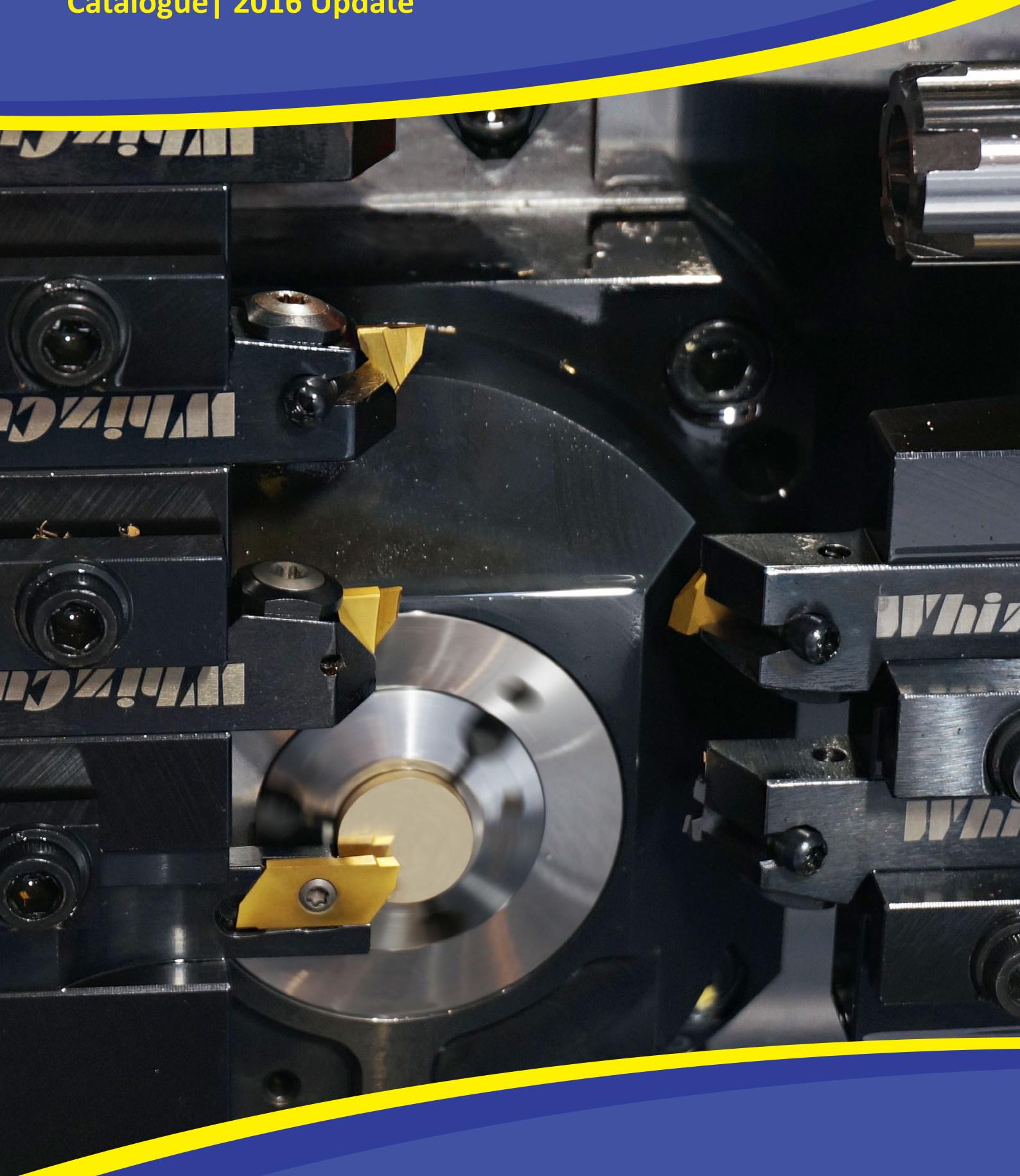
Catalogue| 2016 Update



WhizCut®


Tivoli



The World of WhizCut

Smart Solutions on the Cutting Edge

Demand on production for small parts around the world is continuously increasing and higher expectations are put on the producers of these parts. This is where WhizCut comes in.

At WhizCut we understand the day to day challenges the users of automatic lathes are up against. To assist these users WhizCut has developed a wide range of useful products for all automatic lathes around the globe.

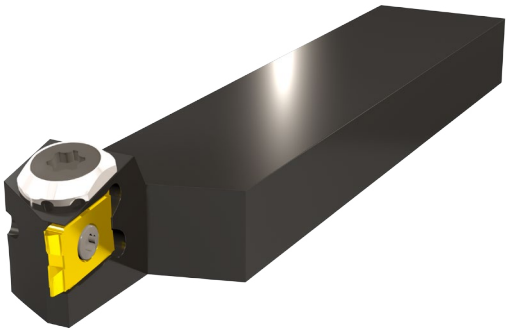
We try, to put it simple, to find new solutions for existing problems within the world of small part machining. Our company is based on these new products that will make your production faster, more precise and more effective. No matter if your work is in external cutting or internal cutting, we have the solutions to boost your production.

WhizCut is determined to continue being one of the leading manufacturers for small part machining in the world.

New Products 2016

WhizHip - P. 13, 18, 28, 29

WhizCut has extended the WhizHip product line with additional toolholders and made it available for the 20 size inserts. The new range includes shifted edge holders for extended nose collets. The WhizThread version of this holder is perfect for making long threads.



Shifted Edge WhizHip Toolholders

New Grades - P. 10

WhizCut has added two new grades, NF8 and ND8. The grades build on the same coatings as F8 and B8, but have an extra reinforced cutting edge. The NF8 and ND8 grades are available for many different styles of inserts.

Groove Turning - P. 14

WhizCut has extended the A style insert range with narrower insert widths for the 11 size inserts, and a wide range of Groove Turning inserts with radiuses.

P-Line - P. 15

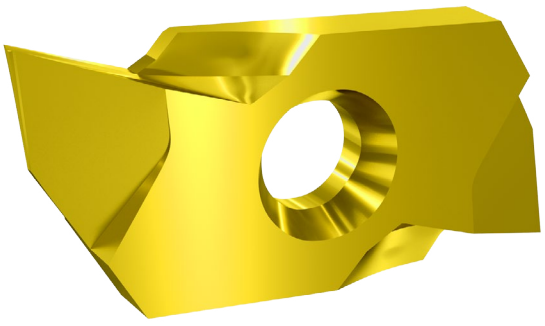
The P-Line style has been updated with several new geometries. The traditional P-line inserts are now available with small radiuses. The new J15ER HP8-2, J15ER HP8-1 and J15ER DP8-4 deliver outstanding performance in very tough materials, such as Inconel and hardened steels. The new J15ER NP12-1 and J15ER NP12-2 deliver optimal performance when a 45 degree relief is needed and these are more stable inserts than the 35 degree inserts that are traditionally used for the task.

Back Turning - P. 21

The already extensive WhizCut Back Turning product line is upgraded with K11ER B12-2-05 along with K15ER BP12-2-03 and K15ER BP12-4-2. The new K15ER VLR8-2 has a wider lead angle for extra strength and longer tool life. It is suitable for tough materials and steels



WhizHip: Toolholders prepared for High Pressure Coolant



WhizCut: New High Positive Inserts available

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Introducing WhizCut

Committed to Quality in Every Way

WhizCut has always taken pride in delivering top quality tooling. All inserts and toolholders are thoroughly examined in top of the range measuring microscopes. Every single cutting edge is also checked at over 60 times enlargement before being packed in transport safe packaging. We at WhizCut therefore guarantee that there is no chipping or other faults in our products. Fast shipment and reliable deliveries are also a major factor in the quality of our products. For this reason we always make sure that our products arrive at its destination on time.
We believe that our quality work through the whole production process makes the WhizCut products one of the highest quality products on the market.



World Wide Presence

WhizCut has from the very beginning been an actor on the international market. Now, 17 years after the company was established, WhizCut products are sold in 28 countries around the world.
Around 95% of WhizCut products are exported, and 85% of the total turnover is shipped outside of Europe. As a company WhizCut is formed to be international, making international relations our everyday work. Understanding customer needs in different cultures is an important step toward maintaining a worldwide presence.
One of the competitive advantages of being a true global company is the knowledge gained from all corners of the world. Through many experiences in different countries we know how to handle new situations and how to solve all kinds of production problems.

The Idea Behind It All

Mr. Erik Schmidt is the founder of WhizCut and the designer behind our original patents. He is a well known figure within the metal cutting industry and invented, among other things, the Snap-Tap threading attachment in 1965, which is still produced today. He has since then developed many revolutionary products, and received a well deserved respect by fellow tool designers for an expertise that is very rare today.

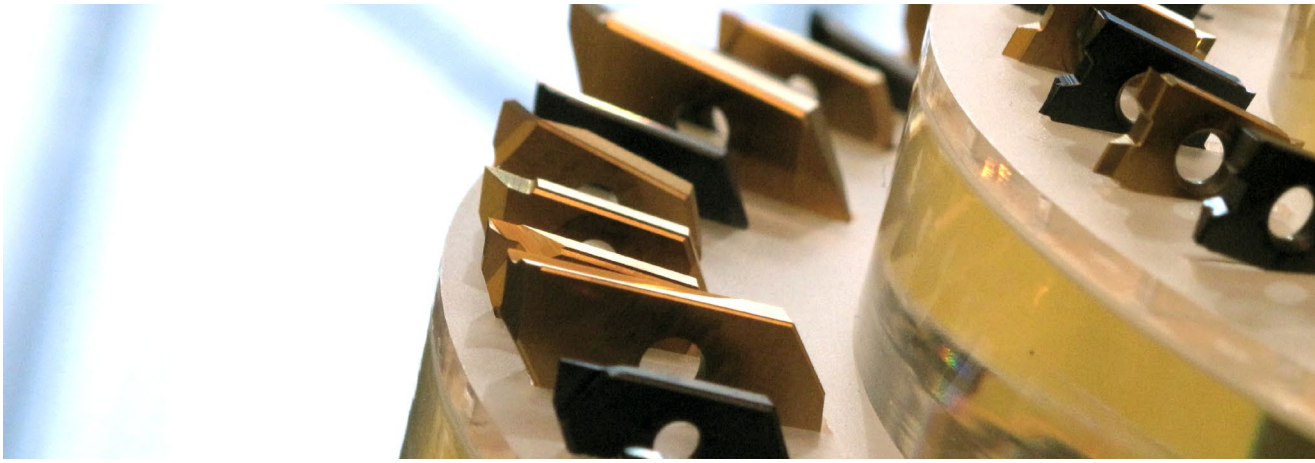
For us at WhizCut, it all started in 1996 with Mr. Schmidt's invention of the WhizFix toolholder system which became a total market changing product only one year later. For this invention Mr. Schmidt also developed the today well known geometries of the WhizCut inserts.



To this day, Mr. Schmidt still develops new products for WhizCut, making us a leading brand of tooling for CNC automatic lathes. WhizCut is still owned by the Schmidt family. By being a family owned company WhizCut can focus on long term goals, which ensures a fully customer oriented organisation. This also gives WhizCut certain resources as a company to evolve both products and business.

WhizCut Online

At WhizCut we continuously enhance our products and product range. For up to date product information, WhizCut product news and downloads, please visit http://www.whizcut.com. One can also join in on the discussions via Twitter (http://twitter.com/WhizCut), Facebook (http://www.facebook.com/WhizCut), and Youtube (http://www.youtube.com/whizcut) . The online experience of WhizCut is developing all the time, so make sure to keep updated with our newsletters.

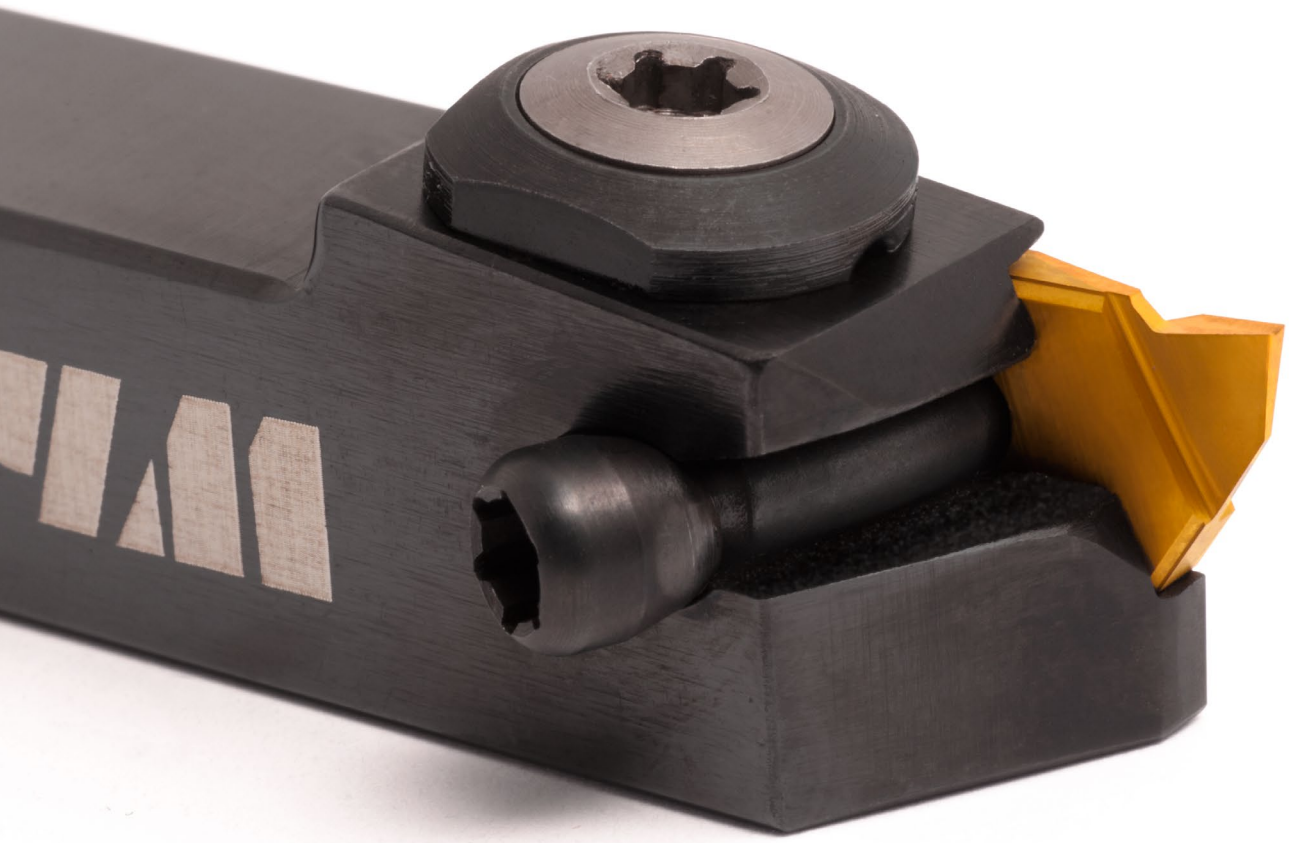


WhizCut

External Toolholders and Inserts

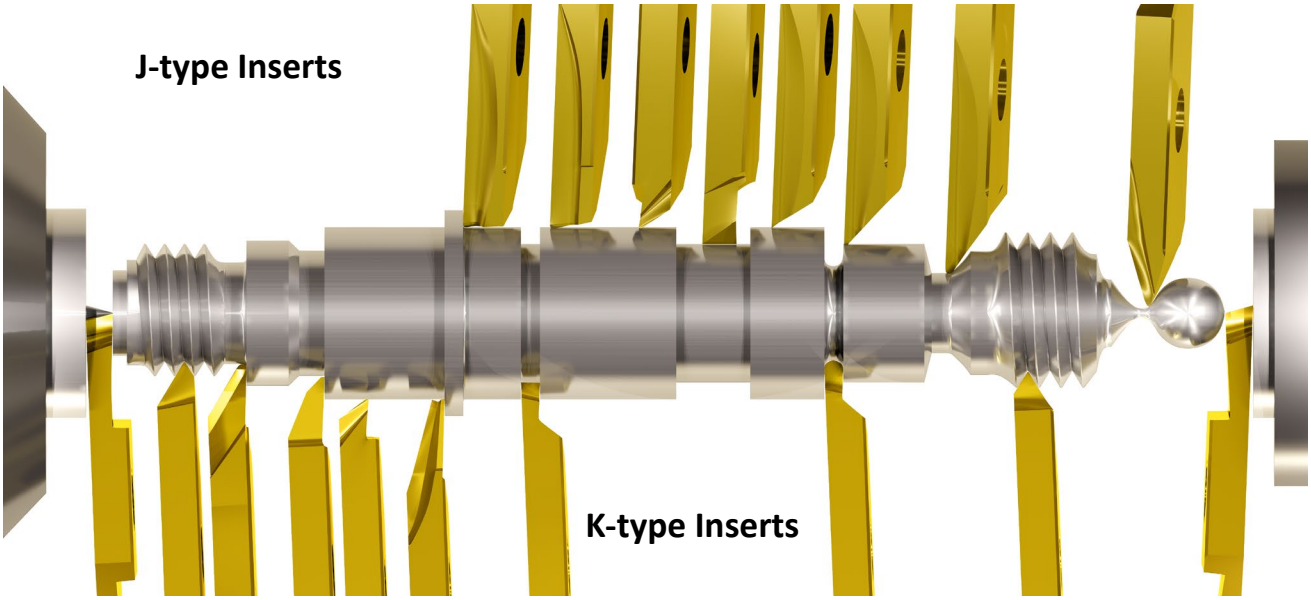
In the past 15 years there has been a very big change in production of small parts. Many parts that previously were made in cam type machines and traditional CNC machines are now produced in Swiss Type Automatic Lathes. Machining in these machines is different from machining in traditional machines and the great advantages of using swiss turning can only be obtained with the right tooling. All WhizCut inserts are specially developed for these machines and today WhizCut has the widest range of inserts specially developed for Swiss type automatic lathes.

Only two types of toolholders are needed to make use of the entire range of inserts. For maximum efficiency of insert tooling, WhizCut has developed the WhizFix toolholder system. WhizFix makes it possible to index an insert in a Swiss type automatic lathe without taking the toolholder out of the machine.



Only Two Toolholders for All Applications

WhizCut offers the widest range of external carbide inserts for Swiss type automatics on the market. Our goal is to offer great performing WhizCut tooling for all applications our customers need in their lathes. WhizCut inserts are divided into 2 different application styles; radial turning and front turning. The toolholders for radial turning and front turning have been optimized for their targeted application. As a result the user of WhizCut inserts only need two types of toolholders to perform almost any operation.



Design of the Perfect Cutting Tool

All WhizCut standard Inserts have sharp, fully ground cutting edges. The standard inserts are available in a 2, 6, 8, 12, 16 or 20° positive cutting rake to enable the best performance for every operation. The combination of a fully ground cutting edge and a high positive cutting rake makes the WhizCut inserts useful for most types of material and applications. All inserts are developed for maximum stability and performance, along with a very high level of chip control.
The WhizCut carbide grade allows the insert to have a very sharp but still strong edge. This also makes the inserts suitable for materials which are difficult to machine such as Titanium, stainless steel and Super Alloys.
The combination of the best grades of carbide, the most suitable geometries and very sharp cutting edges ensures the best tooling possible for Swiss type automatic lathes.
WhizCut regularly develops special solution tooling for individual customers. Please contact a WhizCut distributor for a quote.

Grades of Carbide

WhizCut Inserts are available in both PVD-coated and uncoated fine grain carbide with hardness over 1750 Hv.
The WhizCut carbide is an extremely hard grade with a high tensile strength. The carbide is therefore very wear resistant and drastically extends tool life compared with conventional carbide.

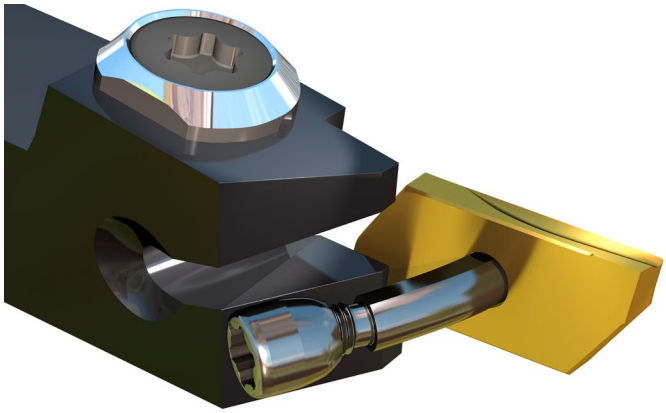
Stock Standard Grades

8M	Uncoated grade covering ISO groups K10-K20 and M10-M20.
C8	TiN coated grade covering ISO groups K05-K20, M05-M20 and P05-P10.
F8	TiAlN multi-coated grade suitable when extreme heat is developed during machining.
B8	AlCrN coated grade for materials such as titanium etc. where an extra edge sharpness is needed.
NF8	TiAlN multi-coated grade with a slightly honed cutting edge, suitable for tough materials.
ND8	AlCrN coated grade with an slightly honed cutting edge. Very suitable for all steels, and tough exotics and larger parts

WhizFix Clamping

WhizCut has the best solution to all indexing problems in Swiss type automatics. By making it easy to index the insert from the opposite side of the toolholder the WhizFix patented toolholder helps the user to index the insert with the toolholder still in the machine.

- Indexing or changing an insert can be done in 15 seconds without removing the toolholder from the machine.
- Indexing or changing an insert will not change the setting, resulting in a much faster return to full production.
- There is no risk of damaging the new cutting edge.





WhizHip - Coolant Through Toolholders

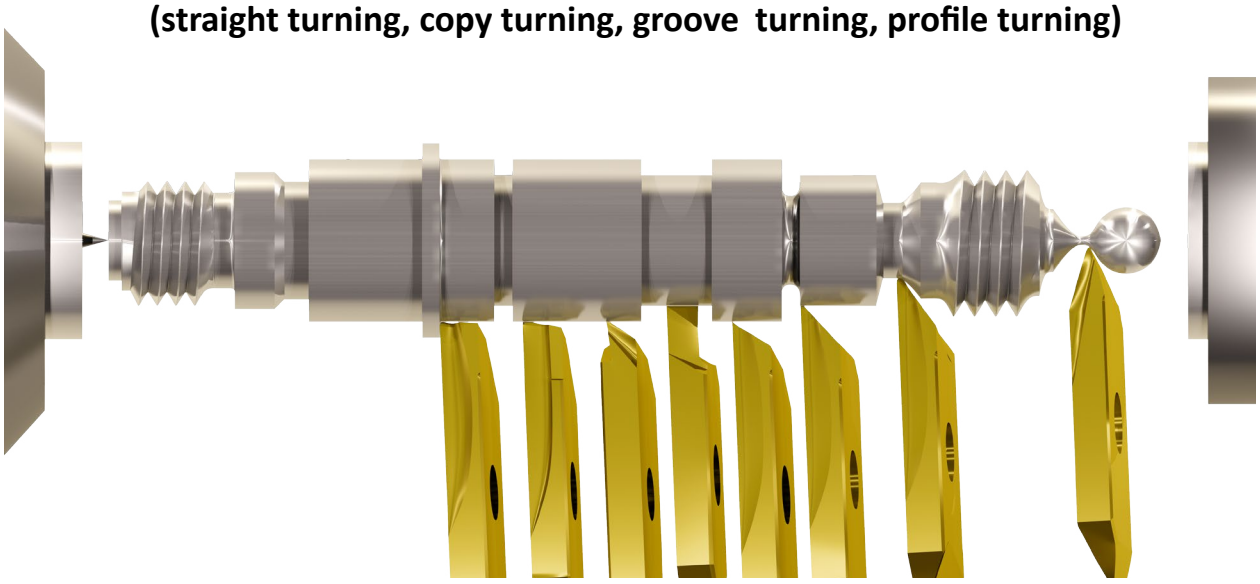
WhizHip is a series of toolholders with high pressure coolant for Swiss type lathes. The high pressure coolant is lead through the toolholder and exits at an optimal angle between the cutting edge and chip to cool the insert and to cut off the building chips. Most toolholders use standard ⅛ NPT connection to connect the coolant from the machine. By using the WhizHip toolholders, an investment in a special gang-plate is not needed.
To minimize setup time we recommend you to use the WhizFix toolholder option of the WhizHip. This way you will not need to take out the toolholder out of the machine when indexing the insert.

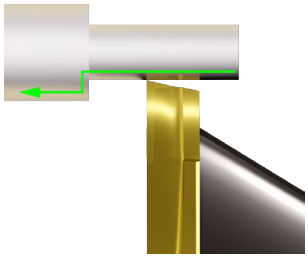


The optimal coolant point is between the chip and the cutting edge which gives improved cooling effect, improved chip control and improved tool life. The best coolant pressure varies between machine, material, RPM and feed rate. The WhizHip toolholder gives a positive effect on performance already from 10 bar. Normal use is around 100 bar, however up to 300 bar can be used.
When working in titanium, and other difficult to machine materials one will find a drastically improved performance of the insert when using high pressure coolant.
The WhizHip toolholders are now available for all right hand WhizCut inserts and all WhizThread inserts. It is also available in left hand for parting off against the sub spindle.

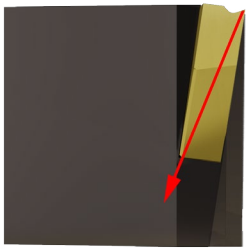
Front Turning: J-type Inserts & Toolholders

(straight turning, copy turning, groove turning, profile turning)





Turning direction



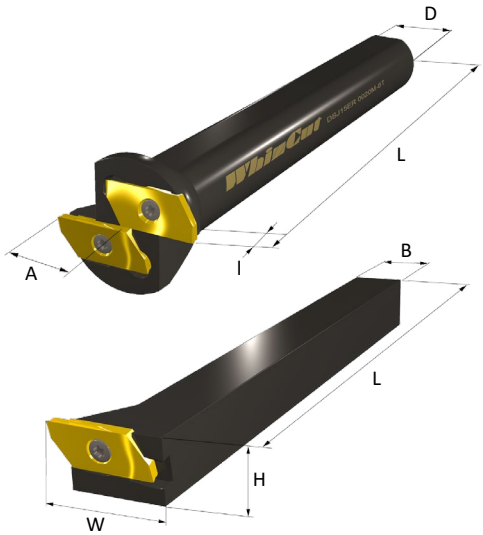
Resulting cutting force

The J-type inserts are available in many variations to enable the most suitable combination of cutting rakes, shapes, corner executions, chip control and grades of carbide.
The J-type insert is tilted in the toolholder to give the best clearance and maximum stability in the tooling.
The resulting cutting force is illustrated beside.

Recommended Cutting Data J-type Inserts

Material	Hardness HB	Feed rate mm/rev	Uncoated m/min	Coated m/min
Carbon steel	150	0,10-0,22	160-270	200-350
	250	0,08-0,17	120-220	150-275
	350	0,07-0,14	70-140	100-200
Alloy steel	200	0,08-0,20	110-190	150-275
	300	0,07-0,16	70-140	100-200
	400	0,06-0,15	50-100	70-140
Stainless steel	150	0,08-0,20	110-190	150-275
	250	0,07-0,16	70-140	100-200
	350	0,06-0,15	50-100	70-140

Material	Hardness HB	Feed rate mm/rev	Uncoated m/min	Coated m/min
High temp.	200	0,05-0,12	40-110	50-130
alloys	300	0,05-0,12	25-90	30-110
	400	0,05-0,12	20-65	25-80
Brass	<110	0,10-0,35	300-700	400-1000
	>110	0,08-0,28	250-500	300-700
Copper	<100	0,10-0,35	250-500	300-700
	>100	0,08-0,28	175-350	250-500
Aluminium	<100	0,10-0,20	300-700	400-1000
	>100	0,08-0,20	250-500	300-700



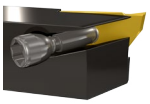
DSJ | Double Inserts Toolholders with Round Shank

Toolholder	D	A	L	I	Insert	Screw	Key	Stock	Price group
DSJ15ER 0016M-8T	16	14	150	8	J15ER	M3x7	J3IP	r	A76
DSJ15ER 0020M-8T	20	14	150	5	J15ER	M3x7	J3IP	r	A77

ZSJ | Square Shank Toolholders

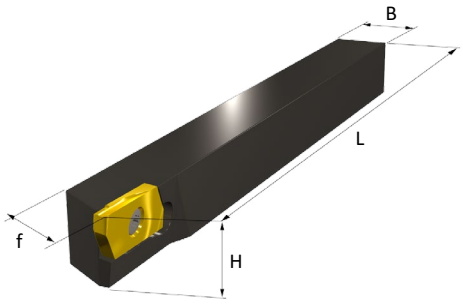
Toolholder	B	H	L	W	Insert	Screw	Key	Stock	Price group
ZSJ15ER 1212K-8T	12	12	125	20	J15ER	M3x7	J3IP	r	A72
ZSJ15ER 1616K-8T	16	16	125	24	J15ER	M3x7	J3IP	r	A73

WPJ | Toolholders with WhizFix Pin Type Clamping


WhizFix Clamping

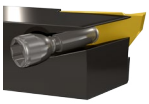
Toolholder	H	B	L	f	Insert	Pin + Nut	Bit	Stock	Price group
WPJ11ER/L 88K-8T	8	8	125	8	J11ER/L	Pin 8	K3	a	A62
WPJ11ER/L 1010K-8T	10	10	125	10	J11ER/L	Pin 8	K3	a	A62
WPJ15ER/L 1010K-8T	10	10	125	10	J15ER/L	Pin 12	J5	a	A62
WPJ15ER 1212F-8T	12	12	85	12	J15ER	Pin 12	J5	r	A61
WPJ15ER/L 1212K-8T	12	12	125	12	J15ER/L	Pin 12	J5	a	A62
WPJ15ER 0500K-8T	1/2”	1/2”	125	1/2”	J15ER	Pin 12	J5	r	A62
WPJ15ER/L 1616K-8T	16	16	125	16	J15ER/L	Pin 12	J5	a	A63
WPJ20ER 1212K-8T	12	12	125	12	J20ER	Pin 16	K3	r	A62
WPJ20ER 0500K-8T	1/2”	1/2”	125	1/2”	J20ER	Pin 16	K3	r	A62
WPJ20ER 1616K-8T	16	16	125	16	J20ER	Pin 16	K3	r	A63
WPJ20ER 2020K-8T	20	20	125	20	J20ER	Pin 16	K3	r	A64

WSJ | Toolholders with Conventional Clamping



Toolholder	H	B	L	f	Insert	Screw	Key	Stock	Price group
WSJ11ER/L 88K-8T	8	8	125	8	J11ER/L	M2,5x6	J2	a	A52
WSJ15ER/L 1010K-8T	10	10	125	10	J15ER/L	M3x7	J3IP	a	A52
WSJ15ER/L 1212K-8T	12	12	125	12	J15ER/L	M3x7	J3IP	a	A52
WSJ15ER 0500K-8T	1/2”	1/2”	125	1/2”	J15ER	M3x7	J3IP	r	A52
WSJ15ER/L 1616K-8T	16	16	125	16	J15ER/L	M3x7	J3IP	a	A53
WSJ20ER 1212K-8T	12	12	125	12	J20ER	M4x9	J4	r	A52
WSJ20ER 0500K-8T	1/2”	1/2”	125	1/2”	J20ER	M4x9	J4	r	A52
WSJ20ER 1616K-8T	16	16	125	16	J20ER	M4x9	J4	r	A53
WSJ20ER 2020K-8T	20	20	125	20	J20ER	M4x9	J4	r	A54
WSJ20ER 2525M-8T	25	25	150	25	J20ER	M4X9	J4	r	A55
WSJ20ER 1000M-8T	1”	1”	150	1”	J20ER	M4X9	J4	r	A55

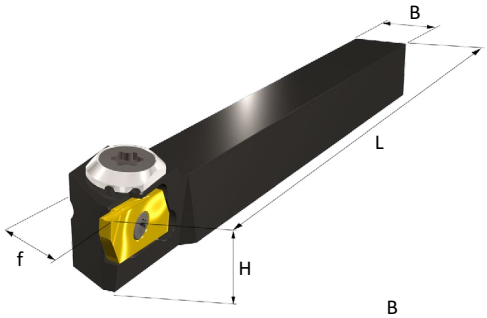
WPJ | WhizFix Toolholders with High Pressure Coolant


WhizFix Clamping

Toolholder	H	B	L	f	Insert	Plug	Pin + Nut	Bit	Stock	Price group
WPJ15ER 1010K-8C	10	10	125	10	J15ER	M8x1	Pin 12	J5	r	A82
WPJ15ER 1010H-8C	10	10	100	10	J15ER	M8x1	Pin 12	J5	r	A82
WPJ15ER 1212K-8C	12	12	125	12	J15ER	1/8 NPT	Pin 12	J5	r	A82
WPJ15ER 0500K-8C	1/2”	1/2”	125	1/2”	J15ER	1/8 NPT	Pin 12	J5	r	A82
WPJ15ER 1616K-8C	16	16	125	16	J15ER	1/8 NPT	Pin 12	J5	r	A83
WPJ20ER 1216K-8C	12	16	125	16	J20ER	1/8 NPT	Pin 16	K3	r	A82
WPJ20ER 0516K-8C	1/2”	16	125	16	J20ER	1/8 NPT	Pin 16	K3	r	A82
WPJ20ER 1616K-8C	16	16	125	16	J20ER	1/8 NPT	Pin 16	K3	r	A83
WPJ20ER 2020K-8C	20	20	125	20	J20ER	1/8 NPT	Pin 16	K3	r	A83

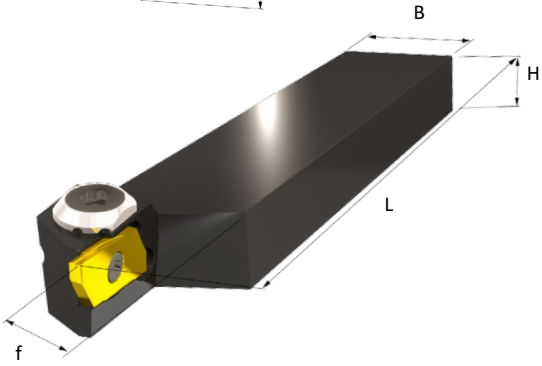
For more info on WhizHip see page 11

WSJ | Toolholders with High Pressure Coolant



Toolholder	H	B	L	f	Insert	Plug	Screw	Key	Stock	Price group
WSJ15ER 1010K-8C	10	10	125	10	J15ER	M8x1	M3x7	J3IP	r	A72
WSJ15ER 1010K-8H	10	10	100	10	J15ER	M8x1	M3x7	J3IP	r	A72
WSJ15ER 1212K-8C	12	12	125	12	J15ER	1/8 NPT	M3x7	J3IP	r	A72
WSJ15ER 0500K-8C	1/2”	1/2”	125	1/2”	J15ER	1/8 NPT	M3x7	J3IP	r	A72
WSJ15ER 1616K-8C	16	16	125	16	J15ER	1/8 NPT	M3x7	J3IP	r	A73
WSJ20ER 1216K-8C	12	16	125	16	J20ER	1/8 NPT	M4x9	J4	r	A72
WSJ20ER 0516K-8C	1/2”	16	125	16	J20ER	1/8 NPT	M4x9	J4	r	A72
WSJ20ER 1616K-8C	16	16	125	16	J20ER	1/8 NPT	M4x9	J4	r	A73
WSJ20ER 2020K-8C	20	20	125	20	J20ER	1/8 NPT	M4x9	J4	r	A73
WSJ20ER 2525M-8C	25	25	150	25	J20ER	1/8 NPT	M4X9	J4	r	A74
WSJ20ER 1000M-8C	1”	1”	150	1”	J20ER	1/8 NPT	M4X9	J4	r	A74

WSJ | Shifted WhizHip Toolholders



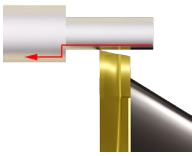
Toolholder	H	B	L	f	Insert	Plug	Screw	Key	Stock	Price group
WSJ15ER 1020H 8C	10	20	125	10	J15ER	M8x1	M3x7	J3IP	r	A72
WSJ15ER 1224K 8C	12	24	125	12	J15ER	1/8 NPT	M3x7	J3IP	r	A72
WSJ15ER 0510K 8C	1/2”	1”	125	1/2”	J15ER	1/8 NPT	M3x7	J3IP	r	A72
WSJ15ER 1632K 8C	16	32	125	16	J15ER	1/8 NPT	M3x7	J3IP	r	A73



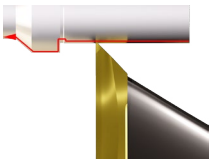
Turning - Selecting the Best Insert

1. Axial Relief vs Component Possibilities

- 3° Gives the strongest tool and smoother finish
- 12° Gives a strong tool and good finish
- 33° Medium strong tool, wiper good for smooth finish
- 48-53°: Less strong tool, wiper needed for smooth finish



Small axial relief
Stronger tool



Large axial relief
Weaker tool

2. Chip Control

- Style H = Long chips and/or high feed rate
- Style J = Long chips and/or highest feed rate
- Style D, N & V = Short chips and/or low to moderate feed rate
- Style M = Short chips and/or low to moderate feed rate
- P - Line = Long chips and/or low to moderate feed rate

3. Cutting Rake vs Material

- 0-2° for short-chipping materials
- 3-8° for harder long-chipping materials
- 8-16° for long-chipping materials
- 16-20° for sticky long-chipping materials
- P - Line style inserts for sticky and exotic materials



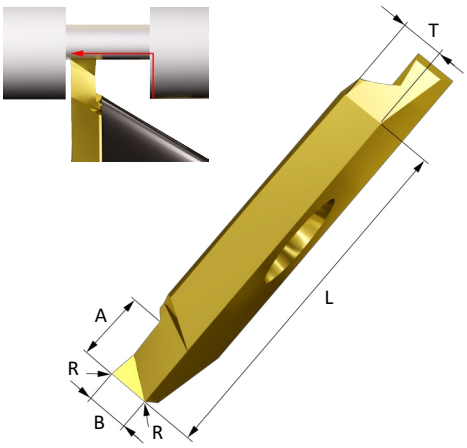
0-2° **3-8°** **8-16°** **16-20°**

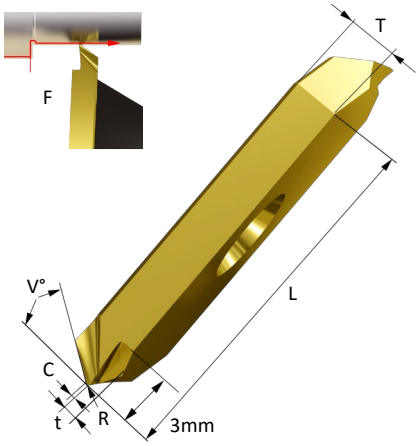
4. Corner Alternatives

- Sharp corner = Minimum cutting force, good when component is weak.
- Wiper = For higher feed rates resulting in better surface finish.
- Radius = Stronger tool, also used upon request of component.
- Wiper and radius = For higher feed-rate with better surface.



Sharp Corner **Wiper** **Full Radius** **Radius+Wiper**





Style A | Inserts for Groove Turning

Extended Range

Inserts	L	B	A	Rx2	Cutting rake°	8M	C8	F8	Stock B8	NF8	ND8	Price group
J11ER A0-03-0	11	0,2	0,3	0	0	r	r	r	r	-	-	A6
J11ER A0-08-0	11	0,5	0,8	0	0	r	r	r	r	-	-	A5
J11ER A0-0	11	1,3	2	0	0	r	r	r	r	-	-	A5
J11ER A12-0	11	1,3	2	0	12	r	r	r	r	-	-	A6
J15ER A0-05-0	15	0,3	0,5	0	0	r	b	r	r	-	-	A6
J15ER A0-08-0	15	0,5	0,8	0	0	r	r	r	r	-	-	A5
J15ER A0-08-03	15	0,5	0,8	0,03	0	r	b	r	r	-	-	A6
J15ER A0-12-0	15	0,75	1,2	0	0	r	r	r	r	-	-	A5
J15ER A0-12-05	15	0,75	1,2	0,05	0	r	b	r	r	-	-	A7
J15ER A0-16-0	15	1	1,6	0	0	r	r	r	r	-	-	A5
J15ER A12-16-0	15	1	1,6	0	12	r	r	r	r	-	-	A6
J15ER A12-16-05	15	1	1,6	0,05	12	r	r	r	r	-	-	A7
J15ER A0-0	15	1,5	2,3	0	0	r	r	r	r	r	r	A5
J15ER/L A12-0	15	1,5	2,3	0	12	b	b	b	r	r	r	A6
J15ER A12-08	15	1,5	2,3	0,08	12	r	b	r	r	-	-	A7
J15ER A12-1	15	1,5	2,3	0,1	12	r	r	r	r	r	r	A7
J20ER A0-3-0	20	2	3	0	0	r	r	r	k	-	-	A22
J20ER A0-5-0	20	3	5	0	0	r	r	r	k	-	-	A22
J20ER A12-3-0	20	2	3	0	12	r	r	r	k	-	-	A24
J20ER A12-3-1	20	2	3	0,1	12	r	r	r	k	r	r	A25
J20ER A12-5-0	20	3	5	0	12	r	r	r	k	-	-	A24
J20ER A12-5-2	20	3	5	0,2	12	r	r	r	k	r	r	A25

Style F | Inserts for an Extra Finishing Cut; Turning

Inserts	L	C	t	R	V°	Cutting rake°	8M	Stock C8	F8	B8	Price group
J15ER F16-0-05	15	0,15	0,6	0,05	30	16	r	r	r	k	A7
J15ER F20-18	15	0	10	0,18	58	20	r	k	r	r	A8

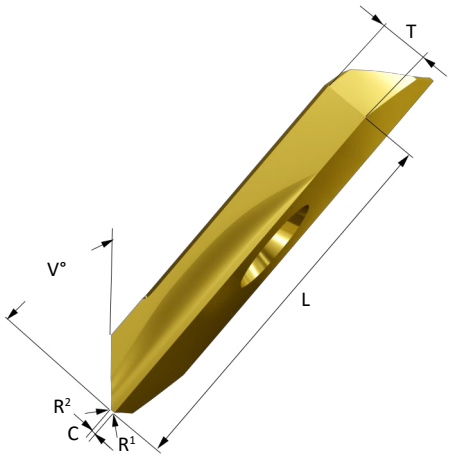
Stock status:

a *ER Stock standard, EL Stock standard*
b *ER Stock standard, EL Against inquiry*
c *EL Stock standard, ER Against inquiry*
r *ER Stock standard only*
l *EL Stock standard only*
k *ER Against inquiry, EL Against inquiry*

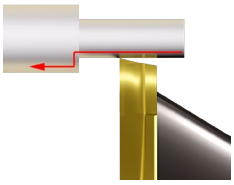
L	T
11	2,5
15	2,1
20	3,5

J-TYPE INSERTS

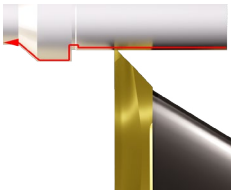
Straight turning, Copy/Profile/Finish turning | Use with J-type Toolholders



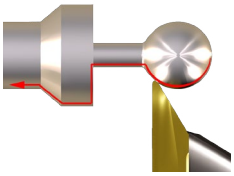
Turning
Style H, HP, J, JP



Copy Turning
Style D, DP, N, NP



Profiling
Style N, NP, V, VP

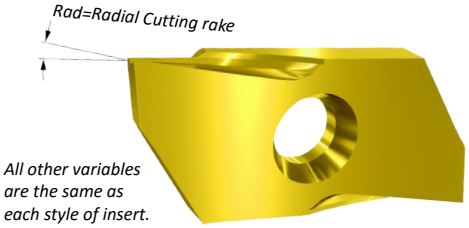


Style H, J, D, N, V | Inserts for Turning, Copy Turning

	Inserts	L	V°	R	C	Cutting rake°	8M	C8	F8	Stock B8	NF8	ND8	Price group
H = 3°	J15ER H6-0	15	3	0	0	6	r	r	r	k	-	-	A3
	J15ER H6-05	15	3	0,05	0	6	r	r	r	k	-	-	A4
	J15ER H6-2	15	3	0,2	0	6	r	r	r	k	r	r	A4
	J15ER H16-0	15	3	0	0	16	r	r	r	r	-	-	A3
	J15ER H16-1	15	3	0,1	0	16	r	r	r	r	r	r	A4
	J15ER H16-2	15	3	0,2	0	16	r	r	r	r	-	-	A4
J=12°	J11ER/L J8-0	11	12	0	0	8	b	a	k	k	-	-	A3
	J11ER/L J8-2	11	12	0,2	0	8	b	a	k	k	r	r	A4
	J11ER/L J20-0	11	12	0	0	20	b	b	k	k	-	-	A3
	J11ER J20-05	11	12	0,05	0	20	b	b	k	k	-	-	A4
	J11ER/L J20-2	11	12	0,2	0	20	b	b	k	k	-	-	A4
	J15ER/L J8-0	15	12	0	0	8	b	b	b	k	-	-	A3
	J15ER/L J8-1	15	12	0,1	0	8	b	b	b	k	r	r	A4
	J15ER/L J8-2	15	12	0,2	0	8	b	b	b	k	r	r	A4
	J15ER/L J20-0	15	12	0	0	20	b	b	b	k	-	-	A3
	J15ER/L J20-1	15	12	0,1	0	20	b	b	b	k	-	-	A4
	J15ER/L J20-2	15	12	0,2	0	20	b	b	b	k	-	-	A4
	J20ER J8-2	20	12	0,2	0	8	r	r	r	k	r	r	A21
	J20ER J8-4	20	12	0,4	0	8	r	r	r	k	r	r	A21
	J20ER J20-2	20	12	0,2	0	20	r	r	r	k	r	r	A23
	J20ER J20-4	20	12	0,4	0	20	r	r	r	k	r	r	A23
D = 33°	J11ER/L D2-0	11	33	0,02	0	2	b	b	b	k	-	-	A5
	J11ER/L D2-0-1	11	33	0	0,12	2	b	b	b	k	-	-	A5
	J11ER/L D12-0	11	33	0,02	0	12	b	b	b	k	-	-	A5
	J11ER/L D12-0-1	11	33	0	0,12	12	b	b	b	k	-	-	A5
	J15ER/L D2-0	15	33	0,02	0	2	b	b	b	k	-	-	A5
	J15ER/L D2-0-2	15	33	0	0,2	2	b	b	b	k	-	-	A5
	J15ER/L D12-0	15	33	0,02	0	12	b	b	b	k	-	-	A5
	J15ER D16-1	15	33	0,1	0	16	r	r	r	r	-	-	A5
	J15ER/L D12-0-2	15	33	0	0,2	12	b	b	b	k	-	-	A5
	J15ER/L D12-1-3	15	33	0,15	0,3	12	b	b	b	k	r	r	A6
	J20ER D2-2-5	20	33	0,2	0,5	2	r	r	r	k	r	r	A23
	J20ER D12-2-5	20	33	0,2	0,5	12	r	r	r	k	r	r	A24
N= 48°	J15ER/L N2-0-2	15	48	0	0,2	2	b	b	b	k	-	-	A6
	J15ER N2-1-3	15	48	0,1	0,3	2	r	r	r	k	-	-	A7
	J15ER/L N12-0-2	15	48	0	0,2	12	b	b	b	k	-	-	A6
	J15ER N12-1-3	15	48	0,1	0,3	12	r	r	r	k	r	r	A7
	J20ER N2-2-5	20	48	0,2	0,5	2	r	r	r	k	-	-	A24
	J20ER N12-2-5	20	48	0,2	0,5	12	r	r	r	k	-	-	A25
V= 53°	J11ER/L V2-1	11	53	0,1	0	2	b	b	b	k	-	-	A6
	J11ER/L V12-2	11	53	0,2	0	12	b	b	b	k	-	-	A7
	J15ER/L V2-1	15	53	0,1	0	2	b	b	b	k	-	-	A6
	J15ER/L V2-0-2	15	53	0	0,2	2	a	a	a	k	-	-	A6
	J15ER/L V12-2	15	53	0,2	0	12	b	b	b	b	r	r	A7
	J15ER V12-4	15	53	0,4	0	12	r	b	r	r	r	r	A7

Extended Range

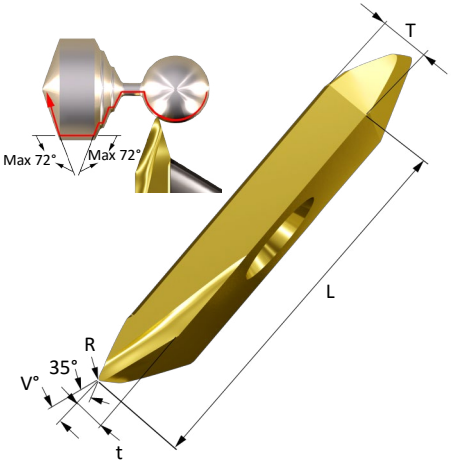
P - Line Inserts for Turning Sticky and Exotic Materials



All other variables are the same as each style of insert.

V°	Inserts	L	V°	R¹	R²	C	Cutting rake° Ax	Rad	8M	F8	Stock B8	NF8	ND8	Price group
3°	J15ER HP8-1	15	3	0,1	-	0	8	12	-	-	-	r	r	A5
	J15ER HP8-2	15	3	0,2	-	0	8	12	-	-	-	r	r	A5
	J15ER HP16-0	15	3	0	-	0	16	12	r	r	r	-	-	A4
	J15ER HP16-03	15	3	0,03	-	0	16	12	r	r	r	-	-	A5
	J15ER HP16-05	15	3	0,05	-	0	16	12	r	r	r	-	-	A5
	J15ER HP16-2	15	3	0,2	-	0	16	12	r	r	r	r	r	A5
12°	J15ER JP12-0	15	12	0	-	0	12	12	r	r	r	-	-	A4
	J15ER JP20-1	15	12	0,1	-	0	20	12	r	r	r	-	-	A5
	J20ER JP20-4	20	12	0,4	-	0	20	12	r	r	r	r	r	A24
33°	J15ER DP8-4	15	33	0,4	-	0	8	12	-	-	-	r	r	A6
	J15ER DP12-0	15	33	0,02	-	0	12	12	r	r	r	-	-	A6
	J15ER DP12-1	15	33	0,1	-	0	12	12	r	r	r	-	-	A6
	J15ER DP12-2	15	33	0,2	-	0	12	12	r	r	r	r	r	A6
48°	J15ER NP12-0-2	15	48	0	-	0,2	12	12	r	r	r	-	-	A7
	J15ER NP12-05-1	15	48	0,05	-	0,15	12	12	r	r	r	-	-	A8
	J15ER NP12-052	15	48	0,05	0,2	0	12	12	r	r	r	-	-	A8
	J15ER NP12-08	15	48	0,08	-	0	12	12	r	r	r	r	r	A8
	J15ER NP12-2	15	48	0,2	-	0	12	12	r	r	r	r	r	A8
	J15ER NP12-1-3	15	48	0,1	-	0,3	12	12	r	r	r	-	-	A8
53°	J15ER VP12-08	15	53	0,08	-	0	12	12	r	r	r	-	-	A8
	J15ER VP12-2	15	53	0,2	-	0	12	12	r	r	r	r	r	A8
72,5°	J15ER MP12-2	15	72,5	0,2	-	0	12	12	r	r	r	-	-	A8
	J15ER MP12-4	15	72,5	0,4	-	0	12	12	r	r	r	r	r	A8

Extended Range

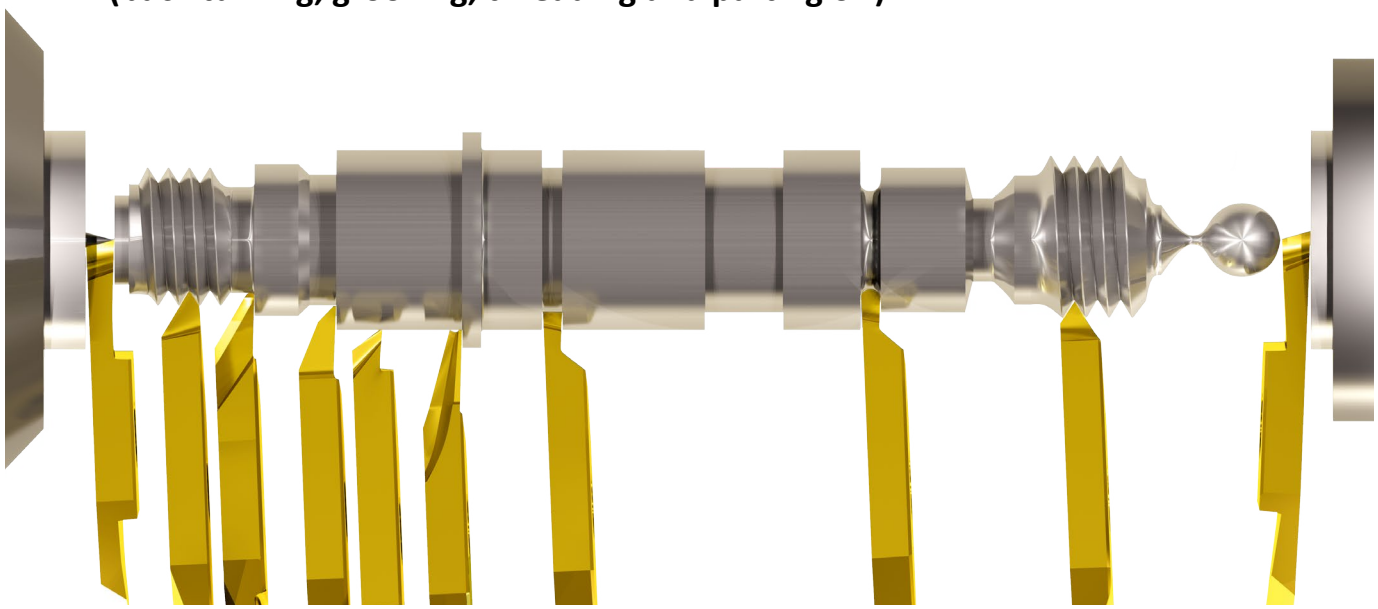


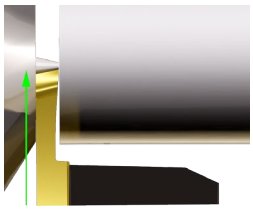
Style M | Inserts for Profile and Copy Turning

	Inserts	L	t	V°	R	Cutting rake°	8M	C8	F8	Stock B8	NF8	ND8	Price group
72,5°	J15ER M12-08	15	1,3	17,5	0,08	12	r	r	r	k	-	-	A7
	J15ER M12-2	15	1,3	17,5	0,2	12	r	r	r	k	r	r	A7

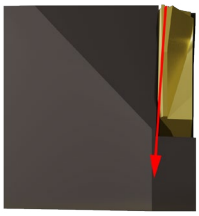
Radial Turning: K-type Inserts & Toolholders

(back turning, grooving, threading and parting off)





Turning direction



Resulting cutting force

The K-type inserts are used for back turning, threading, grooving and parting off. WhizCut has a wide range of inserts for these applications making it possible to always get the correct insert for the application.
The K-type insert is only slightly tilted in the toolholder to give enough clearance while maintaining maximum stability. The resulting cutting force is illustrated beside.

Toolholders

WhizCut has several different types of toolholders for parting off, both against the sub spindle and when the part is very small and needs to be grabbed by the sub spindle. WhizAdjust is a height adjustable toolholder for back working.

WSK15ER 1616K-2CA
WhizHip Page 18



WSK15ER 1212K-2B



WSK15ER 1212K-2P



WSK15EL 12Q6K-2P



WSK15ER 1224K-2C



Recommended Cutting Data K-Type Inserts

Material	Hardness HB	Feed rate mm/rev	Uncoated m/min	Coated m/min
Carbon steel	150	0,07-0,15	130-230	160-270
	250	0,05-0,12	100-190	120-220
	350	0,04-0,10	60-120	70-140
Alloy steel	200	0,05-0,12	90-160	110-190
	300	0,04-0,10	60-120	70-140
	400	0,03-0,08	40-80	50-100
Stainless steel	150	0,05-0,12	90-160	110-190
	250	0,04-0,10	60-120	70-140
	350	0,03-0,08	40-80	50-100

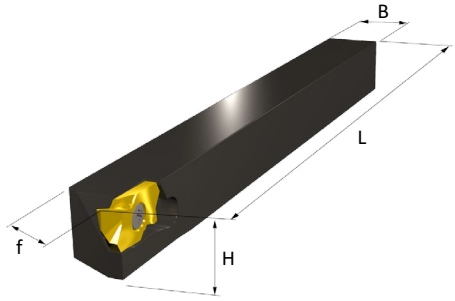
Material	Hardness HB	Feed rate mm/rev	Uncoated m/min	Coated m/min
High temp. alloys	200	0,03-0,09	30-90	40-110
	300	0,03-0,09	20-75	25-90
	400	0,03-0,09	15-50	20-65
Brass	<110	0,07-0,25	250-500	300-700
	>110	0,05-0,20	175-350	250-500
Copper	<100	0,07-0,25	200-400	250-500
	>100	0,05-0,20	140-280	175-350
Aluminium	<100	0,07-0,15	250-600	300-700
	>100	0,06-0,15	175-400	250-500



WhizFix Clamping

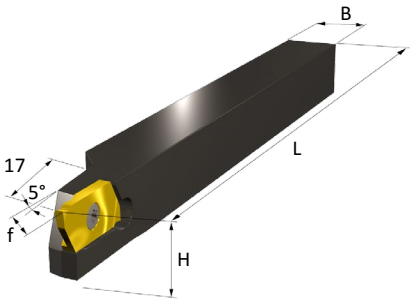
WPK | Toolholders with WhizFix Pin Type Clamping

Toolholder	H	B	L	f	Insert	Pin + Nut	Bit	Stock	Price group
WPK11ER/L 88K-2P	8	8	125	8	K11ER/L	Pin 8	K3	a	A62
WPK11ER/L 1010K-2P	10	10	125	10	K11ER/L	Pin 8	K3	a	A62
WPK15ER/L 1010K-2P	10	10	125	10	K15ER/L	Pin 12	J5	a	A62
WPK15ER 1212F-2P	12	12	85	12	K15ER	Pin 12	J5	r	A61
WPK15ER/L 1212K-2P	12	12	125	12	K15ER/L	Pin 12	J5	a	A62
WPK15ER 0500K-2P	1/2"	1/2"	125	1/2"	K15ER	Pin 12	J5	r	A62
WPK15ER/L 1616K-2P	16	16	125	16	K15ER/L	Pin 12	J5	a	A63
WPK20ER 1212K-2P	12	12	125	12	K20ER	Pin 16	K3	r	A62
WPK20ER 1205K-2P	12	1/2"	125	12	K20ER	Pin 16	K3	r	A62
WPK20ER 1616K-2P	16	16	125	16	K20ER	Pin 16	K3	r	A63
WPK20ER 2020K-2P	20	20	125	20	K20ER	Pin 16	K3	r	A64



WSK | Toolholders with Conventional Clamping

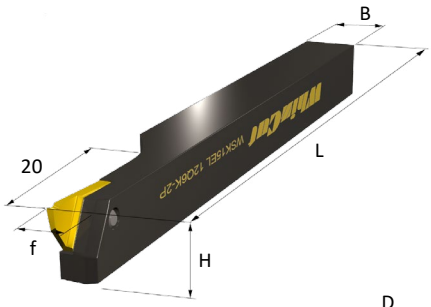
Toolholder	H	B	L	f	Insert	Screw	Key	Stock	Price group
WSK11ER/L 88K-2P	8	8	125	8	K11ER/L	M2,5x6	J2	a	A52
WSK15ER/L 1010K-2P	10	10	125	10	K15ER/L	M3x7	J3IP	a	A52
WSK15ER/L 1212K-2P	12	12	125	12	K15ER/L	M3x7	J3IP	a	A52
WSK15ER/L 0500K-2P	1/2"	1/2"	125	1/2"	K15ER/L	M3x7	J3IP	a	A52
WSK15ER/L 1616K-2P	16	16	125	16	K15ER/L	M3x7	J3IP	a	A53
WSK15ER 2020K-2P	20	20	125	20	K15ER	M3x7	J3IP	a	A54
WSK15ER 2525M-2P	25	25	150	25	K15ER	M3x7	J3IP	a	A55
WSK15ER 1000M-2P	1"	1"	150	1"	K15ER	M3x7	J3IP	a	A55
WSK20ER 1212K-2P	12	12	125	12	K20ER	M4x9	J4	r	A52
WSK20ER 1205K-2P	12	1/2"	125	12	K20ER	M4x9	J4	r	A52
WSK20ER 1616K-2P	16	16	125	16	K20ER	M4x9	J4	r	A53
WSK20ER 2020K-2P	20	20	125	20	K20ER	M4x9	J4	r	A54
WSK20ER 2525M-2P	25	25	150	25	K20ER	M4x9	J4	r	A55
WSK20ER 1000M-2P	1"	1"	150	1"	K20ER	M4x9	J4	r	A55



WSK | Toolholders for Small Parts

Toolholder	H	B	L	f	Insert	Screw	Key	Stock	Price group
WSK15ER 1010K-2B	10	10	125	5	K15ER	M3x5	J3IP	r	A52
WSK15ER 1212K-2B	12	12	125	6	K15ER	M3x5	J3IP	r	A52

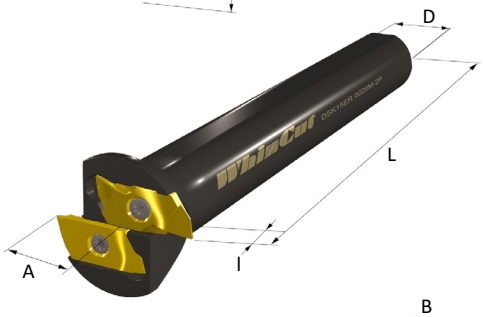




WSK | Left hand Toolholder with Insert in Center

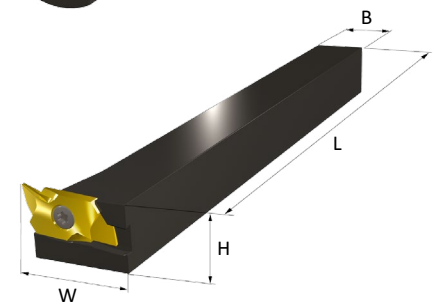
Toolholder	H	B	L	f	Insert	Screw	Key	Stock	Price group
WSK15EL 12Q6K-2P	12	12	125	6	K15EL	M3x5	J3IP	l	A52





DSK | Double Inserts Toolholders Round Shank

Toolholder	D	A	L	l	Insert	Screw	Key	Stock	Price Group
DSK15ER 0016M-2P	16	14	150	8	K15ER	M3x7	J3IP	r	A76
DSK15ER 0020M-2P	20	14	150	5	K15ER	M3x7	J3IP	r	A77



ZSK | Square Shank Toolholders

Toolholder	H	B	L	W	Insert	Screw	Key	Stock	Price Group
ZSK15ER 1212K-2P	12	12	125	20	K15ER	M3x7	J3IP	r	A72
ZSK15ER 1616K-2P	16	16	125	24	K15ER	M3x7	J3IP	r	A73

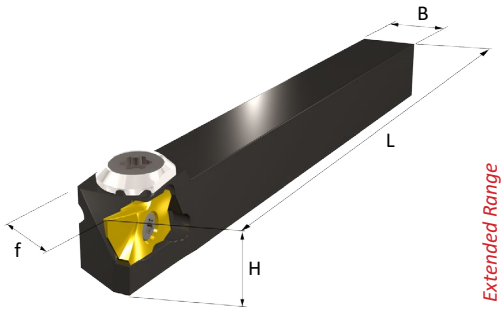


WhizFix Clamping

WPK | WhizHip Pin type Toolholders for High Pressure Coolant

Toolholder	H	B	L	f	Insert	Plug	Pin + Nut	Bit	Stock	Price Group
WPK15ER 1010H-2C	10	10	100	10	K15ER	M8x1	Pin12	J5	r	A82
WPK15ER 1010K-2C	10	10	125	10	K15ER	M8x1	Pin12	J5	r	A82
WPK15ER 1212K-2C	12	12	125	12	K15ER	1/8 NPT	Pin12	J5	r	A82
WPK15ER 0500K-2C	1/2"	1/2"	125	1/2"	K15ER	1/8 NPT	Pin12	J5	r	A82
WPK15ER 1616K-2C	16	16	125	16	K15ER	1/8 NPT	Pin12	J5	r	A83

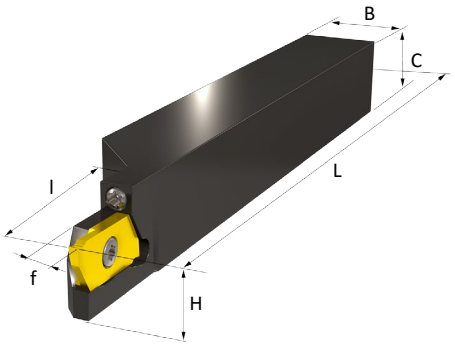
For more info on WhizHip See page 11



WSK | WhizHip Toolholders for High Pressure Coolant

Toolholder	H	B	L	f	Insert	Plug	Screw	Key	Stock	Price Group
WSK15ER/L 1010H-2C	10	10	100	10	K15ER	M8x1	M3x7	J3IP	b	A72
WSK15ER/L 1010K-2C	10	10	125	10	K15ER	M8x1	M3x7	J3IP	b	A72
WSK15ER/L 1212K-2C	12	12	125	12	K15ER	1/8 NPT	M3x7	J3IP	b	A72
WSK15ER/L 0500K-2C	1/2"	1/2"	125	1/2"	K15ER	1/8 NPT	M3x7	J3IP	b	A72
WSK15ER/L 1616K-2C	16	16	125	16	K15ER	1/8 NPT	M3x7	J3IP	b	A73
WSK20ER 1216K-2P	12	16	125	16	K20ER	1/8 NPT	M4x9	J4	r	A52
WSK20ER 0516K-2P	1/2"	16	125	16	K20ER	1/8 NPT	M4x9	J4	r	A52
WSK20ER 1616K-2P	16	16	125	16	K20ER	1/8 NPT	M4x9	J4	r	A53
WSK20ER 2020K-2P	20	20	125	20	K20ER	1/8 NPT	M4x9	J4	r	A54
WSK20ER 2525M-2P	25	25	150	25	K20ER	1/8 NPT	M4x9	J4	r	A55
WSK20ER 1000M-2P	1"	1"	150	1"	K20ER	1/8 NPT	M4x9	J4	r	A55

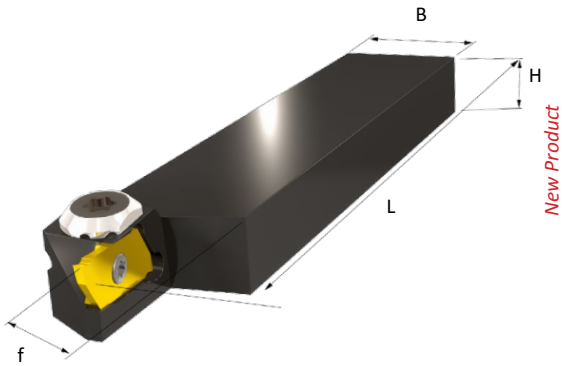
Extended Range



WSK | WhizHip Toolholders for Parting off Small Parts

Toolholder	C	B	H	L	l	f	Insert	Plug	Screw	Key	Stock	Price Group
WSK15ER 1010H-2CA	10	10	10	100	18	5	K15ER	M8	M3x5	J3IP	r	A72
WSK15ER 1010K-2CA	10	10	10	125	18	5	K15ER	M8	M3x5	J3IP	r	A72
WSK15ER 1212K-2CA	12	12	12	125	18	5	K15ER	1/8 NPT	M3x5	J3IP	r	A72
WSK15ER 0500K-2CA	1/2"	1/2"	1/2"	125	18	5	K15ER	1/8 NPT	M3x5	J3IP	r	A72
WSK15ER 1616K-2CA	16	16	12	125	25,4	5	K15ER	1/8 NPT	M3x5	J3IP	r	A73



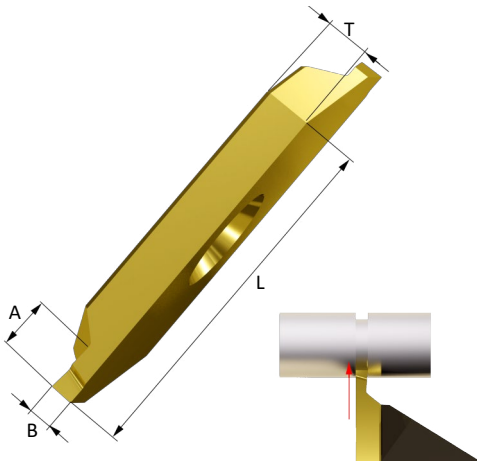


WSK | Shifted WhizHip Toolholders

Toolholder	H	B	L	f	Insert	Plug	Screw	Key	Stock	Price Group
WSK15ER 1020H-2C	10	20	100	10	K15ER	M8x1	M3x7	J3IP	b	A72
WSK15ER 1224K-2C	12	24	125	10	K15ER	M8x1	M3x7	J3IP	b	A72
WSK15ER 0510K-2C	1/2"	1"	125	1/2"	K15ER	1/8 NPT	M3x7	J3IP	b	A72
WSK15ER 1632K-2C	16	32	125	16	K15ER	1/8 NPT	M3x7	J3IP	b	A72

New Product

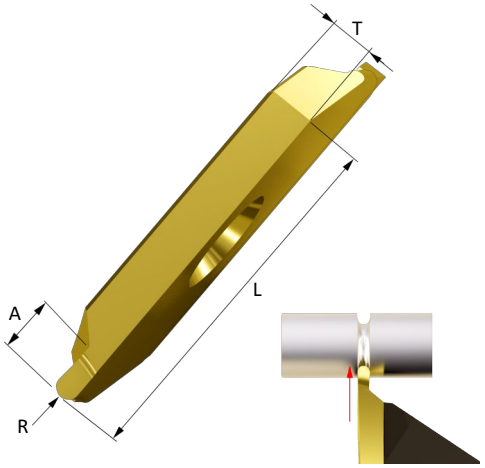




Style G | Inserts for Grooving

Inserts	B	Max A	Circlip Size	Stock 8M	Stock C8	Stock F8	Stock B8	Price group
K11ER G0,5	0,5	1	0,4	r	r	r	k	A4
K11ER G0,8	0,8	1,6	0,7	r	r	r	k	A4
K11ER G1,0	1	2	0,9	r	r	r	k	A4
K15ER G0,1	0,1	0,2		r	r	r	k	A6
K15ER G0,2	0,2	0,4		r	r	r	k	A5
K15ER G0,25	0,25	0,5		r	r	r	k	A5
K15ER G0,3	0,3	0,6		r	r	r	k	A4
K15ER G0,4	0,4	0,8		r	r	r	k	A4
K15ER/L G0,5	0,5	1	0,4	b	b	r	r	A4
K15ER G0,6	0,6	1,2	0,5	r	r	r	k	A4
K15ER G0,7	0,7	1,4	0,6	r	r	r	k	A4
K15ER G0,75	0,75	1,5		r	r	r	k	A4
K15ER/L G0,8	0,8	1,6	0,7	b	b	r	r	A4
K15ER G0,9	0,9	2		r	r	r	r	A4
K15ER G0,95	0,95	2,1		r	r	r	r	A4
K15ER/L G1,0	1	2	0,9	b	b	r	r	A4
K15ER/L G1,15	1,15	2,3	1	b	b	r	r	A4
K15ER G1,2	1,2	2,4		b	b	r	r	A4
K15ER G1,35	1,35	2,7	1,2	r	r	r	r	A4
K15ER/L G1,5	1,5	3		b	b	r	r	A4
K15ER G1,65	1,65	3,3	1,5	r	r	r	r	A4
K15ER G1,90	1,9	3,8	1,75	r	r	r	r	A4
K15ER G2,05	2,05	4,1		r	r	r	r	A4
K20ER G2,0	2	4		r	r	r	k	A24
K20ER G2,5	2,5	5		r	r	r	k	A24
K20ER G3,0	3	6		r	r	r	k	A24

Extended Range



All angles are shown when mounted in toolholder

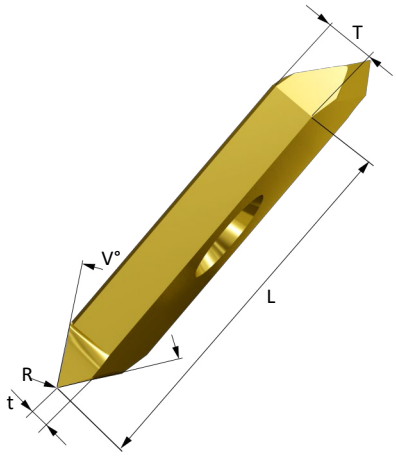
Style GR | Inserts for Radius Grooving

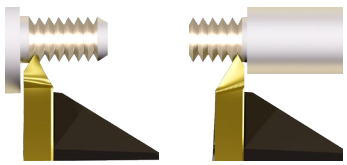
Inserts	R	A	L	T	Stock 8M	Stock C8	Stock F8	Stock B8	Price group
K15ER GR0,25	0,25	1	15	2,1	r	r	r	k	A7
K15ER GR0,5	0,5	2	15	2,1	r	r	r	k	A7
K15ER GR0,75	0,75	3	15	2,1	r	r	r	k	A7
K15ER GR1,0	1	4	15	2,1	r	r	r	k	A7
K20ER GR1,25	1,25	5	20	3,5	r	r	r	k	A27
K20ER GR1,5	1,5	6	20	3,5	r	r	r	k	A27
K20ER GR1,75	1,75	7	20	3,5	r	r	r	k	A27

Stock status:

a ER Stock standard, EL Stock standard
b ER Stock standard, EL Against inquiry
c EL Stock standard, ER Against inquiry
r ER Stock standard only
l EL Stock standard only
k ER Against inquiry, EL Against inquiry

L	T
11	2,5
15	2,1
20	3,5





T - Normal threading

TS - Threading from a shoulder

Style T | Inserts for Partial Profile Threading

Inserts	L	V°	t	R	Stock 8M	Stock C8	Stock F8	Stock B8	Price group
K11ER/L T60-5	11	60	0,5	0,03	a	a	b	k	A4
K15ER/L T55-5	15	55	0,5	0,03	b	b	b	k	A5
K15ER/L T60-5	15	60	0,5	0,02	a	a	b	k	A4
K15ER/L T60-8	15	60	0,8	0,05	a	a	b	k	A4
K15ER TS60-16	15	60	1,6	0,03	b	b	b	k	A5
K20ER T60-10	20	60	1	0,1	r	r	r	k	A25
K20ER T60-15	20	60	1,5	0,2	r	r	r	k	A25
K20ER TS60-25	20	60	2,5	0,1	r	r	r	k	A25

Right hand insert shown. See page 30 for the WhizThread full line of threading inserts.

Back Turning - Exceptional Results in All Materials

WhizCut Backturning inserts have during the past years helped our customers to achieve results that is not possible with any other tools in the market.



WhizCut B Style Back Turning Insert

- Gives better roundness on the component
- Keeps the size longer without adjustment
- Controls chips by moving them away from the work piece
- Curls the chip before it hits the finished face
- Small distance from the side to end of wiper which makes final diameter
- Very suitable for small diameters
- Available in a wide range of unique geometries
- A narrow parting off insert can be used when clearing up unwanted end material

Selecting the Best Back Turning Insert

Style C

Style C is used when there is an undercut required.

Style B

Style B is for general use in back turning applications in stainless steel and other hard and long-chipping materials where good chip control is needed.

Style BP

Style BP is used for sticky materials when there is a chance of an edge build up that can spoil the surface finish or reduce tool-life.

Style BT

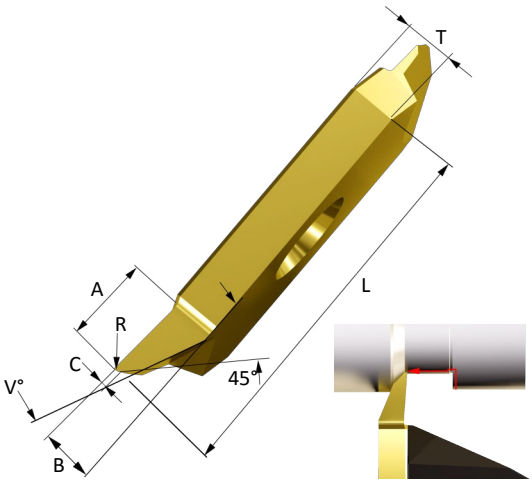
Style BT inserts has a chamfer on the leading corner that improves the tool-life in harder materials. This insert is suitable when the wear on the style B insert is found in an early stage.

Style VLR

Style VLR is used for back turning when a smooth surface is needed when profiling. It is for example excellent to go in behind the head of a bone screw with.

Style E

Style E is used for fine turning, using high cutting speed and low feed rate. This insert will give the best possible surface finish. By protecting the small radius with the larger radius the tool life is extended compared with conventional full radius inserts.



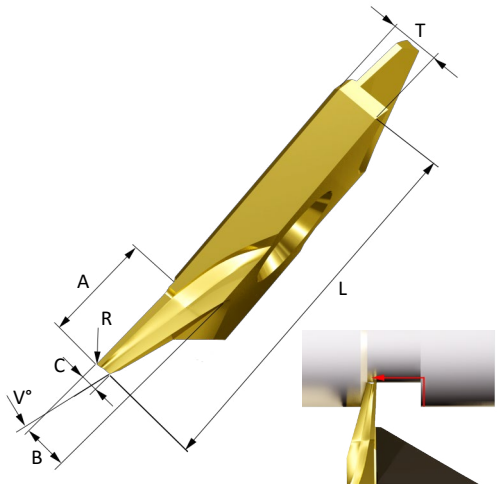
Style C | Inserts for Back Turning when there is a Undercut Required

Inserts	A	B	C	R	V°	Cutting rake°	8M	C8	F8	B8	Price group
K11ER C0-1-0	1,3	1	0,2	0	30	0	r	r	r	k	A6
K15ER/L C0-3-0	3	1,9	0,2	0	20	0	a	a	b	k	A7

Stock status:

a ER Stock standard, EL Stock standard
b ER Stock standard, EL Against inquiry
c EL Stock standard, ER Against inquiry
r ER Stock standard only
l EL Stock standard only
k ER Against inquiry, EL Against inquiry

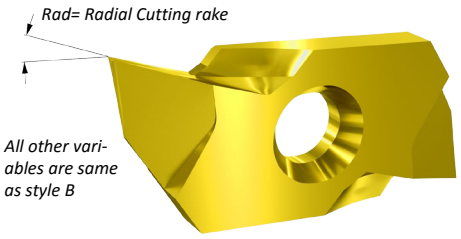
L	T
11	2,5
15	2,1
20	3,5



Style B | Inserts for Back Turning in Steel and Other Hard and Long-Chipping Materials

Inserts	A	B	C	R	V°	Cutting rake°	8M	C8	F8	B8	NF8	ND8	Price group
K11ER/L B12-2-0	2	1	0,4	0	15	12	a	a	b	b	-	-	A8
K11ER B12-2-05	2	1	0,4	0,05	15	12	r	r	r	r	-	-	A9
K11ER/L B12-3-0	3,5	1,5	0,6	0	15	12	a	a	b	b	-	-	A8
K15ER/L B12-2-0	2,5	1,3	0,5	0	15	12	a	a	b	b	-	-	A8
K15ER/L B12-4-0	4	1,9	0,7	0	15	12	a	a	b	b	r	r	A8
K15ER/L B12-4-05	4	1,9	0,7	0,05	15	12	a	a	b	b	-	-	A9
K15ER/L B12-4-1	4	1,9	0,7	0,1	15	12	a	a	b	b	r	r	A9
K15ER/L B12-4-2	4	1,9	0,7	0,2	15	12	a	a	b	b	r	r	A9
K20ER B12-7-0	7	3,2	1,3	0	15	12	r	r	r	k	-	-	A28
K20ER B12-7-2	7	3,2	1,3	0,2	15	12	r	r	r	k	r	r	A29

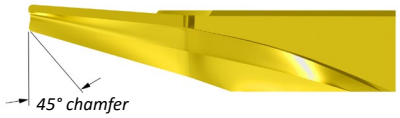
Right hand insert shown.



Style BP | Inserts for Back Turning in Sticky Materials

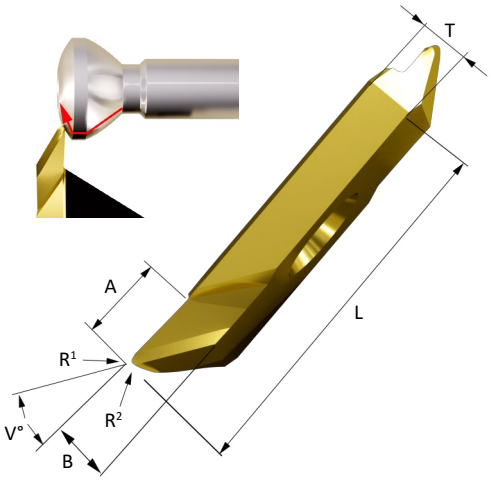
Extended Range

Inserts	A	B	C	R	V°	Cutting rake° Ax	Rad	8M	F8	B8	NF8	ND8	Price group
K15ER BP12-2-0	2,5	1,3	0,5	0	20	12	14	r	r	r	-	-	A8
K15ER BP12-2-03	2,5	1,3	0,5	0,03	20	12	14	r	r	r	-	-	A9
K15ER BP12-2-05	2,5	1,3	0,5	0,05	20	12	14	r	r	r	-	-	A9
K15ER BP12-4-0	4	1,9	0,7	0	20	12	14	r	r	r	-	-	A8
K15ER BP12-4-1	4	1,9	0,7	0,1	20	12	14	r	r	r	r	r	A9
K15ER BP12-4-2	4	1,9	0,7	0,2	20	12	14	r	r	r	r	r	A9



Style BT | Inserts for Back Turning in Tough Materials for Longer Tool Life

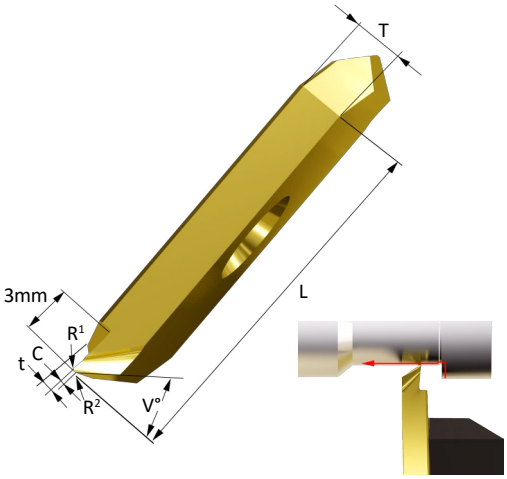
Inserts	A	B	C	R	V°	Cutting rake°	8M	C8	F8	B8	NF8	ND8	Price group
K15ER BT12-4-2	4	1,9	0,7	0,2	15	12	r	r	r	r	r	r	A9
K20ER BT12-7-2	7	3,2	1,3	0,2	15	12	r	r	r	r	r	r	A29



Style VLR | Inserts for Back Turning Profiles

Extended Range

Inserts	A	B	R¹	R²	V°	Cutting rake°	8M	C8	F8	Stock B8	NF8	NB8	Price group
K15ER VLR12-12	3	1,9	0,1	0,2	35	20	r	r	r	r	-	-	A7
K15ER VLR12-2	3	1,9	0,2	0,2	35	20	r	r	r	r	-	-	A7
K15ER VLR8-2	3	1,9	0,2	0,2	42	8	-	-	-	-	r	r	A7



Style E | Inserts for an Extra Finishing Cut; Back turning

Extended Range

Inserts	Max cut	C	t	R¹	R²	V°	Cutting rake°	8M	F8	B8	Price group
K15ER E16-0-0	0,8	0	0,6	0,05	0,15	30	16	r	r	r	A8
K15ER E16-12	0,8	0	0,6	0,1	0,2	30	16	r	r	r	A8
K15ER E16-1-0	1	0,12	0,6	0,1	0	45	16	r	r	r	A8

Parting Off - Selecting the Best Insert

1. Axial Relief vs Component Possibilities

- Style P: 0° gives the strongest tool. Suitable with use of sub spindle. Style PS can be used for extra stability.
- Style Y: 6° gives a strong tool but can leave a small chamfer if a sub spindle is not used.
- Style Z: 15° is an all-round parting off insert. It can be used without a sub spindle.
- Style S, U: 20-30° is a less strong tool suitable for small parts where a fine surface finish is needed.

2. Cutting Rake vs Material

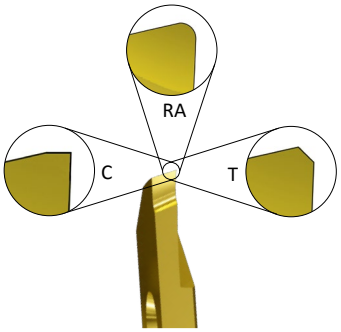
- 0° for short-chipping materials
- 12° for long-chipping materials
- 20° for sticky long-chipping materials

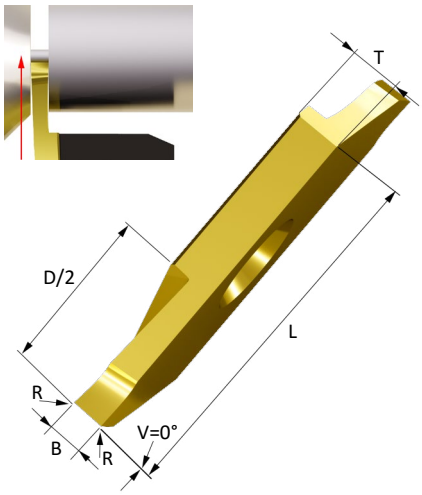
3. Machining Against the Sub Spindle

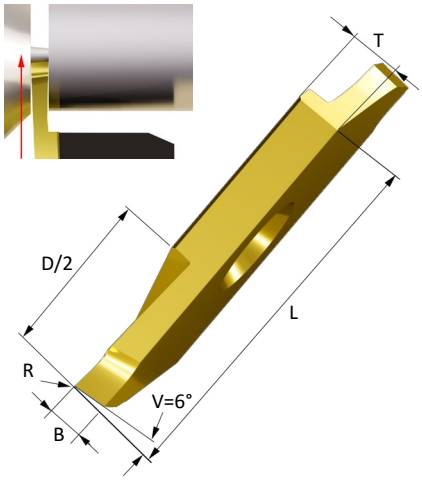
Recommended inserts are YR, ZR and SR. For maximum stability of the part use the special toolholder WSK15EL 12Q6K-2P.

4. Special Corner Alternatives for Parting Off Inserts

Parting off applications sometimes demand a different kind of corner execution on the parting off insert. WhizCut can arrange any type of corner execution. Contact your local distributor who will assist you in finding the type that best suits your needs.







Style P, PS | Inserts for Parting Off

	Inserts	B	Max D	Rx2	Cutting rake°	8M	C8	Stock F8	Stock B8	NF8	ND8	Price group
Extended Range V= 0°	K11ER P0,5-12	0,5	4	0	12	b	b	b	r	-	-	A5
	K11ER/L P0,8-12	0,8	7	0	12	b	b	b	r	-	-	A5
	K11ER/L P1,0-12	1	9	0	12	b	b	b	r	-	-	A5
	K11ER/L P1,5-12	1,5	11	0	12	b	b	b	r	-	-	A5
	K15ER PS0,5-12	0,5	3	0	12	r	k	r	r	-	-	A4
	K15ER/L P0,7-12	0,7	5	0	12	b	a	b	r	-	-	A5
	K15ER/L P1,0-12	1	10	0	12	a	a	b	r	r	r	A5
	K15ER/L P1,0-12-R05	1	10	0,05	12	a	k	a	a	a	a	A6
	K15ER PS1,0-12	1	6	0	12	r	k	r	r	-	-	A5
	K15ER P1,0-20	1	10	0	20	b	k	b	r	r	r	A5
	K15ER/L P1,2-12	1,2	12	0	12	a	a	b	r	-	-	A5
	K15ER/L P1,5-12	1,5	12	0	12	a	a	b	r	r	r	A5
	K15ER/L P1,5-12-R05	1,5	12	0,05	12	a	k	a	a	a	a	A6
	K15ER PS1,5-12	1,5	9	0	12	r	b	a	r	-	-	A4
	K15ER/L P1,5-20	1,5	12	0	20	b	k	r	r	r	r	A4
	K15ER/L P2,0-12	2	12	0	12	a	a	b	r	-	-	A4
	K20ER P1,5-12	1,5	16	0	12	r	r	r	r	k	k	A25
	K20ER P2,0-12	2	20	0	12	r	r	r	r	k	k	A25
	K20ER P2,5-12	2,5	20	0	12	r	r	r	r	k	k	A25
	K20ER P3,0-12	3	20	0	12	r	r	r	r	k	k	A25

Style Y | Inserts for Parting Off

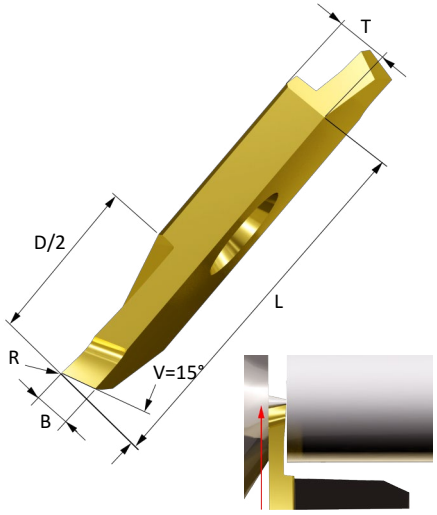
	Inserts	B	Max D	R	Cutting rake°	8M	C8	Stock F8	Stock B8	NF8	ND8	Price group
Extended Range V= 0°	K11ER/L Y1,0-12	1	9	0	12	b	b	b	k			A6
	K11ER/L Y1,5-12	1,5	11	0	12	b	b	b	k			A5
	K15ER/L Y1,0-12	1	10	0	12	a	a	b	k	r	r	A6
	K15ER Y1,0-12-R05	1	10	0,05	12	k	k	k	k	r	r	A7
	K15ER/L Y1,2-12	1,2	12	0	12	b	b	b	k			A5
	K15ER/L Y1,5-12	1,5	12	0	12	a	a	b	k			A5
	K15ER Y1,5-12-R05	1,5	12	0,05	12	k	k	k	k	r	r	A6
	K15ER/L Y2,0-12	2	12	0	12	a	a	b	k			A5
	K15ER Y2,0-12	2	12	0	12	k	k	k	k	k	k	A6
	K20ER Y2,0-12	2	20	0	12	r	r	r	k	k	k	A26
	K20ER Y2,5-12	2,5	20	0	12	r	r	r	k	k	k	A26

Stock status:

a ER Stock standard, EL Stock standard
b ER Stock standard, EL Against inquiry
c EL Stock standard, ER Against inquiry
r ER Stock standard only
l EL Stock standard only
k ER Against inquiry, EL Against inquiry

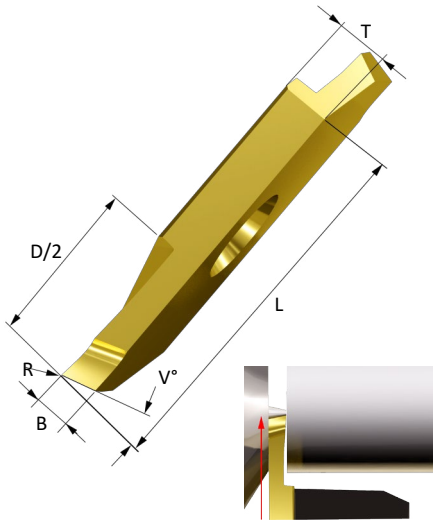
L	T
11	2,5
15	2,1
20	3,5

Style Z | Inserts for Parting Off



	Inserts	B	Max D	R	Cutting rake°	Stock 8M	C8	F8	B8	NF8	ND8	Price group
Extended Range V= 15°	K11ER/L Z0,5-12	0,5	4	0	12	r	k	r	r			A6
	K11ER/L Z1,0-0	1	9	0	0	a	a	b	k			A6
	K11ER/L Z1,0-12	1	9	0	12	a	a	b	k			A6
	K11ER/L Z1,5-0	1,5	11	0	0	a	a	b	k			A5
	K11ER/L Z1,5-12	1,5	11	0	12	a	a	b	k			A5
	K15ER/L Z0,5-12	0,5	5	0	12	b	b	b	r			A6
	K15ER/L Z0,7-0	0,7	5	0	0	b	b	b	k			A6
	K15ER/L Z0,7-12	0,7	5	0	12	b	b	b	k			A6
	K15ER/L Z1,0-0	1	10	0	0	a	a	b	r	r	r	A6
	K15ER Z1,0-0-R05	1	10	0,05	1	a	a	b	r	r	r	A7
	K15ER/L Z1,0-12	1	10	0	12	a	a	b	r			A6
	K15ER/L Z1,5-0	1,5	12	0	0	a	a	b	k			A5
	K15ER/L Z1,5-12	1,5	12	0	12	a	a	b	r	r	r	A5
	K15ER/L Z1,5-12D	1,5	12,6	0	12	a	a	b	k	r	r	A5
	K15ER Z1,5-12-R1	1,5	12	0	12	r	r	r	r	r	r	A6
	K15ER/L Z2,0-0	2	12	0	0	a	a	b	k			A5
	K15ER/L Z2,0-12	2	12	0	12	a	a	b	k			A5
	K20ER Z2,0-0	2	20	0	0	r	r	r	k			A26
	K20ER Z2,0-12	2	20	0	12	r	r	r	k			A26
	K20ER Z2,5-0	2,5	20	0	0	r	r	r	k			A26
	K20ER Z2,5-12	2,5	20	0	12	r	r	r	k			A26

Style S | Inserts for Parting Off

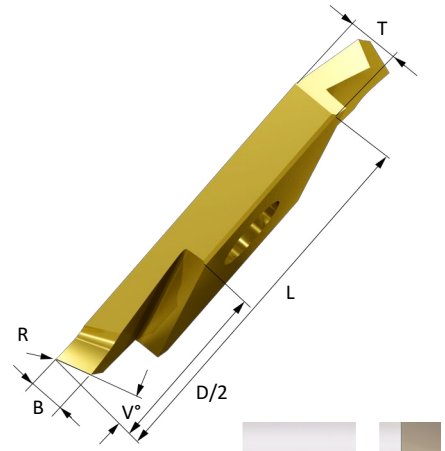


	Inserts	B	Max D	R	Cutting rake°	Stock 8M	C8	F8	B8	Price group
V= 20°	K15ER S1,0-0	1	6	0	0	b	b	b	r	A5
	K15ER S1,0-12	1	6	0	12	b	b	b	r	A6
	K15ER S1,5-0	1,5	9	0	0	b	b	b	r	A5
	K15ER S1,5-12	1,5	9	0	12	b	b	b	r	A6

Style U | Inserts for Parting Off

	Inserts	B	Max D	R	Cutting rake°	Stock 8M	C8	F8	B8	Price group
Extended Range V= 20°	K11ER/L U1,0-0	1	8	0	0	b	b	b	k	A6
	K15ER/L U1,0-0-R05	1	8	0,05	0	b	b	b	k	A6
	K15ER/L U1,5-0	1,5	12	0	0	b	b	b	k	A6
	K20ER U2,0-0	2	16	0	0	r	r	r	k	A26
	K20ER U2,5-0	2,5	20	0	0	r	r	r	k	A26

Style YR, ZR, SR | Inserts for Parting Off against the Sub Spindle etc.



All angles are shown when mounted in toolholder

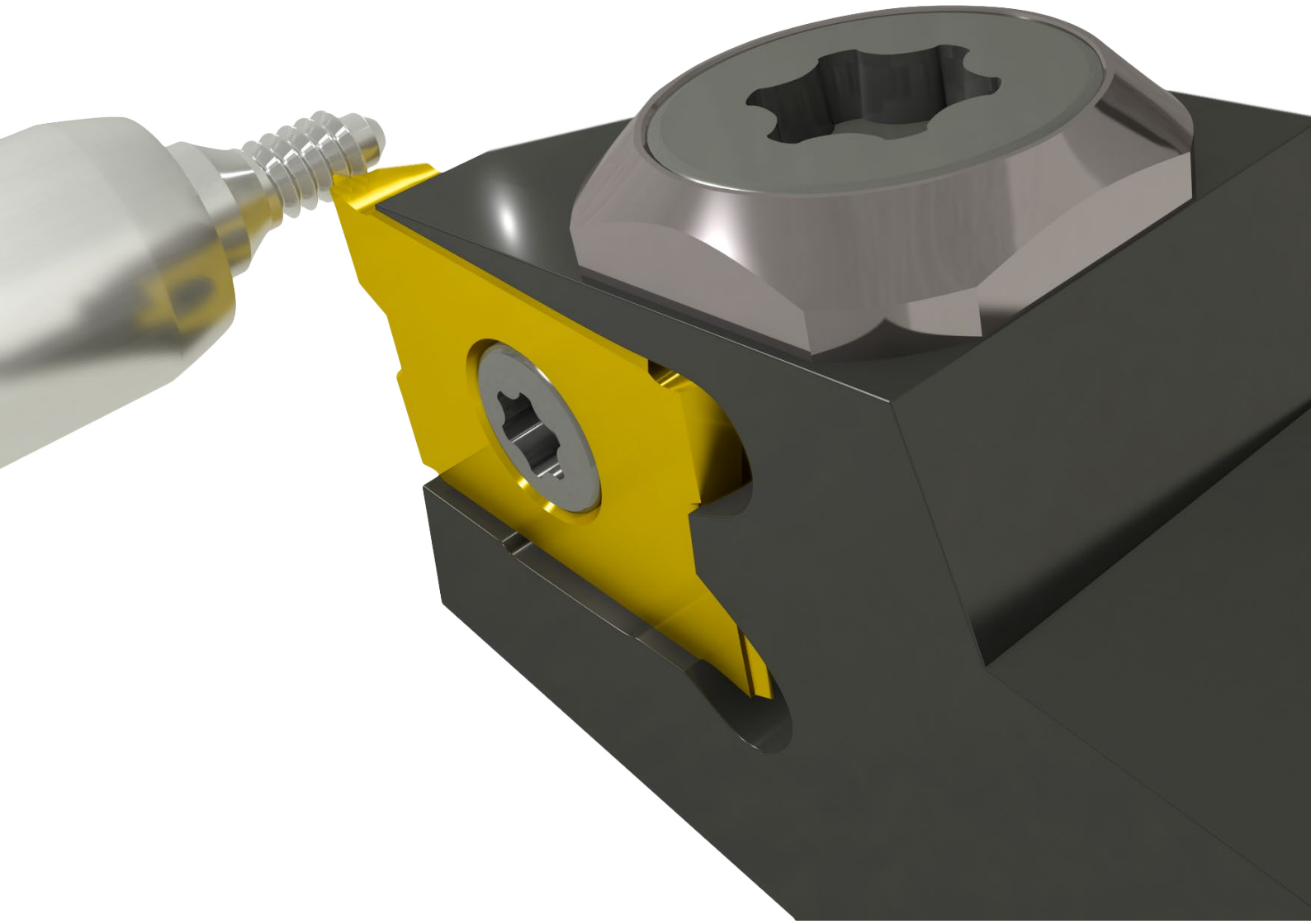
Style	Inserts	B	Max D	R	Cutting rake°	Stock 8M	C8	F8	B8	Price group
YR V = 6°	K15EL YR1,5-12	1,5	12	0	12	l	l	l	k	A6
	K15EL YR2,0-12	2	12	0	12	l	l	l	k	A6
Extended Range ZR V = 15°	K11EL ZR0,5-12	0,5	4	0	12	l	k	l	k	A6
	K11EL ZR1,0-0	1	9	0	0	l	l	l	k	A6
	K11EL ZR1,0-12	1	9	0	12	l	l	l	k	A6
	K11EL ZR1,5-0	1,5	11	0	0	l	l	l	k	A6
	K11EL ZR1,5-12	1,5	11	0	12	l	l	l	k	A6
	K15EL ZR1,0-0	1	10	0	0	l	l	l	k	A6
	K15EL ZR1,0-12	1	10	0	12	l	l	l	k	A6
	K15EL ZR1,0-12-R05	1	10	0,05	12	l	l	l	k	A7
	K15EL ZR1,5-0	1,5	12	0	0	l	l	l	k	A6
	K15EL ZR1,5-12	1,5	12	0	12	l	l	l	k	A6
	K15EL ZR1,5-12-R06	1,5	12	0,05	12	l	l	l	k	A7
	K15EL ZR2,0-0	2	12	0	0	l	l	l	k	A6
	K15EL ZR2,0-12	2	12	0	12	l	l	l	k	A6
SR Short V = 20°	K15EL SR1,0-0	1	5,5	0	0	l	k	l	l	A6
	K15EL SR1,0-12	1	5,5	0	12	l	k	l	l	A6
	K15EL SR1,5-0	1,5	8	0	0	l	k	l	k	A6
	K15EL SR1,5-12	1,5	8	0	12	l	k	l	k	A6

WhizThread

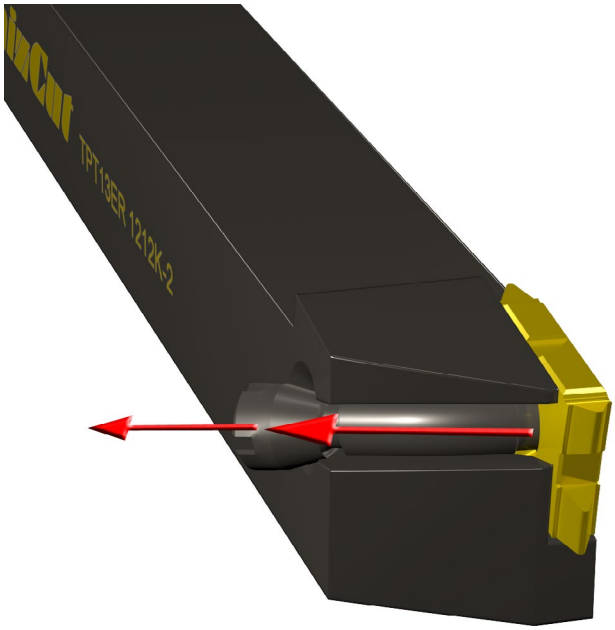
Full Profile Threading Inserts

As specialists of small part machining WhizCut has long been looking to improve the under performing lay down threading inserts with three cutting edges often used in Swiss type automatic lathes. The WhizCut solution, WhizThread uses a stand up insert design. This has enabled WhizThread to have four cutting edges with higher performance. For a truly outstanding performance WhizThread uses a new carbide grade which has great performance in the sizes and geometries mostly common in Swiss type automatic lathes.

The WhizThread tooling system is also combined with the world renowned WhizFix toolholder system which enables the operator to index the insert in the machine without taking out the toolholder.



WhizThread - Four Cutting Edges with Maximum Stability



The WhizThread inserts and toolholders are designed to give the insert the most stable position. The resulting clamping force is diagonally through the insert and toolholder. This forces the insert back into the toolholder's pocket and maximizes support. This unique system with its solid clamping will produce a better product and have longer tool life than any other tooling setup.



Every insert has 4 fully ground sharp cutting edges. The toolholders are available from 8 mm to 1 inch square shafts and are designed for Swiss Type Automatic Lathes.
Another advantage with the WhizThread insert is that the length from the side of the insert to the thread is minimized, making it possible to get very close to a shoulder

Geometry

All WhizThread inserts have 4 sharp, fully ground cutting edges. The inserts all have a positive cutting rake ensuring the best chip control possible when threading. The combination of a high positive cutting rake and a ground cutting edge makes the WhizThread inserts useful for most types of material and applications. All inserts are developed for maximum stability and performance.
The carbide allows the insert to have a very sharp, but still strong edge. This makes the inserts suitable for materials which are difficult to machine, such as Titanium and Super Alloys.
The combination of the best grades of carbide, the most suitable geometries and sharp cutting edges will ensure the best tooling possible for all threading applications.

Grades of Carbide

WhizCut Inserts are available in both PVD-coated and uncoated fine grain carbide with hardness over 1750 Hv.
The WhizCut carbide is an extremely hard grade with a high tensile strength. The carbide is therefore very wear resistant and drastically extends tool life compared with conventional carbide.

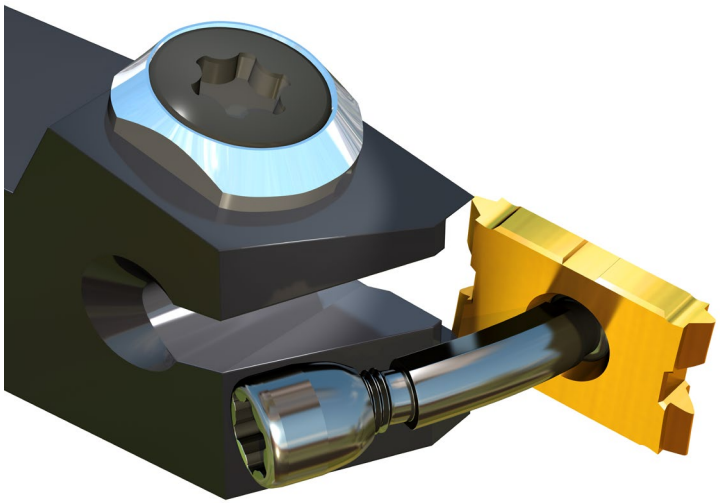
Stock Standard Grades

8M	Uncoated grade covering ISO groups K10-K20 and M10-M20.
C8	TiN coated grade covering ISO groups K05-K20, M05-M20 and P05-P10.
F8	TiAlN multi-coated grade suitable when extreme heat is developed during machining.
B8	AlCrN coated grade for materials such as titanium etc. where an extra edge sharpness is needed.

WhizFix Clamping

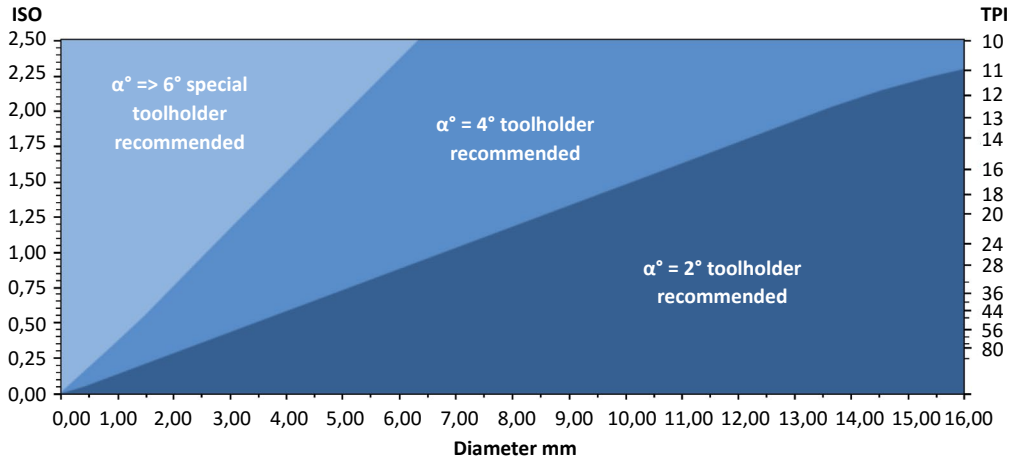
WhizThread toolholders are available with the best solution to all indexing problems in Swiss type automatics, the WhizFix clamping.

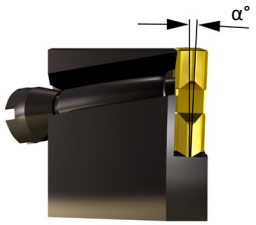
1. Indexing or changing an insert can be done in 15 seconds without removing the toolholder from the machine.
2. Indexing or changing an insert will not change the setting, resulting in a much faster return to full production.
3. There is no risk of damaging the new cutting edge.



Selecting the Toolholder with the Correct Cutting Angle

To achieve best performance when threading small parts it is important to choose the correct cutting angle of the toolholder. The WhizThread toolholders are available with a 2°, 4° and 6° cutting angle. The below table shows what toolholder to use depending on the pitch and diameter of the part. For a very high pitch to diameter ratio we recommend special toolholders.

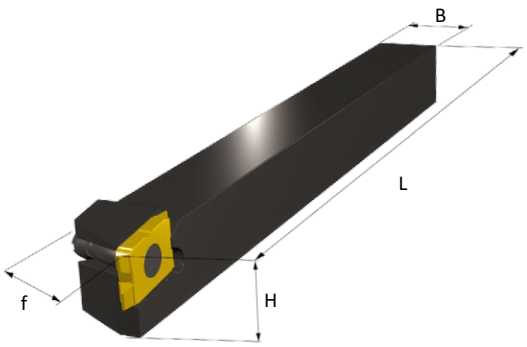




Recommended Cutting Data T-Type Inserts

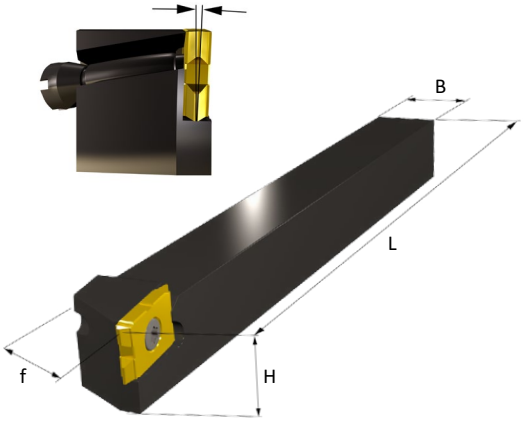
Material	Hardness HB	Feed rate mm/rev	Uncoated m/min	Coated m/min
Carbon steel	150	0,07-0,15	130-230	160-270
	250	0,05-0,12	100-190	120-220
	350	0,04-0,10	60-120	70-140
Alloy steel	200	0,05-0,12	90-160	110-190
	300	0,04-0,10	60-120	70-140
	400	0,03-0,08	40-80	50-100
Stainless steel	150	0,05-0,12	90-160	110-190
	250	0,04-0,10	60-120	70-140
	350	0,03-0,08	40-80	50-100

Material	Hardness HB	Feed rate mm/rev	Uncoated m/min	Coated m/min
High temp. alloys	200	0,03-0,09	30-90	40-110
	300	0,03-0,09	20-75	25-90
	400	0,03-0,09	15-50	20-65
Brass	<110	0,07-0,25	250-500	300-700
	>110	0,05-0,20	175-350	250-500
Copper	<100	0,07-0,25	200-400	250-500
	>100	0,05-0,20	140-280	175-350
Aluminium	<100	0,07-0,15	250-600	300-700
	>100	0,06-0,15	175-400	250-500



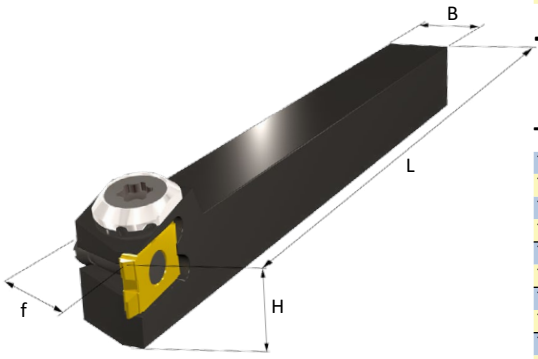
TPT | Toolholders with WhizFix Pin type Clamping

Toolholder	H	B	L	f	α	Insert	Pin + Nut	Bit	Stock	Price group
TPT13ER 1010K-2	10	10	125	10	2°	T13ER/EN	Pin 12	J5	r	A62
TPT13ER 1010K-4	10	10	125	10	4°	T13ER/EN	Pin 12	J5	r	A62
TPT13ER 0375K-2	3/8"	3/8"	125	3/8"	2°	T13ER/EN	Pin 12	J5	r	A62
TPT13ER 0375K-4	3/8"	3/8"	125	3/8"	4°	T13ER/EN	Pin 12	J5	r	A62
TPT13ER 1212K-2	12	12	125	12	2°	T13ER/EN	Pin 12	J5	r	A62
TPT13ER 1212K-4	12	12	125	12	4°	T13ER/EN	Pin 12	J5	r	A62
TPT13ER 0500K-2	1/2"	1/2"	125	1/2"	2°	T13ER/EN	Pin 12	J5	r	A62
TPT13ER 0500K-4	1/2"	1/2"	125	1/2"	4°	T13ER/EN	Pin 12	J5	r	A62
TPT13ER 1616K-2	16	16	125	16	2°	T13ER/EN	Pin 12	J5	r	A63
TPT13ER 1616K-4	16	16	125	16	4°	T13ER/EN	Pin 12	J5	r	A63



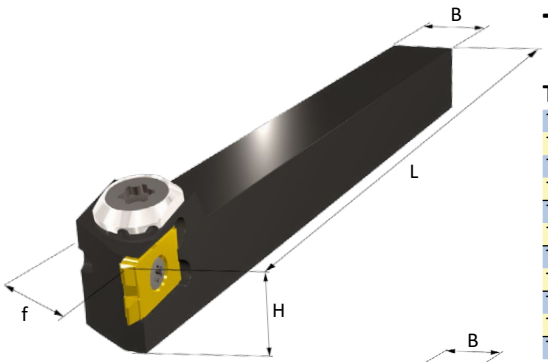
TST | Toolholders with Conventional Clamping

Toolholder	H	B	L	f	α	Insert	Screw	Key	Stock	Price group
TST13ER 88K-2	8	8	125	8	2°	T13ER/EN	M3x7	J3IP	r	A52
TST13ER 88K-4	8	8	125	8	4°	T13ER/EN	M3x7	J3IP	r	A52
TST13ER 1010K-2	10	10	125	10	2°	T13ER/EN	M3x7	J3IP	r	A52
TST13ER 1010K-4	10	10	125	10	4°	T13ER/EN	M3x7	J3IP	r	A52
TST13ER 1010K-6	10	10	125	10	6°	T13ER/EN	M3x7	J3IP	r	A52
TST13ER 0375K-2	3/8"	3/8"	125	3/8"	2°	T13ER/EN	M3x7	J3IP	r	A52
TST13ER 0375K-4	3/8"	3/8"	125	3/8"	4°	T13ER/EN	M3x7	J3IP	r	A52
TST13ER 1212K-2	12	12	125	12	2°	T13ER/EN	M3x7	J3IP	r	A52
TST13ER 1212K-4	12	12	125	12	4°	T13ER/EN	M3x7	J3IP	r	A52
TST13ER 0500K-2	1/2"	1/2"	125	1/2"	2°	T13ER/EN	M3x7	J3IP	r	A52
TST13ER 0500K-4	1/2"	1/2"	125	1/2"	4°	T13ER/EN	M3x7	J3IP	r	A52
TST13ER 1616K-2	16	16	125	16	2°	T13ER/EN	M3x7	J3IP	r	A53
TST13ER 1616K-4	16	16	125	16	4°	T13ER/EN	M3x7	J3IP	r	A53
TST13ER 0750K-2	3/4"	3/4"	125	3/4"	2°	T13ER/EN	M3x7	J3IP	r	A54
TST13ER 0750K-4	3/4"	3/4"	125	3/4"	4°	T13ER/EN	M3x7	J3IP	r	A54
TST13ER 2020K-2	20	20	125	20	2°	T13ER/EN	M3x7	J3IP	r	A54
TST13ER 2525M-2	25	25	150	25	2°	T13ER/EN	M3x7	J3IP	r	A55
TST13ER 1000M-2	1"	1"	150	1"	2°	T13ER/EN	M3x7	J3IP	r	A55



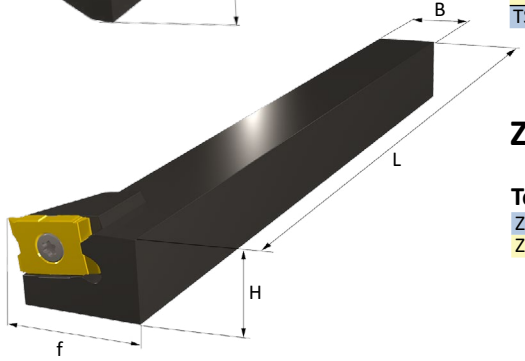
TPT | WhizHip Pin type Toolholders for High Pressure Coolant

Toolholder	H	B	L	f	α	Insert	Pin + Nut	Plug	Bit	Stock	Price group
TPT13ER 1010H-2C	10	10	100	10	2°	T13ER/EN	Pin12	M8x1	K3	r	A82
TPT13ER 1010K-2C	10	10	125	10	2°	T13ER/EN	Pin12	M8x1	K3	r	A82
TPT13ER 1010H-4C	10	10	100	10	4°	T13ER/EN	Pin12	M8x1	K3	r	A82
TPT13ER 1010K-4C	10	10	125	10	4°	T13ER/EN	Pin12	M8x1	K3	r	A82
TPT13ER 0375K-2C	3/8"	3/8"	125	3/8"	2°	T13ER/EN	Pin12	1/8 NPT	K3	r	A82
TPT13ER 0375K-4C	3/8"	3/8"	125	3/8"	4°	T13ER/EN	Pin12	1/8 NPT	K3	r	A82
TPT13ER 1212K-2C	12	12	125	12	2°	T13ER/EN	Pin12	1/8 NPT	K3	r	A82
TPT13ER 1212K-4C	12	12	125	12	4°	T13ER/EN	Pin12	1/8 NPT	K3	r	A82
TPT13ER 0500K-2C	1/2"	1/2"	125	1/2"	2°	T13ER/EN	Pin12	1/8 NPT	K3	r	A82
TPT13ER 0500K-4C	1/2"	1/2"	125	1/2"	4°	T13ER/EN	Pin12	1/8 NPT	K3	r	A82
TPT13ER 1616K-2C	16	16	125	16	2°	T13ER/EN	Pin12	1/8 NPT	K3	r	A83



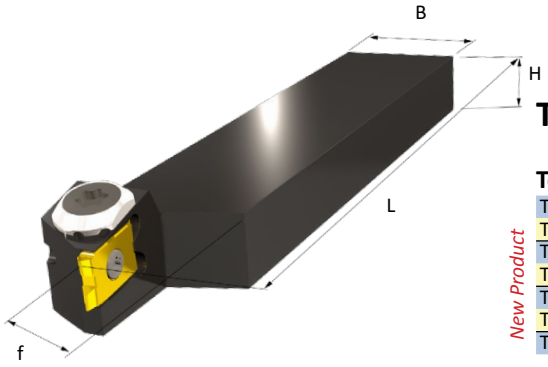
TST | WhizHip Toolholders for High Pressure Coolant

Toolholder	H	B	L	f	α	Insert	Screw	Plug	Key	Stock	Price group
TST13ER 1010H-2C	10	10	100	10	2°	T13ER/EN	M3x7	M8x1	J3	r	A72
TST13ER 1010K-2C	10	10	125	10	2°	T13ER/EN	M3x7	M8x1	J3	r	A72
TST13ER 1010H-4C	10	10	100	10	4°	T13ER/EN	M3x7	M8x1	J3	r	A72
TST13ER 1010K-4C	10	10	125	10	4°	T13ER/EN	M3x7	M8x1	J3	r	A72
TST13ER 0375K-2C	3/8"	3/8"	125	3/8"	2°	T13ER/EN	M3x7	1/8 NPT	J3	r	A72
TST13ER 0375K-4C	3/8"	3/8"	125	3/8"	4°	T13ER/EN	M3x7	1/8 NPT	J3	r	A72
TST13ER 1212K-2C	12	12	125	12	2°	T13ER/EN	M3x7	1/8 NPT	J3	r	A72
TST13ER 1212K-4C	12	12	125	12	4°	T13ER/EN	M3x7	1/8 NPT	J3	r	A72
TST13ER 0500K-2C	1/2"	1/2"	125	1/2"	2°	T13ER/EN	M3x7	1/8 NPT	J3	r	A72
TST13ER 0500K-4C	1/2"	1/2"	125	1/2"	4°	T13ER/EN	M3x7	1/8 NPT	J3	r	A72
TST13ER 1616K-2C	16	16	125	16	2°	T13ER/EN	M3x7	1/8 NPT	J3	r	A73



ZST | Square shank Toolholders

Toolholder	H	B	L	f	α	Insert	Screw	Key	Stock	Price group
ZST13ER 1212K-2	12	12	125	20	2°	T13ER/EN	M3x7	J3IP	r	A72
ZST13ER 1616K-2	16	16	125	24	2°	T13ER/EN	M3x7	J3P	r	A73



TST | Shifted WhizHip Toolholders

Toolholder	H	B	L	f	α	Insert	Screw	Plug	Key	Stock	Price group
TST13ER 1020K-2C	10	20	125	10	2°	T13ER/EN	M3x7	M8x1	J3IP	r	A72
TST13ER 1020K-4C	10	20	125	10	4°	T13ER/EN	M3x7	M8x1	J3P	r	A72
TST13ER 1224K-2C	12	24	125	12	2°	T13ER/EN	M3x7	1/8 NPT	J3IP	r	A72
TST13ER 1224K-4C	12	24	125	12	4°	T13ER/EN	M3x7	1/8 NPT	J3IP	r	A72
TST13ER 0510K-2C	1/2"	1"	125	1/2"	2°	T13ER/EN	M3x7	1/8 NPT	J3IP	r	A72
TST13ER 0510K-4C	1/2"	1"	125	1/2"	4°	T13ER/EN	M3x7	1/8 NPT	J3IP	r	A72
TST13ER 1632K-2C	16	16	125	16	2°	T13ER/EN	M3x7	1/8 NPT	J3IP	r	A73

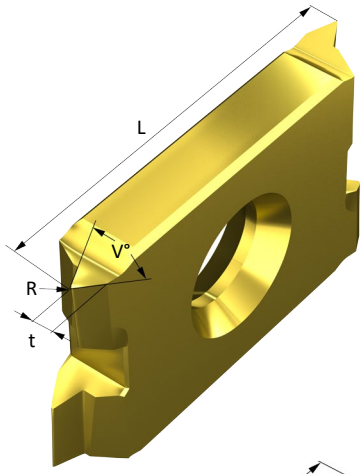
New Product





AST | Height Adjustable Toolholders for Back Working Sub Spindle Threading

Do you need to thread against the sub spindle? WhizCut has designed a Patent toolholder system that allows very quick and easy height adjustment with increased stability. Go to www.whizcut.com for more info or contact your local distributor.



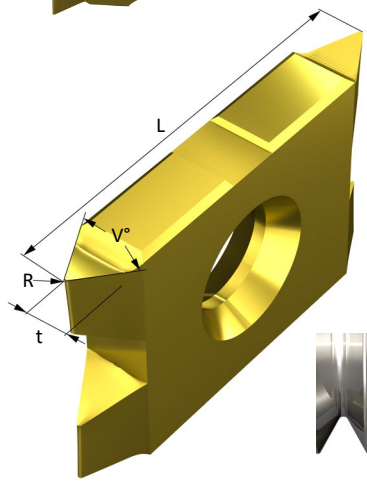
Style V | Inserts for Partial Profile Micro Threading

Inserts	L	V°	t	R	Stock 8M	Stock C8	Stock F8	Stock B8	Price group
T13ER V60-01-01	13	60	0,1	0,01	r	k	r	r	E3
T13ER V60-02-02	13	60	0,2	0,02	r	k	r	r	E3
T13ER V60-05-02	13	60	0,5	0,02	r	r	r	r	E2
T13ER V60-05-05	13	60	0,5	0,05	r	r	r	r	E2

Stock status:

a ER Stock standard, EL Stock standard
b ER Stock standard, EL Against inquiry
c EL Stock standard, ER Against inquiry
r ER Stock standard only
l EL Stock standard only
k ER Against inquiry, EL Against inquiry

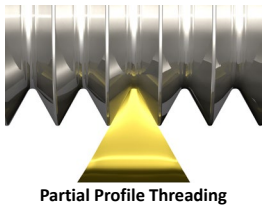
L	T
13	2,2



Style V | Inserts for Partial Profile Threading

Inserts	L	V°	t	R	Stock 8M	Stock C8	Stock F8	Stock B8	Price group
T13EN V55-11-10	13	55	1,1	0,1	r	r	r	r	E3
T13EN V60-11-05	13	60	1,1	0,05	r	r	r	r	E2
T13EN V60-11-10	13	60	1,1	0,1	r	r	r	r	E2
T13EN V80-11-14	13	80	1,1	0,14	r	r	r	r	E3
T13EN V90-11	13	90	1,1	C 0,10	r	r	r	r	E2

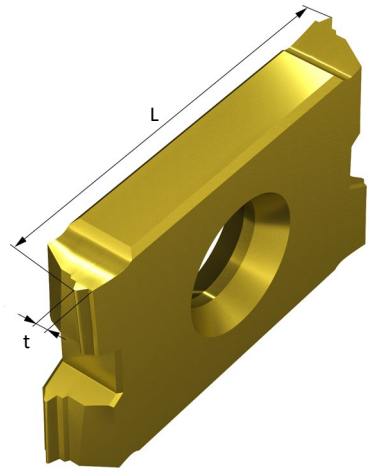
T13EN V90-11 has a 0,1mm flat instead of a radius



Partial Profile Threading

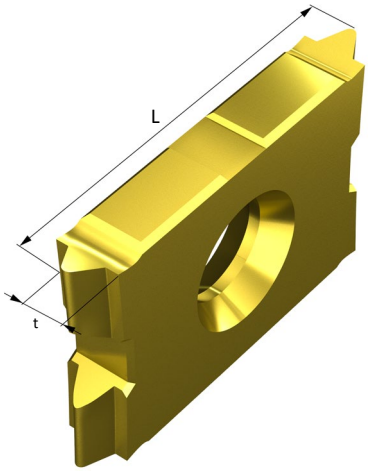
Small Thread Profiles (ER)

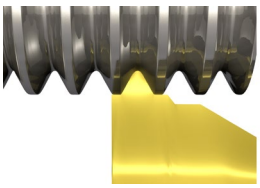
0,25-1,0 ISO and 80-24 UN



Larger Thread Profiles (EN)

≥1,25 ISO and ≥20 UN





Full Profile Threading

T-ISO| Inserts for Full Profile Threading

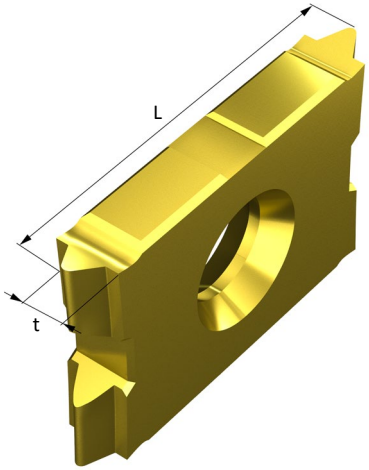
Pitch mm	Inserts	L	t	8M	Stock C8	Stock F8	Stock B8	Price group
0,25	T13ER 0,25ISO	13	0,2	r	-	r	r	E5
0,3	T13ER 0,3ISO	13	0,2	r	-	r	r	E5
0,35	T13ER 0,35ISO	13	0,25	r	-	r	r	E5
0,4	T13ER 0,4ISO	13	0,25	r	k	r	r	E4
0,45	T13ER 0,45ISO	13	0,3	r	k	r	r	E4
0,5	T13ER 0,5ISO	13	0,3	r	r	r	r	E3
0,6	T13ER 0,6ISO	13	0,35	r	k	k	r	E3
0,7	T13ER 0,7ISO	13	0,4	r	r	r	k	E3
0,75	T13ER 0,75ISO	13	0,4	r	r	r	k	E3
0,8	T13ER 0,8ISO	13	0,45	r	r	r	k	E3
1	T13ER 1,0ISO	13	0,55	r	r	r	k	E3
1,25	T13EN 1,25ISO	13	1,1	r	r	r	k	E2
1,5	T13EN 1,5ISO	13	1,1	r	r	r	k	E2
1,75	T13EN 1,75ISO	13	1,1	r	r	r	k	E2
2	T13EN 2,0ISO	13	1,1	r	r	r	k	E2

T-UN | Inserts for Full Profile Threading
(UNC, UNF, UNEF, UNS)

TPI	Inserts	L	t	8M	Stock C8	Stock F8	Stock B8	Price group
120	T13ER 120UN	13	0,15	r	-	r	r	E5
90	T13ER 90UN	13	0,2	r	-	r	r	E5
80	T13ER 80UN	13	0,2	r	k	r	r	E5
72	T13ER 72UN	13	0,25	r	k	r	r	E5
64	T13ER 64UN	13	0,25	r	k	r	r	E4
56	T13ER 56UN	13	0,3	r	k	r	r	E4
48	T13ER 48UN	13	0,35	r	k	r	r	E3
44	T13ER 44UN	13	0,35	r	r	r	k	E3
40	T13ER 40UN	13	0,4	r	r	r	k	E3
36	T13ER 36UN	13	0,4	r	r	r	k	E3
32	T13ER 32UN	13	0,45	r	r	r	k	E3
28	T13ER 28UN	13	0,5	r	r	r	k	E3
24	T13ER 24UN	13	0,55	r	r	r	k	E3
20	T13EN 20UN	13	1,1	r	r	r	k	E2
18	T13EN 18UN	13	1,1	r	r	r	k	E2
16	T13EN 16UN	13	1,1	r	r	r	k	E2
14	T13EN 14UN	13	1,1	r	r	r	k	E2
13	T13EN 13UN	13	1,1	r	r	r	k	E2
12	T13EN 12UN	13	1,1	r	r	r	k	E2

T-UNJ | Inserts for Full Profile Threading
(UNJC, UNJF, UNJEF, UNJS)

TPI	Inserts	L	t	8M	Stock C8	Stock F8	Stock B8	Price group
48	T13ER 48UNJ	13	0,35	r	r	r	k	E3
40	T13ER 40UNJ	13	0,4	r	r	r	k	E3
36	T13ER 36UNJ	13	0,4	r	r	r	k	E3
32	T13ER 32UNJ	13	0,45	r	r	r	k	E3
28	T13ER 28UNJ	13	0,5	r	r	r	k	E3
24	T13ER 24UNJ	13	0,55	r	r	r	k	E3
20	T13EN 20UNJ	13	1,1	r	r	r	k	E2
18	T13EN 18UNJ	13	1,1	r	r	r	k	E2
16	T13EN 16UNJ	13	1,1	r	r	r	k	E2
14	T13EN 14UNJ	13	1,1	r	r	r	k	E2
13	T13EN 13UNJ	13	1,1	r	r	r	k	E2
12	T13EN 12UNJ	13	1,1	r	r	r	k	E2

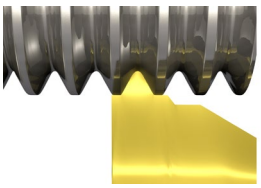


T-NPT | Inserts for Full Profile Threading NPT

TPI	Inserts	L	t	8M	Stock C8	Stock F8	Stock B8	Price group
27	T13ER 27NPT	13	0,55	r	r	r	k	E5
18	T13EN 18NPT	13	1,1	r	r	r	k	E4
14	T13EN 14NPT	13	1,1	r	r	r	k	E4

T-NPTF | Inserts for Full Profile Threading NPTF

TPI	Inserts	L	t	8M	Stock C8	Stock F8	Stock B8	Price group
27	T13ER 27NPTF	13	0,55	r	r	r	k	E5
18	T13EN 18NPTF	13	1,1	r	r	r	k	E4
14	T13EN 14NPTF	13	1,1	r	r	r	k	E4



Full Profile Threading

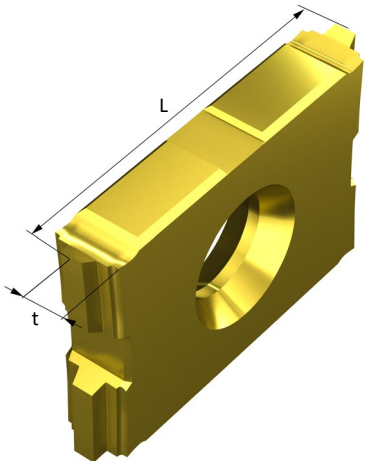
T-W | Inserts for Full Profile Threading Whitworth (BSW, BSP, BSF, BSB)

TPI	Inserts	L	t	8M	Stock C8	Stock F8	Stock B8	Price group
28	T13ER 28W	13	0,55	r	r	r	k	E5
19	T13EN 19W	13	1,1	r	r	r	k	E4
14	T13EN 14W	13	1,1	r	r	r	k	E4

Stock status:

a ER Stock standard, EL Stock standard
b ER Stock standard, EL Against inquiry
c EL Stock standard, ER Against inquiry
r ER Stock standard only
l EL Stock standard only
k ER Against inquiry, EL Against inquiry

L	T
13	2,2

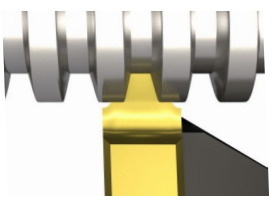


T-Tr | Inserts for Full Profile Threading Trapeziodal DIN 103

Pitch mm	Inserts	L	t	8M	Stock C8	Stock F8	Stock B8	Price group
1,5	T13EN 1,5TR	13	1,1	k	k	k	k	E5
2,0	T13EN 2,0TR	13	1,1	k	k	k	k	E4
2,5	T13EN 2,5TR	13	1,1	k	k	k	k	E4

T-ACME | Inserts for Full Profile Threading ACME

TPI	Inserts	L	t	8M	Stock C8	Stock F8	Stock B8	Price group
16	T13EN 16ACME	13	1,1	k	k	k	k	E5
14	T13EN 14ACME	13	1,1	k	k	k	k	E4
12	T13EN 12ACME	13	1,1	k	k	k	k	E4
10	T13EN 10ACME	13	1,1	k	k	k	k	E4



Full Profile Threading

T-STACME | Inserts for Full Profile Threading STUB ACME

TPI	Inserts	L	t	8M	Stock C8	Stock F8	Stock B8	Price group
16	T13EN 16STACME	13	1,1	k	k	k	k	E5
14	T13EN 14STACME	13	1,1	k	k	k	k	E4
12	T13EN 12STACME	13	1,1	k	k	k	k	E4
10	T13EN 10STACME	13	1,1	k	k	k	k	E4

WhizThrill

Solid Carbide Thread Mills

Users of thread taps and thread mills have for years been battling problems of getting burrs when threading holes. This has resulted in an extra operation where a deburring tool has to be used, resulting in increased production time and cost.

Not only does WhizCut manufacture Micro Thread mills, but WhizCut has changed the way thread mills are used today. The WhizThrill deburring thread mills take thread milling to the next level. A WhizThrill with some help of WhizCut software creates a deburred thread in one single move with a perfect result.

WhizThrills are manufactured with the best carbide and coating combination and are at the forefront of technology when it comes to tool design. WhizThrill is also available in a wide range of micro thread mills down to M1,0.

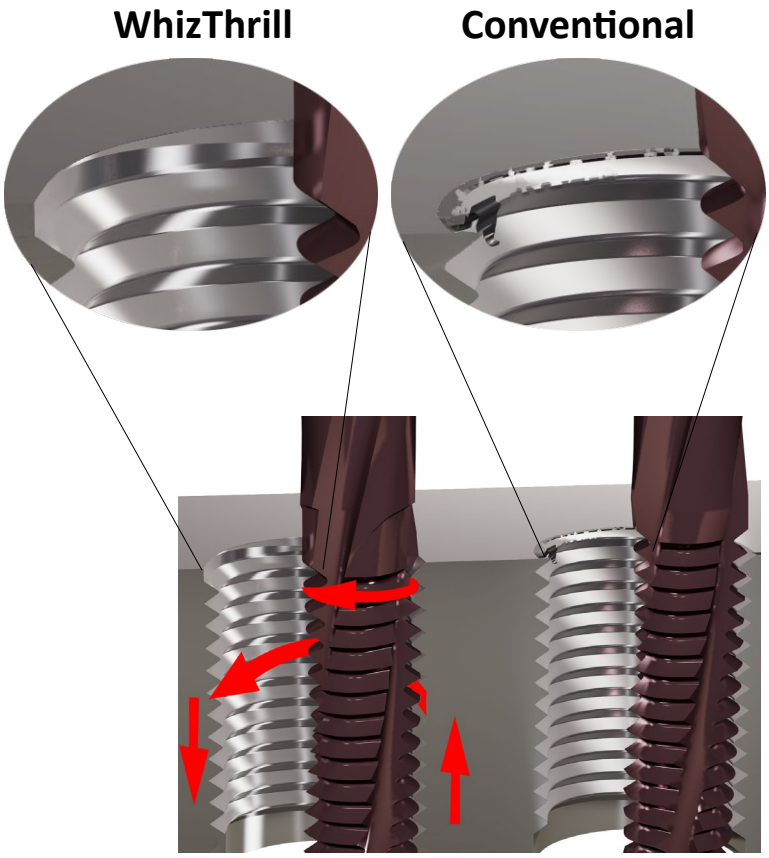




WhizThrill Deburring Thread Milling Cutters

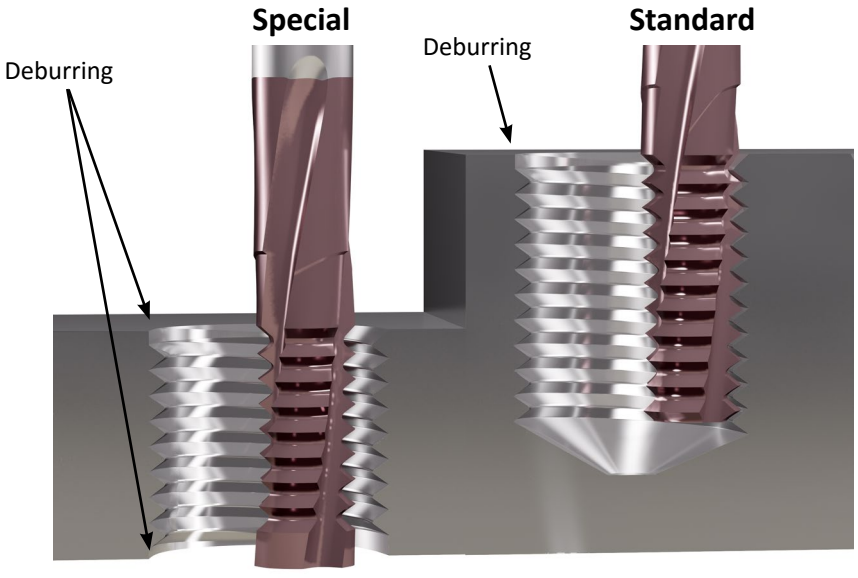
WhizThrill is not a traditional style solid carbide thread mill. Many of the different styles have unique geometries which are very favourable for the tool user. Some of the advantages are:

- The WhizThrill can deburr the thread entrance without having to make a chamfer.
- Wide range of special thread types eg. NPT, NPTF and Whitworth.
- Range from M1-M42, 0,4-4 mm pitch.
- Coolant through available, both straight and radial.
- Micro grain Carbide.
- Special TiAlCN PVD Coating for best surface finish and maximum tool life for regular Thread Mills and an AlCrN coating for extra edge sharpness for micro Thread Mills.
- Close tolerances on thread profile.
- Easy to use programming guide for the most effective programming.
- Tapered end mill for NPT and NPTF.
- Double Deburr available. Contact a WhizCut distributor for a quote.



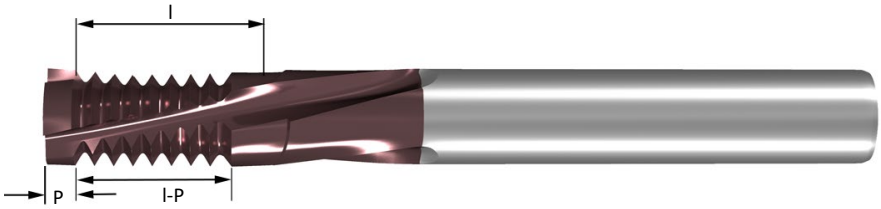
WhizThrill Double Deburr

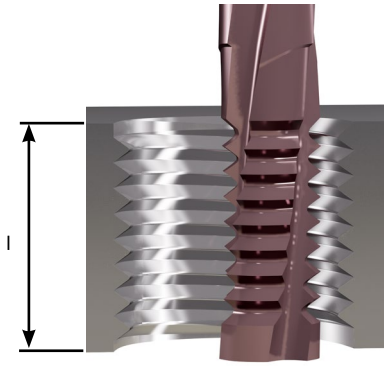
Are you thread milling a through hole and getting problems with burrs on both sides?
WhizCut produces double deburring thread mills, where both sides are deburred in the normal thread milling process. The important aspect to keep in mind is that this is most likely a special as we need to know the exact length of the thread.



WhizThrill Double Deburr Specs

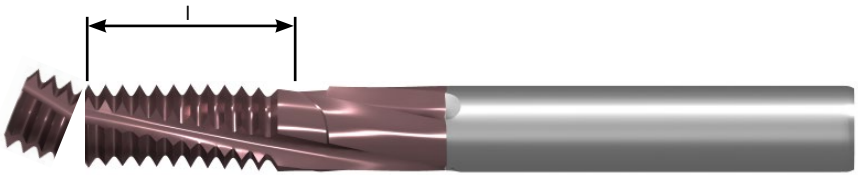
Ordering the right double deburr thread mill is easy. All that is needed is the diameter, pitch, and the thickness of the plate to be thread milled.





WhizThrill Specials

If a measurement is needed that you cannot find in our catalogue, we can arrange cutting a standard thread mill to the correct length for a small fee, as well as grinding special forms. Such as tapered Thred Mills for Bone Plates



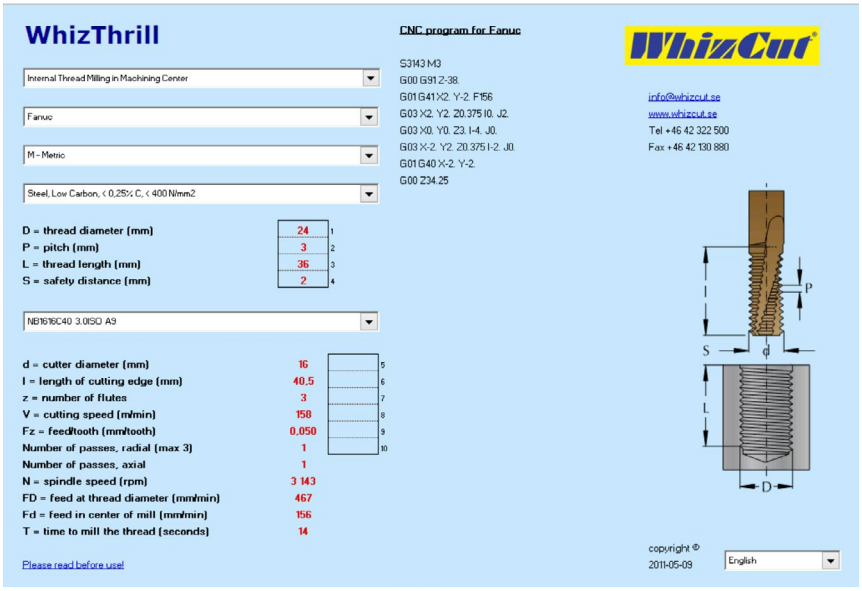
Cut to length



Special Double Deburring Thread Mill for Bone Plates

Do it Easy with the WhizThrill Software

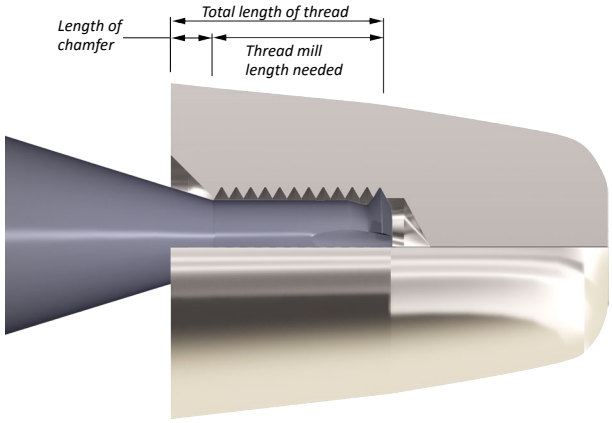
With the right support thread milling is not a difficult operation to do. For this reason WhizCut offers a piece of software aid that will help you program the machine. The program also calculates the deburring automatically if the correct fitting thread mill is used. The WhizThrill aid is a user friendly excel based program that recommends the programming for your CNC machine. The program is updated regularly, and can be ordered free of charge from the WhizCut website.



WhizThrill Micro Thread Mills

WhizThrill Micro Thread Mill Advantages

- B9 grade for extra edge sharpness. Excellent for demanding materials such as Titanium.
- 15° angle from minor diameter to shank.
- Available in many different lengths for each size.
- Full profile thread mills from M1,0.
- Partial Profile thread mills from M0,5.



Selecting the Correct Micro Thread Mill

1. Partial Profile VS Full Profile

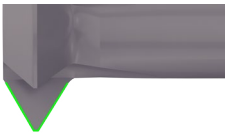
- Partial profile is better for long threads, tougher materials, and unstable machining conditions.
- Full Profile when tight tolerances of major and minor is required. Cycle time should be reduced, and a completely burr free part is the needed

2. Grade VS Material

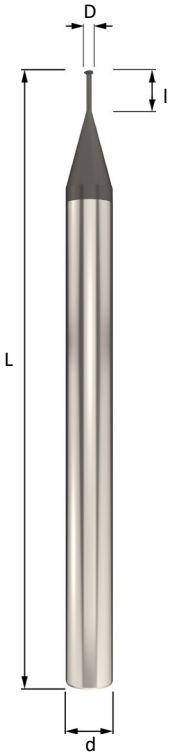
- WhizThrill have an uncoated grade 9M, a sub-micron carbide ISO K20-K30. Performs well in soft materials where no coating is needed.
- B9 is an AlCrN coating which gives an extra edge sharpness. Tool life will be 4-5 times longer in for example titanium compared with an uncoated tool.

3. Determine Length

- Micro thread mills lose a lot of rigidity with increased length. Therefore, always choose the shortest possible tool.
- WhizThrill has a 15° exit angle from the minor dimension (D) to shank (d). When possible, make the chamfer before thread milling so that you can calculate the length of the thread from the end of the chamfer.



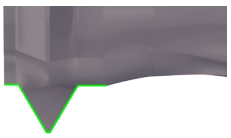
Cutting Zone Partial Profile



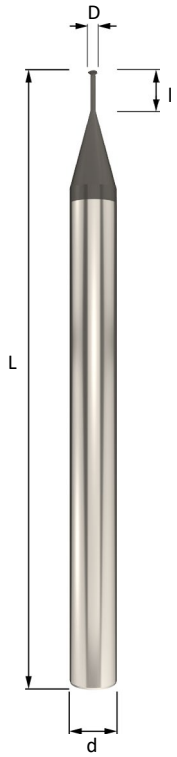
NS | Micro Partial Profile 60°

Extended Range

M coarse	M fine	S & UNM	UNC UNF	Part number	d	D	Flutes	l	L	Stock 9M	Stock B9	Price group
M0,5	M0,5	0,5	#0000-160	NS03003C1.3 P60	3	0,37	3	1,3	39	b	b	T2A
M0,6	M0,6	0,6		NS03004C1.5 P60	3	0,44	3	1,5	39	b	b	T2A
M0,8	M0,8	0,8	#000-120	NS03005C1.4 P60	3	0,57	3	1,4	39	b	b	T2
M0,8	M0,8	0,8	#000-120	NS03005C2.0 P60	3	0,57	3	2,0	39	b	b	T2
M0,8	M0,8	0,8	#000-120	NS03005C2.7 P60	3	0,57	3	2,7	39	b	b	T2
M1,0	M1,0	1,0		NS03007C1.1 P60	3	0,7	3	1,1	39	b	b	T2
M1,0	M1,0	1,0		NS03007C1.7 P60	3	0,7	3	1,7	39	b	b	T2
M1,0	M1,0	1,0		NS03007C2.1 P60	3	0,7	3	2,1	39	b	b	T2
M1,0	M1,0	1,0		NS03007C2.5 P60	3	0,7	3	2,5	39	b	b	T2
M1,0	M1,0	1,0		NS03007C3.2 P60	3	0,7	3	3,2	39	b	b	T2
M1,2	M1,2	1,2	#00-95<	NS03009C2.0 P60	3	0,9	3	2	39	b	b	T2
M1,2	M1,2	1,2	#00-95<	NS03009C2.9 P60	3	0,9	3	2,9	39	b	b	T2
M1,2	M1,2	1,2	#00-95<	NS03009C3.9 P60	3	0,9	3	3,9	39	b	b	T2
M1,4	M1,4	1,4		NS03010C2.2 P60	3	1,03	3	2,2	39	b	b	T2
M1,4	M1,4	1,4		NS03010C3.3 P60	3	1,03	3	3,3	39	b	b	T2
M1,4	M1,4	1,4		NS03010C4.4 P60	3	1,03	3	4,4	39	b	b	T2
M1,6	M1,4x0,2		#0-80	NS03011C2.5 P60	3	1,16	3	2,5	39	b	b	T2
M1,6	M1,4x0,2		#0-80	NS03011C3.6 P60	3	1,16	3	3,6	39	b	b	T2
M1,6	M1,4x0,2		#0-80	NS03011C5.1 P60	3	1,16	3	5,1	39	b	b	T2
M1,8	M1,6x0,2		#1	NS03013C2.8 P60	3	1,35	3	2,8	39	b	b	T2
M1,8	M1,6x0,2		#1	NS03013C4.2 P60	3	1,35	3	4,2	39	b	b	T2
M1,8	M1,6x0,2		#1	NS03013C5.6 P60	3	1,35	3	5,6	39	b	b	T2
M2,0	M1,8		#2	NS03015C3.2 P60	3	1,5	3	3,2	39	b	b	T1
M2,0	M1,8		#2	NS03015C3.8 P60	3	1,5	3	3,8	39	b	b	T1
M2,0	M1,8		#2	NS03015C4.6 P60	3	1,5	3	4,6	39	b	b	T1
M2,0	M1,8		#2	NS03015C5.4 P60	3	1,5	3	5,4	39	b	b	T1
M2,0	M1,8		#2	NS03015C6.2 P60	3	1,5	3	6,2	39	b	b	T1
M2,5	M2,2x0,25		#3	NS03019C4.3 P60	3	1,9	3	4,3	39	b	b	T1
M2,5	M2,2x0,25		#3	NS03019C6.2 P60	3	1,9	3	6,2	39	b	b	T1
	M2,5		#4	NS03021C4.9 P60	3	2,1	3	4,9	39	b	b	T1
	M2,5		#4	NS03021C7.1 P60	3	2,1	3	7,1	39	b	b	T1
M3	M3		#5	NS03023C5.4 P60	3	2,3	3	5,4	39	b	b	T1
M3	M3		#5	NS03023C7.8 P60	3	2,3	3	7,8	39	b	b	T1
M3,5	M3		#6	NS03026C6.1 P60	3	2,6	3	6,1	39	b	b	T1
M3,5	M3		#6	NS03026C8.7 P60	3	2,6	3	8,7	39	b	b	T1
M4	M3,5-M4		#8	NS0303C7.1 P60	3	3	3	7,1	39	b	b	T1
M4	M3,5-M4		#8	NS0303C10.2 P60	3	3	3	10,2	39	b	b	T1
M4,5	M4,5		#10	NS04036C8.3 P60	4	3,6	3	8,3	51	b	b	T2
M4,5	M4,5		#10	NS04036C12.0 P60	4	3,6	3	12	51	b	b	T2
M5-M6	M5-M6		#12	NS0404C10.0 P60	4	4	3	10	51	b	b	T2
M5-M6	M5-M6		#12	NS0404C14.5 P60	4	4	3	14,5	51	b	b	T2



Cutting Zone Full Profile



NT-ISO M| Micro Single Tooth Full Form

M coarse	Pitch ISO	Part number	d	D	Flutes	l	L	9M	F9	B9	Price group
M1,0	0,25	NT03007C1,7-0.25ISO	3	0,7	3	1,7	39	b	k	b	T2B
M1,0	0,25	NT03007C2,5-0.25ISO	3	0,7	3	2,5	39	b	k	b	T2B
M1,0	0,25	NT03007C3,5-0.25ISO	3	0,7	3	3,5	39	b	k	b	T2B
M1,2	0,25	NT03009C2,0-0.25ISO	3	0,9	3	2	39	b	k	b	T2B
M1,2	0,25	NT03009C2,9-0.25ISO	3	0,9	3	2,9	39	b	k	b	T2B
M1,2	0,25	NT03009C3,9-0.25ISO	3	0,9	3	3,9	39	b	k	b	T2B
M1,4	0,3	NT03010C2,3-0.3ISO	3	1,03	3	2,3	39	b	k	b	T2A
M1,4	0,3	NT03010C3,3-0.3ISO	3	1,03	3	3,3	39	b	k	b	T2A
M1,4	0,3	NT03010C4,4-0.3ISO	3	1,03	3	4,4	39	b	k	b	T2A
M1,6	0,35	NT03011C2,5-0.35ISO	3	1,16	3	2,5	39	b	k	b	T2A
M1,6	0,35	NT03011C3,6-0.35ISO	3	1,16	3	3,6	39	b	k	b	T2A
M1,6	0,35	NT03011C5,1-0.35ISO	3	1,16	3	5,1	39	b	k	b	T2A
M1,8	0,35	NT03013C2,8-0.35ISO	3	1,35	3	2,8	39	b	k	b	T2A
M1,8	0,35	NT03013C4,2-0.35ISO	3	1,35	3	4,2	39	b	k	b	T2A
M1,8	0,35	NT03013C5,6-0.35ISO	3	1,35	3	5,6	39	b	k	b	T2A
M2,0	0,4	NT03015C3,2-0.4ISO	3	1,5	3	3,2	39	b	k	b	T2
M2,0	0,4	NT03015C4,7-0.4ISO	3	1,5	3	4,7	39	b	k	b	T2
M2,0	0,4	NT03015C6,2-0.4ISO	3	1,5	3	6,2	39	b	k	b	T2

New Products

NT-ISO S, UNM | Micro Single Tooth Full Form

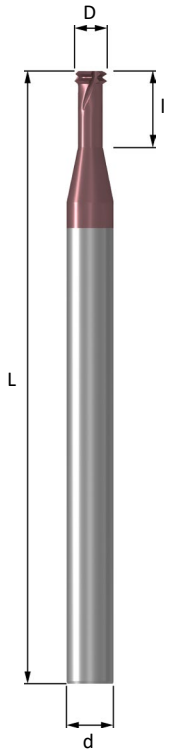
ISO S-1501	UNM	Pitch	Part number	d	D	Flutes	l	L	9M	F9	B9	Price group
S1,0	1,00 UNM	0,25	NT03007C2,5-S1.0UNM	3	0,73	3	2,5	39	b	k	b	T2B
S1,2	1,20 UNM	0,25	NT03009C2,9-S1.2UNM	3	0,93	3	2,9	39	b	k	b	T2B
S1,4	1,40 UNM	0,3	NT03010C3,3-S1.4UNM	3	1,08	3	3,3	39	b	k	b	T2A

New

NT-UN | Micro Single Tooth Full Form

UNC UNF	#	Pitch	Part number	d	D	Flutes	l	L	9M	F9	B9	Price group
UNF	No. 0	80	NT03011C3,3-80UN	3	1,16	3	3,3	39	b	k	b	T2A
UNF	No. 1	72	NT03014C4,4-72UN	3	1,45	3	4,4	39	b	k	b	T2A
UNC	No. 1	64	NT03014C4,4-64UN	3	1,41	3	4,4	39	b	k	b	T2A
UNF	No. 2	64	NT03017C5,2-64UN	3	1,74	3	5,2	39	b	k	b	T2
UNC	No. 2	56	NT03016C5,2-56UN	3	1,68	3	5,2	39	b	k	b	T2

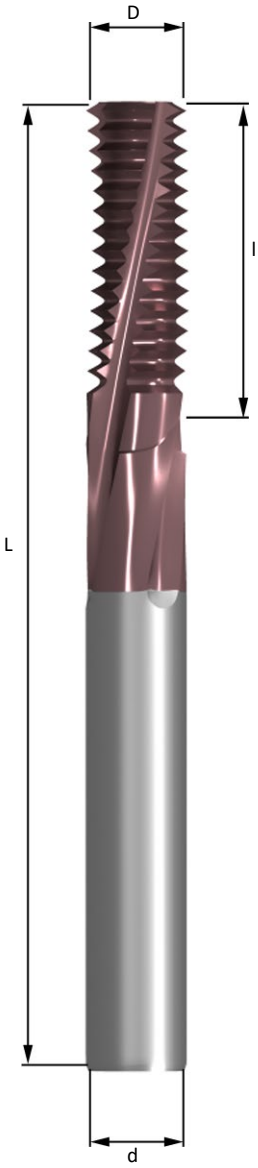
New Products



NM | Two Tooth Metrical

Pitch mm	M coarse	Part number	d	D	Cutting edges	l	L	Price group
0,4	M2 (1,5xD)	NM03015C3 0.4ISO A9	3	1,5	3	3,4	39	T3
0,4	M2 (2,25xD)	NM03015C5 0.4ISO A9	3	1,5	3	5	39	T3
0,45	M2.2 (1,5xD)	NM03016C3 0.45ISO A9	3	1,6	3	3,8	39	T3
0,45	M2.2 (2,25xD)	NM03016C5 0.45ISO A9	3	1,6	3	5,4	39	T3
0,45	M2.5 (1,5xD)	NM03019C4 0.45ISO A9	3	1,9	3	4,2	39	T3
0,45	M2.5 (2,25xD)	NM03019C6 0.45ISO A9	3	1,9	3	6,1	39	T3
0,5	M3 (1,5xD)	NM03023C5 0.5ISO A9	3	2,3	3	5	39	T3
0,5	M3 (2,25xD)	NM03023C7 0.5ISO A9	3	2,3	3	7,3	39	T3
0,6	M3.5 (1,5xD)	NM03026C6 0.6ISO A9	3	2,6	3	6	39	T3
0,6	M3.5 (2,25xD)	NM03026C8 0.6ISO A9	3	2,6	3	8,5	39	T3
0,7	M4 (1,5xD)	NM0303C7 0.7ISO A9	3	3	3	7	39	T3
0,7	M4 (2,25xD)	NM0303C10 0.7ISO A9	3	3	3	10	39	T3
0,8	M5 (1,5xD)	NM04038C9 0.8ISO A9	4	3,8	3	9	51	T3
0,8	M5 (2,25xD)	NM04038C12 0.8ISO A9	4	3,8	3	12,1	51	T3
1	M6 (1,5xD)	NM06045C10 1.0ISO A9	6	4,5	3	10	64	T4
1	M6 (2,25xD)	NM06045C14 1.0ISO A9	6	4,5	3	14,5	64	T4
1,25	M8 (1,5xD)	NM0606C14 1.25ISO A9	6	6	3	14	64	T4
1,25	M8 (2,25xD)	NM0606C19 1.25ISO A9	6	6	3	19,3	64	T4

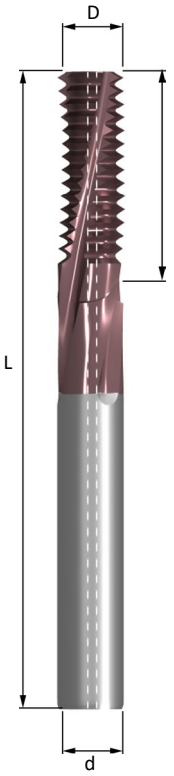
NB-ISO | Metric Deburring Thread Mills



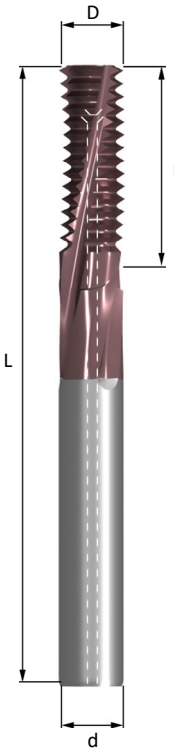
Pitch mm	M coarse	M fine	Part number	d	D	Cutting edges	l	L	Price group
0,4	M2 (1,5xD)		NB04015C3 0.4ISO A9	4	1,5	3	3,4	50	T5
0,4	M2 (2xD)		NB04015C4 0.4ISO A9	4	1,5	3	4,6	50	T6
0,45	M2,2 (1,5xD)		NB04016C3 0.45ISO A9	4	1,6	3	3,82	50	T5
0,45	M2,2 (2xD)		NB04016C5 0.45ISO A9	4	1,6	3	5,17	50	T6
0,45	M2,5 (1,5xD)		NB04019C4 0.45ISO A9	4	1,9	3	4,27	50	T5
0,45	M2,5 (2xD)		NB04019C5 0.45ISO A9	4	1,9	3	5,62	50	T6
0,5	M3 (1,5xD)	≥ M4	NB04023C5 0.5ISO A9	4	2,3	3	5,25	50	T5
0,5	M3 (2xD)	≥ M4	NB04023C6 0.5ISO A9	4	2,3	3	6,75	50	T6
0,5	M3 (2,5xD)	≥ M4	NB04023C8 0.5ISO A9	4	2,3	3	8,25	50	T8
0,5	M3 (1,5xD)	≥ M4	NB06023C5 0.5ISO A9	6	2,3	3	5,25	63	T7
0,5	M3 (2xD)	≥ M4	NB06023C6 0.5ISO A9	6	2,3	3	6,75	63	T9
0,5	M3 (2,5xD)	≥ M4	NB06023C8 0.5ISO A9	6	2,3	3	8,25	63	T10
0,5		≥ M5	NB04038C10 0.5ISO A9	4	3,8	3	10,75	50	T6
0,5		≥ M5	NB06038C10 0.5ISO A9	6	3,8	3	10,75	63	T9
0,6	M3,5 (1,5xD)		NB04026C6 0.6ISO A9	4	2,6	3	6,3	50	T5
0,6	M3,5 (2xD)		NB04026C8 0.6ISO A9	4	2,6	3	8,1	50	T6
0,7	M4 (1,5xD)		NB0403C7 0.7ISO A9	4	3	3	7,35	50	T5
0,7	M4 (2xD)		NB0403C8 0.7ISO A9	4	3	3	8,75	50	T6
0,7	M4 (2,5xD)		NB0403C10 0.7ISO A9	4	3	3	10,85	50	T8
0,7	M4 (1,5xD)		NB0603C7 0.7ISO A9	6	3	3	7,35	63	T7
0,7	M4 (2xD)		NB0603C8 0.7ISO A9	6	3	3	8,75	63	T9
0,7	M4 (2,5xD)		NB0603C10 0.7ISO A9	6	3	3	10,85	63	T10
0,75	M4,5 (1,5xD)		NB04034C7 0.75ISO A9	4	3,4	3	7,87	50	T5
0,75	M4,5 (2xD)		NB04034C10 0.75ISO A9	4	3,4	3	10,12	50	T6
0,75		≥ M6	NB06045C10 0.75ISO A9	6	4,5	3	10,87	63	T7
0,75		≥ M6	NB06045C16 0.75ISO A9	6	4,5	3	16,87	63	T9
0,8	M5 (1,5xD)		NB04038C8 0.8ISO A9	4	3,8	3	8,4	50	T5
0,8	M5 (2xD)		NB04038C10 0.8ISO A9	4	3,8	3	10,8	50	T6
0,8	M5 (2,5xD)		NB04038C13 0.8ISO A9	4	3,8	3	13,2	50	T8
0,8	M5 (1,5xD)		NB06038C8 0.8ISO A9	6	3,8	3	8,4	63	T7
0,8	M5 (2xD)		NB06038C10 0.8ISO A9	6	3,8	3	10,8	63	T9
0,8	M5 (2,5xD)		NB06038C13 0.8ISO A9	6	3,8	3	13,2	63	T10
1	M6 (1,5xD)	≥ M8	NB06045C10 1.0ISO A9	6	4,5	3	10,5	63	T7
1	M6 (2xD)	≥ M8	NB06045C13 1.0ISO A9	6	4,5	3	13,5	63	T9
1	M6 (2,5xD)	≥ M8	NB06045C16 1.0ISO A9	6	4,5	3	16,5	63	T10
1	M6 (3xD)	≥ M8	NB06045C19 1.0ISO A9	6	4,5	3	19,5	63	T12
1		≥ M8	NB0606C10 1.0ISO A9	6	6	3	10,5	63	T7
1		≥ M8	NB0606C13 1.0ISO A9	6	6	3	13,5	63	T8
1		≥ M10	NB0808D10 1.0ISO A9	8	8	4	10,5	63	T10
1		≥ M10	NB0808D13 1.0ISO A9	8	8	4	13,5	63	T11
1		≥ M10	NB0808D17 1.0ISO A9	8	8	4	17,5	63	T12
1		≥ M14	NB1010E14 1.0ISO A9	10	10	5	14,5	76	T16
1		≥ M14	NB1010E19 1.0ISO A9	10	10	5	19,5	76	T17
1		≥ M14	NB1212F15 1.0ISO A9	12	12	6	15,5	83	T18
1		≥ M14	NB1212F21 1.0ISO A9	12	12	6	21,5	83	T19
1,25	M8 (1,5xD)	≥ M10	NB0606C14 1.25ISO A9	6	6	3	14,37	63	T7
1,25	M8 (2xD)	≥ M10	NB0606C18 1.25ISO A9	6	6	3	18,12	63	T9
1,25	M8 (2,5xD)	≥ M10	NB0606C21 1.25ISO A9	6	6	3	21,87	63	T10
1,25	M8 (3xD)	≥ M10	NB0606C25 1.25ISO A9	6	6	3	25,62	76	T12
1,5	M10 (1,5xD)	≥ M12	NB08075C17 1.5ISO A9	8	7,5	3	17,25	63	T11
1,5	M10 (2xD)	≥ M12	NB08075C21 1.5ISO A9	8	7,5	3	21,75	76	T13
1,5	M10 (2,5xD)	≥ M12	NB08075C27 1.5ISO A9	8	7,5	3	27,75	76	T14
1,5	M10 (3xD)	≥ M12	NB08075C32 1.5ISO A9	8	7,5	3	32,25	76	T16
1,5		≥ M14	NB1010D17 1.5ISO A9	10	10	4	17,25	76	T15
1,5		≥ M14	NB1010D23 1.5ISO A9	10	10	4	23,25	76	T15
1,5		≥ M16	NB1212D15 1.5ISO A9	12	12	4	15,75	83	T17
1,5		≥ M16	NB1212D21 1.5ISO A9	12	12	4	21,75	83	T18
1,5		≥ M16	NB1212D29 1.5ISO A9	12	12	4	29,25	83	T19
1,5		≥ M20	NB1616F18 1.5ISO A9	16	16	6	18,75	100	T21
1,5		≥ M20	NB1616F26 1.5ISO A9	16	16	6	26,25	100	T22
1,5		≥ M20	NB1616F35 1.5ISO A9	16	16	6	35,25	100	T23
1,75	M12 (1,5xD)		NB0808C20 1.75ISO A9	8	8	3	20,12	76	T11
1,75	M12 (2xD)		NB0808C27 1.75ISO A9	8	8	3	27,12	76	T13
1,75	M12 (1,5xD)		NB1009C20 1.75ISO A9	10	9	3	20,12	76	T15
1,75	M12 (2xD)		NB1009C27 1.75ISO A9	10	9	3	27,12	76	T17
1,75	M12 (2,5xD)		NB1009C32 1.75ISO A9	10	9	3	32,37	100	T18
1,75	M12 (3xD)		NB1009C37 1.75ISO A9	10	9	3	37,62	100	T19
2	M14 (1,5xD)	≥ M18	NB1010C23 2.0ISO A9	10	10	3	23	76	T15
2	M14 (2xD)	≥ M18	NB1010C31 2.0ISO A9	10	10	3	31	100	T17
2	M14 (2,5xD)	≥ M18	NB1010C37 2.0ISO A9	10	10	3	37	100	T18
2	M16 (1,5xD)	≥ M18	NB1212D27 2.0ISO A9	12	12	4	27	83	T18
2	M16 (2xD)	≥ M18	NB1212D35 2.0ISO A9	12	12	4	35	100	T19
2	M16 (2,5xD)	≥ M18	NB1212D43 2.0ISO A9	12	12	4	43	100	T20
2	M16 (3xD)	≥ M18	NB1212C51 2.0ISO A9	12	12	3	51	100	T21
2		≥ M20	NB1616E29 2.0ISO A9	16	16	5	29	100	T22
2		≥ M20	NB1616E39 2.0ISO A9	16	16	5	39	100	T23
2		≥ M24	NB2020F43 2.0ISO A9	20	20	6	43	100	T26
2		≥ M30	NB2525F57 2.0ISO A9	25	25	6	57	130	T29
2,5	M18 (1,5xD)		NB1212C31 2.5ISO A9	12	12	3	31,25	100	T19
2,5	M18 (2xD)		NB1212C38 2.5ISO A9	12	12	3	38,75	100	T20
2,5	M18 (2,5xD)		NB1212C48 2.5ISO A9	12	12	3	48,75	100	T21
2,5	M20 (1,5xD)		NB1414D33 2.5ISO A9	14	14	4	33,75	89	T20
2,5	M20 (2xD)		NB1414D43 2.5ISO A9	14	14	4	43,75	100	T21
2,5	M20 (2,5xD)		NB1615D53 2.5ISO A9	16	15	4	53,75	120	T23
2,5	M20 (3xD)		NB1615C63 2.5ISO A9	16	15	3	63,75	120	T24
3	M24 (1,5xD)	≥ M30	NB1616C40 3.0ISO A9	16	16	3	40,5	100	T22
3	M24 (2xD)	≥ M30	NB1616C52 3.0ISO A9	16	16	3	52,5	120	T23
3	M24 (2,5xD)	≥ M30	NB1818C64 3.0ISO A9	18	18	3	64,5	130	T25
3		≥ M30	NB2020D46 3.0ISO A9	20	20	4	46,5	120	T25
3		≥ M33	NB2525D61 3.0ISO A9	25	25	4	61,5	130	T29
3,5	M30 (1,5xD)		NB2020C50 3.5ISO A9	20	20	3	50,75	120	T26
3,5	M30 (2xD)		NB2020C64 3.5ISO A9	20	20	3	64,75	150	T27
3,5	M30 (2,5xD)		NB2020C78 3.5ISO A9	20	20	3	78,75	150	T28
4	M36 (1,5xD)	≥ M42	NB2525C58 4.0ISO A9	25	25	3	58	130	T29
4	M36 (2xD)	≥ M42	NB2525C78 4.0ISO A9	25	25	3	78	150	T30

Extended Range

NBK-ISO | Metric Deburring Thread Mills with Internal Coolant



Pitch mm	M coarse	M fine	Part number	d	D	Cutting edges	l	L	Price group
0,8	M5 (1,5xD)		NBK04038C8 0.8ISO A9	4	3,8	3	8,4	50	T6
0,8	M5 (2xD)		NBK04038C10 0.8ISO A9	4	3,8	3	10,8	50	T8
0,8	M5 (2,5xD)		NBK04038C13 0.8ISO A9	4	3,8	3	13,2	50	T9
1	M6 (1,5xD)		NBK06045C10 1.0ISO A9	6	4,5	3	10,5	63	T9
1	M6 (2xD)		NBK06045C13 1.0ISO A9	6	4,5	3	13,5	63	T10
1	M6 (2,5xD)		NBK06045C16 1.0ISO A9	6	4,5	3	16,5	63	T12
1		≥ M10	NBK0808D17 1.0ISO A9	8	8	4	17,5	76	T13
1,25	M8 (1,5xD)	≥ M10	NBK0606C14 1.25ISO A9	6	6	3	14,37	63	T9
1,25	M8 (2xD)	≥ M10	NBK0606C18 1.25ISO A9	6	6	3	18,12	63	T10
1,25	M8 (2,5xD)	≥ M10	NBK0606C21 1.25ISO A9	6	6	3	21,87	63	T12
1,5	M10 (1,5xD)	≥ M12	NBK08075C17 1.5ISO A9	8	7,5	3	17,25	76	T13
1,5	M10 (2xD)	≥ M12	NBK08075C21 1.5ISO A9	8	7,5	3	21,75	76	T14
1,5	M10 (2,5xD)	≥ M12	NBK08075C27 1.5ISO A9	8	7,5	3	27,75	76	T16
1,5	M10 (3xD)	≥ M12	NBK08075C32 1.5ISO A9	8	7,5	3	32,25	76	T17
1,5		≥ M16	NBK1212D29 1.5ISO A9	12	12	4	29,25	100	T18
1,5		≥ M20	NBK1616F35 1.5ISO A9	16	16	6	35,25	120	T22
1,75	M12 (1,5xD)		NBK0808C20 1.75ISO A9	8	8	3	20,12	76	T13
1,75	M12 (2xD)		NBK0808C27 1.75ISO A9	8	8	3	27,12	76	T14
1,75	M12 (1,5xD)		NBK1009C20 1.75ISO A9	10	9	3	20,12	100	T17
1,75	M12 (2xD)		NBK1009C27 1.75ISO A9	10	9	3	27,12	100	T18
1,75	M12 (2,5xD)		NBK1009C32 1.75ISO A9	10	9	3	32,37	100	T19
1,75	M12 (3xD)		NBK1009C37 1.75ISO A9	10	9	3	37,62	100	T20
2	M14 (1,5xD)	≥ M18	NBK1010C23 2.0ISO A9	10	10	3	23	100	T17
2	M14 (2xD)	≥ M18	NBK1010C31 2.0ISO A9	10	10	3	31	100	T18
2	M16 (1,5xD)	≥ M18	NBK1212D27 2.0ISO A9	12	12	4	27	100	T19
2	M16 (2xD)	≥ M18	NBK1212D35 2.0ISO A9	12	12	4	35	100	T20
2	M16 (2,5xD)	≥ M18	NBK1212D43 2.0ISO A9	12	12	4	43	100	T21
2	M16 (3xD)	≥ M18	NBK1212C51 2.0ISO A9	12	12	3	51	100	T22
2		≥ M20	NBK1616E39 2.0ISO A9	16	16	5	39	120	T23
2,5	M20 (1,5xD)		NBK1414D33 2.5ISO A9	14	14	4	33,75	100	T21
2,5	M20 (2xD)		NBK1414D43 2.5ISO A9	14	14	4	43,75	100	T23
2,5	M20 (2,5xD)		NBK1615D53 2.5ISO A9	16	15	4	53,75	120	T24
3	M24 (1,5xD)	≥ M30	NBK1616C40 3.0ISO A9	16	16	3	40,5	120	T23
3	M24 (2xD)	≥ M30	NBK1616C52 3.0ISO A9	16	16	3	52,5	120	T24
3,5	M30 (1,5xD)		NBK2020C50 3.5ISO A9	20	20	3	50,75	150	T27
3,5	M30 (2xD)		NBK2020C64 3.5ISO A9	20	20	3	64,75	150	T28



NBT-ISO | Metric Deburring Thread Mills with Radial Coolant

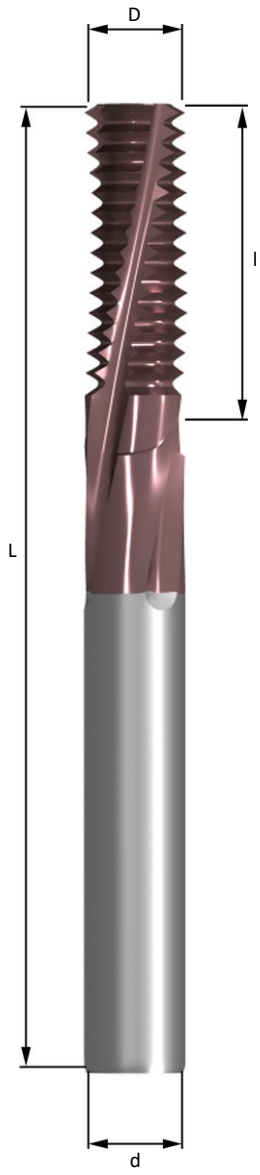
Pitch mm	M coarse	M fine	Part number	d	D	Cutting edges	l	L	Price group
1		≥ M10	NBT0808D17 1.0ISO A9	8	8	4	17,5	76	T14
1,25	M8 (2xD)	≥ M10	NBT0606C18 1.25ISO A9	6	6	3	18,12	76	T12
1,5	M10 (2xD)	≥ M12	NBT08075C21 1.5ISO A9	8	7,5	3	21,75	76	T16
1,5		≥ M16	NBT1212D29 1.5ISO A9	12	12	4	29,25	100	T20
1,75	M12 (2xD)		NBT0808C27 1.75ISO A9	8	8	3	27,12	76	T16
1,75	M12 (2xD)		NBT1009C27 1.75ISO A9	10	9	3	27,12	100	T19
2	M14 (2xD)	≥ M18	NBT1010C31 2.0ISO A9	10	10	3	31	100	T19
2	M16 (2xD)	≥ M18	NBT1212D35 2.0ISO A9	12	12	4	35	100	T21
2		≥ M20	NBT1616E39 2.0ISO A9	16	16	5	39	100	T24

XBT | Whitworth Pipe Thread with Radial Coolant

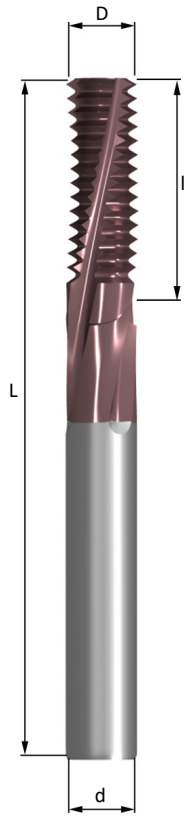
Pitch TPI	Norm	Internal/External part number	d	D	Cutting edges	l	L	Price group
28	G 1/8	XBT0606C10 28W A9	6	6	3	10,43	76	T10
19	G 1/4 - 3/8	XBT1010D22 19W A9	10	10	4	22,06	100	T18
14	G 1/2 - 7/8	XBT1212D28 14W A9	12	12	4	28,12	100	T21
11	G 1 - 3	XBT1616D40 11W A9	16	16	4	40,41	100	T24

More Whitworth thread mills on page 41

UN | Deburring Thread Mills Unified



Pitch TPI	UNC	UNF	Part number	d	D	Cutting edges	l	L	Price group
44		No.5 (1,5xD)	NB04024C5 44UN A9	4	2,4	3	5,48	50	T6
40	No.5 (1,5xD)		NB04023C5 40UN A9	4	2,3	3	5,4	50	T5
40	No.5 (2xD)		NB04023C7 40UN A9	4	2,3	3	7,3	50	T6
40	No.5 (2,5xD)		NB04023C8 40UN A9	4	2,3	3	8,57	50	T6
40		No.6 (1,5xD)	NB04026C6 40UN A9	4	2,6	3	6,03	50	T6
36		No.8 (1,5xD)	NB04031C7 36UN A9	4	3,1	3	7,41	50	T6
36		No.8 (2xD)	NB04031C9 36UN A9	4	3,1	3	9,53	50	T6
32	No.6 (1,5xD)		NB04025C6 32UN A9	4	2,5	3	6,75	50	T5
32	No.6 (2xD)		NB04025C8 32UN A9	4	2,5	3	8,33	50	T6
32	No.6 (2,5xD)		NB04025C10 32UN A9	4	2,5	3	9,92	50	T6
32	No.8 (1,5xD)		NB0403C7 32UN A9	4	3	3	7,54	50	T5
32	No.8 (2xD)		NB0403C9 32UN A9	4	3	3	9,13	50	T6
32	No.8 (2,5xD)		NB0403C11 32UN A9	4	3	3	11,51	50	T6
32		No.10 (1,5xD)	NB04036C8 32UN A9	4	3,6	3	8,33	50	T6
32		No.10 (2xD)	NB04036C10 32UN A9	4	3,6	3	10,72	50	T6
32			NB0606D13 32UN A9	6	6	4	13,1	63	T6
28		No.12 (1,5xD)	NB0404C9 28UN A9	4	4	3	9,52	50	T6
28		No.12 (2xD)	NB0404C12 28UN A9	4	4	3	12,25	50	T6
28		1/4 (1,5xD)	NB0605C10 28UN A9	6	5	3	10,43	63	T9
28		1/4 (2xD)	NB0605C14 28UN A9	6	5	3	14,06	63	T10
28			NB0808D17 28UN A9	8	8	4	17,69	63	T11
24	No.10 (1,5xD)		NB04038C9 24UN A9	4	3,8	3	9	50	T5
24	No.10 (2xD)		NB04038C11 24UN A9	4	3,8	3	11,11	50	T6
24	No.10 (2,5xD)		NB04038C13 24UN A9	4	3,8	3	13,23	50	T6
24	No.12 (1,5xD)		NB0404C10 24UN A9	4	4	3	10,05	50	T5
24	No.12 (2xD)		NB0404C12 24UN A9	4	4	3	12,17	50	T6
24	No.12 (2,5xD)		NB0404C15 24UN A9	4	4	3	15,35	50	T6
24		5/16 (1,5xD)	NB0606C13 24UN A9	6	6	3	13,23	63	T9
24		5/16 (2xD)	NB0606C17 24UN A9	6	6	3	17,46	63	T10
24		3/8 (1,5xD)	NB08076C15 24UN A9	8	7,6	3	15,35	63	T13
24		3/8 (2xD)	NB08076C20 24UN A9	8	7,6	3	20,64	76	T14
20	1/4 (1,5xD)		NB06045C10 20UN A9	6	4,5	3	10,8	63	T7
20	1/4 (2xD)		NB06045C14 20UN A9	6	4,5	3	14,6	63	T9
20	1/4 (2,5xD)		NB06045C17 20UN A9	6	4,5	3	17,15	63	T10
20		7/16 (1,5xD)	NB0808C18 20UN A9	8	8	3	18,41	63	T13
20		7/16 (2xD)	NB0808C23 20UN A9	8	8	3	23,5	76	T14
20		1/2 (1,5xD)	NB1010D21 20UN A9	10	10	4	20,96	76	T17
20		1/2 (2xD)	NB1010D27 20UN A9	10	10	4	27,31	76	T18
20			NB1212E28 20UN A9	12	12	5	28,57	83	T19
18	5/16 (1,5xD)		NB06058C13 18UN A9	6	5,8	3	13,41	63	T7
18	5/16 (2xD)		NB06058C17 18UN A9	6	5,8	3	17,64	63	T9
18	5/16 (2,5xD)		NB06058C21 18UN A9	6	5,8	3	21,87	63	T10
18		9/16 (1,5xD)	NB1010D23 18UN A9	10	10	4	23,28	76	T17
18		9/16 (2xD)	NB1010D30 18UN A9	10	10	4	30,34	100	T18
18		5/8 (1,5xD)	NB1212D26 18UN A9	12	12	4	26,11	83	T19
18		5/8 (2xD)	NB1212D33 18UN A9	12	12	4	33,16	100	T20
16	3/8 (1,5xD)		NB0606C16 16UN A9	6	6	3	16,67	63	T7
16	3/8 (2xD)		NB0606C21 16UN A9	6	6	3	21,43	63	T9
16	3/8 (2,5xD)		NB0807C26 16UN A9	8	7	3	26,19	76	T14
16		3/4 (1,5xD)	NB1212D31 16UN A9	12	12	4	30,96	100	T19
16		3/4 (2xD)	NB1212D40 16UN A9	12	12	4	40,48	100	T19
16			NB1616E35 16UN A9	16	16	5	35,72	100	T23
14	7/16 (1,5xD)		NB0808C19 14UN A9	8	8	3	19,05	63	T11
14	7/16 (2xD)		NB0808C24 14UN A9	8	8	3	24,49	76	T13
14	7/16 (2,5xD)		NB0808C30 14UN A9	8	8	3	29,94	76	T14
14		7/8 (1,5xD)	NB1616E35 14UN A9	16	16	5	35,38	100	T23
14		7/8 (2xD)	NB1616E46 14UN A9	16	16	5	46,26	120	T24
13	1/2 (1,5xD)		NB0808C22 13UN A9	8	8	3	22,47	76	T11
13	1/2 (2xD)		NB0808C28 13UN A9	8	8	3	28,33	76	T13
13	1/2 (2,5xD)		NB10093C34 13UN A9	10	9,3	3	34,19	100	T18
12	9/16 (1,5xD)		NB1010C24 12UN A9	10	10	3	24,34	76	T15
12	9/16 (2xD)		NB1010C30 12UN A9	10	10	3	30,69	100	T17
12			NB1616E43 12UN A9	16	16	5	43,39	100	T23
11	5/8 (1,5xD)		NB1010C26 11UN A9	10	10	3	26,55	76	T15
11	5/8 (2xD)		NB1010C35 11UN A9	10	10	3	35,79	100	T17
11	5/8 (2,5xD)		NB12117C42 11UN A9	12	11,7	3	42,72	100	T19
10	3/4 (1,5xD)		NB1212C31 10UN A9	12	12	3	31,75	100	T18
10	3/4 (2xD)		NB1212C41 10UN A9	12	12	3	41,91	100	T19
9	7/8 (1,5xD)		NB1616C38 9UN A9	16	16	3	38,1	100	T22
9	7/8 (2xD)		NB1616C49 9UN A9	16	16	3	49,39	120	T23
8	1 (1,5xD)		NB1616C42 8UN A9	16	16	3	42,86	100	T22
8	1 (2xD)		NB1616C55 8UN A9	16	16	3	55,56	120	T23
8			NB2020D49 8UN A9	20	20	4	49,21	120	T26
7	11/8 - 11/4 (1,5xD)		NB2020C52 7UN A9	20	20	3	52,61	120	T26
6	13/8 - 11/2 (1,5xD)		NB2525C61 6UN A9	25	25	3	61,38	130	T29



XB | Whitworth Pipe Thread (Also available with Internal Coolant. See page 39)

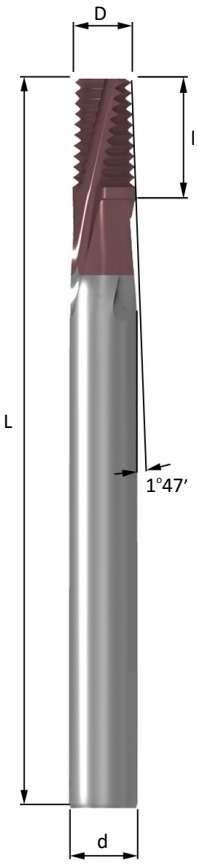
Pitch TPI	Norm	Internal/External part number	d	D	Cutting edges	l	L	Price group
28	G 1/8	XB0606C10 28W A9	6	6	3	10,43	63	T7
19	G 1/4 - 3/8	XB0808C15 19W A9	8	8	3	15,37	63	T11
19	G 1/4 - 3/8	XB1010D22 19W A9	10	10	4	22,06	76	T15
14	G 1/2 - 7/8	XB1212D20 14W A9	12	12	4	20,86	83	T18
14	G 1/2 - 7/8	XB1212D28 14W A9	12	12	4	28,12	83	T19
14	G 1/2 - 7/8	XB1616E28 14W A9	16	16	5	28,12	89	T22
11	G 1 - 1 1/2	XB1212C26 11W A9	12	12	3	26,55	83	T18
11	G 1 - 3	XB1616D40 11W A9	16	16	4	40,41	100	T22
11	G ≥ 1	XB2020E49 11W A9	20	20	5	49,65	120	T25

XB | BSPT Pipe Thread

Pitch TPI	Norm	Internal/External part number	d	D	Cutting edges	l	L	Price group
28	RC 1/8	XB0606C10 28BSPT A9	6	6	3	10,43	63	T9
19	RC 1/4 - 3/8	XB0808C15 19BSPT A9	8	8	3	15,37	63	T13
14	RC 1/2 - 7/8	XB1212D20 14BSPT A9	12	12	4	20,86	83	T19
11	RC 1 - 2	XB1616D31 11BSPT A9	16	16	4	31,17	89	T23

XB | Steel Conduit Thread

Pitch TPI	Norm	Internal/External part number	d	D	Cutting edges	l	L	Price group
20	Pg 7	XB0808C21 20PG A9	8	8	3	20,96	63	T13
18	Pg 9 - 16	XB1010C27 18PG A9	10	10	3	27,52	76	T17
16	Pg 21 - 48	XB1212D31 16PG A9	12	12	4	30,96	83	T19



XB | NPT

Pitch TPI	Norm	Internal/External part number	d	D	Cutting edges	l	L	Price group
27	1/16 - 1/8	XB0606C10 27NPT A9	6	6	3	10,82	63	T9
18	1/4 - 3/8	XB0808C16 18NPT A9	8	8	3	16,23	63	T13
14	1/2 - 3/4	XB1212D22 14NPT A9	12	12	4	22,68	83	T19
14	3/4	XB1616D22 14NPT A9	16	16	4	22,86	89	T23
11,5	1-2	XB1616D29 11.5NPT A9	16	16	4	29,82	89	T23
8	≥ 2 1/2	XB2020D42 8NPT A9	20	20	4	42,86	100	T26

XB | NPTF

Pitch TPI	Norm	Internal/External part number	d	D	Cutting edges	l	L	Price group
27	1/16 - 1/8	XB0606C10 27NPTF A9	6	6	3	10,82	63	T9
18	1/4 - 3/8	XB0808C16 18NPTF A9	8	8	3	16,23	63	T13
14	1/2 - 3/4	XB1212D22 14NPTF A9	12	12	4	22,68	83	T19
11,5	1-2	XB1616D29 11.5NPTF A9	16	16	4	29,82	89	T23
8	≥ 2 1/2	XB2020D42 8NPTF A9	20	20	4	42,86	100	T26

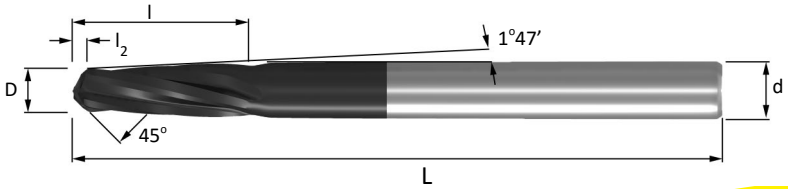
XB | NPSF

Pitch TPI	Norm	Internal/External part number	d	D	Cutting edges	l	L	Price group
27	1/16 - 1/8	XB0606C12 27NPSF A9	6	6	3	12,7	63	T9
18	1/4 - 3/8	XB0808C16 18NPSF A9	8	8	3	16,23	63	T13
14	1/2 - 3/4	XB1212D22 14NPSF A9	12	12	4	22,68	83	T19
11,5	1	XB1616D29 11.5NPSF A9	16	16	4	29,82	89	T23

NPT | Tapered End Mills for NPT/NPTF -reduces wear of the thread mill

D	d	Part number	Cutting edges	l	l_2	L	Price group
6	5	NPT0605D16 F9	4	16	1	64	T1
10	8,5	NPT10085D24 F9	4	24	1,5	76	T4
16	14	NPT1614D32 F9	4	32	2	89	T14
20	17	NPT2017D48 F9	4	48	3	120	T22

Should be used with cylindrical interpolation. Will save the WhizThrill thread mill from excessive wear



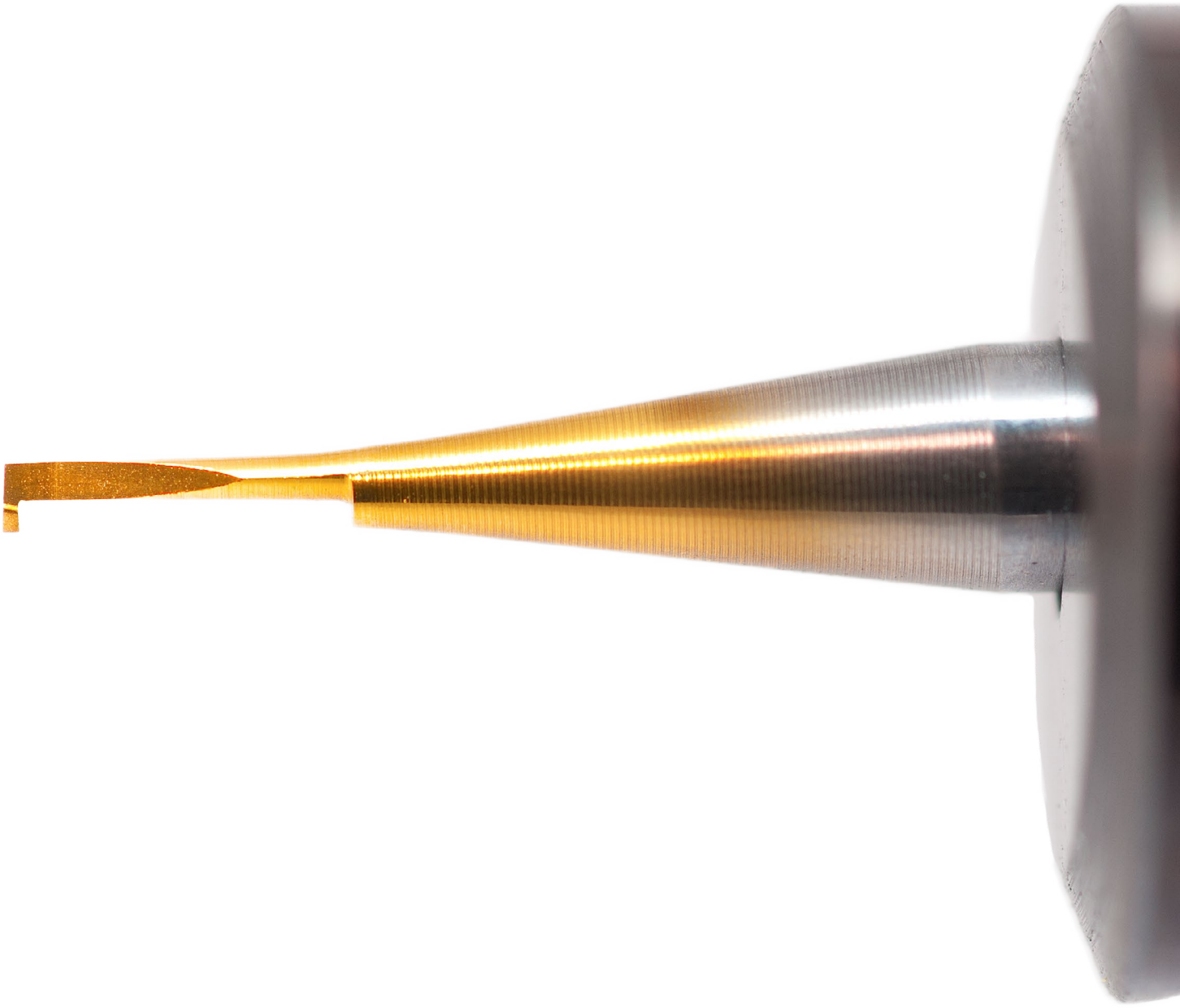
WhizIn

Solid Carbide Boring Bars

WhizIn, another revolutionary product developed by WhizCut is designed to improve productivity of internal applications. It has been specially developed for small diameters in internal turning applications and is unlike anything else on the market.

The WhizIn toolholder has the carbide bar mounted at an angle to achieve the maximum stability for a set diameter. By grinding away less from the base of the insert the insert becomes more stable. Other benefits are less grinding time and grinding stress, and also that the coolant may go through the toolholder and spray directly onto the cutting zone.

The WhizIn program includes a wide range of toolholders and inserts for internal turning, grooving, threading etc. The inserts are fully ground and made of micro grain carbide.

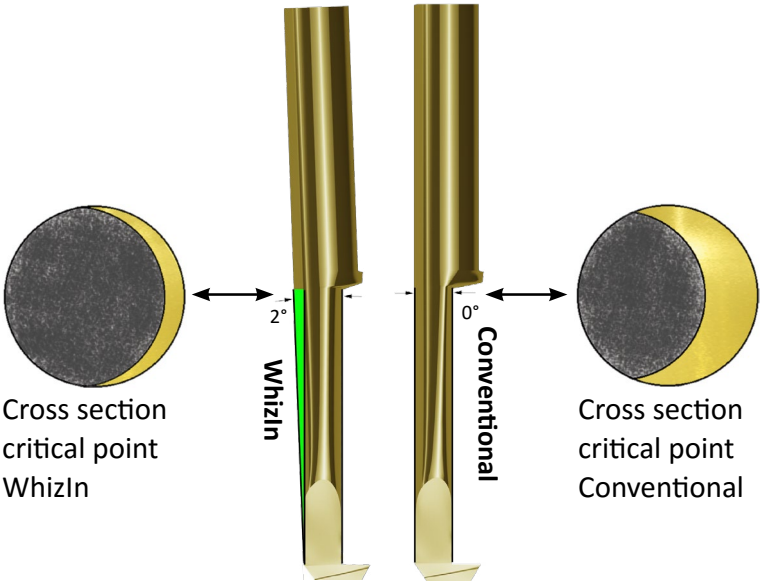


The WhizIn Boring Bar Set at an Angle for Increased Productivity

Better Stability

A WhizIn boring bar has up to 50% more material at the critical point compared with a conventional boring bar. The angle that the boring bar is clamped into the toolholder means the boring bar grows thicker with the length of the bar. This leads to a more stable tool.

The WhizIn boring bar is designed in a way that minimal grinding is required. This results in a less expensive tool but also a tool that has less grinding stress. With lesser grinding stress the tooling performance is more consistent and stronger than a conventional boring bar.

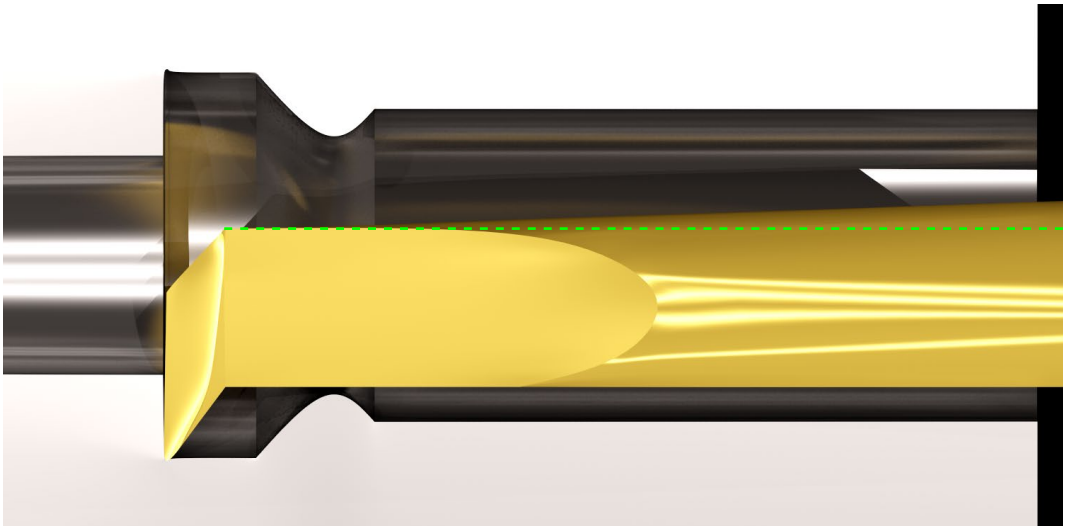


Turning it Right

The WhizIn boring bars are real problem solvers. The unique profiles and chip control geometries increases the possibility for a successful turning operation. The extra material at the critical point and along the weak parts of the boring bar results in an unmatched tool life and surface finish with a tool which will not shatter.

WhizIn Advantages

- Improved surface finish
- Increased tool life
- Coolant through toolholders
- Suitable for higher speeds and feeds
- Wide range of toolholders
- Chip control down to the smallest dimensions
- Fast turn around time for specials



Thickness of a straight boringbar

Turning with the Right Grade of Carbide

10M Uncoated micro grain grade at ISO K20-K30 for non ferrous materials.

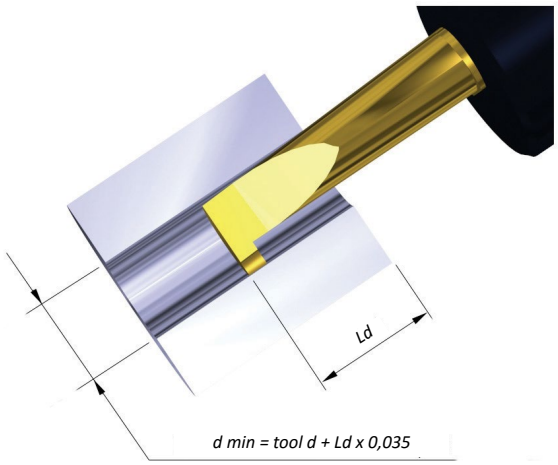
C10 TIN PVD coated micro grain grade (ISO P10-P30, K10-K30) for longer tool life and also for Steel, Stainless etc. using higher cutting speed.

F10 TiAlN multi-coated grade suitable when extreme heat (900C°) is developed during machining.

B10 AlCrN coated grade for materials such as titanium etc. where an extra edge sharpness is needed.

Minimum Bore Size

Due to the angular mounting of the WhizIn boring, the minimum bore size depends on the depth the tool is going into the smaller hole. This can easily be calculated as shown in the picture to the left.



Recommended Cutting Data WhizIn

Turning, Copyturning etc.

	Hardness HB	Feedrate mm/rev	Uncoated m/min	Coated m/min
Carbon steel	150	0,10-0,22	160-270	200-350
	250	0,08-0,17	120-220	150-275
	350	0,07-0,14	70-140	100-200
Alloy steel	200	0,08-0,20	110-190	150-275
	300	0,07-0,16	70-140	100-200
	400	0,06-0,15	50-100	70-140
Stainless steel	150	0,08-0,20	110-190	150-275
	250	0,07-0,16	70-140	100-200
	350	0,06-0,15	50-100	70-140
High temp. all.	200	0,05-0,12	40-110	50-130
	300	0,05-0,12	25-90	30-110
	400	0,05-0,12	20-65	25-80
Brass	<110	0,10-0,35	300-700	400-1000
	>110	0,08-0,28	250-500	300-700
Copper	<100	0,10-0,35	250-500	300-700
	>100	0,08-0,28	175-350	250-500
Aluminium	<100	0,10-0,20	300-700	400-1000
	>100	0,08-0,20	250-500	300-700

Grooving, Threading etc.

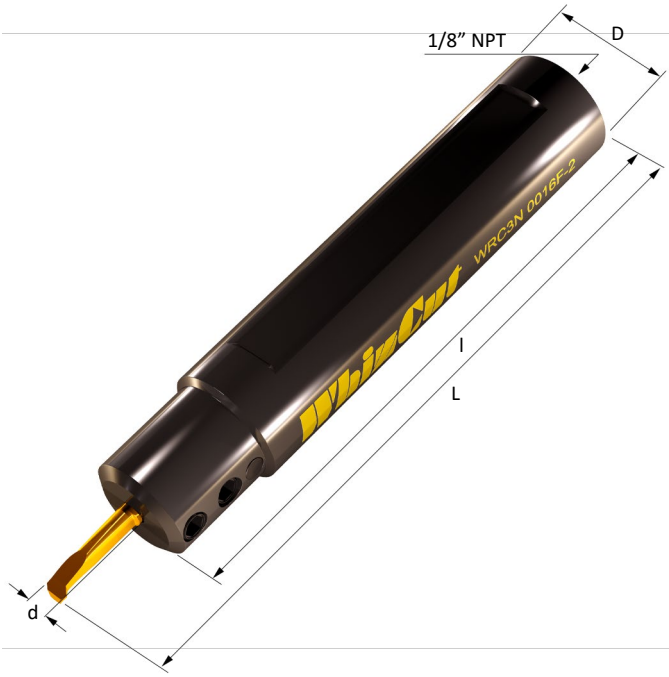
	Hardness HB	Feedrate mm/rev	Uncoated m/min	Coated m/min
Carbon steel	150	0,07-0,15	130-230	160-270
	250	0,05-0,12	100-190	120-220
	350	0,04-0,10	60-120	70-140
Alloy steel	200	0,05-0,12	90-160	110-190
	300	0,04-0,10	60-120	70-140
	400	0,03-0,08	40-80	50-100
Stainless steel	150	0,05-0,12	90-160	110-190
	250	0,04-0,10	60-120	70-140
	350	0,03-0,08	40-80	50-100
High temp. all.	200	0,03-0,09	30-90	40-110
	300	0,03-0,09	20-75	25-90
	400	0,03-0,09	15-50	20-65
Brass	<110	0,07-0,25	250-500	300-700
	>110	0,05-0,20	175-350	250-500
Copper	<100	0,07-0,25	200-400	250-500
	>100	0,05-0,20	140-280	75-350
Aluminium	<100	0,07-0,15	250-600	300-700
	>100	0,06-0,15	175-400	250-500

The WhizIn Toolholder

As the boring bar is mounted in a 2° angle in the toolholder, a natural incline angle is achieved which is perfect for high pressure coolant.

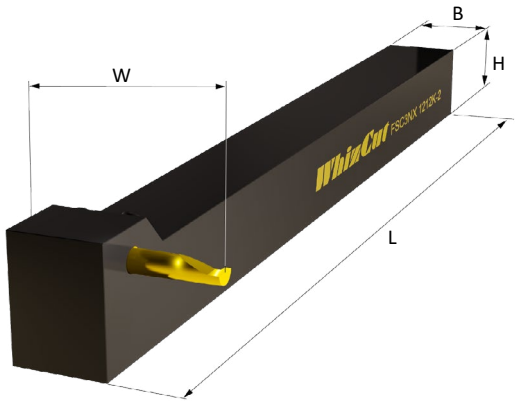
- Coolant Through
- Double screws for security and stability
- Special toolholder designs for Swiss type automatic lathes
- The toolholder and boring bar has a self locating system. When clamping within 30° the boring bar rotates itself into a correct position.





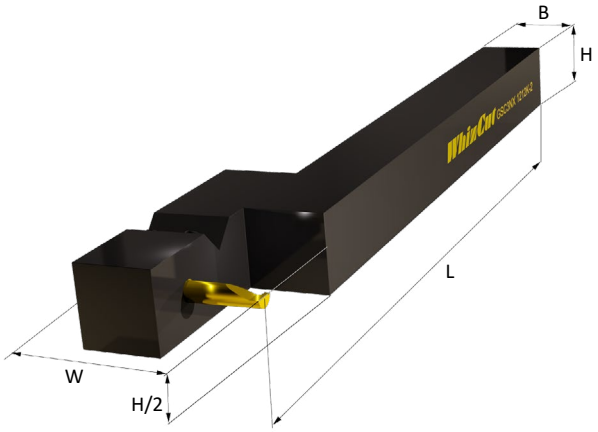
WRC | Round Toolholder with Internal Coolant

Toolholder	D	d Insert Size	l	L with standard insert	Boring bar	Stock	Price group
WRC3N 0012E-2	8	3	60,5	72,5	C3N---	r	B20
WRC4N 0012E-2	8	4	60,5	77	C4N---	r	B20
WRC3N 0012E-2	12	3	70	82	C3N---	r	B20
WRC4N 0012E-2	12	4	75	91,5	C4N---	r	B20
WRC3N 0016F-2	16	3	80	92	C3N---	r	B21
WRC4N 0016F-2	16	4	85	101,5	C4N---	r	B21
WRC5N 0016G-2	16	5	90	111	C5N---	r	B21
WRC6N 0016G-2	16	6	95	121	C6N---	r	B21
WRC3N 0750H-2	3/4"	3	100	112	C3N---	r	B22
WRC4N 0750H-2	3/4"	4	105	121,5	C4N---	r	B22
WRC5N 0750J-2	3/4"	5	110	131	C5N---	r	B22
WRC6N 0750J-2	3/4"	6	115	141	C6N---	r	B22
WRC8N 0750J-2	3/4"	8	120	165	C8N---	r	B22
WRC3N 0020H-2	20	3	100	112	C3N---	r	B22
WRC4N 0020H-2	20	4	105	121,5	C4N---	r	B22
WRC5N 0020J-2	20	5	110	131	C5N---	r	B22
WRC6N 0020J-2	20	6	115	141	C6N---	r	B22
WRC8N 0020J-2	20	8	120	165	C8N---	r	B22
WRC3N 0022J-2	22	3	110	122	C3N---	r	B23
WRC4N 0022J-2	22	4	115	131,5	C4N---	r	B23
WRC5N 0022J-2	22	5	120	141	C5N---	r	B23
WRC6N 0022K-2	22	6	125	151	C6N---	r	B23
WRC8N 0022K-2	22	8	130	175	C8N---	r	B23
WRC3N 0025J-2	25	3	110	122	C3N---	r	B24
WRC4N 0025J-2	25	4	115	131,5	C4N---	r	B24
WRC5N 0025J-2	25	5	120	141	C5N---	r	B24
WRC6N 0025K-2	25	6	125	151	C6N---	r	B24
WRC8N 0025K-2	25	8	130	175	C8N---	r	B24
WRC3N 1000J-2	1"	3	110	122	C3N---	r	B24
WRC4N 1000J-2	1"	4	115	131,5	C4N---	r	B24
WRC5N 1000J-2	1"	5	120	141	C5N---	r	B24
WRC6N 1000K-2	1"	6	125	151	C6N---	r	B24
WRC8N 1000K-2	1"	8	130	175	C8N---	r	B24



FSC | Square Shanks with Centerline at Top

Toolholder	B	H	L	W	Boring bar	Stock	Price group
FSC3NX 1208K-2	12	8	125	24	C3N---	k	B20
FSC3NX 1210K-2	12	10	125	24	C3N---	k	B21
FSC3NX 1212K-2	12	12	125	24	C3N---	k	B22
FSC3NX 1616K-2	16	16	125	24	C3N---	k	B23
FSC4NX 1908K-2	19	8	125	32	C4N---	k	B21
FSC4NX 1910K-2	19	10	125	32	C4N---	k	B22
FSC4NX 1912K-2	19	12	125	32	C4N---	k	B23
FSC4NX 1916K-2	19	16	125	32	C4N---	k	B24
FSC5NX 2412K-2	24	12	125	40	C5N---	k	B24
FSC5NX 2416K-2	24	16	125	40	C5N---	k	B25
FSC5NX 2420K-2	24	20	125	40	C5N---	k	B26

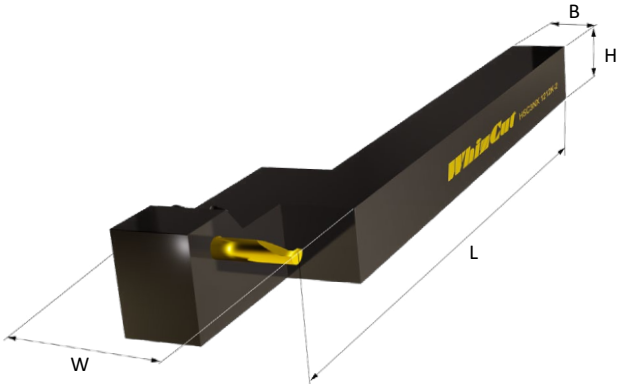


GSC | Square Shanks with Centerline at Center

Toolholder	B	H	L	W	Boring bar	Stock	Price group
GSC3NX 1208K-2	12	8	125	24	C3N---	k	B25
GSC3NX 1210K-2	12	10	125	24	C3N---	k	B26
GSC3NX 1212K-2	12	12	125	24	C3N---	r	B27
GSC3NX 1616K-2	16	16	125	24	C3N---	k	B28
GSC4NX 1908K-2	19	8	125	32	C4N---	k	B25
GSC4NX 1910K-2	19	10	125	32	C4N---	k	B26
GSC4NX 1912K-2	19	12	125	32	C4N---	k	B27
GSC4NX 1916K-2	19	16	125	32	C4N---	k	B28
GSC5NX 2412K-2	24	12	125	40	C5N---	k	B28
GSC5NX 2416K-2	24	16	125	40	C5N---	k	B29

Stock status:

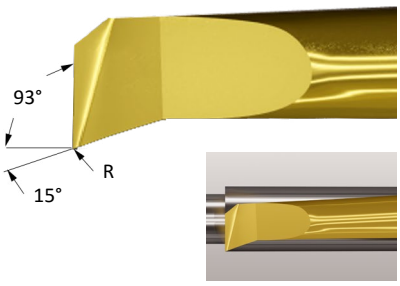
a *ER Stock standard, EL Stock standard*
b *ER Stock standard, EL against inquiry*
c *EL Stock standard, ER against inquiry*
r *ER Stock standard only*
l *EL Stock standard only*
k *ER against inquiry, EL against inquiry*



HSC | Square Shanks with Centerline at top

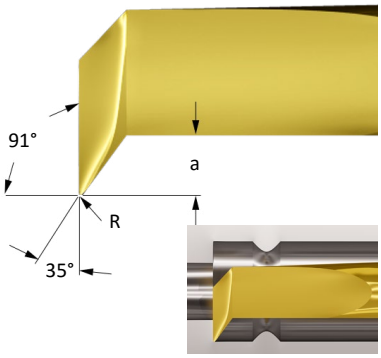
Toolholder	B	H	L	W	Boring bar	Stock	Price group
HSC3NX 1208K-2	12	8	125	24	C3N---	k	B27
HSC3NX 1210K-2	12	10	125	24	C3N---	k	B28
HSC3NX 1212K-2	12	12	125	24	C3N---	k	B29
HSC3NX 1616K-2	16	16	125	24	C3N---	k	B30
HSC4NX 1908K-2	19	8	125	32	C4N---	k	B28
HSC4NX 1910K-2	19	10	125	32	C4N---	k	B29
HSC4NX 1912K-2	19	12	125	32	C4N---	k	B30
HSC4NX 1916K-2	19	16	125	32	C4N---	k	B31
HSC5NX 2412K-2	24	12	125	40	C5N---	k	B31
HSC5NX 2416K-2	24	16	125	40	C5N---	k	B32

Style J | Boring Bars for Turning



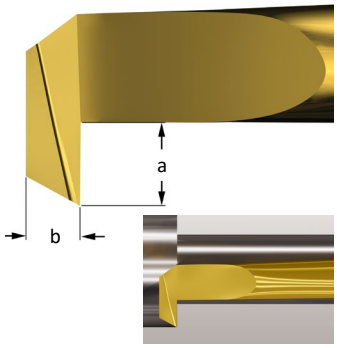
Boring bar	D	d	Cutting rake	r	f	L	l	Stock 10M	Stock C10	Stock F10	Stock B10	Price group
C31NR J8-0	3	0,8	8°	0,0	0,4	24	4	b	b	b	b	B4
C314NR J8-0	3	1,4	8°	0,0	0,7	24	4	b	b	b	b	B4
C32NR J8-0	3	1,6	8°	0,0	0,8	24	7	b	b	b	b	B3
C32NR J16-0	3	1,6	16°	0,0	0,8	24	7	b	b	b	b	B3
C33NR J8-0	3	2,2	8°	0,0	1,1	24	10	b	b	b	b	B3
C33NR J16-0	3	2,2	16°	0,0	1,1	24	10	b	b	b	b	B3
C33NR J8-1	3	2,2	8°	0,1	1,1	24	10	b	b	b	b	B4
C33NR J16-1	3	2,2	16°	0,1	1,1	24	10	b	b	b	b	B4
C34NR J8-0	3	3	8°	0,0	1,5	24	12	b	b	b	b	B2
C34NR J16-0	3	3	16°	0,0	1,5	24	12	b	b	b	b	B2
C34NR J8-1	3	3	8°	0,1	1,5	24	12	b	b	b	b	B3
C34NR J16-1	3	3	16°	0,1	1,5	24	12	b	b	b	b	B3
C4NR J8-0	4	4	8°	0,0	2	32	16,5	b	b	b	k	B3
C4NR J16-0	4	4	16°	0,0	2	32	16,5	b	b	b	k	B3
C4NR J8-1	4	4	8°	0,1	2	32	16,5	b	b	b	k	B4
C4NR J16-1	4	4	16°	0,1	2	32	16,5	b	b	b	k	B4
C5NR J8-0	5	5	8°	0,0	2,5	40	21	b	b	b	k	B4
C5NR J16-0	5	5	16°	0,0	2,5	40	21	b	b	b	k	B4
C5NR J8-1	5	5	8°	0,1	2,5	40	21	b	b	b	k	B5
C5NR J16-1	5	5	16°	0,1	2,5	40	21	b	b	b	k	B5
C6NR J8-0	6	6	8°	0,0	3	48	26	b	b	b	k	B6
C6NR J16-0	6	6	16°	0,0	3	48	26	b	b	b	k	B6
C6NR J8-1	6	6	8°	0,1	3	48	26	b	b	b	k	B7
C6NR J16-1	6	6	16°	0,1	3	48	26	b	b	b	k	B7
C8NR J8-0	8	8	8°	0,0	4	72	45	b	b	b	k	B10
C8NR J16-0	8	8	16°	0,0	4	72	45	b	b	b	k	B10
C8NR J8-1	8	8	8°	0,1	4	72	45	b	b	b	k	B11
C8NR J16-1	8	8	16°	0,1	4	72	45	b	b	b	k	B11

Style V | Boring Bars for Copy Turning



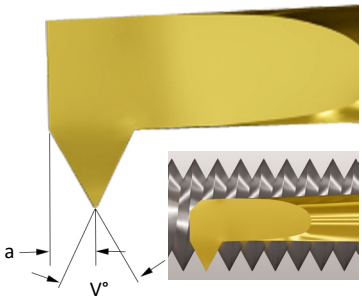
Boring bar	D	d	Cutting rake	a	R	f	L	l	Stock 10M	Stock C10	Stock F10	Stock B10	Price group
C32NR V8	3	1,6	8°	0,5	0,04	0,8	24	7	b	k	b	b	B3
C33NR V8	3	2,2	8°	0,7	0,07	1,1	24	10	b	k	b	b	B3
C3NR V8	3	3	8°	1	0,1	1,5	24	12	b	k	b	b	B3
C4NR V8	4	4	8°	1,4	0,15	2	32	16,5	b	b	b	k	B4
C5NR V8	5	5	8°	1,7	0,2	2,5	40	21	b	b	b	k	B5
C6NR V8	6	6	8°	2	0,25	3	48	26	b	b	b	k	B7
C8NR V8	8	8	8°	2,7	0,3	4	72	45	b	b	b	k	B11

Style B | Boring Bars for Back Turning



Boring bar	D	d	a	b	f	L	l	Stock 10M	Stock C10	Stock F10	Stock B10	Price group
C3NR B12-1-0	3	3	1	0,75	1,5	24	11	b	k	b	b	B4
C4NR B12-1,4-0	4	4	1,4	1	2	32	16,5	b	b	b	k	B5
C5NR B12-1,7-0	5	5	1,7	1,25	2,5	40	21	b	b	b	k	B6
C6NR B12-2-0	6	6	2	1,5	3	48	27	b	b	b	k	B8
C8NR B12-2,7-0	8	8	2,7	1,8	4	72	45	b	b	b	k	B12

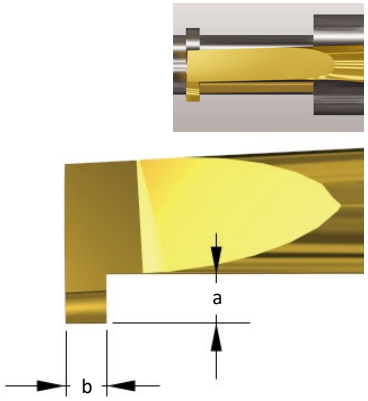
Style T | Boring Bars for Threading



Boring bar	D	d	Pitch	V°	a	f	L	l	Stock 10M	Stock C10	Stock F10	Stock B10	Price group
C31NR T60	3	0,8	0,2-0,4	60	0,2	0,5	24	4	b	k	b	b	B4
C32NR T60	3	1,6	0,2-0,6	60	0,3	0,75	24	7	b	k	b	b	B3
C33NR T60	3	2,2	0,2-0,8	60	0,4	1,25	24	10	b	k	b	b	B3
C34NR T60	3	3	0,2-1,0	60	0,5	1,5	24	12	b	k	b	b	B2
C4NR T60	4	4	0,25-1,25	60	0,6	2	32	16,5	b	b	b	k	B3
C4NR T55	4	4	0,25-1,25	55	0,6	2	32	16,5	b	b	b	k	B3
C5NR T60	5	5	0,25-1,5	60	0,7	2,5	40	21	b	b	b	k	B4
C6NR T60	6	6	0,25-1,75	60	0,8	3	48	27	b	b	b	k	B5
C6NR T55	6	6	0,25-1,75	55	0,8	3	48	27	b	b	b	k	B5
C8NR T60	8	8	0,35-2,5	60	1,2	4	72	45	b	b	b	k	B10

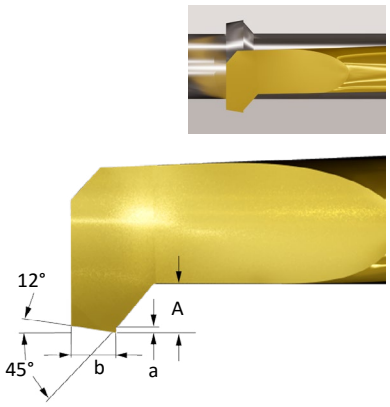
Please note: WhizIn boring bars are only compatible with WhizIn toolholders

Style G | Boring Bars for Straight Grooves

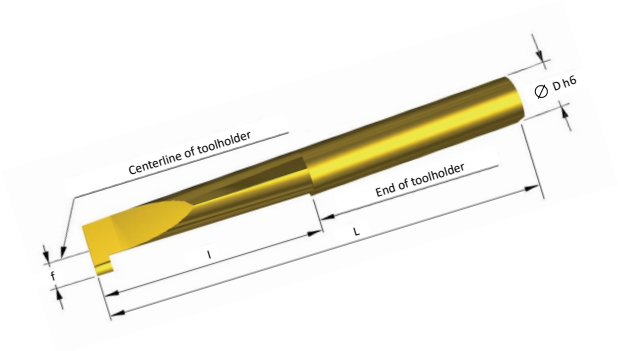


Boring bar	D	d	b	a	f	L	l	10M	Stock C10	Stock F10	Stock B10	Price group
C31NR G0,2	3	0,8	0,2	0,3	0,4	24	4	b	k	b	b	B4
C32NR G0,3	3	1,6	0,3	0,5	0,8	24	7	b	k	b	b	B4
C33NR G0,5	3	2,2	0,5	0,7	1,1	24	10	b	k	b	b	B4
C34NR G0,2	3	3	0,2	0,3	1,5	24	12	b	k	b	b	B3
C34NR G0,5	3	3	0,5	0,8	1,5	24	12	b	b	b	b	B3
C34NR G0,8	3	3	0,8	1,0	1,5	24	12	b	b	b	b	B3
C34NR G1,0	3	3	1,0	1,0	1,5	24	12	b	b	b	b	B3
C4NR G0,5	4	4	0,5	0,8	2	32	16,5	b	b	b	k	B4
C4NR G1,0	4	4	1,0	1,3	2	32	16,5	b	b	b	k	B4
C5NR G0,5	5	5	0,5	0,8	2,5	40	21	b	b	b	k	B5
C5NR G1,0	5	5	1,0	1,5	2,5	40	21	b	b	b	k	B5
C5NR G1,5	5	5	1,5	1,5	2,5	40	21	b	b	b	k	B5
C6NR G0,7	6	6	0,7	1,3	3	48	26	b	b	b	k	B7
C6NR G1,0	6	6	1,0	1,3	3	48	26	b	b	b	k	B7
C6NR G1,5	6	6	1,5	2	3	48	26	b	b	b	k	B7
C6NR G2,0	6	6	2,0	2	3	48	26	b	b	b	k	B7
C8NR G1,0	8	8	1,0	1,7	4	72	45	b	b	b	k	B11
C8NR G1,5	8	8	1,5	2,2	4	72	45	b	b	b	k	B11
C8NR G2,0	8	8	2	2,7	4	72	45	b	b	b	k	B11
C8NR G2,5	8	8	2,5	2,7	4	72	45	b	b	b	k	B11

Style P | Boring Bars for Grooving and Chamfering before Parting Off



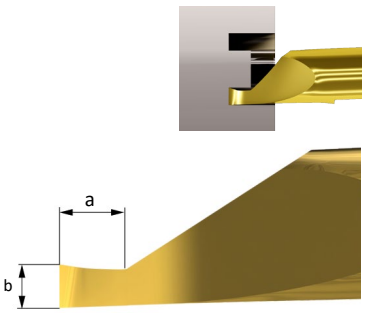
Boring bar	D	d	b	A	a	f	L	l	10M	Stock C10	Stock F10	Stock B10	Price group
C3NR P0,8	3	3	0,8	0,8	0,1	1,5	24	12	b	b	b	b	B4
C4NR P1,0	4	4	1	1	0,1	2	32	16,5	b	b	b	k	B5
C5NR P1,0	5	5	1	1,3	0,2	2,5	40	21	b	b	b	k	B6
C6NR P1,0	6	6	1	1,5	0,2	3	48	26	b	b	b	k	B8
C8NR P1,5	8	8	1,5	2	0,3	4	72	45	b	b	b	k	B12



Stock status:

a ER Stock standard, EL Stock standard
b ER Stock standard, EL against inquiry
c EL Stock standard, ER against inquiry
r ER Stock standard only
l EL Stock standard only
k ER against inquiry, EL against inquiry

Style A | Boring Bars for Face Grooving



Boring bar	D	b	a	L	l	10M	Stock C10	Stock F10	Stock B10	Price group
C3NR A8-3-07	3	0,7	0,8	18	6	b	b	b	k	B2
C4NR A8-4-10	4	1	1,25	23,5	8	b	b	b	k	B3
C5NR A8-5-12	5	1,2	1,5	29	10	b	b	b	k	B4
C6NR A8-6-15	6	1,5	2	34	12	b	b	b	k	B6
C8NR A8-8-20	8	2	2,5	43	16	b	b	b	k	B10

Special widths and depths can be produced. Contact your local distributor for a quote

WhizDrill

Micro Drills for the Most Demanding Applications

Small parts have small holes but big parts can also have small holes. Micro drilling can be very challenging. WhizCut can make it all easier by supplying the perfect drill for the job. Through new production methods WhizCut can manufacture micro drills starting at 0,05 mm in any drill form or geometry.

WhizDrill micro drills are all produced as specials. Therefore manufacturing according to a customer's need is everyday work at WhizCut. As always WhizCut uses modern machinery and the best possible carbide.

Do you want to save cycle time by manufacturing with a step drill or remove the reamer by using our Three Flute Drill? WhizCut will manufacture the best possible drill. We know micro and we understand what our customers need.



WhizDrill Micro Drill Bits Made To Order



The best tool for the job is always the tool that is specially made for the job. In our experience with micro machining we have found that it in most cases is best to offer a specially made tool with the perfect geometry for the job. The problem with this in the past has been that special production was very expensive, so it did not turn out profitable for the user. Today we have improved our machining capabilities which means we can now deliver the perfect tool with superb quality and tool life at a good price, starting from 20 pcs. The shank sizes in stock are 1,00 mm, 1,50 mm, 2,00 mm, 2,50 mm, 3,00 mm, 1/8" and 4,00 mm.
In addition to improved production methods we have found a very suitable wear resistant sub micro grain carbide.
We have put together a range of drills that start at 0,05 mm and go up to 3 mm. These can be ordered to any geometry. If there is a special need for another grade of carbide, or coolant through, just contact your WhizCut representative for a quote.
To order just follow the guidelines on the next page to get your specific item number.





Grades of Carbide

WhizDrills are available in both PVD-coated and uncoated sub-micro grain carbide with hardness over 1570 HV 30 and with a sustained corner strength of >4000 MPA.

Stock Standard Grades

9M Uncoated micro grain grade at ISO K20-K30 a strength of >4000 MPA

F9 TiAlN multi-coated grade suitable when extreme heat (900C°) is developed during machining.

B9 AlCrN coated grade for materials such as titanium etc. where an extra edge sharpness is needed.



The WhizDrill Nomenclature

WhizCut have put together a fast and easy way to order the correct drill bit. All our drills can be ordered for every 0,01 mm in diameter and with a range of different specifications. The below two examples and the conversion chart can be used to get the correct drill.
Details to specify when ordered amongst others, Right or left hand, Helix angle, and Point angle. The Drills have h6 tolerance unless otherwise specified.
Please contact your WhizCut representative if you need assistance to choose the correct drill bit.

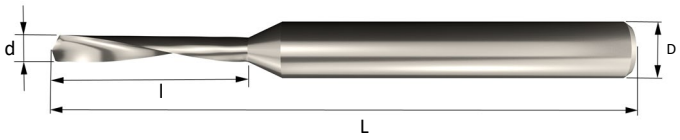
Drill	Type	Right/ left hand	Drill d	Helix angle	Point angle	Shank D mm	Cutting length mm	O.V.A length mm	Grade
D	*	*	*,**	*	*	*,*	*	**	**
D	*C*	*R*	*0,58*	*E*	*D*	*3,0*	*7*	*30*	*C9*
D	*B*	*R*	*0,10*	*F*	*F*	*1,5*	*1*	*30*	*C9*

Name	Drill type
A	*1-Flute Twist Drill with reinforced shank*
B	*2-Flute Twist Drill with reinforced shank*
BA	*2-Flute Self Centering Twist Drill with reinforced shank*
BC	*2-Flute Coolant Through Twist Drill, reinforced shank*
C	*3-Flute Twist Drill withreinforced shank*
D	*2-Flute Twist Drill*
E	*2-Flute Step Twist Drill*
F	*Spade Drill*
G	*Center Drill*
H	*Center Drill Long*
I	*Half Round Drill*
J	*1,2,3 step Half round Drill*
K	*Double Countersink Drill*

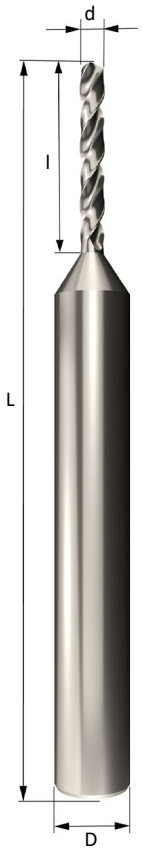
Name	Helix angle°
A	*0*
B	*15*
C	*20*
D	*24*
E	*30*
F	*35*
G	*38*

Name	Point angle°
A	*90*
B	*100*
C	*110*
D	*118*
E	*120*
F	*130*
G	*140*





Style A | Carbide 1-Flute Twist Drill with Reinforced Shank

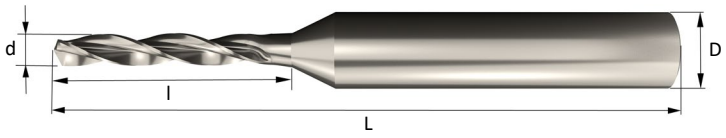


Style B | Carbide 2-Flute Twist Drills with Reinforced Shank

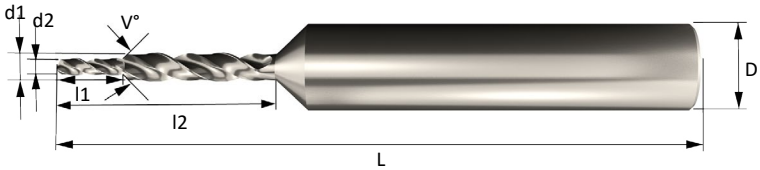
Drill bit	d	D	l	L	Stock 9M	Stock F9	Stock B9
DBR/L H P 0,20 18	0,20	1,00	1,80	25	k	k	k
DBR/L H P 0,21 18	0,21	1,00	1,80	25	k	k	k
DBR/L H P 0,-- 18	0,22-0,24	1,00	1,80	25	k	k	k
DBR/L H P 0,-- 22	0,25-0,30	1,00	2,20	25	k	k	k
DBR/L H P 0,-- 28	0,31-0,38	1,00	2,80	25	k	k	k
DBR/L H P 0,-- 36	0,39-0,48	1,00	3,60	25	k	k	k
DBR/L H P 0,-- 40	0,49-0,53	1,00	4,00	25	k	k	k
DBR/L H P 0,-- 45	0,54-0,60	1,00	4,50	25	k	k	k
DBR/L H P 0,-- 50	0,61-0,67	1,00	5,00	25	k	k	k
DBR/L H P 0,-- 56	0,68-0,75	1,00	5,60	25	k	k	k
DBR/L H P 0,-- 63	0,76-0,79	1,00	6,30	25	k	k	k
DBR/L H P 0,-- 63	0,80-0,85	1,50	6,30	30	k	k	k
DBR/L H P 0,-- 71	0,86-0,95	1,50	7,10	30	k	k	k
DBR/L H P -,-- 80	0,96-1,05	1,50	8,00	30	k	k	k
DBR/L H P 1,-- 90	1,06-1,15	1,50	9,00	30	k	k	k
DBR/L H P 1,-- 100	1,16-1,30	1,50	10,00	30	k	k	k
DBR/L H P 1,-- 112	1,31-1,49	1,50	11,20	30	k	k	k
DBR/L H P 1,-- 120	1,50-1,69	2,00	12,00	30	k	k	k
DBR/L H P 1,-- 130	1,70-1,99	2,00	13,00	38	k	k	k
DBR/L H P 2,-- 140	2,00-2,49	2,50	14,00	38	k	k	k
DBR/L H P -,-- 160	2,50-3,00	3,00	16,00	42	k	k	k

Style BA | Carbide 2-Flute <u>Self Centering</u> Twist Drill with Reinforced Shank

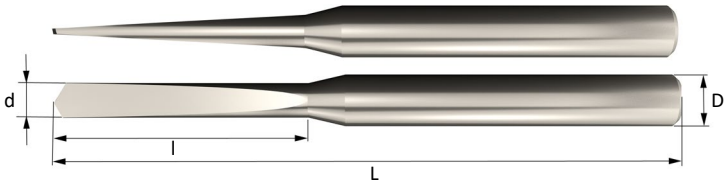
Style BC | Carbide 2-Flute <u>Coolant Through</u> Twist Drill with Reinforced Shank



Style C | Carbide 3-Flute Twist Drill with Reinforced Shank



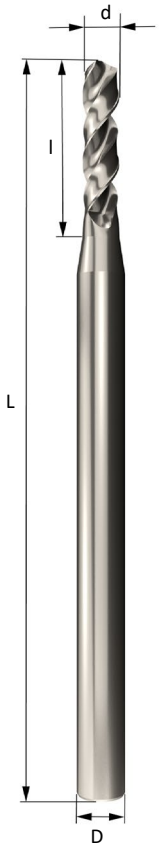
Style E | Carbide 2-Flute multiple Step Twist Drill with Reinforced Shank



Style F | Carbide Spade Drill

Stock status:
All Drills are available for any type of geometry.
All Drills are available of steps of 0,01mm
The tolerance is h6 as standard other tolerances upon request.
All Tabled items have fixed prices from 50pcs. All other will be quoted.

Minimum drill size:
- *0,05mm = style B.*
- *0,10mm = style E, G, H, I, J, K*
- *0,50mm = styles A, BA, BC,C, D, F*

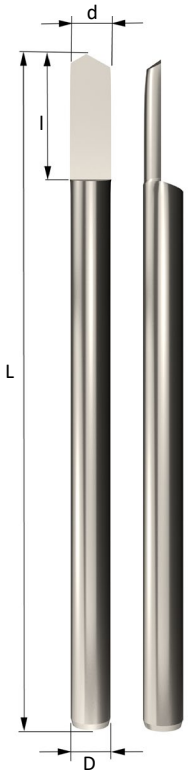


Style G | Carbide Center Drills

Drill bit	d	D	l	L	9M	Stock F9	B9
DGR/L H P 0,-- 07	0,20	1,5	0,7	25	k	k	k
DGR/L H P 0,- -08	0,21-0,24	1,5	0,8	25	k	k	k
DGR/L H P 0,-- 09	0,25-0,30	1,5	0,9	25	k	k	k
DGR/L H P 0,- -12	0,31-0,38	1,5	1,2	25	k	k	k
DGR/L H P 0,-- 15	0,39-0,48	1,5	1,5	25	k	k	k
DGR/L H P 0,- -19	0,49-0,60	1,5	1,9	25	k	k	k
DGR/L H P 0,-- 21	0,61-0,67	1,5	2,1	25	k	k	k
DGR/L H P 0,- -24	0,68-0,75	1,5	2,4	25	k	k	k
DGR/L H P 0,-- 26	0,76-0,85	1,5	2,6	25	k	k	k
DGR/L H P 0,- -30	0,86-0,95	1,5	3,0	25	k	k	k
DGR/L H P 1,- -34	0,96-1,05	1,5	3,4	25	k	k	k
DGR/L H P 1,- -38	1,06-1,15	1,5	3,8	25	k	k	k
DGR/L H P 1,- -42	1,16-1,30	1,5	4,2	25	k	k	k
DGR/L H P 1,- -47	1,31-1,49	1,5	4,7	25	k	k	k

Style H | Carbide Center Drills Long

Drill bit	d	D	l	L	9M	Stock F9	B9
DHR/L H P 0,-- 44	0,70-0,79	1,5	4,4	30	k	k	k
DHR/L H P -,-- 48	0,80-1,09	1,5	4,8	30	k	k	k
DHR/L H P 1,-- 54	1,10-1,19	1,5	5,4	30	k	k	k
DHR/L H P 1,-- 60	1,20-1,29	1,5	6	30	k	k	k
DHR/L H P 1,-- 67	1,30-1,49	1,5	6,7	30	k	k	k
DHR/L H P 1,-- 72	1,50-1,79	2	7,2	38	k	k	k
DHR/L H P 1,-- 84	1,80-1,99	2	8,4	38	k	k	k
DHR/L H P 2,-- 84	2,00-2,49	2,5	8,4	38	k	k	k

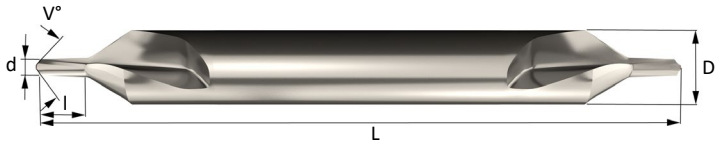


Style I | Carbide Half Round Drills

Drill bit	d	D	l	L	9M	Stock F9	B9
DIR/L H P 0,-- 16	0,20-0,29	1,0	1,6	25	k	k	k
DIR/L H P 0,-- 23	0,30-0,39	1,0	2,3	25	k	k	k
DIR/L H P 0,-- 35	0,40-0,49	1,0	3,5	25	k	k	k
DIR/L H P 0,-- 40	0,50-0,59	1,5	4,0	25	k	k	k
DIR/L H P 0,-- 45	0,60-0,69	1,5	4,5	25	k	k	k
DIR/L H P 0,-- 50	0,70-0,79	1,5	5,0	25	k	k	k
DIR/L H P 0,-- 55	0,80-0,89	1,5	5,5	25	k	k	k
DIR/L H P 0,-- 60	0,90-0,99	1,5	6,0	25	k	k	k
DIR/L H P 0,-- 65	1,00-1,09	1,5	6,5	25	k	k	k
DIR/L H P 0,-- 70	1,10-1,19	1,5	7,0	25	k	k	k
DIR/L H P 0,-- 75	1,20-1,29	1,5	7,5	25	k	k	k
DIR/L H P 0,-- 80	1,30-1,39	1,5	8,0	25	k	k	k
DIR/L H P 0,-- 85	1,40-1,49	1,5	8,5	25	k	k	k
DIR/L H P 0,-- 95	1,50-1,69	2,0	9,5	30	k	k	k
DIR/L H P 0,-- 110	1,70-2,00	2,0	11,0	30	k	k	k
DIR/L H P 0,-- 120	2,01-2,30	2,5	12,0	38	k	k	k
DIR/L H P 0,-- 140	2,31-2,50	2,5	14,0	38	k	k	k

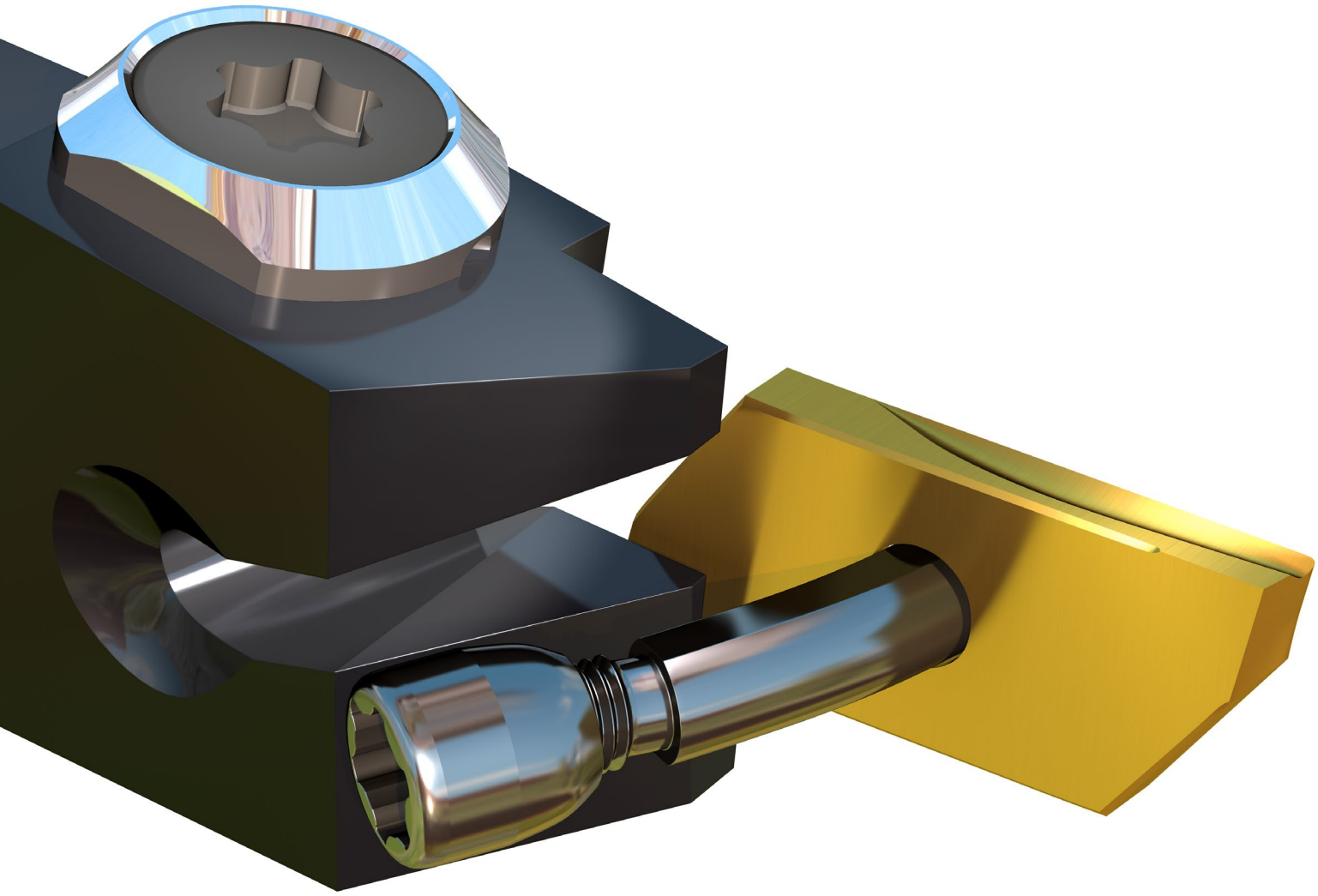


Style J | Carbide 1, 2, 3 Step Half Round



Style K | Carbide Double Countersink Drills

Smart Solutions on the Cutting Edge



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