tuned at the factory to the specific boring ratio
- Bars can be Re-tuned on the machine to optimize boring performance in challenging application

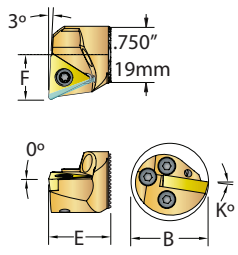


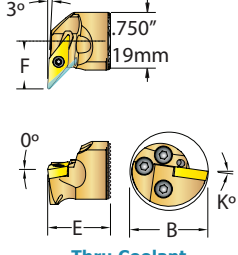
Bar Description	UPC # Neutral	Boring Ratio	Holding Ratio	Construction	Bar Dia. D	Actual Min. Bore B	F1	H	L	C	C1	C2	C3	C4	Quick Change Head	Coolant Attachment Thread
DVM20X-08-MQBBN-0240-SB	59430	8 x Dia.	4	Steel Body	20	B= F + H + (1/2 Bar Dia) Note: Leave enough room for chip evacuation	F1=F+H	0	160	240	220	80	20.3	139.7	DBOMH-12/20M	1/8"-27 NPT
DVM20X-08-MQBBN-0240-CB	60366			Carbide Body	20			0	160	240	220	80	20.3	139.7		
DVM25X-08-MQBBN-0300-SB	59345			Steel Body	25			2.5	200	300	280	100	20.3	179.7		
DVM25X-08-MQBBN-0300-CB	60368			Carbide Body	25			2.5	200	300	280	100	20.3	179.7		
DVM32X-08-MQBBN-0384-SB	59346			Steel Body	32			6	256	384	364	128	20.3	235.7		
DVM32X-08-MQBBN-0384-CB	60370			Carbide Body	32			6	256	384	364	128	20.3	235.7		
DVM20X-10-MQBBN-0280-SB	59347	10 x Dia.	4	Steel Body	20	B= F + H + (1/2 Bar Dia) Note: Leave enough room for chip evacuation	F1=F+H	0	200	280	260	80	20.3	179.7	DBOMH-12/20M	1/8"-27 NPT
DVM20X-10-MQBBN-0280-CB	60367			Carbide Body	20			0	200	280	260	80	20.3	179.7		
DVM25X-10-MQBBN-0350-SB	59431			Steel Body	25			2.5	250	350	330	100	20.3	229.7		
DVM25X-10-MQBBN-0350-CB	60369			Carbide Body	25			2.5	250	350	330	100	20.3	229.7		
DVM32X-10-MQBBN-0448-SB	59472			Steel Body	32			6	320	448	428	128	20.3	299.7		
DVM32X-10-MQBBN-0448-CB	60371			Carbide Body	32			6	320	448	428	128	20.3	299.7		
DVM20X-12-MQBBN-0320-SB	59363	12 x Dia.	4	Steel Body	20	B= F + H + (1/2 Bar Dia) Note: Leave enough room for chip evacuation	F1=F+H	0	240	320	300	80	20.3	219.7	DBOMH-12/20M	1/8"-27 NPT
DVM20X-12-MQBBN-0320-CB	59348			Carbide Body	20			0	240	320	300	80	20.3	219.7		
DVM25X-12-MQBBN-0400-SB	59364			Steel Body	25			2.5	300	400	380	100	20.3	279.7		
DVM25X-12-MQBBN-0400-CB	59395			Carbide Body	25			2.5	300	400	380	100	20.3	279.7		
DVM32X-12-MQBBN-0512-SB	59365			Steel Body	32			6	384	512	492	128	20.3	363.7		
DVM32X-12-MQBBN-0512-CB	59397			Carbide Body	32			6	384	512	492	128	20.3	363.7		
DVM20X-14-MQBBN-0360-CB	59349	14 x Dia.	4	Carbide Body	20	B= F + H + (1/2 Bar Dia) Note: Leave enough room for chip evacuation	F1=F+H	0	280	360	340	80	20.3	259.7	DBOMH-12/20M	1/8"-27 NPT
DVM25X-14-MQBBN-0450-CB	59396			Carbide Body	25			2.5	350	450	430	100	20.3	329.7		
DVM32X-14-MQBBN-0576-CB	59398			Carbide Body	32			6	448	576	556	128	20.3	427.7		

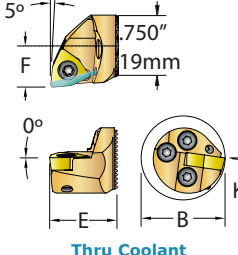
Boring Heads for Solution Tool!™ Quick Change Boring Bar 20 to 32mm

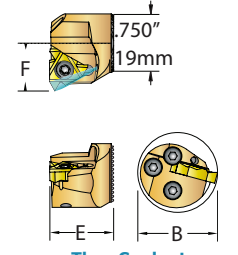
Positive Boring Head Specification	Head Description	UPC #		Reference	B	E	F	K°	Gage	Insert Torx	Torx Key	Locking Head
		R.H.	L.H.	Bar Dia.					Insert			Screw
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-12/20M-SCLCR/L-3	60225	60226	20	26	21	13	8°	CC_W 09T308	TS-4.7-10M1	T-15	QCHLS-3MCS
				25	31	21	13	8°				
				32	38	21	13	8°				
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-12/20M-SCLPR-3	60259	-	20	26	21	15	8°	DC_W 09T308	TS-4.7-10M1	T-15	QCHLS-3MCS
				25	31	21	15	8°				
				32	38	21	15	8°				
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-12/20M-SDNCR/L-3	60229	60230	20	30	21	17	5°	DC_W 11T308	TS-4.7-10M1	T-15	QCHLS-3MCS
				25	35	21	17	5°				
				32	42	21	17	5°				
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-12/20M-SDQCR/L-2	60251	60252	20	29	21	13	7°	DC_W 070204	TS-25.45-6M2	T-8	QCHLS-3MCS
				25	34	21	13	7°				
				32	41	21	13	7°				
	DBOMH-12/20M-SDQCR/L-3	60231	60232	20	29	21	16	7°	DC_W 11T308	TS-4.7-10M1	T-15	QCHLS-3MCS
				25	34	21	16	7°				
				32	41	21	16	7°				
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-12/20M-SDUCR/L-2	60247	60248	20	26	21	13	6°	DC_W 070204	TS-25.45-6M2	T-8	QCHLS-3MCS
				25	27	21	13	6°				
				32	38	21	13	6°				
	DBOMH-12/20M-SDUCR/L-3	60227	60228	20	26	21	16	6°	DC_W 11T308	TS-4.7-10M1	T-15	QCHLS-3MCS
				25	32	21	16	6°				
				32	39	21	16	6°				
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-12/20M-SDXCR/L-3	60233	60234	20	29	12	16	5°	DC_W 11T308	TS-4.7-10M1	T-15	QCHLS-3MCS
				25	35	12	16	5°				
				32	41	12	16	5°				

Boring Heads for Solution Tool!™ Quick Change Boring Bar 20 to 32mm

Positive Boring Head Specification	Head Description	UPC #		Reference Bar Dia.	B	E	F	K°	Gage Insert	Insert Torx	Torx Key	Locking Head Screw
		R.H.	L.H.									
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-12/20M-STUCR/L-2	60255	60256	20	26	21	13	6°	TC_W 110204	TS-25.45-6M2	T-8	QCHLS-3MCS
				25	31	21	13	6°				
				32	38	21	13	6°				
	DBOMH-12/20M-STUCR/L-3	60235	60236	20	28	21	15	9°	TC_W 16T308	TS-4.7-10M1	T-15	QCHLS-3MCS
				25	33	21	15	9°				
				32	40	21	15	9°				

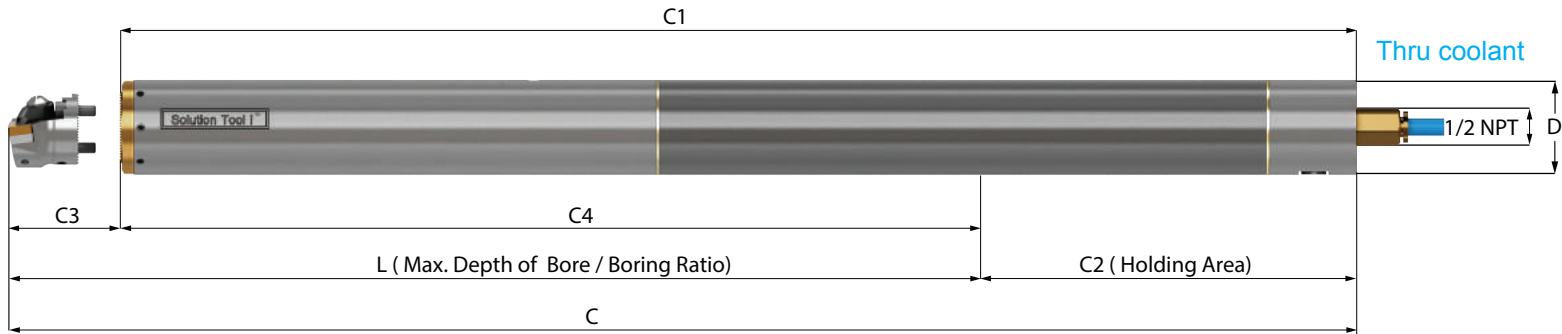
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-12/20M-SVUCR/L-2	60237	60238	20	29	21	16	8°	VC_W 110304	TS-25.45-8M2	T-8	QCHLS-3MCS
				25	34	21	16	8°				
				32	41	21	16	8°				

 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-12/20M-SWLCR/L-3	60241	60242	20	26	21	13	8°	WC_W 06T308	TS-4.7-10M1	T-15	QCHLS-3MCS
				25	31	21	13	8°				
				32	38	21	13	8°				

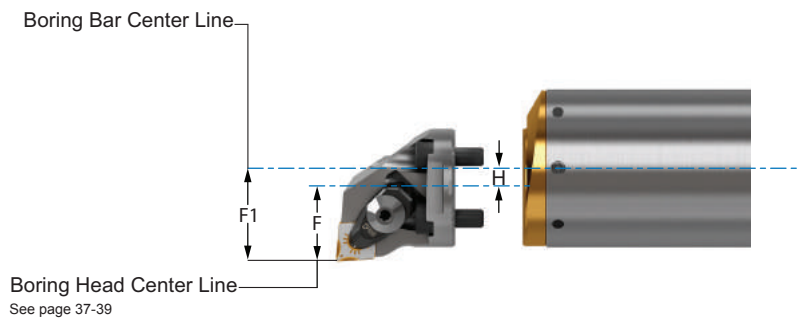
Threading Head Specification	Head Description	UPC #		Reference Bar Dia.	B	E	F	Gage Insert	Insert Torx	Torx Key	Locking Head Screw
		R.H.	L.H.								
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-12/20M-SNR/L-16	60243	60244	20	29	21	16	Laydown 16-A60	TS-35.6-9M1	T-15	QCHLS-3MCS
				25	34	21	16				
				32	41	21	16				

Solution Tool!™ The No! Vibration Re-Tunable Modular Jet-Stream™ Boring Bar

Diameters 40mm, 50mm, 60mm, 80mm and 100mm



- Deep hole boring made simple
- 8xD, 10xD and 12xD boring (overhang) ratios
- For high material removal rate, high surface finish and tight tolerances
- Bars are pre-tuned at the factory to the specific boring ratio
- Bars can be Re-tuned on the machine to optimize boring performance in challenging applications

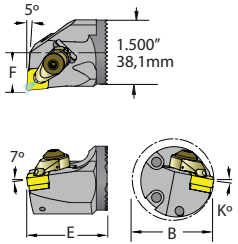
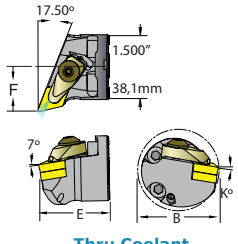
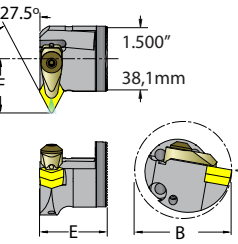
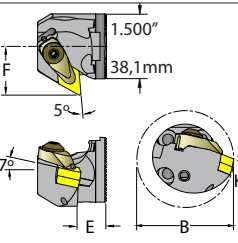
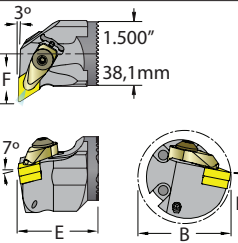
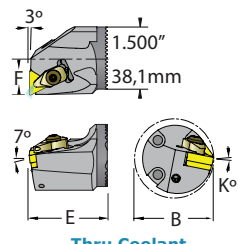


See page 37-39

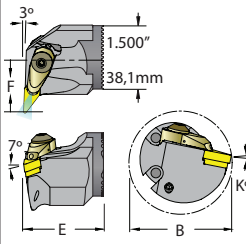


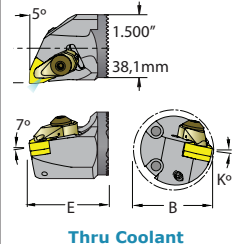
Bar Description	UPC # Neutral	Boring Ratio	Holding Ratio	Construction	Bar Dia. D	Actual Min. Bore B	F1	H	L	C	C1	C2	C3	C4	Modular Head	Coolant Attachment Thread
ASM40X-8-DVI-MBBB-0480-SB	59328	8 x Dia.	4	Steel Body	40	B = F + H + (1/2 Bar Dia) Note: Leave enough room for chip evacuation	F1=F+H	0	320	480	440	160	40	280	DBOMH24/40_A_R/L	1/4"-18 NPT
ASM50X-8-DVI-MBBB-0600-SB	59329			Steel Body	50			5	400	600	560	200	40	360		
ASM60X-8-DVI-MBBB-0720-SB	59330			Steel Body	60			10	480	720	680	240	40	440		
ASM80X-8-DVI-MBBB-0960-SB	59331			Steel Body	80			20	640	960	920	320	40	600		
ASM100X-8-DVI-MBBB-1200-SB	59332			Steel Body	100			30	800	1200	1160	400	40	760		
ASM40X-10-DVI-MBBB-0560-SB	59440	10 x Dia.	4	Steel Body	40	B = F + H + (1/2 Bar Dia) Note: Leave enough room for chip evacuation	F1=F+H	0	400	560	520	160	40	360	DBOMH24/40_A_R/L	1/4"-18 NPT
ASM50X-10-DVI-MBBB-0700-SB	59441			Steel Body	50			5	500	700	660	200	40	460		
ASM60X-10-DVI-MBBB-0840-SB	59442			Steel Body	60			10	600	840	800	240	40	560		
ASM80X-10-DVI-MBBB-1120-SB	59443			Steel Body	80			20	800	1120	1080	320	40	760		
ASM100X-10-DVI-MBBB-1400-SB	59444			Steel Body	100			30	1000	1400	1360	400	40	960		
ASM40X-12-DVI-MBBB-0640-SB	59453	12 x Dia.	4	Steel Body	40	B = F + H + (1/2 Bar Dia) Note: Leave enough room for chip evacuation	F1=F+H	0	480	640	600	160	40	440	DBOMH24/40_A_R/L	1/4"-18 NPT
ASM50X-12-DVI-MBBB-0800-SB	59454			Steel Body	50			5	600	800	760	200	40	560		
ASM60X-12-DVI-MBBB-0960-SB	59455			Steel Body	60			10	720	960	920	240	40	680		
ASM80X-12-DVI-MBBB-1280-SB	59456			Steel Body	80			20	960	1280	1240	320	40	920		
ASM100X-12-DVI-MBBB-1600-SB	59457			Steel Body	100			30	1200	1600	1560	400	40	1160		
ASM40X-14-DVI-MBBB-0720-CB	59466	14 x Dia.	4	Carbide Body	40	B = F + H + (1/2 Bar Dia) Note: Leave enough room for chip evacuation	F1=F+H	0	560	720	680	160	40	520	DBOMH24/40_A_R/L	1/4"-18 NPT
ASM50X-14-DVI-MBBB-0900-CB	59467			Carbide Body	50			5	700	900	860	200	40	660		
ASM60X-14-DVI-MBBB-1080-CB	59468			Carbide Body	60			10	840	1080	1040	240	40	800		
ASM80X-14-DVI-MBBB-1440-CB	59469			Carbide Body	80			20	1120	1440	1400	320	40	1080		
ASM100X-14-DVI-MBBB-1800-CB	59470			Carbide Body	100			30	1400	1800	1760	400	40	1360		

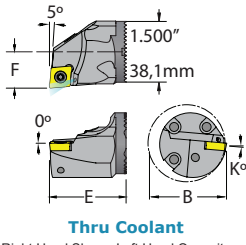
Boring Heads for Solution Tool!™ Modular Jet-Stream™ Boring Bar 40 to 100mm

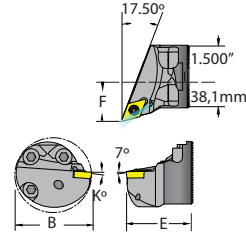
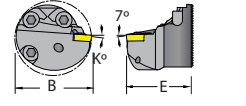
Negative Boring Head Specification	Head Description	UPC #		Reference Bar Dia.	B	E	F	K°	Gage Insert	Seat	Seat Screw	Jet-Stream™ Clamp	Clamp Screw	Locking Head Screw for	
		R.H.	L.H.											40mm Boring Bar	50 to 100mm Boring Bar
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADCLNR/L-4	59507	59508	40/100	45	40	24	11°	CN_W 120408	DC-432	TS-5.8-10M1	JSLC-HPCTW-4N	JSCS-04	MHLS-5MCS	MHLS-6MCS
	DBOMH-24/40M-ADCLNR/L-5	59509	59510	40/100	45	40	29	11°	CN_W 160612	DC-533	TS-5.8-10M1	JSLC-HPC5	JSCS-04		
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADDQNR/L-15	59478	59479	40/100	48	41	29	11°	DN_W 150608	DD-422	TS-5.8-10M2	JSLC-HPD4	JSCS-04	MHLS-5MCS	MHLS-6MCS
	DBOMH-24/40M-ADDNNR-15-1250	59568	-	40/100	60	45	32	10°	DN_W 150608	DD-422	TS-5.8-10M2	JSLC-HPD4	JSCS-04	MHLS-5MCS	MHLS-6MCS
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADDNNR-15-1750	59569	-	40/100	72	45	45								
	DBOMH-24/40M-ADDNNR-15-2250	59570	-	40/100	85	45	57								
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADDXNR-15-1250	59555	-	40/100	60	18	32	10°	DN_W 150608	DD-422	TS-5.8-10M2	JSLC-HPD4	JSCS-04	MHLS-5MCS	MHLS-6MCS
	DBOMH-24/40M-ADDXNR-15-1750	59559	-	40/100	72	18	45								
	DBOMH-24/40M-ADDXNR-15-2250	59560	-	40/100	85	18	57								
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADDUNR/L-15	59511	59512	40/100	57	40	29	11°	DN_W 150608	DD-422	TS-5.8-10M2	JSLC-HPD4	JSCS-04	MHLS-5MCS	MHLS-6MCS
	DBOMH-24/40M-ADTUNR/L-3	59515	59516	40/100	52	40	23	11°	TN_W 160408	DT-322	TS-4.7-10M1	JSLC-HPDT3-BR/L	JSCS-03	MHLS-5MCS	MHLS-6MCS
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADTUNR/L-4	59517	59518	40/100	52	40	26	11°	TN_W 220408	DT-432	TS-5.8-10M1	JSLC-HPTW-4R/L	JSCS-04		

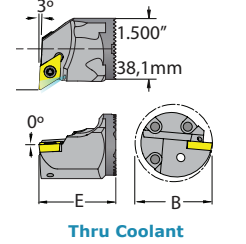
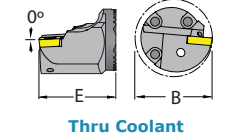
Boring Heads for Solution Tool!™ Modular Jet-Stream™ Boring Bar 40 to 100mm

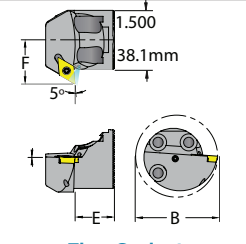
Negative Boring Head Specification	Head Description	UPC #		Reference Bar Dia.	B	E	F	K°	Gage Insert	Seat	Seat Screw	Jet-Stream™ Clamp	Clamp Screw	Locking Head Screw for	
		R.H.	L.H.											40mm Boring Bar	50 to 100mm Boring Bar
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADVUNR/L-3	59521	59522	40/100	64	40	33	11°	VN_W 160408	DV-322	TS-4.7-10M1	JSLC-HPV3	JSCS-04	MHLS-5MCS	MHLS-6MCS

 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADWLNR/L-4	59525	59526	40/100	48	40	24	11°	WN_W 080408	DW-432	TS-5.8-10M1	JSLC-HPTW-4R/L	JSCS-04	MHLS-5MCS	MHLS-6MCS
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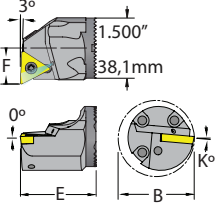
Positive Boring Head Specification	Head Description	UPC #		Reference Bar Dia.	B	E	F	K°	Gage Insert	Insert Screw	Torx Key	Locking Head Screw for	
		R.H.	L.H.									40mm Boring Bar	50 to 100mm Boring Bar
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ASCLCR/L-4	59529	59530	40/100	45	40	23	5°	CC_W 120408	TS-5.8-10M1	T-20	MHLS-5MCS	MHLS-6MCS

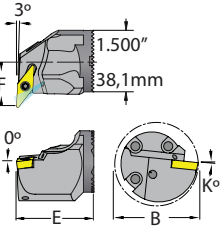
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ASDQCR/L-3	59474	59475	40/100	54	41	27	4°	DC_W 11T308	TS-4.7-10M1	T-15	MHLS-5MCS	MHLS-6MCS
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADSQCR/L-4	59389	59390	40/100	54	41	27	4°	DC_W 150408	TS-5.8-10M1	T-20		

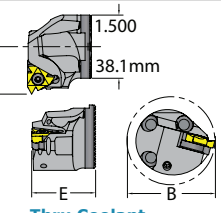
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ASDUCR/L-3	59533	59534	40/100	57	40	26	4°	DC_W 11T308	TS-4.7-8M1	T-15	MHLS-5MCS	MHLS-6MCS
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ASDUCR/L-4	59535	59536	40/100	57	40	26	4°	DC_W 150408	TS-5.8-10M1	T-20		

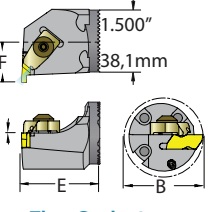
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ASDXCR/L-3	59538	59537	40/100	57	25	26	4°	DC_W 11T308	TS-4.7-10M1	T-15	MHLS-5MCS	MHLS-6MCS
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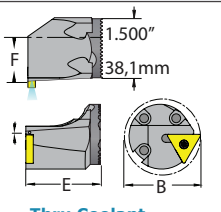
Boring Heads for Solution Tool!™ Modular Jet-Stream™ Boring Bar 40 to 100mm

Positive Boring Head Specification	Head Description	UPC #		Reference Bar Dia.	B	E	F	K°	Gage Insert	Insert Screw	Torx Key	Locking Head Screw for	
		R.H.	L.H.									40mm Boring Bar	50 to 100mm Boring Bar
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ASTUCR/L-3	59539	59540	40/100	57	40	23	5°	TC_W 16T308	TS-4.7-8M1	T-15	MHLS-5MCS	MHLS-6MCS
	DBOMH-24/40M-ASTUCR/L-4	59541	59542	40/100	57	40	23	5°	TC_W 220408	TS-5.8-10M1	T-20		

 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ASVUCR/L-3	59545	59546	40/100	64	40	30	6°	VC_W 160408	TS-4.7-8M1	T-15	MHLS-5MCS	MHLS-6MCS
--	-------------------------	-------	-------	--------	----	----	----	----	-------------	------------	------	-----------	-----------

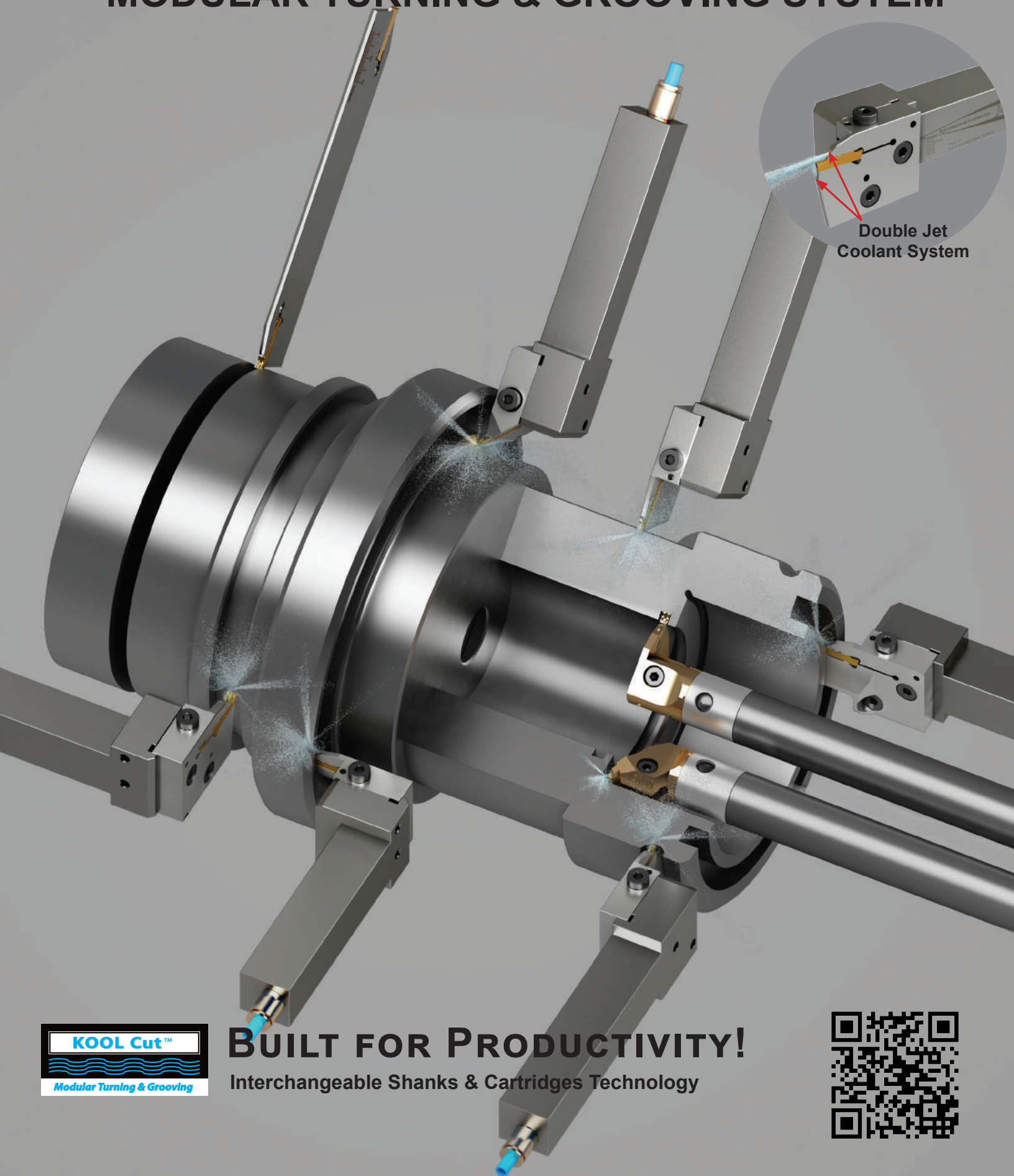
Laydown Threading Head Specification	Head Description	UPC #		Reference Bar Dia.	B	E	F	Gage Insert	Seat	Seat Screw	Chip Flush Nozzle	Locking Head Screw for	
		R.H.	L.H.									40mm Boring Bar	50 to 100mm Boring Bar
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADLNR/L-16	59549	59550	40/100	48	38	25	Laydown 16-A60	GXE/I-16	TS-35.6-14M1	JSPN-M6	MHLS-5MCS	MHLS-6MCS
	DBOMH-24/40M-ADLNR/L-22	59553	59554	40/100	51	38	29	Laydown 22-N60	NXE/I-22	TS-45.75-15M1	JSPN-M6		
	DBOMH-24/40M-ADLNR/L-27	59551	59552	40/100	64	38	32	Laydown 27-Q60	VXE/I-27	TS-5.8-22M1	JSPN-M6	MHLS-5MCS	MHLS-6MCS

DorNotch Threading Head Specification	Head Description	UPC #		Reference Bar Dia.	B	E	F	Gage Insert	Jet-Stream™ Clamp	Clamp Screw	Chip Flush Nozzle	Locking Head Screw for	
		R.H.	L.H.									40mm Boring Bar	50 to 100mm Boring Bar
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADNER/L-3	59557	59558	40/100	51	40	26	DorNotch NG-3L* NG-3R**	JSLC-HP73* JSLC-HP72**	JSCS-04	JSPN-M6	MHLS-5MCS	MHLS-6MCS

On edge Threading Head Specification	Head Description	UPC #		Reference Bar Dia.	B	E	F	Gage Insert	Jet-Stream™ Clamp	Clamp Screw	Chip Flush Nozzle	Locking Head Screw for	
		R.H.	L.H.									40mm Boring Bar	50 to 100mm Boring Bar
 Thru Coolant Right Hand Shown Left Hand Opposite	DBOMH-24/40M-ADTHOR/L-4	59561	59562	40/100	57	40	29	TN_W 220408	GTS-2	T-20	JSPN-M6	MHLS-5MCS	MHLS-6MCS

KOOL CUT™

MODULAR TURNING & GROOVING SYSTEM

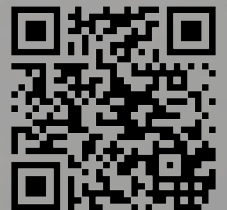


Double Jet
Coolant System

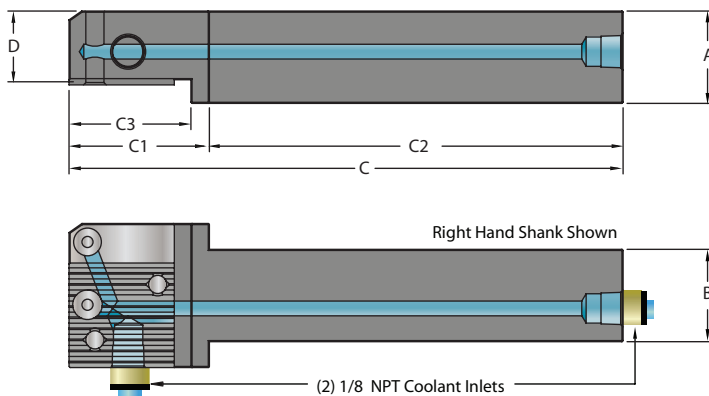


BUILT FOR PRODUCTIVITY!

Interchangeable Shanks & Cartridges Technology

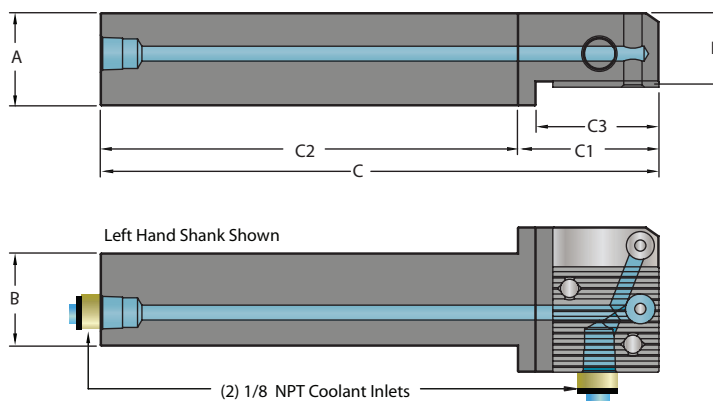


Right Hand KOOL Cut™ Modular Turning and Grooving Straight Tool holder Style Shank



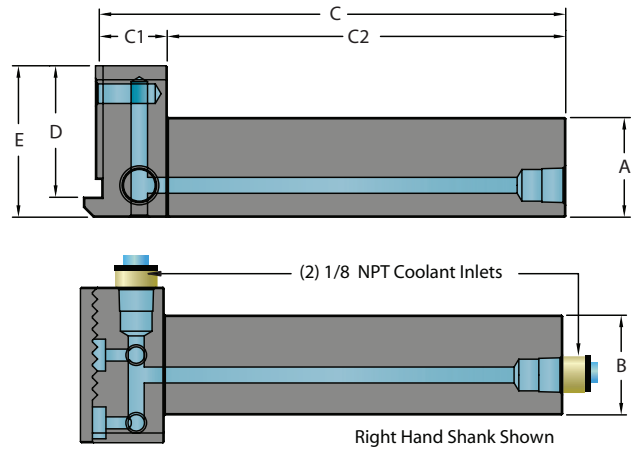
R.H. Shank Description	UPC #	Shank Size	A	B	D	C	C1	C2	C3
ADDN-MTR-2020-C	61975	20mm	20	20	15	127	38	89	33
ADDN-MTR-2525-D	61976	25mm	25	25	20	140	38	102	33
ADDN-MTR-3232-E	61977	32mm	32	32	27	152	38	114	33

Left Hand KOOL Cut™ Modular Turning and Grooving Straight Tool holder Style Shank



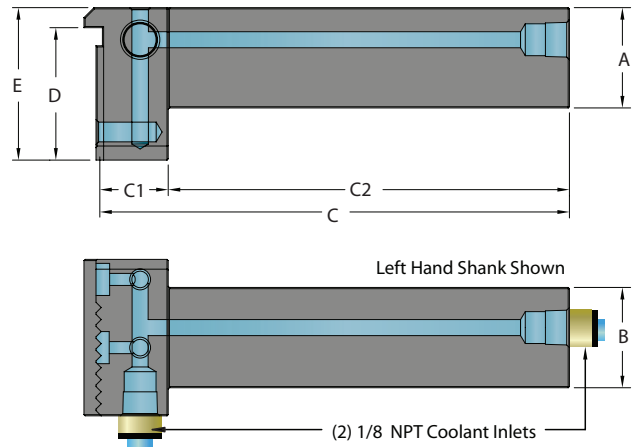
L.H. Shank Description	UPC #	Shank Size	A	B	D	C	C1	C2	C3
ADDN-MTL-2020-C	61978	20mm	20	20	15	127	38	89	33
ADDN-MTL-2525-D	61979	25mm	25	25	20	140	38	102	33
ADDN-MTL-3232-E	61980	32mm	32	32	27	152	38	114	33

Right Hand KOOL Cut™ Modular Turning and Grooving 90° Gang Tool holder Style Shank



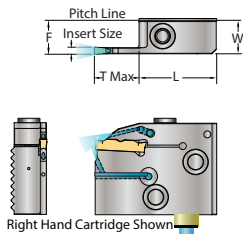
R.H. Shank Description	UPC #	Shank Size	A	B	D	E	C	C1	C2	C3
ADDN-MGR-2020-C	61984	20mm	20	20	33	38	107	18	89	33
ADDN-MGR-2525-D	61985	25mm	25	25	33	38	120	18	102	33
ADDN-MGR-3232-E	61986	32mm	32	32	33	38	132	18	114	33

Left Hand KOOL Cut™ Modular Turning and Grooving 90° Gang Tool holder Style Shank



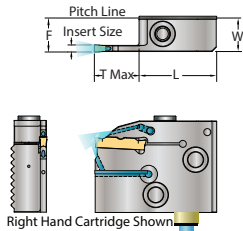
L.H. Shank Description	UPC #	Shank Size	A	B	D	E	C	C1	C2	C3
ADDN-MGL-2020-C	61981	20mm	20	20	33	38	107	18	89	33
ADDN-MGL-2525-D	61982	25mm	25	25	33	38	120	18	102	33
ADDN-MGL-3232-E	61983	32mm	32	32	33	38	132	18	114	33

Right Hand Cartridge KOOL Cut™ Modular Turning Grooving for Right Hand Tool holder



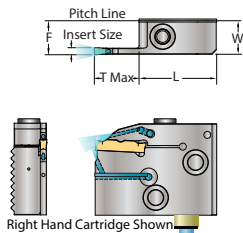
2mm Insert Size Right Hand Cartridge KOOL Cut™ Modular Turning and Grooving

Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-TR20-06	61750	6	33	15,2	15	2	DNTQ-222002-3EU-N DNPG-222002-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-TR20-12	61751	12	33	15,2	15	2					
ADKDN-TR20-18	61752	18	33	15,2	15	2					



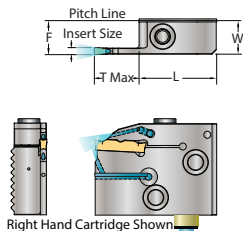
3mm Insert Size Right Hand Cartridge KOOL Cut™ Modular Turning & Grooving

Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-TR30-09	61753	9	33	15,4	15	3	DNTQ-22 3003-3EU-N DNTR-22 3015-3EU-N DNPG-22 3002-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-TR30-18	61754	18	33	15,4	15	3					
ADKDN-TR30-27	61755	27	33	15,4	15	3					



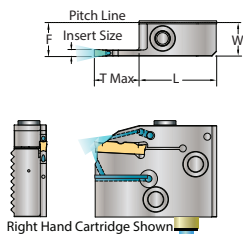
4mm Insert Size Right Hand Cartridge KOOL Cut™ Modular Turning and Grooving

Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-TR40-12	61756	12	33	15,4	15	4	DNTQ-25 4004-3EU-N DNTR-25 4020-3EU-N DNPG-25 4003-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-TR40-18	61757	18	33	15,4	15	4					
ADKDN-TR40-24	61758	24	33	15,4	15	4					
ADKDN-TR40-30	61759	30	33	15,4	15	4					



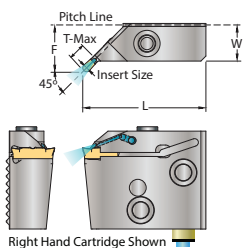
5mm Insert Size Right Hand Cartridge KOOL Cut™ Modular Turning and Grooving

Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-TR50-10	61760	10	33	15,5	15	5	DNTQ-25 5004-3EU-N DNTR-25 5025-3EU-N DNPG-25 5004-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-TR50-15	61761	15	33	15,5	15	5					
ADKDN-TR50-25	61762	25	33	15,5	15	5					
ADKDN-TR50-40	61763	40	33	15,5	15	5					



6mm Insert Size Right Hand Cartridge KOOL Cut™ Modular Turning and Grooving

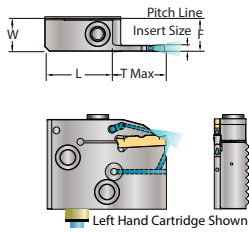
Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-TR60-12	61764	12	33	15,5	15	6	DNTQ-25 6004-3EU-N DNPG-25 6004-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-TR60-18	61765	18	33	15,5	15	6					
ADKDN-TR60-30	61766	30	33	15,5	15	6					
ADKDN-TR60-48	61767	48	33	15,5	15	6					



3,4 and 5mm Insert Size Right Hand Cartridge KOOL Cut™ Modular 45° Grooving

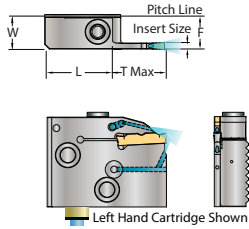
Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-UR30-06	61911	6	33	24	15	3	DNTR-223015-3EU-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-UR40-08	61912	8	33	26	15	4	DNTR-254020-3EU-N				
ADKDN-UR50-10	61913	10	33	27	15	5	DNTR-255025-3EU-N				

Left Hand Cartridge KOOL Cut™ Modular Turning Grooving for Left Hand Tool holder



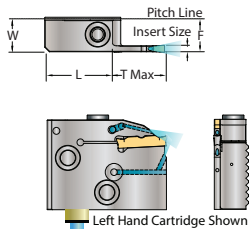
2mm Insert Size Left Hand Cartridge KOOL Cut™ Modular Turning and Grooving

Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-TL20-06	61768	6	33	15,2	15	2	DNTQ-22 2002-3EU-N DNPG-22 2002-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-TL20-12	61769	12	33	15,2	15	2					
ADKDN-TL20-18	61770	18	33	15,2	15	2					



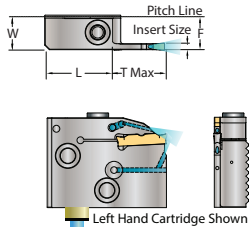
3mm Insert Size Left Hand Cartridge KOOL Cut™ Modular Turning and Grooving

Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-TL30-09	61771	9	33	15,3	15	3	DNTQ-22 3003-3EU-N DNTR-22 3015-3EU-N DNPG-22 3002-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-TL30-18	61772	18	33	15,3	15	3					
ADKDN-TL30-27	61773	27	33	15,3	15	3					



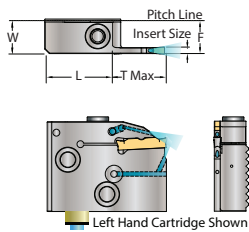
4mm Insert Size Left Hand Cartridge KOOL Cut™ Modular Turning and Grooving

Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-TL40-12	61774	12	33	15,4	15	4	DNTQ-25 4004-3EU-N DNTR-25 4020-3EU-N DNPG-25 4003-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-TL40-18	61775	18	33	15,4	15	4					
ADKDN-TL40-24	61776	24	33	15,4	15	4					
ADKDN-TL40-30	61777	30	33	15,4	15	4					



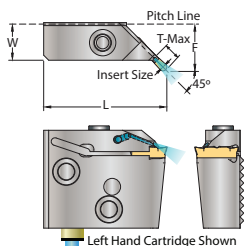
5mm Insert Size Left Hand Cartridge KOOL Cut™ Modular Turning and Grooving

Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-TL50-10	61778	10	33	15,5	15	5	DNTQ-25 5004-3EU-N DNTR-25 5025-3EU-N DNPG-25 5004-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-TL50-15	61779	15	33	15,5	15	5					
ADKDN-TL50-25	61780	25	33	15,5	15	5					
ADKDN-TL50-40	61781	40	33	15,5	15	5					



6mm Insert Size Left Hand Cartridge KOOL Cut™ Modular Turning and Grooving

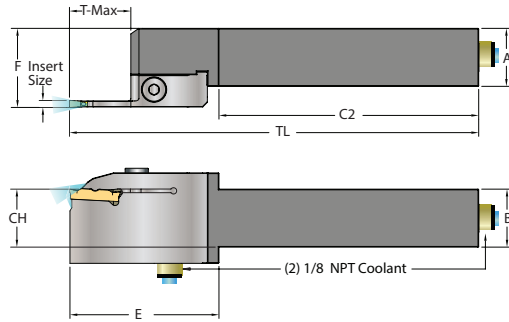
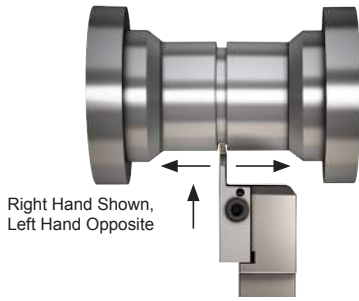
Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-TL60-12	61782	12	33	15,5	15	6	DNTQ-25 6004-3EU-N DNPG-25 6004-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-TL60-18	61783	18	33	15,5	15	6					
ADKDN-TL60-30	61784	30	33	15,5	15	6					
ADKDN-TL60-48	61785	48	33	15,5	15	6					



3,4 and 5mm Insert Size Left Hand Cartridge KOOL Cut™ Modular 45° Grooving

Description	UPC #	T. Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADKDN-UL30-06	61916	6	33	24	15	3	DNTR-22 3015-3EU-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADKDN-UL40-08	61917	8	33	26	15	4	DNTR-25 4020-3EU-N				
ADKDN-UL50-10	61918	10	33	27	15	5	DNTR-25 5025-3EU-N				

Right Hand Shank and Cartridge



TL= C2+E - Total Length

Shank Specification

A See page 41, 42

B See page 41, 42

C2 See page 41, 42

Cartridge Specification

E See page 43, 44

F See page 43, 44

T See page 43, 44

Shank

R.H. Shank Description	UPC #	Shank Size	CH Center Height
ADDN-MTR-2020-C	61975	20mm	20mm
ADDN-MTR-2525-D	61976	25mm	25mm
ADDN-MTR-3232-E	61977	32mm	32mm

Cartridge

Description	UPC #	T. Max
ADKDN-TR20-06	61750	6
ADKDN-TR20-12	61751	12
ADKDN-TR20-18	61752	18

Inserts

Description	UPC #	Size
DNTQ-22 2002-3EU-N	82440	2 x 22
DNPG-22 2002-1SR-N	82475	

2mm Size Insert

3mm Size Insert

4mm Size Insert

5mm Size Insert

6mm Size Insert

3.4 and 5mm Size Insert

ADKDN-TR30-09	61753	9
ADKDN-TR30-18	61754	18
ADKDN-TR30-27	61755	27

ADKDN-TR40-12	61756	12
ADKDN-TR40-18	61757	18
ADKDN-TR40-24	61758	24
ADKDN-TR40-30	61759	30

ADKDN-TR50-10	61760	10
ADKDN-TR50-15	61761	15
ADKDN-TR50-25	61762	25
ADKDN-TR50-40	61763	40

ADKDN-TR60-12	61764	12
ADKDN-TR60-18	61765	18
ADKDN-TR60-30	61766	30
ADKDN-TR60-48	61767	48

ADKDN-UR30-06	61911	6
ADKDN-UR40-08	61912	8
ADKDN-UR50-10	61913	10

DNTQ-22 3003-3EU-N	82442	3 X 22
DNTR-22 3015-3EU-N	82459	
DNPG-22 3002-1SR-N	82476	

DNTQ-25 4004-3EU-N	82443	4 X 25
DNTR-25 4020-3EU-N	82460	
DNPG-25 4003-1SR-N	82477	

DNTQ-25 5004-3EU-N	82444	5 X 25
DNTR-25 5025-3EU-N	82461	
DNPG-25 5004-1SR-N	82478	

DNTQ-25 6004-3EU-N	82445	6 X 25
DNPG-25 6004-1SR-N	82479	

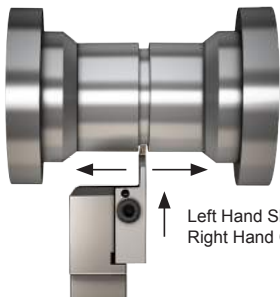
DNTR-22 3015-3EU-N	82459	3 X 22
DNTR-25 4020-3EU-N	82460	
DNTR-25 5025-3EU-N	82461	

Every tool holder will hold any cartridge on this page

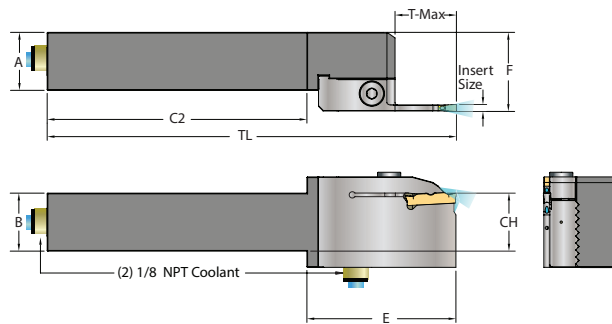
R.H. Shank Description	UPC #	Shank Size	CH Center Height
ADDN-MGR-2020-C	61984	20mm	20mm
ADDN-MGR-2525-D	61985	25mm	25mm
ADDN-MGR-3232-E	61986	32mm	32mm

For grade description see page 50 and 51

Left Hand Shank and Cartridge



Left Hand Shown,
Right Hand Opposite



TL= C2+E - Total Length

Shank Specification

A See page 41, 42

B See page 41, 42

C2 See page 41, 42

Cartridge Specification

E See page 43, 44

F See page 43, 44

T See page 43, 44

Shank

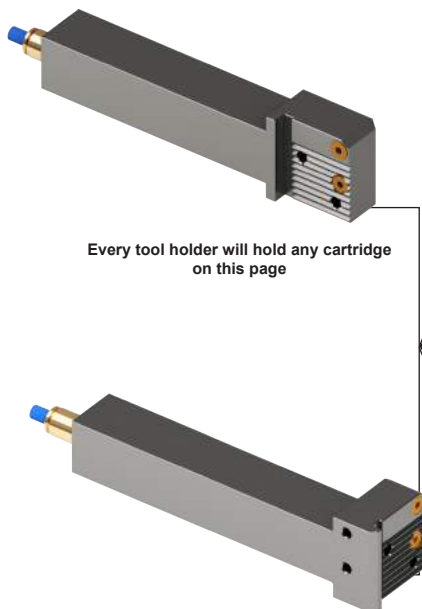
L.H. Shank Description	UPC #	Shank Size	CH Center Height
ADDN-MTL-2020-C	61978	20mm	20mm
ADDN-MTL-2525-D	61979	25mm	25mm
ADDN-MTL-3232-E	61980	32mm	32mm

Cartridge

Description	UPC #	T. Max
ADKDN-TL20-06	61768	6
ADKDN-TL20-12	61769	12
ADKDN-TL20-18	61770	18

Inserts

Description	UPC #	Size
DNTQ-22 2002-3EU-N	82440	2 x 22
DNPG-22 2002-1SR-N	82475	



Every tool holder will hold any cartridge
on this page

2mm Size Insert

3mm Size Insert

4mm Size Insert

5mm Size Insert

6mm Size Insert

2 and 6mm Size Insert

ADKDN-TL30-09	61771	9
ADKDN-TL30-18	61772	18
ADKDN-TL30-27	61773	27

ADKDN-TL40-12	61774	12
ADKDN-TL40-18	61775	18
ADKDN-TL40-24	61776	24
ADKDN-TL40-30	61777	30

ADKDN-TL50-10	61778	10
ADKDN-TL50-15	61779	15
ADKDN-TL50-25	61780	25
ADKDN-TL50-40	61781	40

ADKDN-TL60-12	61782	12
ADKDN-TL60-18	61783	18
ADKDN-TL60-30	61784	30
ADKDN-TL60-48	61785	48

ADKDN-UL20-05	61915	5
ADKDN-UL30-06	61916	6
ADKDN-UL40-08	61917	8
ADKDN-UL50-10	61918	10
ADKDN-UL60-12	61919	12

DNTQ-22 3003-3EU-N	82442	3 X 22
DNTR-22 3015-3EU-N	82459	
DNPG-22 3002-1SR-N	82476	

DNTQ-25 4004-3EU-N	82443	4 X 25
DNTR-25 4020-3EU-N	82460	
DNPG-25 4003-1SR-N	82477	

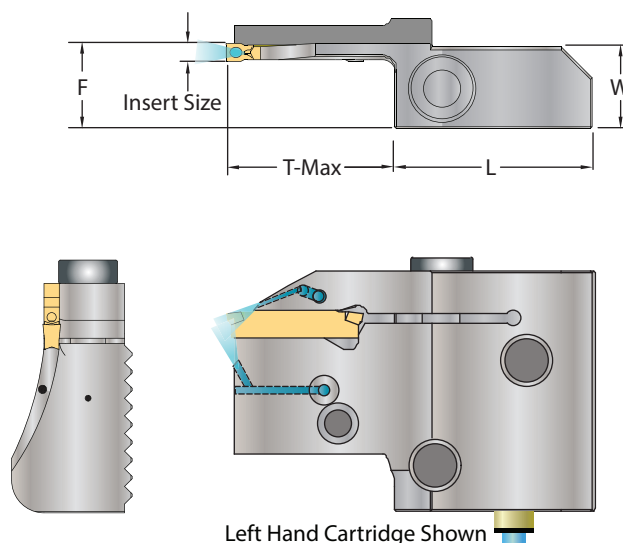
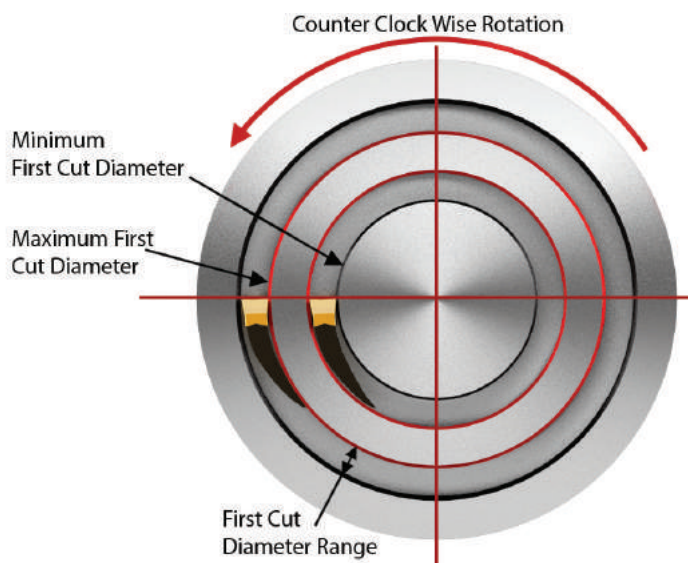
DNTQ-25 5004-3EU-N	82444	5 X 25
DNTR-25 5025-3EU-N	82461	
DNPG-25 5004-1SR-N	82478	

DNTQ-25 6004-3EU-N	82445	6 X 25
DNPG-25 6004-1SR-N	82479	

DNTR-22 3015-3EU-N	82459	3 X 22
DNTR-25 4020-3EU-N	82460	
DNTR-25 5025-3EU-N	82461	

For grade description see page 50 and 51

Left Hand Cartridge 3mm Insert Size. Modular Face Grooving for Left Hand Tool holder



T-Max 12mm

L.H. Cartridge Description	UPC #	First Cut Diameter Min.	First Cut Diameter Max.	T-Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADCDN-FL30-022030-12	62208	22	30	12	33	16	15	3	DNTQ-223003-3EU-N DNTR-223015-3EU-N DNPG-223002-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADCDN-FL30-030038-12	62209	30	38	12	33	16	15	3					
ADCDN-FL30-038048-12	62210	38	48	12	33	16	15	3					
ADCDN-FL30-048060-12	62211	48	60	12	33	16	15	3					
ADCDN-FL30-060075-12	62212	60	75	12	33	16	15	3					
ADCDN-FL30-075100-12	62213	75	100	12	33	16	15	3					
ADCDN-FL30-100200-12	62214	100	200	12	33	16	15	3					
ADCDN-FL30-200300-12	62215	200	300	12	33	16	15	3					
ADCDN-FL30-300->-12	62216	300	>	12	33	16	15	3					

T-Max 18mm

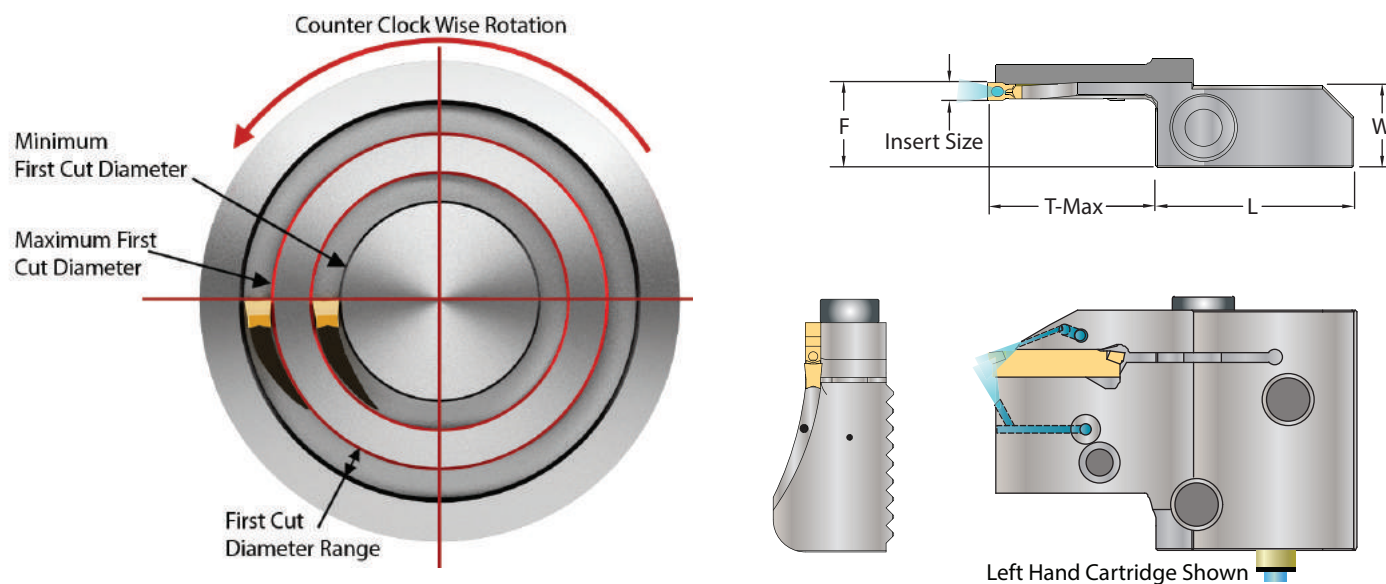
ADCDN-FL30-060075-18	62217	60	75	18	33	16	15	3	DNTQ-223003-3EU-N DNTR-223015-3EU-N DNPG-223002-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADCDN-FL30-075100-18	62218	75	100	18	33	16	15	3					
ADCDN-FL30-100200-18	62219	100	200	18	33	16	15	3					
ADCDN-FL30-200300-18	62220	200	300	18	33	16	15	3					
ADCDN-FL30-300->-18	62221	300	>	18	33	16	15	3					

T-Max 24mm

ADCDN-FL30-100200-24	62222	100	200	24	33	16	15	3	DNTQ-223003-3EU-N DNTR-223015-3EU-N DNPG-223002-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADCDN-FL30-200300-24	62223	200	300	24	33	16	15	3					
ADCDN-FL30-300->-24	62224	300	>	24	33	16	15	3					

For Insert specification and grade see page 50 and 51

Left Hand Cartridge 6mm Insert Size. Modular Face Grooving for Left Hand Tool holder



T-Max 13mm

L.H. Cartridge Description	UPC #	First Cut Diameter Min.	First Cut Diameter Max.	T-Max	L	F	W	Size	Insert Style	Lock Screw	Cartridge Lock Screw	Hex Key	Coolant Seal
ADCDN-FL60-050075-13	62253	50	75	13	33	16	15	6	DNTQ-25 6004-3EU-N DNPG-25 6004-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADCDN-FL60-075130-13	62254	75	130	13	33	16	15	6					
ADCDN-FL60-130300-13	62255	130	300	13	33	16	15	6					
ADCDN-FL60-300500-13	62256	300	500	13	33	16	15	6					
ADCDN-FL60-500>-13	62257	500	>	13	33	16	15	6					

T-Max 26mm

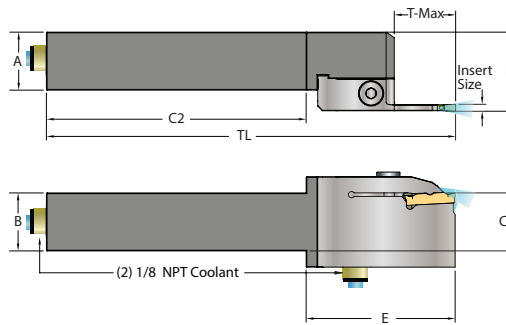
ADCDN-FL60-075130-26	62258	75	130	26	33	16	15	6	DNTQ-25 6004-3EU-N DNPG-25 6004-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADCDN-FL60-130300-26	62259	130	300	26	33	16	15	6					
ADCDN-FL60-300500-26	62260	300	500	26	33	16	15	6					
ADCDN-FL60-500>-26	62261	500	>	26	33	16	15	6					

T-Max 39mm

ADCDN-FL60-075130-39	62262	75	130	39	33	16	15	6	DNTQ-25 6004-3EU-N DNPG-25 6004-1SR-N	CS-M0616	CS-M0620	HAHK-50	CS08-04
ADCDN-FL60-130300-39	62263	130	300	39	33	16	15	6					
ADCDN-FL60-300500-39	62264	300	500	39	33	16	15	6					
ADCDN-FL60-500>-39	62265	500	>	39	33	16	15	6					

For Insert specification and grade see page 50 and 51

Left Hand Kool Cut™ Modular Facing & Grooving System



TL= C2+E - Total Length

Shank Specification

A See page 41, 42
B See page 41, 42
C2 See page 41, 42

Cartridge Specification

E See page 47, 48
F See page 47, 48
T See page 47, 48

Shank

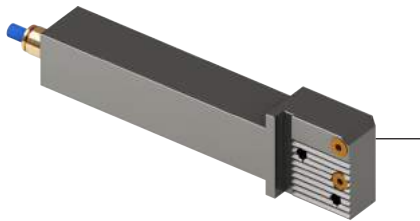
L.H. Shank Description	UPC #	Shank Size	CH Center Height
ADDN-MTL-2020-C	61978	20mm	20mm
ADDN-MTL-2525-D	61979	25mm	25mm
ADDN-MTL-3232-E	61980	32mm	32mm

Cartridge

Description	UPC #	T. Max
ADCDN-FL30-022030-12	62208	12
ADCDN-FL30-030038-12	62209	12
ADCDN-FL30-038048-12	62210	12
ADCDN-FL30-048060-12	62211	12
ADCDN-FL30-060075-12	62212	12
ADCDN-FL30-075100-12	62213	12
ADCDN-FL30-100200-12	62214	12
ADCDN-FL30-200300-12	62215	12
ADCDN-FL30-300->12	62216	12

Inserts

Description	UPC #	Size
DNTQ-22 3003-3EU-N	82442	
DNTR-22 3015-3EU-N	82459	3mm
DNPG-22 3002-1SR-N	82476	



Every tool holder will hold any cartridge on this page

3mm Size Insert

3mm Size Insert

3mm Size Insert

6mm Size Insert

6mm Size Insert

6mm Size Insert

ADCDN-FL30-060075-18	62217	18
ADCDN-FL30-075100-18	62218	18
ADCDN-FL30-100200-18	62219	18
ADCDN-FL30-200300-18	62220	18
ADCDN-FL30-300->18	62221	18

ADCDN-FL30-100200-24	62222	24
ADCDN-FL30-200300-24	62223	24
ADCDN-FL30-300->24	62224	24

ADCDN-FL60-050075-13	62253	13
ADCDN-FL60-075130-13	62254	13
ADCDN-FL60-130300-13	62255	13
ADCDN-FL60-300500-13	62256	13
ADCDN-FL60-500->13	62257	13

ADCDN-FL60-075130-26	62258	26
ADCDN-FL60-130300-26	62259	26
ADCDN-FL60-300500-26	62260	26
ADCDN-FL60-500->26	62261	26

ADCDN-FL60-075130-39	62262	39
ADCDN-FL60-130300-39	62263	39
ADCDN-FL60-300500-39	62264	39
ADCDN-FL60-500->39	62265	39

DNTQ-22 3003-3EU-N	82442	
DNTR-22 3015-3EU-N	82459	3mm
DNPG-22 3002-1SR-N	82476	

DNTQ-22 3003-3EU-N	82442	
DNTR-22 3015-3EU-N	82459	3mm
DNPG-22 3002-1SR-N	82476	

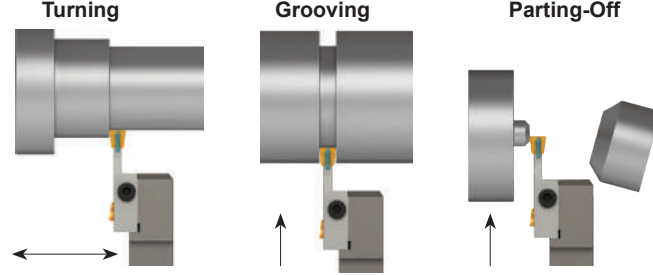
DNTQ-25 6004-3EU-N	82445	6mm
DNPG-25 6004-1SR-N	82479	

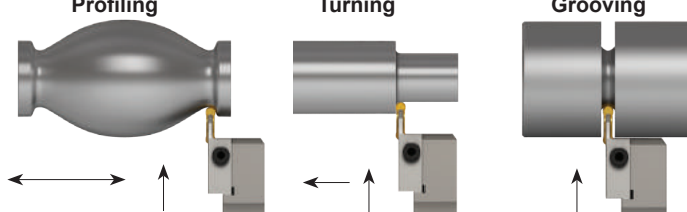
DNTQ-25 6004-3EU-N	82445	6mm
DNPG-25 6004-1SR-N	82479	

DNTQ-25 6004-3EU-N	82445	6mm
DNPG-25 6004-1SR-N	82479	

For grade description see page 50 and 51

Turning & Grooving Insert Grades

Insert Specification						Insert Application		
Double-End Cutting Edge DNTQ-N-_____DUP25UG								
Neutral Straight Nose Multi-Cutting Direction Right Hand and Left Hand								
Cutting Data						Insert Geometry, Material Application		
Insert Dimension			Maximum a_p Depth of Cut for Turning	Maximum f_n Feed Rate for Turning, Grooving and Parting-off		Steel ● Stainless Steel ● Cast Iron ● Non Ferrous ○ Super Alloys ○		
Width	Length	Radius	mm	i/rev.	mm/rev			
2mm	22mm	0,002	1,00	0,006	0,15			
3mm	22mm	0,003	1,50	0,008	0,20			
4mm	25mm	0,004	2,00	0,009	0,23			
5mm	25mm	0,004	2,50	0,010	0,25			
6mm	25mm	0,004	3,00	0,012	0,30			

Double-End Cutting Edge DNTR-N-_____DUP25UG								
Neutral Round Nose Multi-Cutting Direction Right Hand and Left Hand								
Cutting Data						Insert Geometry, Material Application		
Insert Dimension			Maximum a_p Depth of Cut for Turning	Maximum f_n Feed Rate for Turning, Grooving and Parting-off		Steel ● Stainless Steel ● Cast Iron ● Non Ferrous ○ Super Alloys ○		
Width	Length	Radius	mm	i/rev.	mm/rev			
3mm	22mm	1,5mm	1,50mm	0,012	0,30			
4mm	25mm	2,0mm	2,00mm	0,014	0,35			
5mm	25mm	3,0mm	2,50mm	0,016	0,40			

Double-End Cutting Edge DNPG-N/R/L-_____DPP40SG								
Straight Right and Left Nose Multi Parting off Direction Straight, Right Hand and Left Hand								
Cutting Data						Insert Geometry, Material Application		
Insert Dimension				Maximum f_n Feed Rate for Parting-off		Steel ● Stainless Steel ● Cast Iron ● Non Ferrous ○ Super Alloys ○		
Width	Length	Radius		i/rev.	mm/rev			
2mm	22mm	0.002		0.006	0.15			
3mm	22mm	0.003		0.008	0.20			
4mm	25mm	0.004		0.089	2.25			
5mm	25mm	0.004		0.108	2.75			
6mm	25mm	0.004		0.012	0.30			

Turning & Grooving Insert Grades

DUP25UG					
Material		V _c (SFM)			
Steel		F/min.		m/min.	
P	Carbon Steel	363	627	110	190
	Low Alloy Steel	363	594	110	180
	High Temp Alloys	231	528	70	160
M	Ferritic	396	660	120	200
	Austenitic	330	561	100	170
	Duplex	231	363	70	110
	Martensitic	198	297	60	90
K	Gray Cast Iron	330	660	100	200
	Modular Cast Iron	330	594	100	180
	Malleable Cast Iron	264	528	80	160
N	Unleaded Copper	373	825	113	250
	Brass	663	1472	201	446
	Unleaded Bronze	287	495	87	150
S	Iron Base	86	172	26	52
	Nickel Base	53	116	16	35
	Titanium	198	429	60	130

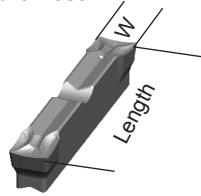
DPP40SG					
Material		V _c (SFM)			
Steel		F/min.		m/min.	
P	Carbon Steel	264	495	80	150
	Low Alloy Steel	231	396	70	120
	High Temp Alloys	198	330	60	100
M	Ferritic	330	594	100	180
	Austenitic	264	495	80	150
	Duplex	231	363	70	110
	Martensitic	198	297	60	90
K	Gray Cast Iron	264	561	80	170
	Modular Cast Iron	297	495	90	150
	Malleable Cast Iron	231	462	70	140
N	Unleaded Copper				
	Brass				
	Unleaded Bronze				
S	Iron Base				
	Nickel Base				
	Titanium				

DUP25UG	HC-P25/M25 K30 N30 S30	Coated	PVD-TiAlN 4μm
Insert Characteristics	Hard, Wear, Abrasive and impact Resistant		
First Choice Application	Universal Multi Purpose Turning and Grooving Application; for Carbon Steel, Alloy Steel & Stainless Steel, Cast Iron, High Temp Alloys, non Ferrous Materials		
Cutting Speed SFM (Vc)	High Cutting Speed in stable Turning and Grooving conditions, light interrupted cut		
Cutting Condition	Wet		

DPP40SG	HC-P45/M45	Multi Coated	PVD-TiAlN 7μm
Insert Characteristics	Extremely Tough and Impact Resistant Substrate		
First Choice Application	For Very Difficult Turning and Grooving Application; for Forgings and Castings of Carbon Steel, Alloy Steel, Stainless Steel and Cast Iron		
Cutting Speed SFM (Vc)	Low to Medium Cutting Speed in unstable conditions and heavy interrupted cut		
Cutting Condition	Wet		

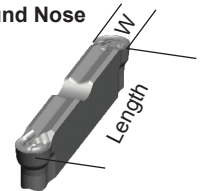
Inserts Specification

"T" Square Nose



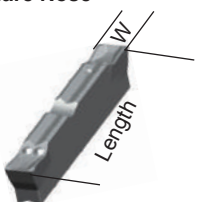
						Grade
UPC #	Application	Part Number	Insert Size			DUP25UG
			Width	Length		
82440	Neutral	DNTQ-22 2002-3EU-N DUP25UG	2mm	22mm		•
82442	Turning Grooving Parting-Off	DNTQ-22 3003-3EU-N DUP25UG	3mm	25mm		•
82443		DNTQ-25 4004-3EU-N DUP25UG	4mm	25mm		•
82444		DNTQ-25 5004-3EU-N DUP25UG	5mm	25mm		•
82445		DNTQ-25 6004-3EU-N DUP25UG	6mm	25mm		•

"R" Round Nose



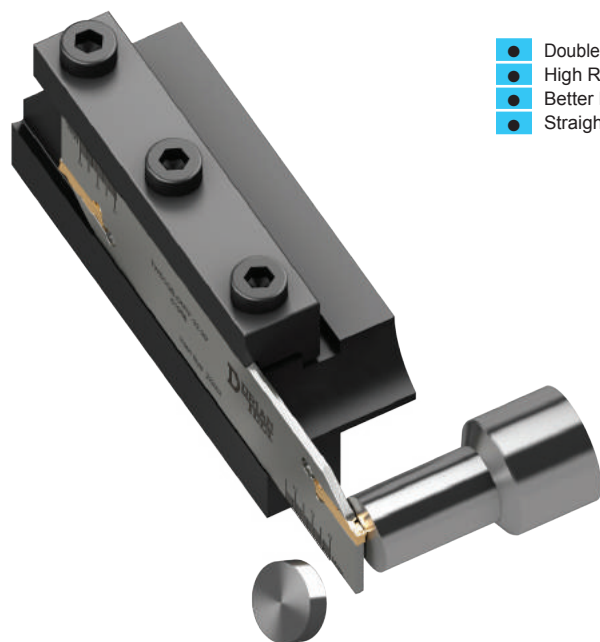
						Grade
UPC #	Application	Part Number	Insert Size		Radius	DUP25UG
			Width	Length		
82459	Profiling Turning Grooving	DNTR-22 3015-3EU-N DUP25UG	3mm	22mm	1.5	•
82460		DNTR-25 4020-3EU-N DUP25UG	4mm	25mm	2.0	•
82461		DNTR-25 5025-3EU-N DUP25UG	5mm	25mm	2.5	•

"G" Square Nose

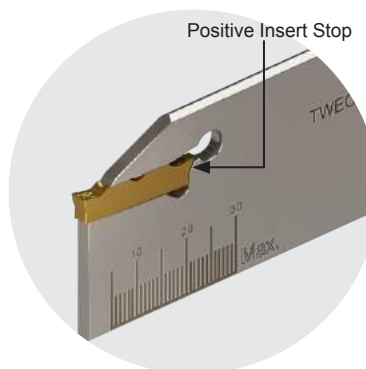


						Grade
UPC #	Application	Part Number	Insert Size			DPP40SG
			Width	Length		
82475	Grooving Parting-Off	DNPG-22 2002-1SR-N DPP40SG	2mm	22mm		•
82476		DNPG-22 3002-1SR-N DPP40SG	3mm	22mm		•
82477		DNPG-25 4003-1SR-N DPP40SG	4mm	25mm		•
82478		DNPG-25 5004-1SR-N DPP40SG	5mm	25mm		•
82479		DNPG-25 6004-1SR-N DPP40SG	6mm	25mm		•

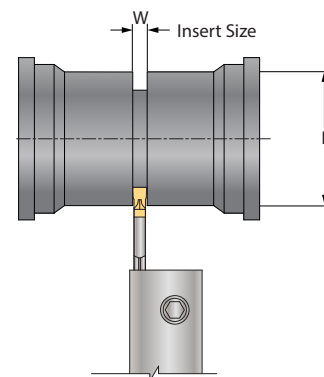
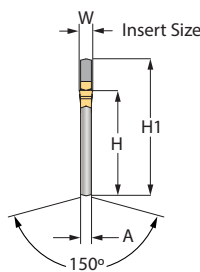
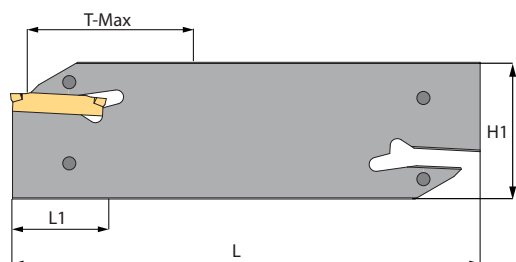
Kool Cut™ Twin Edge Parting-Off Insert Blades *Neutral*



- Double Cutting Edge
- High Rigidity
- Better Finish
- Straight Cut



Double "V"
Locking System



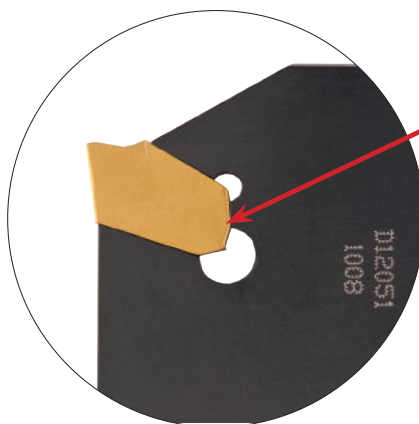
26mm Twin Blade

Blades Description	UPC #	T. Max	A	D	L	L1	H	H1	Insert Description		UPC #	Size	Key Description	UPC #
TWECOB-DNTF-26-20	61965	26	2	52	110	22	21	26	DNTQ-22 2002-3EU-N DUP25UG	82440	2mm	KCIK-DN	61204	
									DNPG-22 2002-1SR-N DPP40SG	82475				
TWECOB-DNTF-26-30	61966	39	2	78	110	22	21	26	DNTQ-22 3003-3EU-N DUP25UG	82442				
									DNTR-22 3015-3EU-N DUP25UG	82459				
									DNPG-22 3002-1SR-N DPP40SG	82476				
TWECOB-DNTF-26-40	61967	42	3	84	110	22	21	26	DNTQ-25 4004-3EU-N DUP25UG	82443	4mm			
									DNTR-25 4020-3EU-N DUP25UG	82460				
									DNPG-25 4003-1SR-N DPP40SG	82477				

32mm Twin Blade

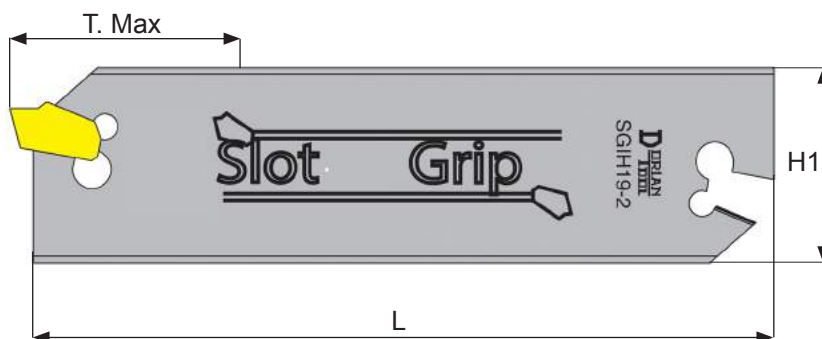
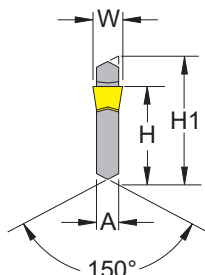
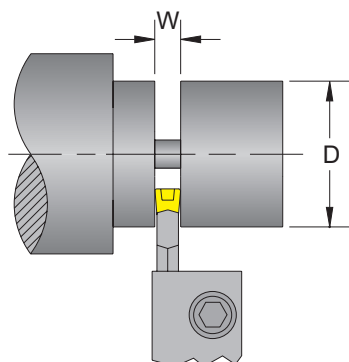
Blades Description	UPC #	T. Max	A	D	L	L1	H	H1	Insert Description		UPC #	Size	Key Description	UPC #
TWECOB-DNTF-32-20	61968	29	2	58	150	22	25	32	DNTQ-22 2002-3EU-N DUP25UG	82440	2mm	KCIK-DN	61204	
									DNPG-22 2002-1SR-N DPP40SG	82475				
TWECOB-DNTF-32-30	61969	45	2	90	150	22	25	32	DNTQ-22 3003-3EU-N DUP25UG	82442	3mm			
									DNTR-22 3015-3EU-N DUP25UG	82459				
									DNPG-22 3002-1SR-N DPP40SG	82476				
TWECOB-DNTF-32-40	61970	50	3	100	150	25	25	32	DNTQ-25 4004-3EU-N DUP25UG	82443	4mm			
									DNTR-25 4020-3EU-N DUP25UG	82460				
									DNPG-25 4003-1SR-N DPP40SG	82477				
TWECOB-DNTF-32-50	61971	60	4	120	150	25	25	32	DNTQ-25 5004-3EU-N DUP25UG	82444	5mm			
									DNTR-25 5025-3EU-N DUP25UG	82461				
									DNPG-25 5004-1SR-N DPP40SG	82478				
TWECOB-DNTF-32-60	61972	70	5	140	150	25	25	32	DNTQ-25 6004-3EU-N DUP25UG	82445	6mm			
									DNPG-25 6004-1SR-N DPP40SG	82479				

POSITIVE STOP BLADES FOR CUT-OFF & GROOVING SGTN INSERTS



Positive Stop

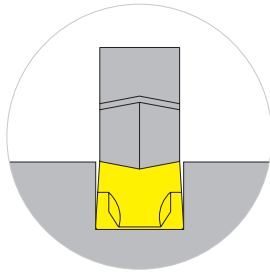
Improved design featuring a "Positive Stop". Inserts are securely held in Slot Grip Positive Stop Blades by a tapered locking system featuring a "Positive Stop" that prevents insert drift and the blade pocket from spreading once the insert is firmly in place.



Designed for use with standard SGTN cut-off inserts and standard cut-off blade holders. The insert's cutting edge location repeats accurately and as a result prevents insert splitting under heavy feed and shock loads. The blade and insert geometry allows free chip flow, minimizing insert breakage due to chip build-up.

Blades Description	UPC #	T. Max	A	D	L	H	H1	Insert Description	Size	Key Description	UPC #
SGIH19-2	62950	20	1,6	40	86	16	19	SGT(N/R/L)-2	2mm	KCIK-DN	61204
SGIH26-2	62951	26	1,6	51	110	21	26	SGT(N/R/L)-2	2mm		
SGIH26-3	62952	38	2	76	110	21	26	SGT(N/R/L)-3	3mm		
SGIH26-4	62953	40	3	80	110	21	26	SGT(N/R/L)-4	4mm		
SGIH32-3	62956	50	2	100	150	25	32	SGT(N/R/L)-3	3mm		
SGIH32-4	62957	50	3	100	150	25	32	SGT(N/R/L)-4	4mm		
SGIH32-5	62958	60	4	120	150	25	32	SGT(N/R/L)-5	5mm		
SGIH32-6	62959	60	5	120	150	25	32	SGT(N/R/L)-6	6mm		
SGIH32-8	62960	70	6	140	150	25	32	SGT(N/R/L)-8	8mm		
SGIH32-9	62961	70	8	140	150	25	32	SGT(N/R/L)-9	9mm		

For Slot Grip Cut Off inserts see complete Kool Cut Catalog



Cut-Off & Grooving Inserts are Designed for use with standard cut-off inserts and standard cut-off blade holders. The insert's cutting edge location repeats accurately and as a result prevents insert splitting under heavy feed and shock loads. The blade and insert geometry permits free chip flow, minimizing insert breakage due to chip build-up.

Chip breaker Geometry

- Reduced machining force
- Controlled, coiled chip flow
- Higher material removal rate

Application

- Quickly inserted into adjustable blades
- For cut-off and grooving
- Fair for interrupted cuts

					Material				
					Carbon & Alloy Steel	Aluminum & Non-Ferrous Metals & Materials	Carbon & Alloy Steel	300 & 400 Series Stainless Steel	Cast Iron, Copper/Brass
									Aluminum & Non-Ferrous Materials
									High Temp Alloys
									Hard Steel to 58 HRC
Insert Grade					P35	K25 N25	K25 P25 M25		
Insert Coating					CVD TiN Coated	Uncoated	PVD TiAlN Coated		
Insert Grade		Dimensions			DC656	DK25	DASK25B		
Description	ANSI	Insert Size mm	Lead Angle	Width + 0,05		UPC #	UPC #	UPC #	
				inch	mm				
SGTN Neutral 	SGTN-2	2	0°	.087	2	82222	82220	82223	
	SGTN-2.4	2,4	0	.094	2,4	82306	82304	82307	
	SGTN-3	3	0°	.122	3	82226	82224	82227	
	SGTN-4	4	0°	.161	4	82230	82228	82231	
	SGTN-4.8	4,8	0	.189	4,8	82318	82316	82319	
	SGTN-5	5	0°	.201	5	82234	82232	82235	
	SGTN-6	6	0°	.252	6	82238	82236	82239	
	SGTN-8	8	0°	.315	8	82242	82240	82243	
	SGTN-9	9	0°	.378	9	82246	82244	82247	
SGTR Right Hand 	SGTR-2-8	2	8°	.087	2	82250	82248	82251	
	SGTR-2.4-8	2,4	8	.094	2,4	82310	82308	82311	
	SGTR-3-8	3	8°	.122	3	82254	82252	82255	
	SGTR-4-8	4	8°	.161	4	82258	82256	82259	
	SGTR-4.8-8	4,8	8	.189	4,8	82322	82320	82323	
	SGTR-5-8	5	8°	.201	5	82262	82260	82263	
	SGTR-6-8	6	8°	.252	6	82266	82264	82267	
	SGTR-8-8	8	8°	.315	8	82270	82268	82271	
	SGTR-9-8	9	8°	.378	9	82274	82272	82275	
SGTL Left Hand 	SGTL-2-8	2	8°	.087	2	82278	82276	82279	
	SGTL-2.4-8	2,4	8	.094	2,4	82314	82312	82315	
	SGTL-3-8	3	8°	.122	3	82282	82280	82283	
	SGTL-4-8	4	8°	.161	4	82286	82284	82287	
	SGTL-4.8-8	4,8	8	.189	4,8	82326	82324	82327	
	SGTL-5-8	5	8°	.201	5	82290	82288	82291	
	SGTL-6-8	6	8°	.252	6	82294	82292	82295	
	SGTL-8-8	8	8°	.315	8	82298	82296	82299	
	SGTL-9-8	9	8°	.378	9	82302	82300	82303	

NOTES:

KOOL CUT™ BORING BARS

Quick Change Boring & Grooving System

*Expands the Flexibility of Multi-Operations
with the Combination of
Steel and Carbide Boring Bar Sizes
And Interchangeable Head Styles*

*Makes Boring and Grooving
Simple - Efficient - Economic*

Boring and Grooving

Left Hand Boring and Grooving
Quick Change Head

Facing and Grooving

Right Hand Face Grooving Quick
Change Head

45° Grooving

45° Right Hand Boring, Face Grooving
Quick Change Head

KOOL CUT™ Quick Change Boring & Grooving System

Built for Productivity!

Interchangeable Steel and Carbide Boring Bar Sizes & Quick Change Head Styles

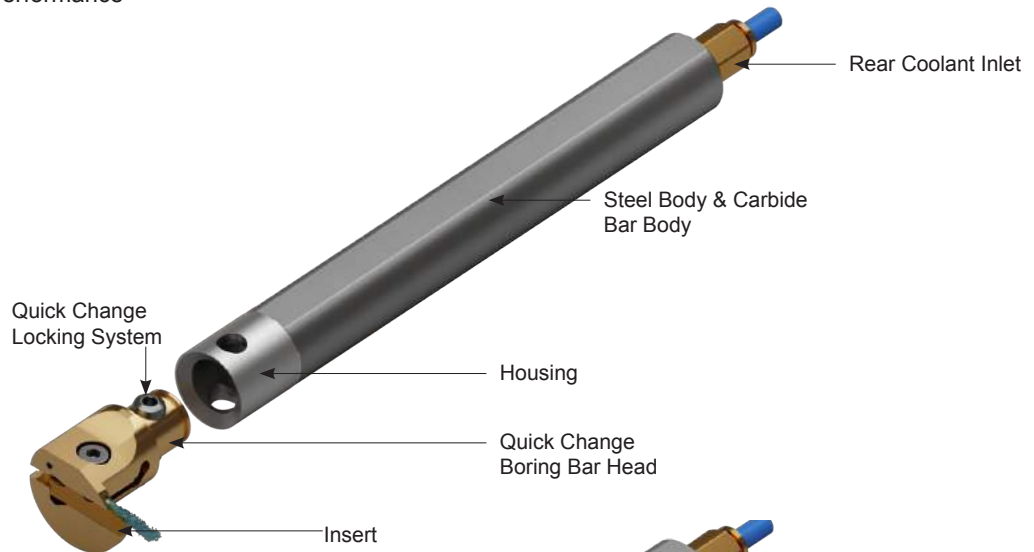
- Rigidity
- Flexibility
- Precision
- Interchangeability
- Advanced Technology
- Repeatability
- Multi-Operation
- High Performance

The KOOL Cut™ Quick Change Boring Bar Body;

Expands the flexibility for multi boring operation with precise and repetitive accuracy, and rigidity.

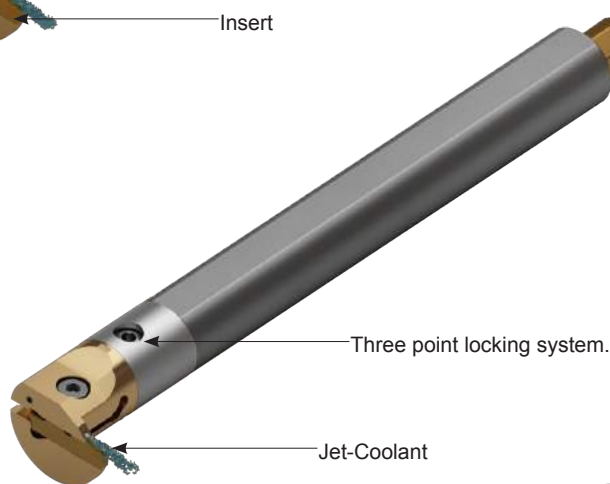
Bidirectional

Right Hand and Left Hand



The KOOL Cut™ Quick Change Boring Bar Head with Jet-Coolant;

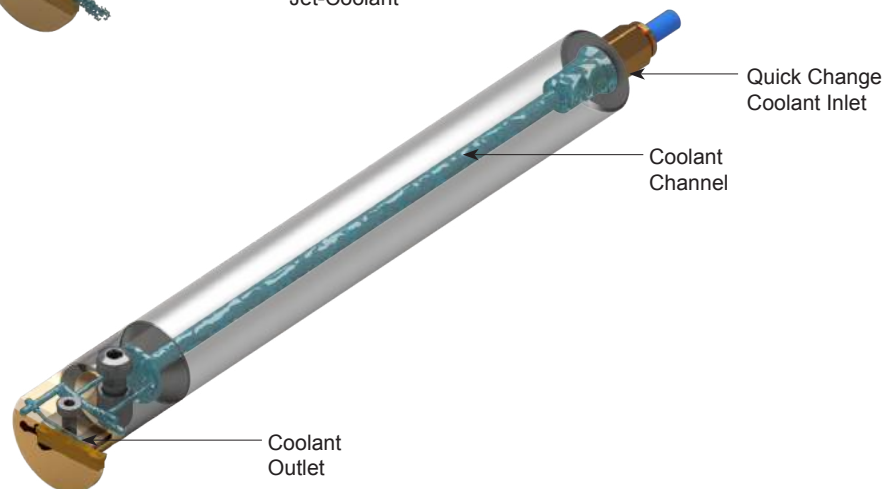
Made of heat treated alloy steel, TiN coated. Locks into the body of the Quick Change boring bar with a Three Point Locking System. The locking system will expand surface contact for maximum locking rigidity and precise interchangeability.



The KOOL Cut™ Quick Change Thru Coolant System;

Coolant is connected on the Coolant Inlet located on the rear end of the Boring Bar Body. The Coolant will travel thru the Boring Bar Body, and exit above the cutting edge of the insert.

The coolant is precisely aimed onto the cutting edge of the insert. The Insert is kept at constant Temperature, and chips are removed from the cutting edge and flushed out from the bore. With the constant insert Temperature, clean cutting edge, and chip free bore, the work quality is increased, and the insert life is increased up to 200%



SIMPLE - PRECISE - RIGID

To simplify deep hole boring with expandable capabilities of multi boring applications

Three Point Locking System

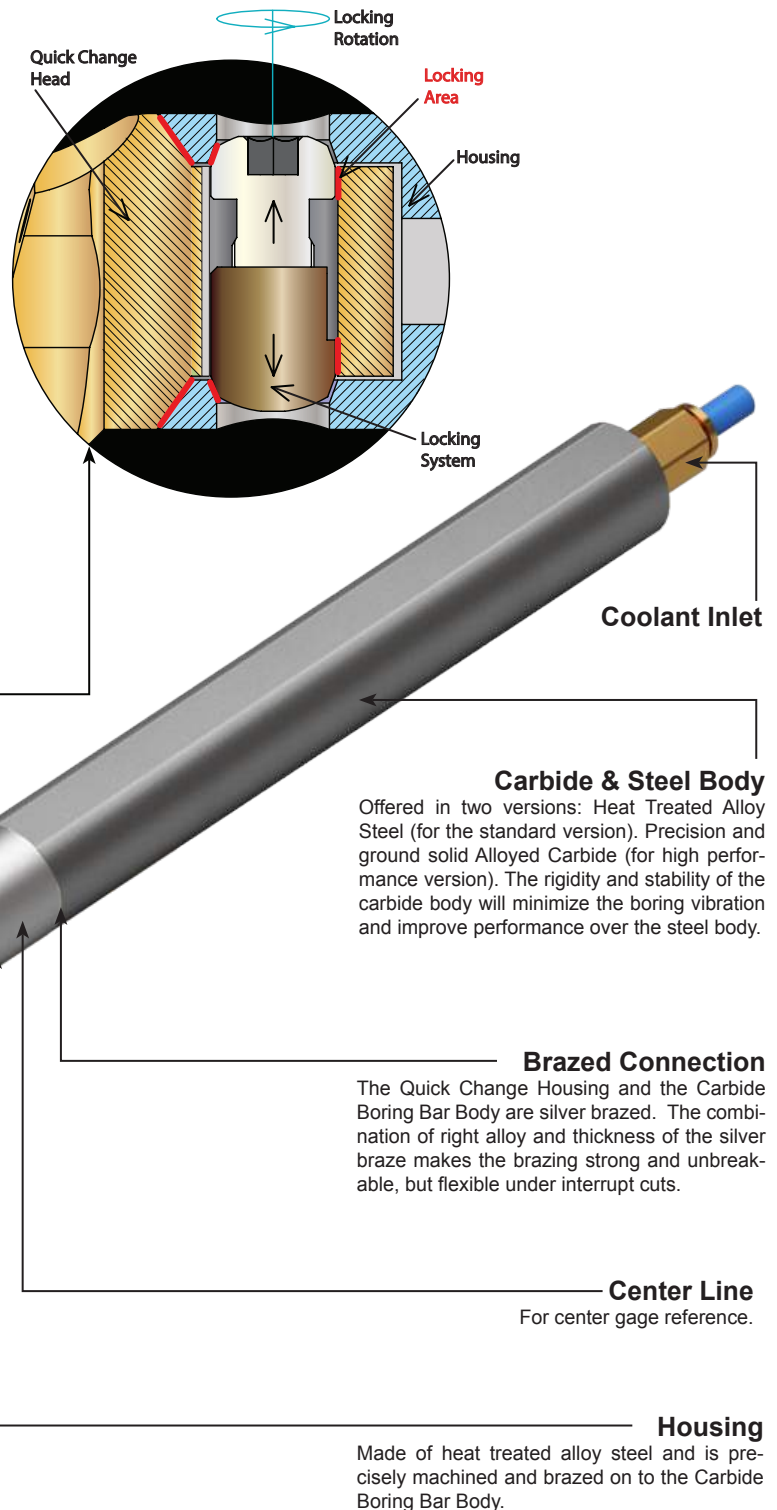
Locks the Quick Change Head to the Boring Bar **Housing** by turning the two piece double head tapered locking screw. The screw will expand, forcing the head against the tapered holes. This tension pushes the body of the Quick Change Head into the Boring Bar **Housing**, causing the tapered shoulder of the Quick Change Head to pull against the inner taper of the Boring Bar **Housing**. Powering the locking screw will cause both heads of the screw to lock 180° simultaneously. This locking angle forces the Quick Change Head to align symmetrically at 90° with the Boring Bar **Housing**. The **expanding, pushing and pulling** mechanical forces result in **Three Point Locking System**.

Boring Bar Sizes

Sizes: 20mm, 25mm, 32mm

Boring Heads

Positive and Threading
DNTQ Inserts



Jet-Stream™ Thru Coolant Quick Change Heads

Made of heat treated alloy steel, TiN coated. The cylindrical body and the tapered shoulder of the Quick Change Head locks precisely into the boring bar body housing. **The Three Point Locking System** will expand surface contact for maximum locking rigidity and precise interchangeability. The Jet Stream thru coolant system will enhance performance, keeping the insert at constant temperature clean and undamaged cutting edge, and will remove chips from the bore while machining.

Boring and Grooving Operation Set-Up

Step 1. Bar Set up

For best performance and to eliminate chatter in boring and grooving operation; Select a boring bar with the largest diameter permissible.

Extend the boring bar the shortest length possible

Use the narrowest insert possible

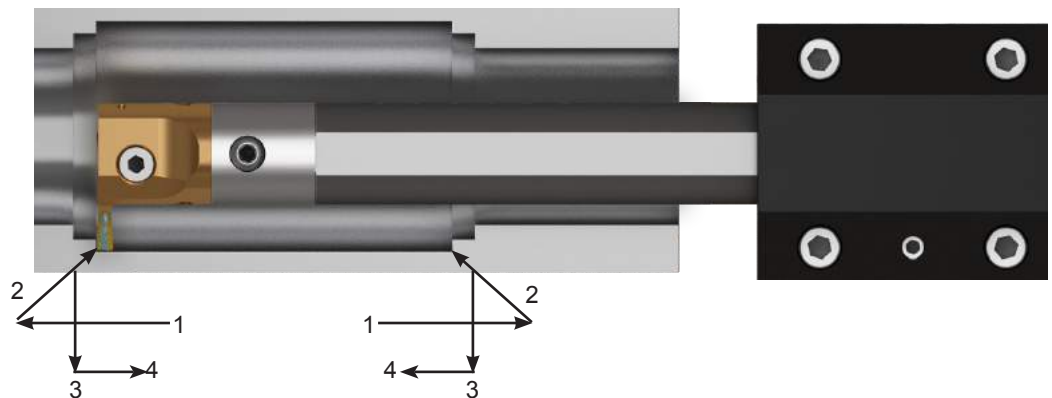


Step 2. Roughing

Cut the first groove to the depth of the first roughing cutting diameter.

Then feed the insert toward the other side of the workpiece. Cut till the end, then retract the insert at 45° away from the wall.

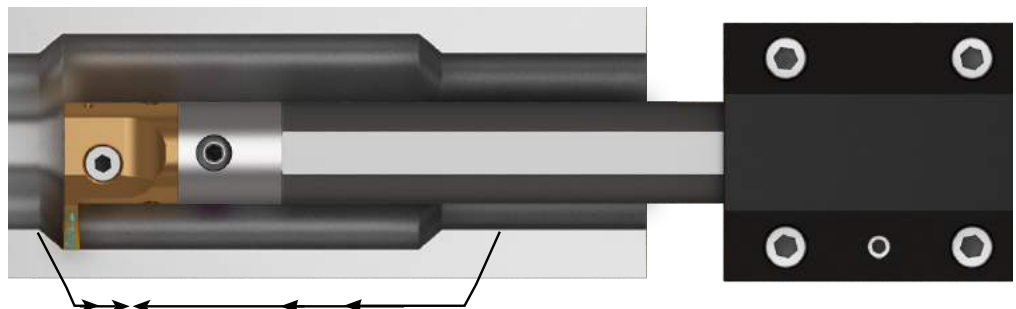
Repeat the operation, till the roughing operation is complete.



Step 3. Finishing

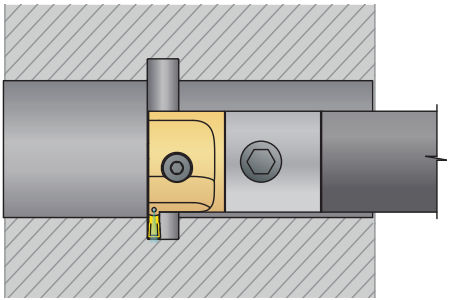
Face-Off at finish dimension, one side of the groove to the finished diameter.

Retract the insert at 45° away from the wall and move to the other side of the groove. Face-Off to the finish diameter and continue to cut till the other wall is reached, then retract the insert at 45°.

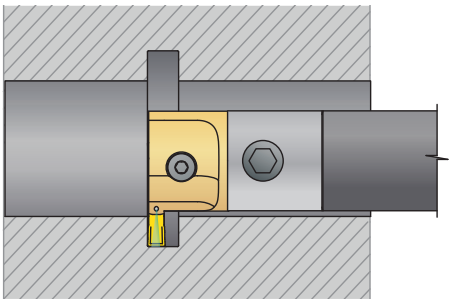


KOOL CUT™ Quick Change Boring & Grooving System

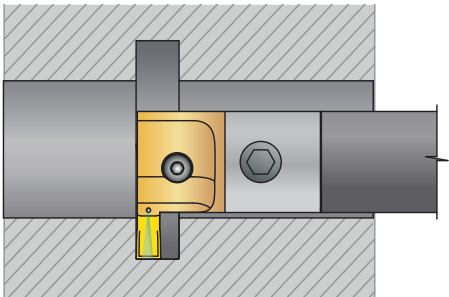
Expands the Flexibility of Multi-Operations



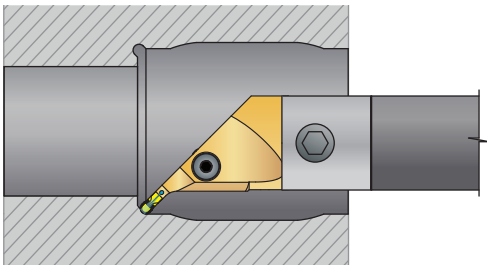
Boring and Grooving 2mm Insert Size



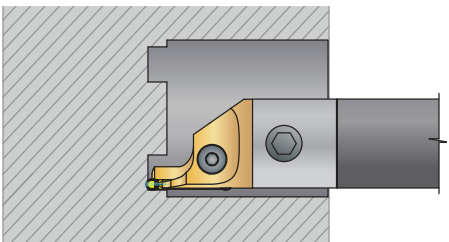
Boring and Grooving 3mm Insert Size



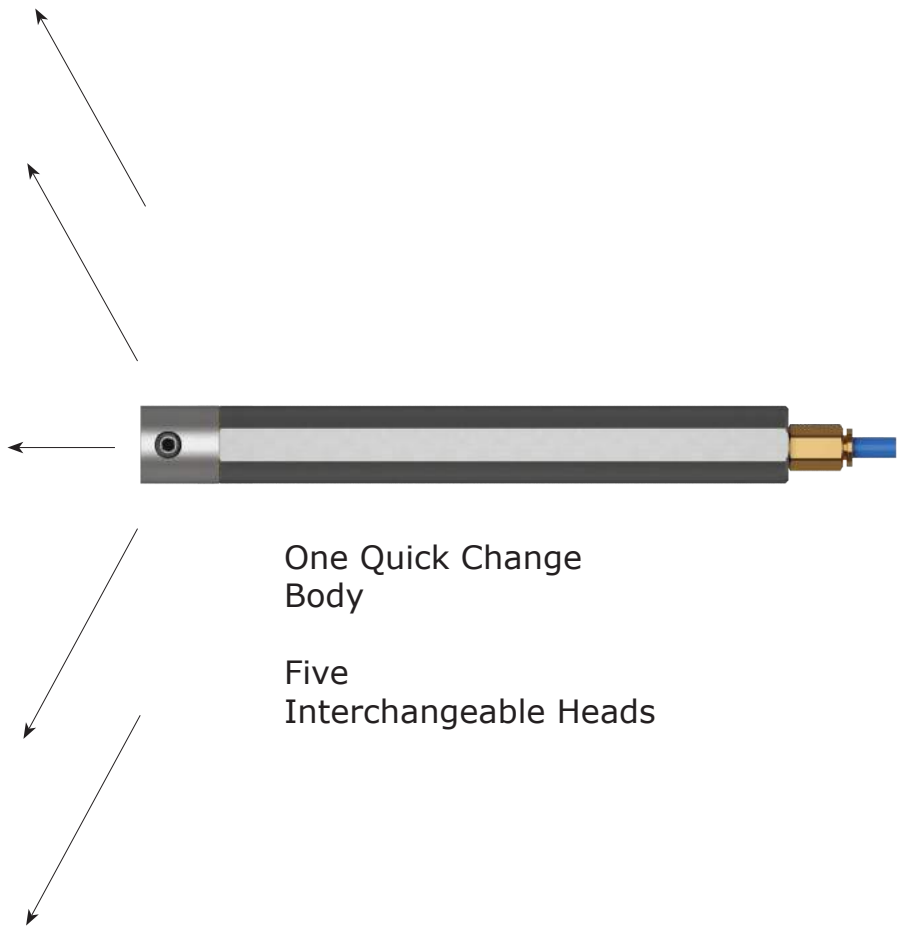
Boring and Grooving 4mm Insert Size



Boring, Profiling and Grooving 45°



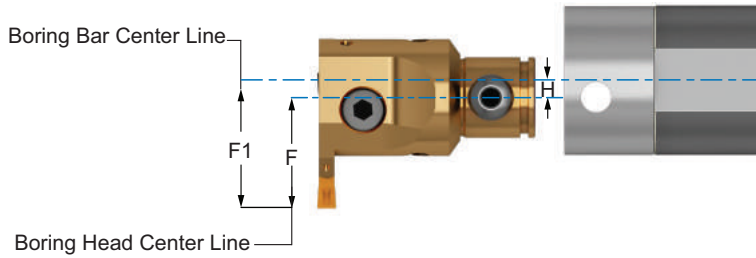
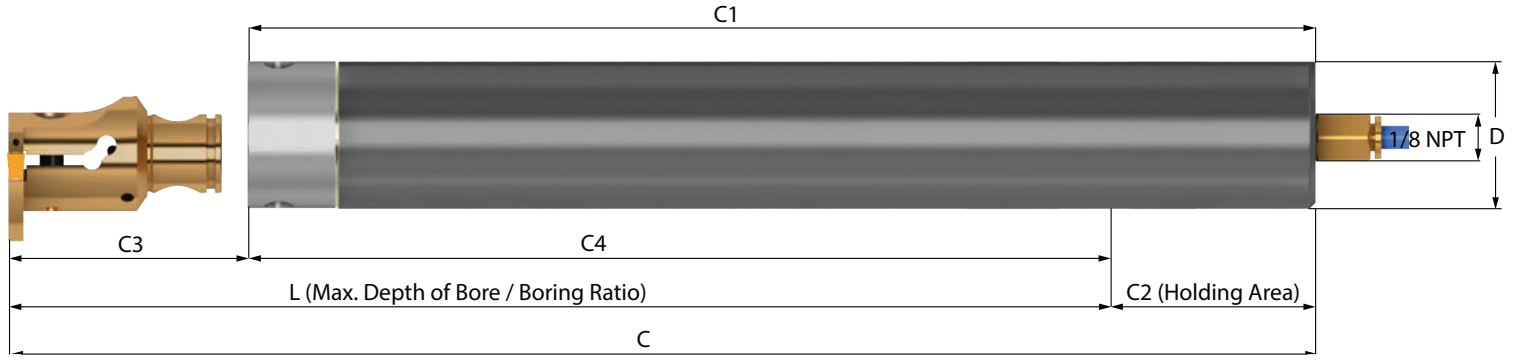
Facing and Face Grooving



One Quick Change
Body

Five
Interchangeable Heads

KOOL Cut™ Quick Change Turning, Threading, Grooving & Facing Steel & Carbide Shank



Min Bore (B) in the Quick Change Head charts below includes chip clearance.
Always allow enough room for chip evacuation.

Bar Description	UPC # Neutral	Boring Ratio	Construction	Bar Dia.	Actual Min. Bore B	F1	H	L	C	C1	C2	C3	C4	Quick Change Head	Coolant Bore Dia.	Coolant Attachment Thread
A20M-R-4-MBQC	60218	4 x Dia.	Steel Body	20	$B = F + H + (1/2 \text{ Bar Dia.})$	$F1 = F + H$	0	80	203	182	122	21	59	DQMH-12-__	4	1/8"-27NTP
A25M-R-4-MBQC	60219			25			5	100	203	182	103	21	79		4	
A32M-S-4-MBQC	60220			32			10	128	254	233	126	21	107		5	

Optimum boring length of the bar is 4 x Dia., cutting length may be extended by using the positive and sharp cutting edge insert.

Bar Description	UPC # Neutral	Boring Ratio	Construction	Bar Dia.	Actual Min. Bore B	F1	H	L	C	C1	C2	C3	C4	Quick Change Head	Coolant Bore Dia.	Coolant Attachment Thread
AE20M-Q-6-MBQC	60205	6 x Dia.	Carbide Body	20	$B = F + H + (1/2 \text{ Bar Dia.})$	$F1 = F + H$	0	120	180	159	80	21	99	DQMH-12-__	4	1/8"-27NTP
AE20M-S-6-MBQC	60206			20			0	120	250	229	130	21	99		4	
AE25M-R-6-MBQC	60207			25			5	150	200	179	50	21	129		5	
AE25M-T-6-MBQC	60208			25			5	150	300	279	150	21	129		5	
AE32M-U-6-MBQC	60209			32			10	192	350	329	158	21	171		5	

Optimum boring length of the bar is 6 x Dia., cutting length may be extended by using the positive and sharp cutting edge insert.

KOOL Cut™ Quick Change Boring and Grooving Head - 2mm Insert Size



Head Description	UPC #		B Min. Dia.	E	F	T-Max	Quick Change Head	Bar Diameter	Size	Insert			Coolant Seal
	R.H.	L.H.								Style	Lock Screw	Key	
DQCMH-ITR/L20-04	61925	61938	31	21,34	16	4	20	20	2	DNTF 222010	CS-M0516	HAHK-50	CS08-04
DQCMH-ITR/L20-08	61926	61939	35	21,34	20	8	20	25	2				
DQCMH-ITR/L20-12	61927	61940	39	21,34	24	12	20	32	2				

KOOL Cut™ Quick Change Boring and Grooving Head - 3mm Insert Size



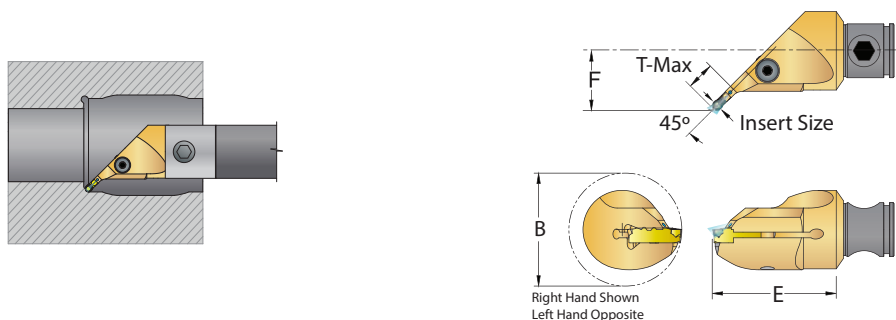
Head Description	UPC #		B Min. Dia.	E	F	T-Max	Quick Change Head	Bar Diameter	Size	Insert			Coolant Seal
	R.H.	L.H.								Style	Lock Screw	Key	
DQCMH-ITR/L30-06	61928	61941	33	21,34	18	6	20	20	3	DNTF 223015	CS-M0516	HAHK-50	CS08-04
DQCMH-ITR/L30-12	61929	61942	39	21,34	24	12	20	25	3				
DQCMH-ITR/L30-15	61930	61943	42	21,34	27	15	20	32	3				

KOOL Cut™ Quick Change Boring and Grooving Head - 4mm Insert Size



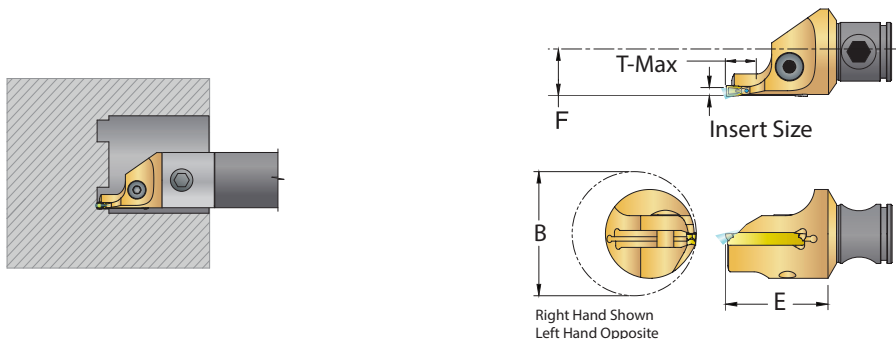
Head Description	UPC #		B Min. Dia.	E	F	T-Max	Quick Change Head	Bar Diameter	Size	Insert			Coolant Seal
	R.H.	L.H.								Style	Lock Screw	Key	
DQCMH-ITR/L40-08	61931	61944	35	21,34	20	8	20	20	4	DNTF 245020	CS-M0516	HAHK-50	CS08-04
DQCMH-ITR/L40-12	61932	61945	39	21,34	24	12	20	25	4				
DQCMH-ITR/L40-16	61933	61946	43	21,34	28	16	20	32	4				

KOOL Cut™ Quick Change Boring and Grooving 45° Head - 2mm, 3mm and 4mm Insert Size



Head Description	UPC #		B Min. Dia.	E	F	T-Max	Quick Change Head	Bar Diameter	Size	Insert		Key	Coolant Seal
	R.H.	L.H.								Style	Lock Screw		
DQCMH-IUR/L20-04	61951	61954	31	21,34	16	4	20	20	2	DNTF 222010	CS-M0516	HAHK-50	CS08-04
DQCMH-IUR/L30-06	61952	61955	33	21,34	18	6	20	20	3	DNTF 223015			
DQCMH-IUR/L40-08	61953	61956	35	21,34	20	8	20	20	4	DNTF 245020			

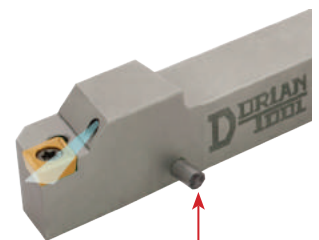
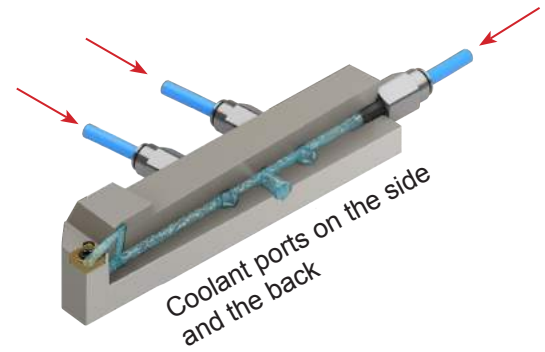
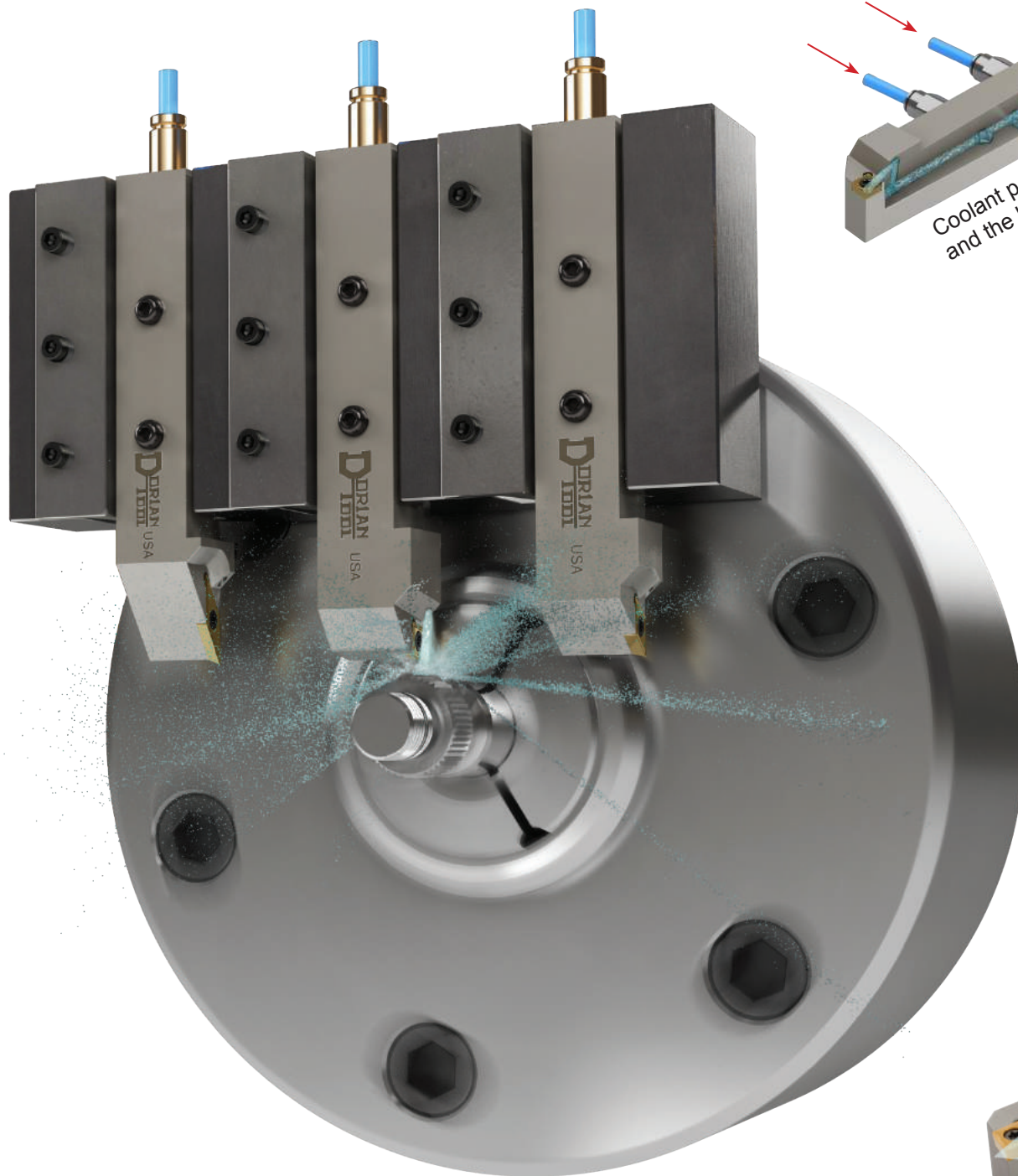
KOOL Cut™ Quick Change Internal Face Grooving Head - 3mm Insert Size



Head Description	UPC #		B Dia.		E	F	T-Max	Quick Change Head	Bar Diameter	Size	Insert		Key	Coolant Seal
	R.H.	L.H.	Min.	Max.							Style	Lock Screw		
DQCNH-IFR/L30-025038-10	61957	61961	25	39	21,34	12	10	20	20	3	DNTF 223015	CS-M0516	HAHK-50	CS08-04
DQCNH-IFR/L30-038060-10	61958	61962	37	60	21,34	12	10	20	20	3				
DQCNH-IFR/L30-060100-10	61959	61963	59	101	21,34	12	10	20	20	3				
DQCNH-IFR/L30-100200-10	61960	61964	99	200	21,34	12	10	20	25	3				

SWISS SCREW MACHINE TOOLS

with Advanced Thru Coolant Jet-Stream™ System



Positive Qualified stop for tool holder after insert change

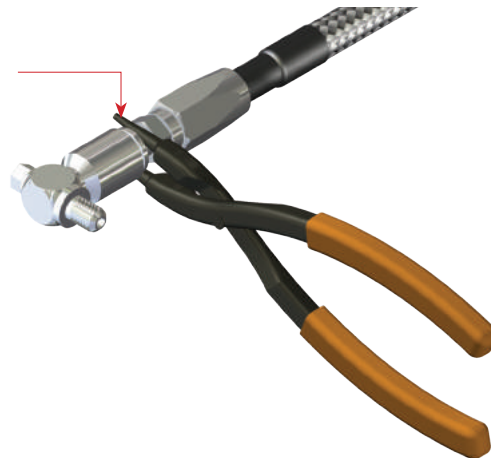
High Pressure Coolant Quick Connection

for Standard or High Pressure Applications
with Side or End Coolant Connection

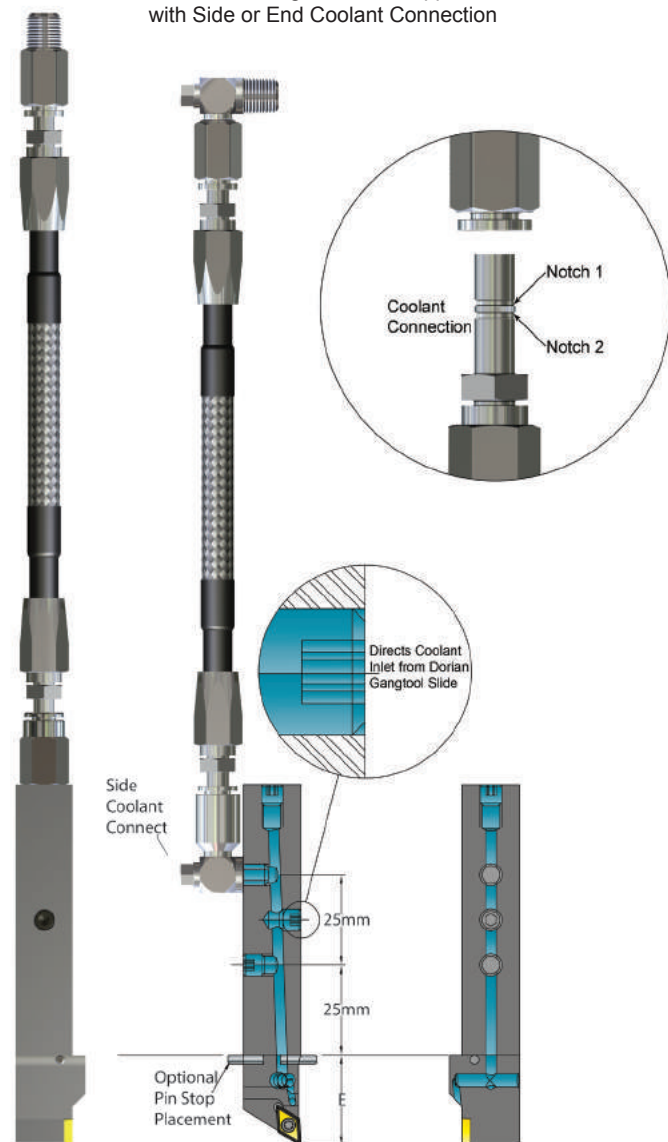
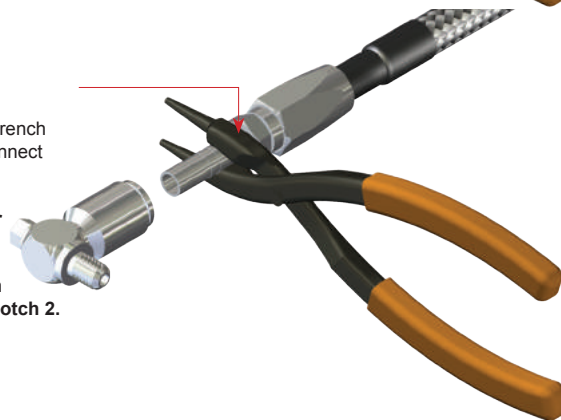
Item	Part Number	UPC #	Description
1	DT-HP-PLIERS	60476	High Pressure Disconnecting Pliers

**To Disconnect the Hydraulic Coolant Hose
Follow Two Safe & Easy Steps:**

1. Place the **thinner section** of the wrench-nose between the coolant hose and the connector.



2. Close the wrench and it will disconnect **Notch 1** of the coolant hose. Use the **thicker section** of the wrench-nose and close again to disconnect **Notch 2**.



Side View Left Hand Top View Right Hand Side View Right Hand

Swiss Tool holders-High Pressure Coolant Connection 7 Pcs. Kit

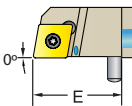
Working Pressure



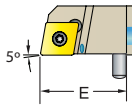
**New Hydraulic Coolant Hose
For Safe & Easy Disconnection**

Item	Part Number	UPC No 733101-	Description	Bar	PSI
	DT-HPTU-ASSY	60480	Swiss High Pressure Quick Release Coolant 7 pcs. Kit	200	2800
1	DT-HPTU-8X4	60477	8mm High Pressure 8mm Coolant Tubing Only		
2	DT-HP90C-8/6	60479	High Pressure Quick Release Straight Intec		
3	DT-HP90C-8/6	60479	High Pressure Quick Release Straight Intec		
4	DT-HP0SC-1/8X6	60490	1/8" NPT Straight High Pressure Quick Release Connector		
5	DT-HP90CE-1/8X6	60489	1/8" NPT 90° Elbow High Pressure Quick Release Connector		
6	DT-HP0SC-6X6	60487	6mm Straight High Pressure Quick Release Connector		
7	DT-HP90C-6X6	60486	6mm 90° Elbow High Pressure Quick Release Connector		

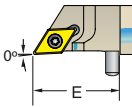
ASCAC Jet-Stream™ Thru Coolant R/L Tool holder Style A - 0° Side Cutting Edge Angle for 7° positive 80° diamond CC_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	CC_W Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASCACR/L 1010-H06	60754	60755	10	100	25	CCGW-060204
	ASCACR/L 1212-H06	60756	60757	12	100	25	CCGW-060204
	ASCACR/L 1616-H06	60758	60759	16	100	25	CCGW-060204
	ASCACR/L 1212-H09	60760	60761	12	100	25	CCGW-09T308
	ASCACR/L 1616-H09	60762	60763	16	100	25	CCGW-09T308
	ASCACR/L 2020-K09	60764	60765	20	125	25	CCGW-09T308

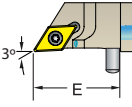
ASCNC Jet-Stream™ Thru Coolant R/L Tool holder Style N - Negative 5° End or Side Cutting Edge Angle for 7° positive 80° diamond CC_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	CC_W Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASCNCR/L 1010-H06	60770	60771	10	100	25	CCGW-060204
	ASCNCR/L 1212-H06	60772	60773	12	100	25	CCGW-060204
	ASCNCR/L 1616-H06	60774	60775	16	100	25	CCGW-060204
	ASCNCR/L 1212-H09	60776	60777	12	100	25	CCGW-09T308
	ASCNCR/L 1616-H09	60778	60779	16	100	25	CCGW-09T308
	ASCNCR/L 2020-K09	60780	60781	20	125	25	CCGW-09T308

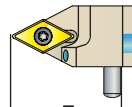
ASDAC Jet-Stream™ Thru Coolant R/L Tool holder Style A - 0° Side Cutting Edge Angle for 7° positive 55° diamond DC_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	DC_W Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASDACR/L 1010-H07	60798	60799	10	100	25	DCGW-070204
	ASDACR/L 1212-H07	60800	60801	12	100	25	DCGW-070204
	ASDACR/L 1616-H07	60802	60803	16	100	25	DCGW-070204
	ASDACR/L 1212-H11	60804	60805	12	100	25	DCGW-11T308
	ASDACR/L 1616-H11	60806	60807	16	100	25	DCGW-11T308
	ASDACR/L 2020-K11	60808	-	20	125	25	DCGW-11T308

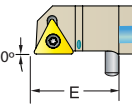
ASDNC Jet-Stream™ Thru Coolant R/L Tool holder Style N - 3° Side Cutting Edge Angle for 7° positive 55° diamond DC_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	DC_W Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASDNCR/L 1010-H07	60810	60811	10	100	25	DCGW-070204
	ASDNCR/L 1212-H07	60812	60813	12	100	25	DCGW-070204
	ASDNCR/L 1616-H07	60814	60815	16	100	25	DCGW-070204
	ASDNCR/L 1212-H11	60816	60817	12	100	25	DCGW-11T308
	ASDNCR/L 1616-H11	60818	60819	16	100	25	DCGW-11T308
	ASDNCR/L 2020-K11	60820	60821	20	125	25	DCGW-11T308

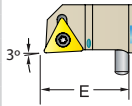
ASDPC Jet-Stream™ Thru Coolant Neutral Tool holder Style P - 27.5° Side Cutting Edge Angle for 7° positive 55° diamond DC_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	DC_W Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASDPCN 1010-H07	60824		10	100	25	DCGW-070204
	ASDPCN 1212-H07	60825		12	100	25	DCGW-070204
	ASDPCN 1212-H11	60826		12	100	25	DCGW-11T308
	ASDPCN 1616-H11	60827		16	100	25	DCGW-11T308

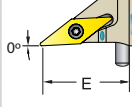
ASTAC Jet-Stream™ Thru Coolant R/L Tool holder Style A - 0° Side Cutting Edge Angle for 7° positive triangle TC_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASTACR/L 1010-H11	60846	60847	10	100	25	TCGW-110204
	ASTACR/L 1212-H11	60848	60849	12	100	25	TCGW-110204
	ASTACR/L 1616-H11	60850	60851	16	100	25	TCGW-110204
	ASTACR/L 2020-K11	60852	60853	20	125	25	TCGW-110204

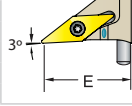
ASTNC Jet-Stream™ Thru Coolant R/L Tool holder Style N - 3° Side Cutting Edge Angle for 7° positive triangle TC_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	TC_W Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASTNCR/L 1010-H11	60858	60859	10	100	25	TCGW-110204
	ASTNCR/L 1212-H11	60860	60861	12	100	25	TCGW-110204
	ASTNCR/L 1616-H11	60862	60863	16	100	25	TCGW-110204
	ASTNCR/L 1616-H16	60864	60865	16	100	25	TCGW-16T308

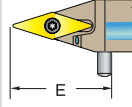
ASVAB Jet-Stream™ Thru Coolant R/L Tool holder Style A - 0° Side Cutting Edge Angle for 5° positive 35° diamond VB_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	VB_W Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASVABR/L 1010-H11	60870	60871	10	100	25	VBGW-110304
	ASVABR/L 1212-H11	60872	60873	12	100	25	VBGW-110304
	ASVABR/L 1212-K16	60874	60875	12	107	32	VBGW-160408
	ASVABR/L 1616-K16	60876	60877	16	107	32	VBGW-160408
	ASVABR/L 2020-K16	60878	60879	20	132	32	VBGW-160408

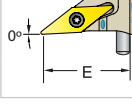
ASVNB Jet-Stream™ Thru Coolant R/L Tool holder Style N - 3° Side Cutting Edge Angle for 5° positive 35° diamond VB_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	VB_W Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASVNBRL 1010-H11	60882	60883	10	100	25	VBGW-110304
	ASVNBRL 1212-H11	60884	60885	12	100	25	VBGW-110304
	ASVNBRL 1212-K16	60886	60887	12	107	32	VBGW-160408
	ASVNBRL 1616-K16	60888	60889	16	107	32	VBGW-160408
	ASVNBRL 2020-K16	60890	60891	20	132	32	VBGW-160408

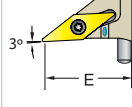
ASVVB Jet-Stream™ Thru Coolant Neutral Tool holder Style V - 17.5° Side Cutting Edge Angle for 5° positive 35° diamond VB_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	VB_W Gage Insert
		Neutral		Height	Length		
	ASVVBN 1010-H11	60893		10	100	25	VBGW-110304
	ASVVBN 1212-H11	60894		12	100	25	VBGW-110304
	ASVVBN 1212-K16	60895		12	107	32	VBGW-160408
	ASVVBN 1616-K16	60896		16	107	32	VBGW-160408

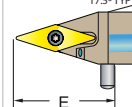
ASVAC Jet-Stream™ Thru Coolant R/L Tool holder Style A - 0° Side Cutting Edge Angle for 7° positive 35° diamond VC_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	VC_W Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASVACR/L 1010-H11	60902	60903	10	100	25	VCGW-110304
	ASVACR/L 1212-H11	60904	60905	12	100	25	VCGW-110304
	ASVACR/L 1212-K16	60906	60907	12	107	32	VCGW-160408
	ASVACR/L 1616-K16	60908	60909	16	107	32	VCGW-160408

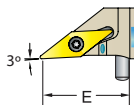
ASVNC Jet-Stream™ Thru Coolant R/L Tool holder Style N - 3° Side Cutting Edge Angle for 7° positive 35° diamond VC_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	VC_W Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASVNCR/L 1010-H11	60914	60915	10	100	25	VCGW-110304
	ASVNCR/L 1212-H11	60916	60917	12	100	25	VCGW-110304
	ASVNCR/L 1616-H11	60918	60919	16	100	25	VCGW-110304
	ASVNCR/L 1212-K16	60920	60921	12	107	32	VCGW-160408
	ASVNCR/L 1616-K16	60922	60923	16	107	32	VCGW-160408
	ASVNCR/L 2020-K16	60924	60925	20	132	32	VCGW-160408

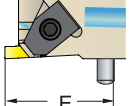
ASVVC Jet-Stream™ Thru Coolant Neutral Tool holder Style V - 17.5° Side Cutting Edge Angle for 7° positive 35° diamond VC_W inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	VC_W Gage Insert
		Neutral		Height	Length		
	ASVVCN 1010-H11	60927		10	100	25	VCGW-110304
	ASVVCN 1212-H11	60928		12	100	25	VCGW-110304
	ASVVCN 1212-K16	60929		12	107	32	VCGW-160408
	ASVVCN 2020-K16	60931		20	132	32	VCGW-160408

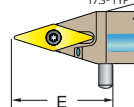
ASVNP Jet-Stream™ Thru Coolant R/L Tool holder Style N - 3° Side Cutting Edge Angle for 11° positive 35° diamond VP_W Inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	VP_W Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASVNP/R/L 1010-H11	60948	60649	10	100	25	VPGW-110304
	ASVNP/R/L 1212-H11	60950	60951	12	100	25	VPGW-110304
	ASVNP/R/L 1212-K16	60952	60953	12	107	32	VPGW-160408
	ASVNP/R/L 1616-K16	60954	60955	16	107	32	VPGW-160408
	ASVNP/R/L 2020-K16	60956	60957	20	132	32	VPGW-160408

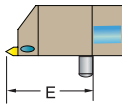
ANS Jet-Stream™ Thru Coolant Threading Tool holder - Right and Left Hand for DorNotch V Thread Inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	Gage Insert
		Right Hand	Left Hand	Height	Length		
	ANSR/L 1212-H02	61088	61089	12	100	25	NG-2R NG-2L
	ANSR/L 1616-H02	61090	61091	16	100	25	
	ANSR/L 1212-H03	61092	61093	12	100	25	NG-3R NG-3L
	ANSR/L 1616-H03	61094	61095	16	100	25	

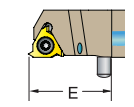
ASVVP Jet-Stream™ Thru Coolant Neutral Tool holder Style V - 17.5° Side Cutting Edge Angle for 11° positive 35° diamond VP_W Inserts

Coolant Outlet	METRIC Description	UPC # Neutral	Shank		E (Tool Stop)	VP_W Gage Insert
			Height	Length		
	ASVVP/N 1010-H11	60959	10	100	25	VPGW-110304
	ASVVP/N 1212-H11	60960	12	100	25	VPGW-110304
	ASVVP/N 1212-K16	60961	12	107	32	VPGW-160408
	ASVVP/N 1616-K16	60962	16	107	32	VPGW-160408

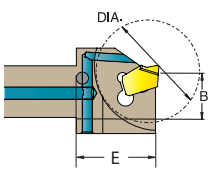
ASTVO Jet-Stream™ Thru Coolant Threading Tool holder- Right and Left Hand for On Edge TNMC Inserts

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASTVOR/L 1010-H16	61098	-	10	100	25	TNMC-322
	ASTVOR/L 1212-H16	61100	-	12	100	25	
	ASTVOR/L 1616-H16	61102	61103	16	100	25	

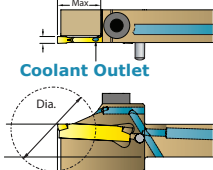
ASE Jet-Stream™ Thru Coolant Threading Tool holder - Right and Left Hand for LayDown Insert

Coolant Outlet	METRIC Description	UPC #		Shank		E (Tool Stop)	Gage Insert
		Right Hand	Left Hand	Height	Length		
	ASER/L 1010-H11	61078	-	10	100	25	11-A60
	ASER/L 1212-H11	61080	-	12	100	25	
	ASER/L 1616-H16	61082	61083	16	100	25	16-G60

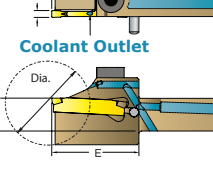
ASGTH Jet-Stream™ Thru Coolant Cut-Off Tool holder - Right and Left Hand for SGTN Cut-Off Inserts for Swiss Screw Machines

Coolant Outlet	METRIC Description	UPC #		Insert Size		Shank		E (Tool Stop)	Max. Dia.	Gage Insert
		Right Hand	Left Hand	Height	Length	Height	Length			
	ASGTHR/L 1010-H02	62922	62923	2,0	2,4	10	100	25	28	SGTN-2.0
	ASGTHR/L 1212-H02	62924	62925	2,0	2,4	12	100	25	28	
	ASGTHR/L 1616-H02	62926	62927	2,0	2,4	16	100	25	28	
	ASGTHR/L 2020-K02	62928	62929	2,0	2,4	20	125	25	32	
	ASGTHR/L 2525-K02	62930	62931	2,0	2,4	25	132	32	40	
	ASGTHR/L 1010-H03	62932	62933	3,0		10	100	25	28	SGTN-3.0
	ASGTHR/L 1212-H03	62934	62935	3,0		12	100	25	32	
	ASGTHR/L 1616-H03	62936	62937	3,0		16	100	25	32	
	ASGTHR/L 2020-K03	62938	62939	3,0		20	125	25	36	
	ASGTHR/L 2525-K03	62940	62941	3,0		25	132	32	52	

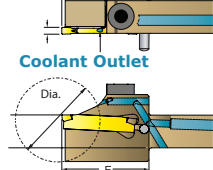
ADDN Jet-Stream™ Thru Coolant External Turning, Grooving & Cut-off Tool holders

Coolant Outlet	METRIC Description	UPC #		Insert Size	Shank		E (Tool Stop)	Grooving Max.	Max. Dia.	Insert
		Right Hand	Left Hand		Height	Length				
	ADDN-TFR/L-1010-H20-06	61000	61001	2	10	107	32	6	12	DN_-22_N-20
	ADDN-TFR/L-1212-H20-06	61002	61003	2	12	107	32	6	12	DN_-22_N-20
	ADDN-TFR/L-1212-H30-09	61008	61009	3	12	107	32	9	18	DN_-22_N-30-
	ADDN-TFR/L-1616-H20-06	61004	61005	2	16	107	32	6	12	DN_-22_N-20
	ADDN-TFR/L-1616-H30-09	61006	61007	3	16	107	32	9	18	DN_-22_N-30-
	ADDN-TFR/L-2020-K20-06	61028	61029	2	20	132	32	6	12	DN_-22_N-20
	ADDN-TFR/L-2020-K30-09	61030	61031	3	20	132	32	9	18	DN_-22_N-30-

ADDN Jet-Stream™ Thru Coolant External Turning, Grooving & Cut-off Tool holders

Coolant Outlet	METRIC Description	UPC #		Insert Size	Shank		E (Tool Stop)	Grooving Max.	Max. Dia.	Insert
		Right Hand	Left Hand		Height	Length				
	ADDN-TFR/L-1010-H20-12	61010	61011	2	10	107	32	12	24	DN_-22_N-20
	ADDN-TFR/L-1212-H20-12	61012	61013	2	12	107	32	12	24	DN_-22_N-20
	ADDN-TFR/L-1212-H30-14	61018	61019	3	12	107	32	14	28	DN_-22_N-30-
	ADDN-TFR/L-1616-H20-12	61014	61015	2	16	107	32	12	24	DN_-22_N-20
	ADDN-TFR/L-1616-H30-14	61016	61017	3	16	107	32	14	28	DN_-22_N-30-
	ADDN-TFR/L-2020-K20-12	61032	61033	2	20	132	32	12	24	DN_-22_N-20
	ADDN-TFR/L-2020-K30-14	61034	61035	3	20	132	32	14	28	DN_-22_N-30-

ADDN Jet-Stream™ Thru Coolant External Turning, Grooving & Cut-off Tool holders

Coolant Outlet	METRIC Description	UPC #		Insert Size	Shank		E (Tool Stop)	Grooving Max.	Max. Dia.	Insert
		Right Hand	Left Hand		Height	Length				
	ADDN-TFR/L-1010-H20-18	61020	61021	2	10	107	32	18	36	DN_-22_N-20
	ADDN-TFR/L-1212-H20-18	61022	61023	2	12	107	32	18	36	DN_-22_N-20
	ADDN-TFR/L-1616-H20-18	61024	61025	2	16	107	32	18	36	DN_-22_N-20
	ADDN-TFR/L-1616-H30-20	61026	61027	3	16	107	32	20	40	DN_-22_N-30-
	ADDN-TFR/L-2020-K20-18	61036	61037	2	20	132	32	18	36	DN_-22_N-20
	ADDN-TFR/L-2020-K30-20	61038	61039	3	20	132	32	20	40	DN_-22_N-30-

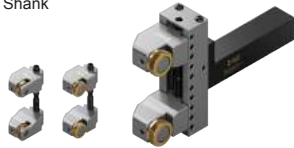
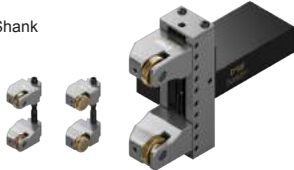
KNURLING TOOLS

from THE KNURLING TOOL SPECIALISTS



SPECIALISTS for
CNC &
MANUAL LATHES

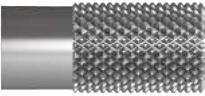
Knurling Tools & Wheels

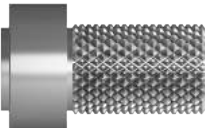
CNC Modular Shank for Standard Series Modular Knurling Heads  Page 78	CNC Modular Shank for SMALL Series Modular Knurling Heads  Page 78	SWFKT Single Wheel Fixed Knurling Tool HDSWFKT Heavy Duty Single Wheel Fixed Knurling Tool  Page 83	KTM109 Heavy Duty Style Straddle Square Shank Knurling Tool 1.5" & 2.5" Diameter Range  Page 85
CNC-1-2 1 - Light Duty 60° Diamond Cutting Knurling Head  Page 80	SCNC-1-2 1-SMALL Light Duty 60° Diamond Cutting Knurling Head  Page 82	SSWFKT Single Shoulder Wheel Fixed Knurling Tool  Page 84	KTW109 Shoulder Style Straddle Square Shank Knurling Tool 1.5" & 2.5" Diameter Range  Page 85
CNC-2-R 2 - Heavy Duty 60° Diamond Cutting Knurling Head  Page 80	SCNC-6-2 6- SMALL Shoulder Forming Knurling Head  Page 82	FKT Fixed Knurling Tool HDFKT Heavy Duty Fixed Knurling Tool  Page 83	KTO109 Heavy Duty Style Straddle Square Shank Knurling Tool 4.0"Diameter  Page 85
CNC-3-M 3 - Extra Heavy Duty 60° Diamond Cutting Knurling Head  Page 80	SCNC-7-D 7- SMALL Straddle Forming Knurling Head  Page 82	SFKT Shoulder Fixed Knurling Tool  Page 83	KTW109-40 Shoulder Style Straddle Square Shank Knurling Tool 4.0" Diameter Range  Page 85
CNC-4-M 4- Double Wheel Forming Knurling Head  Page 80	SCNC-8-2 7- SMALL Straddle Forming Knurling Head  Page 82	SCKN Self Centering Knurling Tool HDSCKN Heavy Duty Self Centering Knurling Tool  Page 83	CNC109-M Side Mount Flange Square Shank Knurling Tool 1.5 & 2.5 Diameter Range  Page 85
CNC-5-O 5- Single Wheel Forming Knurling Head  Page 80	107ST Straight Cutting Knurling Tool  Page 84	SSCK Shoulder Self Centering Knurling Tool  Page 83	CNC109-4 Side Mount Shoulder Square Shank Knurling Tool 1.5 & 2.5 Diameter Range  Page 85
CNC-6-4 6- Shoulder Forming Knurling Head  Page 80	107ST Straight Cutting Shoulder Knurling Tool  Page 84	TIKT True Internal Knurling Tool  Page 84	3WKT Three Wheel Knurling Tool  Page 87
CNC-7-R 7- Straddle Forming Knurling Head  Page 80	3SHKT Three Swivel Head Forming Knurling Tool  Page 83	SIKT Shoulder Internal Knurling Tool  Page 84	Knurling Wheels  Page 89
CNC-8-2 7- Straddle Forming Knurling Head  Page 80	FACEKT Single Wheel Face Forming Knurling Tool  Page 84	MMKT Milling Machine Knurling Tool  Page 84	

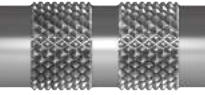
Knurling Tools Applications Form for Manual & CNC Machines

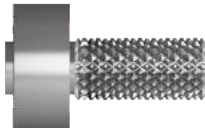
If your knurling application is not in the chart, please supply prints and information.

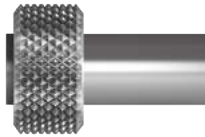
Knurling Application Knurling Tool Recommendation

Diamond Shoulderless	BEST	BETTER	GOOD
	SCNC-_-1-2 CNC-_-1-2 CNC-_-2-R CNC-_-3-M 3WKT-_-	SCNC-_-7-D CNC-_-7-R KTM109-_-M KTO109-_-O 3SHKT-_-	SCKN-_-DW-_ 3SHKT-_- CNC-_-4-M

Diamond to a Shoulder	BEST	BETTER	GOOD
	SCNC-_-6-2 CNC-_-6-4 3WKT-_-	KT109-_-4	SCCK-_-DW-_ KTM-109-_-M

Diamond Band	BEST	BETTER	GOOD
	SCNC-_-7-D- CNC-_-7-R KTM109-_-M KTO109-_-O	SCKN-_-DW-_ 3SHKT-_-	SFKT-_- SWKT-_-
Straight Band	CNC-_-4-M CNC-_-5-O		
			

Small Diameter Diamond to a Shoulder	BEST	BETTER	GOOD
	3WKT-_-		
Small Diameter Straight to a Shoulder			
			

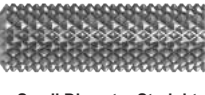
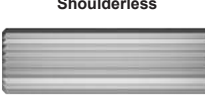
Diamond Crest	BEST	BETTER	GOOD
	SCNC-_-7-D CNC-_-7-R KTM109-_-M CNC-_-4-M CNC-_-5-O	SCKN-_-DW-_ 3SHKT-_-	SFKT-_- SWKT-_-
Straight Crest			
			

Radio Face	BEST	BETTER	GOOD
	Special		

Knurling Application Knurling Tool Recommendation

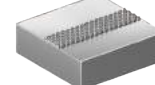
Straight Shoulderless	BEST	BETTER	GOOD
	SCNC-_-7-D CNC-_-7-R KTM109-_-M KTO109-_-O 3WKT-_-	107ST-_ 107ST-_ CNC-_-4-M SCKN-_-DW-_-	CMC-_-5-O SWKT-_-

Straight to a Shoulder	BEST	BETTER	GOOD
	KTW109-_-4 3WKT-_-	SCNC-_-6-2 CNC-_-6-4	FKT-_-

Small Diameter Diamond Shoulderless	BEST	BETTER	GOOD
	3WKT-_-	SCNC-_-7-D CNC-_-7-R	SFKT-_- SWFKT-_-
Small Diameter Straight Shoulderless			
			

Taper Diamond	BEST	BETTER	GOOD
	Special		
Taper Straight			
			

Internal Diamond	BEST	BETTER	GOOD
	TIKT-_- SIKT-_-		
Internal Straight			
			

Milling Diamond	BEST	BETTER	GOOD
	MMKT-_-		
Milling Straight			
			

Knurling Tools Applications Form for Manual & CNC Machines

Figure 1 - Full Knurling

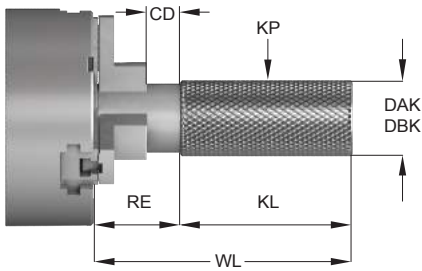


Figure 2 - Band Knurling

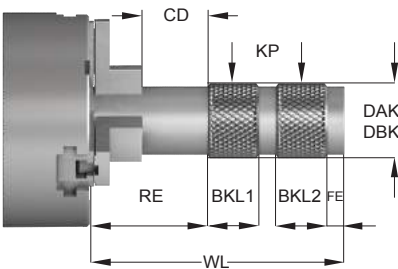


Figure 3 - Shoulder Knurling

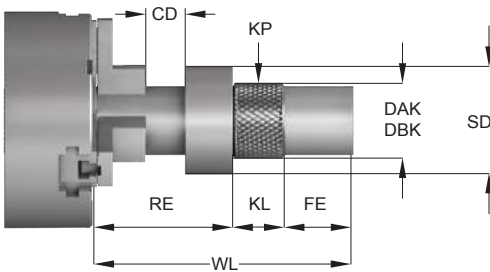
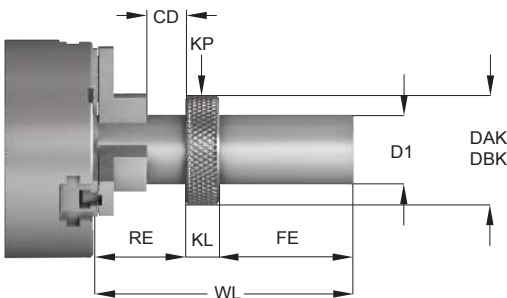
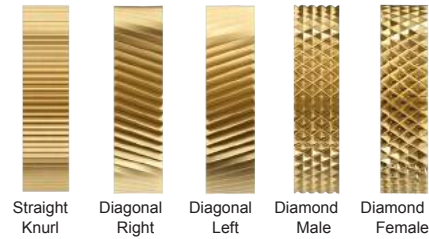


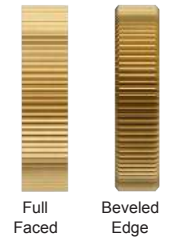
Figure 4 - Crest Knurling



Knurl Wheel Identification



Edge Prep

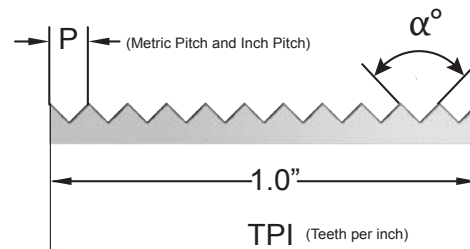


Knurl Pitch

TPI Is the number of teeth per inch

Circular Pitch Is the distance between tooth to tooth

Diametral Pitch Is the number of teeth per inch of diameter



Knurling Specification

x Check Knurling Specification

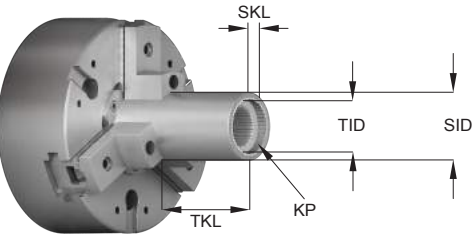
SKP	Straight Knurl	☐	DKPM	Diamond Knurl Male	☐
DKPR	Diagonal Knurl Right	☐	DKPF	Diamond Knurl Female	☐
DKPL	Diagonal Knurl Left	☐			

Fill Knurling Dimension

KP	Knurl Pitch	Inch	TPI	AP	% of Knurl Depth	
		DP				
		Metric	P-mm			
DBK	Diameter (Blank) Before Knurling		FE	Front End Distance		
DAK	Diameter After Knurling		RE	Rear End Distance		
KL	Knurling Length		CD	Chuck Distance		
BKL1	Band Knurling Length 1		SD	Shoulder Diameter		
BKL2	Band Knurling Length 2		D1	Shoulder Diameter		
WL	Workpiece Length					

Knurling Tools Applications Form for Manual & CNC Machines

Figure 5 - ID Internal Knurling

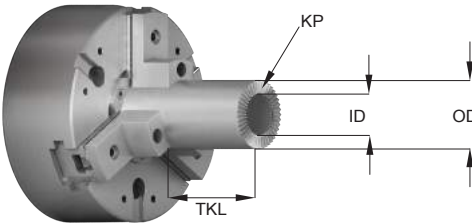


Knurling Specification

Fill Knurling Dimension

TID	True Internal Diameter		SKL	Shoulder Knurling Length	
SID	Shoulder Internal Diameter		KP	Knurl Pattern	
TKL	True Knurling Length		PI	Knurl Pitch	Inch TPI
				DP	
				Metric	P-mm

Figure 6 - Face Knurling

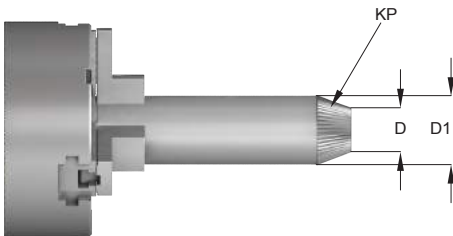


Knurling Specification

Fill Knurling Dimension

ID	Inside Diameter		KP	Knurl Pattern	
OD	Outside Diameter		PI	Knurl Pitch	Inch TPI
				DP	
				Metric	P-mm

Figure 7 - Taper Knurling

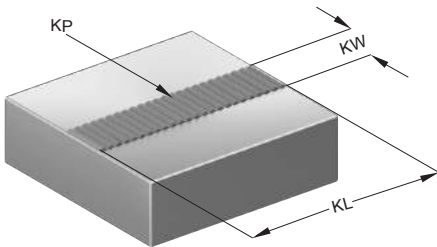


Knurling Specification

Fill Knurling Dimension

D	Small Diameter		KP	Knurl Pattern	
D1	Large Diameter		PI	Knurl Pitch	Inch TPI
				DP	
				Metric	P-mm

Figure 8 - Milling Knurling



Knurling Specification

Fill Knurling Dimension

KW	Knurling Width		KP	Knurl Pattern	
KL	Knurling Length		PI	Knurl Pitch	Inch TPI
				DP	
				Metric	P-mm

Knurling Production Information			
Material		Annealed	Heat Treated
Quantity		Hardness	
Machine	Manual	CNC	Swiss Other
Tool holder Style	Left	Right	Tool holder Size

Knurling Tool Recommendation				
Customer Information	Figure	Dorian Tool Recommendation		
Date		Item	UPC	Price
Company		Knurling Tool		
Contact		Knurling Head		
E-mail		Knurling Wheel		
Telephone		Knurling Pin		

Cutting Speed

Knurling is ordinarily performed at the same speeds used as turning operations. To calculate the cutting parameter of a knurling operation, use the same SFM used for high speed and cobalt tool bits to calculate (RPM) revolution of the workpiece and Knurling (f_n) feed rate.

For in-feed knurling, the knurl should be fed toward the work gradually until contact is made with the blank. As few work revolutions as possible should be allowed for feeding the knurl into the work. The knurl should be fed to full depth as rapidly as permissible without causing undue pressure on the work, the tools, and the equipment. Too many revolutions may result in a roughened or slivered tooth surface and destruction of the knurl and the knurling tool (5 to 20 REV)

For end-feed knurling, the rate of feed is governed by the type of material being knurled, diameter and rigidity of the work, and the width and pitch of the knurl. Faster feeds are used for the softer materials and slower feeds for harder materials.

Knurling Formula:

$$RPM = \frac{12 \times SFM}{\pi \times DIA} \quad SFM = \frac{(DIA \times \pi) \times RPM}{12}$$

Although the knurling should be normally completed within 10 to 25 work revolutions, the ability of many machine cross slides to operate at the desired high speeds prohibits the use of the preferred revolutions, especially when high work spindle speeds are used.

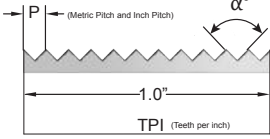
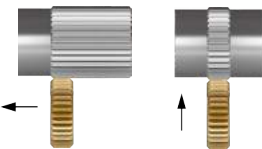
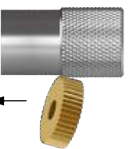
The cam rise must be continuous with no dwell or backing away until the high point is reached. It is desirable to have a slight dwell on the cam at the completion of the feeding which allows several revolutions of the work with the knurl at full tooth depth. The amount of dwell depends upon the nature of the work and the material. The knurl should be then withdrawn from the work quickly.

The feeds used for end-feed knurling with the turret vary considerably and are dependent upon the pitch of the knurl, material being knurled, and the nature and diameter of the work.

-Warning- Speeds and feeds information in the catalog are for reference only. If the operator does not feel safe using our speeds and feed recommendation, the operator should use what he or she is comfortable with. Dorian Tool is not responsible for any injuries that may occur.

Knurling SFM (V_c) parameter

Table 8

Material and Knurl Pitch				Knurl Forming			Knurl Cutting	
								
Material Description	Material Specs	TPI	Metric Pitch	Forming Speed (SFM and V_c)	Feed rate (f_n)		Cutting Speed	End Feed
				Smaller < Wheel dia. > Larger	End Feed	In Feed	Smaller < Wheel dia. > Larger	
Low carbon steel	1018 1117 1215	>14	>1,8	50-210 SFM [15-63 V_c m/min]	0.006" [0,15mm]	.001-.003" [.025-.075mm]	100-350 SFM [30-106 m/min]	0.009" [.23mm]
		16-20	1,6-1,2		0.008" [0,20mm]	.002-.004" [0,050-.100mm]		0.011" [.28mm]
		25-35	1,0-0,7		0.010" [.25mm]	.002-.004" [.050-.100mm]		0.013" [.33mm]
		40>	0,6>		0.012" [.30mm]	.002-.004" [.050-.100mm]		0.015" [.38mm]
Alloy Steel Tool steels	4130 4140 D2	>14	>1,8	35-150 SFM [10-45 m/min]	0.004" [.10mm]	.001-.002" [.025-.050mm]	70-250 SFM [21-75 m/min]	0.007" [.18mm]
		16-20	1,6-1,2		0.005" [.13mm]	.001-.003" [.025-.075mm]		0.008" [.20mm]
		25-35	1,0-0,7		0.007" [.18mm]	.001-.003" [.025-.075mm]		0.010" [.25mm]
		40>	0,6>		0.009" [.23mm]	.001-.003" [.025-.075mm]		0.012" [.30mm]
Stainless Steel	304 17-4	>14	>1,8	35-150 SFM [10-45 m/min]	0.004" [.10mm]	.001-.002" [.025-.050mm]	70-250 SFM [21-75 m/min]	0.007" [.18mm]
		16-20	1,6-1,2		0.005" [.13mm]	.001-.003" [.025-.075mm]		0.008" [.20mm]
		25-35	1,0-0,7		0.007" [.18mm]	.001-.003" [.025-.075mm]		0.010" [.25mm]
		40>	0,6>		0.009" [.23mm]	.001-.003" [.025-.075mm]		0.012" [.30mm]
Aluminum Brass Plastic	6061 C360 Delrin	>14	>1,8	90-390 SFM [27-118 m/min]	0.008" [.20mm]	.002-.004" [.050-.100mm]	110-420 SFM [33-127 m/min]	0.011" [.28mm]
		16-20	1,6-1,2		0.010" [.25mm]	.003-.005" [.075-.125mm]		0.013" [.33mm]
		25-35	1,0-0,7		0.013" [.33mm]	.003-.005" [.075-.125mm]		0.016" [.40mm]
		40>	0,6>		0.017" [.43mm]	.003-.005" [.075-.125mm]		0.020" [.50mm]

Note: When knurling, start with low Cutting speed, to evaluate the wheel performance, (to avoid the premature life of the wheel) increase until optimum cutting speed and feed is achieved

NOTES:

CNC Modular Knurling Tools

With the Flexibility of Multiple Knurling Applications!



Versatility

- **Multi** diameter diamond knurling cutting style
- **Reversible** Head for Right or Left knurling.
- **Heavy duty** knurl cutting and knurl forming
- **Double Wheel** forming knurling head
- **Straddle** forming knurling head
- **Shoulder** forming knurling head
- **Wide diameter** range for small diameter to large diameter parts

Modular

Multi shank size interchangeable with 8 knurling heads.



Adjustable

Dovetail knurling head locking system.

Quick and precise center line setting.

Knurling wheel angle stationary for diamond cutting

Two Ways to Knurl

Forming (five heads available)

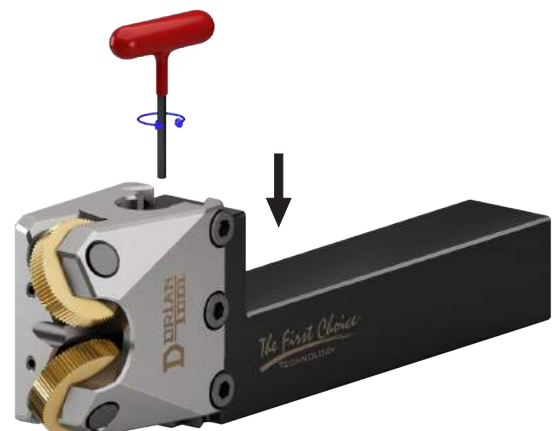
Knurl forming action (material displacement by means of rolling) is generally for special application. It creates a better quality of knurl pattern, but speeds and feeds are sacrificed for this quality.

The force applied through forming is increased in larger diameters making knurling difficult and slow.

Cutting (three heads available)

Knurl cutting action cuts a perfect knurl pattern 10 to 20 times faster than any conventional knurling tool. It is engineered to knurl any material, including thin wall tubing, with minimum stress to the spindle and work piece.

Knurl cutting action speeds up knurling enough to become applicable for CNC use.



CNC-100-3-M used for examples.

Knurling Tools Cutting Operation



Mounting to the Machine

Clamp the shank at right angles to the axial center line of the machine.
The knurl wheels of the knurling tool head should be set exactly on center.

To adjust center-height:

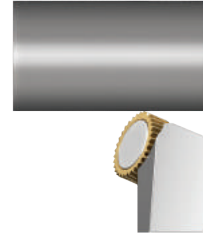
1. Loosen the lock screws.
2. Turning the adjustment screw adjusts the head up or down.
3. Turn adjustment screw until the center height is aligned.
4. Lock head back in place by tightening the lock screws.

Knurling Adjustment Set Up

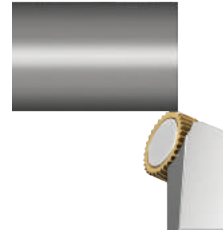
With the machine spindle rotating slowly, in-feed (Plunge) the tool to make a slight impression for the full width of the cutter.

This impression should be equal on both wheels when using Diamond Knurling Head. Misaligned patterns can be corrected by turning the fine adjustment screw in opposite directions.

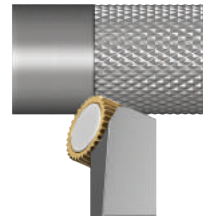
Starting Cutting Knurl



- 1) Touch the workpiece diameter with the knurl wheels.

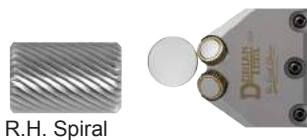


- 2) Move the knurling wheel to the end of the workpiece
 - Set the cutting depth of the wheel (35% of the circular pitch)
 - Start knurl



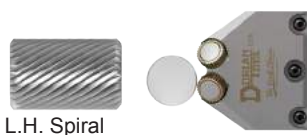
- 3) Use recommended cutting parameter
 - Use coolant

Knurling head center line adjustments



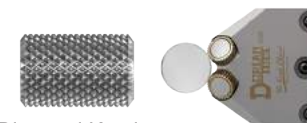
R.H. Spiral

- Knurling tool is too low from center line.
- Top wheel is cutting a deeper R.H. Diagonal Knurl.
- Turn the Fine Center Adjustment Screw until both wheels are on center and touching simultaneously.



L.H. Spiral

- Knurling tool is too high from center line.
- Bottom wheel is cutting a deeper L.H. Diagonal Knurl.
- Turn Fine Center Adjustment Screw until both wheels are on center and touching simultaneously.



Diamond Knurl

- Tool is on center line.
- Both wheels are touching simultaneously, cutting a perfect diamond knurl.

Full Faced Cutting Knurl Wheel

When cut knurling, a full faced knurl wheel must be used. The edge of the knurl wheel will be cut into the material to be knurled. A sharp edge must be kept to cut a clean and smooth knurl pattern. The knurl wheel can be reground once the edge is dull or chipped.

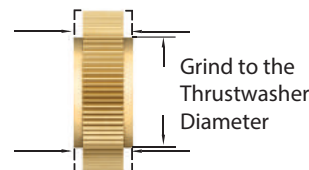
Edge Prep

Full Faced

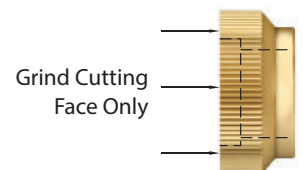


Wheel Grinding

When the cutting edges of the knurl wheel become dull, sharpen them by grinding the cutting face of both wheels evenly. You can also grind forming wheels to desired width, but bevel afterwards.



R & M SERIES KNURL WHEEL



SW SERIES KNURL WHEEL

Easy to set up Simple to operate.

To minimize set up time of knurling application, and simplify the knurling operation, the CNC Modular Knurling Tool has been engineered to create a diamond knurling pattern, without the need of resetting the knurl wheels every time the workpiece diameter changes.

To cover the full range of diameter three modular cutting knurling head have been developed.

- 1) **Small diameter modular head**
- 2) **Medium diameter modular head**
- 3) **Large diameter modular head**

Small Diameter Head



Cutting Range

Small Diameter Cutting Range from 12mm to 38mm

End feed range: 0,10mm to 0,30mm

- Knurl cutting action
- Twin straight SW series knurl wheels for male diamond pattern
- Supplied with Full Faced SW2S-30-HS knurl wheels - TiN coated

Medium Diameter Head



Medium Diameter Cutting Range from 25mm to 127mm

End feed range: .From 0,10mm to 0,40mm

- Knurl cutting action
- Two straight R series knurl wheels for male diamond pattern
- Supplied with Full Faced RS-25-HS knurl wheels - TiN coated

Large Diameter Head



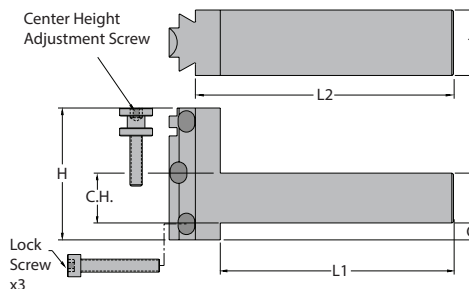
Large Diameter Cutting Range from 50mm & up

End feed range: 0,10mm to 0,63mm

- Knurl cutting action
- Two straight M series knurl wheels for male diamond pattern
- Supplied with Full Faced MS-25-HS knurl wheels - TiN coated

How the diamond CNC Modular Knurling tool works.

- 1) Choose the cutting diameter range of the knurl head
- 2) Set the knurling wheel on centerline of the workpiece
- 3) Touch the workpiece diameter with the knurl wheels.
- 4) Set the depth of cut (35% of the circle pitch)
- 6) Start to cut recommended cutting parameter

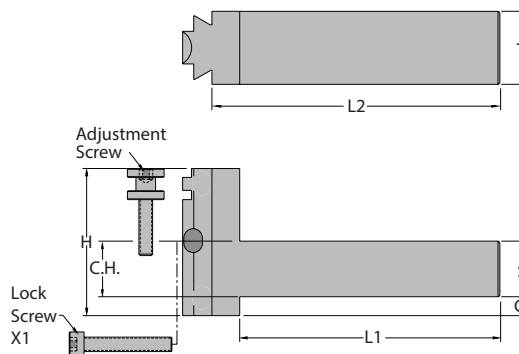


CNC Modular Knurling Tool Shank

Shank Metric Description	UPC #	C.H. & S mm	G	H	L1	L2	T	Adjustment Screw		Lock Screw Set	
								Description	UPC #	Description	UPC #
CNC-20*	21005	20mm	5,4	50,0	114,3	123,8	25,4				
CNC-25*	21015	25mm	-	50,0	114,3	123,8	25,4	CNC-1175	28505	CNC-1024**	28515
CNC-32*	21025	32mm	-	57,2	127,0	136,5	25,4				

* Supplied with lock screw set and adjustment screw

** One (1) set includes three (3) lock screws



- Easy set-up
- High productivity
- Best knurl quality
- Long knurl wheel life
- Low production cost
- Specifically designed for the CNC Lathe
- Precision square shank with preset center height
- Right or Left hand applications
- Shanks and heads are all interchangeable
- High Speed knurl wheels (TiN coated)
- Carbide knurl pin
- Center height adjustment

CNC Small Modular Knurling Tool Shank

Shank metric	UPC #	C.H. & S	G	H	L1	L2	T	Adjustment Screw		Lock Screw Set of 3	
								Description	UPC #	Description	UPC #
SCNC-10	20305	10	2,4	25,4	63,5	68,2	19,1				
SCNC-12	20315	12	0,4	25,4	69,9	74,5	19,1	SCNC-875	28510	SCNC-832	28520
SCNC-162	20325	16	0,0	28,6	69,9	74,5	19,1				

* Modular shank supplied with adjustment screw and screw lock

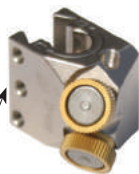
6 Modular Shank Sizes

8 Modular Heads

- Flexibility
- Multiple combinations
- Multiple applications
- Better performance
- Designed for the CNC Lathe
- Precision square shank with preset center height
- Right or Left hand applications
- Interchangeable shanks & heads
- High Speed knurl wheels (TiN coated)
- Supplied with heavy duty parts



1 Light Duty 60° Diamond Cutting Modular Knurling Head - CNCKH-1-2



Cutting

Small Diameter Cutting Range 8mm to 38mm

End feed range: From 0,100mm to 0,30mm

- Knurl cutting action
- Twin straight SW series knurl wheels for male diamond pattern
- Supplied with Full Faced SW2S-30-HS knurl wheels - TiN coated

2 Heavy Duty 60° Diamond Cutting Modular Knurling Head - CNCKH-2-R



Cutting

Medium Diameter Cutting Range 25mm to 125mm

End feed range: From 0,10mm to 0,40mm

- Knurl cutting action
- Two straight R series knurl wheels for male diamond pattern
- Supplied with Full Faced RS-25-HS knurl wheels - TiN coated

3 Extra Heavy Duty 60° Diamond Cutting Modular Knurling Head - CNCKH-3-M



Cutting

Large Diameter Cutting Range 50mm & up

End feed range: From 0,10mm to 0,63mm

- Knurl cutting action
- Two straight M series knurl wheels for male diamond pattern
- Supplied with Full Faced MS-25-HS knurl wheels - TiN coated

4 Double Wheel Forming Knurling Modular Head - CNCKH-4-M



Forming

Diameter Range: 8mm & up

End feed range: From 0,100mm to 0,30mm

- Knurl Forming action
- Two M series knurl wheels for straight or diamond pattern
- Supplied with Beveled MDR/L-25-HSB knurl wheels - TiN coated

5 Single Wheel Forming Modular Knurling Head - CNCKH-5-O



Forming

Straight Bump Unlimited Diameter

End feed range: From 0,100mm to 0,30mm

- Knurl forming action
- Single O series knurl wheel for straight or diamond pattern
- Supplied with Beveled OS-25-HSB knurl wheel - TiN coated

6 Shoulder Forming Modular Knurling Head - CNCKH-6-4



Forming

Diameter Range: 8mm & up

End feed range: From 0,100mm to 0,30mm

- Knurl forming action
- Two SW series knurl wheels for straight or diamond pattern
- Supplied with Beveled SW4R/L-25-HSB knurl wheels - TiN coated

7 Straddle Forming Modular Knurling Head - CNCKH-7-R



Forming

Diameter Range: 25mm

End feed range: From 0,100mm to 0,30mm

- Knurl forming action
- Two R series knurl wheels for straight or diamond pattern
- Supplied with Beveled RDR/L-30-HSB knurl wheels - TiN coated

7-2 Shoulder Style Straddle Forming Modular Knurling Head - CNCKH-7-2



Forming

Diameter Range: up to 25mm

End feed range: From 0,100mm to 0,30mm

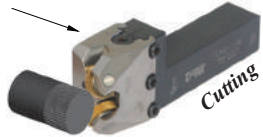
- Knurl forming action
- Two SW series knurl wheels for straight or diamond pattern
- Supplied with Beveled SW2R/L-30-HSB knurl wheels - TiN coated



1 Light Duty 60° Diamond Cutting Modular Knurling Head + CNC Modular Knurling Tool Shank

Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
CNC-20-1-2	20405	20	174,65	SW2	SW2.0P-2S	29055	CNCKH-1-2
CNC-25-1-2	20415	25	174,65	SW2			
CNC-32-1-2	20425	32	187,325	SW2			

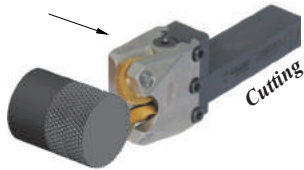
Supplied with a set of Full Faced straight high speed TiN coated knurl wheels, 30 TPI (.8mm) for a male diamond pattern.



2 Heavy Duty 60° Diamond Cutting Modular Knurling Head + CNC Modular Knurling Tool Shank

Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
CNC-20-2-R	20505	20	174,65	Series R	KPS-25- 87-C	28925	CNCKH-2-R
CNC-25-2-R	20515	25	174,65				
CNC-32-2-R	20525	32	187,325				

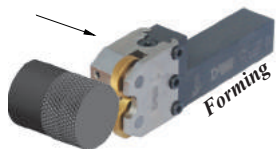
Supplied with a set of Full Faced straight high speed knurl wheels, 25 TPI (1mm) for a male diamond pattern.



3 Extra Heavy Duty 60° Diamond Cutting Modular Knurling Head + CNC Modular Knurling Tool Shank

Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
CNC-20-3-M	20605	20	177,8	Series M	KPS-31-100-C	28945	CNCKH-3-M
CNC-25-3-M	20615	25	177,8				
CNC-32-3-M	20625	32	190,5				

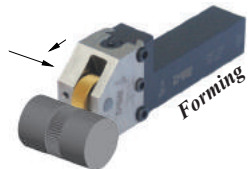
Supplied with a set of Full Faced straight high speed TiN coated knurl wheels, 25 TPI (1mm) for a male diamond pattern.



4 Double Wheel Forming Modular Knurling Head + CNC Modular Knurling Tool Shank

Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
CNC-20-4-M	20640	20	177,8	Series M	KPS-31-125-C	28950	CNCKH-4-M
CNC-25-4-M	20642	25	177,8				
CNC-32-4-M	20644	32	190,5				

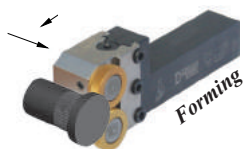
Supplied with a set of Beveled diagonal high speed beveled TiN coated knurl wheels, 25 TPI (1mm) for a male diamond pattern.



5 Single Wheel Forming Modular Knurling Head + CNC Modular Knurling Tool Shank

Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
CNC-20-5-O	20705	20	171,45	Series O	KPS-31-125-C	28950	CNCKH-5-O
CNC-25-5-O	20715	25	171,45				
CNC-32-5-O	20725	32	184,15				

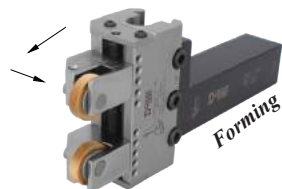
Supplied with one Beveled straight high speed beveled TiN coated knurl wheel, 25 TPI (1mm) for a straight pattern.



6 Shoulder Forming Modular Knurling Head + CNC Modular Knurling Tool Shank

Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
CNC-20-6-4	20775	20	171,45	Series SW4	SW4.0P-2S	29085	CNCKH-6-4
CNC-25-6-4	20785	25	171,45				
CNC-32-6-4	20795	32	184,15				

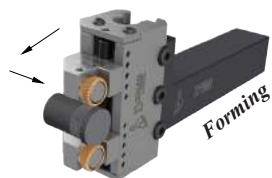
Supplied with a set of Beveled diagonal high speed beveled TiN coated knurl wheels, 25 TPI (1mm) for a male diamond pattern.



7-R Straddle Forming Modular Knurling Head + CNC Modular Knurling Tool Shank

Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
CNC-20-7-R	20905	20	187,325	Series R	KPS-25-75-C	28915	CNCKH-7-R
CNC-25-7-R	20915	25	187,325				
CNC-32-7-R	20925	32	187,325				

Supplied with a set of Beveled diagonal high speed beveled TiN coated knurl wheels, 30 TPI (.8mm) for a male diamond pattern.

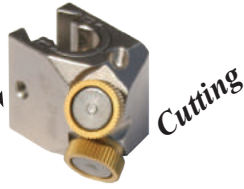


7-2 Shoulder Style Straddle Forming Knurling Head + CNC Modular Knurling Tool Shank

Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
CNC-20-7-2	20935	20	182,88	Series SW2	SW2.0P-2S	29055	CNCKH-7-2
CNC-25-7-2	20945	25	182,88				
CNC-32-7-2	20955	32	193,675				

Supplied with a set of Beveled diagonal high speed beveled TiN coated knurl wheels, 30 TPI (.8mm) for a male diamond pattern.

1 SMALL Light Duty 60° Diamond Cutting Modular Knurling Head - SCNCKH-1-2



Small Cutting Range 8mm to 38mm

End feed range: From 0,100mm to 0,30mm

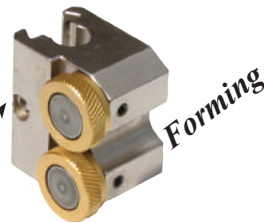
- Knurl cutting action
- Twin straight SW series knurl wheels for male diamond pattern
- Supplied with full faced SW2S-30-HS knurl wheels - TiN coated

3 Modular Shank Sizes

4 Modular Heads

- Flexibility
- Multiple combinations
- Multiple applications
- Better performance
- Designed for the CNC Lathe
- Precision square shank with preset center height
- Right or Left hand applications
- Interchangeable shanks & heads
- High Speed knurl wheels (TiN coated)
- Supplied with heavy duty parts

6 SMALL Shoulder Forming Modular Knurling Head - SCNCKH-6-2

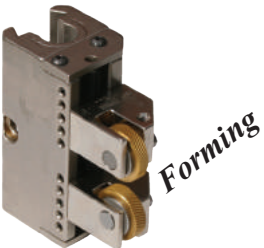


Diameter Range: 6,4mm & up

End feed range: From 0,100mm to 0,30mm

- Knurl forming action
- Twin SW series knurl wheels for straight or diamond pattern
- Supplied with beveled SW2R/L-25-HSB knurl wheels - TiN coated

7-R SMALL Straddle Forming Modular Knurling Head - SCNCKH-7-D

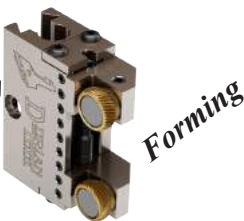


Diameter Range: up to 16mm

End feed range: From 0,100mm to 0,30mm

- Knurl forming action
- Twin D series knurl wheels for straight or diamond pattern
- Supplied with beveled DR/L-30-HSB knurl wheels - TiN coated

7-2 SMALL Shoulder Style Straddle Forming Modular Knurling Head - SCNCKH-7-2

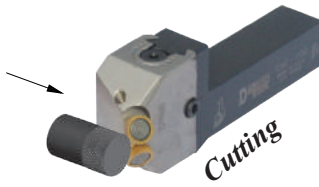


Diameter Range: up to 16mm

End feed range: From 0,100mm to 0,30mm

- Knurl forming action
- Twin SW series knurl wheels for straight or diamond pattern
- Supplied with beveled SW2R/L-30-HSB knurl wheels - TiN coated

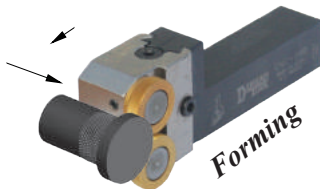
1 SMALL Light Duty 60° Diamond Cutting Modular Knurling Head + SMALL CNC Modular Knurling Tool Shank



Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
SCNC-10-1-2	20005	10	101,6	SW2	SW2.0P-2S	29055	SCNCKH-1-2
SCNC-12-1-2	20015	12	107,95	SW2			
SCNC-162-1-2	20025	16	107,95	SW2			

Supplied with a set of Full Faced straight high speed TiN coated knurl wheels, 30 TPI (.8mm) for a male diamond pattern

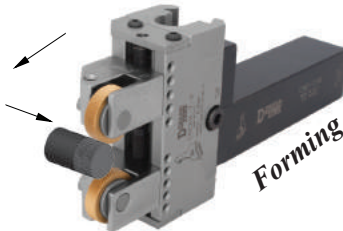
6 SMALL Shoulder Forming Modular Knurling Head + SMALL CNC Modular Knurling Tool Shank



Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
SCNC-10-6-2	20105	10	101,6	Series SW4	SW2.0P-2S	29055	SCNCKH-6-2
SCNC-12-6-2	20115	12	107,95				
SCNC-162-6-2	20125	16	107,95				

Supplied with a set of Beveled diagonal high speed TiN coated knurl wheels, 25 TPI (1mm) for a male diamond pattern

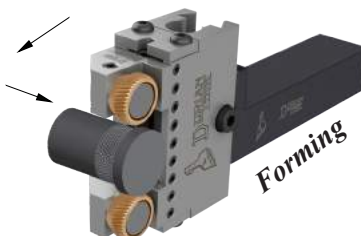
7-R SMALL Straddle Forming Modular Knurling Head + SMALL CNC Modular Knurling Tool Shank



Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
SCNC-10-7-D	20205	10	114,3	Series R	KPS-18-50-C	28905	SCNCKH-7-D
SCNC-12-7-D	20215	12	120,65				
SCNC-162-7-D	20225	16	120,65				

Supplied with a set of Beveled diagonal high speed TiN coated knurl wheels, 30 TPI (8mm) for a male diamond pattern

7-2 SMALL Shoulder Style Straddle Forming Modular Knurling Head + SMALL CNC Modular Knurling Tool Shank



Description	UPC #	Shank Size mm	Tool Length	Knurl Wheel	Knurl Pin Set		Modular Head Description
					Description	UPC #	
SCNC-10-7-2	20275	10	114,3	Series SW2	SW2.0P-2S	29055	SCNCKH-8-2
SCNC-12-7-2	20285	12	120,65				
SCNC-162-7-2	20295	16	120,65				

Supplied with a set of Beveled diagonal high speed TiN coated knurl wheels, 30 TPI (.8mm) for a male diamond pattern



SCKN - Self-Centering Knurling Tool HDSCKN Heavy Duty Self-Centering Knurling Tool *Reversible Direction*

Description	UPC #	Knurl Wheel	Knurl Pin Set		Shank Size
			Description	UPC #	
SCKN-10-DW-D	22161	D *	KPS-18-50	28805	10
SCKN-12-DW-D	22106	D *	KPS-18-50	28805	12
SCKN-162-DW-D	22115	D *	KPS-18-50	28805	16
SCKN-20-DW-M	22116	M **	KPS-31-100	28845	20
SCKN-25-DW-M	22126	M **	KPS-31-100	28845	25
SCKN-32-DW-M	22136	M **	KPS-31-100	28845	32
HDSCKN-20-DW-O	22405	O **	KPS-31-125-C	28950	20
HDSCKN-25-DW-O	22415	O **	KPS-31-125-C	28950	25
HDSCKN-25-DW-P	22425	P **	KPS-50-125-C	28955	25
HDSCKN-32-DW-P	22435	P **	KPS-50-125-C	28955	32



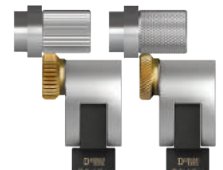
Supplied with one (1) set of beveled diagonal high speed knurl wheels, *30 TPI, **25 TPI

*** Warning: May cause deflections on small part diameters, and too much pressure on large diameters



SSCK - Shoulder Self-Centering Knurling Tool *Reversible Direction*

Description	UPC #	Knurl Wheel	Knurl Pin Set		Shank Size
			Description	UPC #	
SSCK-10-DW-2	22205	SW2 *	SW2.0P-2S	29055	10
SSCK-12-DW-2	22215	SW2 *	SW2.0P-2S	29055	12
SSCK-162-DW-2	22218	SW2 *	SW2.0P-2S	29055	16
SSCK-20-DW-4	22235	SW4 **	SW4.0P-2S	29085	20
SSCK-25-DW-4	22245	SW4 **	SW4.0P-2S	29085	25
SSCK-32-DW-4	22255	SW4 **	SW4.0P-2S	29085	32



Supplied with one (1) set of beveled diagonal high speed TiN coated knurl wheels, *30 TPI, **25 TPI

*** Warning: May cause deflection on small part diameters, and too much pressure on large diameters



3SHKT - Three Swivel Head Knurling Tool *Reversible Direction*

Description	UPC #	Knurl Wheel	Knurl Pin Set		Shank Size
			Description	UPC #	
3SHKT-12-D	21505	D *	KPS-18-62	28810	12
3SHKT-162-D	21515	D *	KPS-18-62	28810	16
3SHKT-20-M	21525	M **	KPS-31-100	28845	20
3SHKT-25-M	21535	M **	KPS-31-100	28845	25
3SHKT-32-M	21545	M **	KPS-31-100	28845	32



* Supplied with three (3) sets of beveled diagonal right and diagonal left high speed TiN coated knurl wheels, 20 TPI, 30 TPI, 40 TPI

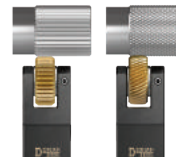
** Supplied with three (3) sets of beveled diagonal right and diagonal left high speed TiN coated knurl wheels, 16 TPI, 25 TPI, 35 TPI.

*** Warning: May cause deflection on small part diameters, and too much pressure on large diameters



FKT - Fixed Forming Knurling Tool

Description	UPC #	Knurl Wheel	Knurl Pin Set		Shank Size
			Description	UPC #	
FKT-10-D	21905	10	KPS-18-50	28805	10
FKT-12-D	21915	12	KPS-18-50	28805	12
FKT-162-D	21955	16	KPS-18-62	28810	16
FKT-20-M	21925	20	KPS-31-75	28840	20
FKT-25-M	21935	25	KPS-31-100	28845	25
FKT-32-O	21945	32	KPS-31-125	28850	32



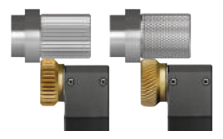
Supplied with one (1) set of diagonal high speed beveled TiN coated knurl wheels, *30 TPI, ** 25 TPI

*** Warning: May cause deflection on small part diameters, and too much pressure on large diameters



SFKT - Shoulder Fixed Forming Knurling Tool

Description	UPC #	Knurl Wheel	Knurl Pin Set		Shank Size
			Description	UPC #	
SFKT-10-2	22005	SW2 *	SW2.0P-2S	29055	10
SFKT-12-2	22015	SW2 *	SW2.0P-2S	29055	12
SFKT-162-2	22055	SW2 *	SW2.0P-2S	29055	16
SFKT-20-4	22025	SW4 **	SW4.0P-2S	29085	20
SFKT-25-4	22035	SW4 **	SW4.0P-2S	29085	25
SFKT-32-4	22045	SW4 **	SW4.0P-2S	29085	32



Supplied with one (1) set of beveled diagonal high speed TiN coated knurl wheels, * 30 TPI (0.8mm), ** 25 TPI (1.0mm)

*** Warning: May cause deflections on small part diameters, and too much pressure on large diameters



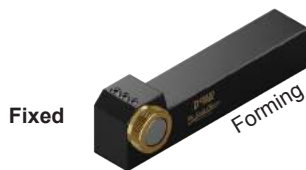
SWFKT - Single Wheel Fixed Forming Knurling Tool HDSWFKT - Heavy Duty Single Wheel Fixed Forming Knurling Tool

Description	UPC #	Knurl Wheel	Knurl Pin Set		Shank Size
			Description	UPC #	
SWFKT-831-B	21705	B *	KPS-12-38	28800	8
SWFKT-10-D	21715	D *	KPS-18-50	28805	10
SWFKT-12-D	21725	D *	KPS-18-50	28805	12
SWFKT-162-D	21765	D *	KPS-18-62	28810	16
SWFKT-20-M	21735	M **	KPS-31-75	28840	20
SWFKT-25-O	21745	O **	KPS-31-100	28845	25
SWFKT-32-O	21755	O **	KPS-31-125	28850	32
HDSWFKT-20-O	21805	O **	KPS-31-100-C	28945	20
HDSWFKT-25-P	21815	P **	KPS-50-125-C	28955	25
HDSWFKT-32-P	21825	P **	KPS-50-125-C	28955	32



Supplied with one (1) straight high speed beveled TiN coated knurl wheel, *30 TPI, **25 TPI

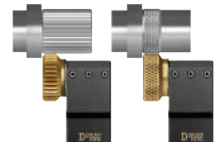
*** Warning: May cause deflection on small part diameters, and too much pressure on large diameters



SSWFKT - Single Shoulder Wheel Fixed Forming Knurling Tool

Description	UPC #	Knurl Wheel	Knurl Pin Set		Shank Size
			Description	UPC #	
SSWFKT-10-2	21775	SW2 *	SW2.0P-1S	29050	10
SSWFKT-12-2	21779	SW2 *	SW2.0P-1S	29050	12
SSWFKT-162-2	21783	SW2 *	SW2.0P-1S	29050	16
SSWFKT-20-4	21787	SW4 **	SW4.0P-1S	29080	20
SSWFKT-25-4	21791	SW4 **	SW4.0P-1S	29080	25
SSWFKT-32-4	21795	SW4 **	SW4.0P-1S	29080	32

Supplied with one (1) beveled straight high speed TIN coated knurl wheel, * 30 TPI (0.8mm), ** 25 TPI (1.0mm)
 *** Warning: May cause deflection on small part diameters, and too much pressure on large diameters



107ST - Straight Cutting Knurling Tool With A Square Shank For CNC

Description	UPC #		Knurl Wheel	Knurl Pin Set		Shank Size
	R.H.	L.H.		Description	UPC #	
107ST-12-R-RH/LH	21105	21205	RDL*	KPS-25-100-C	28930	12
107ST-162-R-RH/LH	21115	21215	RDL*	KPS-25-100-C	28930	16
107ST-20-M-RH/LH	21125	21225	MDL**	KPS-31-125-C	28950	20
107ST-25-M-RH/LH	21135	21235	MDL**	KPS-31-125-C	28950	25
107ST-32-M-RH/LH	21145	21245	MDL**	KPS-31-125-C	28950	32

Supplied with one (1) full faced diagonal left high speed TIN coated knurl wheel, * 30 TPI, ** 25 TPI

*** Warning: May cause deflection on small part diameters, and too much pressure on large diameters



107ST - Straight Cutting Shoulder Knurling Tool With A Square Shank For CNC

Description	UPC #		Knurl Wheel	Knurl Pin Set		Shank Size
	R.H.	L.H.		Description	UPC #	
107ST-12-2-R/L	21106	21206	SW2L*	SW2.0P-1S	29050	12
107ST-162-2-R/L	21116	21216	SW2L*	SW2.0P-1S	29050	16
107ST-20-4-R/L	21126	21226	SW4L**	SW4.0P-1S	29080	20
107ST-25-4-R/L	21136	21236	SW4L**	SW4.0P-1S	29080	25
107ST-32-4-R/L	21146	21246	SW4L**	SW4.0P-1S	29080	32

Supplied with one (1) full faced diagonal left high speed TIN coated knurl wheel, * 30 TPI (.8mm), ** 25 TPI (1.0mm)

*** Warning: May cause deflection on small part diameters, and too much pressure on large diameters



FACEKT - Face Forming Knurling Tool

Description	UPC #	Knurl Wheel	Knurl Pin Set		Shank Size
			Description	UPC #	
FACEKT-20-2	21615	SW2 *	SW2.0P-1S	29050	20
FACEKT-25-2	21625	SW2 *	SW2.0P-1S	29050	25
FACEKT-20-4	21635	SW4 **	SW4.0P-1S	29080	20
FACEKT-25-4	21645	SW4 **	SW4.0P-1S	29080	25

Supplied with one (1) beveled straight high speed TIN coated knurl wheel, * 30 TPI (.8mm), ** 25 TPI (1.0mm)

*** Limited band width from knurl wheel



TIKT - True Internal Forming Knurling Tool

Description	UPC #	Knurl Wheel	Knurl Pin Set		Shank Size
			Description	UPC #	
TIKT-12-B	22601	B *	KPS-12-38	28800	12
TIKT-20-D	22616	D *	KPS-18-50	28805	20
TIKT-25-R	22626	R **	KPS-25-75	28820	25
TIKT-32-M	22636	M **	KPS-31-100	28845	32

Supplied with one (1) set of beveled diagonal high speed knurl wheels, *30 TPI, **25 TPI

*** Warning: May cause deflections on small part diameters, and too much pressure on large diameters



SIKT - Shoulder Internal Forming Knurling Tool

Description	UPC #	Knurl Wheel	Knurl Pin Set		Shank Size
			Description	UPC #	
SIKT-12-2	22605	SW2 *	SW2.0P-1S	29050	12
SIKT-20-4	22615	SW4 **	SW4.0P-1S	29080	20
SIKT-25-4	22625	SW4 **	SW4.0P-1S	29080	25
SIKT-32-4	22635	SW4 **	SW4.0P-1S	29080	32

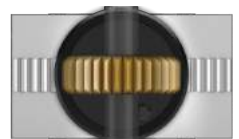
Supplied with one (1) beveled straight high speed TIN coated knurl wheel, * 30 TPI, ** 25 TPI.



MMKT - Milling Machine Forming Knurling Tool

Description	UPC #	Knurl Wheel	Knurl Pin Set		Shank Size
			Description	UPC #	
MMKT-10-D	22505	D *	KPS-18-62	28810	10
MMKT-12-R	22515	R **	KPS-25-87	28825	12
MMKT-20-O	22525	O **	KPS-31-100	28845	20
MMKT-25-O	22535	O **	KPS-31-125	28850	25
MMKT-32-P	22545	P **	KPS-50-150	28860	32

Supplied with one (1) beveled straight high speed TIN coated knurl wheel, *30 TPI (0.8mm), **25 TPI (1.0mm)



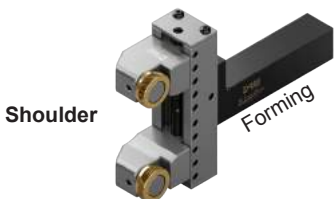


KTM109 Heavy Duty Style Straddle Square Shank Knurling Tool *Reversible Direction*

Description	UPC #	Diameter Range***	Knurl Wheel	Knurl Arm Set		Shank Size
				Supplied	Optional	
KTM109-20-15-M	22811	0 - 38mm	M*	W109-3-25-M	W109-3-25-4	20
KTM109-25-15-M	22812		M*	W109-3-25-M	W109-3-25-4	25
KTM109-32-15-M	22813		M*	W109-3-25-M	W109-3-25-4	32
KTM109-20-25-M	22819	3,2-63mm	M*	W109-3-25-M	W109-3-25-4	20
KTM109-25-25-M	22821		M*	W109-3-25-M	W109-3-25-4	25
KTM109-32-25-M	22822		M*	W109-3-25-M	W109-3-25-4	32

* Supplied with one (1) set of beveled diagonal high speed TiN coated knurl wheels for a male diamond pattern, 25 TPI

***Warning: This tool has the capability to adjust the wheels until they touch, but physically applying a knurl on small diameters may not be possible

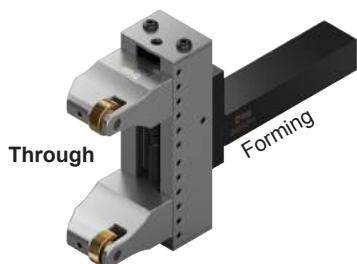


KTW109 Shoulder Style Straddle Square Shank Forming Knurling Tool *Reversible Direction*

Description	UPC #	Diameter Range***	Knurl Wheel	Knurl Arm Set		Shank Size
				Supplied	Optional	
KTW109-20-15-4	22828	0 - 38mm	SW4*	W109-3-25-4	W109-3-25-M	20
KTW109-25-15-4	22829		SW4*	W109-3-25-4	W109-3-25-M	25
KTW109-32-15-4	22831		SW4*	W109-3-25-4	W109-3-25-M	32
KTW109-20-25-4	22836	3,2-63mm	SW4*	W109-3-25-M	W109-3-25-4	20
KTW109-25-25-4	22838		SW4*	W109-3-25-M	W109-3-25-4	25
KTW109-32-25-4	22839		SW4*	W109-3-25-M	W109-3-25-4	32

* Supplied with one (1) set of beveled diagonal high speed TiN coated knurl wheels for a male diamond pattern, 25 TPI

***Warning: This tool has the capability to adjust the wheels until they touch, but physically applying a knurl on small diameters may not be possible

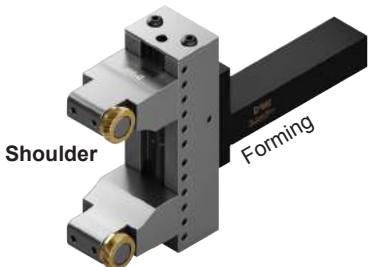


KTO109-40 Heavy Duty Style Straddle Square Shank Knurling Tool *Reversible Direction*

Description	UPC #	Diameter Range***	Knurl Wheel	Knurl Arm Set		Shank Size
				Supplied	Optional	
KTO109-25-40-O	22867	16- 100mm	O*	W109-3-40-O	W109-3-40-4	25
KTO109-32-40-O	22868		O*	W109-3-40-O	W109-3-40-4	32

* Supplied with one (1) set of beveled diagonal high speed TiN coated knurl wheels for a male diamond pattern, 25 TPI

***Warning: Physically applying a knurl on small diameters may not be possible

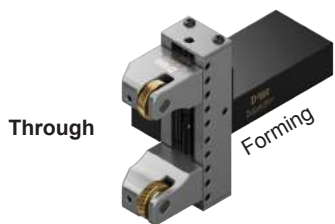


KTW109-40 Shoulder Style Straddle Square Shank Knurling Tool *Reversible Direction*

Description	UPC #	Diameter Range***	Knurl Wheel	Knurl Arm Set		Shank Size
				Supplied	Optional	
KTW109-25-40-4	22871	16- 100mm	SW4*	W109-3-40-4	W109-3-40-O	25
KTW109-32-40-4	22872		SW4*	W109-3-40-4	W109-3-40-O	32

* Supplied with one (1) set of beveled diagonal high speed TiN coated knurl wheels for a male diamond pattern, 25 TPI

***Warning: Physically applying a knurl on small diameters may not be possible



CNC109-M Side Mount Flange Style Square Shank Knurling Tool

Description	UPC #	Diameter Range***	Knurl Wheel	Knurl Arm Set		Shank Size
				Supplied	Optional	
CNC109-20-15-M-R/L	21443 21446	0 - 38mm	M*	W109-3-25-M	W109-3-25-4	20
CNC109-25-15-M-R/L	21444 21447		M*	W109-3-25-M	W109-3-25-4	25
CNC109-32-15-M-R/L	21445 21448		M*	W109-3-25-M	W109-3-25-4	32
CNC109-20-25-M-R/L	21455 21458	3,2-63,5mm	M*	W109-3-25-M	W109-3-25-4	20
CNC109-25-25-M-R/L	21456 21459		M*	W109-3-25-M	W109-3-25-4	25
CNC109-32-25-M-R/L	21457 21460		M*	W109-3-25-M	W109-3-25-4	32

* Supplied with one (1) set of beveled diagonal high speed TiN coated knurl wheels, 25 TPI

*** Warning: This tool has the capability to adjust the wheels until they touch, but physically applying a knurl on small diameters may not be possible



CNC109-4 Side Mount Shoulder Style Square Shank Knurling Tool

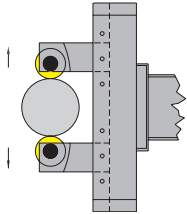
Description	UPC #	Diameter Range***	Knurl Wheel	Knurl Arm Set		Shank Size
				Supplied	Optional	
CNC109-20-15-4-R/L	21467 21470	0 - 38mm	SW4*	W109-3-25-4	W109-3-25-M	20
CNC109-25-15-4-R/L	21468 21471		SW4*	W109-3-25-4	W109-3-25-M	25
CNC109-32-15-4-R/L	21469 21472		SW4*	W109-3-25-4	W109-3-25-M	32
CNC109-20-25-4-R/L	21479 21482	3,2-63,5mm	SW4*	W109-3-25-4	W109-3-25-M	20
CNC109-25-25-4-R/L	21480 21483		SW4*	W109-3-25-4	W109-3-25-M	25
CNC109-32-25-4-R/L	21481 21484		SW4*	W109-3-25-4	W109-3-25-M	32

* Supplied with one (1) set of beveled diagonal high speed TiN coated knurl wheels, 25 TPI

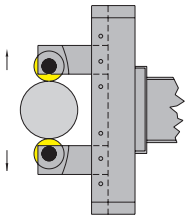
*** Warning: This tool has the capability to adjust the wheels until they touch, but physically applying a knurl on small diameters may not be possible

Diametral Forming Knurling Tools A diametral adjustment screw regulates the depth of the knurl pattern and the diameter size. The floating head will allow the knurl wheel to self adjust on the work piece - even when the work piece is not perfectly concentric. However, the tool can be used for twin wheel applications or single wheel knurling applications. This tool comes with a square shank to be used on open slot tool holders, or on a square index turret, with a preset center height adjustment which will meet the fixed center height of the CNC and the turret lathe. Body and shank are made of heat-treated, precision ground alloy steel. The dovetail guide ensures the most precise accuracy and rigidity for infinite diameter settings.

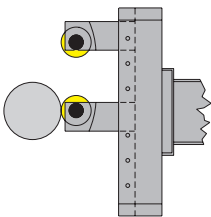
Heavy Duty Style Forming Knurling Tool



Straddle application is best when pressure and deflection are a problem. The knurling arms are able to "float" somewhat and center on the workpiece, compensating for any off-centering. It has been developed to make a perfect knurling pattern without putting any pressure on the spindle or on the lathe compound.



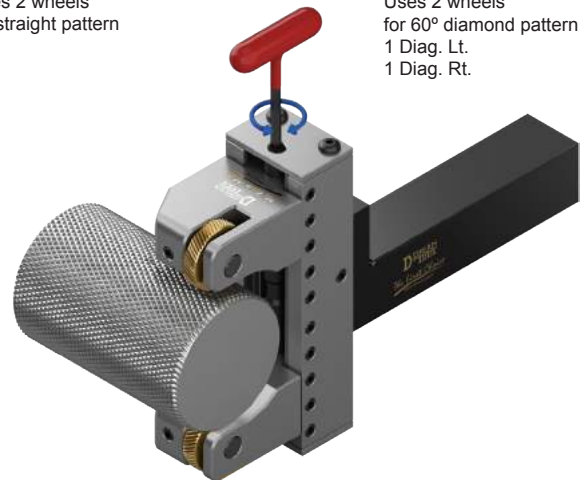
Bump application is best for narrow knurling applications. The knurling arms are moved closer together so that the tool can "bump" against the side of the working part with two wheels touching the part.



Single wheel application is best for narrow and quick knurling setup. The knurling arms are moved up so that the bottom knurling wheel is locked on center and can "bump" against the side of the working part. With one wheel touching the part, this configuration allows for a quicker setup and knurling of narrow knurling applications.

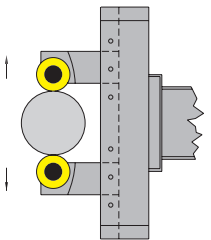
Uses 2 wheels
for straight pattern

Uses 2 wheels
for 60° diamond pattern
1 Diag. Lt.
1 Diag. Rt.



Knurl wheels are supported in a flanged nest to offer best rigidity to handle heavy duty knurling. The knurl wheels are mounted between thrust washers to insure a smooth and even rotation while knurling is performed.

Shoulder Style Forming Knurling Tool

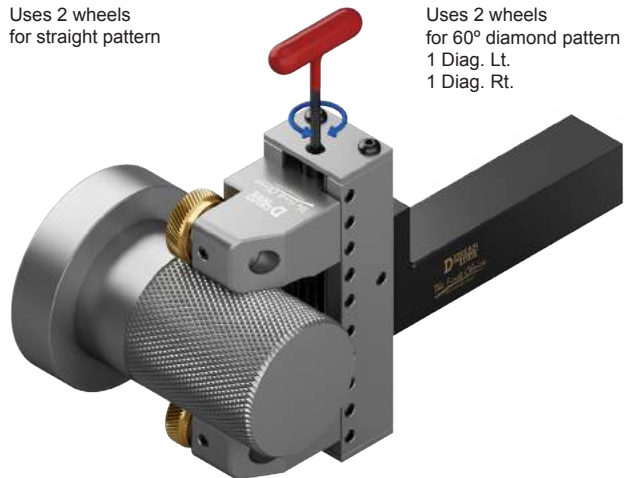


Straddle application is best when pressure and deflection are a problem. The knurling arms are able to "float" somewhat and center on the workpiece, compensating for any off-centering. It has been developed to make a perfect knurling pattern without putting any pressure on the spindle or on the lathe compound.

Designed to knurl against a square shoulder. The knurl wheels are mounted on a thrust washer to insure a smooth and even rotation while knurling is performed. The wheels are held at slight pitch to the work part for better end feeding (feeding across the part towards the chuck).

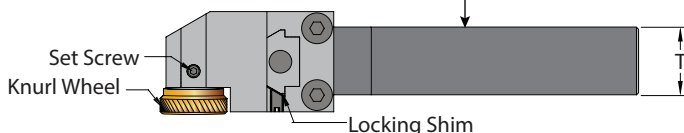
Uses 2 wheels
for straight pattern

Uses 2 wheels
for 60° diamond pattern
1 Diag. Lt.
1 Diag. Rt.



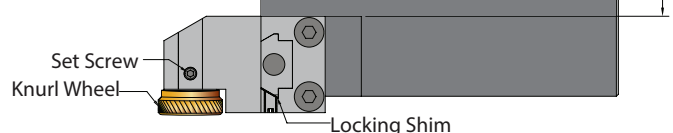
Knurling Tool Shank Mounting

Standard Tool Shank



For Standard to Mounting

CNC Side Mounting Shank



For restricted indexing clearance of the CNC Turret

3 WHEEL KNURLING TOOL

FOR CUTTING & FORMING

Infinite Lengths with Diameters Small as 2,16mm to 38mm



PROPERTIES

1. For small diameters

When side pressure does not allow the use of a one or two wheel knurling tool.

2. For long lengths

When support or live center is not permissible. The part would deflect if a standard one or two wheel knurling tool is used.

3. For high precision knurling

When the finished diameter of the knurled part demands close tolerance. The three wheel knurling system applies less pressure per wheel controlling the displacement and the form of the material. This makes the knurl uniform and precise.

4. For high production

High production without sacrificing performance and quality.

5. For automation

When cost is a factor. The high performance of this tool will keep the manufacturing cost lower.

6. Which machine to use on

Automatic Screw Machines, CNC Lathes, and Turret Lathes.

FEATURES:

- Minimum diameter 2,16mm
- Maximum diameter 38,1mm
- For straight or diamond knurl
- Infinite lengths
- Precise scroll gear
- Fine diameter adjustment
- Dial allows for visual diameter adjustment
- Knurl to a shoulder
- Self-adjust to parts and tool misalignment
- Easy to setup
- Simple to operate
- Manual knurl diameter release for manual lathes

3WSKT -Three wheel knurling tool with optional round or square shanks

- Made of heat treated precision ground alloy steel.
- The dovetail guide and adjustable arms ensure the most possible accuracy and rigidity.
- A precise scroll gear allows for fine diameter settings.
- Scaled dial makes setting the diameter easy.
- This tool is engineered for most demanding knurling jobs in Screw Machine, C.N.C. Lathe, and Turret Lathe Applications.
- Square shank can be reversed for right hand or left hand operation.
- Square shank with preset center height.

Resulting Knurl Pattern

Straight pattern
with 3 straight
wheels



Male 60° diamond pattern
with diagonal wheels
(2 Right & 1 Left or 2 Left & 1 Right)

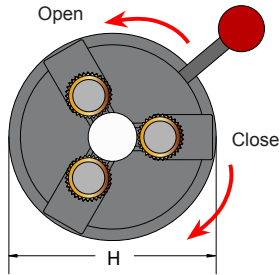


Recommended Use:

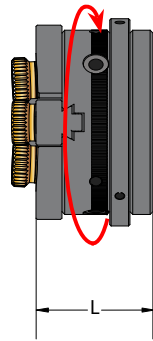
For best results, use beveled knurl wheels. End-feed the knurling tool into the blank until the desired length of the knurl is done.

The Three Wheel Knurling Tool can knurl up to a shoulder, minimum diameter of 2,16mm up to 38,1mm diameter, and infinite lengths. The Heavy Duty Three Wheel Knurling Tool is recommended for shoulderless applications for improved wheel life.

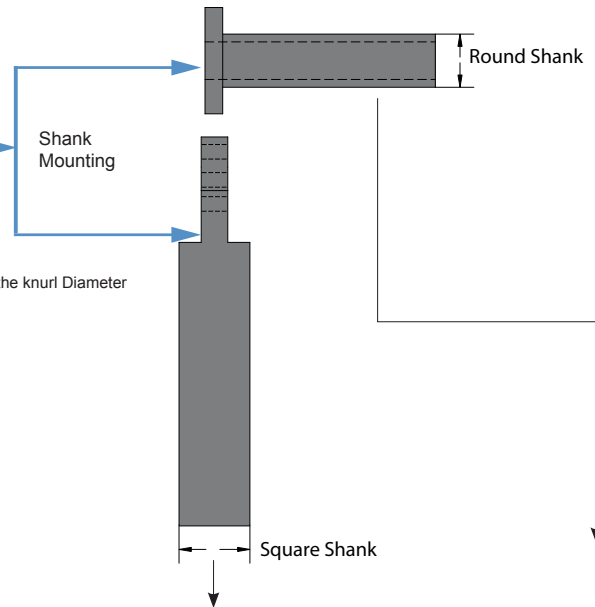
3 Wheel Knurling Tool Head to the Shoulder



Knurling diameter setting



Use to Adjust the knurl Diameter



Specifications

Description	UPC #	Capacity	H	L	Knurl Wheel Style	Knurl Pin Set***	UPC #
3WKT-06-2	23004	2,16mm to 6,4mm	44,5mm	40,0mm	SW2 *	SW2.0P-3S	29060
3WKT-12-2	23009	2,16mm to 12,7mm	57,2mm	40,0mm	SW2 *	SW2.0P-3S	29060
3WKT-25-2	23024	3,2mm to 25,4mm	76,2mm	40,0mm	SW2 *	SW2.0P-3S	29060
3WKT-40-2	23034	4,75mm to 38,1m	108mm	62,0mm	SW2 *	SW2.0P-3S	29060

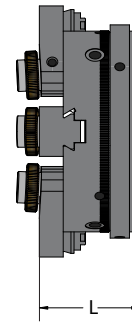
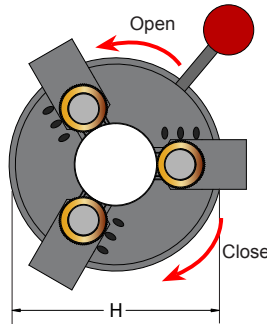
Optional Square Shank

Description	UPC #	Shank Size	
		Square	Length
3WSKT-06-12	23096	12mm	75mm
3WSKT-06-162	23097	16mm	88mm
3WSKT-06-20	23098	20mm	100mm
3WSKT-12-162	23082	16mm	88mm
3WSKT-12-20	23100	20mm	100mm
3WSKT-12-25	23101	25mm	125mm
3WSKT-25-20	23103	20mm	100mm
3WSKT-25-25	23104	25mm	125mm
3WSKT-40-25	23113	25mm	125mm

Optional Round Shank

Description	UPC #	Shank Size	
		Dia.	Length
3WRKT-06-12	23105	12mm	75mm
3WRKT-06-162	23106	16mm	88mm
3WRKT-06-20	23107	20mm	100mm
3WRKT-12-162	23115	16mm	88mm
3WRKT-12-20	23116	20mm	100mm
3WRKT-12-25	23117	25mm	125mm
3WRKT-25-20	23125	20mm	100mm
3WRKT-25-25	23126	25mm	125mm
3WRKT-40-25	23135	25mm	125mm

3-Wheel Knurling Tool Heavy Duty Shoulderless



3 Wheel Knurling Tool Head Specifications

Description	UPC #	Capacity	H	L	Knurl Wheel Style	Knurl Pin Set***	UPC #
3WKT-40-M	23033	4,75mm to 38,1m	108mm	67,2mm	M**	SM4.0P-3S	29092

Optional Square Shank

Description	UPC #	Shank Size	
		Square	Length
3WSKT-40-25	23113	25mm	125mm

Optional Round Shank

Description	UPC #	Shank Size	
		Dia.	Length
3WRKT-40-25	23135	25mm	125mm

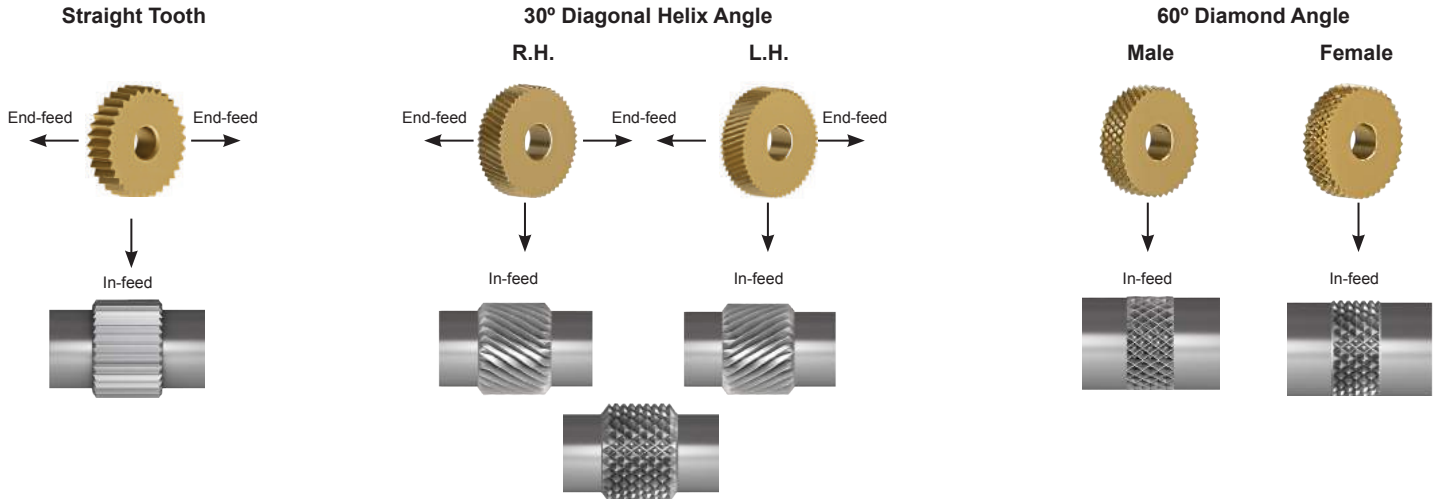
Knurl Tool Head and Optional Shanks are Sold Separately

* Supplied with one (1) set of two (2) diagonal right and one (1) diagonal left beveled high speed TiN coated knurl wheels, 30 TPI (0,8mm)

** Supplied with one (1) set of two (2) diagonal right and one (1) diagonal left beveled high speed TiN coated knurl wheels, 25 TPI (1,0mm)

*** One (1) set consists of three (3) knurling pins and washers

Knurling Wheel Tooth Pattern & Workpiece Knurl Pattern



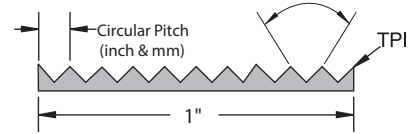
Full Faced: Sharp leading edge for Cutting Type knurling tools only.

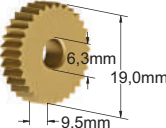
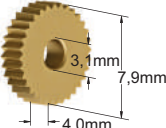
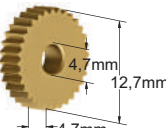
Beveled Edge: Edge security for forming type knurling tools only.

Knurl Wheel Material

High Speed Steel Knurl Wheels: Tough and shock resistant. Best recommended for materials such as Carbon Steel, Alloy Steel, and Stainless Steel.

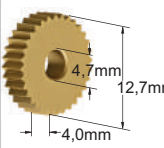
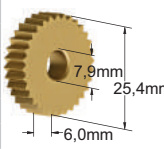
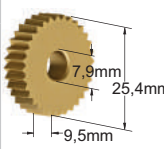
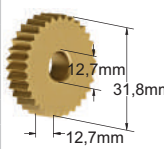
Cobalt Knurl Wheels: The 8.5% cobalt content adds hardness and wear resistance to the wheels. Best recommended for abrasive and soft materials such as Free Machining Steel, Aluminum, and nonferrous materials



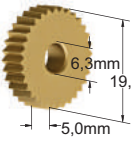
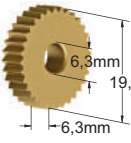
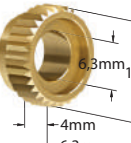
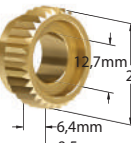
Knurl Wheel Series	Description	Pattern	Grade	Edge Prep	Pitch										
					2,5mm	2mm	1,8mm	1,6mm	1,2mm	1,0mm	0,8mm	0,7mm	0,6mm	0,5mm	0,3mm
	AS-TPI-HS	Straight	High Speed	Sharp Corner	23502	23504	23506	23508	23510	23512	23514	23516	23518	23520	-
	AS-TPI-HSB		TiN Coated	Beveled Corner	-	23537	-	23541	23543	-	-	-	-	-	-
	AS-TPI-C		Cobalt	Sharp Corner	-	-	-	-	23576	23578	23580	23582	-	-	-
	AS-TPI-CB		TiN Coated	Beveled Corner	-	23603	-	23607	-	23611	23613	23615	23617	23619	-
	ADR-TPI-HS	Diagonal Right	High Speed	Sharp Corner	23634	23636	23638	23640	23642	23644	23646	-	23650	23652	-
	ADR-TPI-HSB		TiN Coated	Beveled Corner	23667	23669	-	-	23675	23677	-	-	23683	-	-
	ADR-TPI-C		Cobalt	Sharp Corner	23700	23702	-	23706	23708	23710	-	-	-	-	-
	ADR-TPI-CB		TiN Coated	Beveled Corner	-	-	23737	-	-	23743	-	23747	-	-	-
	ADL-TPI-HS	Diagonal Left	High Speed	Sharp Corner	23766	23768	23770	23772	23774	23776	23778	-	23782	23784	-
	ADL-TPI-HSB		TiN Coated	Beveled Corner	23799	23801	23803	-	23807	23809	-	-	23815	-	-
	ADL-TPI-C		Cobalt	Sharp Corner	23832	23834	-	23838	23840	23842	-	-	-	-	-
	ADL-TPI-CB		TiN Coated	Beveled Corner	-	-	23869	-	-	23875	23877	23879	-	-	-
AM-TPI-HS	Male Diamond	High Speed	Sharp Corner	-	-	-	-	23906	23908	-	-	23914	23916	-	
AM-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	23939	-	-	-	-	-	-	
AF-TPI-HS	Female Diamond	High Speed	Sharp Corner	-	-	-	23970	-	-	-	-	-	-	-	
AF-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-	
	BS-TPI-HS	Straight	High Speed	Sharp Corner	-	-	-	-	-	-	-	-	24110	-	-
	BS-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	24129	-	-	-	24137
	BS-TPI-C		Cobalt	Sharp Corner	-	-	-	-	-	-	24152	24154	24156	24158	-
	BS-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	BDR-TPI-HS	Diagonal Right	High Speed	Sharp Corner	-	-	-	-	-	-	-	24200	24202	-	-
	BDR-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	24221	-	-	-	-
	BDR-TPI-C		Cobalt	Sharp Corner	-	-	-	-	-	-	-	-	24248	-	-
	BDR-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	-	-	24267	-	-	-	-
	BDL-TPI-HS	Diagonal Left	High Speed	Sharp Corner	-	-	-	-	-	-	-	24292	24294	-	-
	BDL-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	24313	-	-	-	-
	BDL-TPI-C		Cobalt	Sharp Corner	-	-	-	-	-	-	-	-	24340	-	-
	BDL-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	-	-	24359	-	-	-	-
	CS-TPI-HS	Straight	High Speed	Sharp Corner	-	-	-	24502	24504	24506	24508	24510	24512	24514	24516
	CS-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	CS-TPI-C		Cobalt	Sharp Corner	-	-	-	-	-	-	24562	-	24566	24568	24570
	CS-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	24597
	CDR-TPI-HS	Diagonal Right	High Speed	Sharp Corner	-	-	-	24610	-	24614	24616	-	-	-	24624
	CDR-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	24641	-	-	-	-	-
	CDR-TPI-C		Cobalt	Sharp Corner	-	-	-	-	-	24668	24670	-	24674	-	24678
	CDR-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	CDL-TPI-HS	Diagonal Left	High Speed	Sharp Corner	-	-	-	24718	24720	24722	24724	-	-	-	24732
	CDL-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	24749	-	-	-	-	-
	CDL-TPI-C		Cobalt	Sharp Corner	-	-	-	-	-	24776	24778	-	24782	-	24786
	CDL-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	CM-TPI-HS	Male Diamond	High Speed	Sharp Corner	-	-	-	-	-	-	-	-	24836	-	-
	CM-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	CF-TPI-HS	Female Diamond	High Speed	Sharp Corner	-	-	-	-	-	24884	-	-	-	24892	-
	CF-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-

NOTE: For forming-type knurling tools, beveled wheels are recommended for longer tool life. For cutting-type tools, full-face (sharp corner) wheels are the only choice.

All Dorian Tool knurl wheels are PVD TiN coated to provide less friction and longer tool life. For a complete selection of knurling wheels, please refer to our general catalog.

Knurl Wheel Series	Description	Pattern	Grade	Edge Prep	2,5mm	2mm	1,8mm	1,6mm	1,2mm	Pitch 1mm	0,8mm	0,7mm	0,6mm	0,5mm	0,3mm
	DS-TPI-HS	Straight	High Speed	Sharp Corner	-	-	-	25001	25003	25005	25007	25009	-	25013	25015
	DS-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	25030	25032	25034	25036	25038	25040	-
	DS-TPI-C		Cobalt	Sharp Corner	-	-	-	-	25004	25006	25008	25010	-	-	25016
	DS-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	25031	25033	25035	-	25039	25041	25043
	DDR-TPI-HS	Diagonal Right	High Speed	Sharp Corner	-	-	-	25055	25057	25059	25061	25063	25065	25067	25069
	DDR-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	25082	25084	25086	25088	25090	25092	25094	-
	DDR-TPI-C		Cobalt	Sharp Corner	-	-	-	25056	25058	-	25062	-	-	-	-
	DDR-TPI-CB		TiN Coated	Beveled Corner	-	-	-	25083	25085	25087	25089	-	25093	-	25097
	DDL-TPI-HS	Diagonal Left	High Speed	Sharp Corner	-	-	-	25109	25111	25113	25115	25117	25119	25121	25123
	DDL-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	25136	25138	25140	25142	25144	25146	25148	-
	DDL-TPI-C		Cobalt	Sharp Corner	-	-	-	25110	25112	-	25116	-	-	-	-
	DDL-TPI-CB		TiN Coated	Beveled Corner	-	-	-	25137	25139	25141	25143	-	25147	-	25151
	DF-TPI-HS	Female Diamond	High Speed	Sharp Corner	-	-	-	-	-	-	25169	-	-	-	-
	DF-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	25192	-	-	-	-	-	-
	MS-TPI-HS	Straight	High Speed	Sharp Corner	25303	25305	25307	25309	25311	25313	25315	25317	-	25321	-
	MS-TPI-HSB		TiN Coated	Beveled Corner	25336	25338	25340	25342	25344	25346	25348	25350	-	-	-
	MS-TPI-C		Cobalt	Sharp Corner	25304	25306	25308	25310	25312	25314	25316	25318	-	25322	-
	MS-TPI-CB		TiN Coated	Beveled Corner	25337	25339	25341	25343	25345	25347	25349	-	-	-	-
	MDR-TPI-HS	Diagonal Right	High Speed	Sharp Corner	25369	25371	25373	25375	25377	25379	-	25383	-	-	-
	MDR-TPI-HSB		TiN Coated	Beveled Corner	25402	25404	25406	25408	25410	25412	25414	25416	-	-	-
	MDR-TPI-C		Cobalt	Sharp Corner	-	25372	25374	25376	25378	25380	25382	-	25386	-	-
	MDR-TPI-CB		TiN Coated	Beveled Corner	-	25405	25407	25409	25411	25413	25415	-	-	-	-
	MDL-TPI-HS	Diagonal Left	High Speed	Sharp Corner	25435	25437	25439	25441	25443	25445	25447	25449	-	-	-
	MDL-TPI-HSB		TiN Coated	Beveled Corner	25468	25470	25472	25474	25476	25478	25480	25482	-	-	-
	MDL-TPI-C		Cobalt	Sharp Corner	-	25438	25440	25442	25444	25446	25448	-	25452	-	-
	MDL-TPI-CB		TiN Coated	Beveled Corner	-	25471	25473	25475	25477	25479	25481	-	-	-	-
	MF-TPI-HS	Female Diamond	High Speed	Sharp Corner	-	-	-	-	-	-	25513	-	-	-	-
	MF-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	OS-TPI-HS	Straight	High Speed	Sharp Corner	25604	25606	25608	25610	25612	25614	25616	25618	-	-	-
	OS-TPI-HSB		TiN Coated	Beveled Corner	-	-	25641	25643	25645	25647	25649	-	-	-	-
	OS-TPI-C		Cobalt	Sharp Corner	-	-	25674	25676	25678	25680	25682	25684	-	-	-
	OS-TPI-CB		TiN Coated	Beveled Corner	-	-	25707	25709	25711	25713	-	-	-	-	-
	ODR-TPI-HS	Diagonal Right	High Speed	Sharp Corner	25736	-	-	25742	-	-	-	-	-	-	-
	ODR-TPI-HSB		TiN Coated	Beveled Corner	-	25771	-	-	25777	25779	-	-	-	-	-
	ODR-TPI-C		Cobalt	Sharp Corner	-	-	-	-	-	25812	-	-	-	-	-
	ODR-TPI-CB		TiN Coated	Beveled Corner	-	-	25839	-	-	25845	-	-	-	-	-
	ODL-TPI-HS	Diagonal Left	High Speed	Sharp Corner	25868	25870	-	25874	-	-	-	-	-	-	-
	ODL-TPI-HSB		TiN Coated	Beveled Corner	-	25903	-	-	25909	25911	-	-	-	-	-
	ODL-TPI-C		Cobalt	Sharp Corner	-	-	25938	-	-	25944	-	-	-	-	-
	ODL-TPI-CB		TiN Coated	Beveled Corner	-	-	25971	-	-	25977	-	-	-	-	-
	OM-TPI-HS	Male Diamond	High Speed	Sharp Corner	-	-	-	-	26008	26010	26012	-	-	-	-
	OM-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	26043	-	-	-	-	-
	OF-TPI-HS	Female Diamond	High Speed	Sharp Corner	-	-	-	-	26074	26076	26078	-	-	-	-
	OF-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	26107	26109	26111	-	-	-	-
	PS-TPI-HS	Straight	High Speed	Sharp Corner	-	-	26202	-	-	-	-	-	-	-	-
	PS-TPI-HSB		TiN Coated	Beveled Corner	26215	26217	-	-	-	26225	-	-	-	-	-
	PS-TPI-C		Cobalt	Sharp Corner	-	-	-	26238	26240	26242	-	-	-	-	-
	PS-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	26257	26259	26261	-	-	-	-
	PDR-TPI-HS	Diagonal Right	High Speed	Sharp Corner	-	26268	-	-	26274	-	26278	-	-	-	-
	PDR-TPI-HSB		TiN Coated	Beveled Corner	-	26285	-	-	-	26293	-	-	-	-	-
	PDR-TPI-C		Cobalt	Sharp Corner	-	-	-	-	-	-	-	-	-	-	-
	PDR-TPI-CB		TiN Coated	Beveled Corner	-	-	-	26323	-	-	-	-	-	-	-
	PDL-TPI-HS	Diagonal Left	High Speed	Sharp Corner	-	26336	-	-	26342	-	26346	-	-	-	-
	PDL-TPI-HSB		TiN Coated	Beveled Corner	-	26353	-	-	-	26361	-	-	-	-	-
	PDL-TPI-C		Cobalt	Sharp Corner	-	-	-	-	-	-	-	-	-	-	-
	PDL-TPI-CB		TiN Coated	Beveled Corner	-	-	-	26391	-	-	-	-	-	-	-
	PM-TPI-HS	Male Diamond	High Speed	Sharp Corner	-	26404	-	26408	26410	-	-	-	-	-	-
	PM-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	26427	26429	-	-	-	-	-
	PF-TPI-C	Female Diamond	High Speed	Sharp Corner	-	-	-	26442	-	26446	-	-	-	-	-
	PF-TPI-CB		TiN Coated	Beveled Corner	-	-	-	26459	-	-	-	-	-	-	-

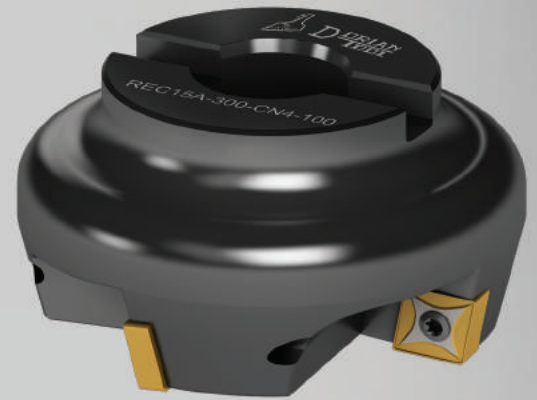
NOTE: For forming-type knurling tools, beveled wheels are recommended for longer tool life. For cutting-type tools, full-face (sharp corner) wheels are the only choice.
All Dorian Tool knurl wheels are PVD TiN coated to provide less friction and longer tool life. For a complete selection of knurling wheels, please refer to our general catalog.

Knurl Wheel Series	Description	Pattern	Grade	Edge Prep	Pitch										
					2,5mm	2mm	1,8mm	1,6mm	1,2mm	1mm	0,8mm	0,7mm	0,6mm	0,5mm	0,3mm
	RS-TPI-HS	Straight	High Speed	Sharp Corner	26501	26503	26505	26507	26509	26511	26513	26515	26517	26519	-
	RS-TPI-HSB		TiN Coated	Beveled Corner	26532	-	26536	26538	26540	26542	26544	-	26548	-	-
	RS-TPI-C		Cobalt	Sharp Corner	26502	26504	26506	26508	26510	26512	26514	26516	26518	26520	-
	RS-TPI-CB		TiN Coated	Beveled Corner	-	26535	26537	26539	26541	26543	26545	26547	-	-	-
	RDR-TPI-HS	Diagonal Right	High Speed	Sharp Corner	26563	-	26567	26569	26571	26573	26575	-	26579	-	-
	RDR-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	26604	26606	26608	-	26612	-
	RDR-TPI-C		Cobalt	Sharp Corner	26564	26566	26568	-	26572	26574	26576	-	26580	26582	-
	RDR-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	26603	-	26607	-	26611	-	-
	RDL-TPI-HS	Diagonal Left	High Speed	Sharp Corner	26625	-	26629	-	26633	26635	26637	-	26641	-	-
	RDL-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	26666	26668	26670	-	26674	-
	RDL-TPI-C		Cobalt	Sharp Corner	26626	26628	26630	-	26634	26636	26638	-	26642	26644	-
	RDL-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	26665	-	26669	-	-	-	-
	RF-TPI-HS	Female Diamond	High Speed	Sharp Corner	-	-	-	-	-	26697	-	-	-	-	-
	RF-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	RF-TPI-C	Female Diamond	Cobalt	Sharp Corner	-	-	-	-	-	-	-	-	-	26706	-
	RF-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	-	-	26731	-	-	-	-
	SS-TPI-HS	Straight	High Speed	Sharp Corner	-	26804	26806	26808	26810	26812	26814	26816	26818	-	-
	SS-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	26841	26843	26845	-	-	-
	SS-TPI-C		Cobalt	Sharp Corner	26862	26864	-	26868	26870	26872	26874	-	-	-	-
	SS-TPI-CB		TiN Coated	Beveled Corner	-	26895	-	-	-	26903	26905	-	-	-	-
	SDR-TPI-HS	Diagonal Right	High Speed	Sharp Corner	26924	26926	-	-	-	26934	26936	-	-	26942	-
	SDR-TPI-HSB		TiN Coated	Beveled Corner	-	-	26959	-	-	26965	26967	-	-	-	-
	SDR-TPI-C		Cobalt	Sharp Corner	-	-	-	-	26994	-	26998	27000	-	27004	-
	SDR-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	27033	-	-
	SDL-TPI-HS	Diagonal Left	High Speed	Sharp Corner	27048	27050	-	-	-	27058	27060	-	-	27066	-
	SDL-TPI-HSB		TiN Coated	Beveled Corner	-	-	27083	-	-	27089	-	-	-	-	-
	SDL-TPI-C		Cobalt	Sharp Corner	-	-	-	-	27118	-	27122	27124	-	27128	-
	SDL-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	27157	-	-
	SM-TPI-HS	Male Diamond	High Speed	Sharp Corner	-	-	-	27178	-	27182	-	-	-	-	-
	SM-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	SF-TPI-HS	Female Diamond	High Speed	Sharp Corner	-	-	-	-	-	-	-	-	27250	27252	-
	SF-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	SW2S-TPI-HS	Straight	High Speed	Sharp Corner	-	-	-	27401	27403	27405	27407	-	27411	-	-
	SW2S-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	27428	27430	27432	-	-	-	-
	SW2S-TPI-C		Cobalt	Sharp Corner	-	-	-	27402	27404	27406	27408	27410	27412	-	-
	SW2S-TPI-CB		TiN Coated	Beveled Corner	-	-	-	27427	27429	27431	27433	27435	27437	27439	-
	SW2R-TPI-HS	Diagonal Right	High Speed	Sharp Corner	-	-	-	-	27453	-	27457	27459	-	-	-
	SW2R-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	27478	27480	27482	-	-	-	-
	SW2R-TPI-C		Cobalt	Sharp Corner	-	-	-	-	27454	27456	27458	-	-	-	-
	SW2R-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	27479	27481	27483	-	-	-	-
	SW2L-TPI-HS	Diagonal Left	High Speed	Sharp Corner	-	-	-	27501	27503	27505	27507	27509	-	-	-
	SW2L-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	27526	27528	27530	27532	-	-	-	-
	SW2L-TPI-C		Cobalt	Sharp Corner	-	-	-	-	27504	27506	27508	-	-	-	-
	SW2L-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	27529	27531	27533	-	-	-	-
	SW2F-TPI-HS	Female Diamond	High Speed	Sharp Corner	-	-	-	27551	-	27555	27557	-	27561	27563	-
	SW2F-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	SW2F-TPI-C	Female Diamond	Cobalt	Sharp Corner	-	-	-	-	-	-	-	-	-	-	-
	SW2F-TPI-CB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	SW4S-TPI-HS	Straight	High Speed	Sharp Corner	-	-	28001	28003	28005	28007	28009	-	28013	-	-
	SW4S-TPI-HSB		TiN Coated	Beveled Corner	-	-	28028	28030	28032	28034	28036	-	28040	-	-
	SW4S-TPI-C		Cobalt	Sharp Corner	-	-	28002	28004	28006	28008	28010	28012	28014	-	-
	SW4S-TPI-CB		TiN Coated	Beveled Corner	-	-	28029	28031	28033	28035	28037	-	28041	28043	-
	SW4R-TPI-HS	Diagonal Right	High Speed	Sharp Corner	-	-	28055	28057	28059	28061	28063	-	-	-	-
	SW4R-TPI-HSB		TiN Coated	Beveled Corner	-	-	28082	28084	28086	28088	28090	-	-	-	-
	SW4R-TPI-C		Cobalt	Sharp Corner	-	-	28056	28058	28060	28062	28064	28066	28068	28070	-
	SW4R-TPI-CB		TiN Coated	Beveled Corner	-	-	28083	28085	28087	28089	28091	28093	-	-	-
	SW4L-TPI-HS	Diagonal Left	High Speed	Sharp Corner	-	-	28109	28111	28113	28115	28117	-	-	-	-
	SW4L-TPI-HSB		TiN Coated	Beveled Corner	-	-	28136	28138	28140	28142	28144	-	-	-	-
	SW4L-TPI-C		Cobalt	Sharp Corner	-	-	28110	28112	28114	28116	28118	28120	28122	28124	-
	SW4L-TPI-CB		TiN Coated	Beveled Corner	-	-	28137	28139	28141	28143	28145	28147	-	-	-
	SW4F-TPI-HS	Female Diamond	High Speed	Sharp Corner	-	-	28163	28165	28167	-	-	-	-	-	-
	SW4F-TPI-HSB		TiN Coated	Beveled Corner	-	-	-	-	-	-	-	-	-	-	-
	SW4F-TPI-C	Female Diamond	Cobalt	Sharp Corner	-	-	-	28166	28168	-	-	-	-	-	-
	SW4F-TPI-CB		TiN Coated	Beveled Corner	-	-	-	28193	28195	-	-	-	-	-	-

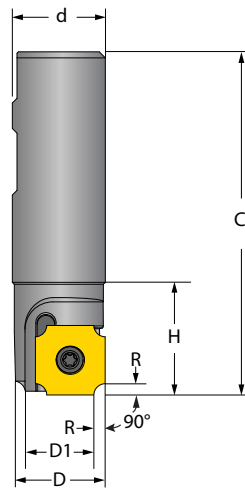
NOTE: For forming-type knurling tools, beveled wheels are recommended for longer tool life. For cutting-type tools, full-face (sharp corner) wheels are the only choice.
All Dorian Tool knurl wheels are PVD TiN coated to provide less friction and longer tool life. For a complete selection of knurling wheels, please refer to our general catalog.

MILLING CUTTERS AND INSERTS

- FACE MILLING
- CORNER ROUNDING
- CHAMFERFING
- DOVETAIL
- T-SLOT
- WOODRUFF KEY SEAT
- SLOT MILLING
- SHOULDER MILLING

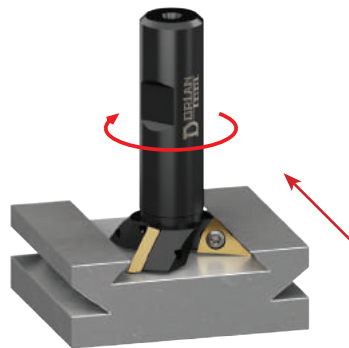
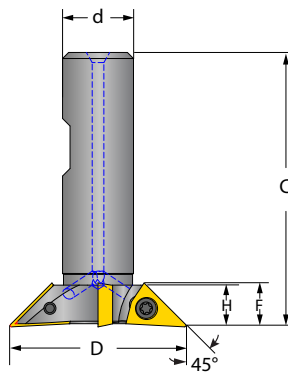


Convex Radius Cutter - Cutting Rake - 15° for 15° positive square convex radius SDGX inserts



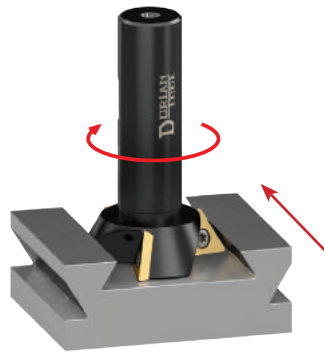
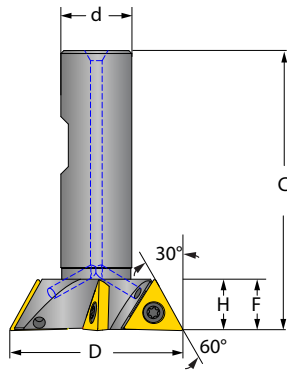
Description	UPC #	C	D	D1	d	H	R-Range		Insert Qty.	SDGX Gage Insert	Insert Torx Screw	Torx Key
							Min.	Max.				
QV-16-S304-12	66500	76,2	15,9	12,8	12	25,4	0,4	1,6	1	09T308	TS-4.7-8M1	T-15
QV-16-S304-16	66501	82,5	15,9	12,8	16	25,4	0,4	1,6	1			
QV-25-S608-20	66505	88,9	25,4	19,2	20	25,4	2,0	3,2	1	190408	TS-5.8-10M1	T-20
QV-25-S608-25	66506	92,1	25,4	19,2	25	28,6	2,0	3,2	1			
QV-25-S612-20	66508	88,9	25,4	16,1	20	25,4	2,0	4,8	1			
QV-25-S612-25	66509	92,1	25,4	16,1	25	28,6	2,0	4,8	1	190408	TS-5.8-10M1	T-20
QV-50-S612-25	66510	95,3	50,8	41,3	25	31,8	2,0	4,8	3			
QV-25-S616-20	66511	88,9	25,4	13,0	20	25,4	3,6	6,4	1			
QV-25-S616-25	66512	92,1	25,4	13,0	25	28,6	3,6	6,4	1	190408	TS-5.8-10M1	T-20
QV-50-S616-25	66513	95,3	50,8	38,1	25	31,8	3,6	6,4	3			

45° Dove Tail - Cutting Rake - 11° for 11° positive TDEX inserts.



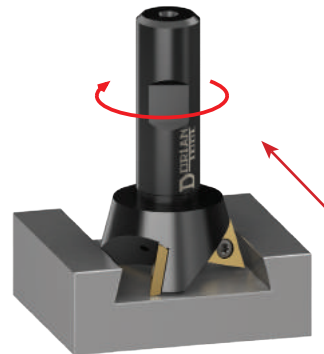
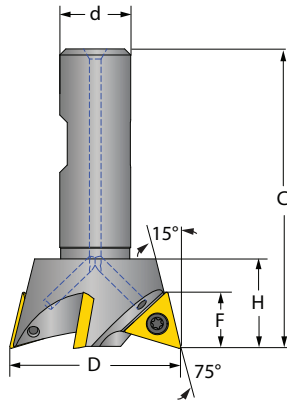
Description	UPC #	C	D	d	F	H	Insert Qty.	TDEX Gage Insert	Insert Torx Screw	Torx Key
D45X-12-TD09-10	66520	60,7	12,7	10	3,2	2,9	1			
D45X-20-TD09-10	66521	60,7	19,1	10	4,0	5,0	2	090202	TS-25.45-6M1	T-7
D45X-25-TD09-12	66522	60,3	25,4	12	6,3	5,7	3			
D45X-25-TD17-16	66523	76,2	34,9	16	11,1	9,1	2	17T304	TS-4.7-8M1	T-15
D45X-50-TD17-20	66524	76,2	47,6	20	11,1	10,4	3			
D45X-60-TD25-25	66525	88,9	57,2	25	15,9	16,7	2	250404	TS-5.8-10M1	T-20
D45X-65-TD25-25	66526	88,9	63,5	25	16,5	16,8	3			

60° Dove Tail Cutter - Cutting Rake - 15° for 15° positive triangle TDEX inserts.



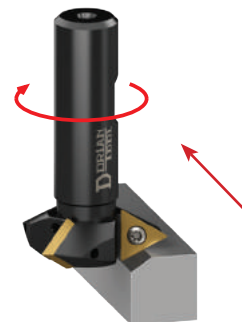
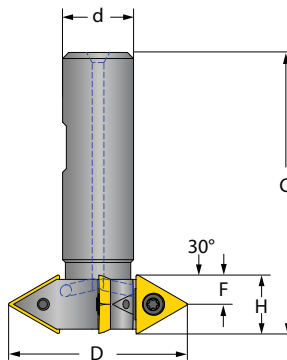
Description	UPC #	C	D	d	F	H	Insert Qty.	TDEX Gage Insert	Insert Torx Screw	Torx Key
D60X-12-TD11-10	66530	60,7	12,7	10	8,3	3,6	1	110204	TS-25.45-6M1	T-7
D60X-20-TD11-10	66531	60,7	19,1	10	8,3	7,2	2			
D60X-25-TD11-12	66532	60,7	25,4	12	8,3	9,5	3			
D60X-35-TD16-16	66533	72,7	34,9	16	13,0	14,0	3	160308	TS-4.7-8M1	T-15
D60X-50-TD16-20	66534	76,2	47,6	20	13,0	14,0	3	160308	TS-4.7-10M1	T-15
D60X-60-TD22-25	66535	88,9	57,2	25	17,8	19,1	3	220408	TS-5.8-10M1	T-20
D60X-65-TD22-25	66536	88,9	63,5	25	17,8	19,1	3			

15° Dove Tail - Cutting Rake - 15° for 15° positive TDEX inserts.



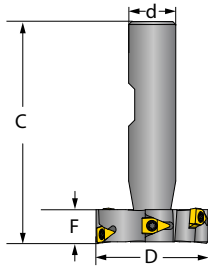
Description	UPC #	C	D	d	F	H	Insert Qty.	TDEX Gage Insert	Insert Torx Screw	Torx Key
D15X-12-TD11-10	66514	61,5	12,7	10	9,1	10,7	1	110204	TS-25.45-6M1	T-7
D15X-25-TD11-12	66515	61,5	25,4	12	9,1	10,7	3			
D15X-50-TD16-20	66516	76,2	47,6	20	14,0	19,1	3	160308	TS-4.7-10M1	T-15
D15X-65-TD22-25	66517	95,3	63,5	25	19,1	25,4	3	220408	TS-5.8-10M1	T-20

Double 30° Indexable Chamfer Mill Cutting Rake - 15° for 15° positive triangle TDEX inserts



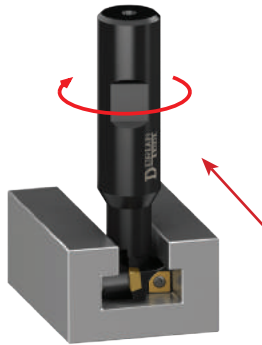
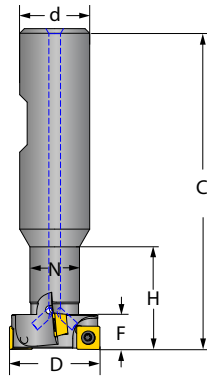
Description	UPC #	C	D	d	F	H	Insert Qty.	TDEX Gage Insert	Insert Torx Screw	Torx Key
C60-20-TD11-10	66901	60,7	19,1	10	5,2	10,4	1	110204	TS-25.45-6M1	T-7
C60-25-TD11-12	66902	60,7	25,4	12	5,2	10,4	3			
C60-35-TD11-16	66903	60,7	34,9	16	5,2	10,4	3			
C60-40-TD16-16	66904	76,2	38,1	16	8,0	15,9	3	160308	TS-4.7-8M1	T-15
C60-50-TD16-20	66905	76,2	47,6	20	8,0	15,9	3			
C60-65-TD22-25	66907	88,9	63,5	25	10,7	21,4	3	220408	TS-5.8-10M1	T-20

WOODRUFF KEY SEAT CUTTER Cutting Rake - 20° for positive TEHW inserts



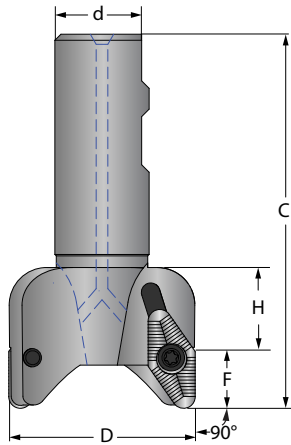
Description	UPC #	C	D	d	F	Insert Qty.	TEHW Gage Insert	Insert Torx Screw	Torx Key
DWKC-195-TE06-10	66550	63	19,5	10	5	2	0602	TS-06	T-6
DWKC-196-TE06-10	66551	63	19,5	10	6	2			
DWKC-225-TE06-10	66552	63	22,5	10	5	2	0602	TS-06	T-6
DWKC-226-TE06-10	66553	63	22,5	10	6	2			
DWKC-228-TE06-10	66554	63	22,5	10	8	2			
DWKC-256-TE06-10	66555	63	25,5	10	6	3	0602	TS-06	T-6
DWKC-286-TE06-10	66556	63	28,5	10	6	6			
DWKC-288-TE06-10	66557	63	28,5	10	8	6	0602	TS-06	T-6
DWKC-2810-TE06-12	66558	71	28,5	12	10	6			
DWKC-328-TE06-12	66559	71	32,5	12	8	6	0602	TS-06	T-6
DWKC-3210-TE06-12	66560	71	32,5	12	10	6			
DWKC-4510-TE06-12	66561	71	45,5	12	10	6	0602	TS-06	T-6

T-SLOT CUTTER Cutting Rake - 20° for positive TEHW/CEHW inserts



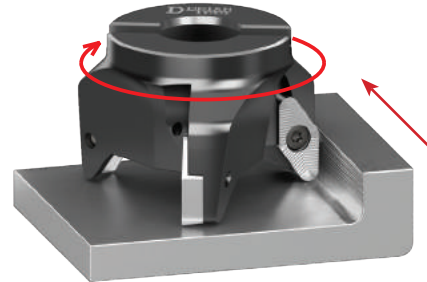
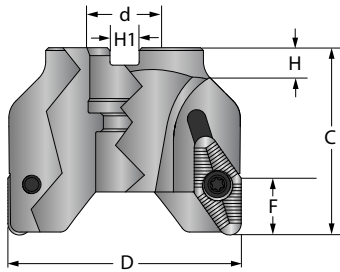
Description	UPC #	C	D	d	F	H	N	No. Inserts	No.Flutes	Gage Insert	Insert Torx Screw	Torx Key
SLOT-21-SP06-12	66562	74	21	12	9	-	12	2	1	SPHX-060304	TS-25.45-6M2	T-15
SLOT-25-SP06-16	66563	82	25	16	11	32	14	4	2			
SLOT-28-SP06-16	66564	82	28	16	12	-	16	4	2			
SLOT-32-SP06-16	66565	90	32	16	14	34	18	3	1			
SLOT-36-SD09-25	66566	103	36	25	16	47	20	4	2	SDGW-090308	TS-35.6-9M1	T-20
SLOT-40-SD09-25	66567	108	40	25	17	49	22	4	2			
SLOT-45-SD09-25	66568	113	45	25	20	49	24	5	2			
SLOT-50-SD09-32	66569	124	50	32	22	60	28	5	2			

90° Aluminum Milling Cutter - Cutting Rake - 7° for 7° positive 35° diamond VCGT inserts



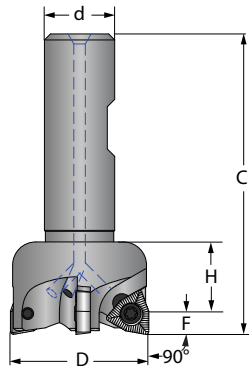
End Mill										
Description	UPC #	C	D	d	F	H	Insert Qty.	VCGT Gage Insert	Insert Torx Screw	Torx Key
E90-50-VC22-20	67200	95	50	20	16	38	2	220432	TS-5.8-10M1	T-20
E90-50-VC22-25	67201	100	50	25	16	38	2			

90° Aluminum Milling Cutter - Cutting Rake - 7° for 7° positive 35° diamond VCGT inserts



Face Mill											
Description	UPC #	C	D	d	F	H	H1	Insert Qty.	VCGT Gage Insert	Insert Torx Screw	Torx Key
E90A-50-VC16-22	67202	50	50	22	14	6,3	10,4	2	160412	TS-4.7-8M1	T-15
E90A-63-VC22-22	67203	50	63	22	16	6,3	10,4	2	220432	TS-5.8-10M1	T-20
E90A-75-VC22-27	67204	50	76	27	16	7	12,4	3			
E90A-100-VC22-32	67205	50	100	32	16	8	14,4	3			
E90A-125-VC22-32	67206	50	124	40	16	8	14,4	4			

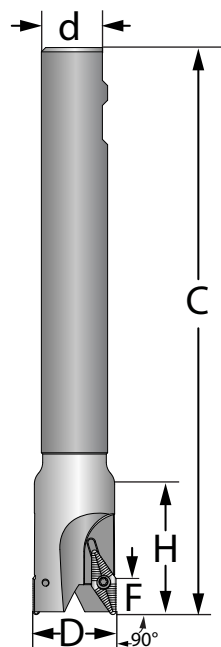
90° Aluminum Milling Cutter - Cutting Rake - 7° for 7° positive trigon WCGT inserts



End Mill										
Description	UPC #	C	D	d	F	H	Insert Qty.	WCGT Gage Insert	Insert Torx Screw	Torx Key
E90-32-WC06-20	67216	75	32	20	6,3	20	3	06T308	TS-35.6-9M1	T-15
E90-50-WC06-25	67217	82	50	25	6,3	20	3			

Face Mill											
Description	UPC #	C	D	d	F	H	H1	Insert Qty.	WCGT Gage Insert	Insert Torx Screw	Torx Key
E90A-050-WC06-22	67218	40	50	22	6,3	6,3	10,4	3			
E90A-063-WC06-27	67219	45	63	27	6,3	7	12,4	4			
E90A-075-WC06-27	67220	45	76	27	6,3	7	12,4	4			
E90A-100-WC06-32	67221	50	100	32	6,3	8	14,4	5			
E90A-125-WC06-32	67222	50	124	32	6,3	8	14,4	6			

90° Aluminum Copy Mill - Cutting Rake - 11° for 11° positive VPGT inserts



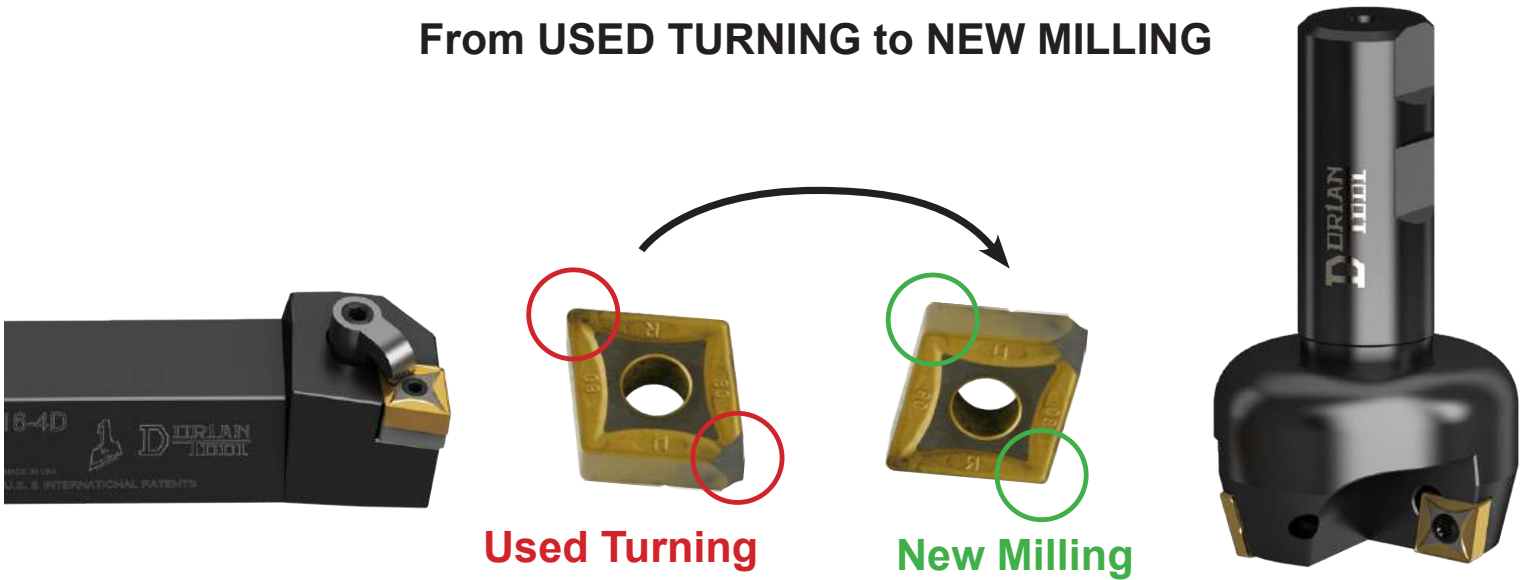
End Mill										
Description	UPC #	C	D	d	F	H	Insert Qty.	VPGT Gage Insert	Insert Torx Screw	Torx Key
E90XL-20-VP11-16	66830	175	20	16	10	30	2	110304	TS-25.45-6M1	T-7
E90XL-25-VP16-20	66831	200	25	20	13,5	40	2	160412	TS-4.7-8M1	T-15
E90XL-32-VP16-25	66832	220	32	25	13,5	50	2			
E90XL-42-VP16-25	66833	220	42	32	13,5	50	3			

Recycle CNMG-1204

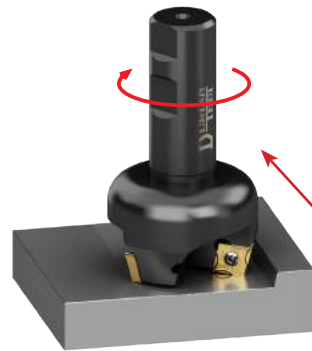
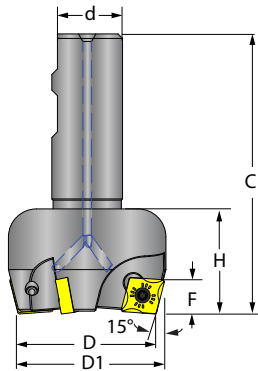
4 Turning Edges + 4 Milling Edges

After the cutting edges are used on your turning tool holder, **do not throw the insert away, it can be used in this milling cutter** to utilize four more cutting edges that were not used in your lathe work.

From USED TURNING to NEW MILLING

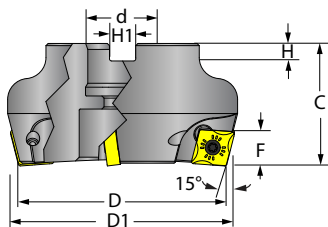


15° CNMG Recycle Milling Cutter - Cutting Rake - Negative 7° for Negative 80° diamond CNMG inserts



End Mill

Description	UPC #	C	D	D1	d	F	H	Insert Qty.	CNMG Gage Insert	Insert Torx Screw	Torx Key
REC15-50-CN4-20	66570	95,3	50,8	57,2	20	11,4	38,1	3	432	TS-1032-5M1	T-20
REC15-50-CN4-25	66571	127,0	50,8	57,2	25	11,4	38,1				



Face Mill

Description	UPC #	C	D	D1	d	F	H	H1	Insert Qty.	CNMG Gage Insert	Insert Torx Screw	Torx Key
REC15A-076-CN4-27	66573	44,5	76,2	82,0	27	11,4	7	12,4	5	432	TS-1032-5M1	T-20
REC15A-100-CN4-32	66574	50,8	101,6	107,4	32	11,4	8	14,4	6			
REC15A-125-CN4-40	66575	50,8	127,0	132,8	40	11,4	9	16,4	8			

Milling Insert Grade Nomenclature

DPC20HM

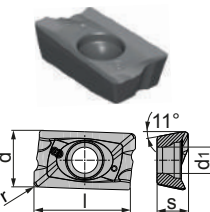
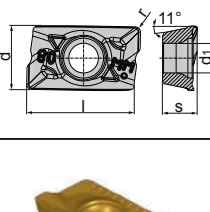
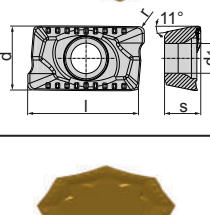
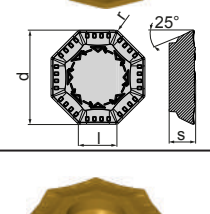
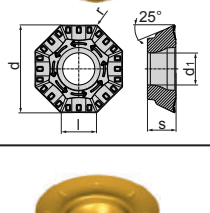
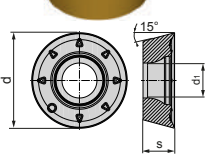
D	P	C	20	H	M			
1	2	3	4	5	6			
D						1	Dorian	
	P					2	Material Designation	
		C				3	Coating	
			20			4	ISO-Hardness	
				H		5	Cutting Application	
					M		6	Machining Operation

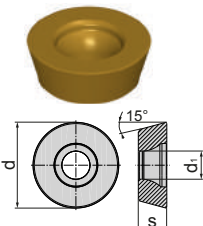
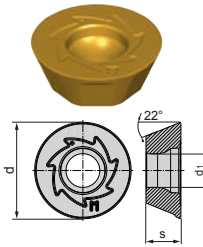
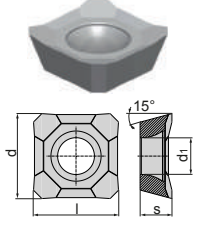
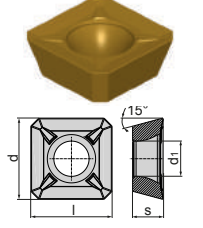
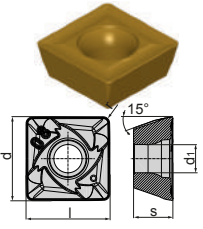
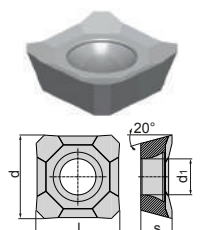
1	Insert Name Brand	3	Coating	5	Cutting Application
	Dorian	U	Uncoated	H	High Speed Application
		C		G	General Application
		P	PVD Coating	U	Universal Application
				R	Low Speed Application
				S	Tough & Unstable Application

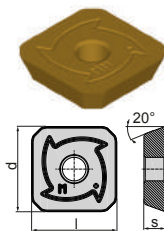
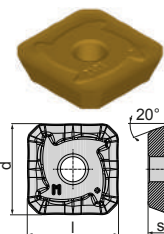
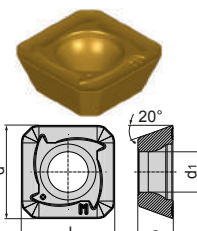
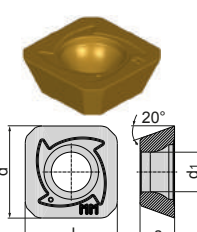
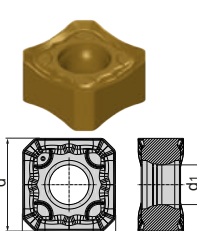
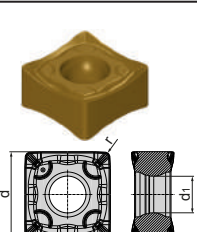
2	Material Designation		4	ISO-Hardness & Toughness		6	Machining Operation	
	P	Carbon & Alloy Steel		HT	10		T	Turning
	M	Stainless Steel		HT	15		S	Threading
	K	Cast Iron		HT	20		D	Drilling
	N	Aluminum & Non ferrous Materials		HT	25		G	Turning & Grooving
	S	High Temp & Supper Alloys		HT	30		P	Parting Off
	H	Hardened Material		HT	35		M	Milling
	U	Multi Material		HT	40			

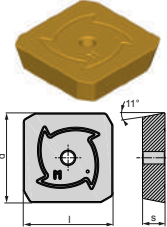
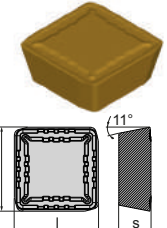
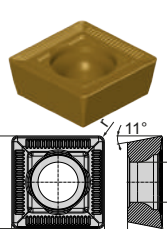
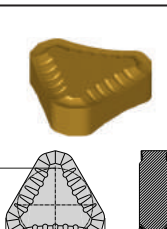
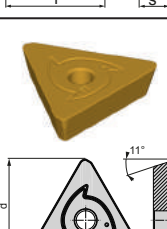
Material		Grade	ISO Grade	ANSI Grade	Insert Specification
Carbon Steel	Alloy Steel	DPC20HM	HC-P20	C7	Multi Coated CVD , Very Hard, Wear and Abrasive Resistant, Face and Plain Milling, for Carbon and Alloy Steel , Very High Cutting Speed in stable Milling conditions. Dry/Wet Cutting
		DPP25GM	HC-P25	C6/C7	Coated PVD , Multi Purpose Milling, for Carbon, Alloy Steel & Stainless Steel, Very High Cutting Speed in stable Milling conditions. Dry/Wet Cutting
		DPC30UM	HC-P30	C6	Multi Coated CVD , Hard, Wear Resistant & Tough Substrate, Universal Milling, for Carbon, Alloy Steel & Stainless Steel, High Cutting Speed in stable Milling conditions Dry Cutting
		DPP35RM	HC-P35	C5/6	Coated PVD , Wear and Impact Resistant & Very Tough Substrate, Difficult Milling, for Forging & Casting Carbon, Alloy Steel & Stainless Steel. Dry Cutting
		DPP40SM	HC-P40	C5	Coated PVD , Tough and Impact Resistant Substrate, Very Difficult Milling, for Forgings & Castings of Alloy Steel & Stainless Steel, Low to Medium Cutting Speed in unstable conditions. Dry Cutting
Stainless Steel	DMP35UM	HC-M35	C5/6	Coated PVD , Wear and Impact Resistant, Micrograin Substrate for high stability, For Universal, Stainless Steel & Austenitic Stainless Steel, Medium Cutting Speed in stable Milling conditions. Dry/Wet	
	DMP40RM	HC-M40	C5	Coated PVD , Wear, Tough and Impact Resistant, Micrograin Substrate for high stability, Multi Purpose, for Austenitic Duplex Stainless Steel, Medium Cutting Speed in stable Milling conditions. Dry/Wet	
Cast Iron	DKC15HM	HC-K15	C2	Coated Multi Layer CVD , Very Hard & Wear Resistant Substrate with Very hard and wear resistant Coating, High Speed Milling, for Gray, Spheroidal Graphite, Temper & Alloyed Cast Iron, Dry Cutting	
	DKP20UM	HC-K20	C3	Coated Thick PVD ,Hard, Tough, Wear & Impact Resistant Substrate, Universal Milling, for Cast Iron Materials & Hardened Steel of 54 HRC, Medium Cutting Speed in stable Milling conditions. Dry Cutting	
Aluminum	High Temp	DNU10GM	HC-N10	C2	Uncoated , Hard & Wear Resistant Uncoated Micrograin Substrate, General Milling, for Aluminum, non Ferrous Metals and Plastics, Medium to High Cutting Speed in stable Milling conditions. Dry/Wet Cutting
		DNP10HM	HC-N10	C2	Coated Ultra-Thin PVD . High Performance Milling, for Aluminum, non Ferrous Material. For Finishing Stainless Steel and Cast Iron, High Cutting Speed in stable Milling conditions. Dry/Wet Cutting
		DNC15UM	HC-N15	C6	Coated TiBN CVD , Hard & Wear Resistant Micrograin Substrate, Universal Milling, for Aluminum, non Ferrous Material, High Cutting Speed in stable Milling conditions. Dry/Wet Cutting

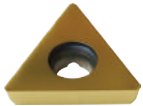
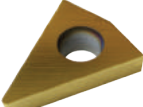
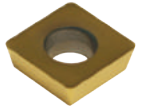
Material Application		Insert Grade		Milling Cutting Speed SFM (V _c)																							
				Annealed Alloy Steel		Heat Treated Alloy Steel		Tool Steel		Hardened Steel		Annealed Austenitic Stainless Steel		Hardened Austenitic Stainless Steel		Gray Cast Iron Alloy Cast		For all Cast Iron Materials		Aluminum, Non Ferrous Materials, Plastics		Aluminum, Non Ferrous Materials, Plastics		Tool Steel		Hardened Steel	
				SFM	V _c	SFM	V _c	SFM	V _c	SFM	V _c	SFM	V _c	SFM	V _c	SFM	V _c	SFM	V _c	SFM	V _c	SFM	V _c	SFM	V _c	SFM	V _c
Carbon Steel Alloy Steel		DPC20HM	633	190	533	160	483	145	366	110																	
			966	290	766	230	699	210	566	170																	
		DPP25GM	583	175	483	145	433	130			300	90			466	140	333	100									
			882	265	716	215	633	190			500	150			999	300	533	160									
		DPC30UM	533	160	466	140	400	120	333	100																	
			799	240	633	190	583	175	533	160																	
		DPP35RM	500	150	433	130	366	110			266	80															
			766	230	599	180	533	160			466	140															
		DPP40SM	333	100	483	145	433	130			233	70															
			733	220	716	215	633	190			433	130															
Stainless Steel		DMP35UM								366	110	333	100														
										433	130	533	160														
		DMP40RM									266	80	233	70							100	30	100	30			
											433	130	400	120							233	70	233	70			
Cast Iron		DKC15HM												599	180	466	140										
														1199	360	833	250										
		DKP20UM	666	200	599	180	533	160	400	120					500	150	366	110									
			999	300	833	250	733	220	599	180					1066	320	599	180									
Aluminum High Temp Alloy		DNU10GM																1332	400	400	120	83	25	100	30		
																		8325	2500	1332	400	266	80	266	80		
		DNP10HM																	1665	500	1665	500					
																			9990	3000	9990	3000					
		DNC15UM																	1665	500	1665	500					
																			9990	3000	9990	3000					

Insert Technical Specification								Material Application											
								P					M		K		N		
Insert Geometry	Specification	Number of Cutting Edges	l	d	s	d ₁	r	DPC20HM	DPP25GM	DPC30UM	DPP35RM	DPP40SM	DMP35UM	DMP40RM	DKC15HM	DKP20UM	DNU10GM	DNP10HM	DNC15UM
	APHT 100304-PDFR-NU	2	10	6,7	3,5	2,8	0,4										94730	94731	
	APHT 160408-PDFR-NU	2	16	9,52	5,26	4,5	0,8										94732	94733	
	APKT 100304 PDSR-PM	2	10	6,7	3,5	2,8	0,4	94734		94735				94736					
	APKT 100304 PDSR-MM	2	10	6,7	3,5	2,8	0,4												
	APKT 100304 PDSR-PR	2	10	6,7	3,5	2,8	0,4			94737	94738	94739							
	APKT 100304 PDSR-KR	2	10	6,7	3,5	2,8	0,4								94740	94741			
	APKT 160408 PDSR-PM	2	16	9,52	5,26	4,5	0,8	94742		94743									
	APKT 160408 PDSR-MM	2	16	9,52	5,26	4,5	0,8							94744					
	APKT 160408 PDSR-PR	2	16	9,52	5,26	4,5	0,8			94745	94746	94747							
	APKT 160408 PDSR-KR	2	16	9,52	5,26	4,5	0,8								94748	94749			
	APKT 160416 PDSR-PU	2	16	9,52	5,26	4,5	1,6			94727									
	APKT 160424 PDSR-PU	2	16	9,52	5,26	4,5	2,4			94728									
	APKT 160432 PDSR-PU	2	16	9,52	5,26	4,5	3,2			94729									
	OFER 070405 SN-PU	8	7	18,1	4,76	-	0,5	94823											
	OFEX 05T305 SN-PU	8	5	12,7	3,97	4,6	0,5	94825	94827	94829									
	RDHT 12T3 MOEN-MM	360°	-	12	3,97	4,4	-						94882	94883					

Insert Technical Specification								Material Application											
								P					M		K		N		
Insert Geometry	Specification	Number of Cutting Edges	l	d	s	d ₁	r	DPC20HM	DPP25GM	DPC30UM	DPP35RM	DPP40SM	DMP35UM	DMP40RM	DKC15HM	DKP20UM	DNU10GM	DNP10HM	DNC15UM
	RDKW 1003 MOSN-PU	360°	-	10	3,18	3,9	-	94885	94886	94887	94888								
	RDKW 1003 MOSN-KU	360°	-	10	3,18	3,9	-								94889	94890			
	RDKW 12T3 MOSN-PU	360°	-	12	3,97	3,9	-	94892	94893	94894	94899								
	RDKW 12T3 MOSN-KU	360°	-	12	3,97	3,9	-								94904	94905			
	RDKW 1604 MOSN-PU	360°	-	16	4,76	5,2	-	94906	94907	94908	94909								
	RDKW 1604 MOSN-KU	360°	-	16	4,76	5,2	-								94910	94911			
	REMW 1304MOSN-PM	360°	-	13,2	4,76	4,6	-	94912	94913	94914	94917								
	REMW 1304MOSN-MM	360°	-	13,2	4,76	4,6	-						94919						
	REMW 1304MOSN-KM	360°	-	13,2	4,76	4,6	-								94921	94922			
	SDHT-1204 AEFN-NU	4	12,70	12,70	4,76	5,5	-										94949	94951	
	SDHT-1504 AEFN-NU	4	15,88	15,88	4,76	5,5	-										94953		
	SDHT 1204 AESN-PU	4	12,70	12,70	4,76	5,5	-	94955	94957	94958									
	SDHT 1204 AESN-MU	4	12,70	12,70	4,76	5,5	-						94959						
	SDHT 1204 AESN-KU	4	12,70	12,70	4,76	5,5	-								94965				
	SDHT 1504 AESN-PU	4	15,88	15,88	4,76	5,5	-			94966									
	SDMT 090308-SN-PU	4	9,52	9,52	3,18	4	0,8	94967											
	SDMT 120408 SN-PU	4	12,70	12,70	4,76	5,5	0,8		94999										
	SDMT 1205 PDSR-PU	4	12,70	12,70	5,56	5,5	-		95001	95003									
	SEHT-1204 AEFN-NU	4	12,70	12,70	4,76	5,5	-										95062	95063	

Insert Technical Specification								Material Application											
								P					M		K		N		
Insert Geometry	Specification	Number of Cutting Edges	l	d	s	d ₁	r	DPC20HM	DPP25GM	DPC30UM	DPP35RM	DPP40SM	DMP35UM	DMP40RM	DKC15HM	DKP20UM	DNU10GM	DNP10HM	DNC15UM
	SEKN 1203 AFSN-PM	4	12,70	12,70	3,18	-	-	95064	95065	95066									
	SEKN 1203 AFEN-MM	4	12,70	12,70	3,18	-	-							95067					
	SEKN 1203 AFSN-KM	4	12,70	12,70	3,18	-	-									95068	95069		
	SEKN 1504 AFSN-PM	4	15,88	15,88	4,76	-	-	95070	95071	95072	95073								
	SEKN 1504 AFEN-MM	4	15,88	15,88	4,76	-	-						95074	95075					
	SEKN 1504 AFSN-KM	4	15,88	15,88	4,76	-	-									95076			
	SEKR 1203 AFSN-PM	4	12,70	12,70	3,18	-	-	95077	95078	95079									
	SEKR 1203 AFEN-MM	4	12,70	12,70	3,18	-	-							95080					
	SEKT 1204 AFSN-PM	4	12,70	12,70	4,76	5,5	-	95081	95082	95083	95084								
	SEKT 1204 AFEN-MM	4	12,70	12,70	4,76	5,5	-						95085	95086					
	SEKW 1204 AFSN-PM	4	12,70	12,70	4,76	5,5	-	95087	95088	95089	95090								
	SEKW 1204 AFEN-MM	4	12,70	12,70	4,76	5,5	-							95091					
	SEKW 1204 AFSN-KM	4	12,70	12,70	4,76	5,5	-									95092	95093		
	SNMX 1206 ANSN-PM	8	12,70	12,70	6,35	5,2	-	95094	95095	95096	95097								
	SNMX 1206 ANSN-MM	8	12,70	12,70	6,35	5,2	-						95098	95099					
	SNMX 1206 ANSN-KM	8	12,70	12,70	6,35	5,2	-									95100	95101		
	SNEX 1206 ANFN-MF	8	12,70	12,70	6,35	5,2	-						95102						
	SNMX 120608 SN-PM	8	12,70	12,70	6,35	5,2	0,8		95103	95104									
	SNMX 120608 SN-MM	8	12,70	12,70	6,35	5,2	0,8						95105						
	SNMX 120608 SN-KM	8	12,70	12,70	6,35	5,2	0,8									95109	95111		
	SNMX 120612 SN-PM	8	12,70	12,70	6,35	5,2	1,2		95117	95118									
	SNMX 120612 SN-KM	8	12,70	12,70	6,35	5,2	1,2									95119	95123		

Insert Technical Specification								Material Application											
								P					M		K		N		
Insert Geometry	Specification	Number of Cutting Edges	l	d	s	d ₁	r	DPC20HM	DPP25GM	DPC30UM	DPP35RM	DPP40SM	DMP35UM	DMP40RM	DKC15HM	DKP20UM	DNU10GM	DNP10HM	DNC15UM
	SPKN 1203 EDSR-PM	4	12,70	12,70	3,18	-	-	95131	95132	95133	95134								
	SPKN 1203 EDSR-KM	4	12,70	12,70	3,18	-	-								95135	95136			
	SPKN 1504 EDSR-PM	4	15,88	15,88	4,76	-	-	95137	95140	95141	95142								
	SPKN 1504 EDSR-KM	4	15,88	15,88	4,76	-	-								95143	95144			
	SPKR 1203 EDSR-PM	4	12,70	12,70	9,18	-	-			95145									
	SPMT 060304 EN-PU	4	6,35	6,35	3,18	3,4	0,4			95146									
	TNHF 1204 ANSN-KM	6	12	12,70	4,76	-	-									95147			
	TPKN 1603 PDSR-PM	3	16	9,52	3,18	-	-	95148	95149	95151	95153					95154	95155		
	TPKN 1603 PDSR-KM	3	16	9,52	3,18	-	-												
	TPKN 2204 PDSR-PM	3	22	12,70	4,76	-	-	95157	95158	95159	95161								
	TPKN 2204 PDSR-KM	3	22	12,70	4,76	-	-								95162	95163			

Insert	Description	Radius	DK25M	DASK25B	DASP35B
TDEX 60° 	TDEX-110201-EN	0,101mm	-	-	95417
	TDEX-110202-EN	0,203mm	-	-	95419
	TDEX-110204-EN	0,381mm	95420	95422	95426
	TDEX-110208-EN	0,812mm	95430	95432	95436
	TDEX-160304-EN	0,381mm	95440	95442	95446
	TDEX-160308-EN	0,812mm	95450	95452	95456
	TDEX-220404-EN	0,381mm	95460	95462	95466
	TDEX-220408-EN	0,812mm	95470	95472	95476
TDEX 45° 	TDEX-090202-EN	0,203mm	95490	95492	95495
	TDEX-090204-EN	0,381mm	95500	95502	95505
	TDEX-17T304-EN	0,381mm	95510	95512	95515
	TDEX-17T308-EN	0,812mm	95520	95522	95525
	TDEX-250404-EN	0,381mm	95530	95532	95535
	TDEX-250408-EN	0,812mm	95540	95542	95545
TEHW 	TEHW-0602-AEEN	0,101mm	95590	95593	95595
SDHW 	SDHW-090308-EN	0,812mm	94996	94998	95002

DK25M / DNU25GT

Uncoated, hard and wear resistant C2 Substrate for Aluminum & Non Ferrous materials.

DASK25B

C2 Substrate with PVD TiN-TiAlN-TiN multi-layer coating. For general purpose milling of non-ferrous metals such as aluminum, copper, brass, and bronze, high temp alloys, 300-series stainless steels and cast iron with medium to high SFM.

DASP35B

C5 Substrate with PVD TiN-TiAlN-TiN multi-layer coating. For general purpose milling of carbon steels, alloy steels and tool steels in annealed state with medium to high SFM.

DUP25GT

C2 Substrate with PVD TiN-TiAlN coating. For general purpose milling of carbon steels, alloy steels, stainless steels, high temp alloys, hardened metals and non ferrous materials with medium to high SFM.

DNP25GT

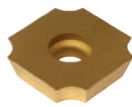
C2 Substrate with PVD TiN coating. For general purpose milling of high temp alloys, hardened metals and non ferrous materials with medium SFM.

DNU10GT

For general turning applications at a high SFM (V_C). Hard, abrasive and wear resistant micro-grained uncoated substrate, for a hard and sharp cutting edge (not for interrupted cuts). Best for Aluminum, Super Alloys, Plastic and all Non Ferrous metals and materials.

DNX10UT

For universal turning at a very high SFM (V_C). Hard, abrasive and high resistant substrate with a microplus® plasma TiAlN coating to improve cutting edge hardness, wear and heat resistant, and better chip flow. Best for Aluminum, Plastic, Super Alloys and low Silicone Aerospace Aluminum.

Insert	Description	Radius	DNU25GT	DUP25GT
SDGX-UEN 3/8" Square Convex Radius 	SDGX-09C01-E	0,406mm	-	95299
	SDGX-09C03-E	1,193mm	95305	95307
	SDGX-09C04-E	1,574mm	95309	95311
SDGX-UEN 3/4" Square Convex Radius 	SDGX-19C05-E	1,981mm		95250
	SDGX-19C06-E	2,387mm	95253	95254
	SDGX-19C07-E	2,768mm	95257	95258
	SDGX-19C08-E	3,175mm	95261	95262
	SDGX-19C09-E	3,581mm		95266
	SDGX-19C10-E	3,962mm	95269	95270
	SDGX-19C11-E	4,521mm		95274
	SDGX-19C12-E	4,775mm	95277	95278
	SDGX-19C13-E	5,156mm		95282
	SDGX-19C14-E	5,562mm	95285	95286
	SDGX-19C15-E*	5,943mm	95289	95290
	SDGX-19C16-E*	6,35mm	95293	95294

*All SDGX inserts have 4 cutting edges, except 5,943mm & 6,35mm radius inserts that have 2 cutting edges.

Description	ISO	Grade DNU10GT	Grade DNX10UT
VPGT-NFU 35° Triangle Universal 	VPGT-160412-NFU	80131	80133
	VPGT-220516-NFU	80135	80136
WCGT-NFU 80° Trigon Universal 	WCGT-06T308-NFU	80148	80149

SUPER QUICK CHANGE TOOL POST

RIGIDITY,
REPEATABILITY &
QUALITY



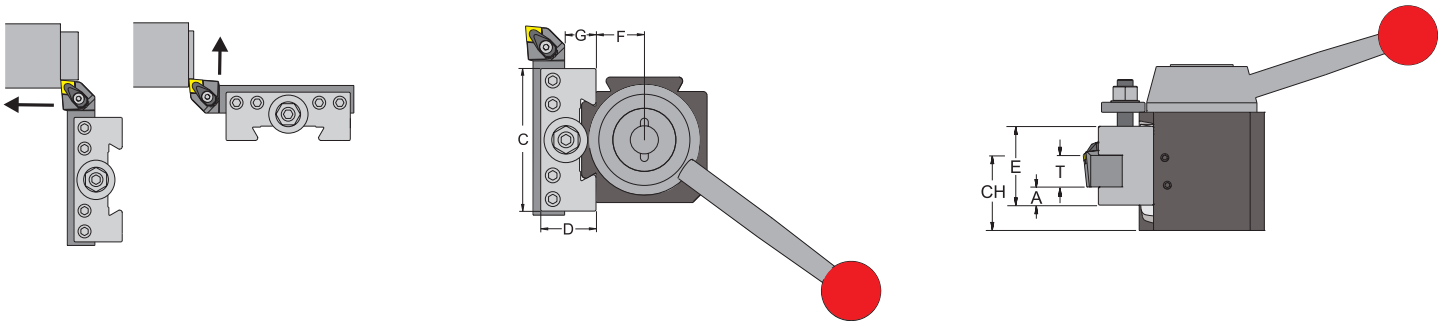
Style	Features	Application
SUPER Quick Change Tool Post 	• Triple Action Locking System • Zero Backlash • Precise Repeatability within .0001" • 15° Locking Handle Position Adjustment • Super Heavy Duty Locking Gear and Wedge Style Sliding Gibs • Industry Standard Interchangeable Tool holders • High Tensile Strength Chromium- Molybdenum Alloy Steel Body, Locking Gear, Sliding Gibs, Locking Gear Head, and Locking Handle • Through-Hardened, Ion Nitrided, and Nickel-plated Body • Through-Hardened and Ion Nitrided and Precision Ground Locking Gear and Sliding Gibs for Wear Resistance and Repeatability • CNC Precision Ground and Qualified for accuracy and super precise repeatability	• CNC Toolroom Lathes • Manual Toolroom Lathes • Engine Lathes • Heavy Duty Oil-Country Lathes • Super Precision High Speed • Tight Tolerances and Excellent Finish Requiring Applications • Deep Drilling and Boring • Heavy Duty Material Removal • Multi Turning, Drilling, Boring, Threading Applications
No. D1 Turning & Facing Holder 	• Quick Change Mounting • High Tensile Strength Chromium-Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within .0001"	• Holds Square Shank Tools • Turning and Facing • Threading and Grooving • Cut-Off Applications
No. D2 Turning, Facing & Boring Holder 	• Boring Bar "V" Seat • Quick Change Mounting • High Tensile Strength Chromium-Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within .0001"	• Holds Square Shank Tools • Holds Boring Bars • Turning and Facing • Light to Medium Boring • Threading and Grooving • Cut-Off Applications
No. D4-D41-DQ41S DUAL Heavy Duty Boring Bar Holder 	• Precision Ground and Honed Bore • Qualified Bore for Precise Tool Alignment and Squareness • Quick-Lock System Aligns Boring Bar Center height and Rake Angle Automatically. • Four Special Flat Machined Locking Screws for High Rigidity Extended Overhangs without Scarring the Boring Bar • Systems Up to 3" Capacity • Quick Change Mounting • High Tensile Strength Chromium- Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within .0001"	• Precision Boring Applications • Heavy Duty Boring Applications • Heavy Duty Drilling Applications • Deep Boring, Drilling and Threading Applications

Style	Features	Application
No. D5 Morse Taper Holder 	• Precision Ground Morse Taper • Qualified for Precise Tool Alignment and Squareness • Designed for Deep Drilling • Heavy Duty Drilling • Quick Change Mounting • High Tensile Strength Chromium-Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within .0001"	• Deep Drilling Applications • Heavy Duty Drilling Applications • Reaming and Tapping
No. D7-71C Reversible Cut-Off Blade Holder 	• Precision Ground Blade Dovetail Seat • Qualified for Precise Tool Alignment and Squareness • Quick Change Mounting • High Tensile Strength Chromium- Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within .0001"	• Cut-Off Applications • Grooving Applications
No. D35 Dovetail Drill Chuck Holder 	• Supplied with a Rohm Chuck • Qualified for Precise Tool Alignment and Squareness • Designed for Versatility • Quick Change Mounting • High Tensile Strength Chromium- Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within .0001"	• Center Drilling • Precision Drilling • Precision Reaming • Tapping

Note: Quick Change Tool Holders will fit on the Quadra Tool Post of the same size.
Only 2 Quick Change Holders at time will fit on the Quadra Index Tool Post.

No. D1 Turning & Facing Tool holder

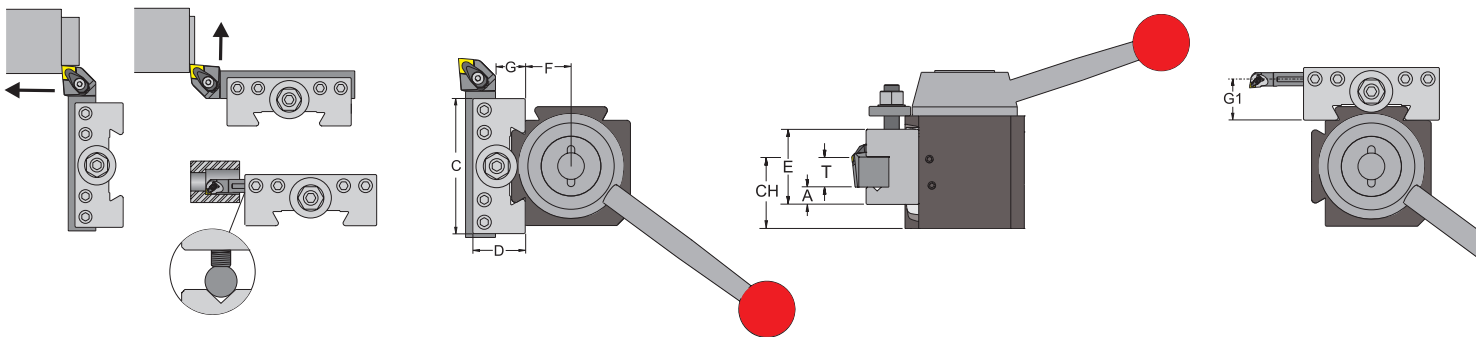
This tool holder is best used for holding square shank tool holders close to the tool post to maximize rigidity when turning, facing, and threading. Fits industry standard tool posts.



Description	UPC #	A	T	C	D	E	F	G
D25AXA-1	01100	10	20	70	32	44	22	20
D30BXA-1	01250	11	25	83	38	57	28	23
D35CXA-1	01400	13	25	95	44	64	30	26
D40CA-1	01550	14	32	114	51	76	39	26
D50DA-1	01700	19	40	152	64	89	48	33
D60EA-1	01850	25	40	179	76	102	56	39

No. D2 Turning, Facing & Boring Tool holder

The "V" groove makes this holder more versatile so that it can hold either square shank tool holders or boring bars. Holds the tool close to the tool post to maximize rigidity when turning, facing, threading or boring. Fits industry standard tool posts.



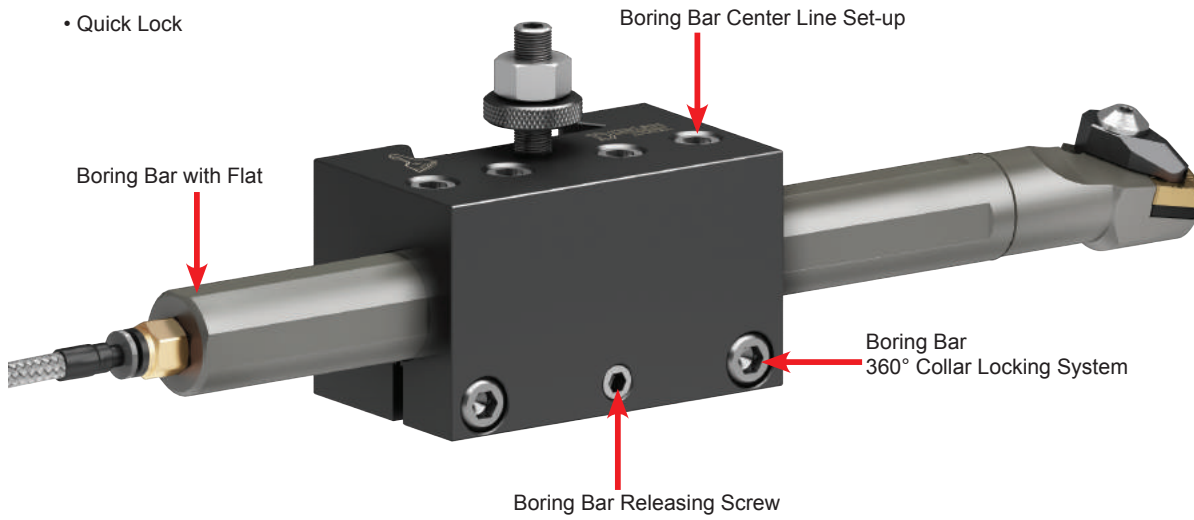
Description	UPC #	A	T	C	D	E	F	G	G1
D25AXA-2	01104	10	20	70	32	44	22	20	26
D30BXA-2	01254	11	25	83	38	57	28	23	31
D35CXA-2	01404	13	25	95	44	64	30	26	35
D40CA-2	01554	14	32	114	51	76	39	26	38
D50DA-2	01704	19	40	152	64	89	48	33	48
D60EA-2	01854	25	40	178	76	102	56	39	58

Dual Boring Bar Quick Change Holder with the Double Locking System

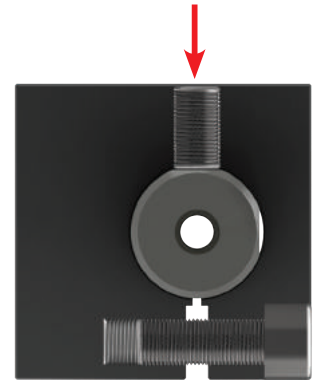
NEW

For Precise Set-up and Maximum Rigidity

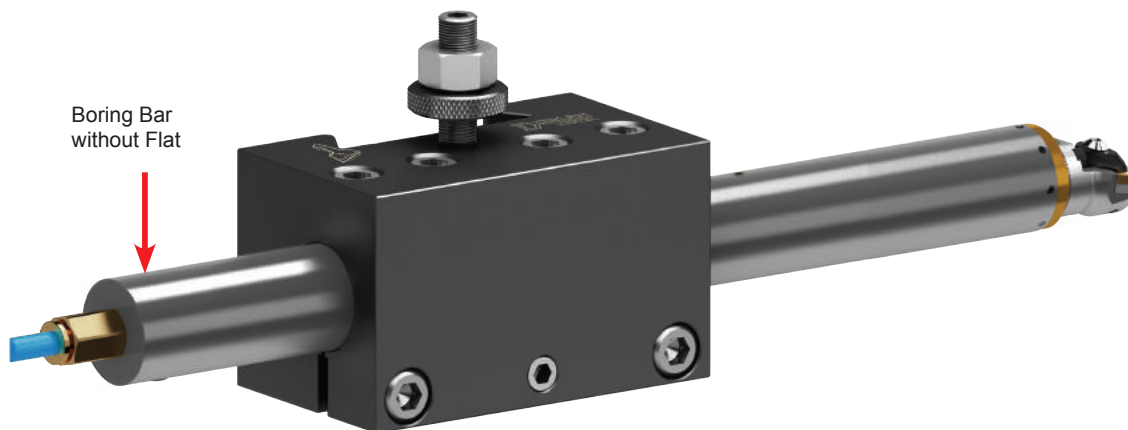
- Boring Bar Center Line Set-up
- Set Screw Locking System
- 360° Collar Locking System
- Maximum Locking force
- No Boring Bar Damage
- Quick Release
- Quick Lock



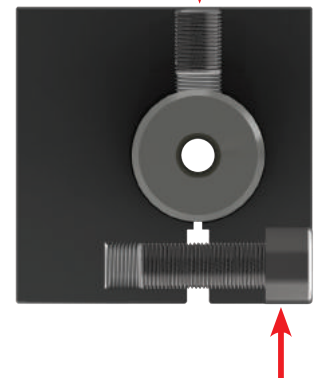
For boring Bars with flats
Use this screw to position
and lock center line



360° Collar Locking System



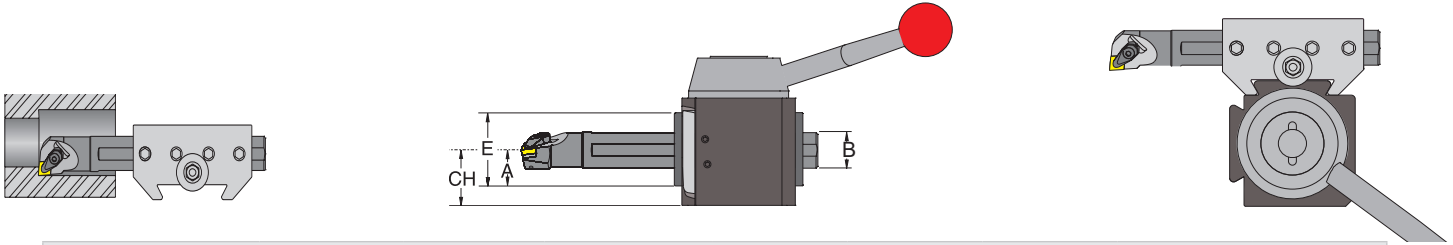
For Boring Bar with no flats
do not use this screw to
position or lock.



360° Collar Locking System

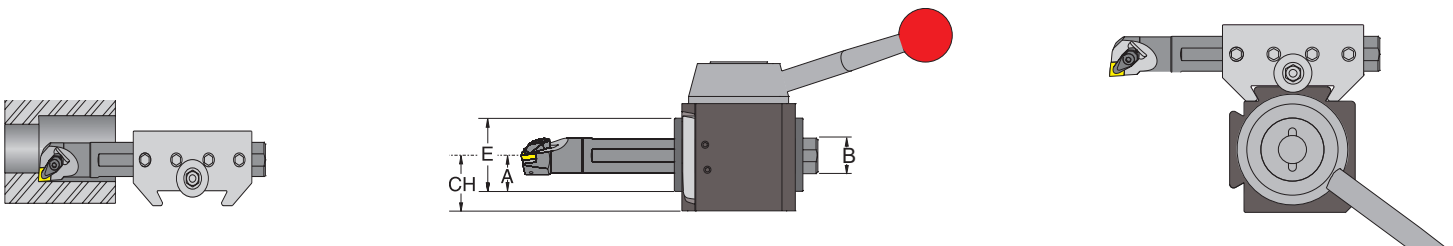
No. D4-DUAL Heavy Duty Boring Bar Tool holder

This holder is best used for holding boring bars. It has four flat-face locking-screws that automatically align the center height and rake angle of the boring bar while locking it rigidly for chatter-free machining. Flat-face locking-screws do not scar the boring bar. This holder reduces setup time by eliminating the need to indicate across the boring bar flat. Fits industry standard tool posts.



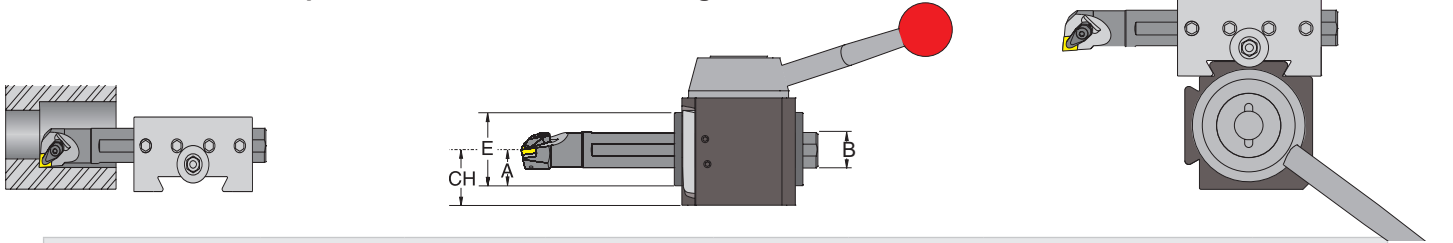
Description	UPC #	Boring Bar Capacity						
		A	B	C	D	E	F	G
D25AXA-4M-20-DUAL	01117	19	19	70	38	38	22	24
D30BXA-4M-25-DUAL	01267	25	25	83	51	51	28	32
D35CXA-4M-25-DUAL	01417	28	25	95	57	57	31	35
D40CA-4M-32-DUAL	01567	32	32	114	63	63	39	38
D50DA-4M-40-DUAL	01717	38	38	140	76	76	48	51
D60EA-4M-50-DUAL	01867	51	50	165	101	101	56	63

No. D41-DUAL Universal Extra Heavy Duty Boring Bar Tool holder



Description	UPC #	Boring Bar Capacity						
		A	B	C	D	E	F	G
D25AXA-41M-25-DUAL	01119	22	25	70	44	44	22	27
D30BXA-41M-32-DUAL	01269	28	32	83	57	57	28	35
D35CXA-41M-32-DUAL	01419	28	32	95	57	57	31	35
D40CA-41M-40-DUAL	01569	32	40	114	63	63	39	38
D50DA-41M-50-DUAL	01719	44	50	140	89	89	48	57
D60EA-41M-60-DUAL	01869	51	60	165	101	101	56	60

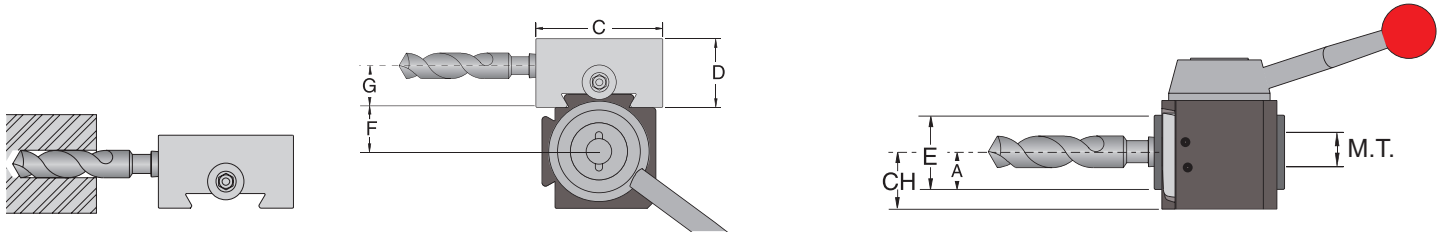
No. DQ41S-DUAL Super Universal Over Sized Boring Bar Tool holder



Description	UPC #	Boring Bar Capacity						
		A	B	C	D	E	F	G
DQ35CXA-41SM-40-DUAL	00423	32	40	102	63	63	31	38
DQ40CA-41SM-50-DUAL	00571	38	50	114	76	76	39	45
DQ50DA-41SM-60-DUAL	00721	51	60	165	101	101	18	57
DQ60EA-41SM-80-DUAL	00871	57	80	178	114	114	56	67

No. D5 Morse Taper Tool holder

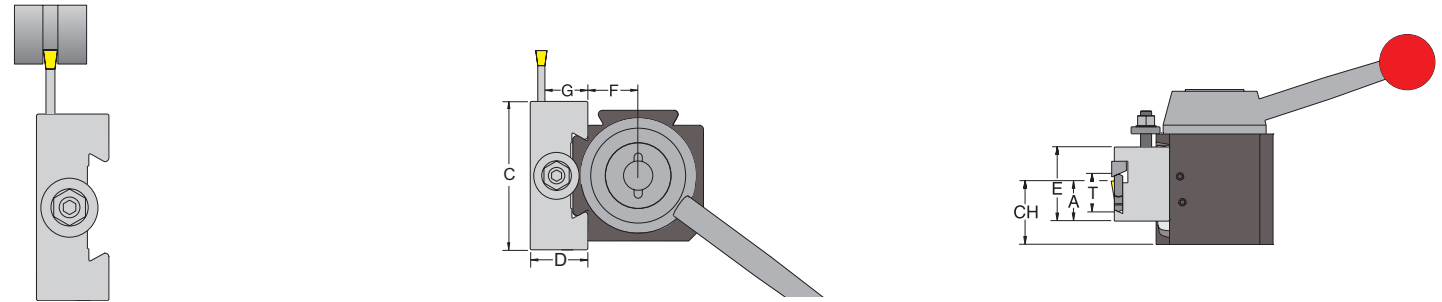
This holder is best used for holding morse taper tools. It can be used for drilling, boring, or reaming operations. Fits industry standard tool posts.



Description	UPC #	A	Morse Taper	C	D	E	F	G
D35CXA-5-4	01424	29	MT4	105	64	57	30	41
D40CA-5-4	01572	32	MT4	114	64	64	39	41
D50DA-5-5	01722	44	MT5	143	89	89	48	58
D60EA-5-5	01872	44	MT5	140	89	89	56	57

No. D7-71C Extra Heavy Duty Cut-Off Blade Tool holder

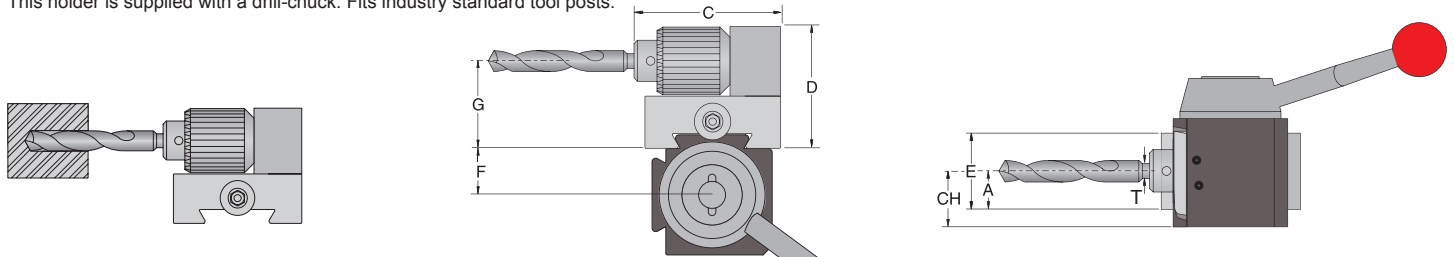
This holder is best used for holding cut-off blades. It has a taper locking system for maximum rigidity and performance in cut-off and face grooving operations. Fits industry standard tool posts.



Description	UPC #	A	Slot Grip Blade T	C	D	E	F	G
D25AXA-7-71C	01126	24	SGIH-19-2	70	32	51	22	29
D30BXA-7-71C	01276	24		83	32	51	28	29
D35CXA-7-71C	01428	32	SGIH-26-2 to 26-6	96	44	64	32	39
D40CA-7-71C	01576	32		114	44	76	39	39
D50DA-7-71C	01726	38	SGIH-32-3 to 32-9	152	51	76	48	43
D60EA-7-71C	01876	52		178	57	89	56	50

No. D35 Drill Chuck Tool holder

This holder is best used for holding drills, reamers, taps, etc., without tailstock mounting. It uses a drill chuck mounted directly to a quick change holder. This holder is supplied with a drill-chuck. Fits industry standard tool posts.

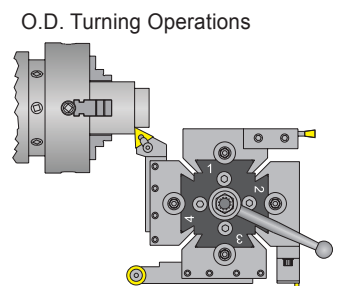
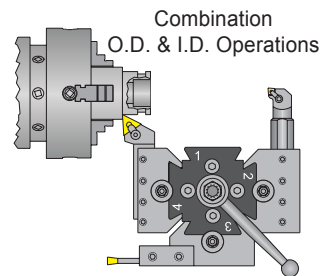


Description	UPC #	A	T Capacity	C	D	E	F	G
D25AXA-35	01140	25	0 - 12.0	106	79	51	22	52
D30BXA-35	01290	25	0 - 12.0	106	79	51	28	52
D35CXA-35	01442	29	0 - 12.0	119	95	57	30	67
D40CA-35	01590	29	0 - 12.0	119	95	57	39	67

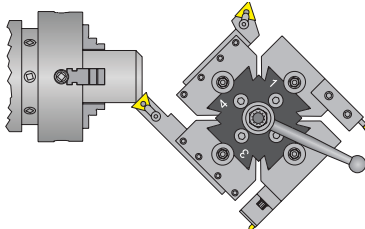
QUADRA INDEXING

QUICK CHANGE

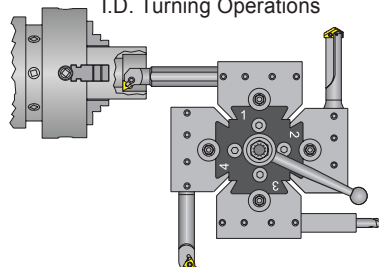
STRONG
RIGID, QUICK
&
PRECISE

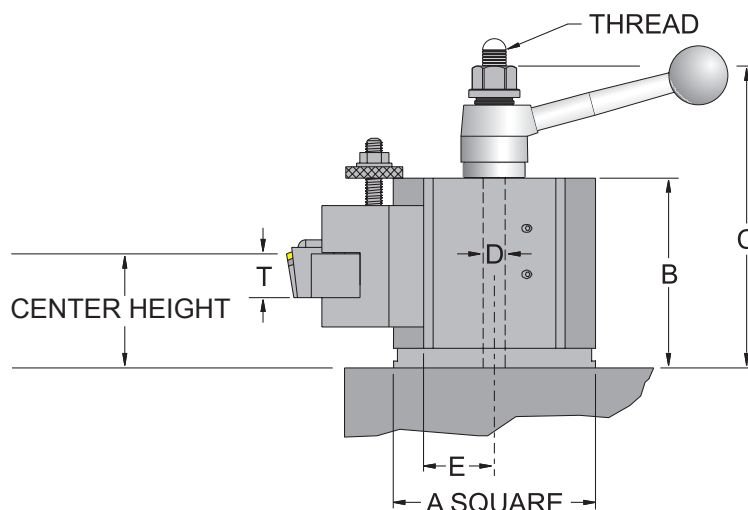


O.D. Chamfering Operations
15° Increments



I.D. Turning Operations





Description	QITP25N	QITP30N	QITP35N	QITP40N	QITP50N	QITP60N
UPC #	00000	00002	00004	00006	00008	00010
Lathe Swing Over Bed	≤300,0	320,0	400,0	450,0	500,0	XHD
A	63,5	76,2	88,9	101,60	127,0	152,4
B	65,3	81,4	87,9	103,4	132,8	142,6
C	132,3	145,3	162,9	191,1	232,0	250,3
D	12,7	12,7	16,0	19,0	25,40	28,6
E	22,4	28,3	31,6	38,9	48,2	56,1
T-Tool Capacity	12-20	16-25	20-25	25-32	32-40	40,0
Optimum C.H.*	36,1	44,4	46,6	55,9	76,1	87,4
C.H. MIN.	25,3	30,8	36,7	44,6	57,0	69,9
Center Height MAX.	50,0	58,0	56,5	67,2	95,1	104,9
Holding Post	M12x1,75	M12x1,75	M16x2,0	M18x2,5	M24x3,0	M27x3,0

*Optimum center height is calculated with the smaller tool size of the tool capacity.

NEW LOCKING & INDEXABLE SYSTEM

with 24 SUPER PRECISE POSITIONING BALL BEARINGS & 2 PRE-LOADED INDEXING PINS

Tool Post Indexing

- Indexing Flexibility every 15°
- 24 Locking Positions
- Multi-position of the locking handle
- Instant Tool Repositioning
- From Prototypes to High Production

Quick Change Tool Holders

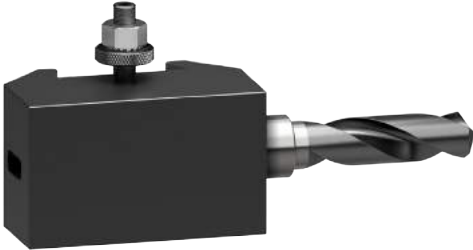
- 4 Tool Holders Locked Simultaneously
- 1 to 4 Tool Holders ready to be used
- Positive Lock with absolute zero backlash
- Tool holder repeatability within 0.00254mm
- Indexing repeatability within 0.00127mm

Tool Post Application

- 6 sizes of Tool Post available
- From tool room to oil country lathes
- Quick and versatile for finishing
- Strong for heavy-duty roughing
- Easy to install
- Maintenance free



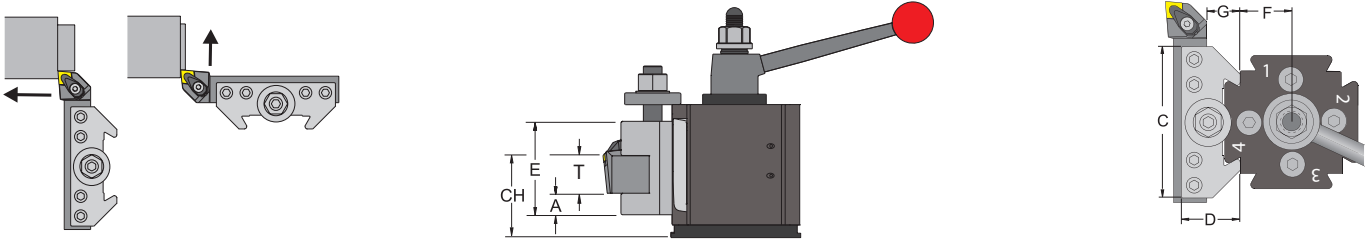
Style	Features	Application
QITPN Quadra Indexing Quick Change Tool Post 	• Heavy duty construction • Heat-treated alloy steel body • Precision ground • Four quick change tool holders locked independently • Industry Standard holders • Positive lock with absolute zero backlash • One to four tools ready to be used • Precise tool repeatability of 0,00127 mm • Cam-Lock tool holder locking system for maximum rigidity • Instant tool positioning • Highest locking rigidity in the industry • Indexing flexibility every 15° • 24 positive positions • Multi-position of the locking handle • Wide range of holders • Maintenance-free • "T"-nut for easy mounting • Ready to install	• CNC Toolroom Lathes • Manual Toolroom Lathes • Engine Lathes • Heavy Duty Oil-Country Lathes • Super Precision High Speed • Tight Tolerances and Excellent Finish Requiring Applications • Deep Drilling and Boring • Heavy Material Removal • Multi Turning, Drilling, Boring, Threading Applications
No. QITPN-1 Turning & Facing Holder 	• Quick Change Mounting • High Tensile Strength Chromium-Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within 0,00254mm	• Holds Square Shank Tools • Turning and Facing • Threading and Grooving • Cut-Off Applications
No. QITPN-2 Turning, Facing & Boring Holder 	• Boring Bar "V" Seat • Quick Change Mounting • High Tensile Strength Chromium-Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within 0,00254mm	• Holds Square Shank Tools • Holds Boring Bars • Turning and Facing • Light to Medium Boring • Threading and Grooving • Cut-Off Applications
No. D4-D41-DQ41S DUAL Heavy Duty Boring Bar Holder 	• Precision Ground and Honed Bore • Qualified Bore for Precise Tool Alignment and Squareness • Quick-Lock System Aligns Boring Bar Center height and Rake Angle Automatically. • Four Special Flat Machined Locking Screws for High Rigidity Extended Overhangs without Scarring the Boring Bar • Systems Up to 76,2mm Capacity • Quick Change Mounting • High Tensile Strength Chromium- Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within 0,00254mm	• Precision Boring Applications • Heavy Duty Boring Applications • Heavy Duty Drilling Applications • Deep Boring, Drilling and Threading Applications

Style	Features	Application
No. QITPN-5 Morse Taper Holder 	• Precision Ground Morse Taper • Qualified for Precise Tool Alignment and Squareness • Designed for Deep Drilling • Heavy Duty Drilling • Quick Change Mounting • High Tensile Strength Chromium-Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within 0,00254mm	• Deep Drilling Applications • Heavy Duty Drilling Applications • Reaming and Tapping
No. QITPN-7-71C Reversible Cut-Off Blade Holder 	• Qualified for Precise Tool Alignment and Squareness • Quick Change Mounting • High Tensile Strength Chromium- Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within 0,00254mm	• Cut-Off Applications • Grooving Applications
No. QITPN-36 5C Collet Holder 	• 5C Collet Holding System • Supplied with Collet Closer • Qualified for Precise Tool Alignment and Squareness • Designed for Versatility • Quick Change Mounting • High Tensile Strength Chromium- Molybdenum Alloy Steel • Hardened & Black Finished • CNC Precision Ground and Qualified for Accuracy and Super Precise Tool Change Repeatability within 0,00254mm	• Miniature to Medium System Tools • For Special Tool System and Shapes • Accepts Square, Round & Hex Collets • Drilling Applications • Boring Applications • Reaming Applications • Tapping • From 1,5875mm to 25,4mm Diameter Tools

Note: The Quadra Tool Holder will fit on the Quick Change Tool Post of the same size

No. QITPN-1 Turning & Facing Tool holder

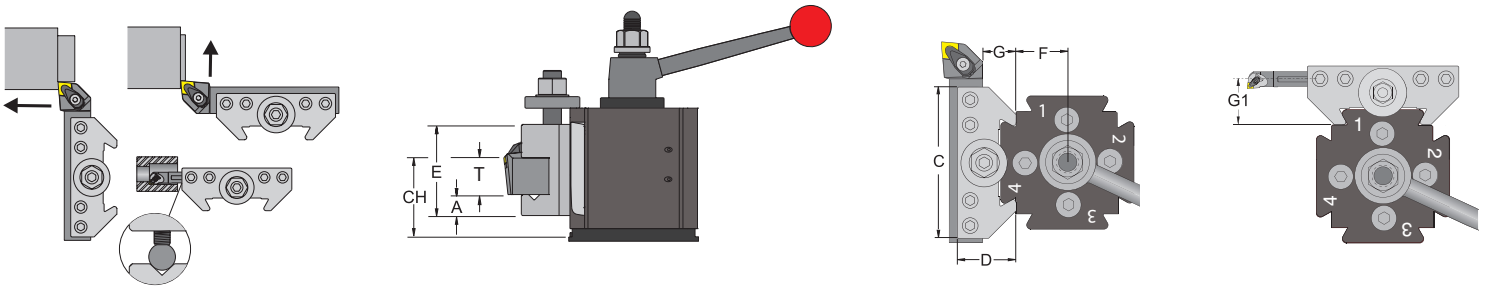
This tool holder is best used for holding square shank tool holders close to the tool post to maximize rigidity when turning, facing, and threading. Fits industry standard tool posts.



Description	UPC #	A	T	C	D	E	F	G
QITP25N-1	00100	9.53	20.00	69.85	31.50	44.20	22.35	19.56
QITP30N-1	00250	11.10	25.00	82.55	37.85	56.90	28.32	22.61
QITP35N-1	00400	12.70	25.00	95.25	44.20	63.25	31.62	25.65
QITP40N-1	00550	14.27	32.00	114.30	50.55	75.95	38.86	26.42
QITP50N-1	00700	19.05	40.00	152.40	63.25	88.65	48.26	32.77
QITP60N-1	00850	25.40	40.00	177.80	75.95	101.35	56.06	39.12

No. QITPN-2 Turning, Facing & Boring Tool holder

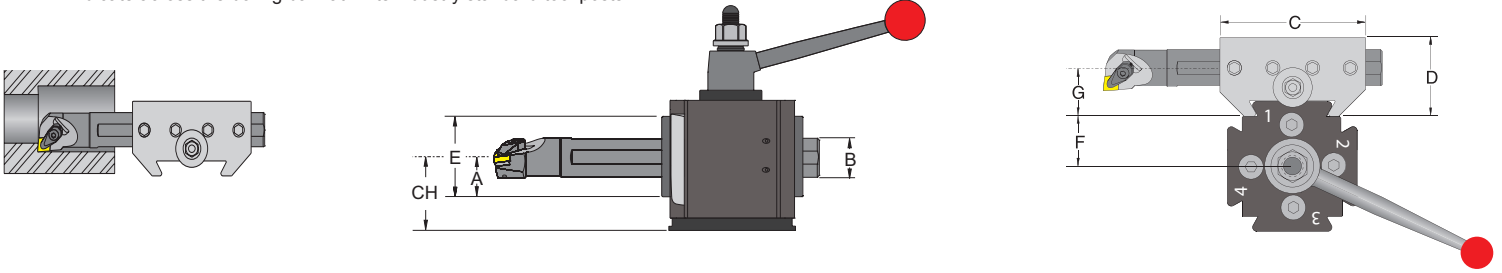
The "V" groove makes this holder more versatile so that it can hold either square shank tool holders or boring bars. Holds the tool close to the tool post to maximize rigidity when turning, facing, threading or boring. Fits industry standard tool posts.



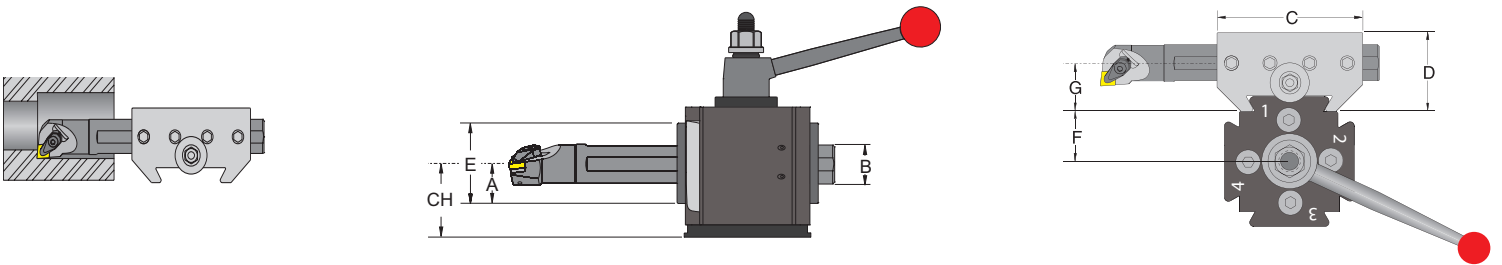
Description	UPC No.733101-	A	T	C	D	E	F	G	G1
QITP25N-2	00104	9.53	20.00	69.85	31.50	44.20	22.35	19.56	26.16
QITP30N-2	00254	11.10	25.00	82.55	37.85	56.90	28.32	22.61	30.73
QITP35N-2	00404	12.70	25.00	95.25	44.20	63.25	31.62	25.65	35.81
QITP40N-2	00554	14.27	32.00	114.30	50.55	75.95	38.86	26.42	40.01
QITP50N-2	00704	19.05	40.00	152.40	63.25	88.65	48.26	32.77	49.53
QITP60N-2	00854	25.40	40.00	177.80	75.95	101.35	56.06	39.12	59.44

No. QITPN-4M-DUAL Heavy Duty Boring Bar Tool holder

This holder is best used for holding boring bars. It has four flat-face locking-screws that automatically align the center height and rake angle of the boring bar while locking it rigidly for chatter-free machining. Flat-face locking-screws do not scar the boring bar. This holder reduces setup time by eliminating the need to indicate across the boring bar flat. Fits industry standard tool posts.

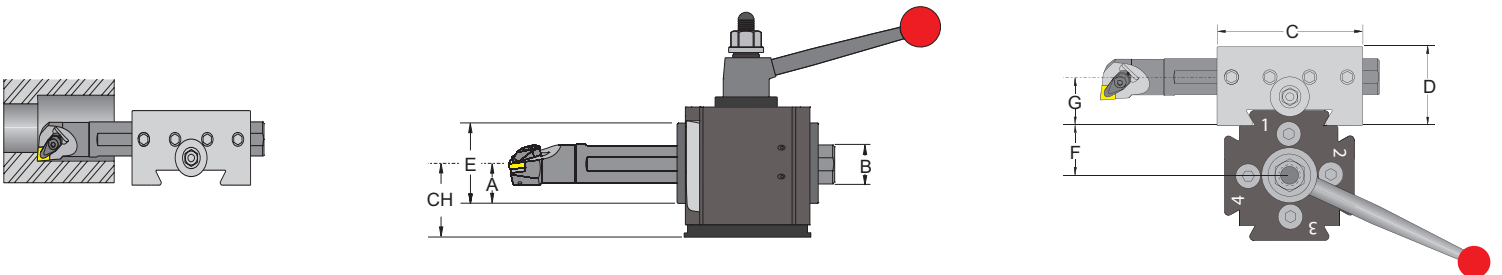


Description	UPC #	Boring Bar Capacity						
		A	B	C	D	E	F	G
QITP25N-4M-20-DUAL	00113	19	19	70	38	38	22	24
QITP30N-4M-25-DUAL	00263	25	25	83	51	51	28	32
QITP35N-4M-25-DUAL	00419	28	25	95	57	57	32	35
QITP40N-4M-32-DUAL	00567	32	32	114	63	63	39	38
QITP50N-4M-40-DUAL	00717	38	38	140	76	76	48	51
QITP60N-4M-50-DUAL	00867	51	51	165	101	101	56	64



No. QITPN-41M-DUAL Universal Extra Heavy Duty Boring Bar Tool holder

Description	UPC #	Boring Bar Capacity						
		A	B	C	D	E	F	G
QITP35N-41M-32-DUAL	00421	28	32	95	57	57	32	35
QITP40N-41M-40-DUAL	00569	35	40	114	70	70	39	41
QITP50N-41M-50-DUAL	00719	44	50	140	89	89	48	57
QITP60N-41M-60-DUAL	00869	57	60	165	114	114	56	70

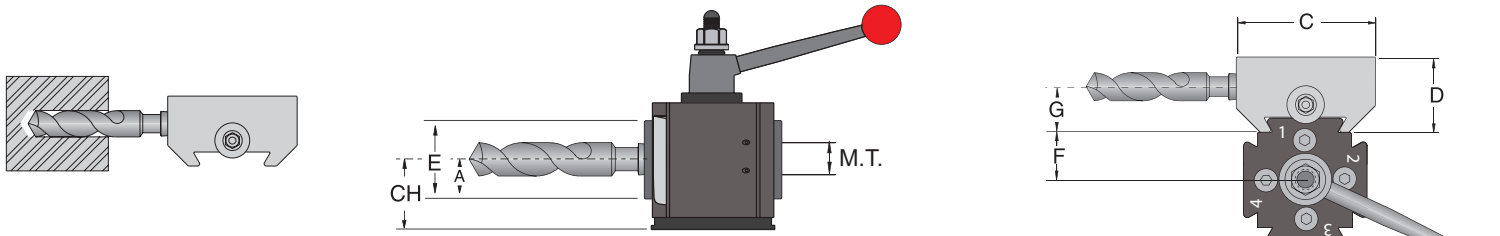


No. DQ-41S-DUAL Universal Super Over Sized Boring Bar Tool holder

Description	UPC #	Boring Bar Capacity						
		A	B	C	D	E	F	G
DQ35CXA-41SM-40-DUAL	00423	31	40	102	63	63	32	38
DQ40CA-41SM-50-DUAL	00571	38	50	114	76	76	39	45
DQ50DA-41SM-60-DUAL	00721	51	60	165	101	101	48	57
DQ60EA-41SM-80-DUAL	00871	57	80	178	114	114	56	67

No. QITPN-5 Morse Taper Tool holder

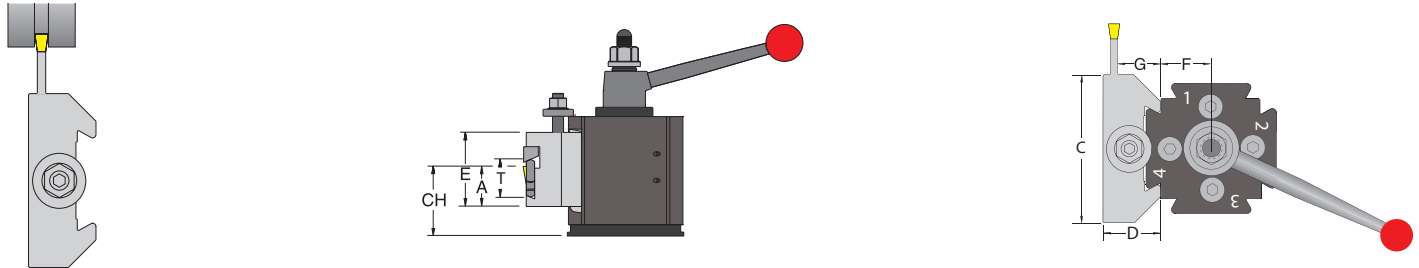
This holder is best used for holding morse taper tools. It can be used for drilling, boring, or reaming operations. Fits industry standard tool posts.



Description	UPC #	A	Morse Taper	C	D	E	F	G
QITP35N-5-4	00424	31.80	MT4	105.41	63.50	63.50	31.62	41.02
QITP40N-5-4	00572	31.80	MT4	114.30	63.50	63.50	38.90	41.02
QITP50N-5-5	00722	44.50	MT5	142.90	88.90	88.90	48.30	58.70
QITP60N-5-5	00872	44.50	MT5	142.90	88.90	88.90	56.10	58.70

No. QITPN-7-71C Extra Heavy Duty Cut-Off Blade Tool holder

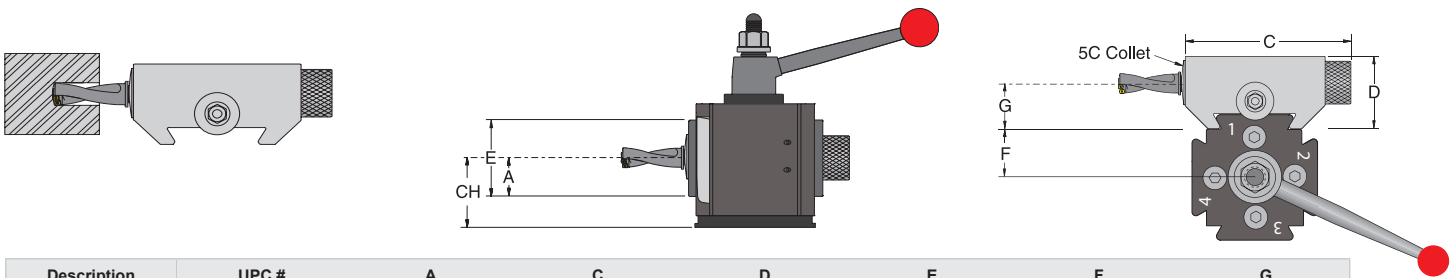
This holder is best used for holding cut-off blades. It has a taper locking system for maximum rigidity and performance in cut-off and face grooving operations. Fits industry standard tool posts.



Description	UPC #	A	Slot Grip Blade T	C	D	E	F	G
QITP25N-7-71C	00126	23.70	SGIH-19-2	69.85	31.75	50.80	22.35	28.63
QITP30N-7-71C	00276	23.70		82.60	31.80	50.80	28.30	28.60
QITP35N-7-71C	00428	31.88	SGIH-26-2 to 26-6	95.25	44.45	63.50	31.62	38.61
QITP40N-7-71C	00576	31.88		114.30	44.45	76.20	38.86	38.61
QITP50N-7-71C	00726	37.67	SGIH-32-3 to 32-9	152.40	50.80	76.20	48.26	43.43
QITP60N-7-71C	00876	52.07		177.80	57.15	88.90	56.06	54.61

No. QITPN-36 5C Collet Tool holder

This holder's wide range of collet adaptability makes this tool ideal for holding drills, taps, chucks, & boring bars. It holds the tools with extreme rigidity without scarring them. Fits industry standard tool posts.



Description	UPC #	A	C	D	E	F	G
QITP25N-36	00142	28.58	107.95	63.50	57.15	22.35	38.10
QITP30N-36	00292	28.58	107.95	63.50	57.15	28.32	38.10
QITP35N-36	00444	34.93	114.30	69.85	69.85	31.62	41.28
QITP40N-36	00592	34.93	127.00	69.85	69.85	38.86	41.28

INDEX



The First Choice™
TECHNOLOGY

Inserts	
Description	Page
CCDGW-S4T001-KEU	8
CCDGW-S4T002-KEU	8
CCGT-060201-UEU	6
CCGT-060202-NFU	9
CCGT-060202-UEU	6
CCGT-060204 UEXL	7
CCGT-060204 UEXR	7
CCGT-060204-NFU	9
CCGT-060204-UEU	6
CCGT-060208 UEXL	7
CCGT-060208 UEXR	7
CCGT-09T302-NFU	9
CCGT-09T302-UEU	6
CCGT-09T304 UEXL	7
CCGT-09T304 UEXR	7
CCGT-09T304-NFU	9
CCGT-09T304-UEU	6
CCGT-09T308 UEXL	7
CCGT-09T308 UEXR	7
CCGT-09T308-NFU	9
CCGT-120404-NFU	9
CCGT-120404-UEU	6
CCGT-120408 UEXL	7
CCGT-120408 UEXR	7
CCGT-120408-NFU	9
CCGT-120408-UEU	6
CCGT-120412 UEXL	7
CCGT-120412 UEXR	7
CCGW-060204-KEU	8
CCGW-09T308-KEU	8
CCGX-060204-UEFL	6
CCGX-060204-UEFR	6
CCMT-060202-PEF	7
CCMT-060202-PEM	7
CCMT-060204-PEF	7
CCMT-060204-PEM	7
CCMT-060208-PEF	7
CCMT-060208-PEM	7
CCMT-093T04-SEH	8
CCMT-09T304-KEM	9
CCMT-09T304-MEH	9
CCMT-09T304-MEM	9
CCMT-09T304-PEF	7
CCMT-09T304-PEM	7
CCMT-09T308-KEM	9
CCMT-09T308-MEH	9
CCMT-09T308-MEM	9
CCMT-09T308-PEF	7
CCMT-09T308-PEM	7
CCMT-120404-MEM	9
CCMT-120404-PEF	7
CCMT-120404-PEM	7
CCMT-120408-KEM	9
CCMT-120408-MEM	9
CCMT-120408-PEM	7
CDGW-040102-KEU	8
CDGW-040104-KEU	8
CDGX-040102-UEFL	6
CDGX-040102-UEFR	6
CDGX-040104-UEFL	6
CDGX-040104-UEFR	6
CNGG-120404-SEF	13
CNGG-120404-SEM	13
CNGG-120408-SEF	13
CNGG-120408-SEM	13
CNGG-120408-SER	13
CNGG-120412-SEF	13
CNGG-120412-SEM	13
CNGG-120412-SER	13
CNMA-120408-KEU	13
CNMA-120412-KEU	13
CNMA-190616-KEU	13
CNMA-250924-KEU	13
CNMG-090304-MEF	12
CNMG-090308-PEM	10
CNMG-120404-KEF	13
CNMG-120404-MEF	12
CNMG-120404-PEF	10
CNMG-120404-SEM	13
CNMG-120404-UEM	10
CNMG-120408-KER	13
CNMG-120408-MEF	12
CNMG-120408-MEM	12
CNMG-120408-PEF	10
CNMG-120408-PEM	10
CNMG-120408-PER	10
CNMG-120408-PEX	11
CNMG-120408-SEH	13
CNMG-120408-SEM	13

Inserts	
Description	Page
CNMG-120408-UEM	10
CNMG-120412-KER	13
CNMG-120412-MEF	12
CNMG-120412-MEH	12
CNMG-120412-MEM	12
CNMG-120412-MER	12
CNMG-120412-PEM	10
CNMG-120412-PER	10
CNMG-120412-PEX	11
CNMG-120416-KER	13
CNMG-160608-PEM	10
CNMG-160608-PER	10
CNMG-160612-KER	13
CNMG-160612-MEH	12
CNMG-160612-MER	12
CNMG-160612-PEM	10
CNMG-160612-PER	10
CNMG-160616-KER	13
CNMG-160616-MEH	12
CNMG-160616-PEM	10
CNMG-160616-PER	10
CNMG-190612-MEH	12
CNMG-190612-MER	12
CNMG-190612-PEM	10
CNMG-190612-PER	10
CNMG-190616-MEH	12
CNMG-190616-PEM	10
CNMG-190616-PER	10
CNMG-190624-PEM	10
CNMM 250924-PST	11
CNMM-120408-PSH	11
CNMM-120412-PSH	11
CNMM-160612-PSH	11
CNMM-160616-PSH	11
CNMM-190612-PSH	11
CNMM-190616-PSH	11
CNMM-190616-PSS	11
CNMM-190624-PSH	11
CNMM-250724-PST	11
CNMX-120404-UEXL	11
CNMX-120404-UEXR	11
CNMX-120408-UEXL	11
CNMX-120408-UEXR	11
CPGT-05T102-UEU	6
CPGT-05T104-UEU	6
CPGT-060204-UEU	6
CPGW-05T102-KEU	8
CPGW-05T104-KEU	8
CPGW-060204-KEU	8
CPGW-09T304-KEU	8
CPGW-09T308-KEU	8
DCGT-070201-UEU	6
DCGT-070202-NFU	9
DCGT-070202-UEU	6
DCGT-070204 UEXL	7
DCGT-070204 UEXR	7
DCGT-070204-NFU	9
DCGT-070204-UEU	6
DCGT-11T301-UEU	6
DCGT-11T302-NFU	9
DCGT-11T302-UEU	6
DCGT-11T304 UEXL	7
DCGT-11T304 UEXR	7
DCGT-11T304-NFU	9
DCGT-11T304-UEU	6
DCGT-11T308 UEXL	7
DCGT-11T308 UEXR	7
DCGT-11T308-NFU	9
DCGT-11T308-UEU	6
DCGT-150404-UEU	6
DCGT-150408-UEU	6
DCGW-070204-KEU	8
DCGX-060204-UEFR	6
DCGX-070204-UEFL	6
DCMT-070204-KEM	9
DCMT-070204-PEM	7
DCMT-070208-KEM	9
DCMT-11T04-SEH	8
DCMT-11T304-KEM	9
DCMT-11T304-MEH	9
DCMT-11T304-MEM	9
DCMT-11T304-PEF	7
DCMT-11T304-PEM	7
DCMT-11T308-KEM	9
DCMT-11T308-MEH	9
DCMT-11T308-MEM	9
DCMT-11T308-PEM	7
DCMT-70204-PEF	7
DCMW-11T304-KEU	8
DCMW-11T308-KEU	8

Inserts	
Description	Page
DNGG-150404-SEF	13
DNGG-150408-SEF	13
DNGG-150412-SEF	13
DNGG-150604-SEF	13
DNGG-150608-SEF	13
DNGG-150612-SEF	13
DNMA-150608-KEU	13
DNMG-110404-KEF	13
DNMG-110404-MEF	12
DNMG-110404-PEF	10
DNMG-110404-UEM	10
DNMG-110408-KEF	13
DNMG-110408-MEM	12
DNMG-110408-PEF	10
DNMG-110408-PEM	10
DNMG-110408-UEM	10
DNMG-150404-PEF	10
DNMG-150404-SEM	13
DNMG-150408-KER	13
DNMG-150408-MEM	12
DNMG-150408-PEF	10
DNMG-150408-PEM	10
DNMG-150408-PER	10
DNMG-150408-SEM	13
DNMG-150408-UEM	10
DNMG-150412-KER	13
DNMG-150412-PEM	10
DNMG-150412-PER	10
DNMG-150412-SEM	13
DNMG-150604-MEF	12
DNMG-150604-PEF	10
DNMG-150604-SEM	13
DNMG-150604-UEM	10
DNMG-150608-KER	13
DNMG-150608-MEF	12
DNMG-150608-MEH	12
DNMG-150608-MEM	12
DNMG-150608-MER	12
DNMG-150608-PEF	10
DNMG-150608-PEM	10
DNMG-150608-PER	10
DNMG-150608-SEH	13
DNMG-150608-SEM	13
DNMG-150608-UEM	10
DNMG-150612-KER	13
DNMG-150612-MEH	12
DNMG-150612-MEM	12
DNMG-150612-MER	12
DNMG-150612-PEM	10
DNMG-150612-PER	10
DNMG-150612-PEX	11
DNMG-150612-SEM	13
DNMG-150616-PEM	10
DNMX-110404-UEXL	11
DNMX-110404-UEXR	11
DNMX-110408-UEXL	11
DNMX-110408-UEXR	11
DNMX-150404-UEXL	11
DNMX-150404-UEXR	11
DNMX-150604-UEXL	11
DNMX-150604-UEXR	11
DNMX-150608-UEXL	11
DNMX-150608-UEXR	11
RCGT-0602MO-NFU	9
RCGT-0803MO-NFU	9
RCGT-1003MO-NFU	9
RCMT-0602MO-NFU	9
RCMT-120400-UM	7
RCMT-1606-MO-SEH	8
RCMT-190600-UM	7
RCMT-2006-MO-SEH	8
RCMT-250600-UM	7
RCMX-1003MO-UJEX	7
RCMX-1204MO-UJEX	7
RCMX-1606MO-UJEX	7
RCMX-2006MO-UJEX	7
RCMT-2507MO-UJEX	7
RCMX-3209MO-UJEX	7
SCGT-120408-NFU	9
SCMT-09T304-PEF	7
SCMT-09T308-PEM	7
SCMT-120408-KEM	9
SCMT-120408-MEM	9
SCMT-120408-PEM	7
SCMT-120412-PEM	7
SDGX-09T3-C04-E	8
SDGX-09T3C12-E	8

Inserts	
Description	Page
SDGX-09T3C16-E	8
SDGX-1904C05-E	8
SDGX-1904C06-E	8
SDGX-1904C07-E	8
SDGX-1904C08-E	8
SDGX-1904C09-E	8
SDGX-1904C10-E	8
SDGX-1904C11-E	8
SDGX-1904C12-E	8
SDGX-1904C13-E	8
SDGX-1904C14-E	8
SDGX-1904C15-E	8
SDGX-1904C16-E	8
SNMA-120408-KEU	13
SNMA-120412-KEU	13
SNMA-120416-KEU	13
SNMA-190616-KEU	13
SNMA-250724-KEU	13
SNMG 190612-PER	10
SNMG-090304-MEF	12
SNMG-090304-UEM	10
SNMG-120404-PEF	10
SNMG-120408-KER	13
SNMG-120408-MER	12
SNMG-120408-PEM	10
SNMG-120408-PER	10
SNMG-120412-KER	13
SNMG-120412-MER	12
SNMG-120412-PEM	10
SNMG-120412-PER	10
SNMG-150608-PEM	10
SNMG-150612-MEH	12
SNMG-150616-MEH	12
SNMG-190612-KER	13
SNMG-190612-MEH	12
SNMG-190612-MER	12
SNMG-190612-PEM	10
SNMG-190616-KER	13
SNMG-190616-MEH	12
SNMG-190616-PER	10
SNMM-120408-PSH	11
SNMM-120412-PSH	11
SNMM-150612-PSH	11
SNMM-150616-PSH	11
SNMM-190612-PSH	11
SNMM-190616-PSH	11
SNMM-190616-PSS	11
SNMM-190624-PSH	11
SNMM-190624-PSS	11
SNMM-190632-PSH	11
SNMM-250724-PST	11
SNMM-250924-PST	11
TCGT-110201-UEU	6
TCGT-110202-UEU	6
TCGT-110204 UEXL	7
TCGT-110204 UEXR	7
TCGT-110204-NFU	9
TCGT-110204-UEU	6
TCGT-16T302-UEU	6
TCGT-16T304 UEXL	7
TCGT-16T304 UEXR	7
TCGT-16T304-NFU	9
TCGT-16T304-UEU	6
TCGT-16T308 UEXL	7
TCGT-16T308 UEXR	7
TCGT-16T308-UEU	6
TCGW-110204-KEU	8
TCGW-16T308-KEU	8
TCGX-110202-UEFR	6
TCGX-110204-UEFR	6
TCMT-06T102-PEF	7
TCMT-110204-MEM	9
TCMT-110204-PEF	7
TCMT-110204-PEM	7
TCMT-110208-MEM	9
TCMT-110208-PEM	7
TCMT-16T304-MEM	9
TCMT-16T304-PEM	7
TCMT-16T308-MEM	9
TCMT-16T308-PEM	7
TNMA-160408-KEU	13
TNMA-160412-KEU	13
TNMA-220416-KEU	13
TNMG-160404-PEF	10
TNMG-160404-UEM	10
TNMG-160408-MEM	12
TNMG-160408-PEF	10
TNMG-160408-PEM	10
TNMG-160412-PEM	10

Inserts	
Description	Page
TNMG-220408-MEM	12
TNMG-220408-PEM	10
TNMG-220412-MEM	12
TNMG-220412-PEM	10
TNMX-160404-UEXL	11
TNMX-160404-UEXR	11
TNMX-160408-UEXL	11
TNMX-160408-UEXR	11
TPG-110304-UEN	8
TPG-110308-UEN	8
TPG-160304-UEN	8
TPG-160308-UEN	8
TPG-220404-UEN	8
TPG-220408-UEN	8
TPG-270612-UEN	8
TPGB-110204-UEN	8
TPGB-110208-UEN	8
TPGB-160404-UEN	8
TPGB-160408-UEN	8
TPGB-220404-UEN	8
TPGB-220408-UEN	8
TPGH-110204-UEN	8
TPGH-110208-UEN	8
TPGH-160304-UEN	8
TPGH-160308-UEN	8
TPGH-220404-UEN	8
TPGH-220408-UEN	8
TPGT-110201-UEU	6
TPGT-110202-UEU	6
TPGT-110204-UEU	6
TPGT-16T302-UEU	6
TPGT-16T304-UEU	6
TPGT-16T308-UEU	6
TPGW-110204-KEU	8
TPGW-16T304-KEU	8
TPGW-16T308-KEU	8
TPHT-16T304-UEN	8
TPHT-16T308-UEN	8
TPMR-110304-PEU	7
TPMR-110308-PEU	7
TPMR-160304-PEU	7
TPMR-160308-PEU	7
VBGT-110304-UEU	6
VBGT-160404-UEU	6
VBGT-160408-UEU	6
VBGW-110304-KEU	8
VBGW-160404-KEU	8
VBGW-160408-KEU	8
VBGX-110304-UEFL	6
VBGX-110304-UEFR	6
VBMT-160404-PEF	7
VBMT-160408-PEF	7
VBMT-160412-PEF	7
VCGT-110301-UEU	6
VCGT-110302-NFU	9
VCGT-110304-NFU	9
VCGT-110304-UEU	6
VCGT-160402-NFU	9
VCGT-160402-UEU	6
VCGT-160404-NFU	9
VCGT-160404-UEU	6
VCGT-160408-NFU	9
VCGT-160408-UEU	6
VCGT-160412-NFU	9
VCGT-220530-NFU	9
VCGW-110304-KEU	8
VCGW-160404-KEU	8
VCGW-160408-KEU	8
VCGX-110202-UEFL	6
VCGX-110304-UEFR	6
VCMT-110304-PEF	7
VCMT-160404-MEM	9
VCMT-160404-PEF	7
VCMT-160404-PEM	7
VCMT-160408-MEM	9
VCMT-160408-PEF	7
VCMT-160408-PEM	7
VCMT-160412-MEM	9
VNMG-160404-PEF	10
VNMG-160404-SEF	13
VNMG-160408-PEF	10
VNMG-160408-PEM	10
VNMG-160408-SEF	13
VNMG-160408-UEM	10
VNMG-160412-PEM	10
VPGT-110304-NFU	9
VPGT-160412-NFU	9
VPGT-220516-NFU	9
WCGT-040204-UEU	6
WCGT-06T302-UEU	9

Inserts	
Description	Page
WCGT-06T304-NFU	9
WCGT-06T304-UEU	6
WCGT-06T308-NFU	9
WCGT-06T308-UEU	6
WCGT-080404-NFU	9
WCGT-080408-NFU	9
WCGT-S30201-UEU	6
WCGT-S30202-UEU	6
WCMT-020102-PEF	7
WNGG-080404-SEF	13
WNGG-080404-SEM	13
WNGG-080408-SEF	13
WNGG-080408-SEH	13
WNGG-080408-SEM	13
WNGG-080412-SEF	13
WNMA-080408-KEU	13
WNMA-080412-KEU	13
WNMG 080408-UEM	10
WNMG 080412-UEM	10
WNMG-060404-MEF	12
WNMG-060404-UEM	10
WNMG-060408-MEM	12
WNMG-060408-PEM	10
WNMG-060408-UEM	10
WNMG-080404-MEF	12
WNMG-080404-SEM	13
WNMG-080404-UEM	10
WNMG-080408-KER	13
WNMG-080408-MEF	12
WNMG-080408-MEM	12
WNMG-080408-MER	12
WNMG-080408-PEM	10
WNMG-080408-PER	10
WNMG-080408-SEM	13
WNMG-080412-KER	13
WNMG-080412-MEH	12
WNMG-080412-MEM	12
WNMG-080412-MER	12
WNMG-080412-PEM	10
WNMG-080412-PER	10
WNMG-080412-SEM	13
WNMG-080416-MEM	12

Jet-Stream	
Description	Page
ADCLNR/L-2020-K12	15
ADCLNR/L-2525-M12	15
ADCLNR/L-3232-P12	15
ADCLNR/L-3232-P16	15
ADCLNR/L-4040-S12	15
ADCLNR/L-4040-S16	15
ADDJNR/L-2020-K11	15
ADDJNR/L-2020-K15	15
ADDJNR/L-2525-M15	15
ADDJNR/L-3232-P15	15
ADDJNR/L-4040-S15	15
ADDPNN-2020-K11	15
ADDPNN-2020-K15	15
ADDPNN-2525-M15	15
ADDPNN-2525-M15	15
ADDPNN-3232-P15	15
ADDPNN-4040-S15	15
ADLER/L2020-16Q-K	18
ADLER/L2525-16Q-M	18
ADLER/L2525-22Q-M	18
ADSDNN-2020-M12	15
ADSDNN-2525-M12	15
ADSDNN-3232-P12	15
ADSDNN-3232-P15	15
ADSDNN-4040-S15	15
ADSRNR/L-2020-K12	15
ADSRNR/L-2525-M12	15
ADSRNR/L-3232-P15	15
ADSRNR/L-4040-S15	15
ADTENN-2020-K16	16
ADTENN-2020-K22	16
ADTENN-2525-M16	16
ADTENN-2525-M22	16
ADTENN-3232-P22	16
ADTENN-4040-S22	16
ADTJNR/L-2020-K16	16
ADTJNR/L-2020-K22	16
ADTJNR/L-2525-M16	16
ADTJNR/L-2525-M22	16
ADTJNR/L-3232-P22	16
ADTJNR/L-4040-S22	16
ADVJNR/L-2020-K16	16
ADVJNR/L-2525-M16	16
ADVJNR/L-3232-P16	16
ADWLNR/L-2020-K06	16
ADWLNR/L-2525-M06	16
ADWLNR/L-2525-M08	16
ADWLNR/L-3232-P08	16
ADWLNR/L-4040-S08	16
ADWLNR/L-2020-K08	16
AS-20R-ADCLNR/L-09	16
AS-20R-ADLNR/L-16	18
AS-20R-ADTUNR/L-16	17
AS-20R-ADWLNR/L-06	18
AS-25R-ADCLNR/L-12	16
AS-25R-ADDUNR/L-11	17
AS-25R-ADLNR/L-16	18
AS-25R-ADTUNR/L-16	17
AS-25R-ADWLNR/L-08	18
AS-32R-ADVUNR/L-16	17
AS-32S-ADCLNR/L-12	16
AS-32S-ADDPNR/L-15	17
AS-32S-ADDUNR/L-15	17
AS-32S-ADLNR/L-16	18
AS-32S-ADLNR/L-22	18
AS-32S-ADSKNR/L-12	17
AS-32S-ADTUNR/L-22	17
AS-32S-ADWLNR/L-08	18
AS-40S-ADCLNR/L-12	16
AS-40S-ADDUNR/L-15	17
AS-40S-ADLNR/L-16	18
AS-40S-ADTUNR/L-22	17
AS-40S-ADVUNR/L-16	17
AS-40S-ADWLNR/L-08	18
AS-50T-ADCLNR/L-12	16
AS-50T-ADDUNR/L-15	17
DT-1/4 HP-QRCK	19
DT-1/8 HP-QRCK	19
DT-HP90C-1/8x6	19
DT-HPQSC-1/4x6	19
DT-HP-PLIERS	19
DT-HPTU-8X4	19
GTS-1M	20
GTS-2	20
GTS-3	20
GXE/I-16	20
IDSN-322	20
IDSN-423	20
ISSN-423	20
IWSN-322	20

Jet-Stream	
Description	Page
IWSN-423	20
IWSN-433	20
JC-432	20
JC-533	20
JC-633	20
JD-432	20
JS-432	20
JS-533	20
JSB PE-M4-039	20
JSBP-M4-039	20
JSBPS-M4-039	20
JSCAP-01	20
JSCS-03	20
JSCS-04	20
JSCS-04-HPV	20
JSCS-06	20
JSFN-M6	20
JSLC-HP16L-N	20
JSLC-HP16R-N	20
JSLC-HP22N	20
JSLC-HP27N	20
JSLC-HP72	20
JSLC-HP73	20
JSLC-HP76	20
JSLC-HP77	20
JSLC-HPC3-B	20
JSLC-HPC5	20
JSLC-HPC6	20
JSLC-HPCTW-4N	20
JSLC-HPCTW-4N-HPV	20
JSLC-HPD3	20
JSLC-HPD4	20
JSLC-HPDT3-BL	20
JSLC-HPDT3-BR	20
JSLC-HPTW3L	20
JSLC-HPTW3N	20
JSLC-HPTW3R	20
JSLC-HPTW4L	20
JSLC-HPTW4R	20
JSLC-HPV3	20
JSLC-HPW3-B	20
JS-MC062-250	19
JS-MC125-250	19
JS-MC250-250	19
JSOR-01	20
JSOR-03	20
JSOR-04	20
JSOR-06	20
JSOR-07	20
JSOR-08	20
JSOR-202	20
JSPLPCK-062-250	19
JSPLPCK-125-250	19
JSPLPCK-250-250	19
JSPN-M3	20
JSPN-M6	20
JS-T250-1200	19
JT-322	20
JT-433	20
JV-322	20
NXE/I-22	20
SL-344	20
SM-420	20
SM-M3	20
SM-M3-T	20
SM-M4-245	20
SM-M4-6	20
SM-M4-6-245	20
SM-M4-8	20
SM-M6	20
SM-M66	20
SM-S4	20
T-10	20
T-20	20
TS-35.6-14M1	20
TS-35.6-9M1	20
TS-45.75-15M1	20
TS-5.8-22M1	20
VXE/I-27	20

Carbide Bars	
Description	Page
AE20M-Q-QCCBB	26
AE20M-S-QCCBB	26
AE25M-R-QCCBB	26
AE25M-T-QCCBB	26
AE32M-U-QCCBB	26
E04M-H-SCLDR/L-03	22
E05M-H-SCLDR/L-03	22
E05M-H-SWLCLR/L-02	23
E06M-H-SCLDR/L-03	22
E06M-H-SNR/L-06	23
E06M-H-SWLCLR/L-02	23
E07M-H-SCLDR/L-04	22
E07M-H-SNR/L-06	23
E07M-H-STUCRL-06	22
E07M-H-SWLCLR/L-02	23
E08M-K-SCLDR/L-04	22
E08M-K-SNR/L-08	23
E08M-K-STUCRL-06	22
E08M-K-SWLCLR/L-02	23
E10M-M-SCLCLR/L-06	22
E10M-M-SCLPR/L-06	22
E10M-M-SDNCR/L-07	22
E10M-M-SDQCR/L-07	22
E10M-M-SDUCRL-07	22
E10M-M-SDXCLR/L-07	22
E10M-M-SNR/L-H11	23
E10M-M-STUCRL-06	22
E10M-M-STUCRL-11	22
E10M-M-STUPRL-11	22
E10M-M-SWLCLR/L-04	23
E12M-K-NER/L-2	23
E12M-K-SCLCLR/L-06	22
E12M-K-SCLCLR/L-09	22
E12M-K-SCLPR/L-06	22
E12M-K-SCLPR/L-09	22
E12M-K-SDNCR/L-07	22
E12M-K-SDQCR/L-07	22
E12M-K-SDUCRL-07	22
E12M-K-SNR/L-H11	23
E12M-K-STUCRL-11	22
E12M-K-STUPRL-11	22
E12M-K-SVMCLR/L-11	23
E12M-K-SWLCLR/L-04	23
E12M-K-SWLCLR/L-06	23
E12M-R-NER/L-2	23
E12M-R-SCLCLR/L-06	22
E12M-R-SCLCLR/L-09	22
E12M-R-SCLPR/L-06	22
E12M-R-SCLPR/L-09	22
E12M-R-SDNCR/L-07	22
E12M-R-SDQCR/L-07	22
E12M-R-SDUCRL-07	22
E12M-R-SDXCLR/L-07	22
E12M-R-SNR/L-H11	23
E12M-R-STUCRL-11	22
E12M-R-STUPRL-11	22
E12M-R-SVMCLR/L-11	23
E12M-R-SWLCLR/L-04	23
E12M-R-SWLCLR/L-06	23
E16M-M-NER/L-2	23
E16M-M-SCLCLR/L-06	22
E16M-M-SCLCLR/L-09	22
E16M-M-SCLPR/L-06	22
E16M-M-SCLPR/L-09	22
E16M-M-SDNCR/L-07	22
E16M-M-SDQCR/L-07	22
E16M-M-SDUCRL-07	22
E16M-M-SDXCLR/L-07	22
E16M-M-SNR/L-H16	23
E16M-M-STUCRL-11	22
E16M-M-STUPRL-11	22
E16M-M-SVMCLR/L-11	23
E16M-M-SVQCLR/L-11	23
E16M-M-SVQPR/L-11	23
E16M-M-SVUCRL-11	23
E16M-M-SVUPRL-11	23
E16M-M-SVXCLR/L-11	23
E16M-M-SVXPR/L-11	23
E16M-M-SWLCLR/L-04	23
E16M-M-SWLCLR/L-06	23
E16M-S-NER/L-2	23
E16M-S-SCLCLR/L-06	22
E16M-S-SCLCLR/L-09	22
E16M-S-SCLPR/L-06	22
E16M-S-SCLPR/L-09	22
E16M-S-SDNCR/L-07	22
E16M-S-SDQCR/L-07	22
E16M-S-SDUCRL-07	22
E16M-S-SDXCLR/L-07	22

Carbide Bars	
Description	Page
E16M-S-SNRL/H-16	23
E16M-S-STUCR/L-11	22
E16M-S-STUPR/L-11	22
E16M-S-SVMCR/L-11	23
E16M-S-SVQCR/L-11	23
E16M-S-SVQPR/L-11	23
E16M-S-SVUCR/L-11	23
E16M-S-SVUPR/L-11	23
E16M-S-SVXCR/L-11	23
E16M-S-SVXPR/L-11	23
E16M-S-SWCLR/L-04	23
E16M-S-SWLCR/L-06	23
E20M-Q-ADLNR/L-16	24
E20M-Q-NER/L-2	23
E20M-Q-SCLCR/L-09	22
E20M-Q-SDUCR/L-11	22
E20M-Q-SDXCR/L-11	22
E20M-Q-STUCR/L-16	22
E20M-Q-SWLCR/L-06	23
E20M-S-ADLNR/L-16	24
E20M-S-NER/L-2	23
E20M-S-SCLCR/L-09	22
E20M-S-SDUCR/L-11	22
E20M-S-SDXCR/L-11	22
E20M-S-STUCR/L-16	22
E20M-S-SWLCR/L-06	23
E25M-R-ADCLNR/L-12	24
E25M-R-ADDPNR/L-11	24
E25M-R-ADDUNR/L-11	24
E25M-R-ADLNR/L-16	24
E25M-R-ADNER/L-3	24
E25M-R-ADTUNR/L-16	24
E25M-R-ADWLNR/L-08	24
E25M-R-SCLCR/L-09	22
E25M-R-SDUCR/L-11	22
E25M-R-SDXCR/L-11	22
E25M-R-STUCR/L-16	22
E25M-R-SWLCR/L-06	23
E25M-T-ADCLNR/L-12	24
E25M-T-ADDPNR/L-11	24
E25M-T-ADDUNR/L-11	24
E25M-T-ADLNR/L-16	24
E25M-T-ADNER/L-3	24
E25M-T-ADTUNR/L-16	24
E25M-T-ADWLNR/L-08	24
E25M-T-SCLCR/L-09	22
E25M-T-SDUCR/L-11	22
E25M-T-SDXCR/L-11	22
E25M-T-STUCR/L-16	22
E25M-T-SWLCR/L-06	23
E32M-U-ADCLNR/L-12	24
E32M-U-ADDPNR/L-15	24
E32M-U-ADDUNR/L-15	24
E32M-U-ADLNR/L-16	24
E32M-U-ADLNR/L-22	24
E32M-U-ADNER/L-3	24
E32M-U-ADTUNR/L-16	24
E32M-U-ADVUNR/L-16	24
E32M-U-ADWLNR/L-08	24
E32M-U-SCLCR/L-12	22
E32M-U-SDUCR/L-11	22
E32M-U-SDXCR/L-11	22
E32M-U-STUCR/L-16	22
E32M-U-SWLCR/L-08	23

Swiss	
Description	Page
ADDN-TFR/L-1010-H20-06	67
ADDN-TFR/L-1010-H20-12	67
ADDN-TFR/L-1010-H20-18	67
ADDN-TFR/L-1212-H20-06	67
ADDN-TFR/L-1212-H20-12	67
ADDN-TFR/L-1212-H20-18	67
ADDN-TFR/L-1212-H30-09	67
ADDN-TFR/L-1212-H30-14	67
ADDN-TFR/L-1616-H20-06	67
ADDN-TFR/L-1616-H20-12	67
ADDN-TFR/L-1616-H20-18	67
ADDN-TFR/L-1616-H30-09	67
ADDN-TFR/L-1616-H30-14	67
ADDN-TFR/L-1616-H30-20	67
ADDN-TFR/L-2020-K20-06	67
ADDN-TFR/L-2020-K20-12	67
ADDN-TFR/L-2020-K20-18	67
ADDN-TFR/L-2020-K30-09	67
ADDN-TFR/L-2020-K30-14	67
ADDN-TFR/L-2020-K30-20	67
ANSR/L 1212-H02	67
ANSR/L 1212-H03	67
ANSR/L 1616-H02	67
ANSR/L 1616-H03	67
ASCACR/L 1010-H06	66
ASCACR/L 1212-H06	66
ASCACR/L 1212-H09	66
ASCACR/L 1616-H06	66
ASCACR/L 1616-H09	66
ASCACR/L 2020-K09	66
ASCNCR/L 1010-H06	66
ASCNCR/L 1212-H06	66
ASCNCR/L 1212-H09	66
ASCNCR/L 1616-H06	66
ASCNCR/L 1616-H09	66
ASCNCR/L 2020-K09	66
ASDACR/L 1010-H07	66
ASDACR/L 1212-H07	66
ASDACR/L 1212-H11	66
ASDACR/L 1616-H07	66
ASDACR/L 1616-H11	66
ASDACR/L 2020-K11	66
ASDNCR/L 1010-H07	66
ASDNCR/L 1212-H07	66
ASDNCR/L 1212-H11	66
ASDNCR/L 1616-H07	66
ASDNCR/L 1616-H11	66
ASDNCR/L 2020-K11	66
ASDPCN 1010-H07	66
ASDPCN 1212-H07	66
ASDPCN 1212-H11	66
ASDPCN 1616-H11	66
ASER/L 1010-H11	67
ASER/L 1212-H11	67
ASER/L 1616-H16	67
ASGTHR/L 1010-H02	67
ASGTHR/L 1010-H03	67
ASGTHR/L 1212-H02	67
ASGTHR/L 1212-H03	67
ASGTHR/L 1616-H02	67
ASGTHR/L 1616-H03	67
ASGTHR/L 2020-K02	67
ASGTHR/L 2020-K03	67
ASGTHR/L 2525-K02	67
ASGTHR/L 2525-K03	67
ASTACR/L 1010-H11	66
ASTACR/L 1212-H11	66
ASTACR/L 1616-H11	66
ASTACR/L 2020-K11	66
ASTNCR/L 1010-H11	66
ASTNCR/L 1212-H11	66
ASTNCR/L 1616-H11	66
ASTNCR/L 1616-H16	66
ASTVOR/L 1010-H16	67
ASTVOR/L 1212-H16	67
ASTVOR/L 1616-H16	67
ASVABR/L 1010-H11	66
ASVABR/L 1212-H11	66
ASVABR/L 1212-K16	66
ASVABR/L 1616-K16	66
ASVABR/L 2020-K16	66
ASVACR/L 1010-H11	66
ASVACR/L 1212-H11	66
ASVACR/L 1212-K16	66
ASVACR/L 1616-K16	66
ASVABR/L 1010-H11	66
ASVABR/L 1212-H11	66
ASVABR/L 1212-K16	66
ASVABR/L 1616-K16	66
ASVABR/L 2020-K16	66

Swiss	
Description	Page
ASVNCRL 1010-H11	66
ASVNCRL 1212-H11	66
ASVNCRL 1212-K16	66
ASVNCRL 1616-H11	66
ASVNCRL 1616-K16	66
ASVNCRL 2020-K16	66
ASVNPR/L 1010-H11	67
ASVNPR/L 1212-H11	67
ASVNPR/L 1212-K16	67
ASVNPR/L 1616-K16	67
ASVNPR/L 2020-K16	67
ASVVBN 1010-H11	66
ASVVBN 1212-H11	66
ASVVBN 1212-K16	66
ASVVBN 1616-K16	66
ASVVCN 1010-H11	66
ASVVCN 1212-H11	66
ASVVCN 1212-K16	66
ASVVCN 2020-K16	66
ASVVPN 1010-H11	67
ASVVPN 1212-H11	67
ASVVPN 1212-K16	67
ASVVPN 1616-K16	67
DT-HP0SC-1/8X6	65
DT-HP0SC-6X6	65
DT-HP90C-6X6	65
DT-HP90C-8/6	65
DT-HP90CE-1/8X6	65
DT-HP-PLIERS	65
DT-HPTU-8X4	65
DT-HPTU-ASSY	65

Knurling Tools	
Description	Page
107ST-12-2-R/L	84
107ST-12-R-RH/LH	84
107ST-162-2-R/L	84
107ST-162-R-RH/LH	84
107ST-20-4-R/L	84
107ST-20-M-RH/LH	84
107ST-25-4-R/L	84
107ST-25-M-RH/LH	84
107ST-32-4-R/L	84
107ST-32-M-RH/LH	84
3SHKT-12-D	83
3SHKT-162-D	83
3SHKT-20-M	83
3SHKT-25-M	83
3SHKT-32-M	83
3WKT-06-2	88
3WKT-12-2	88
3WKT-25-2	88
3WKT-40-2	88
3WKT-40-M	88
3WRKT-40-25	88
3WSKT-06-12	88
3WSKT-06-162	88
3WSKT-06-20	88
3WSKT-12-162	88
3WSKT-12-20	88
3WSKT-12-25	88
3WSKT-25-20	88
3WSKT-25-25	88
3WSKT-40-25	88
ADL-TPI-C	89
ADL-TPI-CB	89
ADL-TPI-HS	89
ADL-TPI-HSB	89
ADR-TPI-C	89
ADR-TPI-CB	89
ADR-TPI-HS	89
ADR-TPI-HSB	89
AF-TPI-HS	89
AF-TPI-HSB	89
AM-TPI-HS	89
AM-TPI-HSB	89
AS-TPI-C	89
AS-TPI-CB	89
AS-TPI-HS	89
AS-TPI-HSB	89
BDL-TPI-C	89
BDL-TPI-CB	89
BDL-TPI-HS	89
BDL-TPI-HSB	89
BDR-TPI-C	89
BDR-TPI-CB	89
BDR-TPI-HS	89
BDR-TPI-HSB	89
BS-TPI-C	89
BS-TPI-CB	89
BS-TPI-HS	89
BS-TPI-HSB	89
CDL-TPI-C	89
CDL-TPI-CB	89
CDL-TPI-HS	89
CDL-TPI-HSB	89
CDR-TPI-C	89
CDR-TPI-CB	89
CDR-TPI-HS	89
CDR-TPI-HSB	89
CF-TPI-HS	89
CF-TPI-HSB	89
CM-TPI-HS	89
CM-TPI-HSB	89
CNC109-20-15-4-R/L	85
CNC109-20-15-M-R/L	85
CNC109-20-25-4-R/L	85
CNC109-20-25-M-R/L	85
CNC109-25-15-4-R/L	85
CNC109-25-15-M-R/L	85
CNC109-25-25-4-R/L	85
CNC109-25-25-M-R/L	85
CNC109-32-15-4-R/L	85
CNC109-32-15-M-R/L	85
CNC109-32-25-4-R/L	85
CNC109-32-25-M-R/L	85
CNC-20	78
CNC-20-1-2	80
CNC-20-2-R	80
CNC-20-3-M	80
CNC-20-4-M	80
CNC-20-5-O	80
CNC-20-6-4	80
CNC-20-7-2	80

Knurling Tools	
Description	Page
CNC-20-7-R	80
CNC-25	78
CNC-25-1-2	80
CNC-25-2-R	80
CNC-25-3-M	80
CNC-25-4-M	80
CNC-25-5-O	80
CNC-25-6-4	80
CNC-25-7-2	80
CNC-25-7-R	80
CNC-32	78
CNC-32-1-2	80
CNC-32-2-R	80
CNC-32-3-M	80
CNC-32-4-M	80
CNC-32-5-O	80
CNC-32-6-4	80
CNC-32-7-2	80
CNC-32-7-R	80
CS-TPI-C	89
CS-TPI-CB	89
CS-TPI-HS	89
CS-TPI-HSB	89
DDL-TPI-C	90
DDL-TPI-CB	90
DDL-TPI-HS	90
DDL-TPI-HSB	90
DDR-TPI-C	90
DDR-TPI-CB	90
DDR-TPI-HS	90
DDR-TPI-HSB	90
DF-TPI-C	90
DF-TPI-CB	90
DF-TPI-HS	90
DS-TPI-C	90
DS-TPI-CB	90
DS-TPI-HS	90
DS-TPI-HSB	90
FACEKT-20-2	84
FACEKT-20-4	84
FACEKT-25-2	84
FACEKT-25-4	84
FKT-10-D	83
FKT-12-D	83
FKT-162-D	83
FKT-20-M	83
FKT-25-M	83
FKT-32-O	83
HDSCCK-20-DW-O	83
HDSCCK-25-DW-O	83
HDSCCK-25-DW-P	83
HDSCCK-32-DW-P	83
HDSWFKT-20-O	83
HDSWFKT-25-P	83
HDSWFKT-32-P	83
KTM109-20-15-M	85
KTM109-20-25-M	85
KTM109-25-15-M	85
KTM109-25-25-M	85
KTM109-32-15-M	85
KTM109-32-25-M	85
KTO109-25-40-O	85
KTO109-32-40-O	85
KTW109-20-15-4	85
KTW109-20-25-4	85
KTW109-25-15-4	85
KTW109-25-25-4	85
KTW109-25-40-4	85
KTW109-32-15-4	85
KTW109-32-25-4	85
KTW109-32-40-4	85
MDL-TPI-C	90
MDL-TPI-CB	90
MDL-TPI-HS	90
MDL-TPI-HSB	90
MDR-TPI-C	90
MDR-TPI-CB	90
MDR-TPI-HS	90
MDR-TPI-HSB	90
MF-TPI-C	90
MF-TPI-CB	90
MF-TPI-HS	90
MF-TPI-HSB	90
MMKT-10-D	84
MMKT-12-R	84
MMKT-20-O	84
MMKT-25-O	84
MMKT-32-P	84
MS-TPI-C	90
MS-TPI-CB	90

Knurling Tools	
Description	Page
MS-TPI-HS	90
MS-TPI-HSB	90
ODL-TPI-C	90
ODL-TPI-CB	90
ODL-TPI-HS	90
ODL-TPI-HSB	90
ODR-TPI-C	90
ODR-TPI-CB	90
ODR-TPI-HS	90
ODR-TPI-HSB	90
OF-TPI-HS	90
OF-TPI-HSB	90
OM-TPI-HS	90
OM-TPI-HSB	90
OS-TPI-C	90
OS-TPI-CB	90
OS-TPI-HS	90
OS-TPI-HSB	90
PDL-TPI-C	90
PDL-TPI-CB	90
PDL-TPI-HS	90
PDL-TPI-HSB	90
PDR-TPI-C	90
PDR-TPI-CB	90
PDR-TPI-HS	90
PDR-TPI-HSB	90
PF-TPI-C	90
PF-TPI-CB	90
PM-TPI-HS	90
PM-TPI-HSB	90
PS-TPI-C	90
PS-TPI-CB	90
PS-TPI-HS	90
PS-TPI-HSB	90
RDL-TPI-C	91
RDL-TPI-CB	91
RDL-TPI-HS	91
RDL-TPI-HSB	91
RDR-TPI-C	91
RDR-TPI-CB	91
RDR-TPI-HS	91
RDR-TPI-HSB	91
RF-TPI-C	91
RF-TPI-CB	91
RF-TPI-HS	91
RF-TPI-HSB	91
RS-TPI-C	91
RS-TPI-CB	91
RS-TPI-HS	91
RS-TPI-HSB	91
SCKN-10-DW-D	83
SCKN-12-DW-D	83
SCKN-162-DW-D	83
SCKN-20-DW-M	83
SCKN-25-DW-M	83
SCKN-32-DW-M	83
SCNC-10	78
SCNC-10-1-2	82
SCNC-10-6-2	82
SCNC-10-7-2	82
SCNC-10-7-D	82
SCNC-12	78
SCNC-12-1-2	82
SCNC-12-6-2	82
SCNC-12-7-2	82
SCNC-12-7-D	82
SCNC-162	78
SCNC-162-1-2	82
SCNC-162-6-2	82
SCNC-162-7-2	82
SCNC-162-7-D	82
SDL-TPI-C	91
SDL-TPI-CB	91
SDL-TPI-HS	91
SDL-TPI-HSB	91
SDR-TPI-C	91
SDR-TPI-CB	91
SDR-TPI-HS	91
SDR-TPI-HSB	91
SFKT-10-2	83
SFKT-12-2	83
SFKT-162-2	83
SFKT-20-4	83
SFKT-25-4	83
SFKT-32-4	83
SF-TPI-HS	91
SF-TPI-HSB	91
SIKT-12-2	84
SIKT-20-4	84
SIKT-25-4	84

Knurling Tools

Description	Page
SIKT-32-4	84
SM-TPI-HS	91
SM-TPI-HSB	91
SSCK-10-DW-2	83
SSCK-12-DW-2	83
SSCK-162-DW-2	83
SSCK-20-DW-4	83
SSCK-25-DW-4	83
SSCK-32-DW-4	83
SS-TPI-C	91
SS-TPI-CB	91
SS-TPI-HS	91
SS-TPI-HSB	91
SSWFKT-10-2	84
SSWFKT-12-2	84
SSWFKT-162-2	84
SSWFKT-20-4	84
SSWFKT-25-4	84
SSWFKT-32-4	84
SW2F-TPI-C	91
SW2F-TPI-CB	91
SW2F-TPI-HS	91
SW2F-TPI-HSB	91
SW2L-TPI-C	91
SW2L-TPI-CB	91
SW2L-TPI-HS	91
SW2L-TPI-HSB	91
SW2R-TPI-C	91
SW2R-TPI-CB	91
SW2R-TPI-HS	91
SW2R-TPI-HSB	91
SW2S-TPI-C	91
SW2S-TPI-CB	91
SW2S-TPI-HS	91
SW2S-TPI-HSB	91
SW4F-TPI-C	91
SW4F-TPI-CB	91
SW4F-TPI-HS	91
SW4F-TPI-HSB	91
SW4L-TPI-C	91
SW4L-TPI-CB	91
SW4L-TPI-HS	91
SW4L-TPI-HSB	91
SW4R-TPI-C	91
SW4R-TPI-CB	91
SW4R-TPI-HS	91
SW4R-TPI-HSB	91
SW4S-TPI-C	91
SW4S-TPI-CB	91
SW4S-TPI-HS	91
SW4S-TPI-HSB	91
SWFKT-10-D	83
SWFKT-12-D	83
SWFKT-162-D	83
SWFKT-20-M	83
SWFKT-25-O	83
SWFKT-32-O	83
SWFKT-831-B	83
TIKT-12-B	84
TIKT-20-D	84
TIKT-25-R	84
TIKT-32-M	84

Milling

Description	Page
APHT 100304-PDFR-NU	101
APHT 160408-PDFR-NU	101
APKT 100304 PDSR-KR	101
APKT 100304 PDSR-MM	101
APKT 100304 PDSR-PM	101
APKT 100304 PDSR-PR	101
APKT 160408 PDSR-KR	101
APKT 160408 PDSR-MM	101
APKT 160408 PDSR-PM	101
APKT 160408 PDSR-PR	101
APKT 160416 PDSR-PU	101
APKT 160424 PDSR-PU	101
APKT 160432 PDSR-PU	101
C60-20-TD11-10	94
C60-25-TD11-12	94
C60-35-TD11-16	94
C60-40-TD16-16	94
C60-50-TD16-20	94
C60-65-TD22-25	94
D15X-12-TD11-10	94
D15X-25-TD11-12	94
D15X-50-TD16-20	94
D15X-65-TD22-25	94
D45X-12-TD09-10	93
D45X-20-TD09-10	93
D45X-25-TD09-12	93
D45X-25-TD17-16	93
D45X-50-TD17-20	93
D45X-60-TD25-25	93
D45X-65-TD25-25	93
D60X-12-TD11-10	94
D60X-20-TD11-10	94
D60X-25-TD11-12	94
D60X-35-TD16-16	94
D60X-50-TD16-20	94
D60X-60-TD22-25	94
D60X-65-TD22-25	94
DKC15HM	99
DKP20UM	99
DMP35UM	99
DMP40RM	99
DNC15UM	99
DNP10HM	99
DNU10GM	99
DPC20HM	99
DPC30UM	99
DPP25GM	99
DPP35RM	99
DPP40SM	99
DWKC-195-TE06-10	95
DWKC-196-TE06-10	95
DWKC-225-TE06-10	95
DWKC-226-TE06-10	95
DWKC-228-TE06-10	95
DWKC-256-TE06-10	95
DWKC-2810-TE06-12	95
DWKC-286-TE06-10	95
DWKC-288-TE06-10	95
DWKC-3210-TE06-12	95
DWKC-328-TE06-12	95
DWKC-4510-TE06-12	95
E90-32-WC06-20	96
E90-50-VC22-20	96
E90-50-VC22-25	96
E90-50-WC06-25	96
E90A-050-WC06-22	96
E90A-063-WC06-27	96
E90A-075-WC06-27	96
E90A-100-VC22-32	96
E90A-100-WC06-32	96
E90A-125-VC22-32	96
E90A-125-WC06-32	96
E90A-50-VC16-22	96
E90A-63-VC22-22	96
E90A-75-VC22-27	96
E90XL-20-VP11-16	97
E90XL-25-VP16-20	97
E90XL-32-VP16-25	97
E90XL-42-VP16-25	97
OFER 070405 SN-PU	101
OFEX 05T305 SN-PU	101
QV-16-S304-12	93
QV-16-S304-16	93
QV-25-S608-20	93
QV-25-S608-25	93
QV-25-S612-20	93
QV-25-S612-25	93
QV-25-S616-20	93
QV-25-S616-25	93
QV-50-S612-25	93

Milling

Description	Page
QV-50-S616-25	93
RDHT 12T3 MOEN-MM	101
RDKW 1003 MOSN-KU	102
RDKW 1003 MOSN-PU	102
RDKW 12T3 MOSN-KU	102
RDKW 12T3 MOSN-PU	102
RDKW 1604 MOSN-KU	102
RDKW 1604 MOSN-PU	102
REC15-50-CN4-20	98
REC15-50-CN4-25	98
REC15A-076-CN4-27	98
REC15A-100-CN4-32	98
REC15A-125-CN4-40	98
REMW 1304MOSN-KM	102
REMW 1304MOSN-MM	102
REMW 1304MOSN-PM	102
SDGX-09C01-E	105
SDGX-09C03-E	105
SDGX-09C04-E	105
SDGX-19C05-E	105
SDGX-19C06-E	105
SDGX-19C07-E	105
SDGX-19C08-E	105
SDGX-19C09-E	105
SDGX-19C10-E	105
SDGX-19C11-E	105
SDGX-19C12-E	105
SDGX-19C13-E	105
SDGX-19C14-E	105
SDGX-19C15-E	105
SDGX-19C16-E	105
SDHT 1204 AESN-KU	102
SDHT 1204 AESN-MU	102
SDHT 1204 AESN-PU	102
SDHT 1504 AESN-PU	102
SDHT-1204 AEFN-NU	102
SDHT-1504 AEFN-NU	102
SDHW-090308-EN	105
SDMT 090308-SN-PU	102
SDMT 120408 SN-PU	102
SDMT 1205 PDSR-PU	102
SEHT-1204 AEFN-NU	102
SEKN 1203 AFEN-MM	103
SEKN 1203 AFSN-KM	103
SEKN 1203 AFSN-PM	103
SEKN 1504 AFEN-MM	103
SEKN 1504 AFSN-KM	103
SEKN 1504 AFSN-PM	103
SEKR 1203 AFEN-MM	103
SEKR 1203 AFSN-PM	103
SEKT 1204 AFEN-MM	103
SEKT 1204 AFSN-PM	103
SEKW 1204 AFEN-MM	103
SEKW 1204 AFSN-KM	103
SEKW 1204 AFSN-PM	103
SLOT-21-SP06-12	95
SLOT-25-SP06-16	95
SLOT-28-SP06-16	95
SLOT-32-SP06-16	95
SLOT-36-SD09-25	95
SLOT-40-SD09-25	95
SLOT-45-SD09-25	95
SLOT-50-SD09-32	95
SNEX 1206 ANFN-MF	103
SNMX 1206 ANSN-KM	103
SNMX 1206 ANSN-MM	103
SNMX 1206 ANSN-PM	103
SNMX 120608 SN-KM	103
SNMX 120608 SN-MM	103
SNMX 120608 SN-PM	103
SNMX 120612 SN-KM	103
SNMX 120612 SN-PM	103
SPKN 1203 EDSR-KM	104
SPKN 1203 EDSR-PM	104
SPKN 1504 EDSR-KM	104
SPKN 1504 EDSR-PM	104
SPKR 1203 EDSR-PM	104
SPMT 060304 EN-PU	104
TDEX-090202-EN	105
TDEX-090204-EN	105
TDEX-110201-EN	105
TDEX-110202-EN	105
TDEX-110204-EN	105
TDEX-110208-EN	105
TDEX-160304-EN	105
TDEX-160308-EN	105
TDEX-17T304-EN	105
TDEX-17T308-EN	105
TDEX-220404-EN	105
TDEX-220408-EN	105

Milling

Description	Page
TDEX-250404-EN	105
TDEX-250408-EN	105
TEHW-0602-AEEN	105
TNHF 1204 ANSN-KM	104
TPKN 1603 PDSR-KM	104
TPKN 1603 PDSR-PM	104
TPKN 2204 PDSR-KM	104
TPKN 2204 PDSR-PM	104
VPGT-160412-NFU	105
VPGT-220516-NFU	105
WCGT-06T308-NFU	105

Tool Post

Description	Page
D25AXA-1	109
D25AXA-2	109
D25AXA-35	112
D25AXA-41M-25-DUAL	111
D25AXA-4M-20-DUAL	111
D25AXA-7-71C	112
D30BXA-1	109
D30BXA-2	109
D30BXA-35	112
D30BXA-41M-32-DUAL	111
D30BXA-4M-25-DUAL	111
D30BXA-7-71C	112
D35CXA-1	109
D35CXA-2	109
D35CXA-35	112
D35CXA-41M-32-DUAL	111
D35CXA-4M-25-DUAL	111
D35CXA-5-4	112
D35CXA-7-71C	112
D40CA-1	109
D40CA-2	109
D40CA-35	112
D40CA-41M-40-DUAL	111
D40CA-4M-32-DUAL	111
D40CA-5-4	112
D40CA-7-71C	112
D50DA-1	109
D50DA-2	109
D50DA-41M-50-DUAL	111
D50DA-4M-40-DUAL	111
D50DA-5-5	112
D50DA-7-71C	112
D60EA-1	109
D60EA-2	109
D60EA-41M-60-DUAL	111
D60EA-4M-50-DUAL	111
D60EA-5-5	112
D60EA-7-71C	112
DQ35CXA-41SM-40-DUAL	111
DQ35CXA-41SM-40-DUAL	118
DQ40CA-41SM-50-DUAL	111
DQ40CA-41SM-50-DUAL	118
DQ50DA-41SM-60-DUAL	111
DQ50DA-41SM-60-DUAL	118
DQ60EA-41SM-80-DUAL	111
DQ60EA-41SM-80-DUAL	118
QITP25N-1	117
QITP25N-2	117
QITP25N-36	119
QITP25N-4M-20-DUAL	118
QITP25N-7-71C	119
QITP30N-1	117
QITP30N-2	117
QITP30N-36	119
QITP30N-4M-25-DUAL	118
QITP30N-7-71C	119
QITP35N-1	117
QITP35N-2	117
QITP35N-36	119
QITP35N-41M-32-DUAL	118
QITP35N-4M-25-DUAL	118
QITP35N-5-4	119
QITP35N-7-71C	119
QITP40N-1	117
QITP40N-2	117
QITP40N-36	119
QITP40N-41M-40-DUAL	118
QITP40N-4M-32-DUAL	118
QITP40N-5-4	119
QITP40N-7-71C	119
QITP50N-1	117
QITP50N-2	117
QITP50N-41M-50-DUAL	118
QITP50N-4M-40-DUAL	118
QITP50N-5-5	119
QITP50N-7-71C	119
QITP60N-1	117
QITP60N-2	117
QITP60N-41M-60-DUAL	118
QITP60N-4M-50-DUAL	118
QITP60N-5-5	119
QITP60N-7-71C	119

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