DORIAN® INTERNATIONAL TOOL

Jet-Stream™ Thru Coolant

Turning, Boring & Threading Toolholders

U.S. & International Patent & Patent Pending

Jet-Stream™ Catalog $1.00

The First Choice

Enrico R. Giannetti
President

A Word from the President:

Since the introduction of the Quadra Index Tool Post in 1982, the Dorian Evolution has never stopped. By developing new ideas and promoting new technology, Dorian Tool has continuously improved our service, technical support, and delivery to our customers.

At Dorian Tool, the quest for innovative tools will never end. Our highly trained and skilled engineers have developed technology that set new standards in the industry and changed the machining process forever.

Today, Dorian Tool offers a wide selection of products for manual and CNC machines. From carbide inserts to toolholders; knurling tools to marking tools; machine tool accessories to automated turrets & rotary tables; tool setters to tool presetters; our tool selection has become the First Choice Technology for thousands of small and large shops around the world.

Thank you for making Dorian Tool successful. Our success comes from the original commitment we made to our customers:

Technology, Quality, & Service

Call: 979-282-2861 Fax: 979-282-2951 Visit:www.doriantool.com E-mail:sales@doriantool.com

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Jet-Stream™ Thru Coolant Hardware & Inserts

On Target!

At The Cutting Edge

Jet-Stream™ Thru Coolant Turning, Boring and Threading Tools

Dorian Jet-Stream™
Thru Coolant System Will:

Improve Quality!

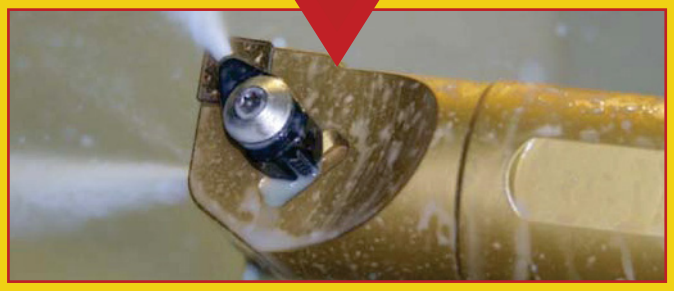
Improve Productivity!

Improve Insert Life!

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 ¼".

This controlled Jet-Stream coolant, directed onto the insert chip interface (right under the chip and over the insert cutting edge) will dissipate the generated heat very effectively as well as lubricate the cutting edge of the insert, causing the chips to hydroplane over the insert surface instead of adhering to it. 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.

Higher speeds and feeds can be achieved, with a better surface finish, tolerance control and machining performance. **The insert life is extended up to 200%.**



Heat and Machining!

Heat generation in cutting tools: Anyone who is even casually involved with a machining process knows that cutting tools generate large amounts of heat. Heat is generated in three ways; by the deformation of the metal in the shear zone ahead of the cutting edge, at the point of separation when the metal is physically pulled apart and by the friction of the chip as it rubs along the surface of the tool as it is pushed out of the way. In fact, much of the horsepower drawn at the spindle motor winds up as heat which is concentrated in a very small area at the cutting edge of the tool, and in the chip itself.

Heat that is allowed to accumulate can be very detrimental to tooling, as well as to the surface of the work piece. The nice blue color in a chip means that the metal has seen very high temperatures. Most steels need to get to a temperature of at least 800° F to acquire an obvious blue oxide surface and the temperature at the tip of the cutting tool can often be over twice as hot. At these temperatures coolant is completely vaporized before it can reach the cutting zone.

Heat vs. temperature: There is no way to eliminate the heat generated at the cutting edge. The use of cutting fluids has an effect on the heat generated by friction; however, the majority of the heat is produced by the deformation of the metal itself as it is removed. The idea is not to allow the heat to accumulate in the tool to cause the temperature to rise. A brief review of heat transfer may be in order at this point. Heat is the measure of the amount of motion of the atoms in a material. All substances at a temperature higher than absolute zero contain heat. Absolute zero is the temperature at which all molecular motion ceases.

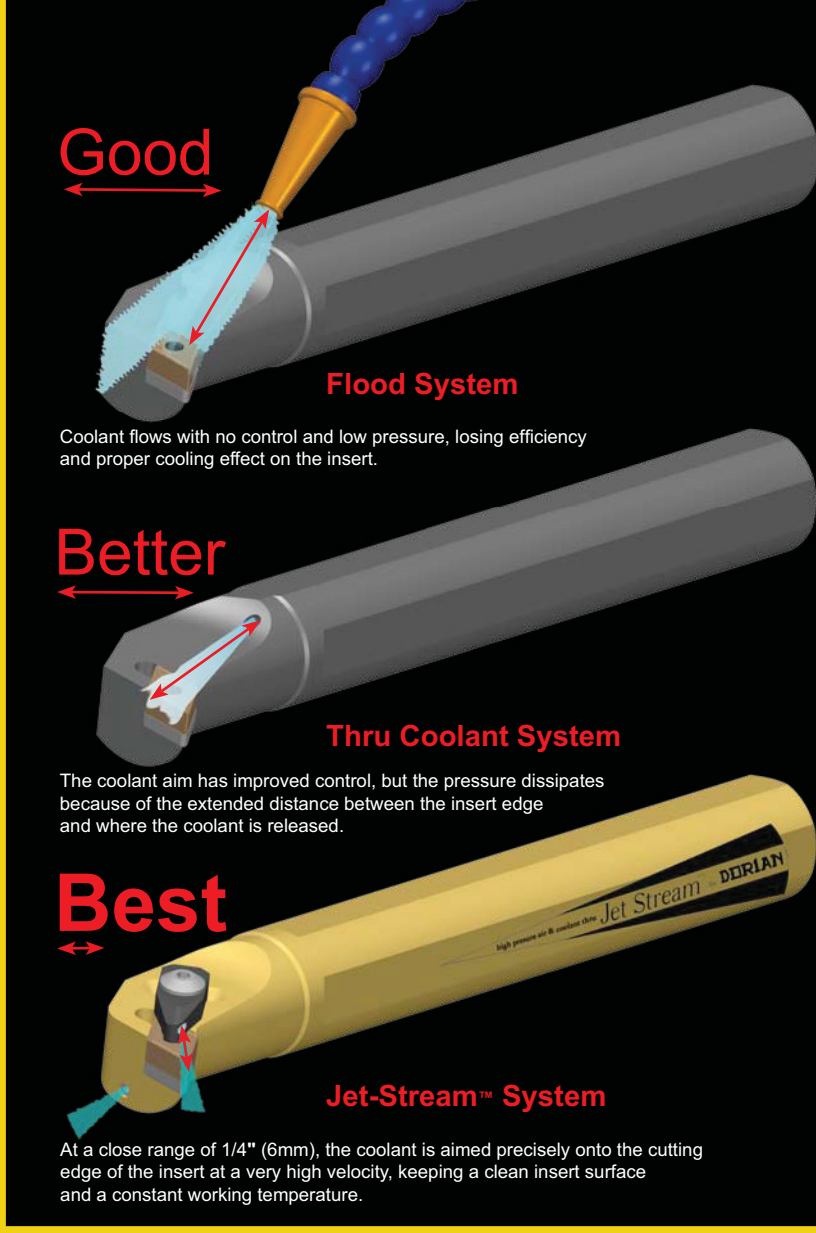
Heat is measured in British thermal units (Btu) in the English system, or calories in the metric system. A Btu is the amount of heat required to raise the temperature of a pound of water one degree on the Fahrenheit scale. Similarly, a calorie is the heat required to raise the temperature of a gram of water by 1° C. Temperature increases in other materials can be predicted by knowing the ratio of the temperature gain for a given heat input expressed as a ratio to that of water. By knowing definition of the units, it becomes obvious that, all other things being equal, an increase in the heat content of a substance causes an increase in temperature.

Heat and machining: So how does all of this relate to high pressure cooling? The fact is that it is not the heat generated by a machining process that does the damage, it's the increase in temperature. Heat that's allowed to accumulate where the tool meets the work will raise the temperature to a point where tool damage occurs. Heat remaining in the material will cause the shear plane to elongate, resulting in a thick chip that won't break or damaging the structure of the work piece surface.

Heat can be removed by simply pouring the coolant over the tool as it cuts. This is referred to as **'FLOOD'** cooling, and has been the standard method for years. The coolant picks up heat as it washes over the area. A problem is that, even with the best operators, the coolant line is rarely aimed at the critical point. Even with the most careful coolant application, however, at the high performance levels available with modern machine tools, so much heat is generated that the coolant is heated to beyond its boiling point. A blanket of vapor forms over the very area we're trying to cool, insulating it from the coolant. The only way heat can be drawn out of the area is by radiating it through the vapor blanket, and by conduction back through the tool. Either way, only a fraction of the heat-carrying capacity of the coolant is being used.

High pressure cooling in conjunction with the **Dorian High Volume Jet-Stream™ System,** allows the coolant to be introduced in such a way as to remove the heat at a high enough rate and pressure to eliminate the vapor barrier. This allows a direct heat transfer from the mass of the insert to the mass of the coolant. The temperature of the tool, in some cases, is only slightly above the temperature of the coolant.

Dorian Jet-Stream™ Tooling uses a patented coolant through locking clamp which is precisely aimed to insert high pressure, high velocity coolant into exactly the spot where the heat is generated.



With standard turning tools the coolant doesn't even hit the part. The operator aims the coolant by hand at the tool using snap together plastic beads or copper tubing. Every operator does it differently, and during operation the coolant lines are frequently pushed out of alignment so that the operator has to manually readjust the aim of the coolant, often every time they change a part. One coolant manufacturer estimates that 40% of the time the coolant doesn't hit the tool or the part. Even when the coolant hits the tool there is no directional control; it can typically come from any direction within a 180-degree arc in one axis and a 90-degree arc in the other axis. Real process control from setup to setup and throughout a production run is virtually nonexistent.

Coolant alignment machined into the Jet-Stream™ Tool Holder: Dorian has introduced a patented through coolant clamping system as part of the holder, insuring that the coolant always hits the insert at exactly the right spot, putting the force where you need it. The process is repeatable from setup to setup and throughout a production run.

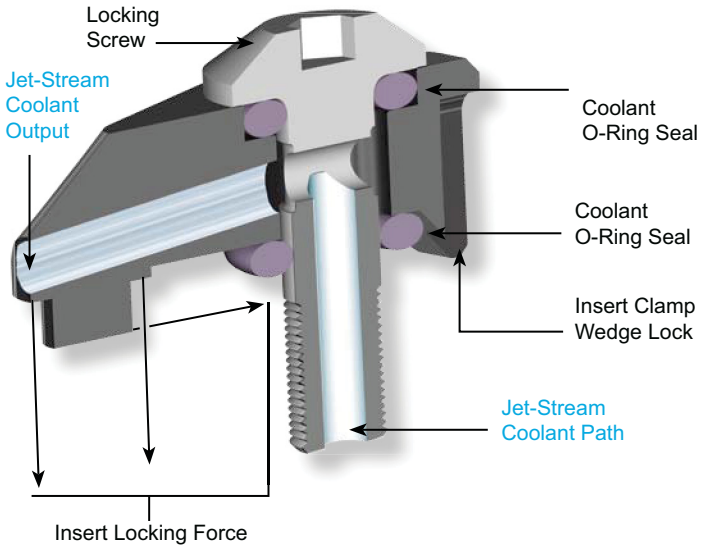
The coolant that is aimed at the tool doesn't get to the tip of the tool: The essence of the problem with standard low pressure coolant systems is that so much heat is produced that the coolant boils away before it can reach the chip tool interface where metal is actually cut. The super heated steam forms a barrier that low pressure coolant can't penetrate. Effective cooling does not occur and there is little real lubrication provided. Unfortunately, the vapor barrier that forms is not powerful enough to keep chips from falling back into the chip/tool interface and causing damage.

Standard

Thru Coolant Dor-Lock™ Clamp Style JSLC-HP

Operates at a Maximum of 1400 psi (100 Bar)

Supplied with all Jet-Stream™ Tools



- Locks and cools the insert in one action
- Aimes the coolant to the cutting edge
- Aimes the coolant underneeth the chip

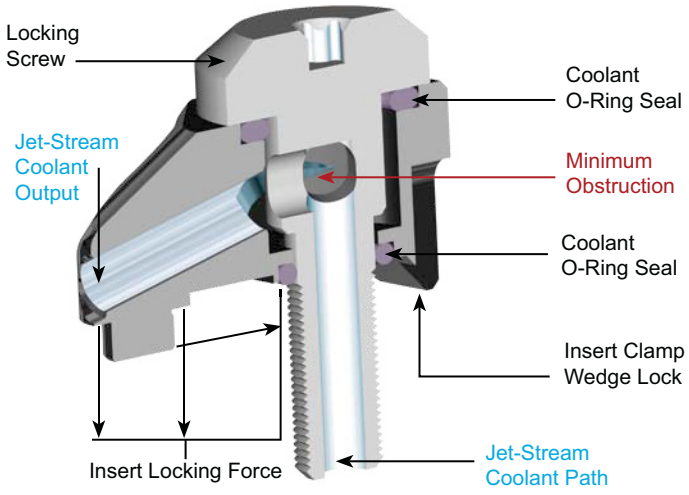
World Wide Patents & Patents Pending

High Volume

Thru Coolant Dor-Lock™ Clamp Style JSLC-HPV

Operates at a Maximum of 1400 psi (100 Bar)

Sold Seperately to Deliver High Coolant Volume for Applications above 1000 psi



Maximum performance will be achieved at 1000 psi and above with a coolant volume of ½ gpm (gallon per minute) per machine horsepower.

World Wide Patents & Patents Pending

Performance is Improved With

- Extreme Lubrication at the cutting edge
- Extreme Heat Dissipation at the cutting edge
- Constant Low Cutting Edge Temperature
- Greater Chip Control and Evacuation
- Chip Breaking at High Pressures
- Smooth Cutting Action and Surface Finish
- Increased Speeds and Feeds

Why The Dorian Jet-Stream™?

The advanced and unique technology of the Jet-Stream™ Thru Coolant System, offers the ability to process the coolant supplied from the machine's pump with maximum efficiency, speed and volume. The speed and volume of the coolant coming out of the Jet-Stream nozzle directly onto the insert cutting edge will improve machining performance.

Anyone who is even casually involved with metalworking knows that cutting tools generate large amounts of heat, which is detrimental to the usable life of carbide inserts.

To overcome this problem with standard turning tools, the operator aims the coolant by hand at the tool using snap together plastic beads or copper tubing. Every operator does it differently, and during machining operation the coolant lines are frequently pushed out of alignment so that the operator has to manually readjust the aim of the coolant, often every time they change a part. One coolant manufacturer estimates that 40% of the time the coolant doesn't hit the tool or the part. Even when the coolant hits the tool there is no directional control; it typically comes from the top and hits the chips before it can reach the insert's cutting edge where heat is accumulating. Real process control from setup to setup and throughout a production run is virtually nonexistent.

Improved Productivity (70 psi):

The Jet-Stream™ Thru Coolant System will immediately improve machine performance with higher sfm (surface footage), extended tool life, ability to hold closer tolerances, and improvement of surface finish. The Jet-Stream™ tooling will excel because it makes machining simple and easy for materials ranging from low carbon steel to high temper alloys, exotics and aerospace materials.

How to Optimize Productivity (1000 psi)

A minimum of 70 psi / 5 Bar is required for the Jet-Stream™ to show improvements in machining performance. To reach optimum results, higher coolant pressure and volume are necessary. Maximum performance will be achieved at 1000 psi and above with a coolant volume of ½ gpm (gallon per minute) per machine horsepower. Example: A 15 HP machine will need a coolant pump of 1000 psi with 7.5 gpm of coolant volume.

How To Guarantee Results

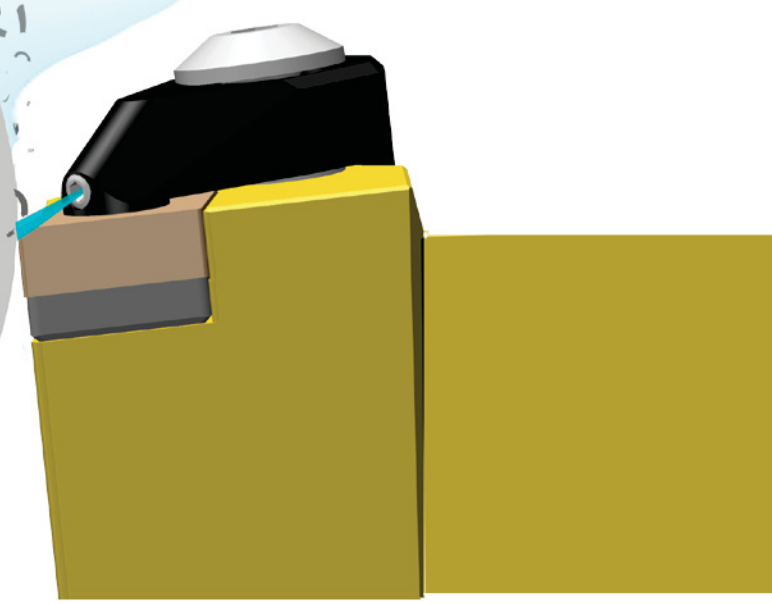
- DO NOT exceed the insert machining data.
- DO NOT take too deep of a cut without the proper coolant pressure and volume.
- If the chips are not breaking your machining data or insert are incorrect.
- Make sure you have a large enough coolant pump on the machine to supply sufficient coolant volume when high and super high pressure is required.

The Jet-Stream™ High force coolant

breaks chips

and keeps them

away from the tool.



High force coolant (pressure and volume) prevents Vapor Barrier: Properly applied high pressure and high volume coolant prevents this vapor barrier from forming by removing the energy created in the turning process and creating a region of high pressure which raises the boiling point of the coolant. So much liquid is forced into the cutting zone that heat is removed and no vapor can form because of the pressurization. A great deal of ***FORCE*** is required to achieve this pressurization. This liquid has the added benefit of providing lubrication and flushes chips away from the cut. There is a great deal of discussion about pressure, pressure is meaningless without volume.

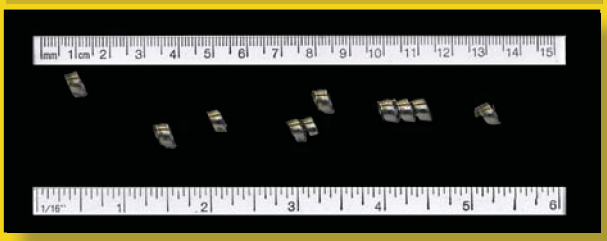
Force requires both mass and velocity, and the coolant must, of course, be focused at the chip tool interface.

It doesn't matter how big a gun you have if you miss the target.

When you combine the Dorian Jet-Stream™ tools with a high pressure pump you gain real control of your process, damage from heat and chips is eliminated and tools can cut until they wear out. Controlled high-pressure coolant keeps the temperature low; changing the way metal is cut. Tools last longer, chips can't weld to the insert and metal can be cut at much higher surface speeds than ever before. Dangerous decomposition of the chemicals mixed in coolants do not occur at low temperatures. Combining a properly designed high pressure and high volume pumping system and the Dorian Jet Stream tooling system allows surface speed to be increased a minimum of 30%, with some operations improving by 300%. High-pressure coolant also provides lubricity by blasting lubricating fluid between the chip and the insert at hundreds of miles per hour. This increased lubricity combined with much lower temperature and the ejection of cut material often causes surface finishes to have a RMA twice as good as can be achieved by traditional methods.

Chip damage from long stringy chips:
Chips cause unpredictable damage. In general, the longer the chips, the harder it is to control and the more damage they cause. Long stringy chips wrap around boring bars, fill the bottoms of holes, catch on the chucks, cause mechanical problems with loaders, and in many cases require manual removal. All of these slow down the production process and eat away at your profitability. Broken chips that can fall away, or that can be blown out of the cutting zone with coolant force and away from the part and tool are always more desirable. Many people don't understand the difference between wear and damage. Wear is a predictable part of any mechanical process. Damage, on the other hand, is random, producing the same bell shaped curve that any random event with enough samples must produce. When inserts wear out you can control your production process, when they fail you can not.

Short chips with high pressure



High Pressure

High Pressure and volume directed into the chip-tool interface never lets the temperature get out of control. The shear zone is short and the chips break over the base material. The part itself is acting as a chip breaker.

Long chips made with low pressure

Standard Pressure

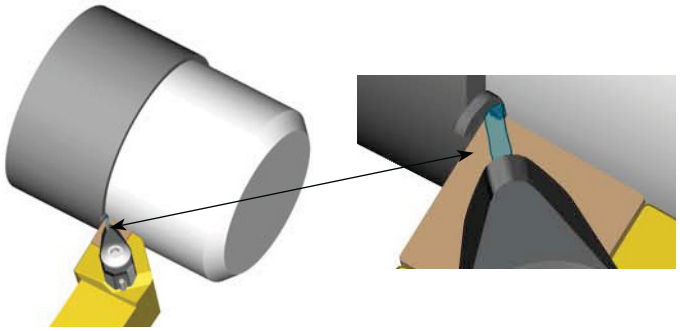
Low-pressure coolant allows a long shear zone that does not break chips in many materials. The result is long uncontrollable chips.

The Jet-Stream™ Pressure

Forces the Hot Chips to Hydroplane

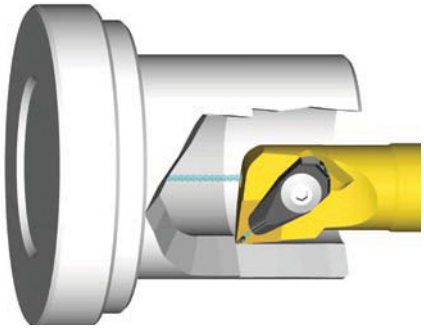
away from the cutting edge of the insert, keeping a clean insert surface and a constant working temperature.

Turning Application



Blind Boring Application

Helps prevent damage to the insert, the tool itself and even the part that is being cut.



The Dorian Jet-Stream™ Coolant System

Controls Volume and Pressure:

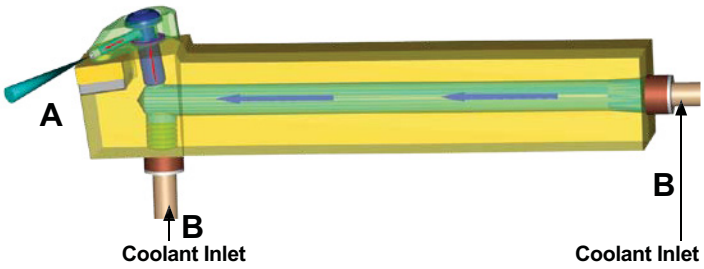
From the apex of the locking Clamp, the coolant Jet-stream is aimed at a close range of 1/4**"** (6mm), precisely onto the cutting edge of the insert at a very high velocity.

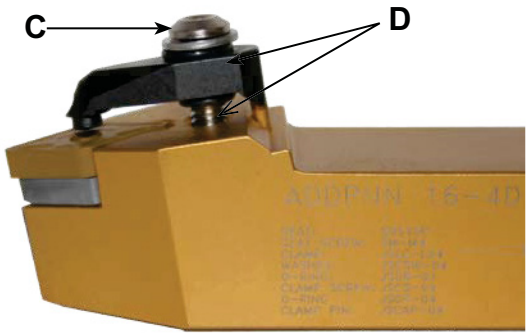
The controlled jet-stream coolant will lubricate the cutting edge of the insert reducing the coefficient of friction, stopping the chips from adhering to the insert. The physical combination of high velocity and high pressure, forces the ***hot chips*** to ***hydroplane*** away from the cutting edge 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. Higher surface speeds and deeper cuts can be achieved, with a better surface finish, close working tolerance and higher machine performance.

The New Patented Jet-Stream™ System will

Increase Machining Performance and Insert Life Up to 200%





The Dorian Jet-Stream™ Coolant System

Features:

A. Coolant shoots directly over the cutting edge of the insert.

B. Double coolant Inlet simplifies the coolant connection to the machine.

C. Lock and release the insert quickly and powerfully with the new patented Dor-Lock clamping system.

D. Patented thru coolant and locking clamp in one system

The patented Jet-Stream™ system:
Is designed for use in all turning, boring and threading applications from heavy roughing to high-speed finishing and threading.

Delivers: • Longer Insert Life • Better Surface Finish • Higher Speeds and Feeds

The patented Dor-Lock™ clamping system:
Locks the insert securely down and aims the coolant flow precisely over the cutting edge of the insert

All Jet-Stream™ toolholders and boring bars use industry standard inserts and are available in multiple geometries.

In Blind Boring Applications:

The advanced design of the Jet-Stream™ Boring Bar offers the ability to use the front coolant port to flush chips out of the way so that they do not get packed or re-cut, by simply installing the supplied coolant nozzle screw. This will help prevent damage to the insert, the tool itself and even the part that is being cut. If this is not necessary in an application just replace the coolant screw with the already supplied solid screw and this will disable the front coolant port and use only the coolant port at the tip of the insert.

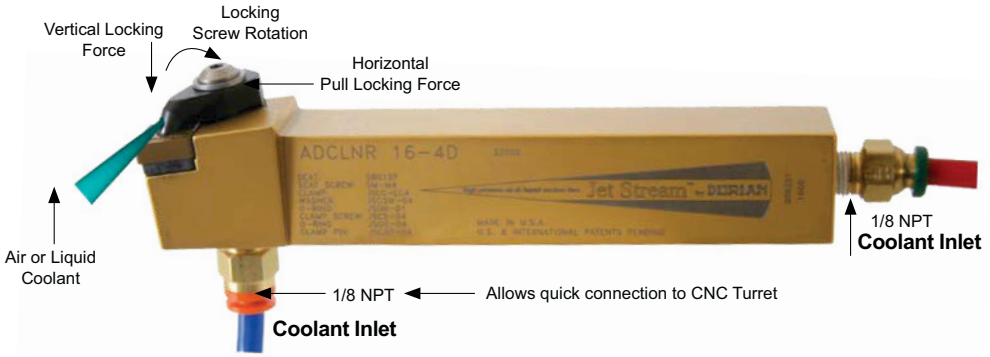
Materials and Quality

The body's of the Jet-Stream™ Toolholders and Boring Bars are built with chromuim-molybdenum alloy steel. This material features properties of high tensile strength and high yield stress. This material is heat treated to 40-44Rc and Electoless Nickel Coated.

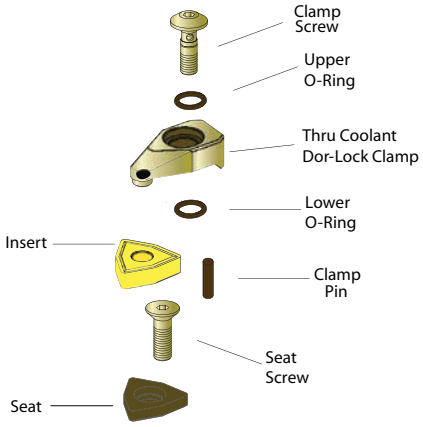
Electoless Nickel Coating will prevent the tools against rust providing a long tool life under severe working conditions.

Boring Bars

Turning Toolholders



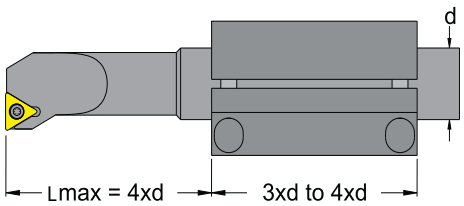
Standard Spare Parts



Guidelines for Utilizing The Boring Bar for Internal Work

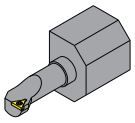
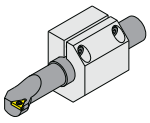
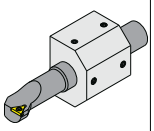
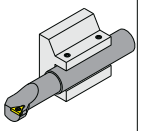
- When choosing a boring bar, always try to select the largest shank diameter that the application will allow.
- As a rule of thumb, never allow a boring bar to extend more than four times its diameter from the end of its clamping surface.
- Using boring bars with coolant through the shank can greatly enhance the removal of chips and improve surface finish on deep bores or blind holes.
- 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: H8
Surface Finish: 32µ in R_a
Hardness: 45 HRC minimum

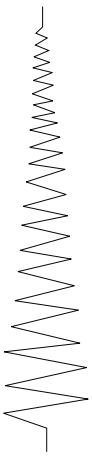
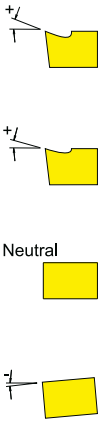


Note: This rule is for steel boring bars only. Carbide boring bars are effective with an overhang of up to seven times the bar diameter.

Boring Bar Clamping Selection

Best Collar Lock System	Better Screw Lock System	Good	Not Recommended
			
Integral bar or flange mounting. Most rigid, but not adjustable.	Split block holder. Provides maximum surface area for clamping.	Cylindrical holder with screws.Provides quick centerline reference.	V-groove with screws. See cylindrical holder with screws.

Minimizing Vibration

Less Vibration	Insert Radius	Cutting Rake
	Use a smaller radius to limit vibration. 	Use as positive cutting rake to limit vibration. 
More Vibration		

Feeds and Speeds (Inch and Metric)

Inch Formulas for Turning and Boring

a_p	= Depth of cut (DOC)	Inch	k_C	= Specific cutting force	Lb/Inch^2
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^3/ Min	R_{max}	= Profile depth	µInch
P_C	= Power requirements (POW)	Hp	r_ε	= Insert nose radius	Inch

Cutting Speed Surface Feet Per Minute:

$$vc = \frac{\pi \times Dm \times n}{12}$$

EX: Determine the cutting speed (v_c) required for turning a 2-1/2" diameter part with a spindle speed of 600 RPM.

$$v_c = \frac{\pi \times 2.5 \times 600}{12} = 392.70 \text{ Feet/Min}$$

Spindle Speed Revolution Per Minute:

$$n = \frac{Vc \times 12}{\pi \times Dm}$$

EX: Determine the spindle speed (n) required for turning a 2-1/2" diameter part with a cutting speed of 400 SFM.

$$n = \frac{400 \times 12}{\pi \times 2.5} = 611.15 \text{ Rev/Min}$$

Metal Removal Rate Inch^3/Min:

$$Q = v_C \times a_p \times f_n \times 12$$

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.

$Q = 400 \times .062 \times .015 \times 12 = 4.464$ inch^3/min

Power Requirement Horsepower:

$$P_C = \frac{v_C \times a_p \times f_n \times k_C}{33{,}000}$$

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.

$$P_c = \frac{400 \times .062 \times .015 \times 181{,}750}{33{,}000} = 2.05 \text{ HP}$$

Cutting Time Minute:

$$T_C = \frac{l_m}{f_n \times n}$$

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.

$$T_c = \frac{6}{.015 \times 600} = .67 \text{ Min (40 Sec)}$$

Profile Depth (µInch)

$$R_{max} = \frac{f_n^2 \times 10^6}{8r_\varepsilon}$$

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^3/ Min	R_{max}	= Profile depth	µm
P_C	= Power requirements (POW)	kW	r_ε	= Insert nose radius	mm

Cutting Speed Surface Meters Per Minute

$$vc = \frac{\pi \times Dm \times n}{1000}$$

EX: Determine the cutting speed (v_c) required for turning a 50mm diameter part with a spindle speed of 600 RPM.

$$v_c = \frac{\pi \times 50 \times 600}{1000} = 94{,}25 \text{ m/Min}$$

Spindle Speed Revolution Per Minute

$$n = \frac{Vc \times 1000}{\pi \times Dm}$$

EX: Determine the spindle speed (n) required for turning a 32mm diameter part with a cutting speed of 100 m/Min.

$$n = \frac{100 \times 1000}{\pi \times 32} = 994{,}72 \text{ Rev/Min}$$

Metal Removal Rate mm^3/Min

$$Q = v_C \times a_p \times f_n \times 1000$$

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.

$Q = 200 \times 1{,}5 \times 0{,}4 \times 1000 = 120.000$ mm^3/min

Power Requirement Killowatts

$$P_C = \frac{v_C \times a_p \times f_n \times k_C}{1.460.000}$$

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.

$$P_c = \frac{200 \times 1{,}5 \times 0{,}4 \times 20.500}{1.460.000} = 1{,}68 \text{ kW}$$

Cutting Time Minute

$$T_C = \frac{l_m}{f_n \times n}$$

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.

$$T_c = \frac{200}{0{,}4 \times 600} = ,83 \text{ Min (50 Sec)}$$

Profile Depth (µm)

$$R_{max} = \frac{f_n^2 \times 10^6}{8r_\varepsilon}$$

Turning and Boring Insert Application

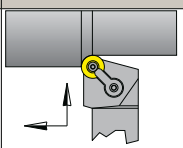
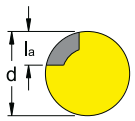
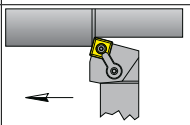
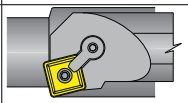
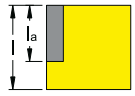
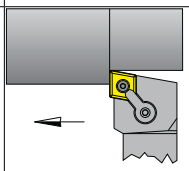
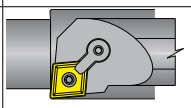
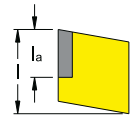
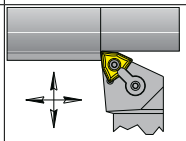
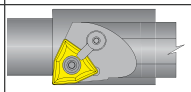
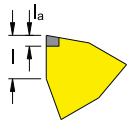
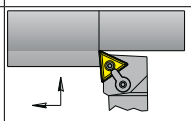
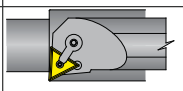
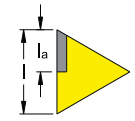
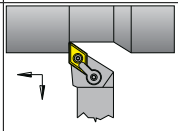
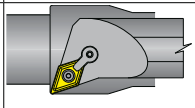
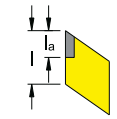
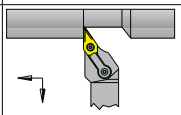
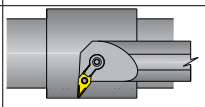
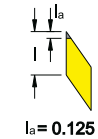
VNM_	DNM_	TNM_	WNM_	CNM_	SNM_	RNM_
Finishing		Multi-Application			Roughing	
Minimum	←	Cutting Edge Strength			→	Maximum
Weaker	←	Insert Attitude			→	Stronger
Finishing	←	Turning Application			→	Roughing
Multi	←	Turning Operation			→	Single
Smooth	←	Surface Finishing			→	Vibration
Low	←	Cutting Force			→	High
High	←	Revolution Per Minute			→	Low
Low	←	Feed Per Minute			→	High

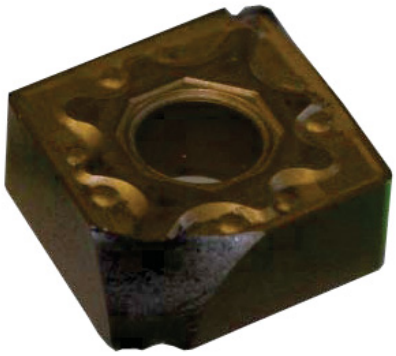
• For roughing, round or square inserts are the best choice because of their superior strength due to large insert angles.

• For finishing, the smaller insert angles of the 55° diamond and 35° diamond inserts are the best choice. These inserts allow for a finer finish.

• For multi-purpose work such as turning, facing, chamfering, profiling, or light roughing, the 80° diamond, 80° trigon, or triangle are the best choices. Though these inserts combine some of the best features of both the roughing and finishing inserts, they should not be The First Choice for either heavy roughing or extreme finishing.

Turning and Boring Insert Geometry Selection

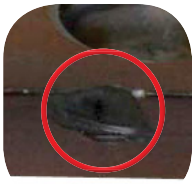
	Insert	Application	O.D. Turning	I.D. Turning	Max. Depth of Cut
Strength ↓ Speed	Round	• Heavy Duty Roughing • Facing • Turning		N/A	 $l_a = 0.400 \times d$
	Square	• Heavy Duty Roughing • Facing • Turning • Chamfering • I.D. Turning			 $l_a = 0.667 \times l$
	80° Diamond	• Roughing • Finishing • Turning • Facing • Chamfering • I.D. Turning			 $l_a = 0.667 \times l$
	80° Trigon	• Roughing • Finishing • Turning • Facing • I.D. Turning			 $l_a = 0.250 \times l$
	Triangle	• Light Roughing • Finishing • Turning • Facing • Chamfering • I.D. Turning			 $l_a = 0.500 \times l$
	55° Diamond	• Light Roughing • Finishing • Turning • O.D. Profiling • I.D. Profiling			 $l_a = 0.500 \times l$
	35° Diamond	• Light Roughing • Finishing • O.D. Profiling • I.D. Profiling			 $l_a = 0.125 \times l$



At Dorian Tool we are constantly searching for methods to improve our tools and reduce insert failure. The type of wear suggests the problem, and is directly related to how a tool or procedure may be changed to improve tool life and cutting performance.

The constant cooling temperature of the new Jet-Stream™ Thru coolant Boring Bars and Toolholders will increase your machining performance and insert life by 200 Percent, minimizing crater, edge build-up, thermal cracking and heat deformation.

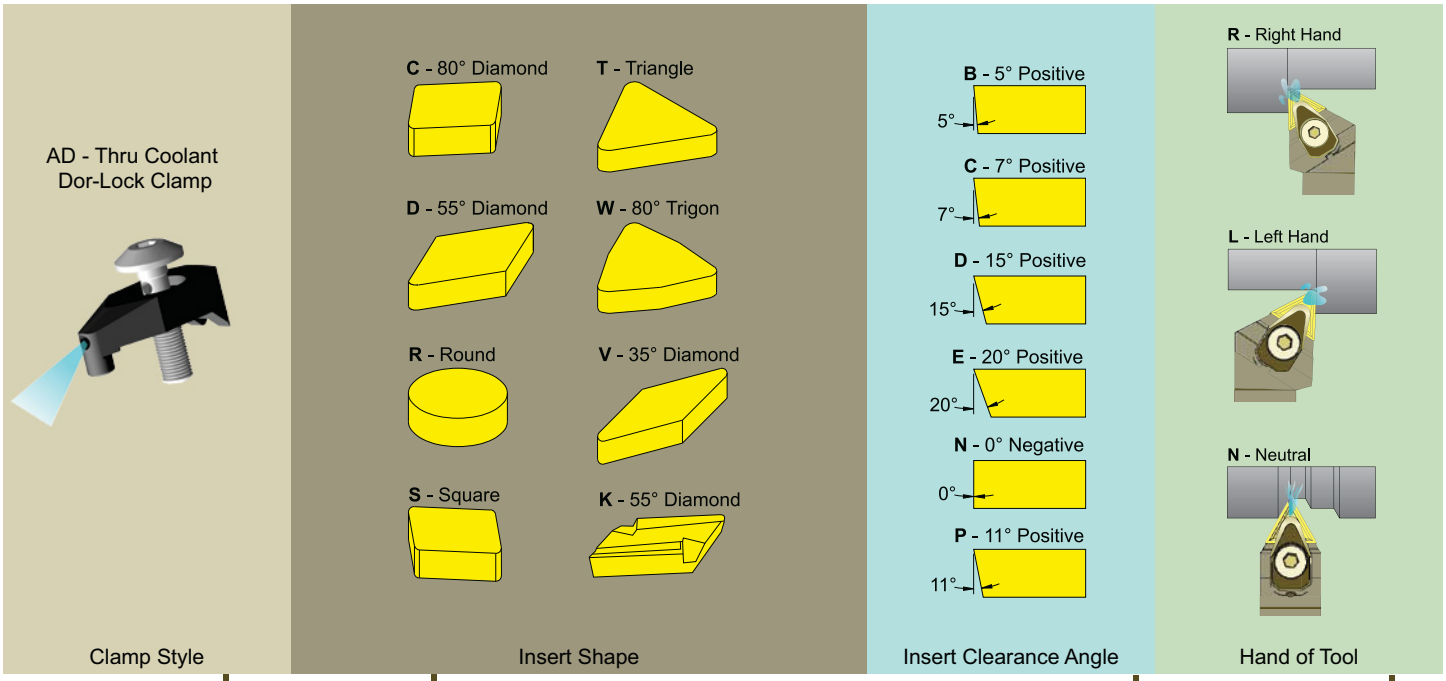
Listed below are the types of insert failure modes we have carefully studied along with the cause and solution.



Type of Failure	Cause	Solution
Edge Wear	• Cutting speed too high • Insufficient wear resistance	• Increase feed • Reduce speed • Use insert with a more wear resistance grade • Apply coolant at a constant rate
Thermal Cracking	• Intermittent machining • Varying coolant supply	• Reduce speed and feed • Apply coolant at a constant rate
Chipping	• Excessive load • Cutting speed too high • Insufficient wear resistance	• Change edge preperation • Check rigidity of the insert • Reduce speed • Use insert with a more wear resistance grade • Apply coolant at a constant rate
Built-up Edge	• Cutting temperature too low • Low cutting speed • Negative cutting geometry	• Increase feed • Increase speed • Apply coolant at a constant rate
Depth of Cut Notching	• Excessive load • Cutting speed too high • Insufficient wear resistance	• Change lead angle • Use different grade • Adjust feed rate • Apply coolant at a constant rate
Heat Deformation	• Cutting temperature too high • Pressure too high	• Reduce speed and feed • Apply coolant at a constant rate • Reduce depth of cut
Crater	• Cutting temperatures on the insert rake face too high	• Reduce speed and feed • Apply coolant at a constant rate
Insert Breakage	• Grade too brittle • Excessive load • Weak insert geometry • Insert too small	• Reduce depth of cut • Reduce speed and feed • Apply coolant at a constant rate • Check ridigity of the insert • Use stronger insert geometry

70 - 1400 psi (5 -100 Bar)

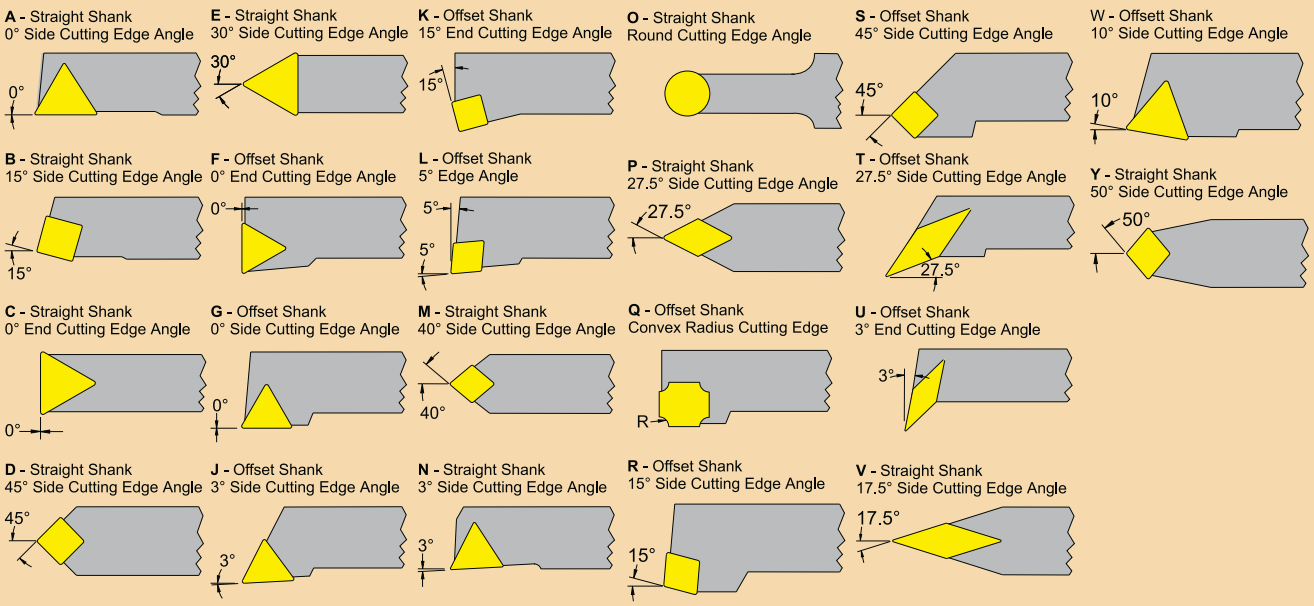
For Inch Tools see Pages 12-16
For Metric Tools see Pages 34-36



AD	C	L	N	R/L-
Clamp Style	Insert Shape	Tool Style	Insert Clearance Angle	Hand of Tool

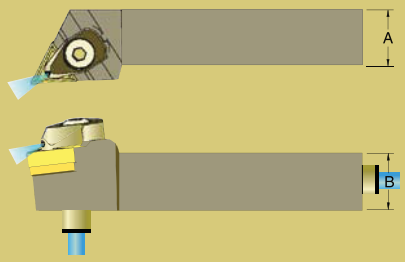
L

Tool Style



Square Shanks:

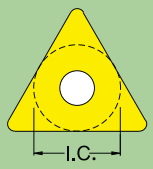
(A) & (B) shown in 1/16″ increments



Shank Size

(I.C.)

Shown in 1/8 ″ increments Insert Size I.C.



Insert I.C.

J - 3.5″
A - 4.0″
B - 4.5″
C - 5.0″
D - 6.0″
E - 7.0″
F - 8.0″

Tool Length

16-	4	D
Shank Size	Insert Size I.C.	Tool Length

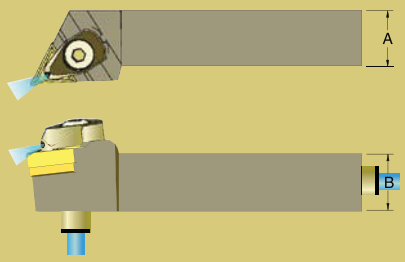
A.N.S.I. (American National Standards Institute)
ADCLNR-16-4D

I.S.O. (International Standards Organization)
ADCLNR-2020-K12

2020-	K	12
Shank Size	Tool Length	Insert Length

Shank Size

Position six (6) :
(A) & (B) shown in 1 mm increments

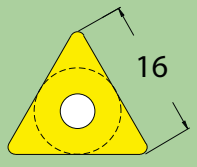


Tool Length

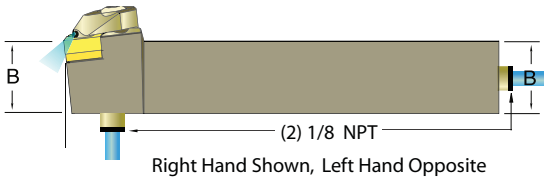
D - 60 mm
E - 70 mm
F - 80 mm
H - 100 mm
K - 125 mm
M - 150 mm
P - 170 mm
S - 250 mm

Insert Length

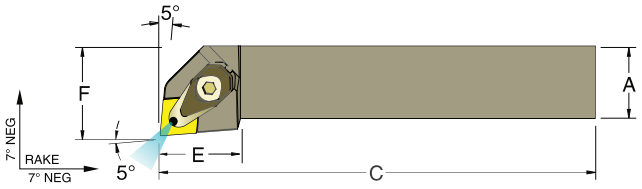
Length
shown in 1 mm increments



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



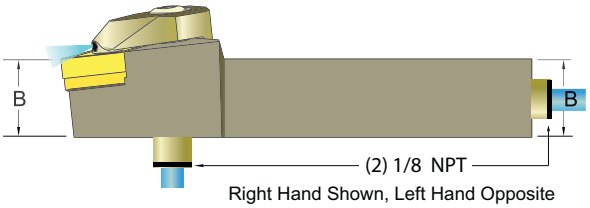
Right Hand Shown, Left Hand Opposite



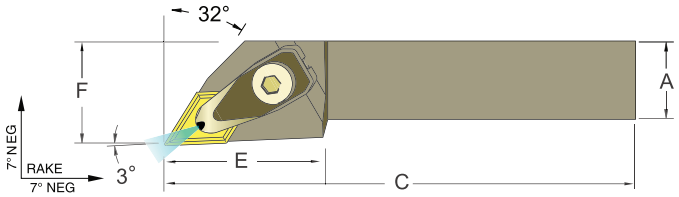
Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	CNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADCLNR/L-12-4B	53000	53001	0.75	0.75	4.50	1.250	1.000	432	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADCLNR/L-16-4D	53002	53003	1.00	1.00	6.00	1.250	1.250	432	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADCLNR/L-20-4D	53004	53005	1.25	1.25	6.00	1.250	1.500	432	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADCLNR/L-20-5D	53006	53007	1.25	1.25	6.00	1.375	2.000	543	ICSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04
ADCLNR/L-20-6E	53012	53013	1.25	1.25	700	1.500	1.500	643	ICSN-633	SM-M66	JSLC-HPC6	JSCS-06	JSOR-07	JSOR-07
*ADCLNR/L-24-4E	53008	53009	1.50	1.50	7.00	1.250	2.000	432	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
*ADCLNR/L-24-5E	53010	53011	1.50	1.50	7.00	1.375	2.000	543	ICSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04
*ADCLNR/L-24-6E	53014	53015	1.50	1.50	7.00	1.500	2.000	643	ICSN-633	SM-M66	JSLC-HPC6	JSCS-06	JSOR-07	JSOR-07

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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



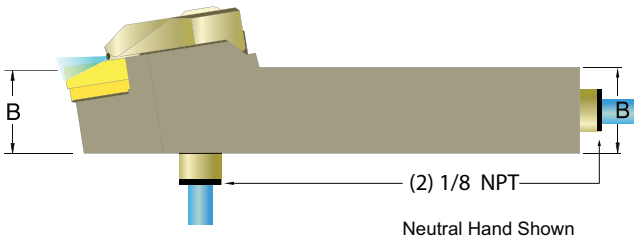
Right Hand Shown, Left Hand Opposite



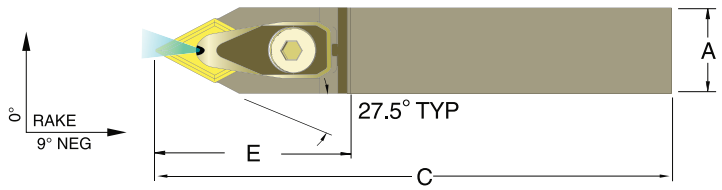
Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADDJNR/L-12-3B	53016	53017	0.75	0.75	4.50	1.500	1.000	332	S5511P	SM-M3	JSLC-HPD3	JSCS-04	JSOR-01	JSOR-04
ADDJNR/L-12-4B	53018	53019	0.75	0.75	4.50	1.500	1.000	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
ADDJNR/L-16-4D	53020	53021	1.00	1.00	6.00	1.500	1.250	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
ADDJNR/L-20-4D	53022	53023	1.25	1.25	6.00	1.500	1.500	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
*ADDJNR/L-24-4E	53024	53025	1.50	1.50	7.00	1.500	2.000	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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



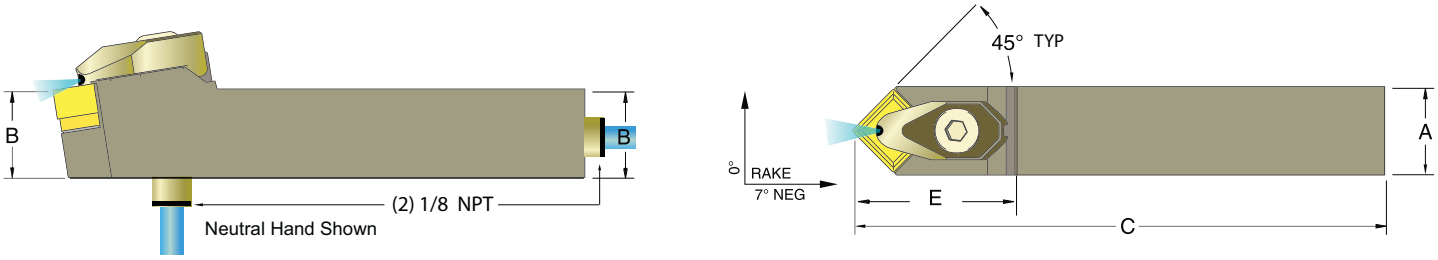
Neutral Hand Shown



Inch Description	Part No. 733101- Neutral	A	B	C	E	DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADDPNN-12-3B	53030	0.75	0.75	4.50	1.750	332	S5511P	SM-M3	JSLC-HPD3	JSCS-04	JSOR-01	JSOR-04
ADDPNN-12-4B	53031	0.75	0.75	4.50	1.750	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
ADDPNN-16-3D	53032	1.00	1.00	6.00	1.750	332	S5511P	SM-M3	JSLC-HPD3	JSCS-04	JSOR-01	JSOR-04
ADDPNN-16-4D	53033	1.00	1.00	6.00	1.750	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
ADDPNN-20-4D	53034	1.25	1.25	6.00	1.750	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
*ADDPNN-24-4E	53035	1.50	1.50	7.00	1.750	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

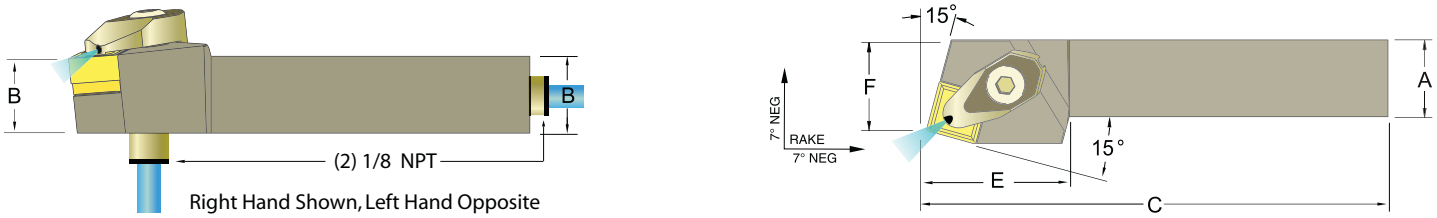
ADSDNN Toolholder Style D - 45° side cutting lead angle for negative square SNM_inserts



Inch Description	Part No. 733101- Neutral	A	B	C	E	SNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADSDNN-12-4B	53053	0.75	0.75	4.50	1.375	432	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADSDNN-16-4D	53054	1.00	1.00	6.00	1.375	432	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADSDNN-20-4D	53055	1.25	1.25	6.00	1.375	432	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADSDNN-20-5D	53056	1.25	1.25	6.00	1.375	543	ISSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04
*ADSDNN-24-5E	53058	1.50	1.50	7.00	1.625	543	ISSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request.One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

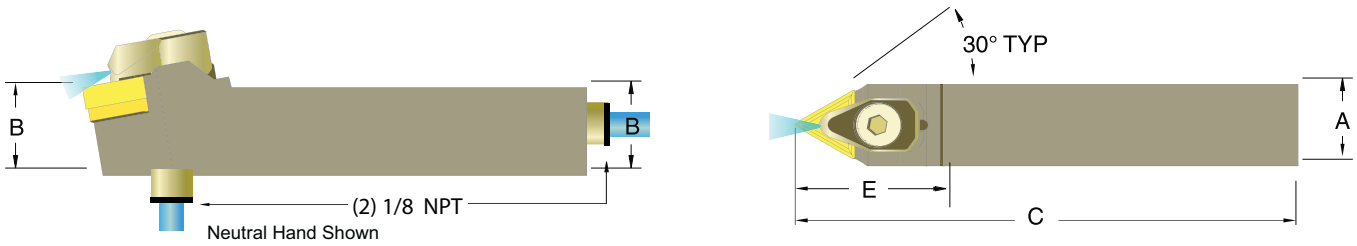
ADSRN R/L Toolholder Style R - 15° side cutting lead angle for negative square SNM_inserts



Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	SNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADSRNR/L-12-4B	53040	53041	0.75	0.75	4.50	1.375	0.880	432	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADSRNR/L-16-4D	53043	53044	1.00	1.00	6.00	1.375	1.000	432	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADSRNR/L-20-5D	53045	53046	1.25	1.25	6.00	1.375	1.000	543	ISSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04
*ADSRNR/L-24-5E	53047	53048	1.50	1.50	7.00	1.375	1.000	543	ISSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

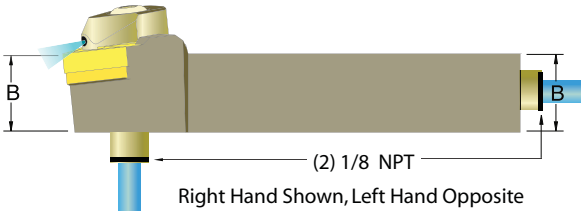
ADTENN Toolholder Style E - 30° side cutting lead angle for negative triangle TNM_inserts

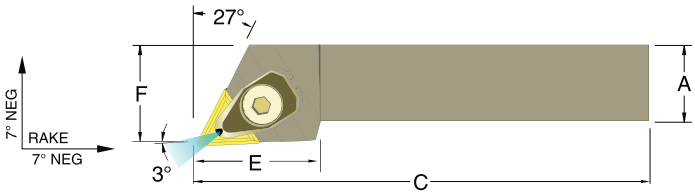


Inch Description	Part No. 733101- Neutral	A	B	C	E	TNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADTENN-12-3B	53075	0.75	0.75	4.50	1.375	332	ITSN-322	SM-M3	JSLC-HPTW3N	JSCS-04	JSOR-01	JSOR-04
ADTENN-12-4B	53076	0.75	0.75	4.50	1.375	432	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADTENN-16-3D	53077	1.00	1.00	6.00	1.375	332	ITSN-322	SM-M3	JSLC-HPTW3N	JSCS-04	JSOR-01	JSOR-04
ADTENN-16-4D	53078	1.00	1.00	6.00	1.375	432	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADTENN-20-4D	53079	1.25	1.25	6.00	1.500	432	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
*ADTENN-24-4E	53080	1.50	1.50	7.00	1.625	432	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

ADTJN R/L Toolholder Style J - 3° side cutting lead angle for negative triangle TNM_ inserts

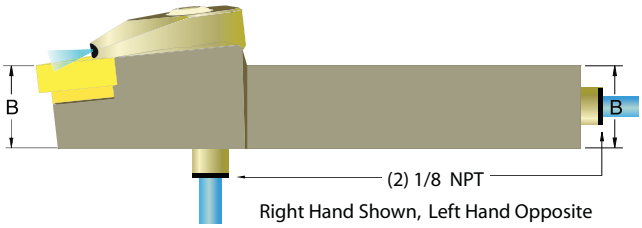


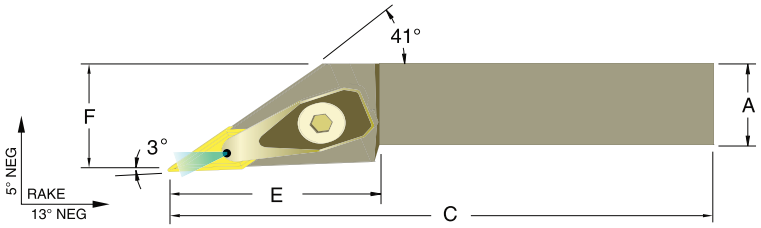


Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	TNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADTJNR/L-12-3B	53063	53064	0.75	0.75	4.50	1.250	1.000	332	ITSN-322	SM-M3	JSLC-HPTW3N	JSCS-04	JSOR-01	JSOR-04
ADTJNR/L-12-4B	53065	53066	0.75	0.75	4.50	1.250	1.250	432	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADTJNR/L-16-3D	53067	53068	1.00	1.00	6.00	1.250	1.500	332	ITSN-322	SM-M3	JSLC-HPTW3N	JSCS-04	JSOR-01	JSOR-04
ADTJNR/L-16-4D	53069	53070	1.00	1.00	6.00	1.250	2.000	432	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADTJNR/L-20-4D	53071	53072	1.25	1.25	6.00	1.375	2.000	432	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
*ADTJNR/L-24-4E	53073	53074	1.50	1.50	7.00	1.500	2.000	432	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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

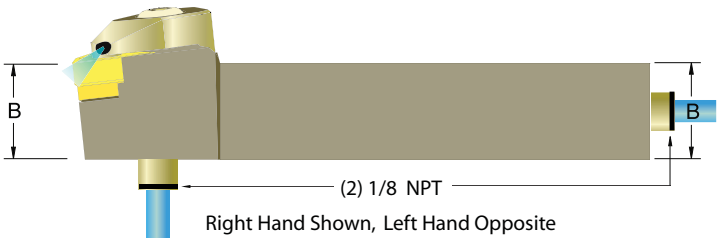


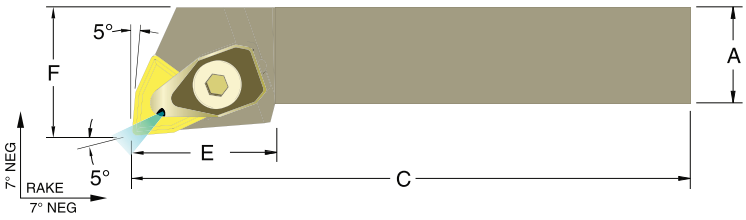


Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	VNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADVJNR/L-12-3B	53081	53082	0.75	0.75	4.50	1.750	1.000	332	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSOR-01	JSOR-04
ADVJNR/L-16-3D	53083	53084	1.00	1.00	6.00	1.750	1.250	332	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSOR-01	JSOR-04
ADVJNR/L-20-3D	53085	53086	1.25	1.25	6.00	1.750	1.500	332	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSOR-01	JSOR-04
*ADVJNR/L-24-3E	53087	53088	1.50	1.50	7.00	1.750	2.000	332	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request.One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

ADWLN R/L Toolholder Style L - Negative 5° end or side cutting lead angle for negative 80° trigon WNM_ inserts





Right clamp for right hand toolholder. Left clamp for left hand toolholder

Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	WNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADWLNR/L-12-3B	53093	53094	0.75	0.75	4.50	1.000	1.000	332	IWSN-322	SM-M3	*JSLC-HPTW3R/L	JSCS-04	JSOR-01	JSOR-04
ADWLNR/L-12-4B	53095	53096	0.75	0.75	4.50	1.250	1.000	432	S8008P	SM-M4	*JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04
ADWLNR/L-16-3D	53097	53098	1.00	1.00	6.00	1.000	1.250	332	IWSN-322	SM-M3	*JSLC-HPTW3R/L	JSCS-04	JSOR-01	JSOR-04
ADWLNR/L-16-4D	53099	53100	1.00	1.00	6.00	1.250	1.250	432	S8008P	SM-M4	*JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04
ADWLNR/L-20-4D	53101	53102	1.25	1.25	6.00	1.250	1.500	432	S8008P	SM-M4	*JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04
*ADWLNR/L-24-4E	53103	53104	1.50	1.50	7.00	1.250	2.000	432	S8008P	SM-M4	*JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

70 - 1400 psi (5 -100 Bar)

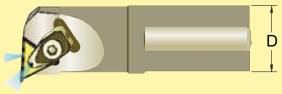
For Inch Boring Bars see Pages 18-20
For Metric Boring Bars see Pages 37-39

A - Steel With Coolant
C - Carbide
E - Carbide With Coolant
S - Steel

Bar Type

Round Shanks:
(D) shown in 1/16 inch increments

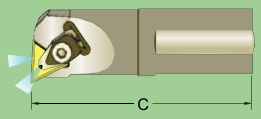
Round Shanks:
(D) shown in 1 mm increments



Bar Diameter

H - 4.0 **S** - 10.0
J - 4.5 **T** - 12.0
K - 5.0 **U** - 14.0
M - 6.0 **V** - 16.0
R - 8.0 **Y** - 18.0

H - 100 mm **R** - 200 mm
J - 110 mm **S** - 250 mm
K - 125 mm **T** - 300 mm
M - 150 mm **U** - 350 mm
Q - 180 mm



Bar Length

AD - Thru Coolant Dor-Lock Clamp

Clamp Style

C - 80° Diamond
T - Triangle
D - 55° Diamond
W - 80° Trigon
R - Round
V - 35° Diamond
S - Square
K - 55° Diamond

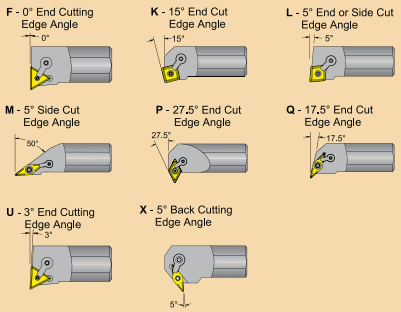
Insert Shape

A.N.S.I.
(American National Standards Institute)
AS-16R-ADCLNR/L-4

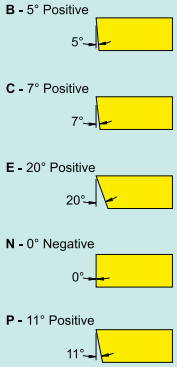
16	R-						4
Bar Diameter (in)	Bar Length (in)						Insert Size (in)
AS-		**AD**	**C**	**L**	**N**	**R/L-**	
Bar Type		Clamp Style	Insert Shape	Bar Style	Insert Clearance Angle	Hand of Tool	
20	**R-**						**09**
Bar Diameter (mm)	Bar Length (mm)						Insert Length (mm)

I.S.O.
(International Standards Organization)
AS-20R-ADCLNR/L-09

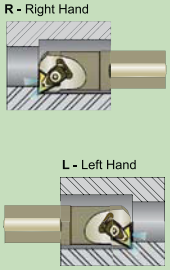
Bar Style



Insert Clearance Angle

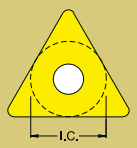


Hand of Tool



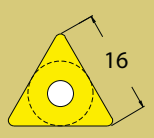
Insert Size (in)

Insert I.C. shown in 1/8" increments

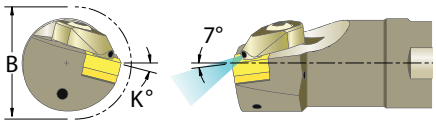


Insert Length (mm)

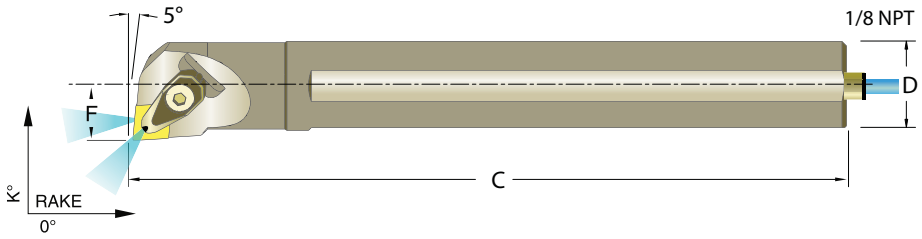
Length shown in 1 mm increments



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



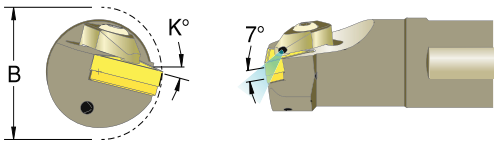
Right Hand Shown, Left Hand Opposite



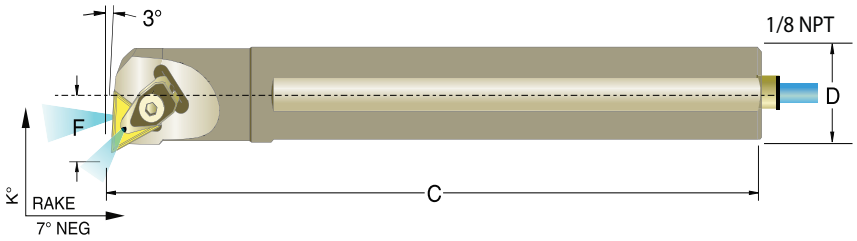
Inch Description	Part No. 733101- R.H.	L.H.	B	C	D	F	Kº	CNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-12R-ADCLNR/L-3	53120	53121	1.000	8.00	0.75	0.500	10º	322	N/A	N/A	JSLC-HPC3-B	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-16R-ADCLNR/L-4	53122	53123	1.280	8.00	1.00	0.640	14º	432	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-20S-ADCLNR/L-4	53124	53125	1.530	10.00	1.25	0.765	14º	432	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-24S-ADCLNR/L-4	53126	53127	1.780	10.00	1.50	0.890	11º	432	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-32T-ADCLNR/L-4	53128	53129	2.562	12.00	2.00	1.281	11º	432	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-32T-ADCLNR/L-5	53130	53131	2.562	12.00	2.00	1.281	11º	543	ICSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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



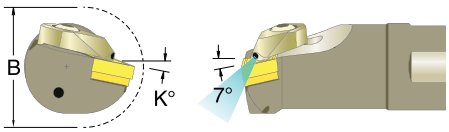
Right Hand Shown, Left Hand Opposite



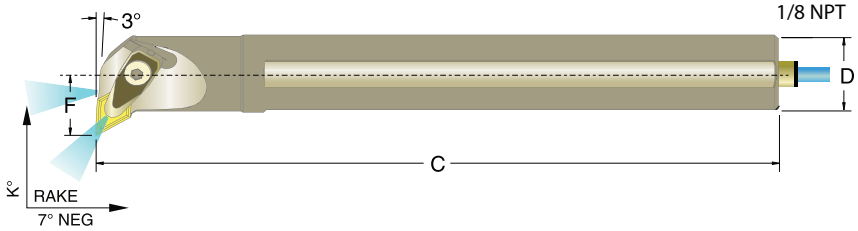
*Right clamp for right hand toolholder. Left clamp for left hand toolholder

Inch Description	Part No. 733101- R.H.	L.H.	B	C	D	F	Kº	TNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-12R-ADTUNR/L-3	53172	53173	1.000	8.00	0.75	0.500	14º	322	N/A	N/A	*JSLC-HPDT3-BR/L	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-16R-ADTUNR/L-3	53174	53175	1.280	8.00	1.00	0.640	14º	332	ITSN-322	SM-M3	*JSLC-HPDT3-BR/L	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-20S-ADTUNR/L-4	53176	53177	1.530	10.00	1.25	0.765	14º	432	ITSN-433	SM-S4	*JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-24S-ADTUNR/L-4	53178	53179	2.060	10.00	1.50	0.890	11º	432	ITSN-433	SM-S4	*JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-32T-ADTUNR/L-4	53180	53181	2.562	12.00	2.00	1.281	11º	432	ITSN-433	SM-S4	*JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

AS-ADDUN R/L Boring Bar Style U - Negative 3º end cutting lead angle for negative 55º diamond DNM _inserts



Right Hand Shown, Left Hand Opposite

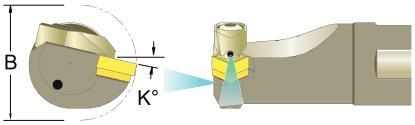


*Right clamp for right hand toolholder. Left clamp for left hand toolholder

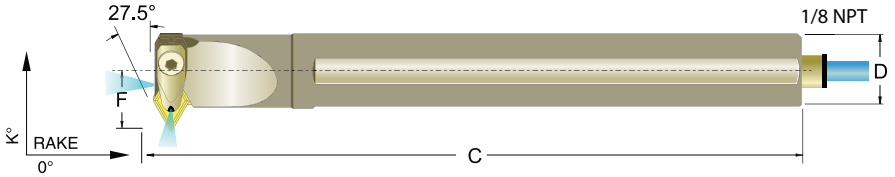
Inch Description	Part No. 733101- R.H.	L.H.	B	C	D	F	Kº	DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-16R-ADDUNR/L-3	53137	53138	1.300	8.00	1.00	0.750	11º	332	S5511P	SM-M3	*JSLC-HPDT3-BR/L	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-20S-ADDUNR/L-4	53139	53140	2.000	10.00	1.25	1.000	11º	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-24S-ADDUNR/L-4	53141	53142	2.250	10.00	1.50	1.125	11º	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-32T-ADDUNR/L-4	53143	53144	3.000	12.00	2.00	1.375	11º	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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



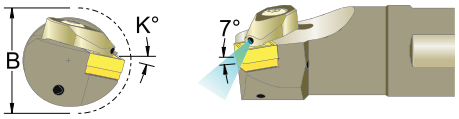
Right Hand Shown, Left Hand Opposite



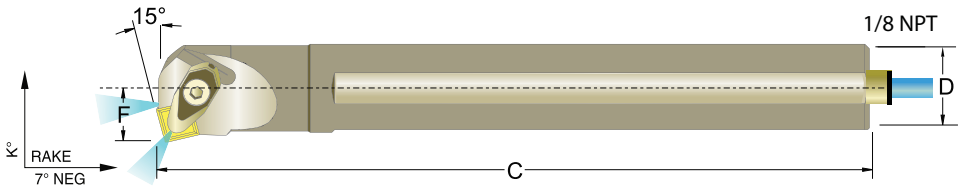
Inch Description	Part No. 733101- R.H.	L.H.	B	C	D	F	K°	DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-20S-ADDPNR/L-4	53150	53151	1.705	10.00	1.25	1.000	13º	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-24S-ADDPNR/L-4	53152	53153	2.000	10.00	1.50	1.125	10º	432	IDSN-433	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

AS-ADSKN R/L Boring Bar Style K - 15º End cutting lead angle for negative square SNM_inserts



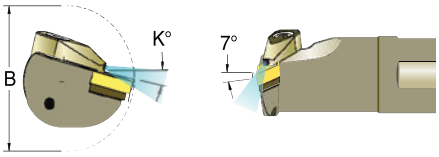
Right Hand Shown, Left Hand Opposite



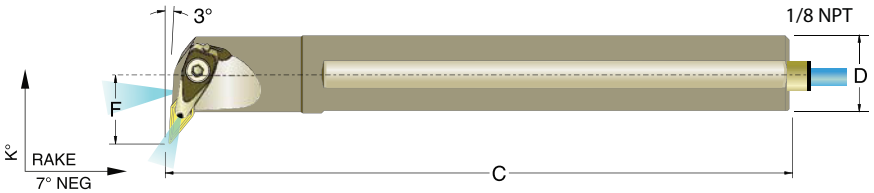
Inch Description	Part No. 733101- R.H.	L.H.	B	C	D	F	K°	SNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-20S-ADSKNR/L-4	53159	53160	1.53	10.00	1.25	0.765	10º	432	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-24S-ADSKNR/L-4	53161	53162	1.76	10.00	1.50	0.890	11º	432	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-32T-ADSKNR/L-4	53163	53164	2.400	12.00	2.00	1.281	12º	432	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-32T-ADSKNR/L-5	53165	53166	2.400	12.00	2.00	1.281	12º	543	ISSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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



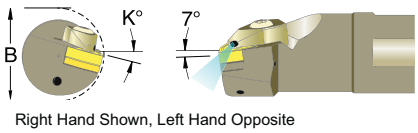
Right Hand Shown, Left Hand Opposite



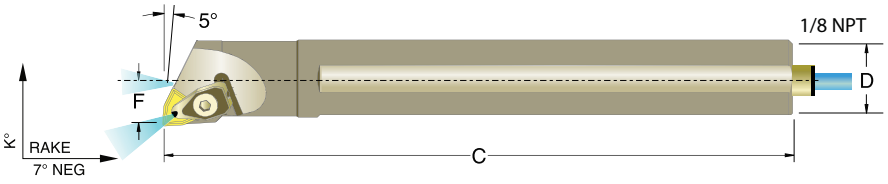
Inch Description	Part No. 733101- R.H.	L.H.	B	C	D	F	K°	VNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-20S-ADVUNR/L-3	53189	53190	2.250	10.00	1.25	1.125	14º	332	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-24S-ADVUNR/L-3	53191	53192	2.500	10.00	1.50	1.250	11º	332	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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



Right Hand Shown, Left Hand Opposite



*Right clamp for right hand toolholder. Left clamp for left hand toolholder

Inch Description	Part No. 733101- R.H.	L.H.	B	C	D	F	K°	WNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-12R-ADWLNR/L-3	53198	53199	1.000	8.00	0.75	0.500	14º	332	N/A	N/A	*JSLC-HPW3-R/L	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-16R-ADWLNR/L-4	53200	53201	1.280	8.00	1.00	0.640	14º	432	S8008P	SM-M4	*JSLC-HPTW-4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-20S-ADWLNR/L-4	53202	53203	1.530	10.00	1.25	0.765	14º	432	S8008P	SM-M4	*JSLC-HPTW-4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-24S-ADWLNR/L-4	53204	53205	1.780	10.00	1.50	0.890	11º	432	S8008P	SM-M4	*JSLC-HPTW-4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-32T-ADWLNR/L-4	53206	53207	2.000	12.00	2.00	1.281	12º	432	S8008P	SM-M4	*JSLC-HPTW-4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

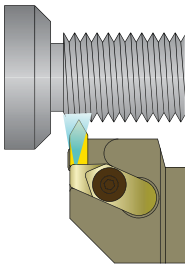
One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

70 - 1400 psi (5 -100 Bar)

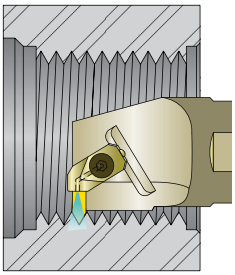
For Inch Threading Toolholders see Pages 27-33
For Metric Threading Toolholders see Pages 39-41

Enhance Performance in:

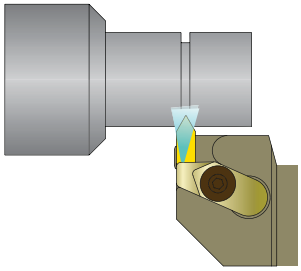
O.D Threading



I.D. Threading



Grooving



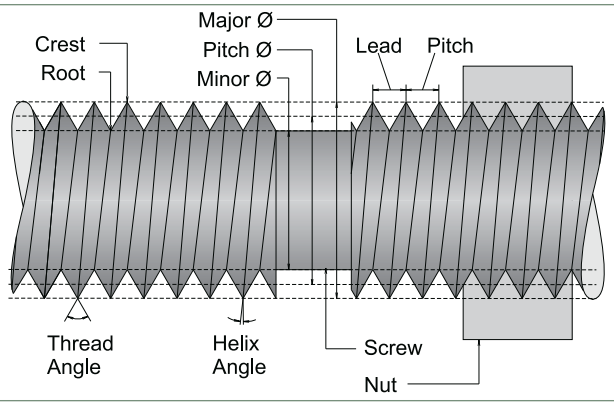
Threading and Grooving - Selection Chart

On Edge Style	Machining Applications		Insert Shape			
	Best	Good	Threading		Grooving	
	Threading	Grooving	Positive	Negative	Positive	Negative
External						
Internal						

Laydown Style	Machining Applications		Insert Shape	
	Best	Not Available	Threading	Grooving
	Threading	Grooving		
External				
Internal				Not Available

DorNotch Style	Machining Applications		Insert Shape			
	Good	Best	Threading		Grooving	
	Threading	Grooving	Positive	Neutral	Positive	Neutral
External						
Internal						

Thread Terminology



Thread Definitions

Crest - The outer most surface of the thread form which joins the flanks.

Helix angle - The angle between the direction of the threads around a screw and a line running at a right angle to the shank.

Lead - The distance a thread will advance along its axis in one complete revolution.
major diameter - The largest diameter of a straight screw thread.

Minor diameter - The smallest diameter of a screw thread. Also known as the "root diameter."

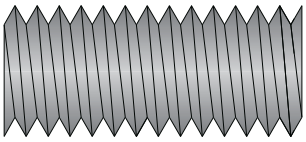
Pitch - The distance from any point on a thread to the corresponding point on the adjacent thread measured parallel to the axis.

Pitch diameter - The diameter of a thread at an imaginary point where the width of the groove and the with of the thread are equal.

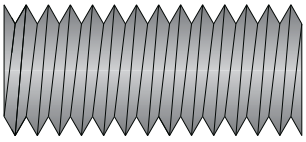
Root - The inner most surface of a thread form.

Thread angle - The angle formed by the two sides of the thread (or their projections) with each other.

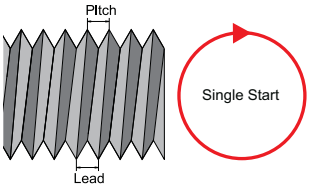
Right Hand Thread



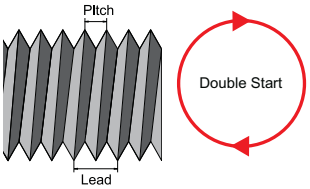
Left Hand Thread



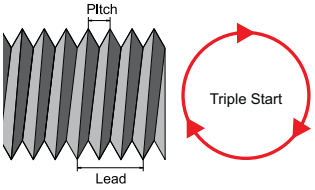
Single Lead Thread



Double Lead Thread



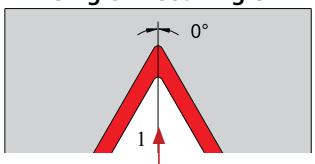
Triple Lead Thread



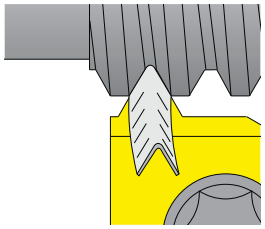
Thread Cutting Methods

In-feed Angle & Cutting Directions (——►) Shown below

Single Infeed Angle



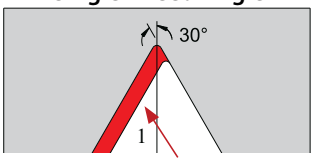
Radial Infeed
(Cut both sides simultanously)



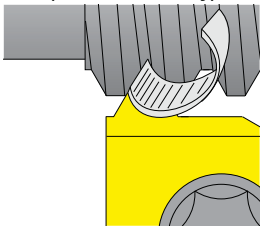
Pros:
- Most commonly used. Often only choice in mechanical operations
- Edge is protected from chipping since all of the cutting edge is located in the cut

Cons:
- Channel chip is created that may be difficult to control
- Burr condition is increased
- Tends to chatter

Single Infeed Angle



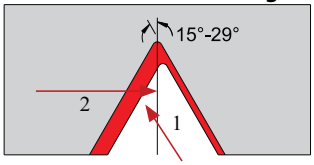
Flank Infeed
(Cut one side only)



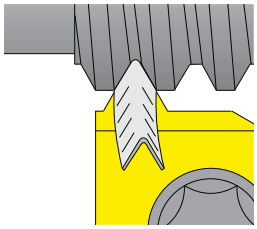
Pros:
- Leading edge of insert is used to make the cut resulting in better chip flow
- Reduced Burring

Cons:
- Trail edge of insert is prone to chipping
- Poor choice of soft materials like aluminum, stainless steel or low carbon steel

Infeed & Crossfeed Angle



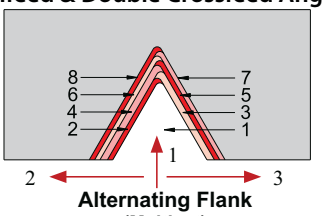
Modified Flank
(Cut one side only & finish opposite)



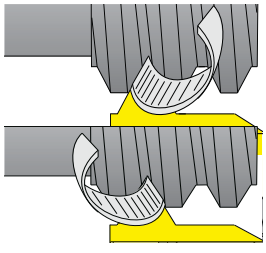
Pros:
- Edge is protected from chipping since all of the cutting edge is located in the cut

Cons:
- Channel chip is created that may be difficult to control
- Burr condition is increased
- Tends to chatter

Infeed & Double Crossfeed Angle



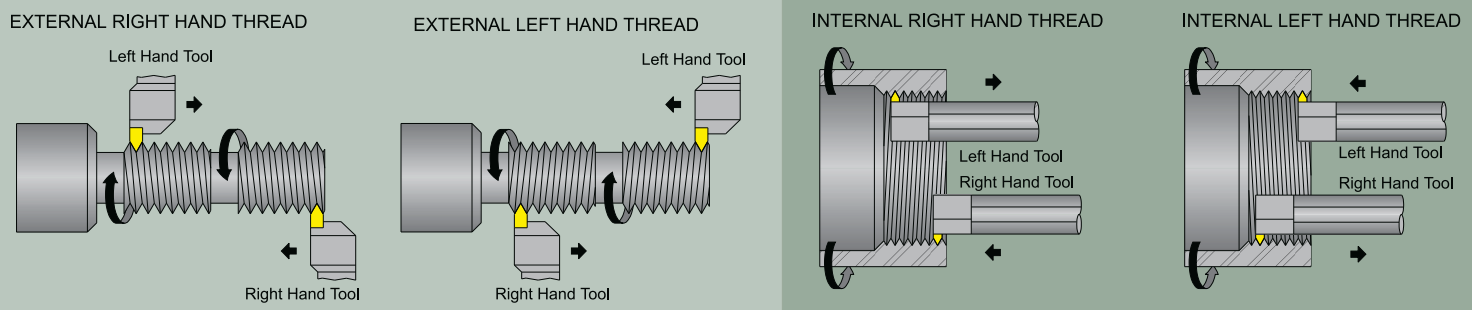
Alternating Flank
(Multicut)



Pros:
- Mainly used for large profiles
- Increased Tool Life
- Insert wears evenly

Cons:
- **Difficult to achieve manually**
- **Requires special programs on CNC machines**

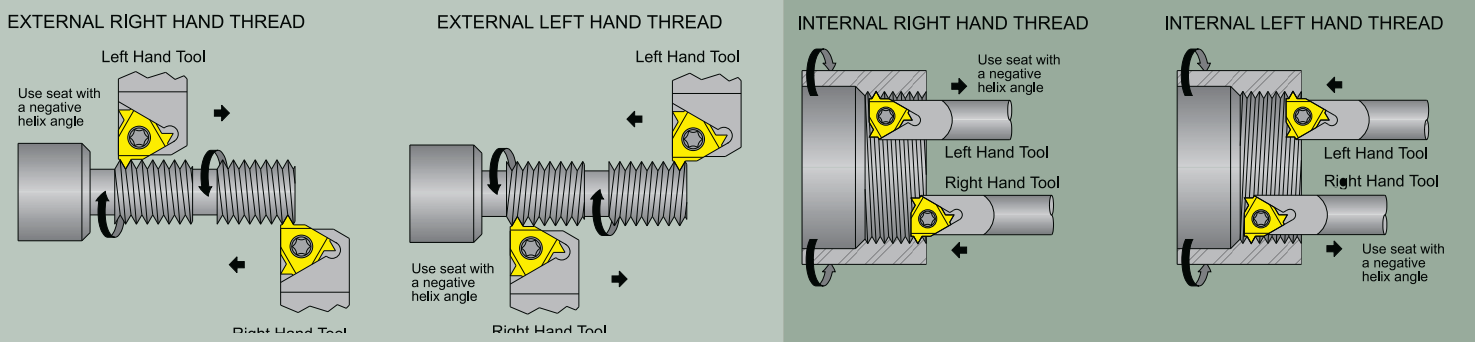
On Edge Threading Methods



Toolholder Threading Method

Threading Bar Threading Method

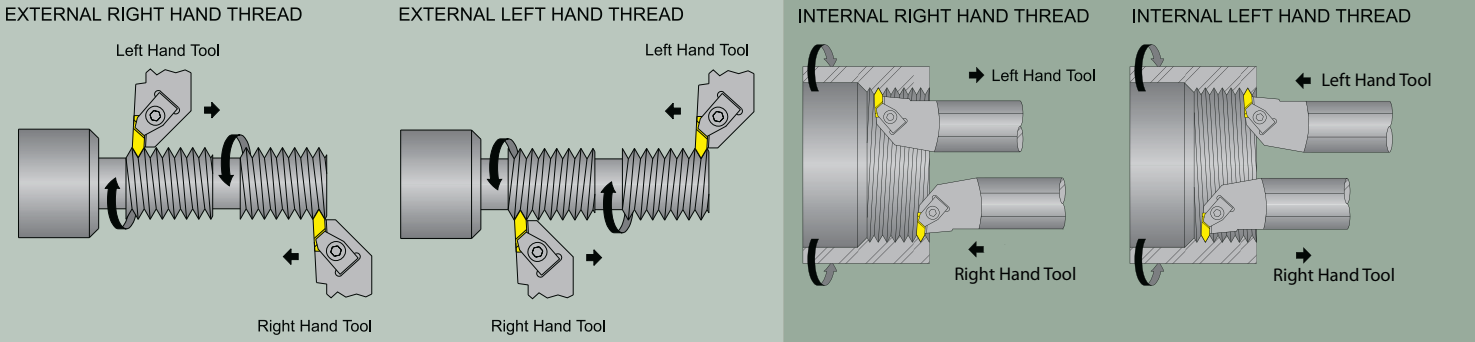
Laydown Threading Methods



Toolholder Threading Method

Threading Bar Threading Method

DorNotch Threading Methods



Toolholder Threading Method

Threading Bar Threading Method

In Blind Threading Applications:

The advanced design of the Jet-Stream™ Threading Bar offers the ability to use the front coolant port to flush chips out of the way so that they do not get packed or re-cut, by simply installing the supplied coolant nozzle screw. This will help prevent damage to the insert, the tool itself and even the part that is being cut. If this is not necessary in an application just replace the coolant screw with the already supplied solid screw and this will disable the front coolant port and use only the coolant port at the tip of the insert.

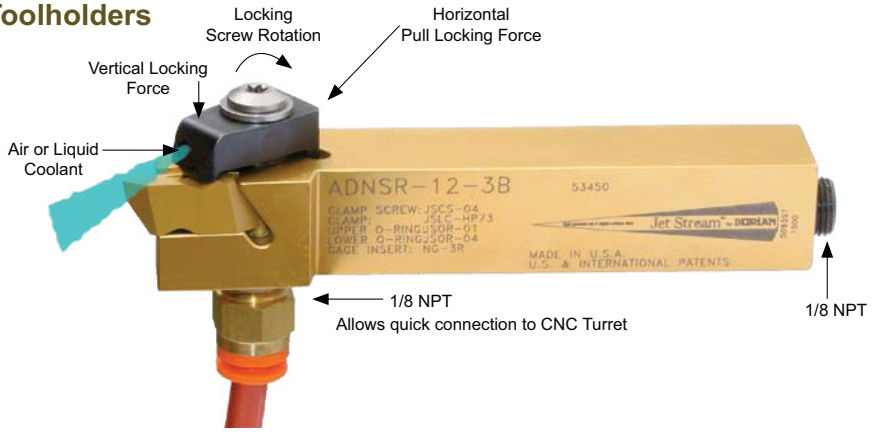
PVD-TiN, Materials and Quality

The body's of the Jet-Stream™ Toolholders and Boring Bars are built with chromuim-molybdenum alloy steel. This material features properties of high tensile strength and high yield stress resistance. This material is heat treated to 40-44Rc and Electoless Nickel Coated.

Electoless Nickel Coating will prevent the tools against rust providing a long tool life under severe working conditions.

Threading Bars

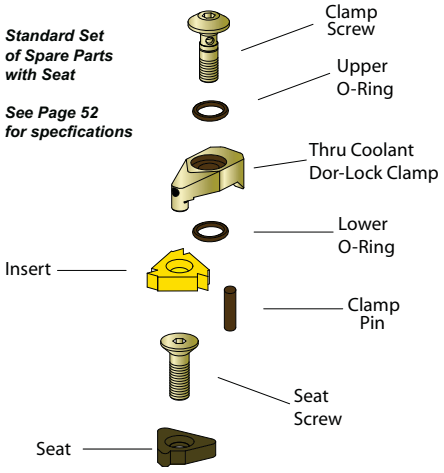
Threading Toolholders



Standard Spare Parts

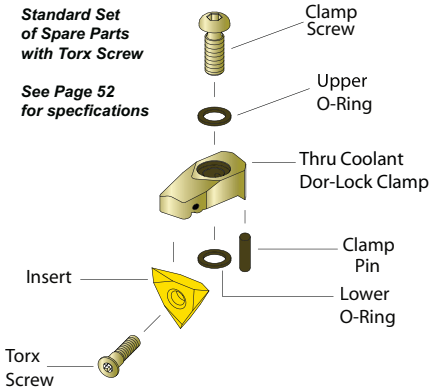
Standard Set of Spare Parts with Seat

See Page 52 for specfications

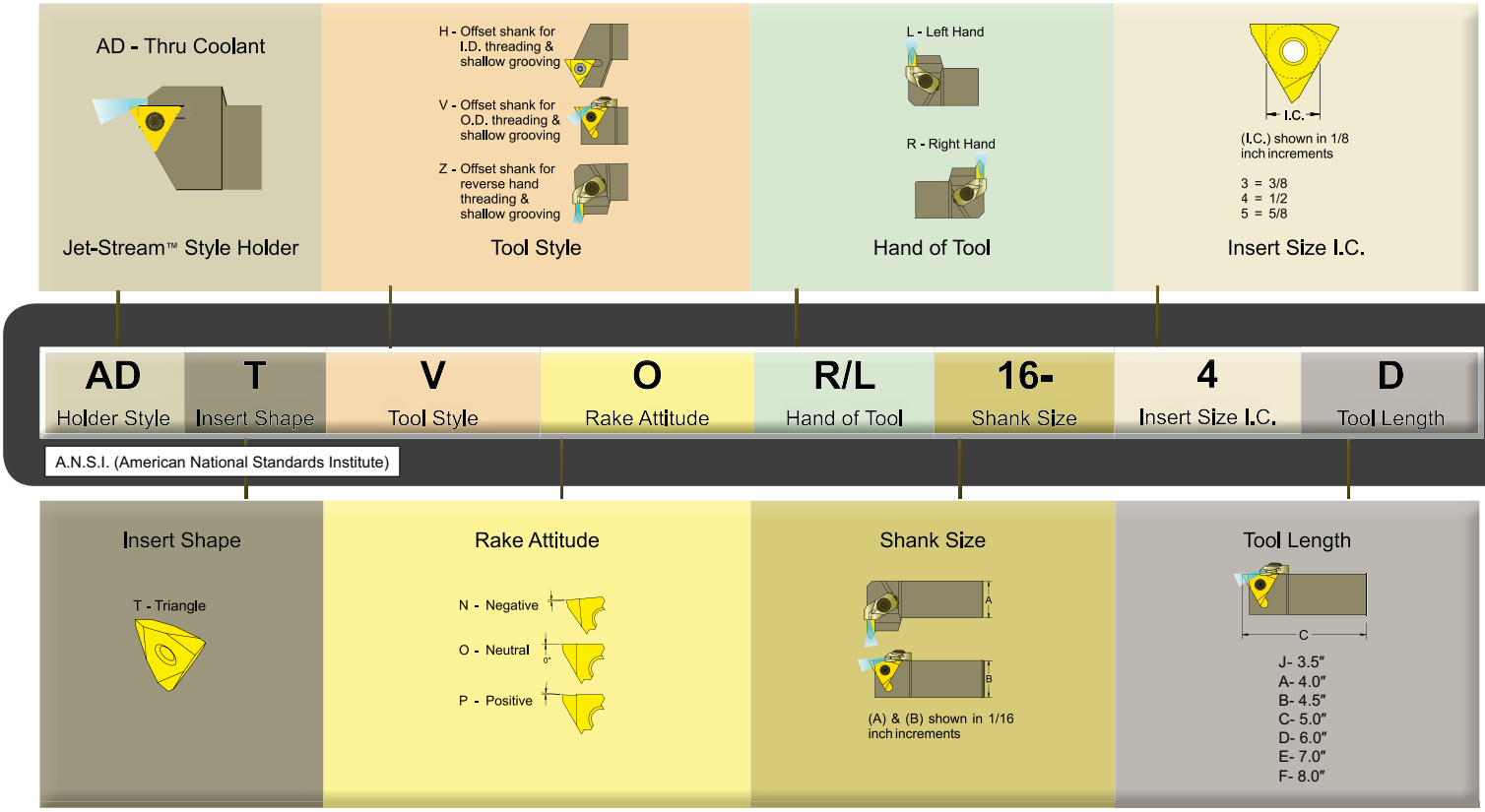


Standard Set of Spare Parts with Torx Screw

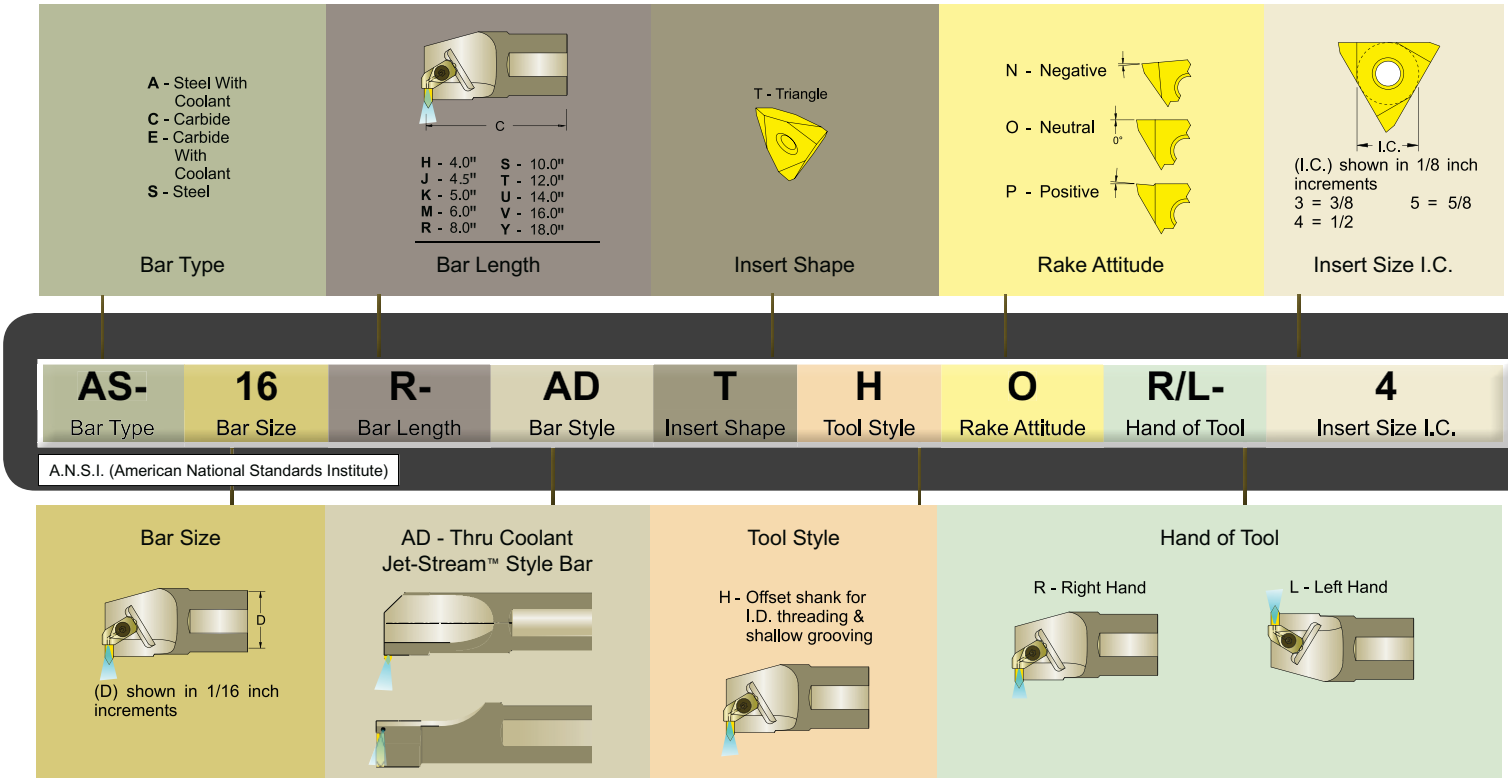
See Page 52 for specfications



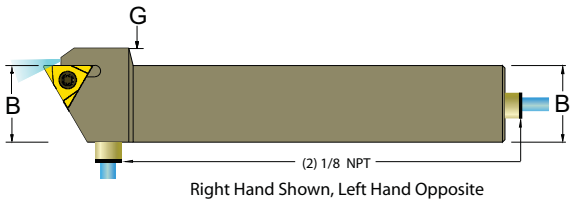
On Edge Threading Toolholder



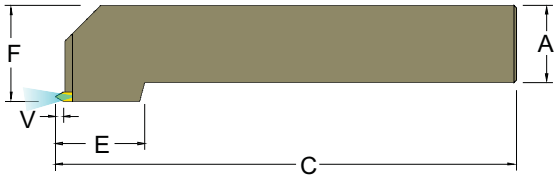
On Edge Threading Bar



ADTVO R/L Toolholder Style V - O.D. Threading and shallow grooving for triangle TNMC inserts



Right Hand Shown, Left Hand Opposite

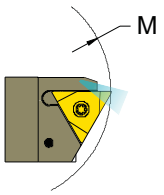


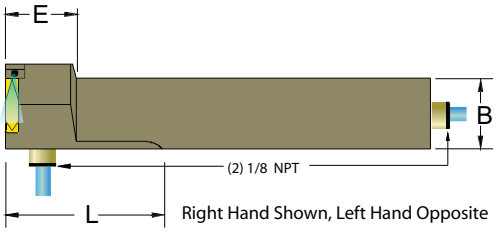
*Right clamp for right hand toolholder. Left clamp for left hand toolholder

Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	G	V	TNMC Gage Insert	Insert Torx Screw	Torx Key
ADTVOR/L12-3B	53400	53401	0.75	0.75	4.50	1.02	0.88	0.13	0.15	322	GTS-1	T-10
ADTVOR/L16-3D	53402	53403	1.00	1.00	6.00	1.16	1.25	0.25	0.15			
ADTVOR/L12-4B	53404	53405	0.75	0.75	4.50	1.25	0.88	0.13	0.23	432	GTS-2	T-20
ADTVOR/L16-4D	53406	53407	1.00	1.00	6.00	1.25	0.88	0.13	0.23			
ADTVOR/L20-4D	53408	53409	1.25	1.25	6.00	1.25	0.25	0.23	0.23			
ADTVOR/L24-4E	53410	53411	1.50	1.50	7.00	1.25	1.75	0.25	0.23			
ADTVOR/L20-5D	53414	53415	1.25	1.25	6.00	1.50	1.50	0.25	0.29	543	GTS-3	T-20
ADTVOR/L24-5E	53416	53417	1.50	1.50	7.00	1.50	1.75	0.25	0.29			

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

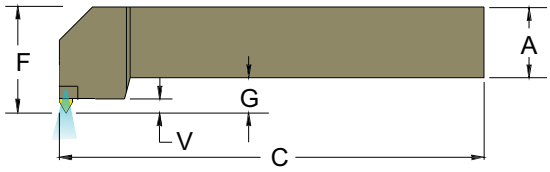
ADTHO R/L Toolholder Style H - Gang Toolholder for shallow grooving or I.D. threading for triangle TNMC inserts





Right Hand Shown, Left Hand Opposite

For Both ***Internal and External Operations***



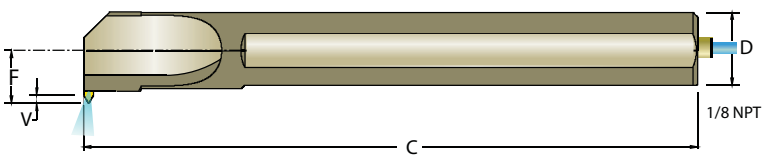
*Right clamp for right hand toolholder. Left clamp for left hand toolholder

Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	G	V	L	TNMC Gage Insert	Insert Torx Screw	Torx Key
ADTHOR/L12-4B	53425	53426	0.75	0.75	4.50	1.25	0.88	0.13	0.23	N/A	432	GTS-2	T-20
ADTHOR/L16-4D	53427	53428	1.00	1.00	6.00	1.25	0.88	0.13	0.23	2.00			
ADTHOR/L20-4D	53429	53430	1.25	1.25	6.00	1.25	1.50	0.25	0.23	2.00			
ADTHOR/L20-5E	53431	53432	1.25	1.25	7.00	1.25	1.50	0.25	0.29	2.50	543	GTS-3	T-20

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

AS-ADTHO R/L Threading Bar Style H - I.D. Threading and shallow grooving for triangle TNMC inserts

Right Hand Shown, Left Hand Opposite

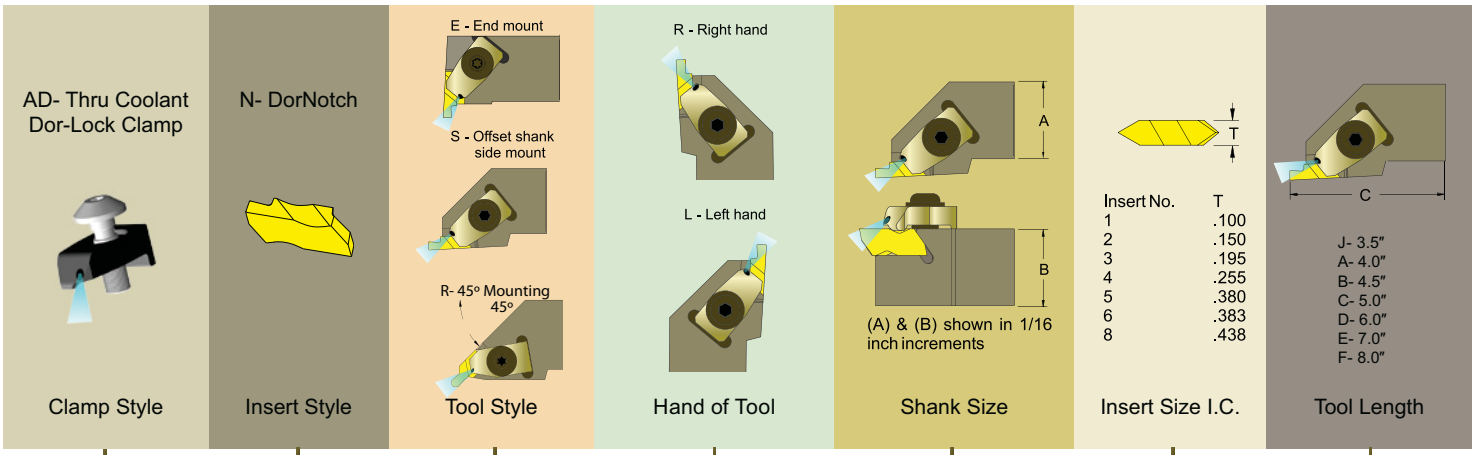


*Right clamp for right hand toolholder. Left clamp for left hand toolholder

Inch Description	Part No. 733101- R.H.	L.H.	B	C	D	F	V	TNMC Gage Insert	Insert Torx Screw	Torx Key
AS-16R-ADTHOR/L-3	53436	53437	1.39	8.00	1.00	.687	.120	322	GTS-1	T-10
AS-20S-ADTHOR/L-4	53438	53439	1.812	10.00	1.25	.875	.19	432	GTS-2	T-20
AS-24S-ADTHOR/L-4	53440	53441	2.250	10.00	1.50	1.00	.19			
AS-32T-ADTHOR/L-4	53442	53443	3.00	12.00	2.00	1.328	.19			
AS-32T-ADTHOR/L-5	53444	53445	3.00	12.00	2.00	1.38	0.25	543	GTS-3	T-20
AS-40T-ADTHOR/L-5	53446	53447	3.75	12.00	2.50	1.69	0.25			

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

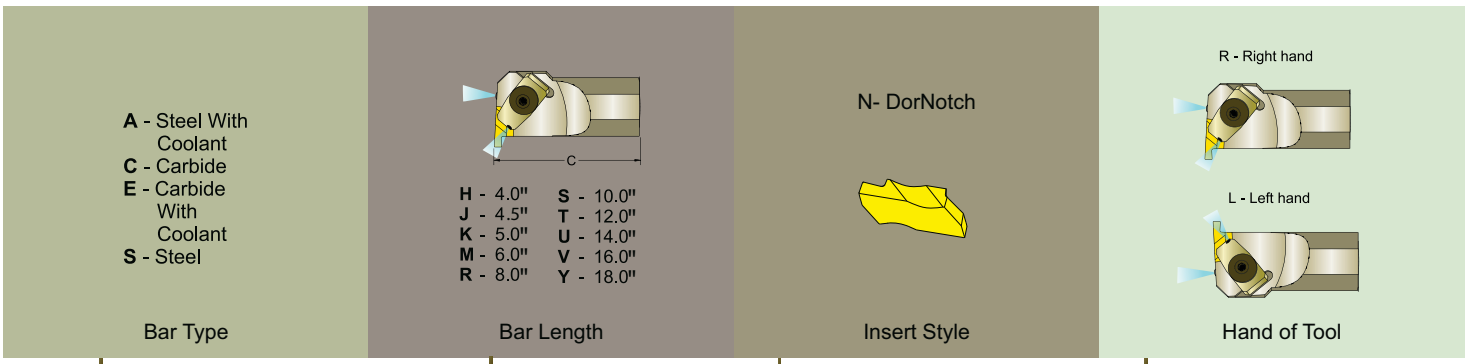
DorNotch Threading Toolholder



AD	N	S	R/L	16-	4	D
Clamp Style	Insert Style	Tool Style	Hand of Tool	Shank Size	Insert Size I.C.	Tool Length

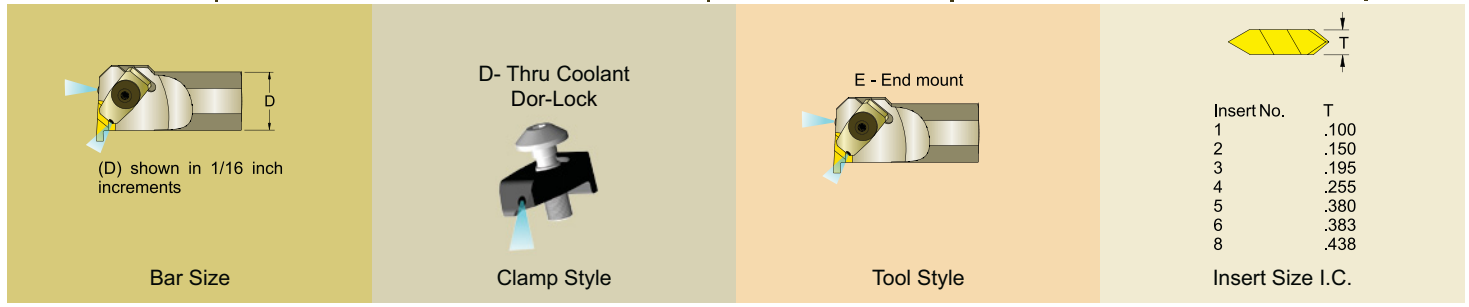
A.N.S.I. (American National Standards Institute)

DorNotch Threading Bar

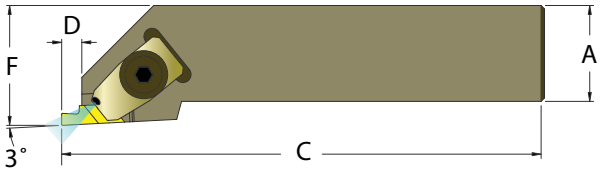


AS	16	R	AD	N	E	R/L	4
Bar Type	Bar Size	Bar Length	Clamp Style	Insert Style	Tool Style	Hand of Tool	Insert Size I.C.

A.N.S.I. (American National Standards Institute)



ADNS R/L Toolholder Style S - External DorNotch toolholder for threading and grooving DorNotch inserts

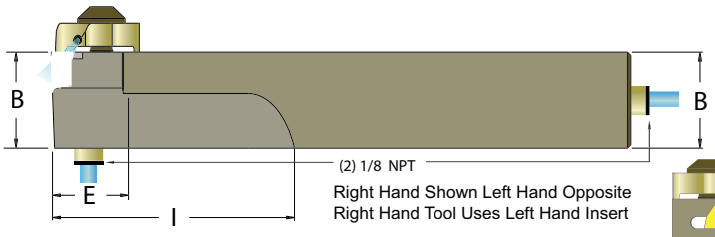


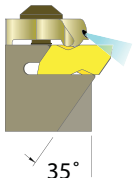
* For right hand tools ** For left hand tools

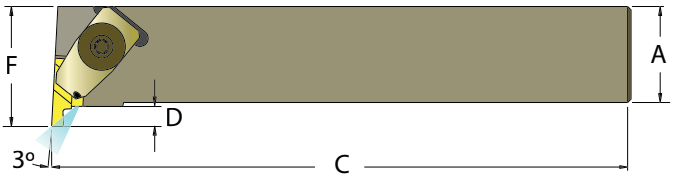
Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	D	E	F	Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADNSR/L12-3B	53450	53451	0.75	0.75	4.50	0.21	1.25	1.00	* NG-3R ** NG-3L	N/A	N/A	* JSLC-HP72 ** JSLC-HP73	JSCS-04	JSOR-01	JSOR-04
ADNSR/L16-3D	53452	53453	1.00	1.00	6.00	0.21	1.25	1.25							
ADNSR-L20-3D	53454	53455	1.25	1.25	6.00	0.21	1.25	1.50							
ADNSR/L16-4D	53456	53457	1.00	1.00	6.00	0.29	1.38	1.25	* NG-4R ** NG-4L	SM-420	SL-344	* JSLC-HP72 ** JSLC-HP73	JSCS-04	JSOR-01	JSOR-04
ADNSR/L20-4D	53458	53459	1.25	1.25	6.00	0.29	1.38	1.50							
ADNSR/L24-4E	53460	53461	1.50	1.50	7.00	0.29	1.38	1.75							

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

ADNE R/L Toolholder Style E- Gang external DorNotch toolholder for threading and grooving DorNotch inserts







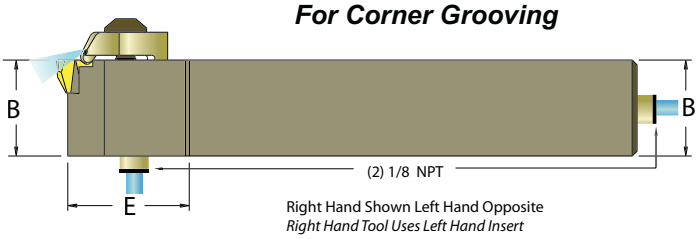
** For right hand tools * For left hand tools

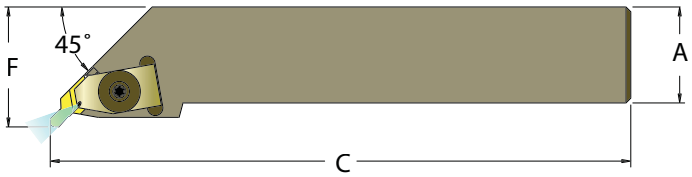
Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	D	E	F	I	Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADNER/L12-3B	53465	53466	0.75	0.75	4.50	0.21	0.75	1.13	2.00	* NG-3L ** NG-3R	N/A	N/A	* JSLC-HP73 ** JSLC-HP72	JSCS-04	JSOR-01	JSOR-04
ADNER/L16-3D	53467	53468	1.00	1.00	6.00	0.21	0.75	1.25	2.00							
ADNER/L20-3D	53469	53470	1.25	1.25	6.00	0.21	0.75	1.50	2.00							
ADNER/L16-4D	53471	53472	1.00	1.00	6.00	0.29	0.75	1.38	2.00	* NG-4L ** NG-4R	N/A	N/A	* JSLC-HP73 ** JSLC-HP72	JSCS-04	JSOR-01	JSOR-04
ADNER/L20-4D	53473	53474	1.25	1.25	6.00	0.29	0.75	1.63	2.00							

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

ADNR R/L Toolholder Style R- Corner grooving external DorNotch toolholder for grooving DorNotch inserts

For Corner Grooving



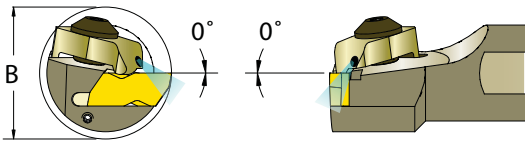


** For right hand tools * For left hand tools

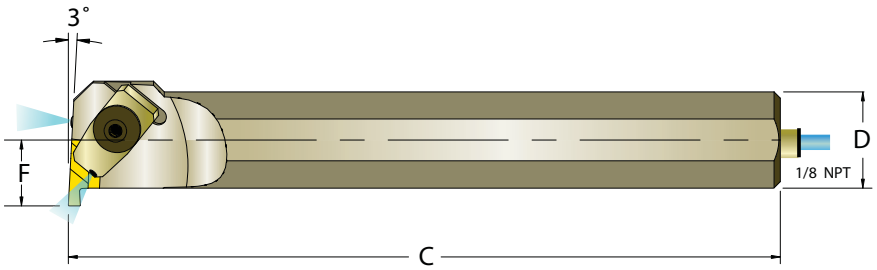
Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	D	E	F	Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADNRR/L12-3B	53480	53481	0.75	0.75	4.50	0.14	1.25	1.00	* NU-3L ** NU-3R	N/A	N/A	* JSLC-HP73 ** JSLC-HP72	JSCS-04	JSOR-01	JSOR-04
ADNRR/L16-3D	53482	53483	1.00	1.00	6.00	0.14	1.25	1.25							
ADNRR/L20-3D	53484	53485	1.25	1.25	6.00	0.14	1.38	1.50							

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

AS-ADNE R/L Boring Bar Style E- Internal DorNotch Boring Bar for threading and grooving DorNotch inserts



Right Hand Shown Left Hand Opposite
Right Hand Tool Uses Left Hand Insert

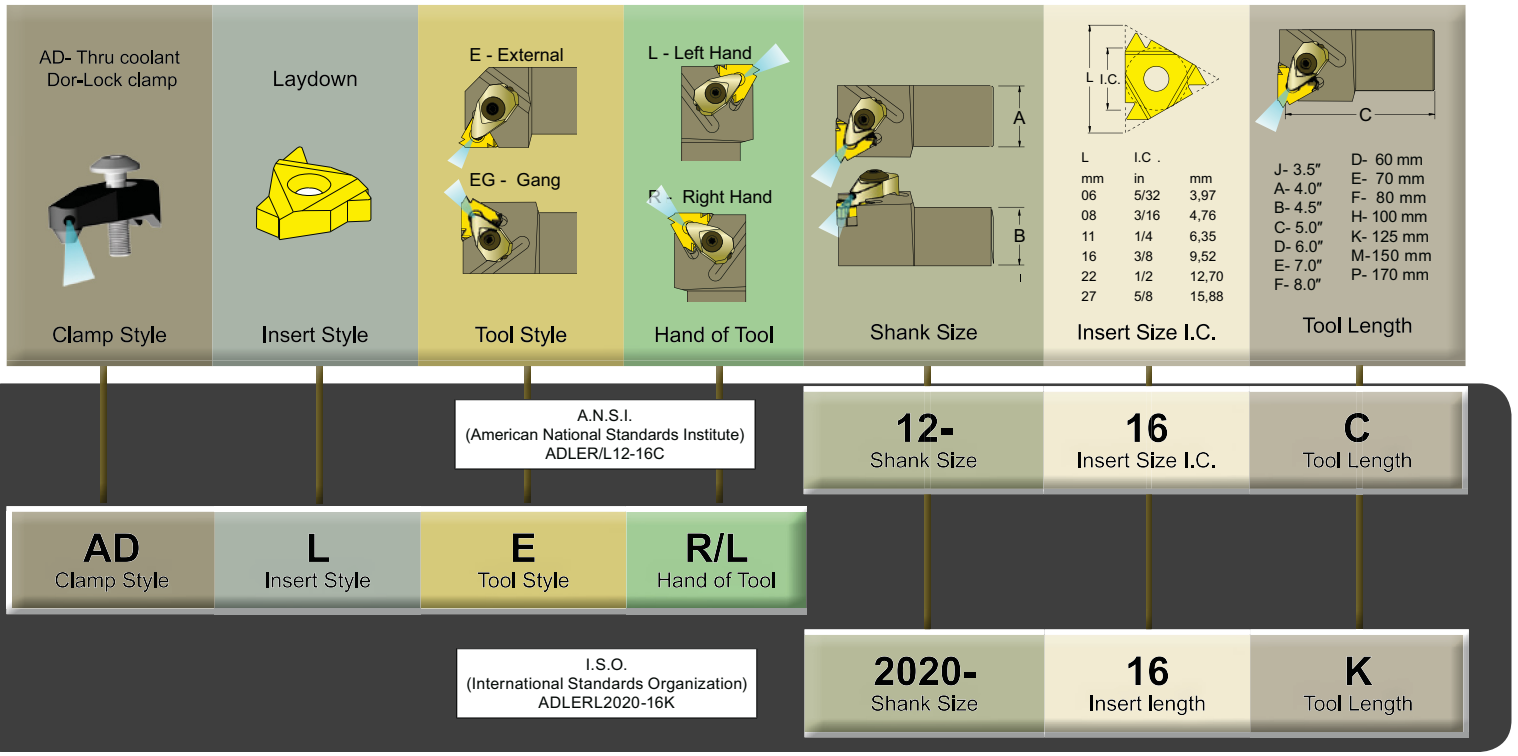


** For right hand tools * For left hand tools

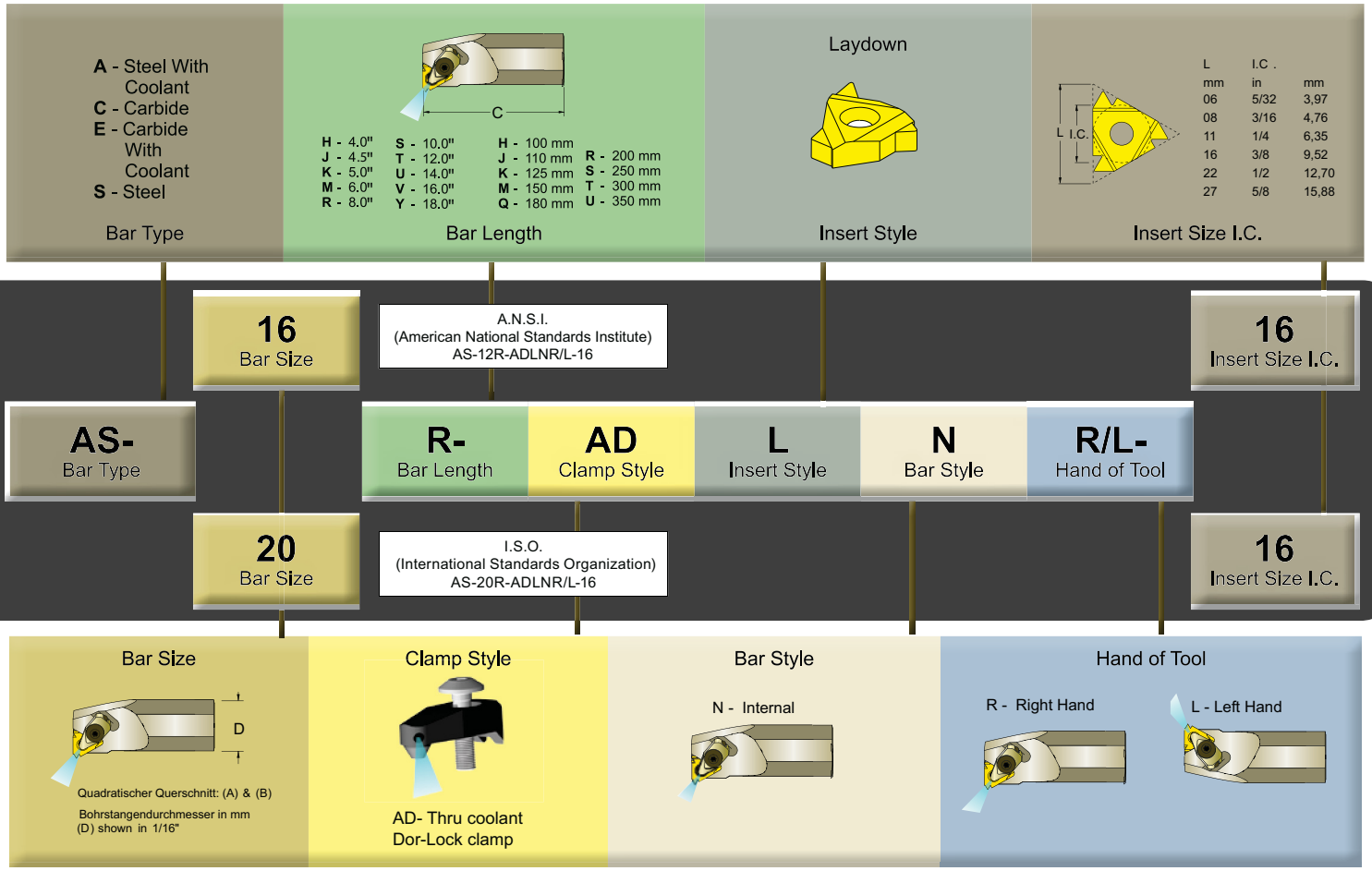
Inch Description	Part No. 733101- R.H.	L.H.	B	C	D	F	Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-16R-ADNER/L-3	53490	53491	1.38	8.00	1.00	0.69	* NG-3L ** NG-3R	N/A	N/A	* JSLC-HP73 ** JSLC-HP72	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-20S-ADNER/L-3	53492	53493	1.75	10.00	1.25	0.88								
AS-24S-ADNER/L-3	53494	53495	2.00	10.00	1.50	1.00								
AS-32T-ADNER/L-4	53496	53497	2.75	12.00	2.00	1.38	* NG-4L ** NG-4R	N/A	N/A	* JSLC-HP73 ** JSLC-HP72	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

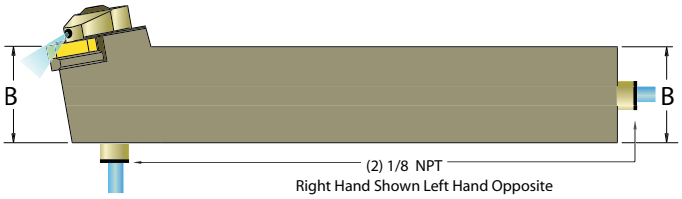
Laydown Threading Toolholder

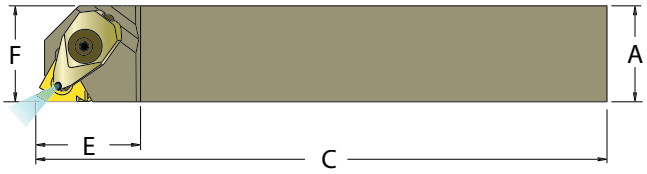


Laydown Threading Bar



ADLE R/L Toolholder Style E- Laydown toolholder for Laydown inserts

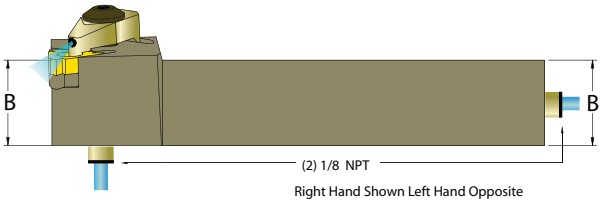


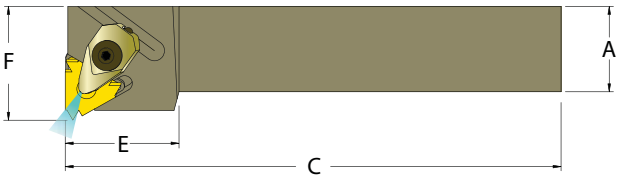


Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADLER/L12-16C	53510	53511	0.75	0.75	5.00	1.25	0.75	16-G60	GX-16-1	GXE-16	*JSLC-HP16R *JSLC-HP16L	JSCS-03	JSOR-03	JSOR-06
ADLER/L16-16D	53512	53513	1.00	1.00	6.00	1.25	1.00							

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.
*Right hand toolholder use a right hand clamp and Left hand toolholder use a left hand clamp.

ADLEG R/L Toolholder Style EG- Gang toolholder for Gang tool post for Laydown inserts

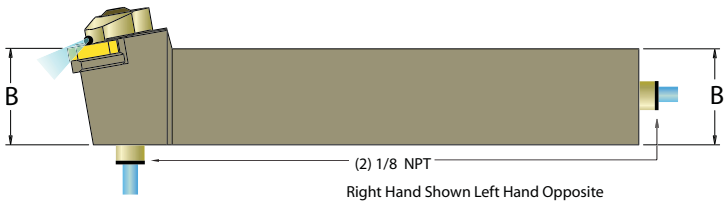


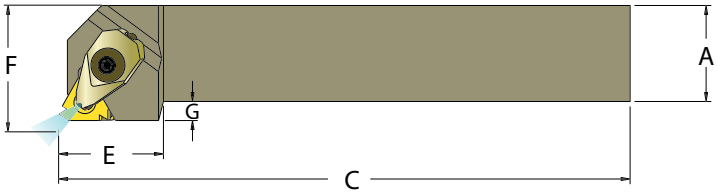


Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADLEGR/L12-16C	53516	53517	0.75	0.75	5.00	1.25	1.00	16-G60	GXE-16	TS 3.5-7M1	*JSLC-HP16R *JSLC-HP16L	JSCS-03	JSOR-03	JSOR-06
ADLEGR/L16-16D	53518	53519	1.00	1.00	6.00	1.25	1.25							

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.
*Right hand toolholder use a left hand clamp and Left hand toolholder use a right hand clamp.

ADLE R/L Qualified Toolholder Style E- Offset head for Laydown inserts

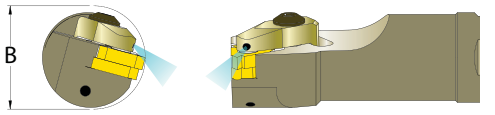




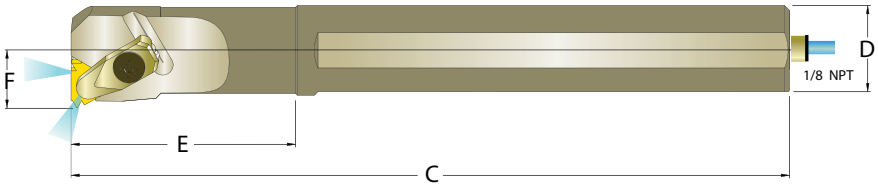
Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	G	Gage Insert	Seat	Insert Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADLER/L12-16Q-C	53522	53523	0.75	0.75	5.00	1.25	1.00	0.25	16-G60	GXE-16	TS 3.5-7M1	*JSLC-HP16R *JSLC-HP16L	JSCS-03	JSOR-03	JSOR-06
ADLER/L16-16Q-D	53524	53525	1.00	1.00	6.00	1.25	1.25	0.25							
ADLER/L20-16Q-D	53526	53527	1.25	1.25	6.00	1.25	1.50	0.25							
ADLER/L16-22Q-D	53528	53529	1.00	1.00	6.00	1.50	1.25	0.25	22-N60	NXE-22	TS-22M	JSLC-HP22N	JSCS-04	JSOR-01	JSOR-04
*ADLER/L20-22Q-D	53530	53531	1.25	1.25	6.00	1.50	1.50	0.25							

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.
*Right hand toolholder use a right hand clamp and Left hand toolholder use a left hand clamp.

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



Right Hand Shown, Left Hand Opposite

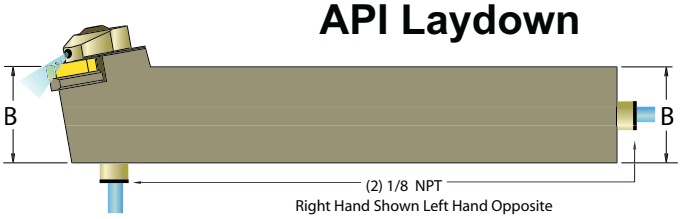


Inch Description	Part No. 733101- R.H.	L.H.	B	C	D	E	F	Gage Insert	Seat	Insert Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-12R-ADLNR/L-16	53533	53534	1.12	8.00	0.75	2.00	.52	16-G60	GXE-16	TS 3.5-7M1	*JSLC-HP16R *JSLC-HP16L	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-16R-ADLNR/L-16	53535	53536	1.37	8.00	1.00	2.50	.65								
AS-20S-ADLNR/L-16	53537	53538	1.62	10.00	1.25	2.50	.78								
AS-24S-ADLNR/L-16	53539	53540	1.87	10.00	1.50	2.50	.90								
AS-20S-ADLNR/L-22	53541	53542	1.75	10.00	1.25	2.50	1.50	22-N60	NXE-16	TS-22M	JSLC-HP22N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-24S-ADLNR/L-22	53543	53544	2.00	10.00	1.50	2.50	1.25								
AS-32T-ADLNR/L-22	53545	53546	2.50	12.00	2.00	2.50	1.50								

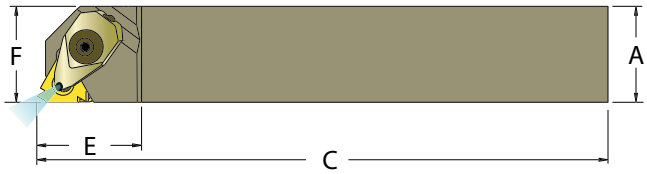
One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.
*Right hand bars use a left hand clamp and Left hand bars use a right hand clamp.

ADLE R/L API Toolholder Style E- External Laydown API Laydown toolholder for Laydown inserts

API Laydown



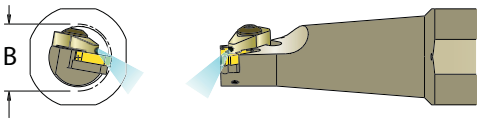
Right Hand Shown Left Hand Opposite



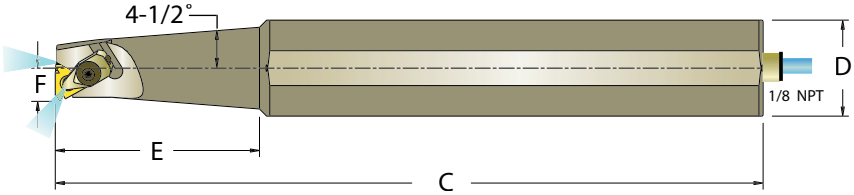
Inch Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	Gage Insert	Seat	Insert Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADLER/L16-T22API-D	53549	53550	1.25	1.00	6.00	1.50	1.25	22-N60	NXE-22	TS-22M	JSLC-HP22N	JSCS-04	JSOR-01	JSOR-04
ADLER/L20-T22API-D	53551	53552	1.50	1.25	6.00	1.50	1.50							
ADLER/L24-T27API-F	53553	53554	1.75	1.50	8.00	1.75	1.75	27-Q60	VXE-27	TS-22M	JSLC-HP27N	JSCS-06	JSOR-07	JSOR-07
ADLER/L32-T27API-H	53555	53556	2.25	2.00	10.00	1.75	2.25							

One Low Pressure Quick Coolant Connector Kit is supplied standard. For low and high pressure coolant fitting see page 41. For spare parts see page 45.

AS-ADLN R/L API Boring Bar Style N- Internal Laydown API Laydown toolholder for Laydown inserts



Right Hand Shown, Left Hand Opposite

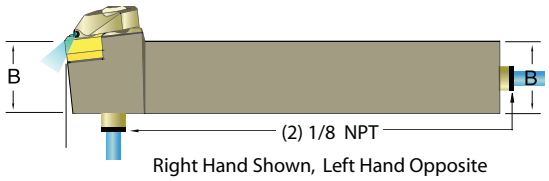


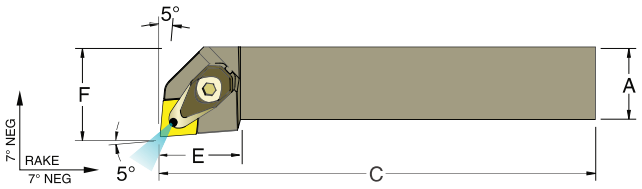
API Laydown

Inch Description	Part No. 733101- R.H.	L.H.	B	C	D	E	F	Gage Insert	Seat	Insert Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-32T-ADLNR/L-22API	53559	53560	1.60	12.00	2.00	5.00	0.88	22-N60	NXE-22	TS-22M	JSLC-HP22N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-40T-ADLNR/L-22API	53561	53562	1.60	12.00	2.50	5.00	0.88								
AS-32T-ADLNR/L-27API	53563	53564	1.60	12.00	2.00	5.00	0.90	27-Q60	VXE-27	TS-22M	JSLC-HP27N	JSCS-06	JSOR-07	JSOR-07	JSPN-M6
AS-40T-ADLNR/L-27API	53565	53566	1.60	12.00	2.50	5.00	0.90								

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

ADCLN R/L Toolholder Style L - Negative 5º end or side cutting lead angle for negative 80º diamond CNM_inserts

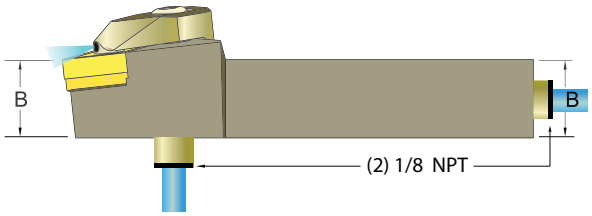


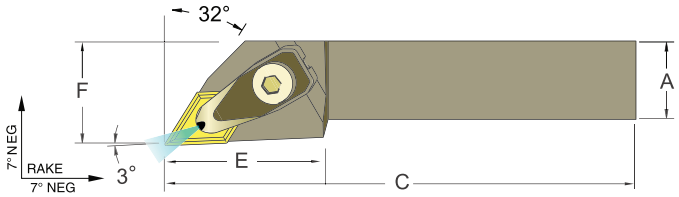


Metric Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	CNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADCLNR/L-2020-K12	52828	52829	20	20	125	32	25	120408	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADCLNR/L-2525-M12	52830	52831	25	25	150	32	32	120408	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADCLNR/L-3232-P12	52832	52833	32	32	170	32	40	120408	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADCLNR/L-3232-P16	52834	52835	32	32	170	35	40	160612	ICSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04
ADCLNR/L-3232-P19	52826	52827	32	32	170	40	40	190612	ICSN-633	SM-M66	JSLC-HPC6	JSCS-06	JSOR-07	JSOR-07
ADCLNR/L-4040-S12	52836	52837	40	40	250	32	50	120408	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADCLNR/L-4040-S16	52838	52839	40	40	250	35	50	160612	ICSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04
*ADCLNR/L-4040-S19	52840	52841	40	40	250	40	50	190612	ICSN-633	SM-M66	JSLC-HPC6	JSCS-06	JSOR-07	JSOR-07

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

ADDJN R/L Toolholder Style J - 3º side cutting lead angle for negative 55º diamond DNM_inserts

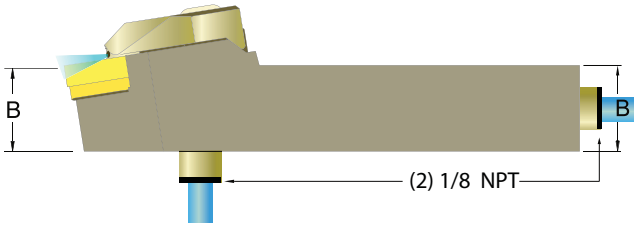


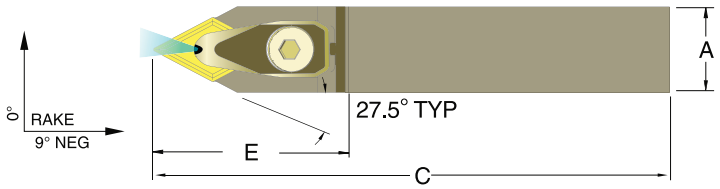


Metric Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADDJNR/L-2020-K11	52842	52843	20	20	125	38	25	110408	S5511P	SM-M3	JSLC-HPD3	JSCS-04	JSOR-01	JSOR-04
ADDJNR/L-2020-K15	52844	52845	20	20	125	38	25	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
ADDJNR/L-2525-M15	52846	52847	25	25	150	38	32	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
ADDJNR/L-3232-P15	52848	52849	32	32	170	38	38	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
*ADDJNR/L-4040-S15	52850	52851	40	40	250	38	50	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

ADDPNN Toolholder Style P - 27.5º side cutting lead angle for negative 55º diamond DNM_inserts

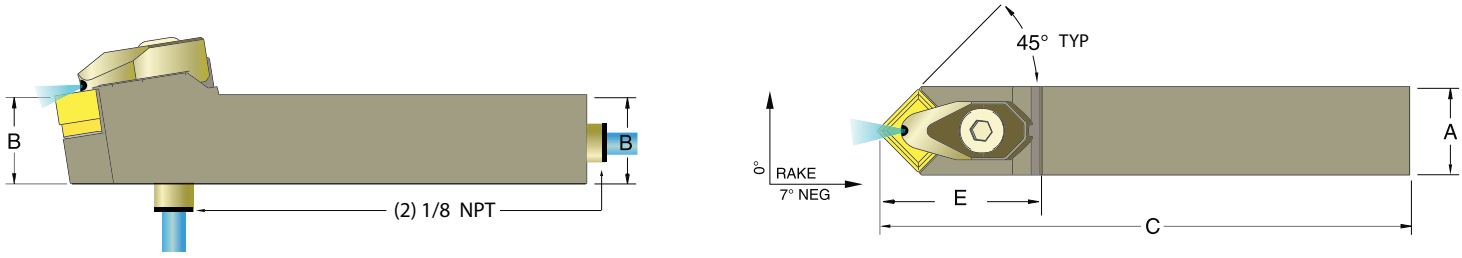




Metric Description	Part No. 733101- Neutral	A	B	C	E	DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADDPNN-2020-K11	52854	20	20	125	44	110408	S5511P	SM-M3	JSLC-HPD3	JSCS-04	JSOR-01	JSOR-04
ADDPNN-2020-K15	52855	20	20	125	44	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
ADDPNN-2525-M11	52856	25	25	150	44	110408	S5511P	SM-M3	JSLC-HPD3	JSCS-04	JSOR-01	JSOR-04
ADDPNN-2525-M15	52857	25	25	150	44	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
ADDPNN-3232-P15	52858	32	32	170	44	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04
*ADDPNN-4040-S15	52859	40	40	250	44	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

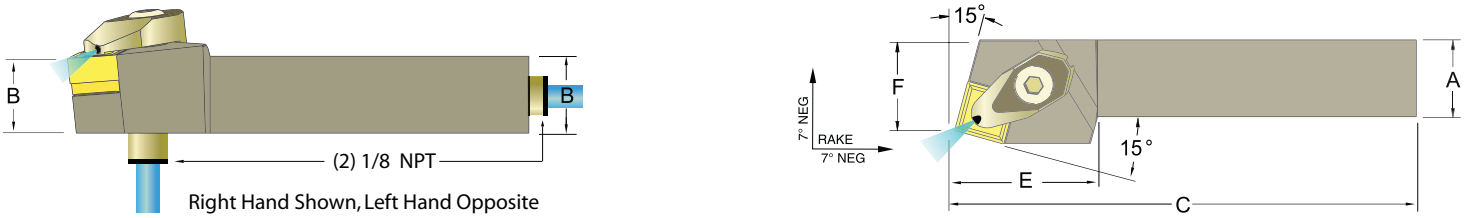
ADSDNN Toolholder Style D - 45° side cutting lead angle for negative square SNM_inserts



Metric Description	Part No. 733101- Neutral	A	B	C	E	F	SNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADSDNN-2525-M12	52872	25	25	150	35	20	120408	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADSDNN-3232-P12	52873	32	32	170	35	25	120408	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADSDNN-3232-P15	52874	32	32	170	35	25	150612	ISSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04
*ADSDNN-4040-S15	52875	40	40	250	35	25	150612	ISSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request.One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

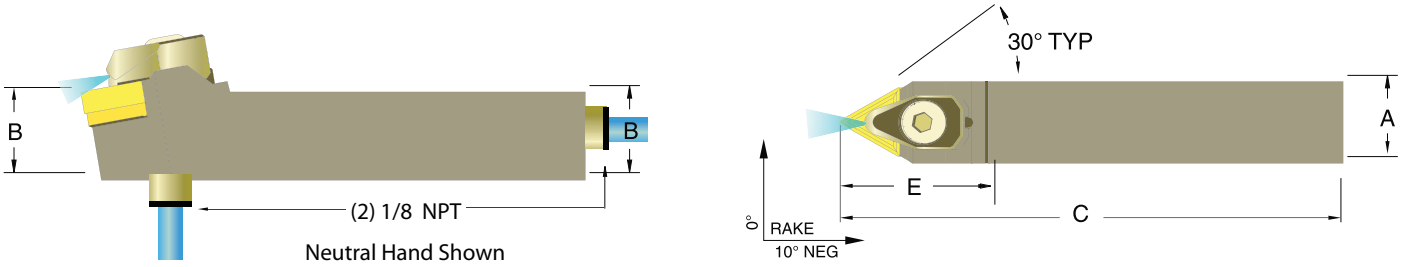
ADSRN R/L Toolholder Style R - 15° side cutting lead angle for negative square SNM_inserts



Metric Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	SNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADSRNR/L-2020-K12	52862	52863	20	20	125	35	21	120408	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADSRNR/L-2525-M12	52864	52865	25	25	150	35	25	120408	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADSRNR/L-3232-P15	52866	52867	32	32	170	35	25	150612	ISSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04
*ADSRNR/L-4040-S15	52868	52869	40	40	250	40	25	150612	ISSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

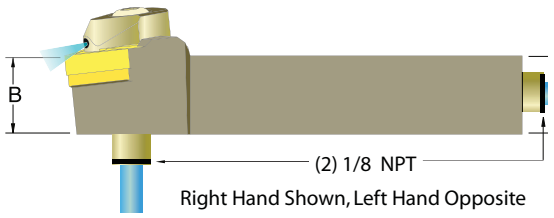
ADTENN Neutral Toolholder Style E - 30° side cutting lead angle for negative triangle TNM_inserts

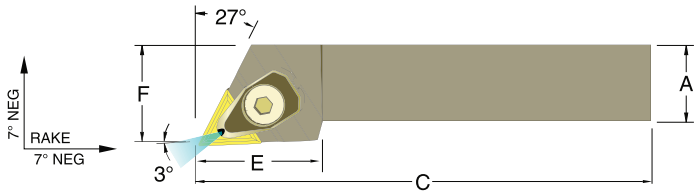


Metric Description	Part No. 733101- Neutral	A	B	C	E	TNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADTENN-2020-K16	52892	20	20	125	35	160408	ITSN-322	SM-M3	JSLC-HPTW3N	JSCS-04	JSOR-01	JSOR-04
ADTENN-2020-K22	52893	20	20	125	35	220408	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADTENN-2525-M16	52894	25	25	150	35	160408	ITSN-322	SM-M3	JSLC-HPTW3N	JSCS-04	JSOR-01	JSOR-04
ADTENN-2525-M22	52895	25	25	150	35	220408	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADTENN-3232-P22	52896	32	32	170	40	220408	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
*ADTENN-4040-S22	52897	40	40	250	40	220408	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request.One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

ADTJN R/L Toolholder Style J - 3° side cutting lead angle for negative triangle TNM_ inserts

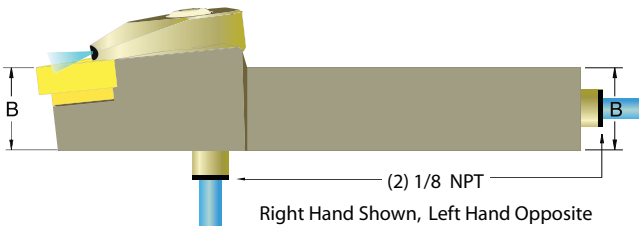


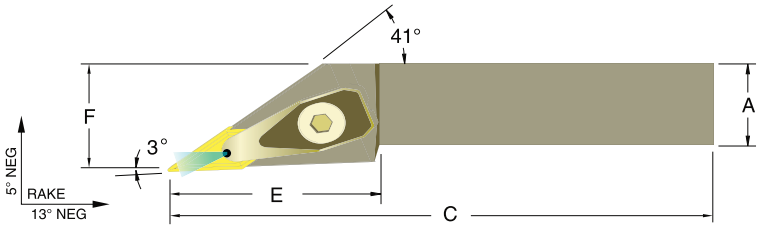


Metric Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	TNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADTJNR/L-2020-K16	52878	52879	20	20	125	35	25	160408	ITSN-322	SM-M3	JSLC-HPTW3N	JSCS-04	JSOR-01	JSOR-04
ADTJNR/L-2020-K22	52880	52881	20	20	125	32	32	220408	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADTJNR/L-2525-M16	52882	52883	25	25	150	35	38	160408	ITSN-322	SM-M3	JSLC-HPTW3N	JSCS-04	JSOR-01	JSOR-04
ADTJNR/L-2525-M22	52884	52885	25	25	150	35	50	220408	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
ADTJNR/L-3232-P22	52886	52887	32	32	170	32	50	220408	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04
*ADTJNR/L-4040-S22	52888	25889	40	40	250	35	50	220408	ITSN-433	SM-S4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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

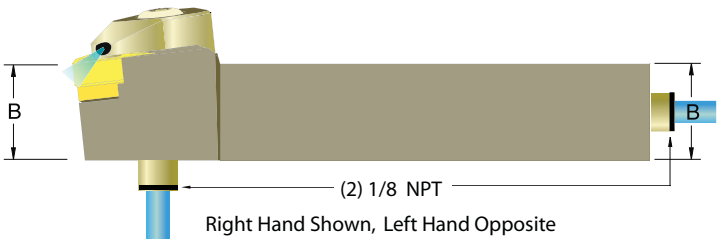


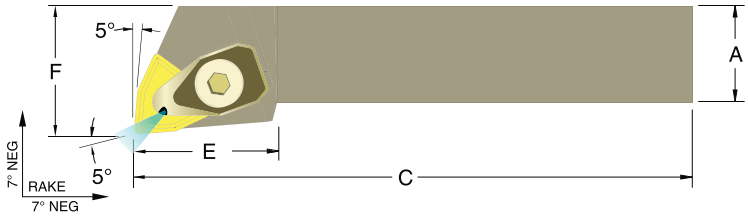


Metric Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	VNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADVJNR/L-2020-K16	52900	52901	20	20	125	45	25	160408	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSOR-01	JSOR-04
ADVJNR/L-2525-M16	52902	52903	25	25	150	45	32	160408	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSOR-01	JSOR-04
ADVJNR/L-3232-P16	52904	52905	32	32	170	45	38	160408	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSOR-01	JSOR-04

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

ADWLN R/L Toolholder Style L - Negative 5° end or side cutting lead angle for negative 80° trigon WNM_ inserts

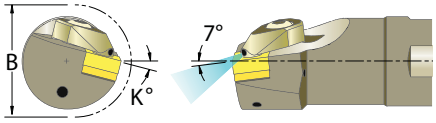




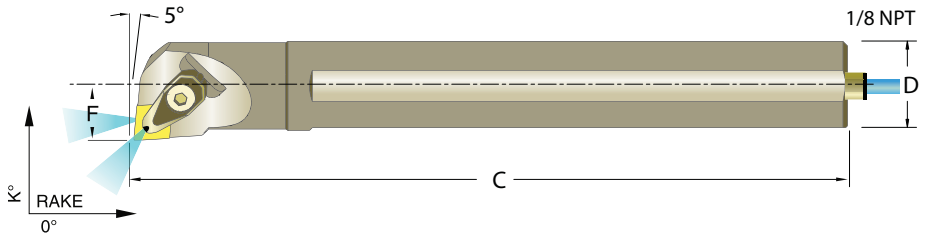
Metric Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	WNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADWLNR/L-2020-K06	52909	52910	20	20	125	25	25	060408	IWSN-322	SM-M3	JSLC-HPTW3R/L	JSCS-04	JSOR-01	JSOR-04
ADWLNRL-2020-K08	52911	52912	20	20	125	25	25	080408	S8008P	SM-M4	JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04
ADWLNR/L-2525-M06	52913	52914	25	25	150	25	25	060408	IWSN-322	SM-M3	JSLC-HPTW3R/L	JSCS-04	JSOR-01	JSOR-04
ADWLNR/L-2525-M08	52915	52916	25	25	150	25	25	080408	S8008P	SM-M4	JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04
ADWLNR/L-3232-P08	52917	52918	32	32	170	25	25	080408	S8008P	SM-M4	JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04
*ADWLNR/L-4040-S08	52919	52920	40	40	250	25	25	080408	S8008P	SM-M4	JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04

*Special Order, available upon request. One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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



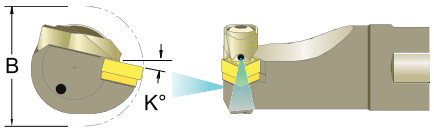
Right Hand Shown, Left Hand Opposite

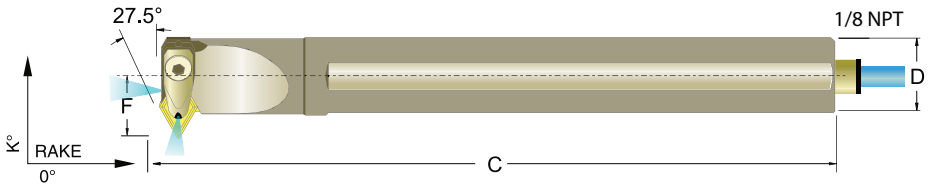


Metric Description	Part No. 733101- R.H.	L.H.	B	C	D	F	K°	CNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-20R-ADCLNR/L-09	52925	52926	25	200	20	13	10º	090308	N/A	N/A	JSLC-HPC3-B	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-25R-ADCLNR/L-12	52927	52928	32	200	25	17	14º	120408	N/A	N/A	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-32S-ADCLNR/L-12	52929	52930	40	250	32	22	14º	120408	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-40S-ADCLNR/L-12	52931	52932	45.	250	40	27	11º	120408	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-50T-ADCLNR-L-12	52933	52934	65	300	50	35	11º	120408	S8012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-50T-ADCLNR-L-16	52935	52936	65	300	50	35	11º	120408	S8016P	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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

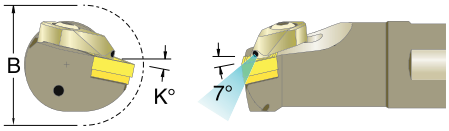




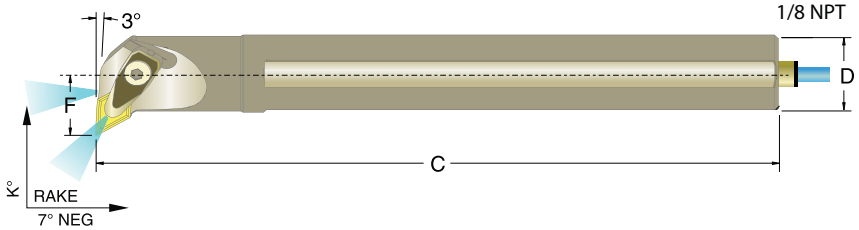
Metric Description	Part No. 733101- R.H.	L.H.	B	C	D	F	K°	DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-32S-ADDPNR/L-15	52939	52940	39	250	32	19	13º	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-40S-ADDPNR/L-15	52941	52942	42	250	40	25	10º	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

AS-ADDUN R/L Boring Bar Style U - Negative 3º end cutting edge angle for negative 55º diamond DNM _inserts



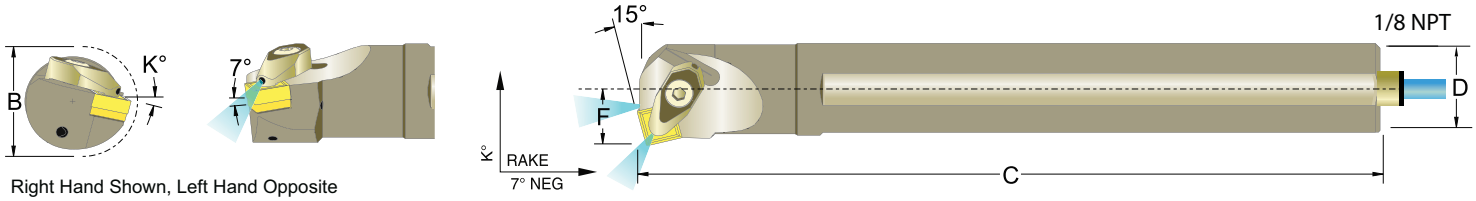
Right Hand Shown, Left Hand Opposite



Metric Description	Part No. 733101- R.H.	L.H.	B	C	D	F	K°	DNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-25R-ADDUNR/L-11	52946	52947	33	200	25	19	11º	110408	S5511P	SM-M3	JSLC-HPDT3R/L	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-32S-ADDUNR/L-15	52948	52949	50	250	32	25	11º	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-40S-ADDUNR/L-15	52950	52951	57	250	40	28	11º	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-50T-ADDUNR/L-15	52952	52953	76	300	50	35	11º	150608	IDSN-423	SM-S4	JSLC-HPD4	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

AS-ADSKN R/L Boring Bar Style K - 15º End cutting edge angle for negative square SNM_inserts

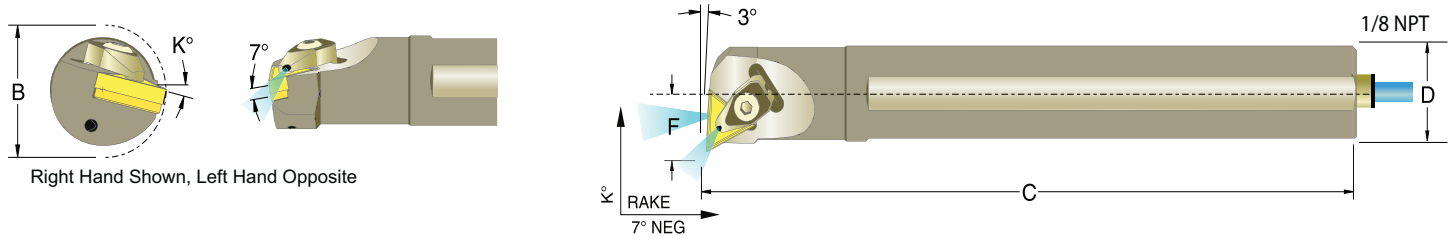


Right Hand Shown, Left Hand Opposite

Metric Description	Part No. 733101-		B	C	D	F	Kº	SNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
	R.H.	L.H.													
AS-32S-ADSKNR/L-12	52958	52959	45	250	32	19	10º	120408	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-40S-ADSKNR/L-12	52960	52961	39	250	40	22	14º	120408	S9012P	SM-M4	JSLC-HPCTW-4N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-50T-ADSKNR/L-15	52962	52963	61	300	50	32	12º	150612	ISSN-533	SM-M6	JSLC-HPC5	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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

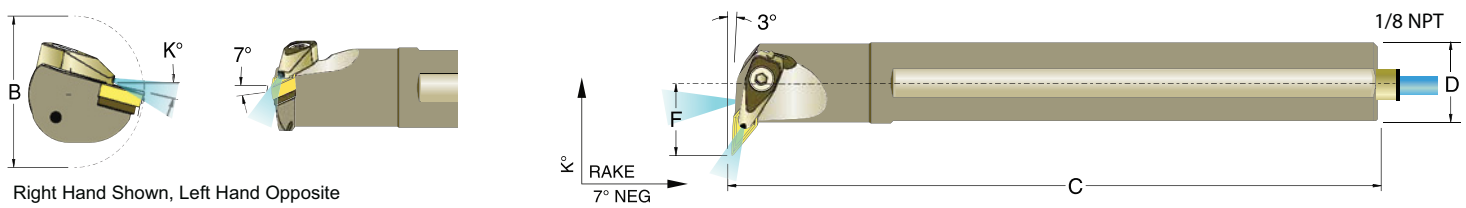


Right Hand Shown, Left Hand Opposite

Metric Description	Part No. 733101-		B	C	D	F	Kº	TNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
	R.H.	L.H.													
AS-20R-ADTUNR/L-16	52967	52968	25	200	20	13	14º	160308	N/A	N/A	JSLCHPDT3R/L	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-25R-ADTUNR/L-16	52969	52970	33	200	25	17	14º	160408	ITSN-322	SM-M3	JSLC-HPDT3R/L	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-32S-ADTUNR/L-22	52971	52972	39	250	32	20	14º	220408	ITSN-433	SM-S4	JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-40S-ADTUNR/L-22	52973	52974	53	250	40	22	11º	220408	ITSN-433	SM-S4	JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-50T-ADTUNR/L-22	52975	52976	66	300	50	32	11º	220408	ITSN-433	SM-S4	JSLC-HPTW4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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

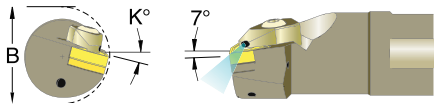


Right Hand Shown, Left Hand Opposite

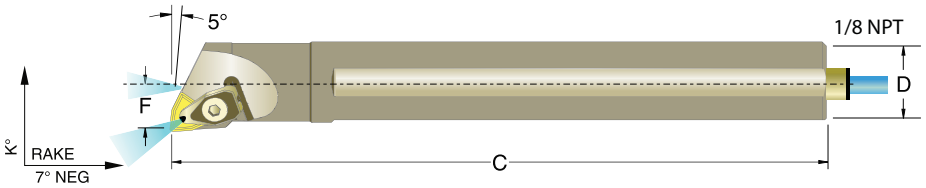
Metric Description	Part No. 733101-		B	C	D	F	Kº	VNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
	R.H.	L.H.													
AS-32R-ADVUNR/L-16	52980	52981	58	200	32	28	14º	160408	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-40S-ADVUNR/L-16	52982	52983	64	250	40	32	11º	160408	S3516P	SM-M3	JSLC-HPV3	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

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



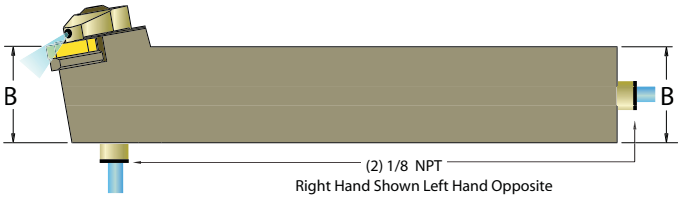
Right Hand Shown, Left Hand Opposite



Metric Description	Part No. 733101- R.H.	L.H.	B	C	D	F	K°	WNM_ Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-20R-ADWLNR/L-06	52986	52987	26	200	20	13	14°	60408	N/A	N/A	JSLC-HPW3-B	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-25R-ADWLNR/L-08	52988	52989	33	200	25	17	14°	80408	S8008P	SM-M4	JSLC-HPTW-4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-32S-ADWLNR/L-08	52990	52991	38	250	32	22	14°	80408	S8008P	SM-M4	JSLC-HPTW-4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-40S-ADWLNR/L-08	52992	52993	46	250	40	27	11°	80408	S8008P	SM-M4	JSLC-HPTW-4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-50T-ADWLNR/L-08	52994	52995	51	300	50	32	12°	80408	S8008P	SM-M4	JSLC-HPTW-4R/L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

ADLE R/L Toolholder Style E- Laydown toolholder for Laydown inserts

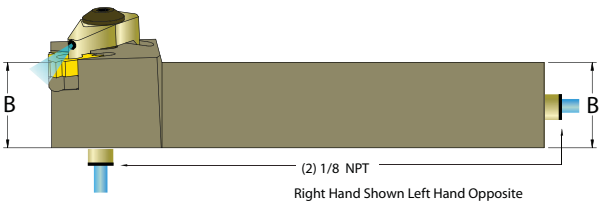


Right Hand Shown Left Hand Opposite

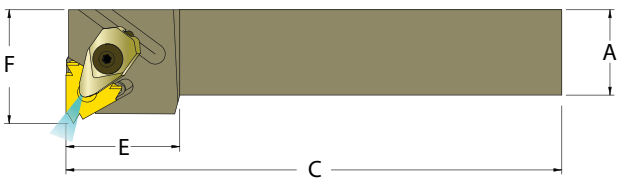
Metric Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADLER/L2020-16K	53575	53576	20	20	125	32	20	16-G60	GXE-16	TS 3.5-7M1	*JSLC-HP16R *JSLC-HP16L	JSCS-03	JSOR-03	JSOR-06
ADLER/L2525-16M	53577	53578	25	25	150	32	25							

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.
*Right hand toolholder use a right hand clamp and Left hand toolholder use a left hand clamp.

ADLEG R/L Toolholder Style EG- Gang toolholder for Gang tool post for Laydown inserts



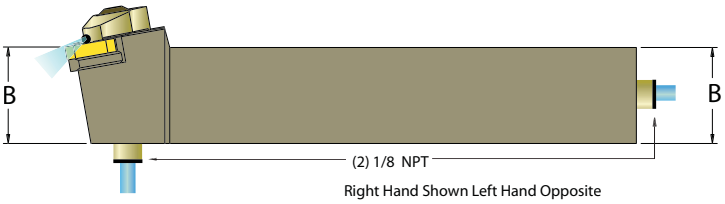
Right Hand Shown Left Hand Opposite
Right hand tool uses left hand insert
Left hand tool uses right hand insert

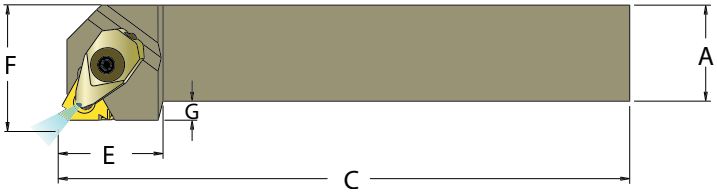


Metric Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADLEGR/L2020-16K	53581	53582	20	20	125	32	25	16-G60	GXE-16	TS 3.5-7M1	*JSLC-HP16R *JSLC-HP16L	JSCS-03	JSOR-03	JSOR-06
ADLEGR/L2525-16M	53583	53584	25	25	150	32	32							

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.
*Right hand toolholder use a left hand clamp and Left hand toolholder use a right hand clamp.

ADLE R/L Qualified Toolholder Style E - Offset head for Laydown inserts

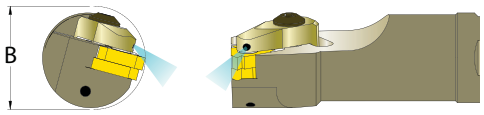




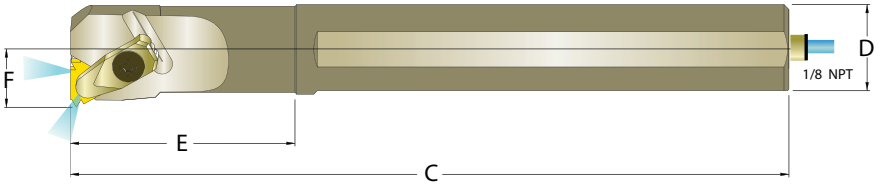
Metric Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	G	Gage Insert	Seat	Insert Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADLER/L2020-16Q-K	53587	53588	20	20	125	32	25	5	16-G60	GXE-16	TS 3.5-7M1	*JSLC-HP16R *JSLC-HP16L	JSCS-03	JSOR-03	JSOR-06
ADLER/L2525-16Q-M	53589	53590	25	25	150	32	32	7							
ADLER/L3232-16Q-M	53591	53592	32	32	150	32	40	8							
ADLER/L2525-22Q-M	53593	53594	25	25	150	38	32	7	22-N60	NXE-22	TS-22M	JSLC-HP22N	JSCS-04	JSOR-01	JSOR-04
ADLER/L3232-22Q-P	53595	53596	32	32	170	38	40	8							

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.
*Right hand toolholder use a left hand clamp and Left hand toolholder use a right hand clamp.

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



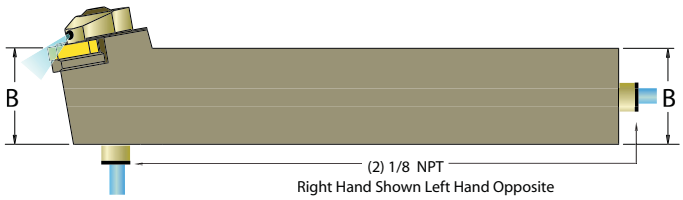
Right Hand Shown, Left Hand Opposite

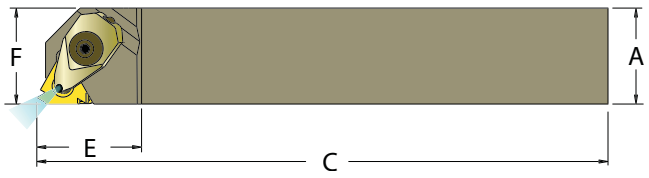


Metric Description	Part No. 733101- R.H.	L.H.	B	C	D	E	F	Gage Insert	Seat	Insert Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
AS-20R-ADLNR/L-16	53600	53601	28	200	20	51	13	16-G60	GXE-16	TS 3.5-7M1	*JSLC-HP16R *JSLC-HP16L	JSCS-03	JSOR-03	JSOR-06	JSPN-M3
AS-25R-ADLNR/L-16	53602	53603	35	200	25	64	17								
AS-32S-ADLNR/L-16	53604	53605	41	250	32	64	19								
AS-40S-ADLNR/L-16	53606	53607	47	250	40	64	23								
AS-32S-ADLNR/L-22	53608	53609	44	250	32	64	21	22-N60	NXE-22	TS-22M	JSLC-HP22N	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-40S-ADLNR/L-22	53610	53611	51	250	40	64	25								
AS-50T-ADLNR/L-22	53612	53613	64	300	50	64	31								

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.
*Right hand toolholder use a left hand clamp and Left hand toolholder use a right hand clamp.

ADLE R/L API Toolholder Style E- External Laydown API Laydown toolholder for Laydown inserts

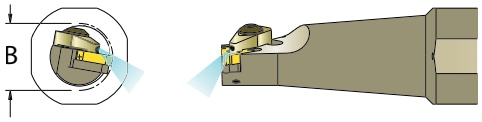




Metric Description	Part No. 733101- R.H.	L.H.	A	B	C	E	F	Gage Insert	Seat	Insert Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring
ADLER/L2525-T22API-M	53614	53615	25	25	150	38	32	22-N60	NXE-22	TS-22M	JSLC-HP22N	JSCS-04	JSOR-01	JSOR-04
ADLER/L3232-T22API-M	53616	53617	32	32	150	38	40							
ADLER/L4040-T27API-R	53618	53619	40	40	200	45	50	27-Q60	VXE-27	TS-27M	JSLC-HP27N	JSCS-06	JSOR-07	JSOR-07
ADLER/L5050-T27API-S	53620	53621	50	50	250	45	60							

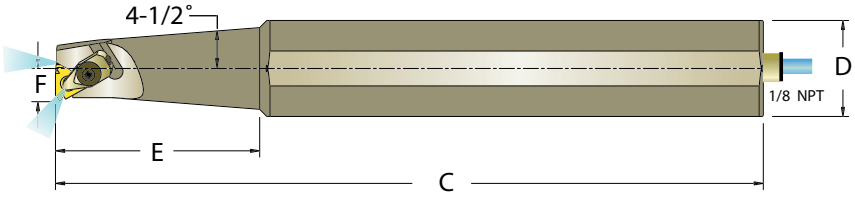
One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

AS-ADLN R/L API Boring Bar Style N- Internal Laydown API Laydown toolholder for Laydown inserts



Right Hand Shown, Left Hand Opposite

API Laydown



Metric Description	Part No. 733101-		B	C	D	E	F	Gage Insert	Seat	Seat Screw	Dor-Lock Clamp	Clamp Screw	Upper 'O' Ring	Lower 'O' Ring	Chip Flush Plug
	R.H.	L.H.													
AS-50T-ADLNR/L-22API	53624	53625	41	300	50	125	22	22-N60	NX-22-1	TS 4.7-10M1	JSLC-HP22R JSLC-HP22L	JSCS-04	JSOR-01	JSOR-04	JSPN-M6
AS-60T-ADLNR/L-22API	53626	53627	41	300	60	125	22								
AS-50T-ADLNR/L-27API	53628	53629	41	300	50	125	23	27-Q60	VX-27-1	TS 5.8-10M1	JSLC-HP27R JSLC-HP27L	JSCS-06	JSOR-07	JSOR-07	JSPN-M6
AS-60T-ADLNR/L-27API	53630	53631	41	300	60	125	23								

One standard coolant connector kit with tubing is supplied, see pg 41 for details and high pressure coolant fitting. For spare parts see page 45.

Coolant Connector Kits Available for Both Standard and High Pressure Applications

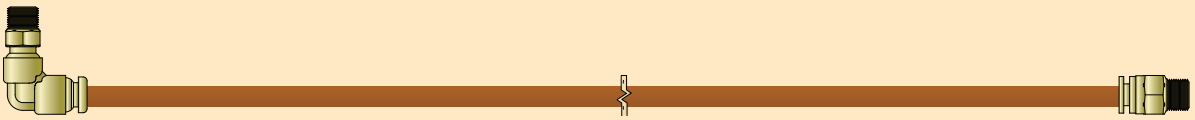
up to 400 psi (16 bar)

Standard Coolant Connector Kits with Tubing

Includes: (1) Tubing and (2) Male Connector

Stabdard Connector Kits		Plug	Male Connector	Tubing	Male Connector	Threading	Coolant Flow
Description	Part No. 733101-	1/8" NPT		12" Long, 1/4" O.D.		NPT	I.D.
JSLPCK-062-250	53303	JSNP-T125	JS-MC125-250	JS-T250-1200	JS-MC062-250	1/16"	3/16"
*JSLPCK-125-250	53304	JSNP-T125	JS-MC125-250	JS-T250-1200	JS-MC125-250	1/8"	
JSLPCK-250-250	53305	JSNP-T125	JS-MC125-250	JS-T250-1200	JS-MC250-250	1/4"	

***JSLPCK-125-250 is Supplied standard with all Jet-Stream™ Toolholders and Boring Bars.**



Over 400 psi (16 bar)

High Pressure Coolant Connector Kits with Copper Tubing

Includes: (1) 90° Swivel Elbow (1) Copper Tubing and (1) Make Connector

High Pressure Connector Kits		90° Swivel Elbow	Copper Tubing	Male Connector	Threading	Coolant Flow
Description	Part No. 733101-		12" Long, 1/4" O.D.		NPT	I.D.
JSHPCK-125-250	53371	JSHP-MC125-250	JSHP-CT250-1200	JSHP-MC125-250	1/8"	1/4"
JSHPCK-250-250	53372	JSHP-MC125-250	JSHP-CT250-1200	JSHP-MC250-250	1/4"	

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 seperately.

Ball-Type Coolant Nozzles
Sold Seperately

Acetal Material

Brass Material

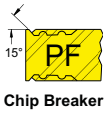
Ball-Type Coolant Nozzles Size	Acetal Material		Brass Material	
	Desc.	UPC NO. 733101-	Desc.	UPC NO. 733101-
12mm OD, 1/8NPT ID	JSCNA-12	53354	JSCNB-12	53365
14mm OD, 1/8NPT ID	JSCNA-14	53355	JSCNB-14	53366
15mm OD, 1/8NPT ID	JSCNA-15	53356	JSCNB-15	53367
22mm OD, 1/8NPT ID	JSCNA-22	53357	JSCNB-22	53368
1/2" OD, 1/8NPT ID	JSCNA-50	53358	JSCNB-50	53369
5/8" OD, 1/8NPT ID	JSCNA-62	53359	JSCNB-62	53370

Please call to check availability of Inserts.

Material To Be Machined

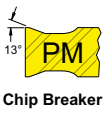
Free Cutting Steel, Low Carbon Steel,
Alloy Carbon Steel, Tool Steel,
Under 35HRC Ferretic Stainless Steel 400

Finishing

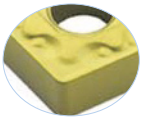


Chip Breaker

General Purpose

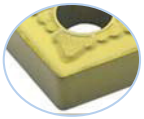


Chip Breaker



Roughing

Chip Breaker



Note: Cutting information provided is for reference only.

Actual cutting data will be determined in the application.

Turning Application	Finishing	General Purpose	Roughing
VC	High	Medium	Low
sfm	330"-885" 120-270mm	330"-750" 100-230mm	200"-600" 70-180mm
Feed Rate-rev	.002"-.012" 0.1-0.3mm	.008"-.016" 0.2-0.4mm	.012"-.020" 0.3-0.5mm
Depth of Cut	.002"-.040" .01-1mm	.008"-.020" .01-3.0mm	.040"-.200" 2.0-5.0mm
Condition	Wet	Wet	Wet
Industry standard Insert Grade	(A.N.S.I. - C6-C7) (I.S.O. - P10-P25)	(A.N.S.I. - C5-C6) (I.S.O. - P20-P35)	(A.N.S.I. - C5) (I.S.O. - P25-P45)
Insert Coating	CVD-TiN-TiCN-AL_2O_3-TiNB	CVD-TiN-TiCN-AL_2O_3-TiNB	CVD-TiN-TiCN-AL_2O_3-TiNB
Insert Grade Specifications	CVD Multi-Layer wear resistant coating with a hard cobalt enriched substrate best for high edge wear resistance. For precision turning operation at high sfm.	CVD Multi-Layer wear resistant coating with a hard and tough cobalt enriched substrate best for resistance to both mechanical and thermal shock. For finishing to medium turning operation at medium sfm.	CVD Multi-Layer wear resistant coating with a tough cobalt enriched substrate for high resistance to both mechanical and thermal shock. For medium to roughing operation at low sfm.
Insert Aptitude	High sfm ← Wear Resistant	Medium	Low sfm → Toughness
Dorian Insert Grade	**DHCP15**	**DHCP25**	**DHCP35**

Insert Geometry	ANSI	ISO	Chip Breaker	UPC No. 733101-	UPC No. 733101-	UPC No. 733101-
CNMG-PF/PM/PR	CNMG-321-	CNMG-090304-	PM		70356	
	CNMG-322-	CNMG-090308-	PM		70360	
	CNMG-431-	CNMG-120404-	PF	*70237		
	CNMG-431-	CNMG-120404-	PM		70364	
	CNMG-432-	CNMG-120408-	PF	*70242		
	CNMG-432-	CNMG-120408-	PM		70368	70369
	CNMG-432-	CNMG-120408-	PR		70472	70473
	CNMG-433-	CNMG-120412-	PM		70372	
DNMG-PF/PM/PR	CNMG-433-	CNMG-120412-	PR		70478	70479
	CNMG-542-	CNMG-160608-	PR			70484
	CNMG-543-	CNMG-160612-	PM		70374	
	CNMG-543-	CNMG-160612-	PR			*70487
	CNMG-643-	CNMG-190612-	PR			70496
	DNMG-331-	DNMG-110404-	PF	*70251		
	DNMG-332-	DNMG-110408-	PM		70380	
SNMG-PF/PM/PR	DNMG-431-	DNMG-150404-	PF	*70261		
	DNMG-431-	DNMG-150404-	PM		70385	
	DNMG-432-	DNMG-150408-	PM		70389	70390
	DNMG-432-	DNMG-150408-	PR		70510	
	DNMG-442-	DNMG-150608-	PF	*70269		
	DNMG-442-	DNMG-150608-	PM		70397	
	DNMG-442-	DNMG-150608-	PR		70515	
TNMG-PF/PM/PR	DNMG-443-	DNMG-150612-	PR			70521
	SNMG-432-	SNMG-120408-	PM		70409	
	SNMG-433-	SNMG-120412-	PR		70531	70532
	SNMG-543-	SNMG-150612-	PR			70540
	SNMG-643-	SNMG-190612-	PR			70549
	SNMG-644-	SNMG-190616-	PR			70553
	TNMG-331-	TNMG-160404-	PF	*70297		
	TNMG-332-	TNMG-160408-	PM		70421	
VNMG-PF/PM	TNMG-332-	TNMG-160408-	PR		70556	70557
	TNMG-431-	TNMG-220404-	PF	*70307		
	TNMG-432-	TNMG-220408-	PM		70433	
	TNMG-432-	TNMG-220408-	PR		70565	
	TNMG-433-	TNMG-220412-	PR		70570	
	VNMG-331-	VNMG-160404-	PF	*70315		
	VNMG-331-	VNMG-160404-	PM		70437	
WNMG-PF/PM/PR	VNMG-332-	VNMG-160408-	PM		70441	
	WNMG-331-	WNMG 060404-	PF	*70324		
	WNMG-332-	WNMG 060408-	PM		70449	
	WNMG-431-	WNMG 080404-	PF	*70338		
	WNMG-432-	WNMG 080408-	PM		70461	
	WNMG-432-	WNMG 080408-	PR		70586	70587

*NOT A Stock Item. Please Call for more information.

Please call to check availability of Inserts.

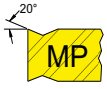
Material To Be Machined

Manganese, Uranium, Zirconium, Copper, Brass, Bronze, Lead Alloy, Tin Alloy, Tungsten Alloy, Nylon, Plastic, Rubber, Graphite, Phenolic

Finishing

Chip Breaker

Finishing to Light Roughing



Chip Breaker

Note: Cutting information provided is for reference only.

Actual cutting data will be determined in the application.

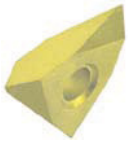
Turning Application	Finishing	General Purpose	Light Roughing
VC	Very High	High	Med-High
sfm	200"-2600" 61-362mm	150"-1850" 45-405mm	100"-1350" 30-405mm
Feed Rate-rev	.002"-.010" 0.05-0.25mm	.002"-.012" 0.1-0.3mm	.004"-.016" 0.05-0.4mm
Depth of Cut	.002"-.080" .05-2.0mm	.002"-.100" .05-2.5mm	.002"-.120" .05-3.0mm
Condition	Dry-Wet	Wet	Dry-Wet
Industry standard Insert Grade	(A.N.S.I. - C3-C4) (I.S.O. -S01-S15)	(A.N.S.I. - C2-C3) (I.S.O. - S05-S25)	(A.N.S.I. -C2) (I.S.O. - S10-S30)
Insert Coating	PVD-AlCrN Multi-Layer	PVD-TiN+TiAlN+TiN Multi-Layer	PVD-TiN+TiAlN Single-Layer
Insert Grade Specifications	Ultra fine and hard micro-grained substrate with hard coating, enhancing sliding wear, load capacity with high lubricity to avoid edge built up. For precision turning operation at high sfm.	Hard and tough micro-grained substrate, PVD coating, TiN over TiAlN for hard and edge wear resistance and lubricity for general turning application. For finishing to medium turning operation at medium sfm.	Tough and Hard micro-grained substrate PVD TiAlN . For medium to light roughing operation at low sfm.
Insert Aptitude	High sfm ← → Low sfm		
	Wear Resistant	Medium	Toughness
Dorian Insert Grade	DKAT10V	DASK25B	DHK425F

Insert Geometry	ANSI	ISO	Chip Breaker	UPC No. 733101-	UPC No. 733101-	UPC No. 733101-
CNGP- XF	CNGP-430.5	CNGP-120402-FN/EN	XF	69508	69509	
	CNGP-431-	CNGP-120404-EN	XF	69520	69521	
	CNGP-432-	CNGP-120408-EN	XF		69533	
DNGP-XF	DNGP-431-	DNGP-150404-FN	XF	69550		
	DNGP-432-	DNGP-150408-EN	XF		*69567	
VNGP- XF	VNGP-330.5-	VNGP-160402-FN	XF	69574		
	VNGP-331-	VNGP-160404-FN	XF	69583		
	VNGP-332-	VNGP-160408-EN	XF		*69589	
CNMP- MP	CNMP-431-	CNMP-120404-	MP	69619		
	CNMP-432-	CNMP-120408-	MP		*69630	*69631
DNMP- MP	DNMP-331-	DNMP-110404-	MP	*69643		
	DNMP-332-	DNMP-110408-	MP		*69655	*69656
	DNMP-431-	DNMP-150404-	MP	*69658		
	DNMP-432-	DNMP-150408-	MP		*69660	*69661
	DNMP-441-	DNMP-150604-	MP	69663		
VNMP- MP	DNMP-442-	DNMP-150608-	MP		*69666	*69667
	VNMP-331-	VNMP-160404-	MP	69691*		
	VNMP-332-	VNMP-160408-	MP		69693*	69694*
WNMP- MP	WNMP-331-	WNMP-060404-	MP	69698		
	WNMP-332-	WNMP-060408-	MP		*69707	*69708
	WNMP-431-	WNMP-080404-	MP	69711		
	WNMP-432-	WNMP-080408-	MP		*69723	*69724

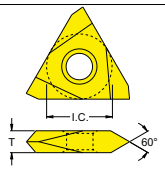
Super Precision Ground

*NOT A Stock Item. Please Call for more information.

On Edge



First Choice for →	General Purpose	General Purpose	High Performance
Material Application	Non Ferrous: Stainless Steel, Cast Iron, Aluminum & H.T.A.	Ferrous: Carbon Steel, Alloy Steel & Stainless Steel	Ferrous & Non Ferrous: Carbon Steel, Alloy Steel & Stainless Steel , Cast Iron, Aluminum & H.T.A.
Dorian Insert Grade	DVK10	DVP656	DASK25B



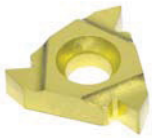
Insert Dimensions

Description — UPC No 733101-

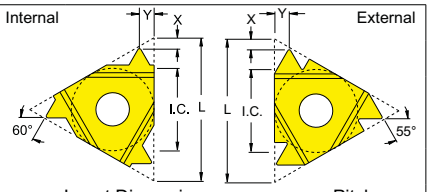
TNMA-TNMC NV 60°	TNMA	TNMC	TNMA	TNMC	TNMA	TNMC	TNMA	TNMC	I.C.	Thick	Hole Dia.	Rad.	TPI
Threading Negative Rake	TNMA-32NV	TNMC-32NV	72529	72004	72528	72003	72530	72005	.375	.125	.150	.003 .005	8-36
	TNMA-43NV	TNMC-43NV	72536	72008	72535	72010	72537	72011	.500	.187	.203	.003 .005	5-24
	TNMA-54NV	TNMC-54NV	72557	72032	72556	72031	72558	72033	.625	.250	.250	.008 .010	4-20

TPMA-TPMC NV 60°	TPMA	TPMC	TPMA	TPMC	TPMA	TPMC	TPMA	TPMC	I.C.	Thick	Hole Dia.	Rad.	TPI
Threading 5° Positive Rake	TPMA-32NV	TPMC-32NV	73394	73056	73393	73055	73395	73057	.375	.125	.150	.003 .005	8-36
	TPMA-43NV	TPMC-43NV	73401	73063	73400	73062	73402	73064	.500	.187	.203	.003 .005	5-24
	TPMA-54NV	TPMC-54NV	73415	73077	73414	73076	73416	73078	.625	.250	.250	.008 .010	4-20

Laydown



First Choice for →	General Purpose	General Purpose
Material Application	Ferrous & Non Ferrous: Carbon Steel, Alloy Steel & Stainless Steel , Cast Iron, Aluminum & H.T.A.	Ferrous: Carbon Steel, Alloy Steel & Stainless Steel
Dorian Insert Grade	DVK10	DVP656



Insert Dimensions — Pitch

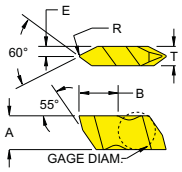
Description — UPC No. 733101-

60° Partial Profile	External Right	External Left	External Right	External Left	External Right	External Left	I.C. Inch	L mm	X mm	Y mm	TPI	mm
External Threading	11ER-A60	11EL-A60	74001	74005	74000	74004	.250	11	0,8	0,9	16-48	0,5-1,5
	16ER-A60	16EL-A60	74009	74013	74008	74012	.375	16	0,8	0,9	16-48	0,5-1,5
	16ER-G60	16EL-G60	74017	74021	74016	74020	.375	16	1,2	1,7	8-14	1,75-3,0
	16ER-AG60	16EL-AG60	74025	74029	74024	74028	.375	16	1,2	1,7	8-48	0,5-3,0
	22ER-N60	22EL-N60	74033	74037	74032	74036	.500	22	1,7	2,5	5-7	3,5-5,0

60° Partial Profile	Internal Right	Internal Left	Internal Right	Internal Left	Internal Right	Internal Left	I.C. Inch	L mm	X mm	Y mm	TPI	MM
Internal Threading	06IR-A60	06IL-A60	74113	74117	74115	74119	.156	6,9	0,6	0,6	16-48	0,5-1,5
	08IR-A60	08IL-A60	74121	74125	74123	74127	.187	8,7	0,6	0,7	16-48	0,5-1,5
	11IR-A60	11IL-A60	74057	74061	74056	74060	.250	11	0,8	0,9	16-48	0,5-1,5
	16IR-A60	16IL-A60	74065	74069	74064	74068	.375	16	0,8	0,9	16-48	0,5-1,5
	16IR-G60	16IL-G60	74073	74077	74072	74076	.375	16	1,2	1,7	8-14	1,75-3,0
	16IR-AG60	16IL-AG60	74081	74085	74080	74084	.375	16	1,2	1,7	8-48	0,5-3,0
	22IR-N60	22IL-N60	74089	74093	74088	74092	.500	22	1,7	2,5	5-7	3,5-5,0

DorNotch

First Choice for →	General Purpose	General Purpose	High Performance
Material Application	Non Ferrous: Stainless Steel, Cast Iron, Aluminum & H.T.A.	Ferrous: Carbon Steel, Alloy Steel & Stainless Steel	Ferrous & Non Ferrous: Carbon Steel, Alloy Steel & Stainless Steel , Cast Iron, Aluminum & H.T.A.
Dorian Insert Grade	DVK10	DVP656	DASK25B



Insert Dimensions — Pitch

Description — UPC No.733101-

V Thread NT- 60°	NT Right	NT Left	NT Right	NT Left	NT Right	NT Left	NT Right	NT Left	Gage Dia.	A IN	B IN	E IN	R IN	T IN	EXT. IN	INT. IN	EXT. mm	INT. mm
Partial Profile Negative Rake Angle	NT-2R	NT-2L	82901	82905	82900	82904	82902	82906	.1875	.219	.2661	.075	.003 .005	.150	8-36	7-20	0,70	3
	NT-3R	NT-3L	82909	82913	82908	82912	82910	82914	.3750	.344	.3999	.098	.005 .008	.195	6-20	5-12	1,25	4
	NT-4R	NT-4L	82917	82921	82916	82920	82918	82922	.5000	.453	.6239	.128	.005 .008	.255	4-20	4-12	1,00	4

V Thread NTP- 60°	NTP Right	NTP Left	NTP Right	NTP Left	NTP Right	NTP Left	NTP Right	NTP Left	Gage Dia.	A IN	B IN	E IN	R IN	T IN	EXT. IN	INT. IN	EXT. mm	INT. mm
Partial Profile Positive Rake Angle	NTP-2R	NTP-2L	82925	82929	82924	82928	82926	82930	.1875	.219	.2661	.075	.003 .005	.150	8-36	7-20	0,70	3
	NTP-3R	NTP-3L	82933	82937	82932	82936	82934	82938	.3750	.344	.3999	.098	.005 .008	.195	6-20	5-12	1,25	4
	NTP-4R	NTP-4L	82941	82945	82940	82944	82942	82946	.5000	.453	.6239	.128	.005 .008	.255	4-20	4-12	1,00	4

Please call for availability on Inserts.

*Dor-Lock turning and threading ***clamp sets*** include ***upper and lower o-rings***.

Jet-Stream™ Turning

Turning Spare Parts

Seats	Description	Inch I.C.	Metric Length	Part No. 733101-
80º Diamond	S8012P	1/2"	12mm	53291
	ICSN-533	5/8"	16mm	90010
	ICSN-633	3/4"	19mm	90012
55º Diamond	S5511P	3/8"	11mm	53293
	IDSN-423	1/2"	15mm	90018
	IDSN-433	1/2"	15mm	90021
35º Diamond	S3516P	3/8"	12mm	53299
Square	S9012P	1/2"	16mm	53295
	ISSN-533	5/8"	11mm	90060
Triangle	ITSN-322	3/8"	22mm	90084
	ITSN433	1/2"	16mm	90093
Trigon	IWSN-322	3/8"	06mm	90070
	S8008P	1/2"	08mm	53301

Seat Screw	Description	Part No. 733101-
	SM-M3	53318
	SM-M4	53319
	SM-M6	53320
	M-M66	53317
	SM-S4	53316

Clamp Screw		
	JSCS-03	53323
	JSCS-04	53324
	JSCS-06	53326
	JSCS-04-HPV	53321
Boring Bar Chip Flush Plug	JSPN-M6	53334
	JSPN-M3	53339
Chip Flush Nozzle	JSFN-M6	53313
Alignment Pin	JSCAP-01	53325
Upper 'O' Ring Seal	JSOR-03	53328
	JSOR-01	53315
Lower 'O' Ring Seal	JSOR-07	53327
	JSOR-06	53330
	JSOR-04	53314

Turning Dor-Lock Clamp Sets*

CNMG Insert Style	Description	Part No. 733101-
	JSLC-HPC3-B	53250
	JSLC-HPCTW-4N	53289
	JSLC-HPC5	53252
	JSLC-HPC6	53248

DNMG Insert Style	Description	Part No. 733101-
	JSLC-HPD3	53253
	JSLC-HPD4	53254

DNMG & TNMG Insert Style	Description	Part No. 733101-
	JSLC-HPDT3-BR	53268
	JSLC-HPDT3-BL	53269

TNMG & WNMG Insert Style	Description	Part No. 733101-
	JSLC-HPTW3N	53261
	JSLC-HPTW3R	53262
	JSLC-HPTW3L	53263
	JSLC-HPCTW-4N	53289
	JSLC-HPTW4R	53265
	JSLC-HPTW4L	53266

WNMG Insert Style	Description	Part No. 733101-
	JSLC-HPW3-B	53270

VNMG Insert Style	Description	Part No. 733101-
	JSLC-HPV3	53267

NEW High Volume Turning Dor-Lock Clamp

Insert Style	Description	Part No. 733101-
CNMG / TNMG / WNMG	JSLC-HPCTW-4N-HPV	53290

Jet-Stream™ Threading

Threading (DorNotch) Dor-Lock Clamp Sets*

NT & NTP 60º Insert Style	Description	Part No. 733101-
	JSLC-HP72	53350
	JSLC-HP73	53351
	JSLC-HP76	53352
	JSLC-HP77	53353

Threading (Laydown) Dor-Lock Clamp Sets*

60º Partial Profile Insert Style	Description	Part No. 733101-
	JSLC-HP16R	53230
	JSLC-HP16L	53231
	JSLC-HP22R	53232
	JSLC-HP22L	53233
	JSLC-HP27R	53234
	JSLC-HP27L	53235

Threading Spare Parts

Seats	Description	Part No. 733101-
	SM-420	90400
	GXE-16	92070
	NXE-22	92072
	VXE-27	92076

Seat Screw	Description	Part No. 733101-
	TS 3.5-7M1	90971
	TS 4.7-10M1	90982
	TS 5.8-10M1	90986
	SL-344	91008

Torx Screw		
	GTS-1	90965
	GTS-2	90966
Torx Keys	GTS-3	90967
	T-10	92005
	T20	92007

Clamp Screw		
	JSCS-03	53323
	JSCS-04	53324
	JSCS-06	53326
Boring Bar Chip Flush Plug	JSPN-M6	53334
	JSPN-M3	53339
Chip Flush Nozzle	JSFN-M6	53313
Alignment Pin	JSCAP-01	53325
Upper 'O' Ring Seal	JSOR-03	53328
	JSOR-01	53315
Lower 'O' Ring Seal	JSOR-07	53327
	JSOR-06	53330
	JSOR-04	53314

Inch Turning Toolholders

Jet-Stream™ Turning Toolholders

Inch Description	Part No. 733101-		Page
ADCLNR/L-12-4B	53000	53001	14
ADCLNR/L-16-4D	53002	53003	14
ADCLNR/L-20-4D	53004	53005	14
ADCLNR/L-20-5D	53006	53007	14
ADCLNR/L-20-6D	53012	53013	14
ADCLNR/L-24-4E	53008	53009	14
ADCLNR/L-24-5E	53010	53011	14
ADCLNR/L-24-6E	53014	53015	14
ADDJNR/L-12-3B	53016	53017	14
ADDJNR/L-12-4B	53018	53019	14
ADDJNR/L-16-4D	53020	53021	14
ADDJNR/L-20-4D	53022	53023	14
ADDJNR/L-24-4E	53024	53025	14
ADDPNN-12-3B	53030		14
ADDPNN-12-4B	53031		14
ADDPNN-16-3D	53032		14
ADDPNN-16-4D	53033		14
ADDPNN-20-4D	53034		14
ADDPNN-24-4E	53035		14
ADSDNN-12-4B	53053		15
ADSDNN-16-4D	53054		15
ADSDNN-20-4D	53055		15
ADSDNN-20-5D	53056		15
ADSDNN-24-5E	53058		15
ADSRNR/L-12-4B	53040	53041	15
ADSRNR/L-16-4D	53043	53044	15
ADSRNR/L-20-5D	53045	53046	15
ADSRNR/L-24-5E	53047	53048	15
ADTENN-12-3B	53075		15
ADTENN-12-4B	53076		15
ADTENN-16-3D	53077		15
ADTENN-16-4D	53078		15
ADTENN-20-4D	53079		15
ADTENN-24-4E	53080		15
ADTJNR/L-12-3B	53063	53064	16
ADTJNR/L-12-4B	53065	53066	16
ADTJNR/L-16-3D	53067	53068	16
ADTJNR/L-16-4D	53069	53070	16
ADTJNR/L-20-4D	53071	53072	16
ADTJNR/L-24-4E	53073	53074	16
ADVJNR/L-12-3B	53081	53082	16
ADVJNR/L-16-3D	53083	53084	16
ADVJNR/L-20-3D	53085	53086	16
ADVJNR/L-24-3E	53087	53088	16
ADWLNR/L-12-3B	53093	53094	16
ADWLNR/L-12-4B	53095	53096	16
ADWLNR/L-16-3D	53097	53098	16
ADWLNR/L-16-4D	53099	53100	16
ADWLNR/L-20-4D	53101	53102	16
ADWLNR/L-24-4E	53103	53104	16

Inch Boring Bars

Jet-Stream™ Boring Bars

Inch Description	Part No. 733101-		Page
AS-12R-ADCLNR/L-3	53120	53121	19
AS-16R-ADCLNR/L-4	53122	53123	19
AS-20S-ADCLNR/L-4	53124	53125	19
AS-24S-ADCLNR/L-4	53126	53127	19
AS-32T-ADCLNR/L-4	53128	53129	19
AS-32T-ADCLNR/L-5	53130	53131	19
AS-20S-ADDPNR/L-4	53150	53151	20
AS-24S-ADDPNR/L-4	53152	53153	20
AS-16R-ADDUNR/L-3	53137	53138	19
AS-20S-ADDUNR/L-4	53139	53140	19
AS-24S-ADDUNR/L-4	53141	53142	19
AS-32T-ADDUNR/L-4	53143	53144	19
AS-20S-ADSKNR/L-4	53159	53160	20
AS-24S-ADSKNR/L-4	53161	53162	20
AS-32T-ADSKNR/L-4	53163	53164	20
AS-32T-ADSKNR/L-5	53165	53166	20
AS-12R-ADTUNR/L-3	53172	53173	19
AS-16R-ADTUNR/L-3	53174	53175	19
AS-20S-ADTUNR/L-4	53176	53177	19
AS-24S-ADTUNR/L-4	53178	53179	19
AS-32T-ADTUNR/L-4	53180	53181	19
AS-20S-ADVUNR/L-3	53189	53190	20
AS-24S-ADVUNR/L-3	53191	53192	20
AS-12R-ADWLNR/L-3	53198	53199	20
AS-16R-ADWLNR/L-4	53200	53201	20
AS-20S-ADWLNR/L-4	53202	53203	20
AS-24S-ADWLNR/L-4	53204	53205	20
AS-32T-ADWLNR/L-4	53206	53207	20

Inch Threading Toolholders & Bars

Jet-Stream™ OnEdge Threading

Inch Description	Part No. 733101-		Page
ADTVOR/L12-3B	53400	53401	27
ADTVOR/L16-3D	53402	53403	27
ADTVOR/L12-4B	53404	53405	27
ADTVOR/L16-4D	53406	53407	27
ADTVOR/L20-4D	53408	53409	27
ADTVOR/L24-4E	53410	53411	27
ADTVOR/L20-5D	53414	53415	27
ADTVOR/L24-5E	53416	53417	27
ADTHOR/L12-4B	53425	53426	27
ADTHOR/L16-4D	53427	53428	27
ADTHOR/L20-4D	53429	53430	27
ADTHOR/L20-5E	53431	53432	27
AS-16R-ADTHOR/L-3	53436	53437	27
AS-20S-ADTHOR/L-4	53438	53439	27
AS-24S-ADTHOR/L-4	53440	53441	27
AS-32T-ADTHOR/L-4	53442	53443	27
AS-32T-ADTHOR/L-5	53444	53445	27
AS-40T-ADTHOR/L-5	53446	53447	27

Inch Threading Toolholders & Bars

Jet-Stream™ DorNotch Threading

Inch Description	Part No. 733101-		Page
ADNSR/L12-3B	53450	53451	29
ADNSR/L16-3D	53452	53453	29
ADNSR-L20-3D	53454	53455	29
ADNSR/L16-4D	53456	53457	29
ADNSR/L20-4D	53458	53459	29
ADNSR/L24-4E	53460	53461	29
ADNER/L12-3B	53465	53466	29
ADNER/L16-3D	53467	53468	29
ADNER/L20-3D	53469	53470	29
ADNER/L16-4D	53471	53472	29
ADNER/L20-4D	53473	53474	29
ADNRR/L12-3B	53480	53481	29
ADNRR/L16-3D	53482	53483	29
ADNRR/L20-3D	53484	53485	29
AS-16R-ADNER/L-3	53490	53491	30
AS-20S-ADNER/L-3	53492	53493	30
AS-24S-ADNER/L-3	53494	53495	30
AS-32T-ADNER/L-4	53496	53497	30

Inch Threading Toolholders & Bars

Jet-Stream™ Laydown Threading

Inch Description	Part No. 733101-		Page
ADLER/L12-16C	53510	53511	32
ADLER/L16-16D	53512	53513	32
ADLEGR/L12-16C	53516	53517	32
ADL-EGR/L16-16D	53518	53519	32
ADLER/L12-16Q-C	53522	53523	32
ADLER/L16-16Q-D	53524	53525	32
ADLER/L20-16Q-D	53526	53527	32
ADLER/L16-22Q-D	53528	53529	32
ADLER/L24-22Q-E	53530	53531	32
AS-12R-ADLNR/L-16	53533	53534	33
AS-16R-ADLNR/L-16	53535	53536	33
AS-20S-ADLNR/L-16	53537	53538	33
AS-24S-ADLNR/L-16	53539	53540	33
AS-20S-ADLNR/L-22	53541	53542	33
AS-24S-ADLNR/L-22	53543	53544	33
AS-32T-ADLNR/L-22	53545	53546	33
ADLER/L16-T22API-D	53549	53550	33
ADLER/L20-T22API-D	53551	53552	33
ADLER/L24-T27API-F	53553	53554	33
ADLER/L32-T27API-H	53555	53556	33
AS-32T-ADLNR/L-22API	53559	53560	33
AS-40T-ADLNR/L-22API	53561	53562	33
AS-32T-ADLNR/L-27API	53563	53564	33
AS-40T-ADLNR/L-27API	53565	53566	33

Metric Turning Toolholders

Jet-Stream™ Turning Toolholders

Metric Boring Bars

Jet-Stream™ Boring Bars

Metric Laydown Toolholders & Bars

Jet-Stream™ Laydown Threading

Threading Inserts

Threading Inserts

ANSI & ISO Negative Turning Inserts

Negative Turning Inserts

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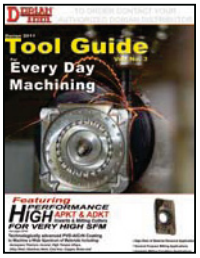
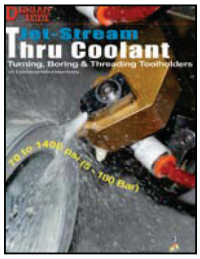
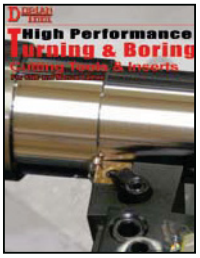
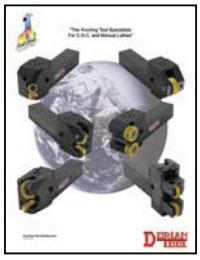
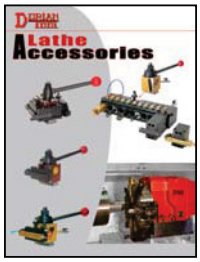
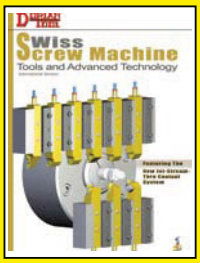
Catalog	Quantity	Catalog	Quantity
Tool Guide for Everyday Machining ***Vol.No 3*** **Our most current Volume will be sent to you. Products offered per volume may vary depending on demand and featured items.** Inside this Tool Guide You will find High Performance cutting tools, inserts and machine tool accessories for every day machining. Additionally this catalog will give you an excellent overview of our complete line of tooling. 		**NEW 2011 Jet-Stream Thru Coolant System** ***Vol.No 3*** 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 ¼"(6mm). This catalog offers a vass range Jet-Stream™ Thru Coolant Cutting Tools for Turning, Boring and Threading applications. 	
NEW 2011 Turning & Boring Cutting Tools & Inserts Dorian Tool offers a complete selection of indexable cutting tools. Our wide variety of Turning, Boring tools and inserts provide solutions for all your Turning, Facing, Boring, Chamfering, I.D. & O.D. Profiling, Chuck Work and Between Center Work Machining Operations. ***For Milling, Cut-off and Drilling Indexable Tools see our 2003 Indexable catalog online.*** 		**NEW 2011 Threading, Grooving & API Cutting Tools & Inserts** 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. & O.D. Profiling, Chuck Work and Between Center Work Machining Operations. 	
2008 CNC Adjustable Angle Heads Choose from two styles (Universal and 90º) 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 & 5th axis rotary tables. The 90º 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. 		**2007 knurling Tools & Wheels** 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 knurling 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. 	
2006 Perfetta Live Centers & Bull Nose 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. 		**NEW Lathe Accessories Catalog** 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. **This catalog replaces all three Dorian Tool post catalogs as well as the 2005 MTA (Machine Tool Accessories) catalog.** 	
Swiss Screw Machine **Tools and Advanced Technology Catalog** Featuring Jet-Stream™ Thru Coolant System for Turning, Threading and Cut-off Toolholders. Designed for Swiss Screw Machines. This catalog will be available in a U.S.A. and European Version. 	**COMING SOON in 2011/2012**	**Indexable Turning Grooving And Parting-Off** Toolholders Catalog **For CNC and Manual Lathes** Featuring Jet-Stream™ Thru Coolant System, multi-application tools, modular face grooving system, and high performance inserts. 	**COMING SOON in 2011/2012**

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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.

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

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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.

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Condition, terms and specifications are subject to change without notice.
Any typographical error in any printing matter is subject to correction.

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