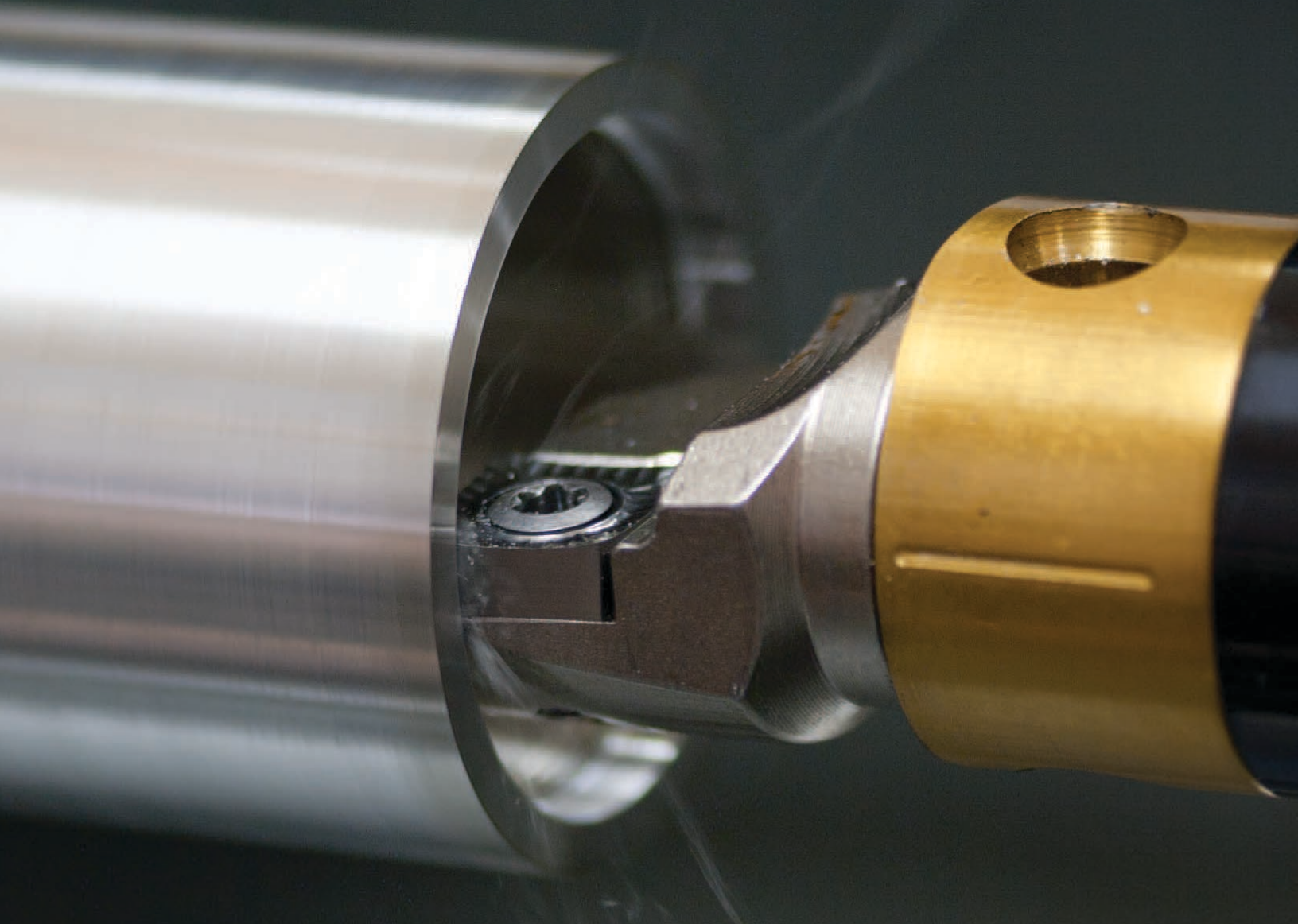


# Deep Hole Boring Made Simple!



Carbide & Tunable  
DeVi CHATTER FREE  
Boring Bar System



## Dorian Tool's Vision and Guiding Principle

"Tomorrow's Technology in Today's Machine Tools", is Dorian Tool's vision and guiding principle. This is reflected by our total commitment to help today's customers achieve their goals by supplying the most advanced tooling with the highest standard of quality and innovative technology in the marketplace. Our highly trained and skilled engineers have developed technologies that set new standards in the industry and changed the machining process forever.

By developing new ideas and promoting new technology, Dorian Tool has continuously improved its products, service, technical support, and delivery to customers.



## The Dorian Evolution

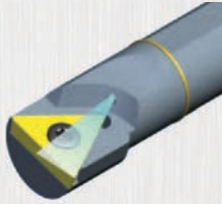
The Dorian Tool evolution began in 1982 with the introduction of the Quadra Index Tool Post and its ability to save countless hours in changing one tool for another. The evolution continues strong with innovation and industry improving ideas that create tomorrow's technology. Whether machining parts of any size or complexity for automotive, aerospace, oil, defense or other industrial applications; the unmatched quality of Dorian Tool products

**"Will Turn Machining Into Profit".**

# CARBIDE Boring Bar System

9-36

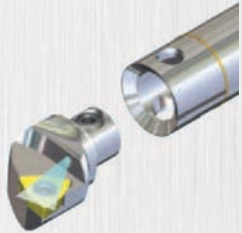
## CARBIDE Solid Boring Bar System



**Deep Hole Boring**  
**Up To 6 Times the Boring Bar Diameter**  
8:1 Boring Ratio can be achieved  
under favorable conditions.

9-28

## CARBIDE Quick Change Boring Bar & Interchangeable Heads System



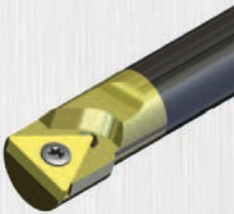
**Deep Hole Boring**  
**Up To 6 Times the Boring Bar Diameter**  
**the Boring Bar Diameter**  
8:1 Boring Ratio can be achieved  
under favorable conditions.

29-36

# DeVi Boring Bar System

37-61

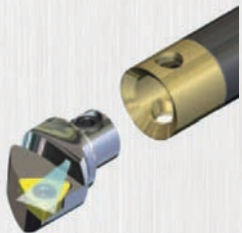
## DeVi Solid Chatter Free Tunable Boring Bar System



**Deep Hole Boring**  
**Up To 8 Times the Boring Bar Diameter**

41-42

## DeVi Quick Change Chatter Free Tunable Boring Bar & Interchangeable Heads System



**Deep Hole Boring**  
**Up To 14 Times the Boring Bar Diameter**

43-50

## DeVi Modular Chatter Free Tunable Boring Bar System



**Deep Hole Boring**  
**Up To 14 Times the Boring Bar Diameter**

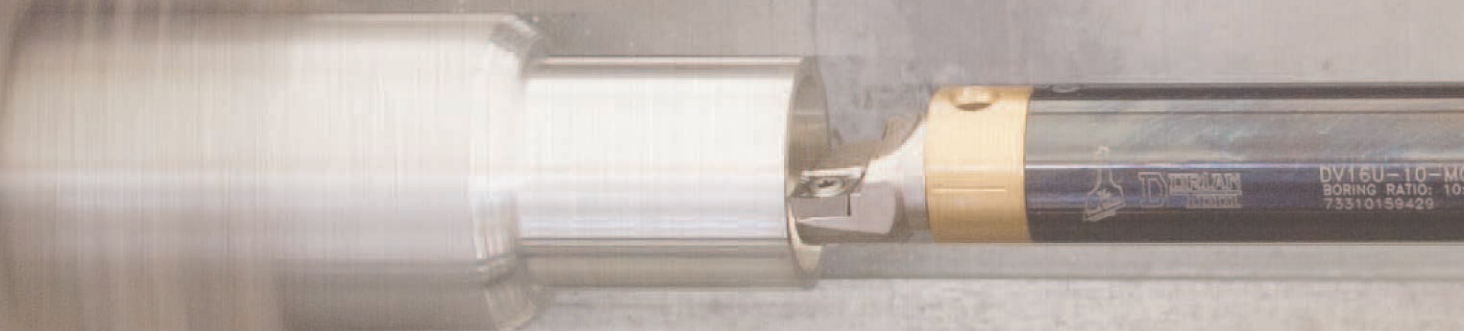
51-61



## Carbide

Boring & Threading Bars Technology

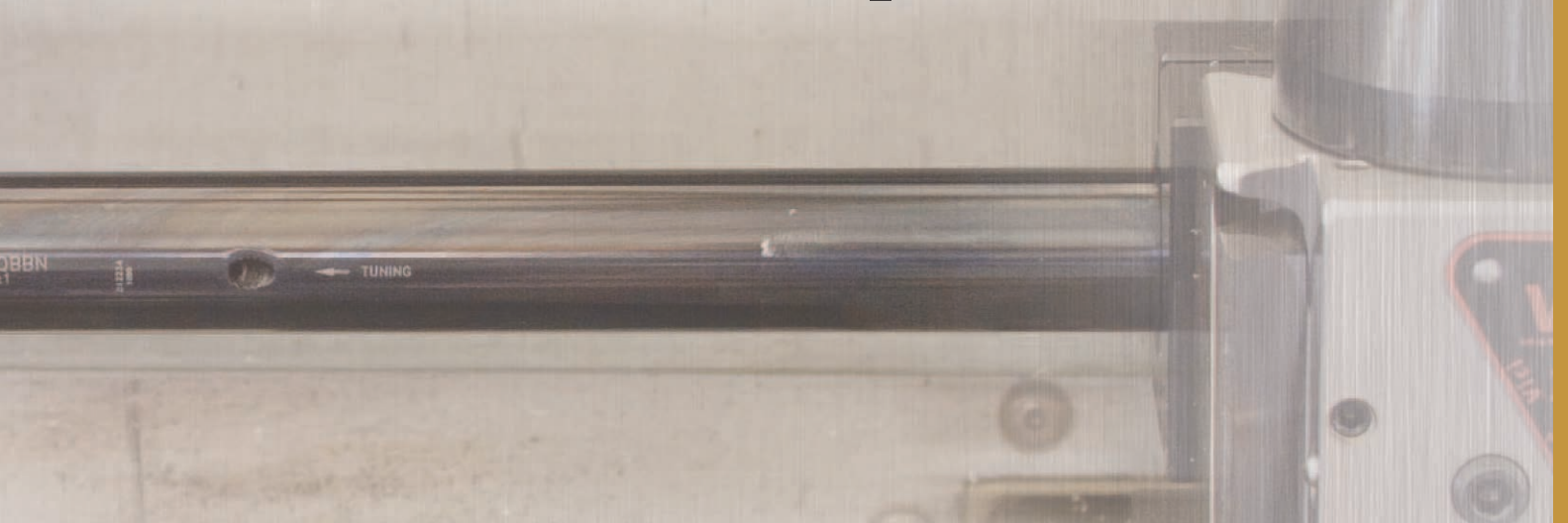
# Deep Hole Boring





DeVi Chatter Free Tunable  
Boring & Threading Bars Technology

**Made Simple!**





When selecting an indexable cutting tool & Insert you must check the appropriate box for each area below and fax to 979-282-2951.

<b>Application</b>				Bore Diameter	<input type="text"/>	Bore Length	<input type="text"/>
1. Boring	<input type="checkbox"/>	4. Grooving	<input type="checkbox"/>				
2. Profiling	<input type="checkbox"/>	5. Under Cut	<input type="checkbox"/>				
3. Back Face	<input type="checkbox"/>	6. Threading	<input type="checkbox"/>				

**Surface Finish**

16	<input type="checkbox"/>	32	<input type="checkbox"/>	63	<input type="checkbox"/>	125	<input type="checkbox"/>	250	<input type="checkbox"/>
----	--------------------------	----	--------------------------	----	--------------------------	-----	--------------------------	-----	--------------------------

Smooth Rough

<b>Material</b>				<b>Material Form</b>			
Carbon Steel	<input type="checkbox"/>	300 Series Stainless Steel	<input type="checkbox"/>	Cast Iron	<input type="checkbox"/>	Bar Stock	<input type="checkbox"/>
Alloy Steel	<input type="checkbox"/>	400 Series Stainless Steel	<input type="checkbox"/>	Aluminum	<input type="checkbox"/>	Tubing	<input type="checkbox"/>
Heat Treat Alloy Steel	<input type="checkbox"/>	PH Series Stainless Steel	<input type="checkbox"/>	High Temper Alloy	<input type="checkbox"/>	Casting	<input type="checkbox"/>
						Forging	<input type="checkbox"/>

Specify Material:

<b>Machine Type</b>		<b>Machine Capacity</b>		<b>Cutting Direction</b>	
Manual Lathe	<input type="checkbox"/>	Swing	<input type="checkbox"/>	Right Hand	<input type="checkbox"/>
CNC Turning	<input type="checkbox"/>	Center Distance	<input type="checkbox"/>	Left Hand	<input type="checkbox"/>

Quote No.	<input type="text"/>	P.O. No.	<input type="text"/>
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To be Completed by Dorian Tool Engineering Department			
Recommended By :	UPC No. 733101-	Description	Delivery
Steel Boring Bar			
Carbide Boring Bar			
DeVi Boring Bar			
Boring Bar Head			
Insert			

Customer Information
Company Name:
Contact Name:
Phone No: (    )
Email:
Fax No: (    )
Address
Date:





To Achieve Optimum Results for Deep Hole Boring

It is extremely important follow steps 1-5.

**1 Workholding**

Use the proper chuck and jaws to hold the work-piece, to assure that the part is held with maximum rigidity and stability under cutting force.

**2 Steady Rest**

When boring a long part, it is necessary to have extra support from the steady rest to eliminate any deflection of the part under the cutting force that causes vibration and poor surface finish.

**3 Boring Bar Size**

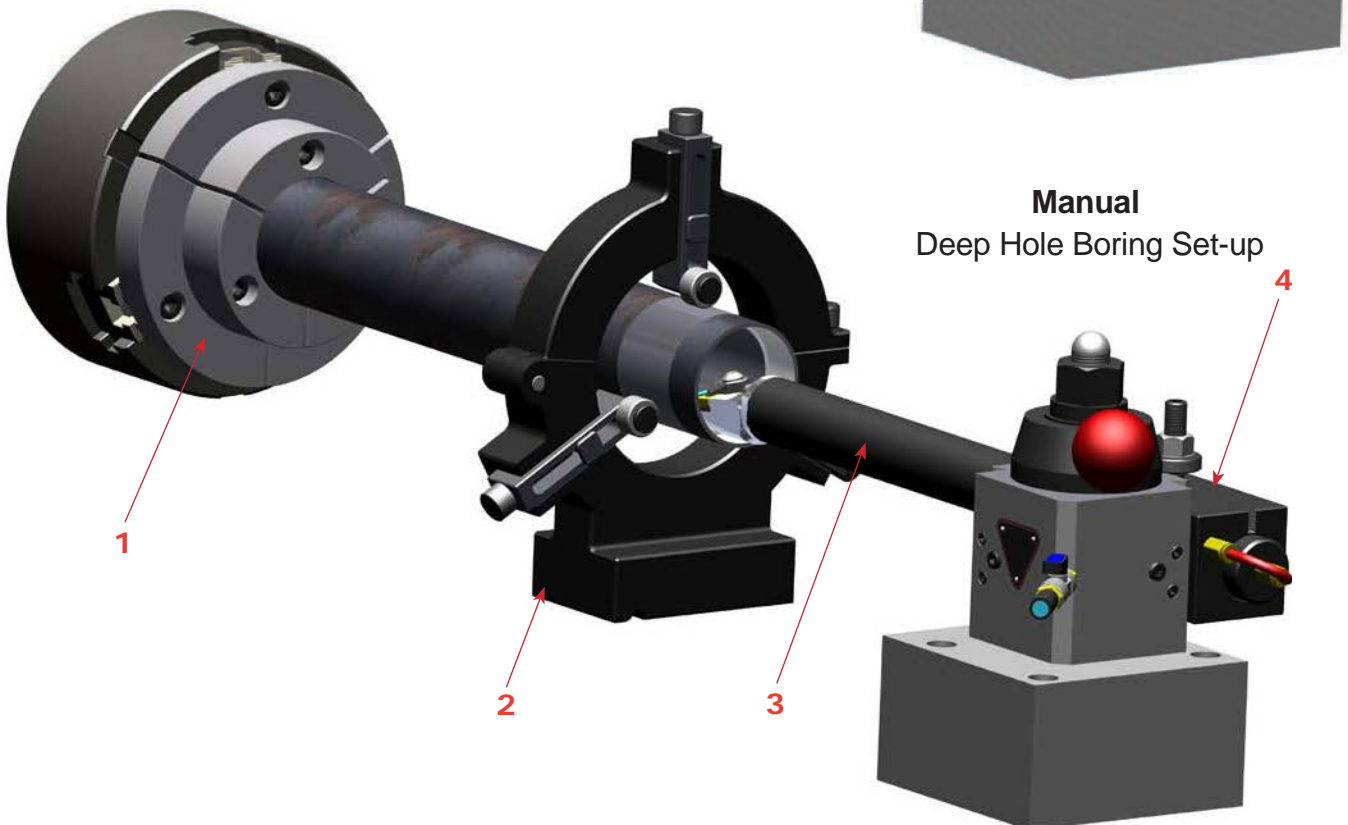
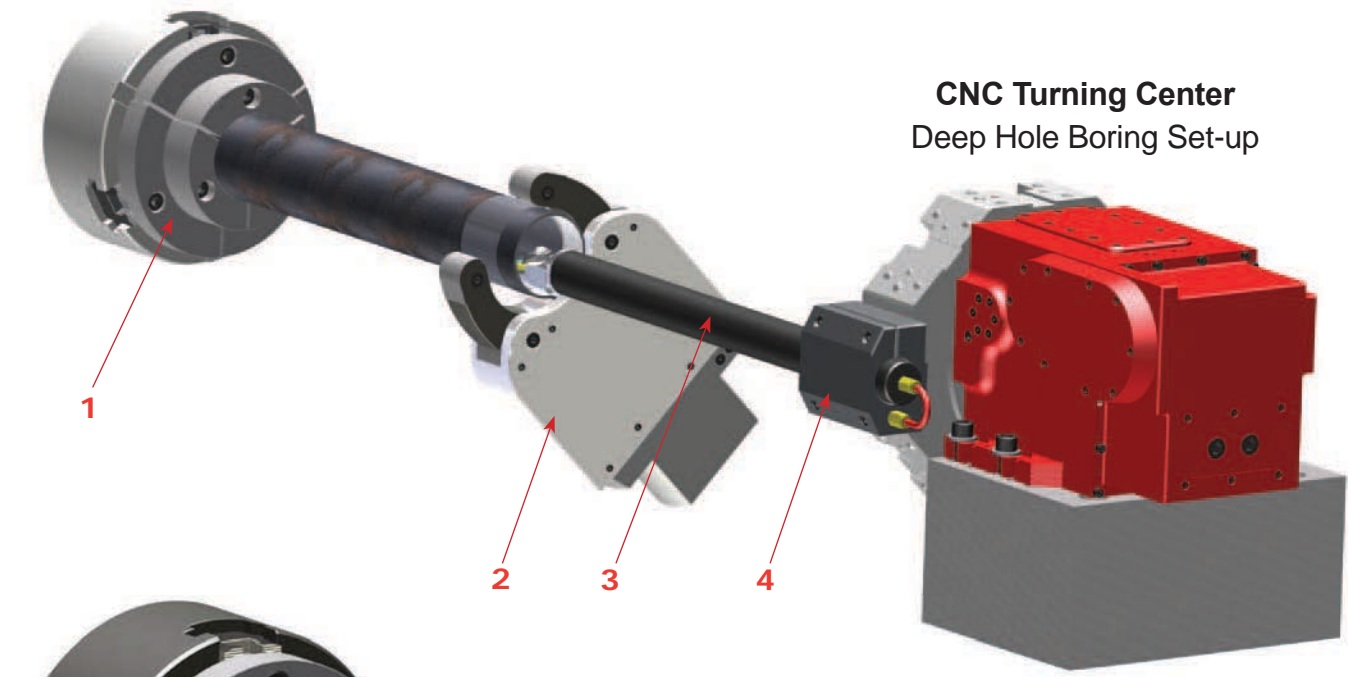
The boring bar should be chosen with the largest diameter size possible to clear the bore diameter, and the shortest overhang to eliminate any vibration.

**4 Boring Bar Holding**

It is best to use a split collar boring bar holder. The 360° locking system offers the largest surface contact between the boring bar and the holder, that maximizes bar rigidity and minimize vibration.

**5 Coolant System**

It is very important that the bore is kept clean and free of chips while cutting to avoid surface damage and insert to break. Use high pressure coolant with the boring bar to flush the chips out while cutting.

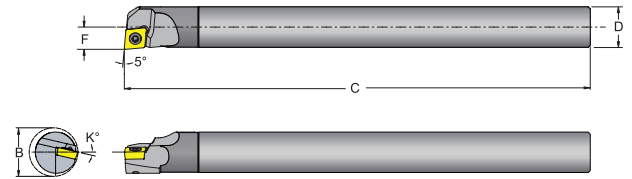




**1 BAR DIAMETER:**  
When choosing a boring bar, always try to select the largest shank diameter that the application will allow. This information is available in the (Bar Specifications) section of each table. Example Shown right.

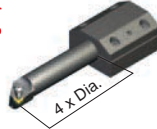
Example:

Part No.	Bar Specifications					
	Min. Bore	C	D	E	F	K°
R.H. B						
59340	0.740	10.00	0.625	1.078	0.395	10°
59342	18.80	250.00	16.00	27.38	10.03	10°



**2 BAR OVERHANG:**  
Never allow a boring bar to extend more than the specified diameter to length ratio from the end of its clamping surface.

**Steel Bar 4:1 Ratio**



**Carbide Bar 6:1 Ratio**

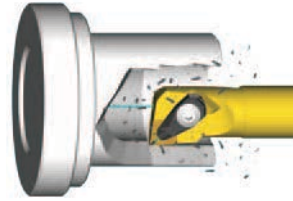


**Devibe Bar 10:1 Ratio**



Larger Ratio is available upon request

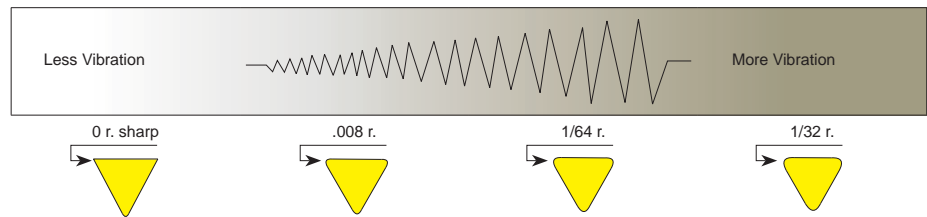
**3 CHIP REMOVAL:**  
Using boring bars with coolant through the shank can greatly enhance the removal of chips and improve surface finish on deep bores or blind holes.



**4 CLAMPING SYSTEM:**  
Be sure to use a stable, properly sized clamping method to secure a boring bar. Use the following information as a guide:  
**Clamping Length:** 3-4 x bar diameter  
**Hole Tolerance:** .001 over bar dia.  
**Surface Finish:** smooth  
**Material:** dampening

Carbide & DVI Boring Bar Clamping Selection			
BEST	Good	Poor	Not to be used
Split collar boring bar holder.	Cylindrical holder with screws using a split bushing.	Cylindrical holder with screws. Provides quick centerline reference.	V-groove with screws.

**5 INSERT RADIUS:**  
Use a smaller radius to limit vibration



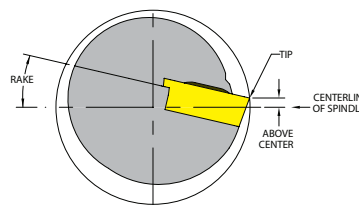
**6 INSERT CUTTING RAKE:**  
Use a positive cutting rake to limit vibration.



**7 CUTTING EDGE ANGLE:**  
Use a cutting edge angle as close to 90° as possible.



**8 INSERT CENTER LINE:**  
Insert Center Line, .002 to .025" [.050 to .635mm] above center line, to compensate for bar deflection and reduce vibration.



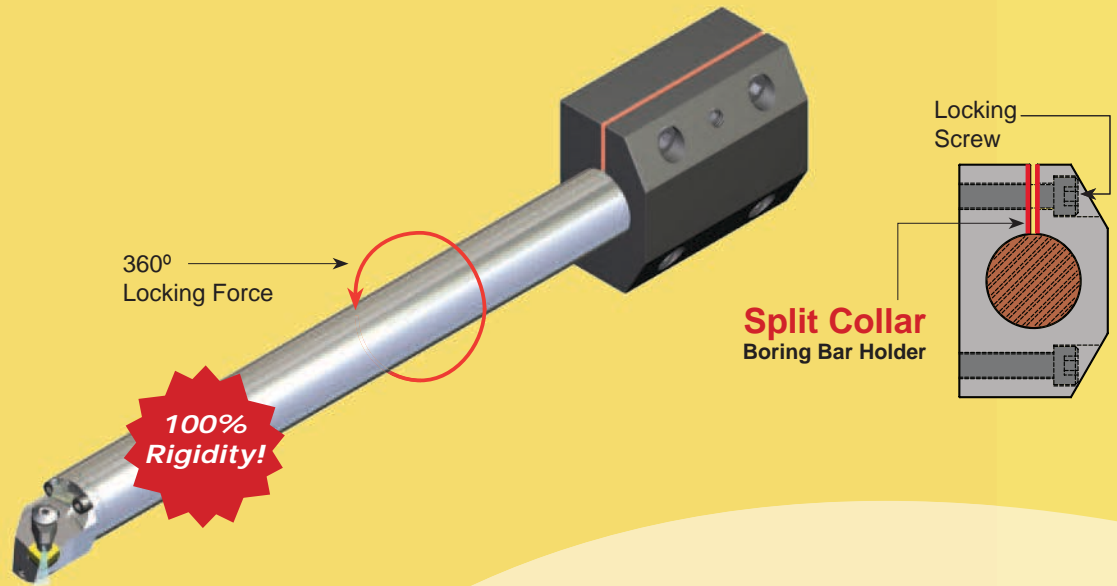




# BEST

## Split Collar System Boring bar holder

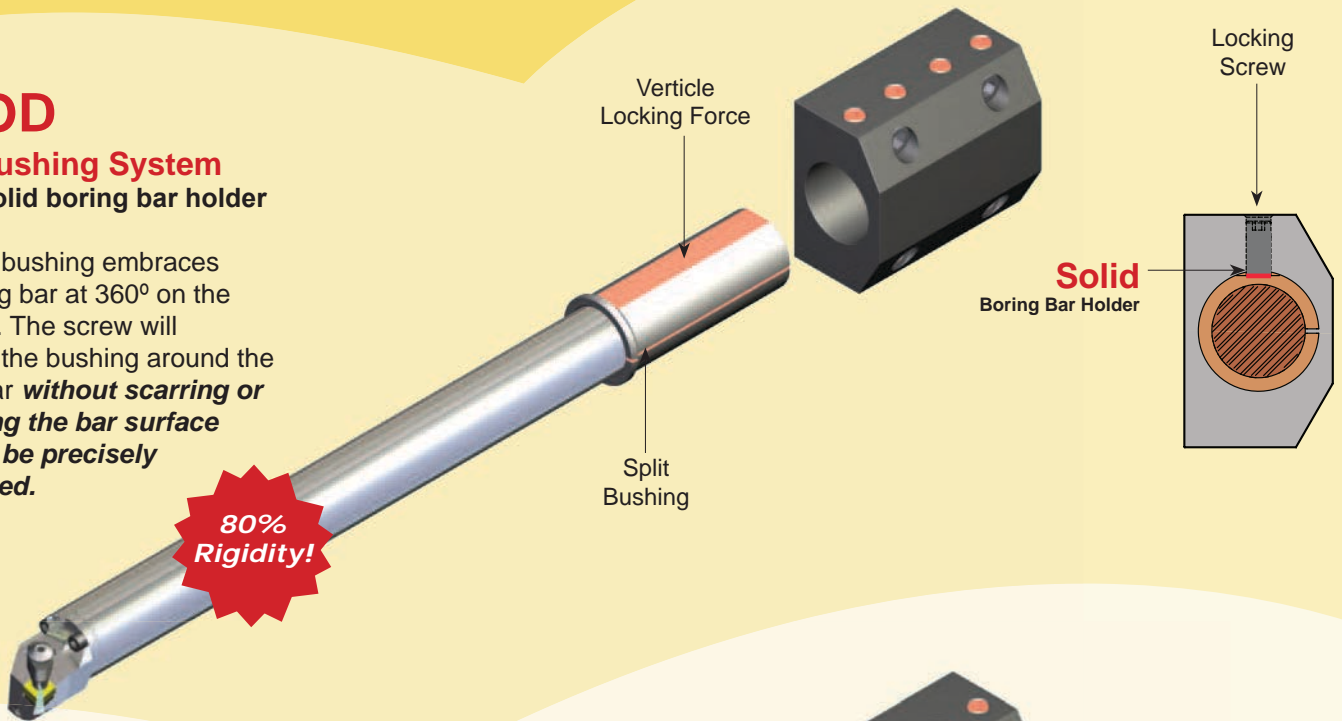
Locks the boring bar at 360° on the diameter assuring the most rigidity and precise boring bar positioning **without scarring or damaging the bar surface.**



# GOOD

## Split Bushing System with a solid boring bar holder

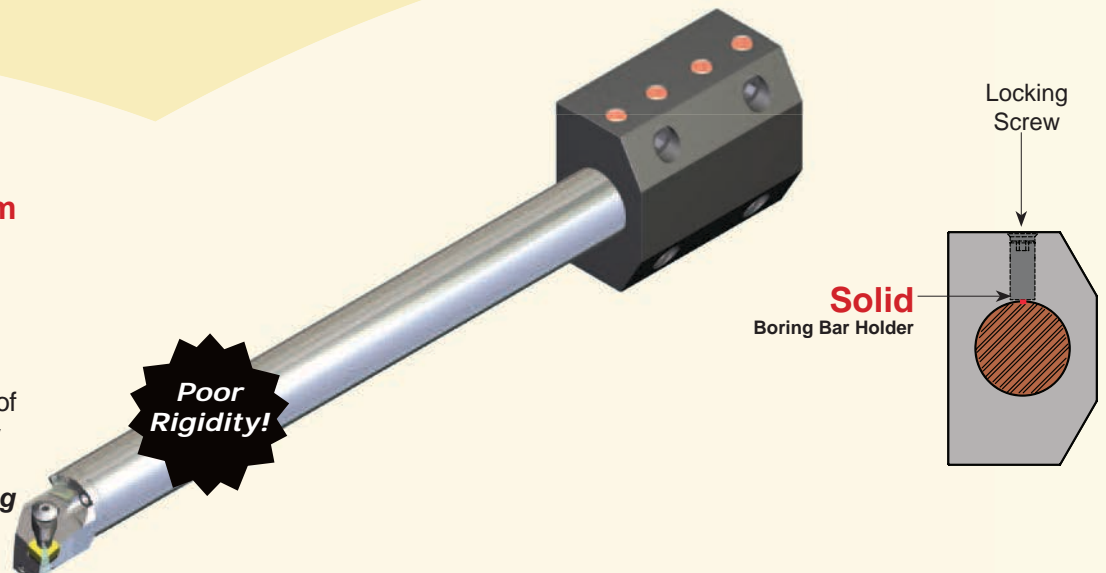
The split bushing embraces the boring bar at 360° on the diameter. The screw will squeeze the bushing around the boring bar **without scarring or damaging the bar surface and can be precisely positioned.**



# POOR

## Set Screw Lock System Solid boring bar holder without bushing

Locking the screw over the boring bar should **never** be done. There is only one point of contact and there will be very poor rigidity. Additionally, the **screw will damage the boring bar surface and positioning will be difficult.**





**Boring Ratio is the maximum extended length** of the boring bar before the boring bar starts to lose rigidity. Rigidity turns into vibration resulting in a chattering surface.

**Boring Ratio is measured from the cutting edge** of the insert to the face of the boring bar holder.

**Boring Ratio Changes depending on the material** of the boring bar.

**Steel Bar  
4:1 Boring Ratio**

6:1 Boring Ratio can be achieved under favorable conditions.

- Good for all general boring bar applications, from roughing to finishing.
- Stable for high material removal
- Poor for small bores
- Chattering occurs when the boring ratio exceeds 4:1

**Carbide Bar  
6:1 Boring Ratio**

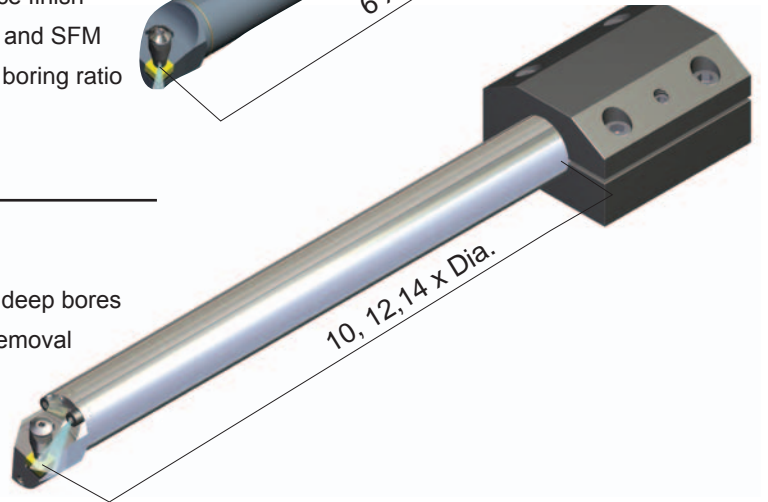
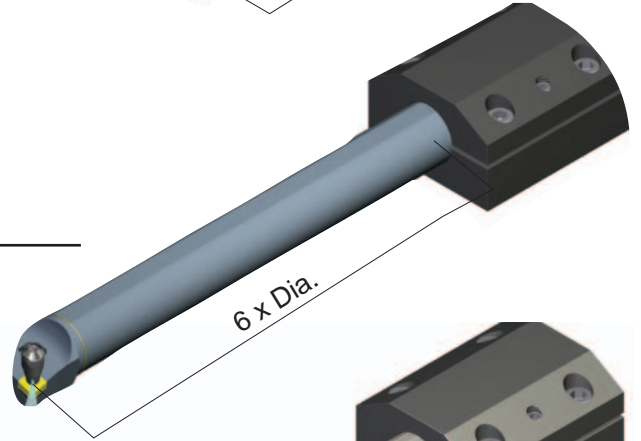
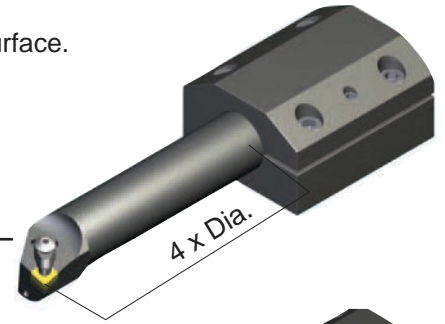
8:1 Boring Ratio can be achieved under favorable conditions.

- Best for small bore and long depth of cut
- Good for high rigidity and surface finish
- Good for high material removal and SFM
- Chattering occurs when the boring ratio exceeds 6:1

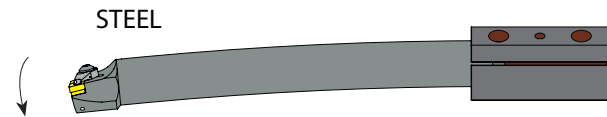
**Tunable DeVil Bar  
10:1, 12:1 & 14:1  
Boring Ratio**

Larger Boring Ratio is available upon request.

- Best for deep bore operations over 3/4" (20mm) Dia.
- Good for high surface finish on deep bores
- Good for high rate of material removal and SFM
- Special boring ratio on request



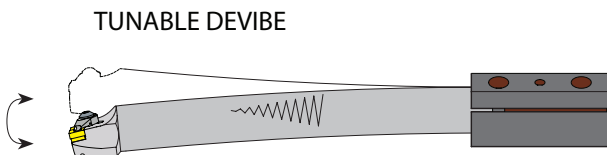
**Boring Ratio Pressure Reaction**



High Flexibility



Rigid



High Flexibility with Tunable System



# Carbide Solid Boring & Threading Bar System

## Deep Hole Boring Made Simple!

- Deep Boring
- Carbide shank
- Alloy steel head
- Five Carbide Solid Bar Styles

- Thru coolant system
- Jet-Stream™ Thru coolant system
- From 5/32" to 5/8" shanks
- From 4mm to 16mm shanks

### 6:1 Boring Ratio

8:1 Boring Ratio can be achieved under favorable conditions.

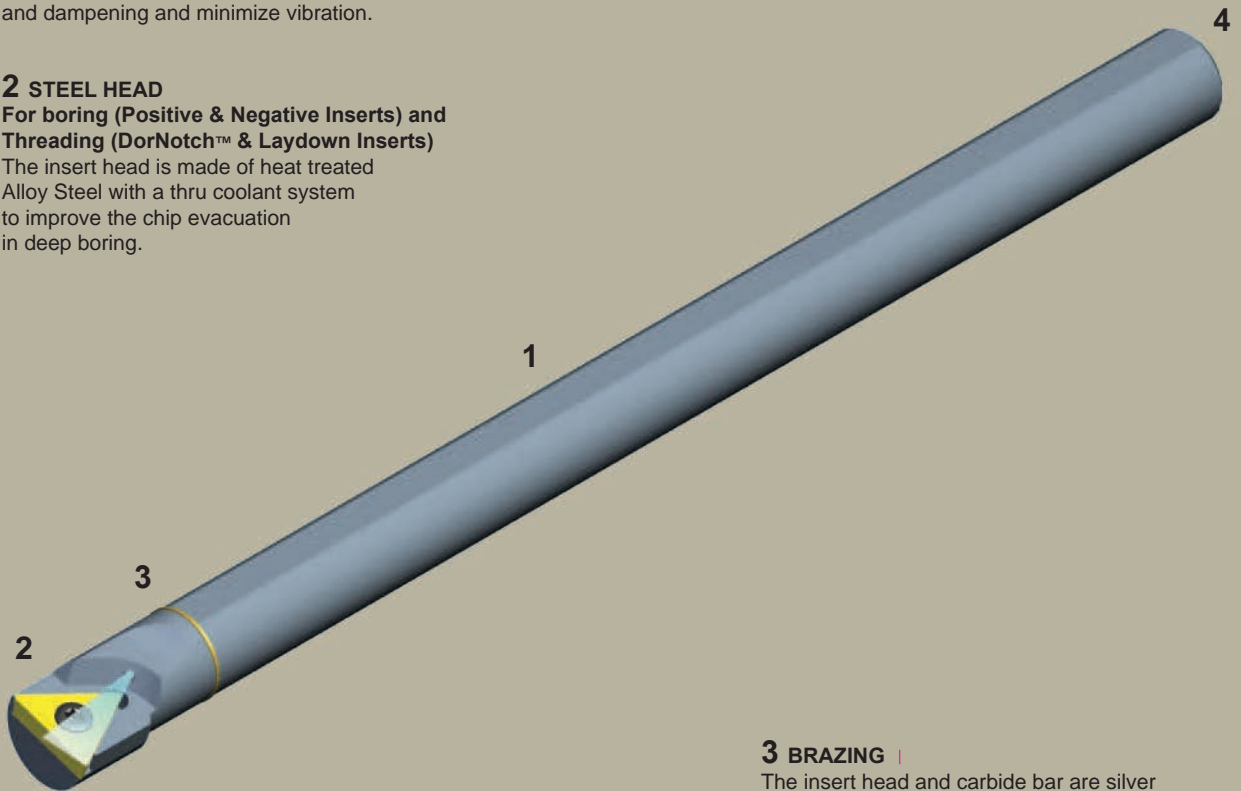
#### 1 CARBIDE BODY

Made of precision ground Carbide Grade. Engineered for deep boring bar applications to maximize rigidity and dampening and minimize vibration.

#### 2 STEEL HEAD

For boring (Positive & Negative Inserts) and Threading (DorNotch™ & Laydown Inserts)

The insert head is made of heat treated Alloy Steel with a thru coolant system to improve the chip evacuation in deep boring.



#### 3 BRAZING

The insert head and carbide bar are silver brazed. The right combination of silver braze and thickness makes the brazing strong and unbreakable but flexible to an interrupted cut.

#### 4 THREADED END

All the boring bars are supplied with a thru coolant hole. Bars over 1/2" and 12mm are threaded for easy coolant connection.



# Available in Five Styles

To Simplify Deep Boring Operations,  
with up to 6 Times the Bar Diameter!

## Carbide **SOLID** Boring Bar *One Piece Construction*

Small Bar Sizes			Page
inch	.156	1.250	12-19
metric	4	32	

Large Bar Sizes			Page
inch	0.750	1.250	20-22
metric	20	32	

## Carbide **SOLID** Small Threading Bar *One Piece Construction*

Small Bar Sizes			Page
inch	.156	1.250	23-24
metric	4	32	

## Carbide **QUICK CHANGE** Boring Bar *Two Piece Construction*

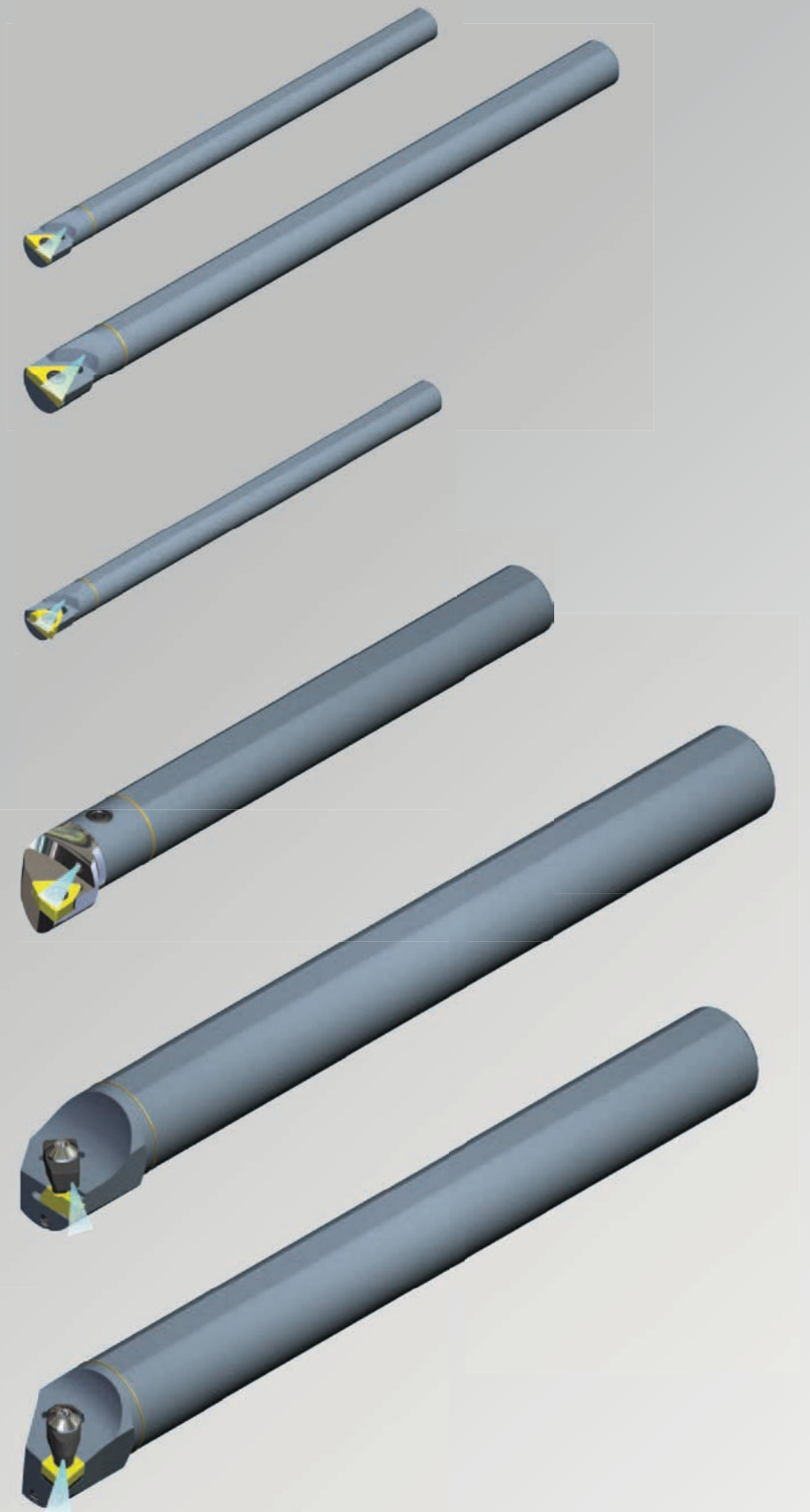
Small Bar Sizes				Page
inch	0.75	1.00	1.25	29-36
metric	20	25	32	

## Jet-Stream™ Carbide **NEGATIVE** Threading Bar *One Piece Construction*

Large Bar Sizes			Page
inch	0.750	1.250	25
metric	20	32	

## Jet-Stream™ Carbide **NEGATIVE** Boring Bar *One Piece Construction*

Large Bar Sizes			Page
inch	1	1.25	26-28
metric	25	32	



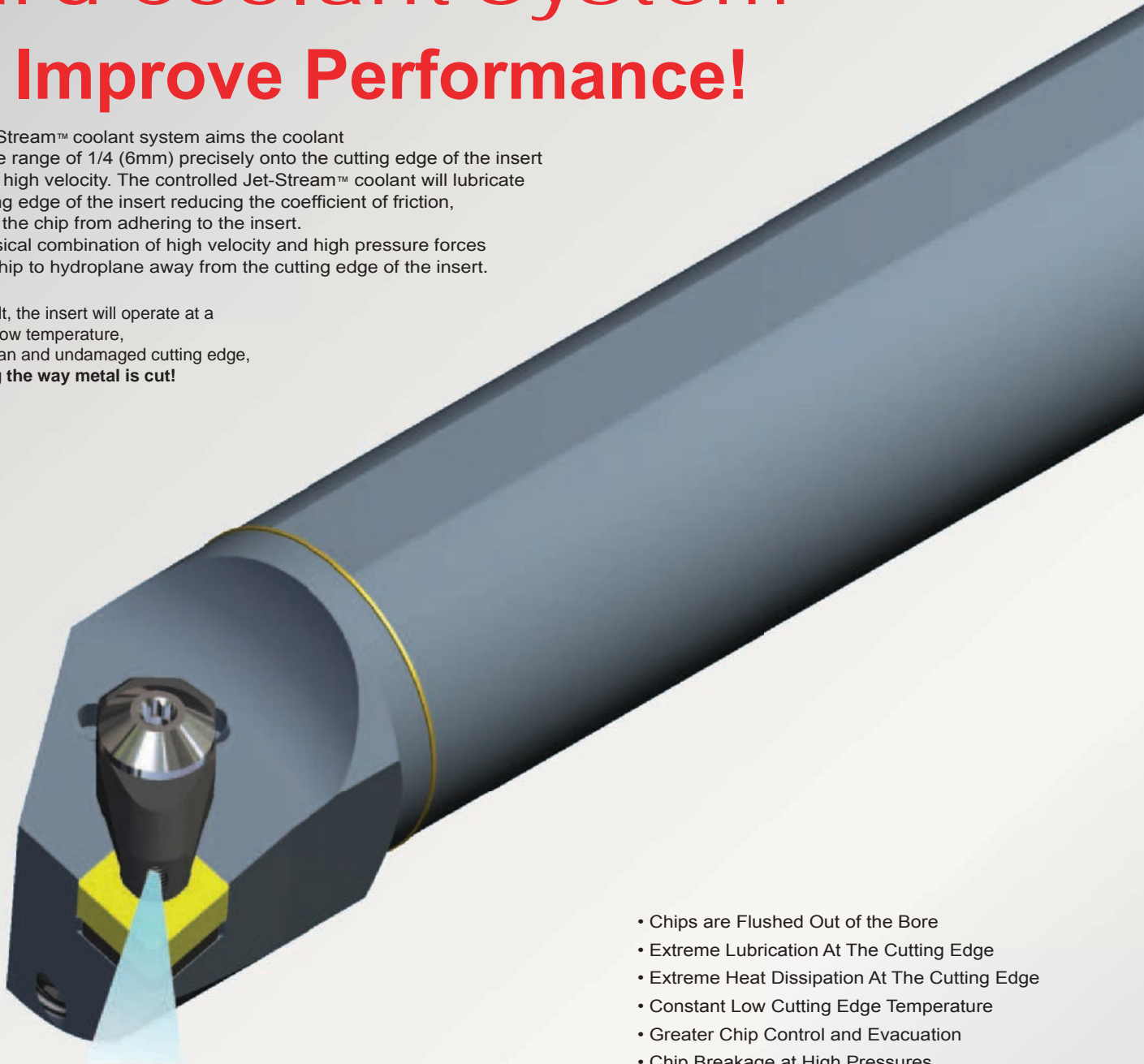


# Jet-Stream™ Carbide **Negative** Boring & Threading Bars are Supplied with the Jet-Stream™ Thru Coolant System To Improve Performance!

The Jet-Stream™ coolant system aims the coolant at a close range of 1/4 (6mm) precisely onto the cutting edge of the insert at a very high velocity. The controlled Jet-Stream™ coolant will lubricate the cutting edge of the insert reducing the coefficient of friction, stopping the chip from adhering to the insert.

The physical combination of high velocity and high pressure forces the hot chip to hydroplane away from the cutting edge of the insert.

As a result, the insert will operate at a constant low temperature, with a clean and undamaged cutting edge, **changing the way metal is cut!**

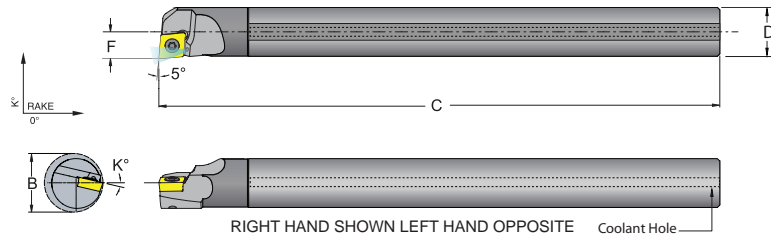
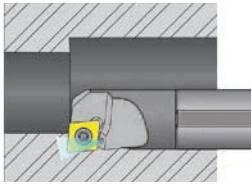


- Chips are Flushed Out of the Bore
- Extreme Lubrication At The Cutting Edge
- Extreme Heat Dissipation At The Cutting Edge
- Constant Low Cutting Edge Temperature
- Greater Chip Control and Evacuation
- Chip Breakage at High Pressures
- Smooth Cutting Action and Surface Finish
- Increased Speeds and Feeds
- Close Working Tolerances



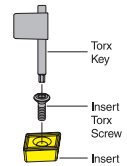
**E\_SCLD R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style L - Negative 5° End & Side Cutting Edge Angle for 15° positive 80°diamond CD\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE Coolant Hole

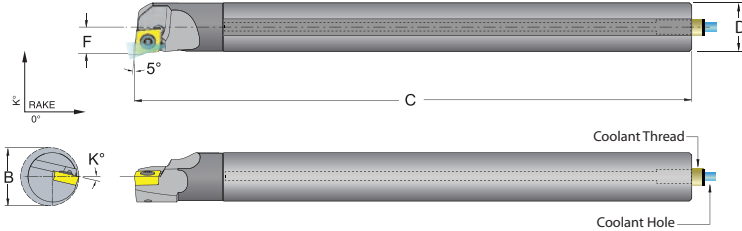
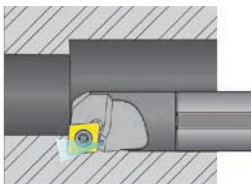
Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min.Bore B	C	D	F	K°	Hole	Thread	CDGB Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E02.5H-SCLDR/L-1.2	59575	59576	6:1	0.175	4.00	0.156	0.093	12°	.040	None				
E03.0H-SCLDR/L-1.2	59579	59580	6:1	0.205	4.00	0.187	0.103	9°	.040	None	1.20.60.2	TS-18.35-1M1	T-6	
E03.5H-SCLDR/L-1.2	59583	59584	6:1	0.245	4.00	0.218	0.123	7°	.040	None				
E04H-SCLDR/L-1.5	59587	59588	6:1	0.270	4.00	0.250	0.135	7°	.040	None				
E05K-SCLDR/L-1.5	59591	59592	6:1	0.335	5.00	0.312	0.167	7°	.040	None	1.510.5	TS-18.35-1M1.5	T-6	
<b>Metric</b>														
E04M-H-SCLDR/L-03	59577	59578	6:1	4.45	100	4	2.36	12°	1.0	None				
E05M-H-SCLDR/L-03	59581	59582	6:1	5.21	100	5	2.62	9°	1.0	None	S4T001	TS-18.35-1M1	T-6	
E06M-H-SCLDR/L-03	59585	59586	6:1	6.22	100	6	3.12	7°	1.0	None				
E07M-H-SCLDR/L-04	59589	59590	6:1	6.86	100	7	3.43	7°	1.0	None				
E08M-K-SCLDR/L-04	59593	59594	6:1	8.51	125	8	4.24	7°	1.0	None	040102	TS-18.35-1M1.5	T-6	



\*8:1 Boring Ratio can be achieved under favorable conditions.

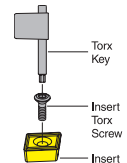
**E\_SCLC R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style L - Negative 5° End & Side Cutting Edge Angle for 7° positive 80°diamond CC\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min.Bore B	C	D	F	K°	Hole	Thread	CCGW Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E06M-SCLCR/L-2	59595	59596	6:1	0.396	6.00	0.375	0.198	15°	.060	None				
E08K-SCLCR/L-2	59599	59600	6:1	0.550	5.00	0.500	0.275	13°	.080	6 X 1mm				
E08R-SCLCR/L-2	59603	59604	6:1	0.550	8.00	0.500	0.275	13°	.080	6 X 1mm	21.51	TS-25.45-6M2	T-8	
E10M-SCLCR/L-2	59607	59608	6:1	0.740	6.00	0.625	0.395	10°	.125	6 X 1mm				
E10S-SCLCR/L-2	59611	59612	6:1	0.740	10.00	0.625	0.395	10°	.125	6 X 1mm				
E08K-SCLCR/L-3	59615	59616	6:1	0.550	5.00	0.500	0.275	13°	.080	6 X 1mm				
E08R-SCLCR/L-3	59619	59620	6:1	0.550	8.00	0.500	0.275	13°	.080	6 X 1mm	32.52	TS-35.6-9M1	T-15	
E10M-SCLCR/L-3	59623	59624	6:1	0.740	6.00	0.625	0.395	10°	.125	6 X 1mm				
E10S-SCLCR/L-3	59627	59628	6:1	0.740	10.00	0.625	0.395	10°	.125	6 X 1mm				
<b>Metric</b>														
E10M-M-SCLCR/L-06	59597	59598	6:1	10.06	150	10	5.03	15°	1.5	None				
E12M-K-SCLCR/L-06	59601	59602	6:1	13.97	125	12	6.99	13°	2	6 X 1mm				
E12M-R-SCLCR/L-06	59605	59606	6:1	13.97	200	12	6.99	13°	2	6 X 1mm	060204	TS-25.45-6M2	T-8	
E16M-M-SCLCR/L-06	59609	59610	6:1	18.80	150	16	10.03	10°	3	6 X 1mm				
E16M-S-SCLCR/L-06	59613	59614	6:1	18.80	250	16	10.03	10°	3	6 X 1mm				
E12M-K-SCLCR/L-09	59617	59618	6:1	13.97	125	12	6.99	13°	2	6 X 1mm				
E12M-R-SCLCR/L-09	59621	59622	6:1	13.97	200	12	6.99	13°	2	6 X 1mm	09T308	TS-35.6-9M1	T-15	
E16M-M-SCLCR/L-09	59625	59626	6:1	18.80	150	16	10.03	10°	3	6 X 1mm				
E16M-S-SCLCR/L-09	59629	59630	6:1	18.80	250	16	10.03	10°	3	6 X 1mm	09T308	TS-35.6-9M1	T-15	



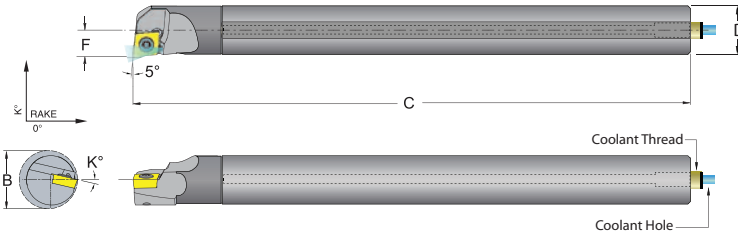
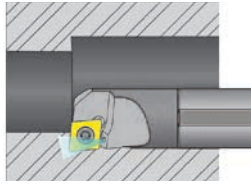
\*8:1 Boring Ratio can be achieved under favorable conditions.

**E\_SCLP R/L CARBIDE Solid Boring Bars**

Style L - Negative 5° End & Side Cutting Edge Angle for 11° positive 80°diamond CP\_\_ inserts

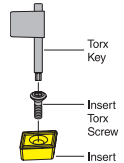
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	CPGW Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E05K-SCLPR/L-1.8	59631	59632	6:1	0.335	5.00	0.312	0.167	7°	.040	None	1.81.20.5	TS-22.45-4M1	T-7	
E06M-SCLPR/L-2	59635	59636	6:1	0.396	6.00	0.375	0.198	6°	.060	None	21.51	TS-25.45-6M2	T-8	
E08K-SCLPR/L-2	59639	59640	6:1	0.550	5.00	0.500	0.275	3°	.080	6 X 1mm				
E08R-SCLPR/L-2	59643	59644	6:1	0.550	8.00	0.500	0.275	3°	.080	6 X 1mm				
E10M-SCLPR/L-2	59647	59648	6:1	0.740	6.00	0.625	0.395	2°	.125	6 X 1mm				
E10S-SCLPR/L-2	59651	59652	6:1	0.740	10.00	0.625	0.395	2°	.125	6 X 1mm				
E08K-SCLPR/L-3	59655	59656	6:1	0.550	5.00	0.500	0.280	9°	.080	6 X 1mm	32.52	TS-35.6-9M1	T-15	
E08R-SCLPR/L-3	59659	59660	6:1	0.550	8.00	0.500	0.280	9°	.080	6 X 1mm				
E10M-SCLPR/L-3	59663	59664	6:1	0.740	6.00	0.625	0.395	5°	.125	6 X 1mm				
E10S-SCLPR/L-3	59667	59668	6:1	0.740	10.00	0.625	0.395	5°	.125	6 X 1mm				
<b>Metric</b>														
E08M-K-SCLPR/L-05	59633	59634	6:1	8.51	125	8	4.24	7°	1	None	05T102	TS-22.45-4M1	T-7	
E10M-M-SCLPR/L-06	59637	59638	6:1	10.06	150	10	5.03	6°	1.5	None	060204	TS-25.45-6M2	T-8	
E12M-K-SCLPR/L-06	59641	59642	6:1	13.97	125	12	6.99	3°	2	6 X 1mm				
E12M-R-SCLPR/L-06	59645	59646	6:1	13.97	200	12	6.99	3°	2	6 X 1mm				
E16M-M-SCLPR/L-06	59649	59650	6:1	18.80	150	16	10.03	2°	3	6 X 1mm				
E16M-S-SCLPR/L-06	59653	59654	6:1	18.80	250	16	10.03	2°	3	6 X 1mm				
E12M-K-SCLPR/L-09	59657	59658	6:1	13.97	125	12	7.11	9°	2	6 X 1mm	09T308	TS-35.6-9M1	T-15	
E12M-R-SCLPR/L-09	59661	59662	6:1	13.97	200	12	7.11	9°	2	6 X 1mm				
E16M-M-SCLPR/L-09	59665	59666	6:1	18.80	150	16	10.03	5°	3	6 X 1mm				
E16M-S-SCLPR/L-09	59669	59670	6:1	18.80	250	16	10.03	5°	3	6 X 1mm				



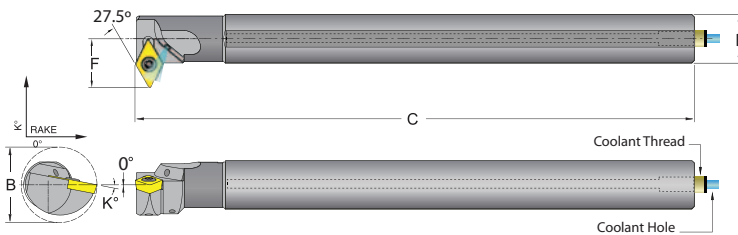
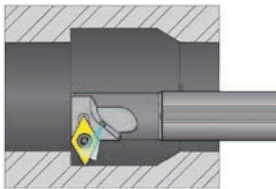
\*8:1 Boring Ratio can be achieved under favorable conditions.

**E\_SDNC R/L CARBIDE Solid Boring Bars**

Style N - Negative 27.5° End & Side Cutting Edge Angle for 7° positive 55° diamond DC\_\_ inserts

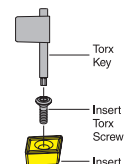
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	DCMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E06M-SDNCR/L-2	59671	59672	6:1	0.581	6.00	0.375	0.375	11°	.060	none	21.51	TS-25.45-6M2	T-8	
E08K-SDNCR/L-2	59675	59676	6:1	0.775	5.00	0.500	0.500	11°	.080	6 X 1mm				
E08R-SDNCR/L-2	59679	59680	6:1	0.775	8.00	0.500	0.500	11°	.080	6 X 1mm				
E10M-SDNCR/L-2	59683	59684	6:1	0.969	6.00	0.625	0.625	7°	.125	6 X 1mm				
E10S-SDNCR/L-2	59687	59688	6:1	0.969	10.00	0.625	0.625	7°	.125	6 X 1mm				
<b>Metric</b>														
E10M-M-SDNCR/L-07	59673	59674	6:1	14.76	150	10	9.53	11°	1.5	none	070204	TS-25.45-6M2	T-8	
E12M-K-SDNCR/L-07	59677	59678	6:1	19.69	125	12	12.70	11°	2	6 X 1mm				
E12M-R-SDNCR/L-07	59681	59682	6:1	19.69	200	12	12.70	11°	2	6 X 1mm				
E16M-M-SDNCR/L-07	59685	59686	6:1	24.61	150	16	15.88	7°	3	6 X 1mm				
E16M-S-SDNCR/L-07	59689	59690	6:1	24.61	250	16	15.88	7°	3	6 X 1mm				

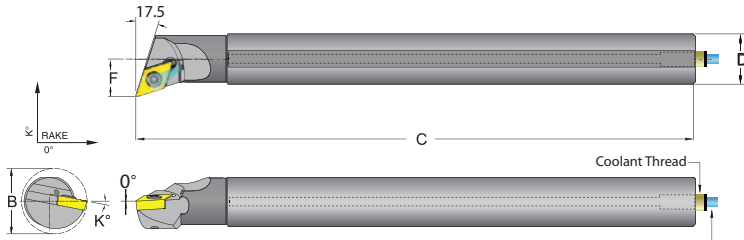
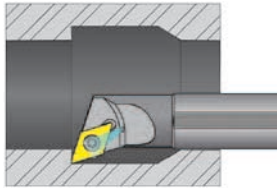


\*8:1 Boring Ratio can be achieved under favorable conditions.



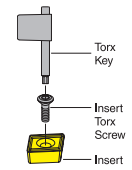
**E\_SDQC R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style N - Negative 17.5° End Cutting Edge Angle for 7° positive 55° diamond DC\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE

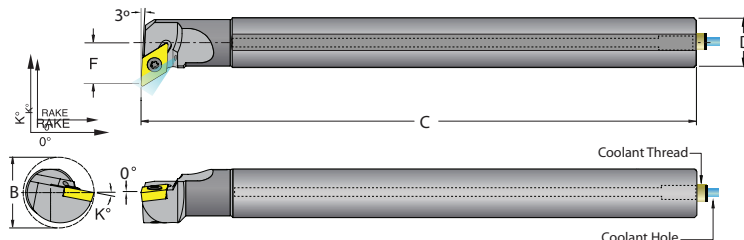
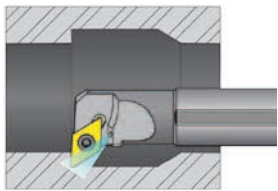
Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	DCMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E06M-SDQCR/L-2	59691	59692	6:1	0.487	6.00	0.375	0.281	11°	.060	None	21.51	TS-25.45-6M2	T-8	
E08K-SDQCR/L-2	59695	59696	6:1	0.650	5.00	0.500	0.375	11°	.080	6 X 1mm				
E08R-SDQCR/L-2	59699	59700	6:1	0.650	8.00	0.500	0.375	11°	.080	6 X 1mm				
E10M-SDQCR/L-2	59703	59704	6:1	0.781	6.00	0.625	0.437	7°	.125	6 X 1mm				
E10S-SDQCR/L-2	59707	59708	6:1	0.781	10.00	0.625	0.437	7°	.125	6 X 1mm				
<b>Metric</b>														
E10M-M-SDQCR/L-07	59693	59694	6:1	12.38	150	10	7.14	11°	1.5	None	070204	TS-25.45-6M2	T-8	
E12M-K-SDQCR/L-07	59697	59698	6:1	16.51	125	12	9.53	11°	2	6 X 1mm				
E12M-R-SDQCR/L-07	59701	59702	6:1	16.51	200	12	9.53	11°	2	6 X 1mm				
E16M-M-SDQCR/L-07	59705	59706	6:1	19.83	150	16	11.10	7°	3	6 X 1mm				
E16M-S-SDQCR/L-07	59709	59710	6:1	19.83	250	16	11.10	7°	3	6 X 1mm				



\*8:1 Boring Ratio can be achieved under favorable conditions.

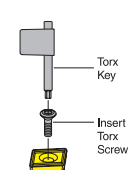
**E\_SDUC R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style U - Negative 3° End Cutting Edge Angle for 7° positive 55° diamond DC\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	DCMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E06M-SDUCR/L-2	59711	59712	6:1	0.581	6.00	0.375	0.375	11°	.060	None	21.51	TS-25.45-6M2	T-8	
E08K-SDUCR/L-2	59715	59716	6:1	0.712	5.00	0.500	0.437	11°	.080	6 X 1mm				
E08R-SDUCR/L-2	59719	59720	6:1	0.712	8.00	0.500	0.437	11°	.080	6 X 1mm				
E10M-SDUCR/L-2	59723	59724	6:1	0.844	6.00	0.625	0.500	7°	.125	6 X 1mm				
E10S-SDUCR/L-2	59727	59728	6:1	0.844	10.00	0.625	0.500	7°	.125	6 X 1mm				
<b>Metric</b>														
E10M-M-SDUCR/L-07	59713	59714	6:1	14.76	150	10	9.53	11°	1.5	None	070204	TS-25.45-6M2	T-8	
E12M-K-SDUCR/L-07	59717	59718	6:1	18.08	125	12	11.10	11°	2	6 X 1mm				
E12M-R-SDUCR/L-07	59721	59722	6:1	18.08	200	12	11.10	11°	2	6 X 1mm				
E16M-M-SDUCR/L-07	59725	59726	6:1	21.43	150	16	12.70	7°	3	6 X 1mm				
E16M-S-SDUCR/L-07	59729	59730	6:1	21.43	250	16	12.70	7°	3	6 X 1mm				



\*8:1 Boring Ratio can be achieved under favorable conditions.

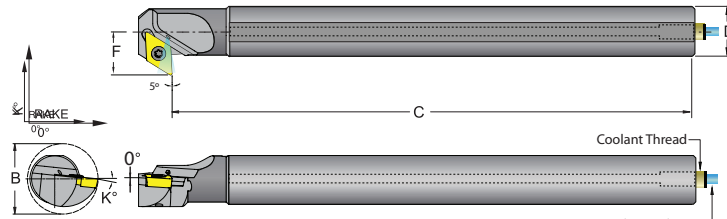
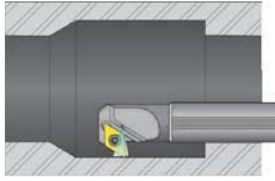


**E\_SDXC R/L CARBIDE Solid Boring Bars**

Style X - Negative 5° Back Boring Cutting Edge Angle for 7° positive 55° diamond DC\_\_ inserts

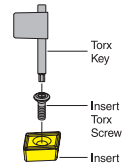
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications						Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	DCMT Gage Insert	Insert Torx Screw	Torx Key
<b>Inch</b>													
E06M-SDXCR/L-2	59731	59732	6:1	0.581	5.66	0.375	0.375	8°	.060	None	21.51	TS-25.45-6M2	T-8
E08K-SDXCR/L-2	59735	59736	6:1	0.712	4.66	0.500	0.437	6°	.080	6 X 1mm			
E08R-SDXCR/L-2	59739	59740	6:1	0.712	7.66	0.500	0.437	6°	.080	6 X 1mm			
E10M-SDXCR/L-2	59743	59744	6:1	0.844	5.66	0.625	0.500	5°	.125	6 X 1mm			
E10S-SDXCR/L-2	59747	59748	6:1	0.844	9.66	0.625	0.500	5°	.125	6 X 1mm			
<b>Metric</b>													
E10M-M-SDXCR/L-07	59733	59734	6:1	14.76	141.36	10	9.53	8°	1.5	None	070204	TS-25.45-6M2	T-8
E12M-K-SDXCR/L-07	59737	59738	6:1	18.08	116.36	12	11.10	6°	2	6 X 1mm			
E12M-R-SDXCR/L-07	59741	59742	6:1	18.08	191.36	12	11.10	6°	2	6 X 1mm			
E16M-M-SDXCR/L-07	59745	59746	6:1	21.43	141.36	16	12.70	5°	3	6 X 1mm			
E16M-S-SDXCR/L-07	59749	59750	6:1	21.43	241.36	16	12.70	5°	3	6 X 1mm			



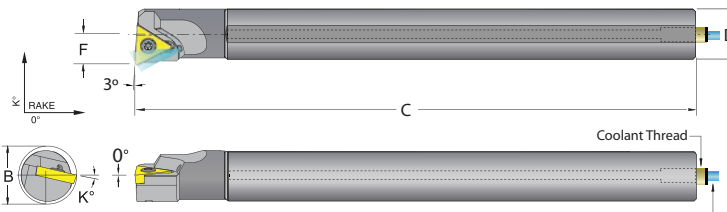
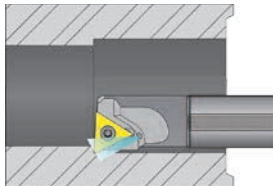
\*8:1 Boring Ratio can be achieved under favorable conditions.

**E\_STUC R/L CARBIDE Solid Boring Bars**

Style U - Negative 3° End Cutting Edge Angle for 7° positive triangle TC\_\_ inserts

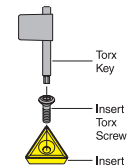
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications						Coolant		Insert Specifications				
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	TCMT Gage Insert	Insert Torx Screw	Torx Key		
<b>Inch</b>															
E04H-STUCR/L-1.2	59751	59752	6:1	0.281	4.00	0.250	0.143	11°	.060	None	1.21.20.2	TS-06	T-6		
E05K-STUCR/L-1.2	59755	59756	6:1	0.339	5.00	0.312	0.167	8°	.060	None					
E06M-STUCR/L-1.2	59759	59760	6:1	0.409	6.00	0.375	0.203	7°	.060	None					
E06M-STUCR/L-2	59763	59764	6:1	0.456	6.00	0.375	0.250	15°	.060	None					
E08K-STUCR/L-2	59767	59768	6:1	0.587	5.00	0.500	0.312	13°	.080	6 X 1mm					
E08R-STUCR/L-2	59771	59772	6:1	0.587	8.00	0.500	0.312	13°	.080	6 X 1mm	21.51	TS-25.45-6M2	T-8		
E10M-STUCR/L-2	59775	59776	6:1	0.750	6.00	0.625	0.406	10°	.125	6 X 1mm					
E10S-STUCR/L-2	59779	59780	6:1	0.750	10.00	0.625	0.406	10°	.125	6 X 1mm					
<b>Metric</b>															
E07M-H-STUCR/L-06	59753	59754	6:1	7.14	100	7	3.63	11°	1.5	None				06T101	TS-06
E08M-K-STUCR/L-06	59757	59758	6:1	8.60	125	8	4.24	8°	1.5	None					
E10M-M-STUCR/L-06	59761	59762	6:1	10.39	150	10	5.16	7°	1.5	None					
E10M-M-STUCR/L-11	59765	59766	6:1	11.59	150	10	6.35	15°	1.5	None					
E12M-K-STUCR/L-11	59769	59770	6:1	14.91	125	12	7.92	13°	2	6 X 1mm					
E12M-R-STUCR/L-11	59773	59774	6:1	14.91	200	12	7.92	13°	2	6 X 1mm	110204	TS-25.45-6M2	T-8		
E16M-M-STUCR/L-11	59777	59778	6:1	19.04	150	16	10.31	10°	3	6 X 1mm					
E16M-S-STUCR/L-11	59781	59782	6:1	19.04	250	16	10.31	10°	3	6 X 1mm					

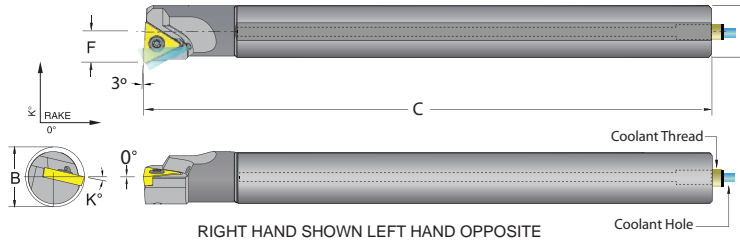
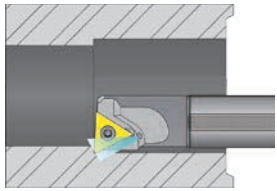


\*8:1 Boring Ratio can be achieved under favorable conditions.



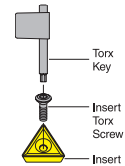
**E\_STUP R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style U - Negative 3° End Cutting Edge Angle for 11° positive triangle TP\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE

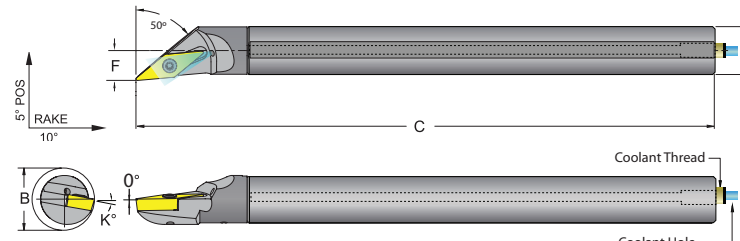
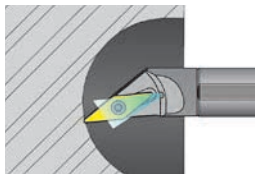
Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	TPMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E06M-STUPR/L-2	59783	59784	6:1	0.456	6.00	0.375	0.250	4°	.060	None				
E08K-STUPR/L-2	59787	59788	6:1	0.587	5.00	0.500	0.312	2°	.080	6 X 1mm	21.51	TS-25.45-6M2	T-8	
E08R-STUPR/L-2	59791	59792	6:1	0.587	8.00	0.500	0.312	2°	.080	6 X 1mm				
E10M-STUPR/L-2	59795	59796	6:1	0.750	6.00	0.625	0.406	0°	.125	6 X 1mm				
E10S-STUPR/L-2	59799	59800	6:1	0.750	10.00	0.625	0.406	0°	.125	6 X 1mm				
<b>Metric</b>														
E10M-M-STUPR/L-11	59785	59786	6:1	11.59	150	10	6.35	4°	1.5	None				
E12M-K-STUPR/L-11	59789	59790	6:1	14.91	125	12	7.92	2°	2	6 X 1mm	110204	TS-25.45-6M2	T-8	
E12M-R-STUPR/L-11	59793	59794	6:1	14.91	200	12	7.92	2°	2	6 X 1mm				
E16M-M-STUPR/L-11	59797	59798	6:1	19.04	150	16	10.31	0°	3	6 X 1mm				
E16M-S-STUPR/L-11	59801	59802	6:1	19.04	250	16	10.31	0°	3	6 X 1mm				



\*8:1 Boring Ratio can be achieved under favorable conditions.

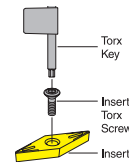
**E\_SVMC R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style M - Negative 5° Side Cutting Edge Angle for 7° positive 35° diamond VC\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	VCMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E08K-SVMCR/L-2	59803	59804	6:1	0.587	5.23	0.500	0.312	10°	.080	6 X 1mm				
E08R-SVMCR/L-2	59807	59808	6:1	0.587	8.23	0.500	0.312	10°	.080	6 X 1mm	221	TS-25.45-6M2	T-8	
E10M-SVMCR/L-2	59811	59812	6:1	0.750	6.16	0.625	0.406	10°	.125	6 X 1mm				
E10S-SVMCR/L-2	59815	59816	6:1	0.750	10.16	0.625	0.406	10°	.125	6 X 1mm				
<b>Metric</b>														
E12M-K-SVMCR/L-11	59805	59806	6:1	14.910	130.84	12	7.925	10°	2	6 X 1mm				
E12M-R-SVMCR/L-11	59809	59810	6:1	14.910	205.84	12	7.925	10°	2	6 X 1mm	110304	TS-25.45-6M2	T-8	
E16M-M-SVMCR/L-11	59813	59814	6:1	19.044	154.06	16	10.312	10°	3	6 X 1mm				
E16M-S-SVMCR/L-11	59817	59818	6:1	19.044	254.06	16	10.312	10°	3	6 X 1mm				



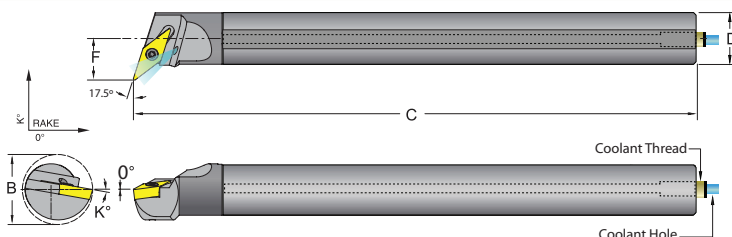
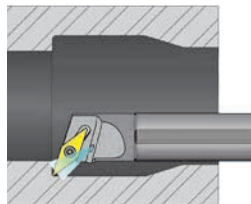
\*8:1 Boring Ratio can be achieved under favorable conditions.

**E\_SVQC R/L CARBIDE Solid Boring Bars**

Style Q - Negative 17.5° End Cutting Edge Angle for 7° positive 35° diamond VC\_\_ inserts

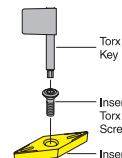
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications					Coolant		Insert Specifications			
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	VCMT Gage Insert	Insert Torx Screw	Torx Key
<b>Inch</b>													
E10M-SVQCR/L-2	59819	59820	6:1	0.844	6.00	0.625	0.500	10°	.125	6 X 1mm	221	TS-25.45-6M2	T-8
E10S-SVQCR/L-2	59823	59824	6:1	0.844	10.00	0.625	0.500	10°	.125	6 X 1mm	221	TS-25.45-6M2	T-8
<b>Metric</b>													
E16M-M-SVQCR/L-11	59821	59822	6:1	21.43	150	16	12.70	10°	3	6 X 1mm	110304	TS-25.45-6M2	T-8
E16M-S-SVQCR/L-11	59825	59826	6:1	21.43	250	16	12.70	10°	3	6 X 1mm	110304	TS-25.45-6M2	T-8



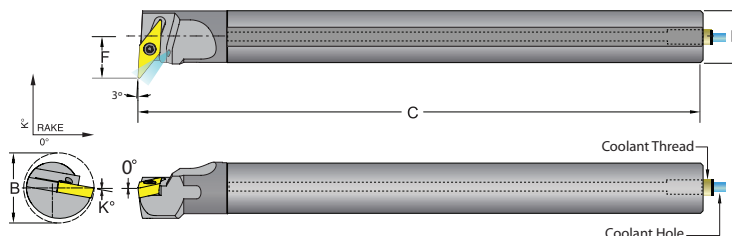
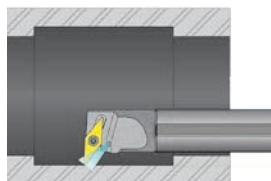
\*8:1 Boring Ratio can be achieved under favorable conditions.

**E\_SVUC R/L CARBIDE Solid Boring Bars**

Style U - Negative 3° End Cutting Edge Angle for 7° positive 35° diamond VC\_\_ inserts

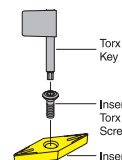
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications					Coolant		Insert Specifications			
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	VCMT Gage Insert	Insert Torx Screw	Torx Key
<b>Inch</b>													
E10M-SVUCR/L-2	59827	59828	6:1	0.844	6.00	0.625	0.500	10°	.125	6 X 1mm	221	TS-25.45-6M2	T-8
E10S-SVUCR/L-2	59831	59832	6:1	0.844	10.00	0.625	0.500	10°	.125	6 X 1mm	221	TS-25.45-6M2	T-8
<b>Metric</b>													
E16M-M-SVUCR/L-11	59829	59830	6:1	21.43	150	16	12.70	10°	3	6 X 1mm	110304	TS-25.45-6M2	T-8
E16M-S-SVUCR/L-11	59833	59834	6:1	21.43	250	16	12.70	10°	3	6 X 1mm	110304	TS-25.45-6M2	T-8



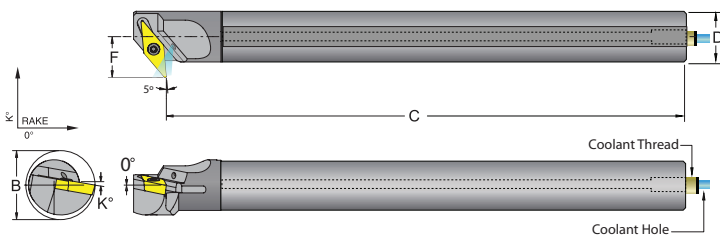
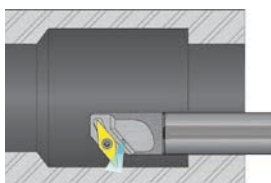
\*8:1 Boring Ratio can be achieved under favorable conditions.

**E\_SVXC R/L CARBIDE Solid Boring Bars**

Style X - Negative 5° Back Boring Cutting Edge Angle for 7° positive 35° diamond VC\_\_ inserts

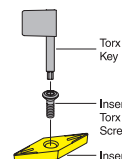
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications					Coolant		Insert Specifications			
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	VCMT Gage Insert	Insert Torx Screw	Torx Key
<b>Inch</b>													
E10M-SVXCR/L-2	59835	59836	6:1	1.0	5.76	0.625	.625	10°	.125	6 X 1mm	221	TS-25.45-6M2	T-8
E10S-SVXCR/L-2	59839	59840	6:1	1.0	9.76	0.625	.625	10°	.125	6 X 1mm	221	TS-25.45-6M2	T-8
<b>Metric</b>													
E16M-M-SVXCR/L-11	59837	59838	6:1	25.40	143.90	16	15.88	10°	3	6 X 1mm	110304	TS-25.45-6M2	T-8
E16M-S-SVXCR/L-11	59841	59842	6:1	25.40	243.90	16	15.88	10°	3	6 X 1mm	110304	TS-25.45-6M2	T-8

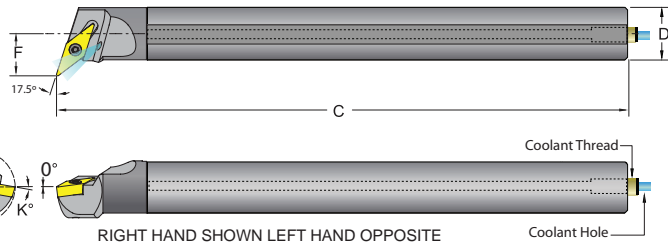
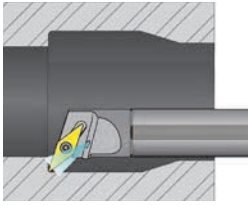


\*8:1 Boring Ratio can be achieved under favorable conditions.



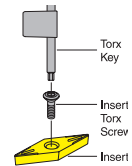
**E\_SVQP R/L CARBIDE Solid Boring Bars** **Thru Coolant** **6:1 Boring Ratio**

Style Q - Negative 17.5° End Cutting Edge Angle for 11° positive 35° diamond VP\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE

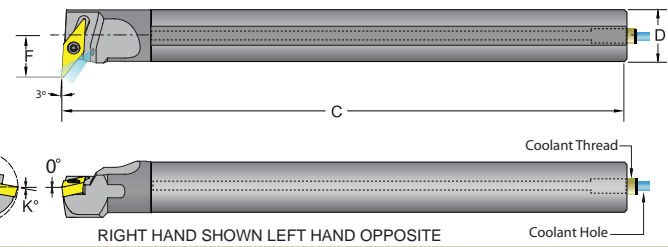
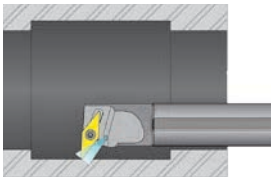
Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min.Bore B	C	D	F	K°	Hole	Thread	VPMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E10M-SVQPR/L-2	59843	59844	6:1	0.844	6.00	0.625	0.500	6°	.125	6 X 1mm	221	TS-25.45-6M2	T-8	
E10S-SVQPR/L-2	59847	59848	6:1	0.844	10.00	0.625	0.500	6°	.125	6 X 1mm	221	TS-25.45-6M2	T-8	
<b>Metric</b>														
E16M-M-SVQPR/L-11	59845	59846	6:1	21.43	150	16	12.70	6°	3	6 X 1mm	110304	TS-25.45-6M2	T-8	
E16M-S-SVQPR/L-11	59849	59850	6:1	21.43	250	16	12.70	6°	3	6 X 1mm	110304	TS-25.45-6M2	T-8	



\*8:1 Boring Ratio can be achieved under favorable conditions.

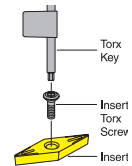
**E\_SVUP R/L CARBIDE Solid Boring Bars** **Thru Coolant** **6:1 Boring Ratio**

Style U - Negative 3° End Cutting Edge Angle for 11° positive 35° diamond VP\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE

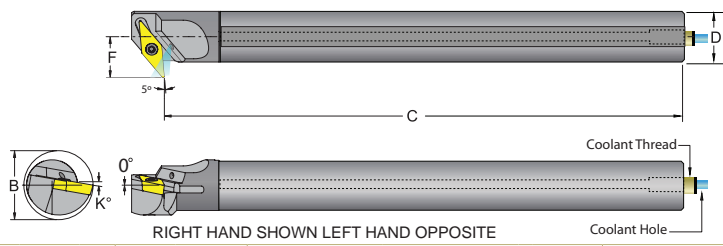
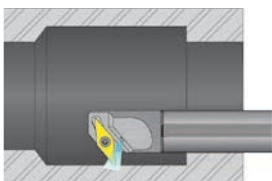
Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min.Bore B	C	D	F	K°	Hole	Thread	VPMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E10M-SVUPR/L-2	59851	59852	6:1	0.844	6.00	0.625	0.500	6°	.125	6 X 1mm	221	TS-25.45-6M2	T-8	
E10S-SVUPR/L-2	59855	59856	6:1	0.844	10.00	0.625	0.500	6°	.125	6 X 1mm	221	TS-25.45-6M2	T-8	
<b>Metric</b>														
E16M-M-SVUPR/L-11	59853	59854	6:1	21.43	150	16	12.70	6°	3	6 X 1mm	110304	TS-25.45-6M2	T-8	
E16M-S-SVUPR/L-11	59857	59858	6:1	21.43	250	16	12.70	6°	3	6 X 1mm	110304	TS-25.45-6M2	T-8	



\*8:1 Boring Ratio can be achieved under favorable conditions.

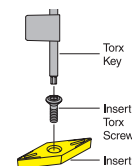
**E\_SVXP R/L CARBIDE Solid Boring Bars** **Thru Coolant** **6:1 Boring Ratio**

Style X - Negative 5° Back Boring Cutting Edge Angle for 11° positive 35° diamond VP\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min.Bore B	C	D	F	K°	Hole	Thread	VPMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E10M-SVXPR/L-2	59859	59860	6:1	1.00	5.76	0.625	.625	6°	.125	6 X 1mm	221	TS-25.45-6M2	T-8	
E10S-SVXPR/L-2	59863	59864	6:1	1.00	9.76	0.625	.625	6°	.125	6 X 1mm	221	TS-25.45-6M2	T-8	
<b>Metric</b>														
E16M-M-SVXPR/L-11	59861	59862	6:1	25.4	143.90	16	15.88	6°	3	6 X 1mm	110304	TS-25.45-6M2	T-8	
E16M-S-SVXPR/L-11	59865	59866	6:1	25.4	243.90	16	15.88	6°	3	6 X 1mm	110304	TS-25.45-6M2	T-8	

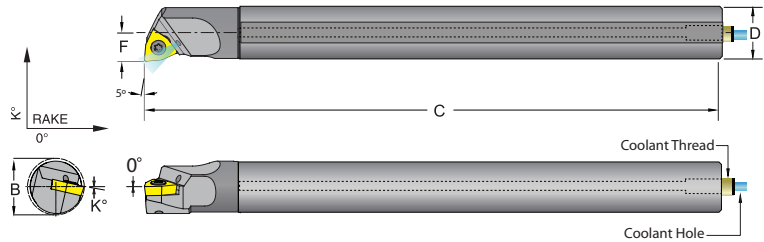
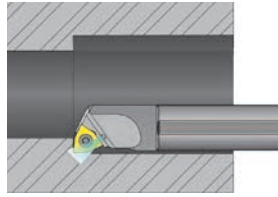


\*8:1 Boring Ratio can be achieved under favorable conditions.



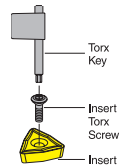
**E\_SWLCL R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style U - Negative 5° End Cutting Edge Angle for 7° positive 80° trigon WC\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	WCMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E03.0H-SWLCL/R-L-1.2	59867	59868	6:1	0.205	4.00	0.187	0.103	13°	.040	None	1.210.2	TS-06	T-6	
E03.5H-SWLCL/R-L-1.2	59871	59872	6:1	0.245	4.00	0.218	0.125	11°	.040	None				
E04H-SWLCL/R-L-1.2	59875	59876	6:1	0.270	4.00	0.250	0.135	9°	.040	None				
E05K-SWLCL/R-L-1.2	59879	59880	6:1	0.335	5.00	0.312	0.167	7°	.040	None	21.51	TS-25.45-6M2	T-8	
E06M-SWLCL/R-L-2	59883	59884	6:1	0.396	6.00	0.375	0.198	15°	.060	None				
E08K-SWLCL/R-L-2	59887	59888	6:1	0.550	5.00	0.500	0.275	13°	.080	6 X 1mm				
E08R-SWLCL/R-L-2	59891	59892	6:1	0.550	8.00	0.500	0.275	13°	.080	6 X 1mm	32.52	TS-35.6-9M1	T-15	
E10M-SWLCL/R-L-2	59895	59896	6:1	0.740	6.00	0.625	0.395	10°	.125	6 X 1mm				
E10S-SWLCL/R-L-2	59899	59900	6:1	0.740	10.00	0.625	0.395	10°	.125	6 X 1mm				
E08K-SWLCL/R-L-3	59903	59904	6:1	0.550	5.00	0.500	0.275	13°	.080	6 X 1mm	042024	TS-25.45-6M2	T-8	
E08R-SWLCL/R-L-3	59907	59908	6:1	0.550	8.00	0.500	0.275	13°	.080	6 X 1mm				
E10M-SWLCL/R-L-3	59911	59912	6:1	0.740	6.00	0.625	0.395	10°	.125	6 X 1mm				
E10S-SWLCL/R-L-3	59915	59916	6:1	0.740	10.00	0.625	0.395	10°	.125	6 X 1mm	06T308	TS-35.6-9M1	T-15	
E05M-H-SWLCL/R-L-02	59869	59870	6:1	5.21	100	5	2.62	13°	1	None				
E06M-H-SWLCL/R-L-02	59873	59874	6:1	6.22	100	6	3.18	11°	1	None				
E07M-H-SWLCL/R-L-02	59877	59878	6:1	6.86	100	7	3.43	9°	1	None	S20101	TS-06	T-6	
E08M-K-SWLCL/R-L-02	59881	59882	6:1	8.51	125	8	4.24	7°	1	None				
E10M-M-SWLCL/R-L-04	59885	59886	6:1	10.06	150	10	5.03	15°	1.5	None				
E12M-K-SWLCL/R-L-04	59889	59890	6:1	13.97	125	12	6.99	13°	2	6 X 1mm	040204	TS-25.45-6M2	T-8	
E12M-R-SWLCL/R-L-04	59893	59894	6:1	13.97	200	12	6.99	13°	2	6 X 1mm				
E16M-M-SWLCL/R-L-04	59897	59898	6:1	18.80	150	16	10.03	10°	3	6 X 1mm				
E16M-S-SWLCL/R-L-04	59901	59902	6:1	18.80	250	16	10.03	10°	3	6 X 1mm	06T308	TS-35.6-9M1	T-15	
E12M-K-SWLCL/R-L-06	59905	59906	6:1	13.97	125	12	6.99	13°	2	6 X 1mm				
E12M-R-SWLCL/R-L-06	59909	59910	6:1	13.97	200	12	6.99	13°	2	6 X 1mm				
E16M-M-SWLCL/R-L-06	59913	59914	6:1	18.80	150	16	10.03	10°	3	6 X 1mm	06T308	TS-35.6-9M1	T-15	
E16M-S-SWLCL/R-L-06	59917	59918	6:1	18.80	250	16	10.03	10°	3	6 X 1mm				

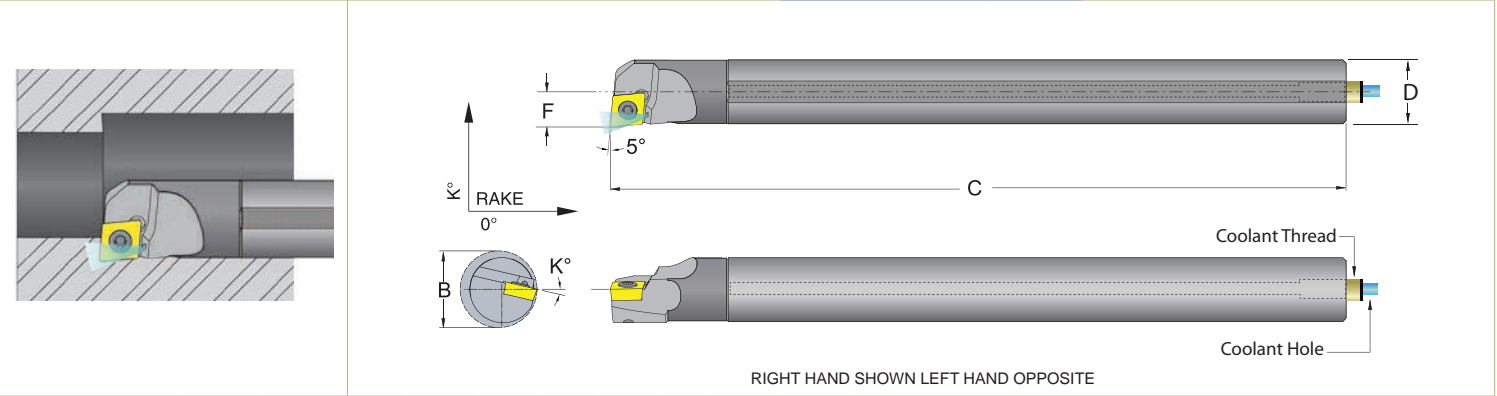


\*8:1 Boring Ratio can be achieved under favorable conditions.

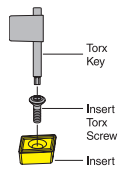


**E\_SCLC R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style L - Negative 5° End & Side Cutting Edge Angle for 7° positive 80°diamond CC\_\_ inserts



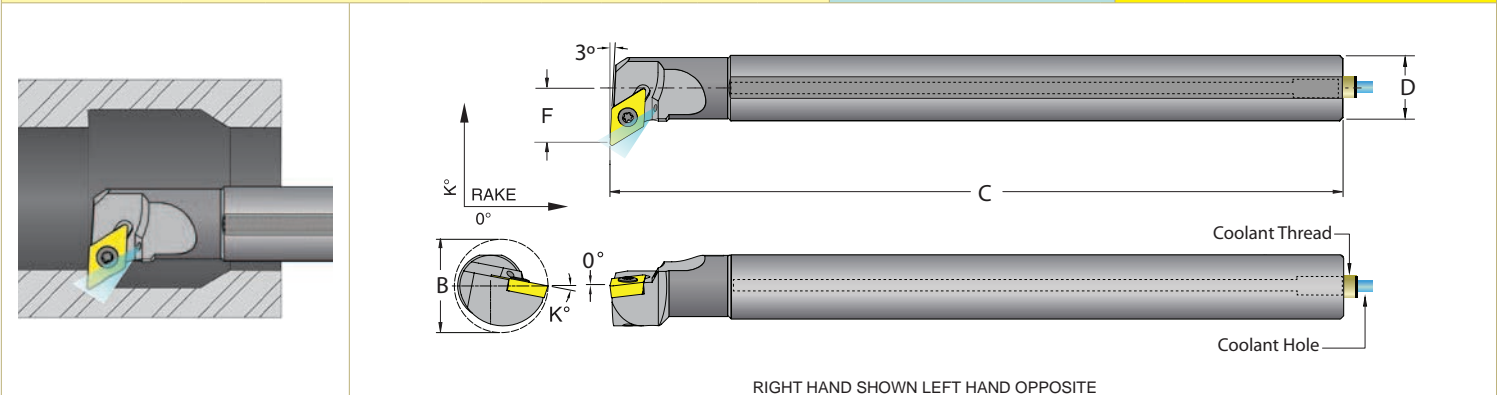
Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	CCMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E12Q-SCLCR/L-3	59967	59968	6:1	0.930	7.000	0.750	0.500	8°	0.157	1/8"-27	32.52	TS-35.6-9M1	T-15	
E12S-SCLCR/L-3	59969	59970	6:1	0.930	10.00	0.750	0.500	8°	0.157	1/8"-27				
E16R-SCLCR/L-3	59971	59972	6:1	1.200	8.000	1.000	0.625	7°	0.197	1/8"-27				
E16T-SCLCR/L-3	59973	59974	6:1	1.200	12.00	1.000	0.625	7°	0.197	1/8"-27	432	TS-5.8-10M1	T-20	
E20U-SCLCR/L-4	59975	59976	6:1	1.470	14.00	1.250	0.765	5°	0.197	1/8"-27				
<b>Metric</b>														
E20M-Q-SCLCR/L-09	59977	59978	6:1	23.6	180	20	12.70	8°	4	None	09T308	TS-35.6-9M1	T-15	
E20M-S-SCLCR/L-09	59979	59980	6:1	23.6	250	20	12.70	8°	4	None				
E25M-R-SCLCR/L-09	59981	59982	6:1	30.5	200	25	15.88	7°	5	None	120408	TS-5.8-10M1	T-20	
E25M-T-SCLCR/L-09	59983	59984	6:1	30.5	300	25	15.88	7°	5	None				
E32M-U-SCLCR/L-12	59985	59986	6:1	37.3	350	32	19.43	5°	5	None				



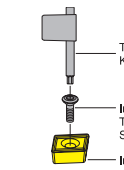
\*8:1 Boring Ratio can be achieved under favorable conditions.

**E\_SDUC R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style U - Negative 3° End Cutting Edge Angle for 7° positive 55° diamond DC\_\_ inserts



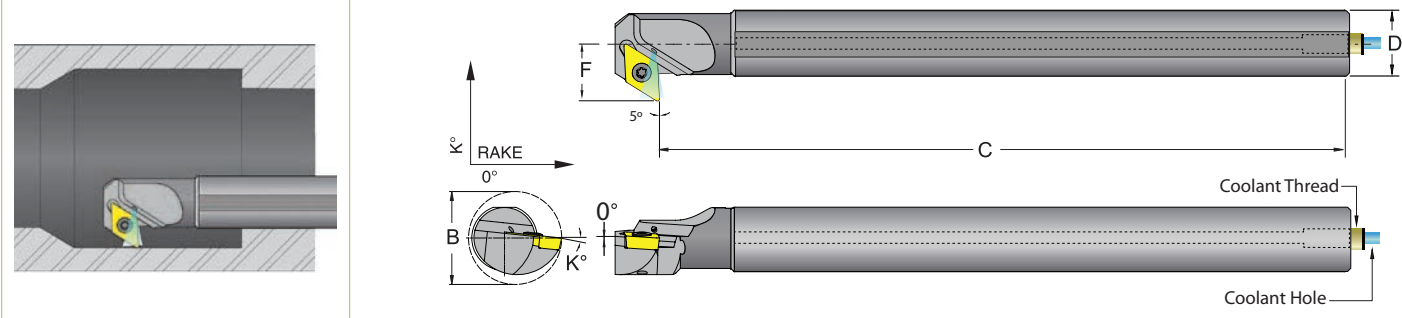
Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	DCMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E12Q-SDUCR/L-3	59987	59988	6:1	1.050	7.000	0.750	0.562	6°	0.157	1/8"-27	32.52	TS-35.6-9M1	T-15	
E12S-SDUCR/L-3	59989	59990	6:1	1.050	10.00	0.750	0.562	6°	0.157	1/8"-27				
E16R-SDUCR/L-3	59991	59992	6:1	1.300	8.000	1.000	0.750	4°	0.197	1/8"-27				
E16T-SDUCR/L-3	59993	59994	6:1	1.300	12.00	1.000	0.750	4°	0.197	1/8"-27	11T308	TS-35.6-9M1	T-15	
E20U-SDUCR/L-3	59995	59996	6:1	1.750	14.00	1.250	0.875	4°	0.197	1/8"-27				
<b>Metric</b>														
E20M-Q-SDUCR/L-11	59997	59998	6:1	26.7	180	20	14.27	6°	4	1/8"-27	11T308	TS-35.6-9M1	T-15	
E20M-S-SDUCR/L-11	59999	60000	6:1	26.7	250	20	14.27	6°	4	1/8"-27				
E25M-R-SDUCR/L-11	60001	60002	6:1	33.0	200	25	19.05	4°	5	1/8"-27	120408	TS-5.8-10M1	T-20	
E25M-T-SDUCR/L-11	60003	60004	6:1	33.0	300	25	19.05	4°	5	1/8"-27				
E32M-U-SDUCR/L-11	60005	60006	6:1	44.5	350	32	22.23	4°	5	1/8"-27				



\*8:1 Boring Ratio can be achieved under favorable conditions.

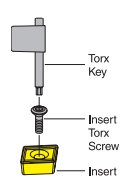
**E\_SDXC R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style X - Negative 5° Back Boring Cutting Edge Angle for 7° positive 55° diamond DC\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE

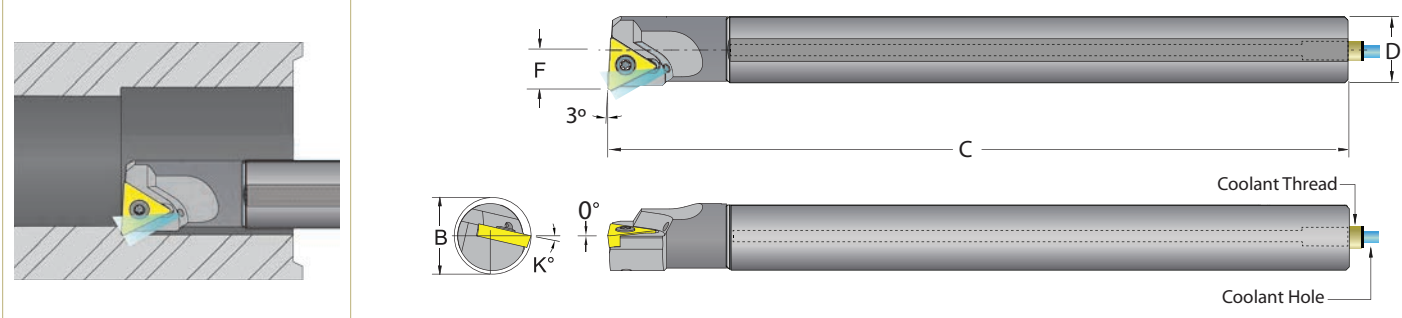
Boring Bar Description	Part No. 733101-		Carbide Bar Specifications						Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	DCMT Gage Insert	Insert Torx Screw	Torx Key
<b>Inch</b>													
E12Q-SDXCR/L-3	60007	60008	6:1	0.980	7.000	0.750	0.562	5°	0.157	1/8"-27			
E12S-SDXCR/L-3	60009	60010	6:1	0.980	10.00	0.750	0.562	5°	0.157	1/8"-27			
E16R-SDXCR/L-3	60011	60012	6:1	1.300	8.000	1.000	0.750	3°	0.197	1/8"-27	32.52	TS-35.6-9M1	T-15
E16T-SDXCR/L-3	60013	60014	6:1	1.300	12.00	1.000	0.750	3°	0.197	1/8"-27			
E20U-SDXCR/L-3	60015	60016	6:1	1.600	14.00	1.250	1.000	3°	0.197	1/8"-27			
<b>Metric</b>													
E20M-Q-SDXCR/L-11	60017	60018	6:1	24.9	180	20	14.27	5°	4	1/8"-27			
E20M-S-SDXCR/L-11	60019	60020	6:1	24.9	250	20	14.27	5°	4	1/8"-27			
E25M-R-SDXCR/L-11	60021	60022	6:1	33.0	200	25	19.05	3°	5	1/8"-27	11T308	TS-35.6-9M1	T-15
E25M-T-SDXCR/L-11	60023	60024	6:1	33.0	300	25	19.05	3°	5	1/8"-27			
E32M-U-SDXCR/L-11	60025	60026	6:1	40.6	350	32	25.40	3°	5	1/8"-27			



\*8:1 Boring Ratio can be achieved under favorable conditions.

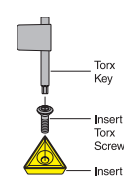
**E\_STUC R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style U - Negative 3° End Cutting Edge Angle for 7° positive triangle TC\_\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications						Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	TCMT Gage Insert	Insert Torx Screw	Torx Key
<b>Inch</b>													
E12Q-STUCR/L-3	60027	60028	6:1	0.930	7.000	0.750	0.500	8°	0.157	1/8"-27			
E12S-STUCR/L-3	60029	60030	6:1	0.930	10.00	0.750	0.500	8°	0.157	1/8"-27			
E16R-STUCR/L-3	60031	60032	6:1	1.200	8.000	1.000	0.625	7°	0.197	1/8"-27	32.52	TS-35.6-9M1	T-15
E16T-STUCR/L-3	60033	60034	6:1	1.200	12.00	1.000	0.625	7°	0.197	1/8"-27			
E20U-STUCR/L-3	60035	60036	6:1	1.470	14.00	1.250	0.875	7°	0.197	1/8"-27			
<b>Metric</b>													
E20M-Q-STUCR/L-16	60037	60038	6:1	23.6	180	20	12.70	8°	4	1/8"-27			
E20M-S-STUCR/L-16	60039	60040	6:1	23.6	250	20	12.70	8°	4	1/8"-27			
E25M-R-STUCR/L-16	60041	60042	6:1	30.5	200	25	15.88	7°	5	1/8"-27	06T308	TS-35.6-9M1	T-15
E25M-T-STUCR/L-16	60043	60044	6:1	30.5	300	25	15.88	7°	5	1/8"-27			
E32M-U-STUCR/L-16	60045	60046	6:1	37.3	350	32	22.23	7°	5	1/8"-27			



\*8:1 Boring Ratio can be achieved under favorable conditions.

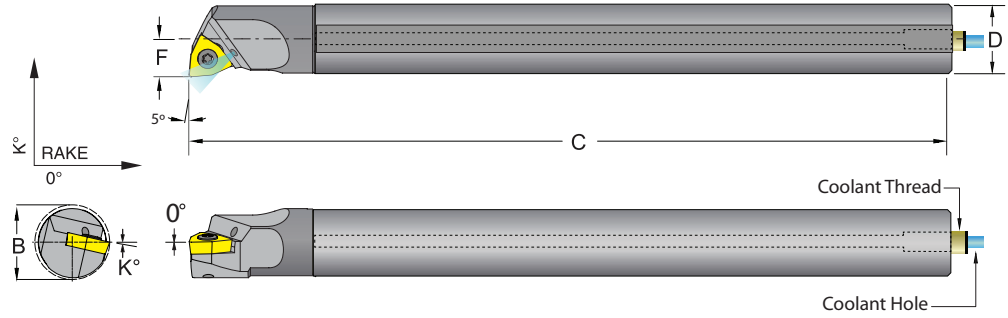
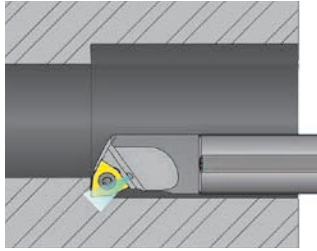


**E\_SWLC R/L CARBIDE Solid Boring Bars**

Style U - Negative 5° End Cutting Edge Angle for 7° positive 80° trigon WC\_\_ inserts

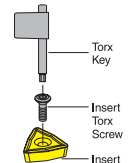
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	WCMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>														
E12Q-SWICR/L-3	60047	60048	6:1	0.930	7.000	0.750	0.500	10°	0.157	1/8"-27	32.52	TS-35.6-9M1	T-15	
E12S-SWICR/L-3	60049	60050	6:1	0.930	10.00	0.750	0.500	10°	0.157	1/8"-27				
E16R-SWICR/L-3	60051	60052	6:1	1.200	8.000	1.000	0.625	5°	0.197	1/8"-27				
E16T-SWICR/L-3	60053	60054	6:1	1.200	12.00	1.000	0.625	5°	0.197	1/8"-27	432	TS-5.8-10M1	T-20	
E20U-SWICR/L-4	60055	60056	6:1	1.530	14.00	1.250	0.765	5°	0.197	1/8"-27				
<b>Metric</b>														
E20W-Q-SWLCR/L-06	60057	60058	6:1	23.6	180	20	12.70	10°	4	1/8"-27	06T308	TS-35.6-9M1	T-15	
E20W-S-SWLCR/L-06	60059	60060	6:1	23.6	250	20	12.70	10°	4	1/8"-27				
E25W-R-SWLCR/L-06	60061	60062	6:1	30.5	200	25	15.88	5°	5	1/8"-27				
E25W-T-SWLCR/L-06	60063	60064	6:1	30.5	300	25	15.88	5°	5	1/8"-27	080408	TS-5.8-10M1	T-20	
E32W-U-SWLCR/L-08	60065	60066	6:1	38.9	350	32	19.43	5°	5	1/8"-27				

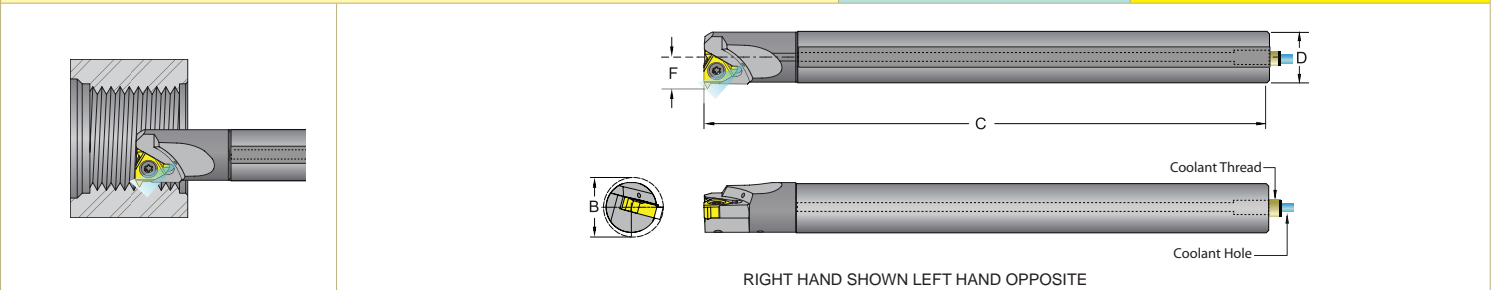


\*8:1 Boring Ratio can be achieved under favorable conditions.

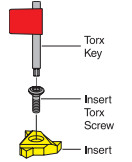




**E\_SN R/L CARBIDE Solid Threading Bar** Thru Coolant 6:1 Boring Ratio  
 Internal Small Shank Laydown Bar for Laydown Inserts

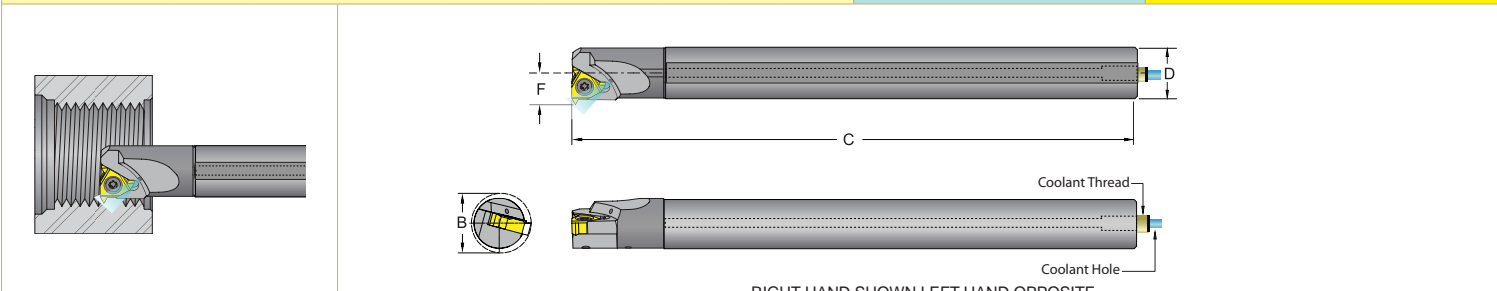


Threading Bar Description	Part No. 733101-		Carbide Bar Specifications					Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	Hole	Thread	Laydown Gage Insert	Insert Torx Screw	Torx Key
<b>Inch</b>												
E03.5H-SNR/L-06	59919	59920	6:1	0.249	4.00	0.218	0.129	.040	None	06-A60	TS-06	T-6
E04H-SNR/L-06	59923	59924	6:1	0.307	4.00	0.250	0.165	.040	None	06-A60	TS-06	T-6
E05K-SNR/L-08	59927	59928	6:1	0.378	5.00	0.312	0.215	.040	None	08-A60	TS-08	T-8
<b>Metric</b>												
E06M-H-SNR/L-06	59921	59922	6:1	6.32	100	6	3.28	1	None	06-A60	TS-06	T-6
E07M-H-SNR/L-06	59925	59926	6:1	7.80	100	7	4.19	1	None	06-A60	TS-06	T-6
E08M-K-SNR/L-08	59929	59930	6:1	9.60	125	8	5.46	1	None	08-A60	TS-08	T-8

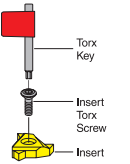


\*8:1 Boring Ratio can be achieved under favorable conditions.

**E\_SN R/L CARBIDE Solid Threading Bar** Thru Coolant 6:1 Boring Ratio  
 Internal Laydown Bar for Laydown Inserts



Threading Bar Description	Part No. 733101-		Carbide Bar Specifications					Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	B Min. Bore	C	D	F	Hole	Thread	Laydown Gage Insert	Insert Torx Screw	Torx Key
<b>Inch</b>												
E06M-SNR/L-H11	59931	59932	6:1	0.500	6.00	0.375	0.250	.060	None			
E08K-SNR/L-H11	59935	59936	6:1	0.590	5.00	0.500	0.315	.080	6 X 1mm	11-A60	TS-25.45-6M2	T-8
E08R-SNR/L-H11	59939	59940	6:1	0.590	8.00	0.500	0.315	.080	6 X 1mm			
E10M-SNR/L-H16	59943	59944	6:1	0.750	6.00	0.625	0.406	.125	6 X 1mm	16-A60	TS-35.6-9M1	T-15
E10S-SNR/L-H16	59947	59948	6:1	0.750	10.00	0.625	0.406	.125	6 X 1mm			
<b>Metric</b>												
E10M-M-SNR/L-H11	59933	59934	6:1	12.70	150	10	6.35	1.5	None			
E12M-K-SNR/L-H11	59937	59938	6:1	14.99	125	12	8.00	2	6 X 1mm	11-A60	TS-25.45-6M2	T-8
E12M-R-SNR/L-H11	59941	59942	6:1	14.99	200	12	8.00	2	6 X 1mm			
E16M-M-SNR/L-H16	59945	59946	6:1	19.04	150	16	10.31	3	6 X 1mm	16-A60	TS-35.6-9M1	T-15
E16M-S-SNR/L-H16	59949	59950	6:1	19.04	250	16	10.31	3	6 X 1mm			



\*8:1 Boring Ratio can be achieved under favorable conditions.



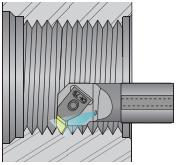
**E\_NE R/L CARBIDE Solid Threading & Grooving Bar**

Style E- Internal DorNotch Bar for threading and grooving DorNotch inserts

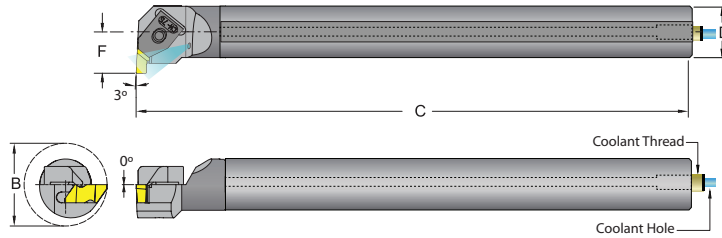
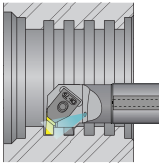
Thru Coolant

6:1 Boring Ratio

**Threading**

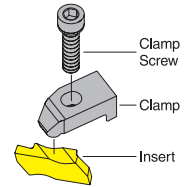


**Grooving**



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Threading Bar Description	Part No. 733101-		Carbide Bar Specifications						Coolant		Insert Specifications		
	R.H.	L.H.	Boring Ratio*	B Min.Bore	C	D	F	Hole	Thread	DorNotch Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>													
E08K-NER/L-2	59951	59952	6:1	0.830	5.12	0.500	0.470	.080	6 X 1mm	*NG-2L	*CM-74	S-310M	
E08R-NER/L-2	59955	59956	6:1	0.830	8.12	0.500	0.470	.080	6 X 1mm	**NG-2R	**CM-75	S-310M	
E10M-NER/L-2	59959	59960	6:1	1.000	6.00	0.625	0.500	.125	6 X 1mm	*NG-2L	*CM-74	S-310M	
E10S-NER/L-2	59963	59964	6:1	1.000	10.00	0.625	0.500	.125	6 X 1mm	**NG-2R	**CM-75	S-310M	
<b>Metric</b>													
E12M-K-NER/L-2	59953	59954	6:1	21.08	128.05	12	11.94	2	6 X 1mm	*NG-2L	*CM-74	S-310M	
E12M-R-NER/L-2	59957	59958	6:1	21.08	203.05	12	11.94	2	6 X 1mm	**NG-2R	**CM-75	S-310M	
E16M-M-NER/L-2	59961	59962	6:1	25.40	150.00	16	12.70	3	6 X 1mm	*NG-2L	*CM-74	S-310M	
E16M-S-NER/L-2	59965	59966	6:1	25.40	250.00	16	12.70	3	6 X 1mm	**NG-2R	**CM-75	S-310M	



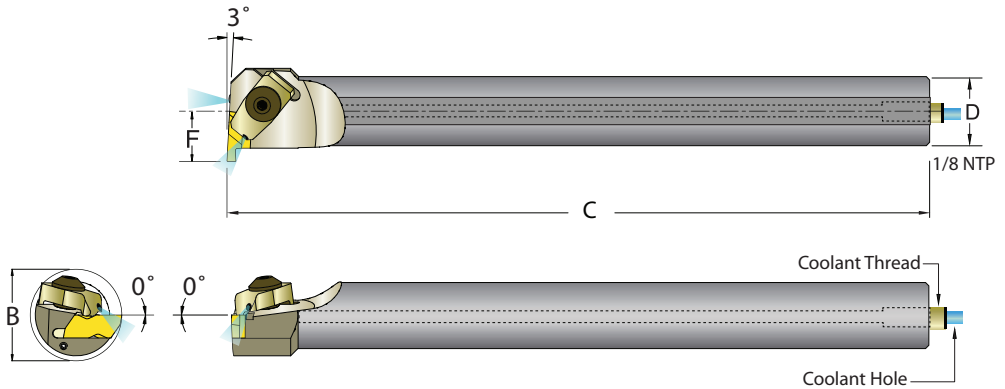
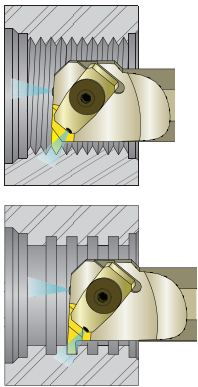
\*8:1 Boring Ratio can be achieved under favorable conditions.

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



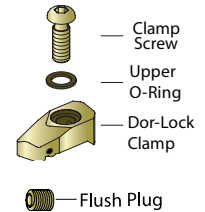
**E-ADNE R/L Carbide Threading Bar** Thru Coolant 6:1 Boring Ratio

Style N-for DorNotch Threading Inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE. \* FOR RIGHT HAND HOLDER \*\* FOR LEFT HAND HOLDER

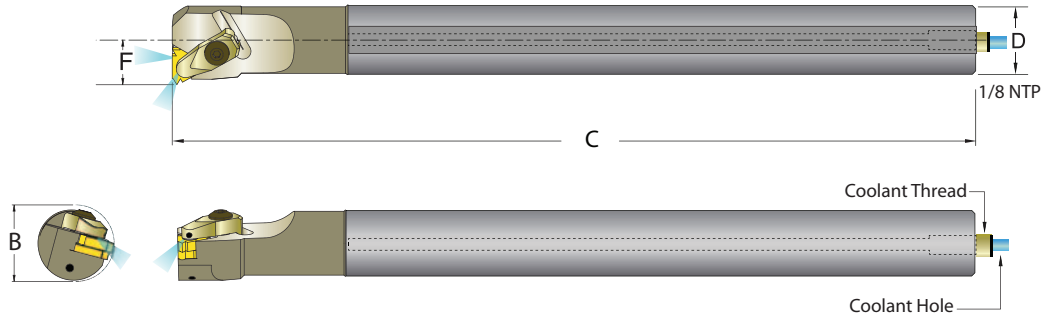
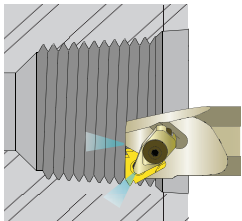
Boring Bar	Part No. 733101-		Carbide Bar Specifications					Coolant		Insert Specifications				
	Description	R.H.	L.H.	Boring Ratio*	Min.Bore B	C	D	F	Hole	Thread	LayDown Gage Insert	Seat	Dor-Lock Clamp	Clamp Screw
<b>Inch</b>														
E12Q-ADNER/L-2	60169	60170	6:1	1.125	7.000	0.750	0.562	0.157	1/8"-27	NG-2L*	NG-2R**	none	CM-75* CM74**	S-310M
E12S-ADNER/L-2	60171	60172	6:1	1.125	10.000	0.750	0.562	0.157	1/8"-27	NG-2L*	NG-2R**	none	CM-75* CM74**	S-310M
E16R-ADNER/L-3	60173	60174	6:1	1.380	8.000	1.000	0.690	0.197	1/8"-27	NG-3L*	NG-3R**	none	JSLC-HP73* JSLC-HP72**	JSCS-04
E16T-ADNER/L-3	60175	60176	6:1	1.380	12.000	1.000	0.690	0.197	1/8"-27	NG-3L*	NG-3R**	none	JSLC-HP73* JSLC-HP72**	JSCS-04
E20U-ADNER/L-3	60177	60178	6:1	1.750	14.000	1.250	0.880	0.197	1/8"-27	NG-3L*	NG-3R**	none	JSLC-HP73* JSLC-HP72**	JSCS-04
<b>Metric</b>														
E20M-Q-ADNER/L-2	60179	60180	6:1	28.6	180	20	14.27	4	1/8"-27	NG-2L*	NG-2R**	none	CM-75* CM74**	S-310M
E20M-S-ADNER/L-2	60181	60182	6:1	28.6	250	20	14.27	4	1/8"-27	NG-2L*	NG-2R**	none	CM-75* CM74**	S-310M
E25M-R-ADNER/L-3	60183	60184	6:1	35.1	200	25	17.53	5	1/8"-27	NG-3L*	NG-3R**	none	JSLC-HP73* JSLC-HP72**	JSCS-04
E25M-T-ADNER/L-3	60185	60186	6:1	35.1	300	25	17.53	5	1/8"-27	NG-3L*	NG-3R**	none	JSLC-HP73* JSLC-HP72**	JSCS-04
E32M-U-ADNER/L-3	60187	60188	6:1	44.5	350	32	22.35	5	1/8"-27	NG-3L*	NG-3R**	none	JSLC-HP73* JSLC-HP72**	JSCS-04



\*8:1 Boring Ratio can be achieved under favorable conditions.

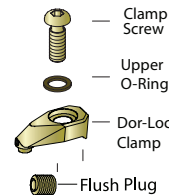
**E-ADLN R/L Carbide Threading Bar** Thru Coolant 6:1 Boring Ratio

Style N-for LayDown Threading Inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE. \*FOR RIGHT HAND BAR \*\* FOR LEFT HAND BAR

Boring Bar	Part No. 733101-		Carbide Bar Specifications					Coolant		Insert Specifications					
	Description	R.H.	L.H.	Boring Ratio*	Min.Bore B	C	D	F	Hole	Thread	LayDown Gage Insert	Seat	Insert or Seat Screw	Dor-Lock Clamp	Clamp Screw
<b>Inch</b>															
E12Q-ADLNR-16	60145	60146	6:1	1.120	7.000	0.750	0.520	0.157	1/8"-27						
E12S-ADLNR-16	60147	60148	6:1	1.120	10.000	0.750	0.520	0.157	1/8"-27						
E16R-ADLNR-16	60149	60150	6:1	1.375	8.000	1.000	0.650	0.197	1/8"-27	16-G60	GXE/I-16	TS-3.5-7M1	JSLC-HP16R* JSLC-HP16L**	JSCS-03	
E16T-ADLNR-16	60151	60152	6:1	1.375	12.000	1.000	0.650	0.197	1/8"-27	16-G60	GXE/I-16	TS-3.5-7M1	JSLC-HP16R* JSLC-HP16L**	JSCS-03	
E20U-ADLNR-16	60153	60154	6:1	1.620	14.000	1.250	0.780	0.197	1/8"-27	22-N60	NXE/I-22	TS-45.75-15M1	JSLC-HPD4	JSCS-04	
E20U-ADLNR-22	60155	60156	6:1	1.750	14.000	1.250	0.840	0.197	1/8"-27	22-N60	NXE/I-22	TS-45.75-15M1	JSLC-HPD4	JSCS-04	
<b>Metric</b>															
E20M-Q-ADLNR-16	60157	60158	6:1	28.4	180	20	13.2	4	1/8"-27						
E20M-S-ADLNR-16	60159	60160	6:1	28.4	250	20	13.2	4	1/8"-27						
E25M-R-ADLNR-16	60161	60162	6:1	34.9	200	25	16.5	5	1/8"-27	16-G60	GXE/I-16	TS-3.5-7M1	JSLC-HP16R* JSLC-HP16L**	JSCS-03	
E25M-T-ADLNR-16	60163	60164	6:1	34.9	300	25	16.5	5	1/8"-27	16-G60	GXE/I-16	TS-3.5-7M1	JSLC-HP16R* JSLC-HP16L**	JSCS-03	
E32M-U-ADLNR-16	60165	60166	6:1	41.1	350	32	19.8	5	1/8"-27	22-N60	NXE/I-22	TS-45.75-15M1	JSLC-HPD4	JSCS-04	
E32M-U-ADLNR-22	60167	60168	6:1	44.5	350	32	21.3	5	1/8"-27	22-N60	NXE/I-22	TS-45.75-15M1	JSLC-HPD4	JSCS-04	



\*8:1 Boring Ratio can be achieved under favorable conditions.

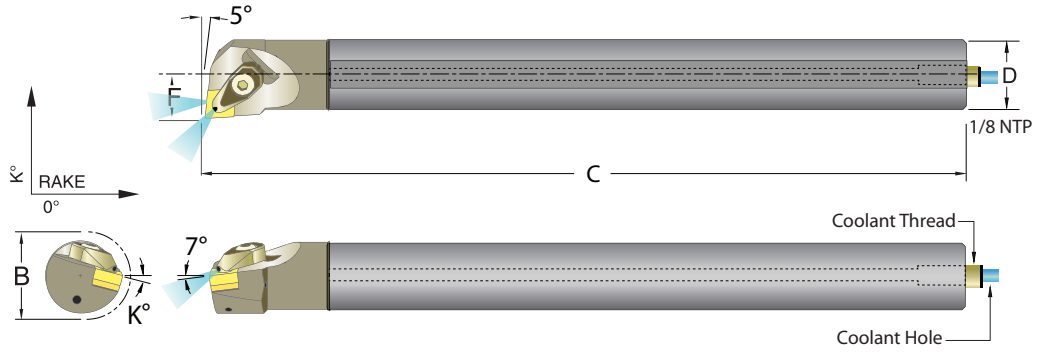
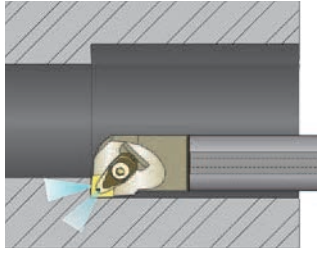


**E\_ADCLN R/L CARBIDE Solid Boring Bars**

Style L - Negative 5° side & end cutting lead angle for negative 80° diamond CNM\_inserts

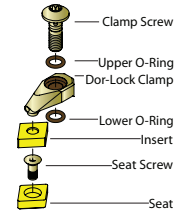
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications						Coolant		Insert Specifications			
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	CNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp
<b>Inch</b>														
E16R-ADCLNR/L-4	60067	60068	6:1	1.280	8.000	1.000	0.640	14°	0.197	1/8"-27				
E16T-ADCLNR/L-4	60069	60070	6:1	1.280	12.000	1.000	0.640	14°	0.197	1/8"-27	432	ICSN-433	SM-S4	JSLC-HPCTW-4N
E20U-ADCLNR/L-4	60071	60072	6:1	1.530	14.000	1.250	0.765	14°	0.197	1/8"-27				
<b>Metric</b>														
E25M-R-ADCLNR/L-12	60073	60074	6:1	32.5	200	25	16.26	14°	5	1/8"-27				
E25M-T-ADCLNR/L-12	60075	60076	6:1	32.5	300	25	16.26	14°	5	1/8"-27	120408	ICSN-433	SM-S4	JSLC-HPCTW-4N
E32M-U-ADCLNR/L-12	60077	60078	6:1	38.9	350	32	19.43	14°	5	1/8"-27				



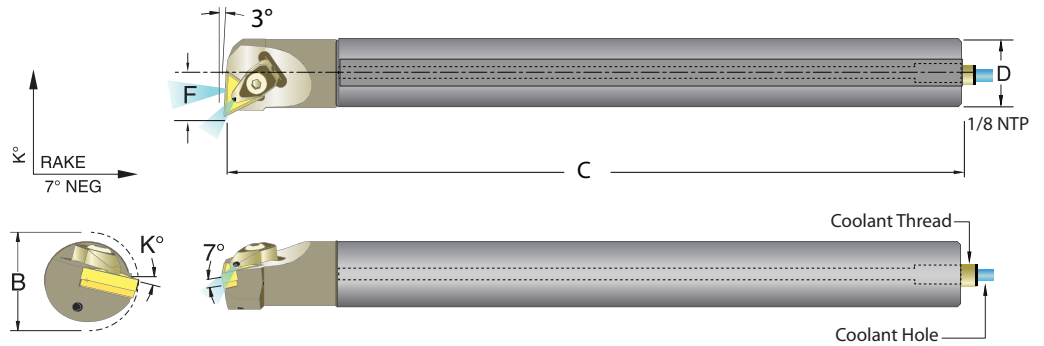
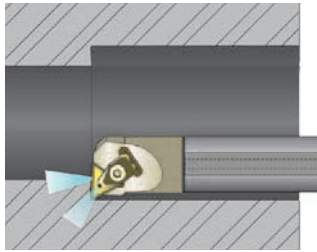
\*8:1 Boring Ratio can be achieved under favorable conditions.

**E\_ADTURN R/L CARBIDE Solid Boring Bars**

Style U - Negative 3° end cutting lead angle for negative triangle TNM\_inserts

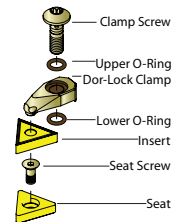
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE. \*RIGHT CLAMP FOR RIGHT HAND TOOLHOLDER. LEFT CLAMP FOR LEFT HAND TOOLHOLDER

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications						Coolant		Insert Specifications			
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	TNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp
<b>Inch</b>														
E16R-ADTURN/L-3	60079	60080	6:1	1.280	8.000	1.000	0.640	14°	0.197	1/8"-27				
E16T-ADTURN/L-3	60081	60082	6:1	1.280	12.000	1.000	0.640	14°	0.197	1/8"-27	332	ITSN-322	SM-S3	JSLC-HPDT3-BR/L
E20U-ADTURN/L-3	60083	60084	6:1	1.530	14.000	1.250	0.765	14°	0.197	1/8"-27				
<b>Metric</b>														
E25M-R-ADTURN/L-16	60085	60086	6:1	32.5	200	25	16.26	14°	5	1/8"-27				
E25M-T-ADTURN/L-16	60087	60088	6:1	32.5	300	25	16.26	14°	5	1/8"-27	160408	ITSN-322	SM-S3	JSLC-HPDT3-BR/L
E32M-U-ADTURN/L-16	60089	60090	6:1	38.9	350	32	19.43	14°	5	1/8"-27				

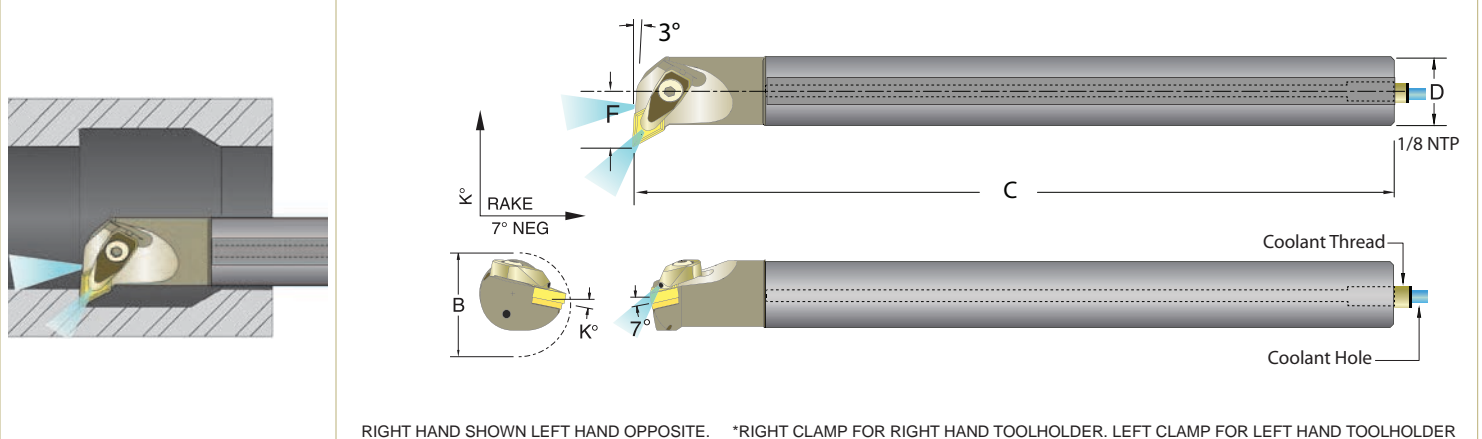


\*8:1 Boring Ratio can be achieved under favorable conditions.



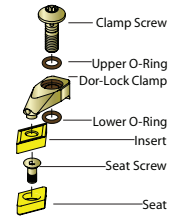
**E\_ADDUN R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Negative 3° end cutting lead angle for negative 55° diamond DNM\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE. \*RIGHT CLAMP FOR RIGHT HAND TOOLHOLDER. LEFT CLAMP FOR LEFT HAND TOOLHOLDER

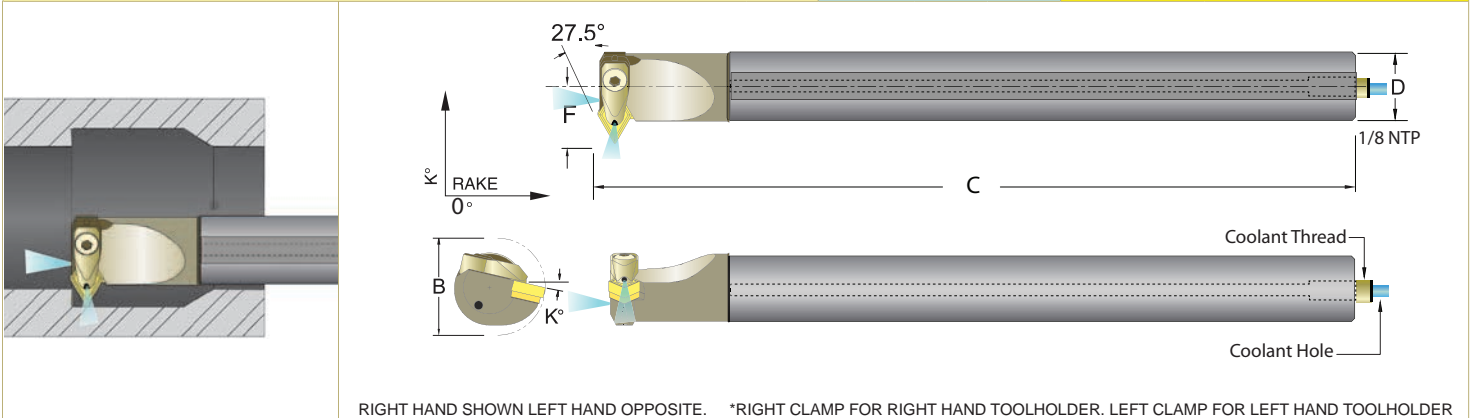
Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications			
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	DNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	
<b>Inch</b>															
E16R-ADDUNR/L-3	60093	60094	6:1	1.300	8.000	1.000	0.750	11°	0.197	1/8"-27	332	IDSN-322	SM-D3	JSLC-HPDT3-BR/L	
E16T-ADDUNR/L-3	60095	60096	6:1	1.300	12.00	1.000	0.750	11°	0.197	1/8"-27					
E20U-ADDUNR/L-4	60097	60098	6:1	2.000	14.00	1.250	1.000	11°	0.197	1/8"-27	432	IDSN-433	SM-M4	JSLC-HPD4	
<b>Metric</b>															
E25M-R-ADDUNR/L-11	60099	60100	6:1	33.0	200	25	19.05	11°	5	1/8"-27	110408	IDSN-322	SM-D3	JSLC-HPDT3-BR/L	
E25M-T-ADDUNR/L-11	60101	60102	6:1	33.0	300	25	19.05	11°	5	1/8"-27					
E32M-U-ADDUNR/L-15	60107	60108	6:1	50.8	350	32	25.40	11°	5	1/8"-27	150408	IDSN-433	SM-M4	JSLC-HPD4	



\*8:1 Boring Ratio can be achieved under favorable conditions.

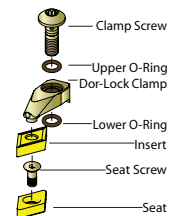
**E\_ADDPN R/L CARBIDE Solid Boring Bars** Thru Coolant 6:1 Boring Ratio

Style P- Negative 27.5° end cutting lead angle for negative 55° diamond DNM\_ inserts



RIGHT HAND SHOWN LEFT HAND OPPOSITE. \*RIGHT CLAMP FOR RIGHT HAND TOOLHOLDER. LEFT CLAMP FOR LEFT HAND TOOLHOLDER

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications							Coolant		Insert Specifications			
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	DNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	
<b>Inch</b>															
E16R-ADDPNR/L-3	60109	60110	6:1	1.500	8.000	1.000	0.750	13°	0.197	1/8"-27	332	IDSN-322	SM-D3	JSLC-HPDT3-BR/L	
E16T-ADDPNR/L-3	60111	60112	6:1	1.500	12.00	1.000	0.750	13°	0.197	1/8"-27					
E20U-ADDPNR/L-4	60113	60114	6:1	1.750	14.00	1.250	1.000	13°	0.197	1/8"-27	432	IDSN-433	SM-M4	JSLC-HPD4	
<b>Metric</b>															
E25M-R-ADDPNR/L-11	60115	60116	6:1	38.1	200	25	19.05	13°	5	1/8"-27	110408	IDSN-322	SM-D3	JSLC-HPDT3-BR/L	
E25M-T-ADDPNR/L-11	60117	60118	6:1	38.1	300	25	19.05	13°	5	1/8"-27					
E32M-U-ADDPNR/L-15	60119	60120	6:1	44.5	350	32	25.40	13°	5	1/8"-27	150408	IDSN-433	SM-M4	JSLC-HPD4	



\*8:1 Boring Ratio can be achieved under favorable conditions.

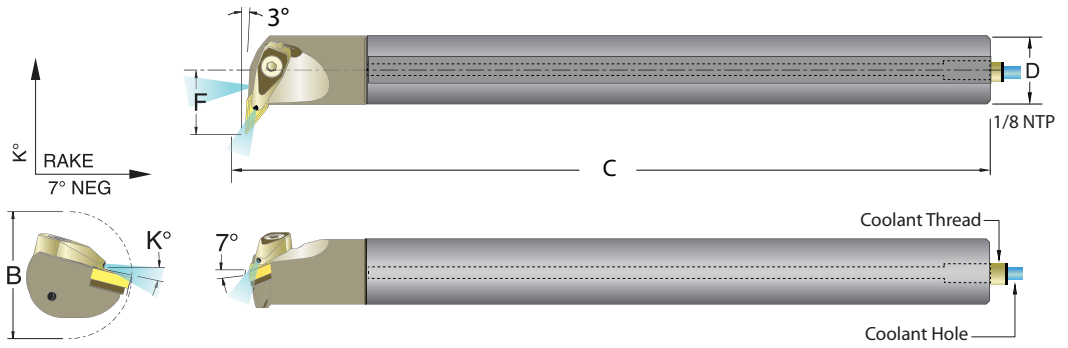
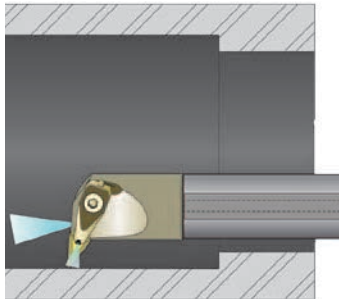


**E\_ADVUN R/L CARBIDE Solid Boring Bars**

Style U - Negative 3° side cutting lead angle for negative 35° diamond VNM\_ inserts

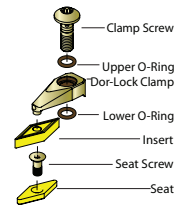
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE. \*RIGHT CLAMP FOR RIGHT HAND TOOLHOLDER. LEFT CLAMP FOR LEFT HAND TOOLHOLDER

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications						Coolant		Insert Specifications			
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	VNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp
<b>Inch</b>														
E20U-ADVUNR/L-3	60121	60122	6:1	2.250	14.00	1.250	1.125	14°	0.197	1/8"-27	332	IVSN-322	SM-M3-V	JSLC-HPV3
<b>Metric</b>														
E32M-U-ADVUNR/L-16	60123	60124	6:1	45.0	350	32	28.58	14°	5	1/8"-27	160408	IVSN-322	SM-M3-V	JSLC-HPV3



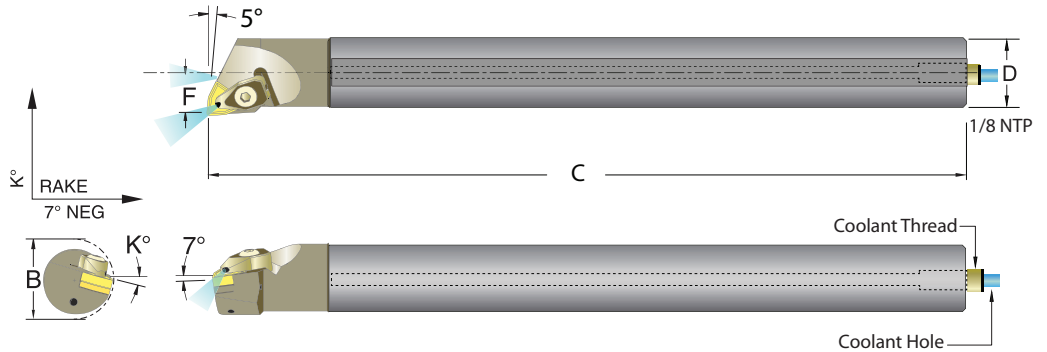
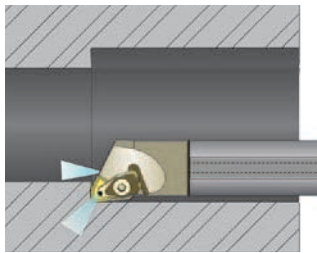
\*8:1 Boring Ratio can be achieved under favorable conditions.

**E\_ADWLN R/L CARBIDE Solid Boring Bars**

Style L - Negative 5° end & side cutting lead angle for negative 80° trigon WNM\_inserts

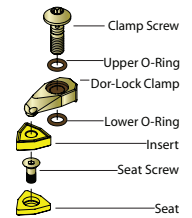
Thru Coolant

6:1 Boring Ratio



RIGHT HAND SHOWN LEFT HAND OPPOSITE. \*RIGHT CLAMP FOR RIGHT HAND TOOLHOLDER. LEFT CLAMP FOR LEFT HAND TOOLHOLDER

Boring Bar Description	Part No. 733101-		Carbide Bar Specifications						Coolant		Insert Specifications			
	R.H.	L.H.	Boring Ratio*	Min. Bore B	C	D	F	K°	Hole	Thread	WNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp
<b>Inch</b>														
E16R-ADWLN/L-4	60125	60126	6:1	1.280	8.000	1.000	0.640	14°	0.197	1/8"-27	432	IWSN-433	SM-S4	*JSLC-HPCTW-4N
E16T-ADWLN/L-4	60127	60128	6:1	1.280	12.00	1.000	0.640	14°	0.197	1/8"-27				
E20U-ADWLN/L-4	60129	60130	6:1	1.530	14.00	1.250	0.765	14°	0.197	1/8"-27				
<b>Metric</b>														
E25M-R-ADWLN/L-08	60131	60132	6:1	32.5	200	25	16.26	14°	5	1/8"-27	080408	IWSN-433	SM-S4	*JSLC-HPCTW-4N
E25M-T-ADWLN/L-08	60133	60134	6:1	32.5	300	25	16.26	14°	5	1/8"-27				
E32M-U-ADWLN/L-08	60135	60136	6:1	38.9	350	32	19.43	14°	5	1/8"-27				



\*8:1 Boring Ratio can be achieved under favorable conditions.



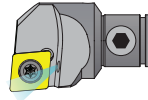
# CARBIDE Quick Change Boring Bar & Interchangeable Heads System

## Deep Hole Boring Made Simple!

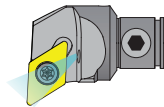
### 6:1 Boring Ratio

8:1 Boring Ratio can be achieved under favorable conditions.

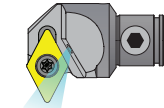
**1 SCLC**  
R/L Carbide Quick Change Boring Bar Head with Thru Coolant



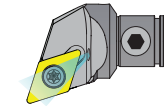
**2 SDUC**  
R/L Carbide Quick Change Boring Bar Head with Thru Coolant



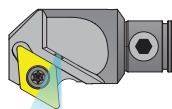
**3 SDNC**  
R/L Quick Change Carbide Boring Bar Head with Thru Coolant



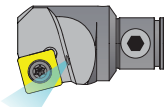
**4 SDQC**  
R/L Quick Change Carbide Boring Bar Head with Thru Coolant



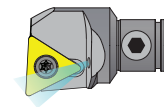
**5 SDXC**  
R/L Quick Change Carbide Boring Bar Head with Thru Coolant



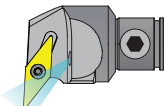
**6 SSKC**  
R/L Quick Change Carbide Boring Bar Head with Thru Coolant



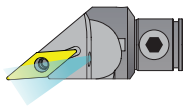
**7 STUC**  
R/L Quick Change Carbide Boring Bar Head with Thru Coolant



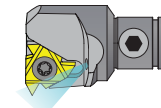
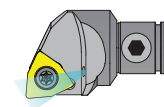
**8 SVUC**  
R/L Quick Change Carbide Boring Bar Head with Thru Coolant



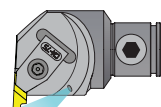
**9 SVMC**  
R/L Quick Change Carbide Boring Bar Head with Thru Coolant



**10 SWUC**  
R/L Quick Change Carbide Boring Bar Head with Thru Coolant



**11 SN**  
R/L Quick Change Carbide Threading Bar with Thru Coolant



**12 NE**  
R/L Quick Change Carbide Threading & Grooving Toolholder Bar with Thru Coolant



- One Carbide Quick Change Boring Bar Body
- Twelve Interchangeable Heads

Note: All Dorlan Interchangeable Heads are designed to be used with both the CARBIDE Quick Change Boring Bar (on page 31) and the DeVl Quick Change Chatter Free Tunable Boring Bar (on page 45)



# QUICK - SIMPLE - PRECISE - RIGID

## 1 Mounting

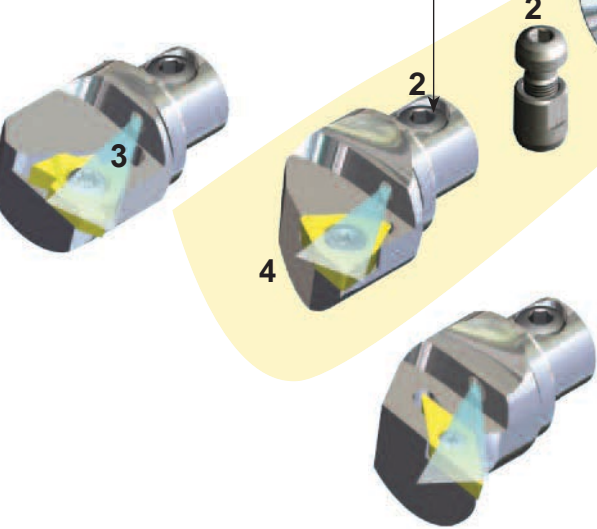
The cylindrical body and the taper shoulder of the Quick Change Head fits precisely in to the boring bar body housing.

## 2 Locking

The **3 point Locking System Technology** 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 cylindrical body of the Quick Change Head into the Boring Bar Housing causing the taper 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 the **3 Point Locking System Technology**.

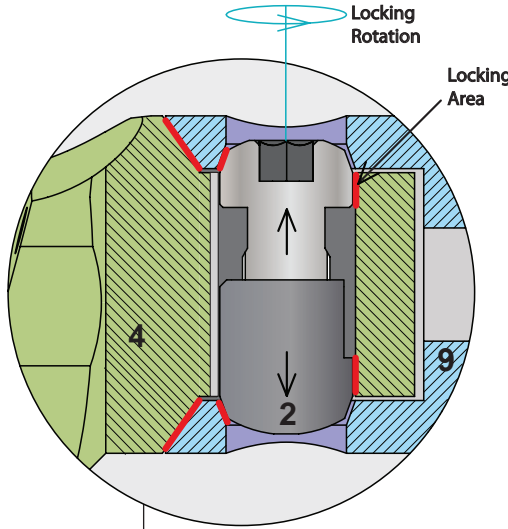
## 3 Jet-Stream™

Thru coolant system brings the coolant to the cutting edge of the insert, making chips hydroplane over the insert. This keeps a sharp cutting edge, extending the insert life. The high pressure coolant will make chip evacuation easy. All the CARBIDE QUICK CHANGE Boring Bars are supplied with a thru coolant hole.



## 4 Interchangeable Quick Change Heads

All the positive and threading QUICK CHANGE heads are fully interchangeable with Carbide and DeVl CHATTER FREE Boring Bar Bodies.



## 5 Carbide Body

Made of precision ground Carbide Grade. Engineered for deep boring bar applications to maximize rigidity and dampening AND minimize vibration.

## 6 Coolant Connection

The boring bar body is supplied with a thru coolant hole and a 1/8-27 NTP thread for coolant fitting connection.

## 7 Brazing

The Quick Change Housing and the Carbide Boring Bar Body are silver brazed. The combination of right alloy and thickness of the silver braze makes the brazing strong and unbreakable, but flexible under interrupt cuts.

## 8 Center Line

For center gage reference.

## 9 Housing

The Quick Change Housing is made of heat treated alloy steel and is precisely machined and brazed on to the Carbide Boring Bar Body.

## 10 Holding

Round holding works best with a **Split Collar Style (shown on page 7)** boring bar holder. **Set screw style (shown on page 7)** boring bar holders diminish the performance.

**The Dorian QUICK CHANGE Carbide Bars are engineered to simplify deep hole boring with expandable capabilities of multi boring applications.**

## Three Shank Sizes

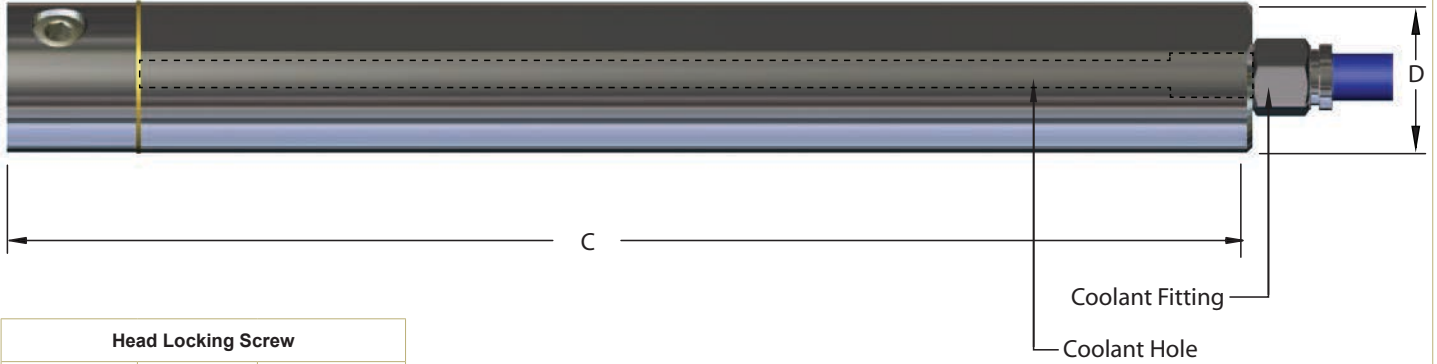
inch	.750	1.00	1.25
metric	20	25	32





<b>Carbide Quick Change Boring Bar</b>	<b>Thru Coolant</b>	<b>6:1 &amp; 8:1 Boring Ratio</b>
--	---------------------	-----------------------------------

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Carbide Boring Shank</li> <li>• 3/4", 1" and 1 1/4" Diameter</li> <li>• 20mm, 25mm and 32mm Diameter</li> <li>• Thru Coolant System</li> </ul> | <ul style="list-style-type: none"> <li>• Interchangeable Heads</li> <li>• Quick Change System</li> <li>• Multi Boring and Threading Application</li> <li>• 6:1 &amp; 8:1 Boring Ratio</li> </ul> |
|---|--|



Head Locking Screw		
	Description	Part No. 733101-
	QCLS-07	92095

Description	Part No. 733101-	Specifications			Coolant	
Inch	Neutral	Boring Ratio*	D	C	Coolant Hole Size	Thread
AE12Q-6-MBQC	59967	6:1	0.750"	6.306"	.157	1/8-27 NPT
AE12S-8-MBQC	59969	8:1	0.750"	9.306"		
AE16R-6-MBQC	59971	6:1	1.000"	7.261"	.197	1/8-27 NPT
AE16T-8-MBQC	59973	8:1	1.000"	11.261"		
AE20U-6-MBQC	59975	6:1	1.250"	13.16"		

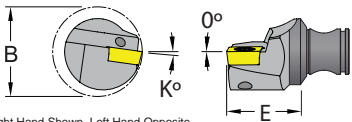
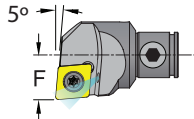
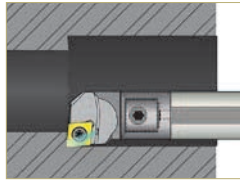
\*8:1 Boring Ratio can be achieved under favorable conditions. One high pressure coolant connection kit supplied, see page 51 for details.

Metric	Neutral	Boring Ratio*	D	C	Coolant Hole Size	Thread
AE20-Q-6-MBQC	59968	6:1	20	158.70	4	1/8-27 NPT
AE20-S-8-MBQC	59970	8:1	20	228.65		
AE25-R-6-MBQC	59972	6:1	25	178.70	5	1/8-27 NPT
AE25-T-8-MBQC	59974	8:1	25	278.70		
AE32-U-6-MBQC	59976	6:1	32	328.66		

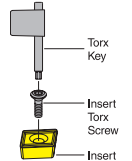
\*8:1 Boring Ratio can be achieved under favorable conditions. One high pressure coolant connection kit supplied, see page 63 for details.



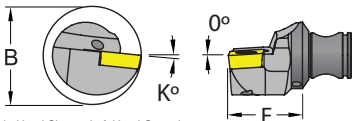
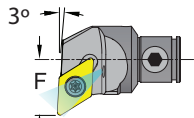
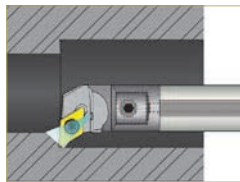
SCLC R/L Quick Change Boring Bar Head								Thru Coolant		
Style L - Negative 5° End & Side Cutting Edge Angle for 7° positive 80° diamond CC__ inserts										
Head Description	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications		
Inch	R.H.	L.H.	B	E	F	K°	Diameter	CCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SCLCR/L-3	59480	59481	0.913	0.840	0.500	8°	0.750	32.52	TS-35.6-9M1	T-15
			1.153	0.840	0.620	8°	1.000			
			1.413	0.840	0.755	8°	1.250			
Metric	R.H.	L.H.	B	E	F	K°	Diameter	CCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SCLCR/L-3	59480	59481	23.19	21.34	12.70	8°	20	09T308	TS-35.6-9M1	T-15
			29.29	21.34	15.75	8°	25			
			35.89	21.34	19.18	8°	32			



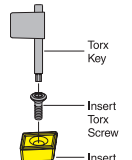
Right Hand Shown, Left Hand Opposite



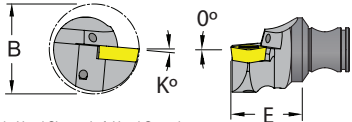
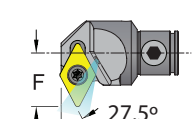
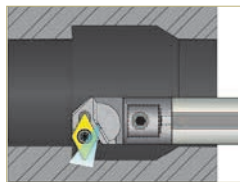
SDUC R/L Quick Change Boring Bar Head								Thru Coolant		
Style U - Negative 3° End & Side Cutting Edge Angle for 7° positive 55° diamond DC__ inserts										
Head Description	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications		
Inch	R.H.	L.H.	B	E	F	K°	Diameter	DCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SDUCR/L-3	59482	59483	1.038	0.840	0.625	6°	0.750	32.52	TS-35.6-9M1	T-15
			1.278	0.840	0.745	6°	1.000			
			1.538	0.840	0.850	6°	1.250			
Metric	R.H.	L.H.	B	E	F	K°	Diameter	DCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SDUCR/L-3	59482	59483	26.37	21.34	15.88	6°	20	11T308	TS-35.6-9M1	T-15
			32.46	21.34	18.92	6°	25			
			39.06	21.34	21.59	6°	32			



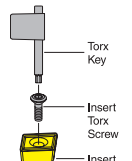
Right Hand Shown, Left Hand Opposite



SDNC R/L Quick Change Boring Bar Head								Thru Coolant		
Style N - Negative 27.5° End & Side Cutting Edge Angle for 7° positive 55° diamond DC__ inserts										
Head Description	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications		
Inch	R.H.	L.H.	B	E	F	K°	Dia.	DCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SDNCR/L-3	59484	59485	1.038	0.840	0.625	5°	0.750	32.52	TS-35.6-9M1	T-15
			1.278	0.840	0.745	5°	1.000			
			1.538	0.840	0.850	5°	1.250			
Metric	R.H.	L.H.	B	E	F	K°	Dia.	DCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SDNCR/L-3	59484	59485	26.37	21.34	15.88	5°	20	11T308	TS-35.6-9M1	T-15
			32.46	21.34	18.92	5°	25			
			39.06	21.34	21.59	5°	32			

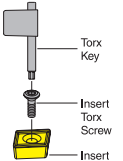
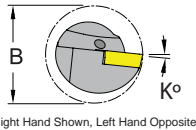
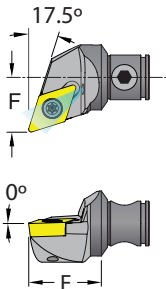
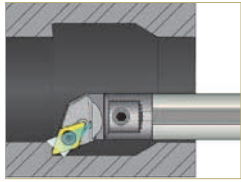


Right Hand Shown, Left Hand Opposite

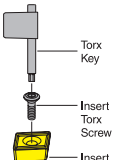
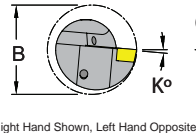
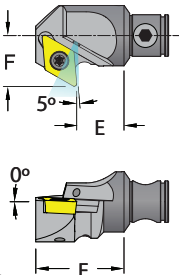
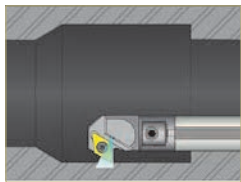




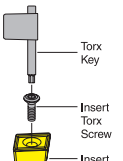
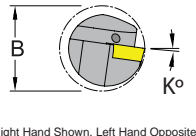
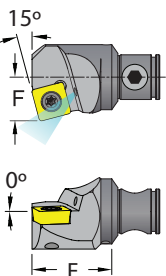
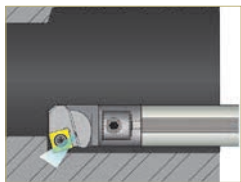
SDQC R/L Quick Change Boring Bar Head								Thru Coolant			
Style Q - Negative 17.5° End & Side Cutting Edge Angle for 7° positive 55° diamond DC__ inserts											
Head Description	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications			
	R.H.	L.H.	B	E	F	K°		Diameter	DCMT Gage Insert	Insert Torx Screw	Torx Key
Inch			1.038	0.840	0.625	7°	0.750	32.52	TS-35.6-9M1	T-15	
			1.278	0.840	0.745	7°	1.000				
			1.538	0.840	0.850	7°	1.250				
Metric			26.37	21.34	15.88	7°	20	11T308	TS-35.6-9M1	T-15	
			32.46	21.34	18.92	7°	25				
			39.06	21.34	21.59	7°	32				



SDXC R/L Quick Change Boring Bar Head								Thru Coolant			
Style X - Negative 5° Back Boring Cutting Edge Angle for 7° positive 55° diamond DC__ inserts											
Head Description	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications			
	R.H.	L.H.	B	E	F	K°		Diameter	DCMT Gage Insert	Insert Torx Screw	Torx Key
Inch			1.038	0.590	0.625	5°	0.750	32.52	TS-35.6-9M1	T-15	
			1.278	0.590	0.745	5°	1.000				
			1.538	0.590	0.850	5°	1.250				
Metric			26.37	14.99	15.88	5°	20	11T308	TS-35.6-9M1	T-15	
			32.46	14.99	18.92	5°	25				
			39.06	14.99	21.59	5°	32				

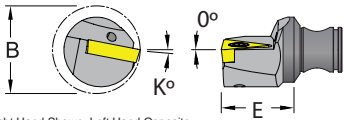
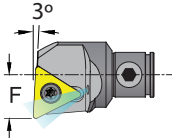
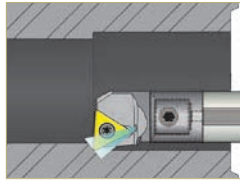


SSKC R/L Quick Change Boring Bar Head								Thru Coolant			
Style K - 15° End Cutting Edge Angle for 7° positive square SC_T inserts											
Head Description	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications			
	R.H.	L.H.	B	E	F	K°		Diameter	SCMT Gage Insert	Insert Torx Screw	Torx Key
Inch			0.913	0.840	0.500	8°	0.750	32.52	TS-35.6-9M1	T-15	
			1.153	0.840	0.620	8°	1.000				
			1.413	0.840	0.755	8°	1.250				
Metric			23.19	21.34	12.70	8°	20	09T308	TS-35.6-9M1	T-15	
			29.29	21.34	15.75	8°	25				
			35.89	21.34	19.18	8°	32				

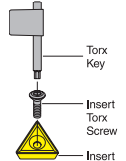




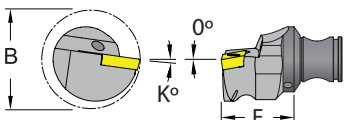
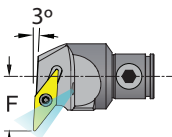
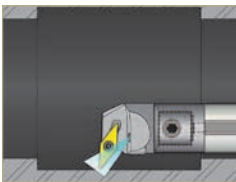
STUC R/L Quick Change Boring Bar Head								Thru Coolant		
Style U - Negative 3° End Cutting Edge Angle for 7° positive triangle TC__ inserts										
Head Description	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications		
Inch	R.H.	L.H.	B	E	F	K°	Diameter	TCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-STUCR/L-3	59492	59493	0.913	0.840	0.500	11°	0.750	32.52	TS-35.6-9M1	T-15
			1.153	0.840	0.620	11°	1.000			
			1.413	0.840	0.755	11°	1.250			
Metric	R.H.	L.H.	B	E	F	K°	Diameter	TCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-STUCR/L-3	59492	59493	23.19	21.34	12.70	11°	20	16T308	TS-35.6-9M1	T-15
			29.29	21.34	15.75	11°	25			
			35.89	21.34	19.18	11°	32			



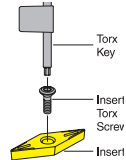
Right Hand Shown, Left Hand Opposite



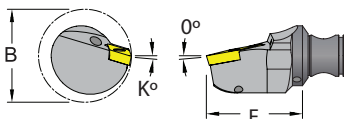
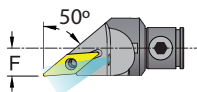
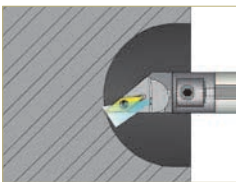
SVUC R/L Quick Change Boring Bar Head								Thru Coolant		
Style U - Negative 3° End Cutting Edge Angle for 7° positive 35° diamond VC__ inserts										
Head Description	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications		
Inch	R.H.	L.H.	B	E	F	K°	Diameter	VCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SVUCR/L-2	59494	59495	1.038	0.840	0.625	8°	0.750	221	TS-35.6-9M1	T-8
			1.278	0.840	0.745	8°	1.000			
			1.538	0.840	0.850	8°	1.250			
Metric	R.H.	L.H.	B	E	F	K°	Diameter	VCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SVUCR/L-2	59494	59495	26.37	21.34	15.88	8°	20	110304	TS-35.6-9M1	T-8
			32.46	21.34	18.92	8°	25			
			39.06	21.34	21.59	8°	32			



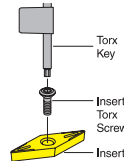
Right Hand Shown, Left Hand Opposite



SVMC R/L Quick Change Boring Bar Head								Thru Coolant		
Style M - Negative 5° Side Cutting Edge Angle for 7° positive 35° diamond VC__ inserts										
Head Description	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications		
Inch	R.H.	L.H.	B	E	F	K°	Diameter	VCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SVMCR/L-2	59496	59497	1.00	1.250	0.500	5°	0.750	221	TS-25.45-6M2	T-8
			1.240	1.250	0.620	5°	1.000			
			1.500	1.250	0.755	5°	1.250			
Metric	R.H.	L.H.	B	E	F	K°	Diameter	VCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SVMCR/L-2	59496	59497	24.50	31.75	12.70	5°	20	110304	TS-25.45-6M2	T-8
			31.50	31.75	15.75	5°	25			
			38.10	31.75	19.18	5°	32			

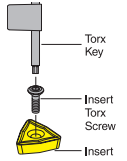
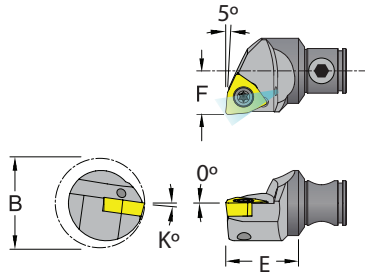
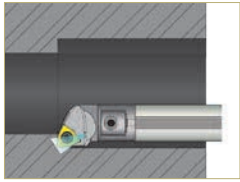


Right Hand Shown, Left Hand Opposite





SWLC R/L Quick Change Boring Bar Head								Thru Coolant			
Style L - Negative 5° End Cutting Edge Angle for 7° positive 80° trigon WC__ inserts											
Head Description	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications			
	R.H.	L.H.	B	E	F	K°	Diameter	WCMT Gage Insert	Insert Torx Screw	Torx Key	
<b>Inch</b>			0.913	0.840	0.500	8°	0.750				
	DQCMH-12-SWLCR/L-3	59498	1.153	0.840	0.620	8°	1.000	32.52 06T308	TS-35.6-9M1	T-15	
			1.413	0.840	0.755	8°	1.250				
<b>Metric</b>			23.19	21.34	12.70	8°	20				
	DQCMH-12-SWLCR/L-3	59498	29.29	21.34	15.75	8°	25	32.52 06T308	TS-35.6-9M1	T-15	
			35.89	21.34	19.18	8°	32				





SN R/L Quick Change Threading Bar Head							Thru Coolant		
Internal Laydown Bar for Laydown Inserts									
Head Description	Part No. 733101-		Head Specifications			Reference Carbide & DeVi Bars	Insert Specifications		
	R.H.	L.H.	B	E	F	Diameter	Laydown Gage Insert	Insert Torx Screw	Torx Key
Inch	59501	59502	0.995	0.840	0.520	0.750	16-A60	TS-35.6-9M1	T-15
			1.235	0.840	0.640	1.000			
			1.495	0.840	1.02	1.250			
Metric	59501	59502	25.27	21.34	13.21	20	16-A60	TS-35.6-9M1	T-15
			31.37	21.34	16.26	25			
			37.97	21.34	25.90	32			

Right Hand Shown, Left Hand Opposite

Torx Key  
Insert Torx Screw  
Insert

NE R/L Quick Change Threading & Grooving Bar Head							Thru Coolant		
Style E - Internal DorNotch Bar for threading and grooving DorNotch inserts									
Head Description	Part No. 733101-		Head Specifications			Reference Carbide & DeVi Bars	Insert Specifications		
	R.H.	L.H.	B	E	F	Diameter	DorNotch Gage Insert	Clamp	Clamp Screw
Inch	59503	59504	1.125	0.840	0.562	0.750	*NG-2L **NG-2R	*CM-75 **CM-74	S-310M
			1.365	0.840	0.682	1.000			
			1.625	0.840	1.062	1.250			
Metric	59503	59504	28.58	21.34	14.27	20	*NG-2L **NG-2R	*CM-75 **CM-74	S-310M
			34.67	21.34	17.32	25			
			41.27	21.34	26.97	32			

Right Hand Shown, Left Hand Opposite

Clamp Screw  
Clamp  
Insert



# DeVi Chatter Free Tunable Boring Bar System

## Deep Hole Boring Made Simple!

- Deep Hole Boring
- No Vibration or Chattering
- Cutting Ratio 14:1 to the Bar Dia.
- Smooth Surface Finish
- Precise Machining Tolerance
- Interrupted Cut Boring Application
- Longer Insert Life
- Higher Productivity

**14:1 Boring Ratio**

### The Dorian DeVi Chatter Free Tunable Boring Bar:

**Designed** to be tunable for deep hole boring.

The Dorian DeVi Chatter Free Tunable Boring Bar will suppress the natural vibration of the bar body that causes chatter while cutting. The internally tuned dampening mechanism provides optimal dynamic stability for deep hole boring operations

***Increasing Machining Performance and Quality!***

**Engineered** and built with the most advanced technology to ***Outperform steel and carbide boring bars in Productivity, Quality and Precision and will extend the Insert Life.***



### How the DeVi Chatter Free Tunable Boring Bar Works:

Each Boring Bar contains a passive mechanical dampening device that is dynamically tuned to suppress the Natural Boring Bar Vibrations that generate machining chatter.

The tuning process establishes the bar frequency and positions the mechanical dampener so the bar's frequencies (vibrations) are completely eliminated.

In essence, the energy in the system is absorbed by the mechanical dampener, not released by the Boring Bar in the form of vibrations that cause machining chatter.



## The Dorian DeVi Chatter Free Tunable Boring Bar

has a built in Tuning Mechanism to control the natural vibration of the Boring Bar.

The Mechanism is tunable to suppress the vibration of the Boring Bar that causes Chatter.

Tuning maximizes the dampening and minimizes vibrations, resulting in chatter free machining.

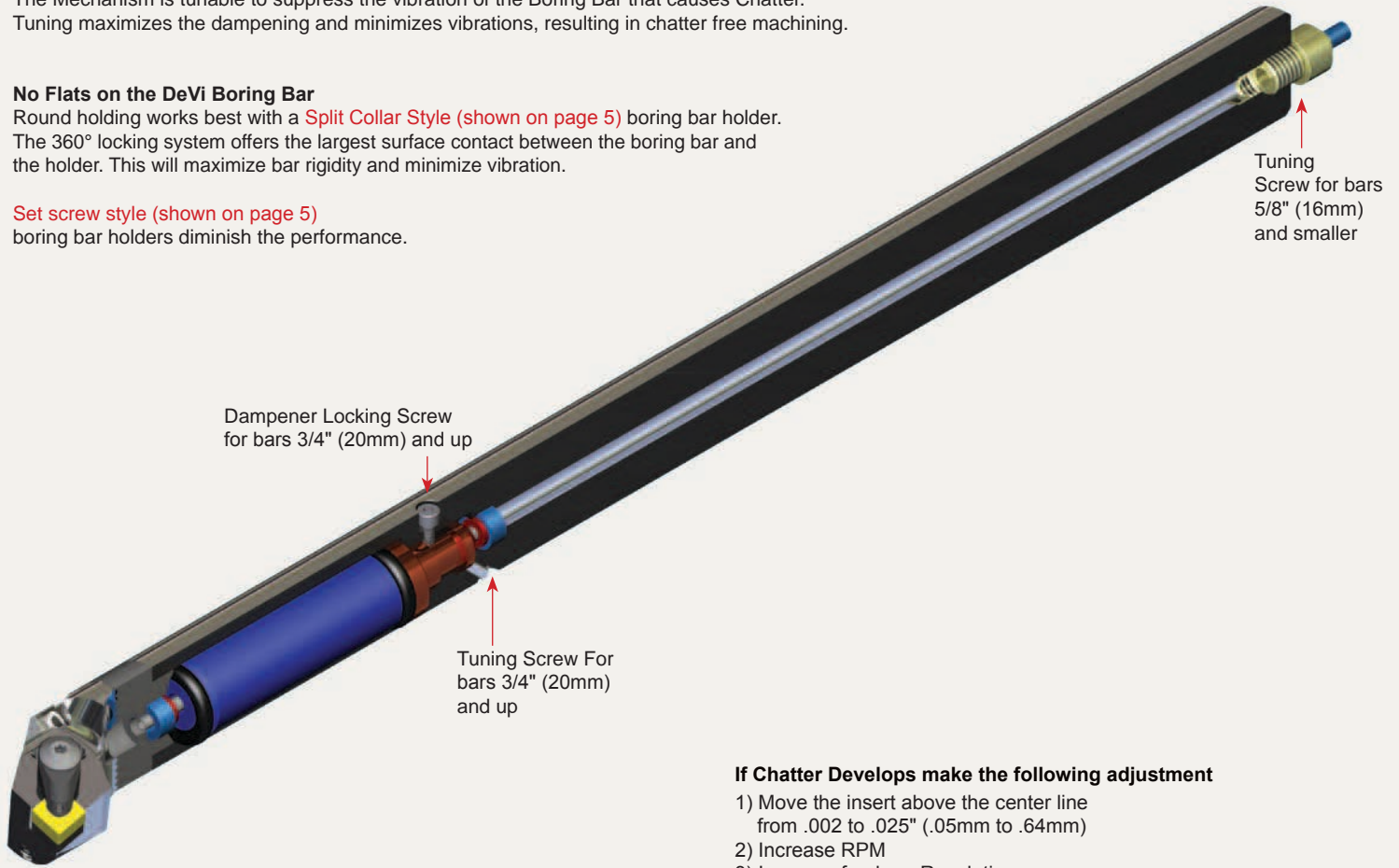
## No Flats on the DeVi Boring Bar

Round holding works best with a Split Collar Style (shown on page 5) boring bar holder.

The 360° locking system offers the largest surface contact between the boring bar and the holder. This will maximize bar rigidity and minimize vibration.

## Set screw style (shown on page 5)

boring bar holders diminish the performance.



## How to Tune the DeVi Chatter Free Tunable Boring Bar

All the DeVi Chatter Free Tunable Boring Bars are 100% dynamically tuned and certified to meet Dorian technical performance.

It is important to follow Dorian Tool's use and recommendation.

## DeVi Boring Bar Performance Failures:

Cause of Chatter may be the Set-Up, Holding Method of the Work piece and or Boring Bar, Material, Insert, Depth of Cut, Feed per Rev. , or the RPM and SFM.

## If Chatter Develops make the following adjustment

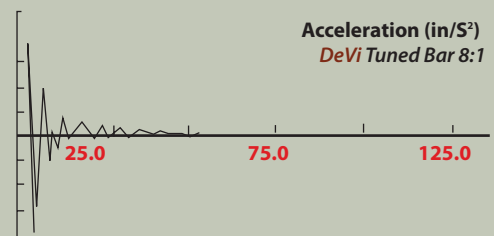
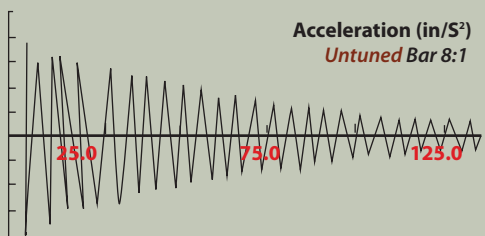
- 1) Move the insert above the center line from .002 to .025" (.05mm to .64mm)
- 2) Increase RPM
- 3) Increase feed per Revolution.
- 4) Change insert to high positive & small radius nose.
- 5) If chatter continues **tune** the Boring Bar.

## How to tune the DeVi Boring Bar

- 1) Loosen the **Dampener Locking Screw** all the way out.
- 2) Using a dead blow hammer, hit the DeVi Bar, and listen for rattle
- 3) Turn the **Tuning Screw** clockwise while the bar rattles; continue until rattle stops.
- 4) Test the **DeVi Boring Bar**, by cutting .010" (.25mm)
- 5) If Chatter continues turn the tuning screw clockwise 30° and retest the **DeVi Bar** by cutting .010" (.25mm) .
- 6) Repeat the tuning till the chatter is gone.
- 7) **Do Not Back Off** the tuning screw if the **DeVi Bar** chatters.

As shown below, by accelerometer testing, a standard carbide bar will vibrate at its natural frequency significantly longer than a "Tuned" DeVi bar.

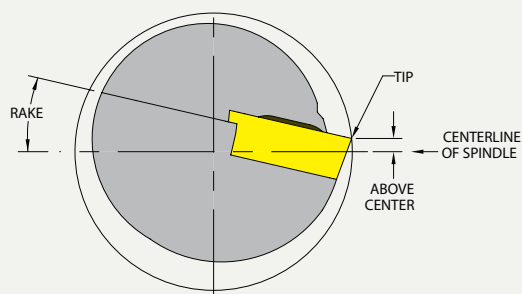
**The increased damping allows for greater depth of cut without chatter and reduced vibration in interrupted cutting!**







## Insert Center Line Set-Up



## Benefits of DeVi Bar

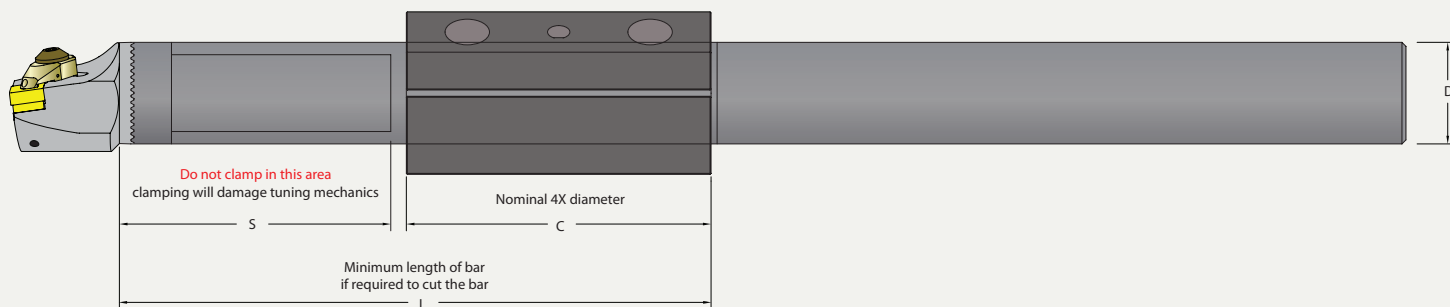
1. Largest bar diameter possible
2. Positive insert over negative insert
3. Minimum insert radius possible
4. Depth of cut is 20% to 50% below the standard depth of cut
5. High revolution per minute is 20% to 80% above the standard RPM
6. High feed per revolution is 20% to 50% above the standard feed rate
7. Insert center line is .002" to 0.25" above center line

\*Due to the cutting pressure placed on the insert during deep boring, the bar flexes downward during machining. The center line set-up values chart (shown below) aid in compensating the deflection.

DeVi Center line Set-up Values Chart (Inch)						
Bar Size	Nominal	Insert Set-Up Above Center Line*			Depth of Cut	
Dia.	Center	Finishing	Roughing	Rough/Finish	Finishing	Roughing
0.500	0.250	0.003"	0.010"	0.007"	.001"	.025"
0.625	0.3125	0.003"	0.010"	0.007"	.001"	.032"
0.750	0.3750	0.003"	0.010"	0.007"	.002"	.036"
1.000	0.500	0.005"	0.013"	0.010"	.003"	.040"
1.250	0.625	0.005"	0.013"	0.010"	.003"	.045"
1.500	0.750	0.007"	0.020"	0.015"	.003"	.050"
1.750	0.8750	0.007"	0.020"	0.015"	.003"	.055"
2.000	1.000	0.010"	0.022"	0.017"	.003"	.060"
2.500	1.250	0.014"	0.025"	0.020"	.003"	.075"
3.000	1.500	0.014"	0.025"	0.020"	.003"	.080"
4.000	2.000	0.014"	0.025"	0.020"	.003"	.100"

DeVi Center line Set-up Values Chart (Metric)						
Bar Size	Nominal	Insert Set-Up Above Center Line*			Depth of Cut	
Dia.	Center	Finishing	Roughing	Rough/Finish	Finishing	Roughing
12	6	.075	0.25	0.18	.025	.64
16	8	.075	0.25	0.18	.025	.64
20	10	.075	0.25	0.18	.050	.76
25	12.5	0.13	0.33	0.25	.075	1.91
32	16	0.13	0.33	0.25	.075	2.03
40	20	0.18	0.50	0.38	.075	2.54
N/A						
50	25	0.25	.56	0.43	.075	1.52
60	30	0.36	.64	0.50	.075	1.78
80	40	0.36	.64	0.50	.075	1.91
100	50	0.36	.64	0.50	.075	2.03

## Minimum Extended DeVi Bar Set-Up



Minimum Extended DeVi Bar Set-Up (Inch)				
Bar Size	L	C	L1	S
Dia.	Bar Length	Holding Length	Minimum Modified Length	None Clamping Zone
0.500	8.00	2.00	N/A	2.535
0.625	9.00	2.50	N/A	2.383
0.750	10.00	3.00	8.375	5.375
1.000	14.00	4.00	10.375	6.375
1.250	16.00	5.00	11.60	6.60
1.500	19.00	6.00	13.20	7.20
1.750	23.00	7.00	14.80	7.80
2.000	26.00	8.00	16.50	8.50
2.500	33.00	10.00	20.00	10.00
3.000	40.00	12.00	24.125	12.125
4.000	50.00	16.00	29.00	13.00

Minimum Extended DeVi Bar Set-Up (Metric)				
Bar Size	L	C	L1	S
Dia.	Bar Length	Holding Length	Minimum Modified Length	None Clamping Zone
12	200	48	N/A	64.4
16	225	64	N/A	60.5
20	280	80	216.5	136.5
25	350	100	261.9	161.9
32	416	128	295.6	167.6
40	520	160	342.9	182.9
N/A				
50	650	200	415.9	215.9
60	780	240	494.0	254.0
80	1040	320	628.0	308.0
100	1300	400	730.2	330.2



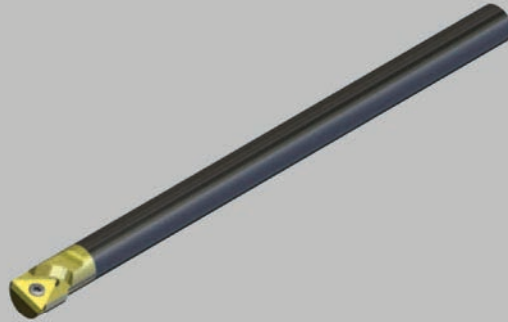
# Available in Three Tunable Styles

To Simplify Deep Boring Operations,  
with up to 14 Times the Bar Diameter!

## DeVi **SOLID CHATTER FREE** TUNABLE Boring Bar

*One Piece Construction*  
Small DeVi Boring Bar

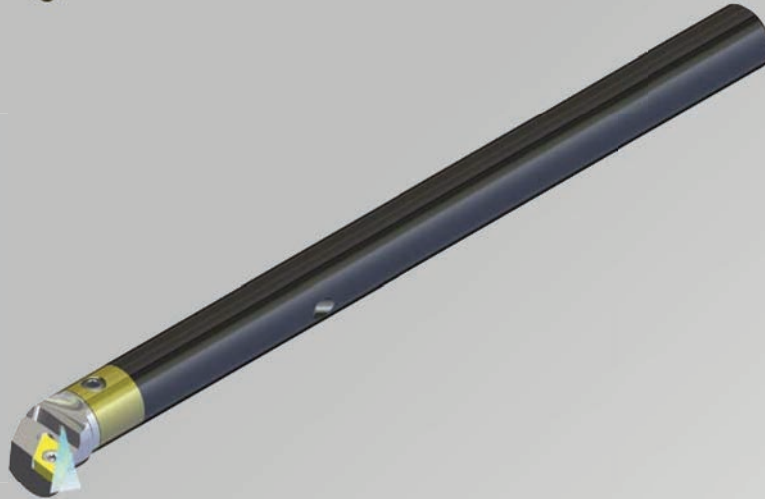
DeVi Intregal Bar Sizes			Page
inch	0.50	.625	42
metric	12	16	



## DeVi **QUICK CHANGE CHATTER FREE** TUNABLE Boring Bar

*Two Piece Construction*  
Medium DeVi Boring Bar

DeVi Quick Change Bar Sizes				Page
inch	0.75	1.00	1.25	43-50
metric	20	25	32	



## DeVi **MODULAR CHATTER FREE** TUNABLE Boring Bar

*Two Piece Construction*  
For Large DeVi Boring Bar  
Pages 40-49

DeVi Modular Bar Sizes								Page
inch	1.25	1.50	1.75	2.00	2.50	3.00	4.00	51-61
metric	32	40	N/A	50	60	80	100	



- 1 1/4", 1 1/2", 1 3/4", 2.0", 2 1/2", 3.0", 4.0" Diameters Bar Body
- 32mm, 40mm, 50mm, 60mm, 80 mm, 100mm Diameters Bar Body
- Boring Ratio 10:1, 12:1, 14:1
- Modular Positive Insert Boring Head



# DeVi Solid Chatter Free Tunable Boring Bar System

## Deep Hole Boring Made Simple!

- Deep Boring
- Available in Multi Insert Geometries
- Chatter Free
- 1/2" and 5/8" Diameters
- 12mm and 16mm Diameters
- High Surface Finish
- Close Tolerances
- Boring Ratio 8:1
- Longer Insert Life
- Higher Rate of Productivity

**8:1 Boring Ratio**

### 1 DeVi CHATTER FREE Tunable

Boring Bar contains a passive mechanical dampening device that is dynamically tuned to suppress the Natural Boring Bar Vibrations generating machining chatter. The tuning process establishes the bar frequency and then positions the mechanical dampener to eliminate the bar's frequency (vibrations). In essence the energy in the system is absorbed by the mechanical dampener, and not released by the Boring Bar in the form of vibrations, that cause chatter.



### 2 STEEL HEAD

For boring (Positive Inserts) and Threading (Dornotch & Laydown Inserts)

The insert head is made of heat treated Alloy Steel with a thru coolant system to improve the chip evacuation in deep boring.

### 3 CENTER LINE

For center gage reference.

### 4 HOLDING

Round holding works best with a Split Collar Style (shown on page 7) boring bar holder. Set screw style (shown on page 7) boring bar holders diminish the performance.

### 5 TUNING SCREW

The tuning screw is accessed from the end of the bar body.

### THREE DeVi Solid Chatter Free Tunable Boring Bar Styles

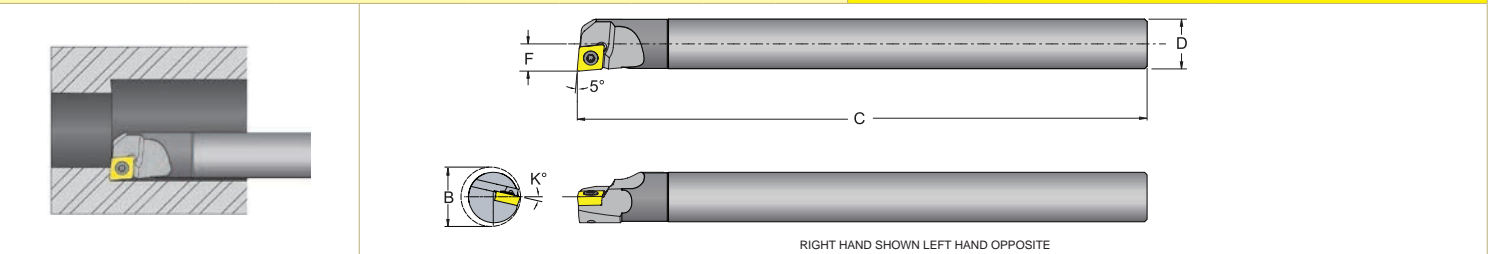
Inch	Metric	Page
SCLCR/L-2 / 3	SCLCR/L-06 / 09	42
SDUCR/L-2	SDUCR/L-07	
STUCR/L-2	STUCR/L-11	

### TWO BAR SHANK SIZES

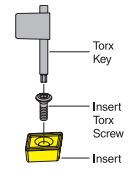
inch	.500	.625
metric	12	16



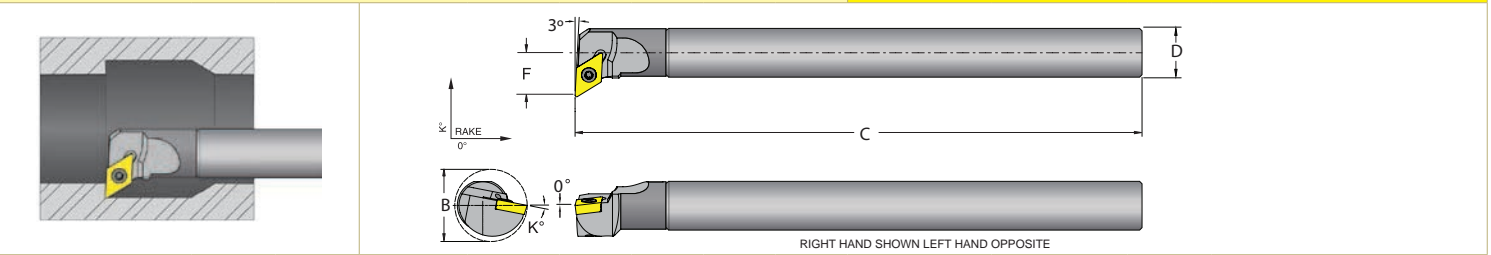
**SCLC R/L DeVi Solid Chatter Free Tunable Boring Bars** **8:1 Boring Ratio**  
 Style L - Negative 5° End & Side Cutting Edge Angle for 7° positive 80° diamond CC\_\_ inserts



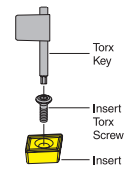
Threading Bar Description	Part No. 733101-		Boring Ratio*	Devibe Bar Specifications					Insert Specifications		
	R.H.	L.H.		Min.Bore B	C	D	F	K°	CCGW Gage Insert	Insert Torx Screw	Torx Key
<b>Inch</b>											
DV08R-8-SCLCR/L-2	59400	59401	8:1	0.680	8.00	0.500	0.281	13°	21.51	TS-25.45-6M2	T-8
DV10S-8-SCLCR/L-2	59402	59403	8:1	0.770	9.00	0.625	0.406	10°			
DV10S-8-SCLCR/L-3	59404	59405	8:1	0.770	9.00	0.625	0.406	10°	32.52	TS-35.6-9M1	T-15
<b>Metric</b>											
DV12R-8-SCLCR/L-06	59414	59415	8:1	17.27	200	12	7.14	13°	060204	TS-25.45-6M2	T-8
DV16S-8-SCLCR/L-06	59416	59417	8:1	19.56	225	16	10.31	10°			
DV16S-8-SCLCR/L-09	59418	59419	8:1	19.56	225	16	10.31	10°	09T308	TS-35.6-9M1	T-15



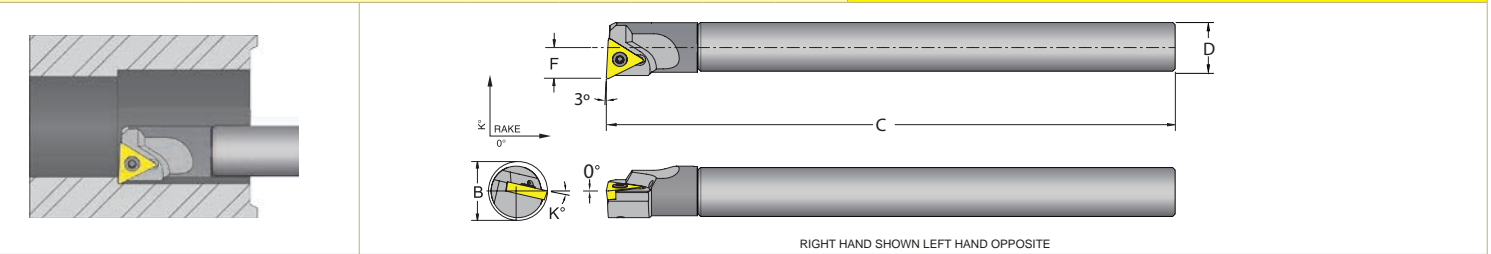
**SDUC R/L DeVi Solid Chatter Free Tunable Boring Bars** **8:1 Boring Ratio**  
 Style U - Negative 3° End Cutting Edge Angle for 7° positive 55° diamond DC\_\_ inserts



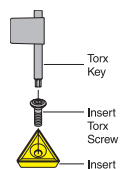
Threading Bar Description	Part No. 733101-		Boring Ratio*	Devibe Bar Specifications					Insert Specifications		
	R.H.	L.H.		Min.Bore B	C	D	F	K°	DCMT Gage Insert	Insert Torx Screw	Torx Key
<b>Inch</b>											
DV08R-8-SDUCR/L-2	59406	59407	8:1	0.730	8.00	0.500	0.437	11°	21.51	TS-25.45-6M2	T-8
DV10S-8-SDUCR/L-2	59408	59409	8:1	0.850	9.00	0.625	0.500	7°			
<b>Metric</b>											
DV12R-8-SDUCR/L-07	59420	59421	8:1	18.54	200	12	11.10	11°	070204	TS-25.45-6M2	T-8
DV16S-8-SDUCR/L-07	59422	59423	8:1	21.59	225	16	12.70	7°			



**STUC R/L DeVi Solid Chatter Free Tunable Boring Bars** **8:1 Boring Ratio**  
 Style U - Negative 3° End Cutting Edge Angle for 7° positive triangle TC\_\_ inserts



Threading Bar Description	Part No. 733101-		Boring Ratio*	Devibe Bar Specifications					Insert Specifications		
	R.H.	L.H.		Min.Bore B	C	D	F	K°	TCMT Gage Insert	Insert Torx Screw	Torx Key
<b>Inch</b>											
DV08R-8-STUCR/L-2	59410	59411	8:1	0.680	8.00	0.500	0.312	13°	21.51	TS-25.45-6M2	T-8
DV10S-8-STUCR/L-2	59412	59413	8:1	0.770	9.00	0.625	0.406	10°			
<b>Metric</b>											
DV12R-8-STUCR/L-11	59424	59425	8:1	17.27	200	12	7.92	13°	110204	TS-25.45-6M2	T-8
DV16S-8-STUCR/L-11	59426	59427	8:1	19.56	225	16	10.31	10°			



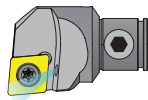


# DeVi Quick Change Chatter Free Tunable Boring Bar & Interchangeable Heads

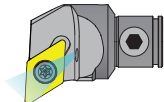
Deep Hole Boring Made Simple!

10:1 Boring Ratio  
12:1 Boring Ratio  
14:1 Boring Ratio

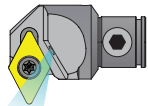
**1 SCLC**  
R/L DeVi Change  
Boring Bar Head  
with Thru Coolant



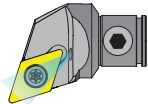
**2 SDUC**  
R/L DeVi Change  
Boring Bar Head  
with Thru Coolant



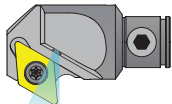
**3 SDNC**  
R/L DeVi Change  
Boring Bar Head  
with Thru Coolant



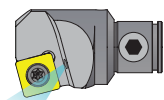
**4 SDQC**  
R/L DeVi Change  
Boring Bar Head  
with Thru Coolant



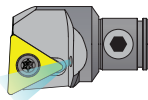
**5 SDXC**  
R/L DeVi Change  
Boring Bar Head  
with Thru Coolant



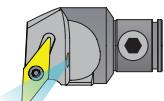
**6 SSKC**  
R/L DeVi Change  
Boring Bar Head  
with Thru Coolant



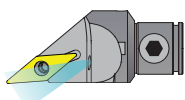
**7 STUC**  
R/L DeVi Change  
Boring Bar Head  
with Thru Coolant



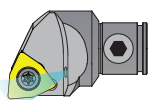
**8 SVUC**  
R/L DeVi Change  
Boring Bar Head  
with Thru Coolant



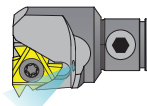
**9 SVMC**  
R/L DeVi Change  
Boring Bar Head  
with Thru Coolant



**10 SWUC**  
R/L DeVi Change  
Boring Bar Head  
with Thru Coolant



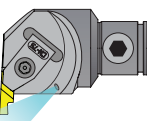
**11 SN**  
R/L DeVi Change  
Threading Bar Head  
with Thru Coolant



- One DeVi Quick Change Chatter Free Tunable Boring Bar Body
- Twelve Interchangeable Heads



**12 NE**  
R/L DeVi Change  
Threading &  
Grooving Bar Head  
with Thru Coolant



Note: All Dorian Interchangeable Heads are designed to be used with both the CARBIDE Quick Change Boring Bar (on page 31) and the DeVi Quick Change Chatter Free Tunable Boring Bar (on page 45)



# QUICK - SIMPLE - PRECISE - RIGID

## 1 Mounting

The cylindrical body and the taper shoulder of the Quick Change Head fits precisely in to the boring bar body housing.

## 2 Locking

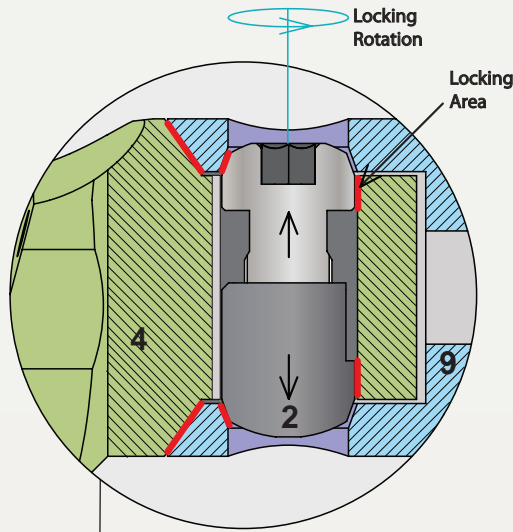
### The 3 point Locking System Technology

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 cylindrical body of the Quick Change Head into the Boring Bar Housing causing the taper 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 the 3 Point Locking System Technology.

## 3 Jet-Stream™

Thru coolant system brings the coolant to the cutting edge of the insert, making chips hydroplane over the insert. This keeps a sharp cutting edge, extending the insert life. The high pressure coolant will make chip evacuation easy. All the DeVi Quick Change Chatter Free Tunable Boring Bars are supplied with a thru coolant hole.

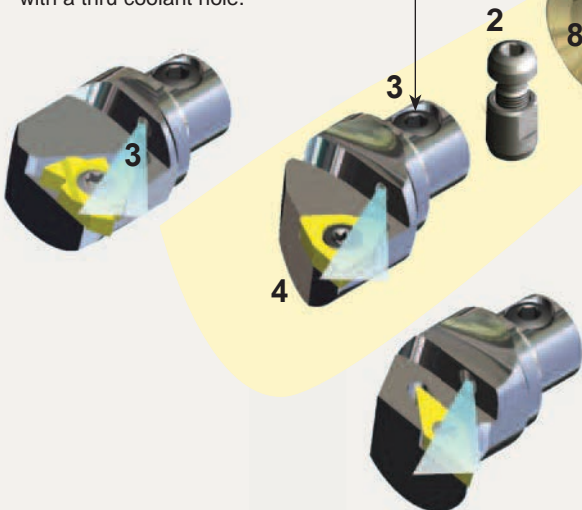


## 5 Chatter Free

The DeVi Chatter Free Tunable Quick Change Boring Bars are Engineered for deep hole boring applications. The internal tunable dampening mechanism provides optimal dynamic stability for deep hole boring operations with a high surface finish and close tolerance.

## 6 Coolant Connection

The boring bar body is supplied with a thru coolant hole and a 1/8-27 NTP thread for coolant fitting connection.



**The Dorian DeVi QUICK CHANGE Carbide Bars are engineered to simplify deep hole boring with expandable capabilities of multi boring applications.**

## 4 Interchangeable Quick Change Heads

All the positive and threading QUICK CHANGE heads are fully interchangeable with Carbide and DeVi CHATTER FREE Boring Bar Bodies.

## 7 Brazing

The Quick Change Housing and the Carbide Boring Bar Body are silver brazed. The combination of right alloy and thickness of the silver braze makes the brazing strong and unbreakable, but flexible under interrupt cuts.

## 8 Center Line

For center gage reference.

## 9 Housing

The Quick Change Housing is made of heat treated alloy steel and is precisely machined and brazed on to the DeVi Boring Bar Body.

## 10 Holding

Round holding works best with a **Split Collar Style** (shown on page 7) boring bar holder. **Set screw style** (shown on page 7) boring bar holders diminish the performance.

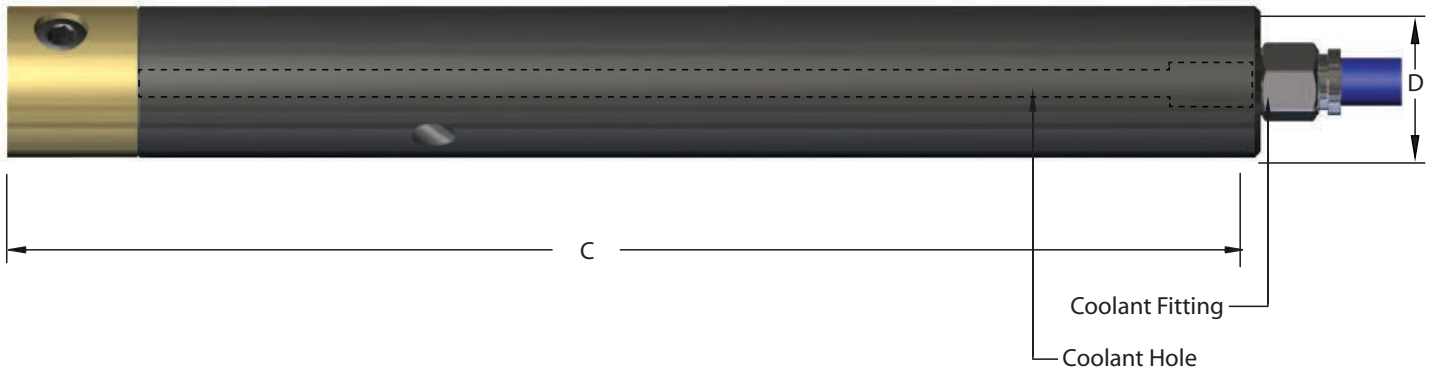
### THREE BAR SHANK SIZES


inch	.750	1.00	1.250
metric	20	25	32



DeVi Quick Change CHATTER FREE Boring Bar Body	Thru Coolant	8:1 & 10:1 Boring Ratio 12:1 & 14:1 Boring Ratio
--	--------------	---

- 3/4" , 1.0" and 1 1/4" Diameters Bar Body
- Quick Change Threading Insert Head
- Boring Ratio 8:1 and 10:1
- 20mm, 25mm and 32mm Diameters Body
- Quick Change Positive Boring Insert Head
- Jet Stream™ Thru Coolant System



Head Locking Screw		
	Description	Part No. 733101-
	QCLS-07	92095

Body Description	Part No. 733101-	Specifications				Coolant	
Inch	Neutral	Boring Ratio	D	C	Bore Depth	Coolant Hole Size	Thread
DV12S-08-MQBBS	59428	8:1	0.750	10.00	6.000	.157	1/8-27 NPT
DV16U-10-MQBBS	59429	10:1	1.000	14.00	10.00	.157	1/8-27 NPT
DV20V-10-MQBBS	59471	10:1	1.250	16.00	12.50	.197	1/8-27 NPT

One high pressure coolant connection kit supplied, see page 63 for details.

Body Description	Part No. 733101-	Specifications				Coolant	
Metric	Neutral	Boring Ratio	D	C	Bore Depth	Coolant Hole Size	Thread
DVM20S-08-MQBBS	59430	8:1	20.0	280	160	4	1/8-27 NPT
DVM25U-10-MQBBS	59431	10:1	25.0	350	250	4	1/8-27 NPT
DVM32V-10-MQBBS	59472	10:1	32.0	416	320	5	1/8-27NPT

One high pressure coolant connection kit supplied, see page 63 for details.

Body Description	Part No. 733101-	Specifications				Coolant	
Inch	Neutral	Boring Ratio	D	C	Bore Depth	Coolant Hole Size	Thread
DV16X-12-MQBBS	59591	12:1	1.000	16.00	12.00	.157	1/8-27 NPT
DV16X-14-MQBBS	59392	14:1	1.000	18.00	14.00	.157	1/8-27 NPT
DV20X-12-MQBBS	59393	12:1	1.250	20.00	15.00	.197	1/8-27 NPT
DV20X-14-MQBBS	59394	14:1	1.250	22.50	17.50	.197	1/8-27 NPT

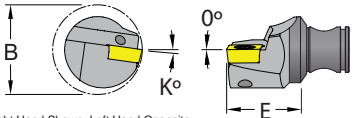
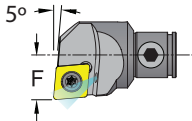
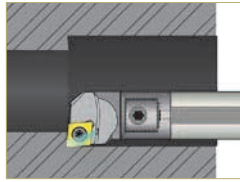
**\*12:1 and 14:1 Boring Ratio bars are a speciality Item, call for price and delivery.** One high pressure coolant connection kit supplied, see page 55 for details.

Body Description	Part No. 733101-	Specifications				Coolant	
Metric	Neutral	Boring Ratio	D	C	Bore Depth	Coolant Hole Size	Thread
DVM25X-12-MQBBS	59395	12:1	25.0	400	300	4	1/8-27 NPT
DVM25X-14-MQBBS	59396	14:1	25.0	450	350	4	1/8-27 NPT
DVM32X-12-MQBBS	59397	12:1	32.0	512	384	5	1/8-27 NPT
DVM32X-14-MQBBS	59398	14:1	32.0	576	448	5	1/8-27 NPT

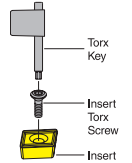
**\*12:1 and 14:1 Boring Ratio bars are a speciality Item, call for price and delivery.** One high pressure coolant connection kit supplied, see page 63 for details.



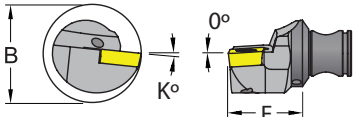
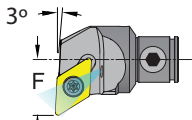
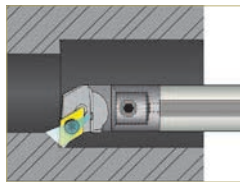
SCLC R/L Quick Change Boring Bar Head								Thru Coolant		
Style L - Negative 5° End & Side Cutting Edge Angle for 7° positive 80° diamond CC__ inserts										
Head	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications		
Inch Description	R.H.	L.H.	B	E	F	K°	Diameter	CCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SCLCR/L-3	59480	59481	0.913	0.840	0.500	8°	0.750	32.52	TS-35.6-9M1	T-15
			1.153	0.840	0.620	8°	1.000			
			1.413	0.840	0.755	8°	1.250			
Metric Description	R.H.	L.H.	B	E	F	K°	Diameter	CCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SCLCR/L-3	59480	59481	23.19	21.34	12.70	8°	20	09T308	TS-35.6-9M1	T-15
			29.29	21.34	15.75	8°	25			
			35.89	21.34	19.18	8°	32			



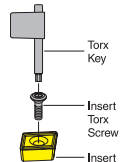
Right Hand Shown, Left Hand Opposite



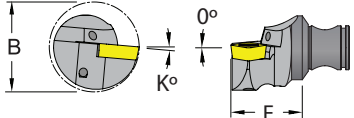
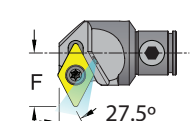
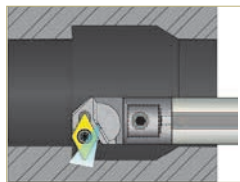
SDUC R/L Quick Change Boring Bar Head								Thru Coolant		
Style U - Negative 3° End & Side Cutting Edge Angle for 7° positive 55° diamond DC__ inserts										
Head	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications		
Inch Description	R.H.	L.H.	B	E	F	K°	Diameter	DCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SDUCR/L-3	59482	59483	1.038	0.840	0.625	6°	0.750	32.52	TS-35.6-9M1	T-15
			1.278	0.840	0.745	6°	1.000			
			1.538	0.840	0.850	6°	1.250			
Metric Description	R.H.	L.H.	B	E	F	K°	Diameter	DCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SDUCR/L-3	59482	59483	26.37	21.34	15.88	6°	20	11T308	TS-35.6-9M1	T-15
			32.46	21.34	18.92	6°	25			
			39.06	21.34	21.59	6°	32			



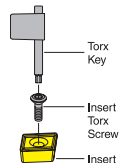
Right Hand Shown, Left Hand Opposite



SDNC R/L Quick Change Boring Bar Head								Thru Coolant		
Style N - Negative 27.5° End & Side Cutting Edge Angle for 7° positive 55° diamond DC__ inserts										
Head	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications		
Inch Description	R.H.	L.H.	B	E	F	K°	Dia.	DCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SDNCR/L-3	59484	59485	1.038	0.840	0.625	5°	0.750	32.52	TS-35.6-9M1	T-15
			1.278	0.840	0.745	5°	1.000			
			1.538	0.840	0.850	5°	1.250			
Metric Description	R.H.	L.H.	B	E	F	K°	Dia.	DCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SDNCR/L-3	59484	59485	26.37	21.34	15.88	5°	20	11T308	TS-35.6-9M1	T-15
			32.46	21.34	18.92	5°	25			
			39.06	21.34	21.59	5°	32			

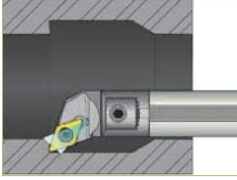
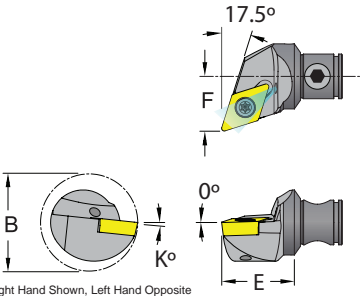


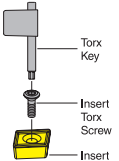
Right Hand Shown, Left Hand Opposite

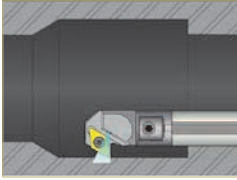
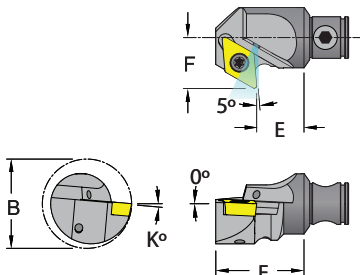


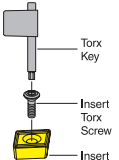


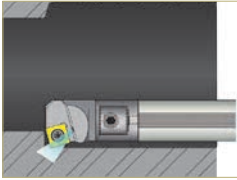
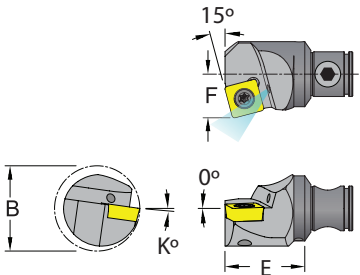


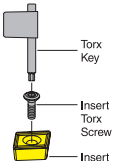
SDQC R/L Quick Change Boring Bar Head								Thru Coolant			
Style Q - Negative 17.5° End & Side Cutting Edge Angle for 7° positive 55° diamond DC__ inserts											
	<b>Head</b>	<b>Part No. 733101-</b>		<b>Head Specifications</b>				<b>Reference Carbide &amp; DeVi Bars</b>	<b>Insert Specifications</b>		
	<b>Inch Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	DCMT Gage Insert	Insert Torx Screw	Torx Key
	DQCMH-12-SDQCR/L-3	59486	59487	1.038	0.840	0.625	7°	0.750	32.52	TS-35.6-9M1	T-15
				1.278	0.840	0.745	7°	1.000			
				1.538	0.840	0.850	7°	1.250			
	<b>Metric Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	DCMT Gage Insert	Insert Torx Screw	Torx Key
	DQCMH-12-SDQCR/L-3	59486	59487	26.37	21.34	15.88	7°	20	11T308	TS-35.6-9M1	T-15
				32.46	21.34	18.92	7°	25			
				39.06	21.34	21.59	7°	32			



SDXC R/L Quick Change Boring Bar Head								Thru Coolant			
Style X - Negative 5° Back Boring Cutting Edge Angle for 7° positive 55° diamond DC__ inserts											
	<b>Head</b>	<b>Part No. 733101-</b>		<b>Head Specifications</b>				<b>Reference Carbide &amp; DeVi Bars</b>	<b>Insert Specifications</b>		
	<b>Inch Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	DCMT Gage Insert	Insert Torx Screw	Torx Key
	DQCMH-12-SDXCR/L-3	59488	59489	1.038	0.590	0.625	5°	0.750	32.52	TS-35.6-9M1	T-15
				1.278	0.590	0.745	5°	1.000			
				1.538	0.590	0.850	5°	1.250			
	<b>Metric Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	DCMT Gage Insert	Insert Torx Screw	Torx Key
	DQCMH-12-SDXCR/L-3	59488	59489	26.37	14.99	15.88	5°	20	11T308	TS-35.6-9M1	T-15
				32.46	14.99	18.92	5°	25			
				39.06	14.99	21.59	5°	32			

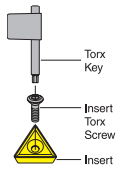


SSKC R/L Quick Change Boring Bar Head with Thru Coolant								Thru Coolant			
Style K - 15° End Cutting Edge Angle for 7° positive square SC__ inserts											
	<b>Head</b>	<b>Part No. 733101-</b>		<b>Head Specifications</b>				<b>Reference Carbide &amp; DeVi Bars</b>	<b>Insert Specifications</b>		
	<b>Inch Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	SCMT Gage Insert	Insert Torx Screw	Torx Key
	DQCMH-12-SSKCR/L-3	59490	59491	0.913	0.840	0.500	8°	0.750	32.52	TS-35.6-9M1	T-15
				1.153	0.840	0.620	8°	1.000			
				1.413	0.840	0.755	8°	1.250			
	<b>Metric Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	SCMT Gage Insert	Insert Torx Screw	Torx Key
	DQCMH-12-SSKCR/L-3	59490	59491	23.19	21.34	12.70	8°	20	09T308	TS-35.6-9M1	T-15
				29.29	21.34	15.75	8°	25			
				35.89	21.34	19.18	8°	32			

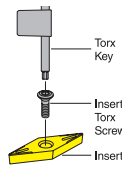




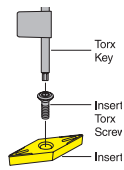
STUC R/L Quick Change Boring Bar Head								Thru Coolant			
Style U - Negative 3° End Cutting Edge Angle for 7° positive triangle TC__ inserts											
<p>Right Hand Shown, Left Hand Opposite</p>	<b>Head</b>	<b>Part No. 733101-</b>		<b>Head Specifications</b>			<b>Reference Carbide &amp; DeVi Bars</b>	<b>Insert Specifications</b>			
	<b>Inch Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	TCMT Gage Insert	Insert Torx Screw	Torx Key
	DQCMH-12-STUCR/L-3	59492	59493	0.913	0.840	0.500	11°	0.750	32.52	TS-35.6-9M1	T-15
				1.153	0.840	0.620	11°	1.000			
			1.413	0.840	0.755	11°	1.250				
<b>Metric Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	TCMT Gage Insert	Insert Torx Screw	Torx Key	
DQCMH-12-STUCR/L-3	59492	59493	23.19	21.34	12.70	11°	20	16T308	TS-35.6-9M1	T-15	
			29.29	21.34	15.75	11°	25				
			35.89	21.34	19.18	11°	32				



SVUC R/L Quick Change Boring Bar Head with Thru Coolant								Thru Coolant			
Style U - Negative 3° End Cutting Edge Angle for 7° positive 35° diamond VC__ inserts											
<p>Right Hand Shown, Left Hand Opposite</p>	<b>Head</b>	<b>Part No. 733101-</b>		<b>Head Specifications</b>			<b>Reference Carbide &amp; DeVi Bars</b>	<b>Insert Specifications</b>			
	<b>Inch Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	VCMT Gage Insert	Insert Torx Screw	Torx Key
	DQCMH-12-SVUCR/L-2	59494	59495	1.038	0.840	0.625	8°	0.750	221	TS-35.6-9M1	T-8
				1.278	0.840	0.745	8°	1.000			
			1.538	0.840	0.850	8°	1.250				
<b>Metric Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	VCMT Gage Insert	Insert Torx Screw	Torx Key	
DQCMH-12-SVUCR/L-2	59494	59495	26.37	21.34	15.88	8°	20	110304	TS-35.6-9M1	T-8	
			32.46	21.34	18.92	8°	25				
			39.06	21.34	21.59	8°	32				

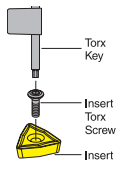


SVMC R/L Quick Change Boring Bar Head with Thru Coolant								Thru Coolant			
Style M - Negative 5° Side Cutting Edge Angle for 7° positive 35° diamond VC__ inserts											
<p>Right Hand Shown, Left Hand Opposite</p>	<b>Head</b>	<b>Part No. 733101-</b>		<b>Head Specifications</b>			<b>Reference Carbide &amp; DeVi Bars</b>	<b>Insert Specifications</b>			
	<b>Inch Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	VCMT Gage Insert	Insert Torx Screw	Torx Key
	DQCMH-12-SVMCR/L-2	59496	59497	1.00	1.250	0.500	5°	0.750	221	TS-25.45-6M2	T-8
				1.240	1.250	0.620	5°	1.000			
			1.500	1.250	0.755	5°	1.250				
<b>Metric Description</b>	R.H.	L.H.	B	E	F	K°	Diameter	VCMT Gage Insert	Insert Torx Screw	Torx Key	
DQCMH-12-SVMCR/L-2	59496	59497	24.50	31.75	12.70	5°	20	110304	TS-25.45-6M2	T-8	
			31.50	31.75	15.75	5°	25				
			38.10	31.75	19.18	5°	32				



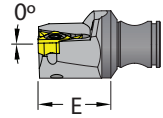
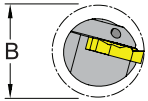
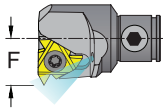
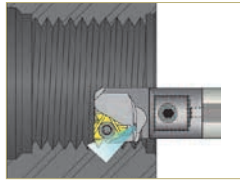


SWLC R/L Quick Change Boring Bar Head with Thru Coolant								Thru Coolant			
Style L - Negative 5° End Cutting Edge Angle for 7° positive 80° trigon WC__ inserts											
<p>Right Hand Shown, Left Hand Opposite</p>	Head	Part No. 733101-		Head Specifications				Reference Carbide & DeVi Bars	Insert Specifications		
	Inch Description	R.H.	L.H.	B	E	F	K°	Diameter	WCMT Gage Insert	Insert Torx Screw	Torx Key
	DQCMH-12-SWLCR/L-3	59498	59498	0.913	0.840	0.500	8°	0.750			
				1.153	0.840	0.620	8°	1.000	32.52 06T308	TS-35.6-9M1	T-15
			1.413	0.840	0.755	8°	1.250				
	Metric Description	R.H.	L.H.	B	E	F	K°	Diameter	WCMT Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SWLCR/L-3	59498	59498	23.19	21.34	12.70	8°	20				
			29.29	21.34	15.75	8°	25	32.52 06T308	TS-35.6-9M1	T-15	
			35.89	21.34	19.18	8°	32				

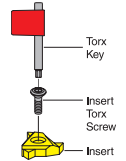




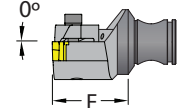
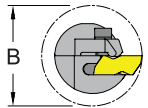
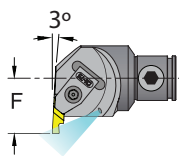
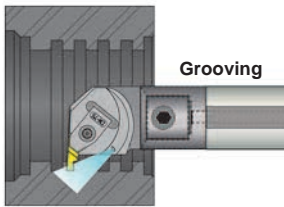
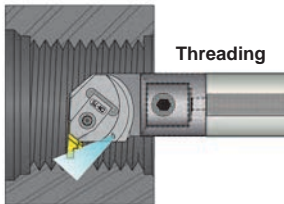
SN R/L Quick Change Threading Bar Head							Thru Coolant		
Internal Laydown Bar for Laydown Inserts									
Head	Part No. 733101-		Head Specifications			Reference Carbide & DeVi Bars	Insert Specifications		
Inch Description	R.H.	L.H.	B	E	F	Diameter	Laydown Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SNR/L-16	59501	59502	0.995	0.840	0.520	0.750	16-A60	TS-35.6-9M1	T-15
			1.235	0.840	0.640	1.000			
			1.495	0.840	1.02	1.250			
Metric Description	R.H.	L.H.	B	E	F	Diameter	Laydown Gage Insert	Insert Torx Screw	Torx Key
DQCMH-12-SNR/L-16	59501	59502	25.27	21.34	13.21	20	16-A60	TS-35.6-9M1	T-15
			31.37	21.34	16.26	25			
			37.97	21.34	25.90	32			



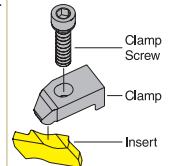
Right Hand Shown, Left Hand Opposite



NE R/L Quick Change Threading & Grooving Bar Head							Thru Coolant		
Style E- Internal DorNotch Bar for threading and grooving DorNotch inserts									
Head	Part No. 733101-		Head Specifications			Reference Carbide & DeVi Bars	Insert Specifications		
Inch Description	R.H.	L.H.	B	E	F	Diameter	DorNotch Gage Insert	Clamp	Clamp Screw
DQCMH-12-NER/L-2	59503	59504	1.125	0.840	0.562	0.750	*NG-2L **NG-2R	*CM-75 **CM-74	S-310M
			1.365	0.840	0.682	1.000			
			1.625	0.840	1.062	1.250			
*For right hand holder. **For left hand holder.									
Metric Description	R.H.	L.H.	B	E	F	Diameter	DorNotch Gage Insert	Clamp	Clamp Screw
DQCMH-12-NER/L-2	59503	59504	28.58	21.34	14.27	20	*NG-2L **NG-2R	*CM-75 **CM-74	S-310M
			34.67	21.34	17.32	25			
			41.27	21.34	26.97	32			



Right Hand Shown, Left Hand Opposite



\*For right hand holder. \*\*For left hand holder.



# DeVi Modular Chatter Free Tunable Boring Bar & Interchangeable Heads

Deep Hole Boring Made Simple!

**1 ADCLN**  
R/L DeVi Modular  
Boring Bar Head  
with Thru Coolant



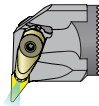
**2 ADDUN**  
R/L DeVi Modular  
Boring Bar Head  
with Thru Coolant



**3 ADTUN**  
R/L DeVi Modular  
Boring Bar Head  
with Thru Coolant



**4 ADVUN**  
R/L DeVi Modular  
Boring Bar Head  
with Thru Coolant



**5 ADWLN**  
R/L DeVi Modular  
Boring Bar Head  
with Thru Coolant



**6 ASCLC**  
R/L DeVi Modular  
Boring Bar Head  
with Thru Coolant



**7 ASDUC**  
R/L DeVi Modular  
Boring Bar Head  
with Thru Coolant



**8 ASTUC**  
R/L DeVi Modular  
Boring Bar Head  
with Thru Coolant



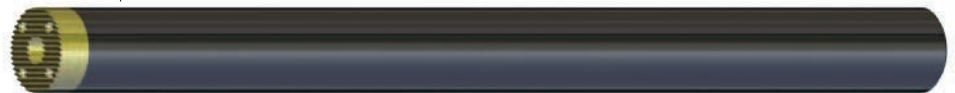
**9 ASVUC**  
R/L DeVi Modular  
Boring Bar Head  
with Thru Coolant



**10 ADLN**  
R/L DeVi Modular  
Threading Bar Head  
with Thru Coolant



- One DeVi Modular Chatter Free Tunable Boring Bar Body
- Twelve Interchangeable Heads



**11 ADNE**  
R/L DeVi Modular  
Threading Bar Head  
with Thru Coolant



**12 ADTHO**  
R/L DeVi Modular  
Threading Bar Head  
with Thru Coolant



10:1 Boring Ratio

12:1 Boring Ratio

14:1 Boring Ratio



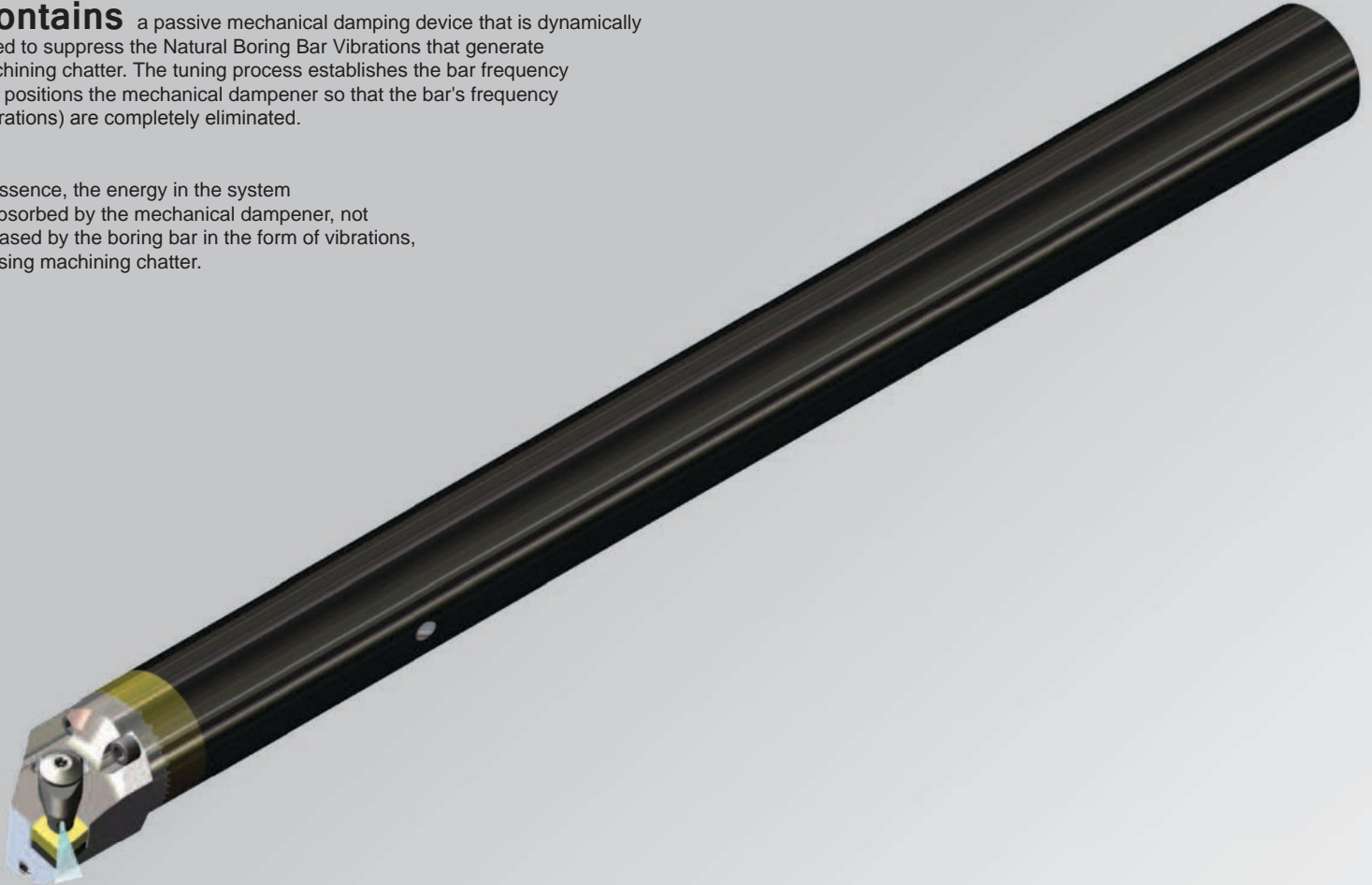
## Dorian DeVi Modular CHATTER FREE Tunable Boring Bar Body:

**Designed** to accept Boring and Threading Modular Heads for Multi Deep Hole Boring Applications

**Engineered** and built with the most advanced technology to extend the depth of boring and expand the capability of multi machining applications.

**Contains** a passive mechanical damping device that is dynamically tuned to suppress the Natural Boring Bar Vibrations that generate machining chatter. The tuning process establishes the bar frequency and positions the mechanical dampener so that the bar's frequency (vibrations) are completely eliminated.

In essence, the energy in the system is absorbed by the mechanical dampener, not released by the boring bar in the form of vibrations, causing machining chatter.



- Modular System
  - Boring Ratio 14:1
  - Jet Stream™ Thru Coolant System
  - Interchangeable Head
- 
- Tunable Boring Bar
  - Multi Boring Application
  - Inch & Metric Sizes  
1 1/4" 1 1/2" 1 3/4" 2.0" 2 1/2" 3.0" 4.0"  
32mm 40mm 50mm 60mm 80mm 100mm

### Modular Heads

For Negative, Positive, Threading and Grooving Inserts

### Thru Coolant

All the Modular Boring Bar Bodies are supplied with thru coolant hole and threaded for a coolant fitting connection.

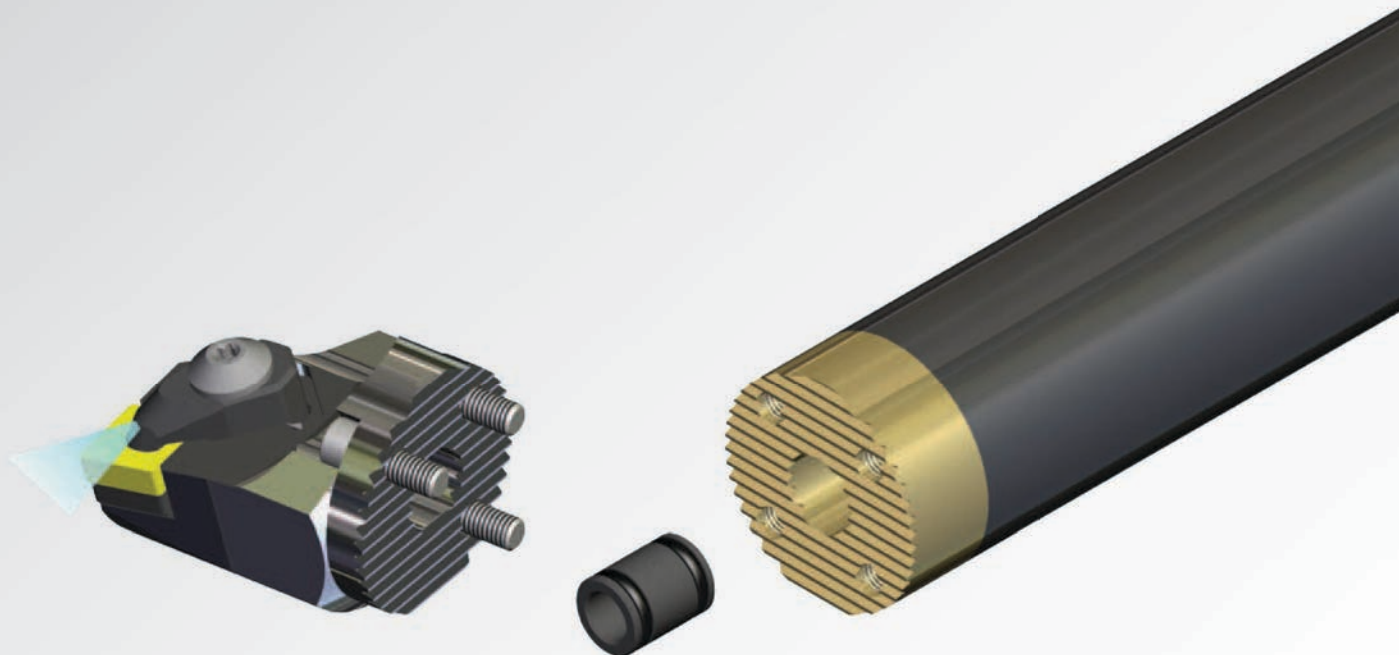
### Jet-Stream™ Thru Coolant System

All the Modular Boring Bar Heads are built with the patented Jet-Stream™ Thru Coolant System to Improve performance, quality and extend insert life.



## DeVi Modular Locking System is SIMPLE - PRECISE - RIGID - POWERFUL

- Modular System
- Jet Stream™ Thru Coolant System
- Negative Insert Heads
- Threading Insert Heads
- Interchangeable Heads
- Multi Boring Applications
- Positive Insert Heads
- Grooving Insert Heads



### **Modular Head Mounting System**

The Modular Heads and Boring Bar Body faces have a precise serrated 60° "V" tooth geometry for precise positioning, repeatability and maximum holding support. The 60° "V" tooth geometry extends the contact of the surface area and minimizes the cutting harmonics between the body and the head.

### **Modular Head Locking System**

The Modular Head mounts on the face of the DeVi Modular CHATTER FREE Tunable Boring Bar Body. The 60° "V" tooth engages in perfect precision, while the precise coolant bushing center the head with the body. Three cap screws will tighten the head with the body.



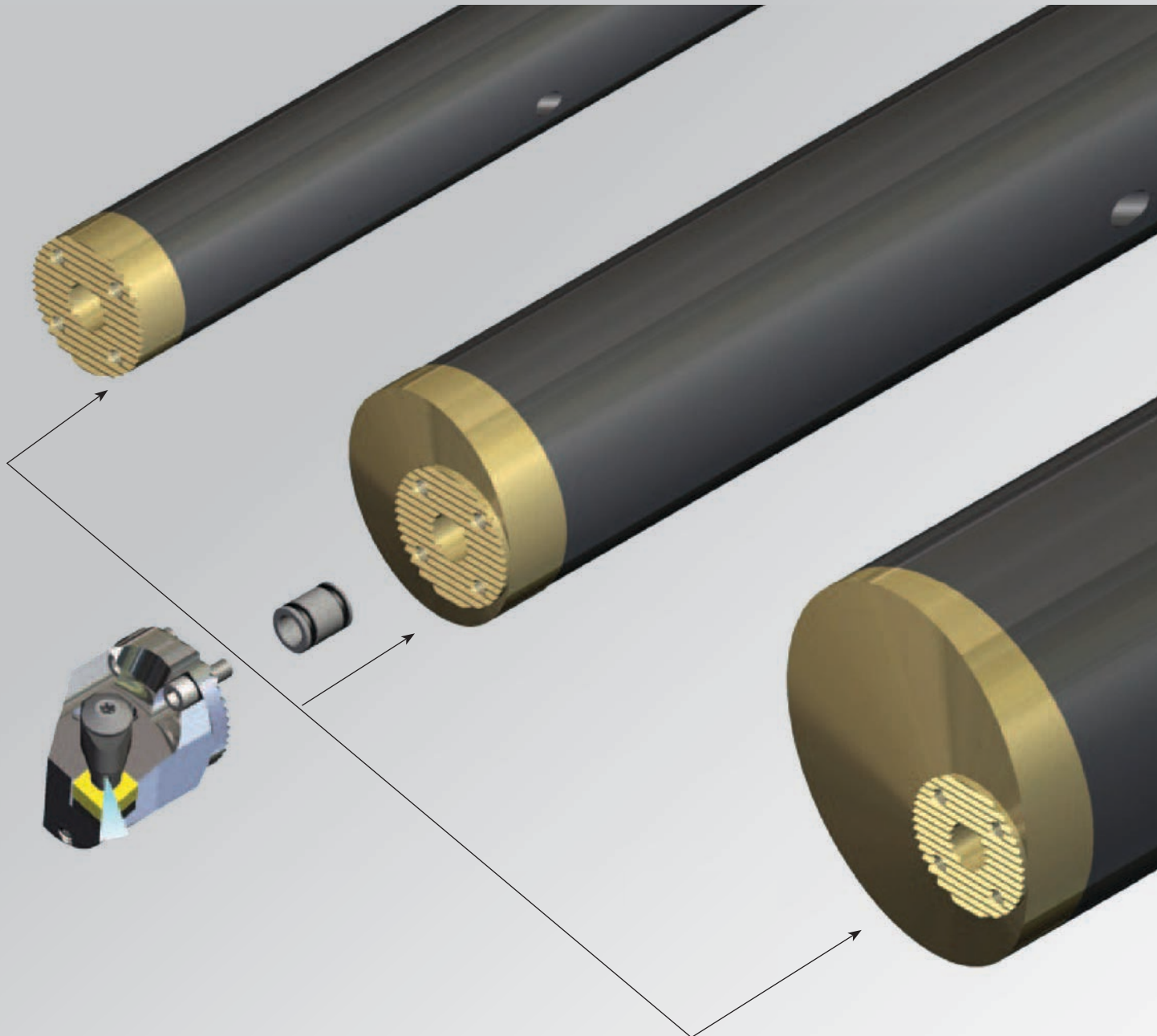
## DeVi Modular CHATTER FREE Tunable Boring Bar Body:

**One Size Head Fits All Boring Bar Bodies !**

**Engineered for High Performance and Efficiency,**

by simplifying the choice of the Modular Heads for the DeVi Modular CHATTER FREE Tunable Boring Bar Body.

**This will expand the use of every Modular Head reducing inventory and machining cost!**





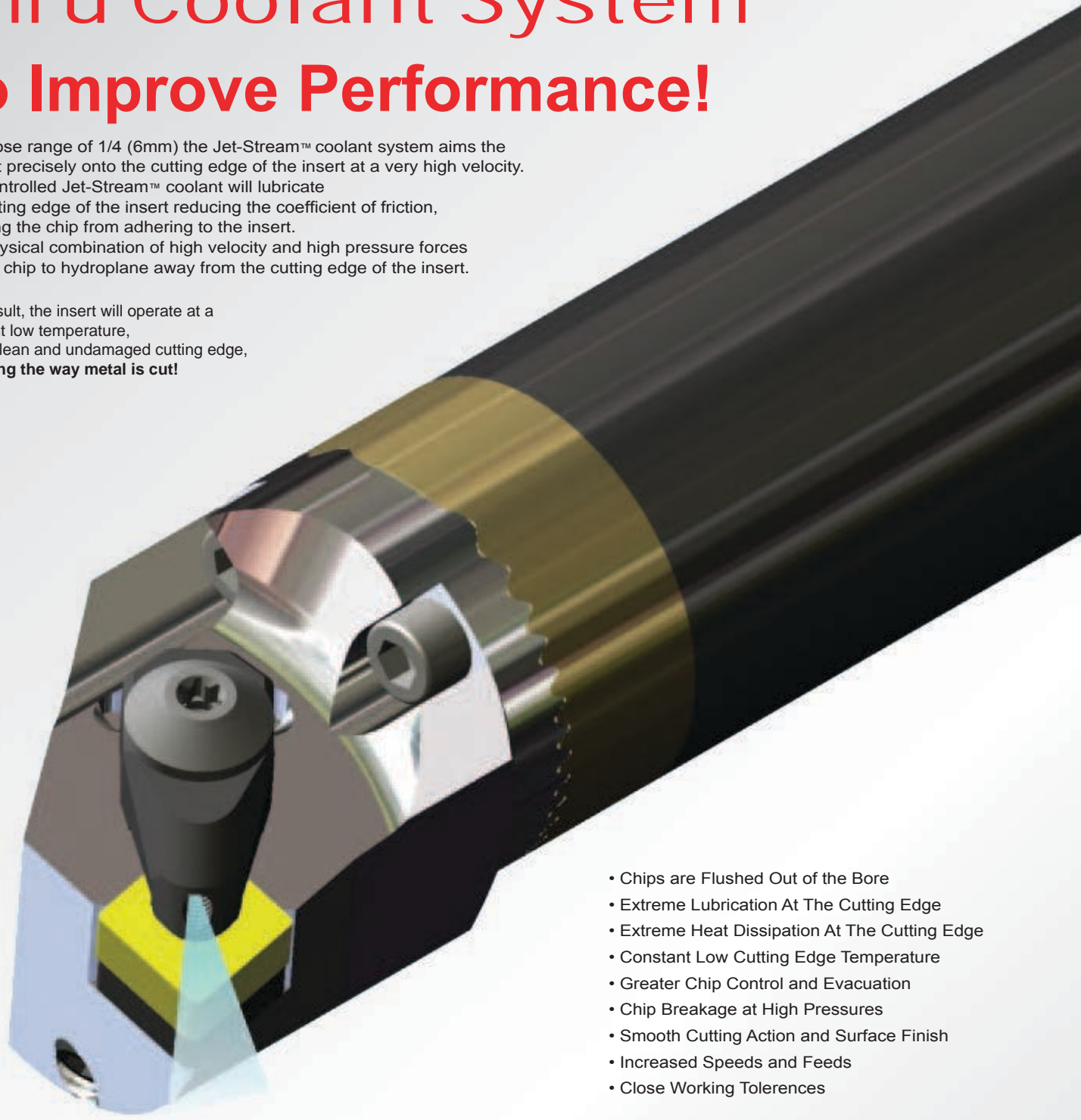


## DeVi Modular CHATTER FREE Tunable Interchangeable Heads:

# Supplied with the Jet-Stream™ Thru Coolant System To Improve Performance!

At a close range of 1/4 (6mm) the Jet-Stream™ coolant system aims the coolant precisely onto the cutting edge of the insert at a very high velocity. The controlled Jet-Stream™ coolant will lubricate the cutting edge of the insert reducing the coefficient of friction, stopping the chip from adhering to the insert. The physical combination of high velocity and high pressure forces the hot chip to hydroplane away from the cutting edge of the insert.

As a result, the insert will operate at a constant low temperature, with a clean and undamaged cutting edge, **changing the way metal is cut!**



- Chips are Flushed Out of the Bore
- Extreme Lubrication At The Cutting Edge
- Extreme Heat Dissipation At The Cutting Edge
- Constant Low Cutting Edge Temperature
- Greater Chip Control and Evacuation
- Chip Breakage at High Pressures
- Smooth Cutting Action and Surface Finish
- Increased Speeds and Feeds
- Close Working Tolerances

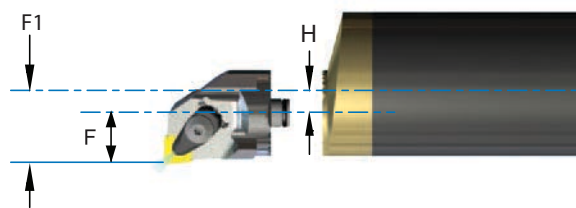
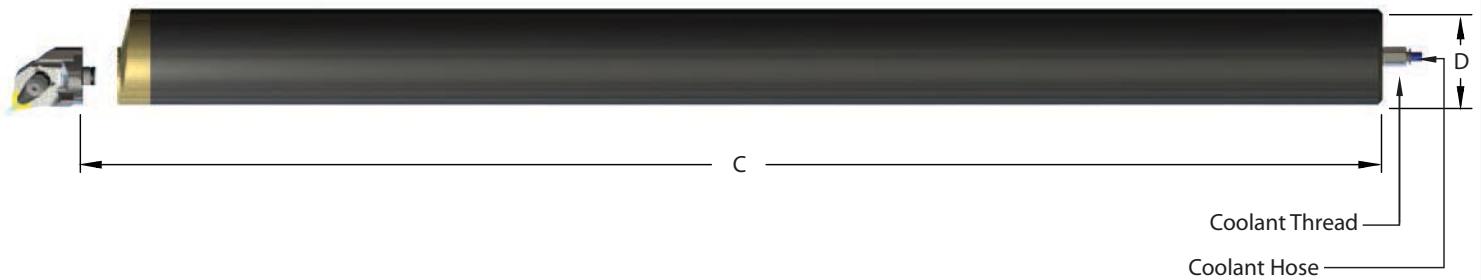


## DeVi Modular CHATTER FREE Tunable Boring Bar Body

## Thru Coolant

- Bar Body Diameters (Inch)  
1 1/4", 1 1/2", 1 3/4", 2.0" 2 1/2", 3.0", 4.0"
- Bar Body Diameters (Metric)  
32mm, 40mm, 50mm, 60mm, 80 mm, 100mm
- Boring Ratio 10:1, 12:1, 14:1

- Modular Positive Insert Boring Heads
- Modular Threading Insert Heads
- Special Bars Built on Request
- Modular Negative Insert Boring Heads
- Modular Double Insert Heads



$$F1^* = F + H$$

$$\text{Min Bore} = B + (H \times 2)^*$$

**\*For reference only**  
(see pages 58-61 for Modular head specifications)  
Note: F is the Tool Head Centerline  
F1 is the Boring Bar Body Centerline

### 10:1 Boring Ratio

Boring Bar	Part No. 733101-	Specifications								Coolant	
Description	R.H. & L.H.	Boring Ratio	D	C	Bore Depth	H	F1*	Min. Bore*	Modular Heads*	Hole	Thread
<b>Inch Description</b>											
AS20X-10-DVI-MBBB-16	59432	10:1	1.250	16.00	12.50	0	F1* = F + H	B + (H x 2)	DBOMH20/32_ASR/L	.25	18-27 NPT
AS24X-10-DVI-MBBB-19	59433	10:1	1.500	19.00	15.00	0			DBOMH24/40_ASR/L	.25	
AS28X-10-DVI-MBBB-23	59434	10:1	1.750	23.00	17.50	.125			DBOMH24/40_ASR/L	.25	
AS32X-10-DVI-MBBB-26	59435	10:1	2.000	26.00	20.00	.250			DBOMH24/40_ASR/L	.3125	
AS40X-10-DVI-MBBB-33	59436	10:1	2.500	33.00	25.00	.500			DBOMH24/40_ASR/L	.375	
AS48X-10-DVI-MBBB-40	59437	10:1	3.000	40.00	30.00	.750			DBOMH24/40_ASR/L	.375	1/4-18 NPT
AS64X-10-DVI-MBBB-50	59438	10:1	4.000	50.00	40.00	1.25			DBOMH24/40_ASR/L	.375	
<b>Metric Description</b>											
ASM32X-10-DVI-MBBB-0416	59439	10:1	32	416	320	0	F1* = F + H	B + (H x 2)	DBOMH20/32_ASR/L	6.4	18-27 NPT
ASM40X-10-DVI-MBBB-0520	59440	10:1	40	520	400	0			DBOMH24/40_ASR/L	6.4	
ASM50X-10-DVI-MBBB-0650	59441	10:1	50	650	500	5			DBOMH24/40_ASR/L	6.4	
ASM60X-10-DVI-MBBB-0780	59442	10:1	60	780	600	10			DBOMH24/40_ASR/L	7.9	
ASM80X-10-DVI-MBBB-1040	59443	10:1	80	1040	800	20			DBOMH24/40_ASR/L	9.5	1/4-18 NPT
ASM100X-10-DVI-MBBB-1300	59444	10:1	100	1300	1000	30			DBOMH24/40_ASR/L	9.5	

One high pressure coolant connection kit supplied, see page 63 for details. \*Modular heads sold separately, see pages 58-61 for specifications.



12:1 Boring Ratio											
Boring Bar	Part No. 733101-	Specifications								Coolant	
Description	R.H. & L.H.	Boring Ratio	D	C	Bore Depth	H	F1*	Min. Bore*	Modular Heads*	Hole	Thread
<b>Inch Description</b>											
AS20X-12-DVI-MBBB-19	59445	12:1	1.250	19.00	15.00	0	F1* = F + H	B + (H x 2)	DBOMH20/32_ASR/L	.25	18-27 NPT
AS24X-12-DVI-MBBB-22	59446	12:1	1.500	22.00	18.00	0			DBOMH24/40_ASR/L	.25	
AS28X-12-DVI-MBBB-27	59447	12:1	1.750	27.00	21.00	.125			DBOMH24/40_ASR/L	.25	
AS32X-12-DVI-MBBB-30	59448	12:1	2.000	30.00	24.00	.250			DBOMH24/40_ASR/L	.3125	1/4-18 NPT
AS40X-12-DVI-MBBB-38	59449	12:1	2.500	38.00	30.00	.500			DBOMH24/40_ASR/L	.375	
AS48X-12-DVI-MBBB-46	59450	12:1	3.000	46.00	36.00	.750			DBOMH24/40_ASR/L	.375	
AS64X-12-DVI-MBBB-58	59451	12:1	4.000	58.00	48.00	1.25			DBOMH24/40_ASR/L	.375	
<b>Metric Description</b>											
ASM32X-12-DVI-MBBB-0480	59452	12:1	32	416	320	0	F1* = F + H	B + (H x 2)	DBOMH20/32_ASR/L	6.4	18-27 NPT
ASM40X-12-DVI-MBBB-0600	59453	12:1	40	520	400	0			DBOMH24/40_ASR/L	6.4	
ASM50X-12-DVI-MBBB-0750	59454	12:1	50	650	500	5			DBOMH24/40_ASR/L	6.4	
ASM60X-12-DVI-MBBB-0900	59455	12:1	60	780	600	10			DBOMH24/40_ASR/L	7.9	1/4-18 NPT
ASM80X-12-DVI-MBBB-1200	59456	12:1	80	1040	800	20			DBOMH24/40_ASR/L	9.5	
ASM100X-12-DVI-MBBB-1500	59457	12:1	100	1300	1000	30			DBOMH24/40_ASR/L	9.5	

One high pressure coolant connection kit supplied, see page 63 for details. \*Modular heads sold seperately, see pages 58-61 for specifications.

14:1 Boring Ratio											
Boring Bar	Part No. 733101-	Specifications								Coolant	
Description	R.H. & L.H.	Boring Ratio**	D	C	Bore Depth	H	F1*	Min. Bore*	Modular Heads*	Hole	Thread
<b>Inch Description</b>											
AS20X-14-DVI-MBBB-22	59458	14:1	1.250	22.50	17.50	0	F1* = F + H	B + (H x 2)	DBOMH20/32_ASR/L	.25	18-27 NPT
AS24X-14-DVI-MBBB-26	59459	14:1	1.500	26.00	21.00	0			DBOMH24/40_ASR/L	.25	
AS28X-14-DVI-MBBB-30	59460	14:1	1.750	30.50	24.50	.125			DBOMH24/40_ASR/L	.25	
AS32X-14-DVI-MBBB-34	59461	14:1	2.000	34.00	28.00	.250			DBOMH24/40_ASR/L	.3125	1/4-18 NPT
AS40X-14-DVI-MBBB-43	59462	14:1	2.500	43.00	35.00	.500			DBOMH24/40_ASR/L	.375	
AS48X-14-DVI-MBBB-52	59463	14:1	3.000	52.00	42.00	.750			DBOMH24/40_ASR/L	.375	
AS64X-14-DVI-MBBB-66	59464	14:1	4.000	68.00	56.00	1.25			DBOMH24/40_ASR/L	.375	
<b>Metric Description</b>											
ASM32X-14-DVI-MBBB-0544	59465	14:1	32	550	448	0	F1* = F + H	B + (H x 2)	DBOMH20/32_ASR/L	6.4	18-27 NPT
ASM40X-14-DVI-MBBB-0680	59466	14:1	40	680	560	0			DBOMH24/40_ASR/L	6.4	
ASM50X-14-DVI-MBBB-0850	59467	14:1	50	850	700	5			DBOMH24/40_ASR/L	6.4	
ASM60X-14-DVI-MBBB-1020	59468	14:1	60	1050	890	10			DBOMH24/40_ASR/L	7.9	1/4-18 NPT
ASM80X-14-DVI-MBBB-1360	59469	14:1	80	1360	1120	20			DBOMH24/40_ASR/L	9.5	
ASM100X-14-DVI-MBBB-1700	59470	14:1	100	1700	1400	30			DBOMH24/40_ASR/L	9.5	

\*\* 14:1 Boring Ratio bars are a speciality item, call for price and delivery. One high pressure coolant connection kit supplied, see page 63 for details.

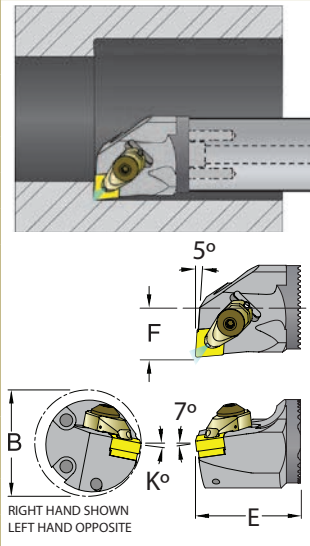
\*Modular heads sold seperately, see pages 58-61 for specifications.



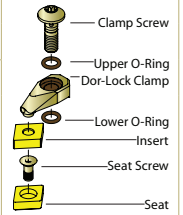
**ADCLN R/L DeVi Modular CHATTER FREE Tunable Boring Bar Head**

Style L - Negative 5° End & Side Cutting Edge Angle for negative 80° diamond CN\_\_ inserts

Thru Coolant



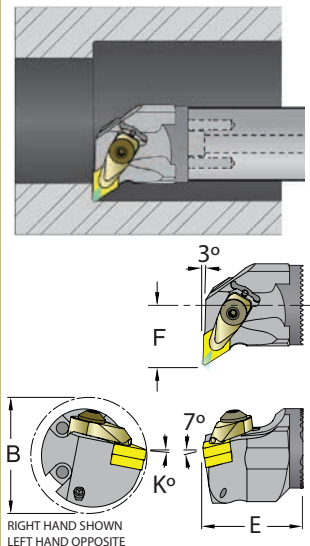
Head	Part No. 733101-		Head Specifications				Bars	Hardware Specifications				
Inch Description	R.H.	L.H.	B	E	F	K°	Dia.	CNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw
DBOMH-20/32M-ADCLNR/L-4	59505	59506	1.530	1.875	0.790	14°	1.25	432	ICSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04
DBOMH-24/40M-ADCLNR/L-4	59507	59508	1.780	1.875	0.900	11°	1.50					
Metric Description	R.H.	L.H.	B	E	F	K°	Dia.	CNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw
DBOMH-20/32M-ADCLNR/L-4	59505	59506	38.86	47.63	20.07	14°	32	120408	ICSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04
DBOMH-24/40M-ADCLNR/L-4	59507	59508	45.21	47.63	22.86	11°	40					



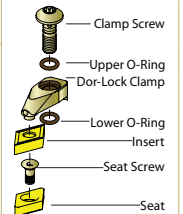
**ADDUN R/L DeVi Modular CHATTER FREE Tunable Boring Bar Head**

Style U - Negative 3° End Cutting Edge Angle for negative 55° diamond DN\_\_ inserts

Thru Coolant



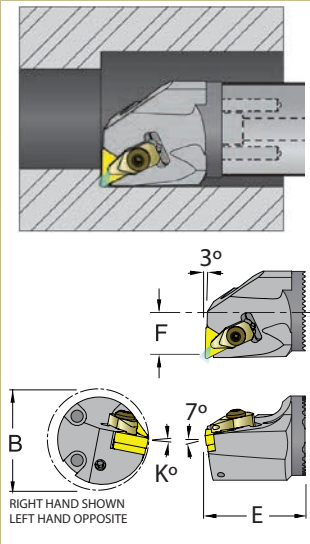
Head	Part No. 733101-		Head Specifications				Bars	Hardware Specifications				
Inch Description	R.H.	L.H.	B	E	F	K°	Dia.	DNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw
DBOMH-20/32M-ADDUNR/L-4	59509	59510	2.000	1.875	1.000	11°	1.25	432	IDSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04
DBOMH-24/40M-ADDUNR/L-4	59511	59512	2.250	1.875	1.125	11°	1.50					
Metric Description	R.H.	L.H.	B	E	F	K°	Dia.	DNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw
DBOMH-20/32M-ADDUNR/L-4	59509	59510	50.80	47.63	25.40	11°	32	150408	IDSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04
DBOMH-24/40M-ADDUNR/L-4	59511	59512	57.15	47.63	28.58	11°	40					



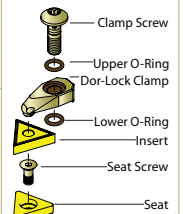
**ADTUN R/L DeVi Modular CHATTER FREE Tunable Boring Bar Head**

Style L - Negative 5° End & Side Cutting Edge Angle for negative 60° triangle TN\_\_ inserts

Thru Coolant

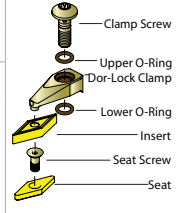
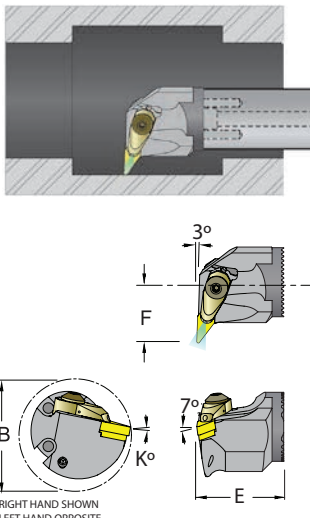


Head	Part No. 733101-		Head Specifications				Bars	Hardware Specifications				
Inch Description	R.H.	L.H.	B	E	F	K°	Dia.	TNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw
DBOMH-20/32M-ADTUNR/L-3	59513	59514	1.530	1.875	0.765	14°	1.25	332	ITSN-322	SM-M3	JSLC-HPDT3-BR/L	JSCS-03
DBOMH-24/40M-ADTUNR/L-3	59515	59516	2.060	1.875	0.890	11°	1.50					
DBOMH-24/40M-ADTUNR/L-4	59517	59518	2.060	1.875	0.890	11°	1.50					
Metric Description	R.H.	L.H.	B	E	F	K°	Dia.	TNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw
DBOMH-20/32M-ADTUNR/L-3	59513	59514	38.86	47.63	19.43	14°	32	160408	ITSN-322	SM-M3	JSLC-HPDT3-BR/L	JSCS-03
DBOMH-24/40M-ADTUNR/L-3	59515	59516	52.32	47.63	22.61	11°	40					
DBOMH-24/40M-ADTUNR/L-4	59517	59518	52.32	47.63	22.61	11°	40					

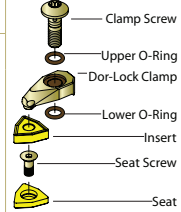
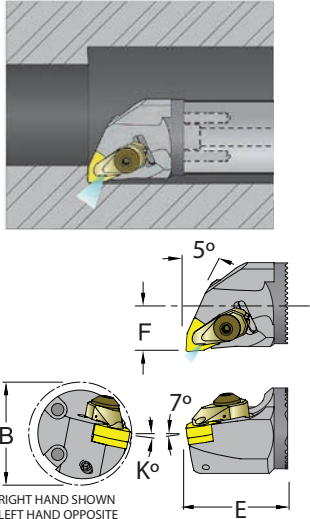




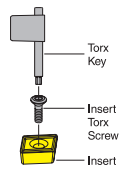
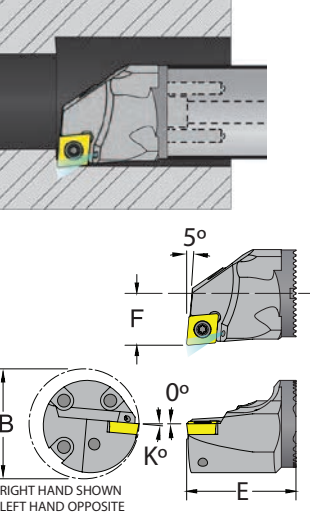
ADVUN R/L DeVi Modular CHATTER FREE Tunable Boring Bar Head										Thru Coolant				
Style U - Negative 3° End Cutting Edge Angle for negative 35° diamond VN__ inserts														
Head	Part No. 733101-		Head Specifications				Bars	Hardware Specifications						
Inch Description	R.H.	L.H.	B	E	F	K°	Dia.	VNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw		
DBOMH-20/32M-ADVUNR/L-3	59519	59520	2.250	1.875	1.125	14°	1.25	332	IVSN-322	SM-M3-V	JSLC-HPV3	JSCS-04		
DBOMH-24/40M-ADVUNR/L-3	59521	59522	2.500	1.875	1.312	11°	1.50							
Metric Description	R.H.	L.H.	B	E	F	K°	Dia.	VNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw		
DBOMH-20/32M-ADVUNR/L-3	59519	59520	57.15	47.63	28.58	14°	32	160408	IVSN-322	SM-M3-V	JSLC-HPV3	JSCS-04		
DBOMH-24/40M-ADVUNR/L-3	59521	59522	63.50	47.63	33.32	11°	40							



ADWLN R/L DeVi Modular CHATTER FREE Tunable Boring Bar Head										Thru Coolant				
Style L - Negative 5° End & Side Cutting Edge Angle for negative 80° trigon WN__ inserts														
Head	Part No. 733101-		Head Specifications				Bars	Hardware Specifications						
Inch Description	R.H.	L.H.	B	E	F	K°	Dia.	WNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw		
DBOMH-20/32M-ADWLNRL/L-4	59523	59524	1.530	1.875	0.765	14°	1.25	432	IWSN-433	SM-S4	JSLC-HPTW-4RT/L	JSCS-04		
DBOMH-24/40M-ADWLNRL/L-4	59525	59526	1.780	1.875	0.890	11°	1.50							
Metric Description	R.H.	L.H.	B	E	F	K°	Dia.	WNMG Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw		
DBOMH-20/32M-ADWLNRL/L-4	59523	59524	38.86	47.63	19.43	14°	32	080408	IWSN-433	SM-S4	JSLC-HPTW-4RT/L	JSCS-04		
DBOMH-24/40M-ADWLNRL/L-4	59525	59526	45.21	47.63	22.61	11°	40							



ASCLC R/L DeVi Modular CHATTER FREE Tunable Boring Bar Head										Thru Coolant				
Style L - Negative 5° End & Side Cutting Edge Angle for 7° positive 80° diamond CC__ inserts														
Head	Part No. 733101-		Head Specifications				Bars	Hardware Specifications						
Inch Description	R.H.	L.H.	B	E	F	K°	Dia.	CCGW Gage Insert	Insert Screw	Torx Screw				
DBOMH-20/32M-ASCLCR/L-4	59527	59528	1.530	1.875	0.765	5°	1.25	432	TS-5.8-10M1	T-20				
DBOMH-24/40M-ASCLCR/L-4	59529	59530	1.780	1.875	0.890	5°	1.50							
Metric Description	R.H.	L.H.	B	E	F	K°	Dia.	CCGW Gage Insert	Insert Screw	Torx Screw				
DBOMH-20/32M-ASCLCR/L-4	59527	59528	38.86	47.63	19.43	5°	32	120408	TS-5.8-10M1	T-20				
DBOMH-24/40M-ASCLCR/L-4	59529	59530	45.21	47.63	22.61	5°	40							

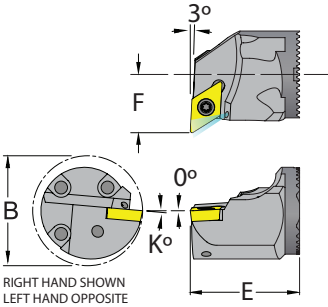
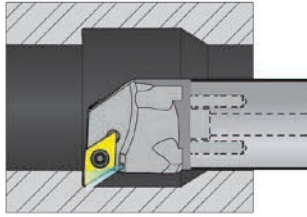




**ASDUC R/L DeVi Modular CHATTER FREE Tunable Boring Bar Head**

Style U - Negative 3° End Cutting Edge Angle for 7° positive 55° diamond DC\_\_ inserts

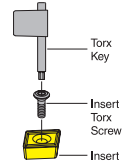
Thru Coolant



Head	Part No. 733101-		Head Specifications				Bars	Hardware Specifications		
Inch Description	R.H.	L.H.	B	E	F	K°	Dia.	DCGW Gage Insert	Insert Screw	Torx Screw
DBOMH-20/32M-ASDUCR/L-3	59531	59532	2.000	1.875	1.000	4°	1.25	32.52	TS-35.6-9M1	T-15
DBOMH-24/40M-ASDUCR/L-3	59533	59534	2.250	1.875	1.125	4°	1.50			
DBOMH-24/40M-ASDUCR/L-4	59535	59536	2.250	1.875	1.125	4°	1.50	432	TS-5.8-10M1	T-20

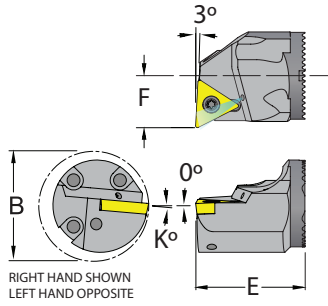
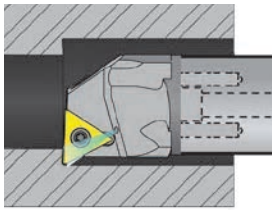
Metric Description	R.H.	L.H.	B	E	F	K°	Dia.	DCGW Gage Insert	Insert Screw	Torx Screw
DBOMH-20/32M-ASDUCR/L-3	59531	59532	50.80	47.63	25.40	4°	32	11T308	TS-35.6-9M1	T-15
DBOMH-24/40M-ASDUCR/L-3	59533	59534	57.15	47.63	28.58	4°	40			
DBOMH-24/40M-ASDUCR/L-4	59535	59536	57.15	47.63	28.58	4°	40	150408	TS-5.8-10M1	T-20



**ASTUC R/L DeVi Modular CHATTER FREE Tunable Boring Bar Head**

Style U - Negative 3° End Cutting Edge Angle for 7° positive triangle TC\_\_ inserts

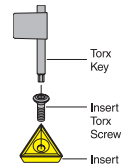
Thru Coolant



Head	Part No. 733101-		Head Specifications				Bars	Hardware Specifications		
Inch Description	R.H.	L.H.	B	E	F	K°	Dia.	TCGW Gage Insert	Insert Screw	Torx Screw
DBOMH-20/32M-ASTUCR/L-3	59537	59538	1.530	1.875	0.765	7°	1.25	32.52	TS-35.6-9M1	T-15
DBOMH-24/40M-ASTUCR/L-3	59539	59540	1.780	1.875	0.890	5°	1.50			
DBOMH-24/40M-ASTUCR/L-4	59541	59542	1.780	1.875	0.890	5°	1.50	432	TS-5.8-10M1	T-20

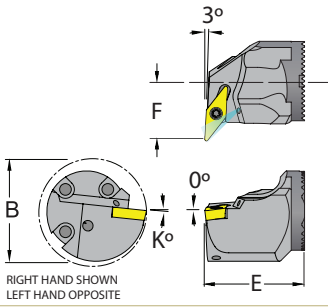
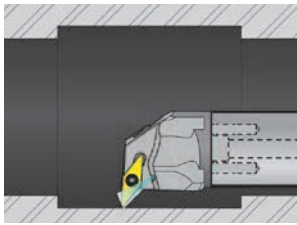
Metric Description	R.H.	L.H.	B	E	F	K°	Dia.	TCGW Gage Insert	Insert Screw	Torx Screw
DBOMH-20/32M-ASTUCR/L-3	59537	59538	50.80	47.63	25.40	4°	32	11T308	TS-35.6-9M1	T-15
DBOMH-24/40M-ASTUCR/L-3	59539	59540	57.15	47.63	28.58	4°	40			
DBOMH-24/40M-ASTUCR/L-4	59541	59542	57.15	47.63	28.58	4°	40	150408	TS-5.8-10M1	T-20



**ASVUC R/L DeVi Modular CHATTER FREE Tunable Boring Bar Head**

Style U - Negative 3° End Cutting Edge Angle for 7° positive 35° diamond VC\_\_ inserts

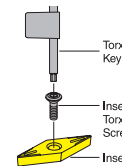
Thru Coolant



Head	Part No. 733101-		Head Specifications				Bars	Hardware Specifications		
Inch Description	R.H.	L.H.	B	E	F	K°	Dia.	VCGW Gage Insert	Insert Screw	Torx Screw
DBOMH-20/32M-ASVUCR/L-3	59543	59544	2.250	1.875	1.125	6°	1.25	332 160408	TS-35.6-9M1	T-15
DBOMH-24/40M-ASVUCR/L-3	59545	59546	2.500	1.875	1.312	6°	1.50			

Metric Description	R.H.	L.H.	B	E	F	K°	Dia.	VCGW Gage Insert	Insert Screw	Torx Screw
DBOMH-20/32M-ASVUCR/L-3	59543	59544	57.15	47.63	28.58	6°	32	332 160408	TS-35.6-9M1	T-15
DBOMH-24/40M-ASVUCR/L-3	59545	59546	63.50	47.63	33.32	6°	40			





**ADLN R/L DeVi Modular CHATTER FREE Tunable Laydown Threading Bar Head**  
 Style N - Internal laydown bar for laydown threading

**Thru Coolant**

Head	Part No. 733101-		Head Specifications			Bars	Hardware Specifications				
Inch Description	R.H.	L.H.	B	E	F	Dia.	Laydown Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw
DBOMH-20/32M-ADLNR/L-16	59547	59548	1.620	1.875	0.780	1.25	16-G60	GXE-16	TS-3.5-7M1	JSLC-HP16R*	JSCS-03
DBOMH-24/40M-ADLNR/L-16	59549	59550	1.870	1.875	0.900	1.50				JSLC-HP16L**	
DBOMH-20/32M-ADLNR/L-22	59551	59552	1.750	1.875	0.937	1.25	22-N60	NXE-22	TS-45.75-15M1	JSLC-HP22N	JSCS-04
DBOMH-24/40M-ADLNR/L-22	59553	59554	2.000	1.875	1.250	1.50				JSCS-04	

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

Metric Description	R.H.	L.H.	B	E	F	Dia.	Laydown Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw
DBOMH-20/32M-ADLNR/L-16	59547	59548	41.15	47.63	19.81	32	16-G60	GXE-16	TS-3.5-7M1	JSLC-HP16R*	JSCS-03
DBOMH-24/40M-ADLNR/L-16	59549	59550	47.50	47.63	22.86	40				JSLC-HP16L**	
DBOMH-20/32M-ADLNR/L-22	59551	59552	44.45	47.63	23.80	32	22-N60	NXE-22	TS-45.75-15M1	JSLC-HP22N	JSCS-04
DBOMH-24/40M-ADLNR/L-22	59553	59554	50.80	47.63	31.75	40				JSCS-04	

**ADNE R/L DeVi Modular CHATTER FREE Tunable DorNotch Threading Bar Head**  
 Style E - Internal DorNotch Boring Bar for threading and grooving DorNotch inserts

**Thru Coolant**

Head	Part No. 733101-		Head Specifications			Bars	Hardware Specifications		
Inch Description	R.H.	L.H.	B	E	F	Dia.	DorNotch Gage Insert	Dor-Lock Clamp	Clamp Screw
DBOMH-20/32M-ADNER/L-3	59555	59556	1.750	1.875	0.880	1.25	NG-3L*	JSLC-HP73*	JSCS-04
DBOMH-24/40M-ADNER/L-3	59557	59558	2.000	1.875	1.000	1.50	NG-3R**	JSLC-HP72**	

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

Metric Description	R.H.	L.H.	B	E	F	Dia.	DorNotch Gage Insert	Dor-Lock Clamp	Clamp Screw
DBOMH-20/32M-ADNER/L-3	59555	59556	44.45	47.63	22.35	32	NG-3L*	JSLC-HP73*	JSCS-04
DBOMH-24/40M-ADNER/L-3	59557	59558	50.80	47.63	25.40	40	NG-3R**	JSLC-HP72**	

**ADTHO R/L DeVi Modular CHATTER FREE Tunable OnEdge Threading Bar Head**  
 Style H - I.D. Threading and grooving for triangle TNMC inserts

**Thru Coolant**

Head	Part No. 733101-		Head Specifications			Bars	Hardware Specifications			
Inch Description	R.H.	L.H.	B	E	F	Dia.	TNMC Gage Insert	Insert Seat Screw	Tork Key	Chip Flush Plug
DBOMH-20/32M-ADTHOR/L-4	59559	59560	1.812	1.875	0.875	1.25	432	GTS-2M	T-20	JSPN-M6
DBOMH-24/40M-ADTHOR/L4	59561	59562	2.250	1.875	1.000	1.50				JSPN-M6
DBOMH-24/40M-ADTHOR/L-5	59563	59564	2.250	1.875	1.000	1.50				JSPN-M6

Metric Description	R.H.	L.H.	B	E	F	Dia.	TNMC Gage Insert	Insert Seat Screw	Tork Key	Chip Flush Plug
DBOMH-20/32M-ADTHOR/L-4	59559	59560	46.02	47.63	22.23	32	220408	GTS-2M	T-20	JSPN-M6
DBOMH-24/40M-ADTHOR/L4	59561	59562	57.15	47.63	25.40	40				JSPN-M6
DBOMH-24/40M-ADTHOR/L-5	59563	59564	57.15	47.63	25.40	40				JSPN-M6



## Inch Formulas for Turning and Boring

$a_p$ = Depth of cut (DOC)	Inch	$k_c$ = Specific cutting force	Lb/Inch <sup>2</sup>
$D_m$ = Diameter of part (DIA)	Inch	$n$ = Spindle speed (RPM)	Rev/Min
$f_n$ = Feed per revolution (FEED)	Inch/Rev	$v_c$ = Cutting speed (SFM)	Feet/Min
$l_m$ = Machined length (LEN)	Inch	$T_c$ = Cutting time (TIM)	Min
$Q$ = Metal removal rate (MMR)	Inch <sup>3</sup> /Min	$R_{max}$ = Profile depth	μInch
$P_c$ = Power requirements (POW)	Hp	$r_\epsilon$ = Insert nose radius	Inch
<b>Cutting Speed Surface Feet Per Minute:</b> $v_c = \frac{\pi \times D_m \times n}{12}$	EX: Determine the cutting speed ( $v_c$ ) required for turning a 2-1/2" diameter part with a spindle speed of 600 RPM.	$v_c = \frac{\pi \times 2.5 \times 600}{12} = 392.70 \text{ Feet/Min}$	
<b>Spindle Speed Revolution Per Minute:</b> $n = \frac{V_c \times 12}{\pi \times D_m}$	EX: Determine the spindle speed ( $n$ ) required for turning a 2-1/2" diameter part with a cutting speed of 400 SFM.	$n = \frac{400 \times 12}{\pi \times 2.5} = 611.15 \text{ Rev/Min}$	
<b>Metal Removal Rate Inch<sup>3</sup>/Min:</b> $Q = v_c \times a_p \times f_n \times 12$	EX: Determine the metal removal rate ( $Q$ ) required for cutting with a depth of .062 with a cutting speed of 400 SFM and feed rate of .015 IPR.	$Q = 400 \times .062 \times .015 \times 12 = 4.464 \text{ inch}^3/\text{min}$	
<b>Power Requirement Horsepower:</b> $P_c = \frac{v_c \times a_p \times f_n \times k_c}{33,000}$	EX: Determine the power requirement ( $P_c$ ) for turning a material with a cutting force of 181,750, a depth of .062, a cutting speed of 400 SFM, and feed rate of .015 IPR.	$P_c = \frac{400 \times .062 \times .015 \times 181,750}{33,000} = 2.05 \text{ HP}$	
<b>Cutting Time Minute:</b> $T_c = \frac{l_m}{f_n \times n}$	EX: Determine the amount of time required to machine a 6" long part with a spindle speed of 600 RPM and feed rate of .015 IPR.	$T_c = \frac{6}{.015 \times 600} = .67 \text{ Min (40 Sec)}$	
<b>Profile Depth (μInch)</b> $R_{max} = \frac{f_n^2 \times 10^6}{8r_\epsilon}$	EX: Determine the profile depth ( $R_{max}$ ) of a surface machined using an insert with a nose radius of .032 and a feed rate of .015 IPR.	$R_{max} = \frac{.015^2 \times 10^6}{8 \times .032} = 879 \text{ μinch}$	

## Metric Formulas for Turning and Boring

$a_p$ = Depth of cut (DOC)	mm	$k_c$ = Specific cutting force	Nm
$D_m$ = Diameter of part (DIA)	mm	$n$ = Spindle speed (RPM)	Rev/Min
$f_n$ = Feed per revolution (FEED)	mm/Rev	$v_c$ = Cutting speed (SFM)	m/Min
$l_m$ = Machined length (LEN)	mm	$T_c$ = Cutting time (TIM)	Min
$Q$ = Metal removal rate (MMR)	mm <sup>3</sup> /Min	$R_{max}$ = Profile depth	μm
$P_c$ = Power requirements (POW)	kW	$r_\epsilon$ = Insert nose radius	mm
<b>Cutting Speed Surface Meters Per Minute</b> $v_c = \frac{\pi \times D_m \times n}{1000}$	EX: Determine the cutting speed ( $v_c$ ) required for turning a 50mm diameter part with a spindle speed of 600 RPM.	$v_c = \frac{\pi \times 50 \times 600}{1000} = 94,25 \text{ m/Min}$	
<b>Spindle Speed Revolution Per Minute</b> $n = \frac{V_c \times 1000}{\pi \times D_m}$	EX: Determine the spindle speed ( $n$ ) required for turning a 32mm diameter part with a cutting speed of 100 m/Min.	$n = \frac{100 \times 1000}{\pi \times 32} = 994,72 \text{ Rev/Min}$	
<b>Metal Removal Rate mm<sup>3</sup>/Min</b> $Q = v_c \times a_p \times f_n \times 1000$	EX: Determine the metal removal rate ( $Q$ ) required for cutting with a depth of 1,5 with a cutting speed of 200 m/Min and feed rate of 0,4 mmPR.	$Q = 200 \times 1,5 \times 0,4 \times 1000 = 120.000 \text{ mm}^3/\text{min}$	
<b>Power Requirement Killowatts</b> $P_c = \frac{v_c \times a_p \times f_n \times k_c}{1.460.000}$	EX: Determine the power requirement ( $P_c$ ) for turning a material with a specific cutting force of 20.500, a depth of 1,5, a cutting speed of 200 m/Min, and feed rate of 0,4 mmPR.	$P_c = \frac{200 \times 1,5 \times 0,4 \times 20.500}{1.460.000} = 1,68 \text{ kW}$	
<b>Cutting Time Minute</b> $T_c = \frac{l_m}{f_n \times n}$	EX: Determine the amount of time required to machine a 200mm long part with a spindle speed of 600 RPM and feed rate of 0,4 mmPR.	$T_c = \frac{200}{0,4 \times 600} = ,83 \text{ Min (50 Sec)}$	
<b>Profile Depth (μm)</b> $R_{max} = \frac{f_n^2 \times 10^6}{8r_\epsilon}$	EX: Determine the profile depth ( $R_{max}$ ) of a surface machined using an insert with a nose radius of 0,8 and a feed rate of 0,4 mmPR.		





6mm Polyamide High Pressure Coolant System							
Item	Image	UPC 733101-	Part Number	Description	Size	Working Pressure	
Boring Bar Connector		60487	DT-HP0SC-6x6	Straight High Pressure Quick Release Connector	6mm Thread, 6 mm Tubing	200 Bar	2800 PSI
		60490	DT-HP0SC-1/8x6	Straight High Pressure Quick Release Connector	1/8" NPT Thread, 6 mm Tubing	200 Bar	2800 PSI
		60484	DT-HP0SC-1/4x6	Straight High Pressure Quick Release Connector	1/4" NPT Thread, 6 mm Tubing	200 Bar	2800 PSI
		60486	DT-HP90C-6x6	90° Elbow High Pressure Quick Release Connector	6mm Thread, 6 mm Tubing	200 Bar	2800 PSI
		60489	DT-HP90C-1/8x6	90° Elbow High Pressure Quick Release Connector	1/8" NPT Thread, 6 mm Tubing	200 Bar	2800 PSI
		60485	DT-HP90C-1/4x6	90° Elbow High Pressure Quick Release Connector	1/4" NPT Thread, 6 mm Tubing	200 Bar	2800 PSI
Tubing		60488	DT-HPTU-6x3	Polyamide Tubing	60D x 3ID x 30mm (12"Long)	200 Bar	2800 PSI
Turret Connector		60490	DT-HP0SC-1/8x6	Straight High Pressure Quick Release Connector	1/8" NPT Thread, 6 mm Tubing	200 Bar	2800 PSI
		60489	DT-HP90C-1/8x6	90° Elbow High Pressure Quick Release Connector	1/8" NPT Thread, 6 mm Tubing	200 Bar	2800 PSI
		60485	DT-HP90C-1/4x6	90° Elbow High Pressure Quick Release Connector	1/4" NPT Thread, 6 mm Tubing	200 Bar	2800 PSI

1/4" Copper High Pressure Coolant System							
Item	Image	UPC 733101-	Part Number	Description	Size	Working Pressure	
Boring Bar Connector		53360	JSHP-MC125-250	Straight High Pressure Connector	1/8" NPT Thread, 1/4" Tubing	75 Bar	1100 PSI
		53362	JSHP-ME125-250	90° Elbow High Pressure Connector	1/8" NPT Thread, 1/4" Tubing	75 Bar	1100 PSI
		53363	JSHP-ME250-250	90° Elbow High Pressure Connector	1/4" NPT Thread, 1/4" Tubing	75 Bar	1100 PSI
Tubing		53364	JSHP-CT250-1200	Copper Tubing	1/4"OD x 3/16"ID x 30mm (12"Long)	75 Bar	1100 PSI
Turret Connector		53360	JSHP-MC125-250	Straight High Pressure Connector	1/8" NPT Thread, 1/4" Tubing	75 Bar	1100 PSI
		53362	JSHP-ME125-250	90° Elbow High Pressure Connector	1/8" NPT Thread, 1/4" Tubing	75 Bar	1100 PSI
		53363	JSHP-ME250-250	90° Elbow High Pressure Connector	1/4" NPT Thread, 1/4" Tubing	75 Bar	1100 PSI

High Pressure Coolant Connection Kit					
		6x3mm Polyamide Tubing 12" Long		Turret Connection 1/8" NTP	
Includes: (1) Tubing and (2) Connectors					
UPC 733101-	High Pressure Connector Kit	Metric Straight High Pressure Quick Release Connector	6x3mm High Pressure Polyamide (300) 12" Tubing	1/8" NTP Straight High Pressure Quick Release Connector	
60494	6MM-1/8 HPCK	(1) DT-HP0SC-6x6	(1) DT-HPTU-6x3	(1) DT-HP0SC-1/8x6	
60498	1/8-1/8 HPCK	(1) DT-HP0SC-1/8x6	(1) DT-HPTU-6x3	(1) DT-HP0SC-1/8x6	
60499	1/4-1/8 HPCK	(1) DT-HP0SC-1/4x6	(1) DT-HPTU-6x3	(1) DT-HP0SC-1/8x6	

1/4" Copper High Pressure Coolant Connection Kit					
		6x3mm Polyamide Tubing 12" Long		Turret Connection 1/8" NTP	
Includes: (1) Tubing and (2) Connectors					
UPC 733101-	Description	90° Swivel Elbow	Copper Tubing	Male Connector	
53371	JSHPK-125-250	JSHP-ME125-250	JSHP-CT250-1200	JSHP-MC125-250	
53372	JSHPK-250-250	JSHP-ME125-250	JSHP-CT250-1200	JSHP-MC250-250	

Acetal Material	Brass Material	Ball-Type Coolant Nozzles				
		Ball-Type Coolant Nozzles Size	Acetal Material		Brass Material	
			Desc.	UPC NO. 733101-	Desc.	UPC NO. 733101-
		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.





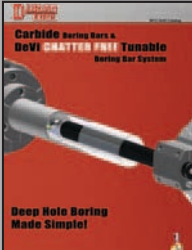

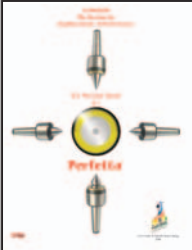


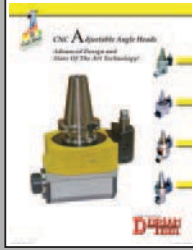






<b>Contact Name:</b>	<b>e-mail address:</b>
<b>Company Name:</b>	<b>Phone Number:</b>

**Mailing Address:**

Catalog	Quantity	Catalog	Quantity
<p><b>NEW 2012 Turning Tools &amp; CARBIDE INSERTS</b></p> <p>Dorian Tool offers a complete selection of indexable cutting tools. Our wide variety of Turning, Boring, threading tools and inserts provide solutions for all your Turning, Facing, Boring, Chamfering, I.D. &amp; O.D. Profiling, Chuck Work and Between Center Work Machining Operations.</p> <p><b>Featuring a NEW EXTENDED line of CARBIDE INSERTS!</b></p> 		<p><b>NEW 2012 Jet-Stream™ Thru Coolant System</b></p> <p>Dorian Tool's Jet-Stream™ Thru Coolant Cutting Tools use a patented thru-coolant locking clamp which is precisely aimed to direct high pressure, high velocity coolant exactly onto the cutting edge of the carbide insert, from a short distance of 1/4" (6mm). This catalog offers a vast range Jet-Stream™ Thru Coolant Cutting Tools for Turning, Boring and Threading applications.</p> 	
<p><b>NEW 2012 Swiss Screw Machine Tools and Advanced Technology</b></p> <p>Featuring Jet-Stream™ Thru Coolant System for Turning, Threading and Cut-off Toolholders. Designed for Swiss Screw Machines.</p> 		<p><b>2011 Threading, Grooving &amp; API Cutting Tools &amp; Inserts</b></p> <p>Dorian Tool offers a complete selection of indexable cutting tools. Our wide variety of Turning, Boring, threading tools and inserts provide solutions for all your Turning, Facing, Boring, Chamfering, I.D. &amp; O.D. Profiling, Chuck Work and Between Center Work Machining Operations.</p> 	
<p><b>NEW 2012 Carbide Boring Bars &amp; DeVi CHATTER FREE Tunable Boring Bar System</b></p> <p><b>For Difficult Deep Boring!</b></p> <p>Featuring internal working parts that can be adjusted during the application!</p> 		<p><b>NEW 2012 knurling Tools &amp; Wheels</b></p> <p>Dorian Tool offers a wide range of knurling tools to cover most knurling applications. Since the introduction of Dorian's modular knurling tool system, knurling has never been easier. The knurl tools range from cutting to forming a knurl pattern. The cutting style knurl tools have revolutionized knurling. It is faster and requires less pressure to create a knurl over forming. A wide range of knurl wheel pitches are also available.</p> <p><b>Includes NEW Knurling Tools for Swiss Screw Machines</b></p> 	
<p><b>2006 Perfetta Live Centers &amp; Bull Nose</b></p> <p>These live centers, which have already been recognized throughout the rest of the industrial world as the most precise live centers ever built, are now available to the American machine tool industry. Designed for turning on a CNC lathe or for use on a CNC grinding machine, the Perfetta™ Live Center has over 50 years of proven workmanship. Where speed, precision and dependability are the requirements, these tools guarantee quality and performance.</p> 		<p><b>2011 Lathe Accessories</b></p> <p>With a full line of Victory Automatic Thru Coolant, Super Quick Change and Quadra™ Indexing Quick Change tool posts and holders as well as manual, electro-pneumatic, and electro-mechanical turrets, Dorian Tool has all that is needed to improve efficiency on both manual and CNC lathes. In addition, the Dorian Tru-Jaws system makes for easy remachining of soft jaws.</p> <p><b>This catalog replaces all three Dorian Tool post catalogs as well as the 2005 MTA (Machine Tool Accessories) catalog.</b></p> 	
<p><b>Tool Guide for Everyday Machining</b></p> <p><b>Our most current Volume will be sent to you. Products offered per volume may vary depending on demand and featured items.</b></p> <p>Inside this Tool Guide You will find High Performance cutting tools, inserts and machine tool accessories for every day machining. Additionally this catalog will give you an excellent overview of our complete line of tooling.</p> <p><b>2013 Version Coming Soon</b></p> 		<p><b>2008 CNC Adjustable Angle Heads</b></p> <p>Choose from two styles (Universal and 90°) and six models for any milling, drilling, tapping and face milling operations. The Universal CNC Adjustable Angle Heads have two positioning axes and are offered in ER25 and ER32 collet toolholding systems. The use of the Universal CNC Adjustable Angle Heads increases productivity and quality by eliminating secondary operations and the need for more expensive 4th &amp; 5th axis rotary tables. The 90° CNC Adjustable Angle Heads have one positioning axis and are offered in ER16, ER25 and ER32 collet toolholding systems as well as CAT/ISO/BT 40 taper toolholding system.</p> 	

# Sales Policy

**Conditions of Sale:** All sales are made in accordance with our standard conditions of sale, current at the time orders are accepted. Specifications and prices are subject to change without notice.

**Terms of Payment:** Standard payment terms for all products is (1% 10 Net 30 days) upon credit approval. Dorian reserves the right to hold shipments or to ship on a C.O.D. basis, any orders received from any purchaser whose account is delinquent. Invoices not paid timely are subject to 1.5% interest per month, not to exceed 18%. However, purchasers who default on terms agreed upon, Dorian reserves the right to add collection and/or attorney fees to the total amount of the invoice or total amount of all invoices. No order will be processed if any invoices are over 45 days old. All taxes, duties, or other expenses arising out of, or in connection with the sale of product shall be the sole liability of purchaser.

**No Minimum Order:** There will be a \$5.00 handling fee for orders drop shipped with a value under \$50.00 net.

**Delivery Terms:** F.O.B. East Bernard, Texas. All shipments are made by regular UPS, Parcel Post, or truck. Full transportation costs will be charged to the buyer. Specify shipment to be made by other than regular means of transportation.

**Defective Product Claim:** If within 30 days from shipping date, customer claims that product is defective and requires an immediate replacement, a distributor can issue a purchase order for a new product and return the defective product to Dorian for inspection. Upon inspection, if the product is found to be defective a credit will be issued for the replacement. If the product is not found to be defective, an invoice will be issued for the replacement. Freight to and from Dorian will be at the customer's expense.

**Claims:** Any claim discrepancies in shipments are to be made within 7 days of receipt of merchandise. Any in transit claim for damaged and lost goods must be made against the transportation company only. The foregoing shall constitute the sole and exclusive remedies of the customer and are in lieu of all other warranties, expressed, implied, or statutory, including but not limited to any implied warranty of merchantability or fitness.

**Satisfaction Guaranteed:** If you are not fully satisfied with a Dorian product, simply return it within 30 days of shipping date and you will receive full CREDIT if the merchandise is received in resalable condition.

**Product Limited Warranty:** Dorian extends to the purchaser for resale, use in their own business, or original equipment manufacturing, a limited warranty, that products made by DORIAN will be free from any defects in material and workmanship for one year after the date of purchase when used under normal intended applications. No other guarantee is made by this policy, nor does it apply to any product which has been altered, misused, or used in applications other than its normal intended use. Request for a Return Goods Authorization (RGA) number from Dorian and return freight pre-paid to Dorian any part or product which is determined by Dorian to be defective in material or workmanship will be repaired or replaced at Dorian's option.

**Special Product Quotations:** All special product quotations are valid for thirty days from the date of quotation unless otherwise specified. Orders for special products must be confirmed in writing before manufacturing can begin, along with payment for 50% of the quoted price, with the remaining 50% to be paid upon delivery of the special products. Special products and non-stock standard products cannot be canceled or returned for exchange or credit.

**Cancellations:** Customer may not cancel or modify any purchase order once a purchase order has been expressly accepted by Dorian, unless (a) customer has given Dorian reasonable notice to stop work, (b) customer pays for all work -in-progress and any raw materials or supplies used or consumed by Dorian in connection with the order, at the time work is stopped (or for which commitments have been made by Dorian at such time) in connection with the order (c) customer pays all costs and expenses otherwise incurred by Dorian in connection with the order, and (d) customer pays a cancellation charge of fifteen percent (15%) of the initial quoted price.

**Returns:** Return undamaged product within 30 days of the ship date, if the merchandise is received in resalable condition you will receive full CREDIT on your account,- Product(s) returned after 30 days but prior to 90 days after the ship date is subject to a 20% restocking fee.- Unless otherwise specified, no material will be accepted for returned after 90 days of the ship date.- If the Distributor or End User, within 30 days of the ship date, claims a product is defective and needs immediate replacement, the customer must place a new order, and a RMA number will be issued for the defective product. The Distributor will be advised upon completion of inspection if credit will be issued.- Any product returned for repair, under warranty or warranty expired, will not be accepted without a RMA number.- Customer will be advised of any charges before repairs are made.- All returns must be authorized by Dorian Tool with a official RMA number.- Dorian Tool does not constitute acceptance of the product when a RMA number is issued.- The RMA number must be visible on the outside of the box and a copy of the RMA form must be placed inside the original box along with the returned product.- Any package received without an official RMA number visible on the outside of the box will be refused and returned to the sender at their expense.- The customer is responsible for the freight to and from Dorian Tool.- **NO PRODUCT WILL BE ACCEPTED FOR RETURN WHEN RECEIVED IN NON-RESALABLE CONDITION.** This includes, but is not limited to: damaged packages, non Dorian labels and marking, missing parts, cosmetic damages, used and/or obsolete product(s).- Quality Control must inspect and accept product before credit will be issued.- RMAs are processed daily by RMA Service Center at X 260.- RMA numbers are valid for 30 days from the date is issued. All product(s) requested for return must be received by Dorian Tool within 30 days of the RMA date.- In the event the RMA is denied, the customer has 30 days from the date of notification to respond with shipping instructions for their product. If shipping instructions are not provided by the customer within 30 days from the RMA denial notification, the product will be disposed at the customers expense.- By writing the RMA number on the outside of the box and shipping product to Dorian against this number constitutes acceptance of Dorian's terms and conditions.

Conditions, terms and specifications are subject to change without notice.

Any typographical error in any printing matter is subject to correction.



**Linear Measurement**

1 foot = 12 inches  
1 yard = 3 feet  
1 yard = 36 inches  
1 mile = 1,760 yards  
1 mile = 5,280 feet  
1 mile = 63,360 inches  
1 light year = 5.879 trillion miles

1 inch = 2.540 centimeters  
1 foot = .3048 meters  
1 yard = .9144 meters  
1 mile = 1.609 kilometers  
1 centimeter = .3937 inches  
1 meter = 3.281 feet  
1 meter = 1.094 yards  
1 kilometer = .6214 miles

1 kilometer = 1000 meters  
1 hectometer = 100 meters  
1 dekameter = 10 meters  
1 meter = 10 decimeters  
1 meter = 100 centimeters  
1 meter = 1000 millimeters  
1 light year = 9.46 trillion kilometers

**Square Measurement**

1 sq. foot = 144 sq. inches  
1 sq. yard = 9 sq. feet  
1 sq. yard = 1,296 sq. inches  
1 sq. mile = 3,097,600 sq. yards  
1 sq. mile = 27,878,400 sq. feet  
1 sq. mile = 4,014,489,600 sq. inches  
1 acre = 4,840 sq. yards  
1 acre = 43,560 sq. feet  
1 acre = 6,272,640 sq. inches

1 sq. inch = 6.452 sq. centimeters  
1 sq. foot = .09290 sq. meters  
1 sq. yard = .8361 sq. meters  
1 sq. mile = 2.590 sq. kilometers  
1 sq. centimeter = .155 sq. inches  
1 sq. kilometer = 247.1 acres  
1 sq. kilometer = .3861 sq. miles  
1 sq. meter = 10.76 sq. feet  
1 sq. meter = 1.196 sq. yards

1 sq. kilometer = 1,000,000 sq. meters  
1 sq hectometer = 10,000 sq. meters  
1 sq dekameter = 100 sq. meters  
1 sq meter = 100 sq. decimeters  
1 sq meter = 10,000 sq. centimeters  
1 sq meter = 1,000,000 sq. millimeters

**Cubic Measurement**

1 cu. foot = 1,728 cu. inches  
1 cu. yard = 27 cu. feet  
1 cu. yard = 46,656 cu. inches  
  
1 cu. inch = 16.39 cu. centimeters  
1 cu. foot = 28,320 cu. centimeters  
1 cu. foot = .02832 cu. meters  
1 cu. yard = 764,600 cu. centimeters  
1 cu. yard = .7646 cu. meters  
1 cu. centimeter = .06102 cu. inches  
1 cu. meter = 35.31 cu. feet  
1 cu. meter = 61,023 cu. inches  
1 cu. meter = 1.308 cu. yards  
  
1 cu. kilometer = 1,000,000,000 cu. meters  
1 cu. hectometer = 1,000,000 cu. meters  
1 cu. dekameter = 1,000 cu. meters  
1 cu. meter = 1,000 cu. decimeters  
1 cu. meter = 1,000,000 cu. centimeters  
1 cu. meter = 1,000,000,000 cu. millimeters

**Weight Measurements**

1 pound = 16 ounces  
1 ton = 2000 pounds  
1 ton = 32,000 ounces  
  
1 ounce = 28.349527 grams  
1 pound = .4536 kilograms  
1 english ton = .90718 metric tons  
1 gram = .03527 ounces  
1 kilogram = 2.205 pounds  
1 metric ton = .98421 english tons  
  
1 kilogram = 1000 grams  
1 hectogram = 100 grams  
1 dekagram = 10 grams  
1 gram = 10 decigrams  
1 gram = 100 centigrams  
1 gram = 1000 milligrams

**Fluid Volume Measurements**

1 gallon = 4 quarts  
1 gallon = 8 pints  
1 gallon = 16 cups  
1 gallon = 256 liquid ounces  
1 quart = 2 pints  
1 quart = 4 cups  
1 quart = 64 liquid ounces  
1 pint = 2 cups  
1 pint = 16 liquid ounces  
1 cup = 8 liquid ounces

1 gallon = 3.785 liters

1 quart = .9463 liters  
1 pint = .4732 liters  
1 liter = .2642 gallons  
1 liter = 1.057 quarts  
1 liter = 2.113 pints

1 kiloliter = 1000 liters  
1 hectoliter = 100 liters  
1 dekaliter = 10 liters  
1 liter = 10 deciliters  
1 liter = 100 centiliters  
1 liter = 1000 milliliters

**Temperature Conversions**

To convert Fahrenheit degrees into Celsius, subtract 32, multiply by .5556.

To convert Celsius into Fahrenheit, multiply by 1.8 and add 32.

**Speeds**

1 mile/hour = 88 feet/minute  
1 mile/hour = 1.467 feet/second  
1 mile/hour = 1.609 kilometers/hour  
1 miles/hour = 44.70 centimeters/second  
1 foot/minute = .0113636 miles/hour  
1 foot/second = 30.48 centimeters/second  
1 foot/second = .6818 miles/hour  
1 centimeter/second = .3281 feet/second  
speed of sound = 742 miles/hour in air  
speed of sound = 1,193.9 kilometers/hour  
speed of light = 186,295 miles/second  
speed of light = 299,748 kilometers/second

**Time**

1 minute = 60 seconds  
1 hour = 60 minutes  
1 hour = 3,600 seconds  
1 day = 24 hours  
1 day = 1,440 minutes  
1 day = 86,400 seconds  
1 week = 7 days  
1 week = 168 hours  
1 week = 10,080 minutes  
1 week = 604,800 seconds  
1 year = 12 months  
1 year = 52 weeks  
1 year = 365 days 6 hours  
1 year = 8,766 hours  
1 year = 525,960 minutes  
1 year = 31,557,600 seconds



From Inch to Metric Formula				
	Inch Value			Metric Value
	1.000	x	25.4	= 25.400
	1.000	÷	0.03937	= 25.400
From Inch to Metric Values				
	Inch			Millimeter
	0.00001	x	25.4	= 0.000254
	0.0001	x	25.4	= 0.00254
	0.001	x	25.4	= 0.0254
	0.01	x	25.4	= 0.254
	0.1	x	25.4	= 2.54
	1.00	x	25.4	= 25.40
	1.125	x	25.4	= 28.58
	1.250	x	25.4	= 31.75
	1.375	x	25.4	= 34.93
	1.500	x	25.4	= 38.10
	1.625	x	25.4	= 41.28
	1.750	x	25.4	= 44.45
	1.875	x	25.4	= 47.63
	2.00	x	25.4	= 50.80
	3.00	x	25.4	= 76.20
	4.00	x	25.4	= 101.60
	5.00	x	25.4	= 127.00
	6.00	x	25.4	= 152.40
	7.00	x	25.4	= 177.80
	8.00	x	25.4	= 203.20
	9.00	x	25.4	= 228.60
	10.00	x	25.4	= 254.00
	11.00	x	25.4	= 279.40
	12.00	x	25.4	= 304.80
	13.00	x	25.4	= 330.20
	14.00	x	25.4	= 355.60
	15.00	x	25.4	= 381.00
	16.00	x	25.4	= 406.40
	17.00	x	25.4	= 431.80
	18.00	x	25.4	= 457.20
	19.00	x	25.4	= 482.60
	20.00	x	25.4	= 508.00
	21.00	x	25.4	= 533.40
	22.00	x	25.4	= 558.80
	23.00	x	25.4	= 584.20
	24.00	x	25.4	= 609.60
	25.00	x	25.4	= 635.00
<b>1-Foot</b>	12.00	x	25.4	= 304.80
<b>1-Yard</b>	36.00	x	25.4	= 914.40

From Metric to Inch Formula				
	Metric Value			Inch Value
	1.000	÷	25.4	= 0.03937
	1.000	x	0.03937	= 0.03937
From Metric to Inch Values				
	Millimeter			Inch
	0.00001	÷	25.4	= 0.00000039
	0.0001	÷	25.4	= 0.0000039
	0.001	÷	25.4	= 0.000039
	0.01	÷	25.4	= 0.00039
	0.1	÷	25.4	= 0.00394
	1	÷	25.4	= 0.0394
	1.1	÷	25.4	= 0.0433
	1.2	÷	25.4	= 0.0472
	1.3	÷	25.4	= 0.0512
	1.4	÷	25.4	= 0.0551
	1.5	÷	25.4	= 0.0591
	1.6	÷	25.4	= 0.0630
	1.7	÷	25.4	= 0.0669
	1.8	÷	25.4	= 0.0709
	1.9	÷	25.4	= 0.0748
	2	÷	25.4	= 0.0787
	3	÷	25.4	= 0.1181
	4	÷	25.4	= 0.1575
	5	÷	25.4	= 0.1969
	6	÷	25.4	= 0.2362
	7	÷	25.4	= 0.2756
	8	÷	25.4	= 0.3150
	9	÷	25.4	= 0.3543
	10	÷	25.4	= 0.3937
	11	÷	25.4	= 0.4331
	12	÷	25.4	= 0.4724
	13	÷	25.4	= 0.5118
	14	÷	25.4	= 0.5512
	15	÷	25.4	= 0.5906
	16	÷	25.4	= 0.6299
	17	÷	25.4	= 0.6693
	18	÷	25.4	= 0.7087
	19	÷	25.4	= 0.7480
	20	÷	25.4	= 0.7874
	21	÷	25.4	= 0.8268
	22	÷	25.4	= 0.8661
	23	÷	25.4	= 0.9055
	24	÷	25.4	= 0.9449
	25	÷	25.4	= 0.9843
<b>1-Meter</b>	1000	÷	25.4	= 39.3701
<b>1-Decimeter</b>	100	÷	25.4	= 3.9370
<b>1-Centimeter</b>	10	÷	25.4	= 0.3937
<b>1-Millimeter</b>	1	÷	25.4	= 0.0394



Fontana Liri Italy

**Dorian U.S.A. Warehouse Locations:**

**East Bernard, TX**

**Bloomfield, CT**

**Anaheim, CA**

**Birmingham, AL**

**U.S.A.**

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MPR08 MV 2012DeVi

Price \$2.00

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