

K-TOOL, INC.

Pioneers in Productivity
Catalog 15

K-Tool, Inc.
99 Enterprise Drive
New Oxford, PA 17350-9253

Phone: 800-377-3056
717-624-3866

E-Mail: info@ktoolinc.com
sales@ktoolinc.com

Guarantee

We guarantee all of our products to be free from defects in workmanship and material. If any defects are apparent, the item will be replaced at no charge.

K-Tool, Inc. accepts no liability for any consequential damage to persons or equipment beyond the guarantee stated above.

Policies

CONDITION OF SALE

All sales are made in accordance with our standard conditions of sale which is current at the time orders are accepted. All of the specifications and prices are subject to change without notice.

TERMS OF PAYMENT

All invoices are NET 30 DAYS from date of invoice. All accounts with invoices past 60 days will be placed on credit hold.

SHIPPING & PROCESSING

All orders are sent via UPS. We will ship orders Freight Collect, although correct info must be provided or additional charges may apply. All in stock items ship the same day if order is received before **3:00 p.m. EST**. We do not ship orders on weekends or holidays.

RETURNS

All returns must have prior authorization within 60 days and may be subject to a 15% restocking charge. After evaluating returns a credit will be issued - **WE DO NOT ACCEPT DEBIT MEMOS.**

MINIMUM ORDER

The minimum order is \$100.00 list. Orders under \$100.00 will be charged with a \$10.00 small order fee.

TEST TOOL POLICY

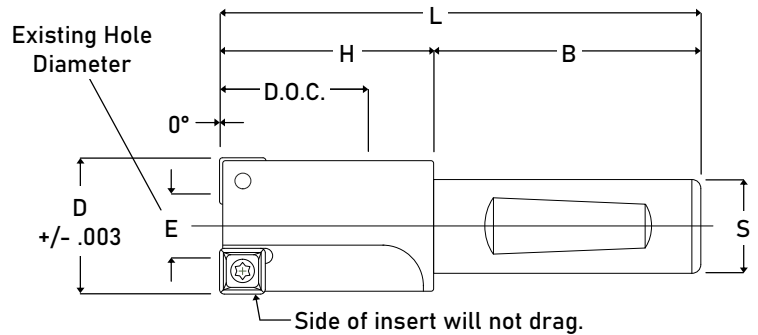
We will ship cutter bodies and inserts on performance purchase order numbers after the guaranteed test form information is supplied. K-Tool, Inc. will cover the tool bodies only. No credit will be given on used inserts, however credit will be issued on unused inserts. Items will be invoiced at the time of shipment. All test tools must be paid for or returned within 60 days. **Refer to page 169 for test form.**

Special Tools		4
Inserts		10
Spot Drills	SDCS	16
Flat Bottom Drills	FB	25
Drill Sergeants	DS-DSL	33
Drill Mills	DM-XDM	41
Drill Mill Twins	DMT-XDMT	47
Drill Mill Twin Long Edge	DMTL	52
FEC-Mills	FEC	54
Counterbore Tools	CBN-CB-CH-BCB	58
High Feed Mills	HF	66
Octa-Mills	HDOC-OC-XOC-DOC	69
Chamfer Products	A-AC-ACR-CMR-OD-CC-CCS-DCR	76
Dovetail Cutters	DT	93
Mini Mills	MM-XMM	97
Radius Mills	RM-RML-RMS-XRM	99
Keli-Mills	KE-KEL	105
Serators	S-SM-V50	109
Super Alloy Mills	SA-SAL	116
Eight Square Positive Mills	ESP-ESPS	121
Stockbusters	SB-V50SB	124
Universal Mills	UM	127
T-Slot & Key Cutters	TS-TSK	130
Radius Slotting Mills	TSR	136
Slotting / Half Side Mills	SC-SCSM	142
Radius Slotting Cutters	SCR-SCRSM	155
Test Tool / Screw Torque Info		168

Special Tools

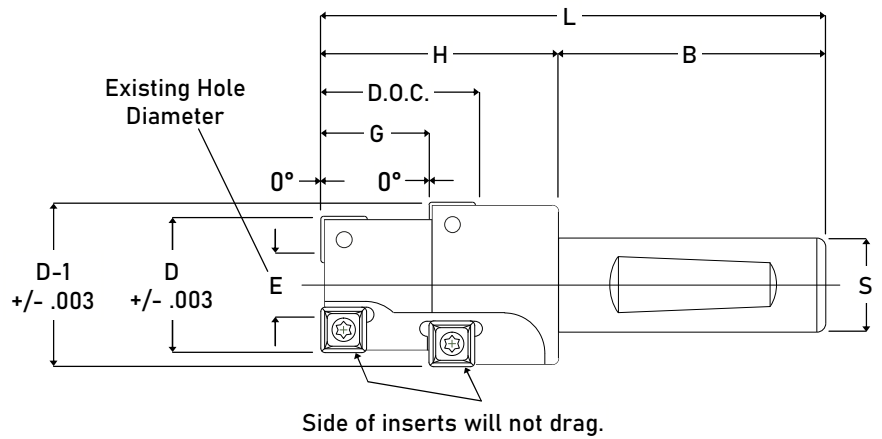
C-Bore / Core Drill

D	
E	
L	
H	
B	
D.O.C.	
S	
Coolant Thru	Yes / No
Flat Type	



Dual C-Bore Tool

D-1	
D	
E	
L	
H	
B	
D.O.C.	
G	
S	
Coolant Thru	Yes / No
Flat Type	



Contact Information

Distributor -

Salesperson -

E-Mail -

Phone # -

Enduser -

E-Mail -

Phone # -

Application Information

Mill or Lathe -

Spindle Taper -

Horsepower -

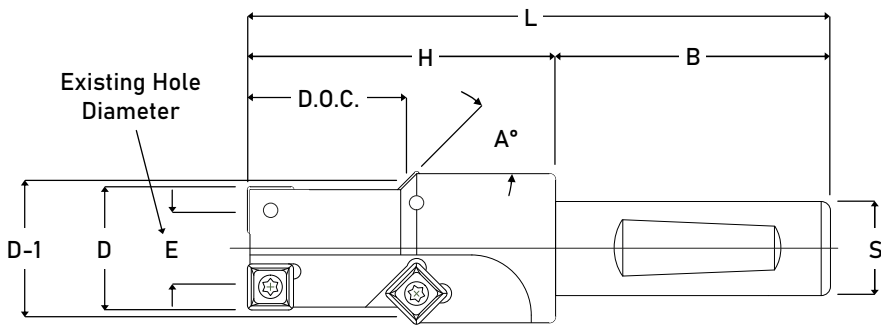
Workpiece Material -

Workpiece Hardness -

Other Information -

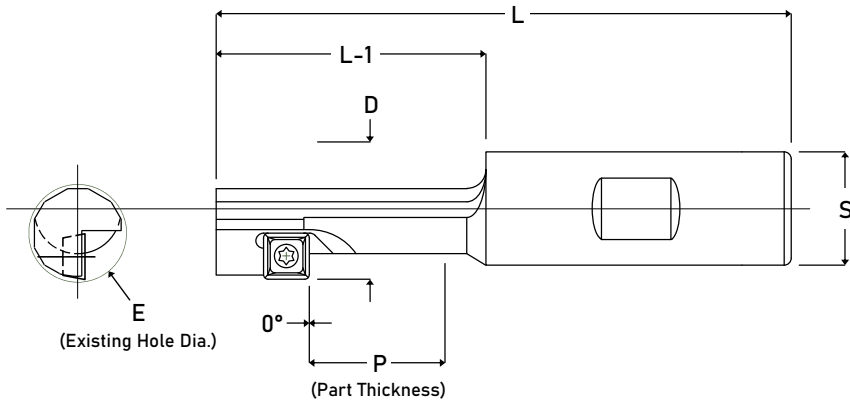
Special Tools

Counterbore & Chamfer Tool



D-1	
D	
E	
L	
H	
B	
D.O.C.	
A	
S	
Coolant Thru	Yes / No
Flat Type	

Back Counterbore Tool



E	
D	
P	
L	
L-1	
S	
Coolant Thru	Yes / No
Flat Type	

Contact Information

Distributor -

Salesperson -

E-Mail -

Phone # -

Enduser -

E-Mail -

Phone # -

Application Information

Mill or Lathe -

Spindle Taper -

Horsepower -

Workpiece Material -

Workpiece Hardness -

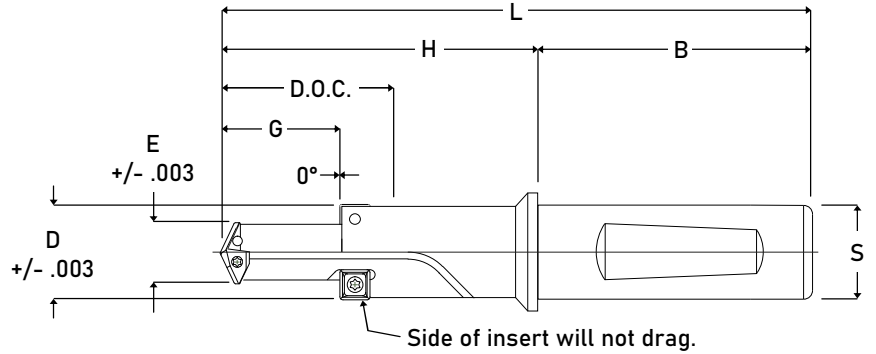
Other Information -

Fastest Delivery Time in the Industry!

Special Tools

Drill & Counterbore Tool

D	
E	
L	
H	
B	
D.O.C.	
G	
S	
Coolant Thru	Yes / No
Flat Type	



Drill Style

DS Style



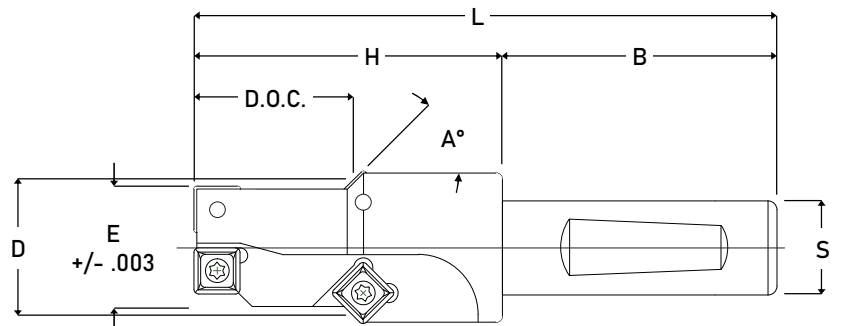
FB Style



Special Tool Request Forms

Drill & Chamfer Tool

D	
E	
L	
H	
B	
D.O.C.	
A	
S	
Coolant Thru	Yes / No
Flat Type	



Drill Style

DS Style



FB Style



CB Style



Existing Hole Dia. =

Contact Information

Distributor -

Salesperson -

E-Mail -

Phone # -

Enduser -

E-Mail -

Phone # -

Application Information

Mill or Lathe -

Spindle Taper -

Horsepower -

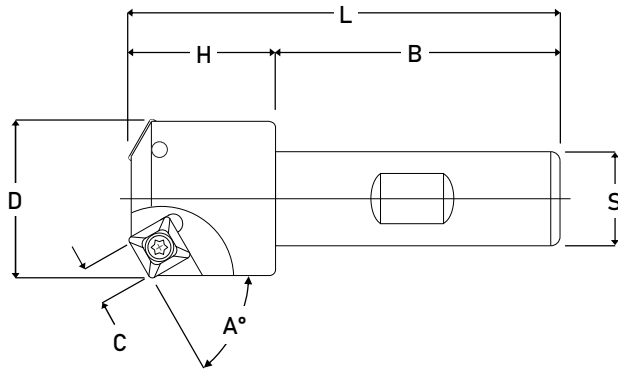
Workpiece Material -

Workpiece Hardness -

Other Information -

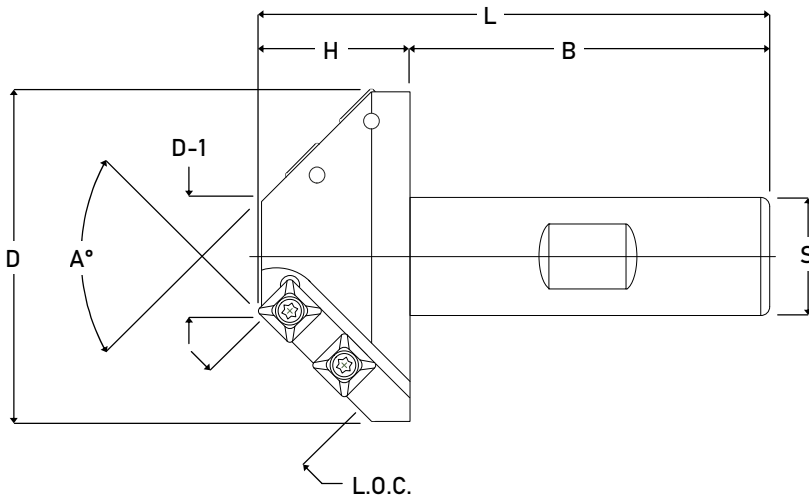
Special Tools

Chamfer Mill



D	
L	
H	
B	
C	
A°	
S	
Flat Type	
Coolant Thru	Yes / No
Application	Mill / Plunge

Long Edge Chamfer Mill



D	
A°	
D-1	
L	
H	
B	
L.O.C.	
S	
Flat Type	
Application	Mill / Plunge

Contact Information

Distributor -

Salesperson -

E-Mail -

Phone # -

Enduser -

E-Mail -

Phone # -

Application Information

Mill or Lathe -

Spindle Taper -

Horsepower -

Workpiece Material -

Workpiece Hardness -

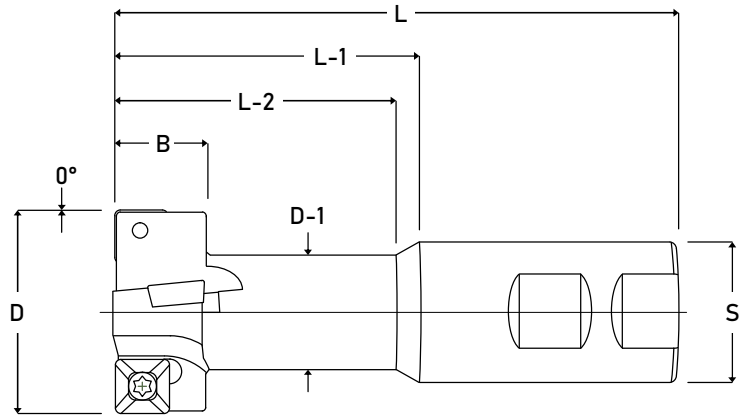
Other Information -

Fastest Delivery Time in the Industry!

Special Tools

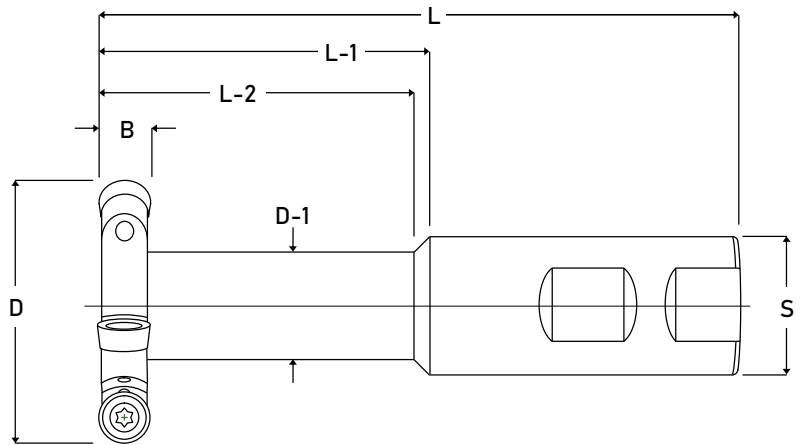
T-Slot / Key Cutter

D	
D-1	
L	
L-1	
L-2	
B	
S	
Coolant Thru	Yes / No
Flat Type	



Radius Slotting Mill

D	
D-1	
L	
L-1	
L-2	
B	
S	
Coolant Thru	Yes / No
Flat Type	



Contact Information

Distributor -

Salesperson -

E-Mail -

Phone # -

Enduser -

E-Mail -

Phone # -

Application Information

Mill or Lathe -

Spindle Taper -

Horsepower -

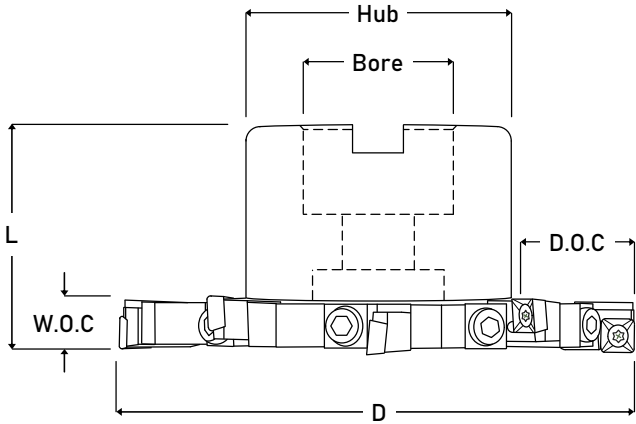
Workpiece Material -

Workpiece Hardness -

Other Information -

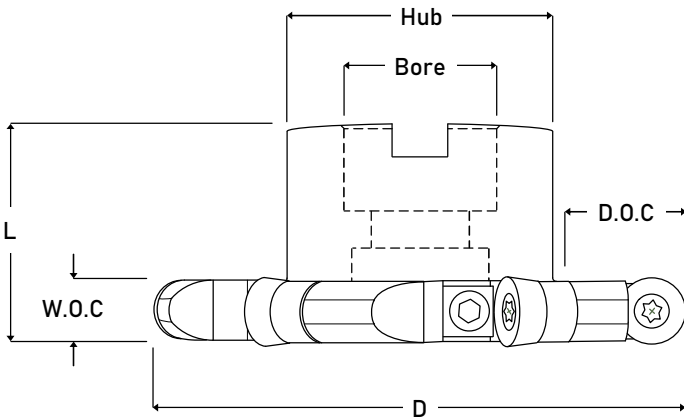
Special Tools

Slotting Cutter - Half Side Mill



D	
L	
W.O.C (Full Slot)	
D.O.C	
Bore	
Hub	
Mounting Style	Arbor or Shell
Half Side	RH or LH

Full Radius Slotting Cutter



D	
L	
W.O.C	
D.O.C	
Bore	
Hub	
Mounting Style	Arbor or Shell

Contact Information

Distributor -

Salesperson -

E-Mail -

Phone # -

Enduser -

E-Mail -

Phone # -

Application Information

Mill or Lathe -

Spindle Taper -

Horsepower -

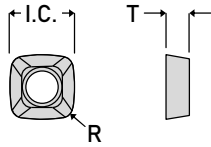
Workpiece Material -

Workpiece Hardness -

Other Information -

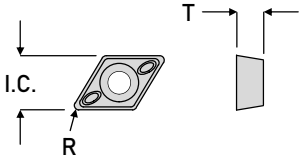
Fastest Delivery Time in the Industry!

ARP / Positive Top



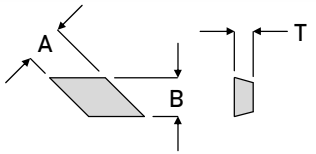
Insert #	I.C.	T	R	Available Grades	
				C55	X33
ARP-33	.375	.187	.062	+	+

DDEB / Positive Top



Insert #	I.C.	T	R	Available Grades	
				X33	X40
DDEB-2151P	.250	.095	.015	+	+

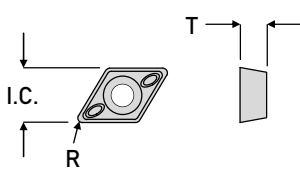
DDG / Flat Top



Insert #	A	B	T	Available Grade
				X33
DDG-45	.190	.187	.093	+

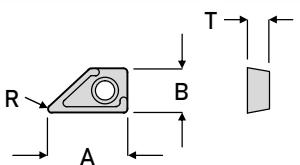
DI	Available Grade			Available Grade			Available Grade		
	Insert #	D	X33	Insert #	D	X33	Insert #	D	X33
	DI-343	.3438		DI-687	.6875		DI-1062	1.0625	
	DI-375	.3750		DI-718	.7188		DI-1093	1.0938	
	DI-406	.4062		DI-750	.7500		DI-1125	1.1250	
	DI-421	.4219		DI-765	.7656		DI-1156	1.1562	
	DI-437	.4375		DI-781	.7812		DI-1187	1.1875	
	DI-468	.4688		DI-812	.8125		DI-1218	1.2188	
	DI-500	.5000		DI-843	.8438		DI-1250	1.2500	
	DI-515	.5156		DI-875	.8750	+	DI-1281	1.2812	+
	DI-531	.5312	+	DI-906	.9062		DI-1312	1.3125	
	DI-562	.5625		DI-921	.9219		DI-1343	1.3438	
	DI-578	.5781		DI-937	.9375		DI-1375	1.3750	
	DI-593	.5938		DI-968	.9688		DI-1406	1.4062	
	DI-625	.6250		DI-984	.9840		DI-1437	1.4375	
	DI-640	.6400		DI-1000	1.000		DI-1468	1.4688	
	DI-656	.6562		DI-1031	1.0312		DI-1500	1.5000	
	DI-669	.6693							

DPEB / Positive Top



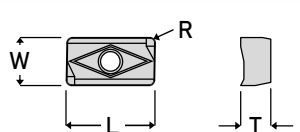
Insert #	I.C.	T	R	Available Grades	
				X33	X40
DPEB-3252P	.375	.160	.031	+	-

DTI / Positive Top



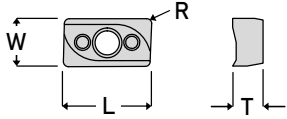
Insert #	B	A	T	R	Available Grade
					X33
DTI-1511P	.187	.328	.082	.015	+

LPMT / Positive Top



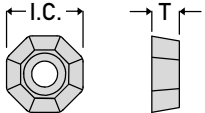
Insert #	R	L	W	T	Available Grades		
					BIM	X33	X40
LPMT-52-532	.031	.600	.320	.208	+	+	+
LPMT-52-533	.047	.600	.320	.208	-	+	+
LPMT-52-534	.062	.600	.320	.208	-	+	+

MGH / Positive Top



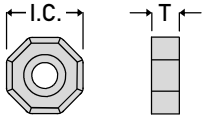
Insert #	R	L	W	T	Available Grades	
					B1M	X33
MGH-151	.002	.250	.170	.080	+	
MGH-1510	.008	.250	.170	.080	-	
MGH-1511	.015	.250	.170	.080	-	
MGH-2321	.015	.400	.250	.140	-	
MGH-2322	.031	.400	.250	.140	+	
MGH-2323	.047	.400	.250	.140	-	
MGH-2324	.062	.400	.250	.140	-	
MGH-531A	.015	.562	.313	.190	-	
MGH-532A	.031	.562	.313	.190	+	+
MGH-534A	.062	.562	.313	.190	-	
MGH-536A	.093	.562	.313	.190	-	
MGH-538A	.125	.562	.313	.190	-	
MGH-5310B	.156	.562	.313	.190	-	
MGH-5312B	.187	.562	.313	.190	-	
MGH-5314B	.218	.562	.313	.190	-	
MGH-5316B	.250	.562	.313	.190	-	

ODEB / Positive Top



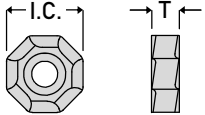
Insert #	I.C.	T	Available Grades	
			B1M	X33
ODEB-2711	.343	.110	-	+
ODEB-2721	.343	.130	+	+

ONMB / Positive Top - Double Sided



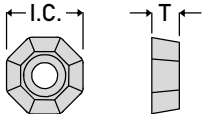
Insert #	I.C.	T	Available Grade
			A10M
ONMB-85	1.000	.312	+

ONPG / Positive Top - Double Sided



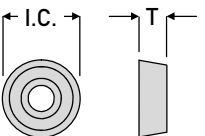
Insert #	I.C.	T	Available Grade
			X33
ONPG-4532	.593	.220	+

OPEB / Positive Top



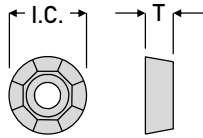
Insert #	I.C.	T	Available Grades			
			B1M	C55	X33	X40
OPEB-535	.625	.220	-	+	+	-
OPEB-535XP	.625	.220	+	-	-	+

RCEB / Positive Top



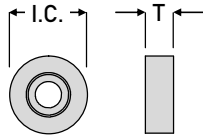
Insert #	I.C.	T	Available Grades					
			Ground	Molded	A10M	B1M	X33	X40
RCEB-22	.250	.125	-	+	+	-	+	-
RCEB-22G	.250	.125	+	-	-	+	+	+
RCEB-25G	.312	.125	+	-	-	+	+	+
RCEB-325	.375	.156	-	+	+	-	+	-
RCEB-325G	.375	.156	+	-	-	+	+	+
RCEB-435	.500	.220	-	+	+	-	+	-
RCEB-435G	.500	.220	+	-	-	+	+	+
RCEB-53G	.625	.220	+	-	-	+	+	+
RCEB-64	.750	.250	-	+	+	-	+	-

RDEB / Positive Top



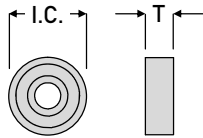
			Available Grade
Insert #	I.C.	T	X33
RDEB-2721	.343	.130	+

RNEB / Positive Top - Single Sided



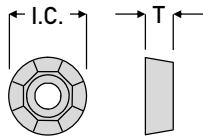
			Available Grade
Insert #	I.C.	T	A10M
RNEB-85P	1.000	.312	+

RNMB / Positive Top - Double Sided



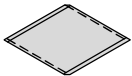
			Available Grade
Insert #	I.C.	T	A10M
RNMB-85	1.000	.312	+

RPEB / Positive Top



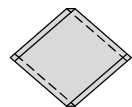
			Available Grade
Insert #	I.C.	T	X33
RPEB-535	.625	.220	+

SDCS / 60°



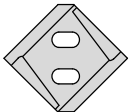
Insert #	Available Grades	
	A1M	B1M
601		
602	+	+

SDCS / 82°



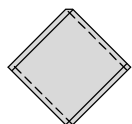
Insert #	Available Grades	
	A1M	B1M
820		
821		
822	+	+
823		

SDCS / 90°



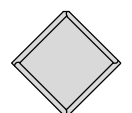
Insert #	Available Grade
	A1M
90-500	
90-625	+
90-750	

SDCS / 90°



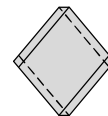
Insert #	Available Grades	
	A1M	B1M
90		
900		
901	+	+
902		
9025		
903		

SDCS / 90° Chipbreaker



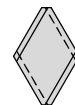
Insert #	Available Grades		
	A1M	B1M	CPM4
901CB	+	+	-
902CB	+	+	+
9025CB	+	-	-
903CB	-	-	+

SDCS / 100°



Insert #	Available Grades	
	A1M	B1M
100	+	+
1001	+	+
1002	+	-

SDCS / 120°



Insert #	Available Grades	
	A1M	B1M
1201		
1202	+	+

SDCS / 135°



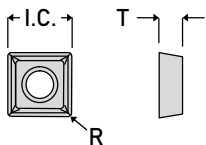
Insert #	Available Grades	
	A1M	B1M
1351	+	+
1352	+	-

SDCS / 142°



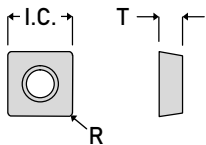
Insert #	Available Grade
	A1M
142-500	
142-750	+

SDEB / Chipbreaker



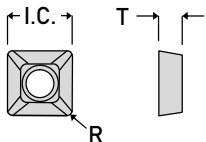
Insert #	I.C.	T	R	Available Grades	
				X33	X40
SDEB-1511CB	.187	.082	.015		
SDEB-2151CB	.250	.093	.015	+	+
SDEB-2522CB	.312	.125	.031		

SDEB / Flat Top



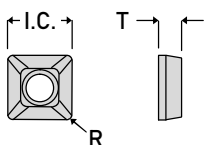
Insert #	I.C.	T	R	Available Grades	
				A1M	X33
SDEB-2151F	.250	.093	.015	+	+

SDEB / Positive Top



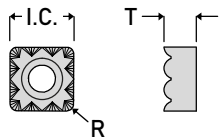
Insert #	I.C.	T	R	Available Grade	
				X33	
SDEB-2151P	.250	.093	.015		
SDEB-2521P	.312	.125	.015	+	
SDEB-2522P	.312	.125	.031		

SNEB / Positive Top



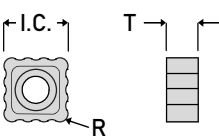
Insert #	I.C.	T	R	Available Grades	
				C55	X33
SNEB-432PA	.500	.187	.031	+	+

SNGC / H Series - Serator Inserts



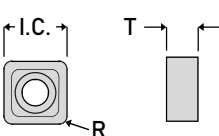
Insert #	I.C.	T	R	Available Grade	
				X33	
SNGC-333H	.375	.187	.047		+
SNGC-444H	.500	.250	.062		

SNMC / B Series - Serator Inserts



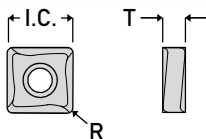
Insert #	I.C.	T	R	Available Grade	
				X33	
SNMC-222B	.250	.125	.031		
SNMC-333B	.375	.187	.047		+
SNMC-444B	.500	.250	.062		

SNMC / P Series - Serator Inserts



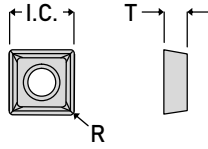
Insert #	I.C.	T	R	Available Grades	
				C55	X33
SNMC-221P	.250	.125	.015	-	
SNMC-332P	.375	.187	.031	-	+
SNMC-443P	.500	.250	.047	+	

SNPG / Positive Top - Double Sided



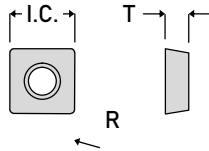
Insert #	I.C.	T	R	Available Grade	
				X33	
SNPG-2522	.312	.125	.031		
SNPG-3532	.437	.187	.031		+

SPEB / Chipbreaker



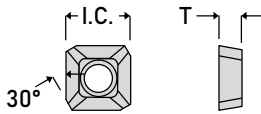
Insert #	I.C.	T	R	Available Grades	
				X33	X40
SPEB-1511CB	.187	.082	.015		
SPEB-1512CB	.187	.082	.031		
SPEB-221CB	.250	.125	.015		
SPEB-222CB	.250	.125	.031		
SPEB-2521CB	.312	.125	.015		
SPEB-2522CB	.312	.125	.031		
SPEB-322CB	.375	.125	.031	+	+
SPEB-332CB	.375	.187	.031		
SPEB-422CB	.500	.125	.031		
SPEB-432CB	.500	.187	.031		
SPEB-532CB	.625	.187	.031		
SPEB-6352CB	.750	.220	.031		
SPEB-842CB	1.000	.250	.031		

SPEB / Flat Top



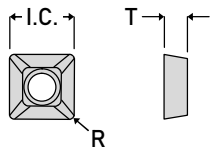
Insert #	I.C.	T	R	Available Grades	
				A1M	X33
SPEB-222F	.250	.125	.031		
SPEB-322F	.375	.125	.031	+	+
SPEB-422F	.500	.125	.031		

SPEB / Positive Top - 30° Lead



Insert #	I.C.	T	Available Grade	
			X33	
SPEB-43-30PA	.500	.187	+	

SPEB / Positive Top



Insert #	I.C.	T	R	Available Grades					
				A1M	B1M	C55	X33	X40	
SPEB-220P	.250	.125	.003	-	-	-	+	-	
SPEB-221P	.250	.125	.015	-	-	-	+	-	
SPEB-222P	.250	.125	.031	+	+	+	+	+	
SPEB-2521P	.312	.125	.015	-	-	-	+	-	
SPEB-2522P	.312	.125	.031	+	+	+	+	+	
SPEB-321P	.375	.125	.015	-	-	-	+	-	
SPEB-322P	.375	.125	.031	+	+	+	+	+	
SPEB-331P	.375	.187	.015	-	-	-	+	-	
SPEB-332P	.375	.187	.031	+	+	+	+	+	
SPEB-333P	.375	.187	.047	+	-	-	+	-	
SPEB-334P	.375	.187	.062	-	-	-	+	+	
SPEB-3522PA	.437	.125	.031	-	-	-	+	-	
SPEB-422PA	.500	.125	.031	-	-	-	+	-	
SPEB-431PA	.500	.187	.015	-	-	-	+	-	
SPEB-432PA	.500	.187	.031	+	+	+	+	+	
SPEB-433PA	.500	.187	.047	+	-	+	+	-	
SPEB-434PA	.500	.187	.062	-	-	-	+	+	
SPEB-43PA45	.500	.187	.05 X 45°	-	-	-	+	-	
SPEB-532PA	.625	.187	.031	-	-	+	+	+	
SPEB-6352PA	.750	.220	.031	-	-	+	+	+	
SPEB-842PA	1.000	.250	.031	-	-	-	+	-	

Questions? Call **1-800-377-3056**

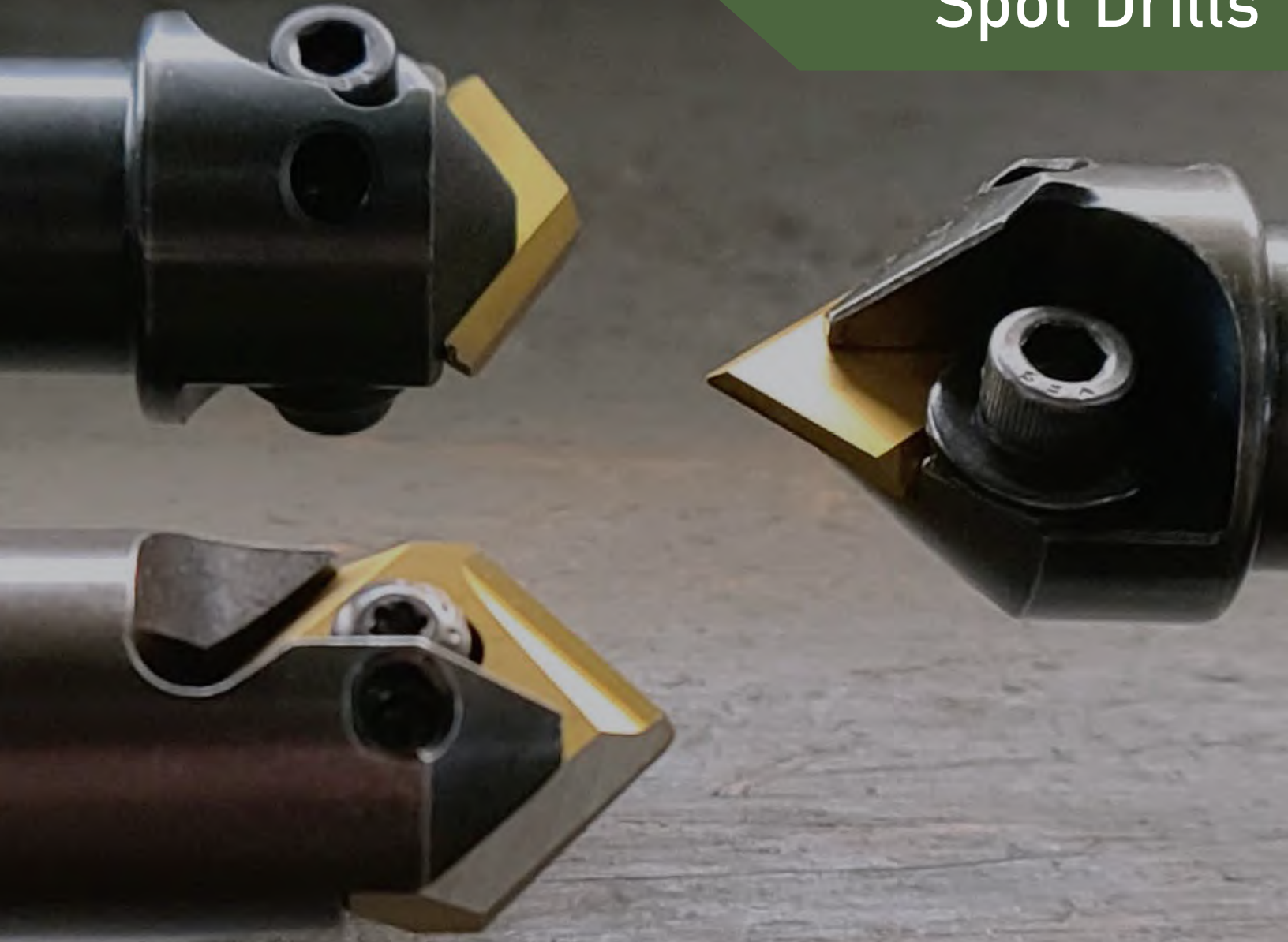
Insert Grades

Insert Grades	Grade Descriptions
A1M	TIN Coated
A10M	TIALN / TIN Coated Carbide / Wear Resistant Grade
B1M	Uncoated Carbide - No Hone
C55	Advanced Multi-Layer PVD Coated Carbide
X33	High Performance Nitride
X40	Extremely Smooth Boride Coating / Periphery Ground

Insert Grade Selection

Material	Material Examples	Preferred Grade
High & Low Carbon Steels	1018, 1020, 1117, 1141, 12L14	X33 / A10M
High Carbon & Alloy Steels	1045, 4140, 4340, 52100, 8620	X33 / A10M
Lower Carbon Tool Steels	P-20, H-13, S-7	X33 / A10M
Tool Steels	A-2, A-6, D-2, M-2	X33 / A10M
Stainless Steels	303, 304, 316, 420, 15-5PH, 17-4PH	X33 / A10M
Iron	Cast, Nodular	C55
Iron	Ductile	X33 / A10M
Nickel & Titanium Alloys	Inconel, Hastelloy, Ti-6AL-4V	X33 / A10M
Non-Ferrous Metals	Aluminum, Bronze, Brass	X40 / B1M / X33

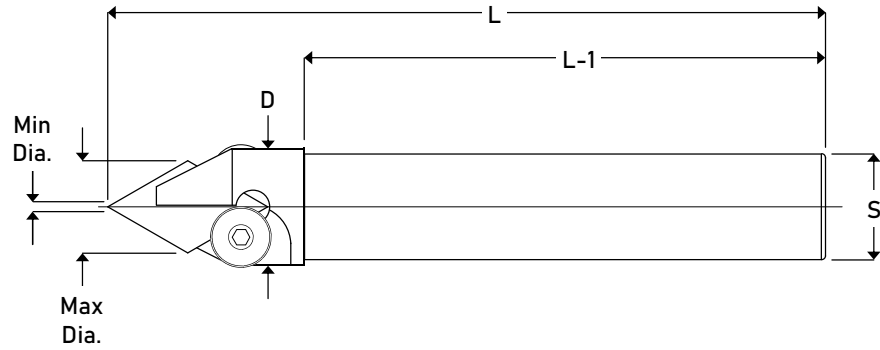
Spot Drills



Insert Loading Procedure
Air Blast Pocket Clean
Hold Insert in Place (Chisel points to front and rear)
Flatted corners are to prevent loading insert backwards
Tighten clamps until each one makes light contact
Alternate tightening screws several times until screws are tight



Patented (Patent # 5,259,707) - 2 Flutes Effective
Must Be Held in a Collet (No Flat)
Wide Variety of Angles Available

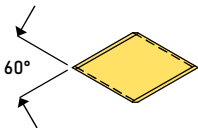


SDCS

Spot Drills

Tool Info.

Tool #	Min Dia.	Max Dia.	L	L-1	S	D	Clamp	Screw	Insert
SDCS-601L	.156	.540	5.450	4.250	.750	1.000	501912	103212	601
SDCS-602L	.250	.750	6.700	4.875	1.000	1.120	621915	103212	602



Insert Grades

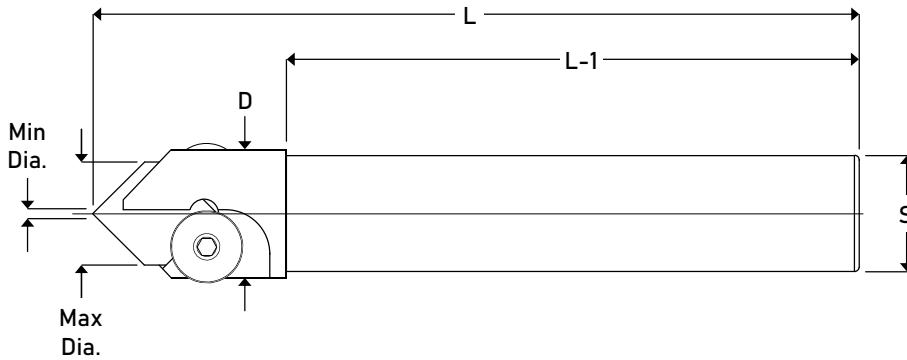
Insert	A1M	B1M
601	+	+
602	+	+

Speed and Feed Info.

Material	S.F.M.	I.P.R.	Insert Grades
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	500 - 700	.0024	A1M
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	400 - 600	.0016	A1M
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 600	.002	A1M
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002	A1M
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	200 - 400	.0014	A1M
Iron <i>Ex. Cast, Ductile, Nodular</i>	400 - 700	.004	A1M
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 250	.0012	A1M
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2000	.006	A1M B1M

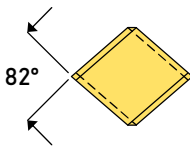
(Patent # 5,259,707)

SDCS
Spot Drills



Tool Info.

Tool #	Min Dia.	Max Dia.	L	L-1	S	D	Clamp	Screw	Insert
SDCS-820	.093	.400	3.250	2.375	.500	.625	311205	44025	820
SDCS-821L	.156	.580	5.360	4.250	.750	1.000	501912	103212	821
SDCS-822L	.250	.880	6.535	4.875	1.000	1.120	621915	103212	822
SDCS-823	.250	1.500	4.937	2.500	1.000	1.500	621915	103212	823



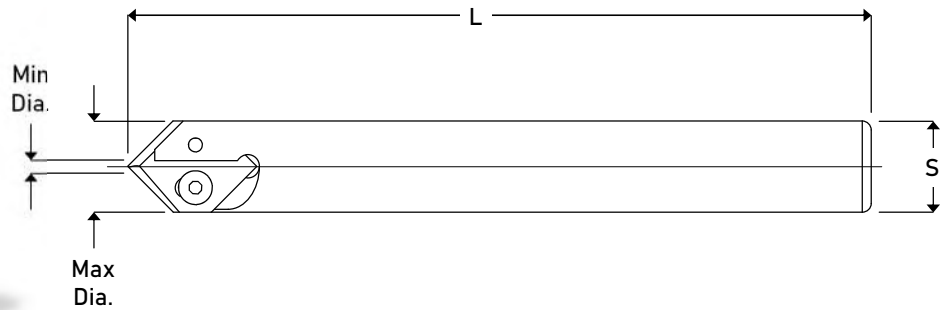
Insert Grades

Insert	A1M	B1M
820	+	+
821	+	+
822	+	+
823	+	+

Speed and Feed Info.

Material	S.F.M.	I.P.R.	Insert Grades
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	500 - 700	.0024	A1M
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	400 - 600	.0016	A1M
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 600	.002	A1M
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002	A1M
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	200 - 400	.0014	A1M
Iron <i>Ex. Cast, Ductile, Nodular</i>	400 - 700	.004	A1M
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 250	.0012	A1M
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2000	.006	A1M B1M

- Designed for spotting along shoulders-
- Split point design for reduced cutting pressure-

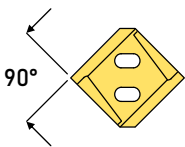


SDCS

Spot Drills

Tool Info.

Tool #	Min Dia.	Max Dia.	L	S	Washer	Screw	Wrench	Insert
SDCS-90-500	.093	.500	4.000	.500	251207	325B	1/16" Allen	90-500
SDCS-90-625	.100	.625	5.000	.625	251207	425B	T-8	90-625
SDCS-90-750	.125	.750	6.000	.750	251603	638B	T-10	90-750



Insert Grade

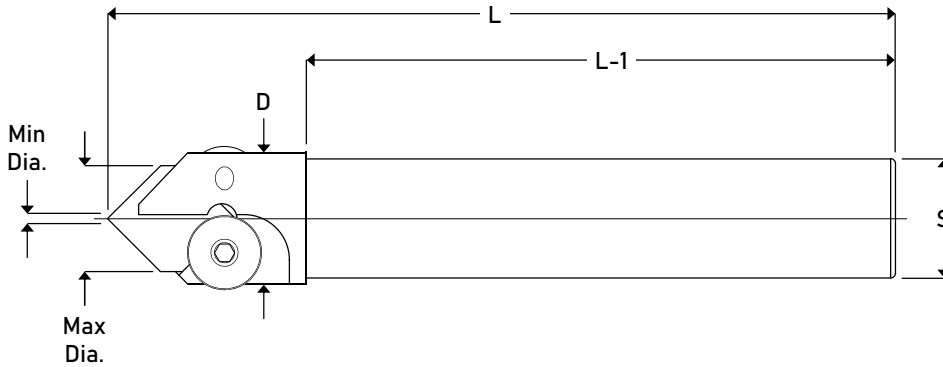
Insert	A1M
90-500	+
90-625	+
90-750	+

Speed and Feed Info.

Material	S.F.M.	I.P.R.	Insert Grade
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	500 - 700	.002 - .004	A1M
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	400 - 600	.002 - .004	A1M
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 600	.002 - .004	A1M
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004	A1M
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	200 - 400	.002 - .004	A1M
Iron <i>Ex. Cast, Ductile, Nodular</i>	400 - 700	.002 - .004	A1M
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	120 - 250	.0012 - .0022	A1M
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2000	.003 - .008	A1M

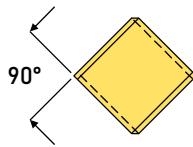
(Patent # 5,259,707)

SDCS
Spot Drills



Tool Info.

Tool #	Min Dia.	Max Dia.	L	L-1	S	D	Clamp	Screw	Insert
SDCS-90	.070	.390	3.250	2.500	.375	.430	180310	25618	90
SDCS-900	.093	.470	3.250	2.375	.500	.625	311205	44025	900
SDCS-901	.156	.600	3.060	2.000	.500	1.000	501912	103212	901
SDCS-901L	.156	.600	5.330	4.250	.750	1.000	501912	103212	901
SDCS-902	.250	.900	4.130	2.500	.750	1.125	621915	103212	902
SDCS-902L	.250	.900	6.530	4.875	1.000	1.125	621915	103212	902
SDCS-9025	.250	1.270	4.690	2.625	1.000	1.250	621915	103212	9025
SDCS-903	.375	1.560	4.880	2.625	1.000	1.700	102518	142812	903

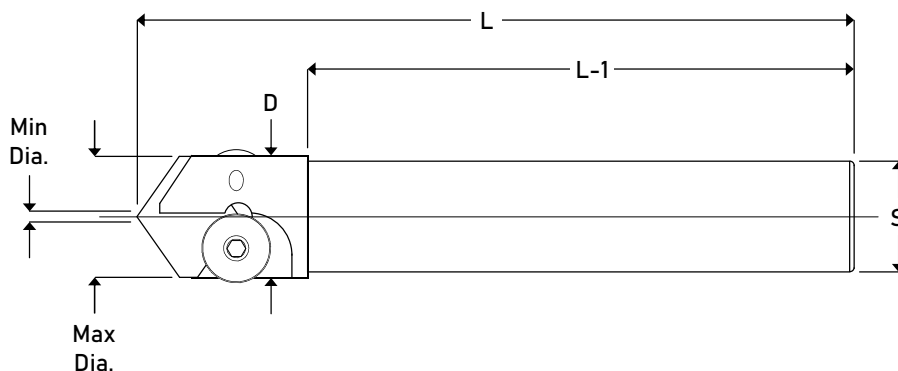


Insert Grades

Insert	AIM	BIM	CPM4
90	+	+	-
900	+	+	+
901	+	+	-
901CB	+	+	-
902	+	+	-
902CB	+	+	+
9025	+	+	-
9025CB	+	-	-
903	+	+	-
903CB	-	-	+

Speed and Feed Info.

Material	S.F.M.	I.P.R.	Insert Grades
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	500 - 700	.0024	AIM
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	400 - 600	.0016	AIM
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 600	.002	AIM
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002	AIM
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	200 - 400	.0014	AIM
Iron Ex. Cast, Ductile, Nodular	400 - 700	.004	AIM
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 250	.0012	AIM
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2000	.006	AIM BIM

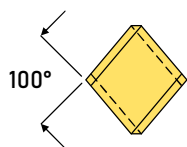


SDCS

Spot Drills

Tool Info.

Tool #	Min Dia.	Max Dia.	L	L-1	S	D	Clamp	Screw	Insert
SDCS-100	.093	.470	3.210	2.375	.500	.625	311205	44025	100
SDCS-1001L	.156	.630	5.310	4.250	.750	1.000	501912	103212	1001
SDCS-1002L	.250	1.030	6.500	4.875	1.000	1.125	621915	103212	1002



Insert Grades

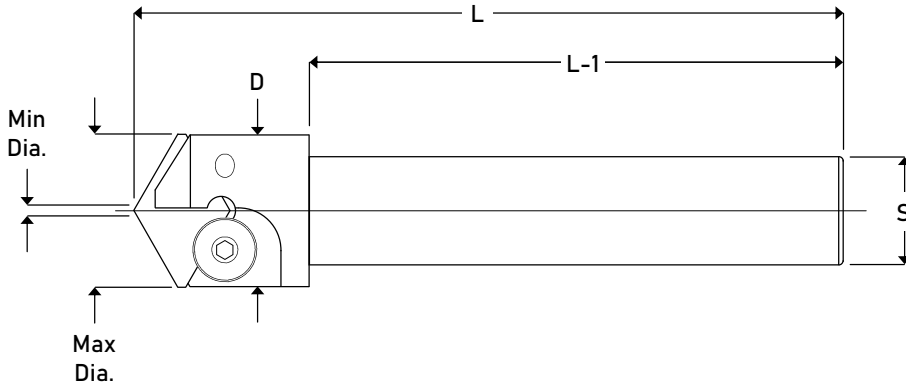
Insert	A1M	B1M
100	+	+
1001	+	+
1002	+	-

Speed and Feed Info.

Material	S.F.M.	I.P.R.	Insert Grades
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	500 - 700	.0024	A1M
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	400 - 600	.0016	A1M
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 600	.002	A1M
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002	A1M
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	200 - 400	.0014	A1M
Iron <i>Ex. Cast, Ductile, Nodular</i>	400 - 700	.004	A1M
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 250	.0012	A1M
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2000	.006	A1M B1M

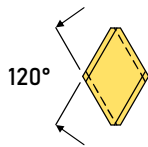
(Patent # 5,259,707)

SDCS
Spot Drills



Tool Info.

Tool #	Min Dia.	Max Dia.	L	L-1	S	D	Clamp	Screw	Insert
SDCS-1201L	.156	.875	5.300	4.250	.750	1.000	501912	103212	1201
SDCS-1202L	.250	1.300	6.437	4.875	1.000	1.350	621915	103212	1202

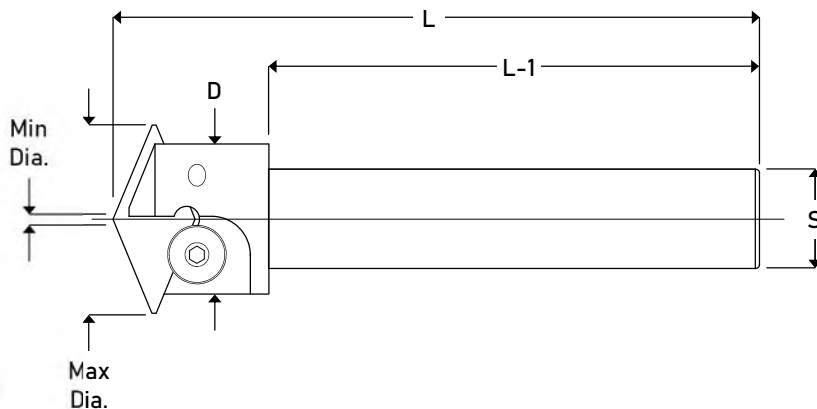


Insert Grades

Insert	A1M	B1M
1201	+	+
1202	+	+

Speed and Feed Info.

Material	S.F.M.	I.P.R.	Insert Grades
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	500 - 700	.0024	A1M
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	400 - 600	.0016	A1M
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 600	.002	A1M
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002	A1M
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	200 - 400	.0014	A1M
Iron <i>Ex. Cast, Ductile, Nodular</i>	400 - 700	.004	A1M
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	120 - 250	.0012	A1M
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2000	.006	A1M B1M

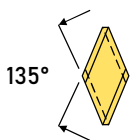


SDCS

Spot Drills

Tool Info.

Tool #	Min Dia.	Max Dia.	L	L-1	S	D	Clamp	Screw	Insert
SDCS-1351L	.156	1.062	5.290	4.250	.750	1.000	501912	103212	1351
SDCS-1352L	.250	1.625	6.400	4.875	1.000	1.600	621915	103212	1352



Insert Grades

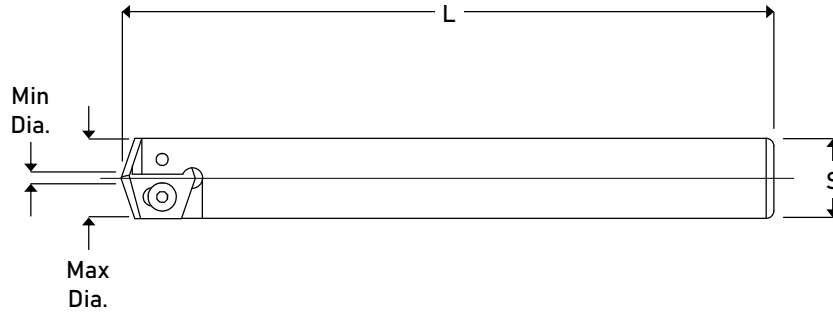
Insert	A1M	B1M
1351	+	+
1352	+	-

Speed and Feed Info.

Material	S.F.M.	I.P.R.	Insert Grades
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	500 - 700	.0024	A1M
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	400 - 600	.0016	A1M
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 600	.002	A1M
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002	A1M
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	200 - 400	.0014	A1M
Iron Ex. Cast, Ductile, Nodular	400 - 700	.004	A1M
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, TI-6AL-4V	120 - 250	.0012	A1M
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2000	.006	A1M B1M

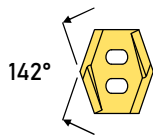
-Designed for spotting along shoulders-
 -Split point design for reduced cutting pressure-

SDCS
Spot Drills



Tool Info.

Tool #	Min Dia.	Max Dia.	L	S	Washer	Screw	Wrench	Insert
SDCS-142-500	.093	.500	4.000	.500	251207	325B	1/16" Allen	142-500
SDCS-142-750	.125	.750	6.000	.750	251603	638B	T-10	142-750



Insert Grade

Insert #	A1M
142-500	+
142-750	+

Speed and Feed Info.

Material	S.F.M.	I.P.R.	Insert Grade
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	500 - 700	.002 - .004	A1M
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	400 - 600	.002 - .004	A1M
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 600	.002 - .004	A1M
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004	A1M
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	200 - 400	.002 - .004	A1M
Iron <i>Ex. Cast, Ductile, Nodular</i>	400 - 700	.002 - .004	A1M
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 250	.0012 - .0022	A1M
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2000	.003 - .008	A1M

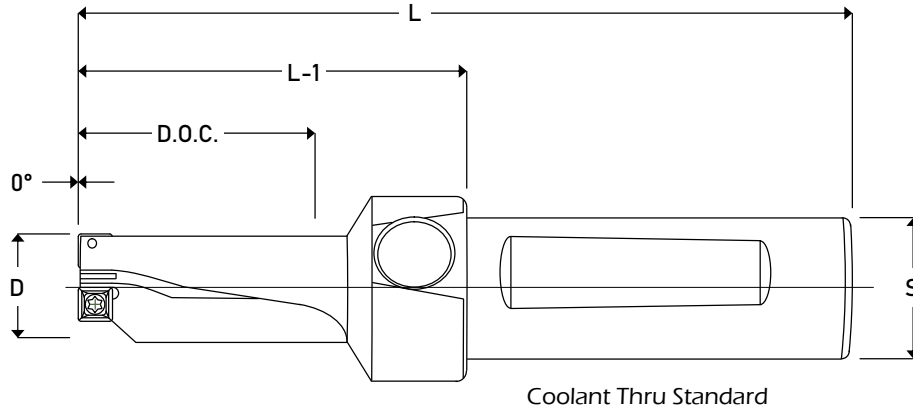
Flat Bottom Drills



Drills from Solid
Cuts a Flat Bottom Within .001
Boring Capabilities - Coolant Thru - Helical Flutes
Available in 2:1 & 3:1 (Most Sizes)
Side & Rear Coolant Ports

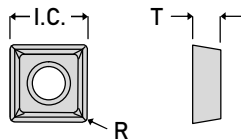


FB
Flat Bottom Drills



Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Coolant Plug	Insert
FB-500	.500	2-1 Effective	4.000	2.000	1.125			
FB-500-3	.500	2-1 Effective	4.500	2.500	1.500			
FB-531	.531	2-1 Effective	4.000	2.000	1.125			
FB-531-3	.531	2-1 Effective	4.500	2.500	1.593			
FB-562	.562	2-1 Effective	4.000	2.000	1.125			
FB-562-3	.562	2-1 Effective	4.625	2.625	1.687	.750	NPT 1/8	SPEB-1511CB
FB-593	.593	2-1 Effective	4.000	2.000	1.187			
FB-593-3	.593	2-1 Effective	4.687	2.687	1.812			
FB-625	.625	2-1 Effective	4.250	2.250	1.375			
FB-625-3	.625	2-1 Effective	4.750	2.750	1.875			
FB-656	.656	2-1 Effective	4.250	2.250	1.375			
FB-656-3	.656	2-1 Effective	4.875	2.875	2.000			



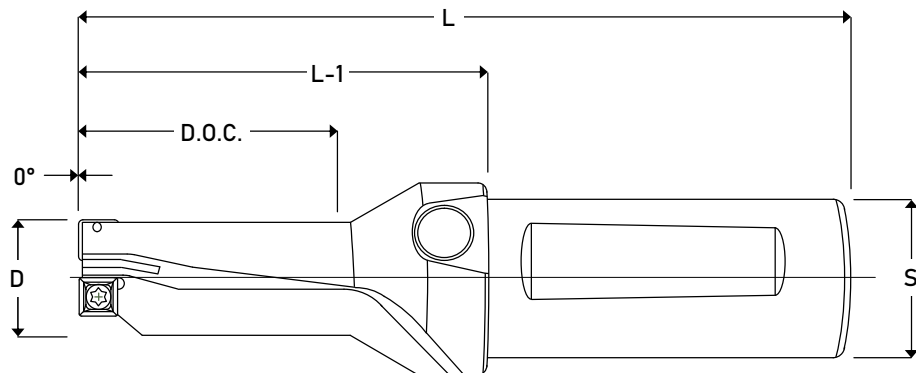
Insert Info

SPEB-1511CB

Grades	X33 X40
I.C.	.187
T	.082
R	.015
Screw	164T
Wrench	T-6

Speed and Feed Info.

Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.001 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.001 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.001 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.001 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .0015
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .003



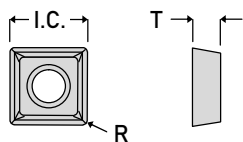
Coolant Thru Standard

FB

Flat Bottom Drills

Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Coolant Plug	Insert
FB-687	.687	2-1 Effective	4.250	2.250	1.375	.750		
FB-687-3	.687	2-1 Effective	4.937	2.937	2.062	.750		
FB-718	.718	2-1 Effective	4.250	2.250	1.437	.750		
FB-718-3	.718	2-1 Effective	5.062	3.062	2.187	.750		
FB-750	.750	2-1 Effective	4.750	2.500	1.500	1.000	NPT 1/8	SPEB-221CB
FB-750-3	.750	2-1 Effective	5.500	3.250	2.250	1.000		
FB-781	.781	2-1 Effective	4.750	2.500	1.562	1.000		
FB-781-3	.781	2-1 Effective	5.500	3.250	2.343	1.000		
FB-812	.812	2-1 Effective	4.750	2.500	1.625	1.000		
FB-812-3	.812	2-1 Effective	5.625	3.375	2.437	1.000		



Insert Info

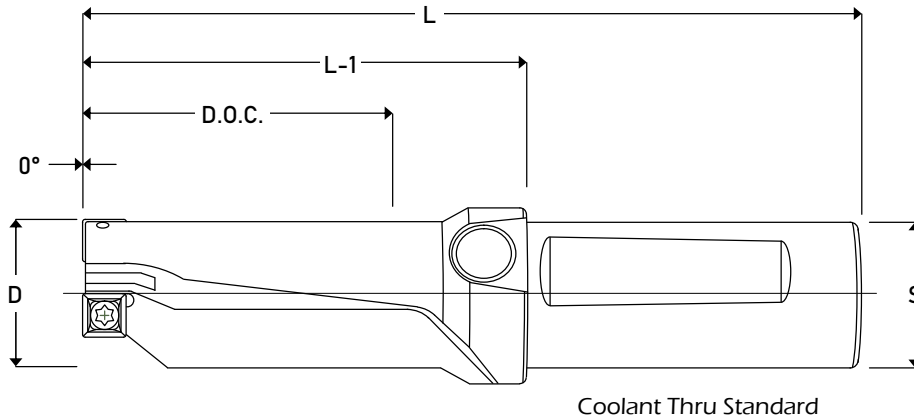
SPEB-221CB

Grades	X33 X40
I.C.	.250
T	.125
R	.015
Screw	314T
Wrench	T-8

Speed and Feed Info.

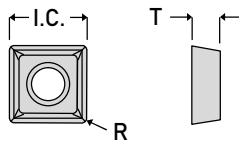
Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .004
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .003
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .003
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.001 - .003
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.001 - .003
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.002 - .005
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .006

FB
Flat Bottom Drills



Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Coolant Plug	Insert
FB-875	.875	2-1 Effective	5.000	2.750	1.750			
FB-875-3	.875	2-1 Effective	5.750	3.500	2.625			
FB-937	.937	2-1 Effective	5.000	2.750	1.875			
FB-937-3	.937	2-1 Effective	6.000	3.750	2.812			
FB-984	.984	2-1 Effective	5.250	3.000	2.000			
FB-984-3	.984	2-1 Effective	6.125	3.875	2.950			
FB-1000	1.000	2-1 Effective	5.250	3.000	2.000	1.000	NPT 1/8	SPEB-2522CB
FB-1000-3	1.000	2-1 Effective	6.250	4.000	3.000			
FB-1031	1.031	2-1 Effective	5.250	3.000	2.062			
FB-1031-3	1.031	2-1 Effective	6.250	4.000	3.093			
FB-1062	1.062	2-1 Effective	5.250	3.000	2.125			
FB-1062-3	1.062	2-1 Effective	6.250	4.000	3.187			
FB-1125	1.125	2-1 Effective	5.250	3.000	2.250			
FB-1125-3	1.125	2-1 Effective	6.375	4.125	3.375			



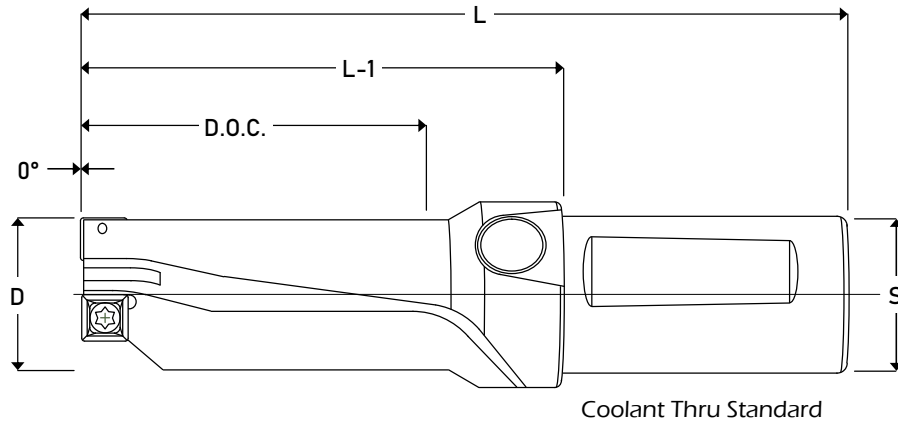
Insert Info

SPEB-2522CB

Grades	X33 X40
I.C.	.312
T	.125
R	.031
Screw	314T
Wrench	T-8

Speed and Feed Info.

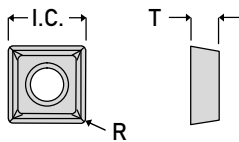
Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .004
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.001 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .005
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .006



FB
Flat Bottom Drills

Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Coolant Plug	Insert
FB-1156	1.156	2-1 Effective	6.000	3.750	2.312			
FB-1156-3	1.156	2-1 Effective	7.125	4.875	3.468			
FB-1187	1.187	2-1 Effective	6.000	3.750	2.375			
FB-1187-3	1.187	2-1 Effective	7.125	4.875	3.562			
FB-1250	1.250	2-1 Effective	6.000	3.750	2.500			
FB-1250-3	1.250	2-1 Effective	7.500	5.250	3.750	1.250	NPT 1/4	SPEB-332CB
FB-1281	1.281	2-1 Effective	6.000	3.750	2.562			
FB-1281-3	1.281	2-1 Effective	7.562	5.312	3.843			
FB-1312	1.312	2-1 Effective	6.000	3.750	2.625			
FB-1312-3	1.312	2-1 Effective	7.562	5.312	3.937			
FB-1375	1.375	2-1 Effective	6.000	3.750	2.750			
FB-1375-3	1.375	2-1 Effective	7.625	5.375	4.125			



Insert Info

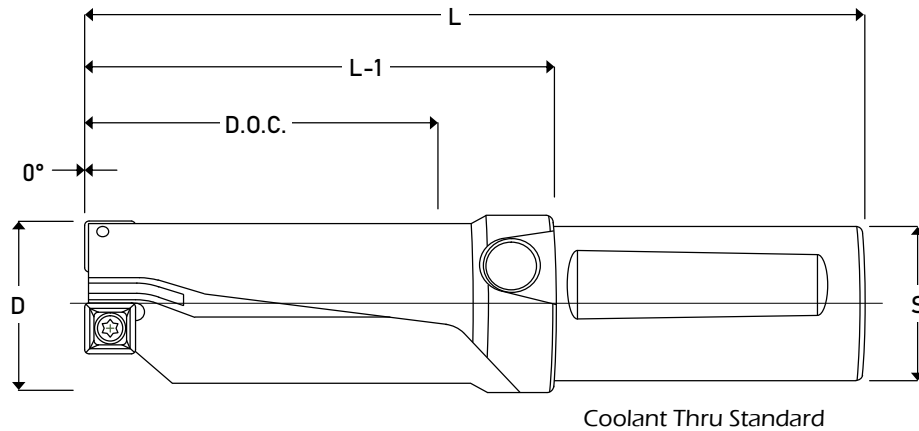
SPEB-332CB

Grades	X33 X40
I.C.	.375
T	.187
R	.031
Screw	538T
Wrench	T-10

Speed and Feed Info.

Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.003 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.003 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.002 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.004 - .008

FB
Flat Bottom Drills

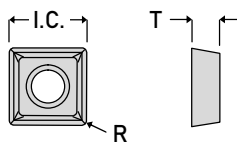


Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Coolant Plug	Insert
FB-1437	1.437	2-1 Effective	6.250	4.000	2.875	1.250		
FB-1437-3	1.437	2-1 Effective	7.687	5.437	4.312	1.250		
FB-1500	1.500	2-1 Effective	6.250	4.000	3.000	1.250		
FB-1500-3	1.500	2-1 Effective	7.750	5.500	4.500	1.250		
FB-1562	1.562	2-1 Effective	7.500	4.500	3.125	1.500		
FB-1562-3	1.562	2-1 Effective	9.062	6.062	4.687	1.500		
FB-1625	1.625	2-1 Effective	7.500	4.500	3.250	1.500		
FB-1625-3	1.625	2-1 Effective	9.125	6.125	4.875	1.500		
FB-1687	1.687	2-1 Effective	7.500	4.500	3.375	1.500		
FB-1687-3	1.687	2-1 Effective	9.312	6.312	5.061	1.500		
FB-1750	1.750	2-1 Effective	7.750	4.750	3.500	1.500		
FB-1750-3	1.750	2-1 Effective	9.625	6.625	5.250	1.500		

NPT 1/4

SPEB-432CB



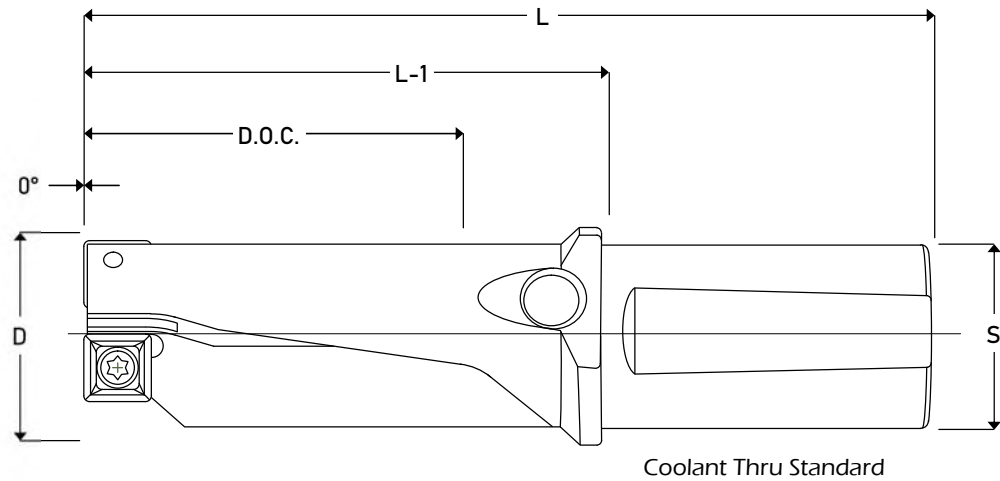
Insert Info

SPEB-432CB

Grades	X33 X40
I.C.	.500
T	.187
R	.031
Screw	638T
Wrench	T-15

Speed and Feed Info.

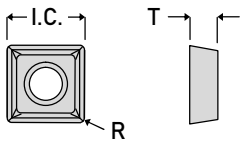
Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.003 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.003 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	120 - 180	.002 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.004 - .008



FB
Flat Bottom Drills

Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Coolant Plug	Insert
FB-1875	1.875	2-1 Effective	8.000	5.000	3.750	1.500	NPT 1/4	SPEB-532CB
FB-1875-3	1.875	2-1 Effective	9.875	6.875	5.625	1.500	NPT 1/4	SPEB-532CB
FB-2000	2.000	2-1 Effective	8.125	5.125	4.000	1.500	NPT 3/8	SPEB-6352CB
FB-2000-3	2.000	2-1 Effective	10.125	7.125	6.000	1.500	NPT 3/8	SPEB-6352CB
FB-2125	2.125	2-1 Effective	9.125	5.625	4.250	2.000	NPT 3/8	SPEB-6352CB
FB-2125-3	2.125	2-1 Effective	11.750	8.250	6.375	2.000	NPT 3/8	SPEB-6352CB
FB-2250	2.250	2-1 Effective	9.125	5.625	4.500	2.000	NPT 3/8	SPEB-6352CB
FB-2250-3	2.250	2-1 Effective	12.125	8.625	6.750	2.000	NPT 3/8	SPEB-6352CB
FB-2375	2.375	2-1 Effective	9.625	6.125	4.750	2.000	NPT 3/8	SPEB-6352CB
FB-2500	2.500	2-1 Effective	9.625	6.125	5.000	2.000	NPT 3/8	SPEB-6352CB
FB-2500-3	2.500	2-1 Effective	12.875	9.375	7.500	2.000	NPT 3/8	SPEB-6352CB



Insert Info

SPEB-532CB

Grade X33

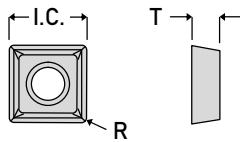
I.C. .625

T .187

R .031

Screw 838T

Wrench T-20



Insert Info

SPEB-6352CB

Grades X33 X40

I.C. .750

T .220

R .031

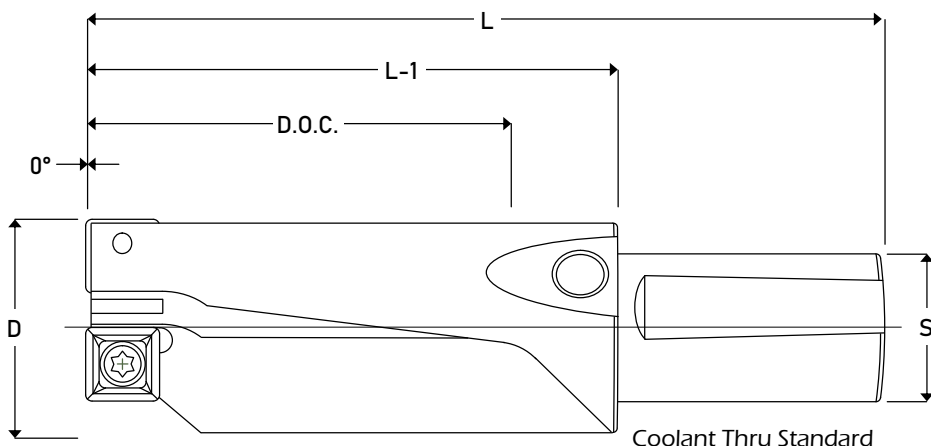
Screw 1012T

Wrench T-25

Speed and Feed Info.

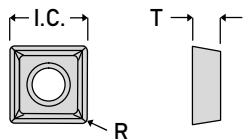
Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.003 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.003 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.002 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.004 - .008

FB
Flat Bottom Drills



Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Coolant Plug	Insert
FB-2750	2.750	2-1 Effective	10.125	6.625	5.500			
FB-3000	3.000	2-1 Effective	10.625	7.125	6.000	2.000	NPT 3/8	SPEB-842CB
FB-3500	3.500	2-1 Effective	11.625	8.125	7.000			



Insert Info

SPEB-842CB

Grade	X33 X40
I.C.	1.000
T	.250
R	.031
Screw	1412T
Wrench	T-532

Speed and Feed Info.

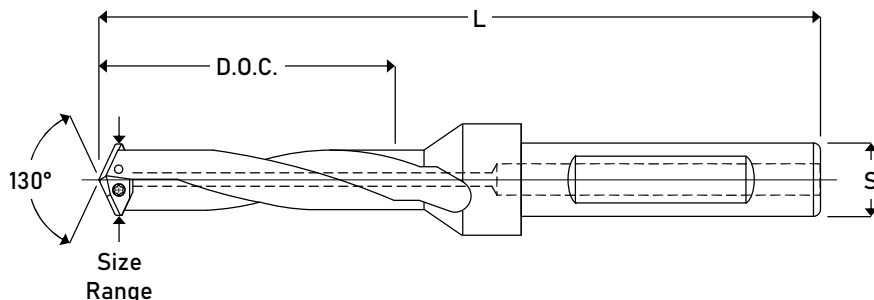
Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.003 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.003 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.002 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.004 - .008

Drill Sergeants

*Straight Flute Shown in Lathe Application

Patented (Patent # 5,259,707)
Coolant Thru w/Rear Coolant Ports
Available in 2:1, 4:1 & 6:1 Ratios
Available in Straight Flute* or Helical Flute
Special Sizes Available Upon Request



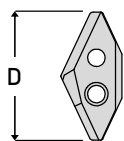


Standard Tap Sizes Highlighted in Red

<i>Helical Flute</i>							<i>Tool Info.</i>						
Tool #	Size Range	Standard Inserts			L	D.O.C.	Coolant Plug	S					
DS-39-45S	.396 - .450	DI-406 / DI-421 / DI-437			3.812	1.000	NPT 1/8						
DS-39-45L	.396 - .450	DI-406 / DI-421 / DI-437			4.812	2.000	N/A						
DS-45-51S	.451 - .510	DI-468 / DI-500			3.812	1.000	NPT 1/8						
DS-45-51L	.451 - .510	DI-468 / DI-500			4.812	2.000	N/A						

<i>Straight Flute</i>							<i>Tool Info.</i>						
Tool #	Size Range	Standard Inserts			L	D.O.C.	Coolant Plug	S					
DSL-39-45L	.396 - .450	DI-406 / DI-421 / DI-437			4.812	2.000	NPT 1/8						
DSL-45-51L	.451 - .510	DI-468 / DI-500											

Use Straight Flute For Lathe and High Pressure Coolant Applications over 500 P.S.I.

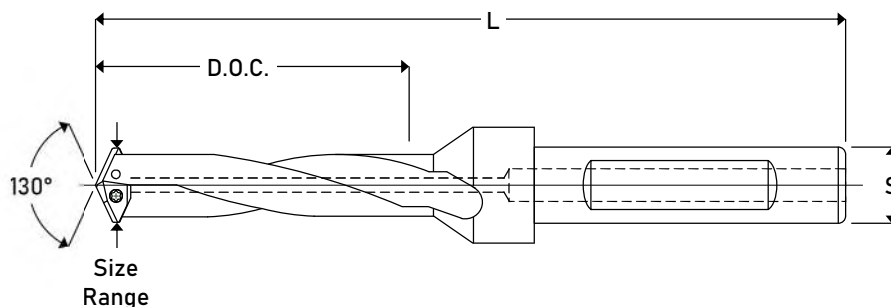


Diameter Tolerance
+/- .002

<i>Insert Info</i>				
Insert #	D	Screw	Wrench	Grade
DI-406	.4062			
DI-421	.4219			
DI-437	.4375	164T	T-6	X33
DI-468	.4688			
DI-500	.5000			

<i>Speed and Feed Info.</i>		
Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	700 - 900	.003 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 600	.003 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 500	.003 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	350 - 450	.003 - .005
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	350 - 550	.003 - .005
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 800	.004 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	100 - 200	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2000	.004 - .006

(Patent # 5,259,707)

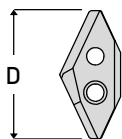


Standard Tap Sizes Highlighted in Red

Helical Flute		Tool Info.				
Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DS-51-57S	.511 - .570	DI-515 / DI-531 / DI-562	5.000	1.500	NPT 1/8	
DS-51-57L	.511 - .570	DI-515 / DI-531 / DI-562	6.500	3.000	N/A	
DS-57-63S	.571 - .630	DI-578 / DI-593 / DI-625	5.000	1.500	NPT 1/8	.750
DS-57-63L	.571 - .630	DI-578 / DI-593 / DI-625	6.500	3.000	N/A	
DS-63-69S	.631 - .695	DI-640 / DI-656 / DI-669 / DI-687	5.000	1.500	NPT 1/8	
DS-63-69L	.631 - .695	DI-640 / DI-656 / DI-669 / DI-687	6.500	3.000	N/A	

Straight Flute		Tool Info.				
Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DSL-51-57L	.511 - .570	DI-515 / DI-531 / DI-562				
DSL-57-63L	.571 - .630	DI-578 / DI-593 / DI-625	6.500	3.000	NPT 1/8	.750
DSL-63-69L	.631 - .695	DI-640 / DI-656 / DI-669 / DI-687				

Use Straight Flute For Lathe and High Pressure Coolant Applications over 500 P.S.I.



Diameter Tolerance
+/- .002

Insert Info

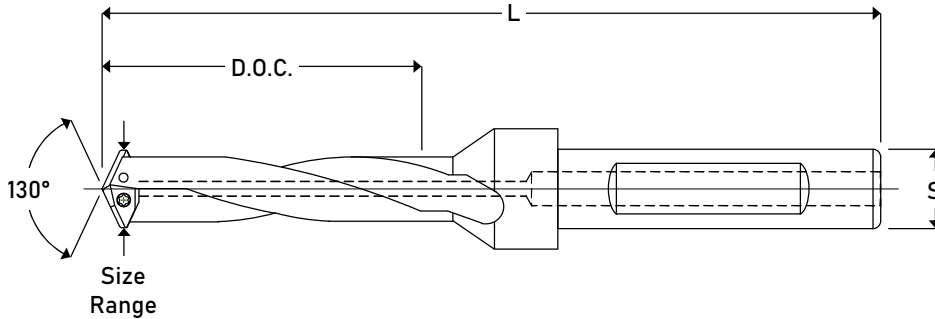
Insert #	D	Screw	Wrench	Grade
DI-515	.5156			
DI-531	.5312			
DI-562	.5625			
DI-578	.5781			
DI-593	.5938			
DI-625	.6250	314T	T-8	X33
DI-640	.6400			
DI-656	.6562			
DI-669	.6693			
DI-687	.6875			

Speed and Feed Info.

Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	700 - 900	.004 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 600	.004 - .006
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 500	.004 - .006
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	350 - 450	.004 - .006
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	350 - 550	.004 - .006
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 800	.005 - .008
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	100 - 200	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2000	.005 - .008

DS / DSL

Drill Sergeants



Helical Flute

Tool Info.

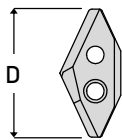
Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DS-69-76S	.696 - .760	DI-718 / DI-750	5.000	1.500	NPT 1/8	
DS-69-76L	.696 - .760	DI-718 / DI-750	6.500	3.000	N/A	.750
DS-69-76XL	.696 - .760	DI-718 / DI-750	8.000	4.500	N/A	

Straight Flute

Tool Info.

Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DSL-69-76L	.696 - .760	DI-718 / DI-750	6.500	3.000	NPT 1/8	.750
DSL-69-76XL	.696 - .760	DI-718 / DI-750	8.000	4.500		

Use Straight Flute For Lathe and High Pressure Coolant Applications over 500 P.S.I.



Diameter Tolerance
+/- .002

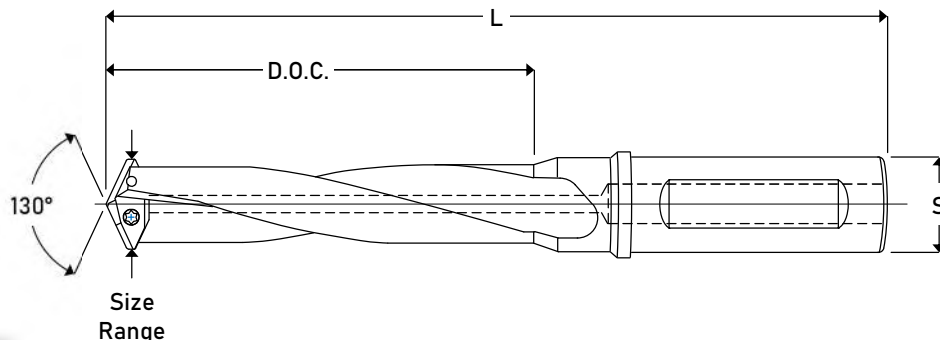
Insert Info

Insert #	D	Screw	Wrench	Grade
DI-718	.7188			
DI-750	.7500	314T	T-8	X33

Speed and Feed Info.

Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	700 - 900	.004 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 600	.004 - .006
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 500	.004 - .006
Tool Steel Ex. A-2, A-6, D-2, M-2	350 - 450	.004 - .006
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	350 - 550	.004 - .006
Iron Ex. Cast, Ductile, Nodular	600 - 800	.005 - .008
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	100 - 200	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2000	.005 - .008

(Patent # 5,259,707)



DS /
DSL

Drill Sergeants

Standard Tap Sizes Highlighted in Red

Helical Flute

Tool Info.

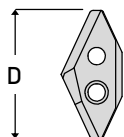
Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DS-76-84S	.761 - .840	DI-765 / DI-781 / DI-812	5.950	2.000	NPT 1/8	1.000
DS-76-84L	.761 - .840	DI-765 / DI-781 / DI-812	7.950	4.000	N/A	
DS-76-84XL	.761 - .840	DI-765 / DI-781 / DI-812	9.950	6.000	N/A	
DS-84-92S	.841 - .925	DI-843 / DI-875 / DI-906 / DI-921	5.950	2.000	NPT 1/8	
DS-84-92L	.841 - .925	DI-843 / DI-875 / DI-906 / DI-921	7.950	4.000	N/A	
DS-84-92XL	.841 - .925	DI-843 / DI-875 / DI-906 / DI-921	9.950	6.000	N/A	

Straight Flute

Tool Info.

Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DSL-76-84L	.761 - .840	DI-765 / DI-781 / DI-812	7.950	4.000	NPT 1/8	1.000
DSL-76-84XL	.761 - .840	DI-765 / DI-781 / DI-812	9.950	6.000		
DSL-84-92L	.841 - .925	DI-843 / DI-875 / DI-906 / DI-921	7.950	4.000		
DSL-84-92XL	.841 - .925	DI-843 / DI-875 / DI-906 / DI-921	9.950	6.000		

Use Straight Flute For Lathe and High Pressure Coolant Applications over 500 P.S.I.



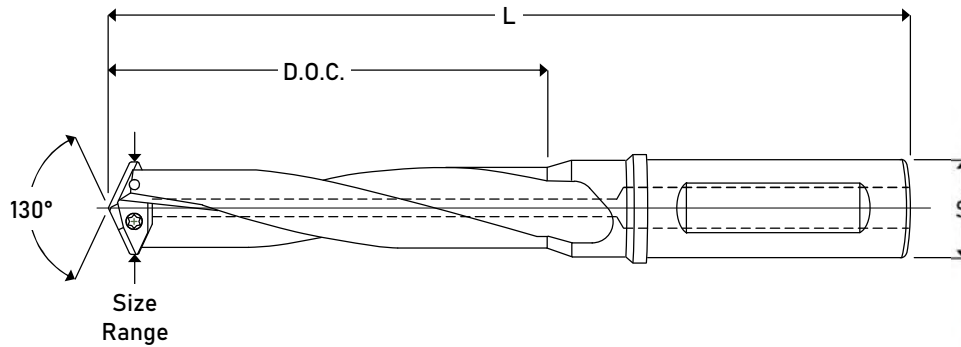
Diameter Tolerance
+/- .002

Insert Info

Insert #	D	Screw	Wrench	Grade
DI-765	.7656			
DI-781	.7812			
DI-812	.8125			
DI-843	.8438	560T	T-10	X33
DI-875	.8750			
DI-906	.9062			
DI-921	.9219			

Speed and Feed Info.

Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	700 - 900	.005 - .008
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 600	.005 - .008
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 500	.005 - .008
Tool Steel Ex. A-2, A-6, D-2, M-2	350 - 450	.005 - .008
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	350 - 550	.005 - .008
Iron Ex. Cast, Ductile, Nodular	600 - 800	.006 - .012
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, TI-6AL-4V	100 - 200	.002 - .004
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2000	.006 - .012

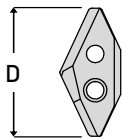


Standard Tap Sizes Highlighted in Red

<i>Helical Flute</i>		<i>Tool Info.</i>				
Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DS-92-101S	.926 - 1.010	DI-937 / DI-968 / DI-984 / DI-1000	5.950	2.000	NPT 1/8	
DS-92-101L	.926 - 1.010	DI-937 / DI-968 / DI-984 / DI-1000	7.950	4.000	N/A	1.000
DS-92-101XL	.926 - 1.010	DI-937 / DI-968 / DI-984 / DI-1000	9.950	6.000	N/A	

<i>Straight Flute</i>		<i>Tool Info.</i>				
Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DSL-92-101L	.926 - 1.010	DI-937 / DI-968 / DI-984 / DI-1000	7.950	4.000	NPT 1/8	1.000
DSL-92-101XL	.926 - 1.010	DI-937 / DI-968 / DI-984 / DI-1000	9.950	6.000		

Use Straight Flute For Lathe and High Pressure Coolant Applications over 500 P.S.I.



Diameter Tolerance
+/- .002

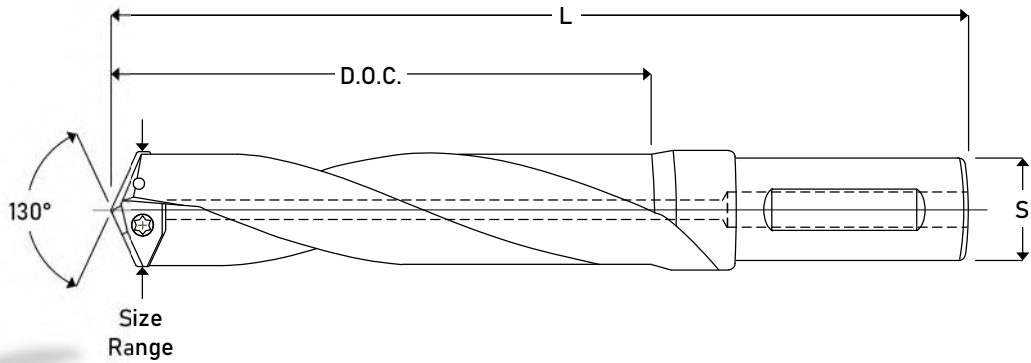
Insert Info

Insert #	D	Screw	Wrench	Grade
DI-937	.9375			
DI-968	.9688	560T	T-10	X33
DI-984	.9840			
DI-1000	1.000			

Speed and Feed Info.

Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	700 - 900	.005 - .008
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 600	.005 - .008
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 500	.005 - .008
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	350 - 450	.005 - .008
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	350 - 550	.005 - .008
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 800	.006 - .012
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	100 - 200	.002 - .004
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2000	.006 - .012

(Patent # 5,259,707)

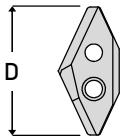


Standard Tap Sizes Highlighted in Red

Helical Flute		Tool Info.				
Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DS-101-113S	1.011 - 1.135	DI-1031 / DI-1062 / DI-1093 / DI-1125	6.500	2.500	NPT 1/4	1.000
DS-101-113L	1.011 - 1.135	DI-1031 / DI-1062 / DI-1093 / DI-1125	9.000	5.000	N/A	
DS-101-113XL	1.011 - 1.135	DI-1031 / DI-1062 / DI-1093 / DI-1125	11.500	7.500	N/A	
DS-113-126S	1.136 - 1.260	DI-1156 / DI-1187 / DI-1218 / DI-1250	6.500	2.500	NPT 1/4	
DS-113-126L	1.136 - 1.260	DI-1156 / DI-1187 / DI-1218 / DI-1250	9.000	5.000	N/A	
DS-113-126XL	1.136 - 1.260	DI-1156 / DI-1187 / DI-1218 / DI-1250	11.500	7.500	N/A	

Straight Flute		Tool Info.				
Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DSL-101-113L	1.011 - 1.135	DI-1031 / DI-1062 / DI-1093 / DI-1125	9.000	5.000	NPT 1/4	1.000
DSL-101-113XL	1.011 - 1.135	DI-1031 / DI-1062 / DI-1093 / DI-1125	11.500	7.500		
DSL-113-126L	1.136 - 1.260	DI-1156 / DI-1187 / DI-1218 / DI-1250	9.000	5.000		
DSL-113-126XL	1.136 - 1.260	DI-1156 / DI-1187 / DI-1218 / DI-1250	11.500	7.500		

Use Straight Flute For Lathe and High Pressure Coolant Applications over 500 P.S.I.



Diameter Tolerance
+/- .002

Insert Info

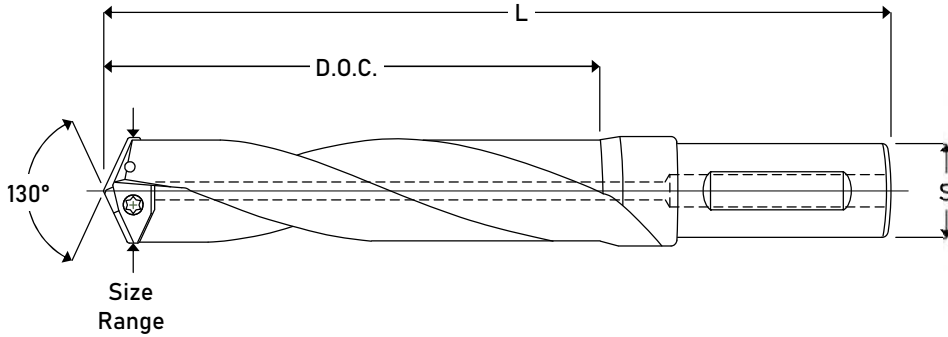
Insert #	D	Screw	Wrench	Grade
DI-1031	1.0312	638T	T-15	X33
DI-1062	1.0625			
DI-1093	1.0938			
DI-1125	1.1250			
DI-1156	1.1562			
DI-1187	1.1875			
DI-1218	1.2188			
DI-1250	1.2500			

Speed and Feed Info.

Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	700 - 900	.006 - .010
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 600	.006 - .010
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 500	.006 - .010
Tool Steel Ex. A-2, A-6, D-2, M-2	350 - 450	.006 - .010
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	350 - 550	.005 - .008
Iron Ex. Cast, Ductile, Nodular	600 - 800	.008 - .014
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	100 - 200	.003 - .005
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2000	.008 - .014

DS /
DSL

Drill Sergeants



Standard Tap Sizes Highlighted in Red

Helical Flute

Tool Info.

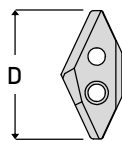
Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DS-126-138S	1.261 - 1.385	DI-1281 / DI-1312 / DI-1343 / DI-1375	7.250	3.000	NPT 1/4	1.250
DS-126-138L	1.261 - 1.385	DI-1281 / DI-1312 / DI-1343 / DI-1375	10.250	6.000	N/A	
DS-126-138XL	1.261 - 1.385	DI-1281 / DI-1312 / DI-1343 / DI-1375	13.250	9.000	N/A	
DS-138-151S	1.386 - 1.510	DI-1406 / DI-1437 / DI-1468 / DI-1500	7.250	3.000	NPT 1/4	
DS-138-151L	1.386 - 1.510	DI-1406 / DI-1437 / DI-1468 / DI-1500	10.250	6.000	N/A	
DS-138-151XL	1.386 - 1.510	DI-1406 / DI-1437 / DI-1468 / DI-1500	13.250	9.000	N/A	

Straight Flute

Tool Info.

Tool #	Size Range	Standard Inserts	L	D.O.C.	Coolant Plug	S
DSL-126-138L	1.261 - 1.385	DI-1281 / DI-1312 / DI-1343 / DI-1375	10.250	6.000	NPT 1/4	1.250
DSL-126-138XL	1.261 - 1.385	DI-1281 / DI-1312 / DI-1343 / DI-1375	13.250	9.000		
DSL-138-151L	1.386 - 1.510	DI-1406 / DI-1437 / DI-1468 / DI-1500	10.250	6.000		
DSL-138-151XL	1.386 - 1.510	DI-1406 / DI-1437 / DI-1468 / DI-1500	13.250	9.000		

Use Straight Flute For Lathe and High Pressure Coolant Applications over 500 P.S.I.



Diameter Tolerance
+/- .002

Insert Info

Insert #	D	Screw	Wrench	Grade
DI-1281	1.2812	638T	T-15	X33
DI-1312	1.3125			
DI-1343	1.3438			
DI-1375	1.3750			
DI-1406	1.4062			
DI-1437	1.4375			
DI-1468	1.4688			
DI-1500	1.5000			

Speed and Feed Info.

Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	700 - 900	.006 - .010
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 600	.006 - .010
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 500	.006 - .010
Tool Steel Ex. A-2, A-6, D-2, M-2	350 - 450	.006 - .010
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	350 - 550	.005 - .008
Iron Ex. Cast, Ductile, Nodular	600 - 800	.008 - .014
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	100 - 200	.003 - .005
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2000	.008 - .014

Drill Mills

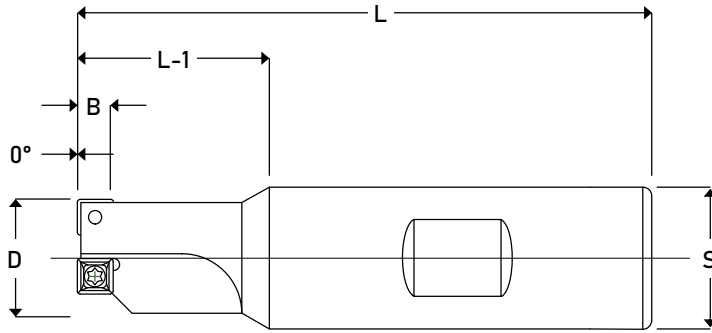


Drills from Solid
Cuts a Flat Bottom Within .001
Boring Capabilities - Modifications Available
Chipbreaker Inserts for Drilling
Positive Top Inserts for Milling



1 Effective Center Cutting Endmills

DM
Drill Mills

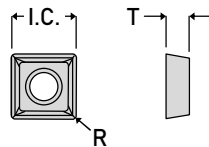


* Single Insert Tool Design

Tool Info.

Tool #	D	Inserts	L	L-1	B	S	Positive Top Inserts	Chipbreaker Inserts	Screw	Wrench
DM-375*	.375	1	2.500	.625	.170	.500	N/A	SDEB-1511CB	164T	T-6
DM-500*	.500	1	2.625	.625	.235	.500	SDEB-2151P	SDEB-2151CB	300T	T-8
DM-502	.500	2	2.625	.875	.170	.500	N/A	SPEB-1511CB	164T	T-6
DM-531	.531	2	2.625	.875	.170	.500	N/A	SPEB-1511CB	164T	T-6
DM-562	.562	2	3.000	1.000	.170	.750	N/A	SPEB-1511CB	164T	T-6
DM-593	.593	2	3.000	1.000	.170	.750	N/A	SPEB-1511CB	164T	T-6
DM-625*	.625	1	3.000	1.000	.280	.750	SDEB-2522P	SDEB-2522CB	300T	T-8
DM-6252	.625	2	3.000	1.000	.170	.750	N/A	SPEB-1511CB	164T	T-6
DM-656	.656	2	3.000	.940	.170	.750	N/A	SPEB-1511CB	164T	T-6

Chipbreaker Inserts



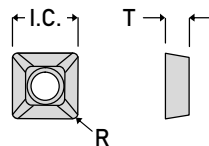
IMPORTANT

Use Chipbreaker Inserts for Drilling & C-Boring.
Use Positive Top Inserts for Ramping or Pocket Milling.

Insert Info.

Insert #	I.C.	T	R	Grades
SDEB-1511CB	.187	.082	.015	X33 X40
SPEB-1511CB	.187	.082	.015	X33 X40
SDEB-2151CB	.250	.093	.015	X33 X40
SDEB-2522CB	.312	.125	.031	X33 X40

Positive Top Inserts



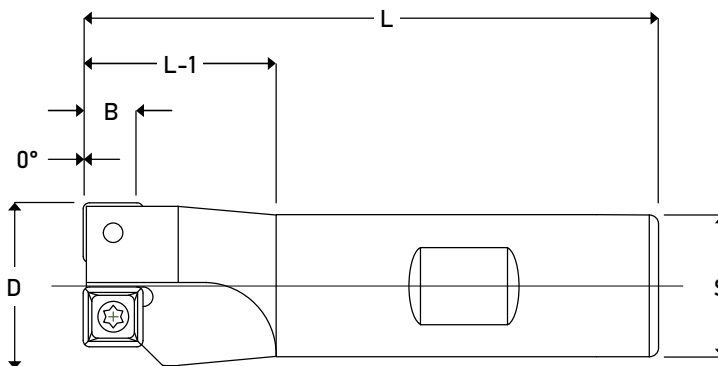
Speed and Feed Info.

Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.001 - .003	.002 - .003
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.001 - .003	.002 - .003
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.001 - .003	.002 - .003
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.001 - .003	.002 - .003
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.001 - .003	.002 - .003
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.002 - .003	.002 - .003
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .0015	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.002 - .003	.002 - .003

Insert Info.

Insert #	I.C.	T	R	Grade
SDEB-2151P	.250	.093	.015	X33
SDEB-2522P	.312	.125	.031	X33

1 Effective Center Cutting Endmills



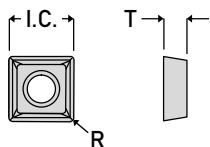
DM
Drill Mills

* Single Insert Tool Design

Tool Info.

Tool #	D	Inserts	L	L-1	B	S	Positive Top Insert	Chipbreaker Insert	Screw	Wrench
DM-687	.687	2	3.000	.970	.235	.750	SPEB-221P	SPEB-221CB	314T	T-8
DM-718	.718	2	3.000	1.000	.235	.750	SPEB-221P	SPEB-221CB	314T	T-8
DM-750*	.750	1	3.000	1.000	.340	.750	SPEB-322P	SPEB-322CB	414T	T-10
XDM-750*	.750	1	4.250	1.500	.340	.750	SPEB-322P	SPEB-322CB	414T	T-10
DM-752	.750	2	3.000	1.000	.235	.750	SPEB-221P	SPEB-221CB	314T	T-8
XDM-752	.750	2	4.250	1.500	.235	.750	SPEB-221P	SPEB-221CB	314T	T-8
DM-781	.781	2	3.000	1.000	.235	.750	SPEB-221P	SPEB-221CB	314T	T-8
DM-812	.812	2	3.000	1.000	.280	.750	SPEB-2522P	SPEB-2522CB	314T	T-8
DM-875	.875	2	3.000	1.000	.280	.750	SPEB-2522P	SPEB-2522CB	314T	T-8
DM-937	.937	2	3.250	1.250	.280	.750	SPEB-2522P	SPEB-2522CB	314T	T-8

Chipbreaker Inserts



IMPORTANT

Use Chipbreaker Inserts for Drilling & C-Boring.
Use Positive Top Inserts for Ramping or Pocket Milling.

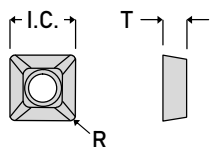
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-221CB	.250	.125	.015	X33 X40
SPEB-2522CB	.312	.125	.031	X33 X40
SPEB-322CB	.375	.125	.031	X33 X40

Speed and Feed Info.

Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .004	.002 - .004
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .003	.002 - .004
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .003	.002 - .004
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.001 - .003	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.001 - .003	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.002 - .005	.002 - .005
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .002	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .006	.002 - .004

Positive Top Inserts

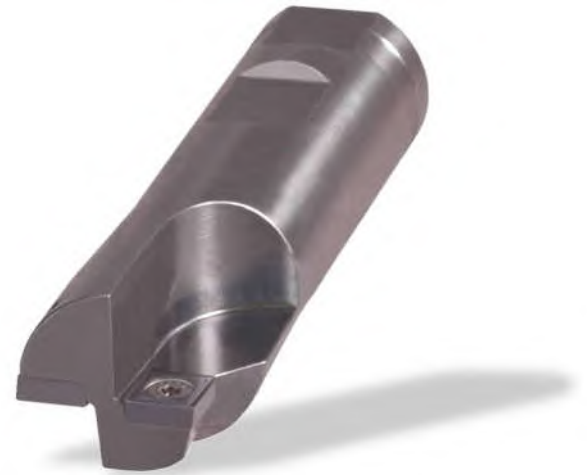
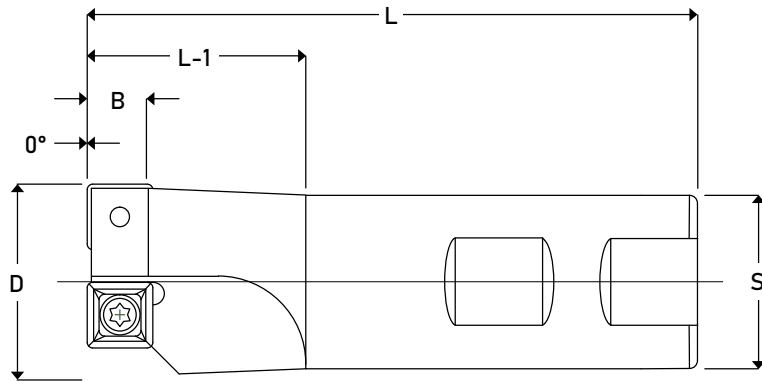


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-221P	.250	.125	.015	X33
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40
SPEB-322P	.375	.125	.031	B1M C55 X33 X40

1 Effective Center Cutting Endmills

DM
Drill Mills



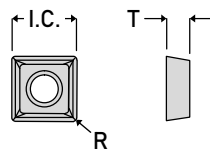
Tool Info.

Tool #	D	Inserts	L	L-1	B	S	Positive Top Insert	Chipbreaker Insert	Screw	Wrench
DM-1000	1.000	2	3.250	1.250	.340	.750	SPEB-322P	SPEB-322CB	414T	T-10
XDM-1000	1.000	2	5.250	2.000	.340	1.000	SPEB-322P	SPEB-322CB	414T	T-10
DM-1125	1.125	2	3.500	1.250	.340	1.000	SPEB-322P	SPEB-322CB	438T	T-10
DM-1250	1.250	2	3.625	1.375	.340	1.000	SPEB-322P	SPEB-322CB	438T	T-10
XDM-1250	1.250	2	5.250	1.375	.340	1.000	SPEB-322P	SPEB-322CB	438T	T-10

IMPORTANT

Use Chipbreaker Inserts for Drilling & C-Boring.
Use Positive Top Inserts for Ramping or Pocket Milling.

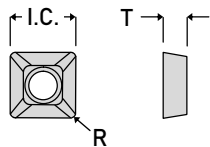
Chipbreaker Insert



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-322CB	.375	.125	.031	X33 X40

Positive Top Insert



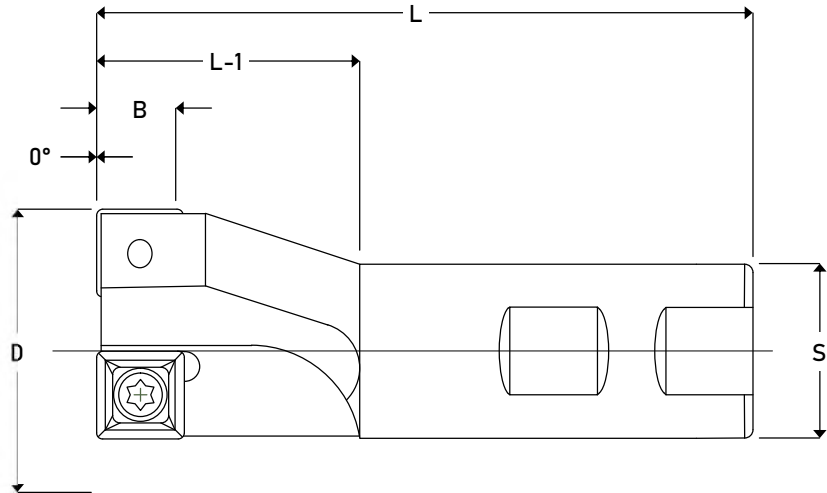
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-322P	.375	.125	.031	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .004	.002 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .004	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .004	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .003	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .004	.002 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .004	.003 - .006

1 Effective Center Cutting Endmills

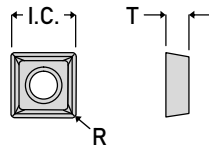


DM
Drill Mills

Tool Info.

Tool #	D	Inserts	L	L-1	B	S	Positive Top Insert	Chipbreaker Insert	Screw	Wrench
DM-1375	1.375	2	3.625	1.375	.465	1.000				
DM-1500	1.500	2	3.625	1.375	.465	1.000				
XDM-1500	1.500	2	5.250	1.375	.465	1.000	SPEB-432PA	SPEB-432CB	638T	T-15
DM-1625	1.625	2	3.750	1.500	.465	1.000				
DM-1750	1.750	2	3.750	1.500	.465	1.000				
DM-1875	1.875	2	3.875	1.625	.585	1.000	SPEB-532PA	SPEB-532CB	838T	T-20

Chipbreaker Insert



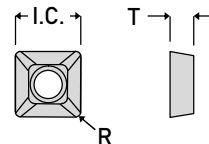
IMPORTANT

Use Chipbreaker Inserts for Drilling & C-Boring.
Use Positive Top Inserts for Ramping or Pocket Milling.

Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-432CB	.500	.187	.031	X33 X40
SPEB-532CB	.625	.187	.031	X33 X40

Positive Top Insert



Insert Info.

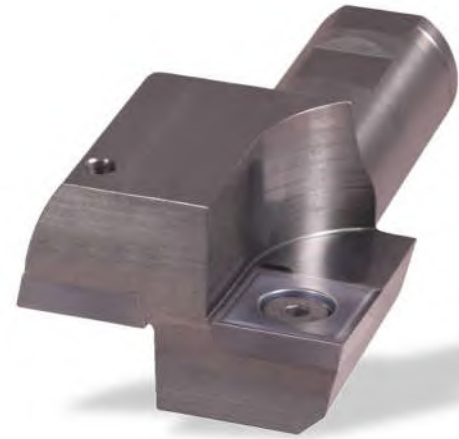
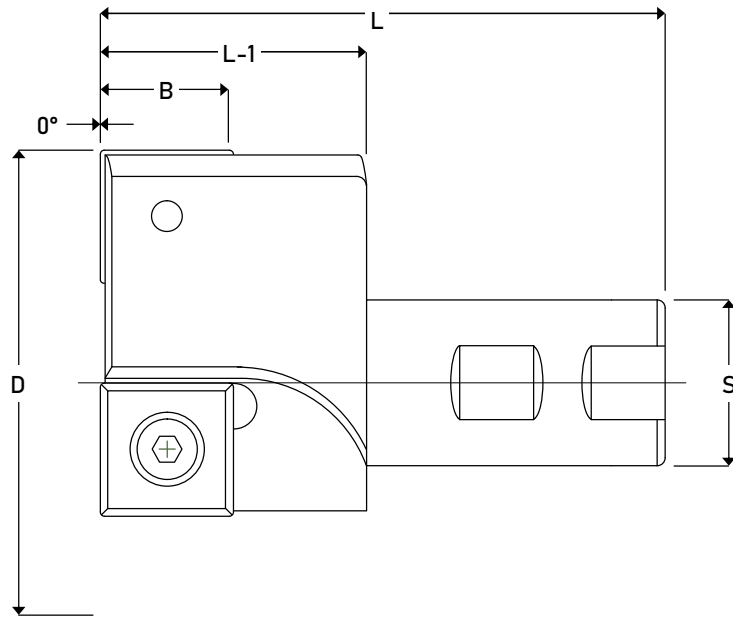
Insert #	I.C.	T	R	Grades
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40
SPEB-532PA	.625	.187	.031	C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .005	.002 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.003 - .005	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.003 - .005	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006	.002 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.002 - .003	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.004 - .008	.003 - .006

1 Effective Center Cutting Endmills

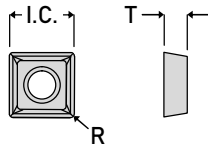
DM
Drill Mills



Tool Info.

Tool #	D	Inserts	L	L-1	B	S	Positive Top Insert	Chipbreaker Insert	Screw	Wrench
DM-2001	2.000	2	4.000	1.750	.710	1.000	SPEB-6352PA	SPEB-6352CB	1012T	T-25
XDM-2000	2.000	2	5.500	1.500	.710	1.250	SPEB-6352PA	SPEB-6352CB	1012T	T-25
DM-2125	2.125	2	4.000	1.750	.710	1.000	SPEB-6352PA	SPEB-6352CB	1012T	T-25
DM-2250	2.250	2	4.000	1.750	.710	1.000	SPEB-6352PA	SPEB-6352CB	1012T	T-25
DM-2500	2.500	2	4.000	1.750	.710	1.000	SPEB-6352PA	SPEB-6352CB	1012T	T-25
DM-3000	3.000	2	4.250	2.000	.960	1.250	SPEB-842PA	SPEB-842CB	1412T	T-532
DM-3250	3.250	2	4.250	2.000	.960	1.250	SPEB-842PA	SPEB-842CB	1412T	T-532
DM-3500	3.500	2	4.250	2.000	.960	1.250	SPEB-842PA	SPEB-842CB	1412T	T-532

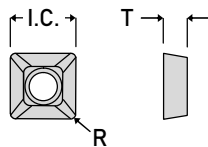
Chipbreaker Inserts



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-6352CB	.750	.220	.031	X33 X40
SPEB-842CB	1.000	.250	.031	X33 X40

Positive Top Inserts



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-6352PA	.750	.220	.031	C55 X33 X40
SPEB-842PA	1.000	.250	.031	X33

IMPORTANT

Use Chipbreaker Inserts for Drilling & C-Boring.
Use Positive Top Inserts for Ramping or Pocket Milling.

Speed and Feed Info.

Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .005	.002 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.003 - .005	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.003 - .005	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006	.002 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.002 - .003	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.004 - .008	.003 - .006

Drill Mill Twins

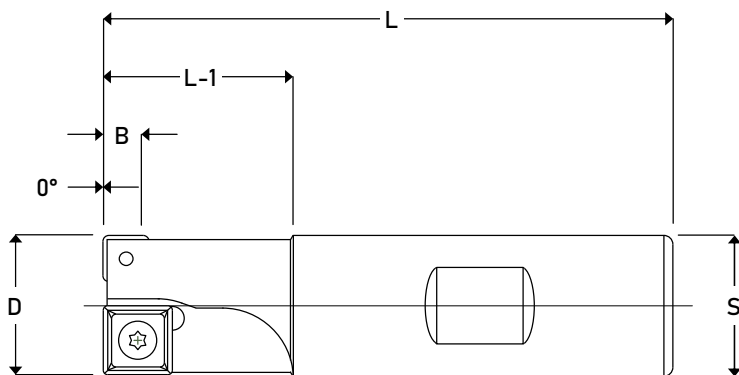


Drills from Solid
Cuts a Flat Bottom Within .001
2 Effective When Milling & Counterboring
Modifications Available
Chipbreaker Inserts for Drilling
Positive Top Inserts for Milling



2 Effective Center Cutting Endmills

DMT
Drill Mill Twins



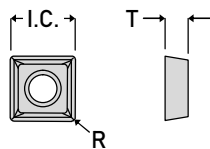
Tool Info.

Tool #	D	L	L-1	B	S	Inserts	Screw	Wrench
DMT-500	.500	2.625	.625	.170	.500	(1) SDEB-1511CB (1) SDEB-2151CB	164T 300T	T-6 T-8
XDMT-500	.500	3.500	1.000	.170	.500	(1) SDEB-1511CB (1) SDEB-2151CB	164T 300T	T-6 T-8

Speed and Feed Info.

Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.0015 - .003	.004 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.0015 - .002	.004 - .006
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.0015 - .002	.004 - .006
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.0015 - .002	.004 - .006
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.0015 - .002	.004 - .006
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.0015 - .004	.004 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.0015 - .002	.002 - .004
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.0015 - .004	.004 - .007

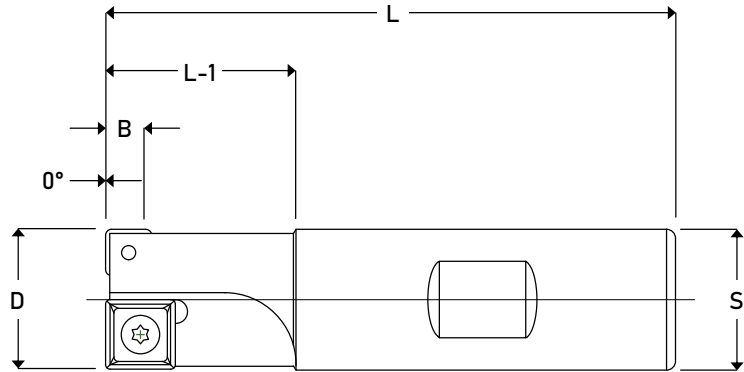
Chipbreaker Inserts



Insert Info.

Insert #	I.C.	T	R	Grades
SDEB-1511CB	.187	.082	.015	X33 X40
SDEB-2151CB	.250	.093	.015	X33 X40

2 Effective Center Cutting Endmills



DMT

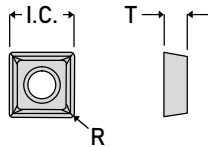
Drill Mill Twins

Tool Info.

Tool #	D	L	L-1	B	S	(Milling) Inserts	(Drilling)	Screw	Wrench
DMT-625	.625	3.000	1.000	.215	.750	(1) SDEB-2522P & (1) SPEB-222P	or (1) SDEB-2522CB & (1) SPEB-222CB	300T	T-8
XDMT-625	.625	4.000	1.250	.215	.750	(1) SPEB-222P	or (1) SPEB-222CB	300T	T-8
DMT-750	.750	3.000	1.000	.215	.750	(1) SPEB-322P & (1) SPEB-222P	or (1) SPEB-322CB & (1) SPEB-222CB	414T	T-10
XDMT-750	.750	4.250	1.500	.215	.750	(1) SPEB-222P	or (1) SPEB-222CB	314T	T-8

Chipbreaker Inserts

(Drilling or C-Boring)



IMPORTANT

When ordering inserts
Order all **Positive Top** Inserts When Ramping or Pocket Milling
Order all **Chipbreaker** Inserts When Drilling or C-Boring

Insert Info.

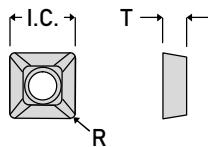
Insert #	I.C.	T	R	Grades
SPEB-222CB	.250	.125	.031	X33 X40
SDEB-2522CB	.312	.125	.031	X33 X40
SPEB-322CB	.375	.125	.031	X33 X40

Speed and Feed Info.

Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.003 - .005	.004 - .008
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.003 - .005	.004 - .008
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.003 - .005	.004 - .008
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.003 - .005	.004 - .008
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.003 - .005	.004 - .008
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .005	.004 - .010
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.002 - .004	.002 - .004
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .005	.004 - .010

Positive Top Inserts

(Milling)

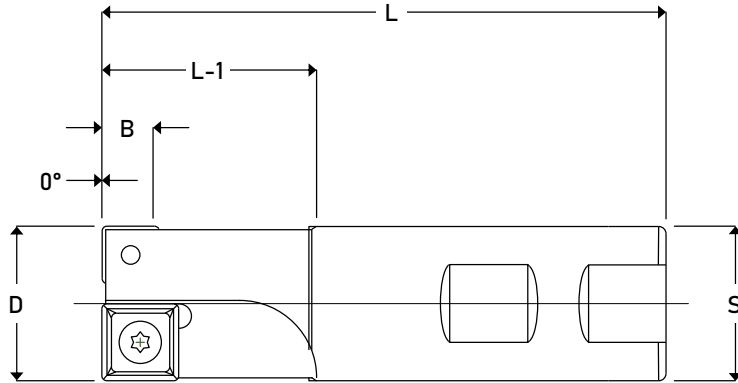


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-222P	.250	.125	.031	C55 X33 X40
SDEB-2522P	.312	.125	.031	X33
SPEB-322P	.375	.125	.031	C55 X33 X40

2 Effective Center Cutting Endmills

DMT Drill Mill Twins

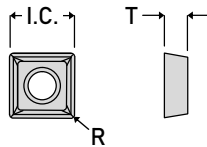


Tool Info.

Tool #	D	L	L-1	B	S	(Milling)	Inserts	(Drilling)	Screw	Wrench
DMT-875	.875	3.625	1.375	.280	1.000	(1) SPEB-3522PA & (1) SPEB-2522P	or	N/A & (1) SPEB-2522CB	614T 314T	T-15 T-8
DMT-100	1.000	3.625	1.375	.340	1.000	(1) SPEB-422PA & (1) SPEB-322P	or	(1) SPEB-422CB & (1) SPEB-322CB	638T 414T	T-15 T-10

Chipbreaker Inserts

(Drilling or C-Boring)



IMPORTANT

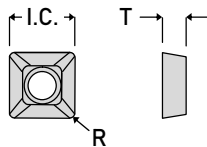
When ordering inserts
Order all **Positive Top** Inserts When Ramping or Pocket Milling
Order all **Chipbreaker** Inserts When Drilling or C-Boring

Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-2522CB	.312	.125	.031	X33 X40
SPEB-322CB	.375	.125	.031	X33 X40
SPEB-422CB	.500	.125	.031	X33 X40

Positive Top Inserts

(Milling)



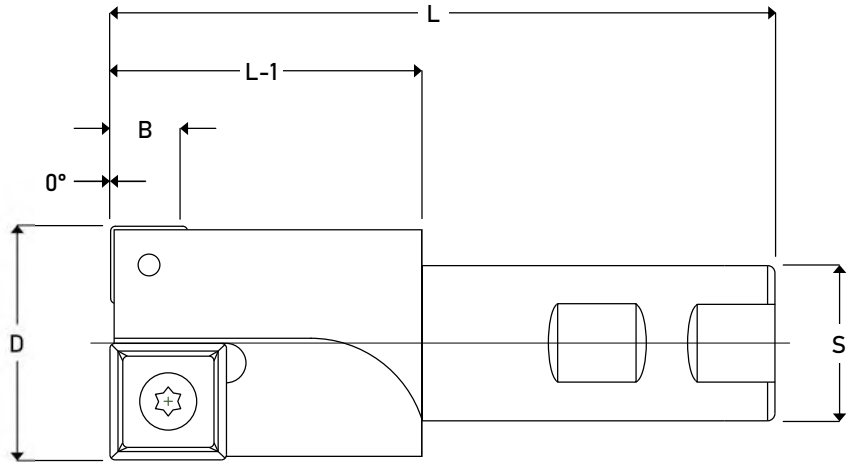
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-2522P	.312	.125	.031	X33
SPEB-322P	.375	.125	.031	X33
SPEB-3522PA	.437	.125	.031	X33
SPEB-422PA	.500	.125	.031	X33

Speed and Feed Info.

Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.003 - .005	.004 - .008
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.003 - .005	.004 - .008
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.003 - .005	.004 - .008
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.003 - .005	.004 - .008
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.003 - .005	.004 - .008
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .005	.004 - .010
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.002 - .004	.002 - .004
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .005	.004 - .010

2 Effective Center Cutting Endmills



DMT

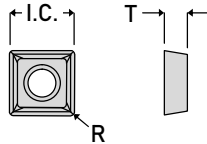
Drill Mill Twins

Tool Info.

Tool #	D	L	L-1	B	S	(Milling) Inserts	(Drilling)	Screw	Wrench
DMT-1250	1.250	4.000	1.750	.465	1.000	(1) SPEB-432PA & (1) SPEB-532PA	or (1) SPEB-432CB & (1) SPEB-532CB	638T	T-15
XDMT-1250	1.250	5.000	2.750	.465	1.250	(1) SPEB-432PA & (1) SPEB-6352PA	or (1) SPEB-432CB & (1) SPEB-6352CB	838T	T-20
DMT-1500	1.500	4.250	2.000	.465	1.000	(1) SPEB-432PA & (1) SPEB-6352PA	or (1) SPEB-432CB & (1) SPEB-6352CB	638T	T-15
XDMT-1500	1.500	5.250	3.000	.465	1.250	(1) SPEB-432PA & (1) SPEB-6352PA	or (1) SPEB-432CB & (1) SPEB-6352CB	1012T	T-25
DMT-2000	2.000	4.750	2.500	.715	1.250	(1) SPEB-6352PA & (1) SPEB-842PA	or (1) SPEB-6352CB & (1) SPEB-842CB	1012T	T-25
XDMT-2000	2.000	6.250	4.000	.715	1.250	(1) SPEB-6352PA & (1) SPEB-842PA	or (1) SPEB-6352CB & (1) SPEB-842CB	1412T	T-532

Chipbreaker Inserts

(Drilling or C-Boring)



IMPORTANT

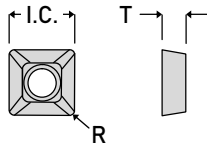
When ordering inserts
 Order all **Positive Top** Inserts When Ramping or Pocket Milling
 Order all **Chipbreaker** Inserts When Drilling or C-Boring

Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-432CB	.500	.187	.031	X33 X40
SPEB-532CB	.625	.187	.031	X33 X40
SPEB-6352CB	.750	.220	.031	X33 X40
SPEB-842CB	1.000	.250	.031	X33 X40

Positive Top Inserts

(Milling)



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-432PA	.500	.187	.031	C55 X33 X40
SPEB-532PA	.625	.187	.031	C55 X33 X40
SPEB-6352PA	.750	.220	.031	C55 X33 X40
SPEB-842PA	1.000	.250	.031	X33

Speed and Feed Info.

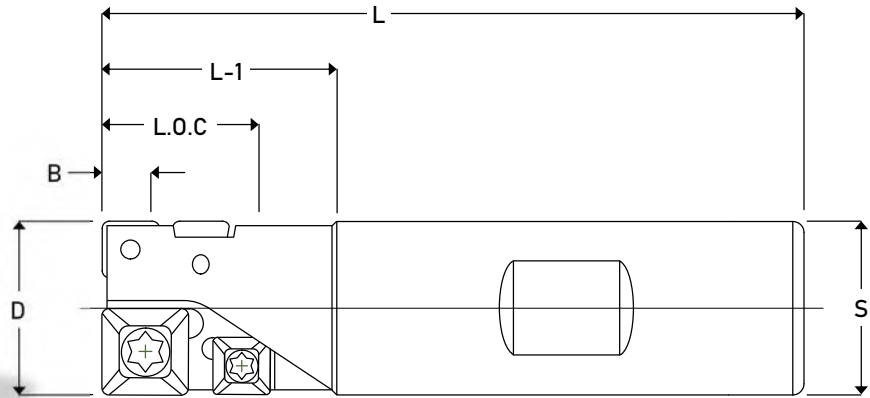
Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.003 - .005	.004 - .008
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.003 - .005	.004 - .008
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.003 - .005	.004 - .008
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.003 - .005	.004 - .008
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.003 - .005	.004 - .008
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .005	.004 - .010
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.002 - .004	.002 - .004
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .005	.004 - .010

Drill Mill Twin Long Edge



Cuts A Flat Bottom Within .001
Drill From Solid
2 Effective When Milling or C-Boring
Longer L.O.C. Than Drill Mill Twin



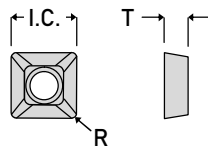


Important : DMTL's are to be run as 1 flute effective at depths more than B dimension.

Tool Info.

Tool #	D	L	L-1	B	L.O.C	S	Inserts	Screw Wrench	Center Insert	Screw Wrench
DMTL-750	.750	3.000	1.000	.215	.700	.750	(3) SPEB-222P	314T T-8	(1) SPEB-322P	414T T-10
DMTL-100	1.000	3.750	1.500	.280	.900	1.000	(3) SPEB-2522P	314T T-8	(1) SPEB-422PA	638T T-15
DMTL-1500	1.500	4.500	2.250	.465	1.500	1.250	(3) SPEB-432PA	638T T-15	(1) SPEB-6352PA	1012T T-25
DMTL-2000	2.000	5.687	3.000	.715	2.125	1.500	(3) SPEB-6352PA	1012T T-25	(1) SPEB-842PA	1412T T-532

Positive Top Inserts



Insert Info.

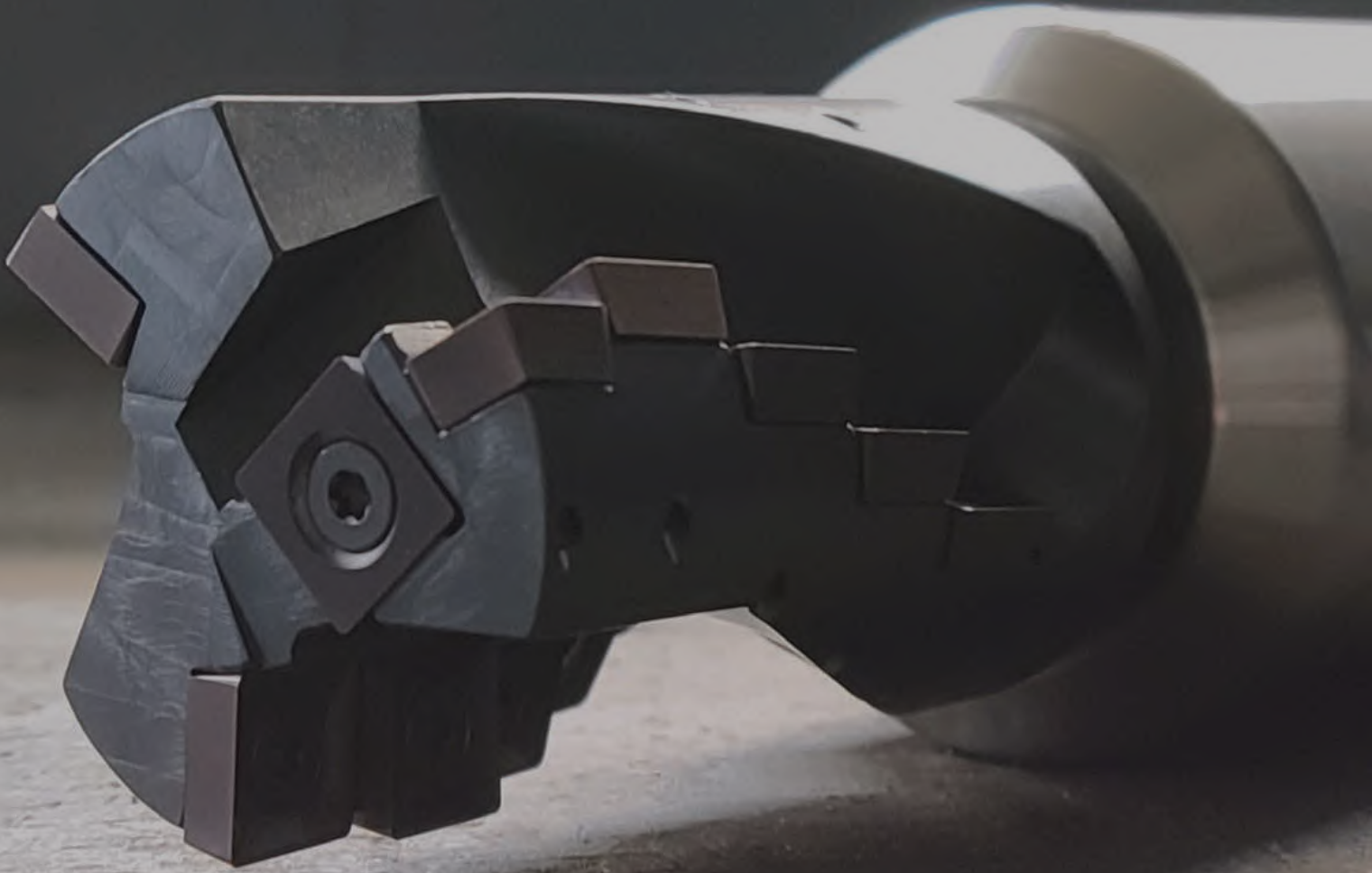
Insert #	I.C.	T	R	Grades
SPEB-222P	.250	.125	.031	B1M C55 X33 X40
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-422PA	.500	.125	.031	X33
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40
SPEB-6352PA	.750	.220	.031	C55 X33 X40
SPEB-842PA	1.000	.250	.031	X33

Speed and Feed Info.

Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	400 - 800	.002 - .004	.002 - .005
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	300 - 500	.002 - .003	.002 - .004
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	300 - 500	.002 - .003	.002 - .004
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 500	.001 - .003	.001 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 500	.001 - .003	.001 - .003
Iron Ex. Cast, Ductile, Nodular	400 - 800	.002 - .005	.002 - .006
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, TI-6AL-4V	100 - 200	.001 - .002	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	800 - 1200	.003 - .006	.003 - .008

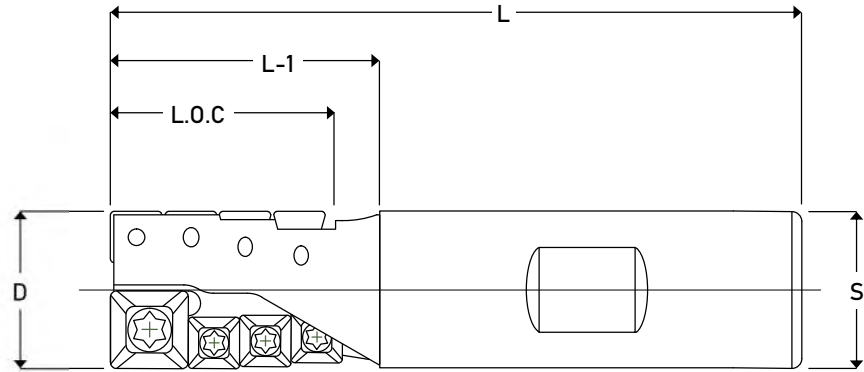
DMTL Drill Mill Twin Long Edge

FEC-Mills



Full Effective & Center Cutting
Great for Aluminum & Soft Materials





**FEC
FEC-Mills**

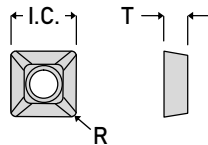
Tool Info.

Tool #	D	Flutes	L	L-1	LOC	S	Insert	Screw Wrench	Center Insert	Screw Wrench
FEC-750	.750	2	3.625	1.375	1.100	.750	(7)SPEB-222P	314T T-8	(1)SPEB-322P	414T T-10
FEC-100	1.000	2	4.250	2.000	1.500	1.000	(8)SPEB-2522P	314T T-8	(1)SPEB-422PA	638T T-15

Speed and Feed Info.

Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	400 - 800	.002 - .004	.002 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	300 - 500	.002 - .003	.002 - .004
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	300 - 500	.002 - .003	.002 - .004
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 500	.001 - .003	.001 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 500	.001 - .003	.001 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	400 - 800	.002 - .005	.002 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	100 - 200	.001 - .002	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	800 - 1200	.003 - .006	.003 - .008

Positive Top Inserts

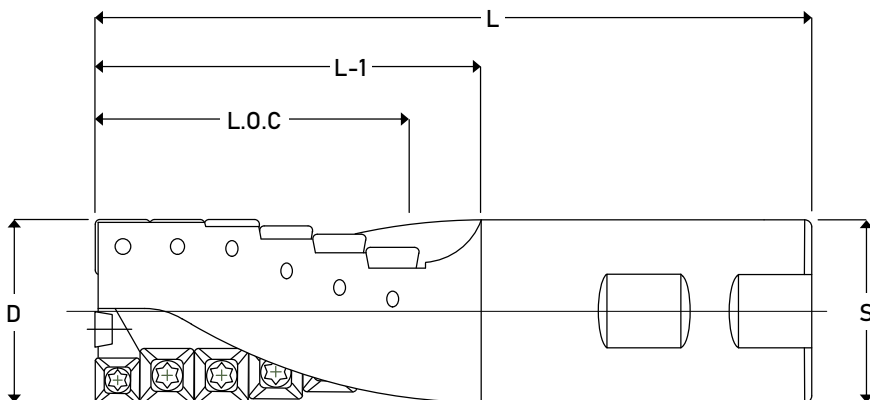


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-222P	.250	.125	.031	B1M C55 X33 X40
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-422PA	.500	.125	.031	X33

Full Effective Center Cutting

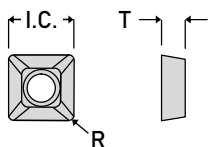
FEC
FEC-Mills



Tool Info.

Tool #	D	Flutes	L	L-1	L.O.C	S	Inserts	Screw Wrench	Center Insert	Screw Wrench
FEC-125	1.250	2	5.125	2.625	2.200	1.250	(1)SPEB-2522P	314T	(1)SPEB-222F	314T
							(11)SPEB-332P	T-8 538T T-10		T-8
FEC-150	1.500	3	5.125	2.625	2.200	1.250	(1)SPEB-2522P	314T	(1)SPEB-322F	438T
							(17)SPEB-332P	T-8 538T T-10		T-10

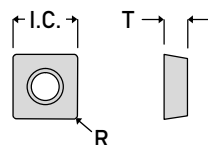
Positive Top Inserts



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40
SPEB-332P	.375	.187	.031	B1M C55 X33 X40

Flat Top Inserts



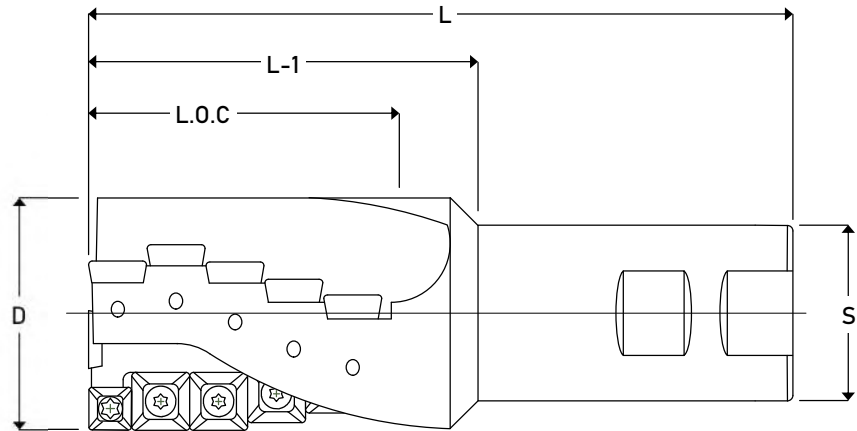
Insert Info.

Insert #	I.C.	T	R	Grade
SPEB-222F	.250	.125	.031	X33
SPEB-322F	.375	.125	.031	X33

Speed and Feed Info.

Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	400 - 800	.002 - .004	.002 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	300 - 500	.002 - .003	.002 - .004
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	300 - 500	.002 - .003	.002 - .004
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 500	.001 - .003	.001 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 500	.001 - .003	.001 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	400 - 800	.002 - .005	.002 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	100 - 200	.001 - .002	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	800 - 1200	.003 - .006	.003 - .008

Full Effective Center Cutting

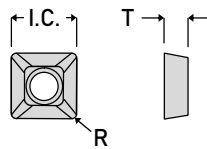


**FEC
FEC-Mills**

Tool Info.

Tool #	D	Flutes	L	L-1	L.O.C	S	Inserts	Screw Wrench	Center Insert	Screw Wrench
FEC-202	2.000	3	6.000	3.312	2.375	1.500	(1)SPEB-332P (14)SPEB-432PA	538T T-10 638T T-15	(1)SPEB-422F	638T T-15
FEC-204	2.000	3	7.875	4.625	3.812	2.000	(1)SPEB-332P (23)SPEB-432PA	538T T-10 638T T-15	(1)SPEB-422F	638T T-15

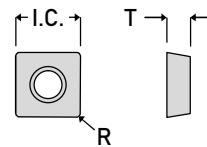
Positive Top Inserts



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-332P	.375	.187	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40

Flat Top Insert



Insert Info.

Insert #	I.C.	T	R	Grade
SPEB-422F	.500	.125	.031	X33

Speed and Feed Info.

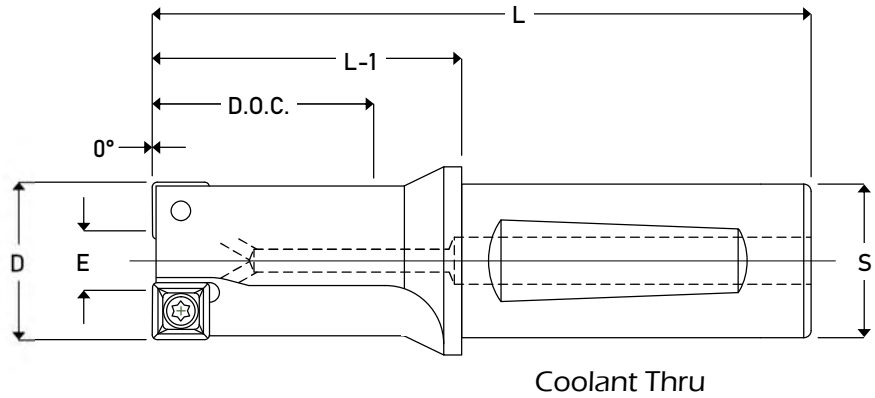
Material	S.F.M.	Drilling I.P.R.	Milling I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	400 - 800	.002 - .004	.002 - .005
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	300 - 500	.002 - .003	.002 - .004
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	300 - 500	.002 - .003	.002 - .004
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 500	.001 - .003	.001 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 500	.001 - .003	.001 - .003
Iron Ex. Cast, Ductile, Nodular	400 - 800	.002 - .005	.002 - .006
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	100 - 200	.001 - .002	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	800 - 1200	.003 - .006	.003 - .008

Counterbore Tools



Cuts a Flat Counterbore Within .001
Standard & Metric S.H.C.S Sizes
Coolant Thru Standard on CBN Tools
Piloted Tools for Manual Applications
Back Counterbores - Adjustable Style





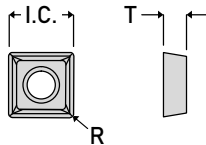
CBN

Counterbore Tools

Tool Info.

Tool #	S.H.C.S. Size	Flutes	D	E	L	L-1	D.O.C.	S	Insert	Screw	Wrench
CBN-500	5/16	2	.500	.180	2.812	1.062	.625	.500	SPEB-1511CB	164T	T-6
CBN-531	N/A	2	.531	.200	2.812	1.062	.625	.500	SPEB-1511CB	164T	T-6
CBN-562	N/A	2	.562	.240	2.875	1.125	.687	.500	SPEB-1511CB	164T	T-6
CBN-594	3/8	2	.594	.150	3.375	1.375	.750	.750	SPEB-221CB	300T	T-8
CBN-625	N/A	2	.625	.180	3.437	1.437	.812	.750	SPEB-221CB	314T	T-8
CBN-687	7/16	2	.687	.240	3.500	1.500	.875	.750	SPEB-221CB	314T	T-8
CBN-718	N/A	2	.718	.188	3.500	1.500	.875	.750	SPEB-2522CB	314T	T-8
CBN-750	N/A	2	.750	.210	3.625	1.625	.937	.750	SPEB-2522CB	314T	T-8
CBN-781	1/2	2	.781	.260	3.625	1.625	1.000	.750	SPEB-2522CB	314T	T-8
CBN-812	N/A	2	.812	.280	3.625	1.625	1.000	.750	SPEB-2522CB	314T	T-8
CBN-906	9/16	2	.906	.260	4.000	1.750	1.125	1.000	SPEB-332CB	538T	T-10
CBN-1000	5/8	2	1.000	.360	4.125	1.875	1.250	1.000	SPEB-332CB	538T	T-10
CBN-1187	3/4	2	1.187	.290	4.500	2.250	1.500	1.000	SPEB-432CB	638T	T-15
CBN-1250	N/A	2	1.250	.350	4.625	2.375	1.625	1.000	SPEB-432CB	638T	T-15
CBN-1375	7/8	2	1.375	.480	4.750	2.500	1.750	1.000	SPEB-432CB	638T	T-15
CBN-1437	N/A	2	1.437	.520	4.812	2.562	1.812	1.000	SPEB-432CB	638T	T-15
CBN-1500	N/A	2	1.500	.340	4.875	2.625	1.875	1.000	SPEB-532CB	838T	T-20
CBN-1625	1"	2	1.625	.480	5.000	2.750	2.000	1.000	SPEB-532CB	838T	T-20
CBN-1812	N/A	2	1.812	.400	5.250	3.000	2.250	1.000	SPEB-532CB	838T	T-20
CBN-2000	N/A	2	2.000	.590	5.500	3.000	2.500	1.250	SPEB-6352CB	1012T	T-25

Chipbreaker Inserts



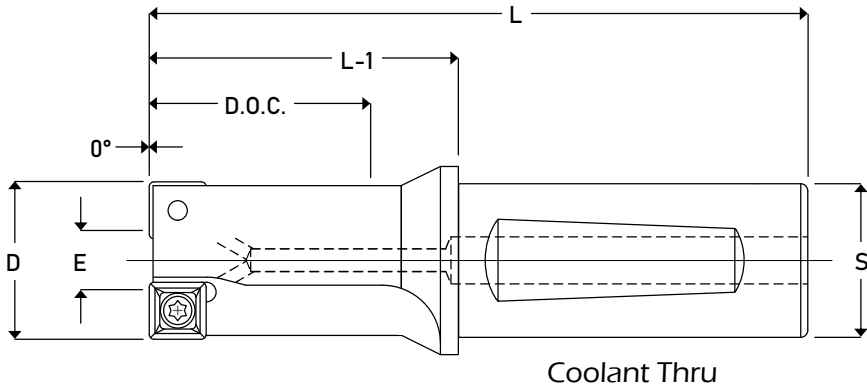
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40
SPEB-221CB	.250	.125	.015	X33 X40
SPEB-2522CB	.312	.125	.031	X33 X40
SPEB-332CB	.375	.187	.031	X33 X40
SPEB-432CB	.500	.187	.031	X33 X40
SPEB-532CB	.625	.187	.031	X33 X40
SPEB-6352CB	.750	.220	.031	X33 X40

Speed and Feed Info.

Material	S.F.M.	.500 Dia. I.P.T.	.531 - .781 Dia. I.P.T.	.812 - 2.000 Dia. I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.001 - .003	.002 - .004	.003 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.001 - .003	.002 - .003	.003 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.001 - .003	.002 - .003	.003 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003	.001 - .003	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.001 - .003	.001 - .003	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .005	.002 - .005	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002	.001 - .002	.002 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .006	.003 - .006	.004 - .008

Metric

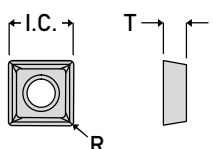


CBN Counterbore Tools

Tool Info.

Tool #	S.H.C.S. Size	Flutes	D	E	L	L-1	D.O.C.	S	Insert	Screw	Wrench
CBN-11MM	M-6	2	.433	.120	2.750	1.000	.563	.500	SPEB-1511CB	164T	T-6
CBN-15MM	M-8	2	.590	.150	3.250	1.250	.625	.750	SPEB-221CB	300T	T-8
CBN-16MM	N/A	2	.630	.185	3.437	1.437	.812	.750	SPEB-221CB	314T	T-8
CBN-18MM	M-10	2	.709	.188	3.500	1.500	.875	.750	SPEB-2522CB	314T	T-8
CBN-20MM	M-12	2	.787	.250	3.625	1.625	.937	.750	SPEB-2522CB	314T	T-8
CBN-22MM	N/A	2	.866	.290	4.000	1.750	1.156	1.000	SPEB-2522CB	314T	T-8
CBN-24MM	M-14	2	.945	.290	4.000	1.750	1.156	1.000	SPEB-332CB	538T	T-10
CBN-26MM	M-16	2	1.024	.370	4.250	2.000	1.375	1.000	SPEB-332CB	538T	T-10
CBN-29MM	M-18	2	1.142	.240	4.500	2.250	1.531	1.000	SPEB-432CB	638T	T-15
CBN-31MM	N/A	2	1.220	.300	4.500	2.250	1.562	1.000	SPEB-432CB	638T	T-15
CBN-33MM	M-20	2	1.299	.390	4.625	2.375	1.625	1.000	SPEB-432CB	638T	T-15
CBN-38MM	M-24	2	1.496	.350	5.000	2.750	2.000	1.000	SPEB-532CB	838T	T-20
CBN-48MM	M-30	2	1.890	.490	5.375	3.125	2.375	1.000	SPEB-6352CB	1012T	T-25

Chipbreaker Inserts

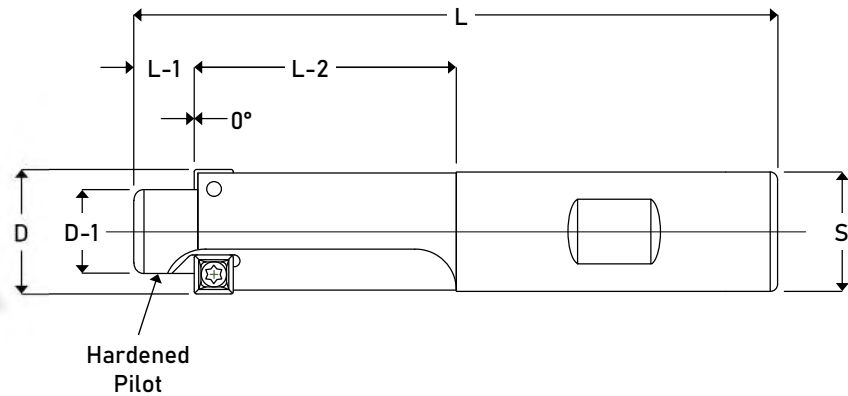


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40
SPEB-221CB	.250	.125	.015	X33 X40
SPEB-2522CB	.312	.125	.031	X33 X40
SPEB-332CB	.375	.187	.031	X33 X40
SPEB-432CB	.500	.187	.031	X33 X40
SPEB-532CB	.625	.187	.031	X33 X40
SPEB-6352CB	.750	.220	.031	X33 X40

Speed and Feed Info.

Material	S.F.M.	.433 Dia. I.P.T.	.590 - .787 Dia. I.P.T.	.866 - 1.890 Dia. I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.001 - .003	.002 - .004	.003 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.001 - .003	.002 - .003	.003 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.001 - .003	.002 - .003	.003 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003	.001 - .003	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.001 - .003	.001 - .003	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .005	.002 - .005	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002	.001 - .002	.002 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .006	.003 - .006	.004 - .008



CB

Piloted Counterbore Tools

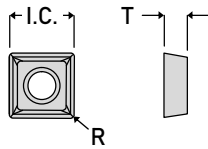
Tool Info.

Tool #	S.H.C.S. Size	Flutes	D	D-1	L	L-1	L-2	S	Insert	Screw	Wrench
CB-359	#10	1	.359	.215	3.250	.250	1.000	.500	SDEB-1511CB	164T	T-6
CB-406	1/4	1	.406	.280	3.250	.250	1.000	.500	SPEB-221CB	300T	T-8
CB-500	5/16	1	.500	.342	3.500	.312	1.187	.500	SPEB-221CB	300T	T-8
CB-594	3/8	2	.594	.405	3.625	.312	1.312	.500	SPEB-221CB	300T	T-8
CB-687	7/16	2	.687	.467	3.750	.375	1.375	.500	SPEB-221CB	300T	T-8
CB-781	1/2	2	.781	.530	4.000	.375	1.625	.750	SPEB-221CB	314T	T-8
CB-1000	5/8	2	1.000	.655	4.125	.500	1.625	.750	SPEB-221CB	314T	T-8
CB-1187	3/4	2	1.187	.812	4.250	.500	1.750	.750	SPEB-221CB	314T	T-8

Speed and Feed Info.

Material	S.F.M.	.359 - .500 Dia. I.P.T.	.594 - 1.187 Dia. I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.001 - .002	.002 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.001 - .002	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.001 - .002	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .002	.002 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.001 - .002	.002 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.001 - .002	.002 - .003
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.001 - .002	.002 - .003

Chipbreaker Inserts

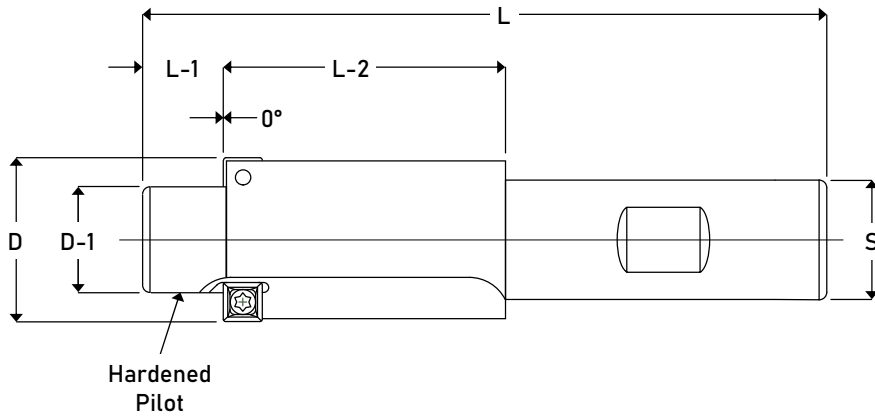


Insert Info.

Insert #	I.C.	T	R	Grades
SDEB-1511CB	.187	.082	.015	X33 X40
SPEB-221CB	.250	.125	.015	X33 X40

Metric

CB
Pilot Counterbore Tools



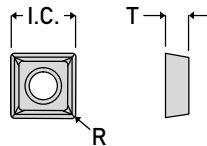
Tool Info.

Tool #	S.H.C.S. Size	Flutes	D	D-1	L	L-1	L-2	S	Insert	Screw	Wrench
CB-11MM	M-6	1	.433	.258	3.250	.250	1.000	.500	SPEB-221CB	300T	T-8
CB-15MM	M-8	2	.590	.352	3.625	.312	1.312	.500	SPEB-221CB	300T	T-8
CB-18MM	M-10	2	.709	.431	3.750	.375	1.375	.500	SPEB-221CB	300T	T-8
CB-20MM	M-12	2	.787	.549	4.000	.375	1.625	.750	SPEB-221CB	314T	T-8
CB-24MM	M-14	2	.945	.588	4.125	.500	1.625	.750	SPEB-221CB	314T	T-8
CB-26MM	M-16	2	1.023	.667	4.250	.500	1.750	.750	SPEB-221CB	314T	T-8
CB-33MM	M-20	2	1.298	.824	4.250	.500	1.750	.750	SPEB-221CB	314T	T-8

Speed and Feed Info.

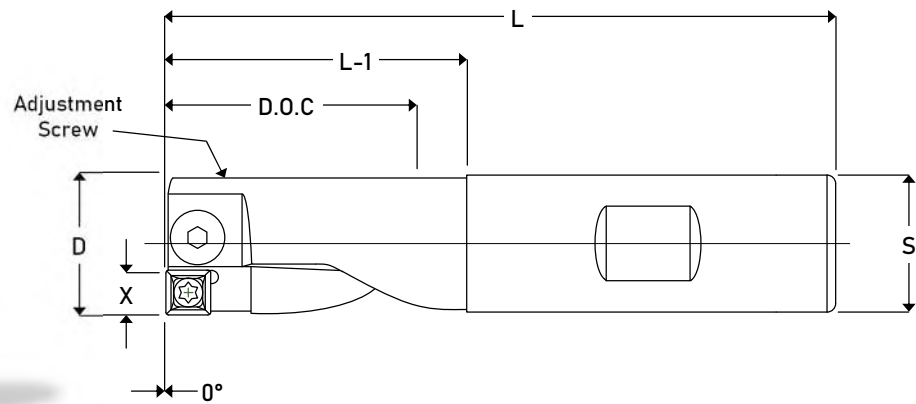
Material	S.F.M.	.433 Dia. I.P.T.	.590 - 1.298 Dia. I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.001 - .002	.002 - .003
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.001 - .002	.002 - .003
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.001 - .002	.002 - .003
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.001 - .002	.002 - .003
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.001 - .002	.002 - .003
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.001 - .002	.002 - .003
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .002	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.001 - .002	.002 - .003

Chipbreaker Insert



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-221CB	.250	.125	.015	X33 X40



CH Adjustable Counterbore Tools

.600 - .750 Dia.

Tool Info.

Tool #	D	Flutes	X	L	L-1	D.O.C.	S
CH-600-750	.600 to .750	1	.172	3.500	1.500	1.250	.750

Cartridge	Cartridge Screw	Adjustment Screw	Insert	Insert Screw	Wrench
CH-1511	#63212	5-40 x 1/4	SPEB-1511CB	164T	T-6

.750 - .937 Dia.

Tool Info.

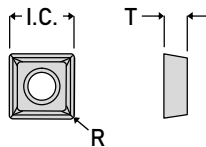
Tool #	D	Flutes	X	L	L-1	D.O.C.	S
CH-750-937	.750 to .937	1	.235	3.750	1.750	1.375	.750

Cartridge	Cartridge Screw	Adjustment Screw	Insert	Insert Screw	Wrench
CH-221	#103262	5-40 x 1/4	SPEB-221CB	300T	T-8

Speed and Feed Info.

Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.001 - .002
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .004

Chipbreaker Inserts

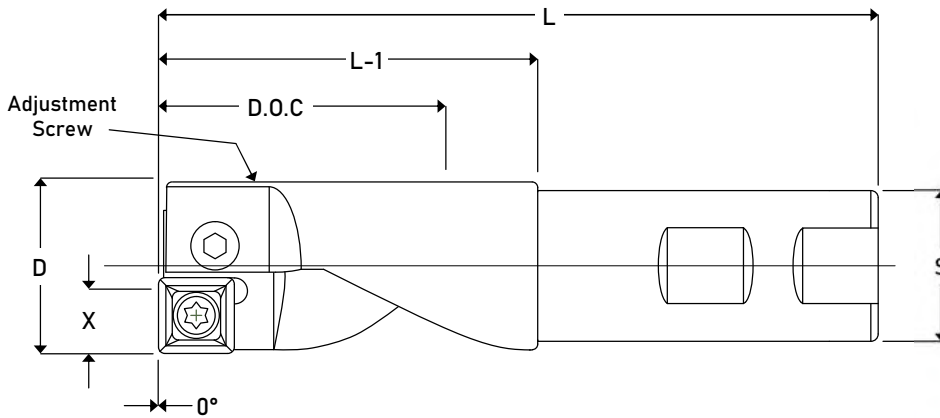


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40
SPEB-221CB	.250	.125	.015	X33 X40

Adjustable

Adjustable Counterbore Tools



.937 - 1.187 Dia.

Tool Info.

Tool #	D	Flutes	X	L	L-1	D.O.C.	S
CH-937-1187	.937 to 1.187	1	.280	4.500	2.250	1.875	1.000

Cartridge	Cartridge Screw	Adjustment Screw	Insert	Insert Screw	Wrench
CH-2522	#103262	5-40 x 1/4	SPEB-2522CB	300T	T-8

1.187 - 1.437 Dia.

Tool Info.

Tool #	D	Flutes	X	L	L-1	D.O.C.	S
CH-1187-1437	1.187 to 1.437	1	.465	4.500	2.250	1.875	1.000

Cartridge	Cartridge Screw	Adjustment Screw	Insert	Insert Screw	Wrench
CH-432	#142878	6-32 x 1/4	SPEB-432CB	638T	T-15

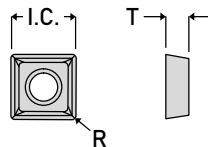
1.437 - 1.687 Dia.

Tool Info.

Tool #	D	Flutes	X	L	L-1	D.O.C.	S
CH-1437-1687	1.437 to 1.687	1	.465	4.500	2.250	1.875	1.000

Cartridge	Cartridge Screw	Adjustment Screw	Insert	Insert Screw	Wrench
CH-432	#142810	6-32 x 3/8	SPEB-432CB	638T	T-15

Chipbreaker Inserts

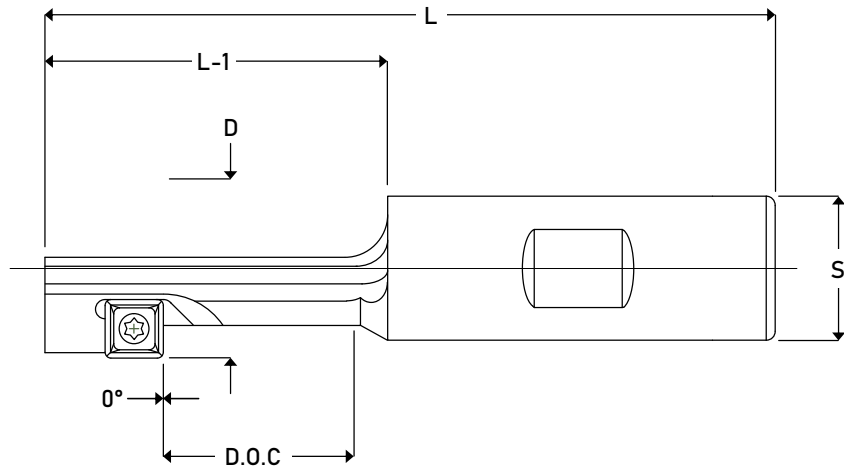


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-2522CB	.312	.125	.031	X33 X40
SPEB-432CB	.500	.187	.031	X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .003
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .003
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .003
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.001 - .003
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.001 - .002
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.002 - .003
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.002 - .004



BCB

Back Counterbore Tools

Tool Info.

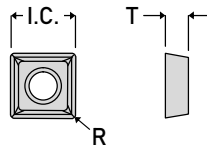
Tool #	S.H.C.S. Size	Flutes	D	L	L-1	D.O.C	S	Insert	Screw	Wrench
BCB-500	5/16	1	.500	2.937	1.187	.750	.500	SPEB-1511CB	164T	T-6
BCB-594	3/8	1	.594	2.937	1.187	.750	.500	SPEB-1511CB	164T	T-6
BCB-687	7/16	1	.687	3.625	1.625	1.000	.750	SPEB-221CB	300T	T-8
BCB-781	1/2	1	.781	3.812	1.812	1.250	.750	SPEB-221CB	314T	T-8
BCB-1000	5/8	1	1.000	4.562	2.312	1.625	1.000	SPEB-221CB	314T	T-8
BCB-1187	3/4	1	1.187	4.812	2.562	1.937	1.000	SPEB-221CB	314T	T-8

Tool #	Min. Existing Hole Dia.	Offset to Enter Hole
BCB-500	.320	.100
BCB-594	.390	.110
BCB-687	.450	.120
BCB-781	.510	.135
BCB-1000	.640	.180
BCB-1187	.800	.195

Speed and Feed Info.

Material	S.F.M.	I.P.R.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .003

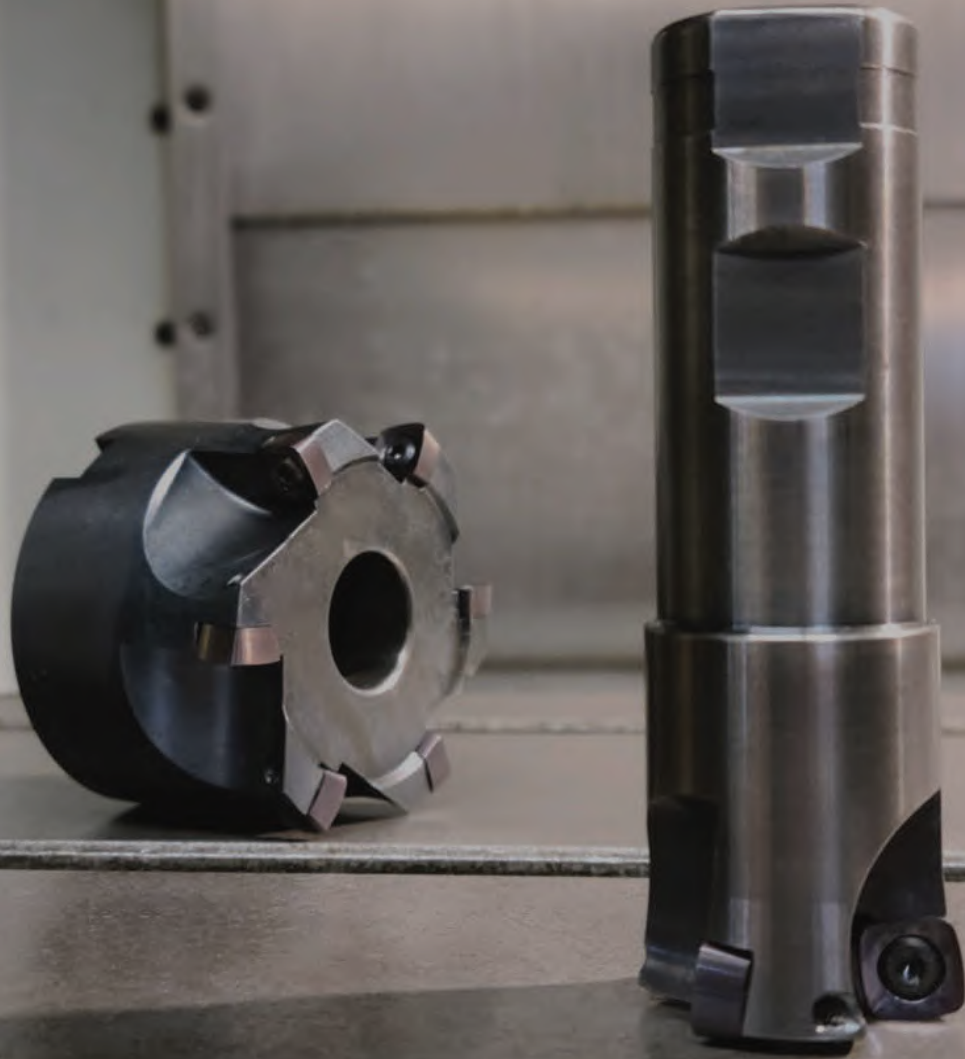
Chipbreaker Inserts



Insert Info.

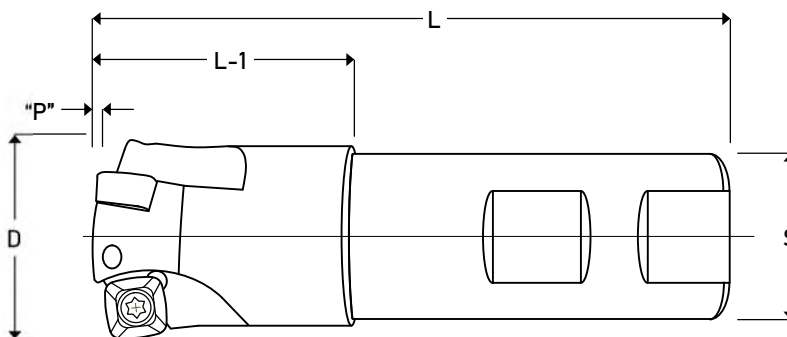
Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40
SPEB-221CB	.250	.125	.015	X33 X40

High Feed Mills



Fast Material Removal - Free Cutting
Ramping Capabilities
Available in Shank & Shell Mount



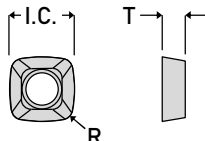


HF

High Feed Mills

Tool Info.

Tool #	Flutes	D	L	L-1	S	Plunge "P"	Ramp	Insert	Screw	Wrench
HF-100	2	1.000	3.750	1.500	1.000	.031	10°			
HF-125	3	1.250	3.750	1.500	1.000	.031	5°	ARP-33	538T	T-10
HF-150	4	1.500	3.750	1.500	1.000	.031	3°			



Insert Info.

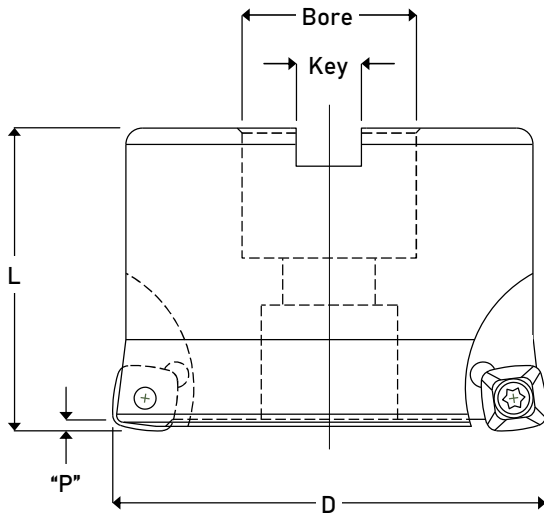
Insert #	I.C.	T	R	Grades
ARP-33	.375	.187	.062	C55 X33

Speed and Feed Info.

Material	S.F.M.	*Minimum D.O.C. of .032 I.P.T.	**Maximum D.O.C. of .089 I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	1000 - 1400	.016 - .041	.010 - .025
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	800 - 1000	.016 - .032	.010 - .020
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	600 - 900	.016 - .032	.010 - .020
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	500 - 800	.016 - .032	.016 - .020
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	500 - 800	.016 - .032	.016 - .020
Iron <i>Ex. Cast, Ductile, Nodular</i>	800 - 1200	.016 - .041	.010 - .025
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	350 - 450	.008 - .024	.005 - .015

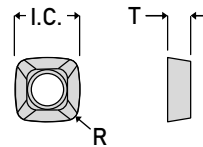
* Minimum D.O.C. of .032" = 8X Chip Thinning Factor

** Maximum D.O.C. of .089" = 5X Chip Thinning Factor



Tool Info.

Tool #	Flutes	D	L	Bore	Key	Plunge "P"	Ramp	Insert	Screw	Wrench
HF-2000S	5	2.000	1.625	.750	.312	.031	3°			
HF-2500S	6	2.500	1.750	1.000	.375	.031	2°	ARP-33	538T	T-10
HF-3000S	7	3.000	1.750	1.000	.375	.031	1.5°			



Insert Info.

Insert #	I.C.	T	R	Grades
ARP-33	.375	.187	.062	C55 X33

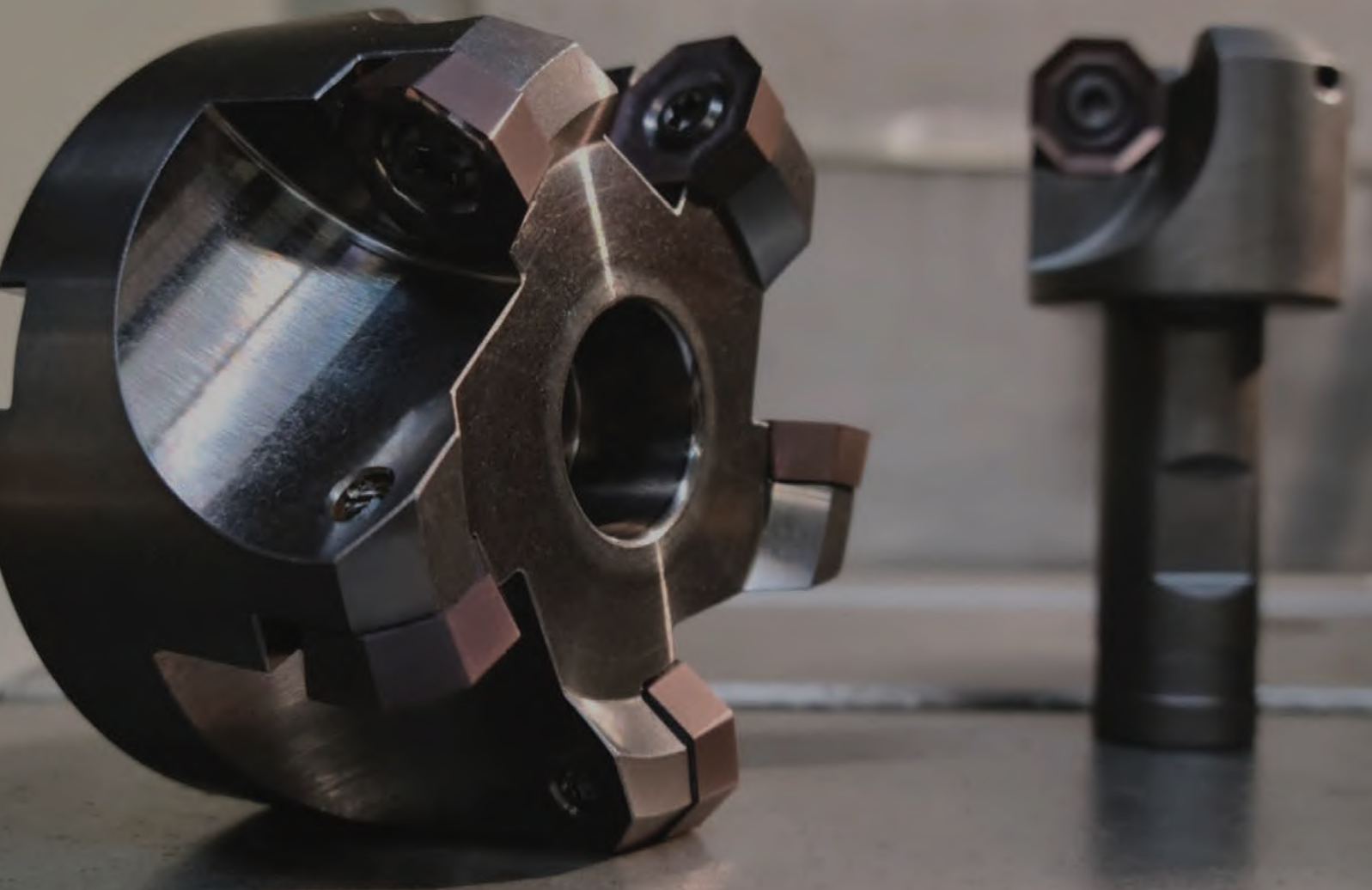
Speed and Feed Info.

Material	S.F.M.	*Minimum D.O.C. of .032 I.P.T.	**Maximum D.O.C. of .089 I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	1000 - 1400	.016 - .041	.010 - .025
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	800 - 1000	.016 - .032	.010 - .020
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	600 - 900	.016 - .032	.010 - .020
Tool Steel Ex. A-2, A-6, D-2, M-2	500 - 800	.016 - .032	.016 - .020
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	500 - 800	.016 - .032	.016 - .020
Iron Ex. Cast, Ductile, Nodular	800 - 1200	.016 - .041	.010 - .025
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	350 - 450	.008 - .024	.005 - .015

* Minimum D.O.C. of .032" = 8X Chip Thinning Factor

** Maximum D.O.C. of .089" = 5X Chip Thinning Factor

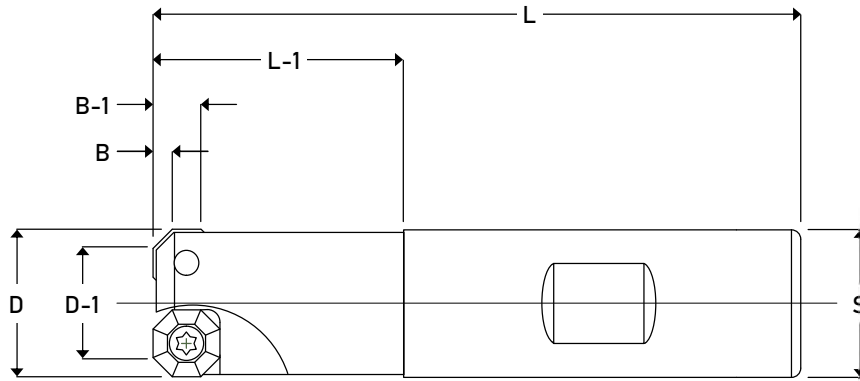
Octa Mills



45° Lead Angle
8/16 Cutting Edges Per Insert
Available in Shank Style or Shell Mount



OC
Octa Mills

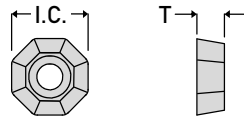


Tool Info.

Tool #	D	D-1	B	B-1	Flutes	L	L-1	S	Ramp	Insert
OC-500	.500	.310	.095	.220	1	3.000	1.000	.625	Drill*	ODEB-2711 RDEB-2711
OC-625	.625	.435	.095	.220	1	3.000	1.000	.625	Drill*	
OC-750	.750	.560	.095	.220	2	3.250	1.250	.750	25°	ODEB-2721 RDEB-2721
XOC-750	.750	.560	.095	.220	2	5.000	3.000	.750	25°	
OC-875	.875	.685	.095	.220	2	3.250	1.250	.750	15°	ODEB-2721 RDEB-2721
OC-1000	1.000	.810	.095	.220	3	3.500	1.500	.750	10°	
XOC-1000	1.000	.810	.095	.220	3	6.250	4.000	1.000	10°	
OC-1250	1.250	1.062	.095	.220	3	3.500	1.500	.750	8°	
OC-1540	1.500	1.312	.095	.220	4	3.500	1.500	.750	6°	

*Applies to ODEB inserts only.

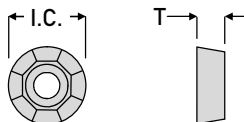
Octa Positive Top Inserts



Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
ODEB-2711	.343	.110	5625T	T-10	X33
ODEB-2721	.343	.130	5625T	T-10	B1M X33

Round Positive Top Inserts

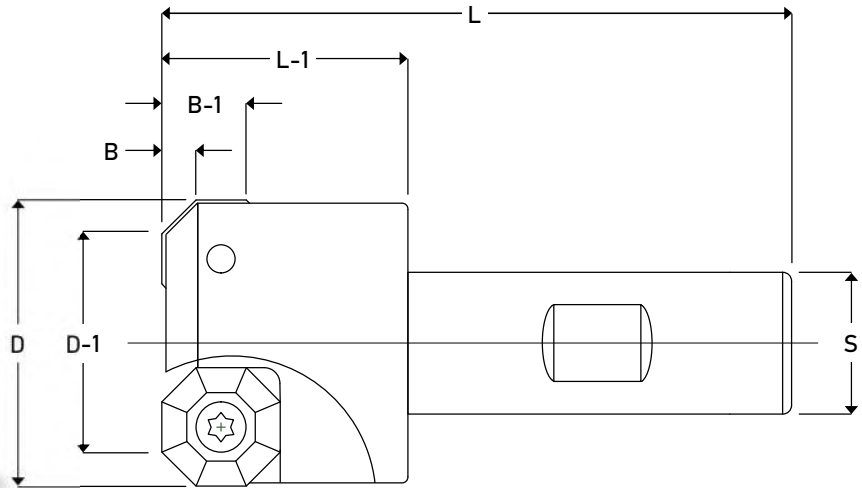


Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grade
RDEB-2711	.343	.110	5625T	T-10	X33
RDEB-2721	.343	.130	5625T	T-10	

Speed and Feed Info.

Material	S.F.M.	.500 - .750 Dia. I.P.T.	.875 - 1.500 Dia. I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .005	.003 - .012
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .004	.003 - .010
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .004	.003 - .010
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004	.003 - .010
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003	.002 - .007
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006	.004 - .012
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003	.001 - .004
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .006	.004 - .014

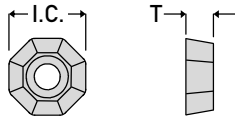


OC
Octa Mills

Tool Info.

Tool #	D	D-1	B	B-1	Flutes	L	L-1	S	Ramp	Insert
OC-1575	1.500	1.125	.160	.410	2	3.250	1.250	.750	20°	OPEB-535 RPEB-535
OC-1510	1.500	1.125	.160	.410	2	4.500	1.500	1.000	20°	
XOC-1500	1.500	1.125	.160	.410	2	8.250	6.000	1.250	20°	
OC-2075	2.000	1.625	.160	.410	3	3.250	1.250	.750	10°	
OC-2010	2.000	1.625	.160	.410	3	4.500	1.500	1.000	10°	

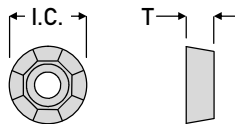
Octa Positive Top Inserts



Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
OPEB-535	.625	.220	838T	T-20	C55 X33
OPEB-535XP	.625	.220	838T	T-20	B1M X40

Round Positive Top Insert



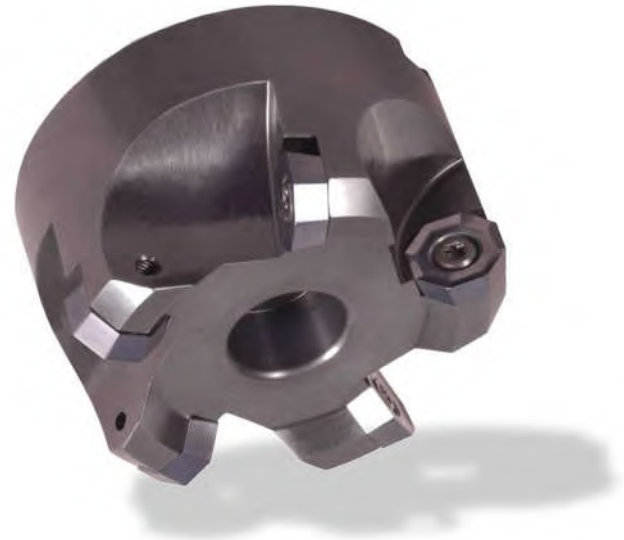
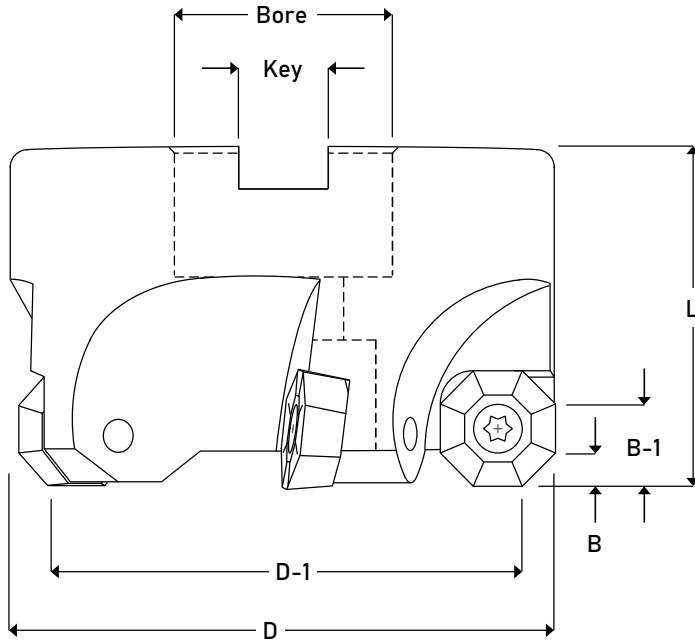
Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grade
RPEB-535	.625	.220	838T	T-20	X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .012
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.003 - .010
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.003 - .010
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.003 - .010
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .007
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.004 - .012
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	120 - 180	.001 - .004
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.004 - .014

OC
Octa Mills

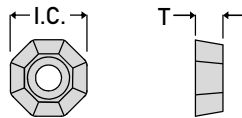


Tool Info.

Tool #	D	D-1	B	B-1	L	Flutes	Bore	Key	Ramp	Insert
OC-2000	2.000	1.625	.160	.410	1.750	3	.750	.312	10°	
OC-2500	2.500	2.125	.160	.410	1.750	4	1.000	.375	7°	
OC-3000	3.000	2.625	.160	.410	1.750	5	1.000	.375	5°	OPEB-535 RPEB-535
OC-4000	4.000	3.625	.160	.410	1.750	6	1.500	.625	3°	
OC-5000	5.000	4.625	.160	.410	1.750	6	1.500	.625	2°	
OC-6000	6.000	5.625	.160	.410	1.750	7	1.500	.625	1°	

For Larger Diameters, Refer to Universal Mills on Page 127

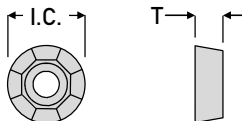
Octa Positive Top Inserts



Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
OPEB-535	.625	.220	838T	T-20	C55 X33
OPEB-535XP	.625	.220	838T	T-20	B1M X40

Round Positive Top Insert

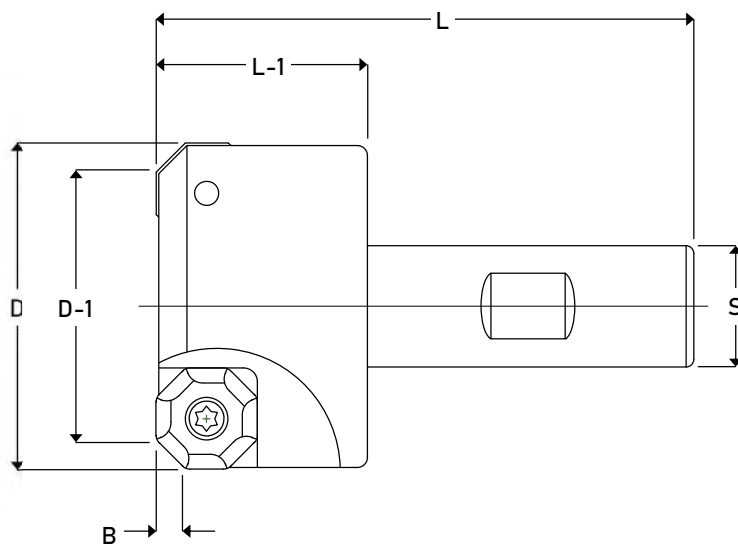


Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grade
RPEB-535	.625	.220	838T	T-20	X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .012
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.003 - .010
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.003 - .010
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.003 - .010
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .007
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.004 - .012
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .004
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.004 - .014



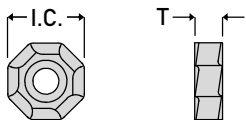
DOC

Dual Octa Mills

Tool Info.

Tool #	D	D-1	B	Flutes	L	L-1	S	Insert
DOC-1575	1.500	1.100	.150	2	3.250	1.250	.750	
DOC-2075	2.000	1.600	.150	4	3.250	1.250	.750	ONPG-4532
DOC-2010	2.000	1.600	.150	4	3.750	1.500	1.000	

Double Sided
16 Edges!



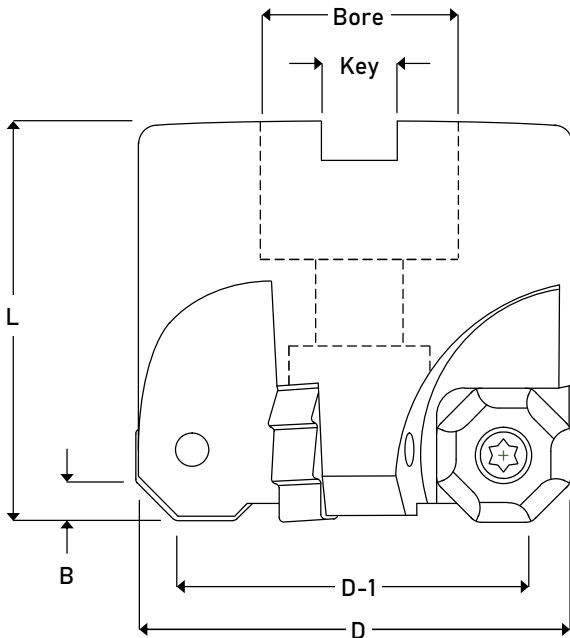
Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grade
ONPG-4532	.593	.220	838T	T-20	X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.004 - .012
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.004 - .010
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.004 - .010
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.004 - .010
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.003 - .007
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.005 - .012
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.002 - .004
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.005 - .014

DOC
Dual Octa Mills

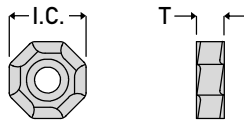


Tool Info.

Tool #	D	D-1	B	L	Flutes	Bore	Key	Insert
DOC-2000	2.000	1.600	.150	1.750	4	.750	.312	
DOC-3000	3.000	2.600	.150	1.750	5	1.000	.375	
DOC-4000	4.000	3.600	.150	1.750	7	1.500	.625	ONPG-4532
DOC-5000	5.000	4.600	.150	1.750	8	1.500	.625	
DOC-6000	6.000	5.600	.150	1.750	9	1.500	.625	

For Larger Diameters, Refer to Universal Mills on Page 127

Double Sided
16 Edges!

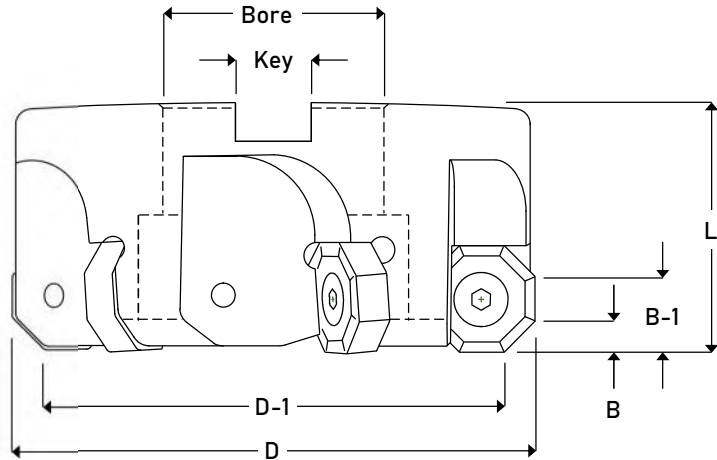


Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grade
ONPG-4532	.593	.220	838T	T-20	X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.004 - .012
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.004 - .010
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.004 - .010
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.004 - .010
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.003 - .007
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.005 - .012
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.002 - .004
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.005 - .014



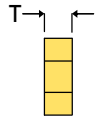
HDOC

Heavy Duty Octa Mills

Tool Info.

Tool #	D	D-1	B	B-1	L	Flutes	Bore	Key	Insert
HDOC-3000	3.000	2.400	.300	.700	2.000	4	1.000	.375	ONMB-85 RNMB-85 RNEB-85P
HDOC-4000	4.000	3.400	.300	.700	2.250	5	1.500	.625	
HDOC-5000	5.000	4.400	.300	.700	2.250	6	1.500	.625	
HDOC-6000	6.000	5.400	.300	.700	2.250	7	1.500	.625	

Octa Positive Top (Double Sided)



16 Edges!

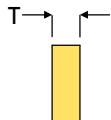
Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grade
ONMB-85	1.000	.312	1462T	T-532	A10M

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.010 - .030
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.008 - .020
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.008 - .020
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.008 - .020
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.006 - .016
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.010 - .030
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.004 - .008
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.010 - .040

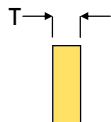
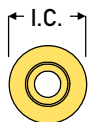
Round Positive Top (Double Sided)



Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grade
RNMB-85	1.000	.312	1462T	T-532	A10M

Round Positive Top (Single Sided)



Insert Info.

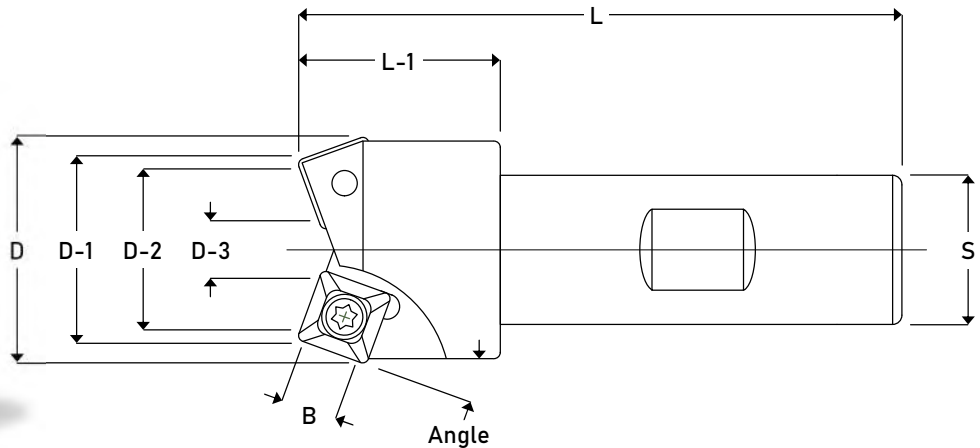
Insert #	I.C.	T	Screw	Wrench	Grade
RNEB-85P	1.000	.312	1462T	T-532	A10M

Chamfer Products



Multiple Angles - Long Edge Chamfers
Extended Lengths - Reverse Chamfers
Adjustable/Cartridge Style
Shank & Shell Mount Available





A

15° & 20° Chamfer Mills

15° Chamfer Mills

Tool Info.

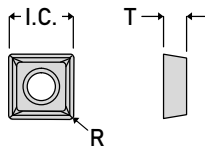
Tool #	Angle	Flutes	D	D-1	D-2	D-3	L	L-1	B	S	Insert	Screw	Wrench
A-5768	15°	2	.625	.560	N/A	N/A	2.500	.750	.156	.500	SPEB-1511CB	164T	T-6
A-5758	15°	2	1.125	.970	.875	.312	3.000	1.000	.312	.750	SPEB-322P	438T	T-10
A-5776	15°	2	1.625	1.410	1.300	.500	3.250	1.250	.438	.750	SPEB-432PA	638T	T-15
A-5762	15°	2	2.250	1.900	1.750	.500	3.750	1.500	.687	1.000	SPEB-6352PA	1012T	T-25

20° Chamfer Mills

Tool Info.

Tool #	Angle	Flutes	D	D-1	D-2	D-3	L	L-1	B	S	Insert	Screw	Wrench
A-5773	20°	2	.625	.525	N/A	N/A	2.500	.750	.156	.500	SPEB-1511CB	164T	T-6
A-5774	20°	2	1.125	.920	.812	.250	3.000	1.000	.312	.750	SPEB-322P	438T	T-10
A-5777	20°	2	1.625	1.340	1.220	.440	3.250	1.250	.438	.750	SPEB-432PA	638T	T-15
A-5775	20°	2	2.250	1.790	1.650	.438	3.750	1.500	.687	1.000	SPEB-6352PA	1012T	T-25

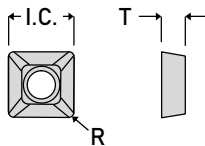
Chipbreaker Insert



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40

Positive Top Inserts



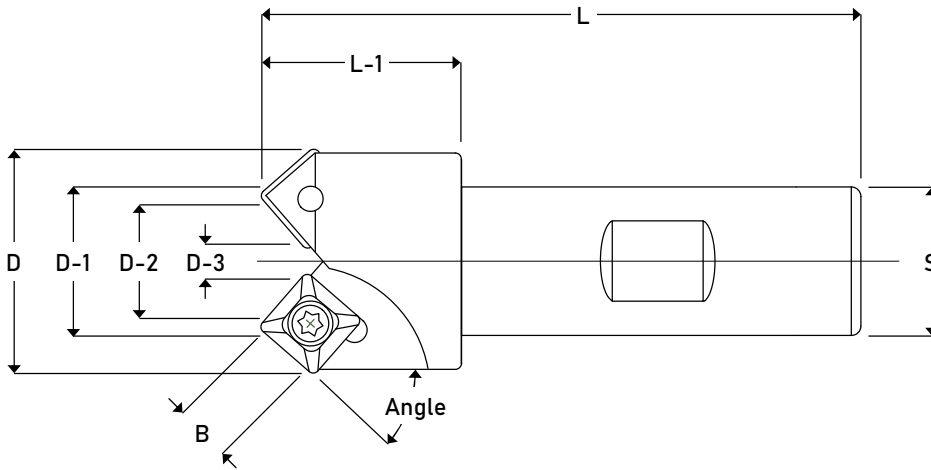
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40
SPEB-6352PA	.750	.220	.031	C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	.625 Dia. I.P.T.	1.125 - 2.250 Dia. I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003	.003 - .007
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003	.002 - .006
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003	.002 - .006
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003	.002 - .006
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003	.002 - .006
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003	.004 - .008
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .003	.004 - .010

22.5° & 30° Chamfer Mills



22.5° Chamfer Mills

Tool Info.

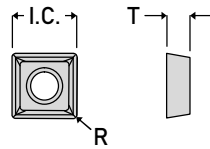
Tool #	Angle	Flutes	D	D-1	D-2	D-3	L	L-1	B	S	Insert	Screw	Wrench
A-2250	22.5°	2	1.625	1.300	1.190	.420	3.250	1.250	.438	.750	SPEB-432PA	638T	T-15
A-2275	22.5°	2	2.250	1.790	1.610	.375	3.750	1.500	.688	1.000	SPEB-6352PA	1012T	T-25

30° Chamfer Mills

Tool Info.

Tool #	Angle	Flutes	D	D-1	D-2	D-3	L	L-1	B	S	Insert	Screw	Wrench
A-5769	30°	2	.625	.485	N/A	N/A	2.500	.750	.156	.500	SPEB-1511CB	164T	T-6
A-5759	30°	2	1.125	.810	.700	.200	3.000	1.000	.312	.750	SPEB-322P	438T	T-10
A-5778	30°	2	1.625	1.200	1.080	.360	3.250	1.250	.438	.750	SPEB-432PA	638T	T-15
A-5763	30°	2	2.250	1.570	1.438	.312	3.750	1.500	.687	1.000	SPEB-6352PA	1012T	T-25

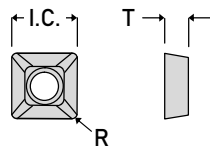
Chipbreaker Insert



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40

Positive Top Inserts

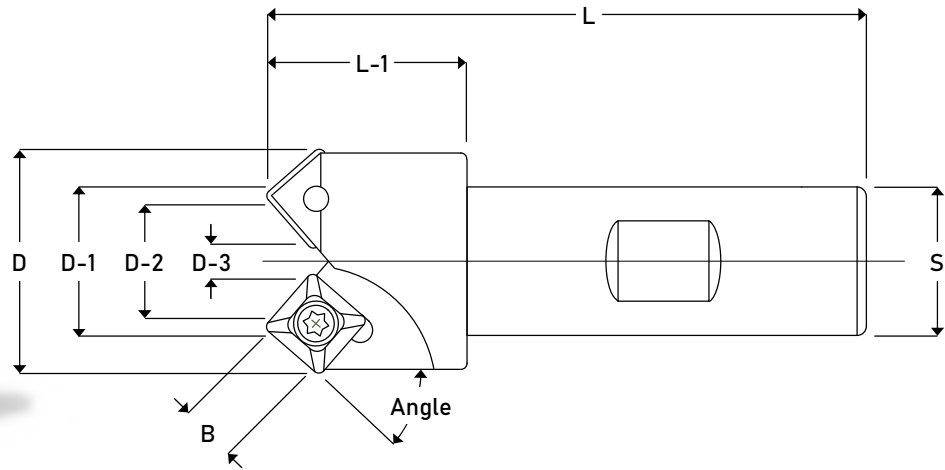


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40
SPEB-6352PA	.750	.220	.031	C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	.625 Dia. I.P.T.	1.125 - 2.250 Dia. I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003	.003 - .007
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003	.002 - .006
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003	.002 - .006
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003	.002 - .006
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003	.002 - .006
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003	.004 - .008
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .003	.004 - .010



A
37.5° & 41° Chamfer Mills

37.5° Chamfer Mills

Tool Info.

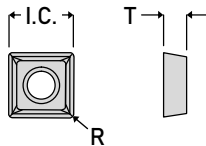
Tool #	Angle	Flutes	D	D-1	D-2	D-3	L	L-1	B	S	Insert	Screw	Wrench
A-3750	37.5°	2	1.625	1.090	.980	.320	3.250	1.250	.438	.750	SPEB-432PA	638T	T-15
A-3775	37.5°	2	2.250	1.420	1.300	.250	3.750	1.500	.688	1.000	SPEB-6352PA	1012T	T-25

41° Chamfer Mills

Tool Info.

Tool #	Angle	Flutes	D	D-1	D-2	D-3	L	L-1	B	S	Insert	Screw	Wrench
A-5772	41°	2	.625	.430	N/A	N/A	2.500	.750	.156	.500	SPEB-1511CB	164T	T-6
A-5766	41°	2	1.125	.710	.580	.160	3.000	1.000	.312	.750	SPEB-322P	438T	T-10
A-5779	41°	2	1.625	1.050	.930	.312	3.250	1.250	.438	.750	SPEB-432PA	638T	T-15
A-5767	41°	2	2.250	1.350	1.188	.250	3.750	1.500	.687	1.000	SPEB-6352PA	1012T	T-25

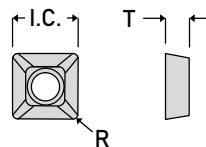
Chipbreaker Insert



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40

Positive Top Inserts



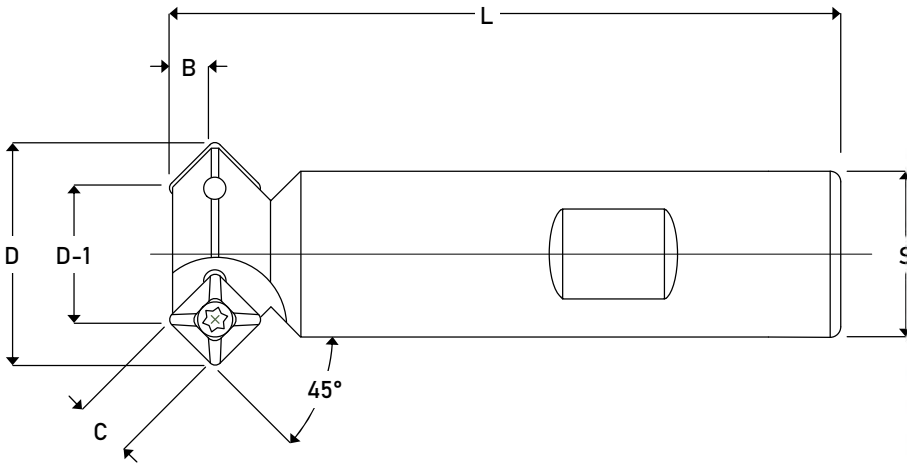
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40
SPEB-6352PA	.750	.220	.031	C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	.625 Dia. I.P.T.	1.125 - 2.250 Dia. I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003	.003 - .007
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003	.002 - .006
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003	.002 - .006
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003	.002 - .006
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003	.002 - .006
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003	.004 - .008
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .003	.004 - .010

A
45° Chamfer Mills

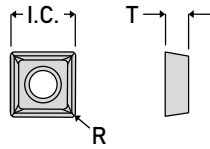


45° Chamfer Mills

Tool Info.

Tool #	Flutes	D	D-1	L	B	C	S	Insert	Screw	Wrench
A-2399	1	.500	.285	2.875	.110	.156	.500	SPEB-1511CB	164T	T-6
A-2199	1	.625	.320	2.500	.155	.218	.500	SDEB-2151P	300T	T-8
A-2299	2	.625	.410	2.875	.110	.156	.500	SPEB-1511CB	164T	T-6
A-0810	1	.810	.352	3.000	.220	.312	.750	SPEB-322P	438T	T-10
A-1383	1	1.000	.540	3.000	.220	.312	.750	SPEB-322P	438T	T-10
A-1383-2	2	1.000	.630	3.000	.176	.250	.750	SPEB-2522P	314T	T-8
A-1383XL	2	1.000	.630	6.000	.176	.250	.750	SPEB-2522P	314T	T-8
A-1383MF	4	1.000	.810	3.250	.088	.125	.750	SPEB-1512CB	164T	T-6

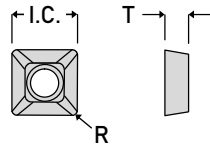
Chipbreaker Inserts



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40
SPEB-1512CB	.187	.082	.031	X33 X40

Positive Top Inserts

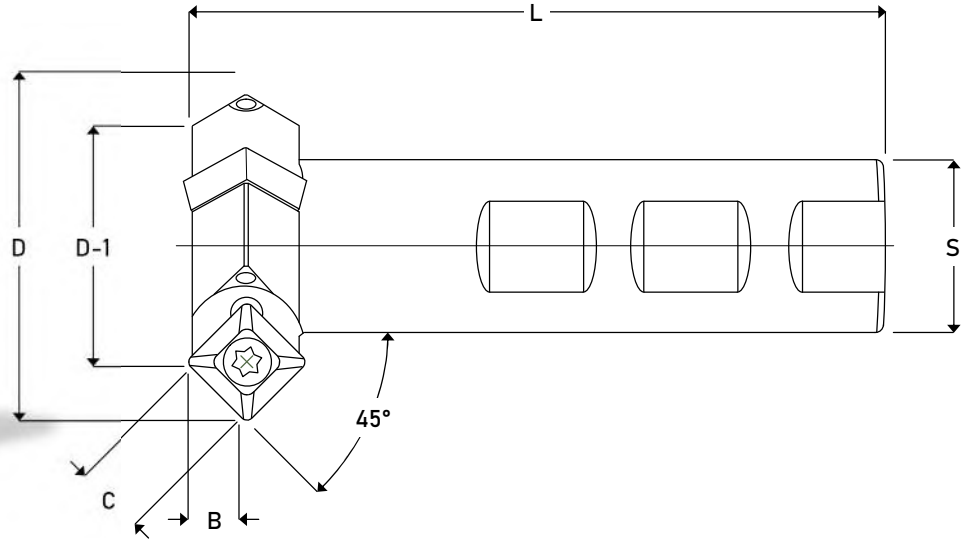


Insert Info.

Insert #	I.C.	T	R	Grades
SDEB-2151P	.250	.125	.015	X33
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40
SPEB-322P	.375	.125	.031	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	.500 Dia. I.P.T.	.625 Dia. I.P.T.	1.000 Dia. I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .003	.002 - .003	.003 - .007
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .003	.002 - .003	.002 - .006
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .003	.002 - .003	.002 - .006
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.001 - .003	.001 - .003	.002 - .006
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .003	.002 - .003	.002 - .006
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.002 - .003	.002 - .003	.004 - .008
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .002	.001 - .002	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.002 - .003	.002 - .003	.004 - .010

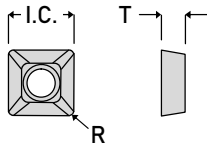


45° Chamfer Mills

Tool Info.

Tool #	Flutes	D	D-1	L	B	C	S	Insert	Screw	Wrench
A-1384	2	1.250	.790	4.000	.220	.312	.750	SPEB-322P	438T	T-10
A-1384XL	2	1.250	.790	6.000	.220	.312	.750	SPEB-322P	438T	T-10
A-1384MF	4	1.250	.970	3.500	.132	.188	.750	SPEB-222P	314T	T-8
A-1390	3	1.375	.920	4.000	.220	.312	.750	SPEB-322P	438T	T-10
A-1385	3	1.500	1.045	4.000	.220	.312	.750	SPEB-322P	438T	T-10
A-1385XL	3	1.500	1.045	6.000	.220	.312	.750	SPEB-322P	438T	T-10
A-1385MF	4	1.500	1.220	3.500	.132	.188	.750	SPEB-222P	314T	T-8
A-1391	3	1.750	1.120	4.000	.309	.437	1.000	SPEB-432PA	638T	T-15
A-1386	3	2.000	1.370	4.000	.309	.437	1.000	SPEB-432PA	638T	T-15
A-1386XL	3	2.000	1.370	6.000	.309	.437	1.000	SPEB-432PA	638T	T-15
A-1386MF	5	2.000	1.635	3.750	.176	.250	1.000	SPEB-2522P	314T	T-8
A-1389	3	2.250	1.450	4.250	.396	.563	1.000	SPEB-532PA	838T	T-20
A-1387	3	2.500	1.510	4.500	.486	.687	1.250	SPEB-6352PA	1012T	T-25
A-1392	3	3.000	2.020	4.500	.486	.687	1.250	SPEB-6352PA	1012T	T-25
A-1388	3	3.500	2.160	5.000	.663	.937	1.500	SPEB-842PA	1412T	T-532

Positive Top Inserts



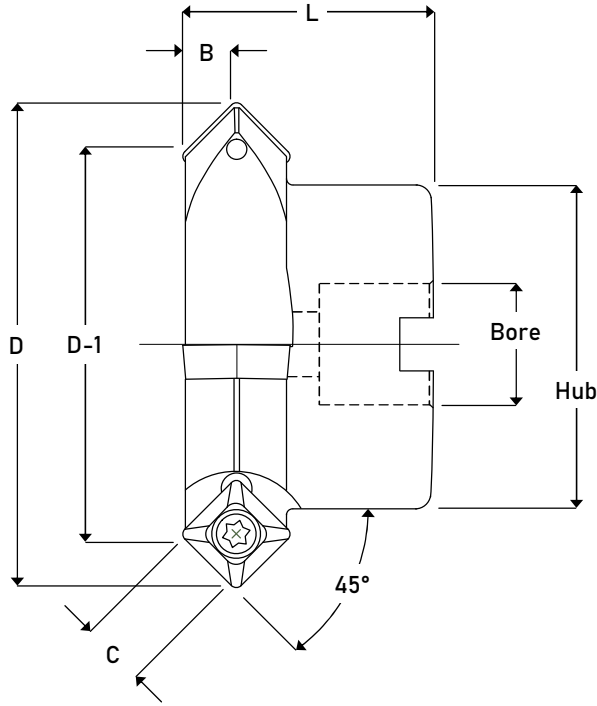
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-222P	.250	.125	.031	B1M C55 X33 X40
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40
SPEB-6352PA	.750	.220	.031	C55 X33 X40
SPEB-842PA	1.000	.250	.031	X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.003 - .007
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .006
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .006
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .006
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .006
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.004 - .008
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, TI-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.004 - .010

A
45° Chamfer Mills

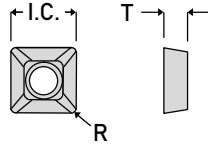


45° Shell Mills

Tool Info.

Tool #	Flutes	D	D-1	L	B	C	Bore	Key	Hub	Insert	Screw	Wrench
A-2000S	4	2.000	1.550	1.250	.220	.312	.500	.250	1.375	SPEB-332P	538T	T-10
A-3000S	4	3.000	2.375	1.500	.309	.437	.750	.312	2.000	SPEB-432PA	638T	T-15
A-4000S	4	4.000	3.030	1.625	.486	.687	1.000	.375	2.375	SPEB-6352PA	1012T	T-25

Positive Top Inserts

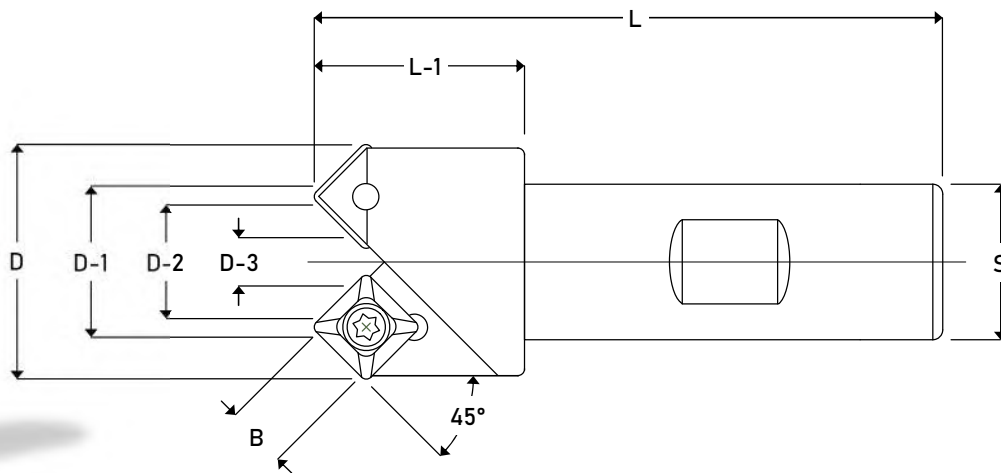


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-332P	.375	.187	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40
SPEB-6352PA	.750	.220	.031	C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .007
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .006
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .006
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .006
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .006
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.004 - .008
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.004 - .010



OD

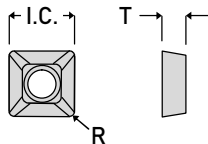
45° O.D. Chamfer Mills

45° Chamfer Mills

Tool Info.

Tool #	Flutes	D	D-1	D-2	D-3	L	L-1	B	S	Insert	Screw	Wrench
OD-0545	2	1.125	.680	.550	.160	3.000	1.000	.312	.750	SPEB-322P	438T	T-10
OD-1245	2	2.187	1.400	1.250	.550	3.750	1.500	.563	1.000	SPEB-532PA	838T	T-20

Positive Top Inserts



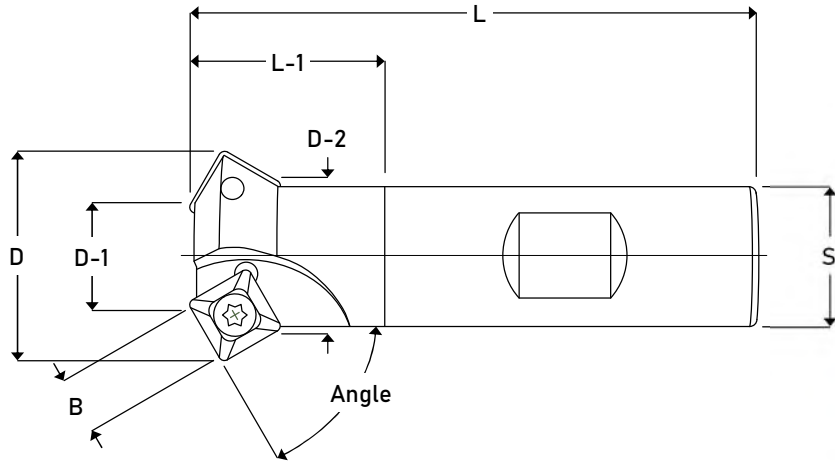
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-532PA	.625	.187	.031	C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .007
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .006
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .006
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .006
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .006
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.004 - .008
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.004 - .010

60° & 67.5° Chamfer Mills



60° Chamfer Mills

Tool Info.

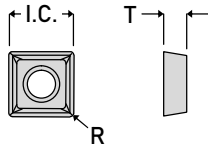
Tool #	Angle	Flutes	D	D-1	D-2	L	L-1	B	S	Insert	Screw	Wrench
A-5771	60°	2	.625	.350	.480	2.500	.750	.156	.500	SPEB-1511CB	164T	T-6
A-5761	60°	2	1.125	.560	.820	3.000	1.000	.312	.750	SPEB-322P	438T	T-10
A-5780	60°	2	1.625	.860	1.190	3.250	1.250	.438	.750	SPEB-432PA	638T	T-15
A-5765	60°	2	2.250	1.040	1.570	3.750	1.500	.687	1.000	SPEB-6352PA	1012T	T-25

67.5° Chamfer Mills

Tool Info.

Tool #	Angle	Flutes	D	D-1	D-2	L	L-1	B	S	Insert	Screw	Wrench
A-6750	67.5°	2	1.625	.790	1.300	3.250	1.250	.438	.750	SPEB-432PA	638T	T-15
A-6775	67.5°	2	2.250	.960	1.750	3.750	1.500	.687	1.000	SPEB-6352PA	1012T	T-25

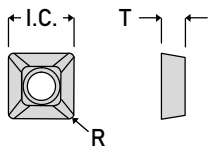
Chipbreaker Insert



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40

Positive Top Inserts

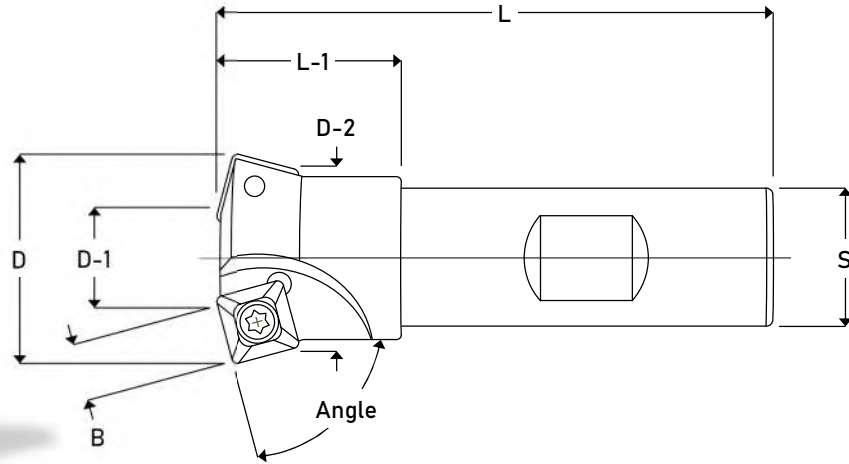


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40
SPEB-6352PA	.750	.220	.031	C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	.625 Dia. I.P.T.	1.125 - 2.250 Dia. I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003	.003 - .007
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003	.002 - .006
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003	.002 - .006
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003	.002 - .006
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003	.002 - .006
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003	.004 - .008
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .003	.004 - .010



70° Chamfer Mills

Tool Info.

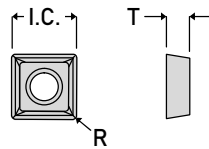
Tool #	Angle	Flutes	D	D-1	D-2	L	L-1	B	S	Insert	Screw	Wrench
A-5782	70°	2	.625	.320	.530	2.500	.750	.156	.500	SPEB-1511CB	164T	T-6
A-5783	70°	2	1.125	.510	.930	3.000	1.000	.312	.750	SPEB-322P	438T	T-10
A-5784	70°	2	1.625	.780	1.330	3.250	1.250	.438	.750	SPEB-432PA	638T	T-15
A-5785	70°	2	2.250	.930	1.790	3.750	1.500	.687	1.000	SPEB-6352PA	1012T	T-25

75° Chamfer Mills

Tool Info.

Tool #	Angle	Flutes	D	D-1	D-2	L	L-1	B	S	Insert	Screw	Wrench
A-5770	75°	2	.625	.320	.550	2.500	.750	.156	.500	SPEB-1511CB	164T	T-6
A-5760	75°	2	1.125	.480	.970	3.000	1.000	.312	.750	SPEB-322P	438T	T-10
A-5781	75°	2	1.625	.750	1.420	3.250	1.250	.438	.750	SPEB-432PA	638T	T-15
A-5764	75°	2	2.250	.880	1.900	3.750	1.500	.687	1.000	SPEB-6352PA	1012T	T-25

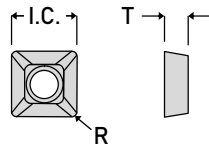
Chipbreaker Insert



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40

Positive Top Inserts



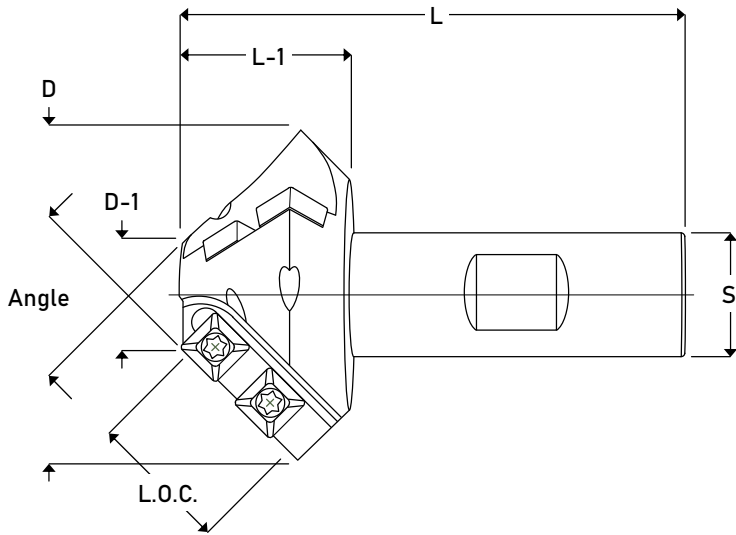
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40
SPEB-6352PA	.750	.220	.031	C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	.625 Dia. I.P.T.	1.125 - 2.250 Dia. I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003	.003 - .007
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003	.002 - .006
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003	.002 - .006
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003	.002 - .006
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003	.002 - .006
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003	.004 - .008
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .003	.004 - .010

CC
Long Edge Chamfer Mills



Shank Tools

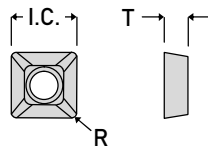
Tool Info.

Tool #	Angle	Flutes	Inserts	D	D-1	L	L-1	L.O.C.	S	Insert	Screw	Wrench
CC-40	40°	4-2 Effective	8	2.030	1.386	3.125	1.125	.900	.750			
CC-60	60°	4-2 Effective	8	2.030	1.090	3.062	1.062	.900	.750			
CC-82	82°	3-1 Effective	6	2.030	.775	3.000	1.000	.900	.750	SPEB-2522P	314T	T-8
CC-90	90°	3-1 Effective	6	2.030	.660	3.000	1.000	.900	.750			
CC-120	120°	2-1 Effective	4	2.030	.390	3.000	1.000	.900	.750			

Speed and Feed Info.

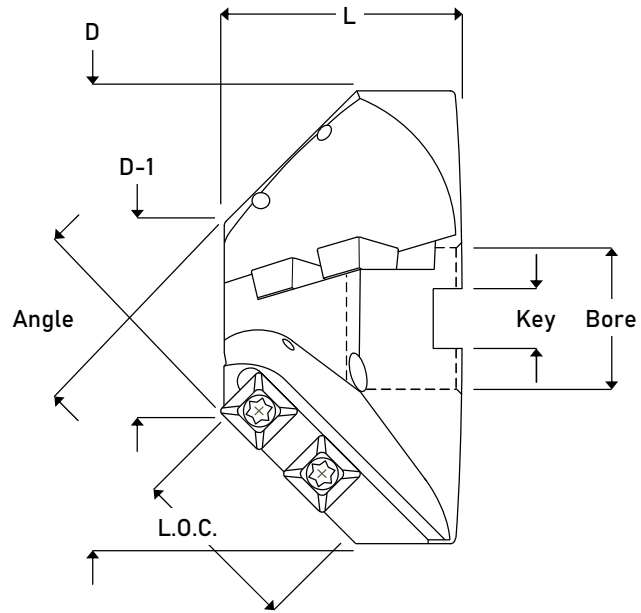
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.003 - .007
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .006
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .006
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .006
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .006
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.004 - .008
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.004 - .010

Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40



CCS

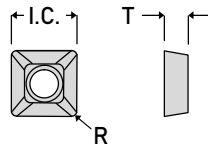
Long Edge Chamfer Mills

Shell Mills

Tool Info.

Tool #	Angle	Flutes	Inserts	D	D-1	L	L.O.C.	Bore	Key	Insert	Screw	Wrench
CCS-601	60°	4-2 Effective	8	3.000	1.840	1.625	1.130	1.000	.375			
CCS-602	60°	4-2 Effective	14	4.000	1.970	2.250	2.000	1.250	.500			
CCS-821	82°	4-2 Effective	8	3.250	1.718	1.625	1.130	1.000	.375			
CCS-822	82°	4-2 Effective	14	4.500	1.750	2.000	2.000	1.250	.500	SPEB-332P	538T	T-10
CCS-901	90°	4-2 Effective	8	2.985	1.250	1.500	1.130	.750	.312			
CCS-902	90°	4-2 Effective	14	4.720	1.750	2.000	2.000	1.250	.500			
CCS-1201	120°	4-2 Effective	8	3.625	1.580	1.625	1.130	1.000	.375			
CCS-1202	120°	4-2 Effective	14	5.375	1.820	2.000	2.000	1.250	.500			

Positive Top Insert



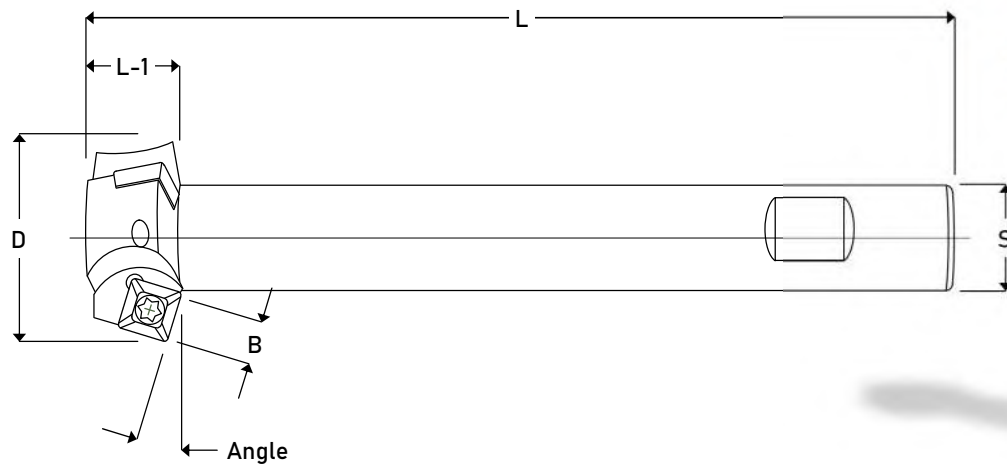
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-332P	.375	.187	.031	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .007
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .006
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .006
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .006
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .006
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.004 - .008
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.004 - .010

CMR
Chamfer Mills Reversed

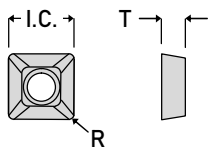


Shank Tools

Tool Info.

Tool #	Angle	Flutes	D	L	L-1	B	S	Insert	Screw	Wrench
CMR-1515	15°	3	1.500	6.000	.625	.312	.750	SPEB-322P	438T	T-10
CMR-2515	15°	3	2.500	6.000	1.250	.687	1.000	SPEB-6352PA	1012T	T-25
CMR-1530	30°	3	1.500	6.000	.625	.312	.750	SPEB-322P	438T	T-10
CMR-2530	30°	3	2.500	6.000	1.250	.687	1.000	SPEB-6352PA	1012T	T-25
CMR-1560	60°	3	1.500	6.000	.795	.312	.750	SPEB-322P	438T	T-10
CMR-2560	60°	3	2.500	6.000	1.650	.687	1.000	SPEB-6352PA	1012T	T-25

Positive Top Inserts

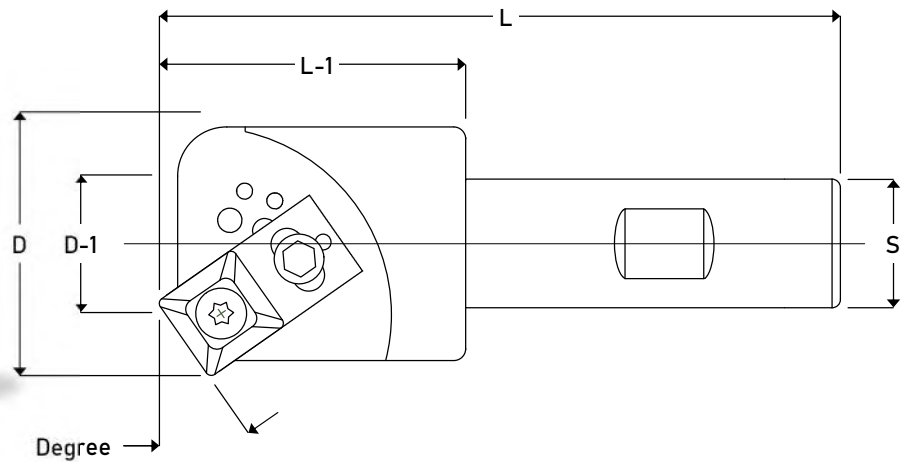


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-6352PA	.750	.220	.031	C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.003 - .007
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .006
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .006
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .006
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .006
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.004 - .008
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.004 - .010



Achieve Any Angle With A Comparator

Shank Tools

Tool Info.

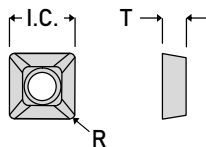
Tool #	Flutes	L	L-1	S	Cartridge	Cartridge Screw	Insert
AC-750	1	3.000	1.000	.750	AC2-Cart	#25638	SDEB-2151P
AC-1250	1	3.500	1.500	.750	AC-Cart	#83212	SPEB-422PA
AC-1500	1	3.500	1.500	.750	AC-Cart	#83212	SPEB-422PA

Standard Preset Angle Dimensions

Tool Info.

Tool #	0°		15°		30°		45°		60°		75°	
	D	D-1	D	D-1	D	D-1	D	D-1	D	D-1	D	D-1
AC-750	.750	-	.770	.350	.810	.420	.820	.520	.810	.600	.790	.680
AC-1250	1.250	-	1.310	.450	1.390	.590	1.430	.790	1.390	.970	1.350	1.120
AC-1500	1.500	-	1.560	.700	1.640	.840	1.680	1.040	1.640	1.220	1.600	1.370

Positive Top Inserts



Insert Info.

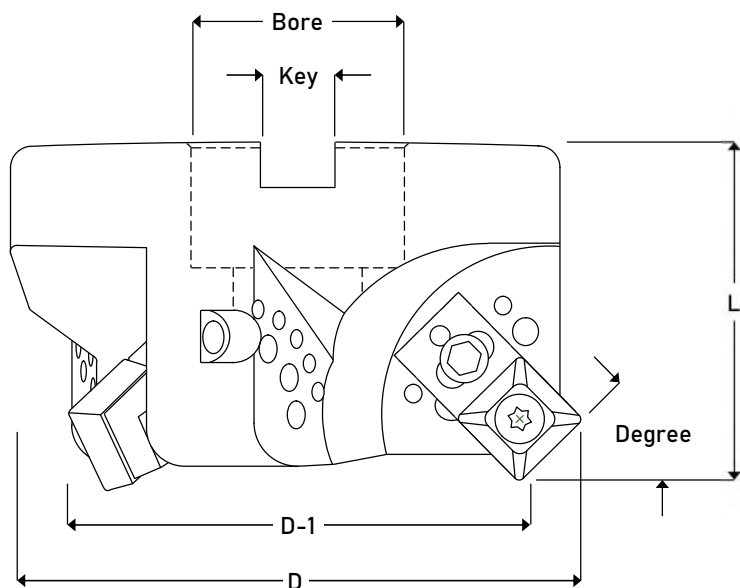
Insert #	I.C.	T	R	Screw	Wrench	Grade
SDEB-2151P	.250	.093	.015	300T	T-8	X33
SPEB-422PA	.500	.125	.031	614T	T-15	X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.003 - .007
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .006
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .006
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .006
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .006
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.004 - .008
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.004 - .010

AC

Multi-Angle Chamfer Tools



Achieve Any Angle With A Comparator

Shell Mill

Tool Info.

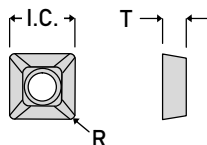
Tool #	Flutes	L	Bore	Key	Cartridge	Cartridge Screw	Insert
AC-3000	3	1.625	1.000	.375	AC3-Cart	#83234	SPEB-432PA

Standard Preset Angle Dimensions

Tool Info.

Tool #	0°		15°		30°		45°		60°		75°	
	D	D-1	D	D-1	D	D-1	D	D-1	D	D-1	D	D-1
AC-3000	3.000	-	3.080	2.250	3.180	2.440	3.220	2.620	3.210	2.780	3.160	2.940

Positive Top Insert

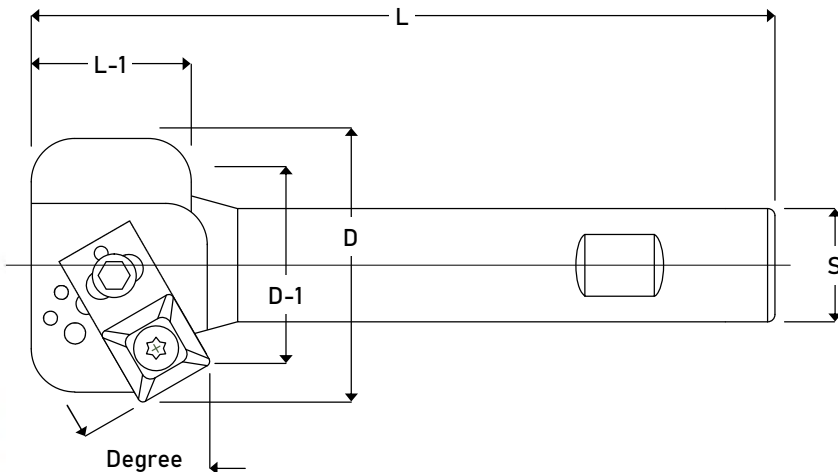


Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grades
SPEB-432PA	.500	.187	.031	638T	T-15	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .005
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .004
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .004
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .007



Achieve Any Angle With A Comparator

Shank Tool

Tool Info.

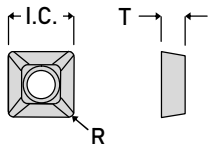
Tool #	Flutes	L	L-1	S	Cartridge	Cartridge Screw	Insert
ACR-1500	1	4.500	1.000	.750	AC-Cart	#83212	SPEB-422PA

Standard Preset Angle Dimensions

Tool Info.

Tool #	0°		15°		30°		45°		60°		75°	
	D	D-1	D	D-1	D	D-1	D	D-1	D	D-1	D	D-1
ACR-1500	1.500	-	1.560	.700	1.640	.840	1.680	1.040	1.640	1.220	1.600	1.370

Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grade
SPEB-422PA	.500	.125	.031	614T	T-15	X33

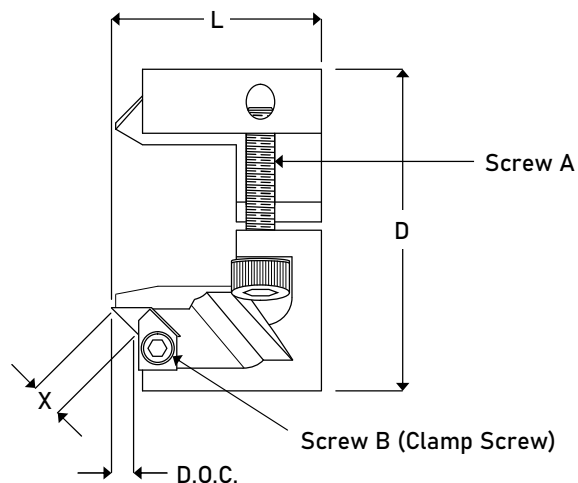
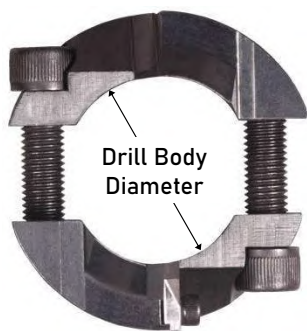
Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .005
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .004
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .004
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .007

AC

Multi-Angle Chamfer Tools

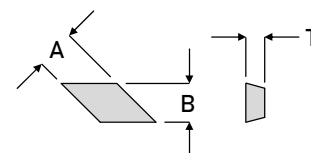
DCR
Drill Chamfer Rings



Tool Info.

Tool #	Drill Body Dia.	D.O.C.	X	L	D	Insert
DCR-30-40	.300 - .400	.180	.250	1.000	1.220	DDG-45
DCR-40-50	.401 - .500	.180	.250	1.000	1.220	
DCR-50-62	.501 - .625	.180	.250	1.140	1.470	
DCR-62-75	.626 - .750	.180	.250	1.140	1.470	
DCR-75-87	.751 - .875	.180	.250	1.280	1.730	
DCR-87-100	.876 - 1.000	.180	.250	1.280	1.730	
DCR-100-112	1.001 - 1.125	.180	.250	1.280	1.970	
DCR-112-125	1.126 - 1.250	.180	.250	1.280	1.970	
DCR-125-138	1.251 - 1.375	.180	.250	1.440	2.130	
DCR-138-150	1.376 - 1.500	.180	.250	1.440	2.250	

Tool #	Screw A	Wrench	Screw B	Wrench	Clamp
DCR-30-40	#103275	5/32"			
DCR-40-50	#103275	5/32"			
DCR-50-62	#103275	5/32"			
DCR-62-75	#103275	5/32"			
DCR-75-87	#142810	3/16"	#44025	3/32"	KCL-1
DCR-87-100	#142810	3/16"			
DCR-100-112	#142810	3/16"			
DCR-112-125	#142810	3/16"			
DCR-125-138	#142810	3/16"			
DCR-138-150	#142810	3/16"			



Insert Info.

Insert #	A	B	T	Grade
DDG-45	.190	.187	.093	X33

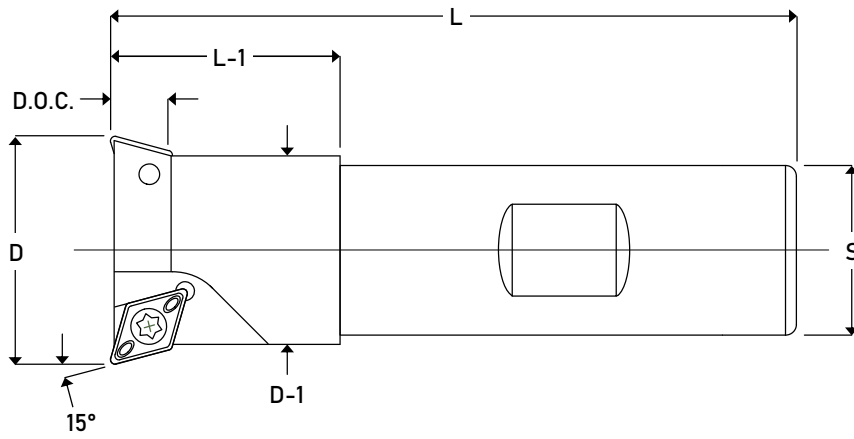
Allen wrenches are not supplied with Chamfer Rings.

Dovetail Cutters

Available in 15° - 30° - 45°

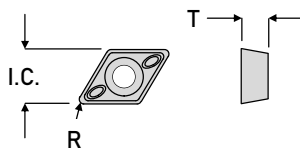


DT
Dovetail Cutters



Tool Info.

Tool #	D	D-1	Flutes	L	L-1	D.O.C.	S	Inserts
DT-1015	1.000	.830	2	3.000	1.000	.255	.750	DDEB-2151P
DT-1515	1.500	1.250	2	3.250	1.250	.370	.750	DPEB-3252P



Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .005
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .005
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .006

Insert Info

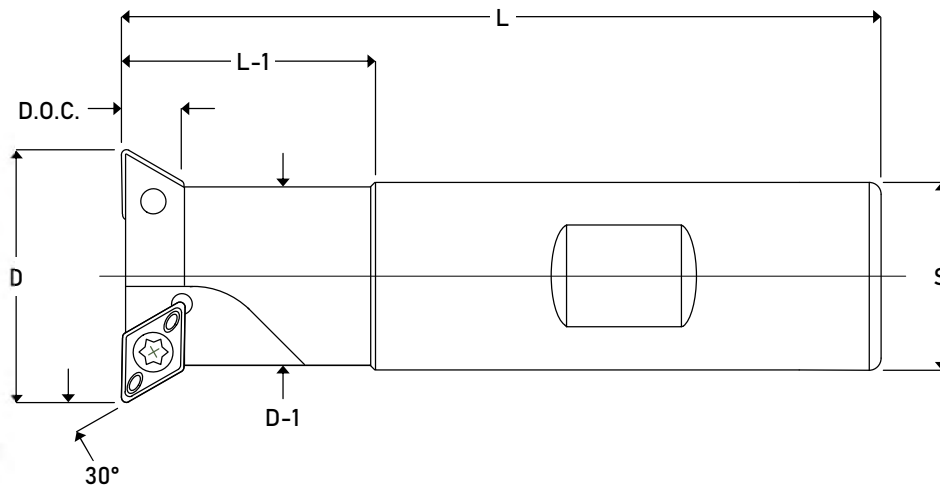
DDEB-2151P

Grades	X33 X40
I.C.	.250
T	.095
R	.015
Screw	314T
Wrench	T-8

Insert Info

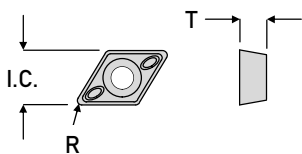
DPEB-3252P

Grade	X33
I.C.	.375
T	.160
R	.031
Screw	538T
Wrench	T-10



Tool Info.

Tool #	D	D-1	Flutes	L	L-1	D.O.C.	S	Inserts
DT-1075	1.000	.700	2	3.000	1.000	.220	.750	DDEB-2151P
DT-1575	1.500	1.062	2	3.250	1.250	.345	.750	DPEB-3252P



Speed and Feed Info.

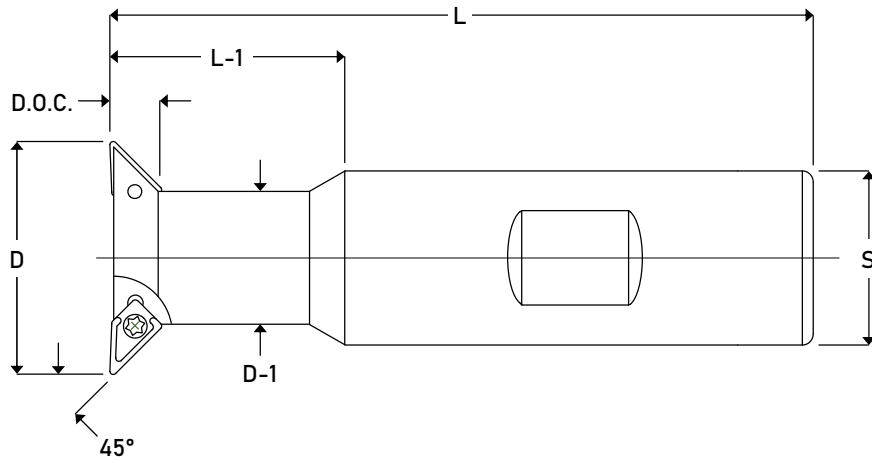
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .005
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .005
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .005
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.002 - .006
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.002 - .006

Insert Info

Insert Info

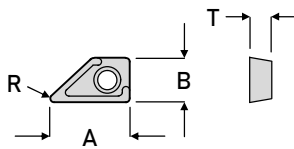
DDEB-2151P		DPEB-3252P	
Grades	X33 X40	Grade	X33
I.C.	.250	I.C.	.375
T	.095	T	.160
R	.015	R	.031
Screw	314T	Screw	538T
Wrench	T-8	Wrench	T-10

DT
Dovetail Cutters



Tool Info.

Tool #	D	D-1	Flutes	L	L-1	D.O.C.	S	Insert
DT-5050	.500	.312	1	2.500	.750	.110	.500	
DT-6250	.625	.312	1	2.500	.750	.170	.500	
DT-7550	.750	.375	1	2.500	.750	.200	.500	DTI-1511P
DT-1175	1.000	.562	2	3.000	1.000	.200	.750	
DT-1210	1.250	.812	3	3.500	1.250	.200	1.000	



Insert Info

DTI-1511P	
Grade	X33
A	.328
B	.187
T	.082
R	.015
Screw	164T
Wrench	T-6

Speed and Feed Info.

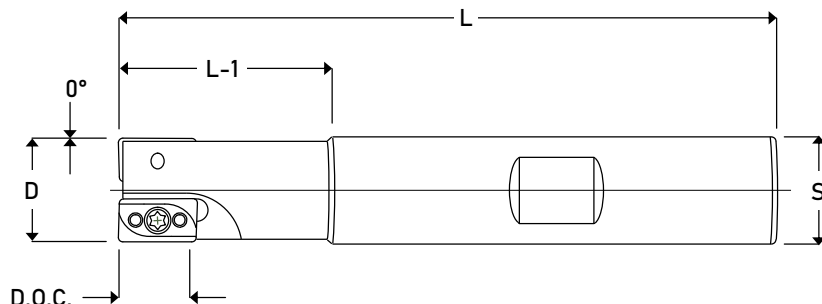
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.001 - .002
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.001 - .002
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.001 - .002
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .002
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.001 - .002
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.001 - .002
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.001 - .003



Mini Mills

Free Cutting for Faster Feed Rates
2 Cutting Edges Per Insert



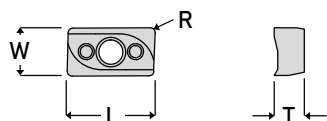


Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Insert	Screw	Wrench
MM-250	.250	1	2.030	.500	.218	.375			
XMM-250	.250	1	3.000	.680	.218	.375			
MM-281	.281	1	2.030	.500	.218	.375			
MM-312	.312	1	2.030	.500	.218	.375			
MM-343	.343	1	2.250	.720	.218	.375			
MM-375	.375	2	2.250	.720	.218	.375			
XMM-375	.375	1	3.500	1.970	.218	.375	MGH-151		
MM-406	.406	2	2.500	.750	.218	.500	MGH-1510	164T	T-6
MM-437	.437	2	2.500	.750	.218	.500	MGH-1511		
MM-468	.468	2	2.500	.750	.218	.500			
MM-500	.500	3	2.500	.750	.218	.500			
XMM-500	.500	2	4.000	2.250	.218	.500			
MM-625	.625	4	2.625	.750	.218	.625			
MM-750	.750	5	2.750	.750	.218	.750			

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.001 - .002
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.001 - .002
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.001 - .002
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .002
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.001 - .002
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.001 - .002
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.001 - .002



Insert Info.

Insert #	W	L	T	R	Grades
MGH-151	.170	.250	.080	.002	B1M X33
MGH-1510	.170	.250	.080	.008	X33
MGH-1511	.170	.250	.080	.015	X33

Radius Mills

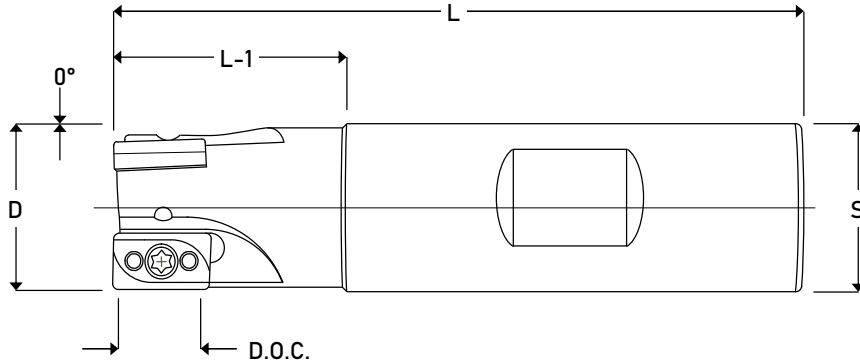


.015 to .250 Radius Inserts Available
Cuts a Square Shoulder within .001
Extended Length Tools Available
Available in Shank & Shell Mount



.015 - .031 - .047 - .062 Radius

RMS
Radius Mills

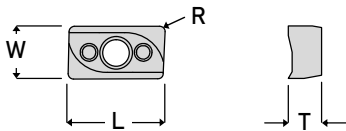


Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Inserts	Screw	Wrench
RMS-375	.375	1	2.625	.340	.310	.500			
RMS-500	.500	1	2.750	.750	.380	.500			
XRM-500	.500	1	3.625	1.500	.380	.750			
RMS-625	.625	2	3.000	1.000	.380	.625	MGH-2321 MGH-2322 MGH-2323 MGH-2324	314T	T-8
XRM-625	.625	1	3.875	1.875	.380	.750			
RMS-750	.750	3	3.000	1.000	.380	.750			
XRM-750	.750	2	4.250	2.250	.380	.750			
RMS-875	.875	3	3.250	1.250	.380	.750			
RMS-1000	1.000	4	3.250	1.250	.380	.750			

Speed and Feed Info.

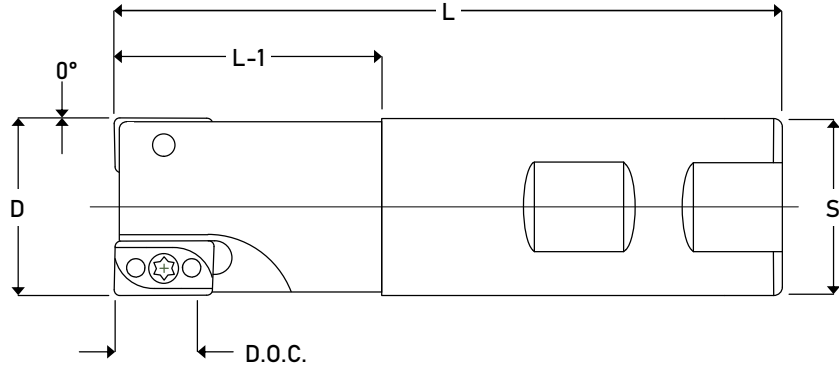
Material	S.F.M.	.375 - .625	.750 - 1.000
		Dia. I.P.T.	Dia. I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .003	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .004	.003 - .007



Insert Info.

Insert #	W	L	T	R	Grades
MGH-2321	.250	.400	.140	.015	X33
MGH-2322	.250	.400	.140	.031	B1M X33
MGH-2323	.250	.400	.140	.047	X33
MGH-2324	.250	.400	.140	.062	X33

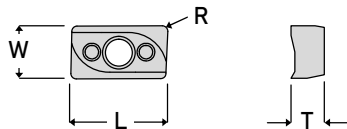
.015 - .031 - .062 - .093 - .125 Radius



RM
Radius Mills

Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Inserts	Screw	Wrench
RM-750A	.750	2	3.250	1.250	.540	.750			
RM-980A	.980	2	3.750	1.500	.540	1.000			
RM-1000A-2	1.000	2	3.750	1.500	.540	1.000			
RM-1000A-3	1.000	3	3.750	1.500	.540	1.000	MGH-531A MGH-532A		
XRM-1000A	1.000	2	5.250	3.000	.540	1.000	MGH-534A	560T	T-10
RM-1250A-3	1.250	3	4.000	.875	.540	1.000	MGH-536A MGH-538A		
RM-1250A-4	1.250	4	4.000	.875	.540	1.000			
RM-1500A-4	1.500	4	4.000	.875	.540	1.000			
RM-1500A-5	1.500	5	4.000	.875	.540	1.000			



Insert Info.

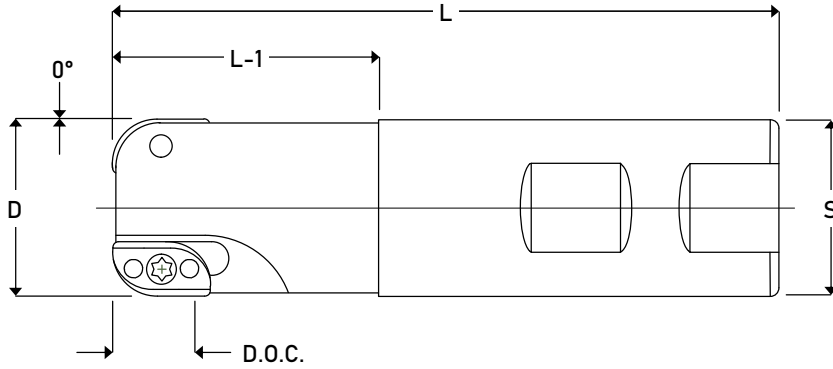
Insert #	W	L	T	R	Grades
MGH-531A	.313	.562	.190	.015	X33
MGH-532A	.313	.562	.190	.031	B1M X33
MGH-534A	.313	.562	.190	.062	X33
MGH-536A	.313	.562	.190	.093	X33
MGH-538A	.313	.562	.190	.125	X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .007

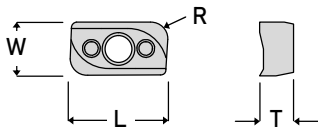
.156 - .187 - .218 - .250 Radius

RM
Radius Mills



Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Inserts	Screw	Wrench
RM-750B	.750	2	3.250	1.250	.540	.750			
RM-980B	.980	2	3.750	1.500	.540	1.000			
RM-1000B-2	1.000	2	3.750	1.500	.540	1.000			
RM-1000B-3	1.000	3	3.750	1.500	.540	1.000	MGH-5310B		
XRM-1000B	1.000	2	5.250	3.000	.540	1.000	MGH-5312B	560T	T-10
RM-1250B-3	1.250	3	4.000	.875	.540	1.000	MGH-5314B		
RM-1250B-4	1.250	4	4.000	.875	.540	1.000	MGH-5316B		
RM-1500B-4	1.500	4	4.000	.875	.540	1.000			
RM-1500B-5	1.500	5	4.000	.875	.540	1.000			

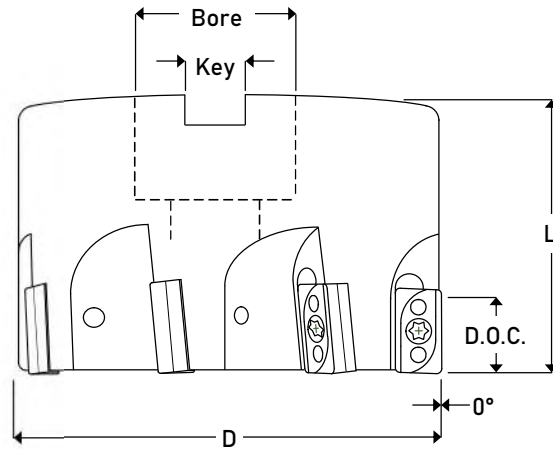
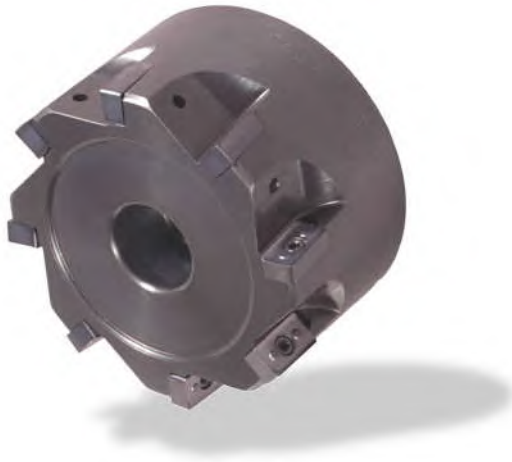


Insert Info.

Insert #	W	L	T	R	Grade
MGH-5310B	.313	.562	.190	.156	X33
MGH-5312B	.313	.562	.190	.187	X33
MGH-5314B	.313	.562	.190	.218	X33
MGH-5316B	.313	.562	.190	.250	X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .007



A Series

.015 - .031 - .062 - .093 - .125 Radius

Tool Info.

Tool #	D	Flutes	L	D.O.C.	Bore	Key	Inserts	Screw	Wrench
RM-2000A	2.000	6	1.625	.540	.750	.312	MGH-531A MGH-532A		
RM-2500A	2.500	7	1.625	.540	1.000	.375	MGH-534A MGH-536A	560T	T-10
RM-3000A	3.000	8	1.750	.540	1.000	.375	MGH-538A		

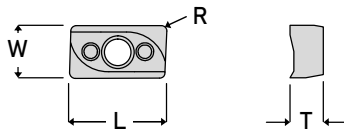
B Series

.156 - .187 - .218 - .250 Radius

Tool Info.

Tool #	D	Flutes	L	D.O.C.	Bore	Key	Inserts	Screw	Wrench
RM-2000B	2.000	6	1.625	.540	.750	.312	MGH-5310B MGH-5312B		
RM-2500B	2.500	7	1.625	.540	1.000	.375	MGH-5314B MGH-5316B	560T	T-10
RM-3000B	3.000	8	1.750	.540	1.000	.375			

For Larger Diameters, Refer to Universal Mills on Page 127



Insert Info.

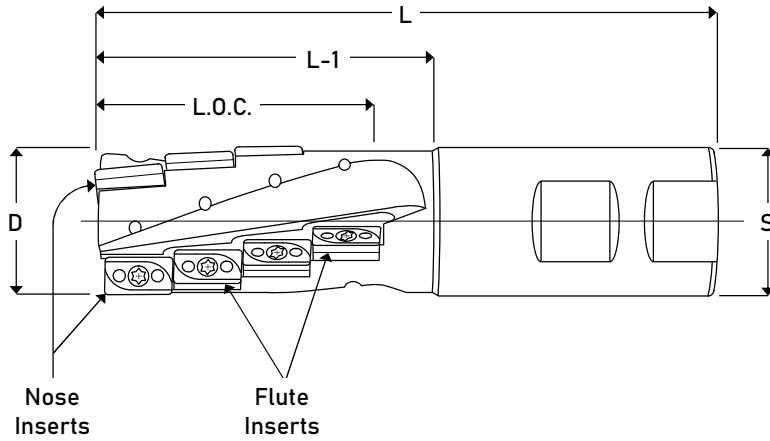
Insert #	W	L	T	R	Grades
MGH-531A	.313	.562	.190	.015	X33
MGH-532A	.313	.562	.190	.031	B1M X33
MGH-534A	.313	.562	.190	.062	X33
MGH-536A	.313	.562	.190	.093	X33
MGH-538A	.313	.562	.190	.125	X33
MGH-5310B	.313	.562	.190	.156	X33
MGH-5312B	.313	.562	.190	.187	X33
MGH-5314B	.313	.562	.190	.218	X33
MGH-5316B	.313	.562	.190	.250	X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .006
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .007

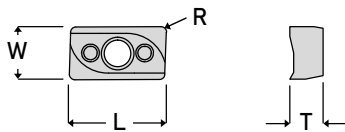
.015 - .250 Radius

RML
Radius Mills



Tool Info.

Tool #	D	Flutes	Inserts	L	L-1	L.O.C.	S	Nose Inserts	Flute Inserts	Screw	Wrench
RML-1000A	1.000	2-1 Effective	6	4.250	2.000	1.700	1.000	MGH-531A			
RML-1250A	1.250	3-1.5 Effective	12	5.000	2.750	2.250	1.250	MGH-532A			
RML-1500A	1.500	4-2 Effective	20	5.500	3.250	2.800	1.250	MGH-534A			
RML-2000A	2.000	4-2 Effective	24	6.687	4.000	3.400	1.500	MGH-536A			
RML-1000B	1.000	2-1 Effective	6	4.250	2.000	1.700	1.000		MGH-538A		
RML-1250B	1.250	3-1.5 Effective	12	5.000	2.750	2.250	1.250		MGH-532A	560T	T-10
RML-1500B	1.500	4-2 Effective	20	5.500	3.250	2.800	1.250	MGH-5310B			
RML-2000B	2.000	4-2 Effective	24	6.687	4.000	3.400	1.500	MGH-5312B			
								MGH-5314B			
								MGH-5316B			



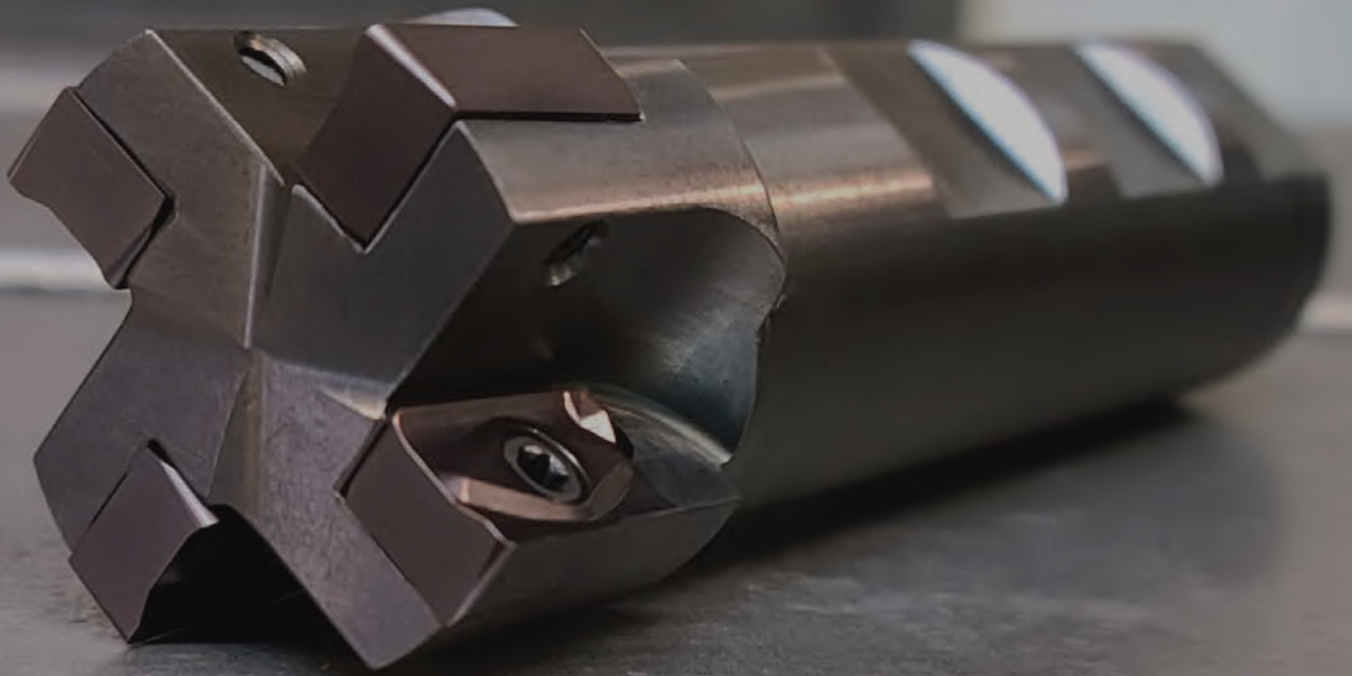
Insert Info.

Insert #	W	L	T	R	Grades
MGH-531A	.313	.562	.190	.015	X33
MGH-532A	.313	.562	.190	.031	B1M X33
MGH-534A	.313	.562	.190	.062	X33
MGH-536A	.313	.562	.190	.093	X33
MGH-538A	.313	.562	.190	.125	X33
MGH-5310B	.313	.562	.190	.156	X33
MGH-5312B	.313	.562	.190	.187	X33
MGH-5314B	.313	.562	.190	.218	X33
MGH-5316B	.313	.562	.190	.250	X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	400 - 800	.003 - .008
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	300 - 500	.002 - .006
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	300 - 500	.002 - .006
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 500	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 500	.002 - .004
Iron Ex. Cast, Ductile, Nodular	400 - 800	.003 - .009
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	100 - 200	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	800 - 1200	.004 - .010

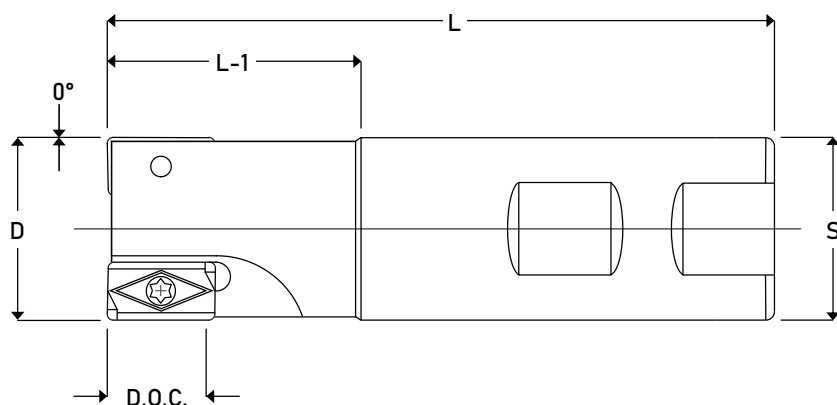
Keli Mills



Great Tool for Cast Iron, Inconel,
Stainless Steel & Aluminum

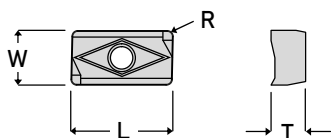
Cuts a Square Shoulder Within .001
Long Edge Tools Available
.031 to .062 Radius Inserts
Available in Shank & Shell Mount Style





Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Inserts	Screw	Wrench
KE-1000-2	1.000	2	3.750	1.500	.580	1.000			
KE-1000-3	1.000	3	3.750	1.500	.580	1.000			
KE-1250-3	1.250	3	4.000	.875	.580	1.000	LPMT-52-532	560T	T-10
KE-1250-4	1.250	4	4.000	.875	.580	1.000	LPMT-52-533		
KE-1500-4	1.500	4	4.000	.875	.580	1.000	LPMT-52-534		
KE-1500-5	1.500	5	4.000	.875	.580	1.000			

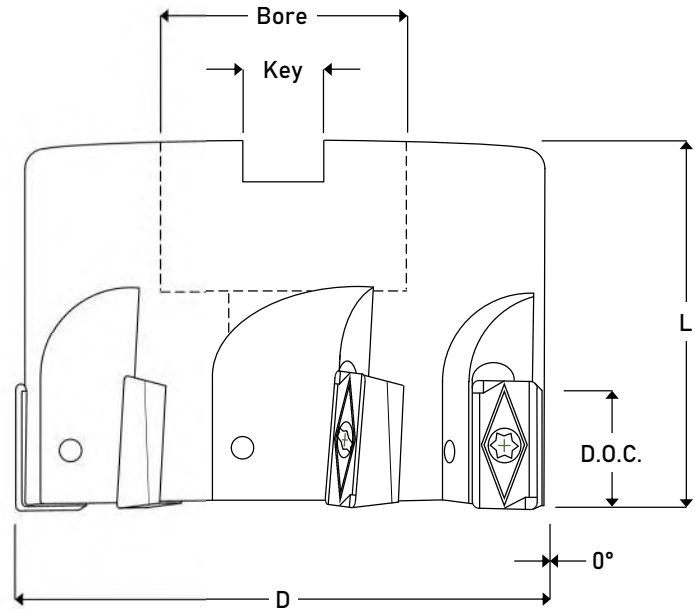


Insert Info.

Insert #	W	L	T	R	Grades
LPMT-52-532	.320	.600	.208	.031	B1M X33 X40
LPMT-52-533	.320	.600	.208	.047	X33 X40
LPMT-52-534	.320	.600	.208	.062	X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1200	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	120 - 180	.001 - .004
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.005 - .010

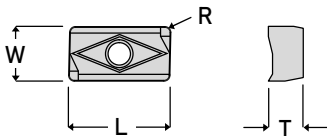


KE
Keli-Mills

Tool Info.

Tool #	D	Flutes	L	D.O.C.	Bore	Key	Inserts	Screw	Wrench
KE-2000	2.000	6	1.625	.580	.750	.312	LPMT-52-532		
KE-2500	2.500	7	1.625	.580	1.000	.375	LPMT-52-533	560T	T-10
KE-3000	3.000	8	1.750	.580	1.250	.500	LPMT-52-534		

For Larger Diameters, Refer to Universal Mills on Page 127



Insert Info.

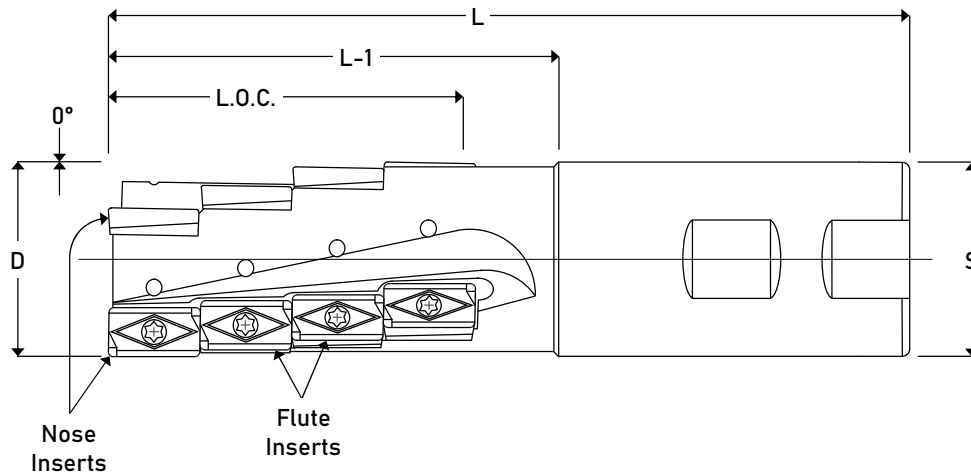
Insert #	W	L	T	R	Grades
LPMT-52-532	.320	.600	.208	.031	B1M X33 X40
LPMT-52-533	.320	.600	.208	.047	X33 X40
LPMT-52-534	.320	.600	.208	.062	X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1200	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	120 - 180	.001 - .004
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.005 - .010

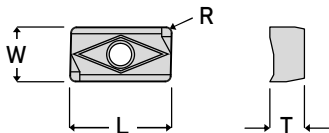
Long Edge

KEL
Keli-Mills



Tool Info.

Tool #	D	Flutes	Inserts	L	L-1	L.O.C.	S	Nose Inserts	Flute Insert	Screw	Wrench
KEL-1000	1.000	2-1 Effective	6	4.500	2.250	1.800	1.000	LPMT-52-532			
KEL-1250	1.250	3-1.5 Effective	12	5.125	2.880	2.400	1.250	LPMT-52-533	LPMT-52-532	560T	T-10
KEL-1500	1.500	3-1.5 Effective	15	5.750	3.500	3.000	1.250	LPMT-52-534			



Insert Info.

Insert #	W	L	T	R	Grades
LPMT-52-532	.320	.600	.208	.031	B1M X33 X40
LPMT-52-533	.320	.600	.208	.047	X33 X40
LPMT-52-534	.320	.600	.208	.062	X33 X40

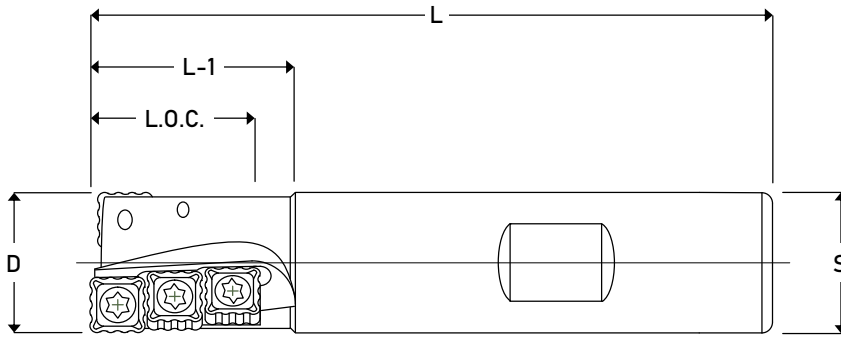
Speed and Feed Info.

Material	S.F.M.	I.P.T.
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 500	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	400 - 800	.004 - .008
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	100 - 200	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	800 - 1200	.005 - .010

Serators

Serrated Edge to Reduce Cutting Pressure
Cuts .010 to .020 Undersize for Finishing
Multiple Style Inserts Available
Available in Shank, Shell & CAT-50 Taper





Tool Info.

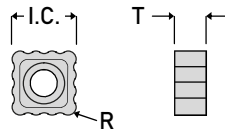
Tool #	D	Flutes	Inserts	L	L-1	L.O.C.	S	Inserts	Screw	Wrench
S-625	.615	2-1 Effective	6	3.000	.900	.750	.625	SNMC-222B	314T	T-8
S-750	.740	2-1 Effective	8	3.375	1.125	1.000	.750	SNMC-221P		

IMPORTANT

High Pressure Flood Coolant or Air Blast Required to Disperse Chip and Cool the Tool

Recutting Chips Will Cause Early Insert Failure

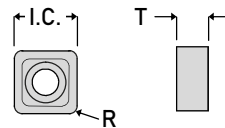
Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Grade
SNMC-222B	.250	.125	.031	X33

Positive Top Insert

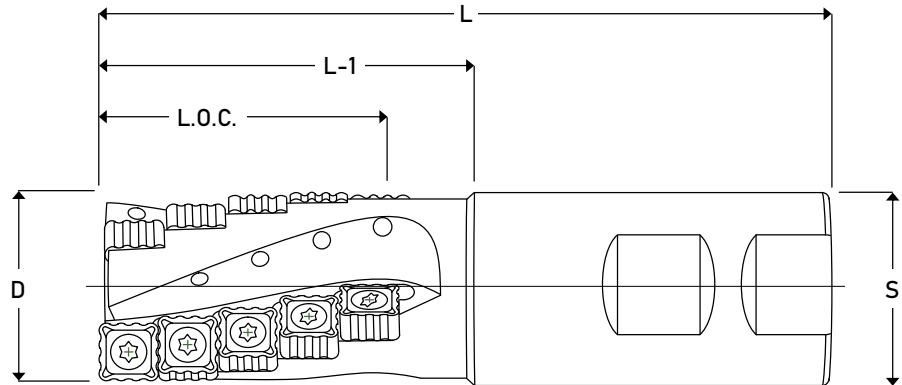


Insert Info.

Insert #	I.C.	T	R	Grade
SNMC-221P	.250	.125	.015	X33

Speed and Feed Info.

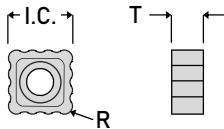
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	600 - 1200	.002 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .004
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	100 - 180	.001 - .002



Tool Info.

Tool #	D	Flutes	Inserts	L	L-1	L.O.C.	S	Inserts	Screw	Wrench
S-100S	.985	2-1 Effective	4	3.125	1.125	.780	.750			
S-100M	.985	2-1 Effective	6	3.625	1.375	1.125	1.000			
S-100	.985	2-1 Effective	8	4.000	1.750	1.500	1.000			
S-125S	1.235	3-1.5 Effective	9	3.750	1.500	1.125	1.000	SNMC-333B		
S-125	1.235	3-1.5 Effective	15	4.625	2.375	1.900	1.250	SNGC-333H	538T	T-10
S-125L	1.235	2-1 Effective	16	5.625	3.375	3.062	1.250	SNMC-332P		
S-150S	1.485	3-1.5 Effective	9	3.875	1.625	1.125	1.000			
S-150	1.485	3-1.5 Effective	18	4.875	2.500	2.250	1.250			
S-150L	1.485	3-1.5 Effective	33	7.250	4.625	4.200	1.500			

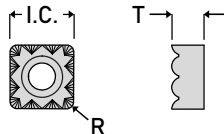
Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Grade
SNMC-333B	.375	.187	.047	X33

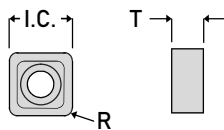
Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Grade
SNGC-333H	.375	.187	.047	X33

Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Grade
SNMC-332P	.375	.187	.031	X33

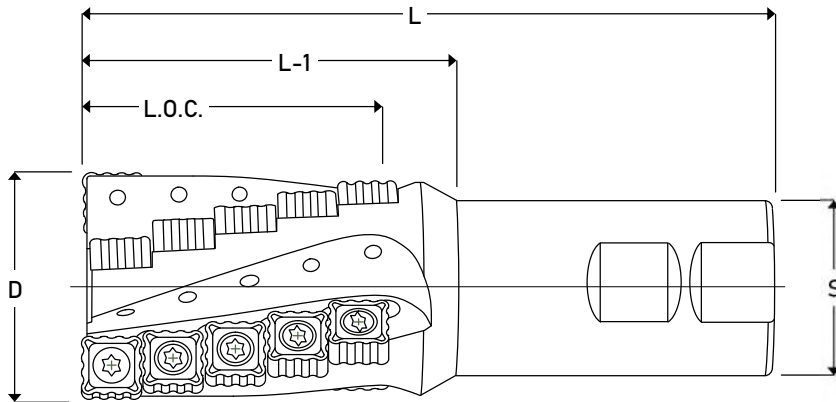
IMPORTANT

High Pressure Flood Coolant or Air Blast Required to Disperse Chip and Cool the Tool

Recutting Chips Will Cause Early Insert Failure

Speed and Feed Info.

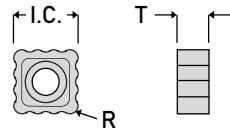
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	600 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .004
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .004
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	100 - 180	.001 - .003



Tool Info.

Tool #	D	Flutes	Inserts	L	L-1	L.O.C.	S	Inserts	Screw	Wrench
S-200	1.980	4-2 Effective	20	5.750	3.125	2.550	1.500	SNMC-444B SNGC-444H SNMC-443P	838T	T-20

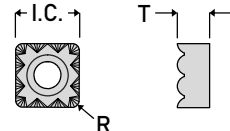
Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Grade
SNMC-444B	.500	.250	.062	X33

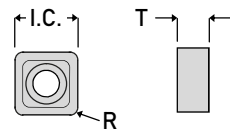
Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Grade
SNGC-444H	.500	.250	.062	X33

Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Grades
SNMC-443P	.500	.250	.047	C55 X33

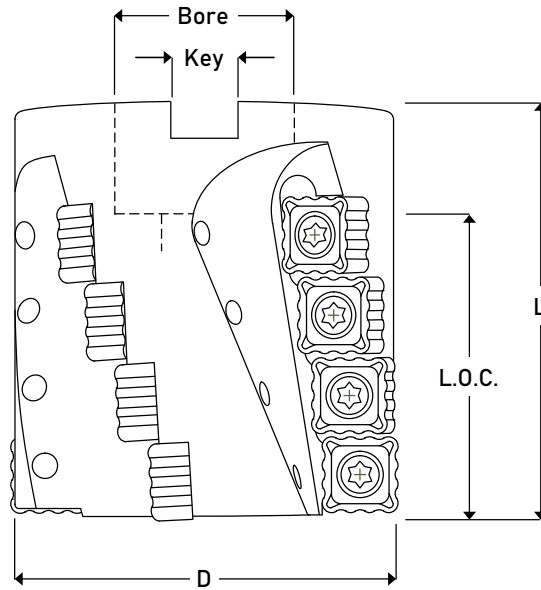
IMPORTANT

High Pressure Flood Coolant or Air Blast Required to Disperse Chip and Cool the Tool

Recutting Chips Will Cause Early Insert Failure

Speed and Feed Info.

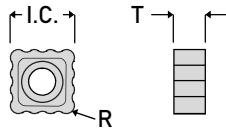
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	600 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .004
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .004
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .006
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, TI-6AL-4V	100 - 180	.001 - .003



Tool Info.

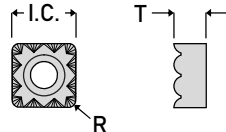
Tool #	D	Flutes	Inserts	L	L.O.C.	Bore	Key	Inserts	Screw	Wrench
S-200S	1.980	4-2 Effective	16	2.000	1.500	.750	.312	SNMC-333B SNGC-333H SNMC-332P	538T	T-10
S-250S	2.480	4-2 Effective	16	2.625	2.000	1.250	.500	SNMC-444B	838T	T-20
S-300S	2.980	4-2 Effective	20	3.250	2.500	1.500	.625	SNGC-444H SNMC-443P	838T	T-20
S-400S	3.980	6-3 Effective	30	3.290	2.500	1.500	.625		838T	T-20

Positive Top Inserts



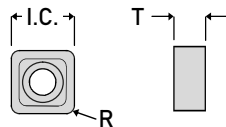
Insert #	I.C.	T	R	Grade
SNMC-333B	.375	.187	.047	X33
SNMC-444B	.500	.250	.062	X33

Positive Top Inserts



Insert #	I.C.	T	R	Grade
SNGC-333H	.375	.187	.047	X33
SNGC-444H	.500	.250	.062	X33

Positive Top Inserts



Insert #	I.C.	T	R	Grades
SNMC-332P	.375	.187	.031	X33
SNMC-443P	.500	.250	.047	C55 X33

IMPORTANT

High Pressure Flood Coolant or Air Blast Required to Disperse Chip and Cool the Tool

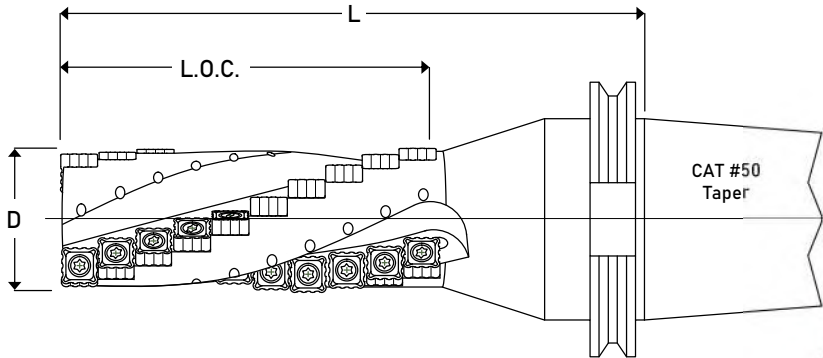
Recutting Chips Will Cause Early Insert Failure

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	600 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .004
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .004
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	100 - 180	.001 - .003

Integral

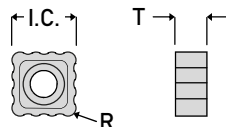
V50 Serators



Tool Info.

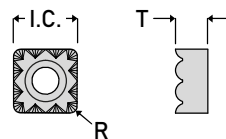
Tool #	D	Flutes	Inserts	L	L.O.C.	Inserts	Screw	Wrench
V50-203	1.980	4-2 Effective	28	6.000	3.600			
V50-205	1.980	3-1.5 Effective	30	8.000	5.100			
V50-253	2.480	4-2 Effective	28	6.000	3.600	SNMC-444B		
V50-256	2.480	4-2 Effective	48	8.000	6.100	SNGC-444H	838T	T-20
V50-303	2.980	4-2 Effective	28	6.000	3.600	SNMC-443P		
V50-306	2.980	4-2 Effective	48	8.000	6.100			

Positive Top Insert



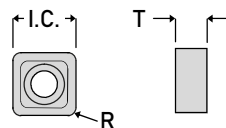
Insert #	I.C.	T	R	Grade
SNMC-444B	.500	.250	.062	X33

Positive Top Insert



Insert #	I.C.	T	R	Grade
SNGC-444H	.500	.250	.062	X33

Positive Top Insert



Insert #	I.C.	T	R	Grades
SNMC-443P	.500	.250	.047	C55 X33

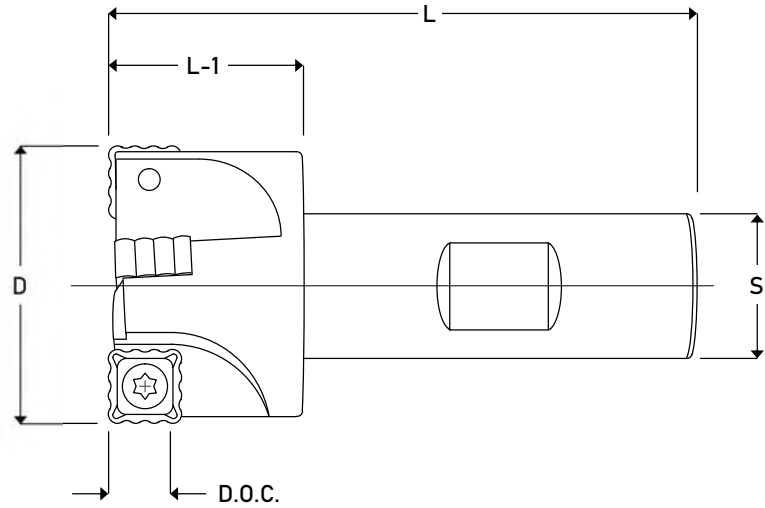
IMPORTANT

High Pressure Flood Coolant or Air Blast Required to Disperse Chip and Cool the Tool

Recutting Chips Will Cause Early Insert Failure

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	600 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .004
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .004
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .006
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	100 - 180	.001 - .003



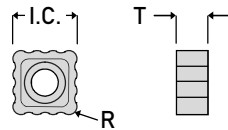
SM
Serators

Tool Info.

Tool #	D	Flutes	Inserts	L	L-1	D.O.C.	S	Inserts	Screw	Wrench
SM-100	.990	2-1 Effective	2	3.000	1.000	.370	.750			
SM-125	1.240	3-1.5 Effective	3	3.000	1.000	.370	.750	SNMC-333B	538T	T-10
SM-150	1.490	4-2 Effective	4	3.000	1.000	.370	.750	SNMC-333H		
SM-200	1.990	6-3 Effective	6	3.000	1.000	.370	.750			

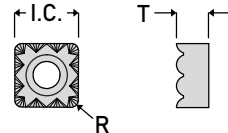
For Larger Diameters, Refer to Universal Mills on Page 127

Positive Top Insert



Insert #	I.C.	T	R	Grade
SNMC-333B	.375	.187	.047	X33

Positive Top Insert



Insert #	I.C.	T	R	Grade
SNGC-333H	.375	.187	.047	X33

IMPORTANT

High Pressure Flood Coolant or Air Blast Required to Disperse Chip and Cool the Tool

Recutting Chips Will Cause Early Insert Failure

Speed and Feed Info.

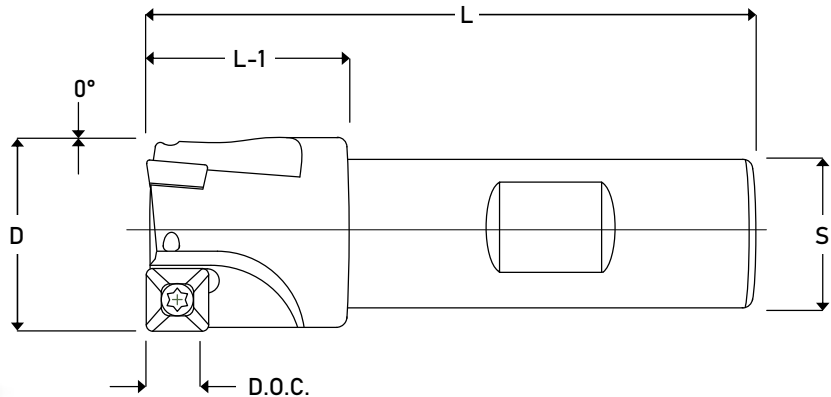
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	600 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .004
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .004
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	100 - 180	.001 - .003

A close-up photograph of a super alloy mill cutting a workpiece. The mill is a multi-fluted tool with a high positive rake angle. The cutting process is shown in progress, with a chip being removed from the workpiece. The mill is mounted on a shank, and the cutting action is focused on the tip of the tool. The background is blurred, showing the workpiece and the machine's structure.

Super Alloy Mills

High Positive & Cuts 90° Shoulder
4 Cutting Edges Per Insert
Multi Flute & Extended Version Available
Available in Shank Style & Shell Mount

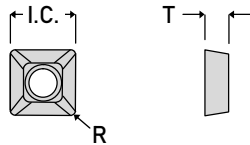




Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Insert	Screw	Wrench
SA-375	.375	1	2.250	.625	.235	.375	SDEB-2151P	300T	T-8
SA-500	.500	1	2.625	.625	.215	.500	SPEB-222P	300T	T-8
SA-625	.625	2	3.000	.875	.215	.625	SPEB-222P	314T	T-8
SA-750	.750	2	3.000	1.000	.280	.750	SPEB-2522P	314T	T-8
SA-100	1.000	3	3.000	1.000	.280	.750	SPEB-2522P	314T	T-8
SA-125	1.250	3	3.250	1.250	.340	.750	SPEB-332P	538T	T-10
SA-125HS	1.250	2	3.500	1.250	.465	1.000	SPEB-432PA	638T	T-15
SA-150	1.500	3	3.250	1.250	.340	.750	SPEB-332P	538T	T-10
SA-150HS	1.500	3	3.500	1.250	.465	1.000	SPEB-432PA	638T	T-15
SA-200	2.000	4	3.250	1.250	.340	.750	SPEB-332P	538T	T-10

Positive Top Inserts



Insert Info.

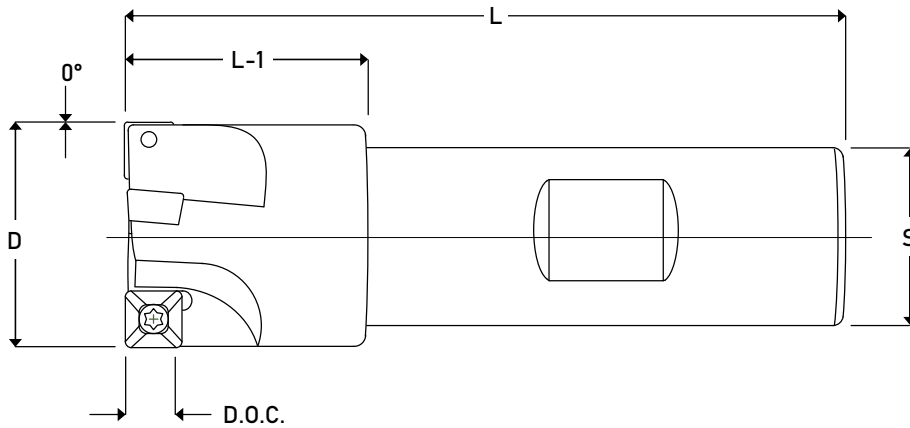
Insert #	I.C.	T	R	Grades
SDEB-2151P	.250	.093	.015	X33
SPEB-222P	.250	.125	.031	B1M C55 X33 X40
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40
SPEB-332P	.375	.187	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	.375-.500 Dia. I.P.T.	.625-2.000 Dia. I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003	.002 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003	.002 - .004
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003	.002 - .004
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.001 - .003	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003	.002 - .005
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .003	.002 - .006

Multi Flute

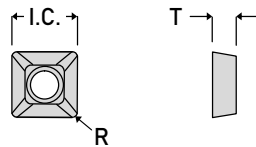
SA
Super Alloy Mills



Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Insert	Screw	Wrench
SA-750MF	.750	3	3.000	1.000	.215	.750	SPEB-222P	314T	T-8
SA-100MF	1.000	4	3.000	1.000	.215	.750	SPEB-222P	314T	T-8
SA-125MF	1.250	4	3.250	1.250	.280	.750	SPEB-2522P	314T	T-8
SA-150MF	1.500	5	3.250	1.250	.280	.750	SPEB-2522P	314T	T-8
SA-200MF	2.000	6	3.250	1.250	.280	.750	SPEB-2522P	314T	T-8

Positive Top Inserts

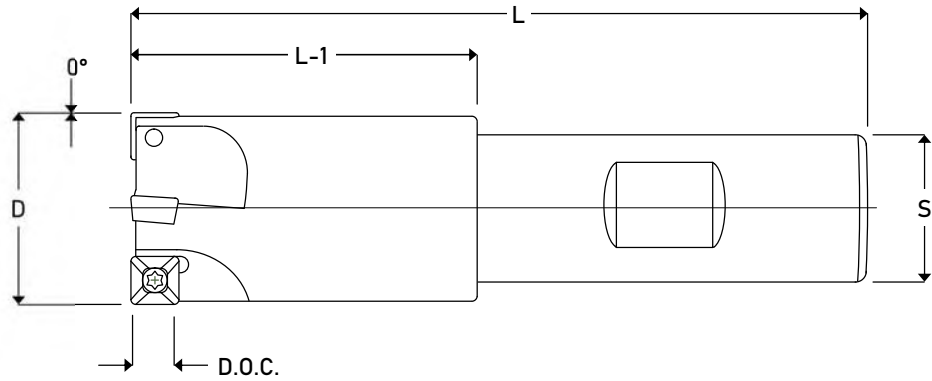


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-222P	.250	.125	.031	B1M C55 X33 X40
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .004
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .004
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .005
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .006

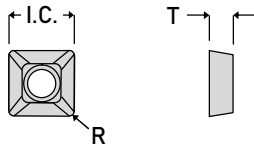


SAL
Super Alloy Mills

Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Insert	Screw	Wrench
SAL-750MF	.750	3	3.500	1.500	.215	.750	SPEB-222P	314T	T-8
SAL-100MF	1.000	4	3.750	1.750	.215	.750	SPEB-222P	314T	T-8
SAL-125MF	1.250	4	4.000	2.000	.280	.750	SPEB-2522P	314T	T-8
SAL-150MF	1.500	5	4.250	2.000	.280	1.000	SPEB-2522P	314T	T-8
SAL-200MF	2.000	6	4.500	2.250	.280	1.000	SPEB-2522P	314T	T-8

Positive Top Inserts



Insert Info.

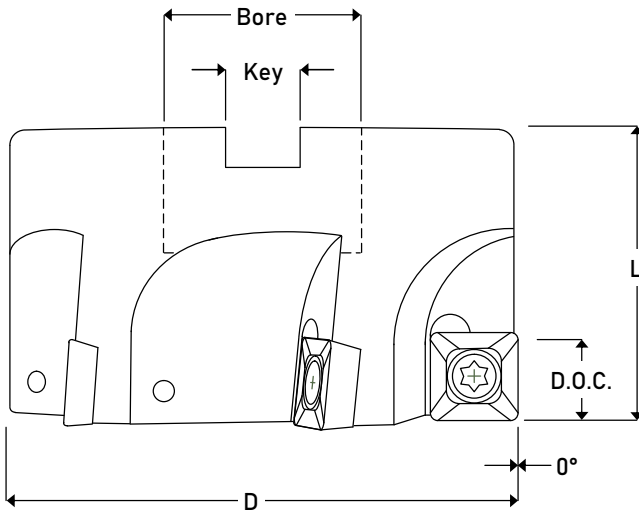
Insert #	I.C.	T	R	Grades
SPEB-222P	.250	.125	.031	B1M C55 X33 X40
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .004
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .004
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .005
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .006

Shell Mount

SA
Super Alloy Mills

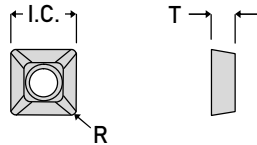


Tool Info.

Tool #	D	Flutes	L	D.O.C.	Bore	Key	Insert	Screw	Wrench
SA-2000	2.000	4	1.500	.465	.750	.312			
SA-2500	2.500	5	1.625	.465	1.000	.375	SPEB-432PA	638T	T-15
SA-3000	3.000	6	1.625	.465	1.000	.375			

For Larger Diameters, Refer to Universal Mills on Page 127

Positive Top Inserts



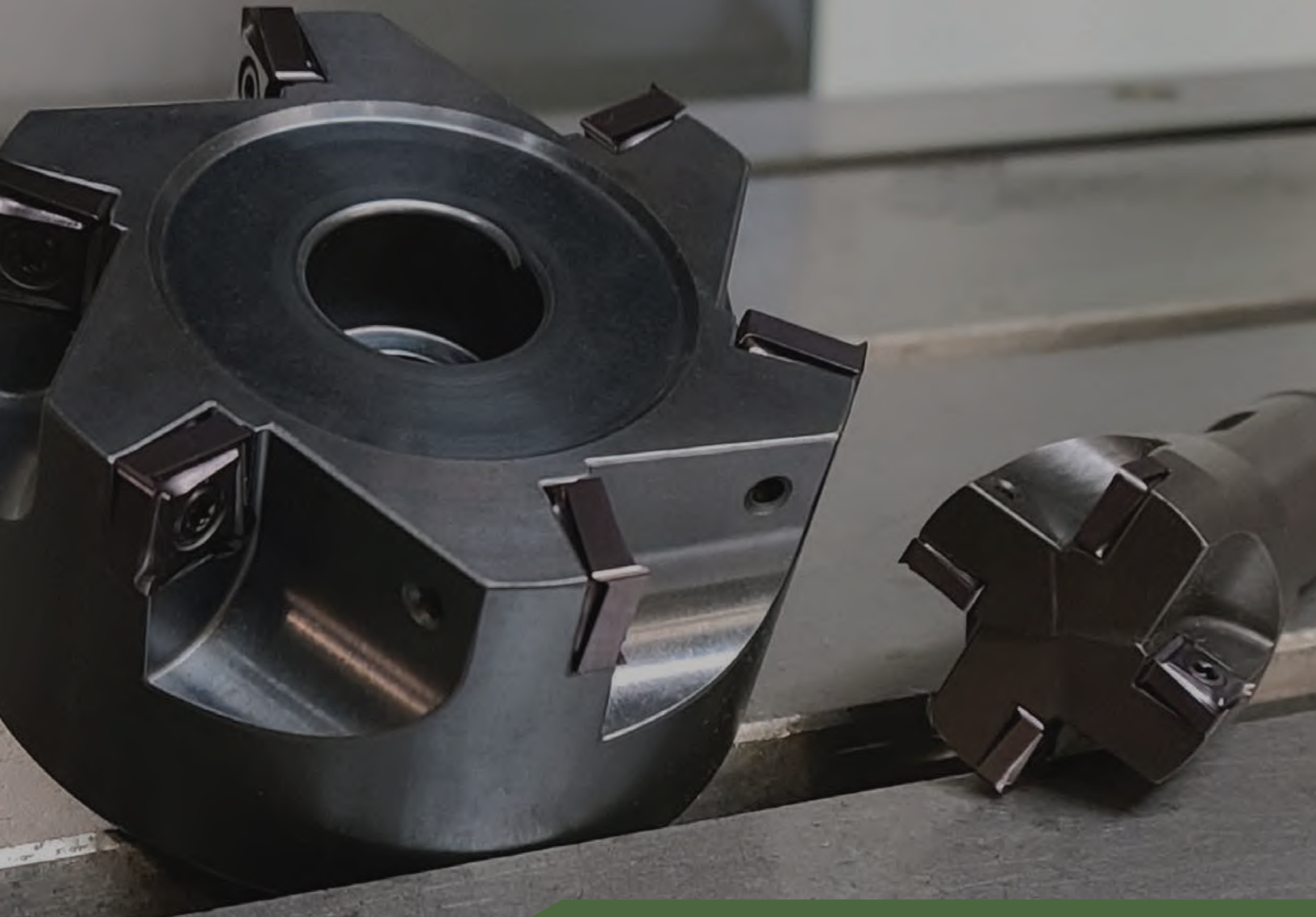
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .005
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .004
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .004
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.002 - .005
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.002 - .006

Eight Square Positive Mills

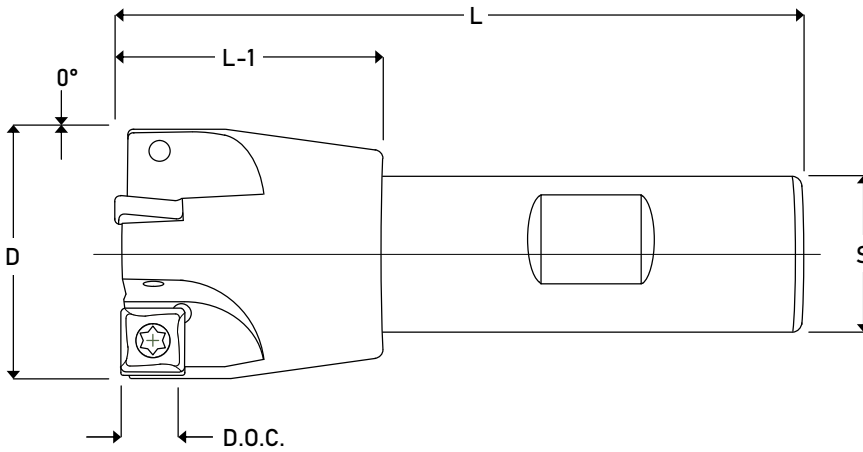


Cuts a Square Shoulder $\pm .001$
8 Cutting Edges
Strong Neutral Cutting Edge & Positive Axial Rake
Shank & Shell Mount Style-Great for Harder Materials



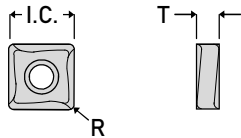
Shank Tools

ESP
Eight Square Positive Mills



Tool Info.

Tool #	D	Flutes	L	L-1	D.O.C.	S	Insert	Screw	Wrench
ESP-750-2	.750	2	3.000	1.000	.280	.750	SNPG-2522	314T	T-8
ESP-1000-2	1.000	3	3.000	1.000	.280	.750	SNPG-2522	314T	T-8
ESP-1250-2	1.250	4	3.250	1.250	.280	.750	SNPG-2522	314T	T-8
ESP-1500-2	1.500	5	3.250	1.250	.280	.750	SNPG-2522	314T	T-8
ESP-2000-2	2.000	6	3.250	1.250	.280	.750	SNPG-2522	314T	T-8
ESP-1500-3	1.500	3	4.000	1.750	.405	1.000	SNPG-3532	538T	T-10
ESP-2000-3	2.000	4	4.000	1.750	.405	1.000	SNPG-3532	538T	T-10

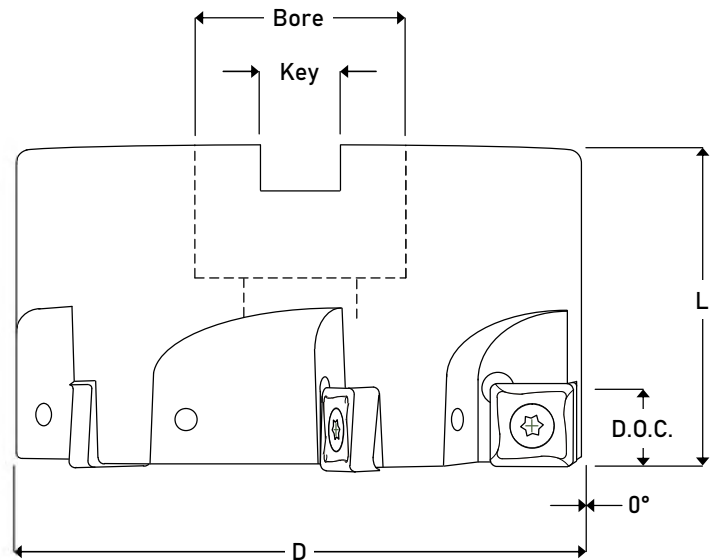


Insert Info.

Insert #	I.C.	T	R	Grade
SNPG-2522	.312	.125	.031	X33
SNPG-3532	.437	.187	.031	X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.003 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.003 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.003 - .005
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.003 - .005
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .007



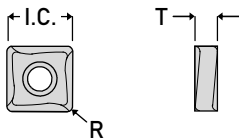
ESPS

Eight Square Positive Mills

Tool Info.

Tool #	D	Flutes	L	D.O.C.	Bore	Key	Insert	Screw	Wrench
ESPS-2000-3	2.000	4	1.500	.405	.750	.312			
ESPS-2500-3	2.500	6	1.625	.405	1.000	.375	SNPG-3532	538T	T-10
ESPS-3000-3	3.000	6	1.625	.405	1.000	.375			

For Larger Diameters, Refer to Universal Mills on Page 127



Insert Info.

Insert #	I.C.	T	R	Grade
SNPG-3532	.437	.187	.031	X33

Speed and Feed Info.

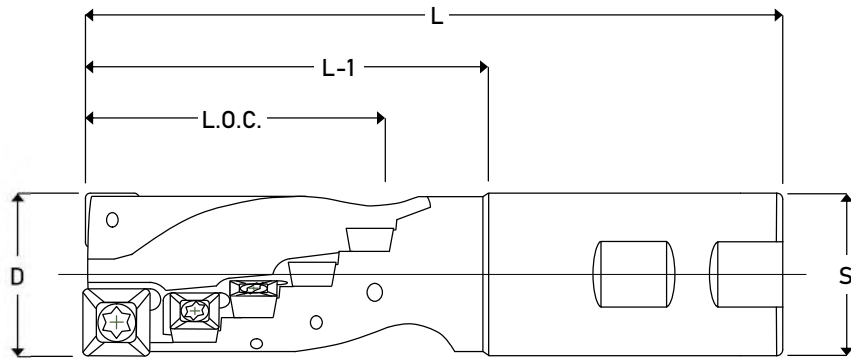
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.003 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.003 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.003 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.003 - .005
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.003 - .005
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .006
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .007

A close-up photograph of a long edge roughing mill. The tool features a cylindrical shank with several offset inserts mounted along its length. Each insert is secured with a screw. The inserts are positioned at different axial locations, creating a staggered cutting edge. The background shows other industrial components, slightly out of focus.

Stockbusters

Long Edge Roughing Mill
Offset Inserts to Reduce Tool Pressure
Available in Shank or CAT-50 Taper





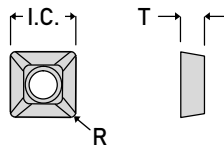
SB

Stockbusters

Tool Info.

Tool #	D	Inserts	Flutes	L	L-1	L.O.C.	S	Inserts	Screw	Wrench
SB-100	1.000	10	2-1 Effective	4.125	1.875	1.500	1.000	(1) SPEB-322P (9) SPEB-222P	438T 314T	T-10 T-8
SB-125	1.250	11	2-1 Effective	5.250	3.000	2.500	1.250	(1) SPEB-432PA (10) SPEB-332P	638T 538T	T-15 T-10
SB-150	1.500	17	3-1.5 Effective	5.250	3.000	2.500	1.250	(1) SPEB-432PA (16) SPEB-332P	638T 538T	T-15 T-10
SB-202	2.000	22	4-2 Effective	5.690	3.000	2.500	1.250	(2) SPEB-432PA (20) SPEB-332P	638T 538T	T-15 T-10

Positive Top Inserts



Insert Info.

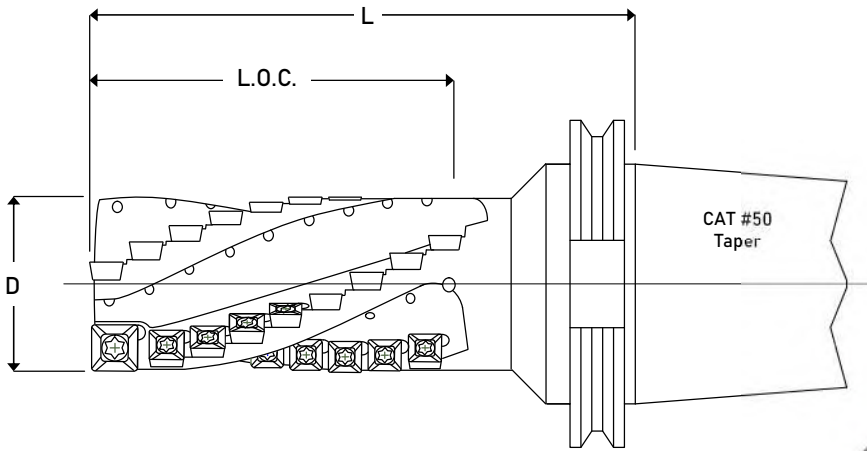
Insert #	I.C.	T	R	Grades
SPEB-222P	.250	.125	.031	B1M C55 X33 X40
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-332P	.375	.187	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	400 - 800	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	300 - 500	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	300 - 500	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 500	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 500	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	400 - 800	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	100 - 200	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	800 - 1200	.003 - .007

Integral

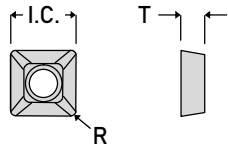
SB
Stockbusters



Tool Info.

Tool #	D	Inserts	Flutes	L	L.O.C.	Inserts	Screw	Wrench
V50-204SB	2.000	36	4-2 Effective	6.000	4.000	(2) SPEB-432PA (34) SPEB-332P	638T 538T	T-15 T-10

Positive Top Inserts



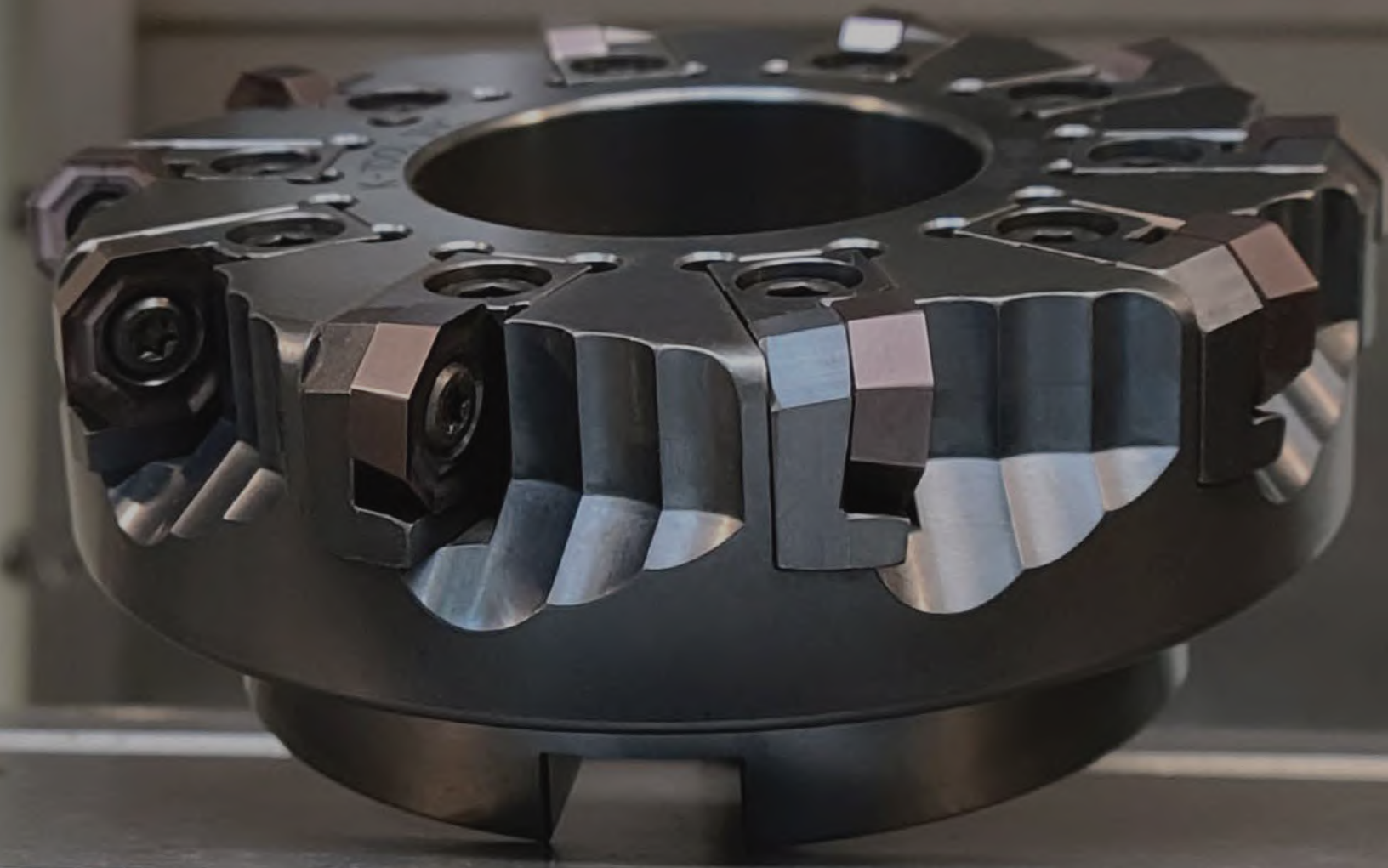
Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-332P	.375	.187	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40

Speed and Feed Info.

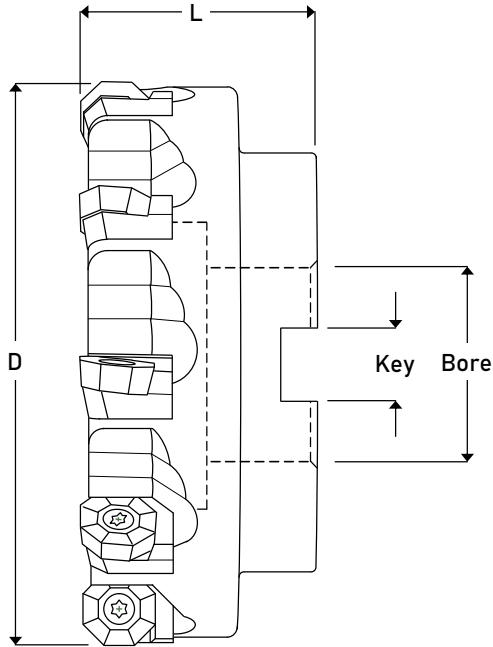
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	400 - 800	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	300 - 500	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	300 - 500	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 500	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 500	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	400 - 800	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	100 - 200	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	800 - 1200	.003 - .007

Universal Mills



Multiple Cartridge Options
Covers Wide Range Of Applications

UM
Universal Mills



Tool Info.

Tool #	D	Flutes	L	Bore	Key	Cartridge Screw	Allen Wrench	Adjustment Screw
UM-408	4.000	8	1.875	1.250	.500			
UM-510	5.000	10	2.000	1.500	.625			
UM-612	6.000	12	2.000	1.500	.625	142878	3/16"	1/4-28 x 3/8"
UM-816	8.000	16	2.250	2.500 With 4 Bolt Hole Pattern	1.000			
UM-1020	10.000	20	2.250		1.000			

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .007

NOTE:
SERA Cartridge A & B
must alternate every other pocket.

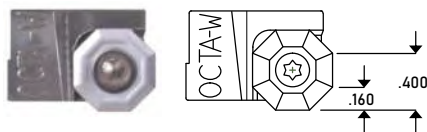
OCTA Cartridge



Insert - OPEB-535 / RPEB-535
See Page 11 For More Info.

Insert Screw	838T
Wrench	T-20

OCTA Wiper Cartridge



Insert - OPEB-535
See Page 11 For More Info.

Insert Screw	838T
Wrench	T-20

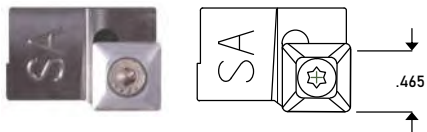
SERA Cartridge A & B



Insert - SNMC-444B / SNGC-444H
See Page 13 For More Info.

Insert Screw	838T
Wrench	T-20

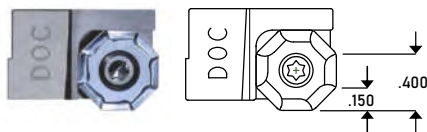
Super Alloy Cartridge



Insert - SNEB-432PA
See Page 13 For More Info.

Insert Screw	638T
Wrench	T-15

DOC Cartridge



Insert - ONPG-4532
See Page 11 For More Info.

Insert Screw	838T
Wrench	T-20

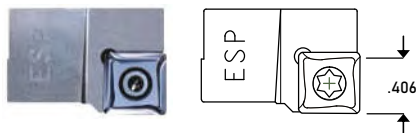
Radius Cartridge



Insert - MGH-530 SERIES
See Page 11 For More Info.

Insert Screw	560T
Wrench	T-10

ESP Cartridge



Insert - SNPG-3532
See Page 13 For More Info.

Insert Screw	538T
Wrench	T-10

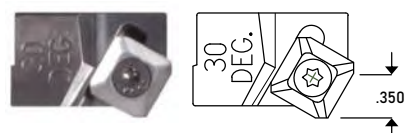
Keli Cartridge



Insert - LPMT-52-532 / 533 / 534
See Page 10 For More Info.

Insert Screw	560T
Wrench	T-10

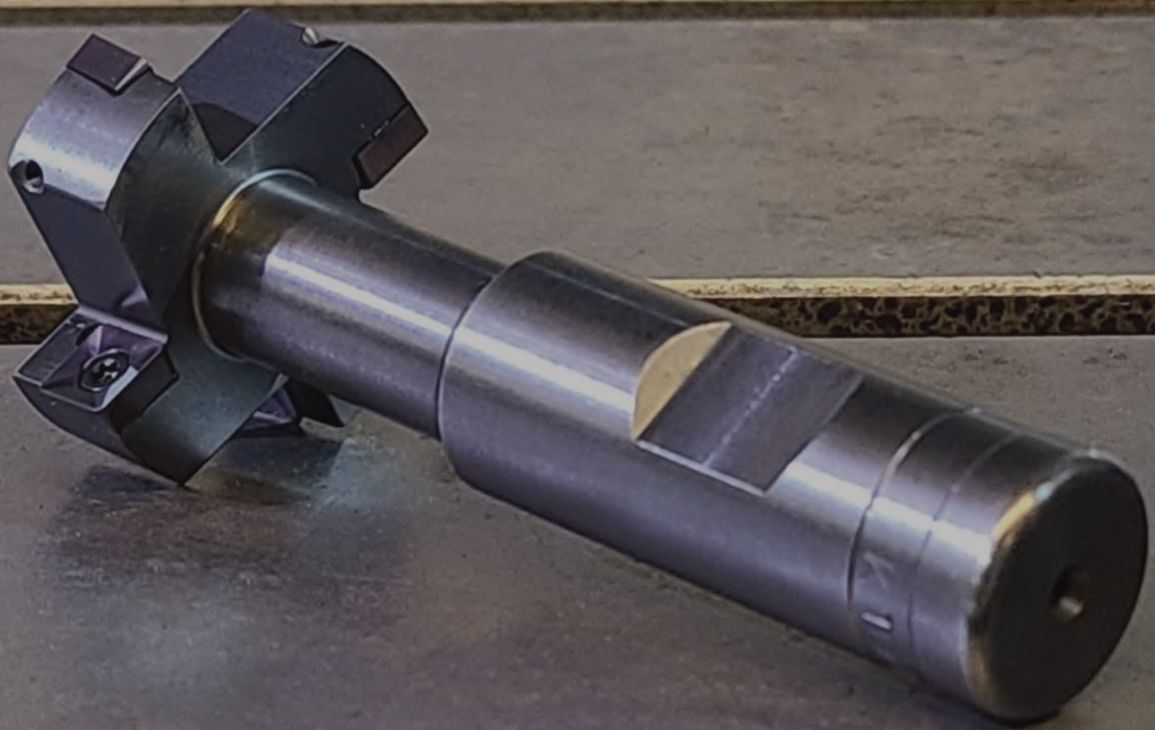
30° Cartridge



Insert - SPEB-43-30PA
See Page 14 For More Info.

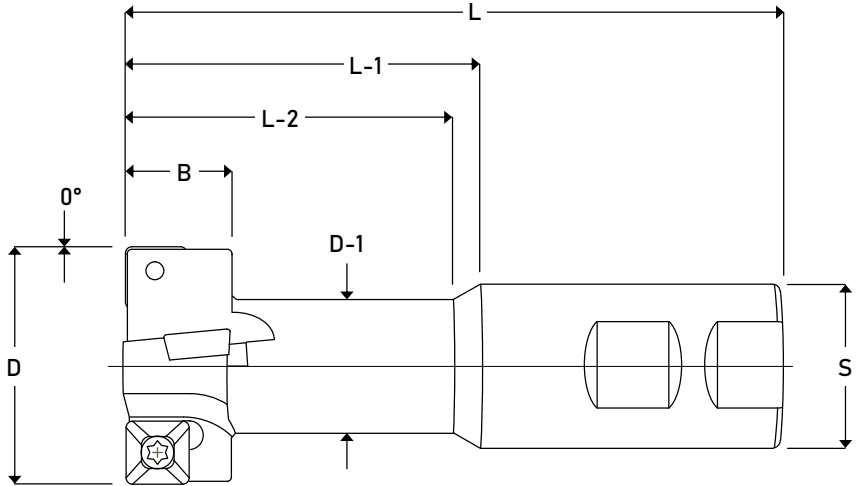
Insert Screw	638T
Wrench	T-15

T-Slot & Key Cutters



Available in Multiple Widths
Offset Inserts for Reduced Cutting Pressure



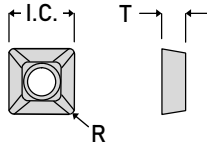


TS
T-Slot Cutters

Tool Info.

Tool #	D	D-1	B	Flutes	L	L-1	L-2	S	Insert	Screw	Wrench
TS-656	.656	.328	.266	2 / 1 Eff.	2.688	.938	.812	.500	SPEB-1511CB	164T	T-6
TS-781	.781	.406	.328	4 / 2 Eff.	3.250	1.250	1.062	.750	SPEB-1511CB	164T	T-6
TS-968	.968	.531	.390	2 / 1 Eff.	3.531	1.531	1.406	.750	SPEB-222P	314T	T-8
TS-1250	1.250	.656	.484	4 / 2 Eff.	4.125	1.875	1.687	1.000	SPEB-2522P	314T	T-8
TS-1468	1.468	.781	.625	4 / 2 Eff.	4.562	2.312	2.187	1.000	SPEB-322P	438T	T-10
TS-1843	1.843	1.031	.828	4 / 2 Eff.	4.937	2.687	2.562	1.250	SPEB-432PA	638T	T-15
TS-2218	2.218	1.281	1.094	4 / 2 Eff.	5.343	3.093	N/A	1.250	SPEB-532PA	838T	T-20
TS-2656	2.656	1.531	1.343	4 / 2 Eff.	5.750	3.500	N/A	1.250	SPEB-6352PA	1012T	T-25

Positive Top Inserts

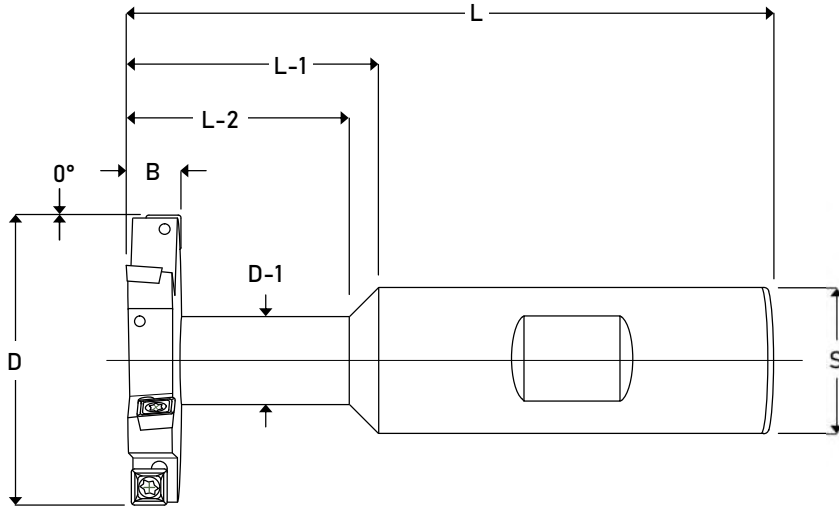


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40
SPEB-222P	.250	.125	.031	B1M C55 X33 X40
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40
SPEB-322P	.375	.125	.031	B1M C55 X33 X40
SPEB-432PA	.500	.187	.031	B1M C55 X33 X40
SPEB-532PA	.625	.187	.031	C55 X33 X40
SPEB-6352PA	.750	.220	.031	C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .005
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .004
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .004
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .005
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .006



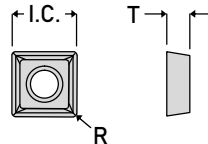
Tool Info.

Tool #	D	D-1	B	Flutes	L	L-1	L-2	S	Insert	Screw	Wrench
TSK-7525	.750	.310	.250	4 / 2 Eff.	2.750	1.000	.900	.500			
TSK-1025	1.000	.350	.250	4 / 2 Eff.	3.250	1.250	1.050	.750			
TSK-1225	1.250	.385	.250	6 / 3 Eff.	3.250	1.250	1.065	.750	SPEB-1511CB	164T	T-6
TSK-1525	1.500	.450	.250	6 / 3 Eff.	3.250	1.250	1.100	.750			
TSK-2025	2.000	.750	.250	8 / 4 Eff.	4.000	2.000	N/A	.750			
TSK-3025	3.000	1.000	.250	8 / 4 Eff.	4.500	2.250	N/A	1.000			

Speed and Feed Info.

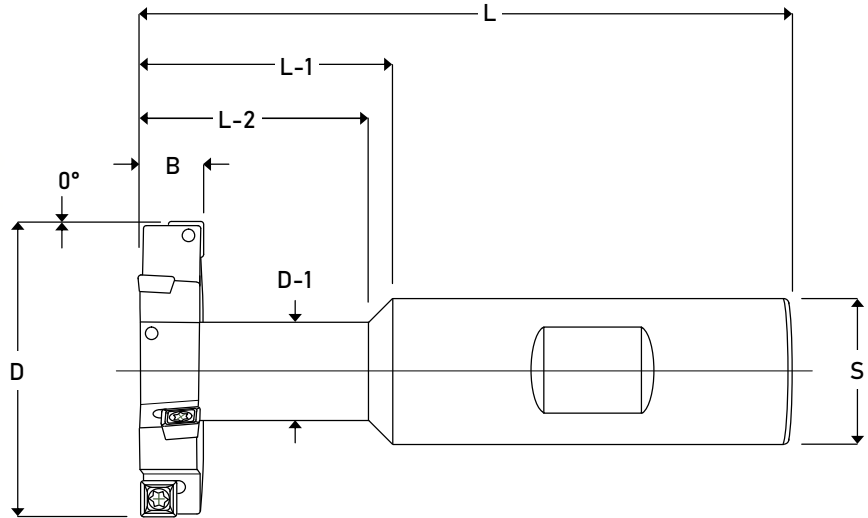
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .003
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .003
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .003
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .003
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.002 - .003
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, TI-6AL-4V	120 - 180	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.002 - .004

Chipbreaker Insert



Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40



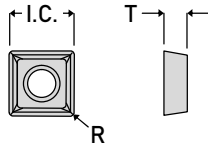
TSK

T-Slot / Key Cutters

Tool Info.

Tool #	D	D-1	B	Flutes	L	L-1	L-2	S	Insert	Screw	Wrench
TSK-7531	.750	.310	.312	4 / 2 Eff.	2.750	1.000	.900	.500			
TSK-1031	1.000	.350	.312	4 / 2 Eff.	3.250	1.250	1.050	.750			
TSK-1231	1.250	.450	.312	6 / 3 Eff.	3.250	1.250	1.100	.750			
TSK-1531	1.500	.500	.312	6 / 3 Eff.	3.250	1.250	1.125	.750	SPEB-1511CB	164T	T-6
TSK-2031	2.000	.750	.312	8 / 4 Eff.	4.000	2.000	N/A	.750			
TSK-3031	3.000	1.000	.312	8 / 4 Eff.	4.500	2.250	N/A	1.000			

Chipbreaker
Insert

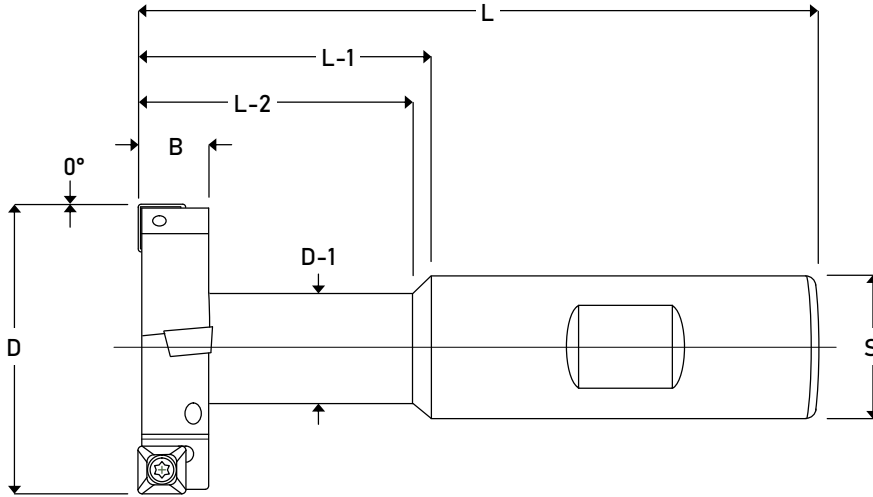


Insert Info.

Insert #	I.C.	T	R	Grades
SPEB-1511CB	.187	.082	.015	X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .004



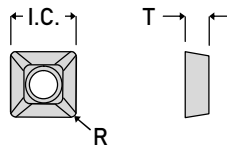
Tool Info.

Tool #	D	D-1	B	Flutes	L	L-1	L-2	S	Insert	Screw	Wrench
TSK-7537	.750	.310	.375	2 / 1 Eff.	2.750	1.000	.900	.500			
TSK-1037	1.000	.350	.375	4 / 2 Eff.	3.250	1.250	1.030	.750			
TSK-1237	1.250	.510	.375	4 / 2 Eff.	3.500	1.500	1.375	.750			
TSK-1537	1.500	.575	.375	4 / 2 Eff.	3.500	1.500	1.410	.750	SPEB-221P	314T	T-8
TSK-2037	2.000	.750	.375	6 / 3 Eff.	4.000	2.000	N/A	.750			
TSK-3037	3.000	1.000	.375	6 / 3 Eff.	4.500	2.250	N/A	1.000			

Speed and Feed Info.

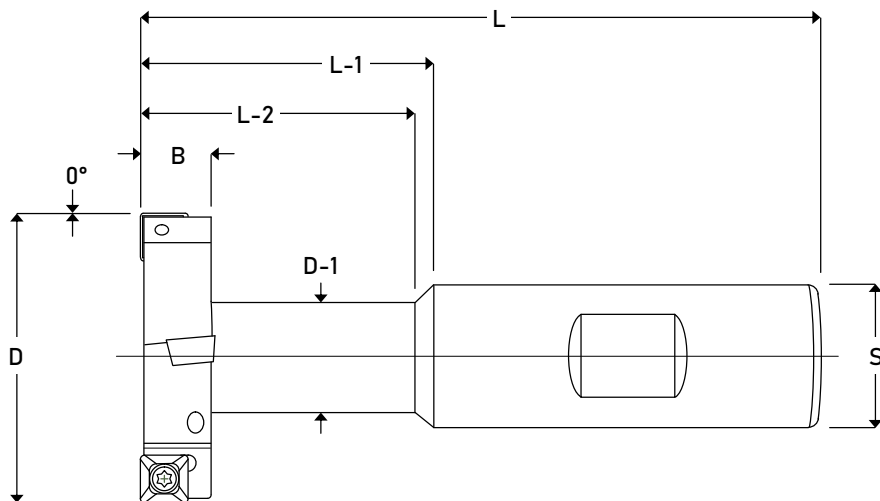
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008

Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Grade
SPEB-221P	.250	.125	.015	X33



TSK

T-Slot / Key Cutters

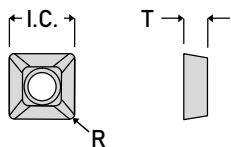
Tool Info.

Tool #	D	D-1	B	Flutes	L	L-1	L-2	S	Insert	Screw	Wrench
TSK-1550	1.500	.575	.500	4 / 2 Eff.	3.625	1.625	1.531	.750			
TSK-2050	2.000	.750	.500	6 / 3 Eff.	4.125	2.125	N/A	.750			
TSK-2550	2.500	.875	.500	6 / 3 Eff.	4.625	2.375	2.300	1.000	SPEB-2522P	314T	T-8
TSK-3050	3.000	1.000	.500	6 / 3 Eff.	4.625	2.375	N/A	1.000			

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008

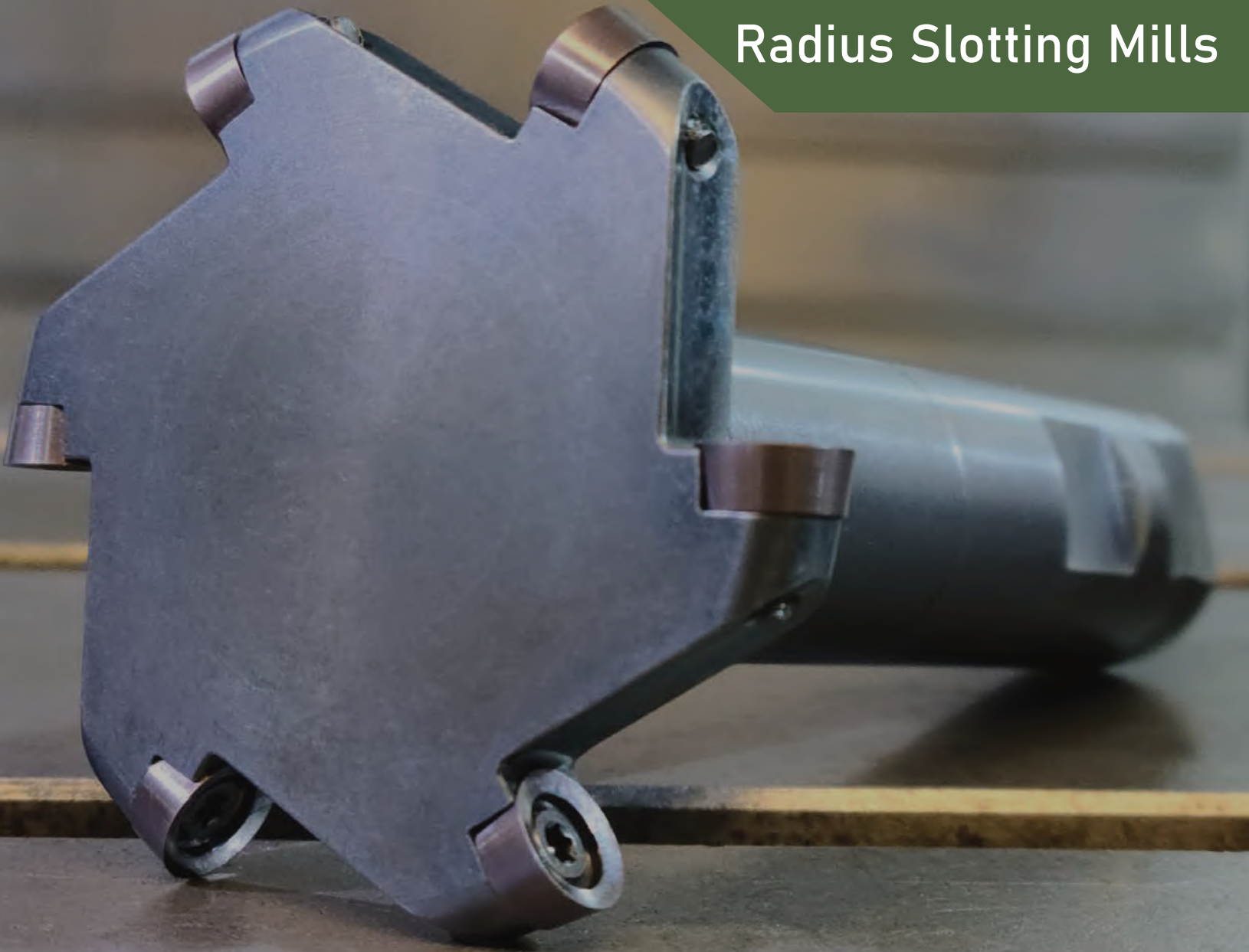
Positive Top Insert



Insert Info.

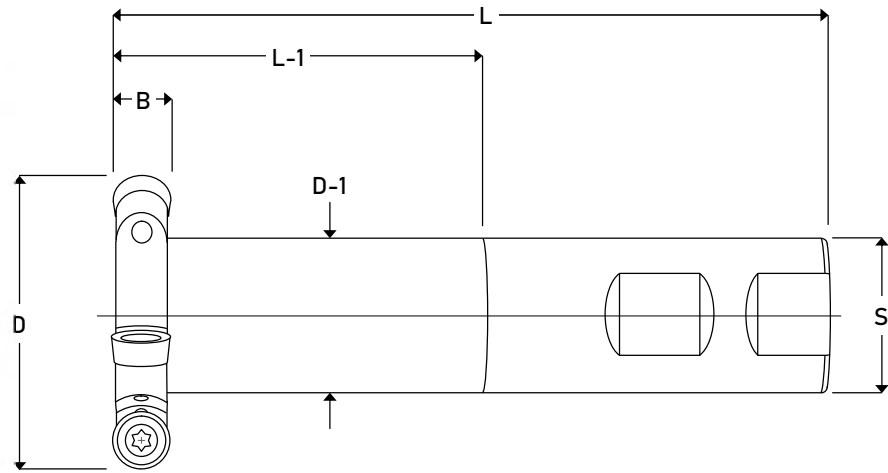
Insert #	I.C.	T	R	Grades
SPEB-2522P	.312	.125	.031	B1M C55 X33 X40

Radius Slotting Mills



Available in Multiple Widths
2 Insert Styles Available in Most Widths
Positive Top Inserts





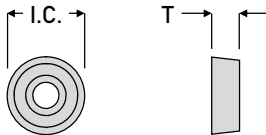
TSR

Radius Slotting Mills

Tool Info.

Tool #	D	D-1	B	Flutes	L	L-1	S	Molded Insert	Ground Insert
TSR-7502	.750	.375	.250	3	3.500	1.500	.750		
TSR-1002	1.000	.500	.250	4	3.500	1.500	.750		
TSR-1252	1.250	.625	.250	4	4.125	1.875	1.000		
TSR-1502	1.500	.625	.250	5	4.125	1.875	1.000		
TSR-2002	2.000	1.000	.250	6	4.625	2.375	1.000	RCEB-22	RCEB-22G
TSR-2505	2.500	1.000	.250	6	4.625	2.375	1.000		
TSR-3002	3.000	1.000	.250	8	4.625	2.375	1.000		
TSR-4002	4.000	1.250	.250	8	5.000	2.750	1.250		

Positive Top Inserts

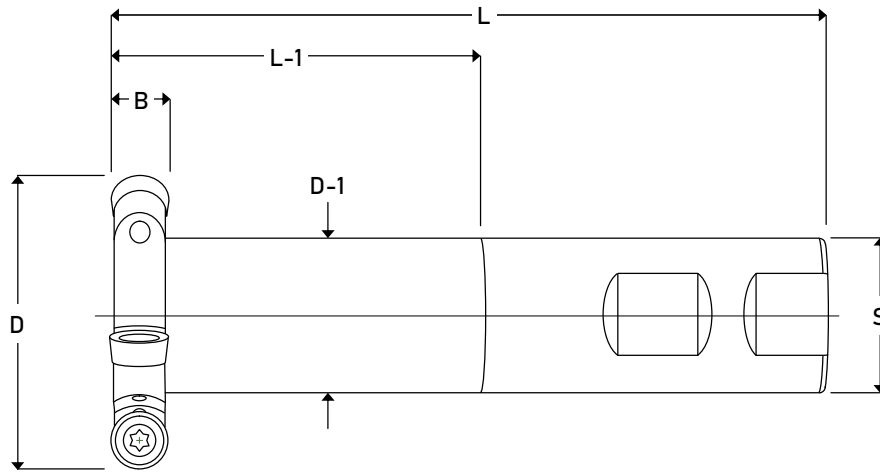


Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-22	.250	.125	314T	T-8	A10M X33
RCEB-22G	.250	.125	314T	T-8	B1M X33 X40

Speed and Feed Info.

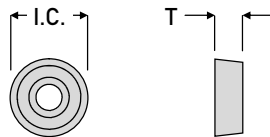
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .004



Tool Info.

Tool #	D	D-1	B	Flutes	L	L-1	S	Ground Insert
TSR-7525	.750	.375	.312	2	3.500	1.500	.750	RCEB-25G
TSR-1025	1.000	.500	.312	3	3.500	1.500	.750	
TSR-1225	1.250	.625	.312	4	4.125	1.875	1.000	
TSR-1525	1.500	.625	.312	5	4.125	1.875	1.000	
TSR-2025	2.000	1.000	.312	6	4.625	2.375	1.000	
TSR-2525	2.500	1.000	.312	6	4.625	2.375	1.000	
TSR-3025	3.000	1.000	.312	7	4.625	2.375	1.000	
TSR-4025	4.000	1.250	.312	8	5.000	2.750	1.250	

Positive Top Inserts

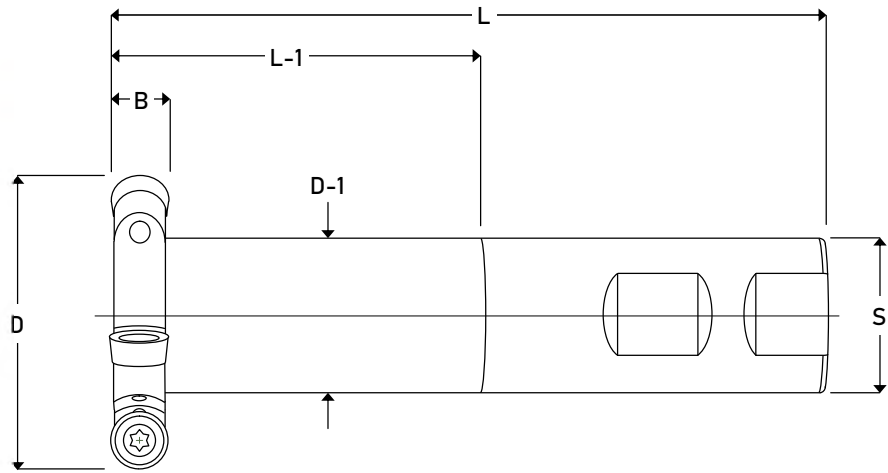


Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-25G	.312	.125	314T	T-8	B1M X33 X40

Speed and Feed Info.

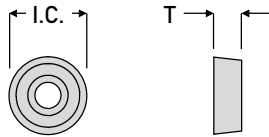
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .004



Tool Info.

Tool #	D	D-1	B	Flutes	L	L-1	S	Molded Insert	Ground Insert
TSR-1003	1.000	.500	.375	3	3.500	1.500	1.000		
TSR-1253	1.250	.625	.375	3	4.125	1.875	1.000		
TSR-1503	1.500	.625	.375	4	4.125	1.875	1.000		
TSR-2003	2.000	1.000	.375	5	4.625	2.375	1.000	RCEB-325	RCEB-325G
TSR-2503	2.500	1.000	.375	6	4.625	2.375	1.000		
TSR-3003	3.000	1.000	.375	6	4.625	2.375	1.000		
TSR-4003	4.000	1.250	.375	8	5.000	2.750	1.250		

Positive Top Inserts

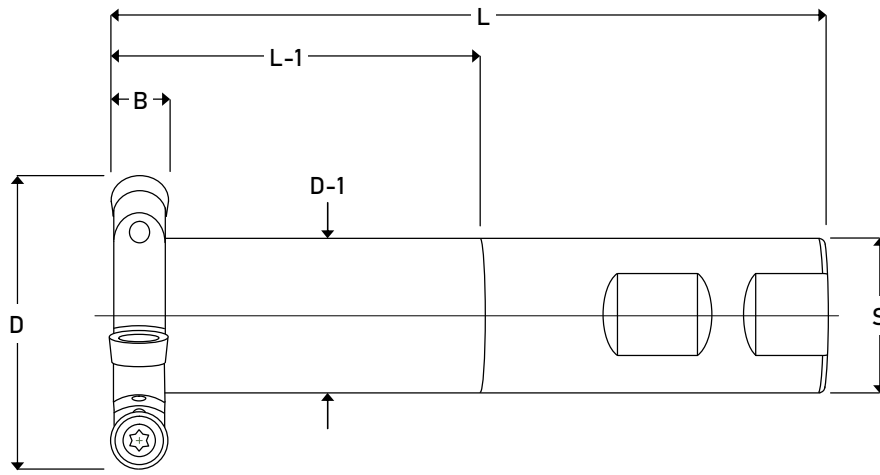


Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-325	.375	.156	538T	T-10	A10M X33
RCEB-325G	.375	.156	538T	T-10	B1M X33 X40

Speed and Feed Info.

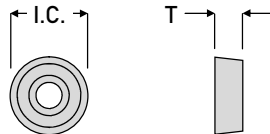
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .004



Tool Info.

Tool #	D	D-1	B	Flutes	L	L-1	S	Molded Insert	Ground Insert
TSR-1504	1.500	.625	.500	3	4.125	1.875	1.000		
TSR-2004	2.000	1.000	.500	4	4.625	2.375	1.000		
TSR-2504	2.500	1.000	.500	4	4.625	2.375	1.000	RCEB-435	RCEB-435G
TSR-3004	3.000	1.000	.500	5	4.625	2.375	1.000		
TSR-4004	4.000	1.250	.500	6	5.000	2.750	1.250		

Positive Top Inserts

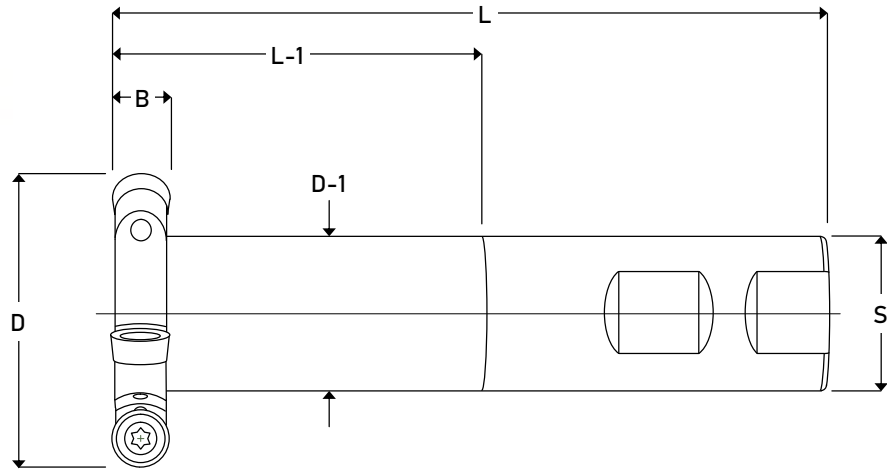


Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-435	.500	.220	838T	T-20	A10M X33
RCEB-435G	.500	.220	838T	T-20	B1M X33 X40

Speed and Feed Info.

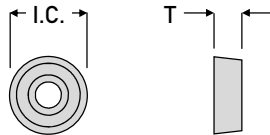
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .004



Tool Info.

Tool #	D	D-1	B	Flutes	L	L-1	S	Ground Insert
TSR-1545	1.500	.625	.625	2	4.125	1.875	1.000	
TSR-2045	2.000	1.000	.625	3	4.625	2.375	1.000	
TSR-2545	2.500	1.000	.625	4	4.625	2.375	1.000	RCEB-53G
TSR-3045	3.000	1.000	.625	5	4.625	2.375	1.000	
TSR-4045	4.000	1.250	.625	6	5.000	2.750	1.250	

Positive Top Inserts



Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-53G	.625	.220	838T	T-20	B1M X33 X40

Speed and Feed Info.

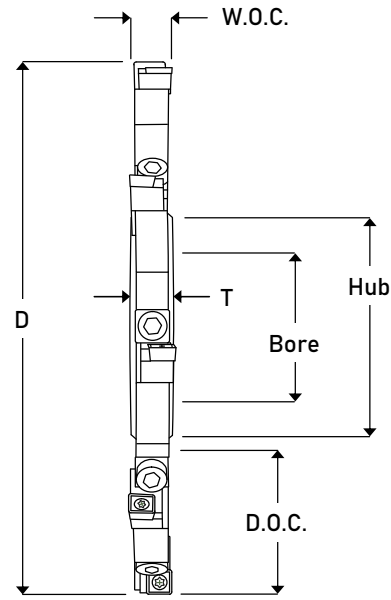
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .004

Slotting/Half Side Mills



Adjustable Width of Cut
Arbor Mount or Shell Mount
Can Be Set Left Hand, Right Hand or Staggered





L.H. Cartridge



R.H. Cartridge

Series #00

Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Tool Info.

Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T
SC-4000	4.000	10	.250 - .340	1.090	1.250	.312	1.630	.340
SC-5000	5.000	12	.250 - .340	1.590	1.250	.312	1.630	.340
SC-6000	6.000	14	.250 - .340	1.900	1.500	.375	2.000	.340

Notes:

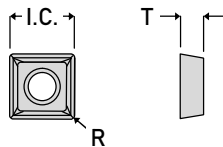
-Tool must be run as 1/2 the number of flutes effective when set for a full slot.
-Initial W.O.C. to be set with dial indicator
(K-Tool Inc. will set width at no charge before shipping).

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SC-4000				
SC-5000	1511C-RH/LH	1	6	SPEB-1511CB
SC-6000				

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .003
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .003
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .003
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .003
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .003
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.002 - .003
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .002
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.002 - .004

Chipbreaker Insert

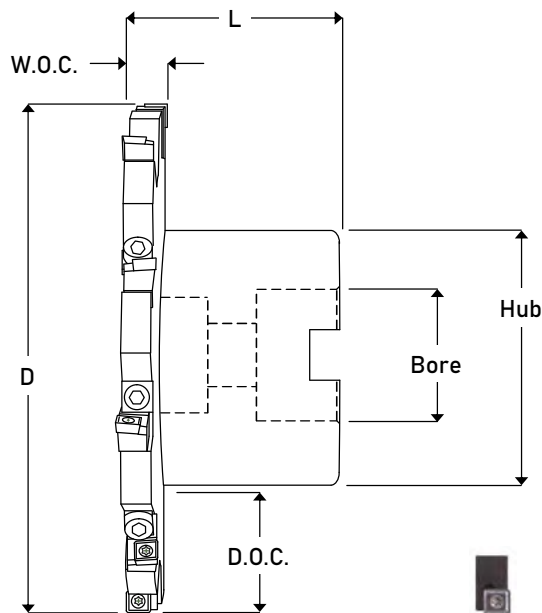


Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grades
SPEB-1511CB	.187	.082	.015	164T	T-6	X33 X40

Shell Mount

SCSM
Slotting / Half Side Mills



L.H. Cartridge



R.H. Cartridge

Series #00

Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Tool Info.

Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCSM-4000	4.000	10	.250 - .340	.875	1.000	.375	2.000	1.625
SCSM-5000	5.000	12	.250 - .340	1.062	1.250	.500	2.625	1.750
SCSM-6000	6.000	14	.250 - .340	1.562	1.250	.500	2.625	1.750

Notes:

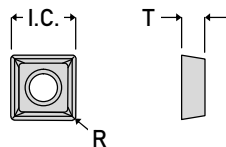
- Tool must be run as 1/2 the number of flutes effective when set for a full slot.
- Initial W.O.C. to be set with dial indicator
- (K-Tool Inc. will set width at no charge before shipping).

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SCSM-4000				
SCSM-5000	1511C-RH/LH	1	6	SPEB-1511CB
SCSM-6000				

Speed and Feed Info.

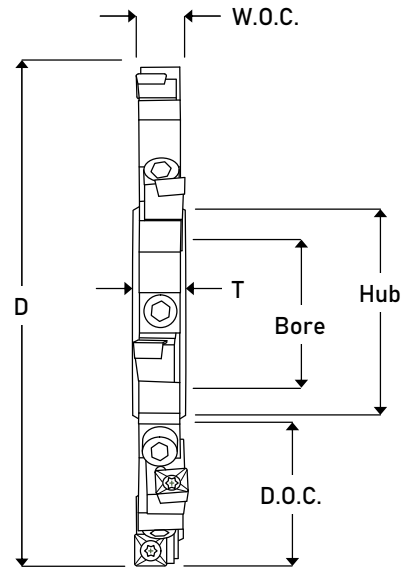
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .003
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .003
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .003
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .003
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .003
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.002 - .003
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .002
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.002 - .004

Chipbreaker Insert



Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grades
SPEB-1511CB	.187	.082	.015	164T	T-6	X33 X40



L.H. Cartridge

R.H. Cartridge

Series #0

Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Tool Info.

Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T
SC-400	4.000	10	.340 - .430	1.090	1.250	.312	1.630	.422
SC-500	5.000	12	.340 - .430	1.590	1.250	.312	1.630	.422
SC-600	6.000	14	.340 - .430	1.900	1.500	.375	2.000	.422

Notes:

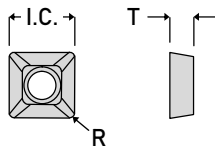
- Tool must be run as 1/2 the number of flutes effective when set for a full slot.
- Initial W.O.C. to be set with dial indicator
- (K-Tool Inc. will set width at no charge before shipping).

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SC-400				
SC-500	222C-RH/LH	2	8	SPEB-222P
SC-600				

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008

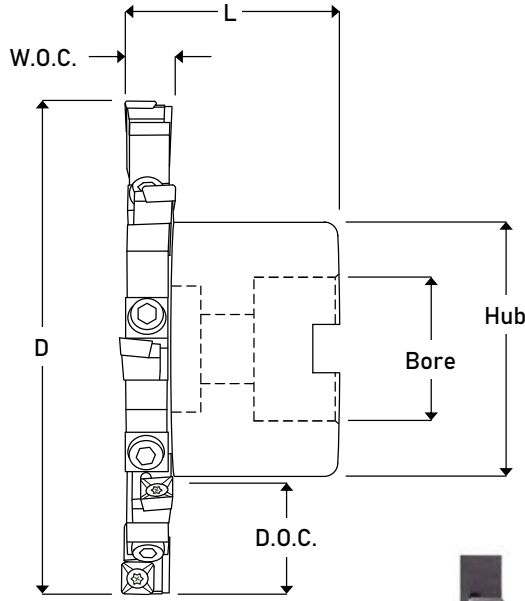
Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grades
SPEB-222P	.250	.125	.031	314T	T-8	B1M C55 X33 X40

Shell Mount



L.H. Cartridge



R.H. Cartridge

Series #0

Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Tool Info.

Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCSM-400	4.000	10	.340 - .430	.875	1.000	.375	2.000	1.625
SCSM-500	5.000	12	.340 - .430	1.062	1.250	.500	2.625	1.750
SCSM-600	6.000	14	.340 - .430	1.562	1.250	.500	2.625	1.750

Notes:

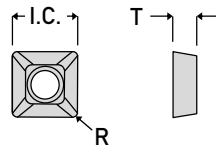
- Tool must be run as 1/2 the number of flutes effective when set for a full slot.
- Initial W.O.C. to be set with dial indicator (K-Tool Inc. will set width at no charge before shipping).

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SCSM-400				
SCSM-500	222C-RH/LH	2	8	SPEB-222P
SCSM-600				

Speed and Feed Info.

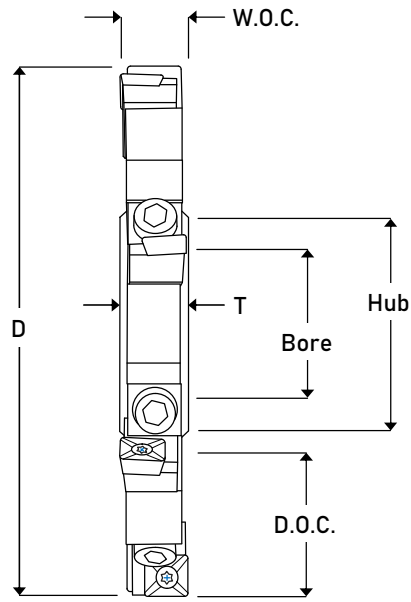
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .008

Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grades
SPEB-222P	.250	.125	.031	314T	T-8	B1M C55 X33 X40



L.H. Cartridge

R.H. Cartridge

Series #1

Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Tool Info.

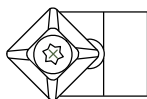
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T
SC-401	4.000	8	.430 - .530	1.090	1.250	.312	1.630	.500
SC-501	5.000	10	.430 - .530	1.590	1.250	.312	1.630	.500
SC-601	6.000	12	.430 - .530	1.900	1.500	.375	2.000	.500
SC-801	8.000	16	.430 - .530	2.900	1.500	.375	2.000	.500

Notes:

- Tool must be run as 1/2 the number of flutes effective when set for a full slot.
- Initial W.O.C. to be set with dial indicator (K-Tool Inc. will set width at no charge before shipping).

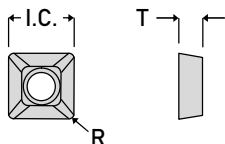
Tool #	Cartridge	Wedge	Wedge Screw	Insert
SC-401				
SC-501	2522C-RH/LH	3	10	SPEB-2522P
SC-601				
SC-801				

45° Cartridge



Cart. # 2522C-45
Insert SPEB-2522P

Positive Top Insert



Insert Info.

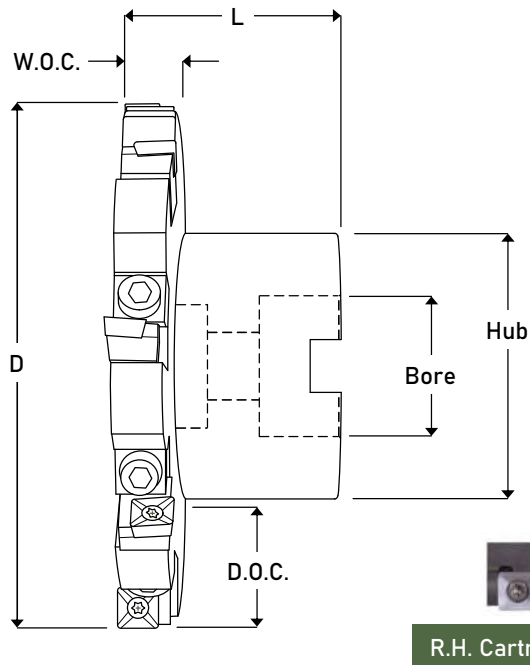
Insert #	I.C.	T	R	Screw	Wrench	Grades
SPEB-2522P	.312	.125	.031	314T	T-8	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008

Shell Mount

SCSM
Slotting / Half Side Mills



Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Series #1

Tool Info.

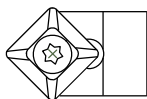
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCSM-401	4.000	8	.430 - .530	.875	1.000	.375	2.000	1.625
SCSM-501	5.000	10	.430 - .530	1.062	1.250	.500	2.625	1.750
SCSM-601	6.000	12	.430 - .530	1.000	1.500	.625	3.800	2.250
SCSM-801	8.000	16	.430 - .530	1.975	1.500	.625	3.800	2.250

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SCSM-401				
SCSM-501	2522C-RH/LH	3	10	SPEB-2522P
SCSM-601				
SCSM-801				

Notes:

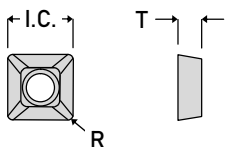
- Tool must be run as 1/2 the number of flutes effective when set for a full slot.
- Initial W.O.C. to be set with dial indicator (K-Tool Inc. will set width at no charge before shipping).

45° Cartridge



Cart. # 2522C-45
Insert SPEB-2522P

Positive Top Insert

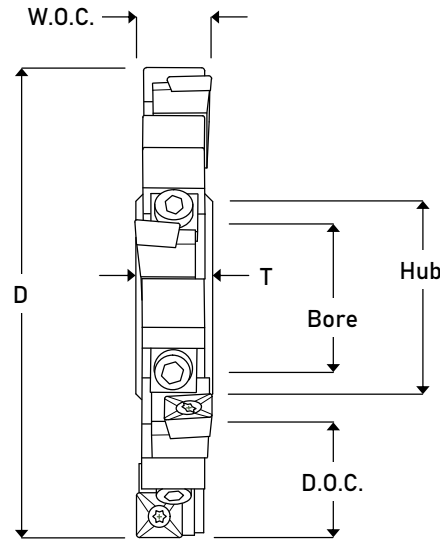


Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grades
SPEB-2522P	.312	.125	.031	314T	T-8	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .008



L.H. Cartridge



R.H. Cartridge

Series #2

Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Tool Info.

Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T
SC-402	4.000	8	.530 - .687	1.090	1.250	.312	1.630	.625
SC-502	5.000	10	.530 - .687	1.590	1.250	.312	1.630	.625
SC-602	6.000	12	.530 - .687	1.900	1.500	.375	2.000	.625
SC-802	8.000	16	.530 - .687	2.900	1.500	.375	2.000	.625
SC-1002	10.000	16	.530 - .687	3.900	1.500	.375	2.000	.625

Notes:

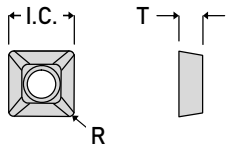
- Tool must be run as 1/2 the number of flutes effective when set for a full slot.
- Initial W.O.C. to be set with dial indicator (K-Tool Inc. will set width at no charge before shipping).

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SC-402				
SC-502				
SC-602	332C-RH/LH	3	10	SPEB-332P
SC-802				
SC-1002				

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008

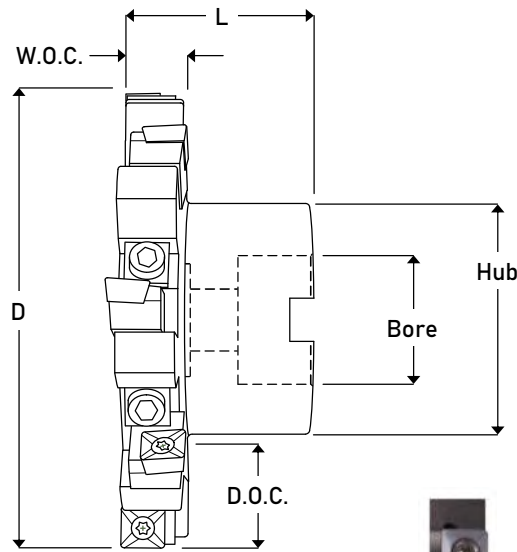
Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grades
SPEB-332P	.375	.187	.031	538T	T-10	B1M C55 X33 X40

Shell Mount



L.H. Cartridge



R.H. Cartridge

Series #2

Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Tool Info.

Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCSM-402	4.000	8	.530 - .687	.875	1.000	.375	2.000	1.625
SCSM-502	5.000	10	.530 - .687	1.062	1.250	.500	2.625	1.750
SCSM-602	6.000	12	.530 - .687	1.000	1.500	.625	3.800	2.250
SCSM-802	8.000	16	.530 - .687	1.975	1.500	.625	3.800	2.250

Notes:

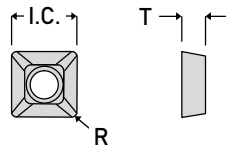
- Tool must be run as 1/2 the number of flutes effective when set for a full slot.
- Initial W.O.C. to be set with dial indicator
- (K-Tool Inc. will set width at no charge before shipping).

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SCSM-402				
SCSM-502	332C-RH/LH	3	10	SPEB-332P
SCSM-602				
SCSM-802				

Speed and Feed Info.

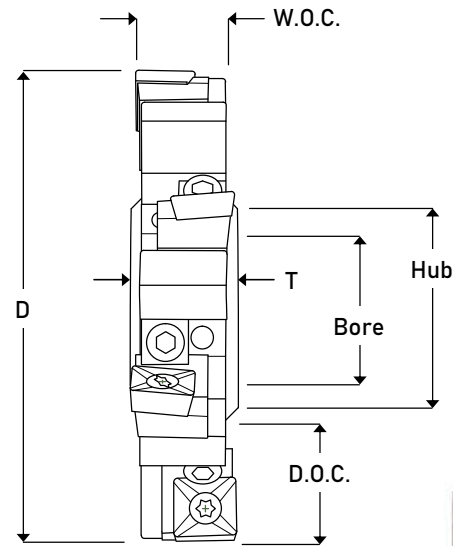
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008

Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grades
SPEB-332P	.375	.187	.031	538T	T-10	B1M C55 X33 X40



L.H. Cartridge



R.H. Cartridge

Series #3

Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Tool Info.

Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T
SC-403	4.000	8	.687 - .937	1.060	1.250	.312	1.630	.875
SC-503	5.000	10	.687 - .937	1.560	1.250	.312	1.630	.875
SC-603	6.000	12	.687 - .937	1.870	1.500	.375	2.000	.875
SC-803	8.000	16	.687 - .937	2.870	1.500	.375	2.000	.875
SC-1003	10.000	16	.687 - .937	3.870	1.500	.375	2.000	.875

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SC-403				
SC-503				
SC-603	432C-RH/LH	3	10	SPEB-432PA
SC-803				
SC-1003				

Notes:

-Tool must be run as 1/2 the number of flutes effective when set for a full slot.
-Initial W.O.C. to be set with dial indicator
(K-Tool Inc. will set width at no charge before shipping).

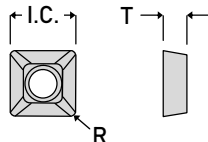
45° Cartridge



Cart. #
Insert

432C-45
SPEB-432PA

Positive Top Insert



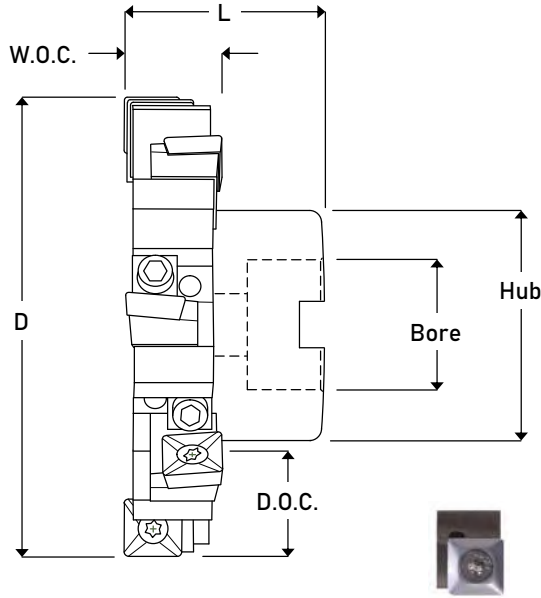
Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grades
SPEB-432PA	.500	.187	.031	638T	T-15	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .008

Shell Mount



L.H. Cartridge



R.H. Cartridge

Series #3

Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Tool Info.

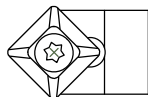
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCSM-403	4.000	8	.687 - .937	.875	1.000	.375	2.000	1.625
SCSM-503	5.000	10	.687 - .937	1.062	1.250	.500	2.625	1.750
SCSM-603	6.000	12	.687 - .937	1.000	1.500	.625	3.800	2.250
SCSM-803	8.000	16	.687 - .937	1.975	1.500	.625	3.800	2.250

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SCSM-403				
SCSM-503	432C-RH/LH	3	10	SPEB-432PA
SCSM-603				
SCSM-803				

Notes:

- Tool must be run as 1/2 the number of flutes effective when set for a full slot.
- Initial W.O.C. to be set with dial indicator
- (K-Tool Inc. will set width at no charge before shipping).

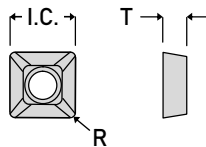
45° Cartridge



Cart. #
Insert

432C-45
SPEB-432PA

Positive Top Insert

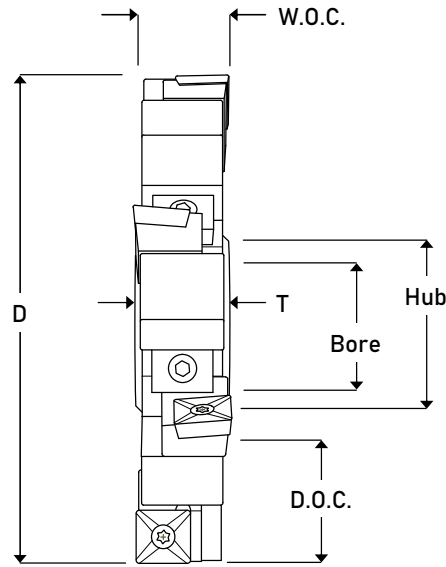


Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grades
SPEB-432PA	.500	.187	.031	638T	T-15	B1M C55 X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, TI-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .008



L.H. Cartridge



R.H. Cartridge

Series #4

Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Tool Info.

Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T
SC-604	6.000	8	.937 - 1.187	1.870	1.500	.375	2.000	1.100
SC-804	8.000	12	.937 - 1.187	2.870	1.500	.375	2.000	1.100
SC-1004	10.000	14	.937 - 1.187	3.870	1.500	.375	2.000	1.100

Notes:

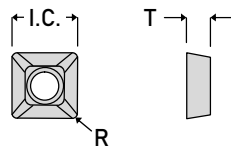
-Tool must be run as 1/2 the number of flutes effective when set for a full slot.
-Initial W.O.C. to be set with dial indicator
(K-Tool Inc. will set width at no charge before shipping).

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SC-604				
SC-804	532C-RH/LH	4	5161D	SPEB-532PA
SC-1004				

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008

Positive Top Insert

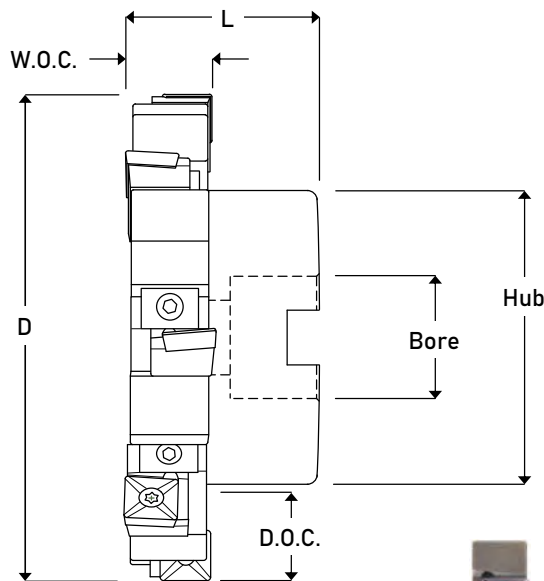


Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grade
SPEB-532PA	.625	.187	.031	838T	T-20	C55 X33 X40

Shell Mount

SCSM
Slotting / Half Side Mills



L.H. Cartridge



R.H. Cartridge

Series #4

Cutters can be used as: Half Side Mill (RH or LH)
Full Slot Mill (W.O.C. Required)

Tool Info.

Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCSM-504	5.000	6	.937 - 1.187	1.062	1.250	.500	2.625	1.750
SCSM-604	6.000	8	.937 - 1.187	1.012	1.500	.625	3.625	2.250
SCSM-804	8.000	12	.937 - 1.187	1.975	1.500	.625	3.800	2.250

Notes:

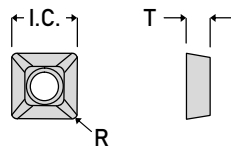
-Tool must be run as 1/2 the number of flutes effective when set for a full slot.
-Initial W.O.C. to be set with dial indicator
(K-Tool Inc. will set width at no charge before shipping).

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SCSM-504				
SCSM-604	532C-RH/LH	4	5161D	SPEB-532PA
SCSM-808				

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .008

Positive Top Insert



Insert Info.

Insert #	I.C.	T	R	Screw	Wrench	Grade
SPEB-532PA	.625	.187	.031	838T	T-20	C55 X33 X40



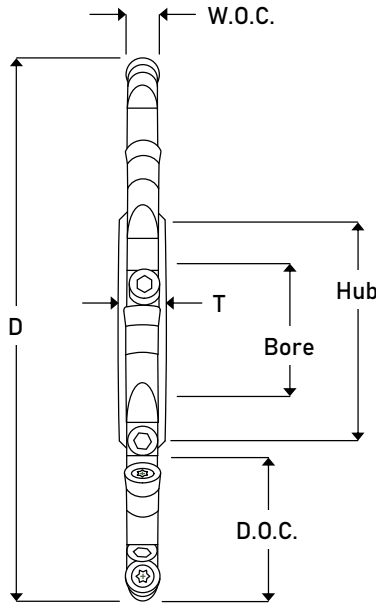
Radius Slotting Cutters

Ground & Molded Inserts Available
Round Inserts Reduce Cutting Pressure



Arbor Mount

SCR
Radius Slotting Cutters



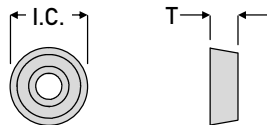
Series #2

Tool Info.									
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T	
SCR-302	3.000	8	.250	.750	1.000	.250	1.400	.340	
SCR-402	4.000	10	.250	1.090	1.250	.312	1.620	.340	
SCR-502	5.000	12	.250	1.590	1.250	.312	1.620	.340	
SCR-602	6.000	14	.250	1.900	1.500	.375	2.000	.340	

Tool #	Cartridge	Wedge	Wedge Screw	Molded Insert	Ground Insert
SCR-302	N/A - Solid Pocket Design				
SCR-402	22R	15	612	RCEB-22	RCEB-22G
SCR-502	22R	15	612		
SCR-602	22R	15	612		

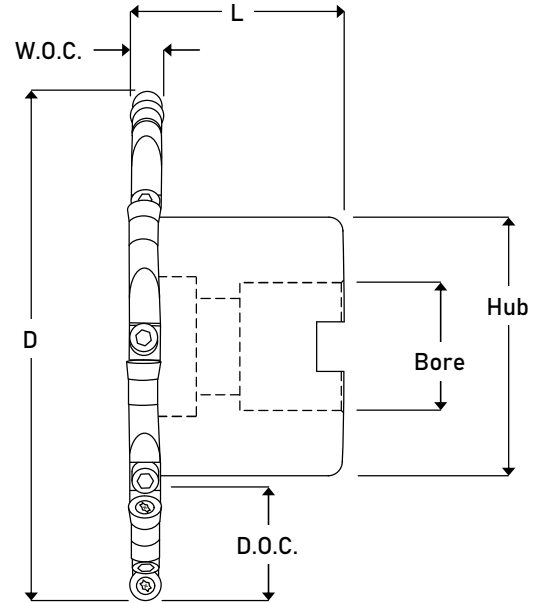
Note:
Cartridges will be preset in body before shipping at no extra charge.

Positive Top Inserts



Insert Info.					
Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-22	.250	.125	314T	T-8	A10M X33
RCEB-22G	.250	.125	314T	T-8	B1M X33 X40

Speed and Feed Info.		
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008



SCRSM

Radius Slotting Cutters

Series #2

Tool Info.

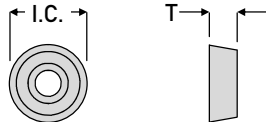
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCRSM-302	3.000	8	.250	.750	.500	.250	1.375	1.500
SCRSM-402	4.000	10	.250	.875	1.000	.375	2.000	1.625
SCRSM-502	5.000	12	.250	1.062	1.250	.500	2.625	1.750
SCRSM-602	6.000	14	.250	.937	1.500	.625	3.800	2.250

Tool #	Cartridge	Wedge	Wedge Screw	Molded Insert	Ground Insert
SCRSM-302	N/A - Solid Pocket Design				
SCRSM-402	22R	15	612	RCEB-22	RCEB-22G
SCRSM-502	22R	15	612		
SCRSM-602	22R	15	612		

Note:

Cartridges will be preset in body before shipping at no extra charge.

Positive Top Inserts



Insert Info.

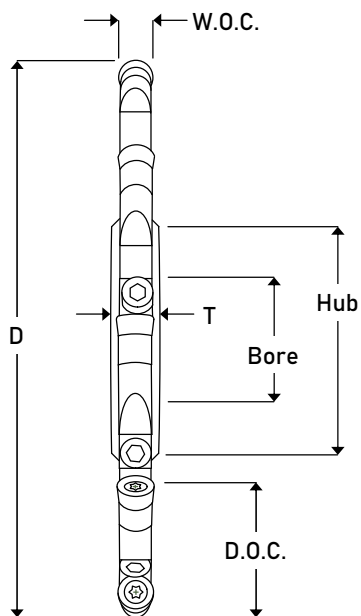
Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-22	.250	.125	314T	T-8	A10M X33
RCEB-22G	.250	.125	314T	T-8	B1M X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008

Arbor Mount

SCR
Radius Slotting Cutters



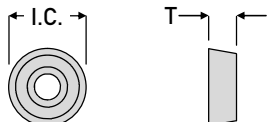
Series #25

Tool Info.								
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T
SCR-325	3.000	7	.312	.750	1.000	.250	1.400	.375
SCR-425	4.000	9	.312	1.093	1.250	.312	1.625	.375
SCR-525	5.000	10	.312	1.590	1.250	.312	1.625	.375
SCR-625	6.000	12	.312	1.900	1.500	.375	2.000	.375

Tool #	Cartridge	Wedge	Wedge Screw	Ground Insert
SCR-325	N/A - Solid Pocket Design			
SCR-425	25R	15	612	RCEB-25G
SCR-525	25R	15	612	
SCR-625	25R	15	612	

Note:
Cartridges will be preset in body before shipping at no extra charge.

Positive Top Inserts

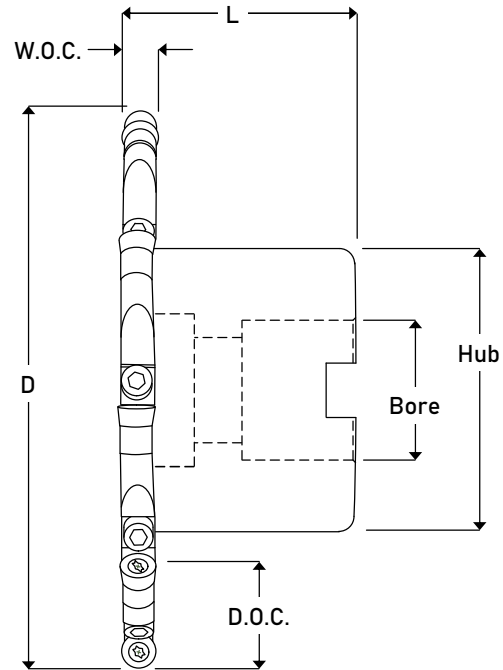


Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-25G	.312	.125	314T	T-8	B1M X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008



SCRSM

Radius Slotting Cutters

Series #25

Tool Info.

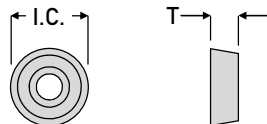
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCRSM-325	3.000	7	.312	.750	.500	.250	1.375	1.500
SCRSM-425	4.000	9	.312	.875	1.000	.375	2.000	1.625
SCRSM-525	5.000	10	.312	1.062	1.250	.500	2.625	1.750
SCRSM-625	6.000	12	.312	.937	1.500	.625	3.800	2.250

Tool #	Cartridge	Wedge	Wedge Screw	Ground Insert
SCRSM-325	N/A - Solid Pocket Design			
SCRSM-425	25R	15	612	RCEB-25G
SCRSM-525	25R	15	612	
SCRSM-625	25R	15	612	

Note:

Cartridges will be preset in body before shipping at no extra charge.

Positive Top Inserts



Insert Info.

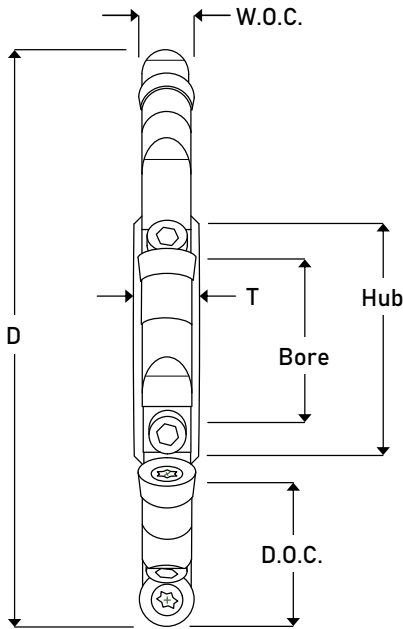
Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-25G	.312	.125	314T	T-8	B1M X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .008

Arbor Mount

SCR
Radius Slotting Cutters



Series #3

Tool Info.

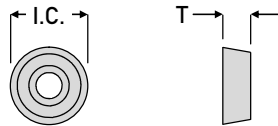
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T
SCR-303	3.000	6	.375	.750	1.000	.250	1.620	.430
SCR-403	4.000	8	.375	1.090	1.250	.312	1.620	.430
SCR-503	5.000	10	.375	1.590	1.250	.312	1.620	.430
SCR-603	6.000	12	.375	1.900	1.500	.375	2.000	.430
SCR-803	8.000	16	.375	2.900	1.500	.375	2.000	.430

Tool #	Cartridge	Wedge	Wedge Screw	Molded Insert	Ground Insert
SCR-303	N/A - Solid Pocket Design				
SCR-403	325R	2	8		
SCR-503	325R	2	8	RCEB-325	RCEB-325G
SCR-603	325R	2	8		
SCR-803	325R	2	8		

Note:

Cartridges will be preset in body before shipping at no extra charge.

Positive Top Inserts

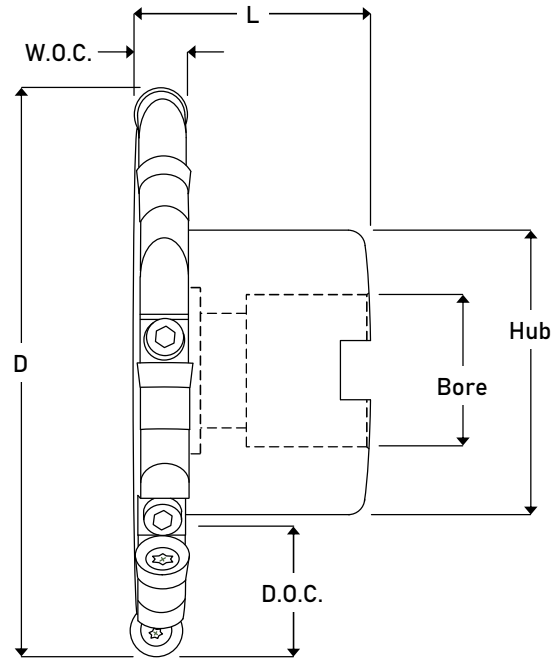


Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-325	.375	.156	538T	T-10	A10M X33
RCEB-325G	.375	.156	538T	T-10	B1M X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .008



Series #3

Tool Info.

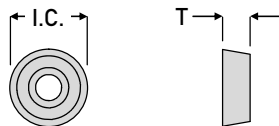
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCRSM-303	3.000	6	.375	.750	.500	.250	1.375	1.500
SCRSM-403	4.000	8	.375	.875	1.000	.375	2.000	1.625
SCRSM-503	5.000	10	.375	1.062	1.250	.500	2.625	1.750
SCRSM-603	6.000	12	.375	.937	1.500	.625	3.800	2.250
SCRSM-803	8.000	16	.375	2.000	1.500	.625	3.800	2.250

Tool #	Cartridge	Wedge	Wedge Screw	Molded Insert	Ground Insert
SCR-303	N/A - Solid Pocket Design				
SCR-403	325R	2	8		
SCR-503	325R	2	8	RCEB-325	RCEB-325G
SCR-603	325R	2	8		
SCR-803	325R	2	8		

Note:

Cartridges will be preset in body before shipping at no extra charge.

Positive Top Inserts



Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-325	.375	.156	538T	T-10	A10M X33
RCEB-325G	.375	.156	538T	T-10	B1M X33 X40

Speed and Feed Info.

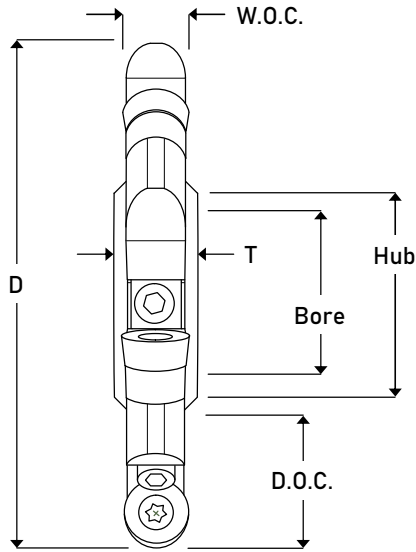
Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008

SCRSM

Radius Slotting Cutters

Arbor Mount

SCR
Radius Slotting Cutters



Series #4

Tool Info.

Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T
SCR-304	3.000	5	.500	.750	1.000	.250	1.400	.625
SCR-404	4.000	6	.500	1.090	1.250	.312	1.620	.625
SCR-504	5.000	8	.500	1.590	1.250	.312	1.620	.625
SCR-604	6.000	10	.500	1.900	1.500	.375	2.000	.625
SCR-804	8.000	12	.500	2.900	1.500	.375	2.000	.625
SCR-1004	10.000	16	.500	3.900	1.500	.375	2.000	.625

Tool #	Cartridge	Wedge	Wedge Screw	Molded Insert	Ground Insert
SCR-304	N/A - Solid Pocket Design				
SCR-404	435R	3	10		
SCR-504	435R	3	10	RCEB-435	RCEB-435G
SCR-604	435R	3	10		
SCR-804	435R	3	10		
SCR-1004	435R	3	10		

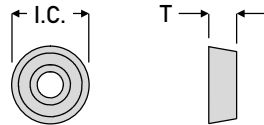
Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, TI-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008

Note:

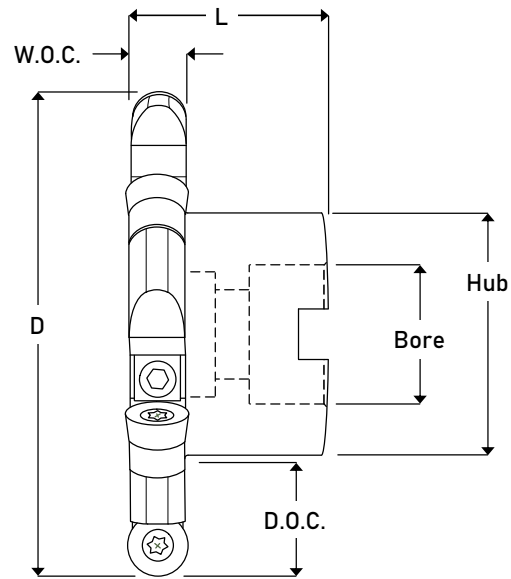
Cartridges will be preset in body before shipping at no extra charge.

Positive Top Inserts



Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-435	.500	.220	838T	T-20	A10M X33
RCEB-435G	.500	.220	838T	T-20	B1M X33 X40



Series #4

Tool Info.

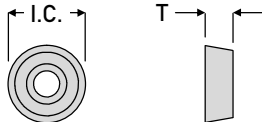
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCRSM-304	3.000	5	.500	.750	.500	.250	1.375	1.500
SCRSM-404	4.000	6	.500	.875	1.000	.375	2.000	1.625
SCRSM-504	5.000	8	.500	1.062	1.250	.500	2.625	1.750
SCRSM-604	6.000	10	.500	.937	1.500	.625	3.800	2.250
SCRSM-804	8.000	12	.500	2.000	1.500	.625	3.800	2.250

Tool #	Cartridge	Wedge	Wedge Screw	Molded Insert	Ground Insert
SCRSM-304	N/A - Solid Pocket Design				
SCRSM-404	435R	3	10		
SCRSM-504	435R	3	10	RCEB-435	RCEB-435G
SCRSM-604	435R	3	10		
SCRSM-804	435R	3	10		

Note:

Cartridges will be preset in body before shipping at no extra charge.

Positive Top Inserts



Insert Info.

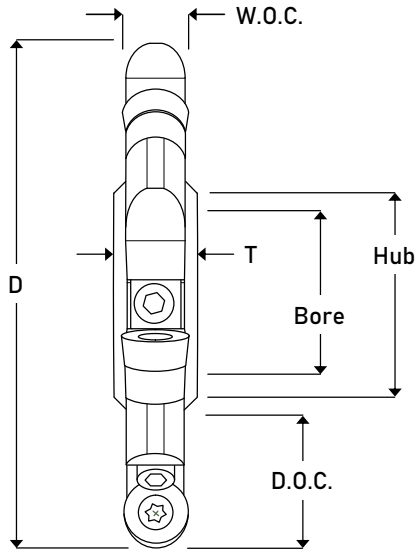
Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-435	.500	.220	838T	T-20	A10M X33
RCEB-435G	.500	.220	838T	T-20	B1M X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel <i>Ex. 1018, 1020, 1117, 1141, 12L14</i>	800 - 1200	.002 - .006
High Carbon & Alloy Steel <i>Ex. 1045, 4140, 4340, 52100, 8620</i>	500 - 800	.002 - .005
Lower Carbon Tool Steel <i>Ex. P-20, H-13, S-7</i>	400 - 700	.002 - .005
Tool Steel <i>Ex. A-2, A-6, D-2, M-2</i>	300 - 600	.002 - .004
Stainless Steel <i>Ex. 304, 316, 420, 15-5PH, 17-4PH</i>	300 - 600	.002 - .004
Iron <i>Ex. Cast, Ductile, Nodular</i>	600 - 1000	.003 - .007
Nickel & Titanium Alloy <i>Ex. Inconel, Hastelloy, Ti-6AL-4V</i>	120 - 180	.001 - .003
Non-Ferrous Metal <i>Ex. Aluminum, Bronze, Brass</i>	1000 - 2500	.003 - .008

Arbor Mount

SCR
Radius Slotting Cutters



Series #45

Tool Info.

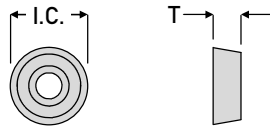
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T
SCR-645	6.000	5	.625	1.900	1.500	.375	2.000	.750
SCR-845	8.000	10	.625	2.900	1.500	.375	2.000	.750
SCR-1045	10.000	12	.625	3.900	1.500	.375	2.000	.750

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SCR-645				
SCR-845	53R	35	141D	RCEB-53G
SCR-1045				

Note:

Cartridges will be preset in body before shipping at no extra charge.

Positive Top Insert

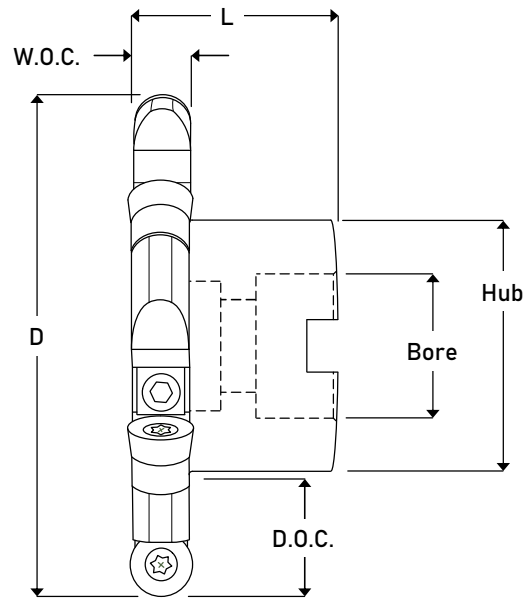


Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-53G	.625	.220	838T	T-20	B1M X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .008



Series #45

Tool Info.

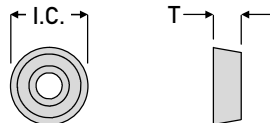
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCRSM-645	6.000	5	.625	.938	1.500	.625	3.800	2.250
SCRSM-845	8.000	10	.625	2.000	1.500	.625	3.800	2.250
SCRSM-1045	10.000	12	.625	3.000	1.500	.625	3.800	2.875

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SCRSM-645				
SCRSM-845	53R	35	141D	RCEB-53G
SCRSM-1045				

Note:

Cartridges will be preset in body before shipping at no extra charge.

Positive Top Insert



Insert Info.

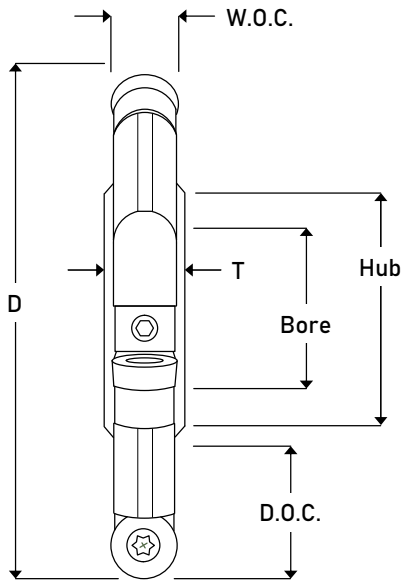
Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-53G	.625	.220	838T	T-20	B1M X33 X40

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, TI-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .008

Arbor Mount

SCR
Radius Slotting Cutters



Series #5

Tool Info.

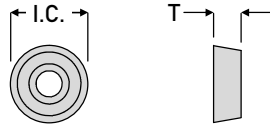
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	T
SCR-605	6.000	5	.750	1.687	1.500	.375	2.000	1.000
SCR-805	8.000	7	.750	2.687	1.500	.375	2.000	1.000
SCR-1005	10.000	8	.750	3.687	1.500	.375	2.000	1.000

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SCR-605				
SCR-805	64R	4	5161D	RCEB-64
SCR-1005				

Note:

Cartridges will be preset in body before shipping at no extra charge.

Positive Top Insert

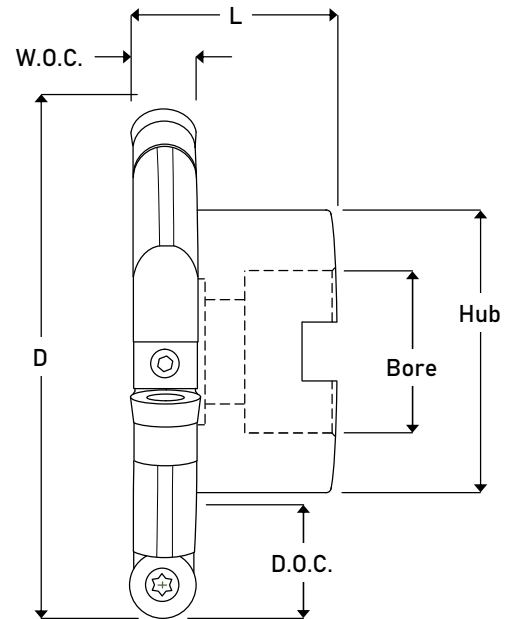


Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-64	.750	.250	1012T	T-25	A10M X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .008



SCRSM

Radius Slotting Cutters

Series #5

Tool Info.

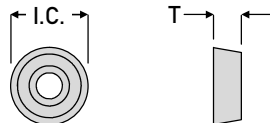
Tool #	D	Flutes	W.O.C.	D.O.C.	Bore	Key	Hub	L
SCRSM-605	6.000	5	.750	1.250	1.500	.625	3.200	2.250
SCRSM-805	8.000	7	.750	2.000	1.500	.625	3.800	2.250
SCRSM-1005	10.000	8	.750	3.000	1.500	.625	3.800	2.875

Tool #	Cartridge	Wedge	Wedge Screw	Insert
SCRSM-605				
SCRSM-805	64R	4	5161D	RCEB-64
SCRSM-1005				

Note:

Cartridges will be preset in body before shipping at no extra charge.

Positive Top Insert



Insert Info.

Insert #	I.C.	T	Screw	Wrench	Grades
RCEB-64	.750	.250	1012T	T-25	A10M X33

Speed and Feed Info.

Material	S.F.M.	I.P.T.
Mild & Low Carbon Steel Ex. 1018, 1020, 1117, 1141, 12L14	800 - 1200	.002 - .006
High Carbon & Alloy Steel Ex. 1045, 4140, 4340, 52100, 8620	500 - 800	.002 - .005
Lower Carbon Tool Steel Ex. P-20, H-13, S-7	400 - 700	.002 - .005
Tool Steel Ex. A-2, A-6, D-2, M-2	300 - 600	.002 - .004
Stainless Steel Ex. 304, 316, 420, 15-5PH, 17-4PH	300 - 600	.002 - .004
Iron Ex. Cast, Ductile, Nodular	600 - 1000	.003 - .007
Nickel & Titanium Alloy Ex. Inconel, Hastelloy, Ti-6AL-4V	120 - 180	.001 - .003
Non-Ferrous Metal Ex. Aluminum, Bronze, Brass	1000 - 2500	.003 - .008

All Torque Specs are in IN/LB

Screw #	Torx Size	Recommended Torque	Max Torque
164T	T-6	2.7 - 3.3	5.5
300T	T-8	5.7 - 6.8	11.3
314T	T-8	5.7 - 6.8	11.3
414T	T-10	10 - 11.9	19.9
438T	T-10	10 - 11.9	19.9
538T	T-10	10 - 11.9	19.9
560T	T-10	10 - 11.9	19.9
5625T	T-10	10 - 11.9	19.9
614T	T-15	15.3 - 18.3	30.5
638T	T-15	15.3 - 18.3	30.5
838T	T-20	22.8 - 27.4	45.6
1012T	T-25	33.6 - 40.4	67.3
1412T	5/32 Allen	77.4 - 92.9	154.9



To receive a test tool number, submit the completed information below to K-Tool, Inc. by Email or Phone. Our tech support staff will be in contact with you within 1 business day to provide a test tool number or to get additional information needed to validate the test.
 Note: Test tool numbers will be issued for standard tools only.

The form can also be found on our website at www.ktoolinc.com under Technical Support.

Distributor Contact Information	
Distributor	
Salesperson	
Email	
Phone #	
Fax #	

End User Contact Information	
Company Name	
Contact	
Email	
Phone #	
Fax #	

Requested Test Tool	
Tool#	
Insert#	
Additional Information	

Material Information	
Material	
Hardness	
Additional Information	

Cutting Parameters	
Width of Cut	
Depth of Cut	
Length of cut	

Machine Information	
Machine Type	<input type="checkbox"/> Mill <input type="checkbox"/> Lathe
Horsepower	
Spindle Taper	
Coolant Thru	
Flood Coolant	
Coolant Pressure	

Tool Holder Information			
Holder Type	<input type="checkbox"/> Collet	<input type="checkbox"/> Milling Chuck	<input type="checkbox"/> End Mill Holder
Holder Length	<input type="checkbox"/> Stub Length	<input type="checkbox"/> Standard Length	<input type="checkbox"/> Extended Length
Projection Length			

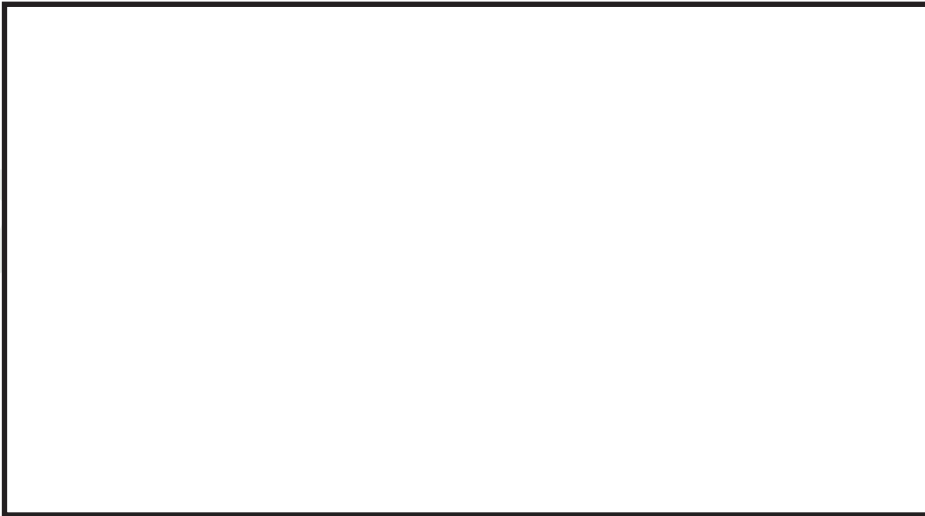
Provide a brief description of how the tool will be used.

TEST TOOL POLICY

We will ship cutter bodies and inserts on performance purchase order numbers after the guaranteed test form information is supplied. K-Tool, Inc. will cover the tool bodies only. No credit will be given on used inserts, however credit will be issued on unused inserts. Items will be invoiced at the time of shipment. All test tools must be paid for or returned within 60 days.

www.ktoolinc.com

Your Local K-Tool Inc. Distributor



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New Oxford, Pennsylvania 17350
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Email: info@ktoolinc.com