

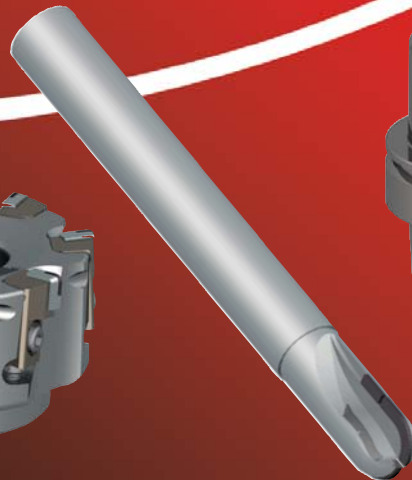
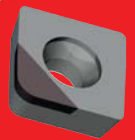
LOVEJOY Tool Co., Inc.

on the cutting edge...



Milling Products

Technical Application Catalog



1-800-843-8376

Catalog No. **05** CAT
LOVEJOY

Last Updated 12-31-2009

Founded: 1917
by Fred P. Lovejoy

Made in the U.S.A.



LOVEJOY Tool Company, Inc.



In **1916** Fred P. Lovejoy conceived an idea for entirely new and unique cutting tools. Based on a sound economic principle, the tools he developed have inserted, replaceable inserts. Mr. Lovejoy organized the LOVEJOY Tool Co., Inc. in **1917** to manufacture the tools he had invented. He did so with the encouragement and experienced guidance of James T. Hartness, then the president of Jones & Lamson Machine Co., for whom Mr. Lovejoy had been working as a master mechanic. Over the years, LOVEJOY Tool Co., Inc. has developed steadily into a leader in the metal cutting tool industry. LOVEJOY has stayed competitive, keeping up with the constant changes in tooling technology as well as, **state-of-the-art** Computer Design systems and CNC equipment in our shop.

LOVEJOY Tool Company, Inc.

133 Main Street / P.O. Box 949
Springfield, Vermont 05156

Phone: 1-800-843-8376
Fax: 1-802-885-9511

www.lovejoytool.com
lovejoy@lovejoytool.com

LOVEJOY Milling Products



Vision:

LOVEJOY Tool Company will strive to be recognized as a leader in cutting tool technology.

Mission:

Develop new products to meet customers' needs.
Satisfy customers' needs for value and service.
Promote teamwork to increase employee involvement.
Identify and eliminate waste through Total Quality Management. Strive for continuous improvement.

Value:

We the men and women of Lovejoy Tool Company will conduct our business in accordance with high ethical standards.

We will treat our customers, suppliers and fellow employees with dignity, trust and respect.



Catalog Contents Guide



*Specials
page 1*



*CONVENTIONAL Inserts
page 28*



*PCD & CBN Inserts
page 50*



*SILICON Inserts
page 60*



*General
page 65*



*CAVITY MOLD Tooling
page 98*



*GRAY IRON Tooling
page 111*



*PCD / CBN Tooling
page 120*



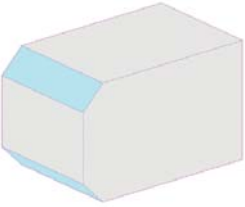
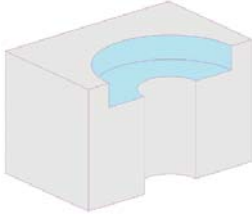
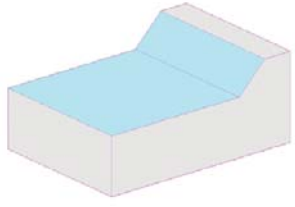
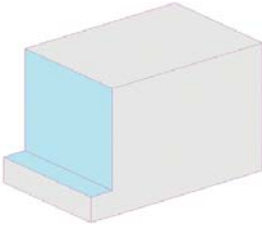
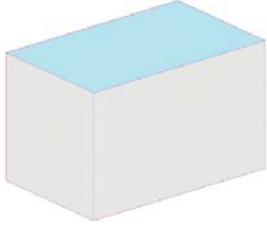
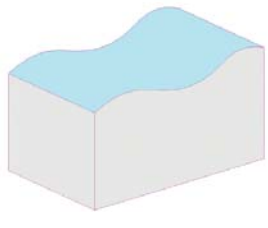
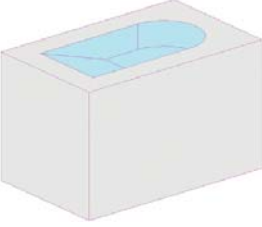
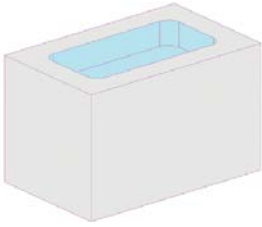
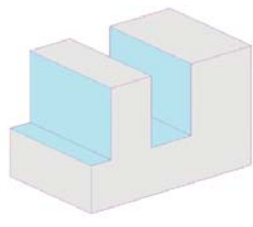
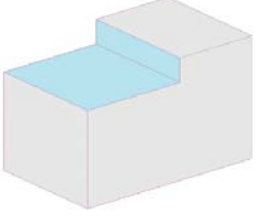
*Slotters
page 128*



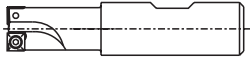
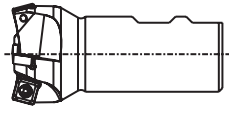
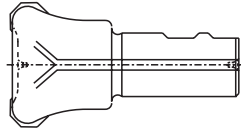
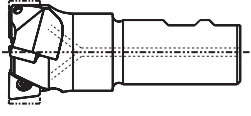
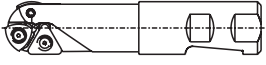

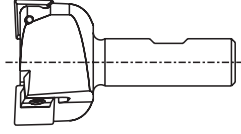
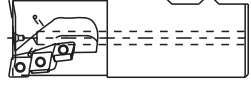
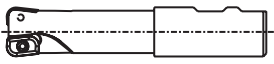

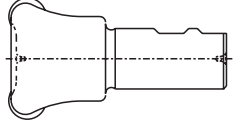
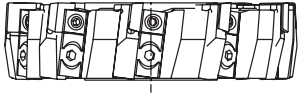

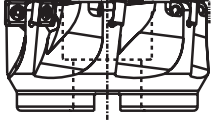
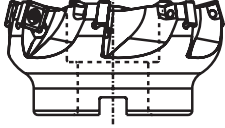
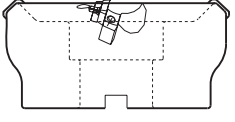
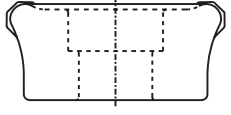
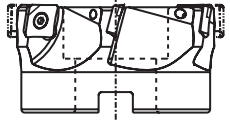
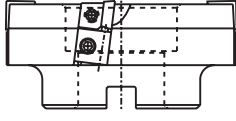
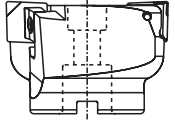
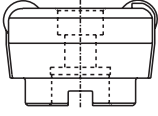
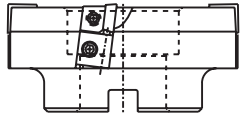
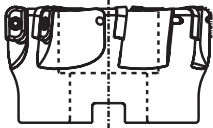

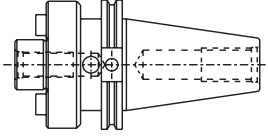
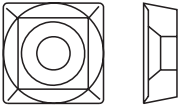


*Arbors / Holders
page 139*

- *Mission Statement* *page i*
- *Catalog Contents Guide* *page ii*
- *Application Index* *page iii*
- *Geometry Index* *page iv*
- *Quick Index* *page v - viii*
- *Request for Quote* *page 25*
- *Insert Nomenclature* *page 27*
- *Grade Specifications* *page 63 - 64*
- *Technical Application Data* *page 136 - 137*
- *Tolerancing Specifications* *page 138*
- *Screw Torque Specifications* *page 138*
- *LOVEJOY Web Site* *page 144*

Application Index

			Index
Chamfering Pg. 70, 73, 76, 85, 95, 96	Plunge Mills Pg. 67, 69, 71, 72, 77, 80, 81, 82, 83, 84, 86, 87, 90, 92, 97, 99, 100, 102, 117, 118, 127	Chamfering - Face Pg. 68, 70, 73, 85, 88, 93, 95, 96	
			Inserts
Shoulder Cutting - Side Pg. 78, 79, 80, 82, 83, 89	Facing Pg. 66, 67, 68, 69, 70, 71, 72, 73, 77, 78, 79, 81, 85, 86, 87, 88, 89, 90, 91, 92, 93, 95, 96, 97, 99, 100, 103, 113, 114, 115, 116, 117, 118, 125, 127	Profiling Pg. 74, 75, 78, 79, 103, 105, 106, 124	
			Cavity Mold
Ramping Pg. 99, 100, 101, 103, 107, 123	Recessing Pg. 84, 101, 102, 103, 104, 107, 123	Slotting Pg. 80, 129, 130, 131, 132, 133, 134, 135	
			PCD / CBN
Shoulder Cutting - Face Pg. 66, 67, 68, 69, 71, 72, 73, 77, 78, 79, 81, 83, 84, 86, 87, 89, 92, 95, 97, 100, 113, 114, 115, 116, 117, 118, 125, 127			Slotters
			Technical Data
			Holders

Geometry Index

Index				
Specials	1° End Mills Pg 69, 92	15° End Mills Pg 68	45° End Mills Pg 70, 76, 95, 96	90° End Mills Pg 66, 67, 71, 77, 78, 79, 80, 81, 82, 83, 84, 97, 100, 102, 107, 123, 125, 127, 132, 133, 134, 135
Inserts				
General	Ball End Mills Pg 74, 75, 105, 106, 124	Center Cut End Mills Pg 84, 123	PCD End Mills Pg 123, 124, 127	Slab End Mills Pg 78, 79, 80
Cavity Mold				
Gray Iron	Backdraft End Mills Pg 101, 107	Plunge End Mills Pg 102, 104	Round Insert End Mills Pg 90, 95, 96, 99, 103, 104	Half Side Mills Pg 89
PCD / CBN				
Slotters	Slotter Mills Pg 129, 130, 131, 132, 133, 134, 135	1° Face Mills Pg 69, 86, 87, 89, 92, 117, 118	15° Face Mills Pg 68, 88	45° Sq. Insert Face Mills Pg 70, 73, 85, 93
Technical Data				
Arbors / Holders	45° Oct. Insert Face Mills Pg 95, 96	90° Face Mills Pg 66, 71, 72, 97, 102, 127	Gray Iron Face Mills Pg 113, 114, 115, 116, 117, 118	PCD Face Mills Pg 125, 127
Carbide Inserts				
PCD / CBN Inserts	Round Insert Face Mills Pg 90, 91, 95, 96, 99, 103	StepDex Face Mills Pg 113, 114, 115, 116	Backdraft Mills Pg 101	Plunge Mills Pg 102
Silicon Nitride Inserts				
	Arbors / Holders Pg 140, 141, 142, 143	Carbide Inserts Pg 28 - 49	PCD / CBN Inserts Pg 50 - 59	Silicon Nitride Inserts Pg 60 - 62

Quick Reference Index - Pg. 1 of 4

Carbide - Inserts Tab							
Insert	Page		Insert	Page		Insert	Page
APKT	28		OEC	38		TPCB	47
BCEA	29		OECH	38		WMECA	48
BCEG	29		RCCH	39		ZCEA	48
BCCG	29 & 30		RDE	39		ZCEG	48
CKDE	31		REC	40		ZPE	49
CPEH	31		RECH	40			
CTDCB	32		RSECH	40			
CTPCB	32		SDEB	41			
CZPEB	33		SPEB	41			
CZPEH	33		SEAN	41			
DPCB	34		SEC	41			
FPE	34 & 35		SECH	42			
KDE	35		SEHW	42			
LCEA	36		SPE	43			
LCEG	36		SPE w/flats	44			
LDEB	36 & 37		SPEW	45			
LEEB	36 & 37		SPEX	45			
LECH	37		SPXV	46			
MECA	37		TDCB	47			

PCD / CBN - Inserts Tab							
Insert	Page		Insert	Page		Insert	Page
0502-2802-0001	51		VNGA	58			
CNG	51		WFPCW	58			
CNGA	51 & 52		WMECA	59			
CNMA	52		WSECH	59			
CPG	52						
DNG	53						
DNGA	53						
DNMA	53						
MECA	53						
SNE	54						
SNG	54						
SNMA	55						
SPCA	55						
SPCB	55						
SPCW	56						
SPG	56						
TEEB	57						
TNG	57						
TNMA	57						
TPG	58						



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

Quick Reference Index - Pg. 3 of 4

Series	Page	Tab	Geometry (AX / RAD)	Dish / Lead	Configuration
170	116	Gray Iron	Positive	1° Dish (Sta. 1)	Face Mill
175	114	Gray Iron	Positive	1° Dish (Sta. 1)	Face Mill
180	118	Gray Iron	Positive	1° Dish	Face Mill
185	117	Gray Iron	Positive	1° Dish	Face Mill
190	125	PCD / CBN	Positive	90° Shoulder	Face Mill
205	66	General	Positive / Negative	0°30' Dish	Face Mill
205	66	General	Positive / Negative	0° Lead	End Mill
207	67	General	Positive / Negative	90° Shoulder	End Mill
222	68	General	Positive / Negative	15° Lead	Face / End Mill
225	69	General	Positive / Negative	0° 30' Dish	End Mill
225	69	General	Positive	0° 30' Dish	Face Mill
229	70	General	Positive / Negative	45° Lead	Face / End Mill
233	71	General	Positive	90° Shoulder	Face / End Mill
245	72	General	Positive / Negative	90° Shoulder	Face Mill
249	73	General	Positive / Negative	45° Lead	Face Mill
255	99	Cavity Mold	Positive / Negative	1° Dish	Face / End Mill
290	100	Cavity Mold	Positive	0° Lead	Face Mill
290	100	Cavity Mold	Positive / Negative	0° Lead	End Mill
291	101	Cavity Mold	Positive / Negative	7° Backdraft	Face / End Mill
293	102	Cavity Mold	Positive / Negative	0° Dish	Face / End Mill
355	103	Cavity Mold	Negative	N/A	Face / End Mill
356	104	Cavity Mold	N/A	N/A	End Mill
539	74	General	N/A	N/A	Ball End Mill
540	105	Cavity Mold	N/A	N/A	Ball End Mill
557	106	Cavity Mold	N/A	N/A	Ball End Mill
558	107	Cavity Mold	N/A	N/A	Flat Bott. End Mill
BNS	75	General	N/A	N/A	Ball End Mill
CE-45	76	General	Positive	45° Lead	End Mill
CEM	84	General	Positive	90° Shoulder	End Mill
EMS	78	General	Positive / Negative	0° Lead - (Sta 1)	Slab Mill w/shank
EMS	79	General	Positive / Negative	0° Lead - (Sta 1)	Slab Mill
EMX	83	General	Positive / Negative	90° Shoulder - to 2.00 dia	End Mill
EMX	83	General	Positive	90° Shoulder-over 2.00 dia	End Mill
EXSP	129	General	Positive	0°30' Dish	Slotter
FXS	85	General	Positive / Negative	45° Dish	Face Mill
GTA-1	87	General	Positive	1° Dish	Face Mill
GTA-15	88	General	Positive	15° Dish	Face Mill
GTAH	89	General	Positive	1° Lead	Half Side Mill
GTZ	90	General	Positive	N/A	Face / End Mill
GXS	130	Slotters	Positive	0°45' Dish	.375 - Slotter
GXSH	131	Slotters	Positive	0°45' Dish	.500 - Slotter
GXSM	132	Slotters	Positive	90° Shoulder	.375 - Slotter
GXSMH	133	Slotters	Positive	90° Shoulder	.500 - Slotter

Index
Specials
Inserts
General
Cavity Mold
Gray Iron
PCD / CBN
Slotters
Technical Data
Holders



Quick Reference Index - Pg. 4 of 4

Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

HOLDERS

Series	Page	Tab	Geometry (AX / RAD)	Dish / Lead	Configuration
HPEM	81	General	Positive	90° Shoulder	End Mill
HPM	77	General	Positive	90° Shoulder	End Mill
HPSM	80	General	Negative	90° Shoulder - to 1.50 dia	Slab Mill
HPSM	80	General	Negative / Positive	90° Shoulder-over 1.50 dia	Slab Mill
LSM	82	General	Positive / Negative	90° Shoulder - to 2.00 dia	End Mill
LSM	82	General	Positive / Positive	90° Shoulder-2.50 dia & up	End Mill
NBX	113	Gray Iron	Negative	3° Dish - (Station 1)	Face Mill
NXS	134	Slotters	Positive	1° 15' Dish	.750 - Slotter
NXSM	135	Slotters	Positive	90° Shoulder	.750 - Slotter
NZ	91	General	Positive	N/A	Face Mill
PCD	123	PCD / CBN	N/A	N/A	Center Cut End Mill
PCD	123	PCD / CBN	N/A	N/A	Non-Ctr Cut End Mill
PCD	124	PCD / CBN	N/A	N/A	Ball End Mill
STX-45	93	General	Positive	45° Lead	Face Mill
SX	115	Gray Iron	Positive	1° Dish - (Station 1)	Face Mill
SX	86	General	Positive	1° Dish - (Station 1)	Face Mill
TX	92	General	Positive	1° Dish	Face Mill
XR4	95	General	Positive / Negative	1° Dish / 45° Lead	Face / End Mill
XR45	96	General	Positive / Negative	1° Dish / 45° Lead	Face / End Mill
XR90	97	General	Positive / Negative	90° Shoulder	Face / End Mill
XR90	127	PCD / CBN	Positive / Negative	90° Shoulder	Face / End Mill

Arbors & Holders - Holders Tab								
Holders	Page	Balanced	Arbors	Page	Balanced	Holders	Page	Balanced
VSTW	140	B	B Arbors	143				
VMTW	140	B						
VST	141	B						
R8	141	B						
W5ST	141	B						
ST	142							
STP	142							

Specials - Custom Tooling, made to order - more >>>

Index
Specials
Inserts
General
Cavity Mold
Gray Iron
PCD / CBN
Slotters
Technical Data
Holders



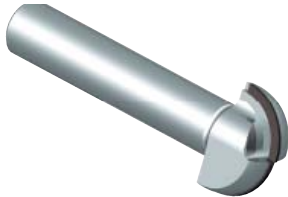
0501-0124-0003 PCD Tipped Boring Tool



0511-1322-0001 PCD Tipped Gun Stock Checkering Tool



0503-0100-0001 PCD Tipped End Mill



0503-1000-0001 PCD Tipped Ball End Mill



1110-2898-0005 Profile End Mill

0503-1300-0001 PCD Tipped Tapered Ball End Mill



1111-6298-0015 Turning Bar



1104-3872-0006 Channel Mill



1110-1398-0042 3" Ball Nose



1110-0460-0026 Ball Nose

1109-4098-0002 HSK shank Plunge Slab Mill Thru Coolant



0508-4027-0001 PCD Tipped Drill Bit Insert



0507-0626-0006 PCD Tipped Screw-On Chamfer Tool



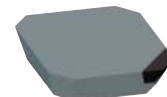
SNGA-433 CBN Double Tipped Inserts



RNMN-42 CBN Tipped Inserts



VNGA-33.010 CBN Tipped Inserts



SEAN-42AFN PCD Tipped Inserts

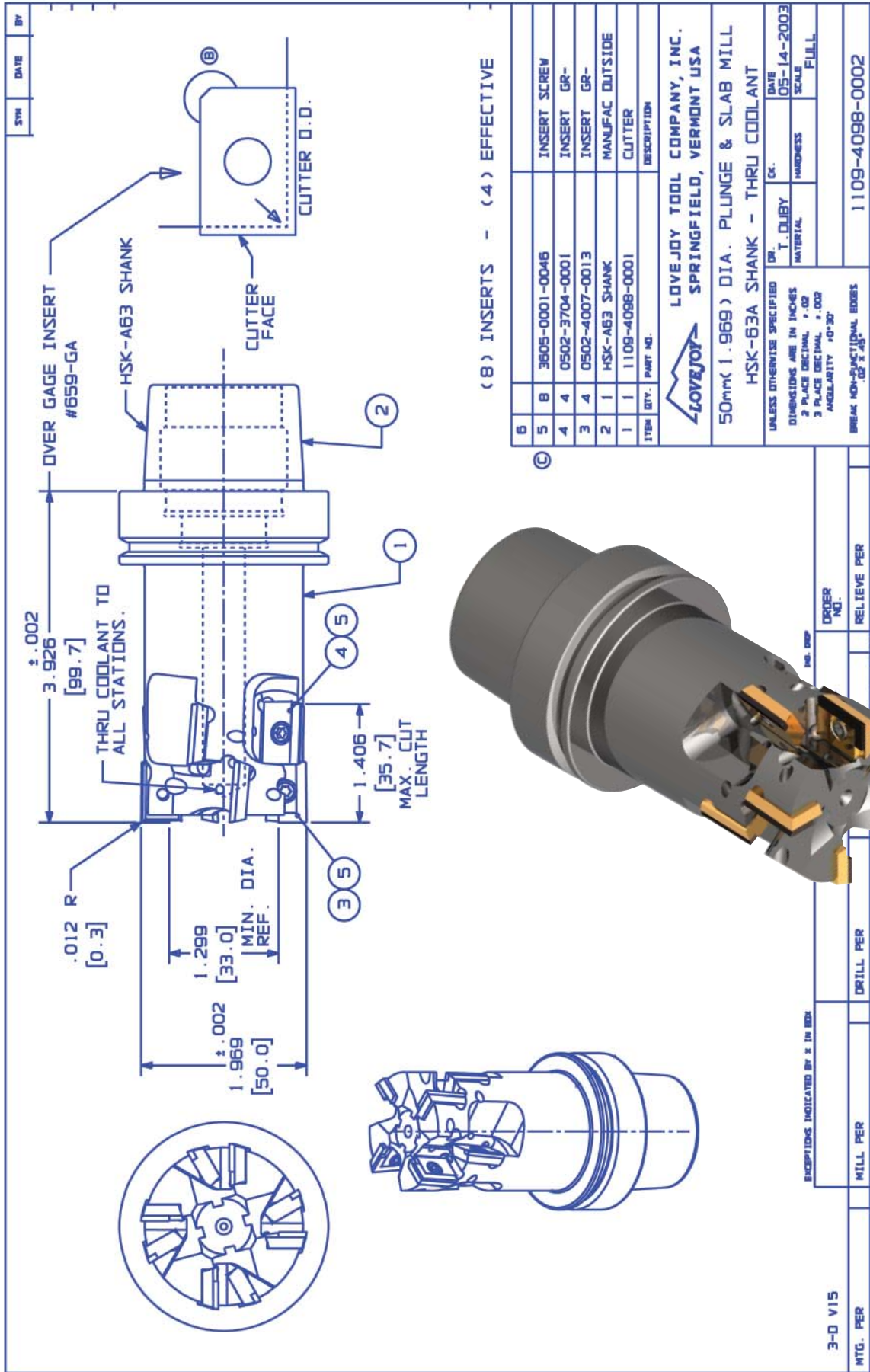


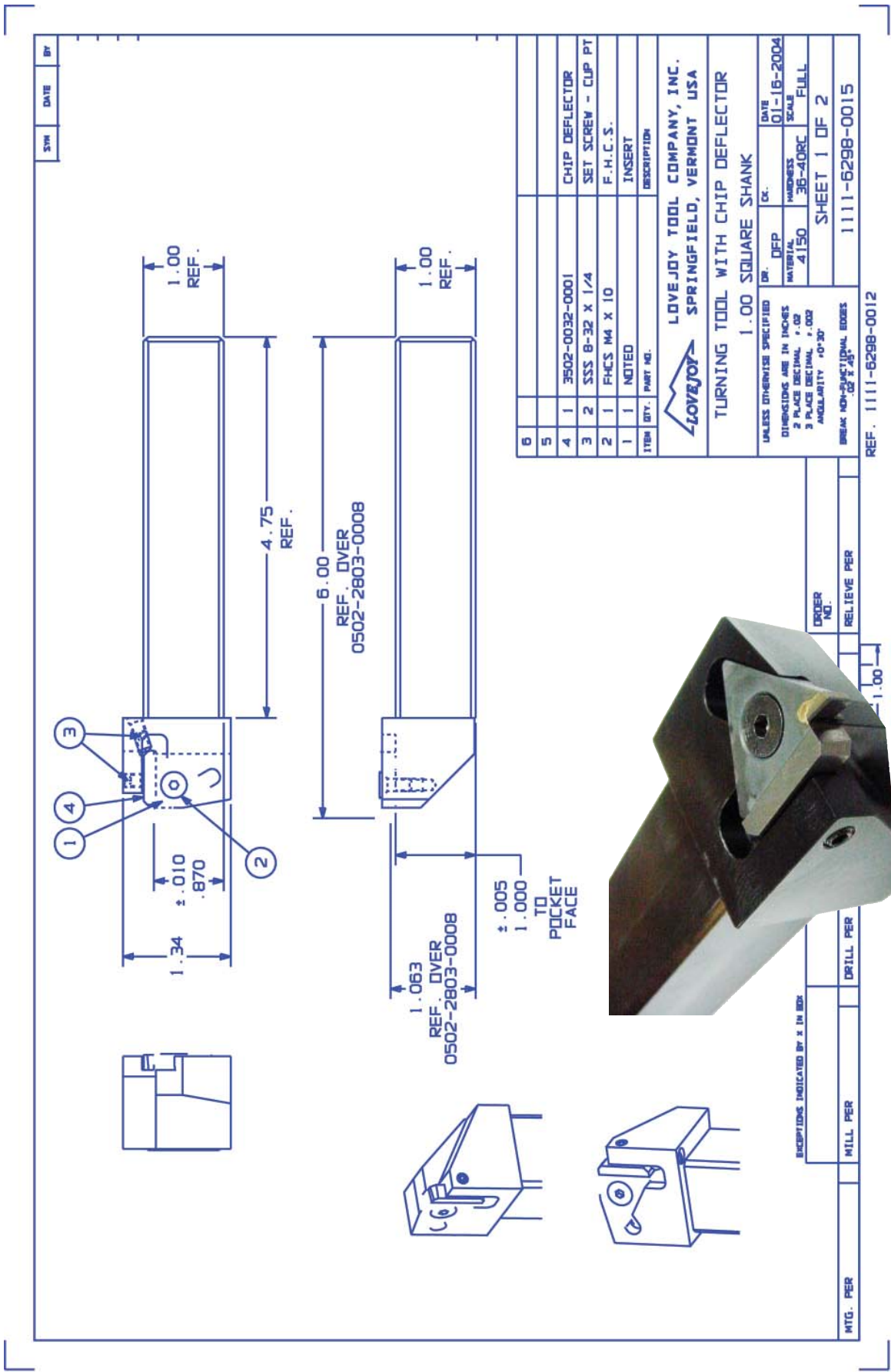
**Turbine Bucket Blade
Semi-Finishing Tool**

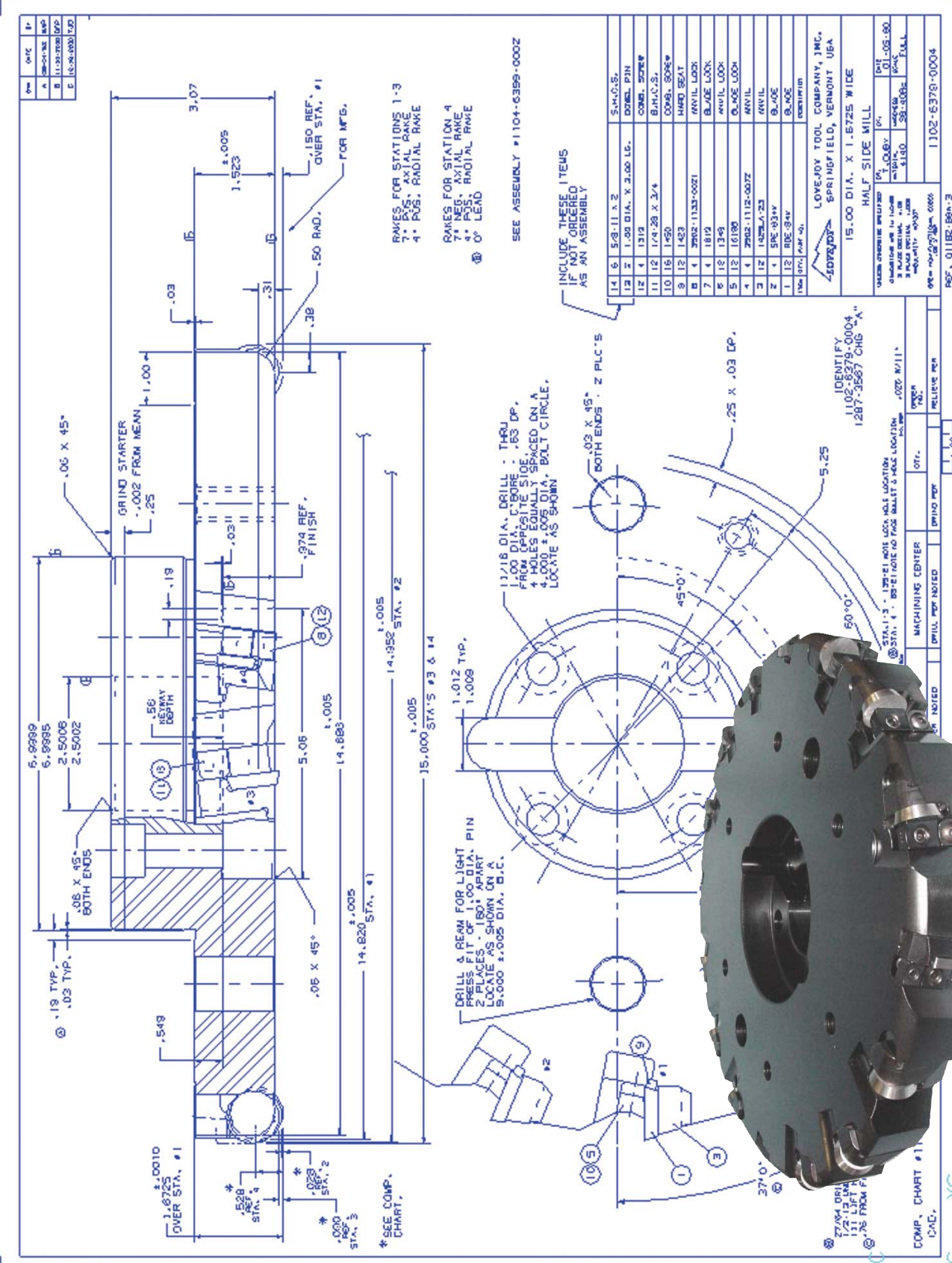
(6) INSERTS - (2) EFFECTIVE

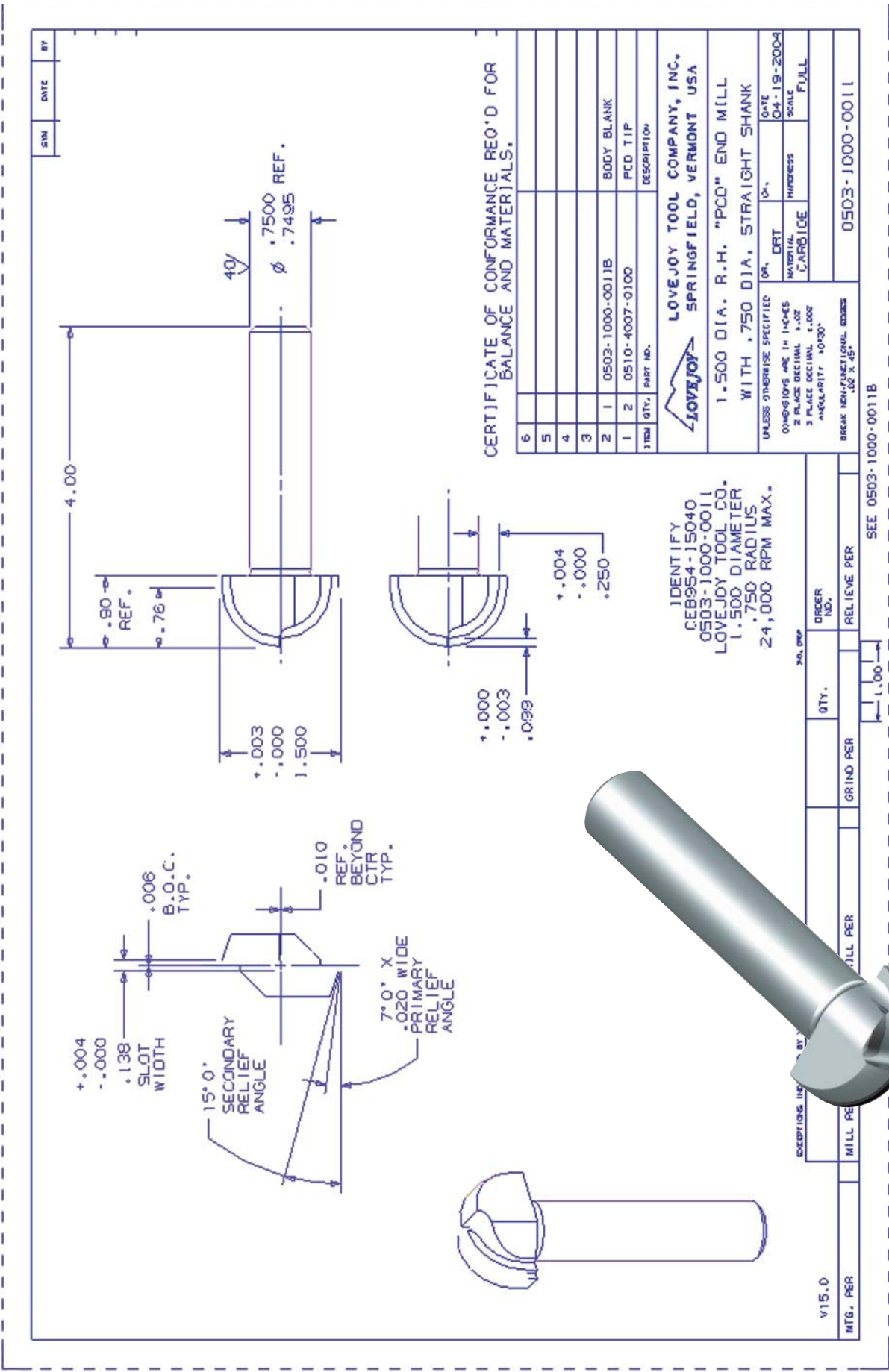
6	5	4	3	2	1	TOTAL QTY.	PART NO.	DESCRIPTION
			3	6	3605-0001-0023			SCREW
			2	4	0211-1401-0008			INSERT
			1	2	0211-1401-0007			INSERT
LOVEJOY TOOL COMPANY, INC. SPRINGFIELD, VERMONT USA								
PROFILE END MILL FOR DOVETAILED 1.250 DIA. STRAIGHT SHANK								
UNLESS OTHERWISE SPECIFIED OR:								
			DATE	02-24-2004				
			DIMENSIONS ARE IN INCHES	SCALE				
			2 PLACE DECIMAL	1-.02				
			3 PLACE DECIMAL	1-.002				
			ANGLE	10°/30°				
BREAK NON-FUNCTIONAL DIMENSIONS SEE P. 15								
1110-2898-0005								

MTS. PER	DRILL PER	GRIND PER	RELIEF PER	DRILL PER	GRIND PER	RELIEF PER	DRILL PER	GRIND PER	RELIEF PER







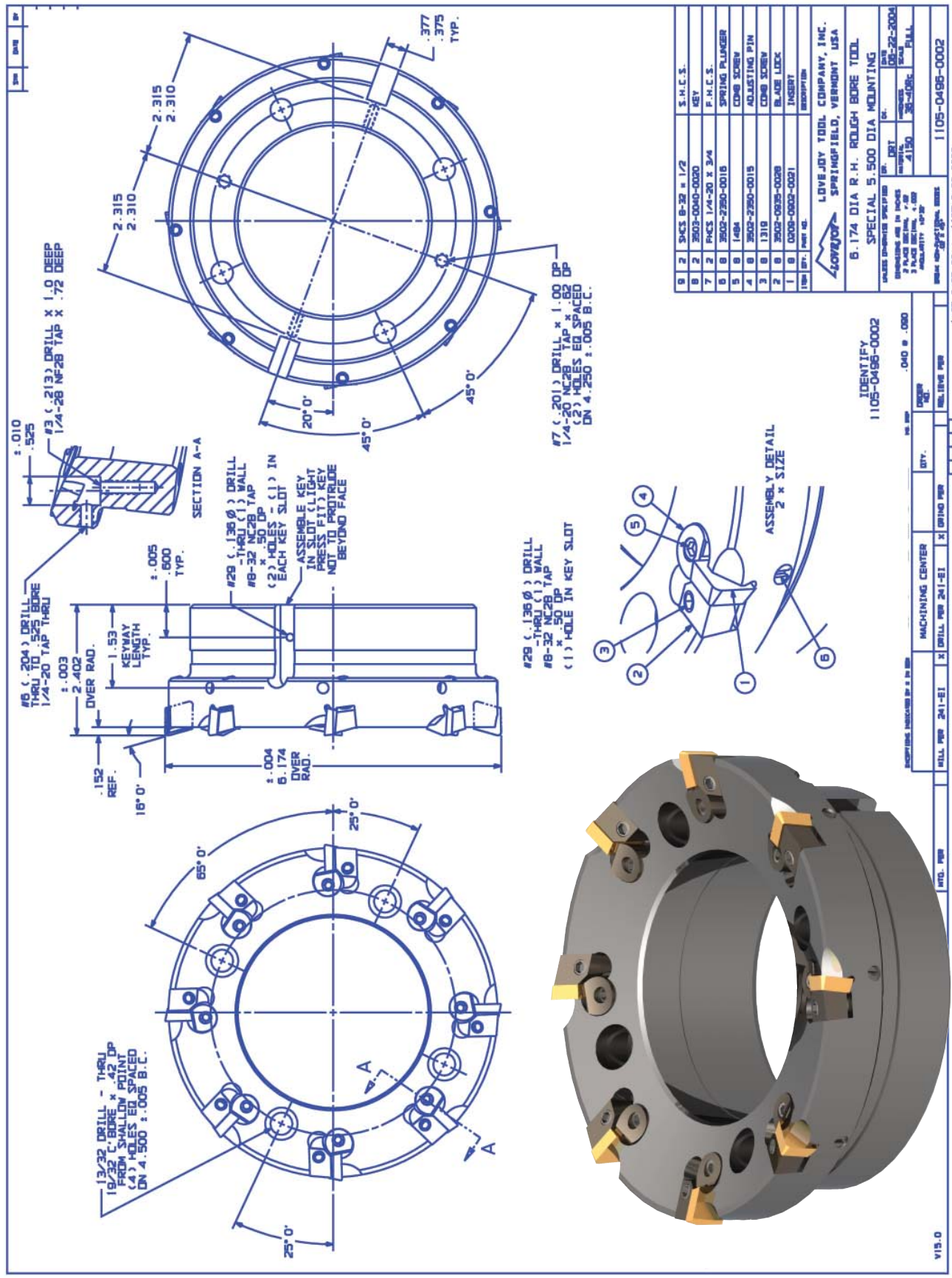


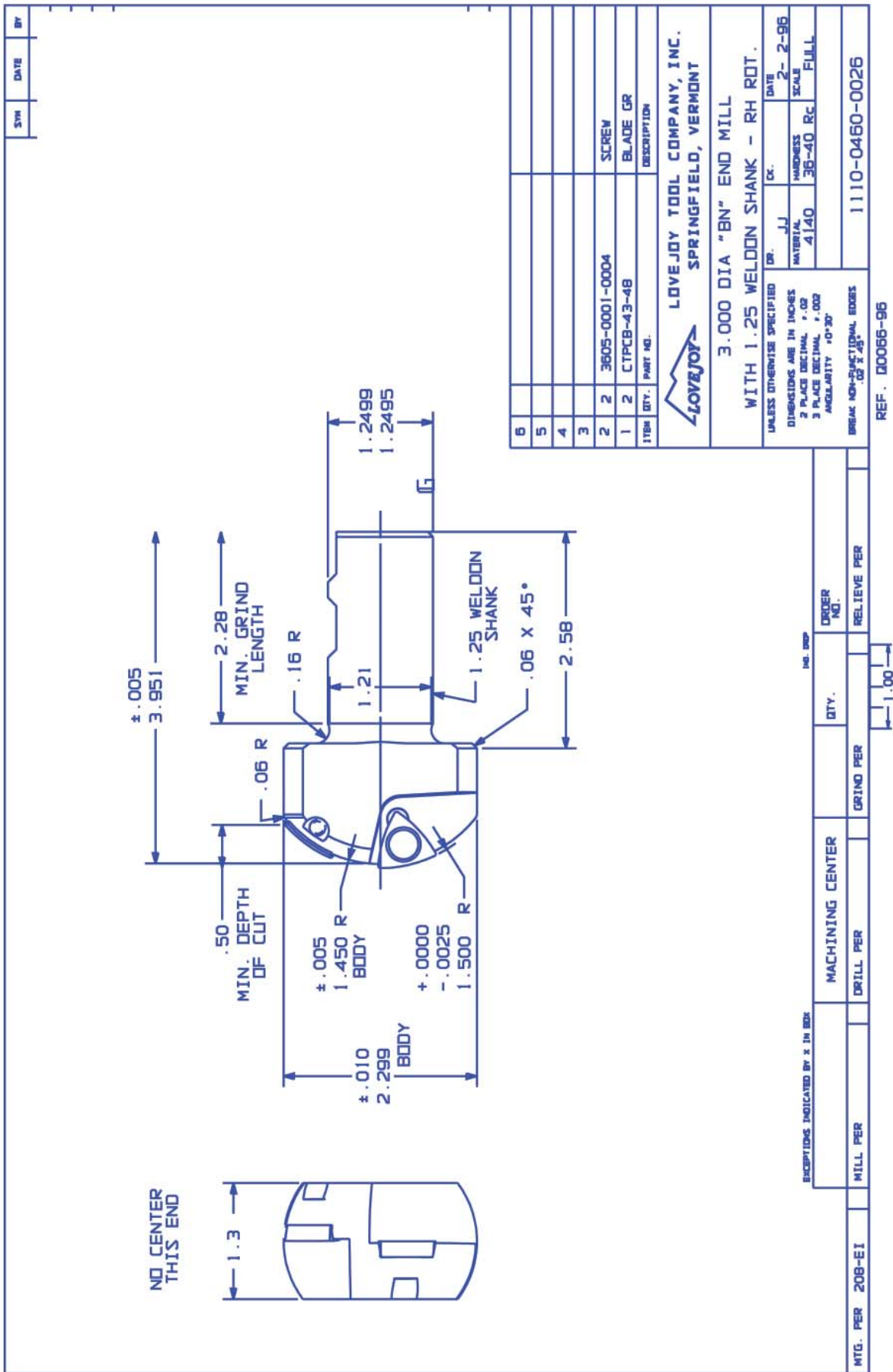
CERTIFICATE OF CONFORMANCE REQ'D FOR
BALANCE AND MATERIALS.

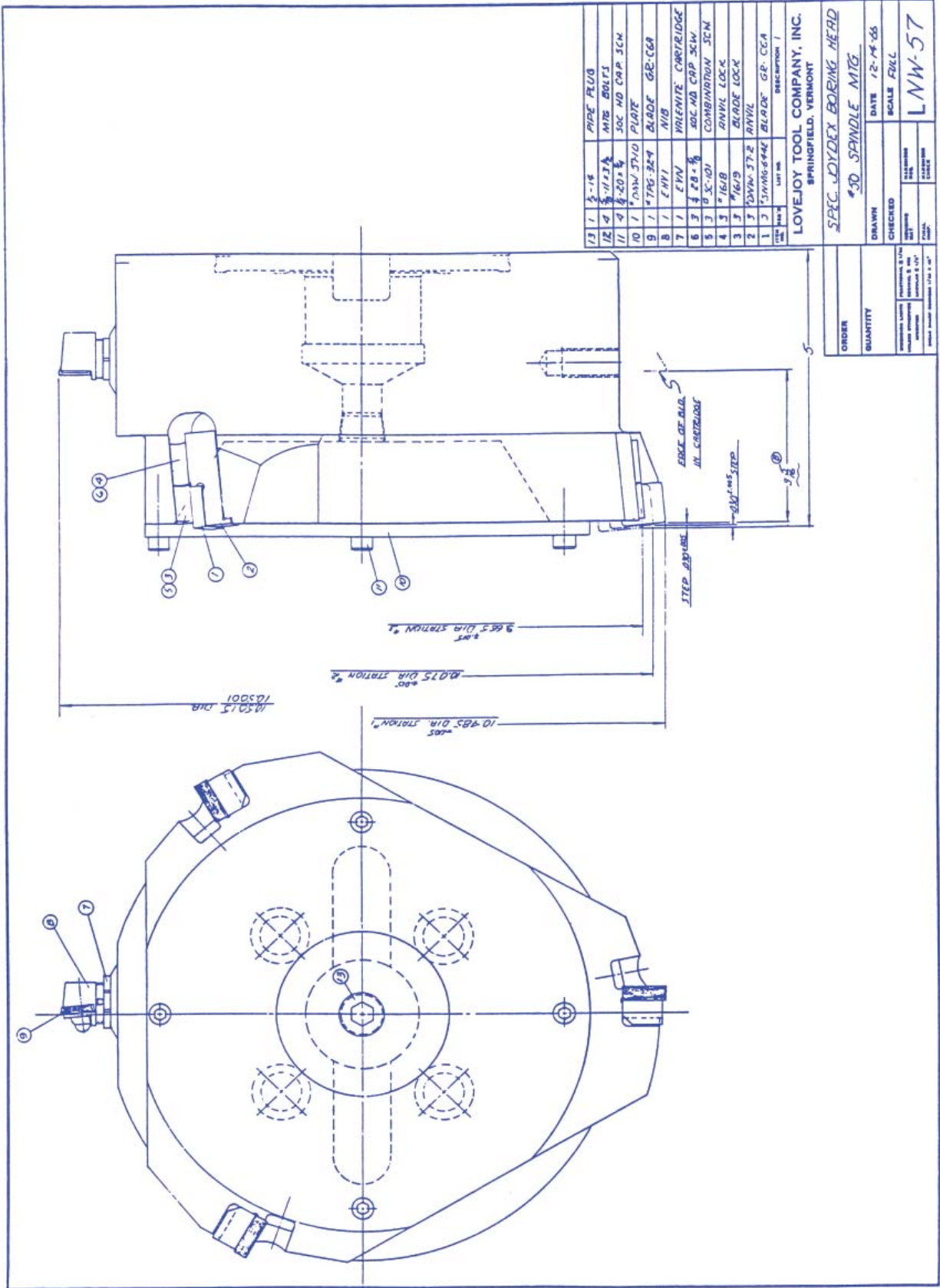
6			
5			
4			
3			
2	1	0503-1000-0011B	BODY BLANK
1	2	0510-4007-0100	PCD TIP
ITEM QTY.		PART NO.	
 LOVEJOY TOOL COMPANY, INC. SPRINGFIELD, VERMONT USA			
1.500 DIA. R.H. "PCD" END MILL WITH .750 DIA. STRAIGHT SHANK			
UNLESS OTHERWISE SPECIFIED		DR.	DATE
DIMENSIONS ARE IN INCHES		DRT	04-19-2004
2 PLACE DECIMAL ±.02		MATERIAL	HARDNESS
3 PLACE DECIMAL ±.002		CARBIDE	SCALE
ANGULARITY ±0°30'			FULL
BREAK NON-FUNCTIONAL EDGES 100" X 45"			0503-1000-0011

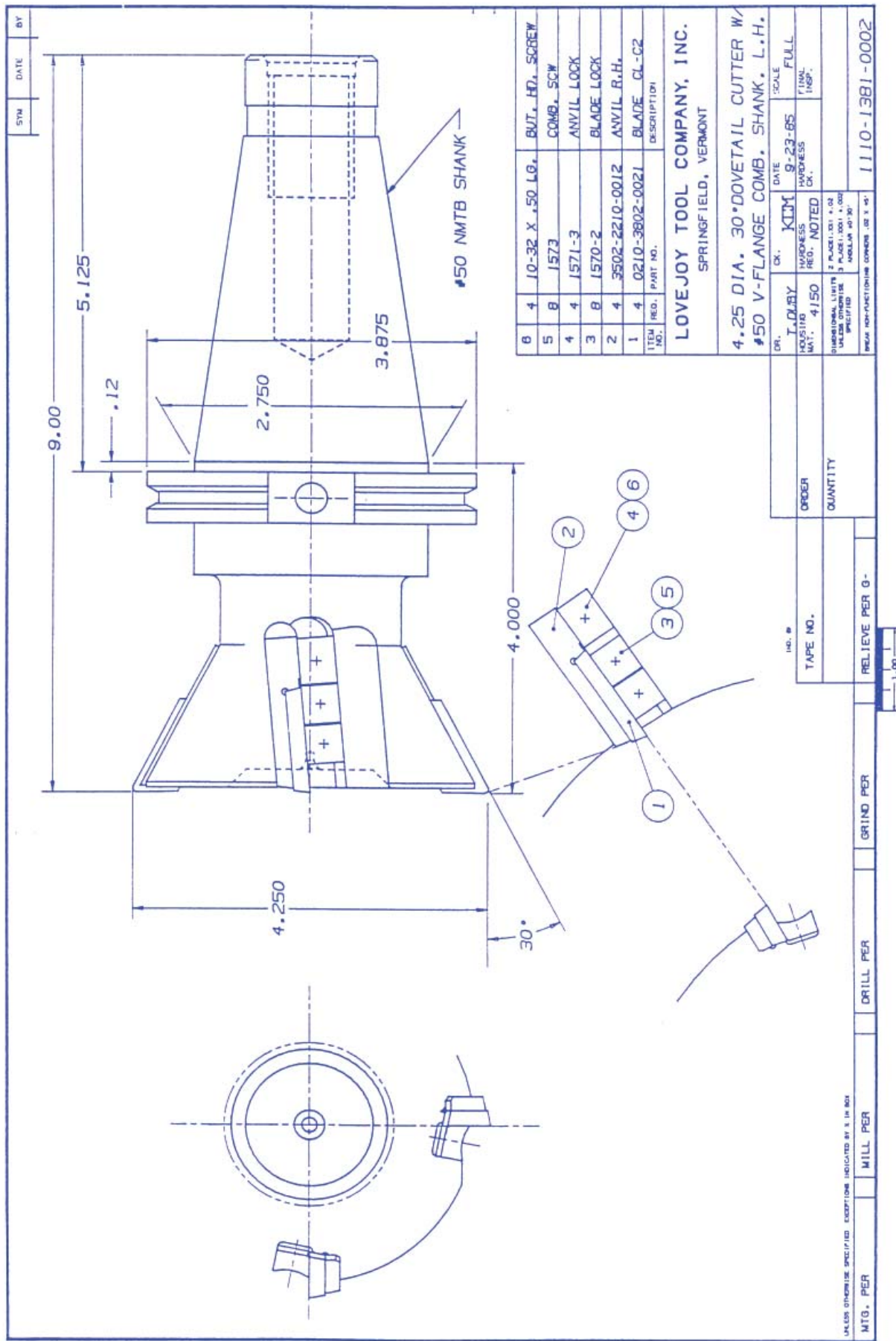
IDENTIFY
CEB954-15040
0503-1000-0011
LOVEJOY TOOL CO.
1.500 DIAMETER
.750 RADIUS
24,000 RPM MAX.

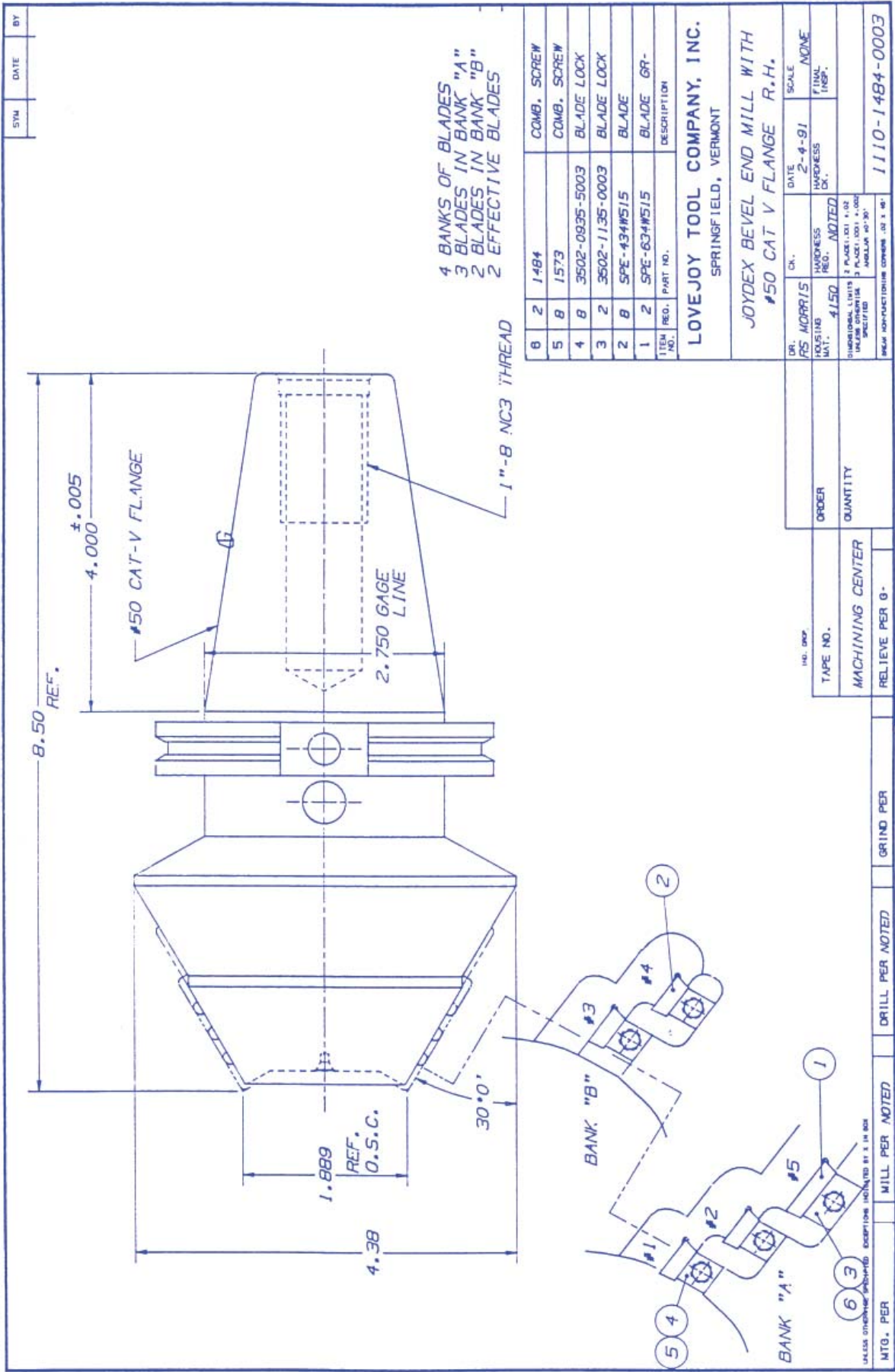
EXCEPTIONS INDICATED BY THE FOLLOWING		3RD. OP.	
MTG. PER	MILL PER	QTY.	ORDER NO.
V15.0			
	MILL PER	GRIND PER	RELIEVE PER
			SEE 0503-1000-0011B

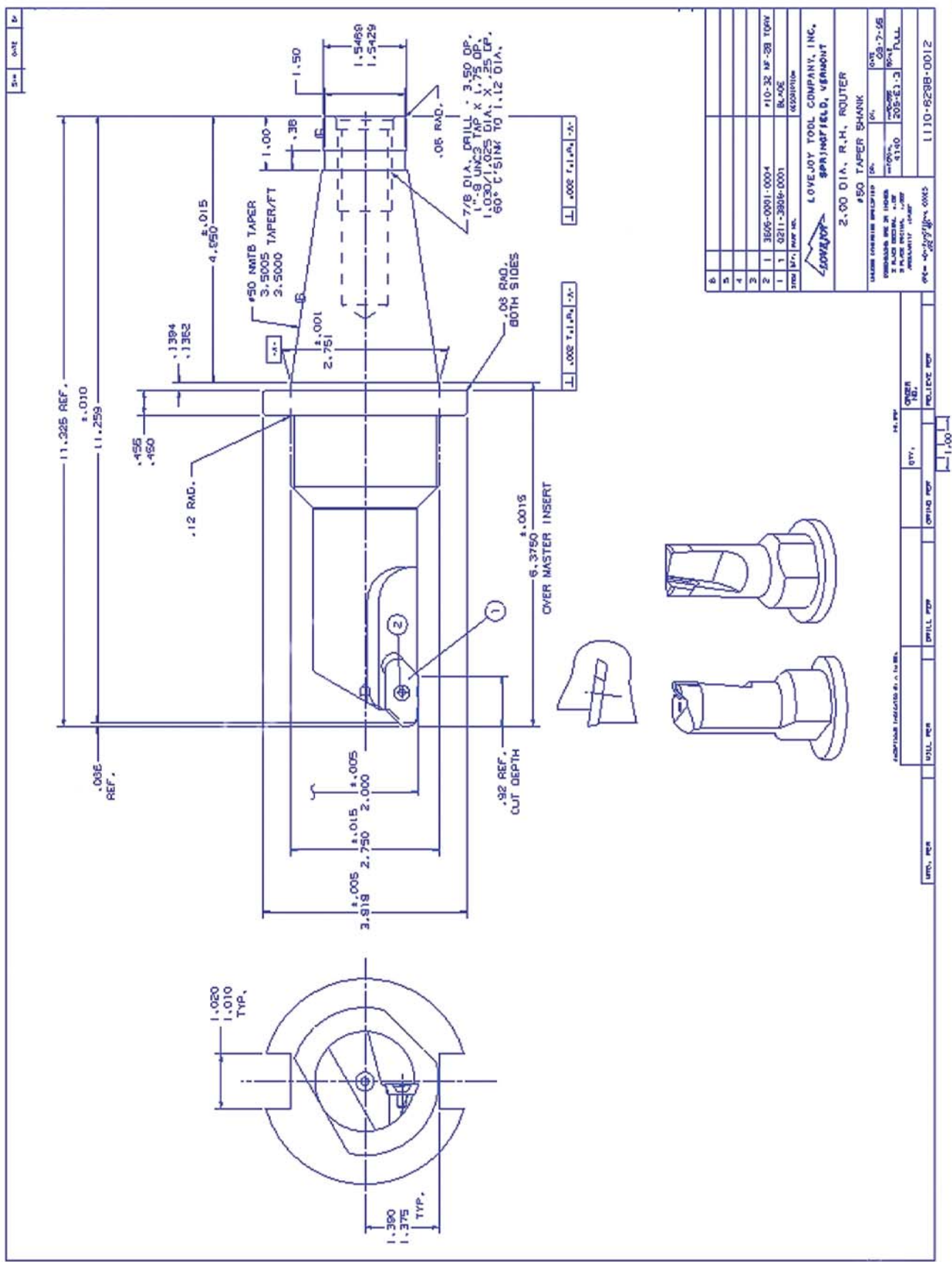




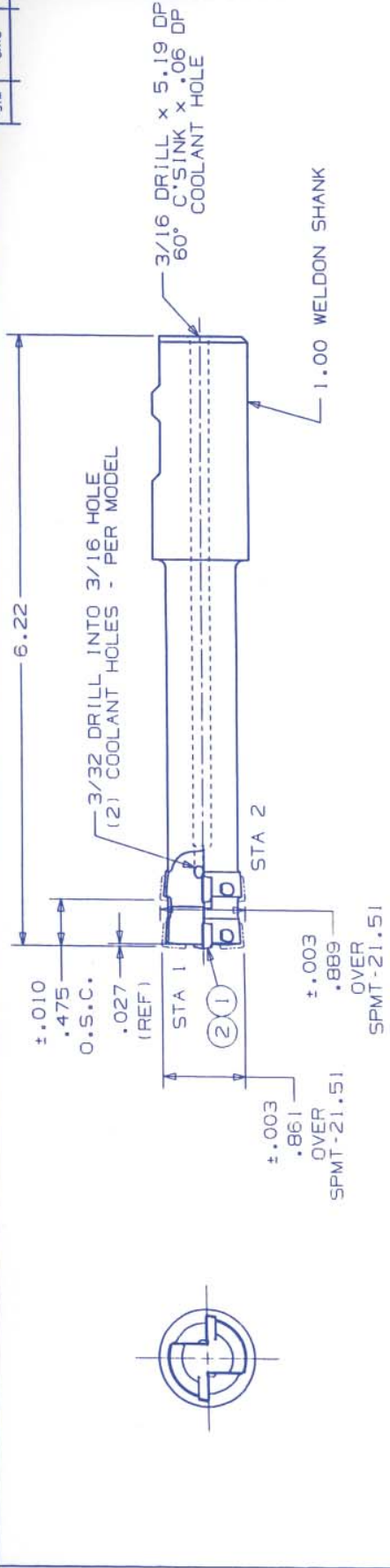






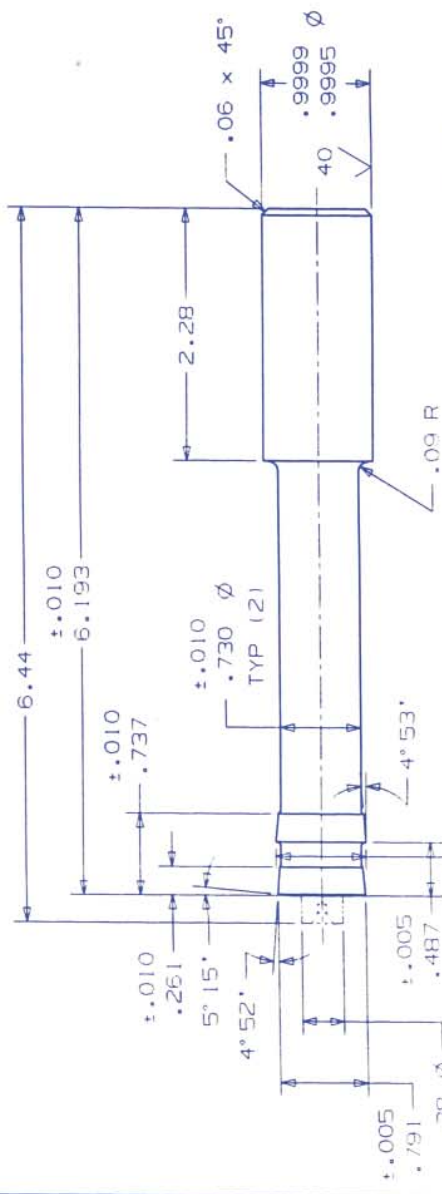


SYM	DATE	BY
-----	------	----



0° AXIAL RAKE
 0° RADIAL RAKE
 5° BACK TAPER

(4) INSERTS - (2) EFFECTIVE



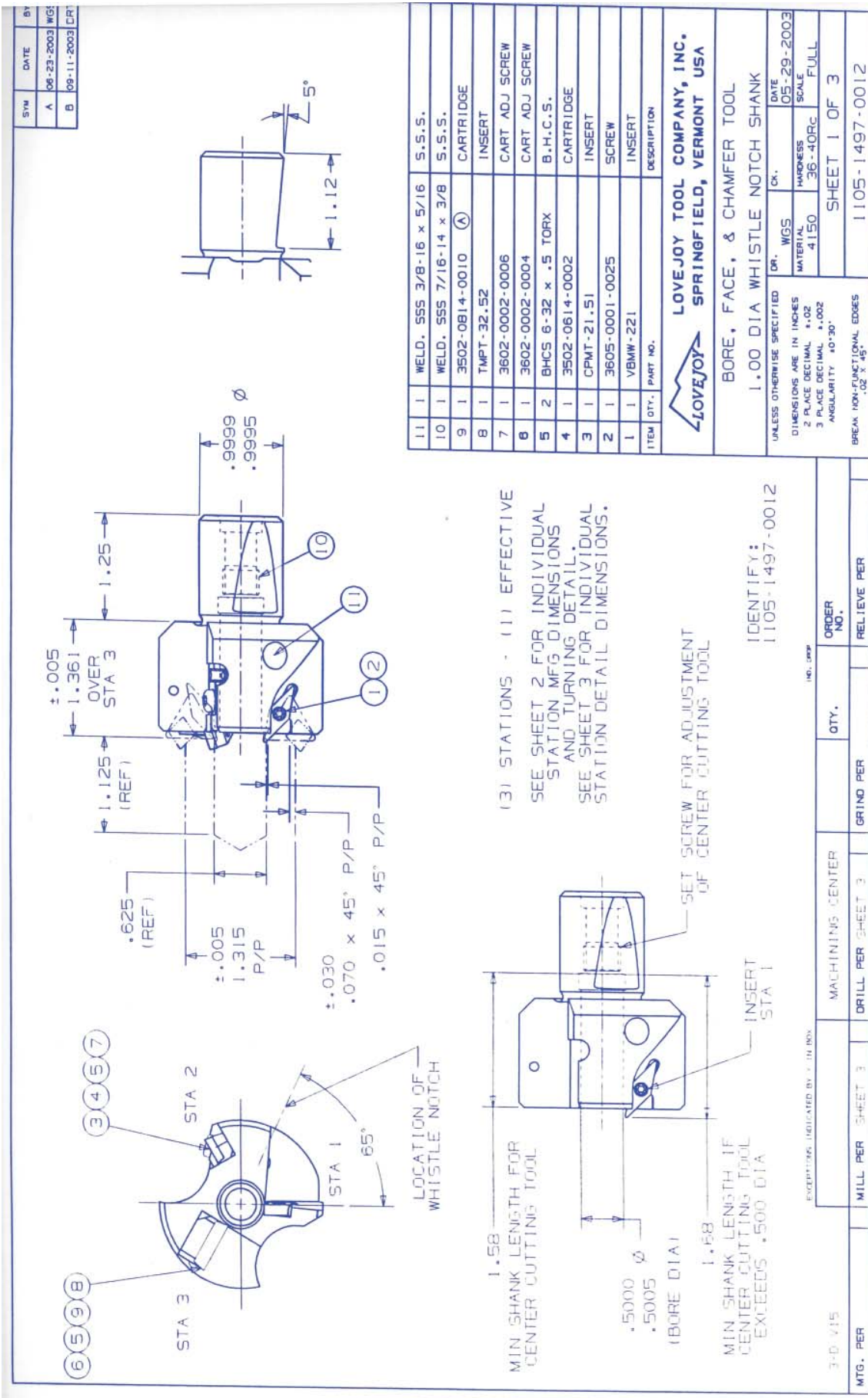
IDENTIFY:
 1105-3156-0004

ITEM	QTY.	PART NO.	DESCRIPTION
2	4	3605-0001-0025	SCREW
1	4	SPMT-21.51	INSERT

LOVEJOY TOOL COMPANY, INC.
SPRINGFIELD, VERMONT USA

.861 & .889 DIA R/H STEPPED BORING BAR	
1.00 WELDON SHANK - THRU COOLANT	
UNLESS OTHERWISE SPECIFIED	DR. DATE
DIMENSIONS ARE IN INCHES	10-25-2004
2 PLACE DECIMAL ±.02	MATERIAL
3 PLACE DECIMAL ±.002	HD-17
ANGULARITY ±0.30°	HARDNESS
	SCALE
	FULL
BREAK NON-FUNCTIONAL EDGES	
.02 X .45°	
	SHEET 1 OF 2
	1105-3156-0004

MTG. PER 208-E1	MILL PER SHEET 2	DRILL PER SHEET 2	MACHINING CENTER	QTY.	ORDER NO.	RELIEVE PER	REF: 1105-3156-0001, 1105-3156-0002



(3) STATIONS - (1) EFFECTIVE
 SEE SHEET 2 FOR INDIVIDUAL
 STATION MFG DIMENSIONS
 AND TURNING DETAIL.
 SEE SHEET 3 FOR INDIVIDUAL
 STATION DETAIL DIMENSIONS.

SET SCREW FOR ADJUSTMENT
 OF CENTER CUTTING TOOL

IDENTIFY:
 1105-1497-0012

EXCEPTING, INDICATED BY 3 IN BOX

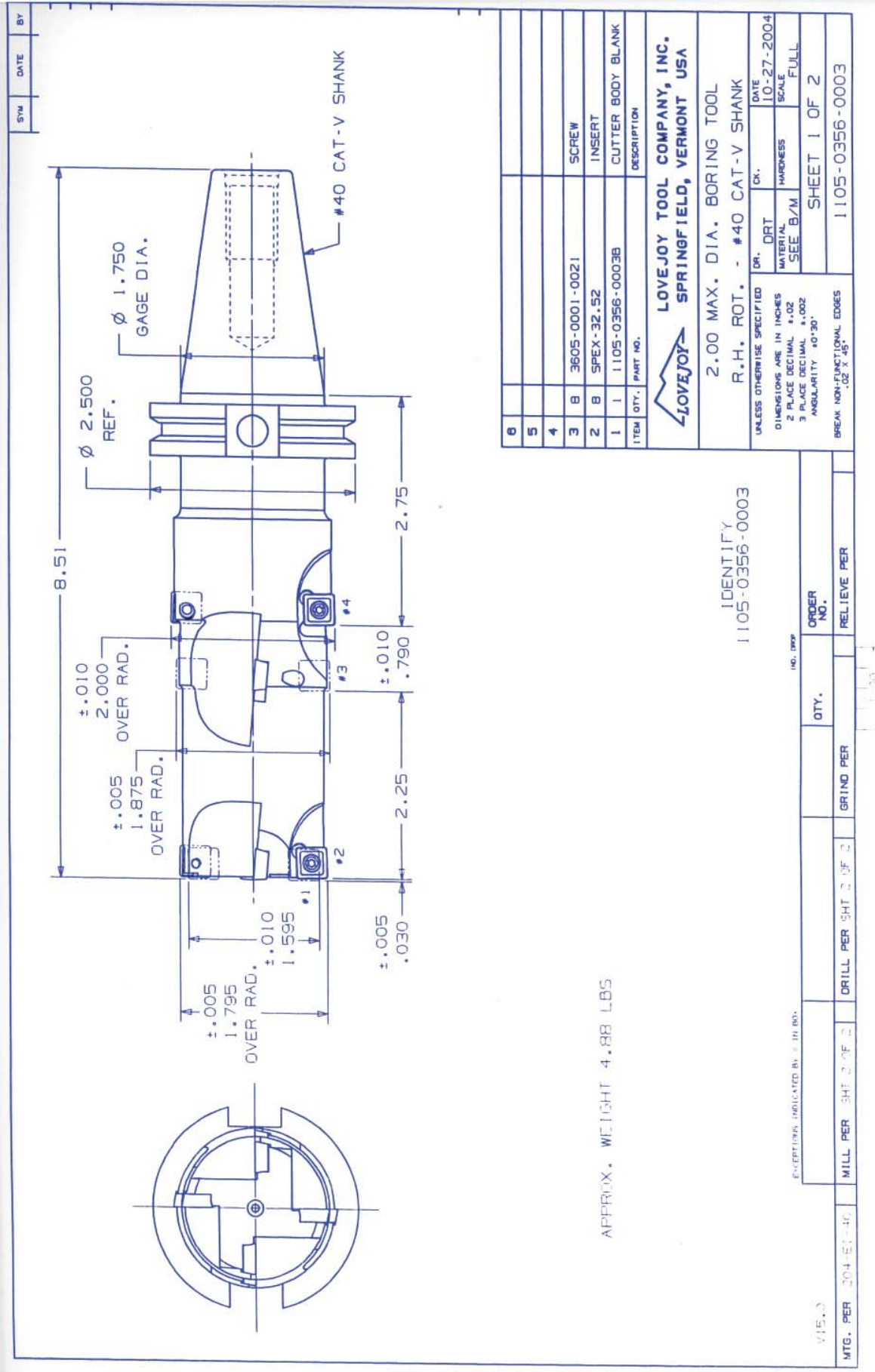
3-D V15	MILL PER SHEET 3	DRILL PER SHEET 3	MACHINING CENTER	QTY.	ORDER NO.
					RELIEVE PER

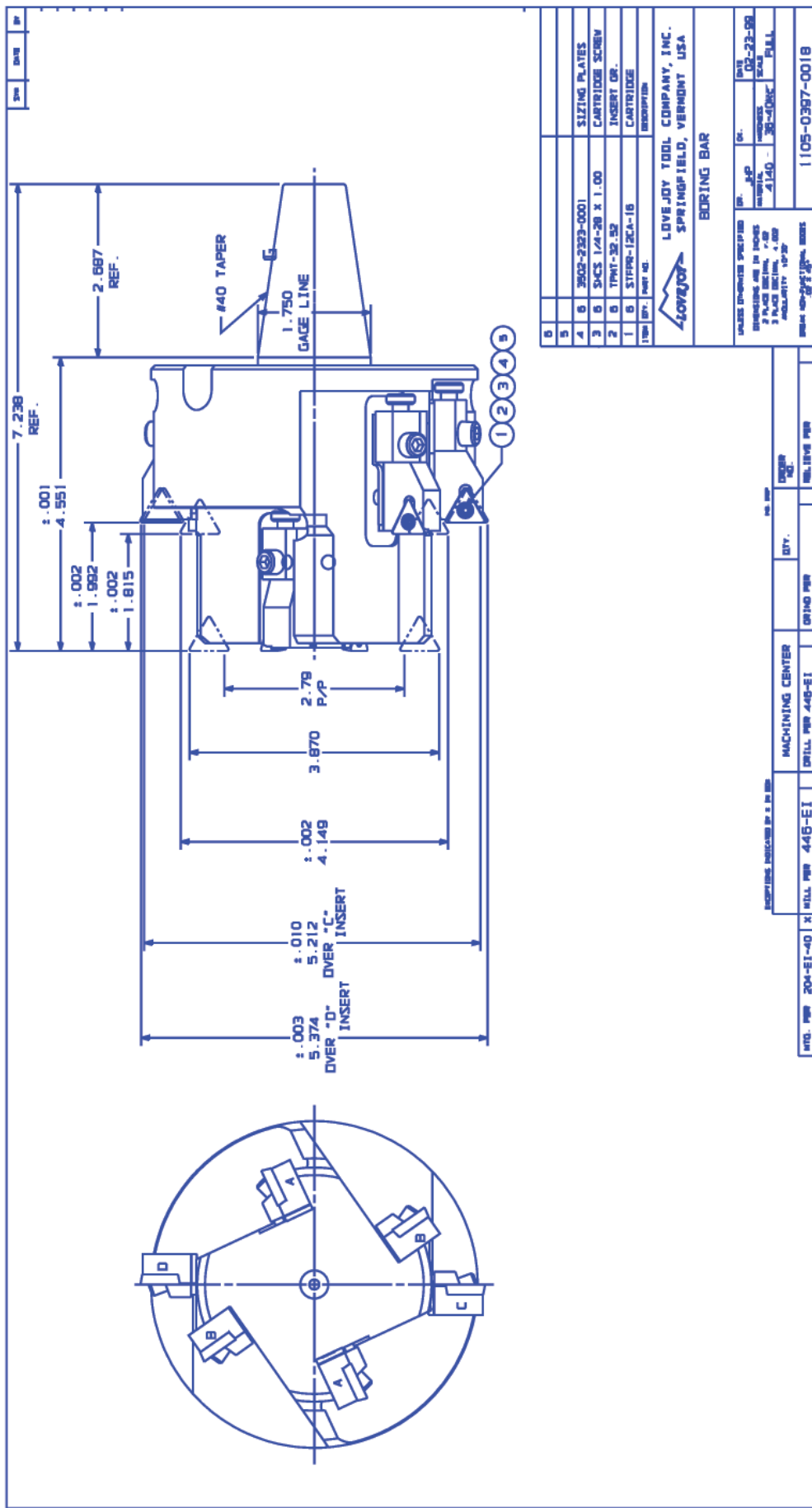
REF: 1105-1497-0002 1105-1497-0011 1105-0307-0021

11	1	WELD. SSS 3/8-16 x 5/16	S.S.S.
10	1	WELD. SSS 7/16-14 x 3/8	S.S.S.
9	1	3502-0814-0010 (A)	CARTRIDGE
8	1	TMPT-32.52	INSERT
7	1	3602-0002-0006	CART ADJ SCREW
6	1	3602-0002-0004	CART ADJ SCREW
5	2	BHCS 6-32 x .5 TORX	B.H.C.S.
4	1	3502-0814-0002	CARTRIDGE
3	1	CPMT-21.51	INSERT
2	1	3605-0001-0025	SCREW
1	1	VBWM-221	INSERT
ITEM QTY.		PART NO.	
DESCRIPTION			

LOVEJOY
 LOVEJOY TOOL COMPANY, INC.
 SPRINGFIELD, VERMONT USA

UNLESS OTHERWISE SPECIFIED		DR. WGS	CN.	DATE
DIMENSIONS ARE IN INCHES		MATERIAL	ADDRESS	SCALE
2 PLACE DECIMAL ±.02		4150	36-40RC	FULL
3 PLACE DECIMAL ±.002		SHEET 1 OF 3		
ANGULARITY ±0°30'		1105-1497-0012		
BREAK NON-FUNCTIONAL EDGES .02 X 45°				





Request for Quote

To obtain a cutter selection or our recommendations on feeds and speeds, we will need the following information. Please copy and complete this form and fax to LOVEJOY Tool Co., Inc. at 1-802-885-9511.

To (LOVEJOY Contact): _____

Company Name: _____

Contact Name: _____

Street: _____ City: _____

State: _____ Zip Code: _____ Country: _____

Phone: _____ Fax: _____

Email: _____ URL: _____

Repeat Items:

Tool No. _____ Insert No. _____

Insert Grade _____

Additional Info. _____

New Tools:

Description of Operation: _____

Cutter Dia. _____ Mounting Size & Style: _____

Part Name: _____ Cutter Rotation: (RH) _____ (LH) _____

Part Material: _____ Hardness: _____

Depth of Cut: _____ Finish Requirement: _____

Send Part Print or Sketch if Possible:

Machine Type: _____

Horse Power: _____ Condition: _____ Spindle Size: _____

Fixture & Setup Condition: Strong _____ Medium _____ Light _____

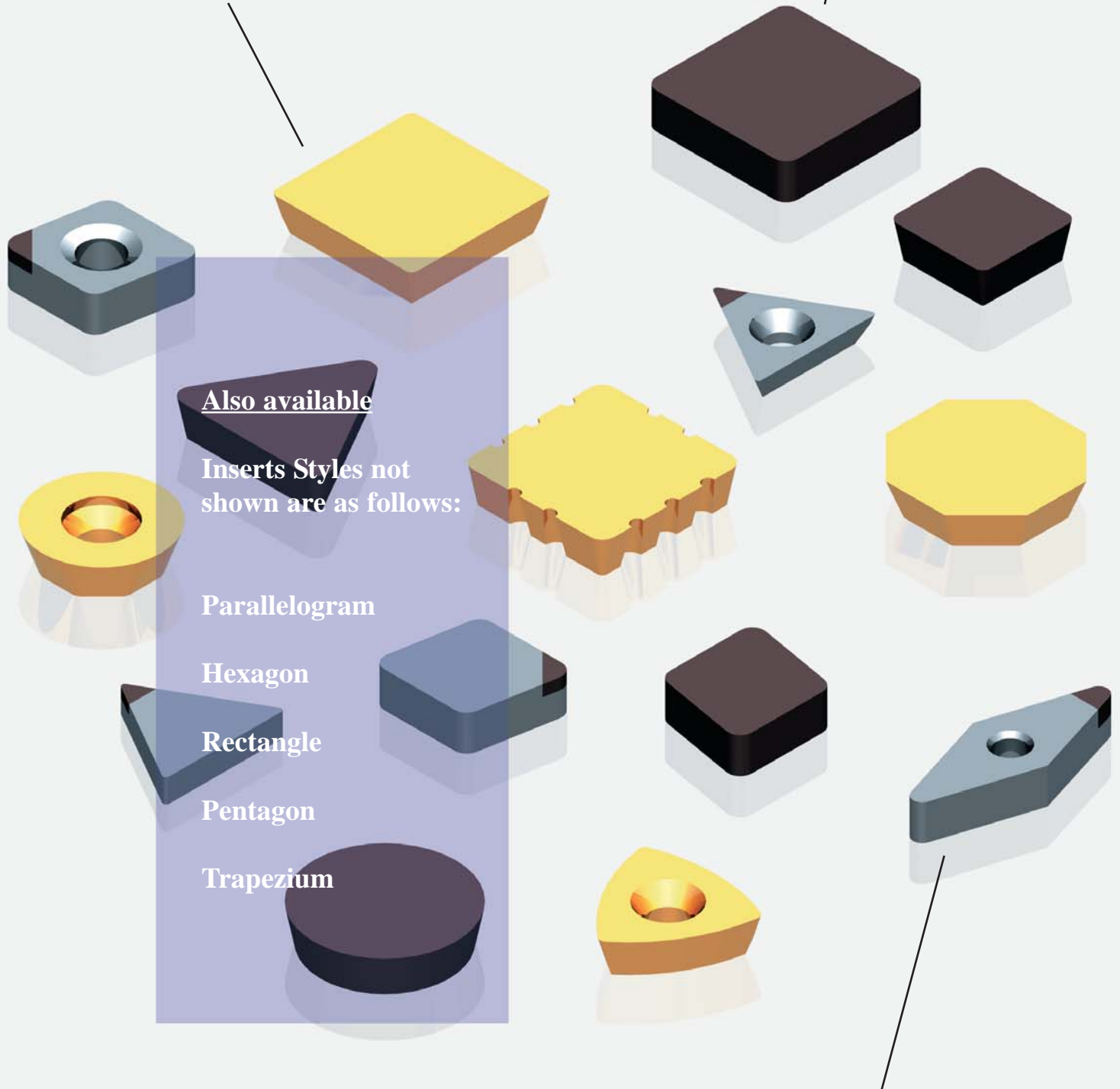
Any other Pertinent Information about your Request: _____



Inserts

Silicon Nitride Inserts

Carbide Inserts



Also available

Inserts Styles not shown are as follows:

Parallelogram

Hexagon

Rectangle

Pentagon

Trapezium

PCD/CBN
Tipped Inserts



LOVEJOY Insert Nomenclature

CLEARANCE

C = 7°
 N = 0°
 P = 11°
 D = 16°
 Z = 18°
 E = 20°
 H = 0°/11°
 J = 0°/15°

TYPE

A = With Hole
 B = With Hole and Countersink (70° - 90°)
 E = Smaller than 1/4" IC
 G = With Hole and Chipbreaker
 H = With Hole, Countersink and Chip Groove
 N = No Hole or Chipbreaker
 P = 10° Positive Land with Hole and Chipbreaker
 V = With Chipbreaker in cutting edge
 W = With Hole and Countersink (40° - 60°)
 X = With Hole, Countersink and Chipbreaker

THICKNESS

Figure represents the number 1/16"
 Shapes less than 1/4" IC figure represents the number of 1/32"

OTHER CONDITIONS

A = Ground all over, light hone
 B = Ground all over, heavy hone
 C = Ground top and bottom, light hone
 D = Ground top and bottom, heavy hone
 E = Unground, heavy hone
 J = Polished top face
 L = Left hand
 M = Extra corner clearance
 N = R and L rotated
 R = Right hand
 T = Chamfered cutting edge
 V = Chamfered cutting edge, heavy honed
 W = Chamfered cutting edge specifications (i.e. W520 = .005" wide land x 20°)
 10F = 10° Dished Face Sharp

O E C H - 6 3 4 W520

SHAPE

A = Parallelogram 85°
 B = Lovejoy Ball Nose
 C = Diamond 80°
 D = Diamond 55°
 F = Parallelogram 88°
 H = Hexagon
 K = Parallelogram 87°
 L = Rectangle
 M = Diamond 86°
 O = Octagon
 P = Pentagon
 R = Round
 S = Square
 T = Triangle
 V = Diamond 35°
 Z = Trapezium

TOLERANCE

Inscribed Circle
 A = ±.0002"
 B = ±.0002"
 C = ±.0005"
 E = ±.001"
 F = ±.002" thru ±.004"
 G = ±.001"
 M = ±.002" thru ±.004"
 U = ±.005" thru ±.012"
 X = ±.003"
 R = Grind stock all surfaces
 S = Grind stock top and bottom
 H = ±.0005" thru ±.001"

SIZE (IC)

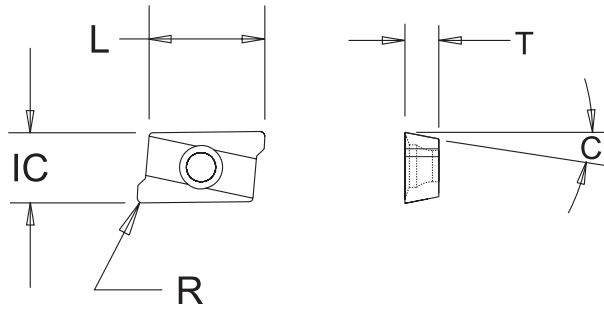
Shapes R, S, T, Z, M, C, D, H, O, P and V the figure represents the number of 1/8" in IC
 Shapes L, F, A, B and K the first digit represents the number of 1/8" in width. The second digit represents the number of 1/4" in length
 Shapes less than 1/4" IC figure represents the number of 1/32" in IC

CUTTING POINT

0 = Sharp corner
 1 = 1/64" radii
 2 = 1/32" radii
 3 = 3/64" radii
 4 = 1/16" radii
 6 = 3/32" radii
 8 = 1/8" radii
 A = 45° chamfer
 AF = 45° edge and 25° relief
 D = 30° chamfer, right hand
 E = 15° chamfer, right hand
 G = 30° chamfer, left hand
 H = 15° chamfer, left hand
 K = 30° double chamfer
 L = 15° double chamfer
 N = Truncated triangle
 X = 1° chamfer, right hand
 Y = 1° chamfer, left hand
 Z = 1° double chamfer



APKT Type



for "207" Series cutters

Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	L	Coated Grades					Uncoated Grades		
						LT-7175	606jRm	LT-50	LT-45	LT-40	LTC-21	LTC-14	LTC-10
APKT-1003-PDER	0.263	0.137	0.019	11°	.370	●							

Please Note:
On the following pages, all bullets in the grade specification section of each table, indicate the grades of stocked inserts.

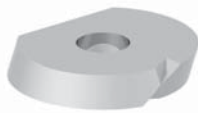
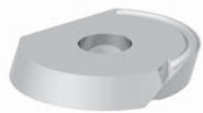
- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

Inserts

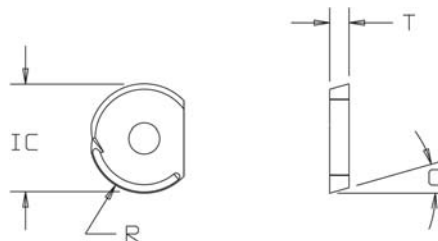
Conventional

BCEG Type

BCEA Type



for "557" Series

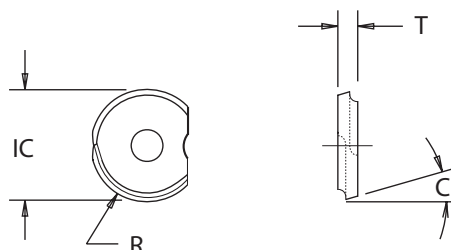


Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Non-Ferrous		Ferrous	
					586XRm	LTC-10	606jRm	LTC-14
BCEG-2.51	0.312	0.078	0.156	7°	●●●●		●	
BCEA-31.5	0.375	0.098	0.187	7°	●●●●		●	
BCEG-31.5	0.375	0.098	0.187	7°	●●●●		●	
BCEA-41.5	0.500	0.098	0.250	7°	●●●●		●	
BCEG-41.5	0.500	0.098	0.250	7°	●●●●		●	
BCEA-52	0.625	0.118	0.312	7°	●●●●		●	
BCEG-52	0.625	0.118	0.312	7°	●●●●		●	
BCEA-62	0.750	0.118	0.375	7°	●●●●		●	
BCEG-62	0.750	0.118	0.375	7°	●●●●		●	
BCEA-82.5	1.000	0.157	0.500	7°	●●●●		●	
BCEG-82.5	1.000	0.157	0.500	7°	●●●●		●	
BCEA-103	1.250	0.197	0.625	7°	●●●●		●	
BCEG-103	1.250	0.197	0.625	7°	●●●●		●	

BCCG Type - MicroFinisher

for "557" Series



* MicroFinisher Insert

* Used in 557 Series for finish cuts only from .005 to .035 depths

BCCG Microfinisher Insert Dimensional and Grade Specifications

Insert Number	IC	T	R	C	Finish Grades - Ferrous & Non-Ferrous
					900XRm
BCCG-2.51.3-8G	0.312	0.078	0.156	7°	●
BCCG-31.5-8G	0.375	0.098	0.187	7°	●
BCCG-41.5-8G	0.500	0.098	0.250	7°	●
BCCG-52-8G	0.625	0.118	0.312	7°	●
BCCG-62-8G	0.750	0.118	0.375	7°	●
BCCG-82.5-8G	1.000	0.157	0.500	7°	●
BCCG-103-8G	1.250	0.197	0.625	7°	●

● All Materials

● Cast Iron

● Hardened Materials

● Steel

● Aluminum / Non-Ferrous

● Stainless Steel

● Heat Resistant Super Alloys



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

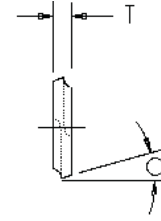
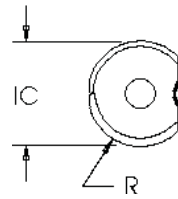
Holders

BCCG Type - Helical Flute

for "557" Series



Helical Flute Insert



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

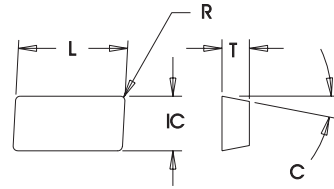
BCCG Helical Insert Dimensional and Grade Specifications

Insert Number	IC	T	R	C	Finish Grades - Ferrous & Non-Ferrous		
					902XRm	904XRm	908XRm
BCCG-2.51-AL	0.312	0.078	0.156	7°			●
BCCG-2.51-FE	0.312	0.078	0.156	7°	● ● ●		
BCCG-2.51-SS	0.312	0.078	0.156	7°		●	
BCCG-2.51-TI	0.312	0.078	0.156	7°			●
BCCG-31.5-AL	0.375	0.098	0.187	7°			●
BCCG-31.5-FE	0.375	0.098	0.187	7°	● ● ●		
BCCG-31.5-SS	0.375	0.098	0.187	7°		●	
BCCG-31.5-TI	0.375	0.098	0.187	7°			●
BCCG-41.5-AL	0.500	0.098	0.250	7°			●
BCCG-41.5-FE	0.500	0.098	0.250	7°	● ● ●		
BCCG-41.5-SS	0.500	0.098	0.250	7°		●	
BCCG-41.5-TI	0.500	0.098	0.250	7°			●
BCCG-52-AL	0.625	0.118	0.312	7°			●
BCCG-52-FE	0.625	0.118	0.312	7°	● ● ●		
BCCG-52-SS	0.625	0.118	0.312	7°		●	
BCCG-52-TI	0.625	0.118	0.312	7°			●
BCCG-62-AL	0.750	0.118	0.375	7°			●
BCCG-62-FE	0.750	0.118	0.375	7°	● ● ●		
BCCG-62-SS	0.750	0.118	0.375	7°		●	
BCCG-62-TI	0.750	0.118	0.375	7°			●
BCCG-82.5-AL	1.000	0.157	0.500	7°			●
BCCG-82.5-FE	1.000	0.157	0.500	7°	● ● ●		
BCCG-82.5-SS	1.000	0.157	0.500	7°		●	
BCCG-82.5-TI	1.000	0.157	0.500	7°			●
BCCG-103-AL	1.250	0.197	0.625	7°			●
BCCG-103-FE	1.250	0.197	0.625	7°	● ● ●		
BCCG-103-SS	1.250	0.197	0.625	7°		●	
BCCG-103-TI	1.250	0.197	0.625	7°			●

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

CKDE Type

for "LSM" Series cutters



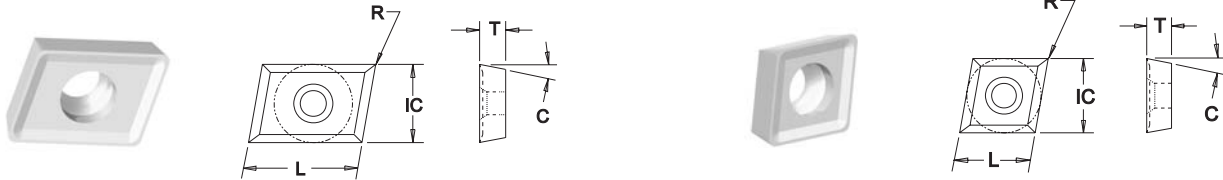
Insert Dimensional & Grade Specifications

Insert Number	IC	L	T	R	C	Coated Grades					Uncoated Grades		
						586XRm	606jRm	LT-50	LT-45	LT-40	LTC-14	LTC-10	
CKDE-3432R	0.375	1.00	0.188	0.031	16°	●●●●			●●●●	●		●	●●
CKDE-3434R	0.375	1.00	0.188	0.062	16°				●●●●				

CPEH-322 Type

and **CPEH-3263 Type**

CPEH-32 Type



for "HPEM, HPSM, 290, 291, 293" Series cutters

Insert Dimensional & Grade Specifications

Insert Number	IC	L	T	R	C	Coated Grades						Uncoated Grades		
						586XRm	606jRm	LT-5565	LT-50	LT-45	LT-40	LTC-21	LTC-14	LTC-10
CPEH-32.52-4W	0.375	0.375	0.156	0.031	11°	●●●●	●			●●	●		●	●●
CPEH-32.52-4WB	0.375	0.375	0.156	0.031	11°				●●●		●			
CPEH-322.52-4W	0.375	0.500	0.156	0.031	11°	●●●●	●			●●	●		●	●●
CPEH-322.52-4WB	0.375	0.500	0.156	0.031	11°				●●●		●			
CPEH-32.63-2-4W	0.375	0.659	0.188	0.032	11°	●●●●	●					●		●●
CPEH-32.63-4-4W	0.375	0.659	0.188	0.062	11°	●●●●	●					●		●●
CPEH-32.63-4-4WL*	0.375	0.659	0.188	0.062	11°	●●●●	●					●		●●
CPEH-32.63-6-4W	0.375	0.659	0.188	0.094	11°	●●●●	●					●		●●
CPEH-32.63-8-4W	0.375	0.659	0.188	0.125	11°	●●●●	●					●		●●
CPEH-32.63-12-4W	0.375	0.659	0.188	0.188	11°	●●●●	●					●		●●
CPEH-3263-4LFW815B*	0.375	0.659	0.188	0.188	11°			●						
CPEH-3263-4RFW815B	0.375	0.659	0.188	0.188	11°			●						

* Use RH inserts for dimensions & Grade selections.

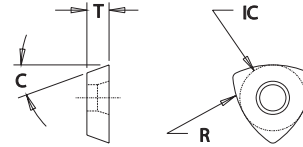
- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys



Inserts

Conventional

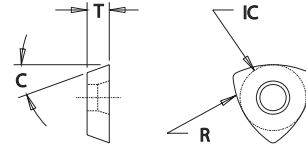
CTDCB Type for "BNS" Series cutters



Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades				Uncoated Grades			
					586XRm	606jRm	LT-50	LT-40	LTC-21	LTC-14	LTC-10	
CTDCB-2.53-12	0.312	0.093	0.375	16°							●	
CTDCB-2.53-12B	0.312	0.093	0.375	16°			●●●	●				
CTDCB-2.53-12J	0.312	0.093	0.375	16°								●●●
CTDCB-32-14	0.375	0.125	0.437	16°				●				
CTDCB-32-14B	0.375	0.125	0.437	16°			●●●	●				
CTDCB-32-14J	0.375	0.125	0.437	16°								

CTPCB Type for "BNS, 540" Series cutters



Insert Dimensional & Grade Specifications

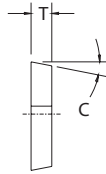
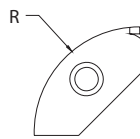
Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades	
					586XRm	606jRm	LT-50	LT-45	LT-40	LTC-14	LTC-10
CTPCB-32-16B	0.375	0.125	0.500	11°		●	●●●	●		●	
CTPCB-32-16J	0.375	0.125	0.500	11°	●●						●●●
CTPCB-32-20B	0.375	0.125	0.625	11°		●	●●●	●		●	
CTPCB-32-20J	0.375	0.125	0.625	11°	●●						●●●
CTPCB-43-24B	0.500	0.188	0.750	11°		●	●●●		●	●	
CTPCB-43-24J	0.500	0.188	0.750	11°	●●●●			●●			●●●
CTPCB-43-32B	0.500	0.188	1.000	11°		●	●●●		●	●	
CTPCB-43-32J	0.500	0.188	1.000	11°	●●●●			●●			●●●

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

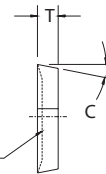
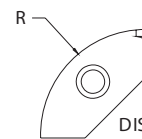
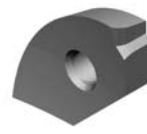
Inserts

Conventional

CZPEB Type



CZPEH Type



for "539" Series cutters

Insert Dimensional & Grade Specifications										
Insert Number	R	T	C	Geometry	Coated Grades			Uncoated Grades		
					586XRm	606jRm	LT-50	LTC-14	LTC-10	LTC-21
CZPEB-2.52A-100R	0.492	0.125	11°	Flat	●●●●			●	●●●	
CZPEB-3.53A-125R	0.618	0.188	11°	Flat	●●●●	●		●	●●●	
CZPEB-43A-150R	0.745	0.188	11°	Flat	●●●●			●	●●●	
CZPEB-53A-200R	0.996	0.188	11°	Flat	●●●●	●		●	●●●	
CZPEH-2.52A-100R	0.492	0.125	11°	10° Dish	●●●●	●		●	●●●	
CZPEH-3.53A-125R	0.618	0.188	11°	10° Dish	●●●●	●		●	●●●	
CZPEH-43A-150R	0.745	0.188	11°	10° Dish	●●●●	●		●	●●●	
CZPEH-53A-200R	0.996	0.188	11°	10° Dish	●●●●	●		●	●●●	

Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

HOLDERS

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

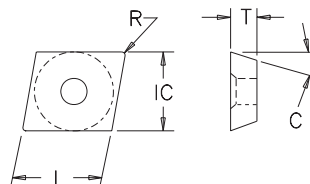
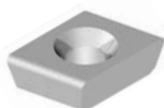


Inserts

Conventional

DPCB Type

for "EXSP" Series cutters



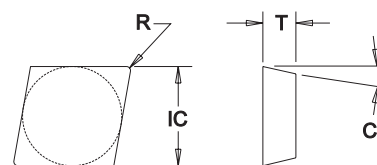
Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	L	Coated Grades				Uncoated Grades			
						586XRm	606jRm	LT-50	LT-40	LTX	LTC-22	LTC-14	LTC-10
DPCB-32.145-1L	0.375	0.145	0.015	11°	0.500		●					●	●
DPCB-32.145-1R	0.375	0.145	0.015	11°	0.500		●					●	●
DPCB-323-2LB	0.375	0.188	0.015	11°	0.500			●●●	●				
DPCB-323-2RB	0.375	0.188	0.015	11°	0.500			●●●	●				

FPE-32 Type

FPE-43 Type

FPE-63 Type



for "GXSM, GXSMH, NXSM, EMX" Series cutters

Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades				Uncoated Grades				
					586XRm	606jRm	LT-50	LT-40	LTC-83	LTC-21	LTC-14	LTC-10	
FPE-321B	0.375	0.126	0.015	11°				●					
FPE-322	0.375	0.126	0.031	11°						●●●		●	
FPE-322B	0.375	0.126	0.031	11°								●	
FPE-432	0.500	0.188	0.031	11°					●●●			●	
FPE-432B	0.500	0.188	0.031	11°								●	
FPE-632	0.750	0.188	0.031	11°					●●●			●	
FPE-632B	0.750	0.188	0.031	11°								●	
FPE-634	0.750	0.188	0.062	11°					●●●			●	
FPE-634B	0.750	0.188	0.062	11°								●	
FPE-634W515	0.750	0.188	0.062	11°				●					

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

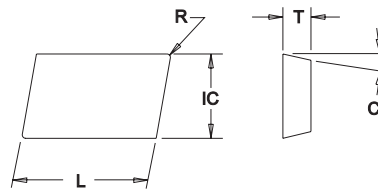
Inserts

Conventional

FPE-3432 Type



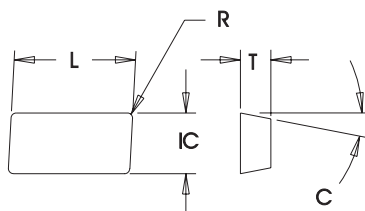
FPE-443_Type



for "GXSM, GXSMH, NXSM, EMX, EMS" Series cutters

Insert Dimensional & Grade Specifications												
Insert Number	IC	L	T	R	C	Coated Grades				Uncoated Grades		
						586XRm	606jRm	LT-50	LT-40	LTC-83	LTC-14	LTC-10
FPE-3432R	0.375	1.00	0.188	0.031	11°		●		●	● ● ● ●		●
FPE-3432RB	0.375	1.00	0.188	0.031	11°			● ● ●				
FPE-4432R	0.500	1.00	0.188	0.031	11°		●			● ● ● ●		●
FPE-4432RB	0.500	1.00	0.188	0.031	11°		●	● ● ●				●
FPE-4434RB	0.500	1.00	0.188	0.062	11°		●	● ● ●				●

KDE Type



for "LSM" Series cutters

Insert Dimensional & Grade Specifications													
Insert Number	IC	L	T	R	C	Coated Grades					Uncoated Grades		
						586XRm	606jRm	LT-50	LT-45	LT-40	LTC-22	LTC-14	LTC-10
KDE-3332R	0.375	0.75	0.188	0.031	16°						●		●
KDE-3332RB	0.375	0.75	0.188	0.031	16°			● ● ●		●			
KDE-3432R	0.375	1.00	0.188	0.031	16°	● ● ● ●	●		● ● ●			●	● ●
KDE-3432RA	0.375	1.00	0.188	0.031	16°					●			
KDE-3432RB	0.375	1.00	0.188	0.031	16°			● ● ●					

● All Materials

● Cast Iron

● Hardened Materials

● Steel

● Aluminum / Non-Ferrous

● Stainless Steel

● Heat Resistant Super Alloys



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

Inserts

Conventional

LCEG Type

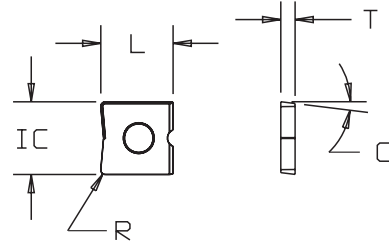


Chip Breaker Style

LCEA Type



for "558" Series cutters



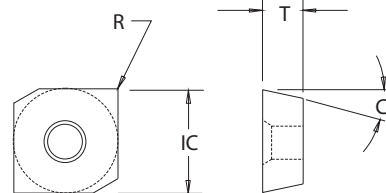
LCEA / G Insert Dimensional and Grade Specifications

Insert Number	IC	T	R (Min.) *	C	L	All Materials Finishing and Light Roughing Only	
						LTC-10	LT-90
LCEA-41.5__	.500	.098	.031	7°	.500		●
LCEG-41.5__	.500	.098	.031	7°	.500		●
LCEA-52__	.625	.118	.031	7°	.550		●
LCEG-52__	.625	.118	.031	7°	.550		●
LCEA-62__	.750	.118	.031	7°	.625		●
LCEG-62__	.750	.118	.031	7°	.625		●
LCEA-82.5__	1.000	.157	.031	7°	.850		●
LCEG-82.5__	1.000	.157	.031	7°	.850		●

LDEB-32 Type



LEEB-32 Type



for "CEM, BNS" Series cutters

Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades		
					586XRm	606jRm	LT-50	LT-45	LT-40	LTC-21	LTC-14	LTC-10
LDEB-321	0.375	0.126	0.015	16°	●●●●	●					●	●●●
LDEB-321B	0.375	0.126	0.015	16°			●●●					
LDEB-322	0.375	0.126	0.031	16°								●●●
LDEB-322B	0.375	0.126	0.031	16°					●			
LEEB-321	0.375	0.126	0.015	20°	●●●●	●			●		●	●●●
LEEB-321B	0.375	0.126	0.015	20°			●●●					

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

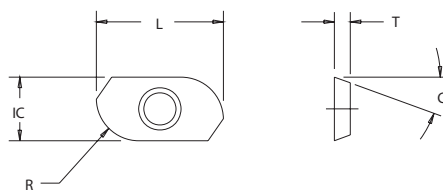
Inserts

Conventional

LDEB-332 Type



LEEB-332 Type

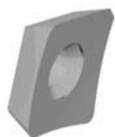


for "BNS" Series cutters

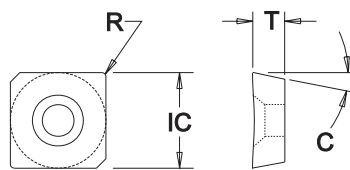
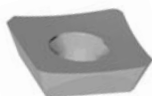
Insert Dimensional & Grade Specifications

Insert Number	IC	L	T	R	C	Coated Grades					Uncoated Grades			
						586XRm	606jRm	LT-50	LT-45	LT-40	LTC-83	LTC-14	LTC-10	
LDEB-332-20	0.375	0.75	0.126	0.312	16°				●	●			●	●
LDEB-332-20J	0.375	0.75	0.126	0.312	16°									
LDEB-332-20B	0.375	0.75	0.126	0.312	16°			●	●	●				
LEEB-332-16	0.375	0.75	0.126	0.250	20°	●	●	●		●			●	●
LEEB-332-16J	0.375	0.75	0.126	0.250	20°									
LEEB-332-16B	0.375	0.75	0.126	0.250	20°			●	●	●				

LECH Type



for "XR90" Series cutters



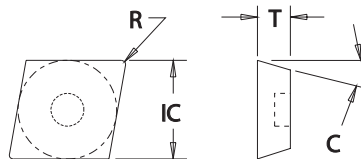
Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades				
					586XRm	606jRm	LT-50	LT-45	LT-40	LTC-21	LTC-14	LTC-10		
LECH-534-10F	0.625	0.188	0.062	23°	●	●	●							

MECA Type



for "HPM, 233" Series cutters



Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades				Uncoated Grades			
					586XRm	606jRm	LT-50	LT-40	LTC-14	LTC-21	LTC-10	
MECA-436J	0.500	0.188	0.093	20°							●	
MECA-530J	0.625	0.188	0.000	20°							●	
MECA-531J	0.625	0.188	0.016	20°							●	
MECA-532	0.625	0.188	0.031	20°							●	
MECA-532J	0.625	0.188	0.031	20°							●	
MECA-533J	0.625	0.188	0.047	20°							●	
MECA-534J	0.625	0.188	0.062	20°							●	
MECA-631J	0.750	0.188	0.016	20°							●	
MECA-632J	0.750	0.188	0.031	20°							●	
MECA-634J	0.750	0.188	0.062	20°							●	
MECA-638J	0.750	0.188	0.125	20°							●	

● All Materials

● Cast Iron

● Hardened Materials

● Steel

● Aluminum / Non-Ferrous

● Stainless Steel

● Heat Resistant Super Alloys



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

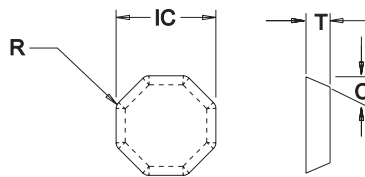
Technical Data

Holders

Inserts

Conventional

OEC Type



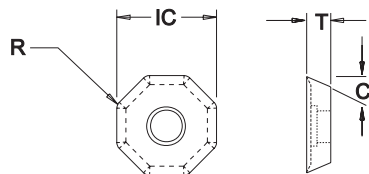
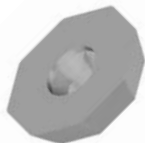
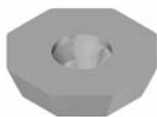
for "450" Series cutters

Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades		
					586XRm	606jRm	LT-50	LT-45	LT-40	LTC-21	LTC-14	LTC-10
OEC-634	0.750	0.188	0.062	20°	●●●●	●						
OEC-634W520	0.750	0.188	0.062	20°	●●●	●			●			

OECH Type

for "XR" Series cutters



Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	Geometry	C	Coated Grades				Uncoated Grades			
						586XRm	606jRm	LT-50	LT-40	LTC-21	LTX	LTC-14	LTC-10
OECH-432	0.500	0.188	0.032	Flat	23°					●●●●			●●
OECH-432-10F	0.500	0.188	0.032	+10° Dish	23°	●●●●							●●
OECH-432W520	0.500	0.188	0.032	Flt. w/land	23°	●●●	●					●	
OECH-534-10F	0.625	0.188	0.062	+10° Dish	23°	●●●●	●		●	●●		●	●●
OECH-534W520	0.625	0.188	0.062	Flt. w/land	23°	●●●	●		●			●	
OECH-634-10F	0.750	0.188	0.062	+10° Dish	23°	●●●●	●		●	●●		●	●●
OECH-634W520	0.750	0.188	0.062	Flt. w/land	23°	●●●	●		●			●	

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

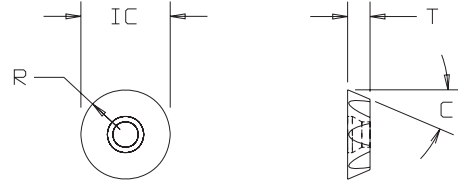


Inserts

Conventional

RCCH Type

for "355" Series cutters

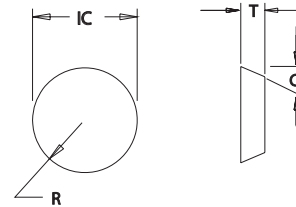


Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades				Uncoated Grades		
					586XRm	606jRm	LT-50	LT-40	LTC-21	LTC-14	LTC-10
RCCH-43-10F	0.500	0.188	.250	7°	●●●●	●●●●					
RCCH-43W520	0.500	0.188	.250	7°	●●●●	●●●●					

RDE Type

for "NZ, 360, FTZ, GTZ, TXZ" Series cutters



Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades				Uncoated Grades				
					586XRm	606jRm	LT-50	LT-40	M+	LTM	LTC-83	LTC-22	LTC-14
RDE-43	0.500	0.187	0.250	16°				●			●●	●	●
RDE-43T	0.500	0.187	0.250	16°									●
RDE-43V	0.500	0.187	0.250	16°			●	●	●				●
RDE-53	0.625	0.187	0.312	16°								●	●
RDE-63	0.750	0.187	0.375	16°							●●	●	●
RDE-63V	0.750	0.187	0.375	16°			●						●
RDE-84	1.000	0.250	0.500	16°							●●	●	
RDE-84J	1.000	0.250	0.500	16°								●	
RDE-84V	1.000	0.250	0.500	16°					●	●			

● All Materials

● Cast Iron

● Hardened Materials

● Steel

● Aluminum / Non-Ferrous

● Stainless Steel

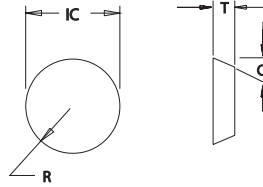
● Heat Resistant Super Alloys



Inserts

Conventional

REC Type



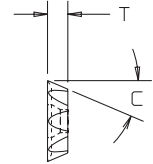
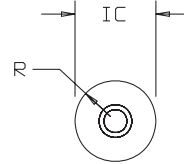
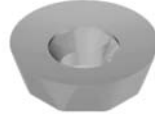
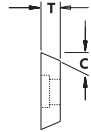
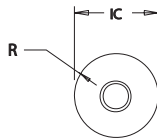
Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades				Uncoated Grades		
					586XRm	606jRm	LT-50	LT-40	LTC-83	LTC-14	LTC-10
REC-63	0.750	0.188	0.375	20°	●●●●	●					
REC-63W520	0.750	0.188	0.375	20°	●●●	●					

RECH Type

for "255, XR" Series cutters

RECH-10F Type



Flat Face

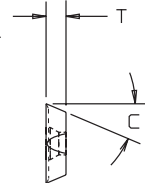
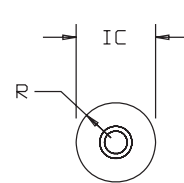
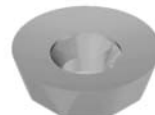
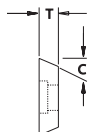
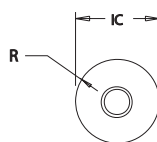
+10° Dished Face

Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades				Uncoated Grades		
					586XRm	606jRm	LT-50	LT-40	LTC-21	LTC-14	LTC-10
RECH-43-10F	0.500	0.188	0.250	23°	●●●						●●
RECH-43W520	0.500	0.188	0.250	23°	●●	●					
RECH-53-10F	0.625	0.188	0.312	23°	●●●	●					
RECH-53W520	0.625	0.188	0.312	23°	●●	●		●			
RECH-63-10F	0.750	0.188	0.375	23°	●●●●	●		●	●●●		●●●
RECH-63W520	0.750	0.188	0.375	23°	●●	●		●			●●●

RSECH Type

for "356" Series cutters



Flat Face

+10° Dished Face

Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades				Uncoated Grades		
					586XRm	606jRm	LT-50	LT-40	LTC-21	LTC-14	LTC-10
RSECH-43-10F	0.500	0.188	0.250	23°	●●●						●●
RSECH-43W520	0.500	0.188	0.250	23°	●●	●					●●●

● All Materials

● Cast Iron

● Hardened Materials

● Steel

● Aluminum / Non-Ferrous

● Stainless Steel

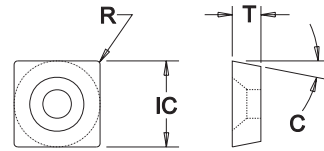
● Heat Resistant Super Alloys

SDEB Type



for "CEM, CE-45" Series cutters

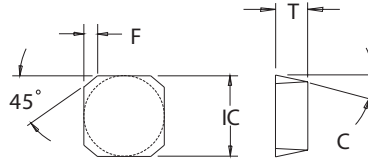
SPEB Type



Insert Dimensional & Grade Specifications										
Insert Number	IC	T	R	C	Coated Grades				Uncoated Grades	
					586XRm	606jRm	LT-50	LT-40	LTC-14	LTC-10
SDEB-321	0.375	0.126	0.015	16°		●			●	
SDEB-321B	0.375	0.126	0.015	16°			●●●	●		
SDEB-321J	0.375	0.126	0.015	16°						●●●
SDEB-322	0.375	0.126	0.031	16°				●	●	●●●
SPEB-321	0.375	0.126	0.015	11°					●	
SPEB-321B	0.375	0.126	0.015	11°			●●●			
SPEB-321J	0.375	0.126	0.015	11°						●●●
SPEB-322	0.375	0.126	0.031	11°				●	●	●●●

SEAN Type

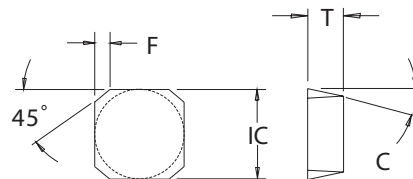
for "JXS" Series cutters



Insert Dimensional & Grade Specifications											
Insert Number	IC	T	F	C	Coated Grades				Uncoated Grades		
					586XRm	606jRm	LT-50	LT-40	LTC-21	LTC-14	LTC-10
SEAN-42AFN	0.500	0.126	0.061	20°	●●●	●			●●●		
SEAN-42AFTN	0.500	0.126	0.061	20°	●●	●		●			●

SEC Type

for "465, FXS, JXS" Series cutters



Insert Dimensional & Grade Specifications													
Insert Number	IC	T	F	C	Coated Grades					Uncoated Grades			
					586XRm	606jRm	LT-50	LT-45	LT-40	LTC-83	LTC-22	LTC-14	LTC-10
SEC-42A4	0.500	0.126	0.062	20°	●●●	●		●●	●	●●●	●●●	●	●●●
SEC-42A4B	0.500	0.126	0.062	20°			●●●						
SEC-42A4W515	0.500	0.126	0.062	20°	●●●	●		●●	●			●	●●●
SEC-53A5	0.625	0.188	0.078	20°	●●●	●		●●	●	●●●		●	
SEC-53A5B	0.625	0.188	0.078	20°			●●●						
SEC-53A5W515	0.625	0.188	0.078	20°		●			●			●	
SEC-63A8	0.750	0.188	0.125	20°	●●●								
SEC-63A8W515	0.750	0.188	0.125	20°		●						●	

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

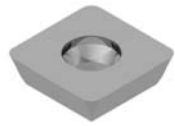
Inserts

Conventional

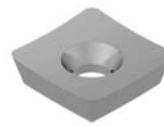
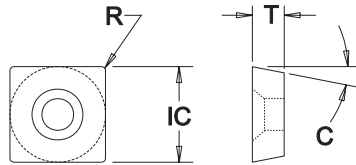
SECH Type

for "XR" Series cutters

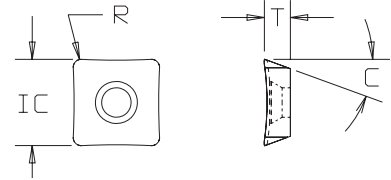
SECH-10F Type



Flat Face



+10° Dished Face



Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades				Uncoated Grades		
					586XRm	606jRm	LT-50	LT-40	LTC-21	LTC-14	LTC-10
SECH-534	0.625	0.188	0.062	23°	●●●●	●					●●●
SECH-534-10F	0.625	0.188	0.062	23°	●●●	●					●●
SECH-534W520	0.625	0.188	0.062	23°	●●	●					

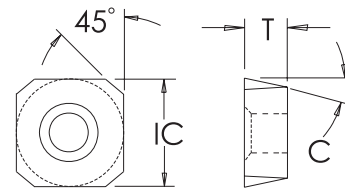
SEHW Type



Flat Face



for "249" Series cutters



Insert Dimensional & Grade Specifications

Insert Number	IC	T	Cham	C	Coated Grades				Uncoated Grades	Silicon Nitride
					586XRm	606jRm	LT-2366	LT-5565	LTC-10	LTC-1200
SEHW-43A3M	0.500	0.188	45°	20°	●●●●	●			●●	
SEHW-43A3MA	0.500	0.188	45°	20°			●●			
SEHW-43A3MB	0.500	0.188	45°	20°		●				
SEHW-43A3MW520B	0.500	0.188	45°	20°		●		●		
SEHW-43A3MW820	0.500	0.188	45°	20°						●

● All Materials

● Cast Iron

● Hardened Materials

● Steel

● Aluminum / Non-Ferrous

● Stainless Steel

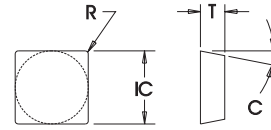
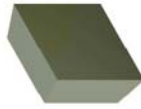
● Heat Resistant Super Alloys

Inserts

Conventional

SPE Type

for "170, 175, 180, 185, GXS, GXSH, GTAH, SDX, SX, EMS, NXS" Series cutters



Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades							
					586XRm	606jRm	LT-50	LT-45	LT-40	M+	LTM	LTC-83	LTC-22	LTC-21	LTC-14	LTC-10	
SPE-322	0.375	0.126	0.031	11°	●●●●	●				●			●●●			●	●●●
SPE-322T	0.375	0.126	0.031	11°	●●●●	●										●	●●●
SPE-422	0.500	0.126	0.031	11°				●●●		●				●●●		●	
SPE-422B	0.500	0.126	0.031	11°			●●●			●	●	●					
SPE-422T	0.500	0.126	0.031	11°												●	
SPE-422V	0.500	0.126	0.031	11°			●●●			●	●						
SPE-432	0.500	0.188	0.031	11°	●●●●	●				●			●			●	●●●
SPE-432B	0.500	0.188	0.031	11°			●●●			●							
SPE-432T	0.500	0.188	0.031	11°												●	
SPE-432V	0.500	0.188	0.031	11°			●●●			●							
SPE-432W515	0.500	0.188	0.031	11°						●							
SPE-433V	0.500	0.188	0.047	11°						●							
SPE-434	0.500	0.188	0.062	11°									●				
SPE-434B	0.500	0.188	0.062	11°													
SPE-434T	0.500	0.188	0.062	11°												●	●●●
SPE-532	0.625	0.188	0.031	11°						●							
SPE-532B	0.625	0.188	0.031	11°												●	
SPE-533B	0.625	0.188	0.047	11°												●	
SPE-533T	0.625	0.188	0.047	11°												●	
SPE-632	0.750	0.188	0.031	11°						●						●	
SPE-632T	0.750	0.188	0.031	11°												●	
SPE-634	0.750	0.188	0.062	11°	●●●●									●●●		●	
SPE-634B	0.750	0.188	0.062	11°			●●●			●	●						
SPE-634M	0.750	0.188	0.062	11°									●●●				
SPE-634T	0.750	0.188	0.062	11°												●	
SPE-634V	0.750	0.188	0.062	11°			●●●			●	●						
SPE-634W515	0.750	0.188	0.062	11°		●		●●●									

- All Materials
- Cast Iron
- Steel
- Stainless Steel
- Hardened Materials
- Aluminum / Non-Ferrous
- Heat Resistant Super Alloys



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

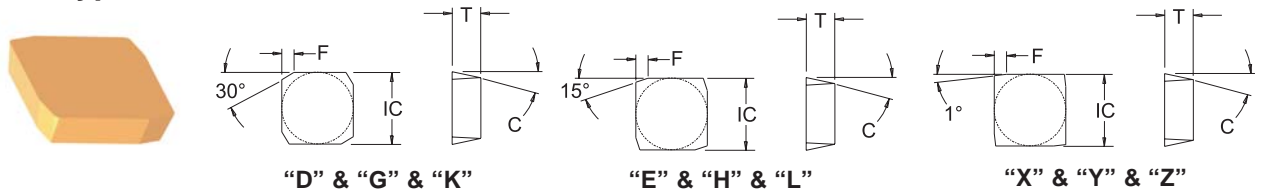
PCD / CBN

Slotters

Technical Data

Holders

SPE Type with Flats



Insert Dimensional & Grade Specifications

Insert Number	IC	T	F	C	Coated Grades					Uncoated Grades					
					586XRm	606jRm	LT-50	LT-45	LT-40	LTC-83	M+	LTX	LTM	LTC-21	LTC-14
SPE-42X	0.500	0.126	0.094	11°					●	●●●	●				
SPE-42Z	0.500	0.126	0.094	11°								●●●			
SPE-42ZB	0.500	0.126	0.094	11°								●			
SPE-43E	0.500	0.188	0.094	11°		●						●●●			
SPE-43X	0.500	0.188	0.094	11°		●						●●●		●	
SPE-43Z	0.500	0.188	0.094	11°		●						●●●		●	
SPE-43ZB	0.500	0.188	0.094	11°			●●●				●				
SPE-43ZV	0.500	0.188	0.094	11°							●				
SPE-53X	0.625	0.188	0.120	11°										●	
SPE-53Y	0.625	0.188	0.120	11°										●	
SPE-63AM	0.750	0.188	0.140	11°	●●●●							●●●		●	
SPE-63AMB	0.750	0.188	0.140	11°			●●●				●			●	
SPE-63AMW515	0.750	0.188	0.140	11°					●						
SPE-63DM	0.750	0.188	0.140	11°								●●●		●	
SPE-63DMB	0.750	0.188	0.140	11°			●●●				●				
SPE-63E	0.750	0.188	0.140	11°								●●●			
SPE-63EB	0.750	0.188	0.163	11°			●●●				●				
SPE-63ET	0.750	0.188	0.163	11°										●	
SPE-63EV	0.750	0.188	0.163	11°							●				
SPE-63H	0.750	0.188	0.163	11°								●●●			
SPE-63HV	0.750	0.188	0.163	11°			●●●				●				
SPE-63LV	0.750	0.188	0.150	11°			●●●								
SPE-63LW515	0.750	0.188	0.150	11°					●						
SPE-63X	0.750	0.188	0.160	11°	●●●●							●●●			
SPE-63Y	0.750	0.188	0.160	11°					●			●●●			
SPE-63XT	0.750	0.188	0.160	11°										●	
SPE-63XV	0.750	0.188	0.160	11°							●				
SPE-63YV	0.750	0.188	0.160	11°							●				

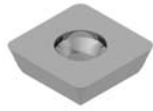
- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

Inserts

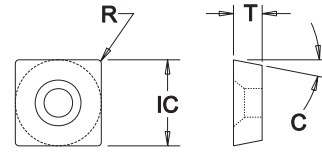
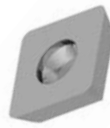
Conventional

SPEW Type

for "240" Series cutters



Flat Face Geometry



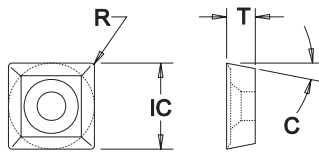
Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades				Uncoated Grades	Silicon Nitride
					586XRm	606jRm	LT-2366	LT-5565	LTC-10	LTC-1200
SPEW-432W820	0.500	0.188	0.032	11°						●

SPEX Type



for "205, 222, 225, 245, 540" Series

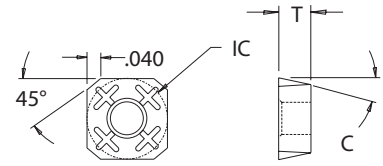


20° Dish Face Geometry

SPEX-32.5A4M_



for "229" Series



Flat Face Geometry

Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Geometry	Coated Grades					Uncoated Grades	
						586XRm	606jRm	LT-40	LT-5565	LT-2366	LTC-14	LTC-10
SPEX-221	0.250	0.125	0.015	11°	20° Dish	●●●●	●				●	●●●
SPEX-222	0.250	0.125	0.031	11°	20° Dish	●●●●	●				●	●●●
SPEX-32.52	0.375	0.156	0.031	11°	20° Dish	●●●●	●				●	●●
SPEX-32.52B	0.375	0.156	0.031	11°	20° Dish		●	●				
SPEX-32.52F	0.375	0.156	0.031	11°	20° Dish	●●●●			●			
SPEX-32.5A4M	0.375	0.156	0.040 Flat	11°	Flat	●●●●	●					●●
SPEX-32.52A4MW515	0.375	0.156	0.040 Flat	11°	Flat				●			
SPEX-432	0.500	0.188	0.032	11°	20° Dish	●●●●	●					●●
SPEX-432B	0.500	0.188	0.032	11°	20° Dish		●					
SPEX-432FA	0.500	0.188	0.032	11°	20° Dish					●●		●●
SPEX-432FW515B	0.500	0.188	0.032	11°	20° Dish				●			

● All Materials

● Cast Iron

● Hardened Materials

● Steel

● Aluminum / Non-Ferrous

● Stainless Steel

● Heat Resistant Super Alloys



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

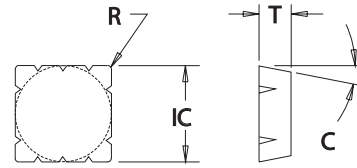
Holders

Inserts

Conventional

SPXV Type

for "EMS" Series cutters



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

HOLDERS

Insert Dimensional & Grade Specifications

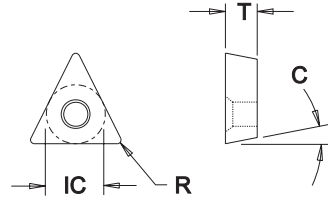
Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades	
					586XRm	606jRm	LT-50	LT-45	LT-40	LTC-14	LTC-10
SPXV-432	0.500	0.188	0.031	11°	●	●				●	●●
SPXV-432B	0.500	0.188	0.031	11°			●		●	●	
SPXV-634	0.750	0.188	0.062	11°						●	●●
SPXV-634B	0.750	0.188	0.062	11°			●				

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys



TDCB Type

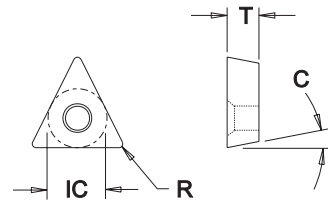
for "BNS" Series cutters



Insert Dimensional & Grade Specifications												
Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades		
					586XRm	606jRm	LT-50	LT-45	LT-40	LTC-14	LTC-10	
TDCB-2.532	0.312	0.094	0.031	16°							●	●●●
TDCB-2.532B	0.312	0.094	0.031	16°			●●●					
TDCB-2.532J	0.312	0.094	0.031	16°								●●●
TDCB-324B	0.375	0.126	0.062	16°			●●●					
TDCB-324J	0.375	0.126	0.062	16°								

TPCB Type

for "BNS" Series cutters



Insert Dimensional & Grade Specifications												
Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades		
					586XRm	606jRm	LT-50	LT-45	LT-40	LTC-14	LTC-10	
TPCB-322B	0.375	0.126	0.031	11°			●●●			●		
TPCB-322J	0.375	0.126	0.031	11°								●●●
TPCB-324	0.375	0.126	0.062	11°				●●				
TPCB-324B	0.375	0.126	0.062	11°		●	●●●			●	●	
TPCB-433B	0.500	0.188	0.047	11°			●●●			●		
TPCB-433J	0.500	0.188	0.047	11°								●●●
TPCB-434	0.500	0.188	0.062	11°				●●				
TPCB-434B	0.500	0.188	0.062	11°		●	●●●			●	●	●●●
TPCB-434J	0.500	0.188	0.062	11°	●●●							●●●

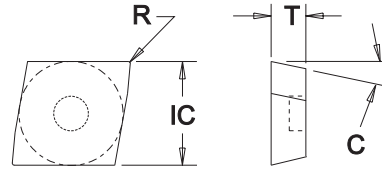
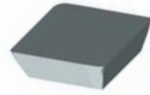
- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys



Inserts

Conventional

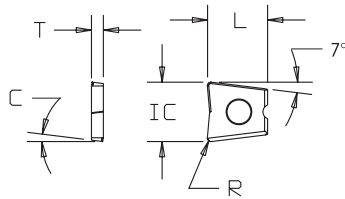
WMECA Type for "233, HPM" Series cutters



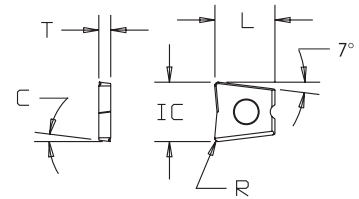
Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades				
					586XRm	606jRm	LT-50	LT-45	LT-40	LTC-21	LTC-83	LTC-14	LTC-10	
WMECA-530RJ	0.625	0.188	0.000 / 0.005	20°							●	●		
WMECA-531RJ	0.625	0.188	0.016	20°							●	●		
WMECA-532RJ	0.625	0.188	0.031	20°							●	●		
WMECA-533RJ	0.625	0.188	0.047	20°							●	●		
WMECA-534RJ	0.625	0.188	0.062	20°							●	●		
WMECA-535RJ	0.625	0.188	0.078	20°							●	●		
WMECA-536RJ	0.625	0.188	0.094	20°							●	●		
WMECA-537RJ	0.625	0.188	0.109	20°							●	●		

ZCEA Type



ZCEG Type



for "558" Series cutters

Chip Breaker Style

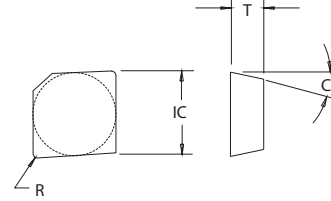
ZCEA / G Insert Dimensional and Grade Specifications

Insert Number	IC	T	R (Min.) *	C	L	All Materials Finishing and Light Roughing Only	
						LTC-10	LT-90
ZCEA-41.5__	.500	.098	.031	7°	.500		●
ZCEG-41.5__	.500	.098	.031	7°	.500		●
ZCEA-52__	.625	.118	.031	7°	.550		●
ZCEG-52__	.625	.118	.031	7°	.550		●
ZCEA-62__	.750	.118	.031	7°	.625		●
ZCEG-62__	.750	.118	.031	7°	.625		●
ZCEA-82.5__	1.000	.157	.031	7°	.850		●
ZCEG-82.5__	1.000	.157	.031	7°	.850		●

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

ZPE Type

for "GXS, GXSH, NXS" Series cutters



Insert Dimensional & Grade Specifications												
Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades		
					586XRm	606jRm	LT-50	LT-45	LT-40	LTC-83	LTC-14	LTC-10
ZPE-321	0.375	0.126	0.015	11°							●●●●	●
ZPE-322	0.375	0.126	0.031	11°							●●●●	

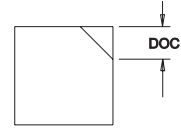
Insert Dimensional & Grade Specifications													
Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades			
					586XRm	606jRm	LT-50	LT-45	LT-40	M+	LTC-83	LTC-37	LTC-10
ZPE-432	0.500	0.188	0.031	11°				●●●				●●●●	
ZPE-432B	0.500	0.188	0.031	11°							●	●	

Insert Dimensional & Grade Specifications													
Insert Number	IC	T	R	C	Coated Grades					Uncoated Grades			
					586XRm	606jRm	LT-50	LT-45	LTM	M+	LTC-83	LTC-14	LTC-10
ZPE-632B	0.750	0.188	0.031	11°							●	●	
ZPE-633	0.750	0.188	0.047	11°									
ZPE-634	0.750	0.188	0.062	11°							●●●●		
ZPE-634B	0.750	0.188	0.062	11°						●		●	

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

Index
 Specials
 Inserts
 General
 Cavity Mold
 Gray Iron
 PCD / CBN
 Slotters
 Holders
 Technical Data

Index
 Specials
 Inserts
 General
 Cavity Mold
 Gray Iron
 PCD / CBN
 Slotters
 Technical Data
 Holders



Specify A, B, S or T

Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

HOLDERS

PCD / CBN Application Specifications

DOC = Depth of Cut

A = .125

B = .225

S = Specials per requirement

T = Full Top

Edge Preparation Specifications

Designation	Description	Application
UP - Sharp	No edge preparation	Cast iron with no interruptions - continuous turning applications
A - Hone	.001 - .003 radius hone	Mild interruptions in cast iron and steel
B - Hone	.003 - .005 radius hone	Severe interruptions in cast iron
T - Land	Chamfered cutting edge	Severe interruptions in steel, cast iron and nodular iron

CBN - Grade Specifications

Grade	Application
LTC-200	Gray cast iron and hard steel above 45 Rc
LTC-205	Gray cast iron - can be substituted for LTC-200
LTC-220	Hard steel above 45 Rc
LTC-240	Interrupted cutting of hard steel above 45 Rc
LTC-260	Mild interrupted cutting of hard steel above 45 Rc - can be substituted for LTC-220 and LTC-240
LTC-270	Nodular cast iron

Ordering Example: MECA-638W820 LTC-200A

CBN - Starting Turning Parameters

Material	SFM Range	IPR Range	DOC Range
Ductile and Nodular Cast Iron	300 - 600	.005 - .007	.005 >
Gray Cast Iron - Pearlitic	1,000 - 3,000	.008 - .010	.010 >
Hard Ferrous Materials - 45 Rc >	300 - 600	.005 - .020	.005 >
Powder Metals	500 >	.004 - .008	.005 >

PCD - Grade Specifications

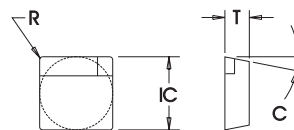
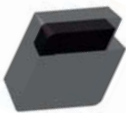
Grade	Grain Size	Key Properties	Application
LTC-130	Course	Highest abrasion resistance low impact resistance	Hard to machine non-ferrous metals and non-metallic materials with abrasive fillers
LTC-120	Medium	High abrasion resistance good tool life	Medium silicon aluminum, composite materials, green ceramics and plastics with abrasive fillers
LTC-110	Fine	Good tool life, impact and abrasion resistance	General purpose applications on all materials as well as applications requiring excellent surface finishes
LTC-105	Super Fine	Excellent impact resistance low abrasion resistance	Applications involving stress and impact

PCD - Starting Turning Parameters

Material	SFM Range	IPR Range	DOC Range
Aluminum Alloy - Silicon Aluminum	3,000 - 6,000	.006 - .012	.010 >
Brass - Bronze	1,500 - 3,000	.002 - .008	.005 >
Carbon	750 - 2,000	.004 - .008	.100 >
Copper - Copper Alloys	900 - 1,800	.004 - .008	.005 >
Fiberglass - Fiberglass Epoxy	1,500 - 3,000	.004 - .008	.010 >
Graphite - Graphite Composite	1,500 - 2,000	.004 - .008	.010 >
Pheonolic Materials	1,500 - 3,000	.004 - .008	.010 >
Plastic	1,500 - 3,000	.008 - .012	.005 >
Tungsten Carbide (over 6% Cobalt)	45 - 150	.004 - .006	.002 - .010

0502-2802-0001 Type

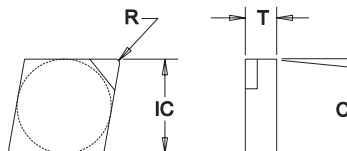
Finishing 35 RMS or better
Wiper for superior finish



PCD / CBN Insert Dimensional & Grade Specifications

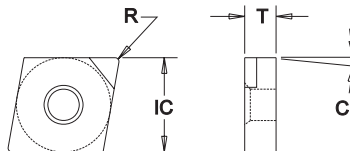
Insert Number	IC	T	R	C	PCD Grades			CBN Grades				
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200S	
0502-2802-0001	0.500	0.188	0.040	11°								● ●

CNG Type



Insert Number	IC	T	R	C	PCD Grades			CBN Grades				
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200	
CNG-422	0.500	0.126	0.031	0°			●					● ●
CNG-432	0.500	0.188	0.031	0°			●					● ●

CNGA Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades				
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200	
CNGA-43	0.500	0.188	Specify	0°			●					● ●

● All Materials

● Cast Iron

● Hardened Materials

● Steel

● Aluminum / Non-Ferrous

● Stainless Steel

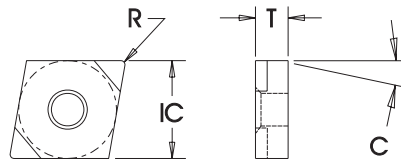
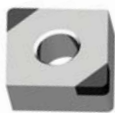
● Heat Resistant Super Alloys



Inserts

PCD/CBN

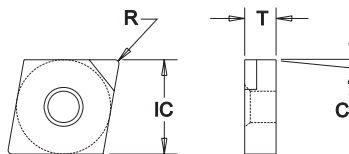
CNGA Type (Double Tipped)



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades	
					LTC-130	LTC-120	LTC-110	200A2	220A2
CNGA-432W615A0.5	.500	.188	.031	0°				●	
CNGA-432W625A0.5	.500	.188	.031	0°				●	
CNGA-433W625A0.5	.500	.188	.047	0°				●	

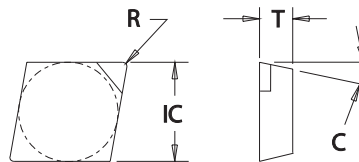
CNMA Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
CNMA-43	0.500	0.188	Specify	0°				●			
CNMA-543	0.625	0.250	0.047	0°				●			

CPG Type



PCD / CBN Insert Dimensional & Grade Specifications

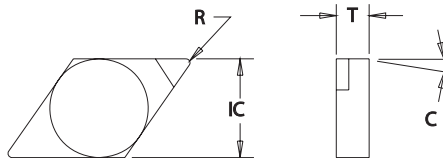
Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
CPG-42	0.500	0.126	Specify	11°			●				●

- All Materials
- Steel
- Stainless Steel
- Cast Iron
- Aluminum / Non-Ferrous
- Heat Resistant Super Alloys
- Hardened Materials

Inserts

PCD/CBN

DNG Type



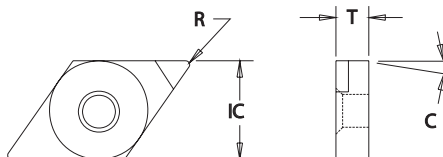
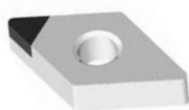
PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
DNG-432	0.500	0.188	0.031	0°			●				● ●

DNGA Type



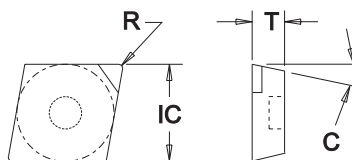
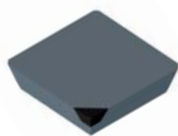
DNMA Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
DNGA-43	0.500	0.188	Specify	0°			●				● ●
DNMA-43	0.500	0.188	Specify	0°			●				● ●

MECA Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130B	LTC-110B	LTC-110A	LTC-270	LTC-260	LTC-220	LTC-200
MECA-532	.625	.187	.015	20°		●	●				
MECA-631	.750	.187	.015	20°			●				
MECA-632	.750	.187	.031	20°			●				
MECA-633	.750	.187	.047	20°			●				
MECA-634	.750	.187	.062	20°		●	●				
MECA-638	.750	.187	.125	20°			●				

● All Materials

● Cast Iron

● Hardened Materials

● Steel

● Aluminum / Non-Ferrous

● Stainless Steel

● Heat Resistant Super Alloys



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

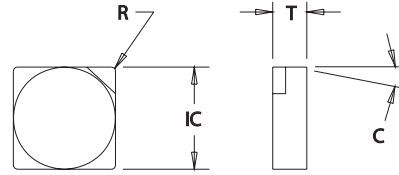
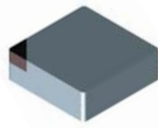
Technical Data

Holders

Inserts

PCD/CBN

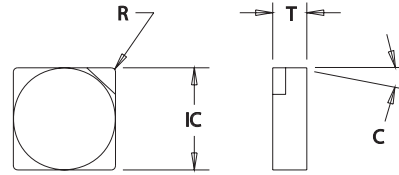
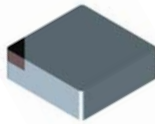
SNE Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
SNE-43	0.500	0.188	Specify	0°			●				● ●

SNG Type



PCD / CBN Insert Dimensional & Grade Specifications

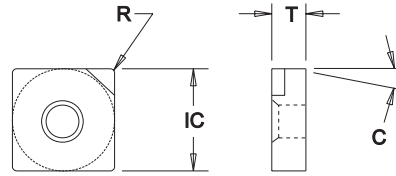
Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
SNG-32	0.375	0.126	Specify	0°			●				● ●
SNG-42	0.500	0.126	Specify	0°			●				● ●
SNG-43	0.500	0.188	Specify	0°			●				● ●
SNG-53	0.625	0.188	Specify	0°			●				● ●

- All Materials
- Cast Iron
- Steel
- Stainless Steel
- Hardened Materials
- Aluminum / Non-Ferrous
- Heat Resistant Super Alloys

Inserts

PCD/CBN

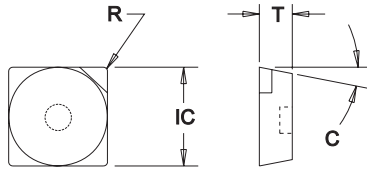
SNMA Type



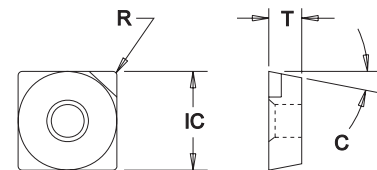
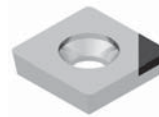
PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
SNMA-32	0.375	0.126	Specify	0°			●				● ●
SNMA-43	0.500	0.188	Specify	0°			●				● ●
SNMA-53	0.625	0.188	Specify	0°			●				● ●

SPCA Type



SPCB Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
SPCA-422	0.500	0.126	0.31	11°			●				
SPCB-422	0.500	0.126	0.31	11°			●				

● All Materials

● Cast Iron

● Hardened Materials

● Steel

● Aluminum / Non-Ferrous

● Stainless Steel

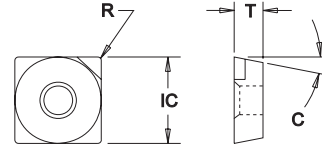
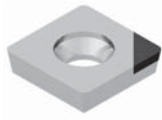
● Heat Resistant Super Alloys



Inserts

PCD/CBN

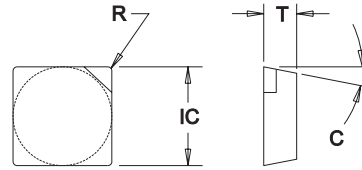
SPCW Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Tip Size	PCD Grades			CBN Grades			
						LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
SPCW-422J	0.500	0.126	0.31	11°	A			●				
SPCW-422J	0.500	0.126	0.31	11°	B			●				

SPG Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades				
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200	
SPG-32	0.375	0.126	Specify	11°			●				●	●
SPG-42	0.500	0.126	Specify	11°			●				●	●

● All Materials

● Cast Iron

● Hardened Materials

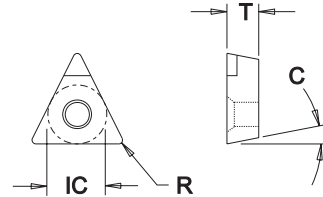
● Steel

● Aluminum / Non-Ferrous

● Stainless Steel

● Heat Resistant Super Alloys

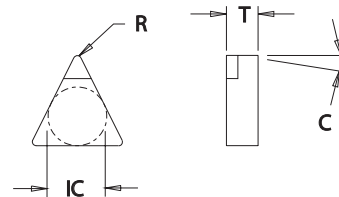
TEEB Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
TEEB-32	0.375	0.126	Specify	20°			●				● ●

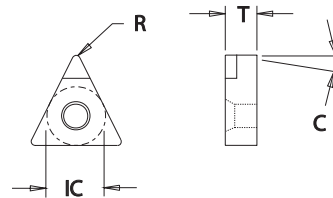
TNG Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
TNG-22	0.250	0.126	Specify	0°			●				● ●
TNG-32	0.375	0.126	Specify	0°			●				● ●
TNG-33	0.375	0.188	Specify	0°			●				● ●

TNMA Type



PCD / CBN Insert Dimensional & Grade Specifications

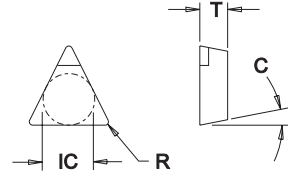
Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
TNMA-22	0.250	0.126	Specify	0°			●				● ●
TNMA-32	0.375	0.126	Specify	0°			●				● ●
TNMA-33	0.375	0.188	Specify	0°			●				● ●
TNMA-43	0.500	0.188	Specify	0°			●				● ●

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

Inserts

PCD/CBN

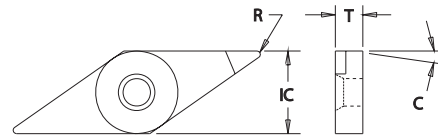
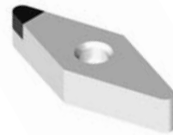
TPG Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
TPG-22	0.250	0.126	Specify	11°			●				● ●
TPG-32	0.375	0.126	Specify	11°			●				● ●
TPG-33	0.375	0.188	Specify	11°			●				● ●
TPG-43	0.500	0.188	Specify	11°			●				● ●

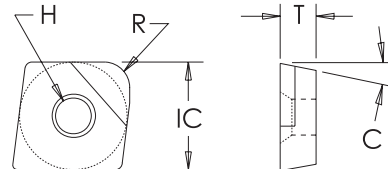
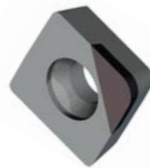
VNGA Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	PCD Grades			CBN Grades			
					LTC-130	LTC-120	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
VNGA-33	0.375	0.188	Specify	0°			●				● ●
VNGA-43	0.500	0.188	Specify	0°			●				● ●

WFPCW Type



PCD Insert Dimensional & Grade Specifications

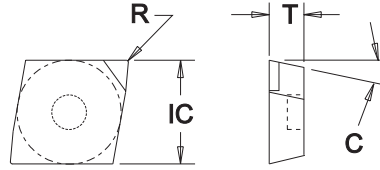
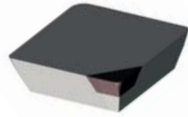
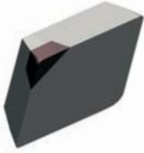
Insert Number	IC	T	R	C	Tip Size	PCD Grades		
						LTC-130	LTC-120	LTC-110
WFPCW-432R	.500	.188	.031	11°	B	●		
WFPCW-433R	.500	.188	.047	11°	B			
WFPCW-434R	.500	.188	.062	11°	B			
WFPCW-436R	.500	.188	.094	11°	B	●		

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

Inserts

PCD/CBN

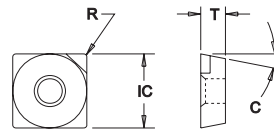
WMECA Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Tip Size	PCD Grades			CBN Grades			
						LTC-130B	LTC-110B	LTC-110A	LTC-270	LTC-260	LTC-220	LTC-200
WMECA-532R	0.625	0.188	0.031	20°	B	●						
WMECA-534R	0.625	0.188	0.062	20°	B	●						

WSECH Type



PCD / CBN Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Tip Size	PCD Grades			CBN Grades			
						LTC-130	LTC-110	LTC-110	LTC-270	LTC-260	LTC-220	LTC-200
WSECH-534R	0.625	0.188	.062	23°	B	●						

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys



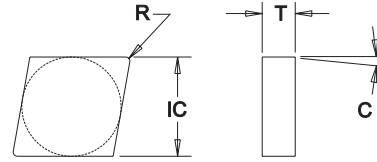
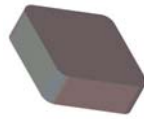
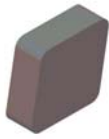
Index
 Specials
 Inserts
 General
 Cavity Mold
 Gray Iron
 PCD / CBN
 Slotters
 Holders
 Technical Data

Index
 Specials
 Inserts
 General
 Cavity Mold
 Gray Iron
 PCD / CBN
 Slotters
 Technical Data
 Holders

Inserts

Silicon Nitride

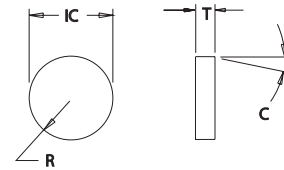
CNG Type



Silicon Nitride Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Silicon Nitride		
					Edge Preparation	LTC-1000	LTC-1200
CNG-433W820	0.500	0.188	0.047	0°	8° X .020		
CNG-434W820	0.500	0.188	0.062	0°	8° X .020		
CNG-443W820	0.500	0.250	0.047	0°	8° X .020		
CNG-444W820	0.500	0.250	0.062	0°	8° X .020		
CNG-533W820	0.625	0.188	0.047	0°	8° X .020		
CNG-534W820	0.625	0.188	0.062	0°	8° X .020		
CNG-543W820	0.625	0.250	0.047	0°	8° X .020		
CNG-544W820	0.625	0.250	0.062	0°	8° X .020		
CNG-633W820	0.750	0.188	0.047	0°	8° X .020		
CNG-634W820	0.750	0.188	0.062	0°	8° X .020		

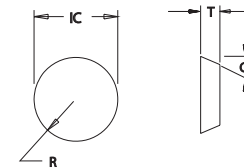
RNG Type



Silicon Nitride Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Silicon Nitride		
					Edge Preparation	LTC-1000	LTC-1200
RNG-43W820	0.500	0.188	0.250	0°	8° X .020		
RNG-53W820	0.625	0.188	0.312	0°	8° X .020		
RNG-63W820	0.750	0.188	0.375	0°	8° X .020		

RPC Type

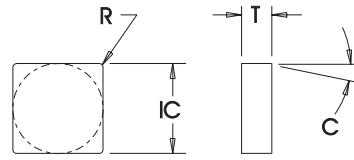


Silicon Nitride Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Silicon Nitride		
					Edge Preparation	LTC-1000	LTC-1200
RPC-43W630	0.500	0.188	0.250	11°	6° X .030		
RPC-53W630	0.625	0.188	0.312	11°	6° X .030		
RPC-63W630	0.750	0.188	0.375	11°	6° X .030		

- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys

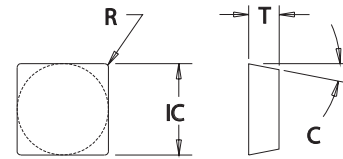
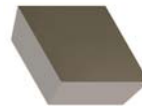
SNC Type



Silicon Nitride Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Silicon Nitride		
					Edge Preparation	LTC-1000	LTC-1200
SNC-432W820	0.500	0.188	0.031	0°	8° X .020	●	
SNC-433W820	0.500	0.188	0.047	0°	8° X .020	●	
SNC-434W820	0.500	0.188	0.062	0°	8° X .020	●	
SNC-533W820	0.625	0.188	0.047	0°	8° X .020		
SNC-534W820	0.625	0.188	0.062	0°	8° X .020		
SNC-536W820	0.625	0.188	0.094	0°	8° X .020		

SPC Type



Silicon Nitride Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Silicon Nitride		
					Edge Preparation	LTC-1000	LTC-1200
SPC-432W630	0.500	0.188	0.031	11°	6° X .030	●	
SPC-433W630	0.500	0.188	0.047	11°	6° X .030	●	●
SPC-433W820	0.500	0.188	0.047	11°	8° X .020	●	●
SPC-434W630	0.500	0.188	0.062	11°	6° X .030	●	●
SPC-434W820	0.500	0.188	0.062	11°	8° X .020		●
SPC-533W630	0.625	0.188	0.047	11°	6° X .030		
SPC-534W630	0.625	0.188	0.062	11°	6° X .030		
SPC-633W630	0.750	0.188	0.047	11°	6° X .030		
SPC-634W630	0.750	0.188	0.062	11°	6° X .030		

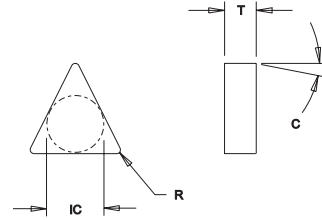
- All Materials
- Cast Iron
- Hardened Materials
- Steel
- Aluminum / Non-Ferrous
- Stainless Steel
- Heat Resistant Super Alloys



Inserts

Silicon Nitride

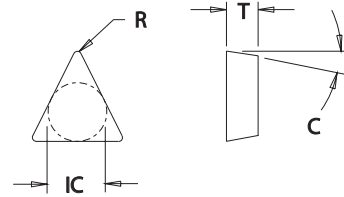
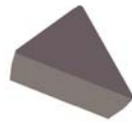
TNE Type



Silicon Nitride Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Silicon Nitride		
					Edge Preparation	LTC-1000	LTC-1200
TNE-433W820	0.500	0.188	0.047	0°	8° X .020		
TNE-434W820	0.500	0.188	0.062	0°	8° X .020		

TPE Type



Silicon Nitride Insert Dimensional & Grade Specifications

Insert Number	IC	T	R	C	Silicon Nitride		
					Edge Preparation	LTC-1000	LTC-1200
TPE-433W630	0.500	0.188	0.047	11°	6° X .030		
TPE-434W630	0.500	0.188	0.062	11°	6° X .030		

- All Materials
- Steel
- Stainless Steel
- Cast Iron
- Aluminum / Non-Ferrous
- Heat Resistant Super Alloys
- Hardened Materials

Index
 Specials
 Inserts
 General
 Cavity Mold
 Gray Iron
 PCD / CBN
 Sloters
 Technical Data
 Holders

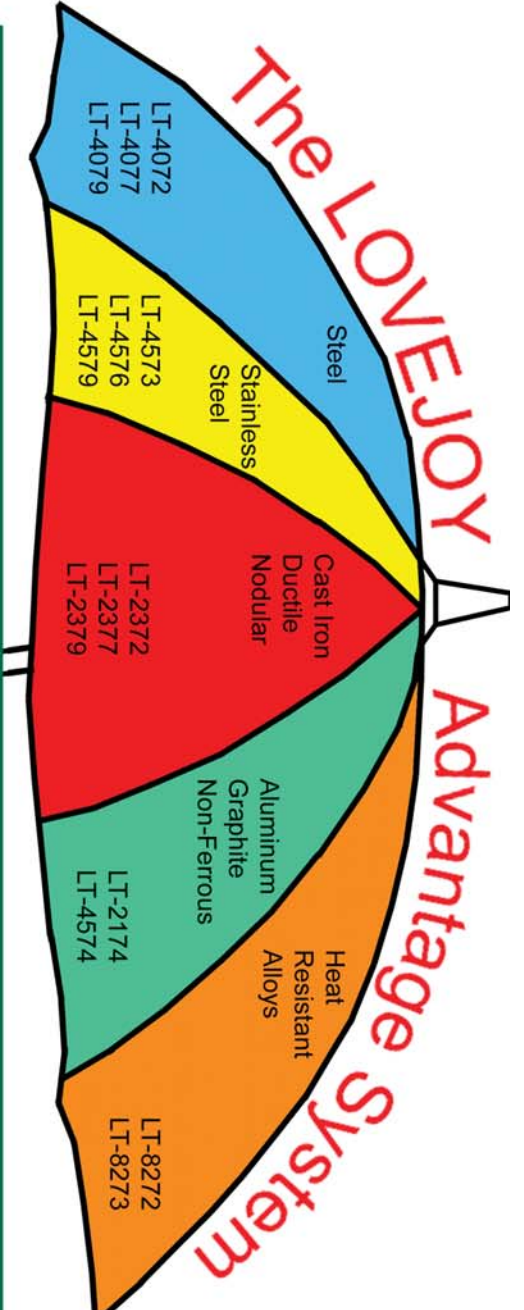
LOVEJOY Grade Specifications

GRADE	ANSI	ISO	PRIMARY APPLICATION RANGE	WORKPIECE MATERIALS	
586XRm LT-4543	C1 - C2	M30 - M20 K40 - K20	PVD TiAlN Coated, general purpose to high velocity milling applications on non-ferrous materials involving heavy to moderate shock. Superior edge strength and wear resistance.	Titanium based Nickel based Austenitic Stainless Steel Martensitic Stainless Steel PH Type Stainless Steel Cast Iron	Index
606jRm	C5 - C6	P40 - P15	PVD AlTiN Coated, general purpose milling of ferrous materials at normal to accelerated spindle velocities. Excellent impact resistance as well as superior wear characteristics.	Carbon Steel Alloyed Steel Tool Steel Stainless Steel	Specials
LT-40	C5 - C6	P30 - P20 M20 - M10	TiN Coated, general purpose milling of moderate to tough steel and steel alloys. Excellent wear characteristics.	Carbon Steel Alloyed Steel Tool Steel Martensitic Stainless Steel PH Type Stainless Steel	Inserts
LT-45	C1 - C2	K20	TiN Coated, specifically designed for a broad range of applications involving austenitic stainless steel and cast iron. Excellent heat and wear resistance.	Titanium based Nickel based Austenitic Stainless Steel	General
LT-50	C1 - C2 C5	K30 - K20 P40	TiC/TiN Coated, heavy metal removal to general purpose milling applications over a broad range of speeds and feeds. Superior impact and shock resistance combined with good wear resistance.	Carbon Steel Alloyed Steel Tool Steel Stainless Steel Cast Iron	Cavity Mold
LT-5565 LT-4066	C5	P40	Multi-Coated MT-CVD, for roughing applications in Alloy & forged Steel, with interrupted cuts at moderate speeds.	Alloys Forged Steel	Gray Iron
LT-2365	C2	K20 - K10	Multi-Coated MT-CVD, for moderate speeds & feeds for both Ductile and Gray Cast Iron.	Ductile Gray Cast Iron	Gray Iron
LT-2366	C2	K20 - K10	Multi-Coated CVD, for moderate to high speeds for both Ductile & Gray Cast Iron.	Ductile Gray Cast Iron	PCD / CBN
LTC-10	C1 - C2	K40 - K30	Uncoated, heavy roughing applications on a variety of non-ferrous materials. Outstanding shock and impact resistance as well as excellent edge strength.	Titanium based Nickel based Austenitic Stainless Steel Cast Iron	PCD / CBN
LTC-14 LTC-37 LTM	C5 - C6	P25	Uncoated, broad range of milling applications on moderate to tough steel and steel alloys. Excellent balance between wear characteristics and shock resistance.	Carbon Steel Alloyed Steel Tool Steel Martensitic Stainless Steel PH Type Stainless Steel	Slotters
LTC-21 LTX LTC-83	C2	K20	Uncoated, general purpose milling applications on all non-ferrous materials as well as some non-metallic material groups.	Aluminum Cast Iron Nickel based Titanium based	Technical Data
LTC-22	C1	K30	Uncoated, milling applications involving tough or abrasive non-ferrous materials such as titanium or nickel based alloys.	Titanium based Nickel based	Technical Data
M+	C5 - C6	P30 - P25	Uncoated, general purpose milling of moderate to tough steel and steel alloys. Excellent balance between wear characteristics and shock resistance.	Carbon Steel Alloyed Steel Tool Steel PH Type Stainless Steel	Holders

NOTE! New Grade selections on next page



This new technology became available just before printing of the catalog so inventory is limited at this time to a few popular inserts. We will continue to build inventory. Please ask for specific product. In most case deliveries would not be any more than two weeks.



Improved:
 • Tool Preparation
 • Substrate
 • Coating

www.lovejoytool.com

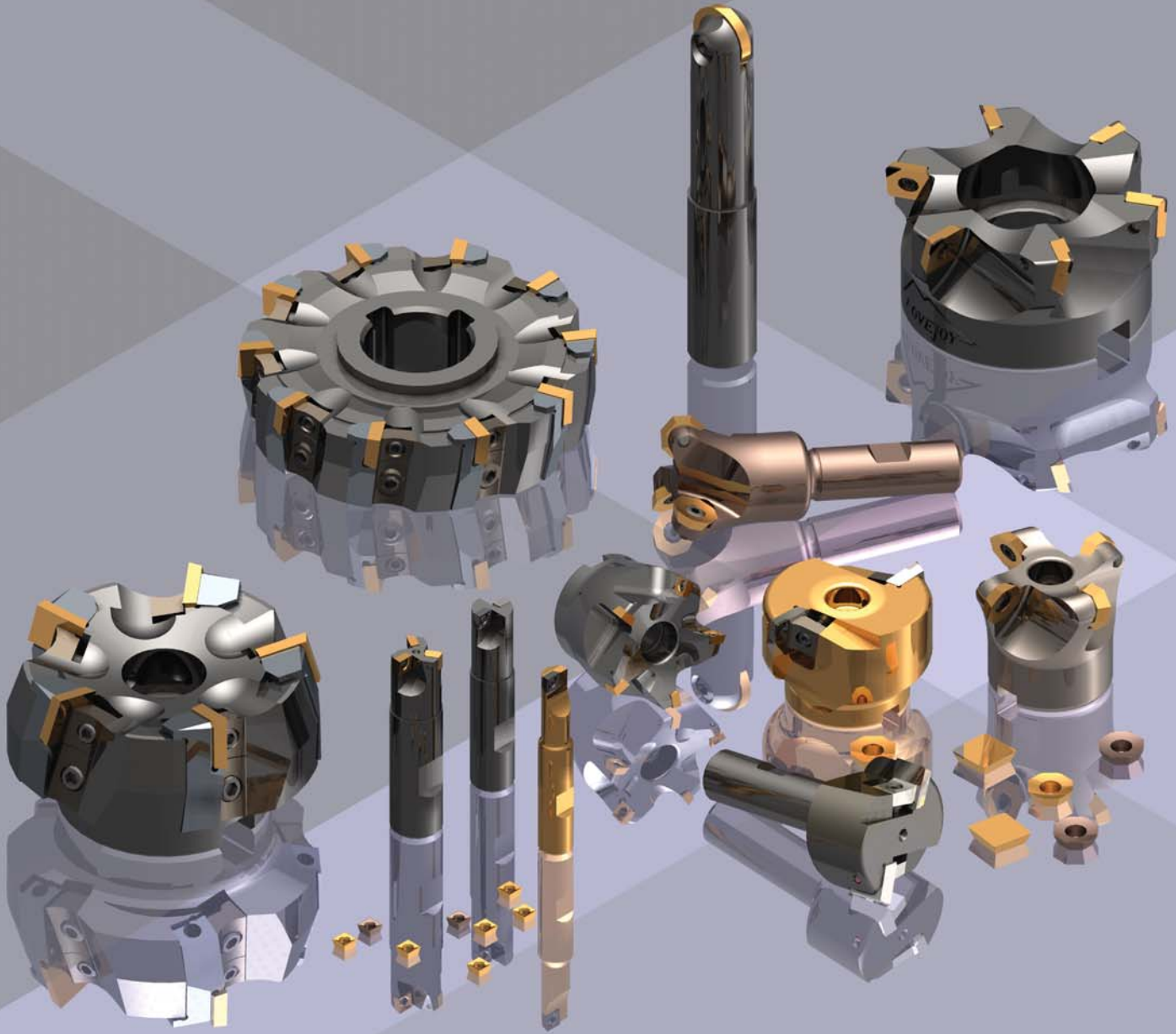
The LOVEJOY Advantage System (800) 843-8376

Application		LT-xx72	LT-xx73	LT-xx74	LT-xx76	LT-xx77	LT-xx79
Why select this product	Used in abrasive applications	Multi area-general purpose, performs favorably to competitive AITIN/TAIN	Offers optional protection against the formation of built-up edges	Select when reduced friction is necessary - extremely smooth surface	Substitute for CVD deposited TiC/TiN and some Al ₂ O ₃ coatings	Select when reduced friction is necessary - extremely smooth surface	Select when reduced friction is necessary - extremely smooth surface
Critical factors	Applied to only honed inserts - at least .001" or 25 micron hone	Sharp edges	Silicon content less than 12%	Gold color with higher performance	Applied to only hone inserts - at least .001" or 25 micron hone - Gold color	Sharp edge - smooth finish	
Type of machining	Roughing, milling, turning, dry cutting	Semi-Finishing to Roughing, milling, turning, dry cutting	Milling, finishing	Finishing, milling, turning, dry cutting	Roughing, milling, turning, dry cutting	Finishing, milling, turning, dry cutting	Finishing, milling, turning, dry cutting
Primary material	Steel, Stainless Steel Cl, Ductile, Nodular	Steel, Stainless Steel Cast Iron	Aluminum	Steel, Stainless Steel	Steel, Stainless Steel Cl, Ductile, Nodular	Steel, Stainless Steel	Steel, Stainless Steel
Also suited for	Materials with difficult cutting properties	Materials with difficult cutting properties	Non-Ferrous materials	Materials with difficult cutting properties	Materials with difficult cutting properties	Materials with difficult cutting properties	Materials with difficult cutting properties



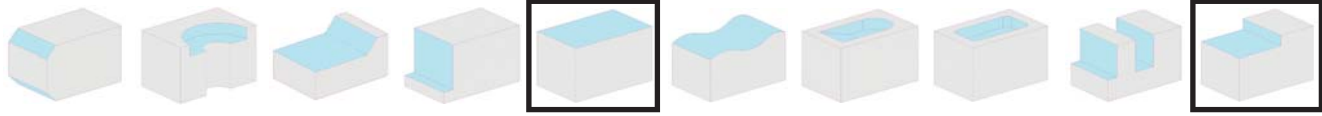
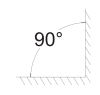
LOVEJOY'S NEW Process Technology

- Index
- Specials
- Inserts
- General
- Cavity Mold
- Gray Iron
- PCD / CBN
- Sloters
- Technical Data
- Holders



LOVEJOY Tool Co., Inc. 1-800-843-8376

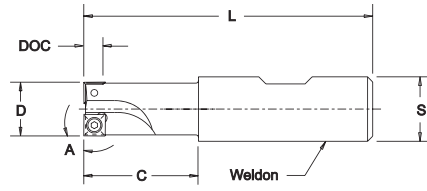
205 Series



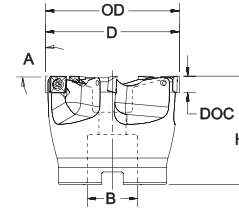
Index

Specials

Inserts



Face Mills
Pos Axial
Neg Radial
0°30' Dish



End Mills
Pos Axial
Neg Radial
0° Lead

• Engineered for High Velocity, light duty machine tools

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

205 Series - Dimensional Specifications

Face Mills										
Product Number	D	OD	B	H	A	DOC	Insert	Screw	Teeth	Weight
205F0200ASP2-075R	2.00	2.00	.750	1.625	0°30'	.150	SPEX-22__	3605-0001-0025	5	0.82
End Mills										
Product Number	D	C	S	L	A	DOC	Insert	Screw	Teeth	Weight
205E0037ASM2-W050R	0.375	1.09	0.500	3.00	90°	0.150	SPEX-22__	3605-0001-0027	1	0.50
205E0037BSM2-W050R	0.375	0.59	0.500	2.50	90°	0.150	SPEX-22__	3605-0001-0027	1	0.50
205E0043ASM2-W050R	0.437	1.09	0.500	3.00	90°	0.150	SPEX-22__	3605-0001-0027	1	0.50
205E0043BSM2-W050R	0.437	0.59	0.500	2.50	90°	0.150	SPEX-22__	3605-0001-0027	1	0.50
205E0050ASM2-W050R	0.500	1.22	0.500	3.00	90°	0.150	SPEX-22__	3605-0001-0025	1	0.50
205E0050BSM2-W050R	0.500	0.72	0.500	2.50	90°	0.150	SPEX-22__	3605-0001-0025	1	0.50
205E0062ASM2-W062R	0.625	1.09	0.625	3.00	90°	0.150	SPEX-22__	3605-0001-0025	2	0.55
205E0075ASM2-W075R	0.750	0.97	0.750	3.00	90°	0.150	SPEX-22__	3605-0001-0025	3	0.62
205E0100ASM2-W075R	1.000	0.97	0.750	3.00	90°	0.150	SPEX-22__	3605-0001-0025	4	0.75
205E0125ASM2-W075R	1.250	0.97	0.750	3.00	90°	0.150	SPEX-22__	3605-0001-0025	4	0.75
205E0125ASM2-W100R	1.250	0.97	1.000	3.25	90°	0.150	SPEX-22__	3605-0001-0025	4	0.75
205E0150ASM2-W100R	1.500	0.97	1.000	3.25	90°	0.150	SPEX-22__	3605-0001-0025	4	0.75

LEFT HAND cutters also available

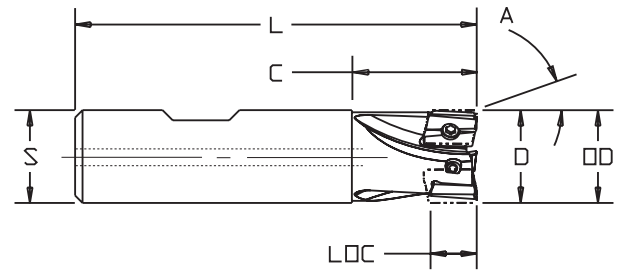
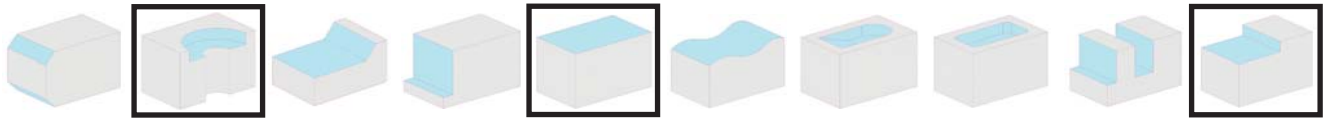
Insert I.C. x Thickness .250 x .125	 Insert Pg. 45 SPEX-221 SPEX-222	 Insert Screw 3605-0001-0025 3605-0001-0027	 Insert Screw Wrench 1557-TX08
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Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Aluminum 2024, 6061, 7072	700-4000	.003-.010	SPEX-221 GR 586XRm	SPEX-221 GR LTC-10
PH Type Stainless Steel 17-4, 15-5, 13-8	500-1100	.003-.010	SPEX-221 GR 606jRm	SPEX-221 GR LTC-14
Alloy Steel 4130, 4340, 5015	350-1000	.003-.008	SPEX-221 GR 606jRm	SPEX-221 GR LTC-14
Carbon Steel 1018, 1020, 1215	400-1150	.003-.010	SPEX-221 GR 606jRm	SPEX-221 GR LTC-14
Titanium and Titanium Alloy	120-320	.003-.010	SPEX-221 GR 586XRm	SPEX-221 GR LTC-10

- Shear angle geometry for broad application range
- Superior AlTiN coated grades for accelerated velocities
- Multifunction - channel cutting - peripheral work - square shoulder
- Designed and engineered for high speed, light duty machine tools
- Miniature sizes down to and including .375" (3/8)

207 Series



Pos Axial
Neg Radial
90° Shoulder

• Engineered for High Velocity, light duty machine tools

207 Series - Dimensional Specifications

Product Number	D	OD	S	L	A	DOC	Teeth	Weight
207E0075AAP2-W075R	0.750	0.750	0.750	3.38	90°	0.355	3	0.50
207E0100AAP2-W075R	1.000	1.000	0.750	3.38	90°	0.355	4	0.50

LEFT HAND cutters also available

Insert I.C. x Thickness			
	Insert Pg. 28	Torx® Screw	Insert Screw Wrench
.263 x .137	APKT-1003-PDER	3605-0001-0049	1557-TX08

Machining Parameters

Material	SFPM	FPT	Primary
Low Carbon Steel	400-900	.003-.008	APKT-1003-PDER LT-7175
Alloy Steel	300-700	.003-.008	APKT-1003-PDER LT-7175
Austenitic Stainless	300-700	.003-.008	APKT-1003-PDER LT-7175
Martensitic Stainless	300-700	.003-.008	APKT-1003-PDER LT-7175
Aluminum	1000 & up	.003-.008	APKT-1003-PDER LT-7175
Gray Cast Iron	300-600	.003-.008	APKT-1003-PDER LT-7175
Ductile Iron	300-600	.003-.008	APKT-1003-PDER LT-7175

- Economical replacement alternative for solid end mills in depths of cut to .355"
- Square shoulder machining
- Designed to work well in #30 and #40 taper machine spindles
- Hardened through body for enhanced durability and dimensional control
- Simple screw on insert design for quick and efficient indexing
- Positive cutting action for extremely free cutting action
- Chip controlled insert geometry design to machine a wide variety of materials
- Grade LT-7175 is a mid-temp multi-layered coating grade good for all materials listed above



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

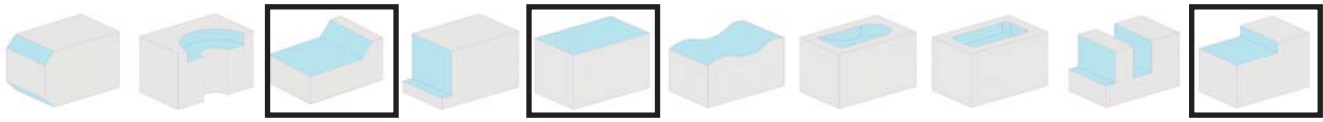
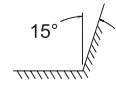
PCD / CBN

Slotters

Technical Data

Holders

222 Series



Index

Specials

Inserts

General

Cavity Mold

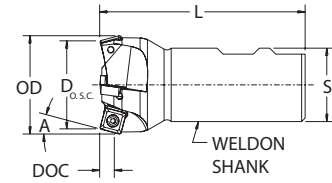
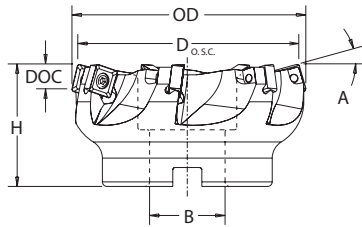
Gray Iron

PCD / CBN

Sloters

Technical Data

HOLDERS



7° Pos Axial
Neg Radial
15° Lead

• Face Mills and End Mills

222 Series - Dimensional Specifications

Face Mills

Product Number	D	OD	B	H	A	DOC	Teeth
222F0200ASP3-075R	2.000	2.17	0.750	1.625	15°	0.156	5
222F0250ASP3-075R	2.500	2.68	0.750	1.625	15°	0.156	6
222F0300ASP3-100R	3.000	3.18	1.000	1.625	15°	0.156	7

End Mills

Product Number	D	OD	S	L	A	DOC	Teeth
222E0100ASP3-W075R	1.000	1.17	0.750	3.00	15°	0.156	2
222E0125ASP3-W075R	1.250	1.43	0.750	3.50	15°	0.156	3
222E0125ASP3-W100R	1.250	1.43	1.000	3.50	15°	0.156	3
222E0150ASP3-W075R	1.500	1.67	0.750	3.50	15°	0.156	4
222E0150ASP3-W125R	1.500	1.67	1.250	3.50	15°	0.156	4

LEFT HAND cutters also available

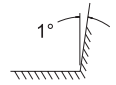
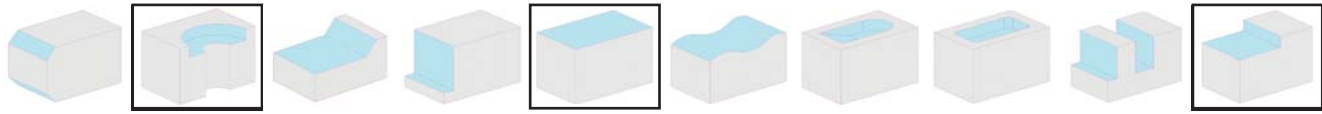
Cutters & Mountings	Insert I.C. x Thickness				
		Insert Pg. 45	Insert Screw	Insert Screw Wrench	Arbor Screw
222 End Mills	.375 x .156	SPEX-32.52	3605-0001-0021	1557-TX10	
3/4" Blind Shell End Face Mills	.375 x .156	SPEX-32.52	3605-0001-0021	1557-TX10	3/8 -24 x 1-1/2 SHCS
1" Shell End Face Mills	.375 x .156	SPEX-32.52	3605-0001-0021	1557-TX10	Not Provided

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Cast Iron	300-600	.004-.012	SPEX-32.52F GR 586XRm	SPEX-32.52 GR 586XRm
Stainless Steel 300 Series	250 - 500	.004-.012	SPEX-32.52 GR 586XRm	SPEX-32.52 GR LTC-10
Soft to Mild Steel	300 - 500	.004-.012	SPEX-32.52B GR 606jRm	SPEX-32.52B GR LT-40
Alloy Steel	300 - 700	.008-.012	SPEX-32.52FW515 GR LT-5565	SPEX-32.52B GR 606jRm
Aluminum	1000 & up	.004-.012	SPEX-32.52 GR 586XRm	SPEX-32.52 GR LTC-10

- Ideal for small and light duty machines in general purpose applications
- Simple screw on insert design for a minimum of hardware
- Conventional rakes designed to machine a wide range of materials
- 15° lead to minimize break out and decrease cutting forces

225 Series



Face Mills
7° Pos Axial
Pos Radial
0°30' Dish

End Mills
7° Pos Axial
Neg Radial
0°30' Dish

• Face Mills and End Mills

225 Series - Dimensional Specifications

Face Mills							
Product Number	D	OD	B	H	A	DOC	Teeth
225F0200ASP3-075R	2.000	2.01	0.750	1.625	0°30'	0.188	5
225F0250ASP3-075R	2.500	2.51	0.750	1.625	0°30'	0.188	6
225F0300ASP3-100R	3.000	3.01	1.000	1.625	0°30'	0.188	7
End Mills							
Product Number	D	OD	S	L	A	DOC	Teeth
225E0100ASP3-W075R	1.000	1.01	0.750	3.00	0°30'	0.188	2
225E0125ASP3-W075R	1.250	1.26	0.750	3.00	0°30'	0.188	3
225E0125ASP3-W100R	1.250	1.26	1.000	3.50	0°30'	0.188	3
225E0150ASP3-W075R	1.500	1.51	0.750	3.00	0°30'	0.188	4
225E0150ASP3-W125R	1.500	1.51	1.250	3.50	0°30'	0.188	4

LEFT HAND cutters also available

Cutters & Mountings	Insert I.C. x Thickness				
		Insert Pg. 45	Insert Screw	Insert Screw Wrench	Arbor Screw
All Cutters	.375 x .156	SPEX-32.52	3605-0001-0021	1557-TX10	
225E0100ASP3-W075R	.375 x .156	SPEX-32.52	3605-0001-0022	1557-TX10	
3/4" Blind Shell End Face Mills	.375 x .156	SPEX-32.52	3605-0001-0021	1557-TX10	3/8 - 24 x 1-1/2 SHCS
1" Shell End Face Mills	.375 x .156	SPEX-32.52	3605-0001-0021	1557-TX10	Not Provided

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Cast Iron	300-600	.004-.012	SPEX-32.52F GR 586XRm	SPEX-32.52 GR 586XRm
Stainless Steel 300 Series	250 - 500	.004-.012	SPEX-32.52 GR 586XRm	SPEX-32.52 GR LTC-10
Soft to Mild Steel	300 - 500	.004-.012	SPEX-32.52B GR 606jRm	SPEX-32.52B GR LT-40
Alloy Steel	300 - 700	.008-.012	SPEX-32.52FW515 GR LT-5565	SPEX-32.52B GR 606jRm
Aluminum	1000 & up	.004-.012	SPEX-32.52 GR 586XRm	SPEX-32.52 GR LTC-10

- Ideal for small and light duty machines in general purpose applications
- Simple screw on insert design for a minimum of hardware
- Conventional rakes designed to machine a wide range of materials
- 0°30' dish allows to get close to part shoulder



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

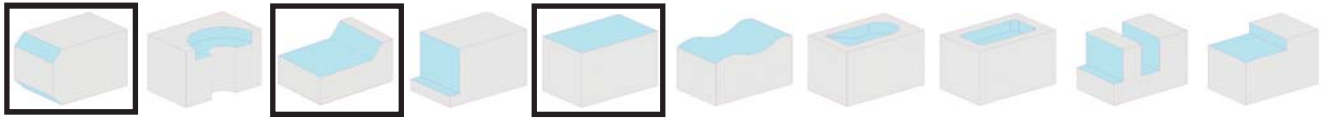
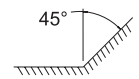
PCD / CBN

Slotters

Technical Data

Holders

229 Series



Index

Specials

Inserts

General

Cavity Mold

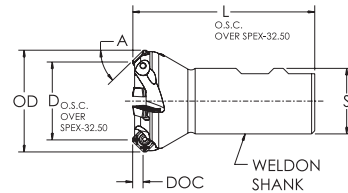
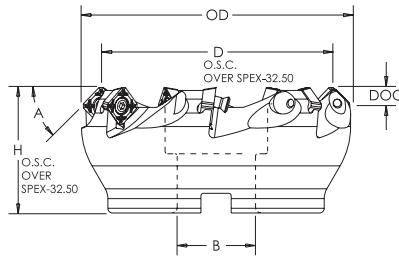
Gray Iron

PCD / CBN

Sloters

Technical Data

HOLDERS



7° Pos Axial
Neg Radial
45° Lead

• Face Mills and End Mills

229 Series - Dimensional Specifications




Face Mills

Product Number	D	OD	B	H	A	DOC	Teeth
229F0200ASP3-075R	2.000	2.47	0.750	1.625	45°	0.125	5
229F0250ASP3-075R	2.500	3.00	0.750	1.625	45°	0.125	6
229F0300ASP3-100R	3.000	3.50	1.000	1.625	45°	0.125	7

End Mills

Product Number	D	OD	S	L	A	DOC	Teeth
229E0100ASP3-W075R	1.000	1.46	0.750	3.00	45°	0.125	2
229E0125ASP3-W075R	1.250	1.72	0.750	3.00	45°	0.125	3
229E0125ASP3-W100R	1.250	1.72	1.000	3.50	45°	0.125	3
229E0150ASP3-W075R	1.500	1.97	0.750	3.00	45°	0.125	4
229E0150ASP3-W125R	1.500	1.97	1.250	3.50	45°	0.125	4

LEFT HAND cutters also available

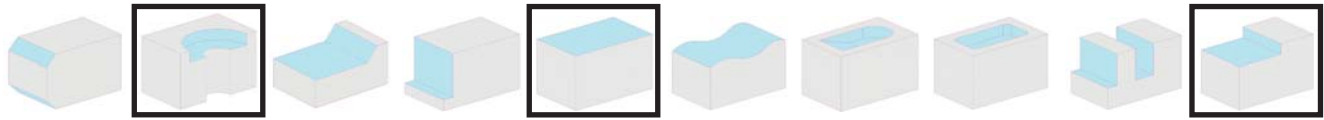
Cutters & Mountings	Insert I.C. x Thickness				
		Insert Pg. 45	Insert Screw	Insert Screw Wrench	Arbor Screw
All Cutters	.375 x .156	SPEX-32.5A4M	3605-0001-0021	1557-TX10	
3/4" Blind Shell End Face Mills	.375 x .156	SPEX-32.5A4M	3605-0001-0021	1557-TX10	3/8 - 24 x 1-1/2 SHCS
1" Shell End Face Mills	.375 x .156	SPEX-32.5A4M	3605-0001-0021	1557-TX10	Not Provided

Machining Parameters

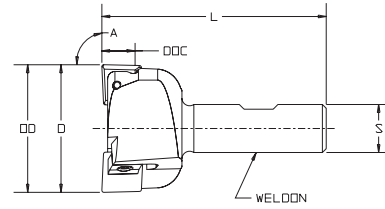
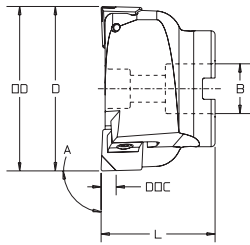
Material	SFPM	FPT	Primary	Secondary
Cast Iron	300-600	.004-.012	SPEX-32.5A4MF GR 586XRm	SPEX-32.5A4M GR 586XRm
Stainless Steel 300 Series	250 - 500	.004-.012	SPEX-32.5A4M GR 586XRm	SPEX-32.5A4M GR LTC-10
Soft to Mild Steel	300 - 500	.004-.012	SPEX-32.5A4M GR 606jRm	SPEX-32.5A4MFW515 GR LT-5565
Alloy Steel	300 - 700	.004-.012	SPEX-32.5A4MFW515 GR LT-5565	SPEX-32.5A4M GR 606jRm
Aluminum	1000 & up	.004-.012	SPEX-32.5A4M GR 586XRm	SPEX-32.5A4M GR LTC-10

- Ideal for small and light duty machines in general purpose applications
- Simple screw on insert design for a minimum of hardware
- Conventional rakes designed to machine a wide range of materials
- 45° lead to minimize breakout and decrease cutting forces

233 Series



Face Mills and End Mills



10° Pos Axial
Pos Radial
90° Shoulder

• Dynamically balanced for 3,000 sfpm

* Note: When using Diamond Inserts DOC can not exceed 2/3 of the Diamond

233 Series - Dimensional Specifications








Face Mills

Product Number	D	OD	B	H	A	DOC *	Insert	Teeth	Max. Recommended RPM	Weight
233F0250AME5-075R	2.50	2.50	0.75	1.75	90°	0.50	WMECA-53_R WMECA-53_RJ / MECA-53_J	2	4500	2.25
233F0300AME5-100R	3.00	3.00	1.00	1.75	90°	0.50	WMECA-53_R WMECA-53_RJ / MECA-53_J	3	4000	3.00
233F0400AME5-100R	4.00	4.00	1.00	1.75	90°	0.50	WMECA-53_R WMECA-53_RJ / MECA-53_J	3	3500	6.00
233F0400AME5-150R	4.00	4.00	1.50	1.75	90°	0.50	WMECA-53_R WMECA-53_RJ / MECA-53_J	3	3000	5.25

End Mills

Product Number	D	OD	S	L	A	DOC *	Insert	Teeth	Max. Recommended RPM	Weight
233E0200AME5-W075R	2.00	2.00	0.75	3.50	90°	0.50	WMECA-53_R WMECA-53_RJ / MECA-53_J	2	5000	1.50

LEFT HAND cutters also available

Insert I.C. x Thickness							
.625 x .188	Insert Pg. 37 MECA-53_J	Insert Pg. 48 WMECA-53_RJ	Insert Pg. 59 WMECA-53_R	Insert Lock 1570PF-2	Lock Screw 1495	Spring Pin 3502-2322-0002	Lock Screw Wrench 1557-PT10
.625 x .188	"J" Polish	"J" Polish	Style "A/B" PCD			.125 x .250	

Note: See insert page for "A / B" DOC & page 23

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Aluminum and Aluminum Alloy	1000 & Up	.005-.020	WMECA-53_RJ GR LTC-21	MECA-53_J GR LTC-21
Aluminum and Aluminum Alloy	1000 & Up	.005-.012	WMECA-53_RJ LTC-130	N/A

- Dynamically balanced for 3,000 sfpm for high velocity milling of aluminum
- Security *Safe-Plus™* locking system ensures operator safety during extreme applications
- Coarse pitch design accommodates heavy feed rates with excellent chip evacuation
- "J" polished MECA type inserts create smooth clean cutting action on all soft materials
- Combination NAS-986 (not shown) / Weldon shank can be utilized in most machine tool types



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

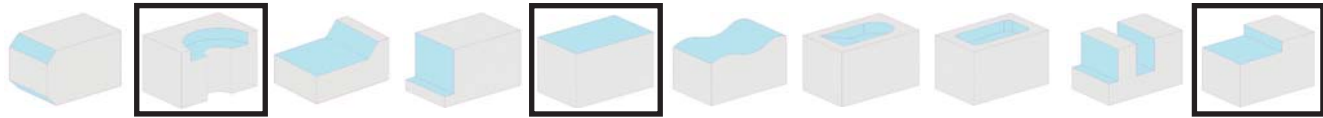
PCD / CBN

Slotters

Technical Data

Holders

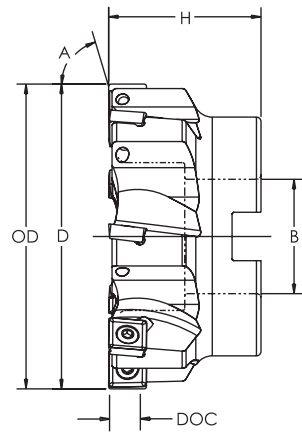
245 Series



Index

Specials

Inserts



7° Pos Axial
Neg Radial
90° Shoulder

• Square shoulder design for close area machining.

General

Cavity Mold

Gray Iron

PCD / CBN

Sloters

Technical Data



HOLDERS

245 Series Face Mill - Dimensional Specifications

Product Number	D	OD	B	H	A	DOC	Insert	Teeth
245F0200ASP4-075R	2.000	2.00	0.750	1.750	90°	.250	SPEX-432	4
245F0250ASP4-100R	2.500	2.50	1.000	1.750	90°	.250	SPEX-432	5
245F0300ASP4-100R	3.000	3.00	1.000	1.750	90°	.250	SPEX-432	6
245F0400ASP4-150R	4.000	4.00	1.500	2.000	90°	.250	SPEX-432	7

LEFT HAND cutters also available

Spare Parts

Insert I.C. x Thickness			
.500 x .188	Insert Pg. 45 SPEX-432	Insert Screw 3605-0001-0023 Silicon Nitride Screw: SR-16-212	Insert Screw Wrench 1557-TX20

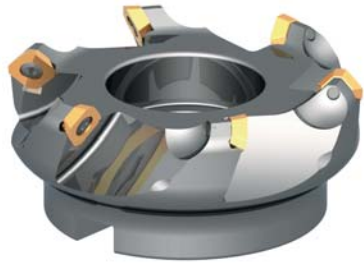
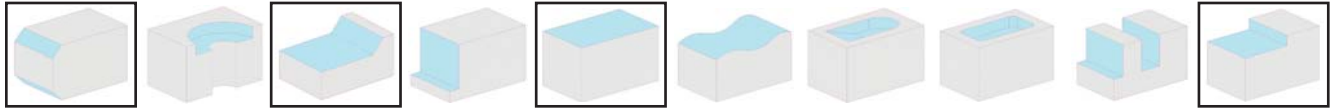
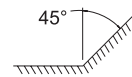
245 Series Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Low Carbon Steel	400 - 800	.005 - .010	SPEX-432 GR 606jRm	SPEX-432 GR 586XRm
Alloy Steel	350 - 700	.005 - .010	SPEX-432B GR 606jRm	SPEX-432F515 GR LT-5565
Forged Steel, Weldment	350 - 500	.005 - .010	SPEX-432F515 GR LT-5565	SPEX-432B GR 606jRm
Austenitic Stainless	350 - 700	.005 - .010	SPEX-432 GR 586XRm	SPEX-432 GR LTC-10
Aluminum	1000 & up	.005 - .010	SPEX-432 GR 586XRm	SPEX-432 GR LTC-10
Gray Cast Iron	2500 & 500	.005 - .010	SPEX-432W515 GR LTC-1200	SPEX-432FA GR LT-2366
Ductile	500 - 1000	.005 - .010	SPEX-432FA GR LT-2366	SPEX-432 GR 606jRm

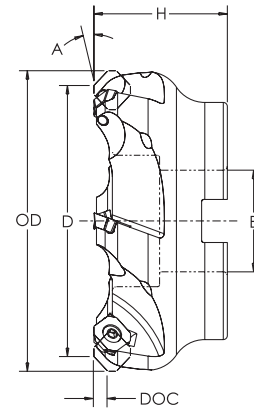
- Simple hardware design for minimum cost
- Positive Chip Control insert geometries for free cutting action in many materials
- Improved Horsepower Utilization
- Designed Edge Preparation geometries for a wide range of materials



249 Series



20° Pos Axial
Neg Radial
45° Lead






• 45° lead angle allows smooth work entry & higher feed rates.

249 Series Face Mill - Dimensional Specifications

Product Number	D	OD	B	H	A	DOC	Insert	Teeth
249F0200ASE4-075R	2.000	2.43	0.750	1.970	0° - 0°15'	.250	SEHW-43A3M	4
249F0250ASE4-100R	2.500	2.93	1.000	1.970	0° - 0°15'	.250	SEHW-43A3M	5
249F0300ASE4-100R	3.000	3.43	1.000	1.970	0° - 0°15'	.250	SEHW-43A3M	6
249F0400ASE4-150R	4.000	4.43	1.500	1.970	0° - 0°15'	.250	SEHW-43A3M	6

LEFT HAND cutters also available

Spare Parts

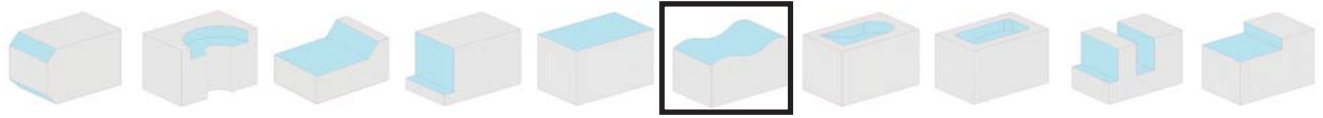
Insert I.C. x Thickness			
.500 x .188	Insert Pg. 42 SEHW-43A3M	Insert Screw 3605-0001-0023 Silicon Nitride Screw: SR-16-212	Insert Screw Wrench 1557-TX20

249 Series Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Low Carbon Steel	400 - 800	.005 - .012	SEHW-43A3M GR 606jRm	SEHW-43A3M GR 586XRm
Alloy Steel	350 - 700	.005 - .010	SEHW-43A3MW520 GR 606jRm	SEHW-43A3MW520B GR LT-5565
Forged Steel, Weldment	300 - 500	.005 - .010	SEHW-43A3MW520B GR LT-5565	SEHW-43A3MW520 GR 606jRm
Austenitic Stainless	350 - 700	.005 - .010	SEHW-43A3M GR 586XRm	SEHW-43A3M GR LTC-10
Aluminum	1000 & up	.005 - .010	SEHW-43A3M GR 586XRm	SEHW-43A3M GR LTC-10
Gray Cast Iron	2500 & 500	.005 - .010	SEHW-43A3MW820 GR LTC-1200	SEHW-43A3MA GR LT-2366
Ductile	500 - 1000	.005 - .010	SEHW-43A3MA GR LT-2366	SEHW-43A3M GR 606jRm

- Positive Chip Control inserts for free cutting action
- Simple hardware construction for minimum cost
- Improved Horsepower Utilization
- Designed Edge Preparation geometries for a wide range of materials





Index

Specials

Inserts

General

Cavity Mold

Gray Iron

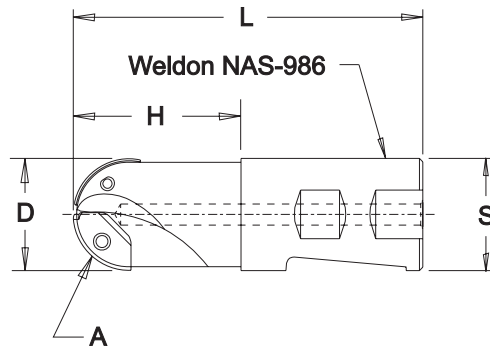
PCD / CBN

Slotters

Technical Data

Holders


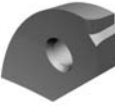


Ball Nose End Mills



• Through Coolant Design

539 Series - Dimensional Specifications

Product Number	D	S	L	A	H	Insert	Teeth	Flutes	Weight
539E0100ACZP2.5-WA100R	1.00	1.00	3.78	Radii	1.50	CZPEB-2.52A-100R	2	2	0.75
539E0100BCZP2.5-WA100R	1.00	1.00	5.28	Radii	3.00	CZPEB-2.52A-100R	2	2	1.00
539E0125ACZP3.5-WA125R	1.25	1.25	3.78	Radii	1.50	CZPEB-3.53A-125R	2	2	1.25
539E0125BCZP3.5-WA125R	1.25	1.25	5.28	Radii	3.00	CZPEB-3.53A-125R	2	2	1.75
539E0150ACZP4-WA125R	1.50	1.25	5.28	Radii	3.00	CZPEB-43A-150R	2	2	2.25
539E0150BCZP4-WA125R	1.50	1.25	7.28	Radii	5.00	CZPEB-43A-150R	2	2	3.25
539E0200ACZP5-WA200R	2.00	2.00	6.25	Radii	3.00	CZPEB-53A-200R	2	2	5.50
539E0200BCZP5-WA200R	2.00	2.00	8.25	Radii	5.00	CZPEB-53A-200R	2	2	7.25

Insert I.C. x Thickness	 Insert Pg. 33	 Insert Pg. 33	 Insert Screw	 Insert Screw Wrench
.492 x .125	CZPEB-2.52A-100R	CZPEB-2.52A-100R	3605-0001-0005	1557-TX10
.618 x .188	CZPEB-3.53A-125R	CZPEB-3.53A-125R	3605-0001-0005	
.745 x .188	CZPEB-43A-150R	CZPEB-43A-150R	3605-0001-0023	
.996 x .188	CZPEB-53A-200R	CZPEB-53A-200R	3605-0001-0023	

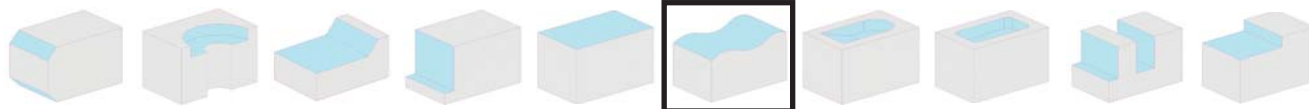
Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Cast Iron, Class 30	350-850	.002-.005	GR 586XRm	GR LTC-10
Tool Steel, D2	300-700	.003-.010	GR 606jRm	GR LTC-14
Ductile Iron	350-850	.002-.005	GR 606jRm	GR LTC-14
Medium Alloy Steel	300-700	.002-.005	GR 606jRm	GR LTC-14
Tool Steel, P20	300-700	.003-.010	GR 606jRm	GR LTC-14

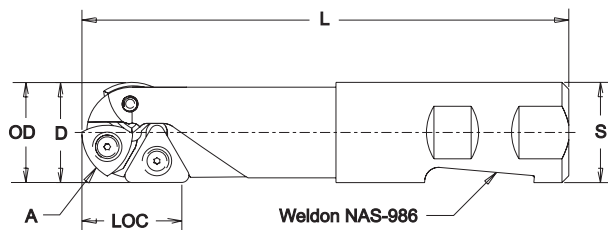
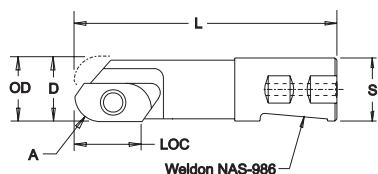
- Precision ground inserts produce accurate ball configuration
- Free cutting geometry performs on all workpiece materials
- Multiple style insert geometries extend application range
- Multifunction 539 performs ramping, channeling, peripheral and plunging cuts
- Engineered for stability over a broad range of applications

BNS Series

Round 



Ball Nose End Mills









- Ball Nose end mills larger than 0.88 dia. see 540 Series Ball Nose end mills in Cavity Mold Group

BNS Series - Dimensional Specifications

Product Number	D	OD	S	L	A	LOC	Insert	Teeth	Eff. Flutes	Weight
0.5BNSRW2	.500	.500	.500	3.00	Radii	0.66	LEEB-332-16	1	1	0.25
0.62BNSRW2.5	.625	.625	.625	3.50	Radii	0.71	LDEB-332-20	1	1	0.38
0.75BNSRWA3	.750	.750	.750	3.88	Radii	0.81	CTDCB-2.53-12 TDCB-2.532	2 1	1	0.50
0.88BNSRWA3.5	.875	.875	.875	4.25	Radii	0.88	CTDCB-32-14 TDCB-324	2 1	1	0.75

LEFT HAND cutters also available

Insert I.C. x Thickness						
	Insert Pg. 37	Insert Pg. 37	Insert Pg. 47	Insert Pg. 32	Torx® Screw	Insert Screw Wrench
.312 x .094			TDCB-2.532	CTDCB-2.53-12	3605-0001-0006	1557-TX10
.375 x .126		LDEB-332-20	TDCB-324	CTDCB-32-14	3605-0001-0007	1557-TX10
.375 x .126	LEEB-332-16				3605-0001-0013	1557-TX10

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Cast Iron, Class 30	350-850	.002-.005	GR LT-45	GR LTC-10
Tool Steel, D2	300-700	.003-.010	B Hone GR LT-40	B Hone GR LT-50
Ductile Iron	350-850	.002-.005	GR LT-40	GR LTC-14
Medium Alloy Steel	300-700	.002-.005	B Hone GR LT-40	B Hone GR LT-50
Tool Steel, P20	300-700	.003-.010	B Hone GR LT-40	B Hone GR LT-50

- Free cutting geometry performs on all workpiece materials
- Precision ground inserts minimize mismatch of peripheral cuts
- Multifunction BNS performs ramping, channeling, peripheral and plunging cuts
- Engineered for stability over a broad range of applications



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

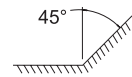
PCD / CBN

Slotters

Technical
Data

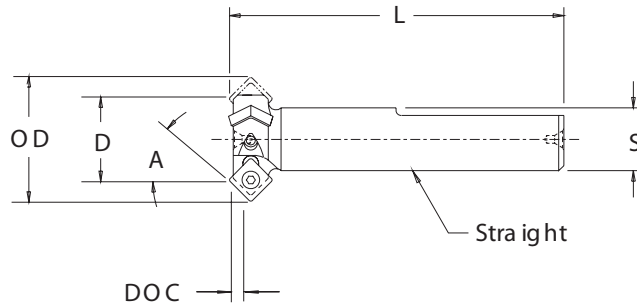
Holders

CE-45 Series



End Mills

0° Pos Axial 0° Pos Radial 45° Lead






• 45° Chamfer Cutter

CE-45 Series - Dimensional Specifications

Product Number	D	OD	S	L	A	DOC	Insert	Teeth	Weight
1.00CE45RW2.5	0.49	1.00	.625	4.00	45°	*	SPEB-32__	1	.33
1.50CE45RW3	0.99	1.50	.750	4.00	45°	*	SPEB-32__	3	.75
2.00CE45RW4	1.49	2.00	1.000	5.00	45°	*	SPEB-32__	4	1.00

LEFT HAND cutters also available

Insert I.C. x Thickness	 Insert Pg. 41	 Insert Screw	 Insert Screw Wrench
.375 x .126	SPEB-32__	3605-0001-0005	1557-TX10

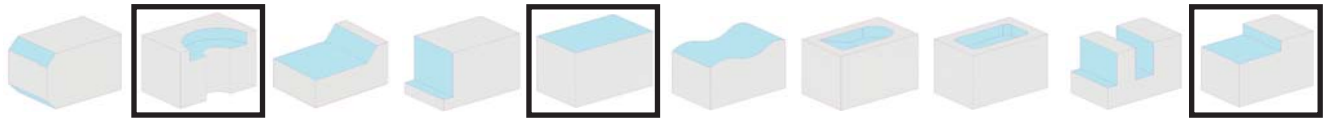
NOTE:
Actual Insert Flats:
* .221 with SPEB-322
* .244 with SPEB-321

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron, Class 30	200-500	.003-.010	SPEB-321J GR LTC-10	SPEB-321B GR LT-50
Tool Steel, D2	250-350	.003-.010	SPEB-321B GR LT-50	SPEB-321 GR LTC-14
Ductile Iron	300-700	.003-.010	SPEB-321B GR LT-50	SPEB-321 GR LTC-14
Medium Alloy Steel	300-700	.003-.010	SPEB-321 GR LTC-14	SPEB-321B GR LT-50
Soft Alloy Steel	400-800	.003-.010	SPEB-321 GR LTC-14	SPEB-321B GR LT-50

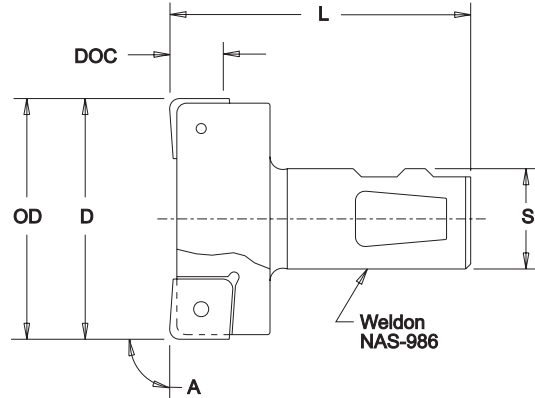
- Engineered for free cutting chamfering cuts on a variety of workpiece materials
- Multifunction design allows CE-45 to plunge or produce peripheral cuts
- Simple screw on insert design provides quick accurate indexing
- Small shank diameters accommodate a broad range of machine tool types

HPM Series



End Mills

10° Pos Axial Pos Radial 90° Shoulder







• Dynamically balanced for 3,000 sfpm

HPM Series - Dimensional Specifications

Product Number	D	OD	S	L	A	DOC	Insert	Teeth	Max. Recommended RPM	Weight
2.5HPMRWA5	2.50	2.50	1.25	3.75	90°	.625	MECA-63__J	2	4500	1.70
3.0HPMRWA5	3.00	3.00	1.25	3.75	90°	.625	MECA-63__J	2	4000	2.50
3.5HPMRWA5	3.50	3.50	1.25	3.75	90°	.625	MECA-63__J	2	3500	3.40
4.0HPMRWA5	4.00	4.00	1.25	3.75	90°	.625	MECA-63__J	2	3000	4.50
6.0HPMRWA5	6.00	6.00	1.25	3.75	90°	.625	MECA-63__J	2	2000	10.00

LEFT HAND cutters also available

Insert I.C. x Thickness					
	Insert Pg. 37	Insert Lock	Lock Screw	Spring Pin	Lock Screw Wrench
.750 x .188	MECA-63__J	1619PF	1452	1/8 x 3/8	1557-PT10
	"J" Polish				

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Aluminum and Aluminum Alloy	1000 & Up	.005-.020	MECA-63__J GR LTC-21	N/A

- Dynamically balanced for 3,000 sfpm for high velocity milling of aluminum
- Security *Safe-Plus™* locking system ensures operator safety in extreme applications
- Coarse pitch design accommodates heavy feed rates with excellent chip evacuation
- "J" polished MECA type inserts create smooth clean cutting action on all soft materials
- Combination NAS-986 weldon shank can be used in most machine tool types



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

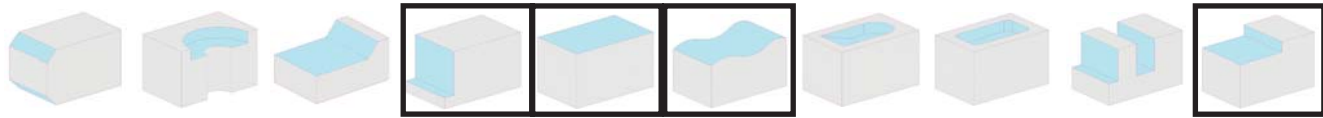
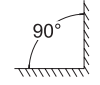
PCD / CBN

Slotters

Technical Data

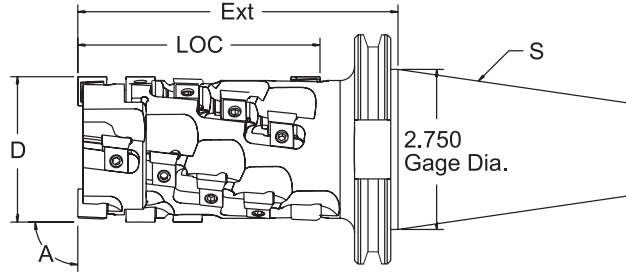
Holders

EMS Series



Slab Mills

7° Pos Axial Neg Radial 0° Lead - Sta. 1
7° Pos Axial Pos Radial 0° Lead - Others



End Cap

EMS Series - End Cap Specifications

2.5-3.0EMSRECRV	2.5EMSC-R
3.0-4.0EMSRECRV	3.0EMSC-R

• Engineered for Heavy Metal Removal - Integral Shank

EMS Series - Dimensional Specifications

Product Number	D	S	EXT	A	LOC	Insert	Teeth	Teeth End Cap	Effective Flutes	Weight
2.5-3.0EMSRECRV	2.50	50V	6.00	90°	3.00	SPXV-43__ / SPE-43__	12	4	2	12.00
3.0-4.0EMSRECRV	3.00	50V	7.00	90°	4.00	SPXV-43__ / SPE-43__	16	6	2	16.50

LEFT HAND cutters also available

Insert I.C. x Thickness	Product Number	End Cap Screw	Insert Pg. 46	Insert Pg. 43	Insert Lock	Lock Screw	Lock Screw Wrench
.500 x .188	2.5-3.0EMSRECRV 3.0-4.0EMSRECRV	1538 1537	SPXV-43__	SPE-43__	3502-0935-5003	1573	1557-PT8

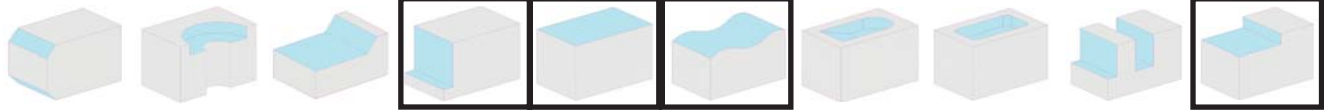
Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Tool Steel, D2-D7	200-350	.003-.012	SPXV-432 GR LT-50	SPE-432B GR LT-50
Alloy Steel Heat Treat 44Rc	100-175	.003-.012	SPXV-432 GR LT-50	SPE-432B GR LT-50
Medium Alloy Steel	300-550	.003-.012	SPXV-432B GR LT-50	SPE-432B GR LT-50
Tool Steel, P20	300-550	.003-.012	SPXV-432B GR LT-50	SPE-432B GR LT-50
Soft Alloy Steel	350-700	.003-.012	SPXV-432B GR LT-50	SPE-432B GR LT-50
PH Type Stainless Steel 17-4, 15-5, 13-8	300-550	.003-.012	SPXV-432B GR LT-50	SPE-432B GR LTC-14
Austenitic Stainless Steel (300)	300-850	.003-.012	SPXV-432B GR LT-50	SPE-432B GR LTC-14

- Multipurpose geometry suitable for a broad range of workpiece materials
- Excellent overall length to diameter ratio ensures necessary rigidity and stiffness
- Available in shell end mount or integral shank to accommodate most machine tools

Index
Specials
Inserts
General
Cavity Mold
Gray Iron
PCD / CBN
Slotters
Technical Data
Holders

EMS Series

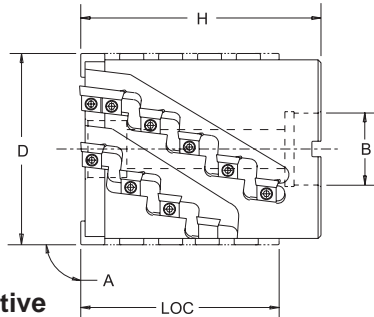


Slab Mills

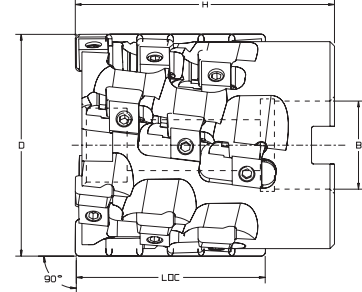
7° Pos Axial Neg Radial 0° Lead - Sta. 1
7° Pos Axial Pos Radial 0° Lead - Others



-B style full effective cut at face



Standard Slab Mill



• Engineered for Heavy Metal Removal

EMS Series - Dimensional Specifications

Product Number	D	B	H	A	LOC	Insert	Teeth	Effective Flutes	Weight
3.0-2.5EMSR5	3.00	1.25	3.50	90°	2.50	SPXV-43__ / SPE-43__	18	3	4.50
4.0-2.5EMSR6-B	4.00	1.50	3.50	90°	2.50	SPXV-43__ / SPE-43__ / FPE-443__	24	4	9.00

LEFT HAND cutters also available

Insert I.C. x Thickness	Product Number	Mounting Bolt	Insert Pg. 46	Insert Pg. 43	Insert Pg. 35	Insert Lock	Lock Screw	Lock Screw Wrench
.500 x .188	3.0-2.5EMSR5 4.0-2.5EMSR6-B	5/8-18 x 2.50 3/4-16 x 2.50	SPXV-43__	SPE-43__	FPE-4434R	3502-0935-5003	1573	1557-PT8

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Tool Steel, D2-D7	200-350	.003-.012	SPXV-432B GR LT-50	SPE-432B GR LT-50
Alloy Steel Heat Treat 44Rc	100-175	.003-.012	SPXV-432B GR LT-40	SPE-432B GR LT-40
Medium Alloy Steel	300-550	.003-.012	SPXV-432B GR LT-50	SPE-432B GR LT-50
Tool Steel, P20	300-550	.003-.012	SPXV-432B GR LT-50	SPE-432B GR LT-50
Soft Alloy Steel	350-700	.003-.012	SPXV-432B GR LT-50	SPE-432B GR LT-50
PH Type Stainless Steel 17-4, 15-5, 13-8	300-550	.003-.012	SPXV-432B GR LT-50	SPE-432B GR LTC-14
Austenitic Stainless Steel	300-850	.003-.012	SPXV-432B GR LT-50	SPE-432B GR LTC-14

- Multipurpose geometry suitable for a broad range of workpiece materials
- Excellent overall length to diameter ratio ensures necessary rigidity and stiffness
- Available in shell end mount or integral shank to accommodate most machine tools
- Inserts available in NEW PVD TiAlN coated grades 586XRm and 606jRm



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

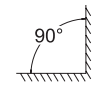
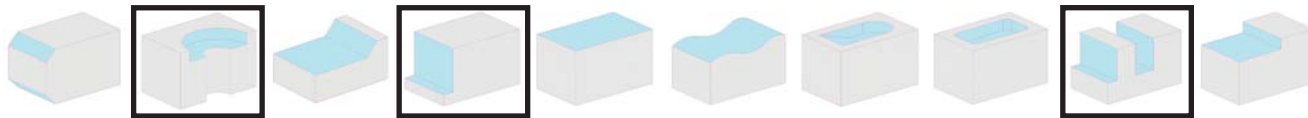
PCD / CBN

Slotters

Technical Data

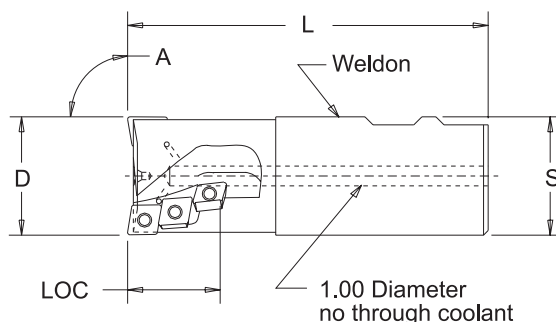
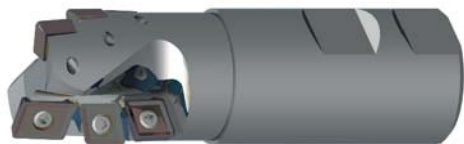
Holders

HPSM Series



Slab Mills





Neg Axial Neg Axial 90° Shldr -to 1.50 dia
Neg Axial Pos Radial 90° Shldr -over 1.50 dia



• General Purpose

HPSM Series - Dimensional Specifications

Product Number	D	OD	S	L	A	LOC	Insert	Teeth	Eff. Flutes	Weight
1.00-1.00HPSMRW4	1.00	1.00	1.00	4.16	90°	1.31	CPEH-32.52-4W CPEH-322.52-4W	5 1	2	1.00
1.25-1.00HPSMRW5	1.25	1.25	1.25	4.16	90°	1.31	CPEH-32.52-4W CPEH-322.52-4W	5 1	2	1.50
1.25-2.00HPSMRW5	1.25	1.25	1.25	5.03	90°	2.25	CPEH-32.52-4W CPEH-322.52-4W	9 1	2	1.75
1.50-1.00HPSMRW6	1.50	1.50	1.50	4.50	90°	1.31	CPEH-32.52-4W CPEH-322.52-4W	7 2	3	2.25
1.50-2.50HPSMRW6	1.50	1.50	1.50	5.81	90°	2.62	CPEH-32.52-4W CPEH-322.52-4W	19 2	3	3.00
2.00-2.50HPSMRW8	2.00	2.00	2.00	6.37	90°	2.62	CPEH-32.52-4W CPEH-322.52-4W	22 2	4	5.50
2.00-4.00HPSMRW8	2.00	2.00	2.00	7.68	90°	4.00	CPEH-32.52-4W CPEH-322.52-4W	34 2	4	6.75

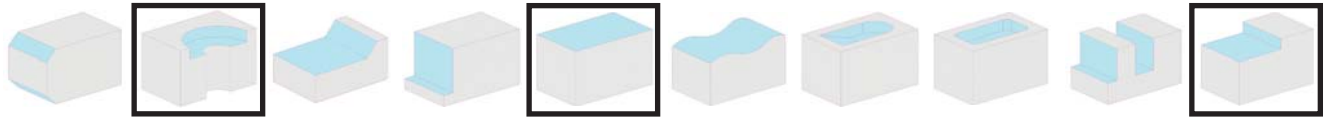
Insert I.C. x Thickness				
	Insert Pg. 31	Insert Pg. 31	Insert Screw	Insert Screw Wrench
.375 x .156	CPEH-322.52-4W	CPEH-32.52-4W	3605-0001-0021	1557-TX10

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Tool Steel D2	250-350	.003-.012	GR 606jRm	GR LT-50
Medium Alloy Steel	300-700	.003-.012	GR 606jRm	GR LTC-14
Tool Steel P20	300-700	.003-.012	GR 606jRm	GR LTC-14
Soft Alloy Steel	400-800	.003-.012	GR 606jRm	GR LTC-14
Tool Steel, D2 Cutting Slots	250-350	.003-.012	GR 606jRm	GR LT-50
Medium Alloy Steel Cutting Slots	300-700	.003-.012	GR 606jRm	GR LTC-14
Tool Steel, P20 Cutting Slots	300-700	.003-.012	GR 606jRm	GR LTC-14

- Through Coolant Capability (only on 1.25 diameter and up)
- Reverse helical flutes stabilize the HPSM during severe machining conditions
- Helical flutes ensure smooth cutting action and excellent chip evacuation
- Excellent overall length to diameter ratio ensures necessary rigidity and stiffness
- CPEH-32.52 type inserts provide 4 indexes for greater economy
- Inserts available in NEW PVD TiAlN coated grades 586XRm and 606jRm

HPEM Series

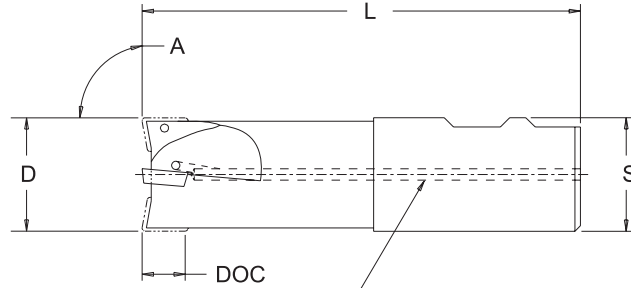


End Mills

5° Pos Axial Pos Radial 90° Shoulder






• 90° Shoulder



Through coolant
Except .750 Diameter

HPEM Series - Dimensional Specifications

Product Number	D	S	L	A	DOC	Insert	Screw	Teeth	Weight
0.75HPEMRW3	.75	.75	4.08	90°	.47	CPEH-322.52-4W	3605-0001-0022	1	.75
1.00HPEMRW4	1.00	1.00	4.13	90°	.47	CPEH-322.52-4W	3605-0001-0021	2	1.05
1.25HPEMRW4	1.25	1.00	4.63	90°	.47	CPEH-322.52-4W	3605-0001-0021	3	1.55
1.50HPEMRW5	1.50	1.25	4.63	90°	.47	CPEH-322.52-4W	3605-0001-0021	3	2.25
2.00HPEMRW5	2.00	1.25	4.63	90°	.47	CPEH-322.52-4W	3605-0001-0022	5	2.75

Insert I.C. x Thickness	 Insert Pg. 31	 Insert Screw	 Insert Screw Wrench
.375 x .156	CPEH-322.52-4W	3605-0001-0021 3605-0001-0022	1557-TX10

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Tool Steel D2	250-350	.003-.012	CPEH-322.52-4WB GR LT-50	CPEH-322.52-4WB GR LTC-14
Medium Alloy Steel	300-700	.003-.012	CPEH-322.52-4W GR 606jRm	CPEH-322.52-4W GR LTC-14
Soft Alloy Steel	400-800	.003-.012	CPEH-322.52-4W GR 606jRm	CPEH-322.52-4W GR LTC-14

- Through Coolant Capability (only on 1.00 diameter and up)
- Double positive geometry accommodates a broad range of workpiece materials
- Engineered in a coarse pitch insert count to accommodate heavy feed rates
- Standard CPEH-322.52 inserts provide excellent DOC to diameter ratios
- Insert compatibility makes the HPEM an ideal companion tool to the HPSM series



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

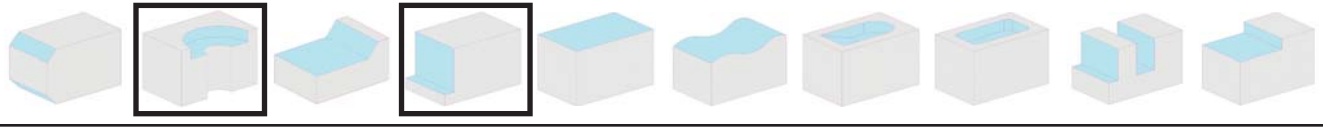
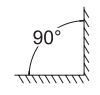
PCD / CBN

Slotters

Technical
Data

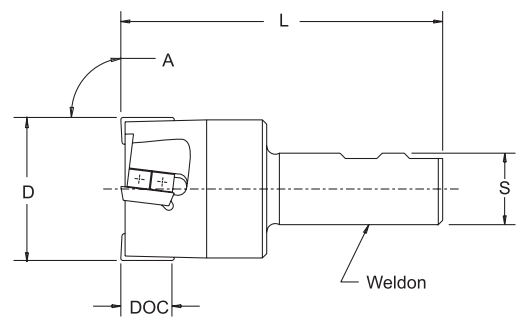
Holders

LSM Series



End Mills

7° Pos Axial Neg Radial 90° Shldr -to 2.00 dia
 7° Pos Axial Pos Radial 90° Shldr -2.50 & up



• High Performance - Deep Shoulder Cutting - General Purpose Tooling

LSM Series - Dimensional Specifications

Product Number	D	S	L	A	DOC	Insert	Screw	Teeth	Weight
1.25LSMRW4	1.25	1.00	4.50	90°	.960	KDE-343_R CKDE-343_R	3601-0001-0017	3	1.00
1.50LSMRW4	1.50	1.00	4.50	90°	.960	KDE-343_R CKDE-343_R	3601-0001-0017	3	1.25
2.00LSMRW4	2.00	1.00	4.50	90°	.960	KDE-343_R CKDE-343_R	1449	4	2.00
2.50LSMRW4	2.50	1.00	4.50	90°	.960	KDE-343_R CKDE-343_R	1449	6	2.50
3.00LSMRW4	3.00	1.00	4.50	90°	.960	KDE-343_R CKDE-343_R	1449	6	3.00

LEFT HAND cutters also available

Insert I.C. x Thickness					
.375 x .188	Insert Pg. 35 KDE-343_R	Insert Pg. 31 CKDE-343_R	Insert Lock 1602	Lock Screw 3601-0001-0017 1449	Lock Screw Wrench 1557-PT6

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Stainless Steel 302,304, 316	250-450	.003-.010	KDE-3432R GR LT-45	KDE-3432R GR LTC-10
Soft Alloy Steel	400-800	.003-.010	KDE-3432RA GR LT-40	KDE-3432R GR LTC-14

- Positive/Negative geometry accommodates a variety of workpiece materials
- Engineered for stability during deep peripheral or channel cuts
- True 90° shoulders can be generated using the optional CKDE style insert
- CKDE and KDE type inserts provide outstanding DOC to diameter ratios
- Standard 1.00" shanks make LSM ideal for use on all light duty machine tools

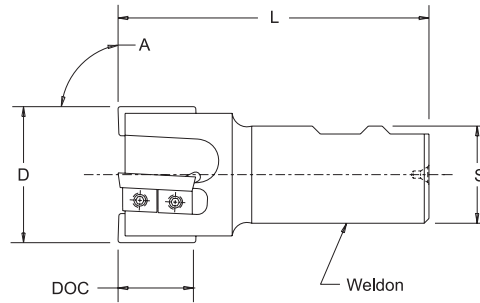


EMX Series



End Mills

3° Pos Axial Neg Radial 90° Shldr -to 2.00 dia
 3° Pos Axial Pos Radial 90° Shldr -2.25 & up


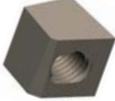




• 90° Shoulder - General Purpose Tooling

EMX Series - Dimensional Specifications

Product Number	D	S	L	A	DOC	Insert	Teeth	Weight
1.5EMXRW5	1.50	1.25	4.00	90°	.960	FPE-343__R	3	1.25
2.0EMXRW5	2.00	1.25	4.00	90°	.960	FPE-443__R	4	1.75
2.5EMXRW5	2.50	1.25	4.00	90°	.960	FPE-443__R	4	2.25

LEFT HAND cutters also available

Insert I.C. x Thickness	Product Number	 Insert Pg. 35	 Insert Lock	 Lock Screw	 Lock Screw Wrench
.375 x .188	1.5EMXRW5	FPE-343__R	3502-0335-5005	1449	1557-PT6
.500 x .188	2.0EMXRW5	FPE-443__R	3502-0335-5006	1573	1557-PT8
.500 x .188	2.5EMXRW5	FPE-443__R	3502-0335-5006	1573	1557-PT8

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Tool Steel, D2	250-350	.003-.010	FPE-__432RB GR LT-50	FPE-__432RB GR LTC-14
Ductile Cast Iron	400-800	.003-.010	FPE-__432R GR LT-40	FPE-__432R GR LTC-14
Medium Alloy Steel	300-700	.003-.010	FPE-__432RB GR LT-50	FPE-__432R GR LTC-14
Tool Steel, P20	300-700	.003-.010	FPE-__432RB GR LT-50	FPE-__432R GR LTC-14
Soft Alloy Steel	400-800	.003-.010	FPE-__432R GR LTC-10	FPE-__432R GR LTC-14
Gray Cast Iron, Class 30	200-500	.003-.010	FPE-__432R GR LTC-83	FPE-__432R GR LTC-21

- Positive/Negative geometry accommodates a variety of workpiece materials
- Engineered for balance and stability during deep peripheral or channel cuts
- True 90° shoulders can be generated using the standard FPE parallelogram insert
- The EMX design provides outstanding .960" LOC without stacked insert design mismatch
- 1.25" Weldon shanks make EMX ideal for use on all standard duty machine tools



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

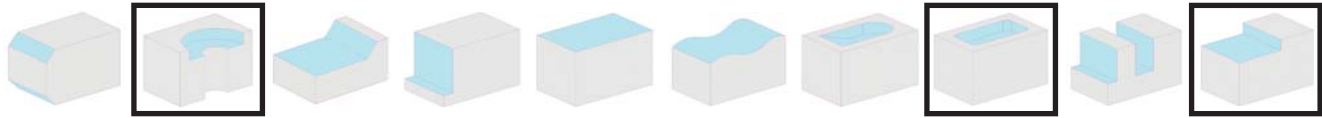
PCD / CBN

Slotters

Technical
Data

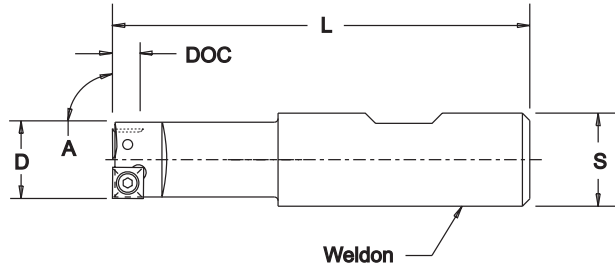
Holders

CEM Series



End Mills

0° Pos Axial 0° Pos Radial 90° Shoulder







• Center cutting configuration

CEM Series - Dimensional Specifications

Product Number	D	S	L	A	DOC	Insert	Teeth	Weight
0.5CEMRW2	.500	.500	2.78	90°	.200	LEEB-32__	1	.20
0.62CEMRW2.5	.625	.625	3.00	90°	.200	LDEB-32__	1	.25
0.75CEMRW3	.750	.750	3.25	90°	.200	SDEB-32__	1	.35
0.88CEMRW3.5	.875	.875	3.25	90°	.200	SPEB-32__	2 - (1) Eff.	.45
1.0CEMRW4	1.000	1.000	4.25	90°	.200	SPEB-32__	2 - (1) Eff.	.50

LEFT HAND cutters also available

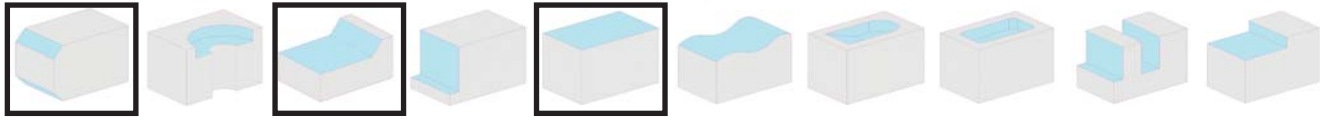
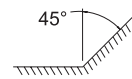
Insert I.C. x Thickness				
	Insert Pg. 36	Insert Pg. 41	Insert Screw	Insert Screw Wrench
.375 x .126	LDEB-32__	SDEB-32__	3605-0001-0006	1557-TX10
.375 x .126		SPEB-32__	3605-0001-0005	1557-TX10
.375 x .126	LEEB-32__		3605-0001-0013	1557-TX10

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron, Class 30	200-500	.002-.006	__EB-321 GR LT-45	__EB -321 GR LTC-10
Ductile Iron	350-700	.002-.006	__EB-321 GR LT-40	__EB -321 GR LTC-14
Medium Alloy Steel	300-700	.002-.006	__EB-321 GR LT-40	__EB -321 GR LTC-14
Tool Steel, P20	300-700	.002-.006	__EB-321 GR LT-40	__EB -321 GR LTC-14
Soft Alloy Steel	400-800	.002-.006	__EB-321 GR LT-40	__EB -321 GR LTC-14

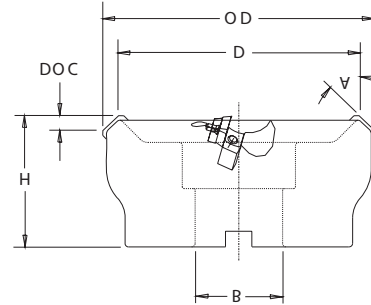
- Free cutting positive geometry accommodates a variety of workpiece materials
- Design allows ramping, plunge to depth of chip clearance and peripheral cuts
- Engineered for rigidity during plunging or channel cuts
- Simple screw insert mounting provides quick accurate indexing
- Small shank diameters make CEM ideal for use on all light duty machine tools

FXS Series



Face Mills

16° Pos Axial Neg Radial 45° Dish



- High Performance - General Purpose Tooling

FXS-45 Series - Dimensional Specifications

Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Weight
3.00FXS45R5	3.00	3.67	1.25	2.25	45°	.310	SEC-53A5__	5	3.00
4.00FXS45R6	4.00	4.67	1.50	2.25	45°	.310	SEC-53A5__	6	4.50
5.00FXS45R6	5.00	5.67	1.50	2.25	45°	.310	SEC-53A5__	7	8.00
6.00FXS45R8	6.00	6.67	2.00	2.25	45°	.310	SEC-53A5__	7	11.00
8.00FXS45RU	8.00	9.40	2.50	2.25	45°	.310	SEC-53A5__	12	21.00

LEFT HAND cutters also available

Insert I.C. x Thickness	Insert Pg. 41	Seat	Seat Screw	Insert Lock	Lock Screw	Lock Screw Wrench
.625 x .188	SEC-53A5__	3502-1018-0001	3605-0001-0009	1570-2	1573	1557-PT8

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
PH Type Stainless Steel 17-4, 15-5, 13-8	350-850	.005-.018	SEC-53A5 GR 606jRm	SEAN-53AFTN GR 606jRm
Austenitic Stainless Steel 302, 304, 316	300-850	.003-.015	SEC-53A5 GR 586XRm	SEAN-53AFTN GR 586XRm
Alloyed Steel 4130, 4340, 5015	450-950	.005-.018	SEC-53A5 GR 606jRm	SEAN-53AFTN GR 606jRm
Carbon Steel 1018, 1020, 1215	500-1100	.005-.020	SEC-53A5 GR 606jRm	SEAN-53AFTN GR 606jRm
Nickel based Alloys A286, 718 Inconel, 625 Inconel	90-200	.005-.012	SEC-53A5 GR 586XRm	SEAN-53AFTN GR 586XRm
Titanium Alloys 3A1-2.5V, 5A1-6n-2Zr-1Mo., 6A1-4V	90-200	.005-.015	SEC-53A5 GR 586XRm	SEAN-53AFTN GR 586XRm

- Shear angle geometry allows machining of a broad range of workpiece materials
- Rugged design ensures tool integrity even during severe operations
- Non-rhythmic insert spacing counteracts harmonic vibration (chatter)
- 45° lead angle thins chip, smoothes entry and cutting action
- Designed with 5/8" IC inserts for greater DOC than JXS series
- Standard inserts available in NEW PVD TiAlN coated grades 586XRm and 606jRm



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

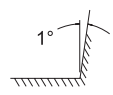
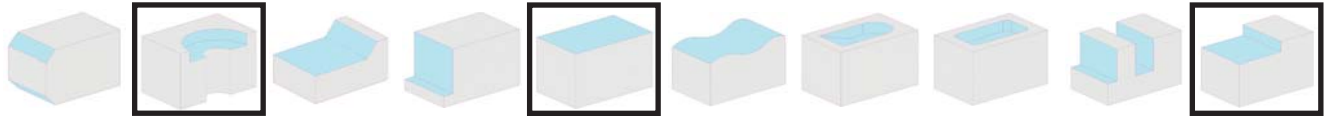
PCD / CBN

Slotters

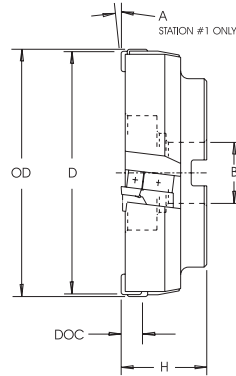
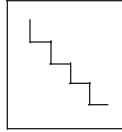
Technical Data

Holders

SX Series



Face Mills



7° Pos Axial
Pos Radial
A = 1° Dish (Sta. 1)
All others 0° lead

• Shurloc Anvil .188 thick inserts

SX Series - Dimensional Specifications

Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Eff. Sets	Weight
3SX23R4	2.96	3.00	1.00	2.10	1°	.080-.150	SPE-43__	3	2	3.75
4SX24R6	3.94	4.00	1.50	2.10	1°	.130-.200	SPE-43__	4	2	6.25
5SX25R6	4.92	5.00	1.50	2.10	1°	.140-.220	SPE-43__	5	2	10.50
6SX26R6	5.90	6.00	1.50	2.10	1°	.150-.250	SPE-43__	6	2	15.75
8SX35R8X	7.92	8.00	2.00	2.10	1°	.150-.250	SPE-43__	5	3	28.00
8SX44R8X	7.94	8.00	2.00	2.10	1°	.150-.250	SPE-43__	4	4	28.00

LEFT HAND cutters also available

SX Series Setting Specifications for Stepped Configuration Tooling

Tool	Station 1 (H)	Station 2 (H)	Station 3 (H)	Station 4 (H)	Station 5 (H)	Station 6 (H)
3SX23R4	2.100	2.080	2.030	N/A	N/A	N/A
4SX24R6	2.100	2.085	2.030	1.970	N/A	N/A
5SX25R6	2.100	2.085	2.035	1.990	1.945	N/A
6SX26R6	2.100	2.085	2.055	2.020	1.985	1.950
8SX35R8	2.100	2.085	2.035	1.990	1.945	N/A
8SX44R8	2.100	2.085	2.030	1.970	N/A	N/A

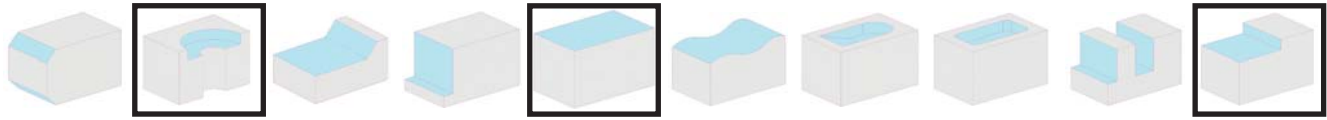
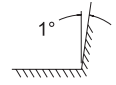
Insert I.C. x Thickness	Insert Pg. 43	Anvil	Adjusting Screw	Insert Lock	Lock Screw	Anvil Lock	Lock Screw BHCS	Lock Screw Wrench
.500 x .188	SPE-43__	1357RA 1357LA	1399	3502-0933-0031 RH 3502-0933-0032 LH	1573	1571	10-32 x 5/8	1557-PT8

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
High Temp Alloy	60-100	.006-.009	SPE-432 GR 586XRm	SPE-432 GR LTC-10
Stainless Steel	400-700	.010-.018	SPE-432 GR 586XRm	SPE-432 GR LTC-10
Medium Alloy Steel	600-800	.012-.020	SPE-432 GR 606jRm	SPE-432 GR LTC-14
Mild Steel	600-1000	.015-.025	SPE-432 GR 606jRm	SPE-432 GR LTC-14
Cast Iron	500-700	.015-.025	SPE-432 GR 586XRm	SPE-432 GR LTC-21
Aluminum	2000-2400	.010-.015	SPE-432 GR 586XRm	SPE-432 GR LTC-21

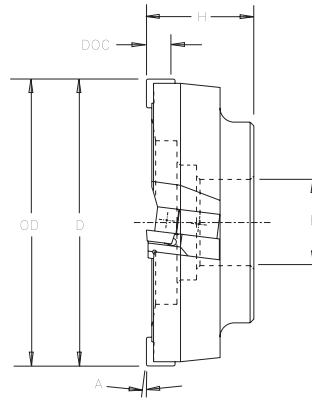
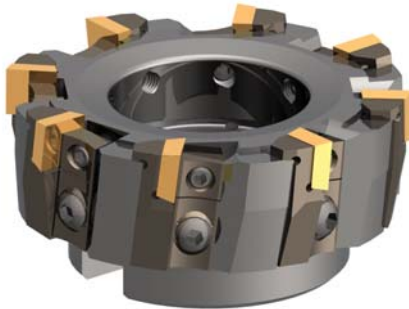
- Free cutting positive geometry is ideally suited for all cast iron materials
- Stepdex configuration generates metal removal rates up to 2 inch³ per minute per unit of horsepower
- Stepdex configuration provides excellent force and load management during awkward, over extended or weak setups
- Self-locating precision anvils ensure quick accurate indexes and little down time
- LOVEJOY'S LTC-1000 operates in the advanced range machining parameters on Gray Iron

GTA Series



Face Mills

7° Pos Axial Pos Radial 1° Dish



GTA Series - Dimensional Specifications

Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Weight
3GTAR4-1	3.000	3.030	1.00	1.87	1°	.460	SPE-43__	6	2.00
4GTAR6-1	4.000	4.030	1.50	1.87	1°	.460	SPE-43__	8	3.50
5GTAR6-1	5.000	5.030	1.50	1.87	1°	.460	SPE-43__	10	6.00
6GTAR8-1	6.000	6.030	2.00	1.87	1°	.460	SPE-43__	12	8.50
7GTAR8-1	7.000	7.030	2.00	1.87	1°	.460	SPE-43__	14	11.50
8GTARU-1	8.000	8.030	2.50	2.25	1°	.460	SPE-43__	16	14.50

LEFT HAND cutters also available

Insert I.C. x Thickness									
	Insert Pg. 43	Anvil	Anvil	Adjusting Screw	Insert Lock	Lock Screw	Anvil Lock	Lock Screw	Lock Screw Wrench
.500 x .188	SPE-43__	1357R/L	1357RA/LA	1399	1570	1573	1571	10-32 x 1/2"	1557-PT8

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Iron, Class 30	200-500	.005-.012	SPE-432 GR 586XRm	SPE-432 GR LTC-21
Tool Steel, D2	250-350	.005-.012	SPE-432 GR 606jRm	SPE-432B GR LTC-14
Medium Alloy Steel	300-700	.005-.012	SPE-432B GR LT-50	SPE-432B GR M+
Tool Steel, P20	300-700	.005-.012	SPE-432B GR LT-50	SPE-432B GR LTC-14
Soft Alloy Steel	400-800	.005-.012	SPE-432 GR LT-40	SPE-432 GR LTC-14

- Free cutting positive geometry accommodates a variety of workpiece materials
- Precision hardware components ensure quick accurate insert indexing
- Hardened hardware components provide body protection for superior tool durability
- 1° dish angle generates a near square 90° utilizing the standard SPE-43 insert



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

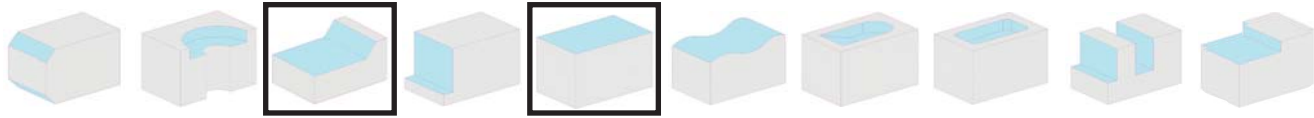
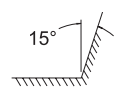
PCD / CBN

Slotters

Technical
Data

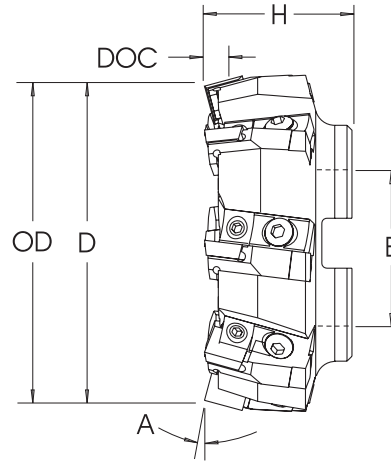
Holders

GTA Series



Face Mills

7° Pos Axial Pos Radial 15° Dish



GTA Series - Dimensional Specifications

Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Weight
3GTAR4-15	3.000	3.420	1.00	1.87	15°	.425	SPE-43__	6	2.00
4GTAR6-15	4.000	4.420	1.50	1.87	15°	.425	SPE-43__	8	3.50
5GTAR6-15	5.000	5.420	1.50	1.87	15°	.425	SPE-43__	10	6.00
6GTAR8-15	6.000	6.420	2.00	1.87	15°	.425	SPE-43__	12	8.50
7GTAR8-15	7.000	7.420	2.00	1.87	15°	.425	SPE-43__	14	11.50
8GTARU-15	8.000	8.420	2.50	2.25	15°	.425	SPE-43__	16	14.50

LEFT HAND cutters also available

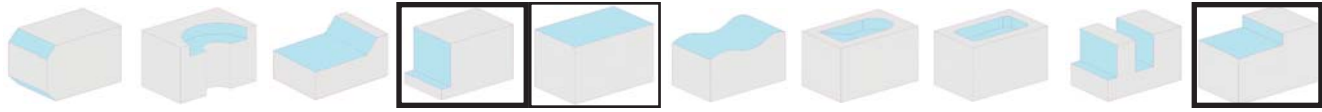
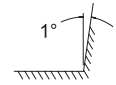
Insert I.C. x Thickness									
	Insert Pg. 43	Anvil	Anvil	Adjusting Screw	Insert Lock	Lock Screw	Anvil Lock	Lock Screw	Lock Screw Wrench
.500 x .188	SPE-43__	1357R/L	1357RA/LA	1399	1570	1573	1571	10-32 x 1/2"	1557-PT8

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Iron, Class 30	200-500	.005-.012	SPE-432 GR 586XRm	SPE-432 GR LTC-21
Tool Steel, D2	250-350	.005-.012	SPE-432 GR 606jRm	SPE-432B GR LTC-14
Medium Alloy Steel	300-700	.005-.012	SPE-432B GR LT-50	SPE-432B GR M+
Tool Steel, P20	300-700	.005-.012	SPE-432B GR LT-50	SPE-432B GR LTC-14
Soft Alloy Steel	400-800	.005-.012	SPE-432 GR LT-40	SPE-432 GR LTC-14

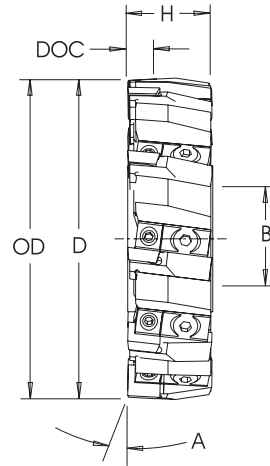
- Free cutting positive geometry accommodates a variety of workpiece materials
- Precision hardware components ensure quick accurate insert indexing
- Hardened hardware components provide body protection for superior tool durability
- 15° dish angle utilizing the standard SPE-43 insert

GTAH Series



Half Side Mills

7° Pos Axial Pos Radial 1° Dish



GTAH Series - Dimensional Specifications

Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Weight
4GTARH-1-5H	4.000	4.030	1.25	1.31	1°	.375	SPE-43__	8	3.31
5GTARH-1-6H	5.000	5.030	1.50	1.31	1°	.375	SPE-43__	10	5.50
6GTARH-1-6H	6.000	6.030	1.50	1.31	1°	.375	SPE-43__	12	8.00
7GTARH-1-8H	7.000	7.030	2.00	1.31	1°	.375	SPE-43__	14	11.00
8GTARH-1-8H	8.000	8.030	2.00	1.31	1°	.375	SPE-43__	16	14.50

LEFT HAND cutters also available

Insert I.C. x Thickness									
.500 x .188	Insert Pg. 43 SPE-43__	Anvil 1357R/L	Anvil 1357RA/LA	Adjusting Screw 1399	Insert Lock 1570	Lock Screw 1573	Anvil Lock 1571	Lock Screw 10-32 x 1/2"	Lock Screw Wrench 1557-PT8

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Iron, Class 30	200-500	.005-.012	SPE-432 GR 586XRm	SPE-432 GR LTC-21
Tool Steel, D2	250-350	.005-.012	SPE-432 GR 606jRm	SPE-432B GR LTC-14
Medium Alloy Steel	300-700	.005-.012	SPE-432B GR LT-50	SPE-432B GR M+
Tool Steel, P20	300-700	.005-.012	SPE-432B GR LT-50	SPE-432B GR LTC-14
Soft Alloy Steel	400-800	.005-.012	SPE-432 GR LT-40	SPE-432 GR LTC-14

- Free cutting positive geometry accommodates a variety of workpiece materials
- Precision hardware components ensure quick accurate insert indexing
- Hardened hardware components provide body protection for superior tool durability
- Adjustable anvil allows accurate setting of wiper insert for superior finishes
- Engineered for balance and stability over a broad spectrum of applications



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

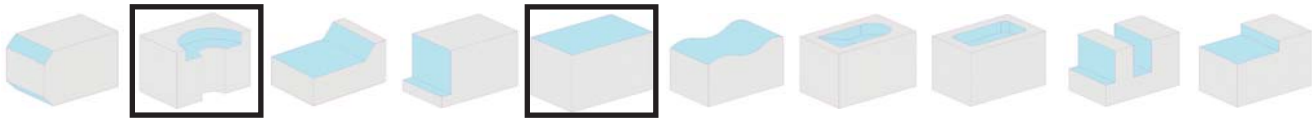
Slotters

Technical Data

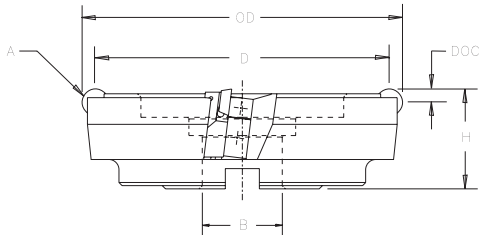
Holders

GTZ Series

Round 



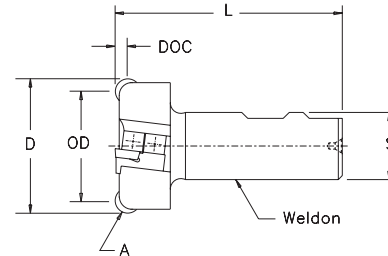
Face Mills



End Mills



7° Pos Axial
Pos Radial








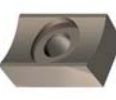



GTZ Series Face Mills - Dimensional Specifications

Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Weight
3GTZR4	2.50	3.00	1.00	1.87	Radii	.250	RDE-43__	6	3.00
4GTZR6	3.50	4.00	1.50	1.87	Radii	.250	RDE-43__	8	4.00
5GTZR6	4.50	5.00	1.50	1.87	Radii	.250	RDE-43__	10	7.00
6GTZR8	5.50	6.00	2.00	1.87	Radii	.250	RDE-43__	12	8.50
7GTZR8	6.50	7.00	2.00	1.87	Radii	.250	RDE-43__	14	14.00
8GTZRU	7.50	8.00	2.50	1.94	Radii	.250	RDE-43__	16	18.00

GTZ Series End Mills - Dimensional Specifications

Product Number	D	OD	S	L	A	DOC	Insert	Teeth	Weight
20GTZRW4	1.50	2.00	1.00	4.00	Radii	.250	RDE-43__	3	1.50
25GTZRW5	2.00	2.50	1.25	4.00	Radii	.250	RDE-43__	4	2.50
30GTZRW5	2.50	3.00	1.25	4.00	Radii	.250	RDE-43__	6	3.00

LEFT HAND cutters also available

Insert I.C. x Thickness									
.500 x .187	Insert Pg. 39 RDE-43__	Anvil 1351RA/LA-C2	Adjusting Screw 1399	Insert Lock 1570	Lock Screw 1573	Anvil Lock 1571	Lock Screw 10-32 x 1/2"	Locator Seat 1429-3	Lock Screw Wrench 1557-PT8

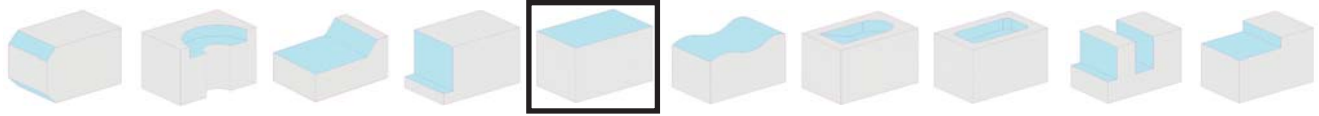
Machining Parameters

Material	SFPM	FPT	Primary	Secondary
A-286	70-120	.005-.012	RDE-43 GR LTC-22	RDE-43 GR LTC-83
Inconel 718	70-120	.005-.012	RDE-43 GR LTC-22	RDE-43 GR LTC-83
Titanium, 6A1-4V	70-120	.005-.012	RDE-43 GR LTC-22	RDE-43 GR LTC-83

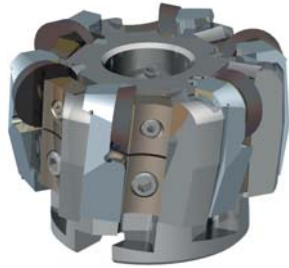
- Free cutting positive geometry is ideally suited for modern day aerospace alloys
- Round inserts with high clearance angles
- The combination of geometry and insert give GTZ machining qualities similar to helical tools
- Precision hardware components ensure quick accurate insert indexing
- Hardened hardware components provide body protection for superior tool durability

NZ Series

Round 



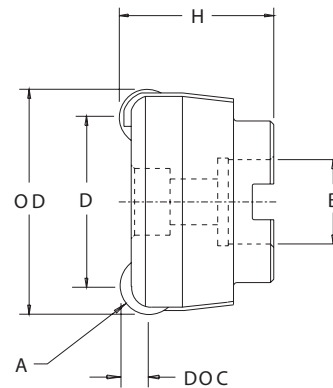
Face Mills



• 1.00 Diameter Round Insert Design

7° Pos Axial


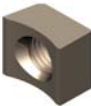

Pos Radial



NZ Series - Dimensional Specifications

Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Weight
4NZR5	3.00	4.00	1.25	2.94	Radii	.500	RDE-84__	6	5.00
5NZR6	4.00	5.00	1.50	2.56	Radii	.500	RDE-84__	6	8.00
6NZR8	5.00	6.00	2.00	2.56	Radii	.500	RDE-84__	8	10.50
8NZRU	7.00	8.00	2.50	2.88	Radii	.500	RDE-84__	10	20.00

LEFT HAND cutters also available

Insert I.C. x Thickness										
1.000 x .250	RDE-84__	1405RA	1425RA	1477	1619B	1450	1618	1/4-28 x 3/4	1423	1557-PT10

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Inconel 625	70-120	.005-.012	RDE-84 GR LTC-22	RDE-84 GR LTC-83
Inconel 718	70-120	.005-.012	RDE-84 GR LTC-22	RDE-84 GR LTC-83
A286	70-120	.005-.012	RDE-84 GR LTC-22	RDE-84 GR LTC-83
Rene 41	60-110	.005-.012	RDE-84 GR LTC-22	RDE-84 GR LTC-83
Titanium, 6A1-4V	70-120	.005-.012	RDE-84 GR LTC-22	RDE-84 GR LTC-83

- Free cutting positive geometry is ideally suited for aerospace alloys
- Round high clearance angle inserts provide a smooth and clean cutting action
- Precision hardware components ensure quick accurate insert indexing
- Hardened hardware components provide body protection for superior tool durability



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

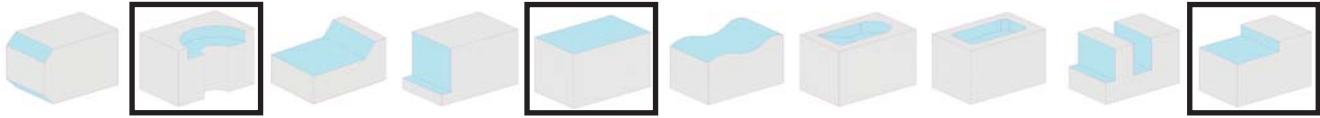
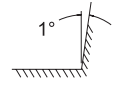
PCD / CBN

Slotters

Technical Data

Holders

TX Series



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Sloters

Technical Data

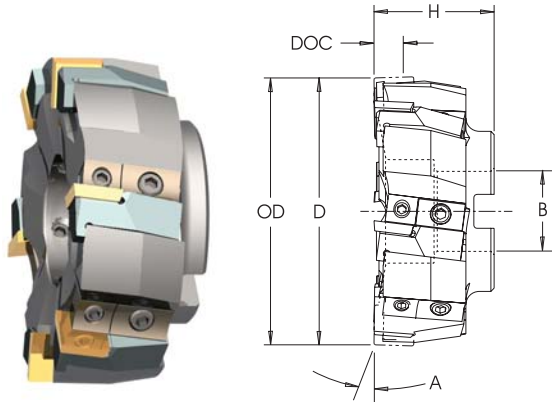
Holders

Face Mills

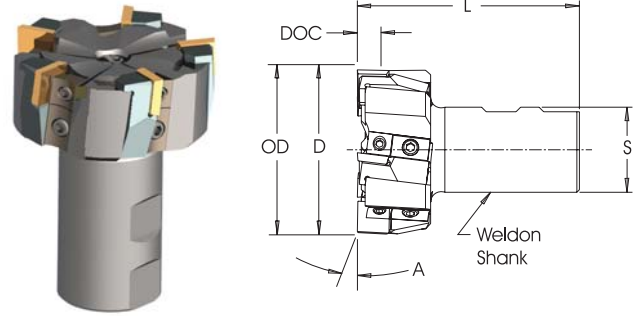
7° Pos Axial

Pos Radial

1° Dish



End Mills



TX Series - Face Mill Dimensional Specifications

Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Weight
4TXR6-1	4.000	4.060	1.50	2.62	1°	.460	SPE-63__	5	5.00
5TXR6-1	5.000	5.060	1.50	2.25	1°	.460	SPE-63__	6	7.00
6TXR8-1	6.000	6.060	2.00	2.25	1°	.460	SPE-63__	8	9.50
7TXR8-1	7.000	7.060	2.00	2.25	1°	.460	SPE-63__	10	14.00
8TXR8-1	8.000	8.060	2.00	2.31	1°	.460	SPE-63__	12	18.00
10TXRU-1	10.000	10.060	2.00	2.31	1°	.460	SPE-63__	16	33.00
12TXRU-1	12.000	12.060	2.50	2.62	1°	.460	SPE-63__	20	46.00

TX Series - End Mill Dimensional Specifications

Product Number	D	OD	S	L	A	DOC	Insert	Teeth	Weight
30TXRW5-1	3.000	3.000	1.250	4.220	1°	.460	SPE-63__	4	3.00
30TXRW8-1	3.000	3.000	2.000	5.220	1°	.460	SPE-63__	4	5.50
35TXRW5-1	3.500	3.500	1.250	4.220	1°	.460	SPE-63__	5	4.00
35TXRW8-1	3.500	3.500	2.000	5.220	1°	.460	SPE-63__	5	6.00
40TXRW5-1	4.000	4.000	1.250	4.220	1°	.460	SPE-63__	5	5.00
40TXRW8-1	4.000	4.000	2.000	5.220	1°	.460	SPE-63__	5	7.50

LEFT HAND cutters also available

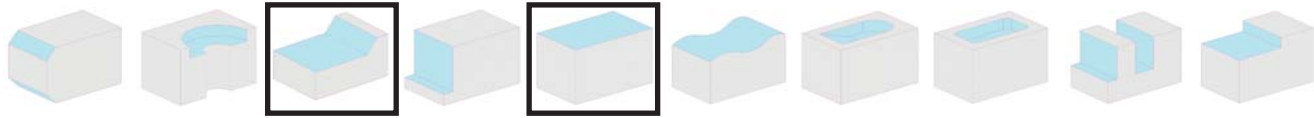
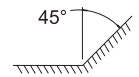
Insert I.C. x Thickness									
.750 x .188	Insert Pg. 43 SPE-63__	Anvil 1513R/L	Anvil 1513RA/LA	Adjusting Screw 1477	Insert Lock 1619	Lock Screw 1450	Anvil Lock 1618	Lock Screw 1/4-28 x 5/8"	Lock Screw Wrench 1557-PT5

Machining Parameters

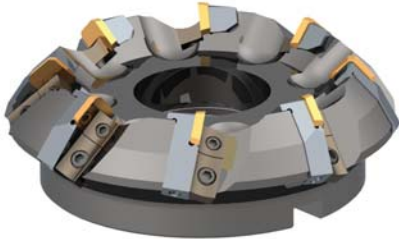
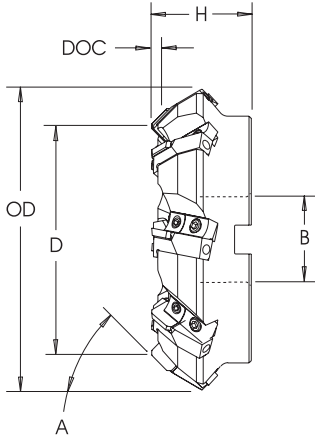
Material	SFPM	FPT	Primary	Secondary
Gray Iron, Class 30	200-500	.005-.012	SPE-634 GR 586XRm	SPE-634 GR LTC-21
Tool Steel, D2	250-350	.005-.012	SPE-634 GR 606jRm	SPE-634B GR LTC-14
Medium Alloy Steel	300-700	.005-.012	SPE-634B GR LT-50	SPE-634B GR M+
Tool Steel, P20	300-700	.005-.012	SPE-634B GR LT-50	SPE-634B GR LTC-14
Soft Alloy Steel	400-800	.005-.012	SPE-634 GR LT-40	SPE-634 GR LTC-14

- Free cutting positive geometry accommodates a variety of workpiece materials
- Precision hardware components ensure quick accurate insert indexing
- Hardened hardware components provide body protection for superior tool durability
- 1° dish angle generates a near square 90° utilizing the standard SPE-63__ insert

STX-45 Series



Face Mills
11° Pos Axial Neg Radial 45° Lead

STX-45 Series - Dimensional Specifications									
Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Weight
4STXR6-45	4.000	5.890	1.50	2.62	45°	.399	SPE-63AM	5	10.50
5STXR6-45	5.000	6.860	1.50	2.62	45°	.399	SPE-63AM	6	16.00
6STXR8-45	6.000	7.770	2.00	2.62	45°	.399	SPE-63AM	8	20.00
7STXR8-45	7.000	8.740	2.00	2.62	45°	.399	SPE-63AM	9	26.00
8STXRU-45	8.000	9.720	2.50	2.62	45°	.399	SPE-63AM	10	30.50
10STXRU-45	10.000	11.700	2.50	2.62	45°	.399	SPE-63AM	13	47.00
12STXRU-45	12.000	13.670	2.50	2.62	45°	.399	SPE-63AM	15	65.00

LEFT HAND cutters also available

Insert I.C. x Thickness								
.750 x .188	Insert Pg. 44 SPE-63AM	Anvil 1513RA/LA-C1	Adjusting Screw 1477	Insert Lock 1619	Lock Screw 1450	Anvil Lock 1618	Lock Screw 1/4-28 x 5/8"	Lock Screw Wrench 1557-PT5

Machining Parameters				
Material	SFPM	FPT	Primary	Secondary
Gray Iron, Class 30	200-500	.005-.015	SPE-63AM GR 586XRm	SPE-63AM GR LTC-21
Tool Steel, D2	250-350	.005-.015	SPE-63AM GR 606jRm	SPE-63AMB GR LTC-14
Medium Alloy Steel	300-700	.005-.015	SPE-63AMB GR LT-50	SPE-63AMB GR M+
Tool Steel, P20	300-700	.005-.015	SPE-63AMB GR LT-50	SPE-63AMB GR LTC-14
Soft Alloy Steel	400-800	.005-.015	SPE-63AM GR LT-40	SPE-63AM GR LTC-14

- Free cutting positive geometry accommodates a variety of workpiece materials
- Non-rhythmic insert spacing counters harmonic vibration and bending (deflection)
- Precision hardware components ensure quick accurate insert indexing
- Precision hardware components provide body protection for superior tool durability
- Engineered for balance and stability during extreme roughing applications



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

“XR” Series

XR45 End Mill Style

XR6 - .750 IC

XR5 - .625 IC

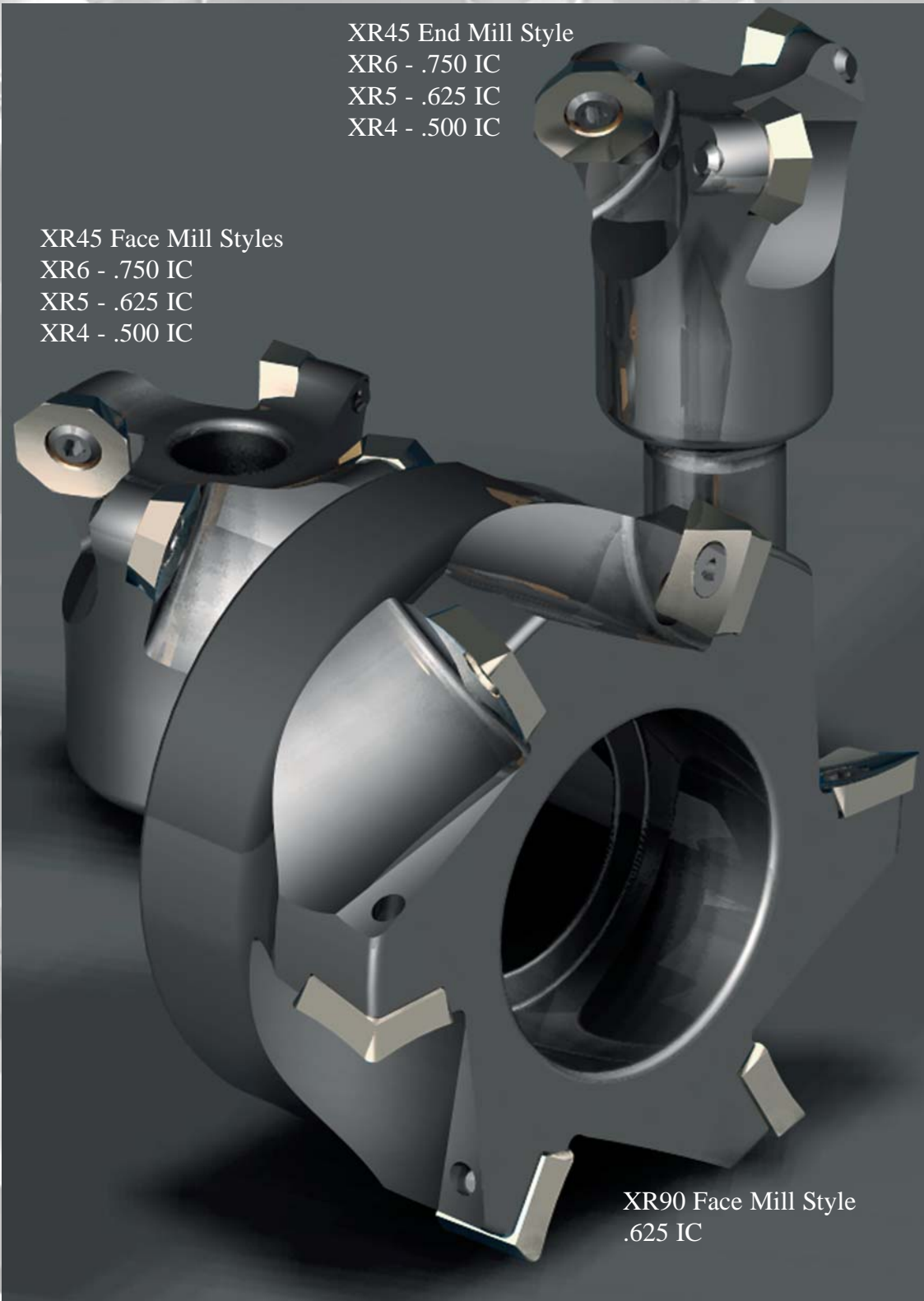
XR4 - .500 IC

XR45 Face Mill Styles

XR6 - .750 IC

XR5 - .625 IC

XR4 - .500 IC

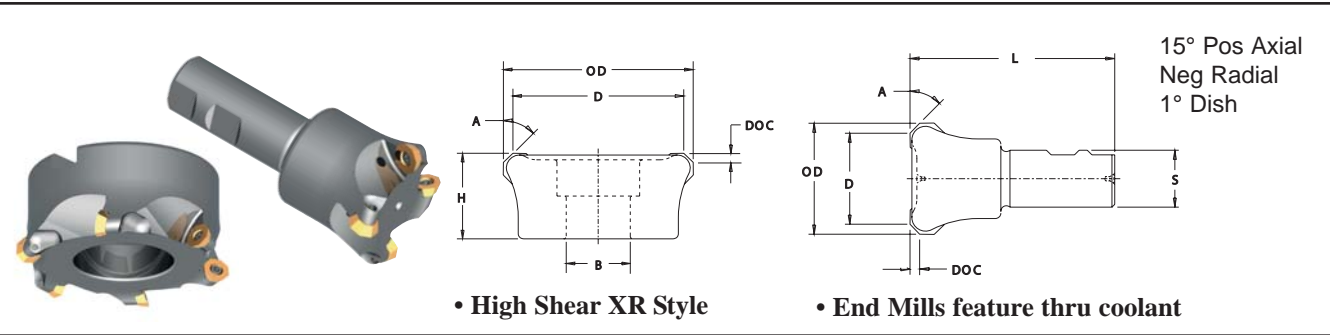
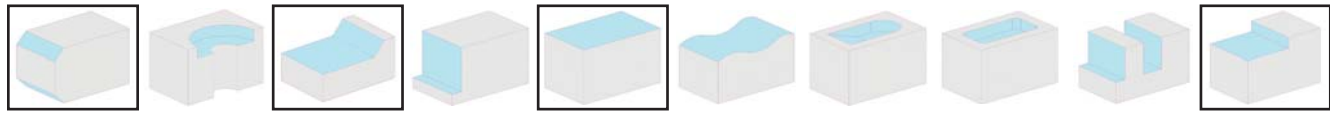


XR90 Face Mill Style
.625 IC

Toll FREE ! 1-800-843-8376

LOVEJOY

XR4 Series - 1/2" IC



XR4 Series - Dimensional Specifications

Face Mills								
Product Number	D	OD	B	H	A OECH / RECH	Max DOC OECH / RECH	Insert	# of Teeth
XRF2.00PN45OE4R.75	2.000	2.30	0.750	2.000	45° / R .250	.140 / R .250	OECH-432 / RECH-43	4
XRF2.50PN45OE4R.75	2.500	2.80	0.750	2.000	45° / R .250	.140 / R .250	OECH-432 / RECH-43	5
XRF2.50PN45OE4R1.00	2.500	2.80	1.000	2.000	45° / R .250	.140 / R .250	OECH-432 / RECH-43	5
XRF3.00PN45OE4R1.00	3.000	3.30	1.000	2.000	45° / R .250	.140 / R .250	OECH-432 / RECH-43	6
XRF4.00PN45OE4R1.50	4.000	4.29	1.500	2.000	45° / R .250	.140 / R .250	OECH-432 / RECH-43	6
End Mills								
Product Number	D	OD	S	L	A OECH / RECH	Max DOC OECH / RECH	Insert	# of Teeth
XRE1.25PN45OE4RW.75	1.250	1.55	0.750	4.25	45° / R .250	.140 / R .250	OECH-432 / RECH-43	3
XRE1.50PN45OE4RW.75	1.500	1.80	0.750	4.25	45° / R .250	.140 / R .250	OECH-432 / RECH-43	3
XRE2.00PN45OE4RW1.00	2.000	2.30	1.000	4.50	45° / R .250	.140 / R .250	OECH-432 / RECH-43	4
XRE2.00PN45OE4RW1.25	2.000	2.30	1.250	4.50	45° / R .250	.140 / R .250	OECH-432 / RECH-43	4
XRE2.50PN45OE4RW1.25	2.500	2.79	1.250	4.50	45° / R .250	.140 / R .250	OECH-432 / RECH-43	5

LEFT HAND cutters also available

Insert I.C. x Thickness						
.500 x .188	Insert Pg. 38 OECH-432__	Insert Pg. 38 OECH-432-10F	Insert Pg. 40 RECH-43	Insert Pg. 40 RECH-43-10F	Insert Screw 3605-0001-0033	Insert Screw Wrench 1557-TX15

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
PH Type Stainless Steel 17-4, 15-5, 13-8	500 - 1200	.003 - .015	OECH-432W520 GR 606jRm	OECH-432W520 GR LTC-14
Austenitic Stainless Steel 302, 304, 316	400 - 1350	.003 - .015	OECH-432-10F GR 586XRm	OECH-432-10F GR LTC-10
Titanium Alloy 3A1-2.5V, 5A16Sn-2Zr-1mo, 6A14V	120 - 325	.003 - .015	RECH-43-10F GR 586XRm	RECH-43-10F GR LTC-10
Carbon Steel 1018, 1020, 1215	600 - 1500	.005 - .020	OECH-432W520 GR 606jRm	OECH-432W520 GR LTC-14
Alloyed Steel 4130, 4340, 6150	400 - 1200	.005 - .020	OECH-432W520 GR 606jRm	OECH-432W520 GR LTC-14
Tool Steel	350 - 1000	.005 - .020	OECH-432W520 GR 606jRm	OECH-432W520 GR LTC-14
Nickel Based Material K-Monel, Inconel 625, A286	100 - 650	.003 - .015	RECH-43-10F GR 586XRm	RECH-43-10F GR LTC-10
Aluminum 2024, 6061, 7072	900 - 4000	.003 - .015	OECH-432-10F GR 586XRm	OECH-432-10F GR LTX

- Multi-purpose positive/negative geometry optimizes horsepower utilization
- Engineered to perform at accelerated spindle velocities
- Pockets accept either round or octagon inserts to extend application range
- Staggered insert spacing counters harmonic vibration (chatter) on 4.00 dia. & up only
- Inserts available in NEW PVD AlTiN coated grades 586XRm and 606jRm



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

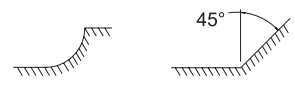
PCD / CBN

Slotters

Technical
Data

Holders

XR45 Series - 5/8" & 3/4" IC



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

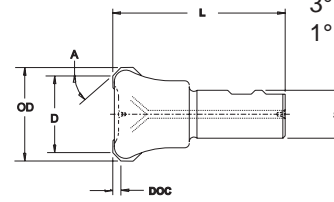
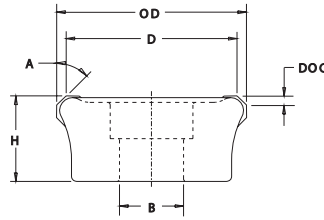
Sloters

Technical Data

Holders



• High Shear XR Style



15° Pos Axial
3° Neg Radial
1° Dish

• End Mills feature thru coolant

XR 45 Series - Dimensional Specifications

Face Mills									
Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Weight
XRF2.00PN45OE5R.75	2.00	2.366	0.75	2.00	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	3	2.00
XRF2.50PN45OE5R1.00	2.50	2.866	1.00	2.00	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	4	2.75
XRF3.00PN45OE5R1.00	3.00	3.366	1.00	2.00	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	5	3.50
XRF4.00PN45OE5R1.50	4.00	4.366	1.50	2.00	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	6	5.00
XRF5.00PN45OE5R1.50	5.00	5.366	1.50	2.00	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	6	7.75
XRF2.00PN45OE6R.75	2.00	2.440	0.75	2.00	45° / R.375	.208 / .375	OECH-634__ / RECH-63__	3	2.00
XRF2.50PN45OE6R1.00	2.50	2.940	1.00	2.00	45° / R.375	.208 / .375	OECH-634__ / RECH-63__	4	2.75
XRF3.00PN45OE6R1.00	3.00	3.440	1.00	2.00	45° / R.375	.208 / .375	OECH-634__ / RECH-63__	4	3.50
XRF4.00PN45OE6R1.50	4.00	4.440	1.50	2.00	45° / R.375	.208 / .375	OECH-634__ / RECH-63__	5	5.00
XRF5.00PN45OE6R1.50	5.00	5.440	1.50	2.00	45° / R.375	.208 / .375	OECH-634__ / RECH-63__	6	7.75
XRF6.00PN45OE6R2.00	6.00	6.440	2.00	2.00	45° / R.375	.208 / .375	OECH-634__ / RECH-63__	7	9.00
XRF8.00PN45OE5R2.00	8.00	8.380	2.00	2.00	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	9	21.00

End Mills									
Product Number	D	OD	S	L	A	DOC	Insert	Teeth	Weight
XRE1.25PN45OE5RW.75	1.25	1.616	0.75	4.25	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	2	1.00
XRE1.25PN45OE5RW1.00	1.25	1.616	1.00	4.50	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	2	1.00
XRE1.50PN45OE5RW.75	1.50	1.866	0.75	4.25	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	3	1.25
XRE1.50PN45OE5RW1.00	1.50	1.866	1.00	4.50	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	3	1.25
XRE2.00PN45OE5RW1.00	2.00	2.366	1.00	4.50	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	3	1.50
XRE2.00PN45OE5RW1.25	2.00	2.366	1.25	4.50	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	3	1.50
XRE2.50PN45OE5RW1.25	2.50	2.866	1.25	4.50	45° / R.312	.173 / .312	OECH-534__ / RECH-53__	4	2.00
XRE2.00PN45OE6RW1.25	2.00	2.440	1.25	4.50	45° / R.375	.208 / .375	OECH-634__ / RECH-63__	3	1.50
XRE2.50PN45OE6RW1.25	2.50	2.940	1.25	4.50	45° / R.375	.208 / .375	OECH-634__ / RECH-63__	4	2.00

LEFT HAND cutters also available

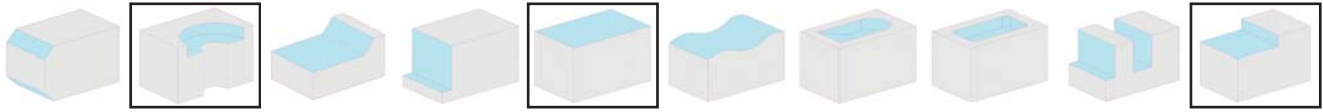
Insert I.C. Thickness	Insert Pg. 38	Insert Pg. 38	Insert Pg. 40	Insert Pg. 40	Insert Screw	Insert Screw Wrench
.625 x .188	OECH-534W520	OECH-534-10F	RECH-53W520	RECH-53-10F	3605-0001-0023	1557-TX20
.750 x .188	OECH-634W520	OECH-634-10F	RECH-63W520	RECH-63-10F		

Machining Parameters

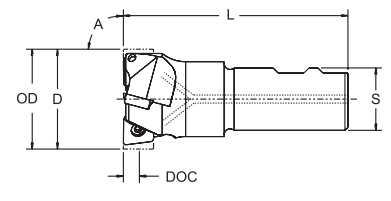
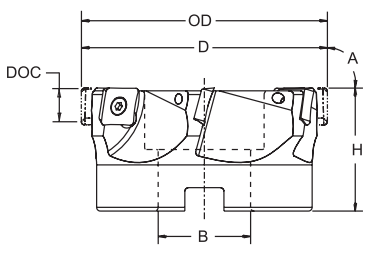
Material	SFPM	FPT	Primary	Secondary
PH Type Stainless Steel 17-4, 15-5, 13-8	500-1200	.003-.015	OECH-634-10F GR 606jRm	OECH-634W520 GR LTC-14
Austenitic Stainless Steel 302, 304, 316	400-1350	.003-.015	OECH-634-10F GR 586XRm	OECH-634W520 GR LTC-10
Titanium Alloy 3A1-2.5V, 5A16Sn-2Zr-1mo, 6A14V	120-325	.003-.015	RECH-63-10F GR 586XRm	RECH-63-10F GR LTC-10
Carbon Steel 1018, 1020, 1215	600-1500	.005-.020	OECH-634W520 GR 606jRm	OECH-634W520 GR LTC-14
Alloyed Steel 4130, 4340, 6150	400-1200	.005-.020	OECH-634W520 GR 606jRm	OECH-634W520 GR LTC-14
Tool Steel	350-1000	.005-.020	OECH-634W520 GR 606jRm	OECH-634W520 GR LTC-14
Nickel Based Material K-Monel, Inconel 625, A286	100-650	.003-.015	RECH-63-10F GR 586XRm	RECH-63-10F GR LTC-10
Aluminum 2024, 6061, 7072	900-4000	.003-.015	OECH-634-10F GR LTC-10	RECH-63-10F GR LTC-10

- Multi-purpose positive/negative geometry optimizes horsepower utilization
- Engineered to perform at accelerated spindle velocities
- Pockets accept either round or octagon inserts to extend application range
- Staggered insert spacing counters harmonic vibration (chatter) on 4.00 dia. and up only
- Inserts available in NEW PVD AlTiN coated grades 586XRm and 606jRm

XR90 Series



15° Pos Axial Neg Radial 90° Shoulder



• End mills feature thru coolant

• XR90 Generates a true 90° when using the LECH dished and SECH-534 Flat Face inserts.

XR 90 Series - Dimensional Specifications

Face Mills									
Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Weight
XRF2.00PN90SE5R.75	2.00	2.00	0.75	2.000	90°	.540	SECH-534__	3	2.00
XRF2.50PN90SE5R1.00	2.50	2.50	1.00	2.000	90°	.540	SECH-534__	4	2.75
XRF3.00PN90SE5R1.00	3.00	3.00	1.00	2.000	90°	.540	SECH-534__	5	3.50
XRF4.00PN90SE5R1.50	4.00	4.00	1.50	2.000	90°	.540	SECH-534__	6	5.00
XRF5.00PN90SE5R1.50	5.00	5.00	1.50	2.000	90°	.540	SECH-534__	7	7.75
XRF6.00PN90SE5R2.00	6.00	6.00	2.00	2.000	90°	.540	SECH-534__	7	9.00

End Mills									
Product Number	D	OD	S	L	A	DOC	Insert	Teeth	Weight
XRE1.50PN90SE5RW.75	1.50	1.50	0.75	4.25	90°	.540	SECH-534__	2	1.00
XRE1.50PN90SE5RW1.00	1.50	1.50	1.00	4.50	90°	.540	SECH-534__	2	1.25
XRE2.00PN90SE5RW1.25	2.00	2.00	1.25	4.50	90°	.540	SECH-534__	3	1.50

LEFT HAND cutters also available

Insert I.C. Thickness					
.625 x .188	Insert Pg. 42 SECH-534-10F	Insert Pg. 42 SECH-534W520	Insert Pg. 37 LECH-534-10F	Insert Screw 3605-0001-0023	Insert Screw Wrench 1557-TX20

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
PH Type Stainless Steel 17-4, 15-5, 13-8	500-1200	.003-.015	SECH-534-10F GR 606jRm	SECH-534W520 GR LTC-14
Austenitic Stainless Steel 302, 304, 316	400-1350	.003-.015	SECH-534-10F GR 586XRm	SECH-534W520 GR LTC-10
Titanium Alloy 3A1-2.5V, 5A16Sn-2Zr-1mo, 6A14V	120-325	.003-.015	SECH-534-10F GR 586XRm	SECH-534-10F GR LTC-10
Carbon Steel 1018, 1020, 1215	600-1500	.005-.020	SECH-534W520 GR 606jRm	SECH-534W520 GR LTC-14
Alloyed Steel 4130, 4340, 6150	400-1200	.005-.020	SECH-534W520 GR 606jRm	SECH-534W520 GR LTC-14
Tool Steel	350-1000	.005-.020	SECH-534W520 GR 606jRm	SECH-534W520 GR LTC-14
Nickel Based K-Monel, Inconel 625, A286	100-50	.003-.015	SECH-534-10F GR 586XRm	SECH-534W520 GR LTC-10
Aluminum 2024, 6061, 7072	900-4000	.003-.015	SECH-534-10F GR LTC-10	SECH-534-10F GR LTC-10

- Multi-purpose positive/negative geometry optimizes horsepower utilization
- Engineered to perform at accelerated spindle velocities
- Staggered insert spacing counters harmonic vibration (chatter) on 4.00 dia. and up only
- Inserts available in NEW PVD AlTiN coated grades 586XRm and 606jRm



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

Mold and Die Tooling

Cavity Machining

**558 Series
End Mills**
(not shown)

**557 Series
Ball End Mills**

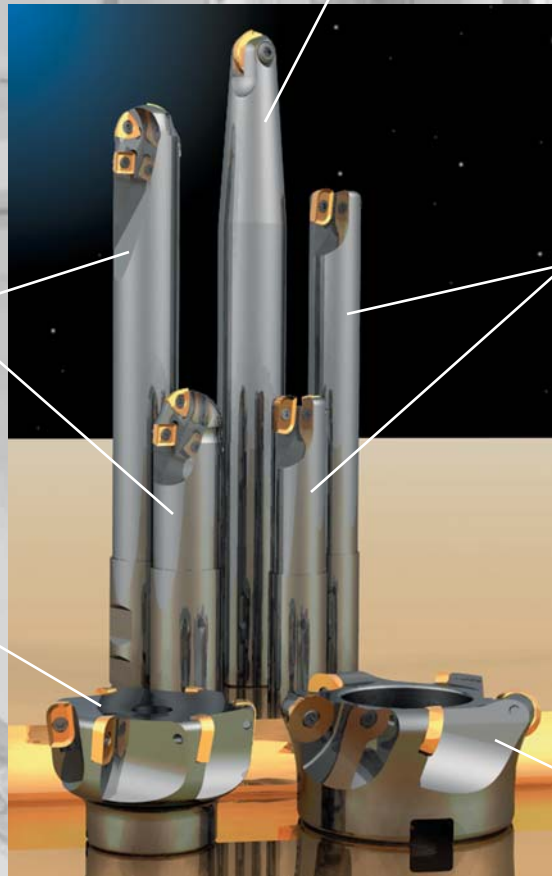
**540 Series
Ball End Mills**

**290 Series
End Mills**

**291 Series
End Mills
w/backdraft
(not shown)**

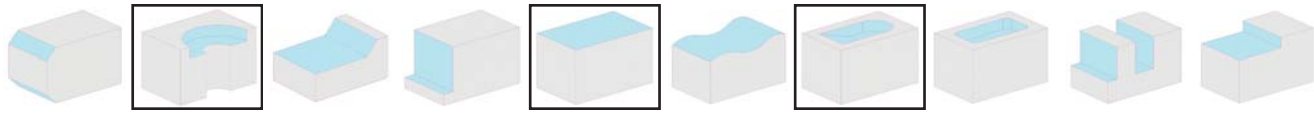
**291 Series
Face Mills**

**255 Series
Face Mills**



255 Series

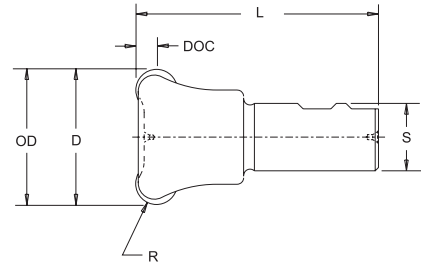
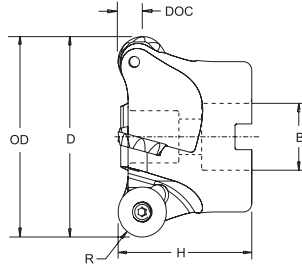
Round 



Face Mill

End Mill

15° Pos Axial
3° Neg Radial
1° Dish



• Ramp Capability Configuration

255 Series - Dimensional Specifications





Face Mills

Product Number	D	OD	B	H	R	DOC	Insert	Teeth	Weight
255F0300ARE6-100R	3.00	3.00	1.00	2.00	.375	.375	RECH-63__	4	3.50
255F0400ARE6-150R	4.00	4.00	1.50	2.00	.375	.375	RECH-63__	5	5.00

End Mills

Product Number	D	OD	S	L	R	DOC	Insert	Teeth	Weight
255E0200ARE6-W075R	2.00	2.00	0.75	4.25	.375	.375	RECH-63__	3	1.50

LEFT HAND cutters also available

Insert I.C. x Thickness				
.750 x .188	RECH-63-10F	RECH-63W520	3605-0001-0023	1557-TX20

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
PH Type Stainless Steel 17-4, 15-5, 13-8	500-1200	.003-.015	RECH-63-10F GR 606jRm	RECH-63W520 GR LTC-14
Austenitic Stainless Steel 302, 304, 316	400-1350	.003-.015	RECH-63-10F GR 586XRm	RECH-63W520 GR LTC-10
Titanium Alloy 3A1-2.5V, 5A16Sn-2Zr-1mo, 6A14V	120-325	.003-.015	RECH-63-10F GR 586XRm	RECH-63-10F GR LTC-10
Carbon Steel 1018, 1020, 1215	600-1500	.005-.020	RECH-63W520 GR 606jRm	RECH-63W520 GR LTC-14
Alloyed Steel 4130, 4340, 6150	400-1200	.005-.020	RECH-63W520 GR 606jRm	RECH-63W520 GR LTC-14
Tool Steel	350-1000	.005-.020	RECH-63W520 GR 606jRm	RECH-63W520 GR LTC-14
Nickel Based K-Monel, Inconel 625, A286	100-650	.003-.015	RECH-63-10F GR 586XRm	RECH-63W520 GR LTC-10
Aluminum 2024, 6061, 7072	900-4000	.003-.015	RECH-63-10F GR LTC-10	RECH-63-10F LTC-10

- Increased face clearance from standard XR series for increased ramp capability
- Multi-purpose positive/negative geometry optimizes horsepower utilization
- Diameter measured at maximum diameter for profile mold programming



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

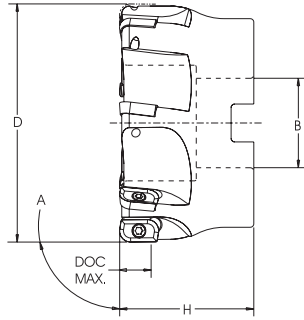
290 Series



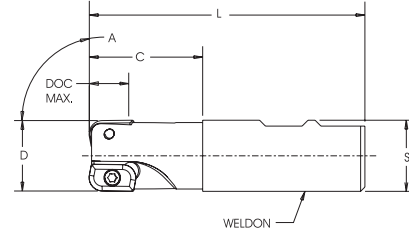
Index

Specials

Inserts



7° Axial Pos Radial 0° Lead - Face Mill
7° Axial Neg Radial 0° Lead - End Mill



• Square Shoulder • Ramping Capability

• Extended Reach • Square Shoulder • Ramping Capability

• End Mills with Thru Coolant Capability

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

290 Series - Dimensional Specifications

Face Mills

Product Number	D	B	H	A	DOC	Insert	Teeth	Weight
290F0200ACP3-075R	2.00	0.75	2.25	90°	.61	CPEH-32.63-__4W	5	1.75
290F0250ACP3-075R	2.50	0.75	2.25	90°	.61	CPEH-32.63-__4W	6	2.75
290F0300ACP3-100R	3.00	1.00	2.25	90°	.61	CPEH-32.63-__4W	6	4.00
290F0400ACP3-150R	4.00	1.50	2.25	90°	.61	CPEH-32.63-__4W	8	6.75

End Mills

Product Number	D	S	C	L	A	DOC	Insert	Teeth	Weight
290E0100ACP3-W100R	1.00	1.00	1.60	3.88	90°	.61	CPEH-32.63-__4W	2	0.88
290E0100BCP3-W100R	1.00	1.00	3.00	5.28	90°	.61	CPEH-32.63-__4W	2	1.25
290E0100CCP3-W100R	1.00	1.00	4.00	6.28	90°	.61	CPEH-32.63-__4W	2	1.50
290E0100DCP3-W125R	1.00	1.25	5.00	7.28	90°	.61	CPEH-32.63-__4W	2	1.88
290E0100ECP3-W125R	1.00	1.25	6.00	8.28	90°	.61	CPEH-32.63-__4W	2	2.00
290E0125ACP3-W100R	1.25	1.00	1.60	3.88	90°	.61	CPEH-32.63-__4W	3	1.00
290E0125BCP3-W125R	1.25	1.25	3.00	5.28	90°	.61	CPEH-32.63-__4W	3	2.00
290E0125DCP3-W125R	1.25	1.25	5.00	7.28	90°	.61	CPEH-32.63-__4W	3	2.50
290E0150ACP3-W100R	1.50	1.00	1.60	3.88	90°	.61	CPEH-32.63-__4W	4	1.25
290E0150ACP3-W125R	1.50	1.25	1.60	3.88	90°	.61	CPEH-32.63-__4W	4	1.50
290E0150BCP3-W125R	1.50	1.25	3.00	5.28	90°	.61	CPEH-32.63-__4W	4	2.25
290E0150DCP3-W125R	1.50	1.25	5.00	7.28	90°	.61	CPEH-32.63-__4W	4	3.25
290E0200ACP3-W125R	2.00	1.25	1.60	3.88	90°	.61	CPEH-32.63-__4W	5	2.25
290E0200CCP3-W200R	2.00	2.00	4.00	7.25	90°	.61	CPEH-32.63-__4W	5	6.50
290E0200ECP3-W200R	2.00	2.00	6.00	9.25	90°	.61	CPEH-32.63-__4W	5	8.25

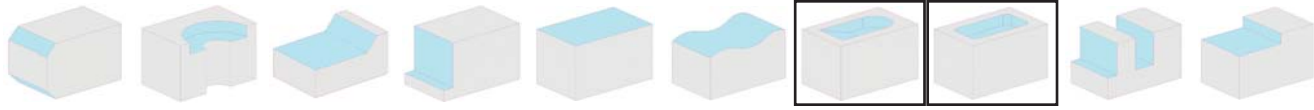
Insert I.C. x Thickness	Insert Pg. 31	Insert Screw	Insert Screw Wrench
.375 x .188	CPEH-32.63-2-4W CPEH-32.63-4-4W CPEH-32.63-6-4W CPEH-32.63-8-4W CPEH-32.63-12-4W	3605-0001-0033	1557-TX15

Machining Parameters

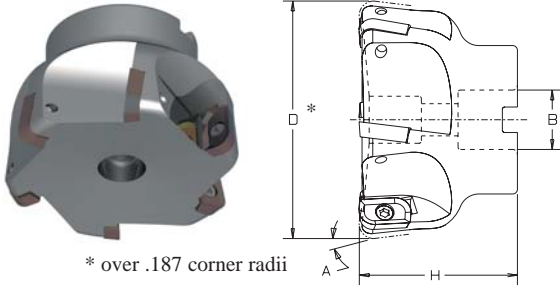
Material	SFPM	FPT	Primary	Secondary
Tool Steel, D2, P20	300-700	.003-.010	CPEH-32.63-__-4W GR 606jRm	CPEH-32.63-__-4W GR LTC-14
Stainless Steel 300 Series	300-600	.003-.008	CPEH-32.63-__-4W GR 586XRm	CPEH-32.63-__-4W GR LTC-10

- Chip control insert for optimum tool performance
- Large chip gullets
- Large offering of insert corner radii
- Extended length tools for long reach applications

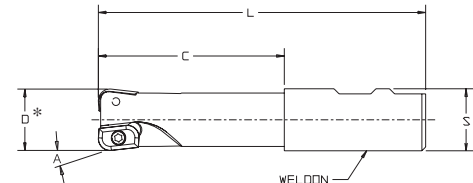
291 Series



7° Axial Neg Radial 7° Back Taper - Face Mill
 7° Axial -8°20' Radial 7° Back Taper - End Mill



7° Backdraft • Ramping Capability Configuration



* over .187 corner radii



Extended Reach • 7° Backdraft Configuration

291 Series - Dimensional Specifications

Face Mills								
Product Number	D *	B		H	A	Insert	Teeth	Weight
291F0200ACP3-075R	2.00	0.75		2.00	7°	CPEH-32.63-__4W	4	1.50
291F0300ACP3-075R	3.00	0.75		2.00	7°	CPEH-32.63-__4W	6	2.38
End Mills								
Product Number	D *	S	C	L	A	Insert	Teeth	Weight
291E0100BCP3-W100R	1.00	1.00	3.00	5.28	7°	CPEH-32.63-__4W	2	1.13
291E0100CCP3-W100R	1.00	1.00	4.00	6.28	7°	CPEH-32.63-__4W	2	1.38
291E0100DCP3-W125R	1.00	1.25	5.00	7.28	7°	CPEH-32.63-__4W	2	1.88
291E0100ECP3-W125R	1.00	1.25	6.00	8.28	7°	CPEH-32.63-__4W	2	2.00

Note: When using a corner radius other than the 12 (CPEH-32.63-12-4W) that the cutter was designed over, use the chart below to determine the correct Dimensional Specifications for your cutter.

291 Series - End Mill and Face Mill *Insert Change* Specifications

Product Series	Cutting Point	Corner Radius	D+	L+	H+	Insert Number
291	2	.031	.046	.011	.011	CPEH-32.63-2-4W
291	4	.062	.037	.009	.009	CPEH-32.63-4-4W
291	6	.094	.027	.007	.007	CPEH-32.63-6-4W
291	8	.125	.018	.005	.005	CPEH-32.63-8-4W
291	12	.188	.000	.000	.000	CPEH-32.63-12-4W

Insert I.C. x Thickness	Insert Pg. 31	Insert Screw	Insert Screw Wrench
.375 x .188	CPEH-32.63-2-4W	3605-0001-0033	1557-TX15
	CPEH-32.63-4-4W		
	CPEH-32.63-6-4W		
	CPEH-32.63-8-4W		
	CPEH-32.63-12-4W		

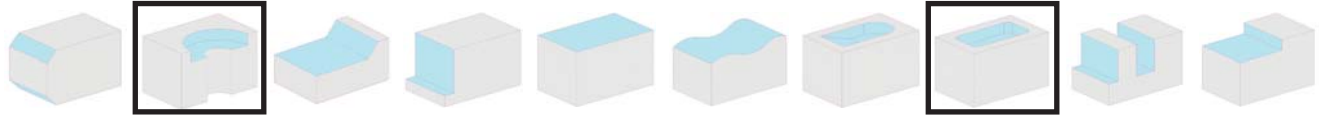
Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Tool Steel, D2, P20	300-700	.002-.006	CPEH-32.63-__-4W GR 606jRm	CPEH-32.63-__-4W GR LTC-14
Stainless Steel 300 Series	250-600	.002-.006	CPEH-32.63-__-4W GR 586XRm	CPEH-32.63-__-4W GR LTC-10

- Chip control insert for optimum tool performance
- Large offering of insert corner radii
- Back taper design to allow reach in tight corners
- Extended length tool for long reach applications
- Accepts same insert as 290 series



293 Series



Index
Specials
Inserts
General
Cavity Mold
Gray Iron
PCD / CBN
Sloters
Technical Data
Holders

- Engineered to plunge in the Z axis
- End Mills with thru coolant

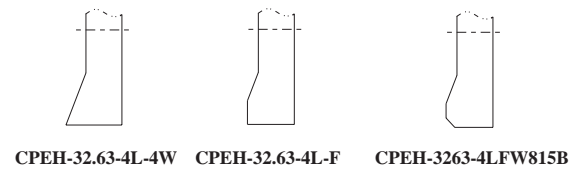
293 Series - Dimensional Specifications

End Mills							
Product Number	D	A	S	L	DOC	Insert *	Teeth
293E0200CCP3-W125R	2.00	0°	1.25	7.88	.56	CPEH-32.63-4L__ CPEH-3263-4L__	3
Face Mills							
Product Number	D	A	B	H	DOC	Insert *	Teeth
293F0250ACP3-075R	2.50	0°	0.75	2.00	.56	CPEH-32.63-4L__ CPEH-3263-4L__	5
293F0300ACP3-100R	3.00	0°	1.00	2.00	.56	CPEH-32.63-4L__ CPEH-3263-4L__	6
293F0400ACP3-125R	4.00	0°	1.25	2.00	.56	CPEH-32.63-4L__ CPEH-3263-4L__	6
293F0500ACP3-150R	5.00	0°	1.50	2.00	.56	CPEH-32.63-4L__ CPEH-3263-4L__	8
293F0600ACP3-200R	6.00	0°	2.00	2.00	.56	CPEH-32.63-4L__ CPEH-3263-4L__	9

LEFT HAND cutters also available

Insert Edge Profiles

Insert I.C. x Thickness			
	Insert Pg 31 *	Insert Screw	Insert Screw Wrench
.375 x .188	CPEH-32.63-4L__ CPEH-3263-4L__	3605-0001-0033	1557-TX15



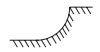
* Left hand inserts are used in Right hand cutters. Use RH inserts for dimensions & Grade selections.

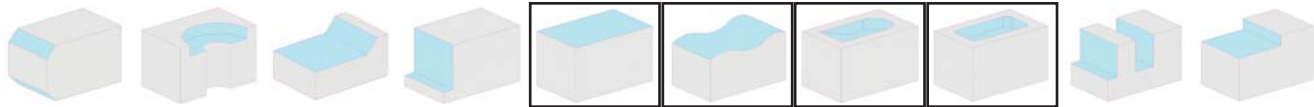
Machining Parameters


Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron, Class 30	200-500	.002-.008	CPEH-32.63-4L-4W GR 586XRm	CPEH-32.63-4L-4W GR LTC-10
Tool Steel, D2	250-350	.002-.008	CPEH-3263-4LFW815B GR LT-5565	CPEH-3263-4LFW815B GR LTC-14
Medium Alloy Steel	300-700	.002-.008	CPEH-3263-4LFW815B GR LT-5565	CPEH-3263-4LFW815B GR LTC-14
Tool Steel, P20	300-700	.002-.008	CPEH-3263-4LFW815B GR LT-5565	CPEH-3263-4LFW815B GR LTC-14
Soft Alloy Steel	400-800	.002-.008	CPEH-32.63-4L-4WB GR 606jRm	CPEH-32.63-4L-4WB GR LTC-14
Stainless Steel, 17-4PH, 15-5PH	300-700	.002-.008	CPEH-3263-4LFW815B GR LT-5565	CPEH-3263-4LFW815B GR LTC-14
Stainless Steel, 304, 316	200-500	.002-.008	CPEH-32.63-4L-4W GR 586XRm	CPEH-32.63-4L-4W GR LTC-10

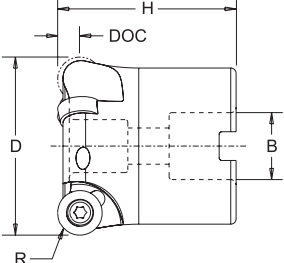
LOVEJOY Tool Company's new Z Axis Plunge mill is intended to be used in applications where there are increased metal removal rates and when tool overhang ratios are exceeded. Tool deflection is decreased when plunging as the cutting forces are directed back into the spindle. This new machining system comes in sizes ranging from 2.00" to 6.00" in diameter.


355 Series

Round 

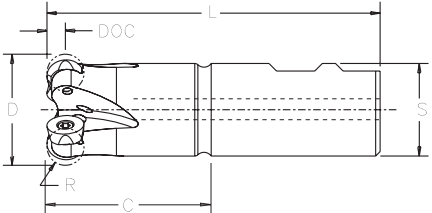








3° Neg Axial 3° Neg Radial






• Roughing Applications • Copy Milling Configuration • End Mills have Thru Coolant

355 Series - Dimensional Specifications

End Mills							
Product Number	D	S	R	C	DOC	L	Teeth
355E0125ARC4-W100R	1.250	1.000	.250	1.97	.250	4.250	3
355E0150BRC4-W075R	1.500	0.750	.250	2.22	.250	4.250	4
355E0150ARC4-W125R	1.500	1.250	.250	2.22	.250	4.500	3
355E0150BRC4-W125R	1.500	1.250	.250	2.22	.250	4.500	4
355E0200ARC4-W125R	2.000	1.250	.250	2.16	.250	4.500	4
355E0200BRC4-W125R	2.000	1.250	.250	2.22	.250	4.500	5

Face Mills							
Product Number	D	B	R		DOC	H	Teeth
355F0200ARC4-075R	2.000	0.750	.250		.250	2.000	4
355F0200BRC4-075R	2.000	0.750	.250		.250	2.000	5
355F0250ARC4-100R	2.500	1.000	.250		.250	2.000	5
355F0300ARC4-100R	3.000	1.000	.250		.250	2.000	6
355F0400ARC4-150R	4.000	1.500	.250		.250	2.000	7
355F0500ARC4-150R	5.000	1.500	.250		.250	2.000	9
355F0600ARC4-200R	6.000	2.000	.250		.250	2.000	11

LEFT HAND cutters also available

Insert I.C. x Thickness			
	Insert Pg. 39	Insert Screw	Insert Screw Wrench
.500 x .188	RCCH-43W520 RCCH-43-10F	3605-0001-0033	1557-TX15

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Tool Steel, D2, P20	300-700	.004-.012	RCCH-43W520 GR 606jRm	RCCH-43W520 GR LTC-14
Stainless Steel 300 Series	250-500	.004-.008	RCCH-43-10F GR 586XRm	RCCH-43-10F GR LTC-10

- Unique design with a combination of rakes to minimize deflection and maximize performance
- Strong design for roughing applications
- Positive round inserts with Negative rake gives smooth cutting action with maximum tool life



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

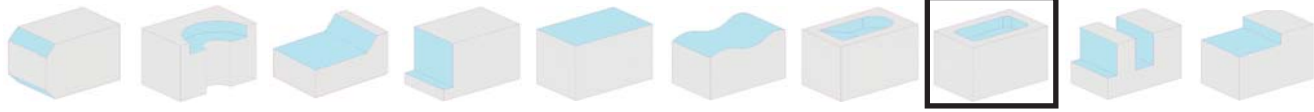
Slotters

Technical Data

Holders

356 Series

Round 



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

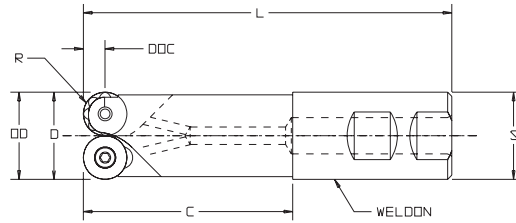
Slotters

Technical Data

HOLDERS



0° Axial 0° Radial







- Ramping and Profiling • Mold and Die Steels
- Light Roughing Applications • Plunge Milling Configuration • End Mills have Thru Coolant

356 Series End Mills - Dimensional Specifications

Product Number	OD	D	S	L	R	DOC	C	Insert	Teeth
356E0100ARC4-W100R	1.00	1.00	1.00	4.78	0.250	0.250	2.50	RSECH-43__ RECH-43__	2
356E0100BRC4-W100R	1.00	1.00	1.00	6.78	0.250	0.250	4.50	RSECH-43__ RECH-43__	2
356E0125BRD5-W125R	1.25	1.25	1.25	5.28	0.312	0.312	3.00	RECH-53__	2
356E0125DRD5-W125R	1.25	1.25	1.25	7.28	0.312	0.312	5.00	RECH-53__	2
356E0150BRD6-W150R	1.50	1.50	1.50	6.19	0.375	0.375	3.50	RECH-63__	2
356E0150DRD6-W150R	1.50	1.50	1.50	8.18	0.375	0.375	5.49	RECH-63__	2

LEFT HAND cutters also available

Insert I.C. x Thickness				
	Insert Pg. 40	Insert Pg. 40	Insert Screw	Insert Screw Wrench
.500 x .188	RSECH-43__	RSECH-43-10F	3605-0001-0033	1557-TX15
.625 x .188	RECH-53__	RECH-53-10F	3605-0001-0023	1557-TX20
.750 x .188	RECH-63__	RECH-63-10F	3605-0001-0023	1557-TX20

NOTE:

RSECH inserts have 4 indexing flats


RECH inserts have 8 indexing flats

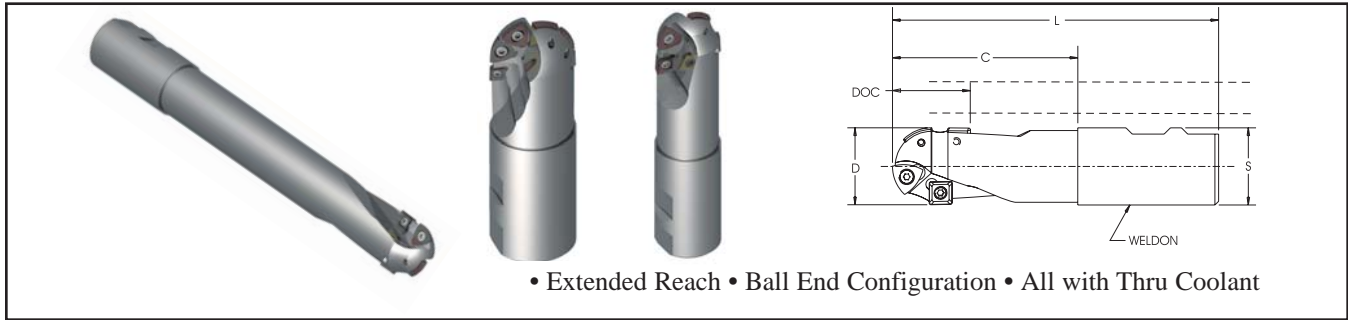
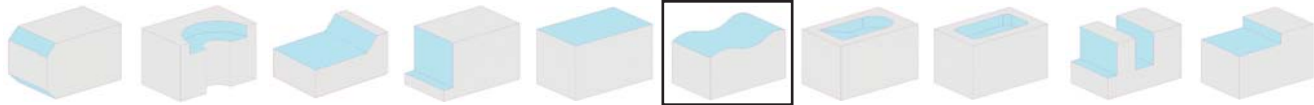
Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Tool Steel, D2, P20	300-700	.003-.012	RECH-__W520 GR 606jRm RSECH-43__W520 GR 606jRm	RECH-__W520 GR LTC-14 RSECH-43__W520 GR LTC-14
Stainless Steel 300 Series	250-500	.003-.012	RECH-__-10F GR 586XRm RSECH-43__-10F GR 586XRm	RECH-__-10F GR LTC-10 RSECH-43__-10F GR LTC-10
Aluminum	1200-1800	.003-.012	RECH-__-10F GR 586XRm RSECH-43__-10F GR 586XRm	RECH-__-10F GR LTC-10 RSECH-43__-10F GR LTC-10
Steel	400-600	.003-.012	RECH-__W520 GR 606jRm RSECH-43__W520 GR 606jRm	RECH-__W520 GR LTC-14 RSECH-43__W520 GR LTC-14
50 Rc	100	.003-.012	RECH-__W520 GR 586XRm RSECH-43__W520 GR 586XRm	RECH-__W520 GR LTC-10 RSECH-43__W520 GR LTC-10
Titanium	100	.003-.012	RECH-__-10F GR 586XRm RSECH-43__-10F GR 586XRm	RECH-__-10F GR LTC-10 RSECH-43__-10F GR LTC-10
Stainless	500	.003-.012	RECH-__-10F GR 586XRm RSECH-43__-10F GR 586XRm	RECH-__W520 GR 586XRm RSECH-43__W520 GR 586XRm

- Light roughing in mold and die steels
- Plunge rates to .015 FPT (.500 DOC before dwell)
- Large step over capacity (50% tool diameter)
- Good for Stainless Steel and Aluminum
- 1.25 and 1.50 diameter tools use the same RECH insert as XR45 Face & End Mill tooling
- Offered in multi-diameter standard & extended lengths
- Thru the shank coolant

540 Series

Round 







- Extended Reach • Ball End Configuration • All with Thru Coolant

540 Series - Dimensional Specifications

Product Number	D	S	C	L	DOC	Insert	Screw	Teeth	Weight
540E0100BCP3-W100R	1.00	1.00	3.00	5.28	1.11	CTPCB-32-16 SPEX-32.52	-0005 -0022	2 2	1.25
540E0100BCP3-W125R	1.00	1.25	3.00	5.28	1.11	CTPCB-32-16 SPEX-32.52	-0005 -0022	2 2	1.38
540E0100CCP3-W125R	1.00	1.25	4.00	6.28	1.11	CTPCB-32-16 SPEX-32.52	-0005 -0022	2 2	1.75
540E0100ECP3-W125R	1.00	1.25	6.00	8.28	1.11	CTPCB-32-16 SPEX-32.52	-0005 -0022	2 2	2.00
540E0100FCP3-W125R	1.00	1.25	7.00	9.28	1.11	CTPCB-32-16 SPEX-32.52	-0005 -0022	2 2	2.00
540E0100GCP3-W125R	1.00	1.25	8.00	10.28	1.11	CTPCB-32-16 SPEX-32.52	-0005 -0022	2 2	2.50
540E0125BCP3-W100R	1.25	1.00	3.00	5.28	1.23	CTPCB-32-20 SPEX-32.52	-0005 -0021	2 2	1.88
540E0125BCP3-W125R	1.25	1.25	3.00	5.28	1.23	CTPCB-32-20 SPEX-32.52	-0005 -0021	2 2	2.00
540E0125CCP3-W125R	1.25	1.25	4.00	6.28	1.23	CTPCB-32-20 SPEX-32.52	-0005 -0021	2 2	2.25
540E0125ECP3-W125R	1.25	1.25	6.00	8.28	1.23	CTPCB-32-20 SPEX-32.52	-0005 -0021	2 2	3.00
540E0125GCP3-W125R	1.25	1.25	8.00	10.28	1.23	CTPCB-32-20 SPEX-32.52	-0005 -0021	2 2	3.50
540E0150BCP3-W125R	1.50	1.25	3.00	5.28	1.35	CTPCB-43-24 SPEX-32.52	-0004 -0021	2 2	4.00
540E0200BCP3-W200R	2.00	2.00	3.00	6.25	1.61	CTPCB-43-32 SPEX-32.52	-0004 -0021	4 2	5.50
540E0200DCP3-W200R	2.00	2.00	5.00	8.25	1.61	CTPCB-43-32 SPEX-32.52	-0004 -0021	4 2	7.25
540E0200FCP3-W200R	2.00	2.00	7.00	10.25	1.61	CTPCB-43-32 SPEX-32.52	-0004 -0021	4 2	9.00

LEFT HAND cutters also available

Insert I.C. x Thickness	 Insert Pg. 32	 Insert Pg. 45	 Insert Screw	 Insert Screw Wrench
.375 x .125	CTPCB-32-16B		3605-0001-0005	1557-TX10
.375 x .125	CTPCB-32-16J		3605-0001-0005	1557-TX10
.375 x .125	CTPCB-32-20B		3605-0001-0005	1557-TX10
.375 x .125	CTPCB-32-20J		3605-0001-0005	1557-TX10
.500 x .188	CTPCB-43-24		3605-0001-0004	1557-TX25
.500 x .188	CTPCB-43-32B		3605-0001-0004	1557-TX25
.500 x .188	CTPCB-43-32J		3605-0001-0004	1557-TX25
.375 x .156		SPEX-32.52	3605-0001-0021 / -0022	1557-TX10

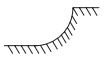
Machining Parameters

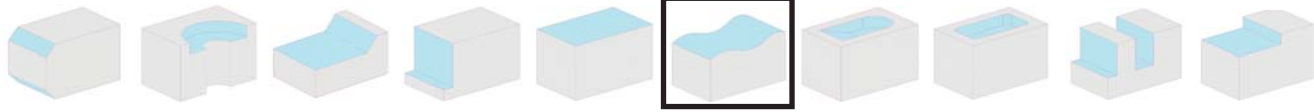
Material	SFPM	FPT	Primary	Secondary
Tool Steel, D2, P20	400-800	.003-.010	GR 606jRm	GR LTC-14
Stainless Steel 300 Series	300-600	.003-.008	GR 586XRm	GR LTC-10

- Wide offering of extensions for hard to reach places
- Ball nose end with ability to do side cutting
- Multi-function design performs, ramping, channeling, peripheral and plunging cuts
- All have through coolant



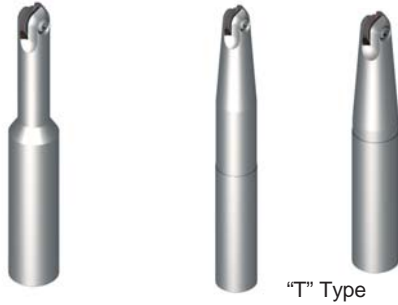
557 Series

Round 

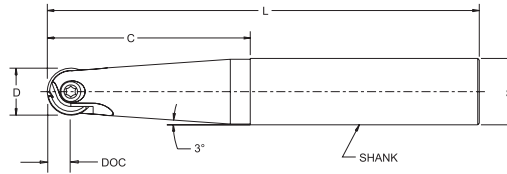


Note: tools ending with "T" indicate taper

End Mills



"T" Type










• Also available with through coolant

• Extended Reach • 2 Effective • Collet Mount Straight Shank Configuration

557 Series - Dimensional Specifications

Product Number	D	S	C	L	DOC	Insert	* Insert	Screw	Teeth	Weight
557E0025ABC2-S050RT	.250	.500	1.250	4.000	.125	BCCG-21.2	BCCG-21.2	GWS 06	1	0.25
557E0031ABC2-S050RT	.312	.500	1.906	5.500	.156	BCEG-2.51	BCCG-2.51.3-8G	GWS 08	1	0.25
557E0037ABC3-S050R	.375	.500	1.344	3.562	.187	BCEG/A-31.5	BCCG/A-31.5-8G	GWS 10	1	0.25
557E0037BBC3-S050RT	.375	.500	1.375	5.875	.187	BCEG/A-31.5	BCCG/A-31.5-8G	GWS 10	1	0.25
557E0050ABC4-S050R	.500	.500	1.250	3.562	.250	BCEG/A-41.5	BCCG/A-41.5-8G	GWS 12	1	0.25
557E0050BBC4-S050R	.500	.500	1.250	5.125	.250	BCEG/A-41.5	BCCG/A-41.5-8G	GWS 12	1	0.25
557E0050CBC4-S050R	.500	.500	1.813	5.875	.250	BCEG/A-41.5	BCCG/A-41.5-8G	GWS 12	1	0.25
557E0050DBC4-S062RT	.500	.625	2.312	6.281	.250	BCEG/A-41.5	BCCG/A-41.5-8G	GWS 12	1	0.50
557E0062ABC5-S062R	.625	.625	1.375	5.500	.312	BCEG/A-52	BCCG/A-52-8G	GWS 16	1	0.50
557E0062BBC5-S062R	.625	.625	2.000	6.281	.312	BCEG/A-52	BCCG/A-52-8G	GWS 16	1	0.50
557E0062CBC5-S075RT	.625	.750	2.562	6.875	.312	BCEG/A-52	BCCG/A-52-8G	GWS 16	1	0.50
557E0075ABC6-S075R	.750	.750	1.750	4.500	.375	BCEG/A-62	BCCG/A-62-8G	GWS 20	1	0.50
557E0075BBC6-S075R	.750	.750	1.750	6.281	.375	BCEG/A-62	BCCG/A-62-8G	GWS 20	1	0.75
557E0075CBC6-S075R	.750	.750	2.375	6.875	.375	BCEG/A-62	BCCG/A-62-8G	GWS 20	1	1.00
557E0075DBC6-S100RT	.750	1.000	3.000	7.500	.375	BCEG/A-62	BCCG/A-62-8G	GWS 20	1	1.25
557E0075EBC6-S075R	.750	.750	2.375	8.250	.375	BCEG/A-62	BCCG/A-62-8G	GWS 20	1	1.00
557E0075FBC6-S100RT	.750	1.000	3.000	9.437	.375	BCEG/A-62	BCCG/A-62-8G	GWS 20	1	1.75
557E0100ABC8-S100R	1.000	1.000	1.750	6.281	.500	BCEG/A-82.5	BCCG/A-82.5-8G	GWS 25	1	1.25
557E0100BBC8-S100R	1.000	1.000	2.750	7.500	.500	BCEG/A-82.5	BCCG/A-82.5-8G	GWS 25	1	1.75
557E0100CBC8-S125RT	1.000	1.250	3.875	8.250	.500	BCEG/A-82.5	BCCG/A-82.5-8G	GWS 25	1	2.25
557E0100DBC8-S100R	1.000	1.000	3.125	9.062	.500	BCEG/A-82.5	BCCG/A-82.5-8G	GWS 25	1	2.00
557E0100EBC8-S125RT	1.000	1.250	3.875	9.437	.500	BCEG/A-82.5	BCCG/A-82.5-8G	GWS 25	1	2.00
557E0125ABC10-S125R	1.250	1.250	2.187	6.875	.625	BCEG/A-103	BCCG/A-103-8G	GWS 32	1	2.25
557E0125BBC10-S125R	1.250	1.250	3.125	8.250	.625	BCEG/A-103	BCCG/A-103-8G	GWS 32	1	2.75
557E0125CBC10-S150RT	1.250	1.500	4.750	9.437	.625	BCEG/A-103	BCCG/A-103-8G	GWS 32	1	4.00

* NOTE! BCCG used in 557 Series tooling only, for finish cuts only from .005 to .035 depths

Insert I.C. x Thickness							
	Insert Pg. 29	Insert Pg. 29	* Insert Pg. 29	Insert Pg. 30	Insert Screw	Insert Screw Wrench	Insert Screw Wrench
.312 x .078	BCEG-2.51	BCEA-31.5	BCCG-2.51.3-8G	BCCG-2.51_	GWS 08	1557-TX10	1557-TX08
.375 x .098	BCEG-31.5	BCEA-31.5	BCCG-31.5-8G	BCCG-31.5_	GWS 10	1557-TX15	
.500 x .098	BCEG-41.5	BCEA-41.5	BCCG-41.5-8G	BCCG-41.5_	GWS 12	1557-TX15	
.625 x .118	BCEG-52	BCEA-52	BCCG-52-8G	BCCG-52_	GWS 16	1557-TX20	
.750 x .118	BCEG-62	BCEA-62	BCCG-62-8G	BCCG-62_	GWS 20	1557-TX25	
1.000 x .157	BCEG-82.5	BCEA-82.5	BCCG-82.5-8G	BCCG-82.5_	GWS 25	1557-TX25	
1.250 x .197	BCEG-103	BCEA-103	BCCG-103-8G	BCCG-103_	GWS 32	1557-TX25	

- Free cutting design allows a wide variety of applications of materials
- Unique single design insert that offers two cutting edges maintaining a strong unit
- Wide offering of small and medium diameters with various extensions available
- Accurate repeatability after insert replacement

558 Series



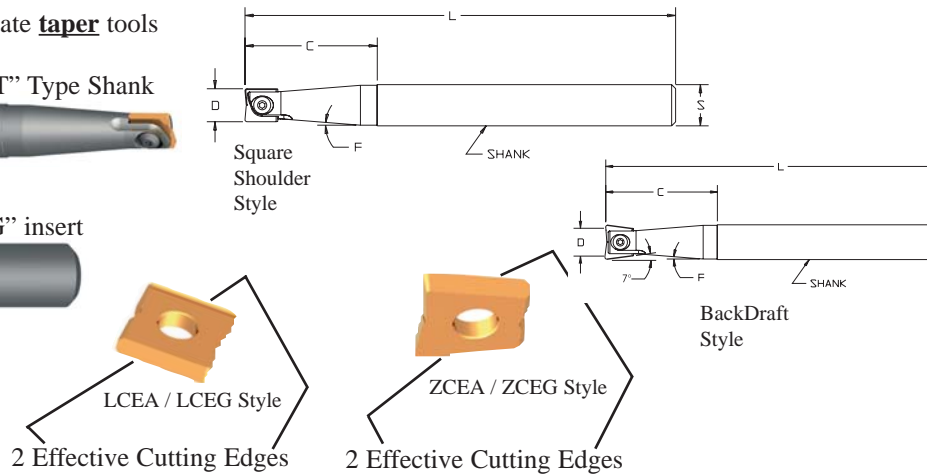
Note: Tools ending with “T” indicate **taper** tools



Standard shank shown with “LCEG” insert



- Extended Reach
- 2 effective
- Collet Mount Configuration
- Thru Coolant also available



558 Series Dimensional Specifications

Product Number	D	S	C	L	F	Insert	Screw	Wrench
558E0050ASC4-S050R	.500	.500	1.250	3.562	N / A	LCEA / G-41.5__ ZCEA / G-41.5__	GWS 12	1557-TX15
558E0050BSC4-S050R	.500	.500	1.250	5.125	N / A	LCEA / G-41.5__ ZCEA / G-41.5__	GWS 12	1557-TX15
558E0050CSC4-S050R	.500	.500	1.812	5.875	3°	LCEA / G-41.5__ ZCEA / G-41.5__	GWS 12	1557-TX15
558E0050DSC4-S062RT	.500	.625	2.312	6.281	N / A	LCEA / G-41.5__ ZCEA / G-41.5__	GWS 12	1557-TX15
558E0062ASC5-S062R	.625	.625	1.375	5.500	N / A	LCEA / G-52__ ZCEA / G-52__	GWS 16	1557-TX15
558E0062BSC5-S062R	.625	.625	2.000	6.281	N / A	LCEA / G-52__ ZCEA / G-52__	GWS 16	1557-TX15
558E0075ASC6-S075R	.750	.750	1.750	4.500	N / A	LCEA / G-62__ ZCEA / G-62__	GWS 20	1557-TX20
558E0075BSC6-S075R	.750	.750	1.750	6.281	N / A	LCEA / G-62__ ZCEA / G-62__	GWS 20	1557-TX20
558E0075CSC6-S075R	.750	.750	2.375	6.875	N / A	LCEA / G-62__ ZCEA / G-62__	GWS 20	1557-TX20
558E0075ESC6-S075R	.750	.750	2.375	8.250	N / A	LCEA / G-62__ ZCEA / G-62__	GWS 20	1557-TX20
558E0075FSC6-S100RT	.750	1.000	3.000	9.437	3°	LCEA / G-62__ ZCEA / G-62__	GWS 20	1557-TX20
558E0100ASC8-S100R	1.000	1.000	1.750	6.281	N / A	LCEA / G-82.5__ ZCEA / G-82.5__	GWS 25	1557-TX25
558E0100BSC8-S100R	1.000	1.000	2.750	7.500	N / A	LCEA / G-82.5__ ZCEA / G-82.5__	GWS 25	1557-TX25
558E0100CSC8-S125RT	1.000	1.250	3.875	9.437	3°	LCEA / G-82.5__ ZCEA / G-82.5__	GWS 25	1557-TX25
558E0100DSC8-S100R	1.000	1.000	3.125	9.062	N / A	LCEA / G-82.5__ ZCEA / G-82.5__	GWS 25	1557-TX25

Insert I.C. x Thickness						
	Insert Pg. 36	Insert Pg. 36	BackDraft Style Insert Pg. 48	BackDraft Style Insert Pg. 48	Insert Screw Wrench	Insert Screw
.500 x .098	LCEA-41.5__	LCEG-41.5__	ZCEA-41.5__	ZCEG-41.5__	(see table above)	(see table above)
.625 x .118	LCEA-52__	LCEG-52__	ZCEA-52__	ZCEG-52__	(see table above)	(see table above)
.750 x .118	LCEA-62__	LCEG-62__	ZCEA-62__	ZCEG-62__	(see table above)	(see table above)
1.000 x .157	LCEA-82.5__	LCEG-82.5__	ZCEA-82.5__	ZCEG-82.5__	(see table above)	(see table above)

- Uniquely designed single insert that offers two cutting edges
- Wide offering of small and medium diameters with various extensions available
- Accurate repeatability after insert replacement



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

557 & 558 Series

Applications and Speed & Feed chart for Ball Nose and Flat Bottom & BackDraft Insert End Mills

Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical
Data

HOLDERS

557 and 558 Series Application Specifications

Type	Grade	Style	Application
"G"		Chip Breaker Insert	soft, gummy materials ie: aluminum, brass, low carbon steels and stainless
"A"		Flat Face Insert	high carbon, die and mold steel
	* LT-90	TiCN-PVD	light roughing and finishing cuts in die and mold steels better edge strength than 586XRm
	586XRm	AlTiN-PVD Coated	light roughing and finishing cuts in die and mold steels and any finishing cuts in hard steels and non-ferrous materials
	606jRm	AlTiN-PVD Coated	roughing low and high carbon steels, die mold steels and ferrous materials
	LTC-10	Class C2 Uncoated	aluminum and non-ferrous materials
	LTC-14	Class C5 Uncoated	carbon steels, die and mold steels
	* 900XRm	AlTiN-PVD Coated	finish cuts in all materials

***LT-90 offered for 558 series backdraft and flat bottom cutters only!**

***900XRm offered for 557 series only!**

CHART "A"

Speed and Feed chart for Ball Nose and Flat Bottom Insert End Mills

Material	Application	Grade	SFPM	IPR
Carbon, Alloy, Tool Steels H10-H14, H21-H26, P2-P6, P20, P21, P4, A4, A6, A7, D2, D3, D4, D5, D7	Finishing	LTC-10	300-560	.004"-.008"
	Finishing	586XRm	400-700	.004"-.008"
	Finishing	LT-90	400-700	.004"-.008"
	Roughing	LTC-14	300-450	.006"-.016"
	Roughing	606jRm	350-600	.006"-.016"
Stainless Steel, High Temp Alloys (300, 400 Series) Must use chip breaker		LTC-10	230-330	.004"-.020"
		LT-90	300-360	.003"-.010"
		586XRm	300-360	.003"-.010"
Cast Steel	Finishing	LTC-10	300-560	.004"-.008"
	Roughing	LTC-14	300-450	.006"-.016"
	Roughing	606jRm	400-700	.006"-.020"
Grey Cast Iron Hard and Soft		LTC-10	340-560	.006"-.024"
		LT-90	400-640	.006"-.024"
		586XRm	400-640	.006"-.024"
Aluminum, Kirksite Must use chip breaker		LTC-10	660-1500	.006"-.032"
		LT-90	900 and UP	.006"-.024"
		586XRm	900 and UP	.006"-.024"
Brass, Copper, Bronze Must use chip breaker		LTC-10	400-600	.006"-.020"
		LT-90	450-760	.006"-.020"
		586XRm	450-760	.006"-.020"
Graphite		LTC-10	640-1320	.006"-.032"
		LT-90	900-1500	.006"-.032"
		586XRm	900-1500	.006"-.032"
Wood (Rock Maple, Mahogany)		LTC-10	1320-1900	.008"-.048"

Note: The effective cutting diameter on full radius inserts will be less than the full diameter of the cutter when the depth of cut is not equal to half of the diameter.

Please consult page 40 for the effective cutting diameter and the multiplying factors for increasing speeds & feeds in relationship to effective cutting diameter.

Screw Torque Specifications

Screw Number	Torque (Inch lbs)
GWS 08	35
GWS 10	35
GWS 12	53
GWS 16	55
GWS 20	55
GWS 25	58
GWS 32	58

Application Data for 557 Series

CHART "B" RPM Factor = RF							
Insert & Ball Nose Diameter							
	0.312	0.375	0.500	0.625	0.750	1.000	1.250
Inch Effective Cutting Diameter							
0.020	0.153	0.169	0.196	0.220	0.242	0.280	0.314
0.050	0.229	0.255	0.300	0.339	0.374	0.436	0.490
0.075	0.267	0.300	0.357	0.406	0.450	0.527	0.594
0.100	0.292	0.332	0.400	0.458	0.510	0.600	0.678
0.125	0.306	0.354	0.433	0.500	0.559	0.661	0.750
0.156	0.313	0.370	0.464	0.541	0.609	0.726	0.827
0.188		0.375	0.484	0.573	0.650	0.781	0.893
0.250			0.500	0.612	0.707	0.866	1.000
0.312				0.625	0.739	0.927	1.082
0.375					0.750	0.968	1.146
0.500						1.000	1.225
0.625							1.250

Depth of Cut

Insert Indexing and Screw Torque Specifications

- Always ensure that insert pockets are clean and free of debris or burrs.
- Utilize holders that are stable and in good condition.
- Clean and recoat screw with anti-seize lubricant during each index.
- For optimum results, replace locking screw after ten inserts.
- For optimum results, replace holders after one hundred inserts.
- Utilize the proper driver to tighten locking screw.
- Hold the insert in place during the tightening process.
- Never force the locking process - check for interference or damage.
- Do not use a pipe or other extensions to tighten the locking screw.
- Generally speaking, drivers supplied with the tools provide proper torque.
- If a torque wrench is available, follow the recommended torque specifications found on page 108.

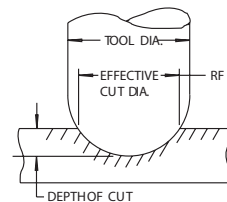


Figure 1.

Divide the IPR found on page 108 Chart "A" by the factor from the table below. Use the same depth of cut used to calculate the RPM in the chart above.

SFPM = Surface Feet per Minute
IPR = Inches per Revolution

Stepover should be: equal to or greater than Depth of Cut (D.O.C.)

RPM = Revolutions per Minute
FPT = Feed per Tooth

RF = RPM Factor
FRF = Feed Rate Factor

CHART "C" Feed Rate Factor = FRF							
Insert & Ball Nose Diameter							
	0.312	0.375	0.500	0.625	0.750	1.000	1.250
Inch Effective Feed Rate Factor							
0.020	0.49	0.45	0.39	0.35	0.32	0.28	0.25
0.050	0.73	0.68	0.60	0.54	0.50	0.44	0.39
0.075	0.85	0.80	0.71	0.65	0.60	0.53	0.47
0.100	0.93	0.88	0.80	0.73	0.68	0.60	0.54
0.125	0.98	0.94	0.87	0.80	0.75	0.66	0.60
0.156	1.00	0.99	0.93	0.87	0.81	0.73	0.66
0.188		1.00	0.97	0.92	0.87	0.78	0.71
0.250			1.00	0.98	0.94	0.87	0.80
0.312				1.00	0.99	0.93	0.87
0.375					1.00	0.97	0.92
0.500						1.00	0.98
0.625							1.00

Depth of Cut

Step (1) To find corrected RPM :
 $3.82 \times \text{SFPM} / \text{RF} = \text{RPM (corrected)}$
 Chart "A" Chart "B"

Step (2) $\text{IPR} / 2 = \text{FPT (starting)}$
 Chart "A"

Step (3) To find corrected FPT:
 $\text{FPT (starting)} / \text{FRF} = \text{FPT (corrected)}$
 Chart "C"

Step (4) $\text{IPM} = (\text{corrected}) \text{RPM} \times \text{no. of effective teeth} \times (\text{corrected}) \text{FPT}$

Example Starting Parameters:
Material: Aluminum, SFPM: 1000, IPR: .020
Tool: .75 dia. with .188 D.O.C.

Examples: see figure 1.

Step (1) To find corrected RPM:
 $3.82 \times 1000 / .650 = 5877 \text{ RPM (corrected)}$

Step (2) To find starting FPT:
 $.020 / 2 = .010 \text{ FPT (starting)}$

Step (3) To find corrected FPT:
 $.010 / .870 = .0115 \text{ FPT (corrected)}$

Step (4) To find IPM:
 $5877 \times 2 \text{ (all 557 series)} \times .0115 = 135.171$

Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders



557 HG Series Tools

(Helical Grind)

on the cutting

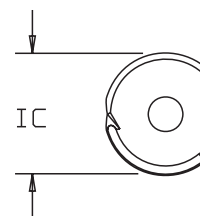


Made in the

BCCG Style



Used for finishing



Note: for more information on insert sizes visit www.lovejoytool.com

(Locate inserts, carbide, screw-on style, on the web site)

557 HG Series - Insert

Nomenclature	IC	Min. DOC (Recommended)	Max. DOC (Recommended)	Material to be Machined
BCCG 2.51 FE GR 902XRm	.312	.005	.005	Ferrous
BCCG 2.51 SS GR 904XRm	.312	.005	.005	Stainless
BCCG 2.51 TI GR 908XRm	.312	.005	.005	Titanium
BCCG 2.51 AL GR 908XRm	.312	.005	.005	Aluminum
BCCG 31.5 FE GR 902XRm	.375	.005	.005	Ferrous
BCCG 31.5 SS GR 904XRm	.375	.005	.005	Stainless
BCCG 31.5 TI GR 908XRm	.375	.005	.005	Titanium
BCCG 31.5 AL GR 908XRm	.375	.005	.005	Aluminum
BCCG 41.5 FE GR 902XRm	.500	.005	.010	Ferrous
BCCG 41.5 SS GR 904XRm	.500	.005	.010	Stainless
BCCG 41.5 TI GR 908XRm	.500	.005	.010	Titanium
BCCG 41.5 AL GR 908XRm	.500	.005	.010	Aluminum
BCCG 52 FE GR 902XRm	.625	.005	.015	Ferrous
BCCG 52 SS GR 904XRm	.625	.005	.015	Stainless
BCCG 52 TI GR 908XRm	.625	.005	.015	Titanium
BCCG 52 AL GR 908XRm	.625	.005	.015	Aluminum
BCCG 62 FE GR 902XRm	.750	.005	.020	Ferrous
BCCG 62 SS GR 904XRm	.750	.005	.020	Stainless
BCCG 62 TI GR 908XRm	.750	.005	.020	Titanium
BCCG 62 AL GR 908XRm	.750	.005	.020	Aluminum
BCCG 82.5 FE GR 902XRm	1.000	.005	.025	Ferrous
BCCG 82.5 SS GR 904XRm	1.000	.005	.025	Stainless
BCCG 82.5 TI GR 908XRm	1.000	.005	.025	Titanium
BCCG 82.5 AL GR 908XRm	1.000	.005	.025	Aluminum
BCCG 103 FE GR 902XRm	1.250	.005	.030	Ferrous
BCCG 103 SS GR 904XRm	1.250	.005	.030	Stainless
BCCG 103 TI GR 908XRm	1.250	.005	.030	Titanium
BCCG 103 AL GR 908XRm	1.250	.005	.030	Aluminum

Note: Special insert IC sizes are also available

Note: FE, SS, TI and AL indicate HELICAL GRIND (HG) for the listed materials



AD1020



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical
Data

Holders

Gray iron group



SX Series
Stepdex Face Mills



170 - 175 Series
Stepdex Face Mills



NBX Series
Stepdex Face Mills

180 - 185 Series
Face Mills
(not shown)

High Efficiency System for Machining

Gray iron



1-800-843-8376

STEPDEX and STANDARD Face Mills

Table of Contents

Series in order of stock removal requirements

- NBX Series Stepdex
- 175 Series Stepdex
- SX Series Stepdex
- 170 Series Stepdex
- 185 Series Standard
- 180 Series Standard
- Inserts
- Maintenance

STEPDEX Face Mill Information

Stepdex is a face mill that is unique, acting as a flycutter with a multi-tooth, rotary broach effect. This type of cutter is commonly used on low horsepower machines, extended reach applications and difficult machining operations. Stepdex face mills obtain faster speeds than conventional face mills and combine rough and finish passes with heavy stock removal. The feed relates to the **number of finish stations** in the cutter as shown below.

Single Set of Inserts: (1) Finish Station
feed per revolution = feed per tooth

Double Set of Inserts: (2) Finish Stations
feed per revolution = feed per tooth x 2

Triple Set of Inserts: (3) Finish Stations
feed per revolution = feed per tooth x 3

- LTC-1000 Silicon Nitride used for High production machining of gray cast iron.

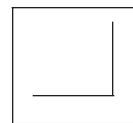
- LTC-1200 is the newest generation of Silicon Nitride for machining gray cast iron with optimum performance.

Quick Cutter Selection Guide

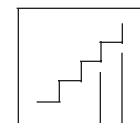
Application	NBX 175	SX 170	185	180
Roughing				
8 Cutting Edges	•			
.250-.350 stock removal				
Roughing/Good Finish				
4 Cutting Edges	•	•		
.150-.250 stock removal				
Roughing/Finishing				
4 Cutting Edges			•	
.080-.150 stock removal				
Finishing or Light DOC				
4 Cutting Edges				•
.010-.100 stock removal				
Faster feed than 170 series				
Finishing or Light DOC				
4 Cutting Edges				•
.010-.100 stock removal				
Fastest feed				

Standard vs. Stepdex Cut Forms

Standard Style



Stepdex Style



Cut Forms

Over OD
Radial
.010

Inserts in one plane

Inserts in stepped plane

Stepdex Advantages

Rough and Finish in One Pass

Limited Horsepower

Light Duty Machines

Fragile Parts

Weak Holding Fixtures

Extended Spindles or Bars

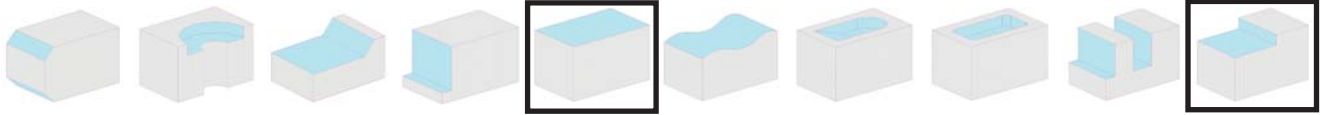
Encountering Chatter

Up to 2 inch³ per minute per unit of horsepower

All dimensions are shown in inches



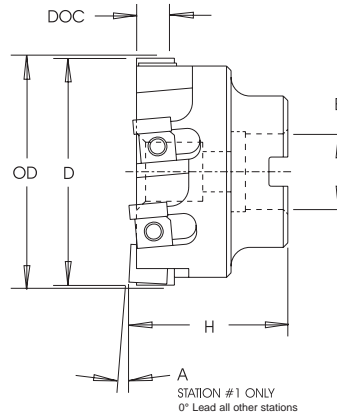
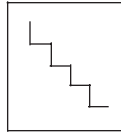
NBX Series



Strong Negative Geometry



• Stepped Face Mill



5° Neg Axial
Neg Radial
3° Dish (Sta. 1)

• Heavy Roughing applications .200-.350 stock

NBX Series - Face Mill Dimensional Specifications

Product Number	D	OD	A	B	H	DOC	Insert	Inserts per Set	Effective Sets	Teeth	Weight
4NBX24R6	3.88	4.00	3°	1.50	2.10	.200-.350	SNC-433W820	4	2	8	4.50
5NBX24R6	4.88	5.00	3°	1.50	2.10	.200-.350	SNC-433W820	4	2	8	8.00
5NBX34R6	4.88	5.00	3°	1.50	2.10	.200-.350	SNC-433W820	4	3	12	8.00
6NBX34R6	5.88	6.00	3°	1.50	2.10	.200-.350	SNC-433W820	4	3	12	12.25
8NBX44R8X	7.88	8.00	3°	2.00	2.10	.200-.350	SNC-433W820	4	4	16	23.00

LEFT HAND cutters also available

NBX Series Setting Specifications for Stepped Configuration Tooling

Tool	Station 1 (H)	Station 2 (H)	Station 3 (H)	Station 4 (H)
4NBX24R6	2.100	2.050	2.000	1.950
5NBX24R6	2.100	2.050	2.000	1.950
5NBX34R6	2.100	2.050	2.000	1.950
6NBX34R6	2.100	2.050	2.000	1.950
8NBX44R8X	2.100	2.050	2.000	1.950

Insert I.C. x Thickness	Insert Pg. 61	Lock	Lock Screw	Lock Screw Wrench
.500 x .188	SNC-433W820	3502-0935-0018 RH 3502-0935-0019 LH	1319	1557-PT8

Machining Parameters

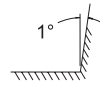
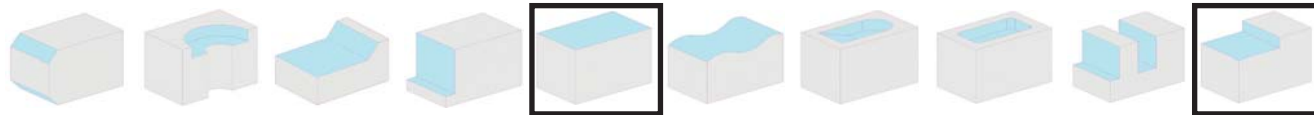
Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron G2500, G3000 and G3500	800-4000*	.003-.025	SNC-433W820 GR LTC-1200	SNC-433W820 GR LTC-1000

* 3600 SFPM MAX. unless really well guarded...

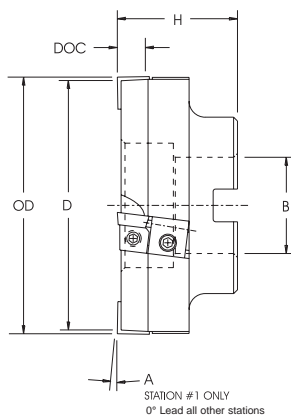
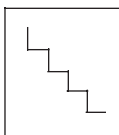
- Strong negative geometry provides superior edge strength during heavy metal removal applications
- Stepdex configuration generates metal removal rates up to 2 inch³ per minute per unit of horsepower
- Stepdex provides excellent force and load management for overextended or weak setups
- LOVEJOY'S LTC-1200 Si₃N₄ (silicon nitride) material provides extraordinary tool life
- LOVEJOY'S LTC-1200 Si₃N₄ material operates in the advanced range machining parameters
- A possible 8 Cutting edges can be obtained



175 Series



Free Cutting Geometry



7° Pos Axial
Pos Radial
1° Dish (Sta. 1)

• Stepped Face Mill

• Rough & Finish in one pass .150-.250 stock

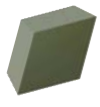
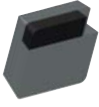
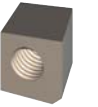




175 Series Dimensional Specifications

Product Number	D	OD	A	B	H	DOC	Insert	Inserts per Set	Effective Sets	Teeth	Weight
175F0300ASP4-100R	2.96	3.00	1°	1.00	1.875	.150-.250	SPC-43__	3	2	6	2.50
175F0400ASP4-150R	3.94	4.00	1°	1.50	1.875	.150-.250	SPC-43__	4	2	8	4.50
175F0500ASP4-150R	4.92	5.00	1°	1.50	1.875	.150-.250	SPC-43__	5	2	10	7.75
175F0600ASP4-150R	5.90	6.00	1°	1.50	1.875	.150-.250	SPC-43__	6	2	12	12.00
175F0800ASP4-200R	7.92	8.00	1°	2.00	1.875	.150-.250	SPC-43__	5	3	15	21.75
175F0800BSP4-200R	7.94	8.00	1°	2.00	1.875	.150-.250	SPC-43__	4	4	16	21.75

LEFT HAND cutters also available

175 Series Setting Specifications for Stepped Configuration Tooling

Tool	Station 1 (H)	Station 2 (H)	Station 3 (H)	Station 4 (H)	Station 5 (H)	Station 6 (H)
175F0300ASP4-100R	1.875	1.855	1.805	N/A	N/A	N/A
175F0400ASP4-150R	1.875	1.860	1.795	1.725	N/A	N/A
175F0500ASP4-150R	1.875	1.860	1.810	1.760	1.720	N/A
175F0600ASP4-150R	1.875	1.860	1.830	1.795	1.760	1.725
175F0800ASP4-200R	1.875	1.860	1.810	1.760	1.720	N/A
175F0800BSP4-200R	1.875	1.860	1.795	1.725	N/A	N/A

Insert I.C. x Thickness							
	Insert Pg. 61	Insert Pg. 51	Lock	Lock Screw	Anvoc	Lock Screw	Lock Screw Wrench
.500 x .188	SPC-43__	0502-2802-0001	1313R	1319	1314R	#8-32 x 5/8 SHCS	1557-PT8

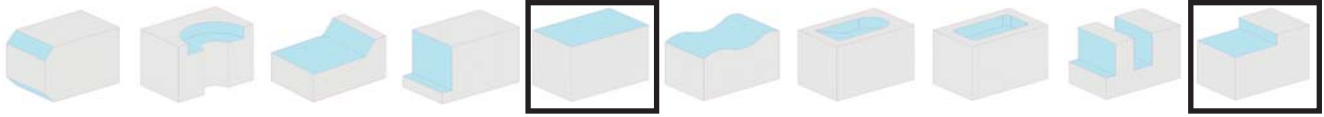
Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron, G2500, G3000, G3500	800-4000*	.003-.025	SPC-433W630 GR LTC-1200	SPC-433W630 GR LTC-1000

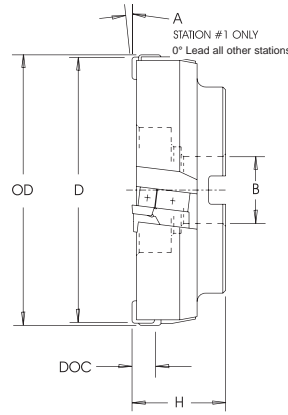
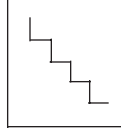
* 3600 SFPM MAX. unless really well guarded...

- Free cutting positive geometry is ideally suited for all gray cast iron materials
- Stepdex configuration generates metal removal rates up to 2 inch³ per minute per unit of horsepower
- Stepdex provides excellent force and load management during overextended or weak setups
- Adjustable Anvoc allows for fine tuning the insert setting
- LOVEJOY S LTC-1200 Si₃N₄ material operates in the advanced range machining parameters

SX Series



Free Cutting Geometry



7° Pos Axial
Pos Radial
1° Dish (Sta. 1)

• Stepped Face Mill

• Rough & Finish in one pass .150-.250 stock

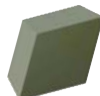







SX Series Dimensional Specifications

Product Number	D	OD	A	B	H	DOC	Insert	Inserts per Set	Effective Sets	Teeth	Weight
3SX23R4	2.96	3.00	1°	1.00	2.10	.150-.250	SPC-43__	3	2	6	3.75
4SX24R6	3.94	4.00	1°	1.50	2.10	.150-.250	SPC-43__	4	2	8	6.25
5SX25R6	4.92	5.00	1°	1.50	2.10	.150-.250	SPC-43__	5	2	10	10.50
6SX26R6	5.90	6.00	1°	1.50	2.10	.150-.250	SPC-43__	6	2	12	15.75
8SX35R8	7.92	8.00	1°	2.00	2.10	.150-.250	SPC-43__	5	3	15	28.00
8SX44R8	7.94	8.00	1°	2.00	2.10	.150-.250	SPC-43__	4	4	16	28.00

LEFT HAND cutters also available

SX Series Setting Specifications for Stepped Configuration Tooling

Tool	Station 1 (H)	Station 2 (H)	Station 3 (H)	Station 4 (H)	Station 5 (H)	Station 6 (H)
3SX23R4	2.100	2.080	2.030	N/A	N/A	N/A
4SX24R6	2.100	2.085	2.030	1.970	N/A	N/A
5SX25R6	2.100	2.085	2.035	1.990	1.945	N/A
6SX26R6	2.100	2.085	2.055	2.020	1.985	1.950
8SX35R8	2.100	2.085	2.035	1.990	1.945	N/A
8SX44R8	2.100	2.085	2.030	1.970	N/A	N/A

Insert I.C. x Thickness	 Insert Pg. 61	 Insert Pg. 51	 Anvil	 Insert Lock	 Lock Screw	 Anvil Lock	 Lock Screw	 Lock Screw Wrench
.500 x .188	SPC-43__	0502-2802-0001	1357RA	3502-0933-0031 RH 3502-0933-0032 LH	1573	1571	#10-32 x 5/8 BHCS	1557-PT8

Machining Parameters

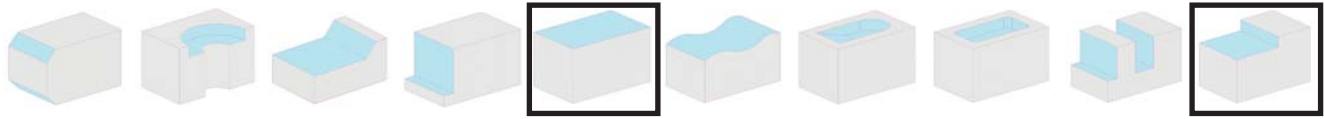
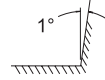
Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron G2500, G3000 and G3500	800-4000*	.003-.025	SPC-433W630 GR LTC-1200	SPC-433W630 GR LTC-1000

* 3600 SFPM MAX. unless really well guarded...

- Free cutting positive geometry is ideally suited for all gray cast iron materials
- Stepdex configuration generates metal removal rates up to 2 inch³ per minute per unit of horsepower
- Stepdex provides excellent force and load management during overextended or weak setups
- Self-locating precision anvils ensure quick accurate indexes and little down time
- LOVEJOY S LTC-1200 Si₃N₄ material operates in the advanced range machining parameters



170 Series



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

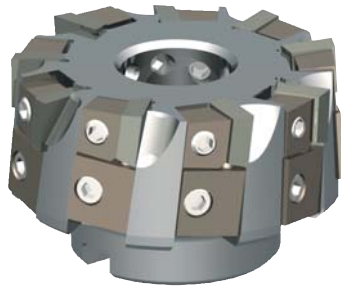
PCD / CBN

Slotters

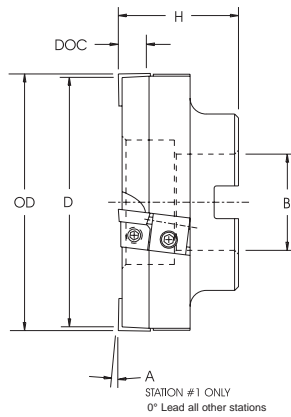
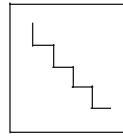
Technical Data

HOLDERS

Double Positive Geometry



• Stepped Face Mill



7° Pos Axial
Pos Radial
1° Dish (Sta. 1)

• Light Duty Rough and Finish .080-.150 stock

170 Series Dimensional Specifications

Product Number	D	OD	A	B	H	DOC	Insert	Inserts per Set	Effective Sets	Teeth	Weight
170F0300ASP4-100R	2.96	3.00	1°	1.00	1.875	.080-.150	SPC-43__	3	3	9	2.50
170F0400ASP4-150R	3.96	4.00	1°	1.50	1.875	.080-.150	SPC-43__	3	4	12	4.50
170F0500ASP4-150R	4.96	5.00	1°	1.50	1.875	.080-.150	SPC-43__	3	5	15	8.00
170F0600ASP4-200R	5.96	6.00	1°	2.00	1.875	.080-.150	SPC-43__	3	6	18	12.00

LEFT HAND cutters also available

170 Series Setting Specifications for Stepped Configuration Tooling

Tool	Station 1 (H)	Station 2 (H)	Station 3 (H)
170F0300ASP4-100R	1.875	1.855	1.795
170F0400ASP4-150R	1.875	1.855	1.795
170F0500ASP4-150R	1.875	1.855	1.795
170F0600ASP4-200R	1.875	1.855	1.795

Insert I.C. x Thickness	Insert Pg. 61	Insert Pg. 51	Lock	Lock Screw	Anvoc	Lock Screw	Lock Screw Wrench
.500 x .188	SPC-43__	0502-2802-0001	1313R	1319	1314R	#8-32 x 5/8 SHCS	1557-PT8

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron G2500, G3000, G3500	800-4000*	.003-.025	SPC-433W820 GR LTC-1200	SPC-433W820 GR LTC-1000

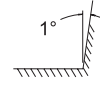
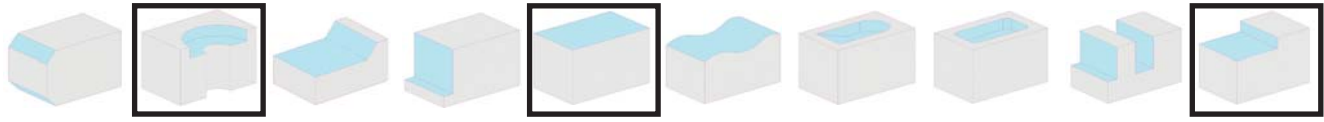
* 3600 SFPM MAX. unless really well guarded...

- Higher feed rates, more effective teeth than a standard stepdex
- Double positive geometry accommodates a broad range of workpiece materials
- Dense (fine) pitch insert count makes 170 ideal for all gray cast iron machining applications
- Adjustable self-locating anvocs provide quick and easy general purpose insert location
- Adjustable ANVOC anvils can fine tune axial runout to tenths (.0001") type tolerances

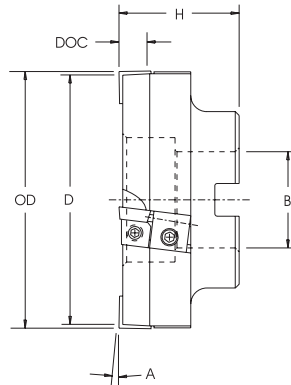
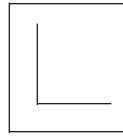
GAX Light



185 Series



Free Cutting Positive Geometry



7° Pos Axial
Pos Radial
1° Dish

• Face Mill

• Medium Pitch for finishing lighter depths of cut .020-.100 stock

185 Series Dimensional Specifications

Product Number	D	OD	A	B	H	DOC	Insert	Teeth	Weight
185F0300ASP4-100R	3.00	3.03	1°	1.00	1.875	.020-.100	SPC-43__	6	2.50
185F0400ASP4-150R	4.00	4.03	1°	1.50	1.875	.020-.100	SPC-43__	8	4.50
185F0500ASP4-150R	5.00	5.03	1°	1.50	1.875	.020-.100	SPC-43__	10	8.00
185F0600ASP4-200R	6.00	6.03	1°	2.00	1.875	.020-.100	SPC-43__	12	12.00
185F0800ASP4-FBR	8.00	8.03	1°	2.50	1.875	.020-.100	SPC-43__	16	22.75

LEFT HAND cutters also available

Insert I.C. x Thickness							
	Insert Pg. 61	Insert Pg. 51	Lock	Lock Screw	Anvoc	Lock Screw	Lock Screw Wrench
.500 x .188	SPC-43__	0502-2802-0001	1313R	1319	1314R	#8-32 x 5/8 SHCS	1557-PT8

Machining Parameters

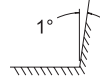
Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron G2500, G3000, G3500	800-4000*	.003-.012	SPC-433W820 GR LTC-1200	SPC-433W820 GR LTC-1000

* 3600 SFPM MAX. unless extremely well guarded...

- Free cutting positive geometry accommodates a variety of workpiece materials
- Precision hardware components ensure quick accurate insert indexing
- Hardened hardware components provide body protection for superior tool durability
- 1° lead angle generates a near square 90° utilizing the standard SPC-43 insert
- Engineered for balance and stability over a broad spectrum of applications



180 Series



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

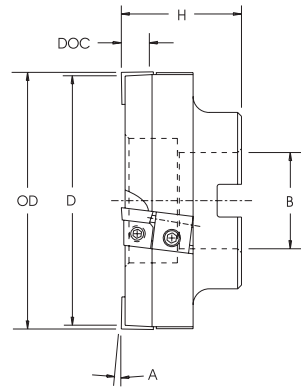
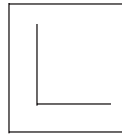
Technical Data

HOLDERS

Double Positive Geometry



• Face Mill



7° Pos Axial
Pos Radial
1° Dish

• Fine Pitch for finish machining with Maximum Feed Rates .020-.100 stock

180 Series Dimensional Specifications

Product Number	D	OD	A	B	H	DOC	Insert	Teeth	Weight
180F0300ASP4-100R	3.00	3.03	1°	1.00	1.875	.020-.100	SPC-43__	9	2.50
180F0400ASP4-150R	4.00	4.03	1°	1.50	1.875	.020-.100	SPC-43__	12	4.50
180F0500ASP4-150R	5.00	5.03	1°	1.50	1.875	.020-.100	SPC-43__	15	8.00
180F0600ASP4-200R	6.00	6.03	1°	2.00	1.875	.020-.100	SPC-43__	18	12.00

LEFT HAND cutters also available

Insert I.C. x Thickness							
	Insert Pg. 61	Insert Pg. 51	Lock	Lock Screw	Anvoc	Lock Screw	Lock Screw Wrench
.500 x .188	SPC-43__	0502-2802-0001	1313R	1319	1314R	#8-32 x 5/8 SHCS	1557-PT8

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron G2500, G3000, G3500	800-4000*	.003-.025	SPC-433W820 GR LTC-1200	SPC-433W820 GR LTC-1000

* 3600 SFPM MAX. unless extremely well guarded...

- Double positive geometry accommodates a broad range of workpiece materials
- Dense (fine) pitch insert count makes 180 ideal for all gray cast iron machining applications
- Adjustable self-locating anvocs provide quick and easy general purpose insert location
- Adjustable ANVOC anvils can fine tune axial runout to tenths (.0001") type tolerances

GAX

Maintenance

Toll Free: 1-800-843-8376 Facsimile: 1-802-885-9511 e-mail: lovejoy@lovejoytool.com

Cleaning and maintenance of *Silicon Nitride* milling cutters

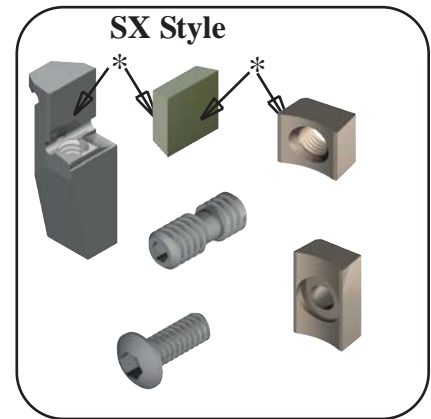
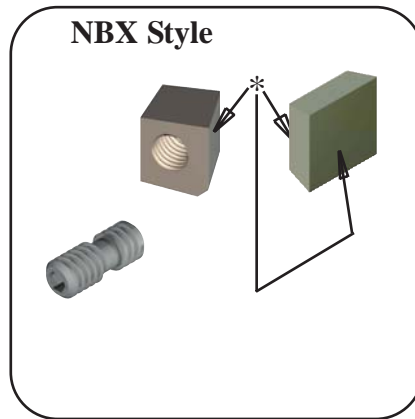
Special attention should be taken in the **cleaning** and maintenance of milling cutters designed to use silicon nitride inserts.

Improper **cleaning**, contamination or damage in the insert seat, insert lock and pocket area can lead to insert breakage.

The following procedures should be used when indexing inserts in cutters:

1. **Clean** cutter after removing from machine.
2. Remove all inserts from cutter.
3. If cutter body or parts are damaged, remove all parts, burr sharp corners, rolled over edges or burrs.
4. Any part or body surface not providing adequate support should be replaced or repaired. See figures below for high potential areas.
5. **Clean** pocket area thoroughly; use of automatic parts cleaner will aid in this process.
6. **Clean** both sides of the inserts to remove any contamination.
7. Index to new corner.
8. Use a **torque** wrench to insure proper and consistent locking pressure. See table below for proper torque specifications.
9. Complete dismantling of cutter and **thorough cleaning** should be scheduled periodically, regardless if damage has occurred or not.

SURFACES that are to be cleaned with extreme care are shown below with an *



Gray Iron Group - Screw Torque Specifications (for Silicon Nitride Inserts only!)


Series	Insert	Insert Lock	Insert Lock Screw	Torque (Inch-lbs)	Anvoc/Lock	Anvoc/Lock Screw (SHCS)	Anvil	Torque (Inch-lbs)
NBX	SNC-43__	3502-0935-0018 RH 3502-0935-0019 LH	1319	35	-	-	-	-
175	SPC-43__	1313R	1319	35	1314R Anvoc	#8-32 x 5/8	-	28
SX	SPC-43__	1570	1573	35	1571 Lock	#10-32 x 1/2 BHCS	1357R / L 1357RA / LA	40
170	SPC-43__	1313R	1319	35	1314R Anvoc	#8-32 x 5/8	-	28
185	SPC-43__	1313R	1319	35	1314R Anvoc	#8-32 x 5/8	-	28
180	SPC-43__	1313R	1319	35	1314R Anvoc	#8-32 x 5/8	-	28




PCD Tooling

The Bottom Line is:


Polycrystalline Diamond (PCD) tooling costs more, but costs less to use.



No other material today machines abrasive, non-ferrous materials better than polycrystalline diamond. The initial cost of PCD cutting tools is generally ten times that of carbide tools. The payback is that PCD has 100 times the wear-life of carbide. Other benefits include reduced operator and job setter dependence which increases production rates. Surface finish and finished part quality are also improved.



The high hardness of PCD translates to an abrasion resistance 100 times that of carbide.




PCD is best used in non-ferrous materials with high abrasion resistance. Optimal results are achieved when using PCD to machine:

- silicon aluminum
- graphite
- graphite composites
- metal matrix
- composites
- plastics



Other benefits include increase in SFM, longer “in tolerance” machining and reduced scrap.



PCD can run SFM from 400 to 6,000 depending on the material being machined.



A Variety of Special PCD & CBN Tooling



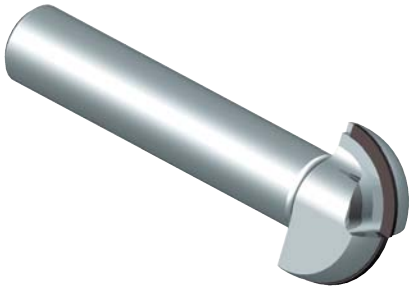
0501-0124-0003 PCD Tipped Boring Tool



0511-1322-0001 PCD Tipped Gun Stock Checkering Tool



0503-0100-0001 PCD Tipped End Mill



0503-1000-0001 PCD Tipped Ball End Mill



0503-1300-0001 PCD Tipped Tapered Ball End Mill



0507-0626-0006 PCD Tipped Screw-On Chamfer Tool

Inserts Styles:

- CNGA
 - CNMA
 - DNGA
 - RNMN
 - SEC
 - SECH
 - SPC
 - SPE
 - SPCW
 - SPG
 - TCMW
 - TNGA
 - TPG
 - and more.....@
- www.lovejoytool.com

0508-4027-0001 PCD Tipped Drill Bit Insert



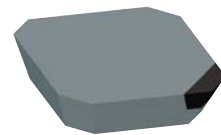
SNGA-433 CBN Double Tipped Inserts



RNMN-42 CBN Tipped Inserts



VNGA-33.010 CBN Tipped Inserts



SEAN-42AFN PCD Tipped Inserts

Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

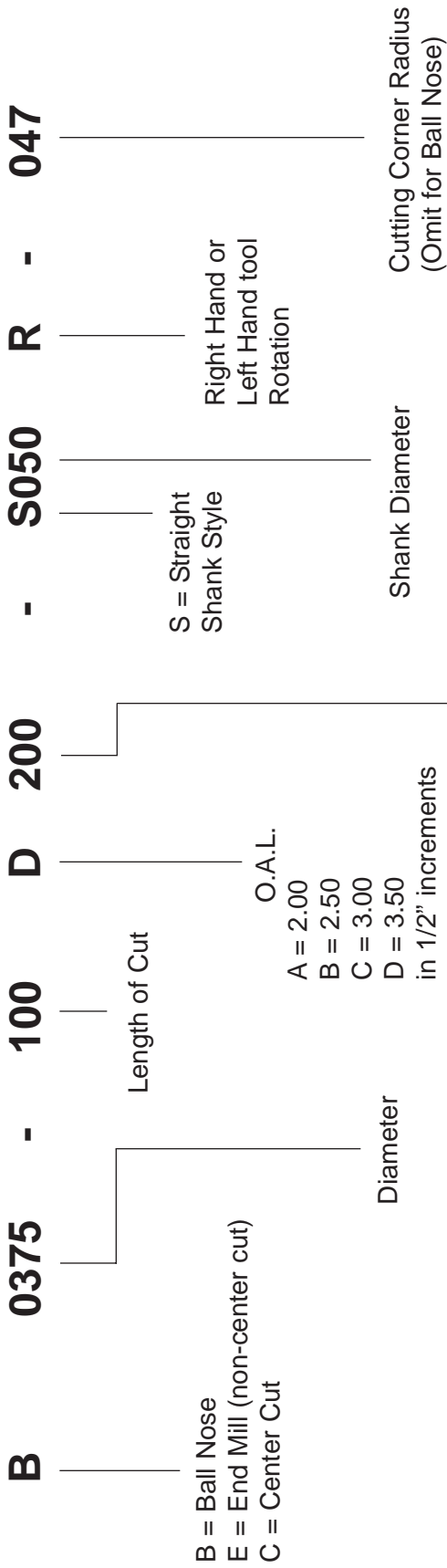
Technical Data

Holders



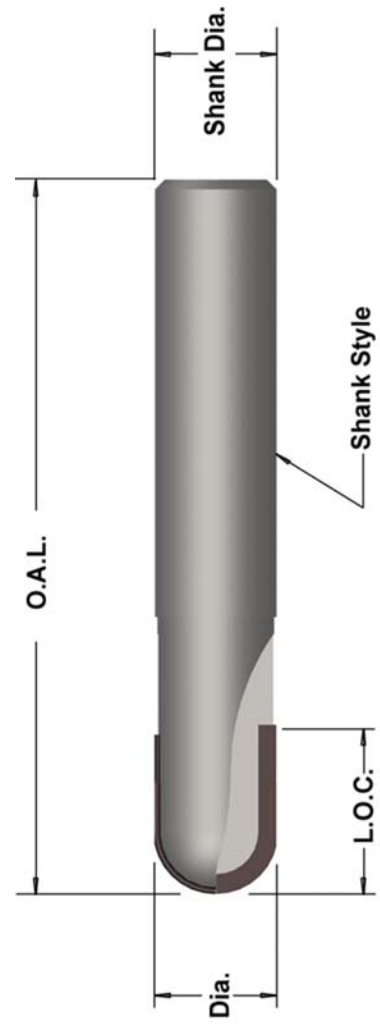
LOVEJOY Milling PCD / CBN Nomenclature

TOOLING IDENTIFICATION number:

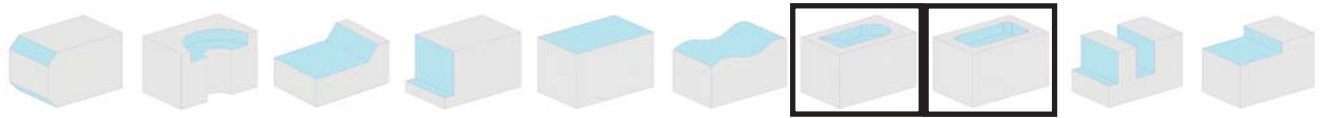
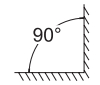


Material by Grade

PCD - 100	CBN - 200	260
105	205	270
110	220	
130	240	



PCD Polycrystalline Diamond Tooling



Index

Specials

Inserts

General

Cavity Mold

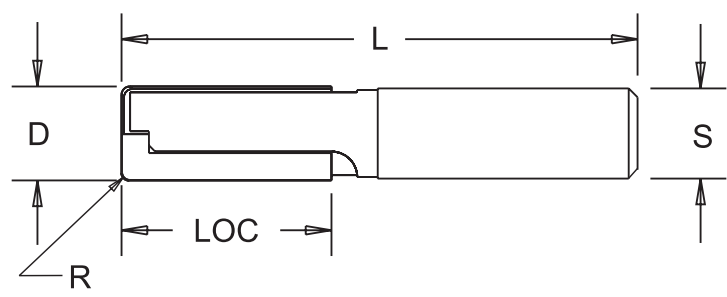
Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

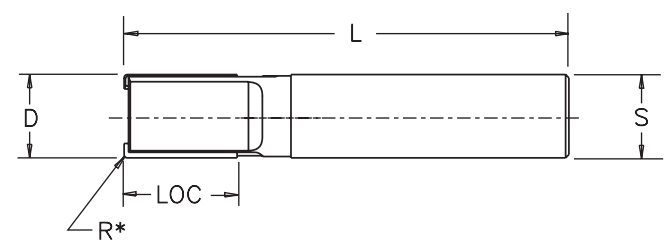
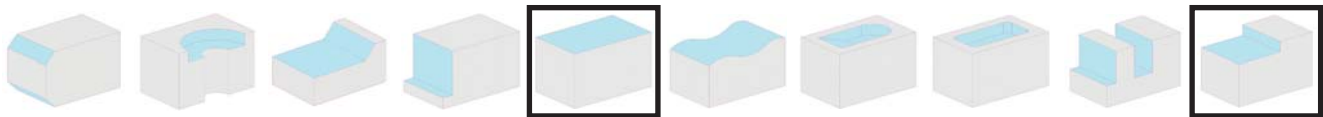


• Center Cut End Mills

* 'R' Corner Radii are also available ranging from 0.015 to 0.125

Center Cut Series - Dimensional Specifications

Product Number	D	S	R *	LOC	L	Teeth
C0375-100E130-S037R-031	0.375	0.375	.031	1.000	4.00	2
C0500-100E130-S050R-031	0.500	0.500	.031	1.000	4.00	2
C0625-100E130-S062R-031	0.625	0.625	.031	1.000	4.00	2
C0750-100E130-S075R-031	0.750	0.750	.031	1.000	4.00	2



• End Mills - Not Center Cut

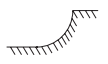
* 'R' Corner Radii are also available ranging from 0.015 to 0.125

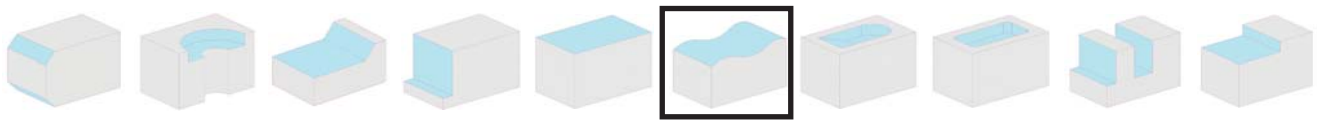
End Mill Series NOT CENTER CUT - Dimensional Specifications

Product Number	D	S	R *	LOC	L	Teeth
E0250-050E130-S025R-031	0.250	0.250	.031	0.500	4.000	1
E0375-100E130-S037R-031	0.375	0.375	.031	1.000	4.000	2
E0500-100E130-S050R-031	0.500	0.500	.031	1.000	4.000	2
E0750-100E130-S075R-031	0.750	0.750	.031	1.000	4.000	2



PCD Polycrystalline Diamond Tooling

Round 



Index

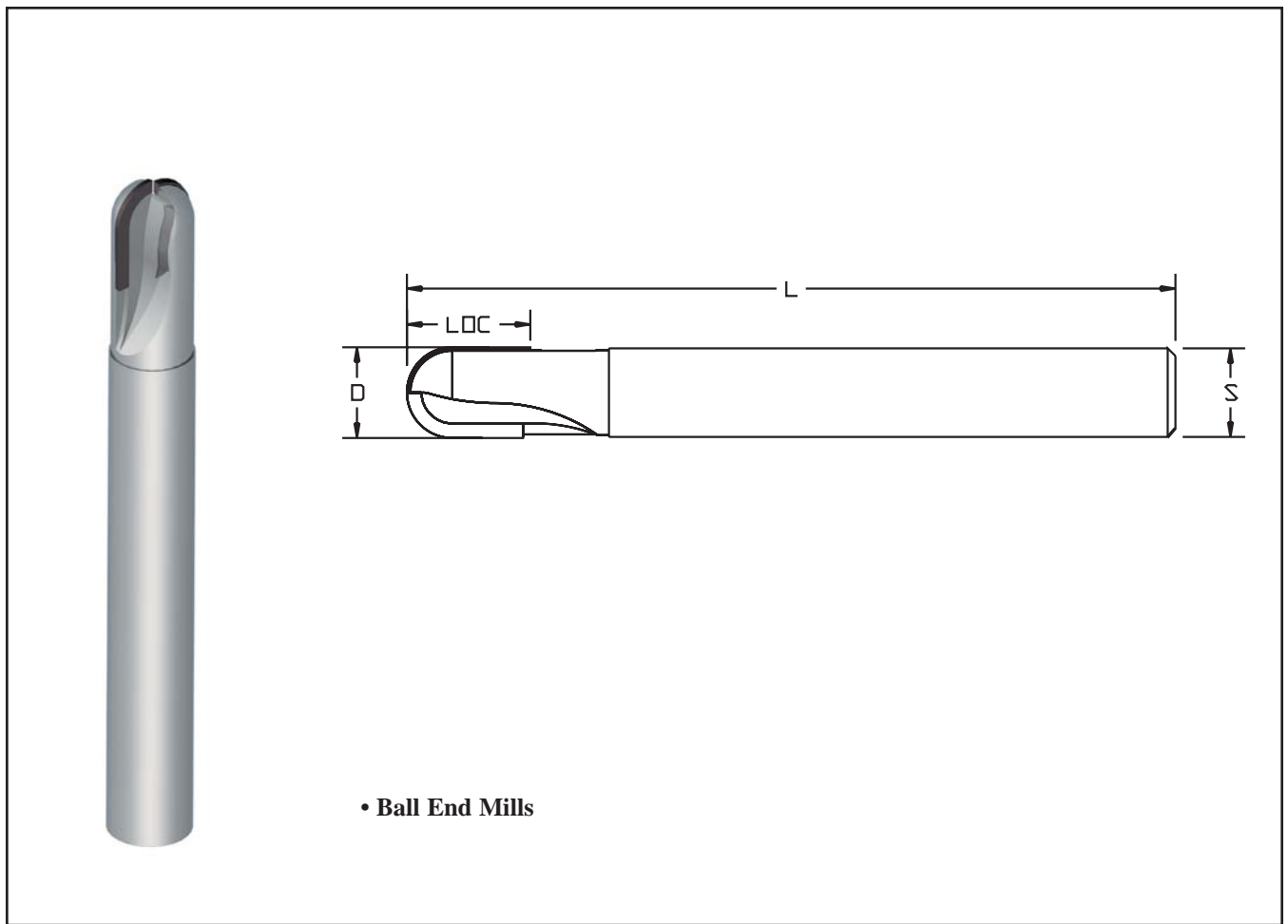
Specials

Inserts

General

Cavity Mold

Gray Iron



PCD / CBN

PCD Ball Series - Dimensional Specifications					
Product Number	D	S	LOC	L	Teeth
B0375-100E130-S037R	0.375	0.375	1.000	4.000	2
B0500-100E130-S050R	0.500	0.500	1.000	4.000	2
B0750-100E130-S075R	0.750	0.750	1.000	4.000	2

Slotters

NOTE: Machining Parameters below are for the tooling shown on pages 4 and 5

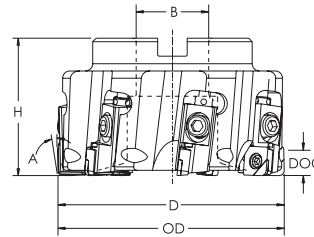
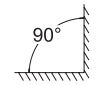
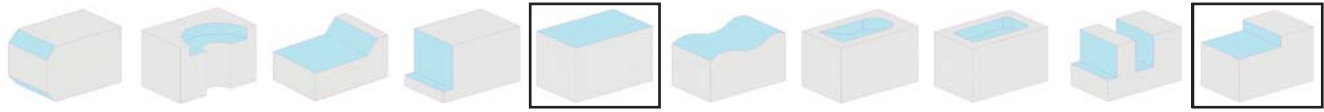
Technical Data

PCD - Starting Parameters			
Material	SFM Range	IPR Range	DOC Range
Carbon	750 - 2,000	.004 - .008	.100 >
Fiberglass - Fiberglass Epoxy	1,500 - 3,000	.004 - .008	.010 >
Graphite - Graphite Composite	1,500 - 2,000	.004 - .008	.010 >
Phenolic Materials	1,500 - 3,000	.004 - .008	.010 >
Plastic	1,500 - 3,000	.008 - .012	.005 >
Tungsten Carbide (over 6% Cobalt)	45 - 150	.004 - .006	.002 - .010

HOLDERS



190 Series



7° Pos
Pos Radial
90° shoulder

- Uses PCD tipped inserts mounted in insert cartridges which allows for quicker setups
- Cutter bodies are made of high strength aluminum and coated for greater surface hardness

• Replaces CJA and 188 Series Tools

190 Series - Dimensional Specifications

Product Number	D O.S.C.	OD	B	H	A	Max DOC "B" Tip	Insert	# of Teeth	Weight / LBS	Max RPM
190F0300AFP4-100R	3.00	3.000	1.000	2.375	90°	.225	WFPCW-436R	5	< 2.0	14,200
190F0400AFP4-125R	4.00	4.000	1.250	2.375	90°	.225	WFPCW-436R	7	2.0	12,250
190F0500AFP4-150R	5.00	5.000	1.500	2.375	90°	.225	WFPCW-436R	8	3.0	11,000
190F0600AFP4-150R	6.00	6.000	1.500	2.375	90°	.225	WFPCW-436R	10	4.5	10,000
190F0800AFP4-UNVR	8.00	8.000	2.500	2.375	90°	.225	WFPCW-436R	10	6.5	8,600
190F1000AFP4-UNVR	10.00	10.000	2.500	2.375	90°	.225	WFPCW-436R	12	8.0	7,750

LEFT HAND cutters also available

Spare Parts

Insert I.C. x Thickness	Insert *	Insert Cartridge *	Adjusting Screw	SHCS -Cartridge	Insert Screw	Insert Screw Wrench
.500 x .188	Insert * Page 58	Insert Cartridge *	Adjusting Screw	SHCS -Cartridge	Insert Screw	Insert Screw Wrench
	WFPCW-43__R	3502-0914-0017	3602-0002-0004	1/4-28 x 5/8	3605-0001-0046	1557-TX15

* The 190 cutter body can accommodate a square insert, SPCW-43__, by changing the 3502-0914-0017 cartridge to a 3502-0914-0022 cartridge.

Note: This setup (change over) will not allow this tool to cut a 90° shoulder with the square insert.

PCD - Starting Parameters

Material	SFM Range	IPR Range	DOC Range
Aluminum Alloy - Silicon Aluminum	3,000 - 6,000	.006 - .012	.010 >
Brass - Bronze	1,500 - 3,000	.002 - .008	.005 >
Carbon	750 - 2,000	.004 - .008	.100 >
Copper - Copper Alloys	900 - 1,800	.004 - .008	.005 >
Fiberglass - Fiberglass Epoxy	1,500 - 3,000	.004 - .008	.010 >
Graphite - Graphite Composite	1,500 - 2,000	.004 - .008	.010 >
Phenolic Materials	1,500 - 3,000	.004 - .008	.010 >
Plastic	1,500 - 3,000	.008 - .012	.005 >
Tungsten Carbide (over 6% Cobalt)	45 - 150	.004 - .006	.002 - .010

Recommended Applications

Non-ferrous metals:

- aluminum alloys
- bronze, copper and brass alloys
- magnesium alloys

Abrasive non-metallic:

- carbon composites
- fiberglass and plastics
- graphic and carbon



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

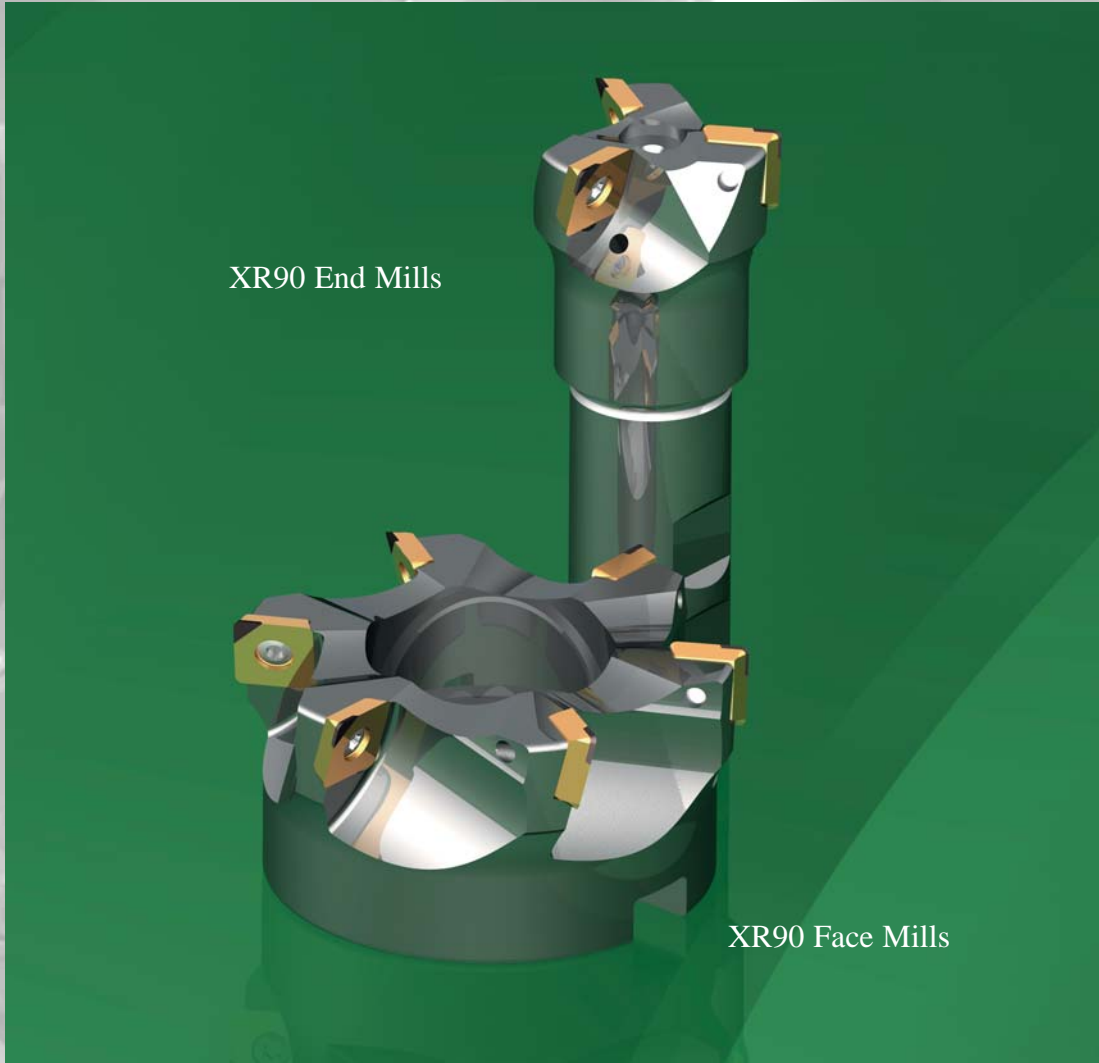
Slotters

Technical Data

Holders

“XR90” Series

Tipped inserts in XR90 style tooling!



XR90 End Mills

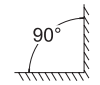
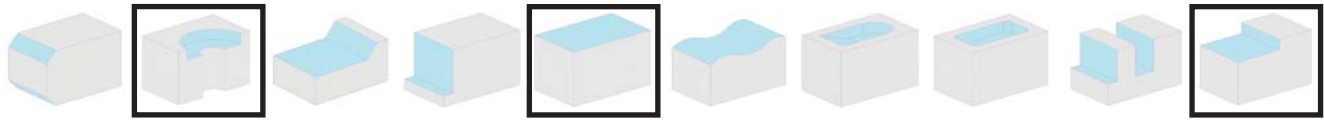
XR90 Face Mills

Toll FREE!

1-800-843-8376

LOVEJOY

XR90 Series



15° Pos Axial
Neg Radial
90° Shoulder

Face Mill

End Mill

• End mills feature thru coolant

XR 90 Series - Dimensional Specifications									
Face Mills									
Product Number	D	OD	B	H	A	DOC	Insert	Teeth	Weight
XRF2.00PN90SE5R.75	2.00	2.00	0.75	2.000	90°	.225	WSECH-534R	3	2.00
XRF2.50PN90SE5R1.00	2.50	2.50	1.00	2.000	90°	.225	WSECH-534R	4	2.75
XRF3.00PN90SE5R1.00	3.00	3.00	1.00	2.000	90°	.225	WSECH-534R	5	3.50
XRF4.00PN90SE5R1.50	4.00	4.00	1.50	2.000	90°	.225	WSECH-534R	6	5.00
XRF5.00PN90SE5R1.50	5.00	5.00	1.50	2.000	90°	.225	WSECH-534R	7	7.75
XRF6.00PN90SE5R2.00	6.00	6.00	2.00	2.000	90°	.225	WSECH-534R	7	9.00
End Mills									
Product Number	D	OD	S	L	A	DOC	Insert	Teeth	Weight
XRE1.50PN90SE5RW.75	1.50	1.50	0.75	4.25	90°	.225	WSECH-534R	2	1.00
XRE1.50PN90SE5RW1.00	1.50	1.50	1.00	4.50	90°	.225	WSECH-534R	2	1.25
XRE2.00PN90SE5RW1.25	2.00	2.00	1.25	4.50	90°	.225	WSECH-534R	3	1.50

LEFT HAND cutters also available

Insert I.C. Thickness	 Insert Pg. 59	 Insert Screw	 Insert Screw Wrench
.625 x .188	WSECH-534R	3605-0001-0023	1557-TX20

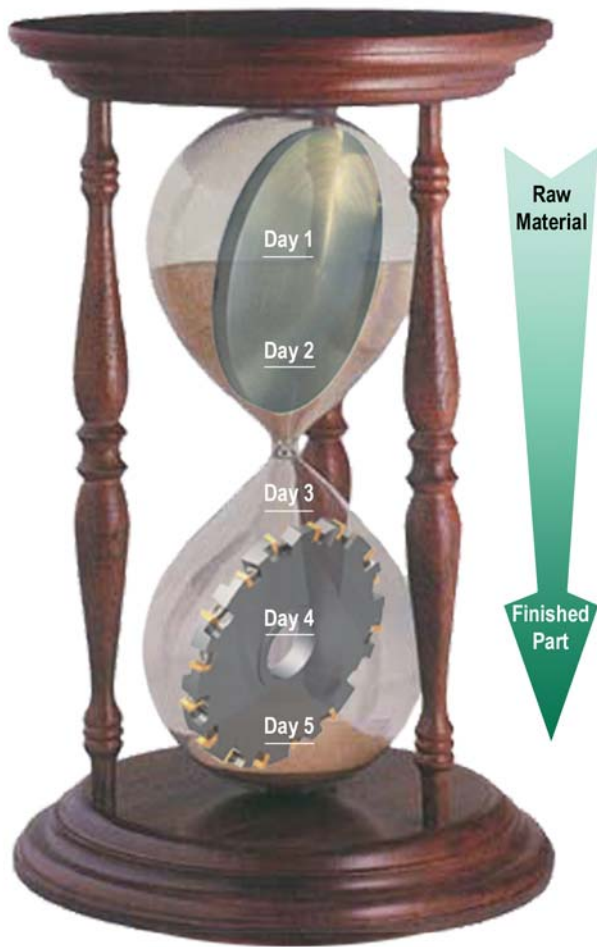
PCD - Starting Parameters			
Material	SFM Range	IPR Range	DOC Range
Aluminum Alloy - Silicon Aluminum	3,000 - 6,000	.006 - .012	.010 >
Brass - Bronze	1,500 - 3,000	.002 - .008	.005 >
Carbon	750 - 2,000	.004 - .008	.100 >
Copper - Copper Alloys	900 - 1,800	.004 - .008	.005 >
Fiberglass - Fiberglass Epoxy	1,500 - 3,000	.004 - .008	.010 >
Graphite - Graphite Composite	1,500 - 2,000	.004 - .008	.010 >
Phenolic Materials	1,500 - 3,000	.004 - .008	.010 >
Plastic	1,500 - 3,000	.008 - .012	.005 >
Tungsten Carbide (over 6% Cobalt)	45 - 150	.004 - .006	.002 - .010

- Multi-purpose positive/negative geometry optimizes horsepower utilization
- Engineered to perform at accelerated spindle velocities
- Non-rhythmic insert spacing counters harmonic vibration (chatter) on 4.00 dia. and up only
- Inserts available in PCD



Indexable Slotting Cutters

You want it when?



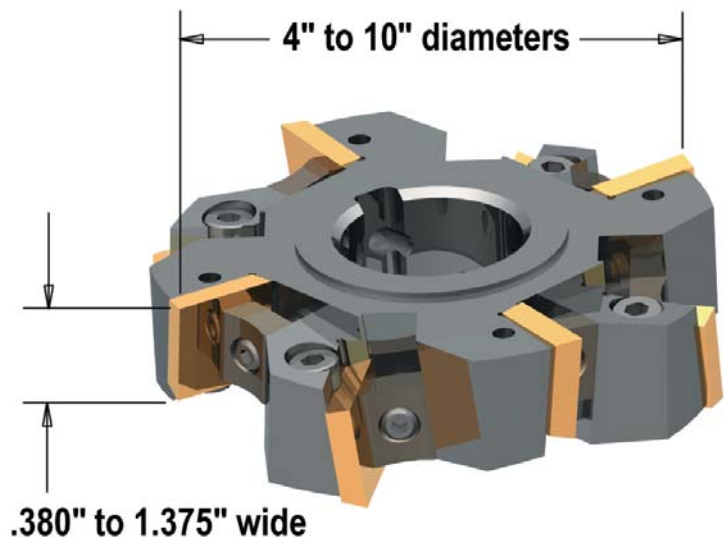
Indexable, Adjustable Slotting Cutters

- .380" to 1.375" wide
- 4" to 10" diameter.

Manufactured & shipped in
5 working days or less.

for more information:

- **Catalog:** Catalog No. 05 CAT
pages: 101 - 107
- **Web:** www.lovejoytool.com



See the following series for:

GXS, GXSM, GXSH, GXSMH, NXS & NXSM style tooling shown above.

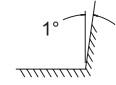
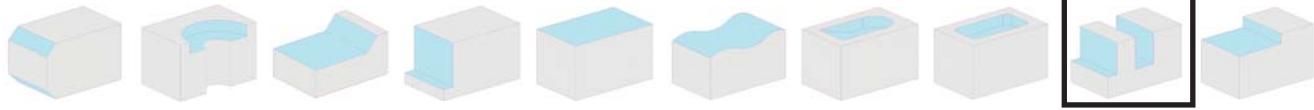


LOVEJOY Tool Co., Inc.

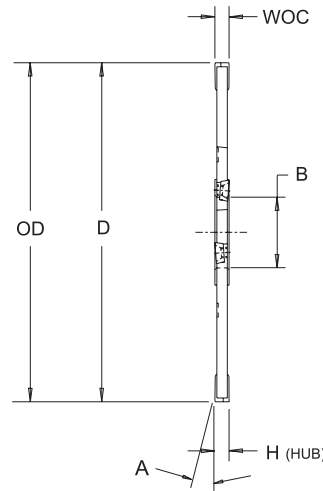
1-800-843-8376

www.lovejoytool.com

EXSP Series



Slotting Cutter

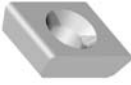




8° Pos Axial
Pos Radial
0°30' Dish

- Engineered for narrow slotting applications

EXSP Series - Dimensional Specifications

Product Number	D	OD	B	H	A	WOC	Insert	Teeth	Weight
4.0EXSP25-5H	4.00	4.00	1.25	.250	0°30'	.250	DPCB-32.145-1L/R	10	0.50
5.0EXSP25-6H	5.00	5.00	1.50	.250	0°30'	.250	DPCB-32.145-1L/R	12	1.00
6.0EXSP25-6H	6.00	6.00	1.50	.250	0°30'	.250	DPCB-32.145-1L/R	14	2.00
8.0EXSP25-8H	8.00	8.00	2.00	.250	0°30'	.250	DPCB-32.145-1L/R	18	3.50
4.0EXSP31-5H	4.00	4.00	1.25	.312	0°30'	.312	DPCB-323-2L/R	10	0.75
5.0EXSP31-6H	5.00	5.00	1.50	.312	0°30'	.312	DPCB-323-2L/R	12	1.50
6.0EXSP31-6H	6.00	6.00	1.50	.312	0°30'	.312	DPCB-323-2L/R	14	2.50
8.0EXSP31-8H	8.00	8.00	2.00	.312	0°30'	.312	DPCB-323-2L/R	18	3.75

Insert I.C. x Thickness	 Insert Pg. 34	 Torx® Screw	 Insert Screw Wrench
.375 x .500 x .145	DPCB-32.145-1L	3605-0001-0006	1557-TX10
.375 x .500 x .145	DPCB-32.145-1R	3605-0001-0006	1557-TX10
.375 x .500 x .188	DPCB-323-2L	3605-0001-0019	1557-TX10
.375 x .500 x .188	DPCB-323-2R	3605-0001-0019	1557-TX10

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Medium Alloy Steel	300-700	.002-.010	DPCB-32.145-1R/L GR LT-40	DPCB-32.145-1R/L GR LTC-14
Tool Steel, P20	300-700	.002-.010	DPCB-32.145-1R/L GR LT-40	DPCB-32.145-1R/L GR LTC-14
Soft Alloy Steel	400-800	.002-.010	DPCB-32.145-1R/L GR LT-40	DPCB-32.145-1R/L GR LTC-14

- Free cutting positive geometry accommodates a variety of workpiece materials
- Tangentially mounted inserts supply strong cross section mass and facilitate narrow widths
- Balanced engineering provides excellent force and load management to offset deflection
- Simple lock screw and precision pocket ensure quick accurate indexes with little down time
- Narrow widths of EXSP accommodate sawing and parting applications



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

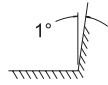
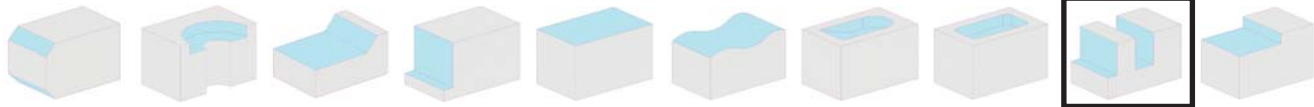
PCD / CBN

Slotters

Technical Data

Holders

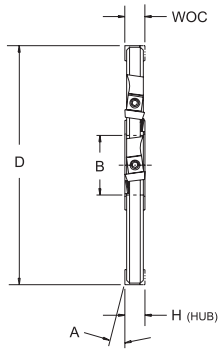
GXS Series



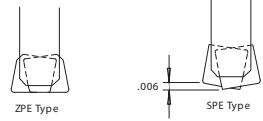
Slotting Cutter .375 Insert



• Adjustable Widths



8° Pos Axial Pos Radial 0°45' Dish



• Use .375 ZPE insert
for flat bottom

GXS Series - Dimensional Specifications

Product Number	D	B	H	A	WOC	Insert	Lock	Teeth	Weight
4GXS6-5H	4.00	1.25	.375	0°45'	.380-.437	SPE-32__	3502-0833-5000 / 5001	8	1.00
5GXS6-6H	5.00	1.50	.375	0°45'	.380-.437	SPE-32__	3502-0833-5000 / 5001	10	1.50
6GXS6-6H	6.00	1.50	.375	0°45'	.380-.437	SPE-32__	3502-0833-5000 / 5001	12	2.00
8GXS6-8H	8.00	2.00	.375	0°45'	.380-.437	SPE-32__	3502-0833-5000 / 5001	16	4.50
10GXS6-8H	10.00	2.00	.375	0°45'	.380-.437	SPE-32__	3502-0833-5000 / 5001	20	7.00
12GXS6-10H	12.00	2.50	.375	0°45'	.380-.437	SPE-32__	3502-0833-5000 / 5001	24	10.50
4GXS7-5H	4.00	1.25	.437	0°45'	.437-.500	SPE-32__	1602A	8	1.20
5GXS7-6H	5.00	1.50	.437	0°45'	.437-.500	SPE-32__	1602A	10	2.00
6GXS7-6H	6.00	1.50	.437	0°45'	.437-.500	SPE-32__	1602A	12	2.50
8GXS7-8H	8.00	2.00	.437	0°45'	.437-.500	SPE-32__	1602A	16	5.50
10GXS7-8H	10.00	2.00	.437	0°45'	.437-.500	SPE-32__	1602A	20	8.50
12GXS7-10H	12.00	2.50	.437	0°45'	.437-.500	SPE-32__	1602A	24	13.00
4GXS8-5H	4.00	1.25	.500	0°45'	.500-.562	SPE-32__	1602A	8	1.50
5GXS8-6H	5.00	1.50	.500	0°45'	.500-.562	SPE-32__	1602A	10	2.50
6GXS8-6H	6.00	1.50	.500	0°45'	.500-.562	SPE-32__	1602A	12	3.75
8GXS8-8H	8.00	2.00	.500	0°45'	.500-.562	SPE-32__	1602A	16	6.50
10GXS8-8H	10.00	2.00	.500	0°45'	.500-.562	SPE-32__	1602A	20	10.00
12GXS8-10H	12.00	2.50	.500	0°45'	.500-.562	SPE-32__	1602A	24	14.50

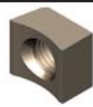
Insert
I.C. x Thickness



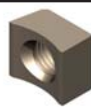
Insert Pg. 43



Insert Pg. 49



Insert Lock



Insert Lock



Lock Screw



Adjusting Screw



Lock Screw Wrench

.375 x .126

SPE-32__

ZPE-32__

1602A

3502-0833-5000 RH
3502-0833-5001 LH

1449

1365-1

1557-PT6

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron, Class 30	200-500	.002-.008	SPE-322 GR LT-45	SPE-322 GR LTC-83
Tool Steel, D2	250-350	.002-.008	SPE-322B GR LT-50	SPE-322 GR LT-40
Medium Alloy Steel	300-700	.002-.008	SPE-322 GR LT-40	SPE-322 GR LTC-14
Tool Steel, P20	300-700	.002-.008	SPE-322B GR LT-50	SPE-322 GR LT-40
Soft Alloy Steel	400-800	.002-.008	SPE-322 GR LT-40	SPE-322 GR LTC-14
Stainless Steel, 304, 316	200-500	.002-.008	SPE-322 GR LT-45	SPE-322 GR LTC-83

- Free cutting positive geometry designed for a broad range of workpiece materials
- High production design includes offset drive keys for multiple tool "gang" setups
- Engineered with generous chip gullets to ensure optimum chip evacuation
- Adjustable widths ensure infinite coverage between .380" and .562" in each GXS diameter
- Engineered for stability over a variety of applications

Index

Specials

Inserts

General

Cavity Mold

Gray Iron

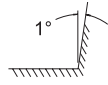
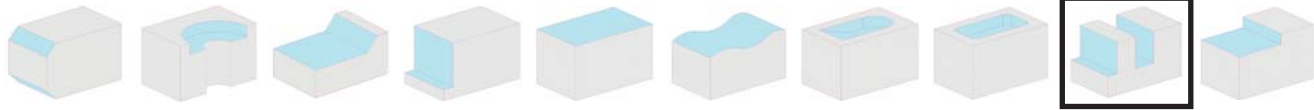
PCD / CBN

Slotters

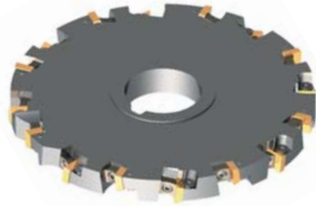
Technical
Data

Holders

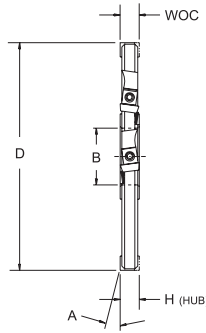
GXSH Series



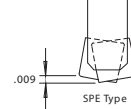
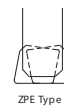
Slotting Cutter .500 Insert



• High production type - adjustable





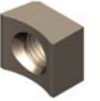



8° Pos Axial Pos Radial 0°45' Dish



• Use .500 ZPE insert for flat bottom

GXSH Series - Dimensional Specifications

Product Number	D	B	H	A	WOC	Insert	Teeth	Weight
4GXS8H-5H	4.00	1.25	.500	0°45'	.510-.562	SPE-43__	8	3.00
5GXS8H-6H	5.00	1.50	.500	0°45'	.510-.562	SPE-43__	10	3.25
6GXS8H-6H	6.00	1.50	.500	0°45'	.510-.562	SPE-43__	12	3.50
8GXS8H-8H	8.00	2.00	.500	0°45'	.510-.562	SPE-43__	16	3.75
10GXS8H-8H	10.00	2.00	.500	0°45'	.510-.562	SPE-43__	20	4.00
4GXS9H-5H	4.00	1.25	.562	0°45'	.562-.625	SPE-43__	8	3.25
5GXS9H-6H	5.00	1.50	.562	0°45'	.562-.625	SPE-43__	10	3.75
6GXS9H-6H	6.00	1.50	.562	0°45'	.562-.625	SPE-43__	12	4.00
8GXS9H-8H	8.00	2.00	.562	0°45'	.562-.625	SPE-43__	16	4.25
10GXS9H-8H	10.00	2.00	.562	0°45'	.562-.625	SPE-43__	20	4.50
4GXS10H-5H	4.00	1.25	.625	0°45'	.625-.687	SPE-43__	8	3.50
5GXS10H-6H	5.00	1.50	.625	0°45'	.625-.687	SPE-43__	10	3.75
6GXS10H-6H	6.00	1.50	.625	0°45'	.625-.687	SPE-43__	12	4.00
8GXS10H-8H	8.00	2.00	.625	0°45'	.625-.687	SPE-43__	16	4.25
10GXS10H-8H	10.00	2.00	.625	0°45'	.625-.687	SPE-43__	20	4.50
4GXS11H-5H	4.00	1.25	.687	1°	.687-.750	SPE-43__	8	3.75
5GXS11H-6H	5.00	1.50	.687	1°	.687-.750	SPE-43__	10	4.00
6GXS11H-6H	6.00	1.50	.687	1°	.687-.750	SPE-43__	12	4.25
8GXS11H-8H	8.00	2.00	.687	1°	.687-.750	SPE-43__	16	4.50
10GXS11H-8H	10.00	2.00	.687	1°	.687-.750	SPE-43__	20	4.75
4GXS12H-5H	4.00	1.25	.750	1°	.750-.812	SPE-43__	8	2.50
5GXS12H-6H	5.00	1.50	.750	1°	.750-.812	SPE-43__	10	2.75
6GXS12H-6H	6.00	1.50	.750	1°	.750-.812	SPE-43__	12	4.25
8GXS12H-8H	8.00	2.00	.750	1°	.750-.812	SPE-43__	16	4.75
10GXS12H-8H	10.00	2.00	.750	1°	.750-.812	SPE-43__	20	5.25

Insert I.C. x Thickness						
	Insert Pg. 43	Insert Pg. 49	Insert Lock	Lock Screw	Adjusting Screw	Lock Screw Wrench
.500 x .188	SPE-43__	ZPE-43__	1570	1573	1365	1557-PT8

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron, Class 30	200-500	.002-.008	SPE-432 GR LT-45	SPE-432 GR LTC-83
Tool Steel, D2	250-350	.002-.008	SPE-432B GR LT-50	SPE-432 GR LT-40
Medium Alloy Steel	300-700	.002-.008	SPE-432 GR LT-40	SPE-432 GR LTC-14
Tool Steel, P20	300-700	.002-.008	SPE-432 GR LT-40	SPE-432 GR LTC-14
Soft Alloy Steel	400-800	.002-.008	SPE-432 GR LT-40	SPE-432 GR LTC-14
Stainless Steel, 17-4PH, 15-5PH	300-700	.002-.008	SPE-432 GR LT-40	SPE-432 GR LTC-14
Stainless Steel, 304, 316	200-500	.002-.008	SPE-432 GR LT-45	SPE-432 GR LTC-83

- Free cutting positive geometry designed for a broad range of workpiece materials
- High production design includes offset drive keys for multiple tool “gang” setups
- Engineered with generous chip gullets to ensure optimum chip evacuation
- Adjustable widths ensure infinite coverage between .510” and .812” in each GXSH diameter
- Engineered for stability over a variety of applications



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

GXSM Series

(for Flat Bottom Only)



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

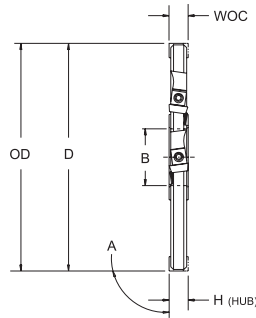
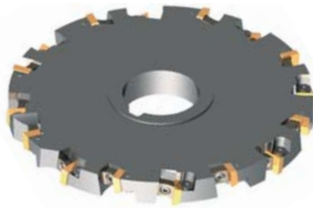
Slotters

Technical Data

HOLDERS

Slotting Cutter .375 FPE Insert

8° Pos Axial Pos Radial 90° Shldr



• Adjustable Widths

• GXSM uses .375 FPE insert for true flat bottom ONLY!

GXSM Series - Dimensional Specifications

Product Number	D	OD	B	H	A	WOC	Insert	Lock	Teeth	Weight
4GXSM6-5H	4.00	4.00	1.25	.375	90°	.380-.437	FPE-32__	3502-0833-5000 / 5001	8	1.00
5GXSM6-6H	5.00	5.00	1.50	.375	90°	.380-.437	FPE-32__	3502-0833-5000 / 5001	10	1.50
6GXSM6-6H	6.00	6.00	1.50	.375	90°	.380-.437	FPE-32__	3502-0833-5000 / 5001	12	2.00
8GXSM6-8H	8.00	8.00	2.00	.375	90°	.380-.437	FPE-32__	3502-0833-5000 / 5001	16	4.50
10GXSM6-8H	10.00	10.00	2.00	.375	90°	.380-.437	FPE-32__	3502-0833-5000 / 5001	20	7.00
12GXSM6-10H	12.00	12.00	2.50	.375	90°	.380-.437	FPE-32__	3502-0833-5000 / 5001	24	10.50
4GXSM7-5H	4.00	4.00	1.25	.437	90°	.437-.500	FPE-32__	1602A	8	1.20
5GXSM7-6H	5.00	5.00	1.50	.437	90°	.437-.500	FPE-32__	1602A	10	2.00
6GXSM7-6H	6.00	6.00	1.50	.437	90°	.437-.500	FPE-32__	1602A	12	2.50
8GXSM7-8H	8.00	8.00	2.00	.437	90°	.437-.500	FPE-32__	1602A	16	5.50
10GXSM7-8H	10.00	10.00	2.00	.437	90°	.437-.500	FPE-32__	1602A	20	8.50
12GXSM7-10H	12.00	12.00	2.50	.437	90°	.437-.500	FPE-32__	1602A	24	13.00
4GXSM8-5H	4.00	4.00	1.25	.500	90°	.500-.562	FPE-32__	1602A	8	1.50
5GXSM8-6H	5.00	5.00	1.50	.500	90°	.500-.562	FPE-32__	1602A	10	2.50
6GXSM8-6H	6.00	6.00	1.50	.500	90°	.500-.562	FPE-32__	1602A	12	3.75
8GXSM8-8H	8.00	8.00	2.00	.500	90°	.500-.562	FPE-32__	1602A	16	6.50
10GXSM8-8H	10.00	10.00	2.00	.500	90°	.500-.562	FPE-32__	1602A	20	10.00
12GXSM8-10H	12.00	12.00	2.50	.500	90°	.500-.562	FPE-32__	1602A	24	14.50

Insert I.C. x Thickness						
	Insert Pg. 34	Insert Lock	Insert Lock	Lock Screw	Adjusting Screw	Lock Screw Wrench
.375 x .126	FPE-32__	1602A	3502-0833-5000 RH 3502-0833-5001 LH	1449	1365-1	1557-PT6

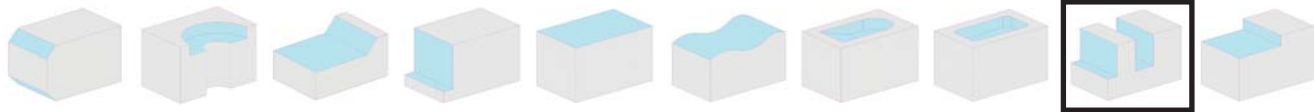
Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron, Class 30	200-500	.002-.008	FPE-322 GR LT-45	FPE-322 GR LTC-83
Tool Steel, D2	250-350	.002-.008	FPE-322B GR LT-50	FPE-322 GR LT-40
Medium Alloy Steel	300-700	.002-.008	FPE-322 GR LT-40	FPE-322 GR LTC-14
Tool Steel, P20	300-700	.002-.008	FPE-322 GR LT-40	FPE-322 GR LTC-14
Soft Alloy Steel	400-800	.002-.008	FPE-322 GR LT-40	FPE-322 GR LTC-14
Stainless Steel, 304, 316	200-500	.002-.008	FPE-322 GR LT-45	FPE-322 GR LTC-83

- Free cutting positive geometry designed for a broad range of workpiece materials
- High production design includes offset drive keys for multiple tool "gang" setups
- Engineered with generous chip gullets to ensure optimum chip evacuation
- Adjustable widths ensure infinite coverage between .380" and .562" in each GXSM diameter
- Engineered for stability over a variety of applications

GXSMH Series

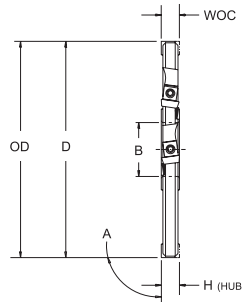
(for Flat Bottom Only)



Slotting Cutter .500 Insert



• Adjustable Widths



8° Pos Axial Pos Radial 90° Shldr

• GXSMH uses .500 FPE insert for true flat bottom ONLY!

GXSMH Series - Dimensional Specifications

Product Number	D	OD	B	H	A	WOC	Insert	Teeth	Weight
4GXSM8H-5H	4.00	4.00	1.25	.500	90°	.510-.562	FPE-43__	8	3.00
5GXSM8H-6H	5.00	5.00	1.50	.500	90°	.510-.562	FPE-43__	10	3.25
6GXSM8H-6H	6.00	6.00	1.50	.500	90°	.510-.562	FPE-43__	12	3.50
8GXSM8H-8H	8.00	8.00	2.00	.500	90°	.510-.562	FPE-43__	16	3.75
10GXSM8H-8H	10.00	10.00	2.00	.500	90°	.510-.562	FPE-43__	20	4.00
4GXSM9H-5H	4.00	4.00	1.25	.562	90°	.562-.625	FPE-43__	8	3.25
5GXSM9H-6H	5.00	5.00	1.50	.562	90°	.562-.625	FPE-43__	10	3.75
6GXSM9H-6H	6.00	6.00	1.50	.562	90°	.562-.625	FPE-43__	12	4.00
8GXSM9H-8H	8.00	8.00	2.00	.562	90°	.562-.625	FPE-43__	16	4.25
10GXSM9H-8H	10.00	10.00	2.00	.562	90°	.562-.625	FPE-43__	20	4.50
4GXSM10H-5H	4.00	4.00	1.25	.625	90°	.625-.687	FPE-43__	8	3.50
5GXSM10H-6H	5.00	5.00	1.50	.625	90°	.625-.687	FPE-43__	10	3.75
6GXSM10H-6H	6.00	6.00	1.50	.625	90°	.625-.687	FPE-43__	12	4.00
8GXSM10H-8H	8.00	8.00	2.00	.625	90°	.625-.687	FPE-43__	16	4.25
10GXSM10H-8H	10.00	10.00	2.00	.625	90°	.625-.687	FPE-43__	20	4.50
4GXSM11H-5H	4.00	4.00	1.25	.687	90°	.687-.750	FPE-43__	8	3.75
5GXSM11H-6H	5.00	5.00	1.50	.687	90°	.687-.750	FPE-43__	10	4.00
6GXSM11H-6H	6.00	6.00	1.50	.687	90°	.687-.750	FPE-43__	12	4.25
8GXSM11H-8H	8.00	8.00	2.00	.687	90°	.687-.750	FPE-43__	16	4.50
10GXSM11H-8H	10.00	10.00	2.00	.687	90°	.687-.750	FPE-43__	20	4.75
4GXSM12H-5H	4.00	4.00	1.25	.750	90°	.750-.812	FPE-43__	8	2.50
5GXSM12H-6H	5.00	5.00	1.50	.750	90°	.750-.812	FPE-43__	10	2.75
6GXSM12H-6H	6.00	6.00	1.50	.750	90°	.750-.812	FPE-43__	12	4.25
8GXSM12H-8H	8.00	8.00	2.00	.750	90°	.750-.812	FPE-43__	16	4.75
10GXSM12H-8H	10.00	10.00	2.00	.750	90°	.750-.812	FPE-43__	20	5.25

Insert I.C. x Thickness					
.500 X .188	Insert Pg. 34 FPE-43__	Insert Lock 1570	Lock Screw 1573	Adjusting Screw 1365	Lock Screw Wrench 1557-PT8

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron, Class 30	200-500	.002-.008	FPE-432 GR LT-45	FPE-432 GR LTC-83
Tool Steel, D2	250-350	.002-.008	FPE-432B GR LT-50	FPE-432 GR LT-40
Medium Alloy Steel	300-700	.002-.008	FPE-432 GR LT-40	FPE-432B GR LT-50
Tool Steel, P20	300-700	.002-.008	FPE-432 GR LT-40	FPE-432 GR LTC-14
Soft Alloy Steel	400-800	.002-.008	FPE-432 GR LT-40	FPE-432 GR LTC-14
Stainless Steel, 17-4PH, 15-5PH	300-700	.002-.008	FPE-432 GR LT-40	FPE-432 GR LTC-14
Stainless Steel, 304, 316	200-500	.002-.008	FPE-432 GR LT-45	FPE-432 GR LTC-83

- Free cutting positive geometry designed for a broad range of workpiece materials
- High production design includes offset drive keys for multiple tool “gang” setups
- Engineered with generous chip gullets to ensure optimum chip evacuation
- Adjustable widths ensure infinite coverage between .510” and .812” in each GXSMH diameter
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Index

Specials

Inserts

General

Cavity Mold

Gray Iron

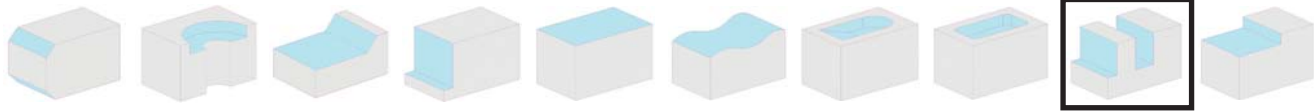
PCD / CBN

Slotters

Technical Data

Holders

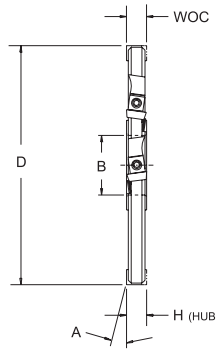
NXS Series



Slotting Cutter .750 Insert



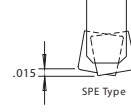
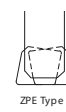
• Adjustable Widths



7° Pos Axial

Pos Radial







1°15' Dish



• Use .750 ZPE insert
for flat bottom

NXS Series - Dimensional Specifications

Product Number	D	B	H	A	WOC	Insert	Teeth	Weight
5NXS13-6H	5.00	1.50	.812	1°15'	.812-.875	SPE-63__	10	3.00
6NXS13-6H	6.00	1.50	.812	1°15'	.812-.875	SPE-63__	12	4.30
8NXS13-8H	8.00	2.00	.812	1°15'	.812-.875	SPE-63__	16	8.00
10NXS13-8H	10.00	2.00	.812	1°15'	.812-.875	SPE-63__	20	12.00
12NXS13-10H	12.00	2.50	.812	1°15'	.812-.875	SPE-63__	24	18.00
5NXS14-6H	5.00	1.50	.875	1°15'	.875-1.000	SPE-63__	10	3.30
6NXS14-6H	6.00	1.50	.875	1°15'	.875-1.000	SPE-63__	12	4.50
8NXS14-8H	8.00	2.00	.875	1°15'	.875-1.000	SPE-63__	16	9.00
10NXS14-8H	10.00	2.00	.875	1°15'	.875-1.000	SPE-63__	20	15.00
12NXS14-10H	12.00	2.50	.875	1°15'	.875-1.000	SPE-63__	24	21.00
5NXS16-6H	5.00	1.50	1.000	1°15'	1.000-1.125	SPE-63__	10	3.50
6NXS16-6H	6.00	1.50	1.000	1°15'	1.000-1.125	SPE-63__	12	5.50
8NXS16-8H	8.00	2.00	1.000	1°15'	1.000-1.125	SPE-63__	16	10.00
10NXS16-8H	10.00	2.00	1.000	1°15'	1.000-1.125	SPE-63__	20	17.00
12NXS16-10H	12.00	2.50	1.000	1°15'	1.000-1.125	SPE-63__	24	24.00
5NXS18-6H	5.00	1.50	1.125	1°	1.125-1.250	SPE-63__	10	3.80
6NXS18-6H	6.00	1.50	1.125	1°	1.125-1.250	SPE-63__	12	6.50
8NXS18-8H	8.00	2.00	1.125	1°	1.125-1.250	SPE-63__	16	11.00
10NXS18-8H	10.00	2.00	1.125	1°	1.125-1.250	SPE-63__	20	19.00
12NXS18-10H	12.00	2.50	1.125	1°	1.125-1.250	SPE-63__	24	27.00
5NXS20-6H	5.00	1.50	1.250	1°	1.250-1.375	SPE-63__	10	4.00
6NXS20-6H	6.00	1.50	1.250	1°	1.250-1.375	SPE-63__	12	7.50
8NXS20-6H	8.00	2.00	1.250	1°	1.250-1.375	SPE-63__	16	12.00
10NXS20-8H	10.00	2.00	1.250	1°	1.250-1.375	SPE-63__	20	21.00
12NXS20-10H	12.00	2.50	1.250	1°	1.250-1.375	SPE-63__	24	30.00

Insert I.C. x Thickness						
.750 x .188	Insert Pg. 43 SPE-63__	Insert Pg. 49 ZPE-63__	Insert Lock 1619	Lock Screw 1450	Adjusting Screw 1367	Lock Screw Wrench 1557-PT10

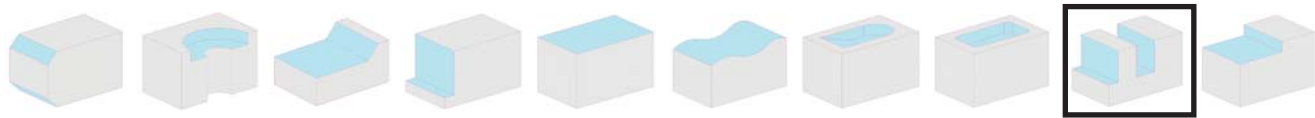
Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron, Class 30	200-500	.002-.008	SPE-634 GR 586XRm	SPE-634 GR LTC-21
Tool Steel, D2	250-350	.002-.008	SPE-634W515 GR 606jRm	SPE-634W515 GR LT-40
Medium Alloy Steel	300-700	.002-.008	SPE-634W515 GR 606jRm	SPE-634W515 GR LT-40
Tool Steel, P20	300-700	.002-.008	SPE-634W515 GR 606jRm	SPE-634 GR LTC-14
Soft Alloy Steel	400-800	.002-.008	SPE-634B GR LT-50	SPE-634 GR LTC-14

- Free cutting positive geometry designed for a broad range of workpiece materials
- High production design includes offset drive keys for multiple tool “gang” setups
- Engineered with generous chip gullets to ensure optimum chip evacuation
- Adjustable widths ensure infinite coverage between .812” and 1.375” in each NXS diameter
- Engineered for stability over a variety of applications

NXSM Series

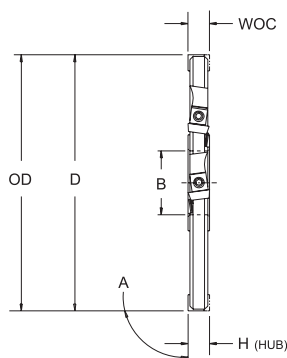
(for Flat Bottom Only)



Slotting Cutter .750 Insert



• Adjustable Widths



7° Pos Axial Pos Radial 90° Shldr

• NXSM uses .750 FPE insert for true flat bottom ONLY!

NXSM Series - Dimensional Specifications

Product Number	D	OD	B	H	A	WOC	Insert	Teeth	Weight
5NXSM13-6H	5.00	5.00	1.50	.812	90°	.812-.875	FPE-63__	10	3.00
6NXSM13-6H	6.00	6.00	1.50	.812	90°	.812-.875	FPE-63__	12	4.30
8NXSM13-8H	8.00	8.00	2.00	.812	90°	.812-.875	FPE-63__	16	8.00
10NXSM13-8H	10.00	10.00	2.00	.812	90°	.812-.875	FPE-63__	20	12.00
12NXSM13-10H	12.00	12.00	2.50	.812	90°	.812-.875	FPE-63__	24	18.00
5NXSM14-6H	5.00	5.00	1.50	.875	90°	.875-1.000	FPE-63__	10	3.30
6NXSM14-6H	6.00	6.00	1.50	.875	90°	.875-1.000	FPE-63__	12	4.50
8NXSM14-8H	8.00	8.00	2.00	.875	90°	.875-1.000	FPE-63__	16	9.00
10NXSM14-8H	10.00	10.00	2.00	.875	90°	.875-1.000	FPE-63__	20	15.00
12NXSM14-10H	12.00	12.00	2.50	.875	90°	.875-1.000	FPE-63__	24	21.00
5NXSM16-6H	5.00	5.00	1.50	1.000	90°	1.000-1.125	FPE-63__	10	3.50
6NXSM16-6H	6.00	6.00	1.50	1.000	90°	1.000-1.125	FPE-63__	12	5.50
8NXSM16-8H	8.00	8.00	2.00	1.000	90°	1.000-1.125	FPE-63__	16	10.00
10NXSM16-8H	10.00	10.00	2.00	1.000	90°	1.000-1.125	FPE-63__	20	17.00
12NXSM16-10H	12.00	12.00	2.50	1.000	90°	1.000-1.125	FPE-63__	24	24.00
5NXSM18-6H	5.00	5.00	1.50	1.125	90°	1.125-1.250	FPE-63__	10	3.80
6NXSM18-6H	6.00	6.00	1.50	1.125	90°	1.125-1.250	FPE-63__	12	6.50
8NXSM18-8H	8.00	8.00	2.00	1.125	90°	1.125-1.250	FPE-63__	16	11.00
10NXSM18-8H	10.00	10.00	2.00	1.125	90°	1.125-1.250	FPE-63__	20	19.00
12NXSM18-10H	12.00	12.00	2.50	1.125	90°	1.125-1.250	FPE-63__	24	27.00
5NXSM20-6H	5.00	5.00	1.50	1.250	90°	1.250-1.375	FPE-63__	10	4.00
6NXSM20-6H	6.00	6.00	1.50	1.250	90°	1.250-1.375	FPE-63__	12	7.50
8NXSM20-6H	8.00	8.00	2.00	1.250	90°	1.250-1.375	FPE-63__	16	12.00
10NXSM20-8H	10.00	10.00	2.00	1.250	90°	1.250-1.375	FPE-63__	20	21.00

Insert I.C. x Thickness					
.750 x .188	Insert Pg. 34 FPE-63__	Insert Lock 1619	Lock Screw 1450	Adjusting Screw 1367	Lock Screw Wrench 1557-PT10

Machining Parameters

Material	SFPM	FPT	Primary	Secondary
Gray Cast Iron, Class 30	200-500	.002-.008	FPE-634 GR LTC-21	FPE-634 GR LTC-83
Tool Steel, D2	250-350	.002-.008	FPE-634W515 GR LT-40	FPE-634W515 GR LT-40
Medium Alloy Steel	300-700	.002-.008	FPE-634W515 GR LT-40	FPE-634B GR LTC-37
Tool Steel, P20	300-700	.002-.008	FPE-634W515 GR LT-40	FPE-634 GR LTC-14
Soft Alloy Steel	400-800	.002-.008	FPE-634 GR LTC-14	FPE-634 GR LTC-14

- Free cutting positive geometry designed for a broad range of workpiece materials
- High production design includes offset drive keys for multiple tool “gang” setups
- Engineered with generous chip gullets to ensure optimum chip evacuation
- Adjustable widths ensure infinite coverage between .812” and 1.375” in each NXSM diameter
- Engineered for stability over a variety of applications



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders

Technical Application Data

Face Milling:

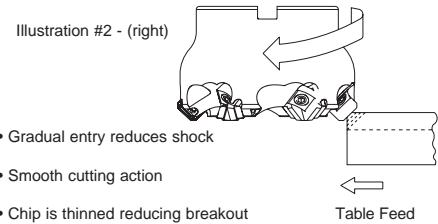
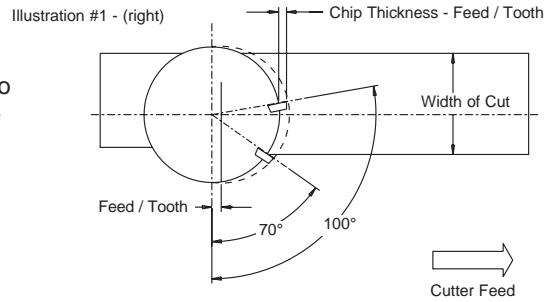
One of the most important factors for successful milling with carbide cutting tools is the formation and thickness of the chip. Unlike high speed steel cutters, which can form chips from a zero thickness, due to their sharp ground cutting edges and slow surface footages, indexable carbide cutters must take a bite upon entry. Illustration #1 shows the proper engagement for best performance.

Note: A good rule of thumb when selecting a chip load would be to start no less than .003 - .004 feed per tooth. If there is ample horsepower and good rigidity a higher rate of .008 and up should be selected.

If possible always select a lead angle cutter for maximum cutter performance, Illustration #2.

- | | | |
|---|--|---|
| 1) 70° to 90° for best insert life. Initial impact on face of insert, not corner. | 2) Produces optimum chip thickness upon entry. | 3) Limiting engagement to 60-75% on heavy depths of cut prevents chip plugging. |
|---|--|---|

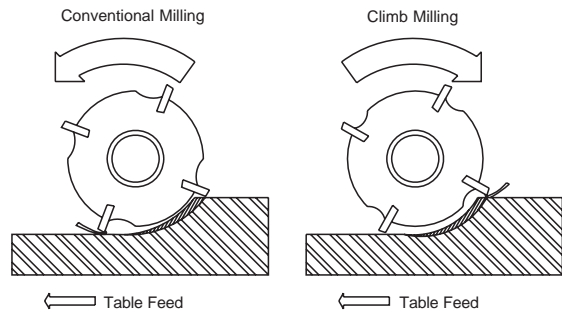
Cutter Angle of Entry with three basic reasons - (shown below)



Slot Milling:

When applying a carbide cutter a climb mill mode should be used. This is especially important in slot milling. Unlike a face mill the slotting cutter has half the number of effective blades (i.e. 6" diameter with a total of 12 blades (6) RH and (6) LH for (6) effective). Also remember you are matching a slot, which is a confined area. The deeper the slot the more concern should be given to feed rates (i.e. higher rate - shallow slots, slower rate - deeper slots). As Illustration #3 shows a conventional mode even at a proper chip load will generate heat when forming chip from zero thickness, which causes welding of the chip to the blade face and severe tool failure upon re-entry. Whereas, in the climb mode, even if a chip should stick, (not welded because severe heat was not generated at formation) the chip is sheared off on re-entry not wedged as in the conventional mode.

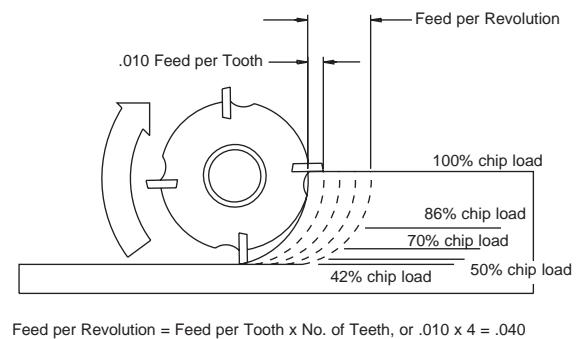
Illustration #3 - (below)



Slab Milling:

Like slot milling, slab mills are not very often buried (cut deeper than center of tool) Illustration #4. So, for shallow depths of cut, higher chip loads should be used to create an engagement. Quite often, chatter and bouncing of the cutter occurs because the chip load is too light and instead of increasing feed to engage the feed is reduced, which will make the situation worse. Remember, carbide likes to take a bite!

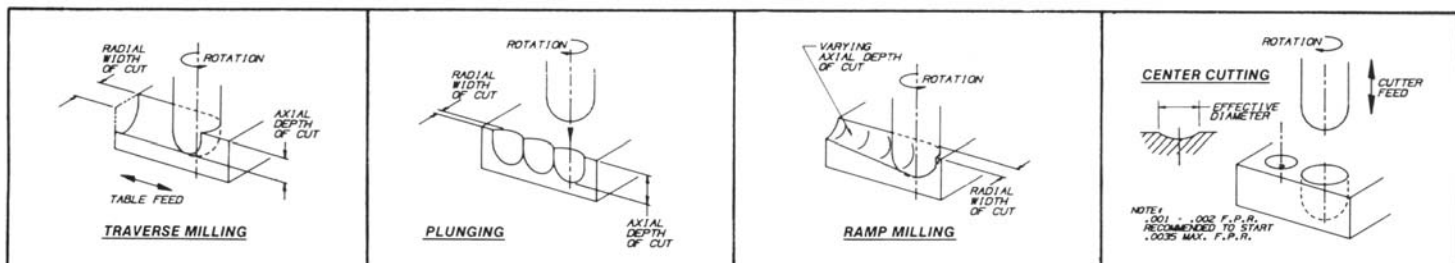
Illustration #4 - (right)



Ball Nose Milling:

Application of carbide ball nose end mills must be given some extra attention because of zero surface footage condition at the nose of tool and a chip thinning effect depending on depth of cut, Illustration #5.

Illustration #5 - (below)



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

HOLDERS

Mounting Specifications for LOVEJOY Face Mills

Mounting Specifications for LOVEJOY Face Mills:

Joydex face mills are available with the popular mounting illustrated and described below. For the mountings available for a specific series of Joydex cutters refer to the catalog page for that series.

Special Mountings:

LOVEJOY Cutters can be manufactured for any type of mounting within the design limitations of the cutter's diameter and thickness. Please provide a blue print when ordering.

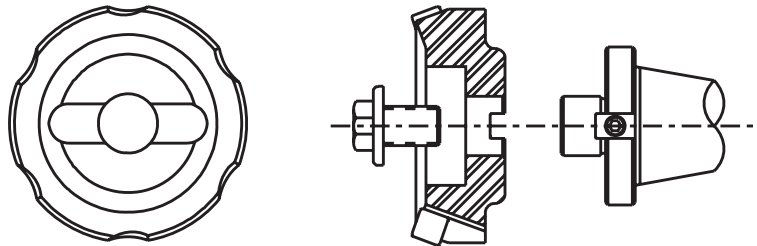
Numerical Control:

When ordering face mills for mounting on NC machine specify program dimensions for thickness and diameters.

National Standard Shell End Arbor Mount:

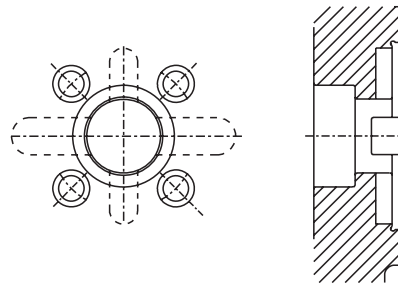
This mount is designed to fit the pilot of a Style C National Standard Shell End Arbor with #30, #40, #50 or #60 NMTBA Tapered Shank. Other shanks, which this mount will fit includes Brown & Sharpe, Morse Arbors and arbors to suit all quick-change adaptors.

Hole sizes are available for pilots of 1" through 2 1/2" in diameter depending on the cutter diameter. Cutter sizes with this mount are generally 3" through 8" diameter.



Combination Mounting:

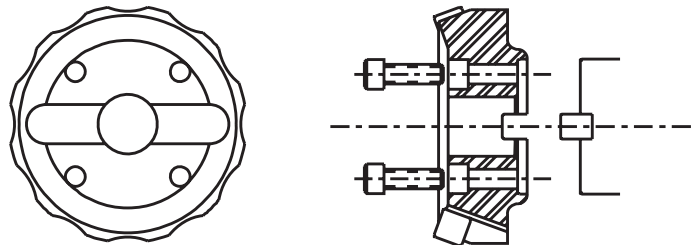
8" diameter cutters are made with a combination mounting that will fit the National Standard Shell End Arbor with a 2" pilot or the #50 National Standard Spindle Mount. Two keyways are provided to suit each mounting.



#50 National Standard Spindle Mount:

Cutters with this mount have a recessed back that fits the standard #50 NMTBA spindle diameter of 5.0625. Four bolts on a 4" diameter circle mount the cutters to the spindle face. The arbor hole is 2" in diameter.

This mount is generally used for cutter 8" in diameter and larger.



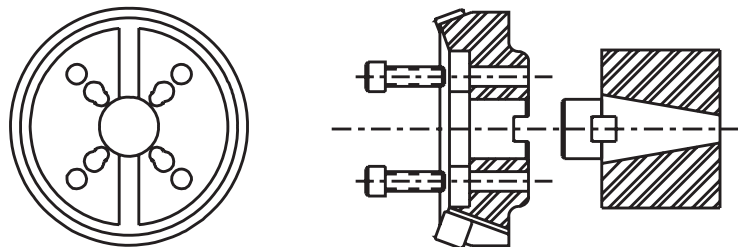
Flat Back, Universal Mount:

This mount, designed for cutters 8" in diameter and larger, has a 2 1/2" arbor hole for mounting on a centering plug for accurate cutter location.

Four bolts bolt the cutter to the spindle face. The boltholes are elongated and placed to permit mounting in 4", 4 3/4" and 7" diameter bolt circles, depending on cutter diameter.

8" diameter cutters have 4" bolt circle. 9" through 11" diameter cutters have 4" and 4 3/4" diameter bolt circle.

12" diameter and larger are furnished with 4", 4 3/4" and 7" diameter bolt circles.



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

Slotters

Technical Data

Holders



LOVEJOY Tolerancing & Torque Specifications

Indexable Cutters			
	Diameter	Thickness	
Index	Face Mills		
	thru 6"	+ .000 / - .005	+ .000 / - .005
	over 6" - 12"	+ .015 / - .000	+ .000 / - .020
	over 12" - 16"	+ .032 / - .000	+ .000 / - .020
Specials	over 16"	+ .062 / - .005	+ .000 / - .020
	45° Lead Face Mills		
	thru 6"	+ .005 / - .005	+ .005 / - .005
	Stepdex Face Mills		
Inserts	thru 12"	+ .000 / - .005	+ .000 / - .005
	over 12" and up	+ .032 / - .000	+ .000 / - .020
	90° Shoulder Face Mills		
	thru 12"	+ .000 / - .005	+ .000 / - .005
General	over 12" and up	+ .032 / - .000	+ .000 / - .020
	Ball Nose End Mills		
	All	+ .0025 / - .0025	N / A
	Half Side Mills		
Cavity Mold	thru 12"	+ .015 / - .000	+ .000 / - .015
	over 12" - 16"	+ .032 / - .000	+ .000 / - .020
	over 16" and up	+ .062 / - .000	+ .000 / - .020
	Slotting Cutters		
Gray Iron	thru 12"	+ .015 / - .000	+ .000 / - .006
	over 12" - 16"	+ .032 / - .000	+ .000 / - .006
	over 16" and up	+ .062 / - .000	+ .000 / - .006
	EXSP Slotting Cutters		
PCD / CBN	thru 12"	+ .015 / - .000	+ .004 / - .004
	over 12" - 16"	+ .032 / - .000	+ .004 / - .004
	over 16" and up	+ .062 / - .000	+ .004 / - .004
	Slab Mills		
Slotters	All Diameters	+ .020 / - .000	N / A
	End Mills		
	Joydex	+ .000 / - .005	N / A
	Screw mount type	+ .002 / - .002	N / A

Screw Torque Specifications		
	Carbide	Silicon Nitride
Screw	Torque (inch-lbs)	Torque (inch-lbs)
1/4-28 x 1/2	100	
3605-0001-0010	28	
1319	80	28
1449	35	
1450	100	
1451	100	
1452	100	
1495	80	
1573	80	40
1/4-28 x 3/4	100	
10-32 x 1/2	40	
3-48 x 3/16	6.7	
3601-0001-0017	28	
3605-0001-0004	40	
3605-0001-0005	12	
3605-0001-0006	12	
3605-0001-0009	28	
3605-0001-0013	12	
3605-0001-0019	12	
3605-0001-0021	30	
3605-0001-0022	30	
3605-0001-0023	90	
3605-0001-0025	11	
3605-0001-0027	11	
3605-0001-0033	45	
6-32 x 1/2	12	
8-32 x 5/8	28	

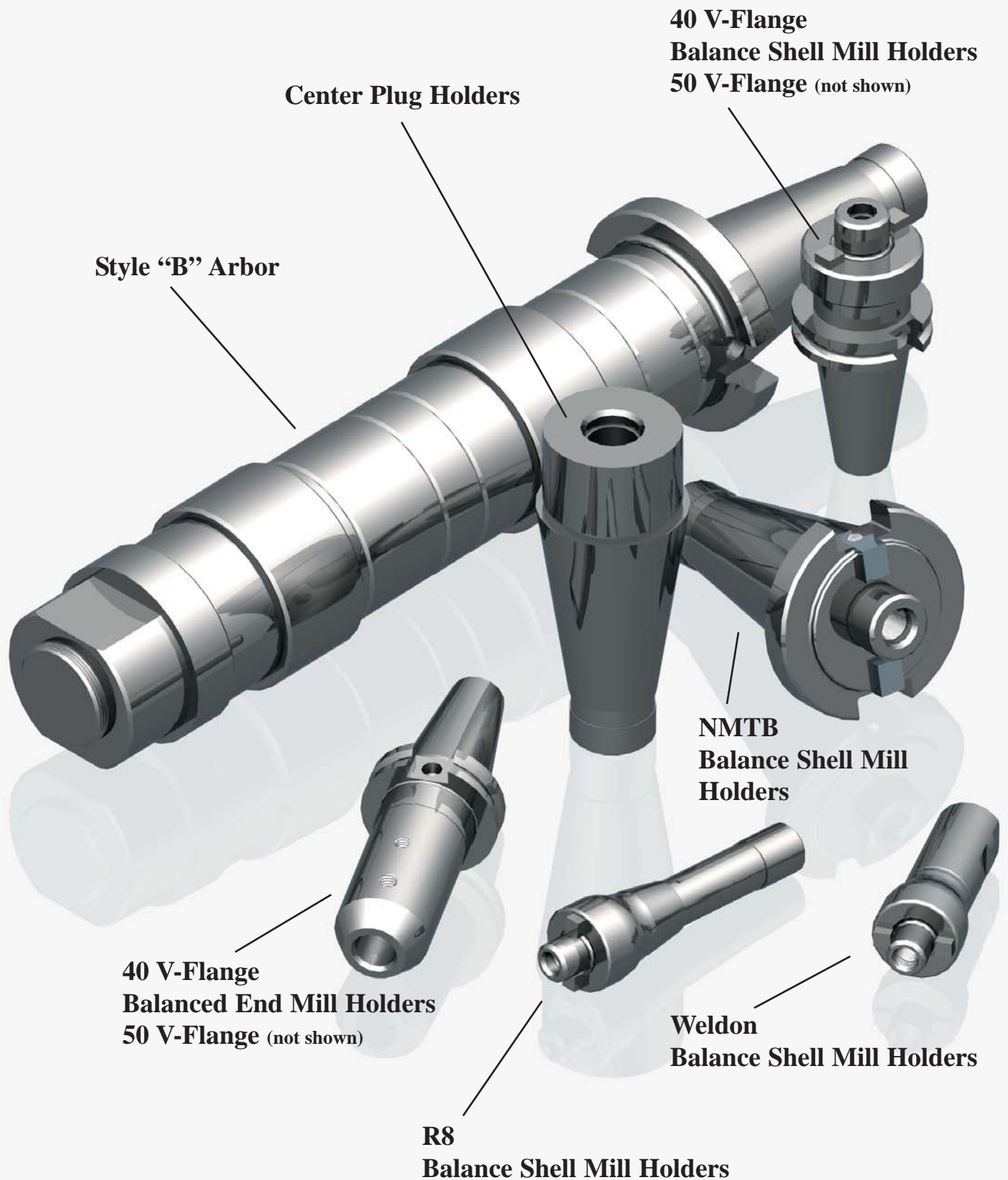
557 Series - Screw Torque Specifications		
	Torque (Nm)	Torque (inch-lbs)
GWS 08	Manual	Manual
GWS 10	Manual	Manual
GWS 12	6.0	53
GWS 16	6.2	55
GWS 20	6.2	55
GWS 25	6.5	58
GWS 32	6.5	58

Standard Runout Tolerance				
Maximum Over Master Insert	(Flat Anvil) Face	(Lipped Anvil) Face	O.D.	Slot / Slot
thru 6"	.0003	.0008	.0010	.0005
over 6" - 12"	.0005	.0010	.0013	.0005
over 12" - 16"	.0008	.0013	.0015	.0007

Screw-On Insert - Standard Runout Tolerance			
Maximum Over Master Insert	Face	O.D.	Slot / Slot
thru 6"	.0014	.0022	.0009
over 6"	.002	.0022	.0012

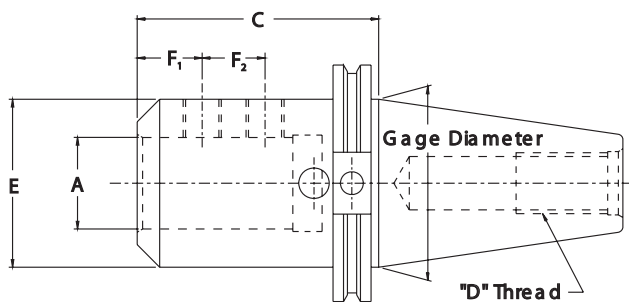
Non-Anvil Style - Standard Runout Tolerance			
Maximum Over Master Insert	Face	O.D.	Slot / Slot
thru 6"	.0012	.0012	.0006
over 6"	.0018	.0022	.0009

Arbors & Holders



Holders

CAT 40 / 50 - Balanced End Mill Holders



- NATIONAL STANDARD End Mill Holders with V-FLANGE

Hardware Specifications

Weldon Set Screw
(see table)



40 CAT V-Flange End Mill Holders

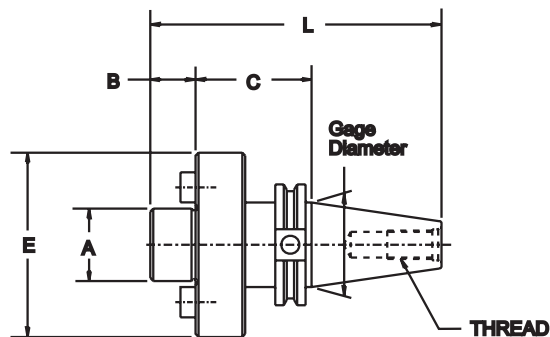
Shank	Product Number	Gage Diameter	A	E	C	D	F1	F2	Weldon Set Screw
40 V-Flange	40VSTW3B	1.750	0.375	1.00	2.50	5/8-11	0.75	---	3/8-16 x 5/16
40 V-Flange	40VSTW4B	1.750	0.500	1.25	2.63	5/8-11	0.88	---	7/16-14 x 3/8
40 V-Flange	40VSTW5B	1.750	0.625	1.50	3.75	5/8-11	0.94	---	9/16-12 x 7/16
40 V-Flange	40VSTW6B	1.750	0.750	1.75	4.00	5/8-11	1.00	---	1350
40 V-Flange	40VSTW7B	1.750	0.875	2.00	4.00	5/8-11	1.00	---	1350
40 V-Flange	40VSTW8B	1.750	1.000	2.25	4.00	5/8-11	1.13	---	1347
40 V-Flange	40VSTW10B	1.750	1.250	2.50	4.25	5/8-11	1.13	---	1347

50 CAT V-Flange End Mill Holders

Shank	Product Number	Gage Diameter	A	E	C	D	F1	F2	Weldon Set Screw
50 V-Flange	50VSTW3B	2.750	0.375	1.00	2.50	1"-8	0.75	---	3/8-16 x 5/16
50 V-Flange	50VMTW3B	2.750	0.375	1.00	4.50	1"-8	0.75	---	3/8-16 x 5/16
50 V-Flange	50VSTW4B	2.750	0.500	1.38	2.63	1"-8	0.88	---	7/16-14 x 3/8
50 V-Flange	50VMTW4B	2.750	0.500	1.38	4.63	1"-8	0.88	---	7/16-14 x 3/8
50 V-Flange	50VSTW5B	2.750	0.625	1.63	3.75	1"-8	0.94	---	9/16-12 x 1/2
50 V-Flange	50VMTW5B	2.750	0.625	1.63	5.75	1"-8	0.94	---	9/16-12 x 1/2
50 V-Flange	50VSTW6B	2.750	0.750	1.75	3.75	1"-8	1.00	---	1350
50 V-Flange	50VMTW6B	2.750	0.750	1.75	5.75	1"-8	1.00	---	1350
50 V-Flange	50VSTW7B	2.750	0.875	2.00	3.75	1"-8	1.00	---	1350
50 V-Flange	50VMTW7B	2.750	0.875	2.00	5.75	1"-8	1.00	---	1350
50 V-Flange	50VSTW8B	2.750	1.000	2.00	4.00	1"-8	1.13	---	1347
50 V-Flange	50VMTW8B	2.750	1.000	2.00	6.00	1"-8	1.13	---	1347
50 V-Flange	50VSTW10B	2.750	1.250	2.50	4.00	1"-8	1.13	0.94	1347
50 V-Flange	50VMTW10B	2.750	1.250	2.50	6.00	1"-8	1.13	1.00	1347
50 V-Flange	50VSTW12B	2.750	1.500	2.75	4.00	1"-8	1.50	0.94	1353
50 V-Flange	50VMTW12B	2.750	1.500	2.75	6.00	1"-8	1.50	1.00	1353
50 V-Flange	50VSTW16B	2.750	2.000	3.75	5.63	1"-8	1.41	0.94	1"-14 x 7/8
50 V-Flange	50VMTW16B	2.750	2.000	3.75	7.63	1"-8	1.41	1.00	1"-14 x 7/8



Holders

CAT 40 / 50 - Balanced Shell Mill Holders



• NATIONAL STANDARD Shell Mill Holders with V-FLANGE

Hardware Specifications

Drive Key (See Table)		Arbor Screw (See Table)	
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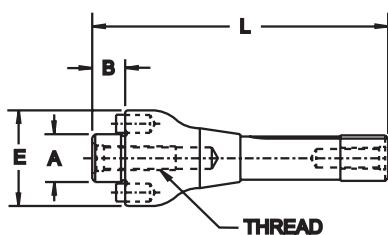
40 CAT V-Flange Shell Mill Holders

Shank	Product Number	Gage	A	B	C	Thread	E	L	Drive Key	Arbor Screw
40 V-Flange	40VST3B	1.750	0.750	0.687	1.375	5/8-11	1.75	4.75	#0	1538
40 V-Flange	40VST4B	1.750	1.000	0.687	2.062	5/8-11	2.19	5.44	#1	1537
40 V-Flange	40VST5B	1.750	1.250	0.687	2.125	5/8-11	2.88	5.50	#2	1536
40 V-Flange	40VST6B	1.750	1.500	0.937	2.406	5/8-11	3.81	6.03	#3	1535

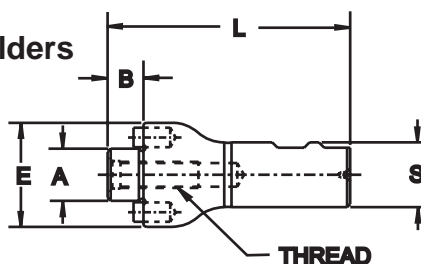
50 CAT V-Flange Shell Mill Holders

Shank	Product Number	Gage	A	B	C	Thread	E	L	Drive Key	Arbor Screw
50 V-Flange	50VST3B	2.750	0.750	0.687	1.375	1"-8	1.75	4.75	#0	1538
50 V-Flange	50VST4B	2.750	1.000	0.687	2.062	1"-8	2.19	5.44	#1	1537
50 V-Flange	50VST6B	2.750	1.500	0.937	2.406	1"-8	3.81	6.03	#3	1535
50 V-Flange	50VST8B	2.750	2.000	0.937	2.406	1"-8	4.86	7.34	#4	1534



R8 - Balanced Shell Mill Holders



Weldon - Balanced Shell Mill Holders



Hardware Specifications

Drive Key (See Table)	
Arbor Screw (See Table)	

R8 - Balanced Shell Mill Holders

Type	Product Number	Gage	A	B	C - Thread	E	L	S	Drive Key	Arbor Screw
R8	R8ST3B	1.25	0.750	0.687	3/8-24	1.625	6.000	N/A	#0	1538
R8	R8ST4B	1.25	1.000	0.687	1/2-20	2.000	6.190	N/A	#1	1537

Weldon - Balanced Shell Mill Holders

Type	Product Number	Gage	A	B	C - Thread	E	L	S	Drive Key	Arbor Screw
Weldon	W5ST3B	N/A	0.750	0.687	3/8-24	1.625	4.500	1.250	#0	1538
Weldon	W5ST4B	N/A	1.000	0.687	1/2-20	2.000	4.680	1.250	#1	1537



Index

Specials

Inserts

General

Cavity Mold

Gray Iron

PCD / CBN

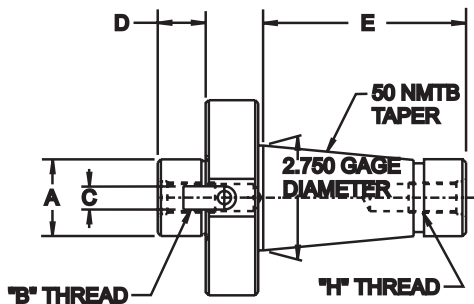
Slotters

Technical Data

Holders

Holders

50 NMTB - Shell Mill Holders

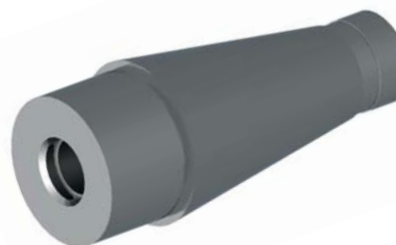
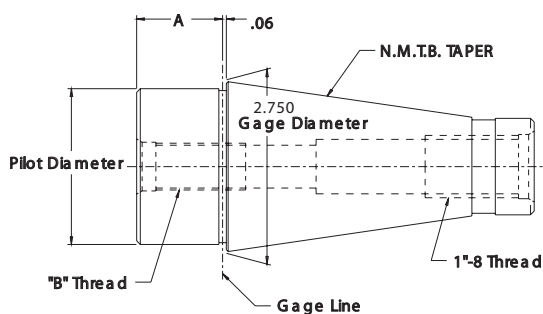


- STANDARD Flanged Shell Mill Holders

Hardware Specifications							
Drive Key (See Table)		Key Screw (See Table)		Washer (See Table)		Arbor Screw (See Table)	

Standard Shell Mill Holders												
Product Number	Size Number	A	B	C	D	E	H	J	Key Screw Dimensions	Washer Number	Drive Key	Arbor Screw
50ST3	50-3/4C5/8	.750	3/8-24	5/16	11/16	5-1/8	1"-8	5/8	3/8-24 x 1"	1746	1675	1372
50ST4	51C7/8	1.000	1/2-20	3/8	11/16	5-1/8	1"-8	7/8	1/2-20 x 1"	1747	1677	1371
50ST5	51-1/4C7/8	1.250	5/8-18	1/2	11/16	5-1/8	1"-8	7/8	5/8-18 x 1-1/4"	1720	1685	1370
50ST6	51-1/2C7/8	1.500	3/4-16	5/8	15/16	5-1/8	1"-8	7/8	3/4-16 x 1-1/2"	1696	1694	1369
50ST8	52C7/8	2.000	3/4-16	3/4	15/16	5-1/8	1"-8	7/8	3/4-16 x 1-1/2"	1667	1795	1368
50ST10	52-1/2C7/8	2.500	1"-14	1"	1-1/8	5-1/8	1"-8	7/8	1"-14 x 1-1/2"	1648	1629	1368

Center Plug Holders

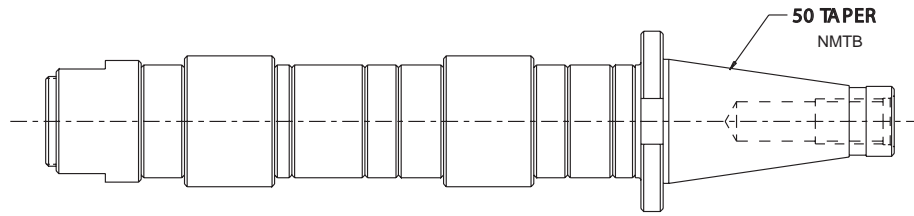


- Heavy Duty

Hardware Specifications			
Washer (See Table)		Arbor Screw (See Table)	

Heavy Duty - Center Plug Holders							
Product Number	Pilot Diameter	A	B	Shank	Washer	Arbor Screw Dimensions	Arbor Screw
50STP8	2.00	1.500	1"-14	50 NMTB	1667	1"-14 x 1-1/2	1368
50STP10	2.50	1.000	1"-14	50 NMTB	1648	1"-14 x 1-1/2	1368

Style "B" Arbor



- NATIONAL STANDARD Milling Machine Holders

50 Taper Arbors

Product Number	Diameter	Length Shoulder to Nut	Keyway		Bearing Furnished			Arbor Nut Thread
			Width	Depth	Quantity	Standard Number	O.D.	
51-1/4B18-4	1.25	18	5/16	3/16	1	4	2-1/8	1-1/4"-12
51-1/4B18-5	1.25	18	5/16	3/16	1	5	2-3/4	1-1/4"-12
51-1/4B24-4	1.25	24	5/16	3/16	2	4	2-1/8	1-1/4"-12
51-1/4B24-5	1.25	24	5/16	3/16	2	5	2-3/4	1-1/4"-12
51-1/2B18-4	1.50	18	3/8	7/32	1	4	2-1/8	1-1/2"-12
51-1/2B18-5	1.50	18	3/8	7/32	2	5	2-3/4	1-1/2"-12
51-1/2B24-4	1.50	24	3/8	7/32	2	4	2-1/8	1-1/2"-12
51-1/2B24-5	1.50	24	3/8	7/32	2	5	2-3/4	1-1/2"-12
51-1/2B30-4	1.50	30	3/8	7/32	2	4	2-1/8	1-1/2"-12
51-1/2B30-5	1.50	30	3/8	7/32	2	5	2-3/4	1-1/2"-12
51-1/2B36-4	1.50	36	3/8	7/32	2	4	2-1/8	1-1/2"-12
51-1/2B36-5	1.50	36	3/8	7/32	2	5	2-3/4	1-1/2"-12
52B24-5	2.00	24	1/2	5/16	2	5	2-3/4	2"-12
52B30-5	2.00	30	1/2	5/16	2	5	2-3/4	2"-12
52B36-5	2.00	36	1/2	5/16	2	5	2-3/4	2"-12
52-1/2B30-6	2.50	30	5/8	13/32	2	6	3-3/8	2-1/2"-12
52-1/2B36-6	2.50	36	5/8	13/32	2	6	3-3/8	2-1/2"-12



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Notes:

Index	
Specials	
Inserts	
General	
Cavity Mold	
Gray Iron	
PCD / CBN	
Slotters	
Technical Data	
HOLDERS	

Notes:

Index	
Specials	
Inserts	
General	
Cavity Mold	
Gray Iron	
PCD / CBN	
Slotters	
Technical Data	
HOLDERS	



Notes:

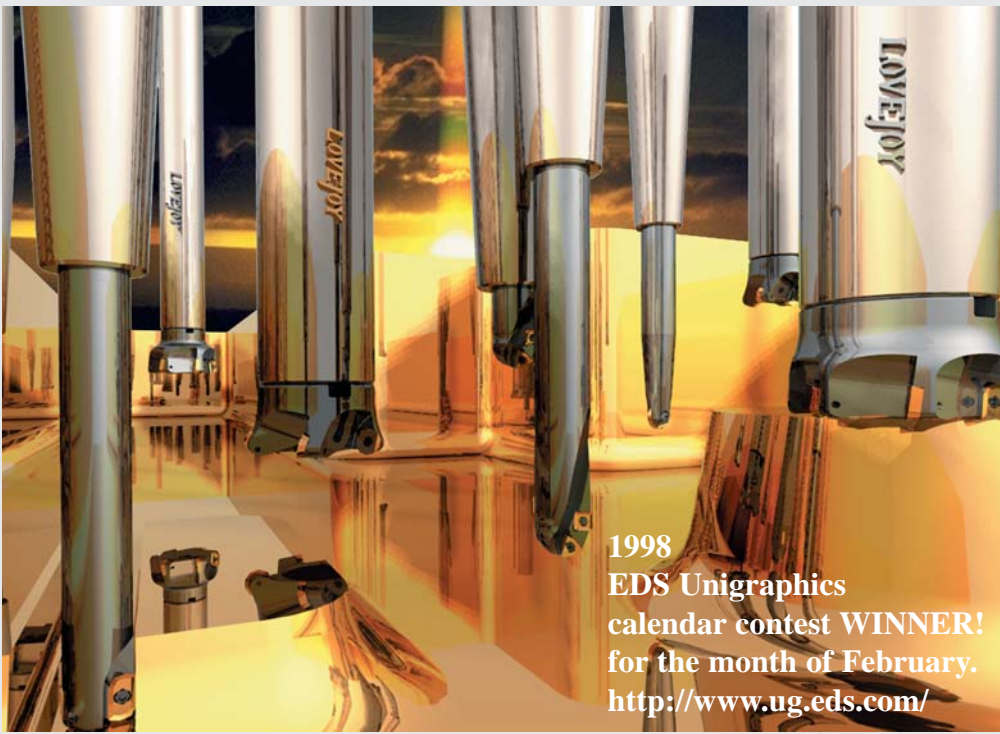
Index	
Specials	
Inserts	
General	
Cavity Mold	
Gray Iron	
PCD / CBN	
Slotters	
Technical Data	
HOLDERS	



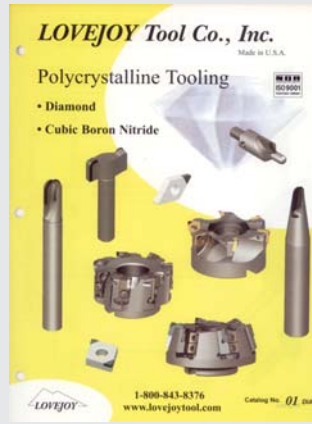
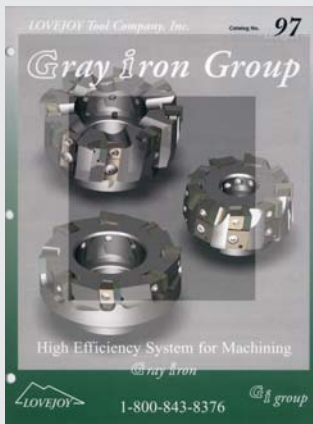
Notes:

Index	
Specials	
Inserts	
General	
Cavity Mold	
Gray Iron	
PCD / CBN	
Slotters	
Technical Data	
HOLDERS	





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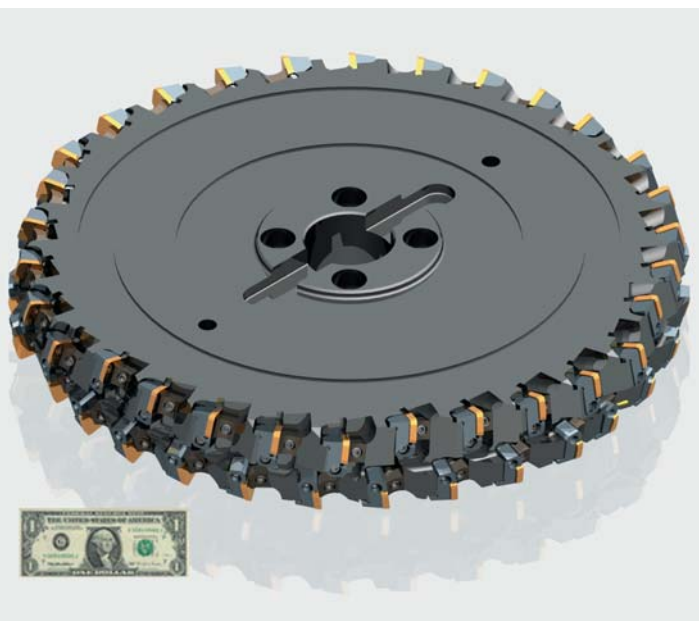
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