



2017 Master Catalog

WIDIA  TM



The WIDIA™ line of micro boring bars provides accurate holmaking tooling in diameters as small as .062" (1,57mm). These economical, indexable inserts are available in both steel and carbide shanks and are stocked in both metric and inch sizes. Ideal for a wide range of applications, including precision micro boring.

Small Hole Boring • I.D. Indexable Insert Tooling



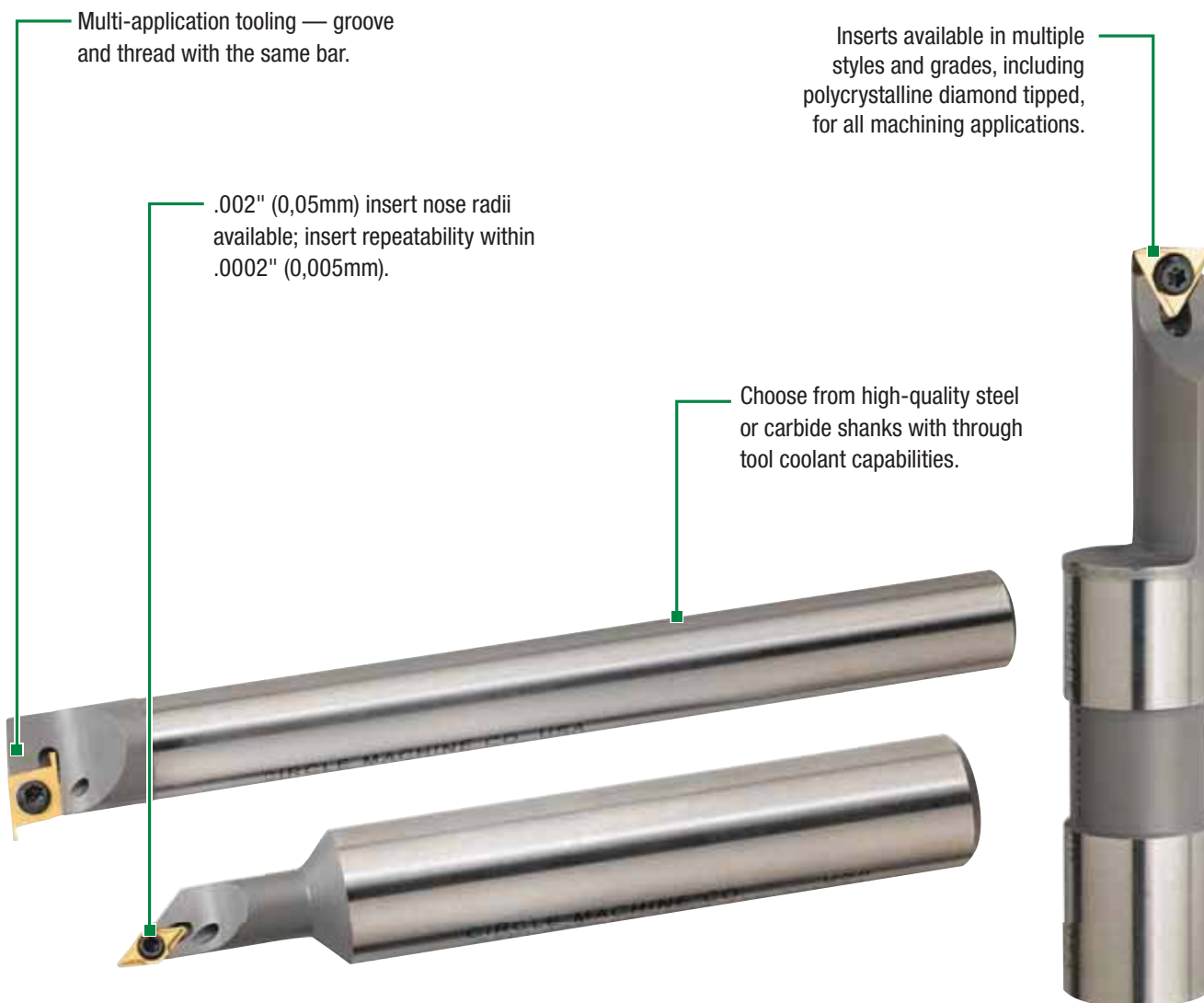
80° Diamond Insert Boring Bars

- Available in shanks as small as .157" (4mm) to bore >.180" (4,57mm) diameter.
- Positive rake geometry for free cutting action and better surface finishes.
- Superior, unobstructed chip evacuation.
- Stocked in multiple grades to bore a wide range of materials.

Threading and Grooving Boring Bars

- Easy insert changes for threading and grooving.
- Thread down to a 48 TP, 1,3mm TP (pitch).
- Thread and groove capabilities to an inside bore diameter of .272" (6,91mm).





Triangle Insert Boring Bars

- Designed for less obstruction and greater chip evacuation.
- Positive rake geometry to bore holes $>.275"$ (6,98mm) diameter.
- Stocked in all grades, including diamond-tipped and borazon-tipped styles.
- Stocked in shanks as small as $.24"$ (6mm) for $.28"$ (7,06mm) minimum bore diameter.



The World's Most Comprehensive Boring Solutions

Trust the WIDIA™ full line of boring tools to meet all of your demanding job requirements. Whatever the work at hand, you are sure to find the most appropriate solution in this comprehensive, easy-to-use guide.

We engineer only the BEST boring tools, designed to reduce your machining time, provide superior results, and outperform the competition.



Select the Correct Small Hole Boring Product Platform for Your Application

1 Determine tooling system to be used based on hole size to be bored (D min).

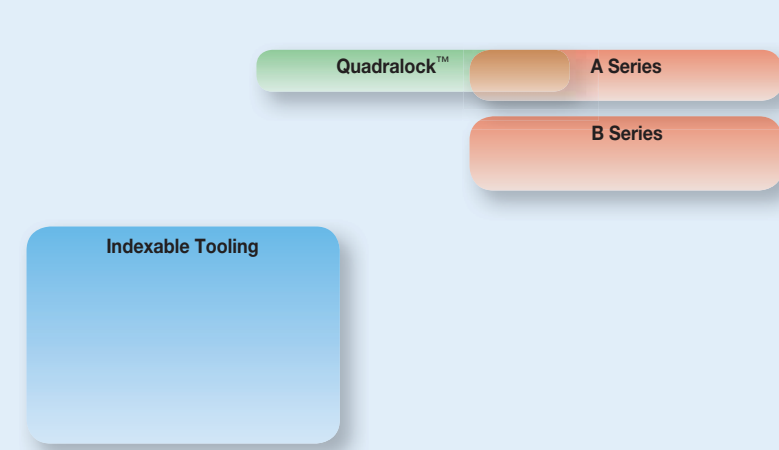
NOTE: Proper bar selection will have largest minimum bore dimension under hole size to be bored.

- Indexable Tooling
- A/B Series
- Quadralock

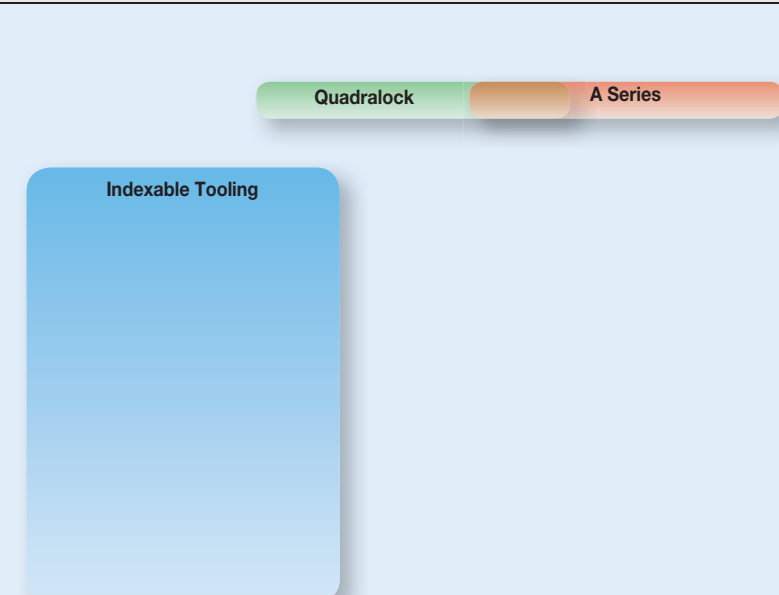
Boring

minimum bore diameter (D min)	high performance ◀ ▶ general performance
.04	Indexable Tooling Quadralock A Series B Series
.08	
.12	
.16	
.20	
.24	
.28	
.31	
.35	
.39	
.43	
.47	
.51	
.55	
.59	
.63	
.67	
.71	
.75	
.79	
.83	
.87	
.91	
.94	
.98	
1.02	
1.06	
1.10	
1.14	
1.18	
1.22	
1.26	
1.30	
1.34	
1.38	

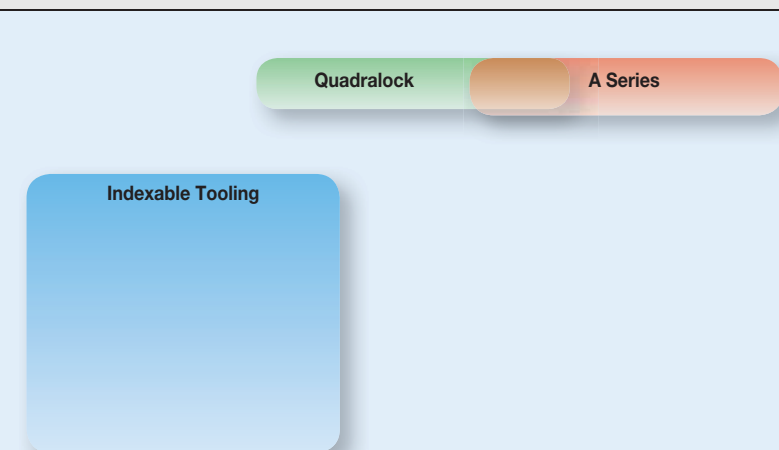
Profiling

minimum bore diameter (D min)	high performance ◀ ▶ general performance
.04	
.08	
.12	
.16	
.20	
.24	
.28	
.31	
.35	
.39	
.43	
.47	
.51	
.55	
.59	
.63	
.67	
.71	
.75	

Threading

minimum bore diameter (D min)	high performance ◀ ▶ general performance
.04	
.08	
.12	
.16	
.20	
.24	
.28	
.31	
.35	
.39	
.43	
.47	
.51	
.55	
.59	
.63	
.67	
.71	
.75	
.79	
.83	
.87	
.91	
.94	
.98	

Grooving

minimum bore diameter (D min)	high performance ◀ ▶ general performance
.04	
.08	
.12	
.16	
.20	
.24	
.28	
.31	
.35	
.39	
.43	
.47	
.51	
.55	
.59	
.63	
.67	
.71	
.75	

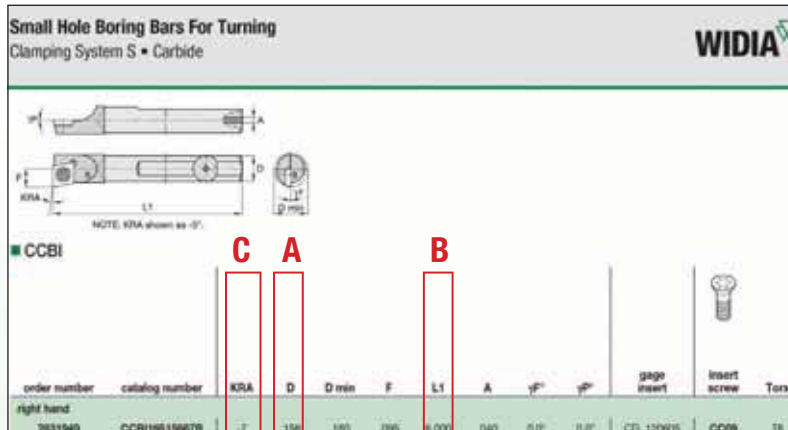
NOTE: Proper bar selection will have largest minimum bore dimension under hole size to be bored.

2 Determine boring bar (D).

A Select shank size (D) based on your machine's requirements.

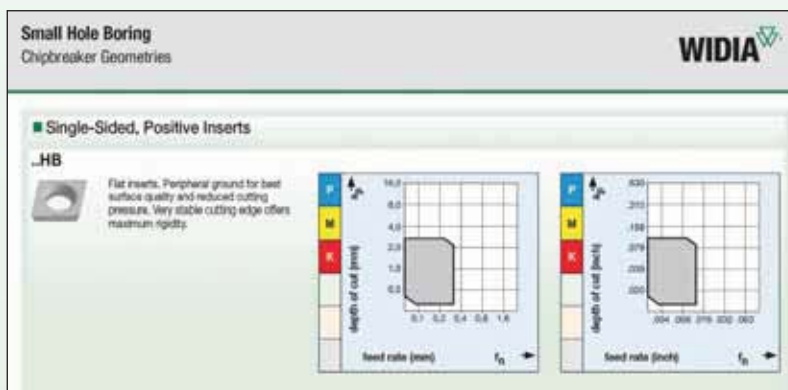
B Determine bore depth (how far the boring bar extends from the holder). Multiply bar diameter by 4. If bore depth is less, use a steel bar. If bore depth exceeds 4:1 ratio, use a carbide bar. Use L1 or L4 depending on bar selected. (See recommended maximum overhang chart on [page D122](#).) For indexable tooling, go to **step 3**. For all other tooling systems, go directly to **step 4**.

C Determine lead angle (KRA). Zero degree lead angle is used when maximum stability is required. Lead angle may vary based on changing conditions, such as boring in a blind hole.



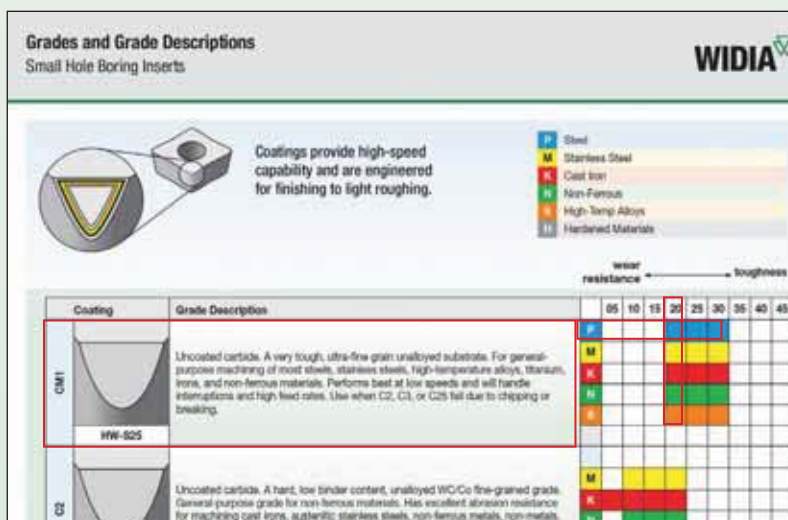
3 Determine which chipbreaker is best for the material to be machined.

Consult the Small Hole Boring Chipbreaker Geometry charts on [pages D66–D69](#).



4 Determine which grade is best for the material to be machined.

Consult the Grades and Grade Descriptions charts on [pages D70–D71](#).



5 Select the appropriate insert based on style, grade, and geometry.

Small Hole Boring Positive Inserts														
WIDIA														
* first choice ○ alternate choice														
CDHB														
ISO catalog number	ANSI catalog number	D		L10		S		Rr		D1		max		
mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	
CDHB54T00B	CDHB1206XB	5.97	5/32	4.00	1/8	1.02	.040	0.05	.002	2.13	.084	—	—	2030M7
CDHB54T00M	CDHB1206XM	5.97	5/32	4.00	1/8	1.02	.040	0.05	.002	2.13	.084	1.30	.075	2030M7
CDHB54T002	CDHB120605	5.97	5/32	4.00	1/8	1.02	.040	0.18	.007	2.13	.084	—	—	2030M4
CDHB54T00M	CDHB120605M	5.97	5/32	4.00	1/8	1.02	.040	0.18	.007	2.13	.084	0.98	.038	2030M4
CDHB54T004M	CDHB12061M	5.97	5/32	4.00	1/8	1.02	.040	0.38	.015	2.13	.084	0.96	.038	2030M4
CDHB54T004	CDHB12061	5.97	5/32	4.00	1/8	1.02	.040	0.38	.015	2.13	.084	—	—	2030M4
NOTE: Max DOC only applies to tipped inserts, which are designated with an "M" at the end of the catalog number.														

6 Determine the Speed and Feed Chart with the appropriate cutting data.

- A Based on grade and edge geometry, identify starting speed (vc) and feed (fz). The first choice starting feed is in **bold**.
- B Use the corresponding speed located in the same column below the feed information.

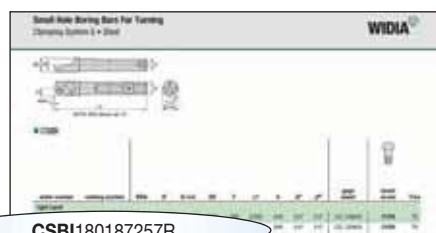
Speed and Feed Chart

Positive Inserts • Inch

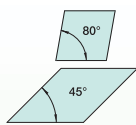
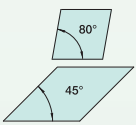
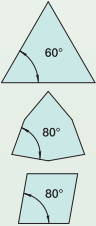
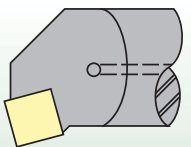
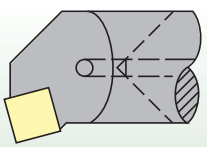
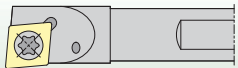
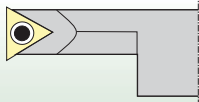
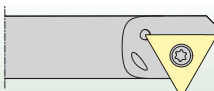
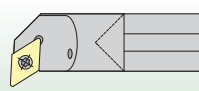
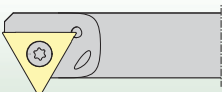
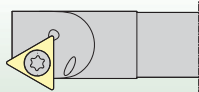
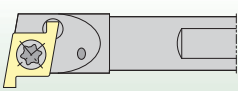
Cutting Speed – vc SFM														
Material Group		C2			C25			C3			CG5			
		min	Start	max	min	Start	max	min	Start	max	min	Start	max	min
P	ap [inch]	—	—	—	—	—	—	—	—	—	.002	—	.012	.002
	f [inch]	—	—	—	—	—	—	—	—	—	.002	—	.001	.019
	0/1	—	—	—	—	—	—	—	—	—	305	380	460	340
	2	—	—	—	—	—	—	—	—	—	200	250	300	220
	3	—	—	—	—	—	—	—	—	—	200	250	300	220
	4	—	—	—	—	—	—	—	—	—	155	195	235	170
M	5	—	—	—	—	—	—	—	—	—	200	250	300	220
	6	—	—	—	—	—	—	—	—	—	135	165	200	150
	ap [inch]	.002	—	.012	.002	—	.012	.002	—	.012	.002	—	.012	.002
K	f [inch]	.001	—	.012	.001	—	.012	.001	—	.012	.001	—	.012	.001
	1	180	225	270	205	255	310	205	255	310	240	300	360	265
	2	165	205	250	185	230	280	185	230	280	220	270	325	240
N	3	120	150	185	140	170	210	140	170	210	160	200	245	180
	ap [inch]	.002	—	.012	.002	—	.012	.002	—	.012	.002	—	.012	.002
	f [inch]	.001	—	.012	.001	—	.012	.001	—	.012	.001	—	.012	.001
S	1	170	213	255	190	235	285	190	235	285	195	240	295	220
	2	220	270	330	240	300	360	240	300	360	250	310	375	275
	3	160	200	240	180	220	265	180	220	265	180	225	270	200
H	ap [inch]	.002	—	.020	.002	—	.020	.002	—	.020	.002	—	.020	.002
	f [inch]	.001	—	.012	.001	—	.012	.001	—	.012	.001	—	.012	.001
	1	1320	1650	1980	1320	1650	1980	1320	1650	1980	1320	1650	1980	1455
	2	970	1210	1450	970	1215	1460	970	1215	1460	970	1215	1460	1070

How Do Catalog Numbers Work?

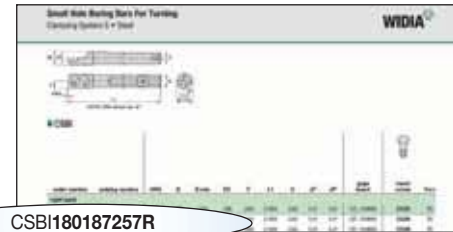
Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



CSBI180187257R

C	S	B	I	
Series Type	Bar Type	Bar Style Designation	Units	Insert Shape (optional)
C  F  G  L  Q  S 	S = Steel (with coolant)  C = Carbide (with coolant) 	B Boring Bar  O Offset Boring Bar  C External Chamfering Bar  P Profiling Bar  I Internal Threading Bar  R Reverse Chamfer or Back Chamfer Bar  M Offset Internal Grooving Bar 	I = Inch M = Metric	C  W 

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



CSBI180187257R

180

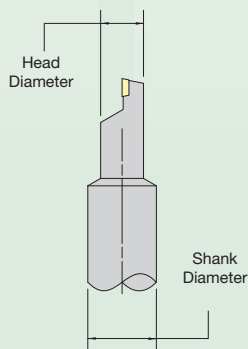
Head Diameter
shown as "D2"

Inch

165 = .166"
180 = .180"/.189"
203 = .203"/.207"/.210"
250 = .260"/.258"
312 = .313"/.321"/.322"/.323"
322 = .322"
375 = .375"/.385"/.390"
500 = .510"

Metric

7 = 6,60mm
8 = 8,18mm/8,20mm
10 = 9,78mm
13 = 12,70mm/12,95mm
45 = 4,57mm
48 = 4,80mm
52 = 5,16mm
53 = 5,30mm
64 = 6,60mm
66 = 6,55mm/6,60mm
82 = 8,15mm
95 = 9,50mm
99 = 9,91mm
159 = 15,88mm



NOTE: Only shown on stepped-style bars.

187

Shank Diameter
shown as "D"

Inch

156 = .156"
187 = .187"/.188"
250 = .250"
312 = .312"/.313"
375 = .375"
500 = .500"
625 = .625"
750 = .750"
875 = .875"
1000 = 1.000"
1250 = 1.250"

Metric

4 = 4,00mm
5 = 5,00mm
6 = 6,00mm
8 = 8,00mm
10 = 10,00mm
12 = 12,00mm
16 = 16,00mm

25

Length/Depth
shown as "L1/L4"

Bore Length for Step Bars

Thread Depth for Threading Bars

Overall Length for Straight
Shank Bars

Inch	Metric
1 = 1.000"	12 = 12,70mm
1125 = 1.125"	19 = 19,05mm
125 = 1.250"	22 = 22,23mm
15 = 1.500"	25 = 25,40mm
1875 = 1.875"	32 = 31,75mm
2 = 2.000"	38 = 38,10mm
25 = 2.500"	48 = 47,63mm
3125 = 3.125"	51 = 50,80mm
35 = 3.500"	63 = 63,50mm
4 = 4.000"	64 = 64,00mm
45 = 4.500"	76 = 76,00mm
5 = .500"/5.000"	79 = 79,38mm
6 = 6.000"	100 = 100,58mm/ 101,50mm/ 101,60mm
7 = 7.000"/7.085"	102 = 101,60mm
75 = .750"	127 = 127,00mm
8 = 8.000"	152 = 152,00mm 152,40mm
90 = .900"	178 = 177,80mm 179,90mm
10 = 10.000"	203 = 203,20mm
12 = 12.000"	254 = 254,00mm

7

Lead Angle*

0 = 0°

Used for
Threading/
Grooving Bars

3 = 3°

5 = 5°

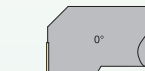
7 = 7°

225 = 22.5°

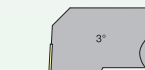
30 = 30°

45 = 45°

60 = 60°



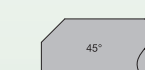
0°



3°



22.5°



45°



7°



5°

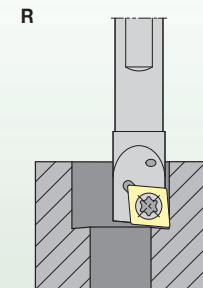
R

Hand of Tool

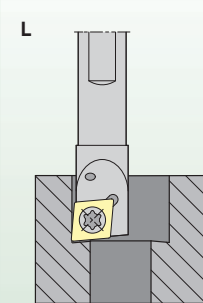
R = Right hand

L = Left hand

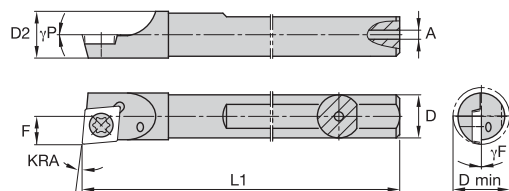
Right-hand boring bar



Left-hand boring bar



*NOTE: Shown as "KRI" for metric bars
and "KRA" for inch bars.

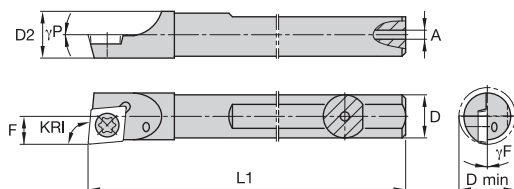


NOTE: KRA shown as -5°.

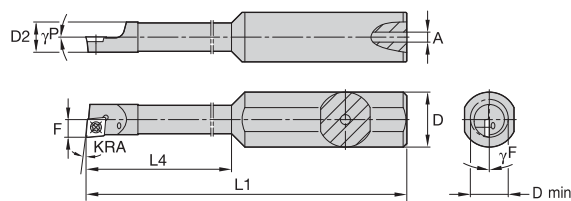
CSBI



order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2832371	CSBI16518757R	-7	.188	.180	.166	.095	2.500	.040	0.0°	0.0°	CD..120605	CC09	T6
2832617	CSBI180187255R	-5	.188	.204	.180	.104	2.500	.040	0.0°	5.0°	CD..120605	CC09	T6
2832553	CSBI187255R	-5	.188	.228	.203	.228	2.500	.040	0.0°	5.0°	CD..120605	CC09	T6
2832442	CSBI25035R	-5	.250	.285	.260	.145	3.000	.040	0.0°	5.0°	CD..120605	CC11	T6
2832566	CSBI187250R	0	.188	.244	.203	.122	2.500	.040	0.0°	5.0°	CD..120605	CC11	T6
2832454	CSBI25030R	0	.250	.292	.260	.152	3.000	.040	0.0°	5.0°	CD..120605	CC11	T6
left hand													
2832365	CSBI16518757L	-7	.188	.180	.166	.095	2.500	.040	0.0°	0.0°	CD..120605	CC09	T6
2832623	CSBI180187255L	-5	.188	.204	.180	.104	2.500	.040	0.0°	5.0°	CD..120605	CC09	T6
2832559	CSBI187255L	-5	.188	.228	.203	.116	2.500	.040	0.0°	5.0°	CD..120605	CC11	T6
2832448	CSBI25035L	-5	.250	.285	.260	.145	3.000	.040	0.0°	5.0°	CD..120605	CC11	T6
3896203	CSBI25030L	0	.250	.292	.260	.152	3.000	.040	0.0°	5.0°	CD..120605	CC11	T6


CSBM

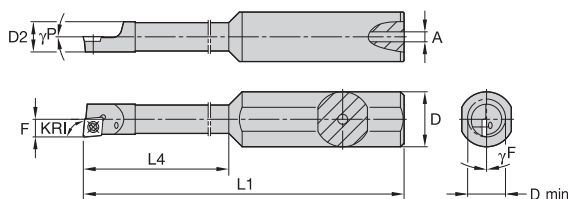

order number	catalog number	KRI	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
3896205	CSBM5650R	90	5,00	5,94	5,16	3,10	63,50	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
2831676	CSBM6650R	90	6,00	7,09	6,20	3,73	63,50	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831441	CSBM5655R	95	5,00	5,79	5,16	2,95	63,50	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
2831687	CSBM6655R	95	6,00	7,09	6,21	3,73	63,50	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831666	CSBM8765R	95	8,00	9,04	8,18	4,70	76,20	1,52	0.0°	5.0°	CD..S4T002	CC11	T6
2831701	CSBM4657R	97	4,00	4,57	4,22	2,41	63,50	1,02	0.0°	0.0°	CD..S4T002	CC09	T6
left hand													
3896204	CSBM5650L	90	5,00	5,94	5,16	3,10	63,50	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
3896207	CSBM6650L	90	6,00	7,09	6,20	3,73	63,50	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
3896209	CSBM8760L	90	8,00	9,05	8,18	4,70	76,00	2,40	0.0°	5.0°	CD..S4T002	CC11	T6
3896206	CSBM5655L	95	5,00	5,78	5,16	2,95	63,50	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
3896208	CSBM6655L	95	6,00	7,09	6,20	3,73	63,50	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
3517652	CSBM8765L	95	8,00	9,04	8,18	9,04	76,20	1,52	0.0°	5.0°	CD..S4T002	CC11	T6
2831695	CSBM4657L	97	4,00	4,57	4,22	2,41	63,50	1,02	0.0°	0.0°	CD..S4T002	CC09	T6



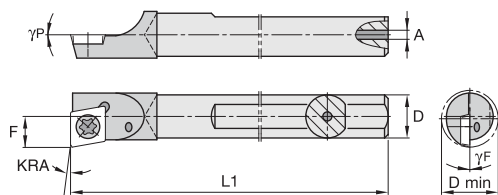
NOTE: KRA shown as -5°.

CSBI • STEPPED

													
order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2832607	CSBI18037515R	-5	.375	.204	.180	.104	2.500	.040	0.0°	5.0°	CD..120605	CC09	T6
2832596	CSBI18037555R	-5	.375	.204	.180	.104	2.500	.040	0.0°	5.0°	CD..120605	CC09	T6
2832535	CSBI20337515R	-5	.375	.228	.203	.116	2.500	.040	0.0°	5.0°	CD..120605	CC11	T6
2832518	CSBI20337555R	-5	.375	.230	.203	.116	2.500	.040	0.0°	5.0°	CD..120605	CC11	T6
2832429	CSBI2503751255R	-5	.375	.285	.260	.145	2.500	.040	0.0°	5.0°	CD..120605	CC11	T6
2832414	CSBI250375755R	-5	.375	.285	.260	.145	2.500	.040	0.0°	5.0°	CD..120605	CC11	T6
2832589	CSBI18050015R	-5	.500	.204	.180	.104	2.750	.040	0.0°	5.0°	CD..120605	CC09	T6
2832577	CSBI18050055R	-5	.500	.204	.180	.104	2.750	.040	0.0°	5.0°	CD..120605	CC09	T6
2832488	CSBI20350015R	-5	.500	.228	.203	.116	2.750	.040	0.0°	5.0°	CD..120605	CC09	T6
2832467	CSBI20350055R	-5	.500	.228	.203	.116	2.750	.040	0.0°	5.0°	CD..120605	CC09	T6
2832398	CSBI2505001255R	-5	.500	.285	.260	.145	2.750	.040	0.0°	5.0°	CD..120605	CC11	T6
2832374	CSBI250500755R	-5	.500	.285	.260	.145	2.750	.040	0.0°	5.0°	CD..120605	CC11	T6
2832547	CSBI20337510R	0	.375	.234	.203	.122	2.500	.040	0.0°	5.0°	CD..120605	CC09	T6
2832529	CSBI20337550R	0	.375	.234	.203	.122	2.500	.040	0.0°	5.0°	CD..120605	CC11	T6
2832503	CSBI20350010R	0	.500	.234	.203	.122	2.750	.040	0.0°	5.0°	CD..120605	CC11	T6
2832409	CSBI2505001250R	0	.500	.292	.260	.152	2.750	.040	0.0°	5.0°	CD..120605	CC11	T6
2832385	CSBI250500750R	0	.500	.292	.260	.152	2.750	.040	0.0°	5.0°	CD..120605	CC11	T6
left hand													
2832602	CSBI18037555L	-5	.375	.204	.180	.104	2.500	.040	0.0°	5.0°	CD..120605	CC09	T6
2832419	CSBI250375755L	-5	.375	.285	.260	.145	2.500	.040	0.0°	5.0°	CD..120605	CC11	T6
2832583	CSBI18050055L	-5	.500	.204	.180	.104	2.750	.040	0.0°	5.0°	CD..120605	CC09	T6
2832494	CSBI20350015L	-5	.500	.228	.203	.116	2.750	.040	0.0°	5.0°	CD..120605	CC11	T6
2832472	CSBI20350055L	-5	.500	.228	.203	.116	2.750	.040	0.0°	5.0°	CD..120605	CC11	T6
2832404	CSBI2505001255L	-5	.500	.285	.260	.145	2.750	.040	0.0°	5.0°	CD..120605	CC11	T6
2832380	CSBI250500755L	-5	.500	.285	.260	.145	2.750	.040	0.0°	5.0°	CD..120605	CC11	T6


CSBM • STEPPED

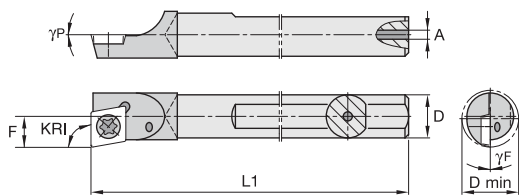

order number	catalog number	KRI	D	D min	D2	F	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2831606	CSBM5210250R	90	10,00	5,94	5,16	3,10	70,00	25,72	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831499	CSBM5212250R	90	12,00	5,94	5,16	3,10	70,00	25,40	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831477	CSBM6412190R	90	12,00	7,42	6,60	3,86	70,00	19,05	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831462	CSBM6412320R	90	12,00	7,42	6,60	3,86	70,00	31,75	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831661	CSBM4510125R	95	10,00	5,18	4,57	5,18	69,85	12,70	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
2831639	CSBM5210125R	95	10,00	5,78	5,16	2,95	70,00	12,30	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
2831615	CSBM5210255R	95	10,00	5,78	5,16	5,78	69,85	24,96	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831595	CSBM6410195R	95	10,00	7,24	6,60	3,68	70,00	19,05	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831548	CSBM4512125R	95	12,00	5,18	4,57	2,64	69,85	12,70	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
2831512	CSBM5212255R	95	12,00	5,78	5,16	2,95	70,00	25,40	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
2831490	CSBM6412195R	95	12,00	7,24	6,60	3,68	70,00	19,05	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831468	CSBM6412325R	95	12,00	7,24	6,60	3,68	70,00	31,75	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
left hand														
2831656	CSBM4510125L	95	10,00	5,18	4,57	2,64	70,00	12,70	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
2831588	CSBM6410195L	95	10,00	7,24	6,60	3,68	70,00	19,05	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
3890853	CSBM4512125L	95	12,00	5,18	4,57	2,64	69,85	12,70	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
3890854	CSBM4512255L	95	12,00	5,18	4,57	2,64	69,85	25,40	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
2831528	CSBM5212125L	95	12,00	5,78	5,16	2,95	70,00	12,70	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831483	CSBM6412195L	95	12,00	7,24	6,60	3,68	70,00	19,05	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
3890855	CSBM6412325L	95	12,00	7,24	6,60	3,68	70,00	31,75	1,02	0.0°	5.0°	CD..S4T002	CC11	T6



CCBI



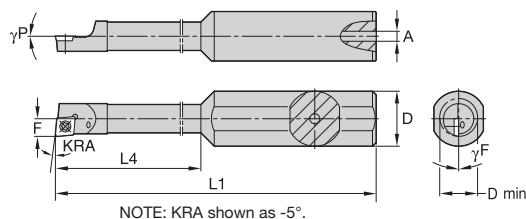
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right hand												
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2832281	CCBI18018745R	-5	.188	.208	.104	4.000	.040	0.0°	5.0°	CD..120605	CC09	T6
2832276	CCBI18018765R	-5	.188	.208	.104	6.000	.040	0.0°	5.0°	CD..120605	CC09	T6
2832183	CCBI18745R	-5	.188	.218	.111	4.000	.040	0.0°	5.0°	CD..120605	CC09	T6
2832164	CCBI18765R	-5	.188	.218	.111	6.000	.040	0.0°	5.0°	CD..120605	CC09	T6
2832049	CCBI25045R	-5	.250	.285	.145	4.000	.047	0.0°	5.0°	CD..120605	CC11	T6
2832029	CCBI25065R	-5	.250	.285	.145	6.000	.047	0.0°	5.0°	CD..120605	CC11	T6
2832270	CCBI31265R	-5	.312	.356	.185	6.000	.093	0.0°	5.0°	CD..120605	CC11	T6
2832195	CCBI18740R	0	.187	.224	.117	4.000	.040	0.0°	5.0°	CD..120605	CC09	T6
2832177	CCBI18760R	0	.188	.224	.117	6.000	.040	0.0°	5.0°	CD..120605	CC09	T6
2832062	CCBI25040R	0	.250	.292	.152	4.000	.047	0.0°	5.0°	CD..120605	CC11	T6
2832039	CCBI25060R	0	.250	.292	.152	6.000	.047	0.0°	5.0°	CD..120605	CC11	T6
2832234	CCBI31260R	0	.313	.356	.185	6.000	.093	0.0°	5.0°	CD..120605	CC09	T6
left hand												
2831945	CCBI16515667L	-7	.156	.180	.095	6.000	.040	0.0°	0.0°	CD..120605	CC09	T6
2832287	CCBI18018745L	-5	.188	.208	.104	4.000	.040	0.0°	5.0°	CD..120605	CC09	T6
2832190	CCBI18745L	-5	.188	.218	.111	4.000	.040	0.0°	5.0°	CD..120605	CC09	T6
2832172	CCBI18765L	-5	.188	.218	.111	6.000	.040	0.0°	5.0°	CD..120605	CC09	T6
2832057	CCBI25045L	-5	.250	.285	.145	4.000	.047	0.0°	5.0°	CD..120605	CC11	T6
2832033	CCBI25065L	-5	.250	.285	.145	6.000	.047	0.0°	5.0°	CD..120605	CC11	T6
2832265	CCBI31265L	-5	.313	.356	.185	6.000	.093	0.0°	5.0°	CD..120605	CC11	T6
2832200	CCBI18740L	0	.188	.224	.117	4.000	.040	0.0°	5.0°	CD..120605	CC09	T6
2832067	CCBI25040L	0	.250	.292	.152	4.000	.047	0.0°	5.0°	CD..120605	CC11	T6
2832043	CCBI25060L	0	.250	.292	.152	6.000	.047	0.0°	5.0°	CD..120605	CC11	T6
2832229	CCBI31260L	0	.312	.356	.185	6.000	.093	0.0°	5.0°	CD..120605	CC11	T6



CCBM

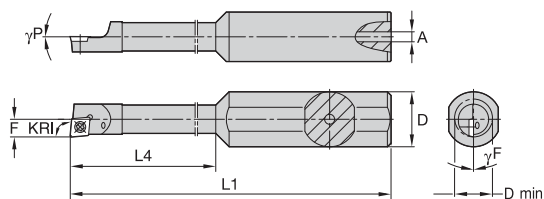
		KRI	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
2831801	CCBM51000R	90	5,00	5,94	3,18	100,58	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
3896025	CCBM61000R	90	6,00	7,08	3,73	100,33	1,19	0.0°	5.0°	CD..S4T002	CC11	T6
2831277	CCBM81520R	90	8,00	9,04	4,70	152,15	2,36	0.0°	5.0°	CD..S4T002	CC11	T6
2831826	CCBM51005R	95	5,00	5,94	3,02	100,58	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831311	CCBM61525R	95	6,00	7,08	3,73	152,15	1,19	0.0°	5.0°	CD..S4T002	CC11	T6
2831821	CCBM61005R	95	6,00	7,09	3,73	100,33	1,19	0.0°	5.0°	CD..S4T002	CC11	T6
2831289	CCBM81525R	95	8,00	9,04	4,70	152,15	2,36	0.0°	5.0°	CD..S4T002	CC11	T6
2831832	CCBM41007R	97	3,96	4,57	2,41	100,33	1,02	0.0°	0.0°	CD..S4T002	CC09	T6
2831324	CCBM41527R	97	4,00	4,57	2,41	152,40	1,02	0.0°	0.0°	CD..S4T002	CC09	T6
left hand												
3896023	CCBM51000L	90	5,00	5,94	3,18	100,58	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
3896024	CCBM61000L	90	6,00	7,08	3,73	100,33	1,19	0.0°	5.0°	CD..S4T002	CC11	T6
3896026	CCBM61520L	90	6,00	7,09	3,73	152,15	1,19	0.0°	5.0°	CD..S4T002	CC11	T6
3896028	CCBM81520L	90	8,00	9,04	4,70	152,15	2,36	0.0°	5.0°	CD..S4T002	CC11	T6
2831807	CCBM51005L	95	5,00	5,94	3,02	100,58	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831025	CCBM51525L	95	5,00	5,94	3,02	152,40	1,02	0.0°	5.0°	CD..S4T002	CC09	T6
2831307	CCBM61525L	95	6,00	7,08	3,73	152,15	1,19	0.0°	5.0°	CD..S4T002	CC11	T6
2831791	CCBM61005L	95	6,00	7,09	3,73	100,33	1,19	0.0°	5.0°	CD..S4T002	CC11	T6
3896027	CCBM81005L	95	8,00	9,04	4,70	101,60	2,36	0.0°	5.0°	CD..S4T002	CC11	T6
2831283	CCBM81525L	95	8,00	9,04	4,70	152,40	2,36	0.0°	5.0°	CD..S4T002	CC11	T6
2831813	CCBM41007L	97	3,96	4,57	2,41	100,33	1,02	0.0°	0.0°	CD..S4T002	CC09	T6
3896002	CCBM41527L	97	4,00	4,57	2,41	152,40	1,02	0.0°	0.0°	CD..S4T002	CC09	T6





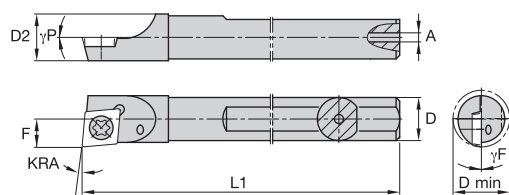
■ CCBI • STEPPED

order number	catalog number	KRA	D	D min	F	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
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2832241	CCBI1805008755R	-5	.500	.208	.104	2.375	.875	.040	0.0°	5.0°	CD..120605	CC09	T6
2832141	CCBI20350015R	-5	.500	.234	.119	2.500	1.000	.040	0.0°	5.0°	CD..S4T002	CC11	T6
2832120	CCBI20350025R	-5	.500	.234	.119	3.500	2.000	.125	0.0°	5.0°	CD..120605	CC11	T6
2832006	CCBI2505001255R	-5	.500	.285	.145	2.750	1.250	.125	0.0°	5.0°	CD..120605	CC11	T6
2831989	CCBI250500255R	-5	.500	.285	.145	4.000	2.500	.125	0.0°	5.0°	CD..120605	CC11	T6
2832219	CCBI18062518755R	-5	.625	.208	.104	4.375	1.875	.125	0.0°	5.0°	CD..120605	CC09	T6
2832205	CCBI1806258755R	-5	.625	.208	.104	3.375	.875	.125	0.0°	5.0°	CD..120605	CC09	T6
2832101	CCBI20362515R	-5	.625	.234	.119	3.500	1.000	.125	0.0°	5.0°	CD..S4T002	CC11	T6
2832076	CCBI20362525R	-5	.625	.234	.119	4.500	2.000	.125	0.0°	5.0°	CD..120605	CC11	T6
2831976	CCBI2506251255R	-5	.625	.285	.145	3.750	1.250	.125	0.0°	5.0°	CD..120605	CC11	T6
2832152	CCBI20350010R	0	.500	.234	.125	2.500	1.000	.125	0.0°	5.0°	CD..S4T002	CC11	T6
2832135	CCBI20350020R	0	.500	.240	.125	3.500	2.000	.125	0.0°	5.0°	CD..120605	CC11	T6
3337598	CCBI2505001250R	0	.500	.292	.152	2.750	1.250	.125	0.0°	5.0°	CD..120605	CC11	T6
2831999	CCBI250500250R	0	.500	.292	.152	4.000	2.500	.125	0.0°	5.0°	CD..120605	CC11	T6
3789922	CCBI20362520R	0	.625	.240	.125	4.500	2.000	.125	0.0°	5.0°	CD..120605	CC11	T6
2831987	CCBI2506251250R	0	.625	.292	.152	3.750	1.250	.125	0.0°	5.0°	CD..120605	CC11	T6
left hand													
2832247	CCBI1805008755L	-5	.500	.208	.104	2.375	.875	.125	0.0°	5.0°	CD..120605	CC09	T6
2832147	CCBI20350015L	-5	.500	.234	.119	2.500	1.000	.125	0.0°	5.0°	CD..S4T002	CC11	T6
2832012	CCBI2505001255L	-5	.500	.285	.145	2.750	1.250	.125	0.0°	5.0°	CD..120605	CC11	T6
2831995	CCBI250500255L	-5	.500	.285	.145	4.000	2.500	.125	0.0°	5.0°	CD..120605	CC11	T6
2832211	CCBI1806258755L	-5	.625	.208	.104	3.375	.875	.125	0.0°	5.0°	CD..120605	CC09	T6


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order number	catalog number	KRI	D	D min	F	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2831211	CCBM5312510R	90	12,00	5,94	3,18	88,90	50,80	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
2831188	CCBM6612320R	90	12,00	7,42	3,85	69,85	31,75	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
2831175	CCBM6612630R	90	12,00	7,42	3,86	101,60	63,50	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
2831127	CCBM5316510R	90	16,00	6,10	3,18	114,30	50,80	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
2831110	CCBM6516320R	90	16,00	7,42	3,86	95,25	31,75	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
2831265	CCBM4812225R	95	12,00	5,28	2,64	60,32	22,22	3,18	0.0°	5.0°	CD..S4T002	CC09	T6
2831255	CCBM4812485R	95	12,00	5,28	2,64	85,73	47,63	3,18	0.0°	5.0°	CD..S4T002	CC09	T6
2831244	CCBM5312255R	95	12,00	5,94	3,02	63,50	25,40	1,02	0.0°	5.0°	CD..S4T002	CC11	T6
2831201	CCBM6612325R	95	12,00	7,24	3,68	69,85	31,75	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
3896019	CCBM6612635R	95	12,00	7,24	3,68	101,60	63,50	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
3896015	CCBM4816225R	95	16,00	5,28	2,64	85,72	22,23	3,18	0.0°	5.0°	CD..S4T002	CC09	T6
3896017	CCBM4816485R	95	16,00	5,28	2,64	111,12	47,62	3,18	0.0°	5.0°	CD..S4T002	CC09	T6
2831162	CCBM5316255R	95	16,00	5,94	3,02	88,90	25,40	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
2831139	CCBM5316515R	95	16,00	5,94	3,02	114,30	50,80	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
3896018	CCBM6516325R	95	16,00	7,24	3,68	95,25	31,75	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
left hand													
2831194	CCBM6612325L	95	12,00	7,24	3,68	69,85	31,75	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
3896093	CCBM6612635L	95	12,00	7,24	3,68	101,60	63,50	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
2831157	CCBM5316255L	95	16,00	5,94	3,02	88,90	25,40	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
2831132	CCBM5316515L	95	16,00	5,94	3,02	114,30	50,80	3,18	0.0°	5.0°	CD..S4T002	CC11	T6
2831117	CCBM6516325L	95	16,00	7,24	3,68	95,25	31,75	3,18	0.0°	5.0°	CD..S4T002	CC11	T6





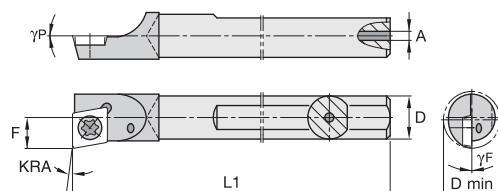
NOTE: KRA shown as -5°.

QSMI

order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2825464	QSMI37545R	-5	.375	.481	.385	.278	4.000	.125	0.0°	0.0°	CP..2....	QC15	T8
2825455	QSMI50055R	-5	.500	.545	.510	.280	5.000	.156	0.0°	0.0°	CP..2....	QC15	T8
2825394	QSMI62565R	-5	.625	.670	.635	.343	6.000	.156	0.0°	0.0°	CP..2....	QC15	T8
left hand													
2825457	QSMI37545L	-5	.375	.420	.385	.218	4.000	.125	0.0°	0.0°	CP..2....	QC15	T8
2825449	QSMI50055L	-5	.500	.545	.510	.280	5.000	.156	0.0°	0.0°	CP..2....	QC15	T8

NOTE: D min and F calculated using the CPG grooving-style insert.

Clamping System S • Carbide

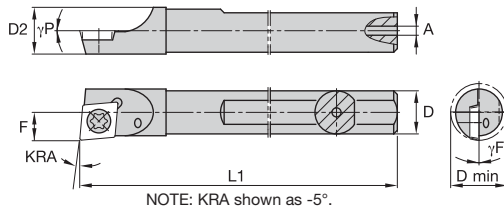


NOTE: KRA shown as -5°.

QCMi

order number	catalog number	KRA	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
2825117	QCMi37565R	-5	.375	.481	.278	6.000	.125	0.0°	0.0°	CP..2....	QC15	T8
2825105	QCMi50085R	-5	.500	.545	.280	8.000	.188	0.0°	0.0°	CP..21205	QC15	T8
2825089	QCMi625105R	-5	.625	.670	.343	10.000	.218	0.0°	0.0°	CP..2....	QC15	T8
left hand												
2825112	QCMi37565L	-5	.375	.420	.218	6.000	.125	0.0°	0.0°	CP..2..	QC15	T8
2825094	QCMi50085L	-5	.500	.545	.280	8.000	.188	0.0°	0.0°	CP..2....	QC15	T8

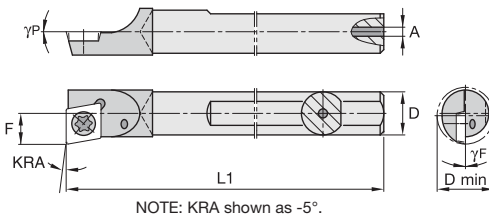
NOTE: F calculated using the CPG-style insert.



SSBIC

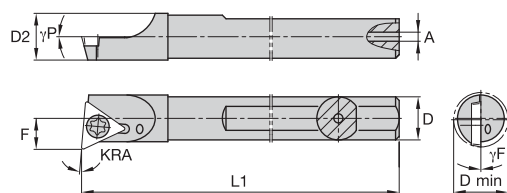
order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
													
right hand													
2822637	SSBIC62575R	-5	.625	.680	.635	.353	7.000	.156	0.0°	0.0°	CP..3252	STM31	T15
2822626	SSBIC75085R	-5	.750	.805	.760	.415	8.000	.156	0.0°	0.0°	CP..3252	STM31	T15
left hand													
2822643	SSBIC62575L	-5	.625	.680	.635	.353	7.000	.156	0.0°	0.0°	CP..3252	STM31	T15
2822631	SSBIC75085L	-5	.750	.805	.760	.415	8.000	.156	0.0°	0.0°	CPMT3252	STM31	T15

Clamping System S • Carbide



SDBIC

order number	catalog number	KRA	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
												
right hand												
2822301	SDBIC62565R	-5	.625	.680	.353	6.000	.218	-5.0°	0.0°	CPMT3252	STM31	T15
2822289	SDBIC625105R	-5	.625	.680	.353	10.000	.218	-5.0°	0.0°	CPMT3252	STM31	T15
2822277	SDBIC75065R	-5	.750	.805	.415	6.000	.281	0.0°	0.0°	CP..3252	STM31	T15
2822265	SDBIC750105R	-5	.750	.805	.415	10.000	.281	0.0°	0.0°	CP..3205	STM31	T15
left hand												
2822306	SDBIC62565L	-5	.625	.680	.353	6.000	.218	0.0°	0.0°	CP..3252	STM31	T15
3896009	SDBIC625105L	-5	.625	.680	.353	10.000	.218	-5.0°	0.0°	CP..3252	STM31	T15
2822283	SDBIC75065L	-5	.750	.805	.415	6.000	.281	0.0°	0.0°	CPMT3252	STM31	T15
2822272	SDBIC750105L	-5	.750	.805	.415	10.000	.281	0.0°	0.0°	CP..3205	STM31	T15

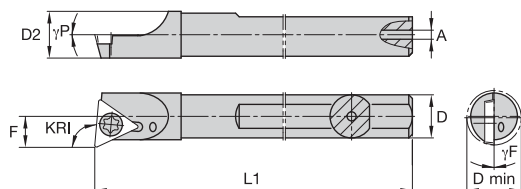


NOTE: KRA shown as -5°.

FSBI

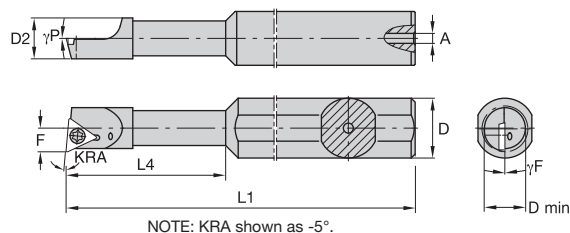


order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2830455	FSBI187355R	-5	.188	.275	.197	.123	3.500	.040	0.0°	5.0°	TD..130805	FC11	T7
2830358	FSBI25045R	-5	.250	.296	.260	.156	4.000	.040	0.0°	5.0°	TD..130805	FC14	T7
2830260	FSBI31245R	-5	.313	.358	.322	.187	4.000	.060	0.0°	5.0°	TD..130805	FC14	T7
2830466	FSBI187350R	0	.188	.275	.197	.123	3.500	.040	0.0°	5.0°	TD..130805	FC11	T7
2830369	FSBI25040R	0	.250	.296	.260	.156	4.000	.040	0.0°	5.0°	TD..130805	FC14	T7
2830272	FSBI31240R	0	.313	.358	.322	.187	4.000	.060	0.0°	5.0°	TD..130805	FC14	T7
left hand													
3783152	FSBI187355L	-5	.187	.275	.197	.123	3.500	.040	0.0°	5.0°	TD..130805	FC11	T7
2830364	FSBI25045L	-5	.250	.296	.260	.156	4.000	.040	0.0°	5.0°	TD..130805	FC14	T7
2830270	FSBI31245L	-5	.313	.358	.322	.187	4.000	.060	0.0°	5.0°	TD..130805	FC14	T7
3896210	FSBI25040L	0	.250	.296	.260	.156	4.000	.040	0.0°	5.0°	TD..130805	FC14	T7


FSBM

order number	catalog number	KRI	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2829554	FSBM61000R	90	6,00	7,06	6,20	3,71	101,60	1,02	0.0°	5.0°	TD..07S102	FC11	T7
2829566	FSBM61005R	95	6,00	7,06	6,20	3,71	101,60	1,02	0.0°	5.0°	TD..07S102	FC11	T7
left hand													
3896211	FSBM61000L	90	6,00	7,06	6,20	3,71	101,60	1,02	0.0°	5.0°	TD..07S102	FC11	T7
3896213	FSBM81000L	90	8,00	9,14	8,20	4,80	101,60	1,52	0.0°	5.0°	TD..07S102	FC11	T7
2829545	FSBM81005L	95	8,00	9,14	8,20	4,80	101,60	1,52	0.0°	5.0°	TD..07S102	FC11	T7

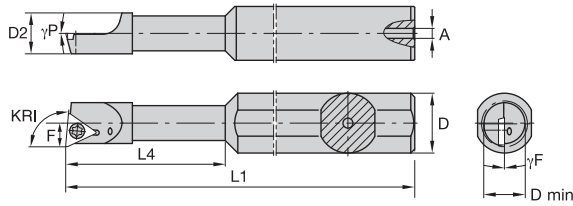




■ FSBI • STEPPED

														
order number	catalog number	KRA	D	D min	D2	F	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2830430	FSBI20350015R	-5	.500	.275	.203	.126	3.000	1.000	.040	0.0°	5.0°	TD..130805	FC11	T7
2830405	FSBI20350055R	-5	.500	.275	.203	.126	3.000	.500	.040	0.0°	5.0°	TD..130805	FC11	T7
2830335	FSBI2505001255R	-5	.500	.296	.259	.156	3.000	1.250	.040	0.0°	5.0°	TD..130805	FC14	T7
2830312	FSBI250500755R	-5	.500	.296	.259	.156	3.000	.750	.040	0.0°	5.0°	TD..130805	FC14	T7
2830245	FSBI312500155R	-5	.500	.358	.321	.187	3.000	1.500	.060	0.0°	5.0°	TD..130805	FC14	T7
2830212	FSBI31250015R	-5	.500	.358	.321	.187	3.000	1.000	.060	0.0°	5.0°	TD..130805	FC14	T7
2830380	FSBI20362555R	-5	.625	.275	.203	.126	4.000	.500	.040	0.0°	5.0°	TD..130805	FC11	T7
2830296	FSBI2506251255R	-5	.625	.296	.259	.156	4.000	1.250	.040	0.0°	5.0°	TD..130805	FC11	T7
2830284	FSBI250625755R	-5	.625	.296	.259	.156	4.000	.750	.040	0.0°	5.0°	TD..130805	FC11	T7
2830189	FSBI312625155R	-5	.625	.358	.321	.187	4.000	1.500	.060	0.0°	5.0°	TD..130805	FC11	T7
2830185	FSBI31262515R	-5	.625	.358	.321	.187	4.000	1.000	.060	0.0°	5.0°	TD..130805	FC11	T7
2830417	FSBI20350050R	0	.500	.275	.203	.134	3.000	.500	.040	0.0°	5.0°	TD..130805	FC11	T7
2830347	FSBI2505001250R	0	.500	.296	.259	.156	3.000	1.250	.040	0.0°	5.0°	TD..130805	FC14	T7
2830329	FSBI250500750R	0	.500	.296	.259	.156	3.000	.750	.040	0.0°	5.0°	TD..130805	FC14	T7
2830227	FSBI31250010R	0	.500	.358	.321	.187	3.000	1.000	.060	0.0°	5.0°	TD..130805	FC14	T7
left hand														
2830324	FSBI250500755L	-5	.500	.296	.259	.156	3.000	.750	.040	0.0°	5.0°	TD..130805	FC14	T7
2830222	FSBI31250015L	-5	.500	.358	.321	.187	3.000	1.000	.060	0.0°	5.0°	TD..130805	FC14	T7
2830320	FSBI250625755L	-5	.625	.296	.259	.156	4.000	.750	.040	0.0°	5.0°	TD..130805	FC14	T7
3383045	FSBI2506251250L	0	.625	.296	.259	.156	4.000	1.250	.040	0.0°	5.0°	TD..130805	FC14	T7
3327103	FSBI250625750L	0	.625	.296	.259	.156	4.000	.750	.040	0.0°	5.0°	TD..130805	FC14	T7

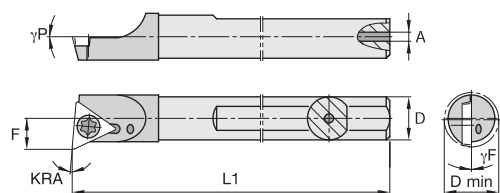




FSBM • STEPPED

order number	catalog number	KRI	D	D min	D2	F	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
3890858	FSBM6612320R	90	12,00	7,52	6,58	3,96	76,20	31,75	1,02	0.0°	5.0°	TD..07S102	FC14	T7
2829472	FSBM8212250R	90	12,00	9,09	8,15	4,75	76,00	25,40	1,52	0.0°	5.0°	TD..07S102	FC14	T7
2829448	FSBM8212380R	90	12,00	9,09	8,15	4,75	76,20	38,10	1,52	0.0°	5.0°	TD..07S102	FC14	T7
3890860	FSBM6616190R	90	16,00	7,52	6,58	3,96	101,60	19,05	1,02	0.0°	5.0°	TD..07S102	FC14	T7
2829533	FSBM5212125R	95	12,00	6,99	5,16	3,20	76,20	12,70	1,02	0.0°	5.0°	TD..07S102	FC11	T7
3890857	FSBM5212255R	95	12,00	6,99	5,16	3,20	76,20	25,40	1,02	0.0°	5.0°	TD..07S102	FC11	T7
2829508	FSBM6612195R	95	12,00	7,52	6,58	3,96	76,00	19,05	1,02	0.0°	5.0°	TD..07S102	FC14	T7
2829459	FSBM8212385R	95	12,00	9,09	8,15	4,75	76,00	38,10	1,52	0.0°	5.0°	TD..07S102	FC14	T7
3897011	FSBM5216125R	95	16,00	6,99	5,16	3,20	101,60	12,70	1,02	0.0°	5.0°	TD..07S102	FC11	T7
3890862	FSBM6616325R	95	16,00	7,52	6,58	3,96	101,60	31,75	1,02	0.0°	5.0°	TD..07S102	FC14	T7
2829429	FSBM6616195R	95	16,00	7,52	6,60	3,96	102,00	19,05	1,02	0.0°	5.0°	TD..07S102	FC14	T7
left hand														
2829442	FSBM8212380L	90	12,00	9,09	8,15	4,75	76,00	38,10	1,52	0.0°	5.0°	TD..07S102	FC14	T7
3890861	FSBM6616320L	90	16,00	7,52	6,58	3,96	101,60	31,75	1,02	0.0°	5.0°	TD..07S102	FC14	T7
3890856	FSBM5212125L	95	12,00	6,99	5,16	3,20	76,20	12,70	1,02	0.0°	5.0°	TD..07S102	FC11	T7



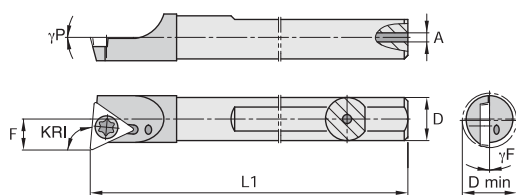


NOTE: KRA shown as -5°.

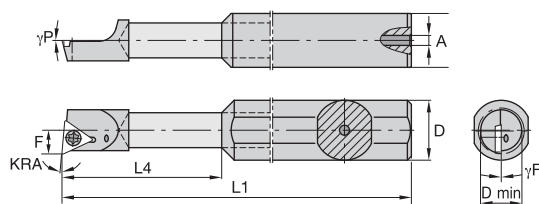
■ FCBI

order number	catalog number	KRA	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
2830020	FCBI18745R	-5	.188	.275	.126	4.000	.040	0.0°	5.0°	TD..130805	FC11	T7
2829995	FCBI18765R	-5	.188	.275	.126	6.000	.040	0.0°	5.0°	TD..130805	FC11	T7
2829897	FCBI25045R	-5	.250	.296	.156	4.000	.047	0.0°	5.0°	TD..130805	FC11	T7
2829764	FCBI31265R	-5	.312	.358	.187	6.000	.093	0.0°	5.0°	TD..130805	FC14	T7
2829881	FCBI25065R	-5	.250	.296	.156	6.000	.047	0.0°	5.0°	TDHB130805	FC14	T7
2829787	FCBI31245R	-5	.312	.358	.187	4.000	.093	0.0°	5.0°	TDHB130805	FC14	T7
2830007	FCBI18760R	0	.187	.275	.134	6.000	.040	0.0°	5.0°	TD..130805	FC11	T7
2830032	FCBI18740R	0	.188	.275	.134	4.000	.040	0.0°	5.0°	TD..130805	FC11	T7
2829908	FCBI25040R	0	.250	.296	.156	4.000	.047	0.0°	5.0°	TD..130805	FC14	T7
2829892	FCBI25060R	0	.250	.296	.156	6.000	.047	0.0°	5.0°	TD..130805	FC11	T7
2829799	FCBI31240R	0	.313	.358	.187	4.000	.093	0.0°	5.0°	TD..130805	FC14	T7
2829777	FCBI31260R	0	.313	.358	.187	6.000	.093	0.0°	5.0°	TD..130805	FC14	T7
left hand												
2830027	FCBI18745L	-5	.187	.275	.126	4.000	.040	0.0°	5.0°	TD..130805	FC11	T7
2829903	FCBI25045L	-5	.250	.296	.156	4.000	.047	0.0°	5.0°	TD..130805	FC14	T7
2829885	FCBI25065L	-5	.250	.296	.156	6.000	.047	0.0°	5.0°	TD..130805	FC14	T7
2829793	FCBI31245L	-5	.312	.358	.187	4.000	.093	0.0°	5.0°	TD..130805	FC14	T7
2829770	FCBI31265L	-5	.312	.358	.187	6.000	.093	0.0°	5.0°	TD..130805	FC14	T7
3896029	FCBI25040L	0	.250	.296	.156	4.000	.047	0.0°	5.0°	TD..130805	FC14	T7



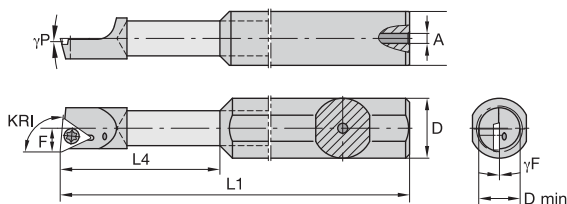

FCBM


order number	catalog number	KRI	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
3896036	FCBM51000R	90	5,00	6,98	3,40	100,58	1,02	0.0°	5.0°	TD..07S102	FC11	T7
3896031	FCBM61520R	90	6,00	7,06	3,70	152,40	1,19	0.0°	5.0°	TD..07S102	FC11	T7
2829356	FCBM81520R	90	8,00	9,16	4,80	152,40	2,36	0.0°	5.0°	TD..07S102	FC14	T7
2829390	FCBM61525R	95	6,00	7,06	3,71	152,40	1,19	0.0°	5.0°	TD..07S102	FC11	T7
2829368	FCBM81525R	95	8,00	9,16	4,80	152,40	2,36	0.0°	5.0°	TD..07S102	FC14	T7
left hand												
3896035	FCBM51000L	90	5,00	6,98	3,40	100,58	1,02	0.0°	5.0°	TD..07S102	FC11	T7
3896030	FCBM61520L	90	6,00	7,06	3,71	152,40	1,19	0.0°	5.0°	TD..130805	FC11	T7
3896032	FCBM81520L	90	8,00	9,16	4,80	152,40	2,36	0.0°	5.0°	TD..130805	FC11	T7
3896037	FCBM51005L	95	5,00	6,98	3,20	100,58	1,02	0.0°	5.0°	TD..07S102	FC11	T7
2829385	FCBM61525L	95	6,00	7,06	3,71	152,40	1,19	0.0°	5.0°	TD..07S102	FC11	T7



■ FCBI • STEPPED

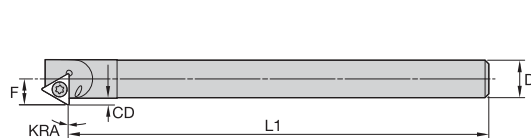
order number	catalog number	KRA	D	D min	F	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
													
right hand													
2829979	FCBI20350015R	-5	.500	.275	.126	2.500	1.000	.125	0.0°	5.0°	TD..130805	FC11	T7
2829962	FCBI20350025R	-5	.500	.275	.126	3.500	2.000	.125	0.0°	5.0°	TD..130805	FC11	T7
2829857	FCBI2505001255R	-5	.500	.296	.156	2.750	1.250	.250	0.0°	5.0°	TD..130805	FC11	T7
2829847	FCBI250500255R	-5	.500	.296	.156	4.000	2.500	.125	0.0°	5.0°	TD..130805	FC11	T7
2829740	FCBI312500155R	-5	.500	.358	.187	3.000	1.500	.125	0.0°	5.0°	TD..130805	FC14	T7
2829722	FCBI31250031255R	-5	.500	.358	.187	4.625	3.125	.125	0.0°	5.0°	TD..130805	FC14	T7
2829942	FCBI20362515R	-5	.625	.275	.126	3.500	1.000	.125	0.0°	5.0°	TD..130805	FC11	T7
2829920	FCBI20362525R	-5	.625	.275	.126	4.500	2.000	.125	0.0°	5.0°	TD..130805	FC14	T7
2829828	FCBI2506251255R	-5	.625	.296	.156	3.750	1.250	.250	0.0°	5.0°	TD..130805	FC11	T7
2829811	FCBI250625255R	-5	.625	.296	.156	5.000	2.500	.125	0.0°	5.0°	TD..130805	FC14	T7
2829704	FCBI312625155R	-5	.625	.358	.187	4.000	1.500	.125	0.0°	5.0°	TD..130805	FC14	T7
2829686	FCBI31262531255R	-5	.625	.358	.187	5.625	3.125	.125	0.0°	5.0°	TD..130805	FC14	T7
2829990	FCBI20350010R	0	.500	.275	.134	2.500	1.000	.125	0.0°	5.0°	TD..130805	FC11	T7
2829967	FCBI20350020R	0	.500	.275	.134	3.500	2.000	.125	0.0°	5.0°	TD..130805	FC11	T7
2829869	FCBI2505001250R	0	.500	.296	.156	2.750	1.250	.125	0.0°	5.0°	TD..130805	FC14	T7
2829851	FCBI250500250R	0	.500	.296	.156	4.000	2.500	.125	0.0°	5.0°	TD..130805	FC14	T7
2829751	FCBI312500150R	0	.500	.358	.187	3.000	1.500	.125	0.0°	5.0°	TD..130805	FC14	T7
2829736	FCBI31250031250R	0	.500	.358	.187	4.625	3.125	.125	0.0°	5.0°	TD..130805	FC14	T7
3896065	FCBI20362510R	0	.625	.275	.134	3.500	1.000	.125	0.0°	5.0°	TD..130805	FC11	T7
2829930	FCBI20362520R	0	.625	.275	.134	4.500	2.000	.125	0.0°	5.0°	TD..130805	FC11	T7
2829841	FCBI2506251250R	0	.625	.296	.156	3.750	1.250	.125	0.0°	5.0°	TD..130805	FC14	T7
2829817	FCBI250625250R	0	.625	.296	.156	5.000	2.500	.125	0.0°	5.0°	TD..130805	FC14	T7
2829716	FCBI312625150R	0	.625	.358	.187	4.000	1.500	.125	0.0°	5.0°	TD..130805	FC14	T7
2829698	FCBI31262531250R	0	.625	.358	.187	5.625	3.125	.125	0.0°	5.0°	TD..130805	FC14	T7
left hand													
2829985	FCBI20350015L	-5	.500	.275	.126	2.500	1.000	.125	0.0°	5.0°	TDHB130805	FC14	T7
2829863	FCBI2505001255L	-5	.500	.296	.156	2.750	1.250	.125	0.0°	5.0°	TD..130805	FC14	T7
2829745	FCBI312500155L	-5	.500	.358	.187	3.000	1.500	.125	0.0°	5.0°	TD..130805	FC14	T7
2829835	FCBI2506251255L	-5	.625	.296	.156	3.750	1.250	.125	0.0°	5.0°	TD..130805	FC14	T7
2829709	FCBI312625155L	-5	.625	.358	.187	4.000	1.500	.125	0.0°	5.0°	TD..130805	FC14	T7



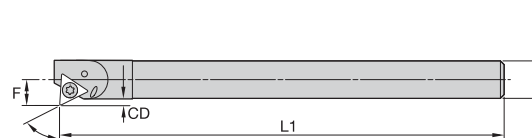
FCBM • STEPPED



order number	catalog number	KRI	D	D min	F	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
3896072	FCBM6612630R	90	12,00	7,52	3,96	101,60	63,50	1,19	0.0°	5.0°	TD..07S102	FC14	T7
2829268	FCBM8212790R	90	12,00	9,09	4,75	117,48	79,38	3,18	0.0°	5.0°	TD..07S102	FC14	T7
3896069	FCBM5316250R	90	16,00	6,98	3,40	88,90	25,40	3,18	0.0°	5.0°	TD..07S102	FC11	T7
3896084	FCBM6616320R	90	16,00	7,52	3,96	95,25	31,75	3,18	0.0°	5.0°	TD..07S102	FC11	T7
3896086	FCBM8216380R	90	16,00	9,09	4,75	101,60	38,10	3,18	0.0°	5.0°	TD..07S102	FC14	T7
3896095	FCBM8216790R	90	16,00	9,09	4,75	142,87	79,37	3,18	0.0°	5.0°	TD..07S102	FC14	T7
2829350	FCBM5312255R	95	12,00	6,98	3,20	63,50	25,40	3,18	0.0°	5.0°	TD..07S102	FC11	T7
2829323	FCBM6612325R	95	12,00	7,52	3,96	69,85	31,75	3,18	0.0°	5.0°	TD..07S102	FC14	T7
3896083	FCBM6612635R	95	12,00	7,52	3,96	101,60	63,50	3,18	0.0°	5.0°	TD..07S102	FC11	T7
2829301	FCBM8212385R	95	12,00	9,09	4,75	76,20	38,10	3,18	0.0°	5.0°	TD..07S102	FC14	T7
2829279	FCBM8212795R	95	12,00	9,09	4,75	117,48	79,38	3,18	0.0°	5.0°	TD..07S102	FC14	T7
3897085	FCBM5316255R	95	16,00	6,98	3,20	88,90	25,40	3,18	0.0°	5.0°	TD..07S102	FC11	T7
3790247	FCBM6616325R	95	16,00	7,52	3,96	95,25	31,75	3,18	0.0°	5.0°	TD..07S102	FC14	T7
3786518	FCBM6616635R	95	16,00	7,52	3,96	127,00	63,50	3,18	0.0°	5.0°	TD..07S102	FC14	T7
3786519	FCBM8216795R	95	16,00	9,09	4,75	117,48	79,38	3,18	0.0°	5.0°	TD..07S102	FC14	T7
left hand													
3896067	FCBM5312510L	90	12,00	6,98	3,40	88,90	50,80	3,18	0.0°	5.0°	TD..07S102	FC11	T7
2829344	FCBM5312255L	95	12,00	6,98	3,20	63,50	25,40	3,18	0.0°	5.0°	TD..07S102	FC11	T7
3896068	FCBM5312515L	95	12,00	6,98	3,20	88,90	50,80	3,18	0.0°	5.0°	TD..07S102	FC11	T7
2829319	FCBM6612325L	95	12,00	7,52	3,96	69,85	31,75	3,18	0.0°	5.0°	TD..07S102	FC14	T7
2829295	FCBM8212385L	95	12,00	9,09	4,75	76,20	38,10	3,18	0.0°	5.0°	TD..07S102	FC14	T7
3896070	FCBM5316255L	95	16,00	6,98	3,20	88,90	25,40	3,18	0.0°	5.0°	TD..07S102	FC11	T7
3896085	FCBM6616325L	95	16,00	7,52	3,96	95,25	31,75	3,18	0.0°	5.0°	TD..07S102	FC11	T7
3896087	FCBM8216385L	95	16,00	9,09	4,75	101,60	38,10	3,18	0.0°	5.0°	TD..07S102	FC14	T7



NOTE: KRA shown as 0°.

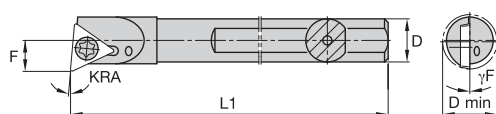


NOTE: KRA shown as 60°.

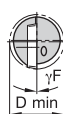


FSRI

order number	catalog number	KRA	D	D min	D2	F	L1	CD	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2830138	FSRI312350R	0	.313	.394	.322	.223	3.500	.062	.040	0.0°	0.0°	TD..130805	FC14	T7
2830120	FSRI3123560R	30	.313	.407	.322	.236	3.500	.075	.040	0.0°	0.0°	TD..130805	FC14	T7



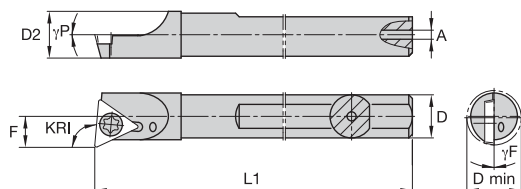
NOTE: KRA shown as -5°.



QSBI

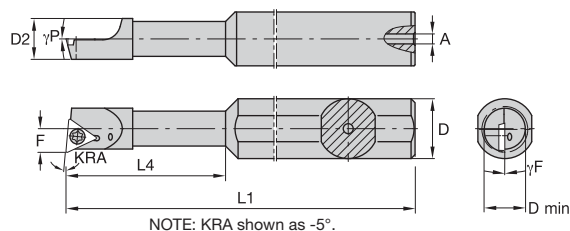
													
order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2825910	QSBI37555R	-5	.375	.438	.385	.221	5.000	.125	0.0°	5.0°	TP..21505	QC21	T9
2825774	QSBI50065R	-5	.500	.563	.510	.296	6.000	.156	0.0°	5.0°	TP..21505	QC26	T9
2825923	QSBI37550R	0	.375	.438	.385	.221	5.000	.125	0.0°	5.0°	TP..21505	QC21	T9
2825788	QSBI50060R	0	.500	.563	.510	.296	6.000	.156	0.0°	5.0°	TP..21505	QC26	T9
left hand													
2825917	QSBI37555L	-5	.375	.438	.385	.221	5.000	.125	0.0°	5.0°	TP..21505	QC21	T9
2825781	QSBI50065L	-5	.500	.563	.510	.296	6.000	.156	0.0°	5.0°	TP..21505	QC26	T9





■ QSBM

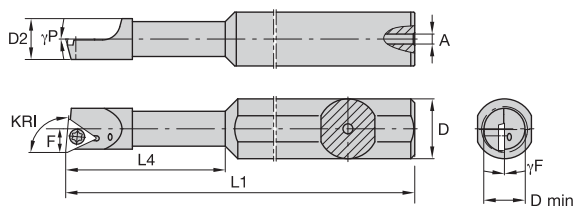
order number	catalog number	KRI	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
													
right hand													
3886552	QSBM101275R	95	10,00	11,15	10,21	5,79	127,00	3,20	0.0°	5.0°	TP..110202	QC21	T9
left hand													
3886550	QSBM101270L	90	10,00	11,15	10,21	5,79	127,00	3,20	0.0°	5.0°	TP..110202	QC21	T9
3886943	QSBM121520L	90	12,00	13,16	12,19	6,81	152,40	4,00	0.0°	5.0°	TP..110202	QC26	T9
3886551	QSBM101275L	95	10,00	11,15	10,21	5,79	127,00	3,20	0.0°	5.0°	TP..110202	QC21	T9



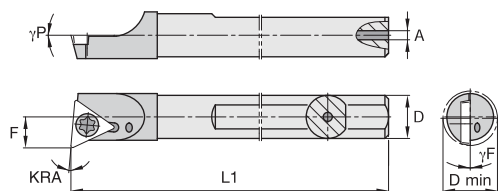
■ QSBI • STEPPED

order number	catalog number	KRA	D	D min	D2	F	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2825884	QSBI37550011255R	-5	.500	.438	.390	.221	3.750	1.125	.080	0.0°	5.0°	TP..21505	QC21	T9
2825854	QSBI37550018755R	-5	.500	.438	.390	.221	3.750	1.875	.080	0.0°	5.0°	TP..21505	QC21	T9
2825832	QSBI37562511255R	-5	.625	.438	.390	.221	4.250	1.125	.080	0.0°	5.0°	TP..21505	QC21	T9
2825816	QSBI37562518755R	-5	.625	.438	.390	.221	4.250	1.875	.080	0.0°	5.0°	TP..21505	QC21	T9
2825753	QSBI500625155R	-5	.625	.563	.510	.296	4.250	1.500	.156	0.0°	5.0°	TP..21505	QC26	T9
2825730	QSBI500625255R	-5	.625	.563	.510	.296	4.250	2.500	.156	0.0°	5.0°	TP..21505	QC26	T9
2825801	QSBI375750155R	-5	.750	.438	.390	.221	4.000	1.500	.080	0.0°	5.0°	TP..21505	QC21	T9
2825720	QSBI625750255R	-5	.750	.688	.625	.353	4.500	2.500	.098	0.0°	5.0°	TP..21505	QC26	T9
2825897	QSBI37550011250R	0	.500	.438	.390	.221	3.750	1.125	.080	0.0°	5.0°	TP..21505	QC21	T9
2825870	QSBI37550018750R	0	.500	.438	.390	.221	3.750	1.875	.080	0.0°	5.0°	TP..21505	QC21	T9
2825819	QSBI37562518750R	0	.625	.438	.390	.221	4.250	1.875	.080	0.0°	5.0°	TP..21505	QC21	T9
2825747	QSBI500625250R	0	.625	.563	.510	.296	4.250	2.500	.156	0.0°	5.0°	TP..21505	QC26	T9
2825727	QSBI625750250R	0	.750	.688	.625	.353	4.500	2.500	.098	0.0°	5.0°	TP..21505	QC26	T9
left hand														
2825864	QSBI37550018755L	-5	.500	.438	.390	.221	3.750	1.875	.080	0.0°	5.0°	TP..21505	QC21	T9
2825838	QSBI37562511255L	-5	.625	.438	.390	.221	4.250	1.125	.080	0.0°	5.0°	TP..21505	QC21	T9
2825760	QSBI500625155L	-5	.625	.563	.510	.296	4.250	1.500	.156	0.0°	5.0°	TP..21505	QC26	T9
3783153	QSBI500625255L	-5	.625	.563	.510	.296	4.250	2.500	.156	0.0°	5.0°	TP..21505	QC26	T9
2825522	QSBI375750155L	-5	.750	.438	.390	.221	4.000	1.500	.080	0.0°	5.0°	TP..21505	QC21	T9
2954362	QSBI500625150L	0	.625	.563	.510	.296	4.250	1.500	.080	0.0°	5.0°	TP..21505	QC26	T9




■ QSBM • STEPPED

order number	catalog number	KRI	D	D min	D2	F	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2825013	QSBM9912480R	90	12,00	11,12	9,91	5,61	95,25	47,63	2,03	0.0°	5.0°	TP..110202	QC21	T9
3890865	QSBM9916480R	90	16,00	11,12	9,91	5,61	107,95	47,63	2,03	0.0°	5.0°	TP..110202	QC21	T9
3886949	QSBM15920630R	90	20,00	17,47	15,88	8,97	114,30	63,50	2,49	0.0°	5.0°	TP..110202	QC26	T9
2825052	QSBM9912295R	95	12,00	11,12	9,91	5,61	95,25	28,58	2,03	0.0°	5.0°	TP..110202	QC21	T9
2825024	QSBM9912485R	95	12,00	11,12	9,91	5,61	95,25	47,63	2,03	0.0°	5.0°	TP..110202	QC21	T9
3890864	QSBM9916295R	95	16,00	11,12	9,91	5,61	107,95	28,58	2,03	0.0°	5.0°	TP..110202	QC21	T9
2824993	QSBM9916485R	95	16,00	11,12	9,91	5,61	107,95	47,63	2,03	0.0°	5.0°	TP..110202	QC21	T9
3886945	QSBM1316385R	95	16,00	14,30	12,95	7,52	107,95	38,10	2,03	0.0°	5.0°	TP..110202	QC26	T9
3886948	QSBM1316635R	95	16,00	14,30	12,95	7,52	107,95	63,50	2,03	0.0°	5.0°	TP..110202	QC26	T9
2824950	QSBM9920385R	95	20,00	11,12	9,91	5,61	101,60	38,10	2,03	0.0°	5.0°	TP..110202	QC21	T9
3886950	QSBM15920635R	95	20,00	17,47	15,88	8,97	114,30	63,50	2,49	0.0°	5.0°	TP..110202	QC26	T9
left hand														
2825019	QSBM9912485L	95	12,00	11,12	9,91	5,61	95,25	47,63	2,03	0.0°	5.0°	TP..110202	QC21	T9
3896089	QSBM9916295L	95	16,00	11,12	9,91	5,61	107,95	28,58	2,03	0.0°	5.0°	TP..110202	QC21	T9
3886944	QSBM1316385L	95	16,00	14,30	12,95	7,52	107,95	38,10	2,03	0.0°	5.0°	TP..110202	QC26	T9
3886947	QSBM1316635L	95	16,00	14,30	12,95	7,52	107,95	63,50	2,03	0.0°	5.0°	TP..110202	QC26	T9
2824945	QSBM9920385L	95	20,00	11,12	9,91	5,61	101,60	38,10	2,03	0.0°	5.0°	TP..110202	QC21	T9

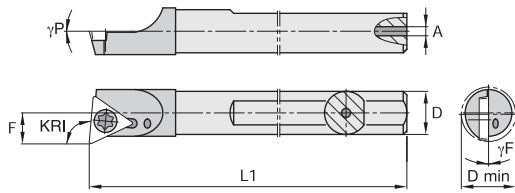


NOTE: KRA shown as -5°.

■ QCBI

order number	catalog number	KRA	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
2825290	QCBI37565R	-5	.375	.438	.228	6.000	.125	0.0°	5.0°	TP..21505	QC21	T9
2825265	QCBI375105R	-5	.375	.438	.228	10.000	.125	0.0°	5.0°	TP..21505	QC21	T9
2825272	QCBI50085R	-5	.500	.563	.296	8.000	.188	0.0°	5.0°	TP..21505	QC21	T9
2825232	QCBI500105R	-5	.500	.563	.296	10.000	.188	0.0°	5.0°	TP..21505	QC21	T9
2825304	QCBI37560R	0	.375	.438	.228	6.000	.125	0.0°	5.0°	TP..21505	QC21	T9
3837881	QCBI375100R	0	.375	.438	.228	10.000	.125	0.0°	5.0°	TP..21505	QC21	T9
2825285	QCBI50080R	0	.500	.563	.296	8.000	.188	0.0°	5.0°	TP..21505	QC21	T9
2825238	QCBI500100R	0	.500	.563	.296	10.000	.188	0.0°	5.0°	TP..21505	QC26	T9
left hand												
2825297	QCBI37565L	-5	.375	.438	.228	6.000	.125	0.0°	5.0°	TP..21505	QC21	T9
2825278	QCBI50085L	-5	.500	.563	.296	8.000	.188	0.0°	5.0°	TP..21505	QC21	T9
3896041	QCBI375100L	0	.375	.438	.228	10.000	.125	0.0°	5.0°	TP..21505	QC21	T9
2979612	QCBI50080L	0	.500	.563	.296	8.000	.188	0.0°	5.0°	TP..21505	QC21	T9





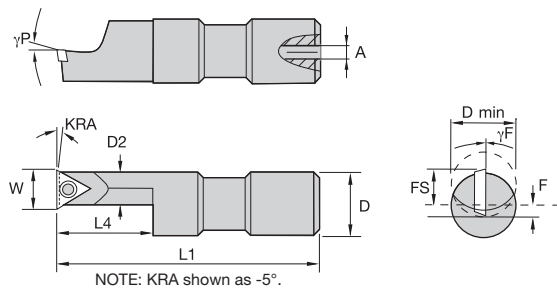
■ QCBM

order number	catalog number	KRI	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
3854445	QCBM102540R	90	10,00	11,15	5,79	254,00	3,20	0.0°	5.0°	TP..110202	QC21	T9
2824776	QCBM102545R	95	10,00	11,15	5,79	254,00	3,20	0.0°	5.0°	TP..110202	QC21	T9
2824747	QCBM122545R	95	12,00	13,16	6,81	254,00	4,70	0.0°	5.0°	TP..110202	QC21	T9
left hand												
3896043	QCBM122540L	90	12,00	13,16	6,81	254,00	4,70	0.0°	5.0°	TP..110202	QC26	T9
3896044	QCBM122545L	95	12,00	13,16	6,81	254,00	4,70	0.0°	5.0°	TP..110202	QC26	T9



Tools for Small Hole Boring

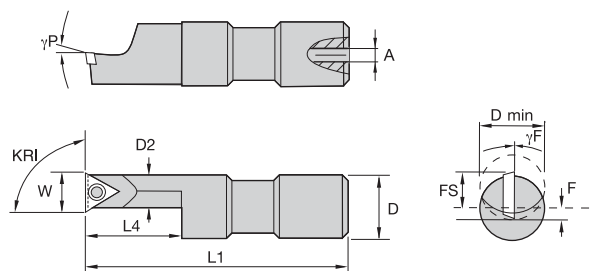
Clamping System S • Steel



■ QSOI

order number	catalog number	KRA	D	D min	D2	F	L1	L4	FS	W	A	γF°	γP°	gage insert	insert screw	Torx
right hand																
2825654	QSOI3126251255R	-5	.625	.606	.313	.055	3.125	1.250	.366	.421	.060	0.0°	5.0°	TP..21505	QC26	T9
2825640	QSOI375750155R	-5	.750	.750	.375	.023	3.750	1.500	—	—	.080	0.0°	5.0°	TP..21505	QC26	T9
2825660	QSOI3126251250R	0	.625	.606	.312	.055	3.125	1.250	.156	.422	.060	0.0°	5.0°	TP..21505	QC26	T9
2825647	QSOI375750150R	0	.750	.750	.375	.024	3.750	1.500	.188	.423	.080	0.0°	5.0°	TP..21505	QC26	T9

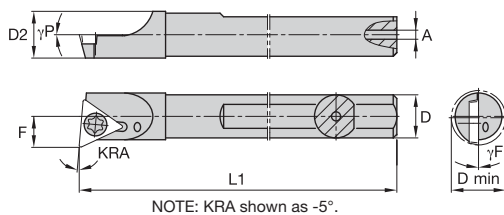




■ **QSOM**

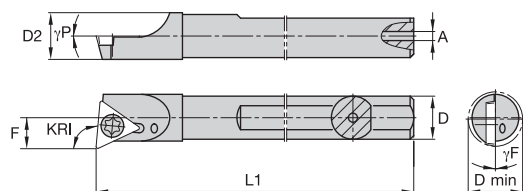
order number	catalog number	KRI	D	D min	D2	F	L1	L4	FS	W	A	γF°	γP°	gage insert	insert screw	Torx
right hand																
2824819	QSOM9516385R	95	16,00	16,51	9,50	0,64	95,25	38,10	10,63	10,70	2,03	0.0°	5.0°	TP..110202	QC26	T9





SSBI

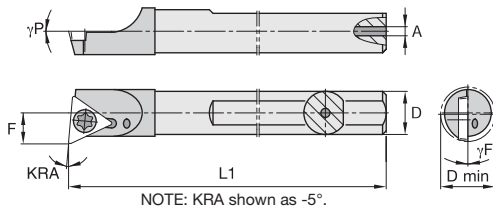
order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2823053	SSBI500255R	-5	.500	.668	.572	.339	2.500	.156	0.0°	5.0°	TP..3205	SC30	T10
2823025	SSBI50065R	-5	.500	.668	.572	.339	6.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2822980	SSBI62545R	-5	.625	.720	.635	.393	4.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2822947	SSBI62575R	-5	.625	.720	.635	.393	7.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2822921	SSBI75045R	-5	.750	.850	.760	.460	4.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2822898	SSBI75085R	-5	.750	.850	.760	.460	8.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2823121	SSBI1000105R	-5	1.000	1.100	1.010	.585	10.000	.250	0.0°	5.0°	TP..3205	SC30	T10
2823096	SSBI100055R	-5	1.000	1.100	1.010	.585	5.000	.250	0.0°	5.0°	TP..3205	SC30	T10
2823073	SSBI1250125R	-5	1.250	1.350	1.260	.710	12.000	.250	0.0°	5.0°	TP..3205	SC30	T10
2823067	SSBI500250R	0	.500	.668	.572	.339	2.500	.156	0.0°	5.0°	TP..3205	SC30	T10
2823039	SSBI50060R	0	.500	.668	.572	.339	6.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2823009	SSBI62540R	0	.625	.720	.635	.393	4.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2822959	SSBI62570R	0	.625	.720	.635	.393	7.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2822935	SSBI75040R	0	.750	.850	.760	.460	4.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2822907	SSBI75080R	0	.750	.850	.760	.460	8.000	.156	0.0°	5.0°	TP..3205	SC30	T10
left hand													
2823032	SSBI50065L	-5	.500	.668	.572	.339	6.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2822987	SSBI62545L	-5	.625	.720	.635	.393	4.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2822954	SSBI62575L	-5	.625	.720	.635	.393	7.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2822928	SSBI75045L	-5	.750	.850	.760	.460	4.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2822901	SSBI75085L	-5	.750	.850	.760	.460	8.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2823128	SSBI1000105L	-5	1.000	1.100	1.010	.585	10.000	.250	0.0°	5.0°	TP..3205	SC30	T10
2823081	SSBI1250125L	-5	1.250	1.350	1.260	.710	12.000	.375	0.0°	5.0°	TP..3205	SC30	T10
2822966	SSBI62570L	0	.625	.720	.635	.393	7.000	.156	0.0°	5.0°	TP..3205	SC30	T10
3792877	SSBI75080L	0	.750	.850	.760	.460	8.000	.156	0.0°	5.0°	TP..3205	SC30	T10
2823142	SSBI1000100L	0	1.000	1.100	1.010	.585	10.000	.312	0.0°	5.0°	TP..3205	SC30	T10
3837307	SSBI100050L	0	1.000	1.100	1.010	.585	5.000	.312	0.0°	5.0°	TP..3205	SC30	T10



SSBM

order number	catalog number	KRI	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
3886968	SSBM202030R	90	20,00	21,23	20,19	10,90	203,20	4,00	0.0°	5.0°	TP..160302	SC30	T10
left hand													
3886967	SSBM202030L	90	20,00	21,23	20,19	10,90	203,20	4,00	0.0°	5.0°	TP..160302	SC30	T10
3886969	SSBM202035L	95	20,00	21,23	20,19	10,90	203,20	4,00	0.0°	5.0°	TP..160302	SC30	T10

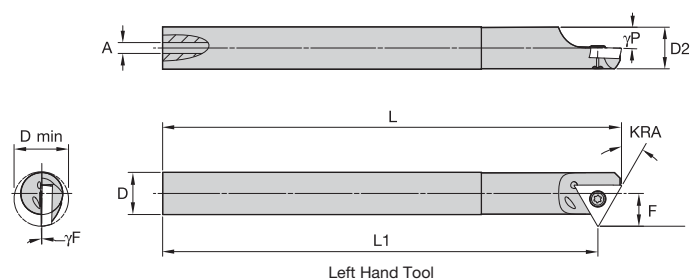




SCBI



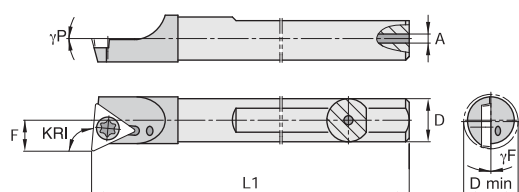
order number	catalog number	KRA	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
2822500	SCBI62565R	-5	.625	.720	.393	6.000	.218	0.0°	5.0°	TP..3205	SC30	T10
2822515	SCBI625105R	-5	.625	.720	.393	10.000	.218	0.0°	5.0°	TP..3205	SC30	T10
2822454	SCBI75065R	-5	.750	.850	.460	6.000	.281	0.0°	5.0°	TP..3205	SC30	T10
2822479	SCBI750105R	-5	.750	.850	.460	10.000	.281	0.0°	5.0°	TP..3205	SC30	T10
2822327	SCBI875125R	-5	.875	.953	.500	12.000	.281	0.0°	5.0°	TP..3205	SC30	T10
2822540	SCBI100065R	-5	1.000	1.100	.585	6.000	.312	0.0°	5.0°	TP..3205	SC30	T10
2822561	SCBI1000125R	-5	1.000	1.100	.585	12.000	.312	0.0°	5.0°	TP..3205	SC30	T10
2822510	SCBI62560R	0	.625	.720	.393	6.000	.218	0.0°	5.0°	TP..3205	SC30	T10
2822527	SCBI625100R	0	.625	.720	.393	10.000	.218	0.0°	5.0°	TP..3205	SC30	T10
2822467	SCBI75060R	0	.750	.850	.460	6.000	.281	0.0°	5.0°	TP..3205	SC30	T10
2822492	SCBI750100R	0	.750	.850	.460	10.000	.281	0.0°	5.0°	TP..3205	SC30	T10
2822574	SCBI1000120R	0	1.000	1.100	.585	12.000	.312	0.0°	5.0°	TP..3205	SC30	T10
left hand												
2822503	SCBI62565L	-5	.625	.720	.393	6.000	.218	0.0°	5.0°	TP..3205	SC30	T10
2822522	SCBI625105L	-5	.625	.720	.393	10.000	.218	0.0°	5.0°	TP..3205	SC30	T10
2822460	SCBI75065L	-5	.750	.850	.460	6.000	.281	0.0°	5.0°	TP..3205	SC30	T10
3784482	SCBI100060L	0	1.000	1.100	.585	6.000	.312	0.0°	5.0°	TP..3205	SC30	T10
2822576	SCBI1000120L	0	1.000	1.100	.585	12.000	.312	0.0°	5.0°	TP..3205	SC30	T10



SSCI

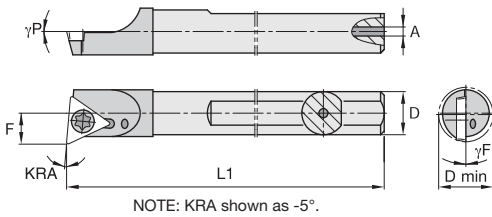
order number	catalog number	KRA	D	D min	D2	F	L1	L	A	γF°	γP°	gage insert	insert screw	Torx
left hand														
2822888	SSCI625430L	30	.625	.730	.635	.402	3.530	4.086	.156	0.0°	0.0°	TP..3205	SC30	T10

Clamping System S • Carbide



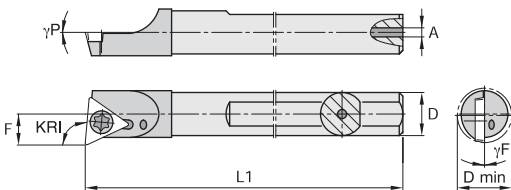
SCBM

order number	catalog number	KRI	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
3895892	SCBM162540R	90	16,00	17,25	8,89	254,00	5,51	0.0°	5.0°	TP..160302	SC30	T10
3896004	SCBM162545R	95	16,00	17,25	8,89	254,00	5,51	0.0°	5.0°	TP..160302	SC30	T10
3896006	SCBM202545R	95	20,00	21,25	10,90	254,00	7,11	0.0°	5.0°	TP..160302	SC30	T10
left hand												
3895891	SCBM162540L	90	16,00	17,25	8,89	254,00	5,51	0.0°	5.0°	TP..160302	SC30	T10
3896005	SCBM202540L	90	20,00	21,25	10,90	254,00	7,11	0.0°	5.0°	TP..160302	SC30	T10
3896003	SCBM162545L	95	16,00	17,25	8,89	254,00	5,51	0.0°	5.0°	TP..160302	SC30	T10
3896091	SCBM202545L	95	20,00	21,25	10,90	254,00	7,11	0.0°	5.0°	TP..160302	SC30	T10



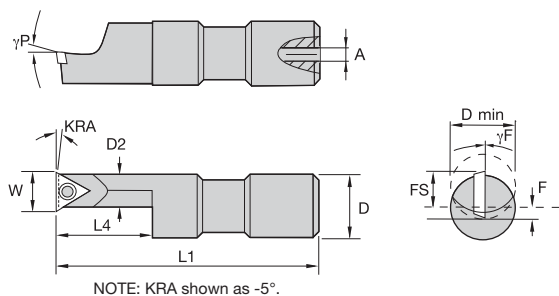
SDBI

order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
3896007	SDBI1000125R	-5	1.000	1.100	—	.585	12.000	.312	0.0°	5.0°	TP..3205	SC30	T10
3896008	SDBI625100R	0	.625	.731	—	.393	10.000	.218	0.0°	5.0°	TP..3205	SC30	T10
left hand													
2822433	SDBI62560L	0	.625	.731	.635	.393	6.000	.218	0.0°	5.0°	TP..3205	SC30	T10



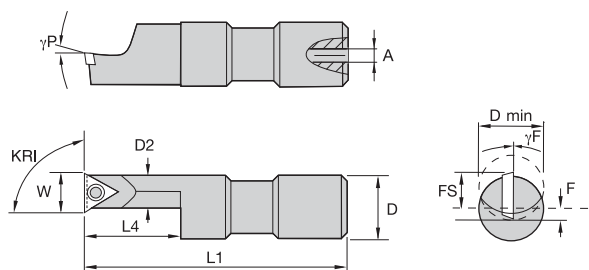
SDBM

order number	catalog number	KRI	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
3896011	SDBM162540R	90	16,00	17,25	—	8,89	254,00	5,51	0.0°	5.0°	TP..160302	SC30	T10
3896014	SDBM202540R	90	20,00	21,25	—	10,90	254,00	7,11	0.0°	5.0°	TP..160302	SC30	T10
2822085	SDBM162545R	95	16,00	17,25	16,13	8,89	254,00	5,54	0.0°	5.0°	TP..160302	SC30	T10
3896092	SDBM202545R	95	20,00	21,25	—	10,90	254,00	7,11	0.0°	5.0°	TP..160302	SC30	T10
left hand													
3896010	SDBM162540L	90	16,00	17,25	—	8,89	254,00	5,51	0.0°	5.0°	TP..160302	SC30	T10
3896013	SDBM202540L	90	20,00	21,25	—	10,90	254,00	7,11	0.0°	5.0°	TP..160302	SC30	T10
3896012	SDBM162545L	95	16,00	17,25	—	8,89	254,00	5,51	0.0°	5.0°	TP..160302	SC30	T10
3897084	SDBM202545L	95	20,00	21,25	—	10,90	254,00	7,11	0.0°	5.0°	TP..160302	SC30	T10



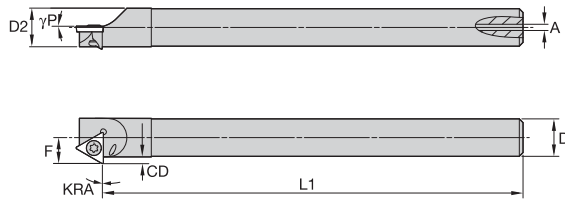
SSOI

order number	catalog number	KRA	D	D min	D2	F	L1	L4	FS	W	A	γF°	γP°	gage insert	insert screw	Torx
right hand																
2822843	SSOI5001000255R	-5	1.000	.969	.500	.070	4.750	2.500	—	—	.118	0.0°	5.0°	TP..3205	SC30	T10
2822857	SSOI5001000150R	0	1.000	.969	.500	.070	3.750	1.500	.250	.640	.118	0.0°	5.0°	TP..3205	SC30	T10
2822850	SSOI5001000250R	0	1.000	.969	.500	.070	4.750	2.500	.250	.640	.118	0.0°	5.0°	TP..3205	SC30	T10

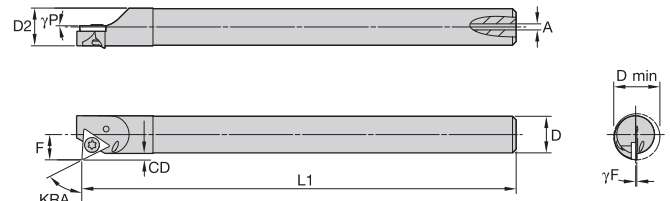


SSOM

order number	catalog number	KRI	D	D min	D2	F	L1	L4	FS	W	A	γF°	γP°	gage insert	insert screw	Torx
right hand																
3896090	SSOM1325380R	90	24,99	24,61	12,70	1,78	95,25	38,10	14,46	16,24	3,00	0.0°	5.0°	TPHB160302	SC30	T10
3890867	SSOM1325630R	90	24,99	24,61	12,70	1,78	120,65	63,50	14,46	16,24	3,00	0.0°	5.0°	TPHB160302	SC30	T10
3890866	SSOM1325385R	95	24,99	24,61	12,70	1,78	95,25	38,10	14,40	16,18	3,00	0.0°	5.0°	TPHB160302	SC30	T10
3890868	SSOM1325635R	95	24,99	24,61	12,70	1,78	120,65	63,50	14,40	16,18	3,00	0.0°	5.0°	TPHB160302	SC30	T10



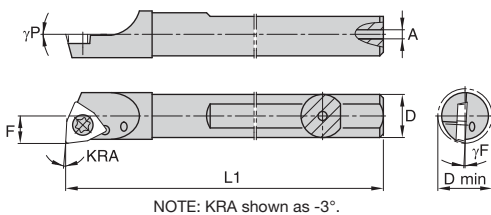
NOTE: KRA shown as 0°.



NOTE: KRA shown as 60°.

■ QSRI

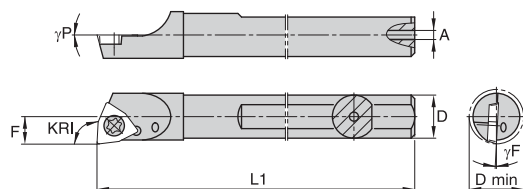
order number	catalog number	KRA	D	D min	D2	F	L1	CD	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2825633	QSRI375450R	0	.375	.492	.370	.287	4.500	.102	.125	0.0°	0.0°	TP..21505	QC21	T9
2825605	QSRI50050R	0	.500	.645	.510	.380	5.000	.125	.156	0.0°	0.0°	TP..21505	QC21	T9
2825614	QSRI375560R	30	.375	.525	.390	.320	5.000	.125	.125	0.0°	0.0°	TP..21505	QC21	T9
2825587	QSRI500660R	30	.500	.645	.510	.380	6.000	.125	.156	0.0°	0.0°	TP..21505	QC21	T9
2825621	QSRI375545R	45	.375	.525	.390	.320	5.000	.125	.125	0.0°	0.0°	TP..21505	QC21	T9
2825594	QSRI500645R	45	.500	.645	.510	.380	6.000	.125	.156	0.0°	0.0°	TP..21505	QC21	T9
3896088	QSRI375530R	60	.375	.525	.390	.320	5.000	.125	.125	0.0°	0.0°	TP..21505	QC21	T9



NOTE: KRA shown as -3°.

■ GSBIW

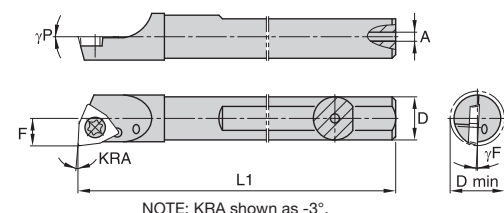
													
order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2828170	GSBIW18743R	-3	.188	.260	.228	.126	4.000	.040	-3.0°	0.0°	WP..1511	CT11	T6
2828161	GSBIW25043R	-3	.250	.285	.260	.142	4.000	.040	-3.0°	0.0°	WP..1511	CT11	T6
2828145	GSBIW31243R	-3	.313	.347	.322	.174	4.000	.040	-3.0°	0.0°	WP..1511	CT15	T6
left hand													
2828167	GSBIW18743L	-3	.187	.260	.228	.126	4.000	.040	-3.0°	0.0°	WP..1511	CT11	T6
2828151	GSBIW25043L	-3	.250	.285	.260	.142	4.000	.040	-3.0°	0.0°	WP..1511	CT11	T6
2828139	GSBIW31243L	-3	.313	.347	.322	.174	4.000	.040	-3.0°	0.0°	WP..1511	CT15	T6



GSBMW

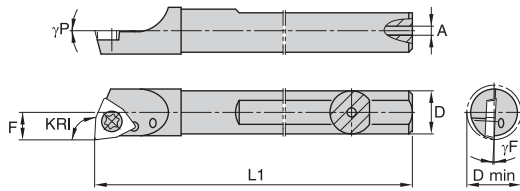
order number	catalog number	KRI	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
													
right hand													
2828122	GSBMW61003R	93	6,00	6,78	6,21	3,43	101,60	1,02	-3.0°	0.0°	WP..S30104	CT11	T6
3886549	GSBMW81003R	93	8,00	8,10	8,18	4,42	101,60	2,40	-3.0°	0.0°	WP..S30104	CT11	T6
left hand													
2828116	GSBMW61003L	93	6,00	6,78	6,21	3,43	101,60	1,02	-3.0°	0.0°	WP..S30104	CT11	T6
3886548	GSBMW81003L	93	8,00	8,10	8,18	4,42	101,60	2,40	-3.0°	0.0°	WP..S30104	CT11	T6

Clamping System S • Carbide



GCBW

order number	catalog number	KRA	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
												
right hand												
2827756	GCBW18763R	-3	.188	.260	.126	6.000	.040	-3.0°	0.0°	WP..1511	CT11	T6
2827743	GCBW25063R	-3	.250	.285	.143	6.000	.047	-3.0°	0.0°	WP..1511	—	T6
2827734	GCBW31263R	-3	.312	.347	.174	6.000	.093	-3.0°	0.0°	WP..1511	CT15	T6
left hand												
2827749	GCBW18763L	-3	.188	.260	.126	6.000	.040	-3.0°	0.0°	WP..1511	CT11	T6
2827740	GCBW25063L	-3	.250	.285	.143	6.000	.047	-3.0°	0.0°	WP..1511	CT11	T6
2827727	GCBW31263L	-3	.312	.347	.174	6.000	.093	-3.0°	0.0°	WP..1511	CT15	T6



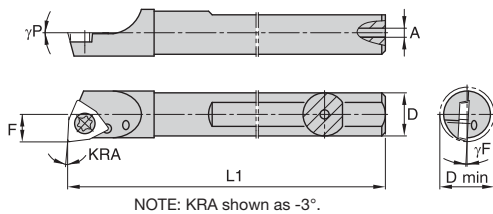
GCBMW

order number	catalog number	KRI	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
3896040	GCBMW51523R	93	5,00	6,60	3,20	152,40	1,02	-3.0°	0.0°	WP..S30104	CT11	T6
2827711	GCBMW61523R	93	6,00	6,78	3,43	152,40	1,19	-3.0°	0.0°	WP..S30104	CT11	T6
left hand												
3896039	GCBMW51523L	93	5,00	6,60	3,20	152,40	1,02	-3.0°	0.0°	WP..S30104	CT11	T6
2827705	GCBMW61523L	93	6,00	6,78	3,43	152,40	1,19	-3.0°	0.0°	WP..S30104	CT11	T6
3897012	GCBMW81523L	93	8,00	8,80	4,42	152,40	2,36	-3.0°	0.0°	WP..S30104	CT11	T6



Tools for Small Hole Boring

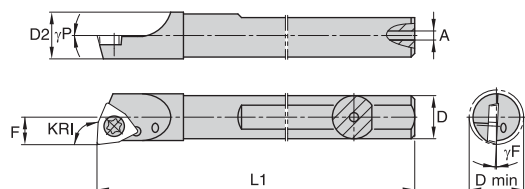
Clamping System S • Steel



QSB IW

													
order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2825364	QSB IW37553R	-3	.375	.413	.385	.211	5.000	.093	-3.0°	0.0°	WP..2151	QTM20	T7
2825351	QSB IW50063R	-3	.500	.538	.510	.272	6.000	.156	-3.0°	0.0°	WP..2151	QTM20	T7
left hand													
2825357	QSB IW37553L	-3	.375	.413	.385	.211	5.000	.093	-3.0°	0.0°	WP..2151	QTM20	T7
2825345	QSB IW50063L	-3	.500	.538	.510	.273	6.000	.156	-3.0°	0.0°	WP..2151	QTM20	T7

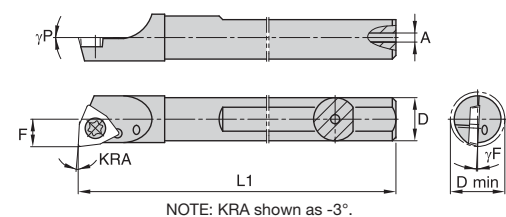




■ QSBMW

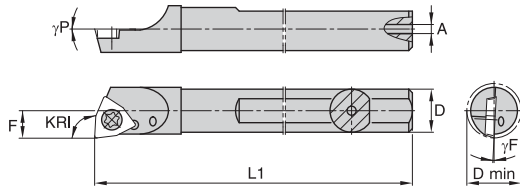
order number	catalog number	KRI	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
													
right hand													
3393828	QSBMW121523R	93	12,00	12,90	12,19	6,55	152,40	4,00	-3.0°	0.0°	WP..040204	QTM20	T7
left hand													
3886952	QSBMW101273L	93	10,00	10,94	10,70	5,59	127,00	3,20	-3.0°	0.0°	WP..040204	QTM20	T7

Clamping System S • Carbide



■ QCBIW

order number	catalog number	KRA	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
												
right hand												
2825335	QCBIW37563R	-3	.375	.413	.211	6.000	.125	-3.0°	0.0°	WP..2151	QTM20	T7
2825324	QCBIW50083R	-3	.500	.538	.273	8.000	.188	0.0°	0.0°	WP..2151	QTM20	T7
left hand												
2825327	QCBIW37563L	-3	.375	.413	.211	6.000	.125	-3.0°	0.0°	WP..2151	QTM20	T7
2825318	QCBIW50083L	-3	.500	.538	.273	8.000	.188	0.0°	0.0°	WP..2151	QTM20	T7

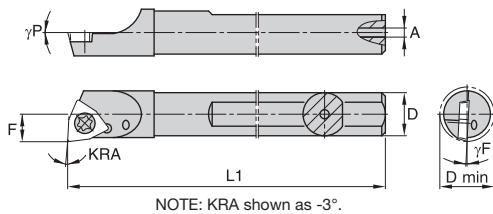


■ QCBMW

order number	catalog number	KRI	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
3782378	QCBMW102543R	93	10,00	10,95	5,59	254,00	3,20	-3.0°	0.0°	WP..040204	QTM20	T7
left hand												
3896045	QCBMW102543L	93	10,00	10,95	5,59	254,00	3,20	-3.0°	0.0°	WP..040204	QTM20	T7
3896046	QCBMW122543L	93	12,00	12,90	6,55	254,00	4,70	-3.0°	0.0°	WP..040204	QTM20	T7



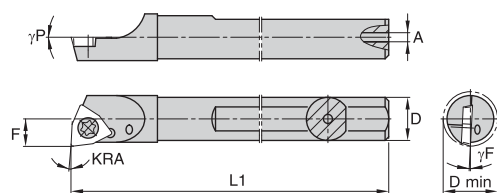
Clamping System S • Steel



■ SSB IW

													
order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2823167	SSBIW62573R	-3	.625	.673	.635	.345	7.000	.156	-3.0°	0.0°	WP..3251	STM31	T15
2823155	SSBIW75083R	-3	.750	.797	.760	.407	8.000	.156	-3.0°	0.0°	WP..321	STM31	T15
left hand													
2823161	SSBIW62573L	-3	.625	.673	.635	.345	7.000	.156	-3.0°	0.0°	WP..3251	STM31	T15
2823149	SSBIW75083L	-3	.750	.797	.760	.407	8.000	.156	-3.0°	0.0°	WP..3251	STM31	T15

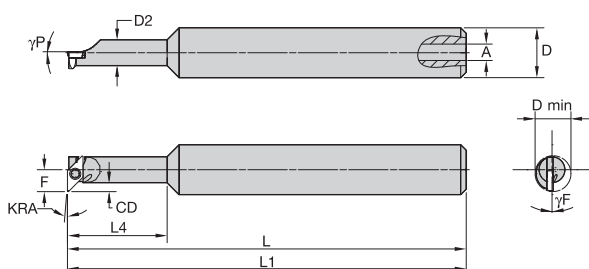




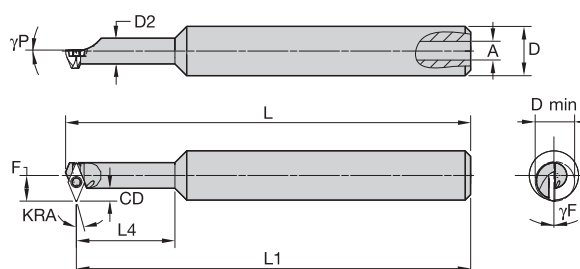
NOTE: KRA shown as -3°.

SCBIW

order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2822603	SCBIW625103R	-3	.625	.673	—	.345	10.000	.218	-3.0°	0.0°	WP..3251	STM31	T15
2822591	SCBIW750103R	-3	.750	.797	—	.407	10.000	.281	-3.0°	0.0°	WP..321	STM31	T15
left hand													
2822595	SCBIW625103L	-3	.625	.673	.635	.345	10.000	.218	-3.0°	0.0°	WP..321	STM31	T15



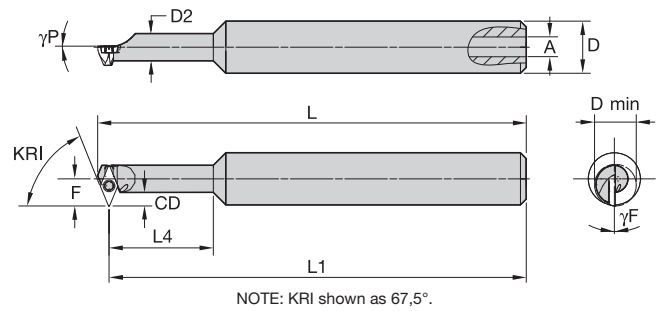
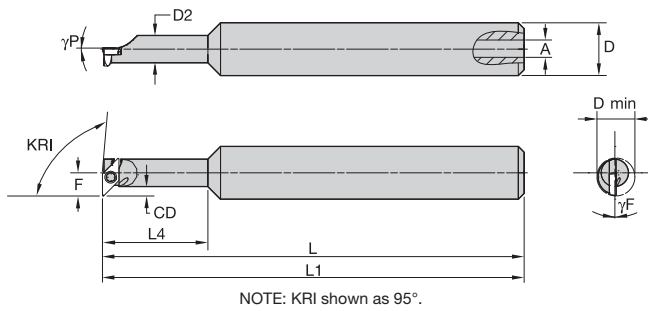
NOTE: KRA shown as -5°.



NOTE: KRA shown as 22.5°.

CSPI

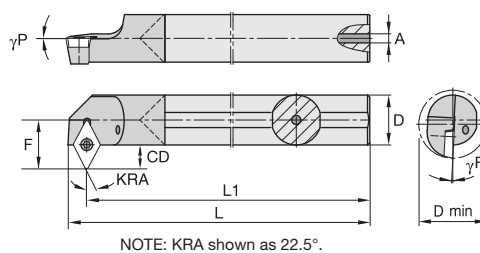
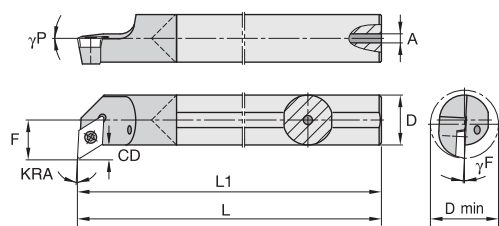
order number	catalog number	KRA	D	D min	D2	F	CD	L	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand																
2832344	CSPI25050015R	-5.0	.500	.360	.260	.220	.090	4.000	4.000	1.000	.040	0.0°	0.0°	GP..12105	CT15	T6
2832334	CSPI3125001255R	-5.0	.500	.423	.323	.251	.090	4.000	4.000	1.250	.040	0.0°	0.0°	GP..12105	CT15	T6
2832297	CSPI25050010R	.0	.500	.360	.260	.220	.090	4.000	4.000	1.000	.040	0.0°	0.0°	GPHW12105	CT15	T6
2832291	CSPI3125001250R	.0	.500	.423	.323	.251	.090	4.000	4.000	1.250	.040	0.0°	0.0°	GP..12105	CT15	T6
2832319	CSPI2505001225R	22.5	.500	.400	.260	.260	.130	4.080	4.000	1.000	.040	0.0°	0.0°	GP..12105	CT15	T6
left hand																
2832337	CSPI25050015L	-5.0	.500	.360	.260	.220	.090	4.000	4.000	1.000	.040	0.0°	0.0°	GP..12105	CT15	T6
2832326	CSPI3125001255L	-5.0	.500	.423	.323	.251	.090	4.000	4.000	1.250	.040	0.0°	0.0°	GP..12105	CT15	T6



CSPM

order number	catalog number	KRI	D	D min	D2	F	CD	L	L1	L4	A	γ_F°	γ_P°	gage insert	insert screw	Torx
right hand																
2831399	CSPM71225225R	67.5	12,00	10,16	6,60	6,60	3,30	104,00	101,60	25,40	1,02	0.0°	0.0°	GC..050102	CT15	T6
3758942	CSPM81232225R	67.5	12,00	11,37	8,18	7,01	2,92	105,16	101,60	31,75	1,02	0.0°	0.0°	GC..050102	CT15	T6
2831411	CSPM712255R	95.0	12,00	9,14	6,60	5,59	2,29	101,60	101,60	25,40	1,02	0.0°	0.0°	GC..050102	CT15	T6
left hand																
2831394	CSPM71225225L	67.5	12,00	10,16	6,60	6,60	3,30	104,00	101,60	25,40	1,02	0.0°	0.0°	GPHW050102	CT15	T6
2831378	CSPM81232225L	67.5	12,00	11,38	8,18	7,01	2,92	104,10	101,60	31,75	1,02	0.0°	0.0°	GC..050102	CT15	T6
2831405	CSPM712255L	95.0	12,00	9,14	6,60	5,59	2,29	101,60	101,60	25,40	1,02	0.0°	0.0°	GP..050102	CT15	T6
2831383	CSPM812325L	95.0	12,00	10,74	8,20	6,38	2,27	101,60	101,60	31,75	1,02	0.0°	0.0°	GP..050102	CT15	T6

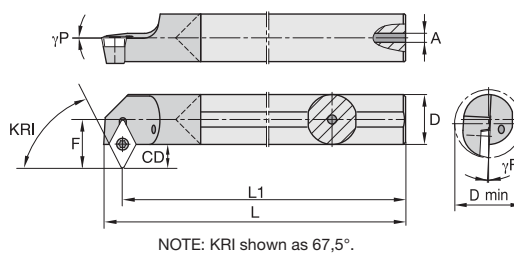
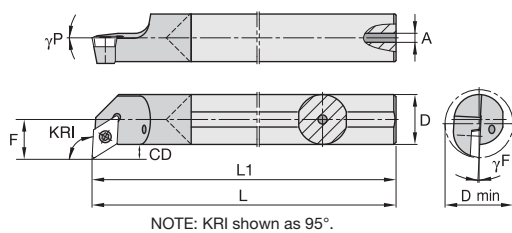




CCPI

order number	catalog number	KRA	D	D min	F	CD	L	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2831774	CCPI25065R	-5.0	.250	.360	.220	.091	6.000	6.000	.047	0.0°	0.0°	GP..12105	CT15	T6
2831762	CCPI31265R	-5.0	.313	.423	.251	.091	6.000	6.000	.093	0.0°	0.0°	GP..12105	CT15	T6
2831727	CCPI25060R	.0	.250	.360	.220	.091	6.000	6.000	.047	0.0°	0.0°	GP..12105	CT15	T6
2831714	CCPI31260R	.0	.313	.423	.251	.091	6.000	6.000	.093	0.0°	0.0°	GP..12105	CT15	T6
2831751	CCPI2506225R	22.5	.250	.400	.260	.131	6.095	6.000	.047	0.0°	0.0°	GP..12105	CT15	T6
2831739	CCPI3126225R	22.5	.313	.448	.276	.116	6.101	6.000	.093	0.0°	0.0°	GP..12105	CT15	T6
left hand														
2831767	CCPI25065L	-5.0	.250	.360	.220	.091	6.000	6.000	.047	0.0°	0.0°	GP..12105	CT15	T6
2831755	CCPI31265L	-5.0	.313	.423	.251	.091	6.000	6.000	.093	0.0°	0.0°	GP..12105	CT15	T6
2831721	CCPI25060L	.0	.250	.360	.220	.091	6.000	6.000	.047	0.0°	0.0°	GP..12105	CT15	T6
3849913	CCPI31260L	.0	.313	.423	.251	.091	6.000	6.000	.093	0.0°	0.0°	GP..12105	CT15	T6
3897898	CCPI2506225L	22.5	.250	.400	.260	.131	6.096	6.000	.047	0.0°	0.0°	GP..12105	CT15	T6

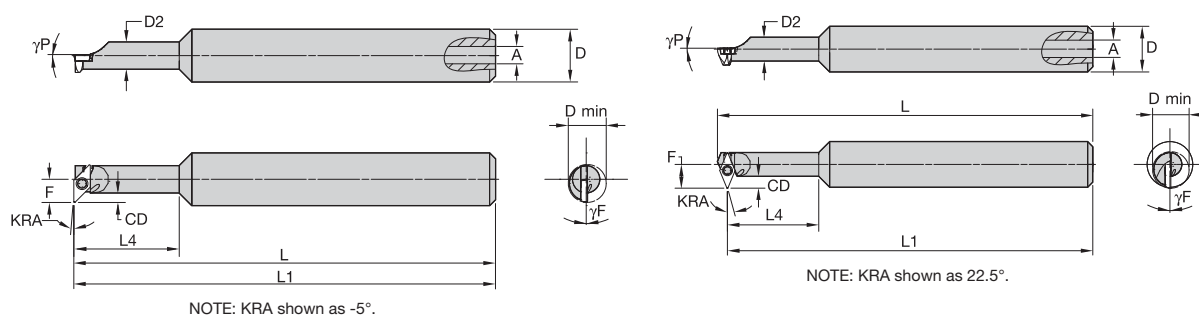




CCPM



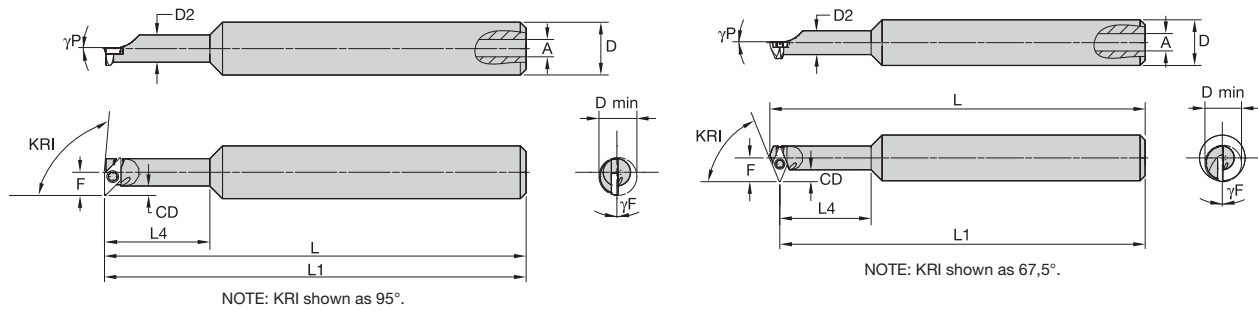
order number	catalog number	KRI	D	D min	F	CD	L	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2831010	CCPM6152225R	67.5	6,00	10,16	6,60	3,51	154,61	152,40	1,19	0.0°	0.0°	GP..050102	CT15	T6
2831020	CCPM61525R	95.0	6,00	9,14	5,59	2,49	152,40	152,40	1,19	0.0°	0.0°	GP..050102	CT15	T6
left hand														
2831004	CCPM6152225L	67.5	6,00	10,15	6,60	3,51	152,61	152,40	1,19	0.0°	0.0°	GP..050102	CT15	T6
2830980	CCPM8152225L	67.5	8,00	11,38	7,01	2,92	155,96	152,40	2,36	0.0°	0.0°	GP..050102	CT15	T6
3897899	CCPM61525L	95.0	6,00	9,14	5,59	2,49	152,40	152,40	1,19	0.0°	0.0°	GP..050102	CT15	T6
3896022	CCPM81525L	95.0	8,00	10,74	6,38	2,28	152,40	152,40	2,23	0.0°	0.0°	GP..050102	CT15	T6



■ GSPI

order number	catalog number	KRA	D	D min	D2	F	CD	L	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand																
2828281	GSPI375625155R	-5.0	.625	.515	.385	.312	.120	4.500	4.500	1.500	.098	0.0°	0.0°	GC..151505	GT21	T7
2828269	GSPI50075025R	-5.0	.750	.630	.510	.374	.119	5.000	5.000	2.000	.098	0.0°	0.0°	GC..151505	GT21	T7
2828196	GSPI375625150R	.0	.625	.515	.385	.312	.120	4.500	4.500	1.500	.098	0.0°	0.0°	GC..151505	GT21	T7
2828203	GSPI50075020R	.0	.750	.630	.510	.374	.119	5.000	5.000	2.000	.098	0.0°	0.0°	GC..151505	GT21	T7
2828310	GSPI37562515225R	22.5	.625	.540	.385	.338	.146	4.134	4.000	1.500	.098	0.0°	0.0°	GC..151505	GT21	T7
2828295	GSPI5007502225R	22.5	.750	.665	.510	.400	.145	5.158	5.000	2.000	.098	0.0°	0.0°	GC..151505	GT21	T7
left hand																
2828275	GSPI375625155L	-5.0	.625	.515	.385	.312	.120	4.500	4.500	1.500	.098	0.0°	0.0°	GC..151505	GT21	T7

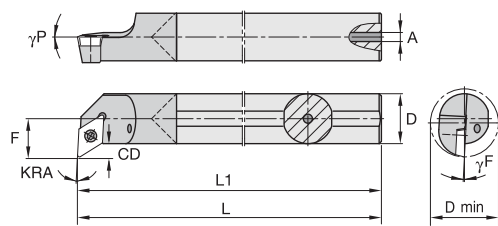




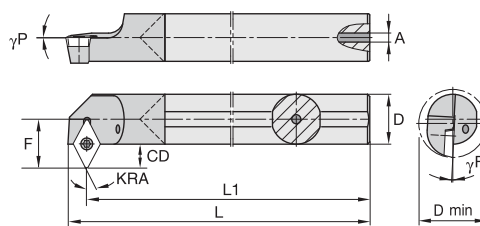
■ GSPM

order number	catalog number	KRI	D	D min	D2	F	CD	L	L1	L4	A	γ_F°	γ_P°	gage insert	insert screw	Torx
right hand																
3518694	GSPM1316515R	95.0	16,00	16,00	12,95	9,50	3,02	127,00	127,00	50,80	2,49	0.0°	0.0°	GC..060202	GT21	T7
left hand																
3897894	GSPM101638225L	67.5	16,00	13,72	9,78	8,59	3,70	105,01	101,60	38,10	2,49	0.0°	0.0°	GC..060202	GT21	T7
3897896	GSPM131651225L	67.5	16,00	16,89	12,95	10,16	3,68	130,90	127,00	50,80	2,49	0.0°	0.0°	GC..060202	GT21	T7
3897895	GSPM1016385L	95.0	16,00	13,08	9,78	7,93	3,04	114,30	114,30	38,10	2,49	0.0°	0.0°	GC..060202	GT21	T7
3896052	GSPM1316515L	95.0	16,00	16,00	12,95	9,50	3,02	127,00	127,00	50,80	2,49	0.0°	0.0°	GC..060202	GT21	T7





NOTE: KRA shown as -5°.

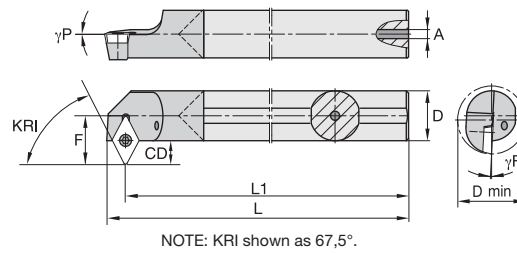
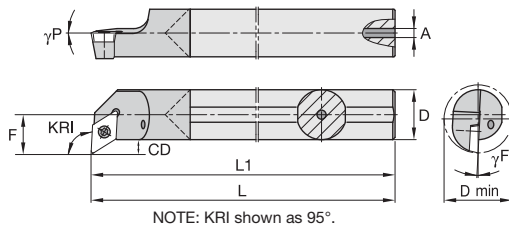


NOTE: KRA shown as 22.5°.

GCPI

Tools for Small Hole Boring

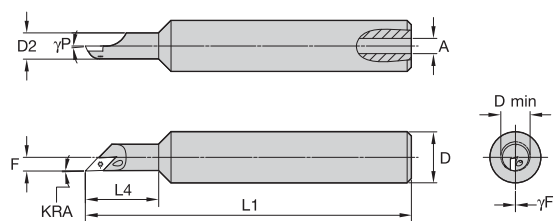
														
order number	catalog number	KRA	D	D min	F	CD	L	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2827811	GCPI50085R	-5.0	.500	.640	.374	.120	8.000	8.000	.188	0.0°	0.0°	GC..151505	GT21	T7
2827800	GCPI625105R	-5.0	.625	.765	.437	.121	10.000	10.000	.218	0.0°	0.0°	GC..151505	GT21	T7
2827775	GCPI37560R	.0	.375	.515	.312	.121	6.000	6.000	.125	0.0°	0.0°	GC..151505	GT21	T7
2827767	GCPI50080R	.0	.500	.640	.374	.120	8.000	8.000	.188	0.0°	0.0°	GC..151505	GT21	T7
3897902	GCPI625100R	.0	.625	.765	.437	.121	10.000	10.000	.218	0.0°	0.0°	GC..151505	GT21	T7
2827825	GCPI37565R	.0	.375	.515	.312	.121	6.000	6.000	.125	0.0°	0.0°	GC..151505	GT21	T7
2827845	GCPI3756225R	22.5	.375	5.400	.338	.147	6.134	6.000	.125	0.0°	0.0°	GC..151505	GT21	T7
2827833	GCPI5008225R	22.5	.500	.665	.400	.145	8.158	8.000	.187	0.0°	0.0°	GC..151505	GT21	T7
left hand														
2827819	GCPI37565L	-5.0	.375	.515	.312	.121	6.000	6.000	.125	0.0°	0.0°	GC..151505	GT21	T7
3897901	GCPI50085L	-5.0	.500	.640	.374	.120	8.000	8.000	.188	0.0°	0.0°	GC..151505	GT21	T7
2827794	GCPI625105L	-5.0	.625	.765	.437	.120	10.000	10.000	.218	0.0°	0.0°	GC..151505	GT21	T7
3897900	GCPI50080L	.0	.500	.640	.374	.120	8.000	8.000	.188	0.0°	0.0°	GC..151505	GT21	T7
2827839	GCPI3756225L	22.5	.375	.540	.338	.147	6.176	6.000	.125	0.0°	0.0°	GC..151505	GT21	T7
2827829	GCPI5008225L	22.5	.500	.665	.400	.146	8.157	8.000	.188	0.0°	0.0°	GC..151505	GT21	T7
3838856	GCPI62510225L	22.5	.625	.791	.463	.146	10.158	10.000	.218	0.0°	0.0°	GC..151505	GT21	T7



GCPM

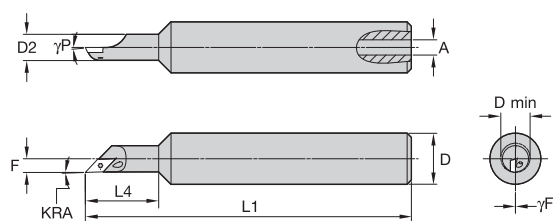
order number	catalog number	KRI	D	D min	F	CD	L	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2827656	GCPM10254225R	67.5	10,00	14,20	8,81	3,68	258,47	254,00	3,20	0.0°	0.0°	GC..060202	GT21	T7
3897906	GCPM12254225R	67.5	12,00	16,18	9,80	3,71	257,86	254,00	4,70	0.0°	0.0°	GC..060202	GT21	T7
3896073	GCPM16254225R	67.5	16,00	20,09	11,76	3,67	258,01	254,00	5,51	0.0°	0.0°	GC..060202	GT21	T7
3897904	GCPM102545R	95.0	10,00	13,54	8,15	3,06	254,00	254,00	3,20	0.0°	0.0°	GC..060202	GT21	T7
3759184	GCPM122545R	95.0	12,00	15,52	9,14	3,05	254,00	254,00	4,70	0.0°	0.0°	GC..060202	GT21	T7
3897909	GCPM162545R	95.0	16,00	19,43	11,10	3,01	254,00	254,00	5,51	0.0°	0.0°	GC..060202	GT21	T7
left hand														
3897903	GCPM10254225L	67.5	10,00	14,20	8,81	3,72	257,49	254,00	3,20	0.0°	0.0°	GC..060202	GT21	T7
3897905	GCPM12254225L	67.5	12,00	16,18	9,80	3,71	257,86	254,00	4,70	0.0°	0.0°	GC..060202	GT21	T7
3897908	GCPM16254225L	67.5	16,00	20,07	11,76	3,67	258,02	254,00	5,51	0.0°	0.0°	GC..060202	GT21	T7
3782377	GCPM102545L	95.0	10,00	13,54	8,15	3,02	254,00	254,00	3,20	0.0°	0.0°	GC..060202	GT21	T7
3897907	GCPM122545L	95.0	12,00	15,52	9,14	3,05	254,00	254,00	4,70	0.0°	0.0°	GC..060202	GT21	T7
2827644	GCPM162545L	95.0	16,00	19,43	11,10	3,01	254,00	254,00	5,51	0.0°	0.0°	GC..060202	GT21	T7





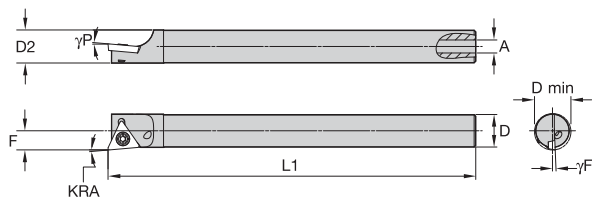
CTPI

order number	catalog number	KRA	D	D min	D2	F	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2828101	CTPI32262590647R	-2.0	.625	.339	.322	.168	4.000	.900	.187	0.0°	0.0°	GP..12105	CT11	T6



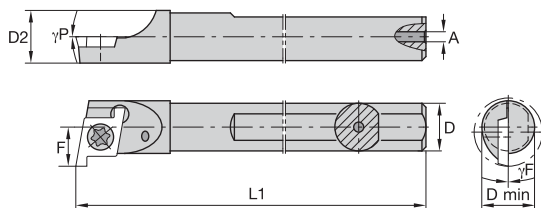
GTPI

order number	catalog number	KRA	D	D min	D2	F	L1	L4	A	γF°	γP°	gage insert	insert screw	Torx
right hand														
2828184	GTPI37562590647R	-2.0	.625	.625	.375	.236	4.000	.900	.187	0.0°	-3.0°	GC..151505	GT21	T7



SSPI

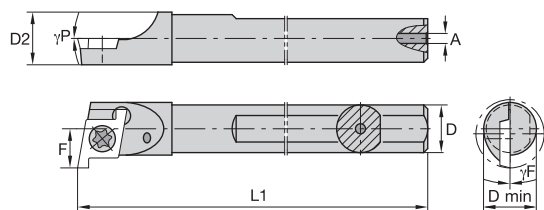
order number	catalog number	KRA	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2822826	SSPI62575R	-5.0	.625	.700	.635	.372	7.000	.156	0.0°	5.0°	TP..3205	SC30	T10



CSMI

order number	catalog number	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
2832353	CSMI187250R	.188	.272	.219	.154	2.500	.040	0.0°	0.0°	CD.5..	CC11	T6
2832348	CSMI25030R	.250	.312	.260	.175	3.000	.040	0.0°	0.0°	CD.5..	CC11	T6

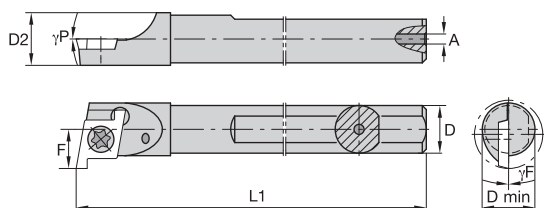
NOTE: Refer to insert design for cutting depth, cutting width, and blind hole limitations.



CSMM

order number	catalog number	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
2831048	CSMM6760R	6,00	7,92	6,60	4,44	76,20	1,02	0.0°	0.0°	CD.50302R	CC11	T6

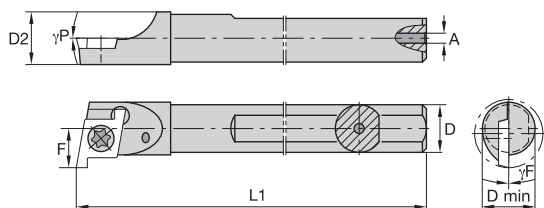
NOTE: Refer to insert design for cutting depth, cutting width, and blind hole limitations.



CCMI

order number	catalog number	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
2831841	CCMI18740R	.187	.272	.208	.154	4.000	.040	0.0°	0.0°	CD.5..	CC11	T6
2831838	CCMI25040R	.250	.312	.258	.175	4.000	.047	0.0°	0.0°	CD.5..	CC11	T6

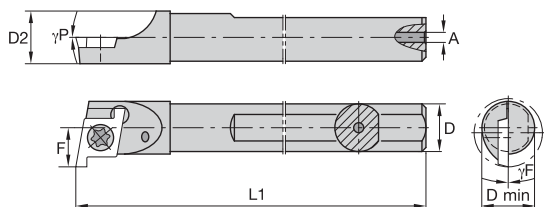
NOTE: Refer to insert design for cutting depth, cutting width, and blind hole limitations.



QSMI

order number	catalog number	D	D min	D2	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand												
2825464	QSMI37545R	.375	.481	.385	.278	4.000	.125	0.0°	0.0°	CP..2....	QC15	T8
2825455	QSMI50055R	.500	.545	.510	.280	5.000	.156	0.0°	0.0°	CP..2....	QC15	T8
2825394	QSMI62565R	.625	.670	.635	.343	6.000	.156	0.0°	0.0°	CP..2....	QC15	T8
left hand												
2825457	QSMI37545L	.375	.420	.385	.218	4.000	.125	0.0°	0.0°	CP..2....	QC15	T8
2825449	QSMI50055L	.500	.545	.510	.280	5.000	.156	0.0°	0.0°	CP..2....	QC15	T8

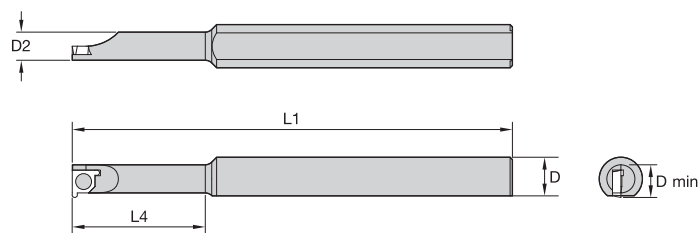
NOTE: D min and F calculated using the CPG grooving-style insert.
Refer to insert design for cutting depth, cutting width, and blind hole limitations.



QCMi

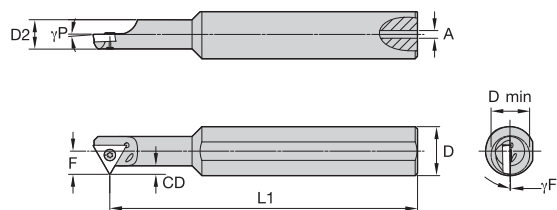
order number	catalog number	D	D min	F	L1	A	γF°	γP°	gage insert	insert screw	Torx
right hand											
2825117	QCMi37565R	.375	.481	.278	6.000	.125	0.0°	0.0°	CP..2....	QC15	T8
2825105	QCMi50085R	.500	.545	.280	8.000	.188	0.0°	0.0°	CP..21205	QC15	T8
2825089	QCMi625105R	.625	.670	.343	10.000	.218	0.0°	0.0°	CP..2....	QC15	T8
left hand											
2825112	QCMi37565L	.375	.420	.218	6.000	.125	0.0°	0.0°	CP..2..	QC15	T8
2825094	QCMi50085L	.500	.545	.280	8.000	.188	0.0°	0.0°	CP..2....	QC15	T8

NOTE: F calculated using the CPG-style insert.
Refer to insert design for cutting depth, cutting width, and blind hole limitations.



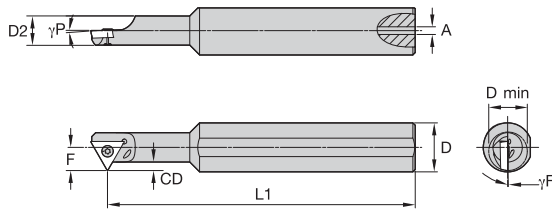
LSMI

order number	catalog number	D	D min	D2	L1	L4	gage insert	insert screw	Torx
right hand									
2820948	LSMI24437511870R	.375	.315	.244	3.819	1.187	FN..1.5..	LTM16	T5
2820954	LSMI2443758280R	.375	.315	.244	3.425	.828	FN..1.5..	LTM16	T5
2820937	LSMI24450011870R	.500	.315	.244	3.819	1.187	FN..1.5..	LTM16	T5
2820944	LSMI2445008280R	.500	.315	.244	3.425	.828	FN..1.5..	LTM16	T5



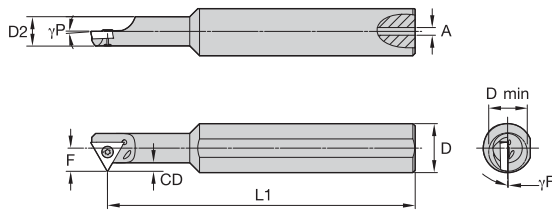
FSII

order number	catalog number	D	D min	D2	F	L1	CD	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2830177	FSII25062512560R	.625	.322	.250	.155	4.000	.060	.040	0.0°	-2.0°	TB..1308X0	FC11	T7
2830171	FSII2506257560R	.625	.322	.250	.155	4.000	.060	.040	0.0°	-2.0°	TB..1308X0	FC11	T7
2830161	FSII3126251560R	.625	.382	.372	.186	4.000	.060	.040	0.0°	-2.0°	TB..1308X0	FC11	T7
2830155	FSII31262593760R	.625	.382	.372	.186	4.000	.060	.040	0.0°	-2.0°	TB..1308X0	FC11	T7
2830143	FSII625460R	.625	.700	.635	.377	4.000	.060	.156	0.0°	-2.0°	TB..1308X0	FC14	T7



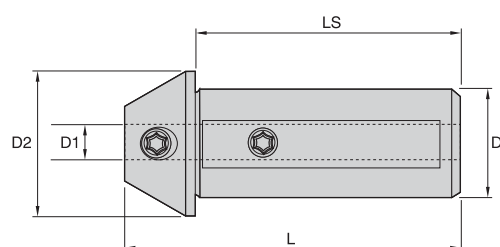
■ QSII

order number	catalog number	D	D min	D2	F	L1	CD	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2825707	QSII375625187560R	.625	.468	.375	.234	4.000	.093	.098	0.0°	-2.0°	TB..2150	QC21	T9
2825693	QSII375625112560R	.625	.478	.375	.234	4.000	.093	.098	0.0°	-2.0°	TB..2150	QC21	T9
2825679	QSII5006251560R	.625	.603	.501	.297	4.000	.093	.098	0.0°	-2.0°	TB..2150	QC21	T9
2825670	QSII625460R	.625	.738	.635	.410	4.000	.092	.156	0.0°	-2.0°	TB..2150	QC26	T9



■ SSII

order number	catalog number	D	D min	D2	F	L1	CD	A	γF°	γP°	gage insert	insert screw	Torx
right hand													
2822864	SSII750860R	.750	.935	.760	.548	8.000	.168	.156	0.0°	-2.0°	TP..3205	SC30	T10



■ CSI

order number	catalog number	D1	D	D2	LS	L
2832905	CSI750156	.156	.750	1.100	2.000	2.500
2832801	CSI1000156	.156	1.000	1.100	2.000	2.500
2832868	CSI625156	.157	.625	1.100	2.000	2.500
2832898	CSI750187	.188	.750	1.100	2.000	2.500
2832795	CSI1000187	.188	1.000	1.100	2.000	2.500
3493266	CSI625187	.188	.625	1.100	2.000	2.500
2832856	CSI625250	.250	.625	1.100	2.000	2.500
2832893	CSI750250	.250	.750	1.100	2.000	2.500
2832790	CSI1000250	.250	1.000	1.100	2.000	2.500
2832851	CSI625312	.312	.625	1.100	2.000	2.500
2832885	CSI750312	.313	.750	1.100	2.000	2.500
2832785	CSI1000312	.313	1.000	1.100	2.000	2.500
2832844	CSI625375	.375	.625	1.100	2.000	2.500
2832879	CSI750375	.375	.750	1.100	2.000	2.500
2832780	CSI1000375	.375	1.000	1.100	2.000	2.500
2832932	CSI1250375	.375	1.250	1.725	3.000	3.875
2832874	CSI750500	.500	.750	1.100	2.000	2.500
2832775	CSI1000500	.500	1.000	1.100	2.000	2.500
2832920	CSI1250625	.625	1.250	1.725	3.000	3.625
2832947	CSI1500625	.625	1.500	1.725	3.000	3.875
2832914	CSI1250750	.750	1.250	1.725	3.000	3.625
2832941	CSI1500750	.750	1.500	1.725	3.000	3.875
2832935	CSI15001000	1.000	1.500	1.725	3.000	3.875

■ CSM

order number	catalog number	D1	D	D2	LS	L
2832838	CSM22156	3,96	22,00	27,94	50,80	63,50
2832832	CSM22187	4,75	22,00	27,94	50,80	63,50
2832827	CSM22250	6,36	22,00	27,94	50,80	63,50
2832820	CSM22312	7,93	22,00	27,94	50,80	63,50
2832813	CSM22375	9,53	22,00	27,94	50,80	63,50
2832809	CSM22500	12,70	22,00	27,94	50,80	63,50

ToolBOSS™

ToolBOSS Vending Solutions

ToolBOSS vending solutions help to reduce costs and improve efficiencies to give you a competitive edge.

- Cut tooling inventory by 50% or more.
- Decrease spending on tooling by up to 30%.
- Reduce administrative costs by as much as 90%.

Customer Offering

Shared Rewards

Free use of ToolBOSS vending machine combined with a comprehensive maintenance and service package based on agreed sales targets for specified contract terms.

Direct Purchase of Equipment

ToolBOSS vending machines are available for purchase. Maintenance and service packages available with annual agreements.

For more information, please contact us at:

Tel: 888 281 8080

na-help.desk@toolboss.com

toolboss.com



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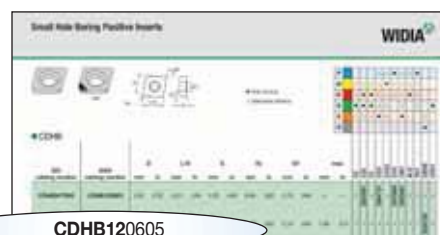
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How Do Catalog Numbers Work?

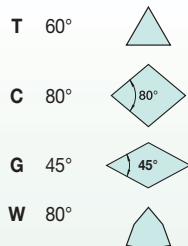
Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



CDHB120605

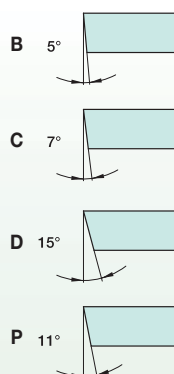
C

Insert Shape



D

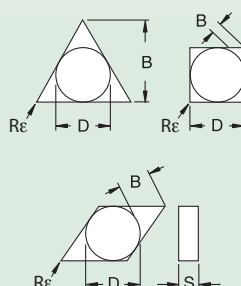
Insert Clearance Angle



H

Tolerance Class

Tolerances apply prior to edge prep and coating.



D = Theoretical diameter of the insert inscribed circle
S = Thickness
B = See figures below

B

Insert Features

12

Size

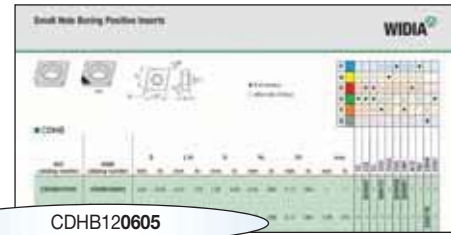
Code for inch cutting edge length "L10"				
"D" inch	C	G	T	W
5/32	12	12	-	-
.160	-	-	13	-
3/16	-	15	-	15
1/4	2	-	2	2
3/8	3	-	3	3
.386	-	-	31	-

tolerance class	tolerance on "D"	tolerance on "B"	tolerance on "S"
C	±.0010"	±.0005"	±.001"
H	±.0005"	±.0005"	±.001"
E	±.0010"	±.0010"	±.001"
G	±.0010"	±.0010"	±.005"
M	See tables on next page		±.005"
U	See tables on next page		±.005"

Partly cylindrical hole, 40–60° countersink, single-sided	W	without chipbreaker		
	T	with chipbreaker		

Partly cylindrical hole, 70–90° countersink, single-sided	B	without chipbreaker		
	H	with chipbreaker		

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



CDHB120605

06

Thickness

symbol inch	thickness inch
06	.040
1	.0625
12	.0781
15	.0938
2	.1250
25	.1563

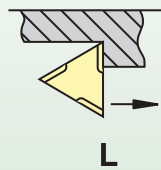
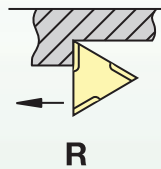
05

Corner
Radius "R_e"

symbol inch	corner radius inch
X0	.0015
0	.004
05	.008
1	.0156
13	.021
2	.0313
24	.037
3	.0469
4	.0625

Hand of Insert
(optional)

R = Right hand
L = Left hand



Cutting Edge Condition
or Chip Control Features
(optional)

HP = High positive
LF = Light finishing

Tip Style
(optional)

Symbol
M
Usage
Mini tip

“D”	± Tolerance on “D”				“D”	± Tolerance on “B”			
	Class M Tolerance			Class U Tolerance		Class M Tolerance			Class U Tolerance
	Shapes S, T, C, R, & W	Shape D	Shape V			Shapes S, T, & C	Shapes S, T, C, R, & W	Shape D	
inch	inch	inch	inch	inch	inch	inch	inch	inch	inch
5/32	.002	—	—	—	5/32	.003	—	—	—
3/16	.002	—	—	.003	3/16	.003	—	—	.005
7/32	.002	.002	.002	.003	7/32	.003	.004	—	.005
1/4	.002	.002	.002	.003	1/4	.003	.004	—	.005
5/16	.002	.002	.002	.003	5/16	.003	.004	—	.005
3/8	.002	.002	.002	.003	3/8	.003	.004	.007	.005
7/16	.003	.003	.003	.005	7/16	.005	.006	—	—
1/2	.003	.003	.003	.005	1/2	.005	.006	.010	.008
9/16	.003	.003	.003	.005	9/16	.005	.006	—	—
5/8	.004	.004	.004	.007	5/8	.006	.007	—	.011
11/16	.004	.004	.004	.007	11/16	.006	.007	—	.011
3/4	.004	.004	.004	.007	3/4	.006	.007	—	.011
7/8	.005	—	—	.010	7/8	.006	—	—	.015
1	.005	—	—	.010	1	.007	—	—	.015
1 1/4	.006	—	—	.010	1 1/4	.008	—	—	.015

The WIDIA™ three-step insert selection system makes choosing and applying the most productive tool easy. Tool recommendations are based on six workpiece material groups.

1 Select the Insert Geometry:

Based on the needed depth of cut and feed rate, choose the geometry that best matches your needs.

2 Select the Grade:

Determine your cutting conditions, and choose the proper grade.

TN7–CM1 for Steel

ISO 513	P				
	01	10	20	30	40
Hard Metal Coated					
		TN7			
		ALO			
		CG6			
		CG55			
			CG5		
			CM1		

wear resistance = harder

- TN7** — High edge strength and wear-resistant cermet. Finishing to semi-finishing of carbon, alloy, and stainless steels at medium to high speeds.
- ALO** — Can withstand light interruptions. Alumina coating enables higher cutting speeds.
- CG6** — High-speed, general-purpose grade for all kinds of steel and cast iron.
- CG55** — High edge strength and wear resistance. Reduces problems with built-up edge. Superior thermal deformation resistance and depth-of-cut notch resistance.
- CG5** — Best at low speeds. Will handle interruptions and high feed rates.
- CM1** — For heavy turning and heavily interrupted cuts.

toughness = softer

ALO–CM1 for Stainless Steel

ISO 513	M				
	01	10	20	30	40
Hard Metal Coated					
		ALO			
		C3 and C25			
		C2			
		CG6			
		CG55			
			CG5		
			CM1		

wear resistance = harder

- ALO** — Can withstand light interruptions. Alumina coating enables higher cutting speeds.
- C3 and C25** — Good wear resistance with some toughness.
- C2** — Excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and most high-temperature alloys.
- CG6** — High-speed, general-purpose grade for all kinds of steel and cast iron.
- CG55** — High edge strength and wear resistance. Reduces problems with built-up edge. Superior thermal deformation resistance and depth-of-cut notch resistance.
- CG5** — Best at low speeds. Will handle interruptions and high feed rates.
- CM1** — For heavy turning and heavily interrupted cuts.

toughness = softer

3 Select the Cutting Speed:

In the foldout speed and feed chart, establish your cutting speed and obtain your optimal starting conditions and range.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

TN7–CM1 for Cast Iron

ISO 513	K				
	01	10	20	30	40
Hard Metal Coated					
	TN7				
	ALO				
	CG6				
	CG55				
	C3 and C25				
	C2				
			CG5		
			CM1		

wear resistance = harder

- TN7** — High edge strength and wear-resistant cermet.
- ALO** — Can withstand light interruptions. Alumina coating enables higher cutting speeds.
- CG6** — High-speed, general-purpose grade for all kinds of steel and cast iron.
- CG55** — High edge strength and wear resistance. Reduces problems with built-up edge. Superior thermal deformation resistance and depth-of-cut notch resistance.
- C3 and C25** — Good wear resistance with some toughness.
- C2** — Excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and most high-temperature alloys.
- CG5** — Best at low speeds. Will handle interruptions and high feed rates.
- CM1** — For heavy turning and heavily interrupted cuts.

toughness = softer

C3–CM1 for High-Temperature Alloys

ISO 513	S				
	01	10	20	30	40
Hard Metal Coated					
	C3 and C25				
	C2				
			CG5		
			CM1		

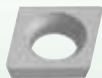
wear resistance = harder

- C3 and C25** — Good wear resistance with some toughness.
- C2** — Excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and most high-temperature alloys.
- CG5** — Best at low speeds. Will handle interruptions and high feed rates.
- CM1** — For heavy turning and heavily interrupted cuts.

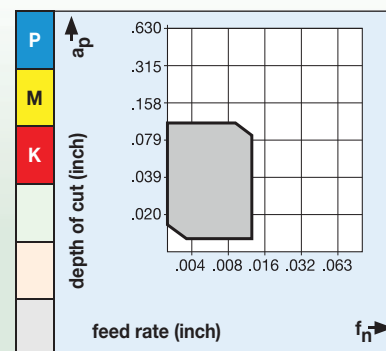
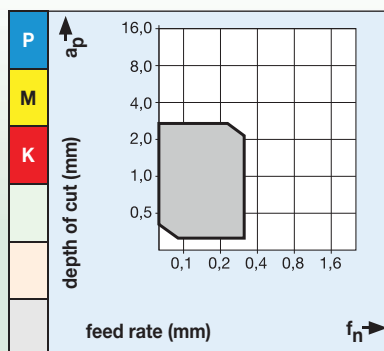
toughness = softer

■ Single-Sided, Positive Inserts

..HB



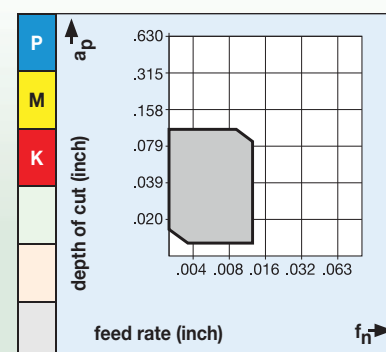
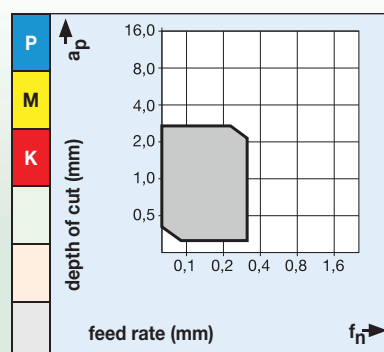
Flat inserts. Peripheral ground for best surface quality and reduced cutting pressure. Very stable cutting edge offers maximum rigidity.



..HT



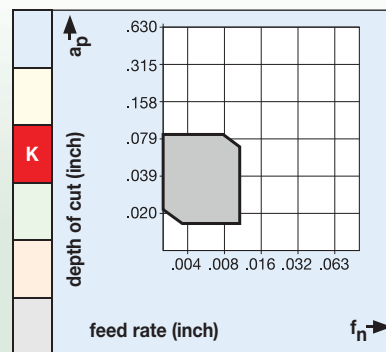
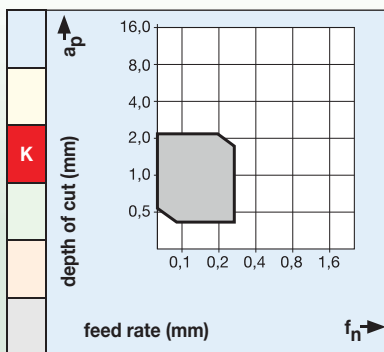
Peripheral ground insert chipbreaker. Good chip control. Geometry for general-purpose applications.



..HB-M



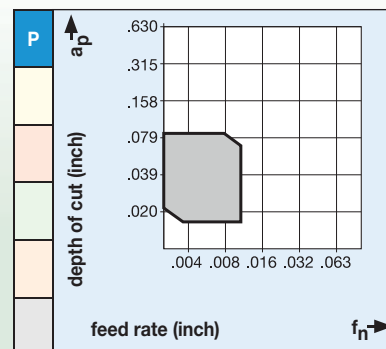
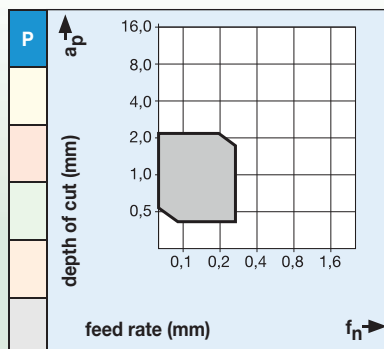
Cubic Boron Nitride (CBN) or Polycrystalline Diamond (PCD) tip for high-temp alloys and non-ferrous machining. Very stable cutting edge offers maximum rigidity.



..LF



Geometry for general-purpose applications. Very good chip control. Recommended for general finish machining.



Geometry Selection Criteria

Flat Top-Type Inserts

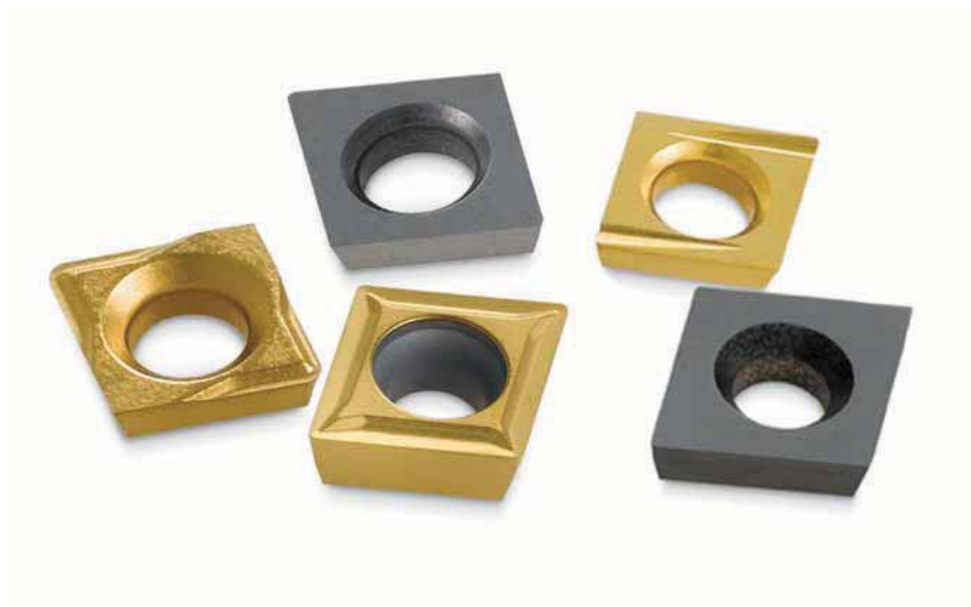
Chipbreaker Geometry ..HB, ..HB-M, ..HW

- Suitable for interrupted cuts.
- Use when chip control is not critical.

Pressed Chipbreaker-Type Inserts

Chipbreaker Geometry ..LF

- Suitable for moderate interruption of cuts.
- Use when chip control is a concern.

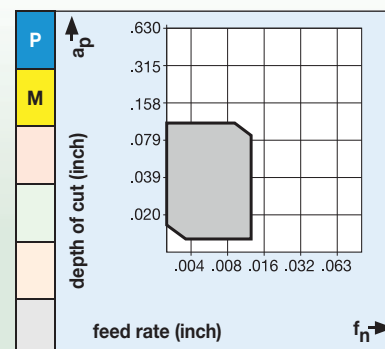
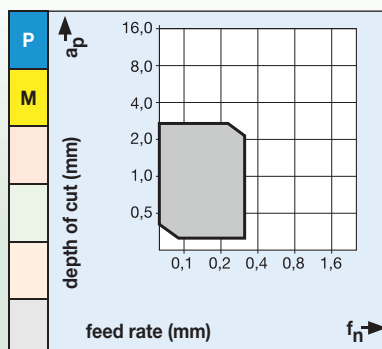


■ Single-Sided, Positive Inserts

..HH



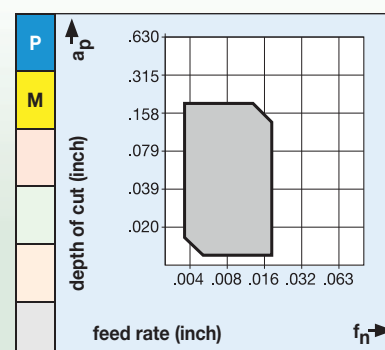
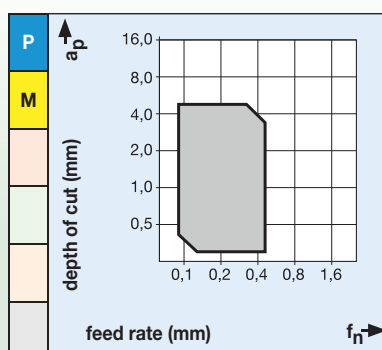
Peripheral ground for best surface quality and reduced cutting pressure. For fine to medium finishes.



HP



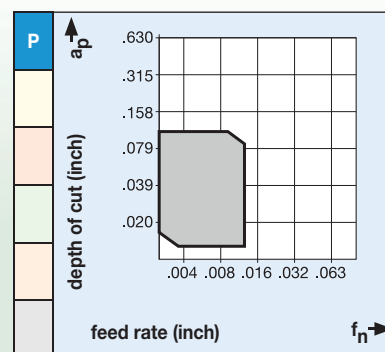
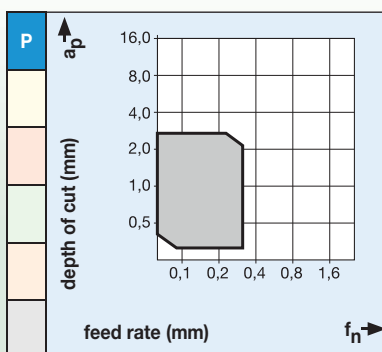
High positive-type chipbreaker. Peripheral ground for best surface quality and reduced cutting pressure. Recommended for high-temp alloys and non-ferrous machining.



..HH-R/L



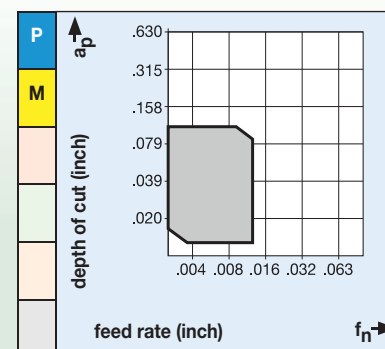
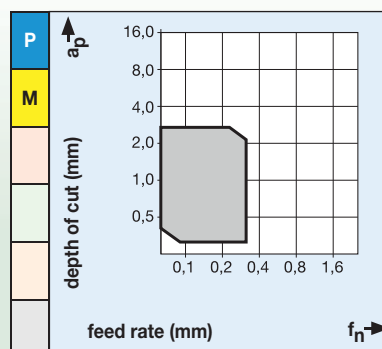
Ground-in chipbreaker. Peripheral ground for best surface quality and reduced cutting pressure.
*Right-hand inserts used in left-hand bars ONLY. Left-hand inserts used in right-hand bars ONLY.



..HW



Flat insert for profiling. Very stable cutting edge offers maximum rigidity.



Geometry Selection Criteria

Pressed Chipbreaker-Type Inserts with Ground Periphery

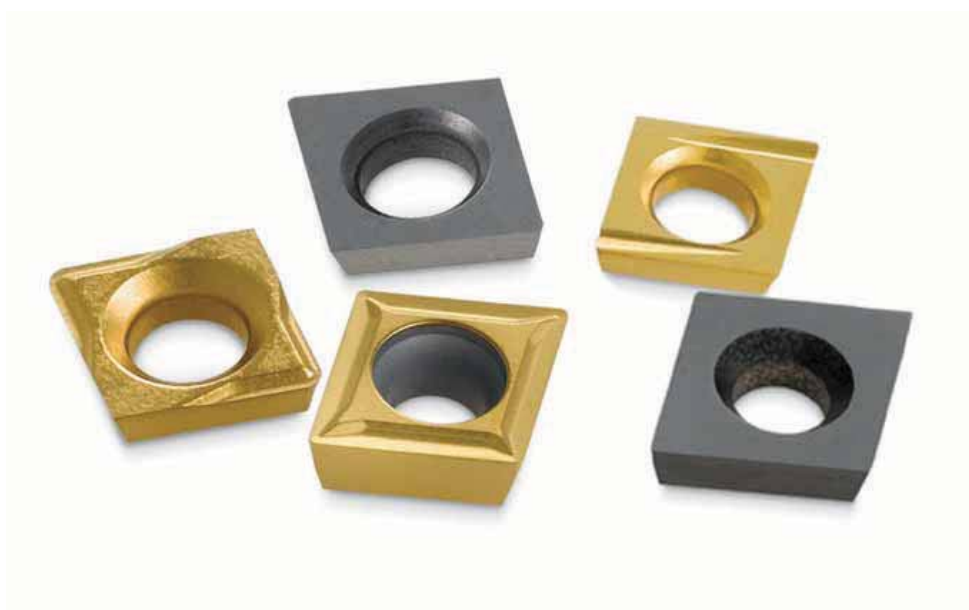
Chipbreaker Geometry ..HH, ..HT, HP

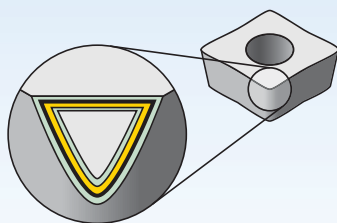
- Suitable for light to moderate interruption of cuts.
- Use when chip control is a concern.
- Superior surface finish and closer tolerance on workpiece.

Ground-In Chipbreaker-Type Inserts

Chipbreaker Geometry ..HH-R/L

- Suitable for smooth cuts.
- Use when chip control is a concern.
- Superior surface finish and closer tolerance on workpiece.





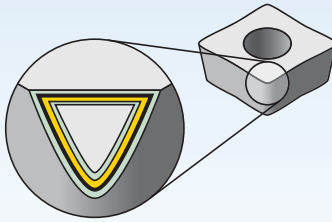
Coatings provide high-speed capability and are engineered for finishing to light roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

wear resistance ← → toughness

Coating		Grade Description		05	10	15	20	25	30	35	40	45	
CM1		Uncoated carbide. A very tough, ultra-fine grain unalloyed substrate. For general-purpose machining of most steels, stainless steels, high-temperature alloys, titanium, irons, and non-ferrous materials. Performs best at low speeds and will handle interruptions and high feed rates. Use when C2, C3, or C25 fail due to chipping or breaking.	P										
			M										
			K										
			N										
			S										
HW-S25													
C2		Uncoated carbide. A hard, low binder content, unalloyed WC/Co fine-grained grade. General-purpose grade for non-ferrous materials. Has excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and most high-temperature alloys.											
			M										
			K										
			N										
			S										
HW-N15													
C3 and C25		Uncoated carbide. Has excellent abrasion resistance for machining cast irons, aluminum, and non-ferrous metals. Good wear resistance with some toughness. Harder than C2, resulting in greater edge wear resistance. Suitable for finishing operations.											
			M										
			K										
			N										
			S										
HW-K15													
TN7		A highly wear-resistant (TiC/TiN-based) cermet grade. High edge strength and wear-resistant cermet offers improved tool life over uncoated/coated carbides and resists material build-up on cutting edge. Finishing to semi-finishing of carbon, alloy, and stainless steels at medium to high speeds. Can also be used on non-ferrous materials.	P										
			K										
HT-P15													
ALO		Coated carbide. CVD — TiCN-TiC-Al2O3. A thin alumina coating over a hard, deformation-resistant substrate. High-speed finishing of gray cast irons and medium-speed finishing of alloy steels that are in a hardness range of 35–50 HRC. Can withstand light interruptions. Alumina coating enables higher cutting speeds.	P										
			M										
			K										
HC-K15													



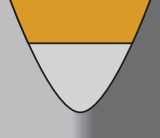
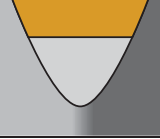


Coatings provide high-speed capability and are engineered for finishing to light roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

wear resistance ← → toughness

Grade

Coating		Grade Description		05	10	15	20	25	30	35	40	45
CG6		Coated carbide. CVD — TiC-TiCN-TiN. Tri-phase coating on a hard, low binder content, fine-grained grade. High-speed, general-purpose grade for all kinds of steel. Gold in color.	P									
	M											
	K											
HC-P10												
CG5		A PVD-TiN-coated grade. Straight 9.5% Co substrate. Submicron grain. For general-purpose machining of most steels, stainless steels, high-temperature alloys, titanium, irons, and non-ferrous materials. Performs best at low speeds and will handle interruptions and high feed rates.	P									
	M											
	K											
	N											
	S											
HC-S25												
CG55		A PVD-TiN coating over a very wear-resistant, unalloyed carbide substrate. For general-purpose machining of most steels, stainless steels, high-temperature alloys, titanium, irons, and non-ferrous materials. Grade provides combination of high edge strength and wear resistance. Coating increases wear resistance and reduces problems with built-up edge. The substrate offers superior thermal deformation resistance and depth-of-cut notch resistance.	P									
	M											
	K											
	S											
HC-M20												
CBN6		PcBN tip brazed onto a carbide insert. Recommended for machining hardened steel (45–65 HRC). Use on bearing steel, hot and cold work tool steels, high-speed steels, die steels, case-hardened steels, carburized and nitrided irons, and some hard coatings. Can be run both dry and wet.										
	H											
BN-H25												
CPD1		Polycrystalline diamond (PCD) compact grade provides exceptional hardness and abrasion resistance. CPD1 is a superior finish boring grade that will significantly improve workpiece tolerances, surface finishes, and insert tool life in high-silicon aluminum, copper, aluminum carbon graphite, hard rubber, plastics, and/or wood.										
	N											
DP-N10												



Speed and Feed Chart

Positive Inserts • Inch



Cutting Speed — vc SFM																			
Material Group		C2			C25			C3			CG5			CG55			CG6		
		min	Start	max	min	Start	max	min	Start	max	min	Start	max	min	Start	max	min	Start	max
P	ap [inch]	—	—	—	—	—	—	—	—	—	.002	—	.012	.002	—	.012	.002	—	.012
	f [inch]	—	—	—	—	—	—	—	—	—	.012	—	.001	.012	—	.001	.012	—	.001
	0/1	—	—	—	—	—	—	—	—	—	305	380	460	340	420	505	415	515	620
	2	—	—	—	—	—	—	—	—	—	200	250	300	220	275	330	270	335	405
	3	—	—	—	—	—	—	—	—	—	200	250	300	220	275	330	270	335	405
	4	—	—	—	—	—	—	—	—	—	155	195	235	170	215	260	210	260	315
	5	—	—	—	—	—	—	—	—	—	200	250	300	220	275	330	270	335	405
	6	—	—	—	—	—	—	—	—	—	135	165	200	150	185	225	180	220	265
M	ap [inch]	.002	—	.012	.002	—	.012	.002	—	.012	.002	—	.012	.002	—	.012	.002	—	.012
	f [inch]	.001	—	.012	.001	—	.012	.001	—	.012	.001	—	.012	.001	—	.012	.001	—	.012
	1	180	225	270	205	255	310	205	255	310	240	300	360	265	330	400	305	380	460
	2	165	205	250	185	230	280	185	230	280	220	270	325	240	300	360	280	345	415
K	ap [inch]	.002	—	.012	.002	—	.012	.002	—	.012	.002	—	.012	.002	—	.012	.002	—	.012
	f [inch]	.001	—	.012	.001	—	.012	.001	—	.012	.001	—	.012	.001	—	.012	.001	—	.012
	1	170	213	255	190	235	285	190	235	285	195	240	295	220	270	325	240	300	360
	2	220	270	330	240	300	360	240	300	360	250	310	375	275	345	415	305	380	460
N	ap [inch]	.002	—	.020	.002	—	.020	.002	—	.020	.002	—	.020	.002	—	.020	—	—	—
	f [inch]	.001	—	.012	.001	—	.012	.001	—	.012	.001	—	.012	.001	—	.012	—	—	—
	1	1320	1650	1980	1320	1650	1980	1320	1650	1980	1320	1650	1980	1455	1815	2180	—	—	—
	2	970	1210	1450	970	1215	1460	970	1215	1460	970	1215	1460	1070	1335	1600	—	—	—
	3	225	280	340	225	280	340	225	280	340	275	340	410	300	375	450	—	—	—
	4	1015	1250	1520	1010	1270	1520	1010	1270	1520	455	570	690	505	630	760	—	—	—
	5	480	600	720	480	600	720	480	600	720	580	720	865	640	795	955	—	—	—
	6	460	575	690	460	575	690	460	575	690	555	690	830	610	765	920	—	—	—
	7	780	975	1170	780	980	1175	780	980	1175	800	1000	1200	875	1100	1320	—	—	—
S	ap [inch]	.001	—	.008	.001	—	.008	.001	—	.008	.001	—	.008	.001	—	.008	—	—	—
	f [inch]	.001	—	.005	.001	—	.005	.001	—	.005	.001	—	.005	.001	—	.005	—	—	—
	1	95	120	145	95	120	145	95	120	145	95	120	145	108	133	163	—	—	—
	2	75	95	115	75	95	120	75	95	120	75	95	120	87	107	130	—	—	—
	3	75	95	115	75	95	120	75	95	120	105	130	160	120	145	175	—	—	—
H	ap [inch]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	f [inch]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE: Speed and feed rates and depth of cut may vary depending on materials and machining conditions including, but not limited to, tool overhang, tool size, and finished surface requirements.

Cutting Speed — vc SFM																
Material Group		CM1			ALO			TN7			CBN6			CPD1		
		min	Start	max	min	Start	max	min	Start	max	min	Start	max	min	Start	max
P	ap [inch]	.002	—	.012	.002	—	.012	.002	—	.012	—	—	—	—	—	—
	f [inch]	.012	—	.001	.012	—	.001	.012	—	.001	—	—	—	—	—	—
	0/1	180	220	265	540	675	810	650	810	975	—	—	—	—	—	—
	2	115	140	175	350	440	530	420	525	630	—	—	—	—	—	—
	3	115	140	175	350	440	530	420	525	630	—	—	—	—	—	—
	4	90	110	135	275	340	410	330	410	495	—	—	—	—	—	—
	5	115	140	175	350	440	525	420	520	628	—	—	—	—	—	—
	6	80	95	115	235	290	350	280	350	420	—	—	—	—	—	—
M	ap [inch]	.002	—	.012	.002	—	.012	.002	—	.012	—	—	—	—	—	—
	f [inch]	.001	—	.012	.001	—	.012	.001	—	.012	—	—	—	—	—	—
	1	180	220	265	345	430	520	340	420	505	—	—	—	—	—	—
	2	160	200	240	315	390	470	305	380	460	—	—	—	—	—	—
K	ap [inch]	.002	—	.012	.002	—	.012	.002	—	.012	—	—	—	—	—	—
	f [inch]	.001	—	.012	.001	—	.012	.001	—	.012	—	—	—	—	—	—
	1	150	190	230	410	510	615	270	340	410	—	—	—	—	—	—
	2	190	240	290	520	650	780	345	430	520	—	—	—	—	—	—
N	ap [inch]	.002	—	.020	—	—	—	.002	—	.020	—	—	—	.002	—	.020
	f [inch]	.001	—	.012	—	—	—	.001	—	.012	—	—	—	.001	—	.012
	1	1320	1650	1980	—	—	—	1320	1650	1980	—	—	—	2800	3500	4200
	2	970	1215	1460	—	—	—	970	1210	1455	—	—	—	2130	2665	3200
	3	225	280	340	—	—	—	265	330	400	—	—	—	1200	1500	1800
	4	330	410	490	—	—	—	635	790	955	—	—	—	1065	1330	1600
	5	480	600	720	—	—	—	640	800	960	—	—	—	1120	1400	1680
	6	460	575	690	—	—	—	580	725	870	—	—	—	1100	1375	1650
S	ap [inch]	.001	—	.008	—	—	—	—	—	—	.001	—	.008	—	—	—
	f [inch]	.001	—	.005	—	—	—	—	—	—	.001	—	.005	—	—	—
	1	85	105	130	—	—	—	—	—	—	290	360	435	—	—	—
	2	65	80	100	—	—	—	—	—	—	230	280	340	—	—	—
	3	90	110	135	—	—	—	—	—	—	320	400	480	—	—	—
H	ap [inch]	—	—	—	—	—	—	—	—	—	.001	—	.008	—	—	—
	f [inch]	—	—	—	—	—	—	—	—	—	.001	—	.005	—	—	—
	1	—	—	—	—	—	—	—	—	—	360	450	540	—	—	—
	2	—	—	—	—	—	—	—	—	—	340	420	505	—	—	—
	3	—	—	—	—	—	—	—	—	—	320	400	480	—	—	—
	4	—	—	—	—	—	—	—	—	—	290	360	435	—	—	—

NOTE: Speed and feed rates and depth of cut may vary depending on materials and machining conditions including, but not limited to, tool overhang, tool size, and finished surface requirements.

Speed and Feed Chart

Positive Inserts • Metric



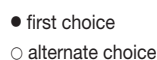
		Cutting Speed — vc m/min																	
Material Group		C2			C25			C3			CG5			CG55			CG6		
		min	Start	max	min	Start	max	min	Start	max	min	Start	max	min	Start	max	min	Start	max
P	ap [mm]	—	—	—	—	—	—	—	—	—	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300
	f [mm/rev]	—	—	—	—	—	—	—	—	—	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300
	0/1	—	—	—	—	—	—	—	—	—	95	115	140	105	130	155	125	155	190
	2	—	—	—	—	—	—	—	—	—	60	75	90	65	85	100	80	100	125
	3	—	—	—	—	—	—	—	—	—	60	75	90	65	85	100	80	100	125
	4	—	—	—	—	—	—	—	—	—	45	60	70	50	65	80	65	80	95
	5	—	—	—	—	—	—	—	—	—	60	75	90	65	85	100	80	100	125
	6	—	—	—	—	—	—	—	—	—	40	50	60	45	55	70	55	65	80
M	ap [mm]	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300
	f [mm/rev]	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300
	1	55	70	80	60	80	95	60	80	95	75	90	110	80	100	120	95	115	140
	2	50	60	75	55	70	85	55	70	85	65	80	100	75	90	110	85	105	125
K	3	35	45	55	45	50	65	45	50	65	50	60	75	55	65	80	60	80	95
	ap [mm]	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300
	f [mm/rev]	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300
	1	50	65	80	60	70	85	60	70	85	60	75	90	65	80	100	75	90	110
N	2	65	80	100	75	90	110	75	90	110	75	95	115	85	105	125	95	115	140
	3	50	60	75	55	65	80	55	65	80	55	70	80	60	75	90	65	85	100
	ap [mm]	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300	0,051	—	0,300	—	—	—
	f [mm/rev]	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300	0,025	—	0,300	—	—	—
	1	400	505	605	400	505	605	400	505	605	400	505	605	445	555	665	—	—	—
	2	295	370	440	295	370	445	295	370	445	295	370	445	325	405	490	—	—	—
	3	70	85	105	70	85	105	70	85	105	85	105	125	90	115	135	—	—	—
	4	310	380	465	310	385	465	310	385	465	140	175	210	155	190	230	—	—	—
S	5	145	185	220	145	185	220	145	185	220	175	220	265	195	240	290	—	—	—
	6	140	175	210	140	175	210	140	175	210	170	210	255	185	235	280	—	—	—
	7	240	295	355	240	300	360	240	300	360	245	305	365	265	335	400	—	—	—
	ap [mm]	0,025	—	0,200	0,025	—	0,200	0,025	—	0,200	0,025	—	0,200	0,025	—	0,200	—	—	—
H	f [mm/rev]	0,025	—	0,127	0,025	—	0,127	0,025	—	0,127	0,025	—	0,127	0,025	—	0,127	—	—	—
	1	30	35	45	30	35	45	30	35	45	30	35	45	35	40	50	—	—	—
	2	25	30	35	25	30	35	25	30	35	25	30	35	25	35	40	—	—	—
	3	25	30	35	25	30	35	25	30	35	30	40	50	35	45	55	—	—	—
H	4	25	30	35	25	30	35	25	30	35	—	—	—	—	—	—	—	—	—
	ap [mm]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	f [mm/rev]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
H	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE: Speed and feed rates and depth of cut may vary depending on materials and machining conditions including, but not limited to, tool overhang, tool size, and finished surface requirements.



		Cutting Speed — vc m/min														
Material Group		CM1			ALO			TN7			CBN6			CPD1		
		min	Start	max	min	Start	max	min	Start	max	min	Start	max	min	Start	max
P	ap [mm]	0,051	–	0,300	0,051	–	0,300	0,051	–	0,300	–	–	–	–	–	–
	f [mm/rev]	0,025	–	0,300	0,025	–	0,300	0,025	–	0,300	–	–	–	–	–	–
	0/1	55	65	80	165	205	245	200	245	295	–	–	–	–	–	–
	2	35	45	55	105	135	160	130	160	190	–	–	–	–	–	–
	3	35	45	55	105	135	160	130	160	190	–	–	–	–	–	–
	4	25	35	40	85	105	125	100	125	150	–	–	–	–	–	–
	5	35	45	55	105	135	160	130	160	190	–	–	–	–	–	–
	6	25	30	35	70	90	105	85	105	130	–	–	–	–	–	–
M	ap [mm]	0,051	–	0,300	0,051	–	0,300	0,051	–	0,300	–	–	–	–	–	–
	f [mm/rev]	0,025	–	0,300	0,025	–	0,300	0,025	–	0,300	–	–	–	–	–	–
	1	55	65	80	105	130	160	105	130	155	–	–	–	–	–	–
	2	50	60	75	95	120	145	95	115	140	–	–	–	–	–	–
K	ap [mm]	0,051	–	0,300	0,051	–	0,300	0,051	–	0,300	–	–	–	–	–	–
	f [mm/rev]	0,025	–	0,300	0,025	–	0,300	0,025	–	0,300	–	–	–	–	–	–
	1	45	60	70	125	155	185	80	105	125	–	–	–	–	–	–
	2	60	75	90	160	200	240	105	130	160	–	–	–	–	–	–
N	ap [mm]	0,051	–	0,300	–	–	–	0,051	–	0,300	–	–	–	0,051	–	0,300
	f [mm/rev]	0,025	–	0,300	–	–	–	0,025	–	0,300	–	–	–	0,025	–	0,300
	1	400	505	605	–	–	–	400	505	605	–	–	–	855	1065	1280
	2	295	370	445	–	–	–	295	370	445	–	–	–	650	810	975
	3	70	85	105	–	–	–	80	100	120	–	–	–	365	455	550
	4	100	125	150	–	–	–	195	240	290	–	–	–	325	405	490
	5	145	185	220	–	–	–	195	245	295	–	–	–	340	425	510
	6	140	175	210	–	–	–	175	220	265	–	–	–	335	420	505
S	ap [mm]	0,025	–	0,200	–	–	–	–	–	–	0,025	–	0,200	–	–	–
	f [mm/rev]	0,025	–	0,127	–	–	–	–	–	–	0,025	–	0,127	–	–	–
	1	25	30	40	–	–	–	–	–	–	90	110	135	–	–	–
	2	20	25	30	–	–	–	–	–	–	70	85	105	–	–	–
H	ap [mm]	–	–	–	–	–	–	–	–	–	0,025	–	0,200	–	–	–
	f [mm/rev]	–	–	–	–	–	–	–	–	–	0,025	–	0,127	–	–	–
	1	–	–	–	–	–	–	–	–	–	110	135	165	–	–	–
	2	–	–	–	–	–	–	–	–	–	105	130	155	–	–	–
	3	–	–	–	–	–	–	–	–	–	100	120	145	–	–	–
	4	–	–	–	–	–	–	–	–	–	90	110	135	–	–	–

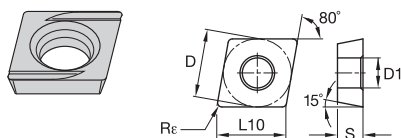
NOTE: Speed and feed rates and depth of cut may vary depending on materials and machining conditions including, but not limited to, tool overhang, tool size, and finished surface requirements.



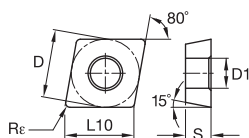
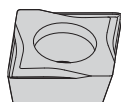
P											
M											
K											
N											
S											
H											

Tools for Small Hole Boring

NOTE: Max DOC only applies to tipped inserts, which are designated with an "M" at the end of the catalog number.



NOTE: Right-hand inserts used in left-hand bars only.

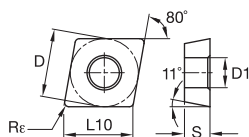


- first choice
- alternate choice

[illegible]

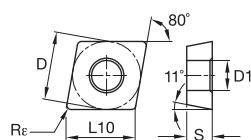
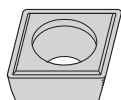
■ CDHH

ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in											
CDHHS4T002	CDHH120605	3,97	5/32	4,03	.159	1,02	.040	0,18	.007	2,13	.084	■	■	■	2830632	■	■	2830638	■	■	■	■
CDHHS4T002L	CDHH120605L	3,97	5/32	4,03	.159	1,02	.040	0,18	.007	2,13	.084	■	■	■	2830724	■	■	2830700	■	■	■	■
CDHHS4T002R	CDHH120605R	3,97	5/32	4,03	.159	1,02	.040	0,18	.007	2,13	.084	■	■	■	2830731	■	■	2830706	■	■	■	■
CDHHS4T004L	CDHH12061L	3,97	5/32	4,03	.159	1,02	.040	0,38	.015	2,13	.084	■	■	■	2830678	■	■	■	■	■	■	■
CDHHS4T004R	CDHH12061R	3,97	5/32	4,03	.159	1,02	.040	0,38	.015	2,13	.084	■	■	■	2830682	■	■	■	■	■	■	■
CDHHS4T004	CDHH12061	3,97	5/32	4,10	.161	1,02	.040	0,38	.015	2,13	.084	■	■	■	2830619	■	■	■	■	■	■	■



■ CPHB

ISO catalog number	ANSI catalog number	D		L10		S		R _ε		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in											
CPHB06T102	CPHB21205	6,35	1/4	6,45	.254	1,91	.075	0,18	.007	2,80	.110	■	■	■	2824583	■	■	■	■	■	■	■
CPHB06T104	CPHB2121	6,35	1/4	6,45	.254	1,91	.075	0,38	.015	2,80	.110	■	■	■	2824562	■	■	■	■	■	■	■

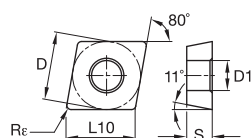
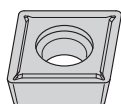


- first choice
○ alternate choice

P					●	○			●	○	○	●				
M		○	○	○	○	●	●	○	○	○	○	○	○	○	○	○
K		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
N		●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
S		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
H															●	

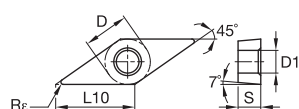
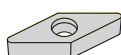
CPHH

ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in											
CPHH06T102	CPHH21205	6,35	1/4	6,45	.254	1,91	.075	0,18	.007	2,79	.110	■	■	■	2824461	■	2824454	2824468	■	■	■	■
CPHH06T104	CPHH2121	6,35	1/4	6,45	.254	1,91	.075	0,38	.015	2,80	.110	■	■	■	2824441	■	■	■	■	■	■	■



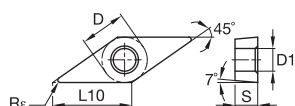
CPMT-LF

ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in											
CPMT09T302LF	CPMT32505LF	9,53	3/8	9,67	.381	3,97	.156	0,20	.008	4,40	.173	■	■	■	2821519	■	■	■	■	■	■	■
CPMT09T304LF	CPMT3251LF	9,53	3/8	9,67	.381	3,97	.156	0,40	.016	4,40	.173	■	■	■	2821499	■	■	■	■	■	■	■
CPMT09T308LF	CPMT3252LF	9,52	3/8	9,67	.381	3,97	.156	0,79	.031	4,40	.173	■	■	■	2821484	■	■	■	■	■	■	■

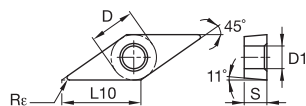


GCHW

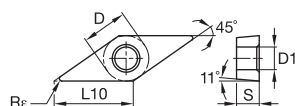
ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in											
GCHW060202	GCHW151505	4,76	3/16	6,73	.265	2,36	.093	0,18	.007	2,39	.094	■	■	■	2827596	■	■	2827601	■	■	■	■
GCHW060204	GCHW15151	4,76	3/16	6,73	.265	2,36	.093	0,38	.015	2,39	.094	■	■	■	2827577	■	■	2827584	■	■	■	■

[illegible]

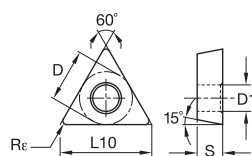
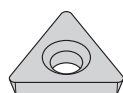
ISO catalog number	ANSI catalog number	D		L10		S		R _e		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in											
GCHT060202	GCHT151505	4,83	.1902	6,83	.269	2,36	.093	0,18	.007	2,39	.094	■	■	■	2827537	■	■	■	■	■	■	■
GCHT060204	GCHT15151	4,76	3/16	6,83	.269	2,36	.093	0,38	.015	2,39	.094	■	■	■	2827525	■	■	■	2827531	■	■	■



GPHW																							
ISO catalog number	ANSI catalog number	D		L10		S		R _ε		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1	
		mm	in	mm	in	mm	in	mm	in	mm	in												
GPHW050102	GPHW12105	3,97	5/32	5,61	.221	1,59	.062	0,18	.007	2,13	.084	■	■	■	2827631	■	2827625	2827621	2827637	■	■	■	■
GPHW050104	GPHW1211	3,97	5/32	5,61	.221	1,59	.062	0,38	.015	2,13	.084	■	■	■	2827615	■	2827608	2827621	2827637	■	■	■	■



ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in											
GPHT050102	GPHT12105	3,97	5/32	5,76	.227	1,57	.062	0,18	.007	2,13	.084	■	■	■	2827560	■	■	2827566	■	■	■	■
GPHT050104	GPHT1211	4,08	.1605	5,76	.227	1,57	.062	0,38	.015	2,13	.084	■	■	■	2827548	■	■	2827554	■	■	■	■

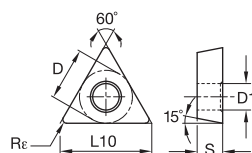
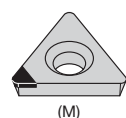
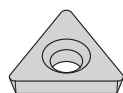


- first choice
○ alternate choice

P					●	○	●	○	●	○	●		
M		○	○	○	●	●	○	○	○	○	○		
K		○	●	●	○	○	○	○	○	○	○		
N		○	●	●	○	○	○	○	○	○	○	●	
S		○	○	○	○	○	○	○	○	○	○	○	
H												●	

TBHB

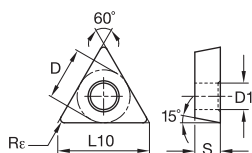
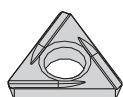
ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in											
TBHB07S1X0	TBHB1308X0	4,06	.160	7,04	.277	1,19	.047	0,05	.002	2,39	.094	■	■	■	2828556	■	■	■	■	■	■	■
TBHB110201	TBHB2150	6,35	.250	11,00	.433	2,38	.094	0,10	.004	3,33	.131	■	■	■	2824266	■	■	■	■	■	■	■



TDHB

ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		max		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in											
TDHB07S1X0M	TDHB1308X0M	4,06	.160	7,04	.277	1,19	.047	0,05	.002	2,39	.094	1,27	.050	■	■	■	■	■	■	■	■	■	■	2828622
TDHB07S102M	TDHB130805M	4,06	.160	7,04	.277	1,19	.047	0,18	.007	2,39	.095	1,27	.050	■	■	■	■	■	■	■	■	■	2828579	■
TDHB07S104M	TDHB13081M	4,06	.160	7,04	.277	1,19	.047	0,38	.015	2,39	.094	1,27	.050	■	■	■	■	■	■	■	■	■	2828634	■
TDHB07S1X0	TDHB1308X0	4,06	.160	7,04	.277	1,19	.047	0,05	.002	2,41	.095	—	—	■	2828784	■	2828796	■	2828778	■	■	■	■	■
TDHB07S102	TDHB130805	4,06	.160	7,04	.277	1,19	.047	0,18	.007	2,41	.095	—	—	■	2828697	2828732	2828755	■	2828749	2828727	2828763	2828720	■	■
TDHB07S104	TDHB13081	4,06	.160	7,04	.277	1,19	.047	0,38	.015	2,41	.095	—	—	■	2828708	2828732	2828755	■	2828749	2828727	2828763	2828720	■	■
TDHB07S108	TDHB13082	4,06	.160	7,04	.277	1,19	.047	0,79	.031	2,41	.095	—	—	■	■	■	2828682	■	■	■	■	■	■	■

NOTE: Max DOC only applies to tipped inserts, which are designated with an "M" at the end of the catalog number.



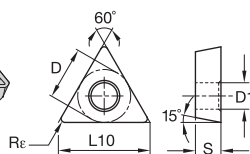
- first choice
- alternate choice

[illegible]

■ TDHH-R/L

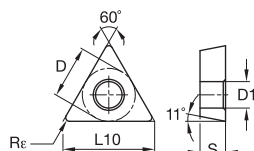
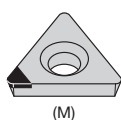
		D		L10		S		Rε		D1		C2	C25	C3	C65	C655	C66	CM1	ALO	TN7	C8N6	CPD1	
ISO catalog number	ANSI catalog number	mm	in	mm	in	mm	in	mm	in	mm	in												
right hand																							
TDHH07S102R	TDHH130805R	4,06	.160	7,04	.277	1,19	.047	0,18	.007	2,41	.095				2828547								
TDHH07S104R	TDHH13081R	4,06	.160	7,04	.277	1,19	.047	0,38	.015	2,41	.095				2828499								
left hand																							
TDHH07S102L	TDHH130805L	4,06	.160	7,04	.277	1,19	.047	0,18	.007	2,41	.095				2828541		2828529	2828516		2828508			
TDHH07S104L	TDHH13081L	4,06	.160	7,04	.277	1,19	.047	0,38	.015	2,41	.095				2828494		2828472	2828460		2828450			

NOTE: Right-hand inserts used in left-hand bars only.



■ TDHH

ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		max		C2	C25	C3	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in										
TDHH07S102	TDHH130805	4,06	.160	7,04	.277	1,19	.047	0,18	.007	2,41	.095	—	—	⌈	⌈	⌈	2828398	⌈	⌈	⌈	⌈	⌈	⌈
TDHH07S102L	TDHH130805L	4,06	.160	7,04	.277	1,19	.047	0,18	.007	2,41	.095	4,52	.178	⌈	⌈	⌈	2828541	2828529	2828516	⌈	2828508	⌈	⌈
TDHH07S102R	TDHH130805R	4,06	.160	7,04	.277	1,19	.047	0,18	.007	2,41	.095	4,52	.178	⌈	⌈	⌈	2828547	⌈	⌈	⌈	⌈	⌈	⌈
TDHH07S104L	TDHH13081L	4,06	.160	7,04	.277	1,19	.047	0,38	.015	2,41	.095	4,36	.172	⌈	⌈	⌈	2828494	⌈	2828472	⌈	2828460	⌈	⌈
TDHH07S104R	TDHH13081R	4,06	.160	7,04	.277	1,19	.047	0,38	.015	2,41	.095	4,36	.172	⌈	⌈	⌈	2828499	⌈	⌈	⌈	⌈	⌈	⌈
TDHH07S104	TDHH13081	4,06	.160	7,18	.283	1,19	.047	0,38	.015	2,41	.095	—	—	⌈	⌈	⌈	2828386	⌈	⌈	⌈	⌈	⌈	⌈



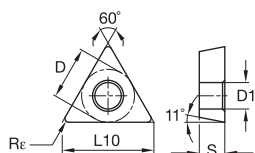
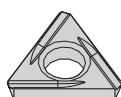
- first choice
- alternate choice

[illegible]

Tools for Small Hole Boring

ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		max		C2	C25	C3	C35	C355	C36	C361	ALO	TN7	CBN6	CBN1
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in											
TPHB1102X0	TPHB215X0	6,35	1/4	11,00	.433	2,38	.094	0,05	.002	3,30	.130	—	—	1	1	2824236	2824251	1	1	2824220	1	1	1	1
TPHB1102X0M	TPHB215X0M	6,35	1/4	11,00	.433	2,38	.094	0,05	.002	3,30	.130	1,62	.064	1	1	1	1	1	1	1	1	1	2823954	
TPHB110202	TPHB21505	6,35	1/4	11,00	.433	2,38	.094	0,18	.007	3,30	.130	—	—	1	1	2824191	2824200	1	1	2824195	1	1	2824148	1
TPHB110202M	TPHB21505M	6,35	1/4	11,00	.433	2,38	.094	0,18	.007	3,30	.130	1,62	.064	1	1	1	1	1	1	1	1	1	2823949	2824000
TPHB110204	TPHB2151	6,35	1/4	11,00	.433	2,38	.094	0,38	.015	3,30	.130	—	—	1	1	2824122	2824136	1	1	2824129	1	1	2824090	1
TPHB110204M	TPHB2151M	6,35	1/4	11,00	.433	2,38	.094	0,40	.015	3,30	.130	1,62	.064	1	1	1	1	1	1	1	1	1	2823942	2824045
TPHB110208	TPHB2152	6,35	1/4	11,00	.433	2,38	.094	0,79	.031	3,30	.130	—	—	1	1	1	2824077	1	1	2824044	1	1	2824037	1
TPHB1603X0	TPHB32X0	9,53	3/8	16,50	.650	3,18	.125	0,05	.002	3,30	.130	—	—	1	1	1	2821402	1	1	2821844	1	1	1	1
TPHB160302	TPHB3205	9,53	3/8	16,50	.650	3,18	.125	0,18	.007	3,30	.130	—	—	1	1	2821834	2821397	1	1	2821816	1	1	1	1
TPHB160304	TPHB321	9,53	3/8	16,50	.650	3,18	.125	0,38	.015	3,30	.130	—	—	1	1	2821799	2821392	1	1	2821778	1	1	2821749	1
TPHB160308	TPHB322	9,53	3/8	16,50	.650	3,18	.125	0,79	.031	3,30	.130	—	—	1	1	2821371	1	1	2821381	1	1	2821331	1	
TPCB160302	TD6P05	9,53	3/8	—	—	3,23	.127	0,18	.007	3,30	.130	—	—	1	1	1	1	1	2821822	1	1	1	1	

NOTE: Max DOC only applies to tipped inserts, which are designated with an "M" at the end of the catalog number.



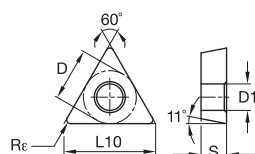
- first choice
- alternate choice

P										
M										
K										
N										
S										
H										

■ TPHH-R/L

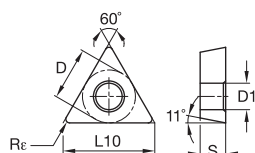
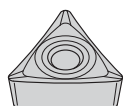
ISO catalog number	ANSI catalog number	D		L10		S		R _e		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CBN1	
		mm	in	mm	in	mm	in	mm	in	mm	in												
right hand																							
TPHH110202R	TPHH21505R	6,35	1/4	11,00	.433	2,38	.094	0,18	.007	3,33	.131	■	■	■	2823812	■	■	■	■	■	■	■	
TPHH160302R	TPHH3205R	9,53	3/8	16,50	.650	3,18	.125	0,18	.007	3,33	.131	■	■	■	2821213	■	■	■	■	■	■	■	
TPHH160304R	TPHH321R	9,53	3/8	16,50	.650	3,18	.125	0,38	.015	3,33	.131	■	■	■	2821168	■	■	■	■	■	■	■	
TPHH160308R	TPHH322R	9,53	3/8	16,50	.650	3,18	.125	0,79	.031	3,33	.131	■	■	■	2821121	■	■	■	■	■	■	■	
left hand																							
TPHH110202L	TPHH21505L	6,35	1/4	11,00	.433	2,38	.094	0,18	.007	3,33	.131	■	■	■	2823805	■	■	■	■	■	■	■	
TPHH110204L	TPHH2151L	6,35	1/4	11,00	.433	2,38	.094	0,38	.015	3,33	.131	■	■	■	2823753	■	2823739	■	■	■	■	■	
TPHH160302L	TPHH3205L	9,53	3/8	16,50	.650	3,18	.125	0,18	.007	3,33	.131	■	■	■	2821208	■	■	■	■	■	■	■	
TPHH160304L	TPHH321L	9,53	3/8	16,50	.650	3,18	.125	0,38	.015	3,33	.131	■	■	■	2821162	■	2821150	■	■	■	■	■	
TPHH160308L	TPHH322L	9,53	3/8	16,50	.650	3,18	.125	0,79	.031	3,33	.131	■	■	■	2821115	■	■	■	■	■	■	■	

NOTE: Right-hand inserts used in left-hand bars only.

[illegible]

Tools for Small Hole Boring

ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		C2	C25	C3	C65	C655	C66	CM1	ALO	TN7	CBN6	CBN1
		mm	in	mm	in	mm	in	mm	in	mm	in											
TPHH160304	TPHH321	9,53	3/8	16,50	.650	3,18	.125	0,40	.016	3,33	.131	1	1	1	2821070	1	2821705	1	1	1	1	1
TPHH160304LF	TPHH321LF	9,53	3/8	16,50	.650	3,18	.125	0,40	.016	3,33	.131	1	2821718	1	1	1	1	1	1	1	1	1
TPHH160308	TPHH322	9,53	3/8	16,50	.650	3,18	.125	0,79	.031	3,33	.131	1	1	1	1	1	2821670	1	1	1	1	1
TPHH160308	TPHH322LF	9,53	3/8	16,50	.650	3,18	.125	0,79	.031	3,33	.131	1	1	1	2821067	1	1	1	1	1	1	1
TPHH17T309LF	TPHH312524LF	9,80	.386	16,98	.669	3,97	.156	0,94	.037	3,33	.131	1	1	1	2821319	1	1	1	1	1	1	1

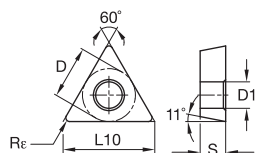
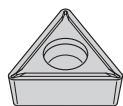


- first choice
- alternate choice

[illegible]

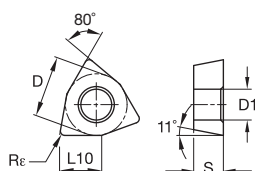
■ TPGT-HP

ISO catalog number	ANSI catalog number	D		L10		S		R _e		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CBN1
		mm	in	mm	in	mm	in	mm	in	mm	in											
TPGT110202HP	TPGT21505HP	6,35	1/4	11,00	.433	2,38	.094	0,20	.008	2,90	.114	■	■	■	2823605	■	■	■	■	■	■	■
TPGT110204HP	TPGT2151HP	6,35	1/4	11,00	.433	2,38	.094	0,40	.016	2,90	.114	■	■	■	2823592	■	■	2823595	■	■	■	■
TPGT16T304HP	TPGT3251HP	9,53	3/8	16,50	.650	3,97	.156	0,40	.016	4,40	.173	■	■	■	2821536	■	■	■	■	■	■	■

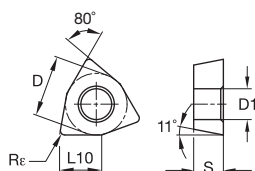


■ TPMT-LF

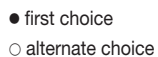
ISO catalog number	ANSI catalog number	D		L10		S		R _e		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CBN1
		mm	in	mm	in	mm	in	mm	in	mm	in											
TPMT110202LF	TPMT21505LF	6,35	1/4	11,00	.433	2,38	.094	0,20	.008	2,80	.110	■	■	■	2823646	■	■	■	■	■	■	■
TPMT110204LF	TPMT2151LF	6,35	1/4	11,00	.433	2,38	.094	0,40	.016	2,80	.110	■	■	■	2823625	■	■	■	■	■	■	■
TPMT160304LF	TPMT321LF	9,53	3/8	16,50	.650	3,18	.125	0,40	.016	4,40	.173	■	■	■	2821577	■	■	■	■	■	■	■
TPMT160308LF	TPMT322LF	9,53	3/8	16,50	.650	3,18	.125	0,79	.031	4,40	.173	■	■	■	2821566	■	■	■	■	■	■	■

[illegible]

Tools for Small Hole Boring



ISO catalog number	ANSI catalog number	D		L10		S		Rε		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CBN1
		mm	in	mm	in	mm	in	mm	in	mm	in											
WPMTS3T104LF	WPMT15121LF	4,76	3/16	3,25	.128	1,98	.078	0,40	.016	2,15	.085	■	■	■	■	2827521	■	■	■	■	■	■
WPMT040204LF	WPMT2151LF	6,35	1/4	4,34	.171	2,38	.094	0,40	.016	2,90	.114	■	■	■	■	2824362	■	■	■	■	■	■
WPMT06T304LF	WPMT3251LF	9,53	3/8	6,52	.257	3,97	.156	0,40	.016	4,40	.173	■	■	■	■	2821036	■	■	■	■	■	■
WPMT06T308LF	WPMT3252LF	9,53	3/8	6,52	.257	3,97	.156	0,80	.031	4,40	.173	■	■	■	■	2821023	■	■	■	■	■	■

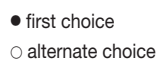
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ISO catalog number	ANSI catalog number	D		S		T		W		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in											
right hand																						
CDG50252R	CDG50252R	3,97	5/32	1,27	.050	1,02	.040	0,64	.025	2,13	.084	■	■	■	2830541	■	■	■	■	■	■	■
CDG50302R	CDG50302R	3,97	5/32	1,27	.050	1,02	.040	0,76	.030	2,13	.084	■	■	■	2830529	■	■	■	2830535	■	■	■

Detail of .015" (0,38mm) insert.

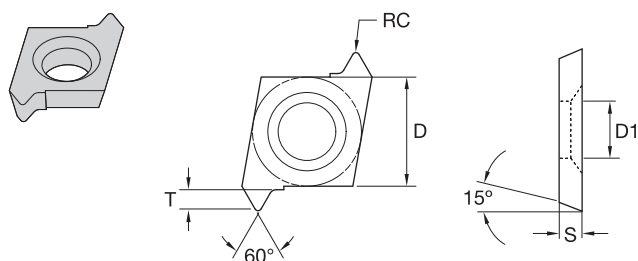
ISO catalog number	ANSI catalog number	D		S		T		W		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in											
right hand																						
CPG2032R	CPG2032R	6,35	1/4	1,91	.075	1,65	.065	0,76	.030	2,79	.110	■	■	■	2824546	■	■	■	■	■	■	■
CPG2062R	CPG2062R	6,35	1/4	1,91	.075	1,65	.065	1,52	.060	2,79	.110	■	■	■	2824531	■	■	■	■	■	■	■

ISO catalog number	ANSI catalog number	D		S		T		W		D1		C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in											
right hand																						
CPG2032R	CPG2032R	6,35	1/4	1,91	.075	1,65	.065	0,76	.030	2,79	.110	■	■	■	2824546	■	■	■	■	■	■	■
CPG2062R	CPG2062R	6,35	1/4	1,91	.075	1,65	.065	1,52	.060	2,79	.110	■	■	■	2824531	■	■	■	■	■	■	■

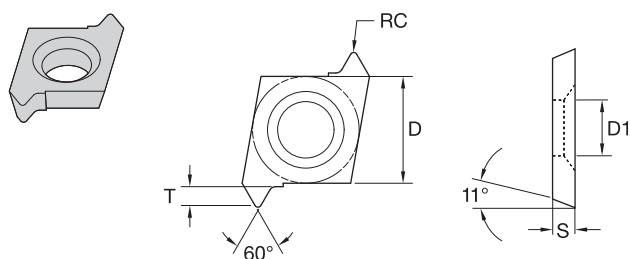
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Tools for Small Hole Boring

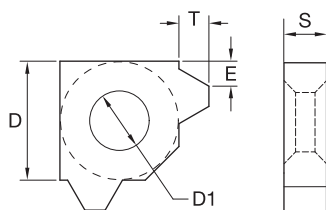
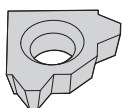
ISO catalog number	ANSI catalog number													C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CBN1	
		D		S		T		W		RC		D1													
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in												
right hand																									
FNR150472R	FNR150472R	5,00	.1969	1,85	.073	1,00	.039	1,20	.047	0,60	.024	2,50	.098	1	1	2820783	1	1	1	1	1	1	1		



ISO catalog number	ANSI catalog number	D S T RC D1														C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CBN1	
		mm	in	mm	in	mm	in	mm	in	mm	in	TPI min	TPI max	TP min	TP max												
right hand																											
CDT50022R	CDT50022R	3,97	5/32	1,27	.050	0,76	.030	0,05	.002	2,11	.083	24	48	0,5	1,0	1	1	1	2830567	1	1	1	1	1	1	1	



ISO catalog number	ANSI catalog number	D		S		T		RC		D1		TPI min	TPI max	TP min	TP max	C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CBN1	
		mm	in	mm	in	mm	in	mm	in	mm	in																
right hand																											
CPT20052R	CPT20052R	6,35	1/4	1,91	.075	1,65	.065	0,13	.005	2,79	.110	10	24	1,0	2,5	1	1	1	2824516	1	1	2824523	1	1	1	1	1

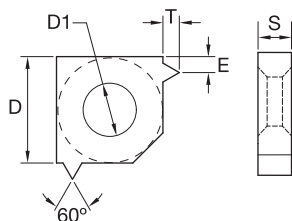
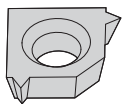


- first choice
- alternate choice

P				●	○	●	○	●	
M		○	○	●	●	○	○	○	
K		○	●	●	○	○	○	●	○
N	●	●	●	●	○	○	○	○	●
S	○	○	○	●	○	●		○	
H								●	

■ FNT-ACME-R/L

ISO catalog number	ANSI catalog number	D		S		T		E		D1		TPI min	C2	C25	C3	C65	C655	C66	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in												
right hand																							
FNT1512ACME2R	FNT1512ACME2R	5,00	.197	2,35	.093	1,26	.049	1,05	.041	2,50	.098	12				2820829							



■ FNT-UN-R/L

ISO catalog number	ANSI catalog number	D S T E D1										TPI min	C2	C25	C3	CG5	CG55	CG6	CM1	ALO	TN7	CBN6	CPD1
		mm	in	mm	in	mm	in	mm	in	mm	in												
right hand																							
FNT1528UN2R	FNT1528UN2R	5,00	.197	1,85	.073	0,61	.024	0,65	.026	2,50	.098	28	1	1	1	2820865	1	1	1	1	1	1	1

WIDIA-CIRCLE™ catalog number	New ISO/ANSI catalog number
CDCD	CDHB
CDCG	CDHH
CDCT	CDHH
CPCA	CPHB
CPCM	CPHH
GCCD	GCHW
GCCT	GCHT
GPCD	GPHW
GPCT	GPHT
TD6P	TPHB
TDAB	TDHB
TDAT	TDHH
TDCG	TDHH
TPCB	TPHB
TPCG	TPHH
TPCH	TPHH
TPGH	TPHH
TPMT	TPMT
WPGT	WPHT



■ Insert Screws

order number	ISO catalog number	ANSI catalog number	Torx/hex	internal thread
2840098	MSM46	MSM46	2 mm	M4X0.7
2840186	AS832/AS-8-32	AS832/AS-8-32	5/64	#8-32
2892513	BS832	BS832	5/64	—
2820981	LTM16	LTM16	T5	M2X0.4
2832647	CC11	CC11	T6	#1-72
2832635	CT11	CT11	T6	#1-72
2830477	FC11	FC11	T7	—
2828337	GT21	GT21	T7	#2-56
2825941	QTM20	QTM20	T7	M2.5X0.45
2825948	QTM26	QTM26	T7	M2.5X0.45
2826005	QC15	QC15	T8	#3-48
2826038	QC21	QC21	T9	#4-40
2823227	SC30	SC30	T10	#4-40
2823203	STM31	STM31	T15	M3.5 X 0.6
2832641	CT15	CT15	T16	#1-72

Tools for Small Hole Boring

■ Wrenches

order number	ISO catalog number	ANSI catalog number	Torx/hex
2840094	MKEY	MKEY	2.0 mm
2840174	AKEY	AKEY	5/64
2828318	GTKEY	GTKEY	T5
2832628	CKEY	CKEY	T6
2830492	FKEY	FKEY	T7
2825973	Q8KEY	Q8KEY	T8
2825982	QKEY	QKEY	T9
2823182	SKEY	SKEY	T10

■ Drive Bits

order number	ISO catalog number	ANSI catalog number	Torx/hex
2840089	MBIT	MBIT	2 mm
2832661	CBIT	CBIT	T6
2830497	FBIT	FBIT	T7
2825963	QTBIT	QTBIT	T7
2825964	Q8BIT	Q8BIT	T8
2826045	QBIT	QBIT	T9
2823236	SBIT	SBIT	T10
2823196	STBIT	STBIT	T15

■ Wedges

order number	ISO catalog number	ANSI catalog number
2840192	AW250/AW-250	AW250/AW-250
2836024	BW312	BW312