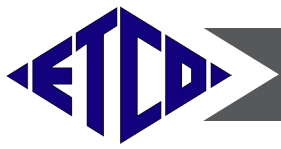
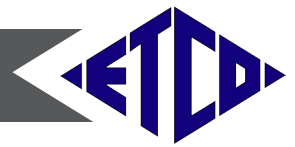


ETCO TOOLHOLDERS & INSERTS	PAGE
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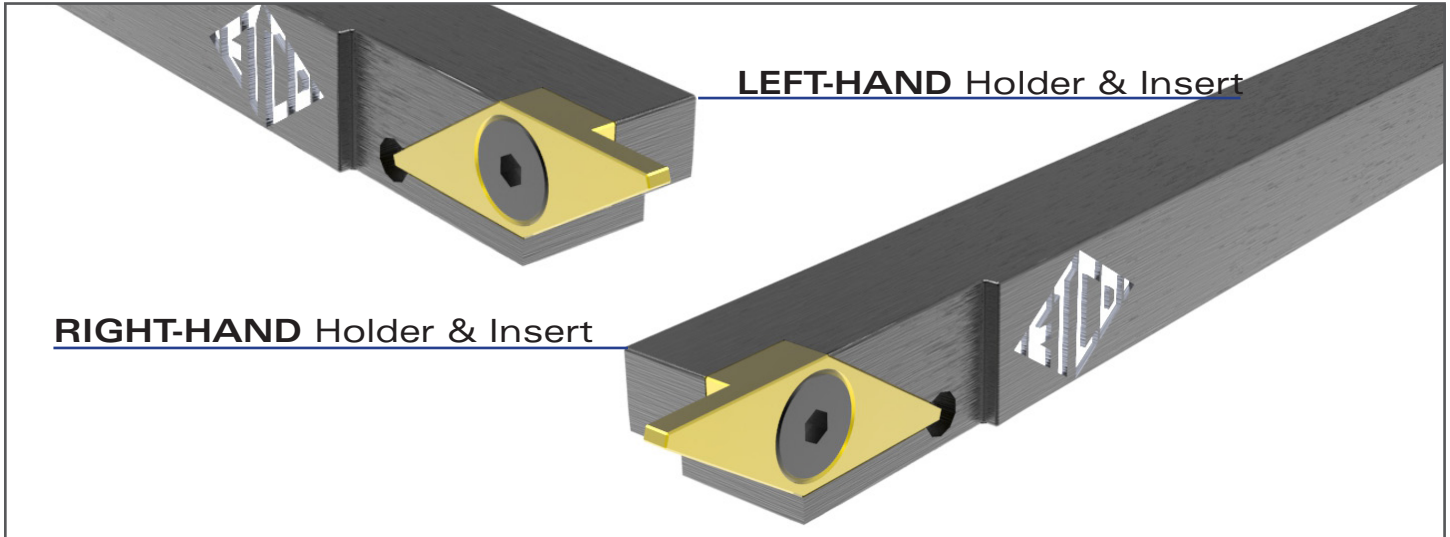


INSERT GRADES

GRADES	DESCRIPTION
C2	Sub Micron Carbide Substrate with excellent abrasion resistance for toughness and edge strength. Good for turning all Non-Ferrous Materials (Aluminum, Brass, Bronze, Copper, Silver, Reney etc.) Designed to cut 300 Stainless, Titanium, and Refractory Metals.
C-2 T	C-2 Substrate with TiN coating. 950°F 80 HRC. See Alcrona.
C-2 N	C-2 Substrate with TiCN coating. 950°F 90 HRC.
C-2 A	C-2 Substrate with ALTiN coating. 950°F 93 HRC.
C-5	Carbide substrate with excellent shock and impact resistance: good wear and toughness features. Good for turning various types of carbon steels to alloy steels from 1018, 1117, 1245, 4140, 4340 and in addition performs on a broad range of applications.
C-5 T	C-5 Substrate with TiN coating. (See Alcrona)
C-5 N	C-5 Substrate with TiCN coating. (See Alcrona)
C-5 A	C-5 Substrate with ALTiN coating. (See Alcrona)
TiN	General purpose coating for cutting, forming, plastic molding. 80 HRC (See Alcrona)
TiCN (N)	Cutting carbon steel, alloy steel and cast iron. 90HRC
TiALN (TIA)	Broad-based coating for cutting all steels, cast iron, stainless steel; dry machining possible; aerospace titanium alloys, stainless steel, Inconel. 93HRC
ALCRONA	For steels (<92 HRC), cast iron, aerospace Inconel; titanium alloys.



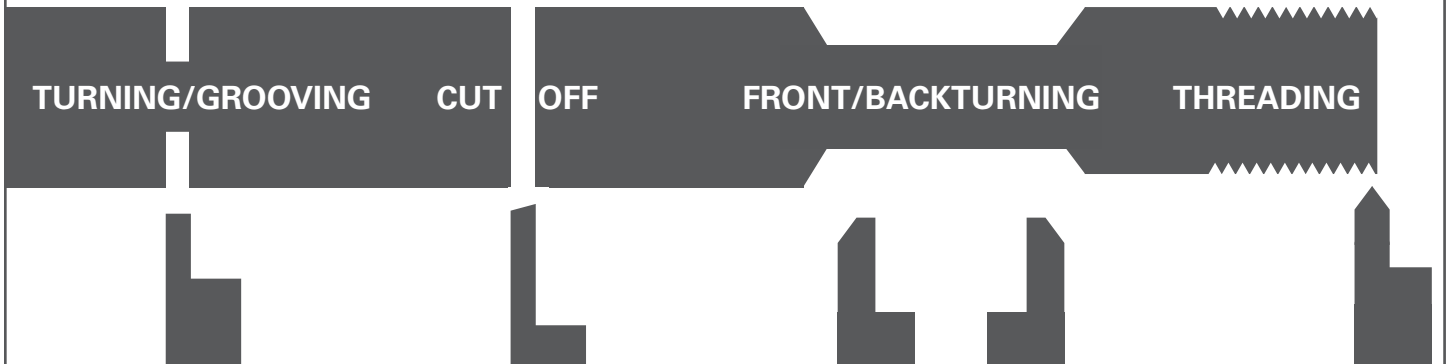
FOR ALL SWISS STYLE & CNC MACHINING CENTERS



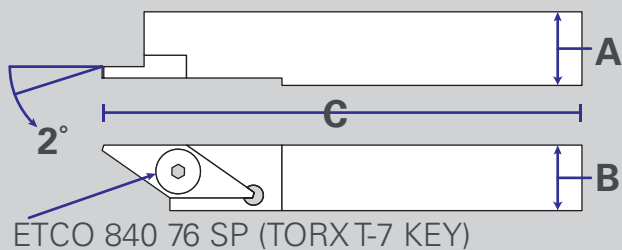
LEFT-HAND Holder & Insert

RIGHT-HAND Holder & Insert

AVAILABLE SELECTION OF INSERT STYLES FOR VERTICAL STYLE CUTTING



35° TOOLHOLDERS "T SERIES" VERTICAL STYLE



LEFT HAND	RIGHT HAND	A	B	C
SMV-35 T-L7mm	SMV-35T-R7mm	7mm	7mm	5"
SMV-35 T-L8mm	SMV-35T-R8mm	8mm	8mm	5"
SMV-35 T-L10mm	SMV-35T-R10mm	10mm	10mm	5"
◇SMV-35 T-L12mm	SMV-35 T-R12mm	12mm	12mm	5"
*	SMV-35 T-R2	3/8"	3/8"	5"
◇SMV-35T-L4	SMV-35 T-R4	1/2"	1/2"	5"
*	SMV-35 T-R6	5/8"	5/8"	5"

DUO BAR FORTURRET - CROSS SLIDE - GANG LOADING



TOOLHOLDER NUMBER	DIAMETER	LENGTH
DBSMV-3525-6	5/8"	5"
DBSMV-3525-8	3/4"	5"

HOLD DOWN SCREW FOR ABOVE ETCO-84076SP

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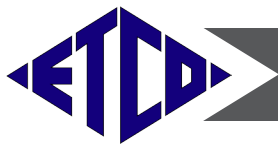
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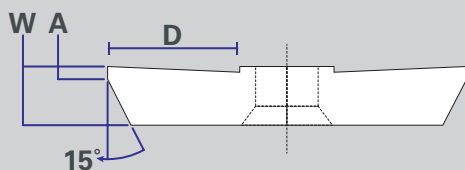


SMV-35 T SERIES

VERTICAL CUTTING

35° BACKTURNING T SERIES

15° LEAD FOR FERROUS STEEL

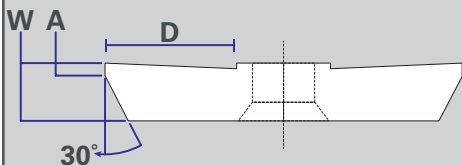


INSERT NUMBER		DIMENSION				
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A	
BTL35T15-040	BTR35T15-040	.040	.080	.250	.010	
BTL35T15-062	BTR35T15-062	.062	.124	.250	.020	
BTL35T15-078	BTR35T15-078	.078	.156	.250	.020	

AVAILABLE WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

35° BACKTURNING T SERIES

30° LEAD FOR NON-FERROUS AND HIGH TEMP ALLOYS

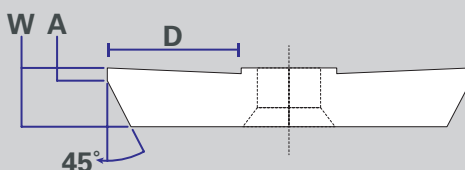


INSERT NUMBER		DIMENSION				
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A	
BTL35T30-040	BTR35T30-040	.040	.080	.250	.010	
BTL35T30-062	BTR35T30-062	.062	.124	.250	.020	
BTL35T30-078	BTR35T30-078	.078	.156	.250	.020	

AVAILABLE WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

45° BACKTURNING T SERIES

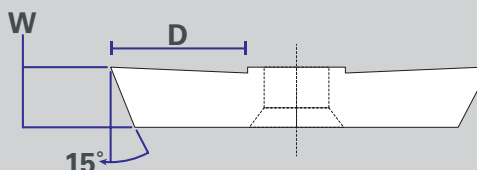
45° LEAD FOR NON-FERROUS AND HIGH TEMP ALLOYS



INSERT NUMBER		DIMENSION				
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A	
BTL35T45-040	BTR35T45-040	.040	.080	.250	.010	
BTL35T45-062	BTR35T45-062	.062	.124	.250	.020	
BTL35T45-078	BTR35T45-078	.078	.156	.250	.020	

AVAILABLE WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

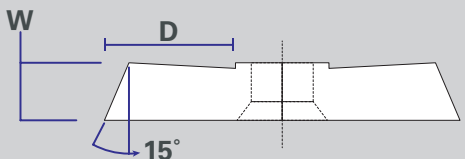
35° CUT-OFF FOR T SERIES ONLY



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
COL35T-020	COR35T-020	.020	.050	.250
COL35T-030	COR35T-030	.030	.060	.250
COL35T-040	COR35T-040	.040	.090	.250
COL35T-050	COR35T-050	.050	.125	.250
COL35T-062	COR35T-062	.062	.230	.250
COL35T-078	COR35T-078	.078	.230	.250

AVAILABLE WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

35° CUT-OFF FOR T SERIES ONLY "SPECIAL APPLICATIONS"



LEFT HAND FOR RIGHT CUT
RIGHT HAND FOR LEFT CUT

INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
COL35T-030-RC	COR35T-030-LC	.030	.070	.250
COL35T-040-RC	COR35T-040-LC	.040	.090	.250
COL35T-050-RC	COR35T-050-LC	.050	.125	.250
COL35T-062-RC	COR35T-062-LC	.062	.230	.250
COL35T-078-RC	COR35T-078-LC	.078	.230	.250

AVAILABLE WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

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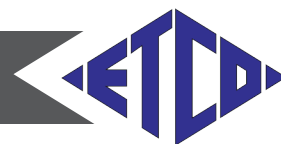
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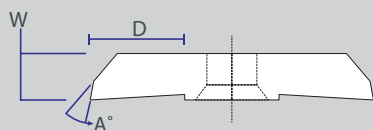
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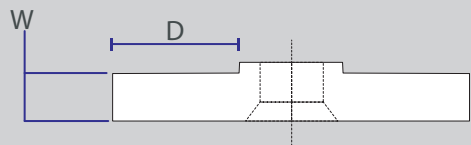
35° FRONTTURNINGT SERIES ONLY



INSERT NUMBER		DIMENSION				
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	RADIUS	ANGLE	I.C
FTL35T-11010	FTR35T-11010	.110	.230	.000	1°	.250
FTL35T-11040	FTR35T-11040	.110	.230	.000	4°	.250
FTL35T-11052	FTR35T-11052	.110	.230	.002	15°	.250
FTL35T-11057	FTR35T-11057	.110	.230	.007	15°	.250

AVAILABLE WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

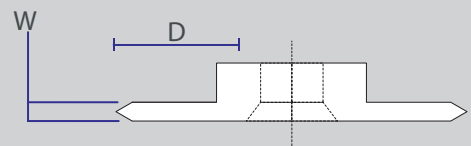
35°TURNING & GROOVINGT SERIES ONLY



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
TGL35T-020	TGR35T-020	.020	.050	.250
TGL35T-030	TGR35T-030	.030	.060	.250
TGL35T-040	TGR35T-040	.040	.090	.250
TGL35T-050	TGR35T-050	.050	.125	.250
TGL35T-062	TGR35T-062	.062	.230	.250
TGL35T-078	TGR35T-078	.078	.230	.250
TGL35T-093	TGR35T-093	.093	.230	.250

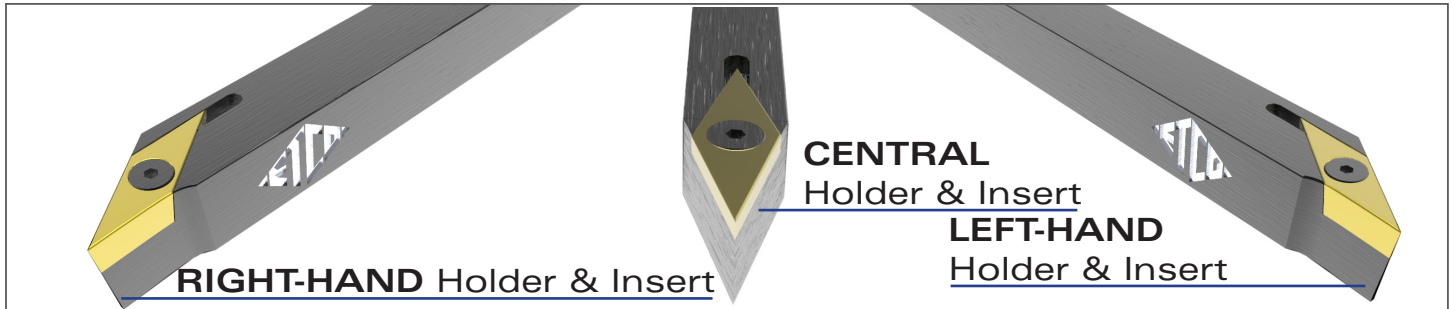
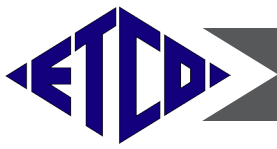
AVAILABLE WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

35°THREADING T SERIES ONLY



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
TTL35T-016	TTR35T-016	.032	.155	.250
TTL35T-031	TTR35T-031	.062	.155	.250

AVAILABLE WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER



35° PROFILING TOOLHOLDERS USE INSERTS VBGB35T

TOOLHOLDER NUMBER	DIMENSION		
	A	B	C
SMP-35T-L 7MM	7mm	7mm	5"
SMP-35T-L 8MM	8mm	8mm	5"
SMP-35T-L 10MM	10mm	10mm	5"
SMP-35T-L 12MM	12mm	12mm	5"

HOLD DOWN SCREW FOR ABOVE ETCO-84076SP

35° PROFILING FOR T SERIES ONLY

INSERT NUMBER	DIMENSION		
	PROFILING	WIDTH	R I.C
VBGB35T-000	.110	.000	.250
VBGB35T-002	.110	.002	.250
VBGB35T-004	.110	.004	.250
VBGB35T-006	.110	.006	.250
VBGB35T-008	.110	.008	.250
VBGB35T-010	.110	.010	.250

AVAILABLE WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

35° PROFILING FOR T SERIES ONLY WITH CHIPBREAKER

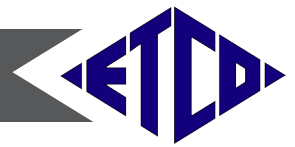
INSERT NUMBER	DIMENSION		
	LEFT HAND	RIGHT HAND	WIDTH R I.C
VBGBL35T-004	VBGBR35T-004	.110	.004 .250
VBGBL35T-006	VBGBR35T-006	.110	.006 .250
VBGBL35T-008	VBGBR35T-008	.110	.008 .250
VBGBL35T-010	VBGBR35T-010	.110	.010 .250

35° FRONT TURNING FOR T SERIES ONLY WITH FLAT

INSERT NUMBER	DIMENSION	
	CHIPBREAKER	TYPE
VBGBL-21030T	-	-
VBGBR-21030T	-	-
VBGBRL-21030T	L. CHIPBREAKER	-
VBGBRR-21030T	R. CHIPBREAKER	-

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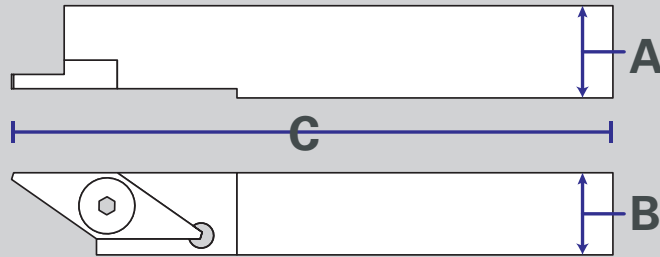
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LEFT-HAND Holder & Insert

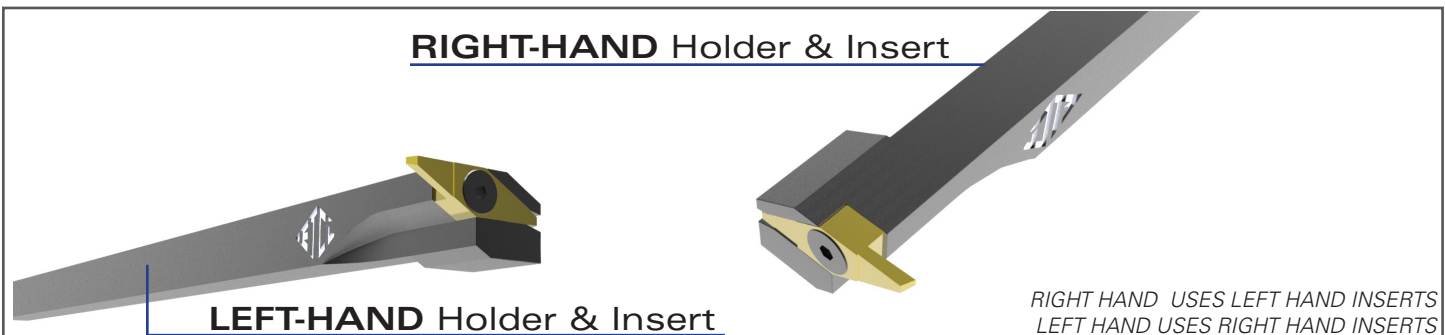
RIGHT-HAND Holder & Insert

35° TOOLHOLDERS



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	A	B	C
SMV-35-L00	SMV-35-R00	5/16"	5/16"	5"
SMV-35-L1	SMV-35-R1	3/8"	3/8"	3.5"
SMV-35-L2	SMV-35-R2	3/8"	3/8"	5"
SMV-35-L3	SMV-35-R3	1/2"	1/2"	3.5"
SMV-35-L4	SMV-35-R4	1/2"	1/2"	5"
SMV-35-L12mm	SMV-35-R12mm	12mm	12mm	5"
SMV-35-L5	SMV-35-R5	5/8"	5/8"	3.5"
SMV-35-L6	SMV-35-R6	5/8"	5/8"	5"
SMV-35-L16mm	SMV-35-R16mm	16mm	16mm	5"
SMV-35-L20mm	SMV-35-R20mm	20mm	20mm	5"
SMV-35-L8	SMV-35-R8	3/4"	3/4"	5"
◇SMV-35-L10	◇SMV-35-R10	1"	1"	5"

HOLD DOWN SCREW FOR ABOVE ETCO-54038AFSCS

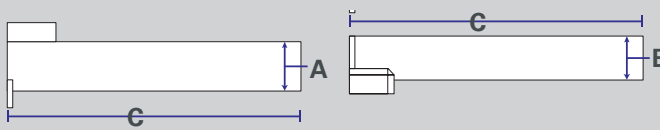


RIGHT-HAND Holder & Insert

LEFT-HAND Holder & Insert

RIGHT HAND USES LEFT HAND INSERTS
LEFT HAND USES RIGHT HAND INSERTS

35°-90° OFFSET TOOLHOLDERS



TOOLHOLDER NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	A	B	C
SMV-35904-L1	SMV-35904-R1	3/8"	3/8"	4"
SMV-35904-L3	SMV-35904-R3	1/2"	1/2"	4"

HOLD DOWN SCREW FOR ABOVE ETCO-54038AFSCS

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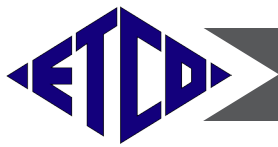
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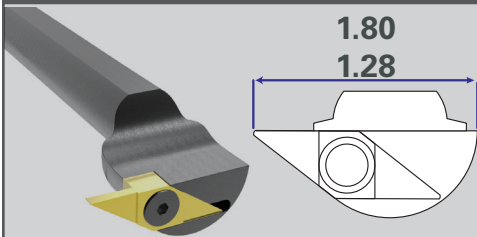
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SMV-35 SERIES

VERTICAL CUTTING

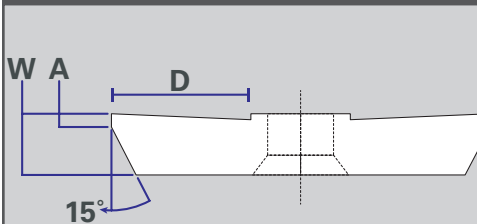
35°-90° OFFSET TOOLHOLDERS VERTICAL



INSERT NUMBER		DIMENSION	
LEFT HAND	RIGHT HAND	DIAMETER	LENGTH
BSMV-3590-L6	BSMV-3590-R6	.625	6"
BSMV-3590-L8	BSMV-3590-R8	.750	6"

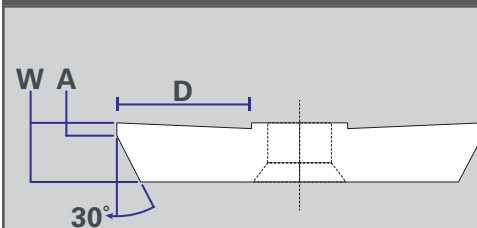
NOTE: RIGHT-HAND - USES LEFT HAND INSERTS - ROUND SHANK ONLY
LEFT-HAND - USES RIGHT HAND INSERTS - ROUND SHANK ONLY
HOLD DOWN SCREWS ETCO -54038AFSCS

35° BACKTURNING 15° LEAD FOR FERROUS STEEL



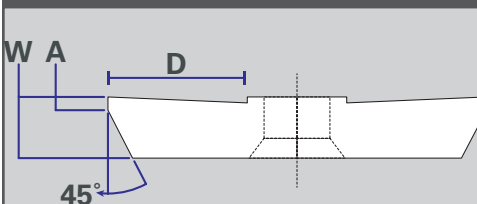
INSERT NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A
BTL-3515-062	BTR-3515-062	.062	.125	.312	.020
BTL-3515-078	BTR-3515-078	.078	.156	.312	.025
BTL-3515-093	BTR-3515-093	.093	.187	.312	.025
BTL-3515-125	BTR-3515-125	.125	.300	.312	.030

35° BACKTURNING 30° LEAD FOR NON-FERROUS STEEL AND HIGH TEMP ALLOY



INSERT NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A
BTL-3530-062	BTR-3530-062	.062	.125	.312	.020
BTL-3530-078	BTR-3530-078	.078	.156	.312	.025
BTL-3530-093	BTR-3530-093	.093	.187	.312	.025
BTL-3530-125	BTR-3530-125	.125	.300	.312	.030

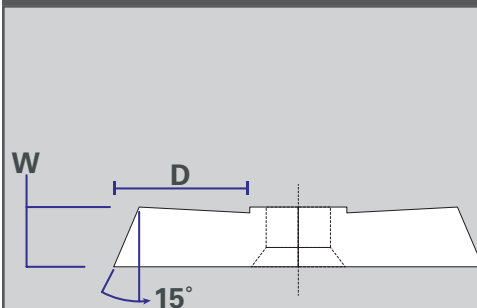
35° BACKTURNING 45° LEAD FOR NON-FERROUS STEEL AND HIGH TEMP ALLOY



INSERT NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A
BTL-3545-078	BTR-3545-078	.078	.156	.312	.025
BTL-3545-093	BTR-3545-093	.093	.187	.312	.025
BTL-3545-125	BTR-3545-125	.125	.300	.312	.030

ALL BACKTURNING-AVAILABLE WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

35° CUT-OFF



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
COL-35-020	COR-35-020	.020	.050	.312
COL-35-030	COR-35-030	.030	.060	.312
COL-35-040	COR-35-040	.040	.080	.312
COL-35-047	COR-35-047	.047	.250	.312
COL-35-062	COR-35-062	.062	.250	.312
COL-35-078	COR-35-078	.078	.300	.312
COL-35-093	COR-35-093	.093	.300	.312
COL-35-125	COR-35-125	.125	.300	.312

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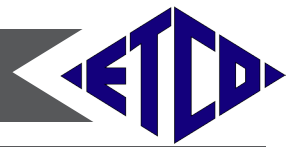
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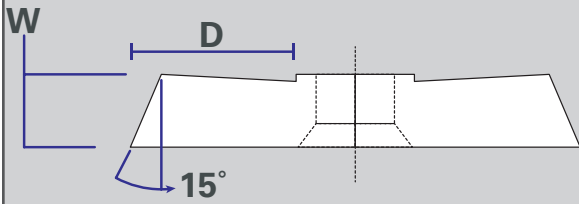
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35° CUT-OFF SPECIALS

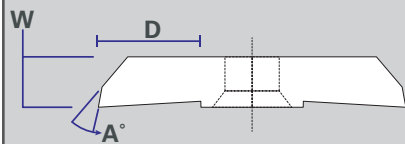
15° LEAD



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
COL-35-062RC	COR-35-062LC	.062	.250	.312
COL-35-078RC	COR-35-078LC	.078	.300	.312
COL-35-093RC	COR-35-093LC	.093	.300	.312
COL-35-125RC	COR-35-125LC	.125	.300	.312

AVAILABLE WITH GROUND CHIPBREAKER

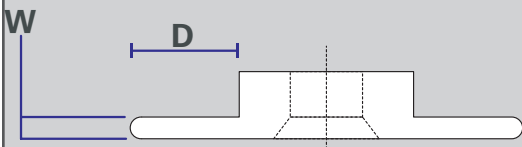
35° FRONT TURNING



INSERT NUMBER		DIMENSION				
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	RADIUS	ANGLE	I.C
FTL35-15640	FTR35-15640	.156	.300	.000	1°	.312
FTL35-15645	FTR35-15645	.156	.300	.005	4°	.312

AVAILABLE WITH GROUND CHIPBREAKER

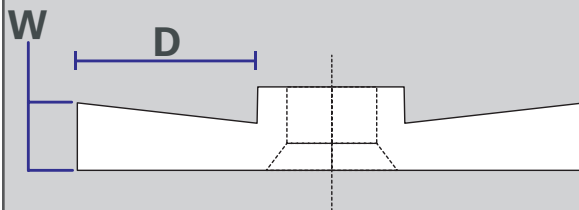
35° FULL RADIUS



INSERT NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	RADIUS	I.C
TGL35-031FR	TGR-35-031FR	.062	.250	.031	.312
TGL35-047FR	TGR-35-047FR	.094	.300	.047	.312
TGL35-062FR	TGR-35-062FR	.124	.300	.062	.312
TGL35-078FR	TGR-35-078FR	.156	.300	.078	.312

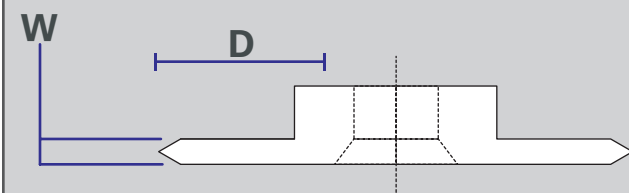
CUSTOM CUTTING WIDTHS & DEPTHS AVAILABLE

35° TURNING & GROOVING



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
TGL35-020	TGR-35-020	.020	.050	.312
TGL35-030	TGR-35-030	.030	.060	.312
TGL35-0401	TGR-35-0401	.040	.080	.312
TGL35-0471	TGR-35-0471	.047	.094	.312
TGL35-047	TGR-35-047	.047	.250	.312
TGL35-062	TGR-35-062	.062	.250	.312
TGL35-078	TGR-35-078	.078	.300	.312
TGL35-093	TGR-35-093	.093	.300	.312
TGL35-125	TGR-35-125	.125	.300	.312

35° THREADING



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
TTL-35	TTR-35	.156	.300	.312
TTL-35-016	TTR-35-016	.032	.200	.312
TTL-35-031	TTR-35-031	.062	.200	.312

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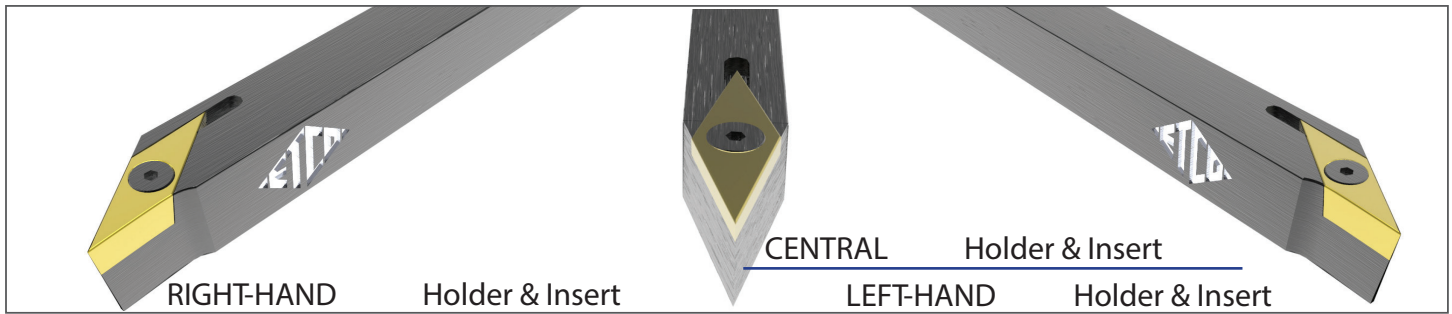
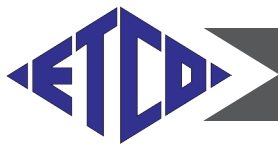
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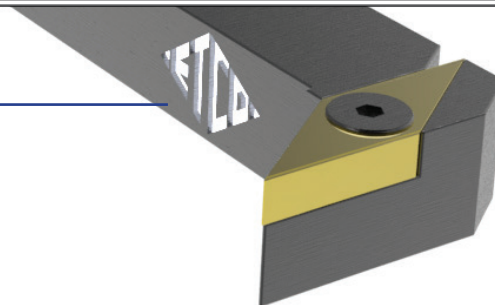
35° TOOLHOLDERS

USE INSERT SERIES VBGB-35 (PG 11)

	INSERT NUMBER			DIMENSION		
	LEFT HAND	CENTRAL	RIGHT HAND	A	B	C
	◇SMP-35-L0	SMP-35-C0	SMP-35-R0	5/16"	5/16"	3.5"
	SMP-35-L00	SMP-35-C00	SMP-35-R00	5/16"	5/16"	5"
	◇SMP-35-L1	SMP-35-C1	SMP-35-R1	3/8"	3/8"	3.5"
	SMP-35-L2	SMP-35-C2	SMP-35-R2	3/8"	3/8"	5"
	SMP-35-L3	SMP-35-C3	SMP-35-R3	1/2"	1/2"	3.5"
	SMP-35-L4	SMP-35-C4	SMP-35-R4	1/2"	1/2"	5"
	SMP-35-L12mm	SMP-35C12mm	SMP-35-R12mm	12mm	12mm	5"
	SMP-35-L5	SMP-35-C5	SMP-35-R5	5/8"	5/8"	3.5"
	SMP-35-L6	SMP-35-C6	SMP-35-R6	5/8"	5/8"	5"
	SMP-35-L8	SMP-35-C8	SMP-35-R8	3/4"	3/4"	5"
	SMP-35-L20mm	SMP-35-C20mm	SMP-35-R20mm	20mm	20mm	5"

HOLD DOWN SCREW FOR ABOVE
ETCO-54038AFSCS

LEFT HAND
HOLDER &
INSERT



RIGHT HAND USES LEFT HAND INSERTS
LEFT HAND USES RIGHT HAND INSERTS

35°-90° OFFSET PROFILING TOOLHOLDERS

USE INSERT SERIES VBGB-35 (PG 11)

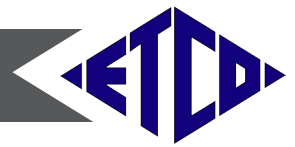
	TOOLHOLDER NUMBER	DIMENSION		
		A	B	C
	SMP-35904-L1	.375	.375	4"
	SMP-35904-L3	.500	.500	4"
	SMP-35904-L20mm	20mm	20mm	4"

HOLD DOWN SCREW FOR ABOVE ETCO-54038AFSCS

INSERTS FOR ABOVE SMP HOLDERS ON PAGE 11

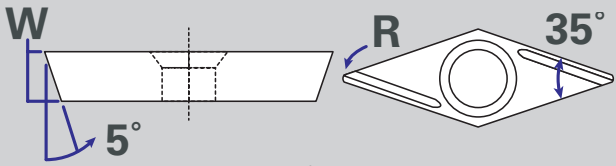
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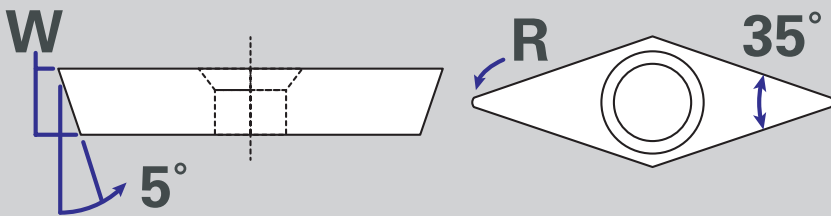
SMP 35 SERIES INSERTS

35° PROFILING WITH CHIPBREAKER



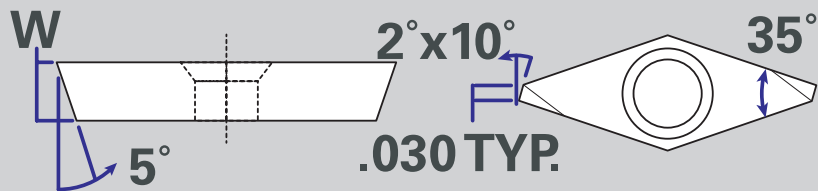
INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	RADIUS	I.C
VBGBL-35-005	VBGBR-35-005	.156	.005	.312
VBGBL-35-007	VBGBR-35-007	.156	.007	.312
VBGBL-35-015	VBGBR-35-015	.156	.015	.312

35° PROFILING

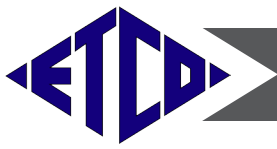


INSERT NUMBER		DIMENSION		
LEFT HAND		WIDTH	RADIUS	I.C
VBGB-35-000		.156	.000	.312
VBGB-35-002		.156	.002	.312
VBGB-35-005		.156	.005	.312
VBGB-35-007		.156	.007	.312
VBGB-35-015		.156	.015	.312

35° FRONT TURNING WITH FLAT



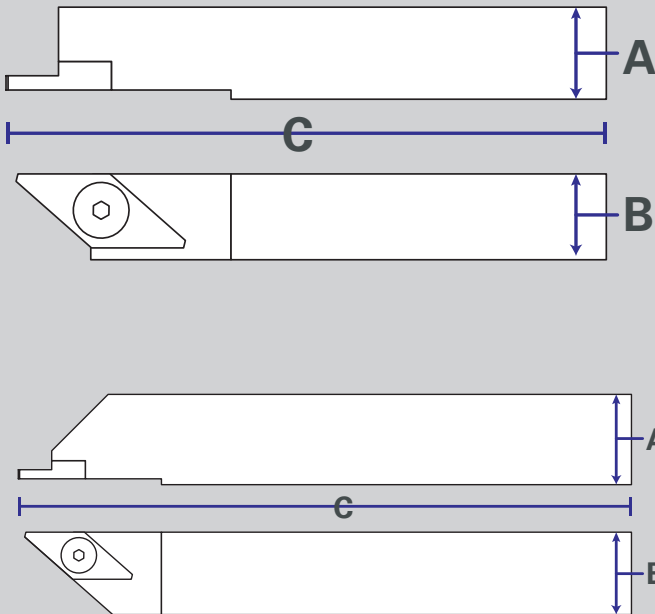
INSERT NUMBER		
VBGBL-21030		LEFT FRONT TURN
VBGBR-21030		RIGHT FRONT TURN
VBGBRL-21030		L. CHIPBREAKER
VBGBRR-21030		R. CHIPBREAKER



RIGHT-HAND Holder & Insert

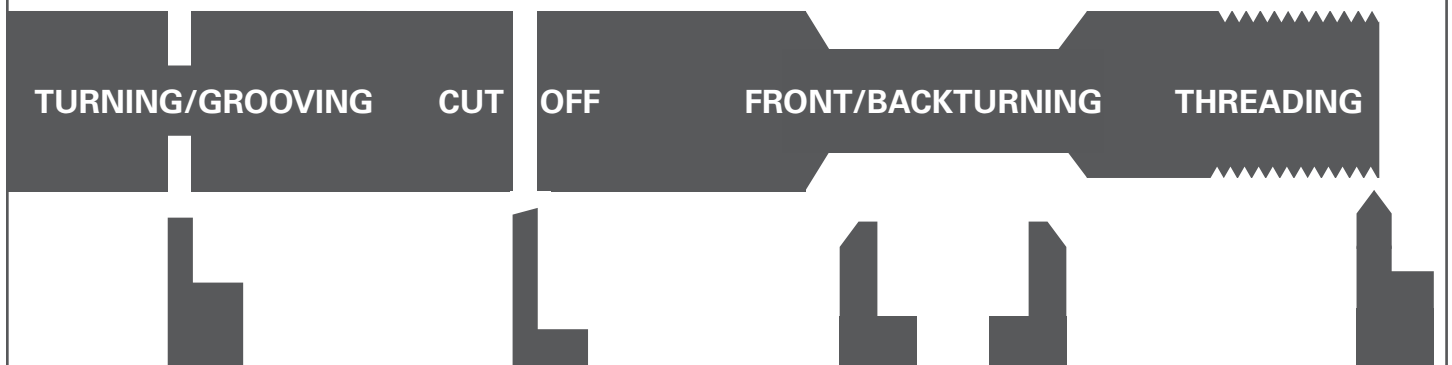
LEFT-HAND Holder & Insert

50° DIAMOND TOOLHOLDERS



TOOLHOLDER NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	A	B	C
SMV-50-L1	SMV-50-R1	3/8"	3/8"	3.5"
SMV-50-L2	SMV-50-R2	3/8"	3/8"	5"
SMV-50-L3	SMV-50-R3	1/2"	1/2"	3.5"
SMV-50-L4	SMV-50-R4	1/2"	1/2"	5"
SMV-50-L12mm	SMV-50-R12mm	12mm	12mm	5"
SMV-50-L5	SMV-50-R5	5/8"	5/8"	3.5"
SMV-50-L6	SMV-50-R6	5/8"	5/8"	5"
SMV-50-L16mm	SMV-50-R16mm	16mm	16mm	5"
SMV-50-L8	SMV-50-R8	3/4"	3/4"	5"
SMV-50-L20mm	SMV-50-R20mm	20mm	20mm	5"
SMV-50-L11	SMV-50-R11	1"	1"	5"
TOOLHOLDER NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	A	B	C
SMV-50-2H-L11	SMV-50-2H-R11	1"	1"	6"
SMV-50-2H-L12	SMV-50-2H-R12	1.25"	1.25"	6"
SMV-50-2H-L13	SMV-50-2H-R13	1.5"	1.5"	6"
SMV-50-2H-L14	SMV-50-2H-R14	1.5"	1.5"	7"

AVAILABLE SELECTION OF INSERT STYLES FOR VERTICAL STYLE CUTTING



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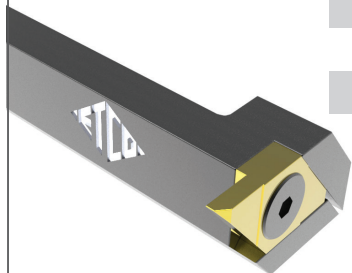
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50°-90° OFFSET VERTICAL TOOLHOLDERS

USE INSERT SERIES BELOW



TOOLHOLDER NUMBER	DIMENSION			FIT TOOL HOLDER BLOCKS:
	A	B	C	
SMV-50904-L/R-1	.375	.375	4"	H-375-BLOK H-375-2-BLOK
SMV-50904-L/R-3	.500	.500	4"	H-500-BLOK H-500-2-BLOK
◇SMV-50904-L/R-8	.750	.750	6"	
◇SMV-50904-L/R-11	1.00	1.00	6"	

INSERTS FOR THIS TOOLHOLDER	
LEFT HAND TURNING	RIGHT HAND TURNING
TGL-50-AR2 (.002R)	TGR-50-BR2 (.002R)
TGL-50-AR7 (.007R)	TGR-50-BR7 (.007R)
TGL-50-AR15 (.015R)	TGR-50-BR15 (.015R)
LEFT HAND BACKTURNING	RIGHT HAND BACKTURNING
BTL-50-DR3 (.003R)	BTR-50-CR3 (.003R)
BTL-50-DR5 (.005R)	BTR-50-CR5 (.005R)
BTL-50-DR7 (.007R)	BTR-50-CR7 (.007R)

SPECIAL ORDERS ALSO AVAILABLE
 USE HOLD DOWN SCREWS 83250AFSCS
 RIGHT HAND USES LEFT HAND INSERTS
 LEFT HAND USES RIGHT HAND INSERTS

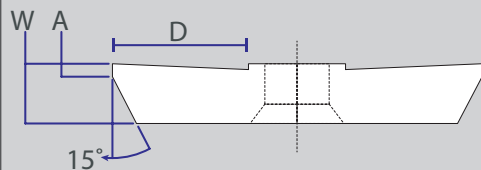
VERTICAL STYLE INSERTS

SMV-50 ° SERIES



50° BACKTURNING

15° LEAD FOR FERROUS STEEL

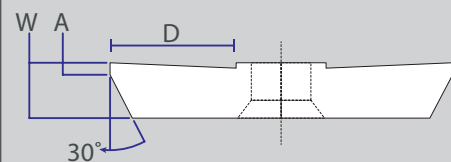


ALSO WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

INSERT NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A
BTL-5015-062	BTR-5015-062	.062	.125	.500	.020
BTL-5015-078	BTR-5015-078	.078	.156	.500	.025
BTL-5015-093	BTR-5015-093	.093	.187	.500	.025
BTL-5015-125	BTR-5015-125	.125	.300	.500	.030

50° BACKTURNING

30° LEAD FOR NON-FERROUS STEEL AND HIGHTEMP ALLOY

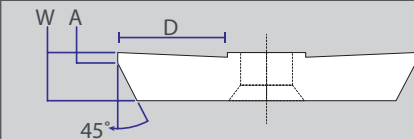


ALSO WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

INSERT NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A
BTL-5030-062	BTR-5030-062	.062	.125	.500	.020
BTL-5030-078	BTR-5030-078	.078	.156	.500	.025
BTL-5030-093	BTR-5030-093	.093	.187	.500	.025
BTL-5030-125	BTR-5030-125	.125	.300	.500	.030

50° BACKTURNING

45° LEAD FOR NON-FERROUS STEEL AND HIGHTEMP ALLOY



ALSO WITH CORNER RADIUS AND/OR GROUND CHIPBREAKER

INSERT NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A
BTL-5045-078	BTR-5045-078	.078	.156	.500	.020
BTL-5045-093	BTR-5045-093	.093	.187	.500	.025
BTL-5045-125	BTR-5045-125	.125	.300	.500	.025

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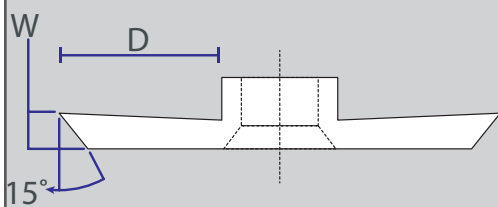
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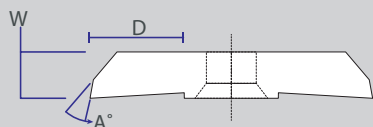


50° CUT-OFF



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
COL-50-030	COR-50-030	.030	.070	.500
COL-50-047	COR-50-047	.047	.250	.500
COL-50-062	COR-50-062	.062	.250	.500
COL-50-078	COR-50-078	.078	.300	.500
COL-50-093	COR-50-093	.093	.300	.500
COL-50-125	COR-50-125	.125	.300	.500

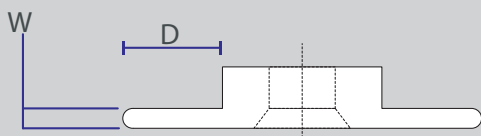
50° FRONTTURNING



INSERT NUMBER		DIMENSION				
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	RADIUS	ANGLE	I.C
FTL-50-18740	FTR-50-18740	.110	.300	.000	1°	.500
FTL-50-18745	FTR-50-18745	.110	.300	.005	4°	.500

AVAILABLE WITH GROUND CHIPBREAKER

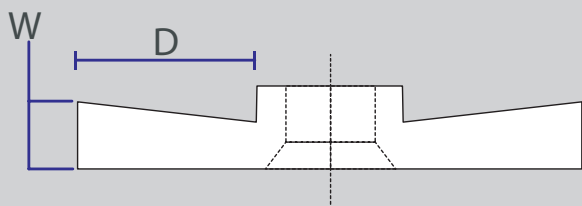
50° FULL RADIUS



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	RADIUS
◇TGL-50-031FR	TGR-50-031FR	.062	.050	.031
◇TGL-50-047FR	TGR-50-047FR	.094	.060	.047
◇TGL-50-062FR	TGR-50-062FR	.124	.090	.062
◇TGL-50-078FR	TGR-50-078FR	.156	.125	.078
◇TGL-50-094FR	TGR-50-094FR	.188	.230	.094
◇TGL-50-125FR	TGR-50-125FR	.250	.230	.125

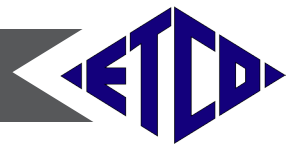
HOLD DOWN SCREW FOR ABOVE ETCO-83250AFSCS

50° TURNING & GROOVING

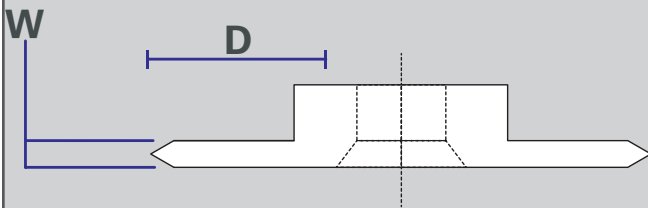


INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
TGL-50-040-1	TGR-50-040-1	.040	.080	.500
TGL-50-047	TGR-50-047	.047	.094	.500
TGL-50-062	TGR-50-062	.062	.250	.500
TGL-50-078	TGR-50-078	.078	.300	.500
TGL-50-093	TGR-50-093	.093	.300	.500
TGL-50-125	TGR-50-125	.125	.300	.500
TGL-50-156	TGR-50-156	.156	.300	.500
TGL-50-187	TGR-50-187	.187	.300	.500
TGL-50-250	TGR-50-250	.250	.300	.500

-THREADING-NEXT PAGE

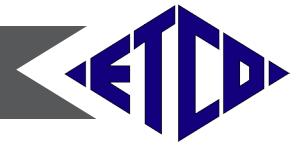


50° THREADING

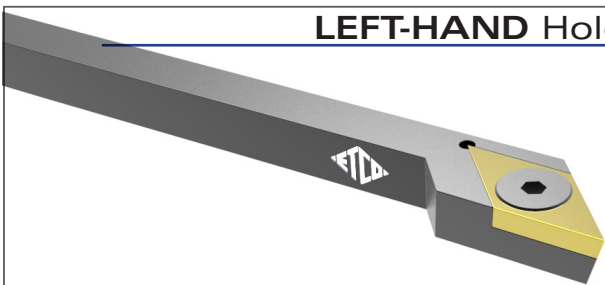


INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
TTL-50-016	TTR-50-016	.032	.100	.500
TTL-50-031	TTR-50-031	.062	.100	.500
TTL-50-062	TTR-50-062	.124	.100	.500
TTL-50-093	TTR-50-093	.187	.300	.500

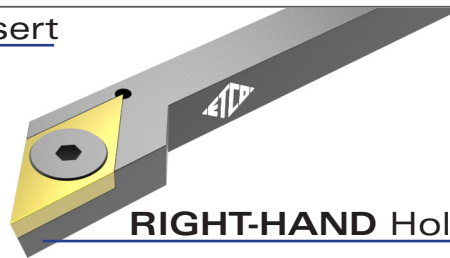
SDF-50° PROFILING SERIES 5° LEAD



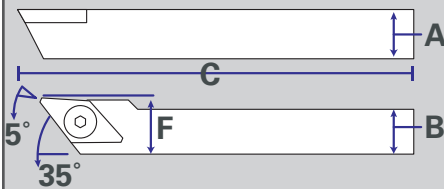
LEFT-HAND Holder & Insert



RIGHT-HAND Holder & Insert



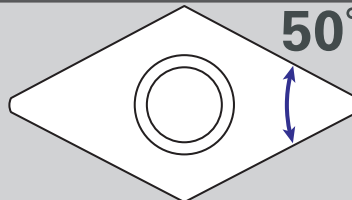
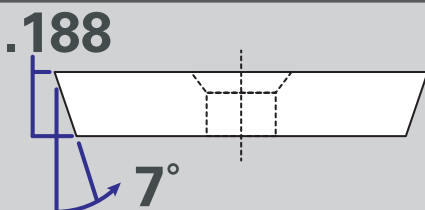
50° PROFILING DIAMOND TOOLHOLDERS 5° LEAD



INSERT NUMBER		DIMENSION					I.C.
LEFT HAND	RIGHT HAND	A	B	C	F		
◇SDFL-50-64C	SDFR-50-64C	3/8"	3/8"	5"	.75	.500	
◇SDFL-50-84C	SDFR-50-84C	1/2"	1/2"	5"	.75	.500	
◇SDFL-50-104C	SDFR-50-104C	5/8"	5/8"	5"	.875	.500	
◇SDFL-50-124C	SDFR-50-124C	3/4"	3/4"	5"	.875	.500	
◇SDFL-50-164D	◇SDFR-50-164D	1"	1"	6"	1.25	.500	
◇SDFL-50-204D	◇SDFR-50-204D	1.25"	1.25"	6"	1.50	.500	
◇SDFL-50-244D	◇SDFR-50-244D	1.5"	1.5"	6"	2.00	.500	
◇SDFL-50-244E	◇SDFR-50-244E	1.5"	1.5"	7"	2.00	.500	

HOLD DOWN SCREW FOR ABOVE
ETCO-83250AFSCS

50° PROFILING INSERTS



INSERT NUMBER

- KCG-43-.000
- KCG-43-.005*
- KCG-43-.010*
- KCG-43-.015*
- KCG-43-.030*

*AVAILABLE IN STOCK WITH CHIPBREAKER-STANDARD. INTERCHANGEABLE WITH SMA 50 SERIES ONLY
NON STANDARD RADII &CHIPBREAKER AVAILABLE. AVAILABLE IN STOCK WITH CHIPBREAKER.

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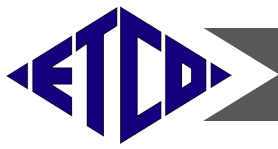
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SMA-50° PROFILING SERIES 0° LEAD

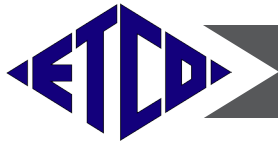
SMA-50° PROFILING DIAMOND TOOLHOLDERS

	TOOLHOLDER NUMBER		DIMENSION				
	LEFT HAND	RIGHT HAND	A	B	C	F	I.C.
	SMA-50-L2	SMA-50-R2	3/8"	3/8"	5"	.600	.500
	SMA-50-L3	SMA-50-R3	1/2"	1/2"	3.5"	.600	.500
	SMA-50-L4	SMA-50-R4	1/2"	1/2"	5"	.625	.500
	◇SMA-50-L6	SMA-50-R6	5/8"	5/8"	5"	.625	.500
	◇SMA-50-L8	SMA-50-R8	3/4"	3/4"	5"	.750	.500
	◇SMA-50-L10	SMA-50-R10	1"	1"	5"	1.00	.500

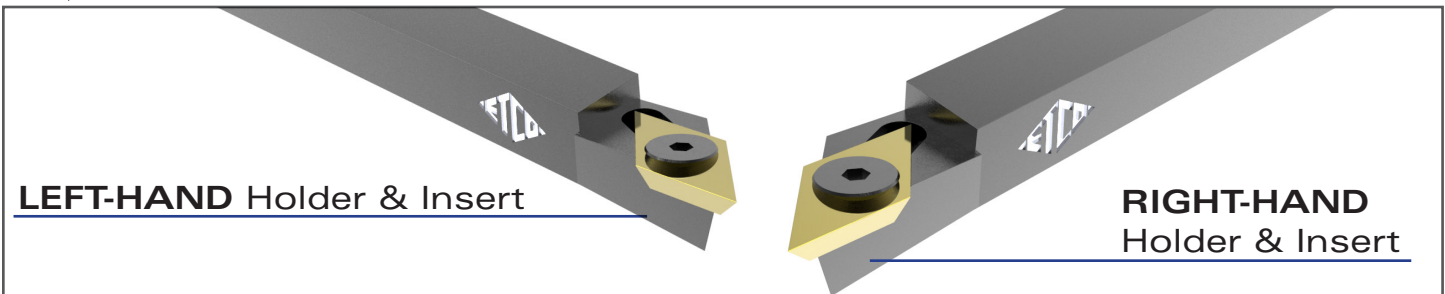
HOLD DOWN SCREW FOR ABOVE ETCO-83250AFSCS

50° PROFILING INSERTS WITH FLAT AND CHIPBREAKER FOR USE WITH SMA-50 SERIES ONLY

	INSERT NUMBER		DIMENSION		
	LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C.
	TAL-50-1	TAR-50-1	.000	.300	.500
	◇TAL-5-C1	◇TAR-5-C1	.063	.300	.500



SMA-50° HIGH SHEAR SERIES



50° HIGH SHEAR TOOLHOLDERS

	TOOLHOLDER NUMBER		DIMENSION				
	LEFT HAND	RIGHT HAND	A	B	F	H1	I.C.
	SMA-50-HS-L4	SMA-50-HS-R4	.500	.500	.625	.500	.500
	◇SMA-50-HS-L6	◇SMA-50-HS-R6	.625	.625	.750	.625	.500
	◇SMA-50-HS-L8	◇SMA-50-HS-R8	.750	.750	.875	.750	.500
	◇SMA-50-HS-L10	◇SMA-50-HS-R10	1.00	1.00	1.125	1.000	.500

HOLD DOWN SCREW FOR ABOVE ETCO-83250AFSCS

50° HIGH SHEAR INSERTS

	INSERT NUMBER		DIMENSION		
	LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C.
	THSL-50-008	THSR-50-008	.187	.300	.500
	THSL-50-015	THSR-50-015	.187	.300	.500

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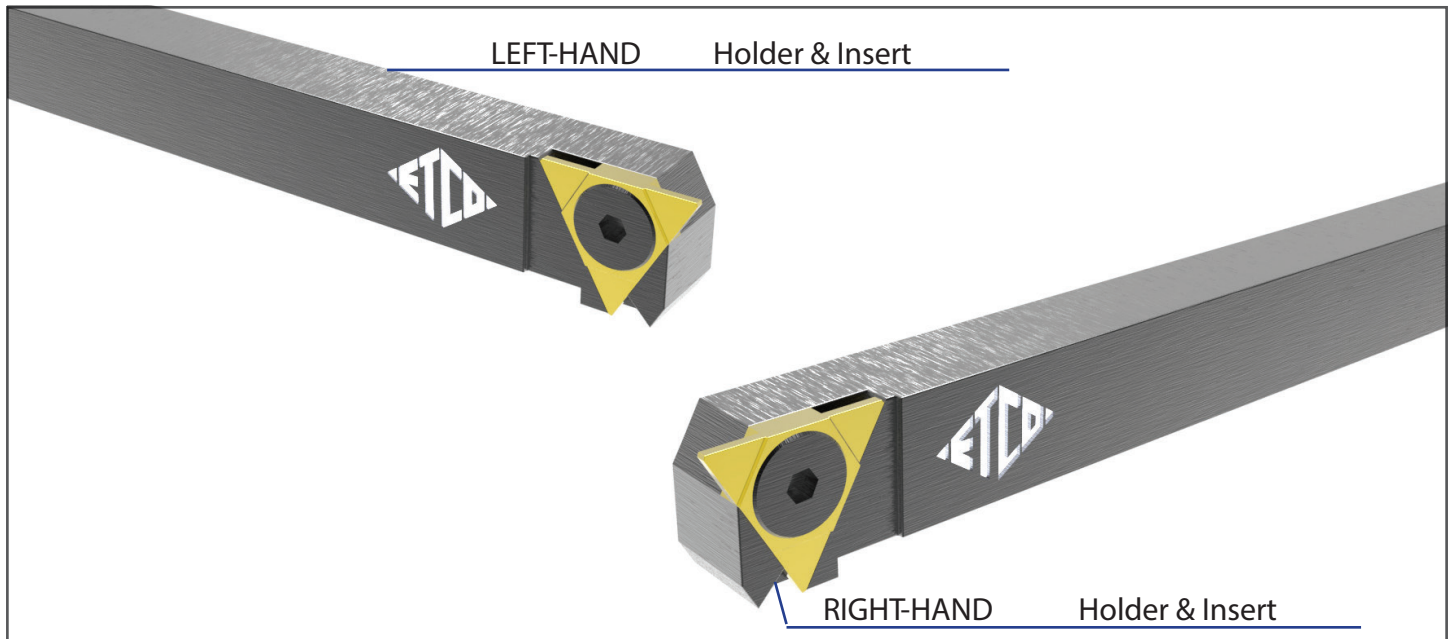
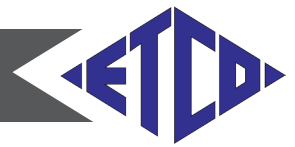
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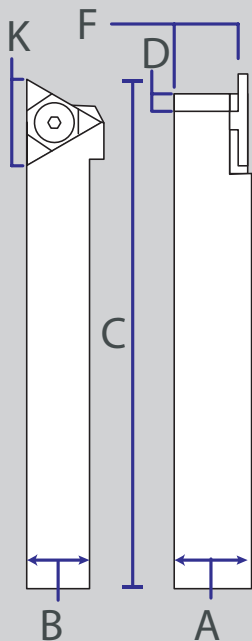
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60°TRIANGULARTOOLHOLDERS

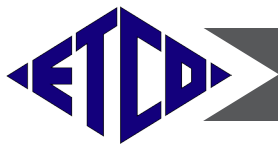


HOLD DOWN SCREW FOR ABOVE ETCO-83250AFSCS

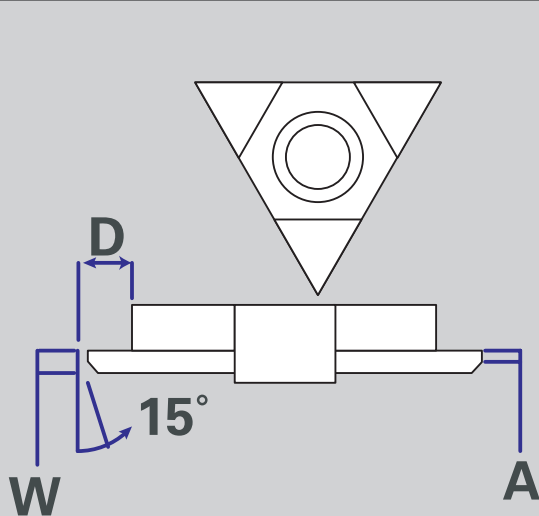
TOOLHOLDER NUMBER		DIMENSION							
LEFT HAND	RIGHT HAND	A	B	C	D	F	K	I.C.	
SMV-60-L00	SMV-60-R00	5/16"	5/16"	5"	.220	.375	.450	.375	
SMV-60-L1	SMV-60-R1	3/8"	3/8"	3.5"	.220	.375	.450	.375	
SMV-60-L2	SMV-60-R2	3/8"	3/8"	5"	.220	.375	.450	.375	
SMV-60-L4CM◇	SMV-60-R4CM◇	1/2"	1/2"	5"	.220	.500	.000	.375	
SMV-60-L6CM◇	SMV-60-R6CM◇	5/8"	5/8"	5"	.220	.675	.000	.375	
SMV-60-L8CM◇	SMV-60-R8CM◇	3/4"	3/4"	5"	.220	.750	.000	.375	
SMV-60-L10CM◇	SMV-60-R10CM◇	1"	1"	5"	.220	1.00	.000	.375	
SMV-60-L2FS	SMV-60-R2FS	3/8"	3/8"	5"	.320	.500	.750	.500	
SMV-60-L3	SMV-60-R3	1/2"	1/2"	3.5"	.320	.500	.750	.500	
SMV-60-L4	SMV-60-R4	1/2"	1/2"	5"	.320	.500	.750	.500	
SMV-60-L5	SMV-60-R5	5/8"	5/8"	3.5"	.320	.625	.750	.500	
SMV-60-L6	SMV-60-R6	5/8"	5/8"	5"	.320	.625	.750	.500	
SMV-60-L20MM◇	SMV-60-L20MM◇	20mm	20mm	5"	.320	.625	.750	.500	
SMV-60-L8	SMV-60-R8	3/4"	3/4"	5"	.320	.750	.750	.500	
SMV-60-L10	SMV-60-R10	1"	1"	5"	.320	.750	.750	.500	

INSERTS FOR ABOVE STARTS ON PAGE 18

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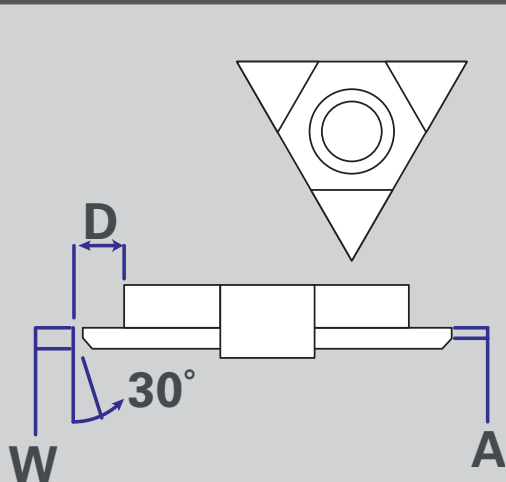


60° BACKTURNING 15° LEAD FOR FERROUS STEEL



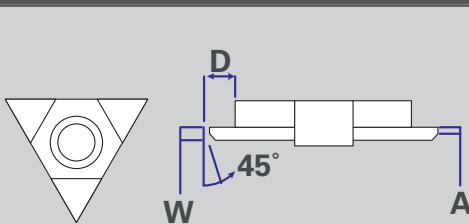
INSERT NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A
◇BTL-315-047	◇BTR-315-047	.047	.094	.375	.020
◇BTL-315-062	◇BTR-315-062	.062	.124	.375	.020
◇BTL-315-078	BTR-315-078	.078	.078	.375	.025
◇BTL-315-093	BTR-315-093	.093	.093	.375	.025
◇BTL-315-125	BTR-315-125	.125	.125	.375	.030
◇BTL-415-047	BTR-415-047	.047	.047	.500	.020
◇BTL-415-062	BTR-415-062	.062	.062	.500	.025
◇BTL-415-078	BTR-415-078	.078	.156	.500	.025
BTL-415-093	BTR-415-093	.093	.186	.500	.030
BTL-415-125	BTR-415-125	.125	.200	.500	.030

60° BACKTURNING 30° LEAD FOR NON-FERROUS STEEL AND HIGHTEMP ALLOY



INSERT NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A
◇BTL-330-047	BTR-330-047	.047	.094	.375	.020
◇BTL-330-062	BTR-330-062	.062	.124	.375	.020
◇BTL-330-078	BTR-330-078	.078	.156	.375	.025
◇BTL-330-093	BTR-330-093	.093	.186	.375	.025
◇BTL-330-125	BTR-330-125	.125	.220	.375	.030
◇BTL-430-047	BTR-430-047	.047	.094	.500	.020
◇BTL-430-062	BTR-430-062	.062	.124	.500	.020
◇BTL-430-078	BTR-430-078	.078	.156	.500	.025
BTL-430-093	BTR-430-093	.093	.186	.500	.025
BTL-430-125	BTR-430-125	.125	.220	.500	.030

60° BACKTURNING 45° LEAD FOR NON-FERROUS STEEL AND HIGHTEMP ALLOY



INSERT NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C	A
BTL-345-062	BTR-345-062	.062	.125	.375	.020
BTL-345-078	BTR-345-078	.078	.156	.375	.020
BTL-345-093	BTR-345-093	.093	.187	.375	.025
BTL-345-125	BTR-345-125	.125	.300	.375	.030
BTL-445-093◇	BTR-445-093◇	.093	.186	.500	.025
BTL-445-125◇	BTR-445-125◇	.125	.320	.500	.030

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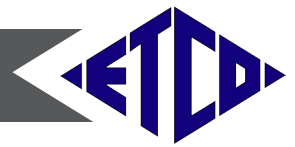
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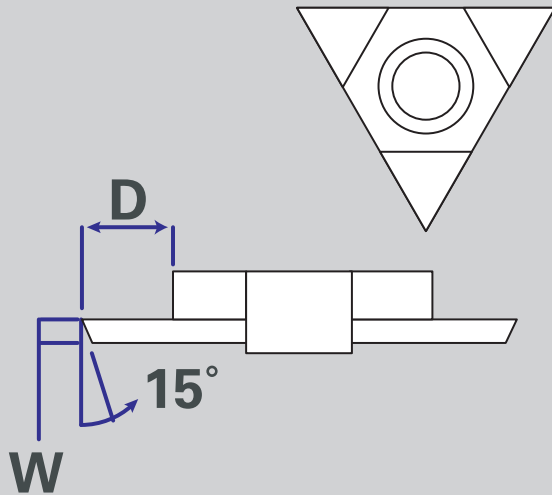
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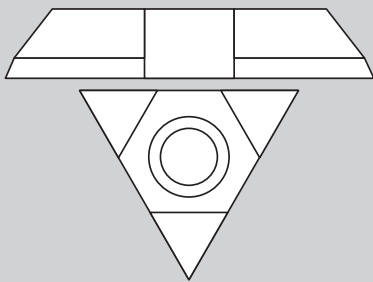


60° CUT-OFF



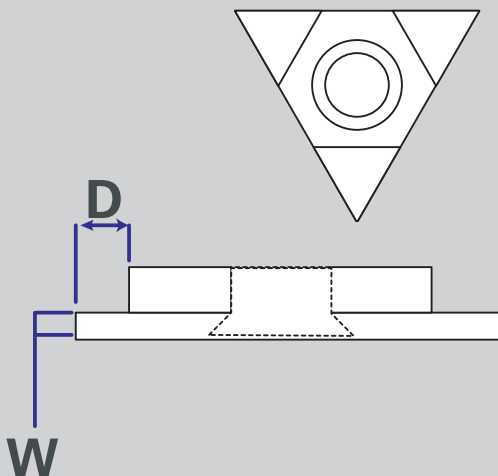
INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
TCOL3-047	TCOR-3-047	.047	.220	.375
TCOL3-062	TCOR-3-062	.062	.220	.375
TCOL3-078	TCOR-3-078	.078	.220	.375
TCOL3-093	TCOR-3-093	.093	.220	.375
TCOL3-125	TCOR-3-125	.125	.220	.375
TCOL4-047	TCOR-4-047	.047	.200	.500
TCOL4-062	TCOR-4-062	.062	.250	.500
TCOL4-078	TCOR-4-078	.078	.300	.500
TCOL4-093	TCOR-4-093	.093	.300	.500
TCOL4-125	TCOR-4-125	.125	.300	.500

60° FRONT TURNING



INSERT NUMBER		DIMENSION				
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	RADIUS	ANGLE	I.C
FTL3-12540	FTR-3-12540	.125	.225	.000	1°	.375
FTL3-12545	FTR-3-12545	.125	.225	.005	4°	.375
FTL4-18740	FTR-4-18740	.187	.350	.000	1°	.500
FTL4-18745	FTR-4-18745	.187	.350	.005	4°	.500

60° TURNING & GROOVING



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C
TGL3-040	TGR-3-040	.040	.180	.375
TGL3-047	TGR-3-047	.047	.220	.375
TGL3-062	TGR-3-062	.062	.220	.375
TGL3-078	TGR-3-078	.078	.220	.375
TGL3-093	TGR-3-093	.093	.220	.375
TGL3-125	TGR-3-125	.125	.220	.375
TGL4-040	TGR-4-040	.040	.180	.500
TGL4-047	TGR-4-047	.047	.200	.500
TGL4-062	TGR-4-062	.062	.250	.500
TGL4-078	TGR-4-078	.078	.300	.500
TGL4-093	TGR-4-093	.093	.300	.500
TGL4-125	TGR-4-125	.125	.300	.500

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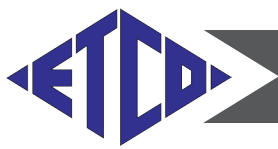
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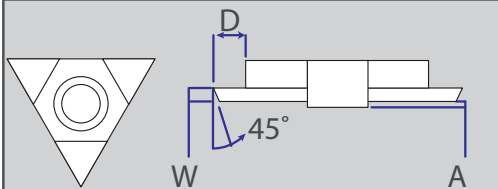


SMV-60 SERIES

VERTICAL CUTTING

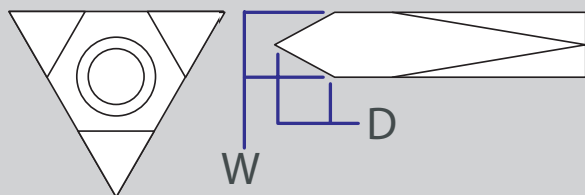
60° SNAP RING

USE WITH SMV-60 SERIES TOOLHOLDERS



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C.
SRL-60-3	SRR-60-3	.029	.052	.375
SRL-60-4	SRR-60-4	.029	.052	.500

60° THREADING



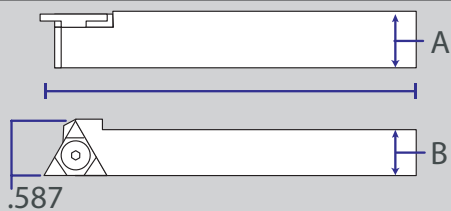
INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	DEPTH	I.C.
TTL-603-016	TTR-603-016	.032	.100	.375
TTL-603-031	TTR-603-031	.062	.100	.375
TTL-60-3	TTR-60-3	.125	.145	.375
TTL-604-016	TTR-604-016	.032	.100	.500
TTL-604-031	TTR-604-031	.062	.100	.500
TTL-60-4	TTR-60-4	.187	.200	.500



SMA-60 ° SERIES

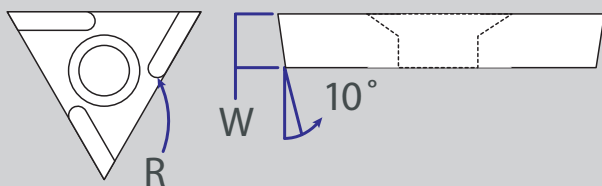
PROFILE CUTTING

60° PROFILING TOOLHOLDERS

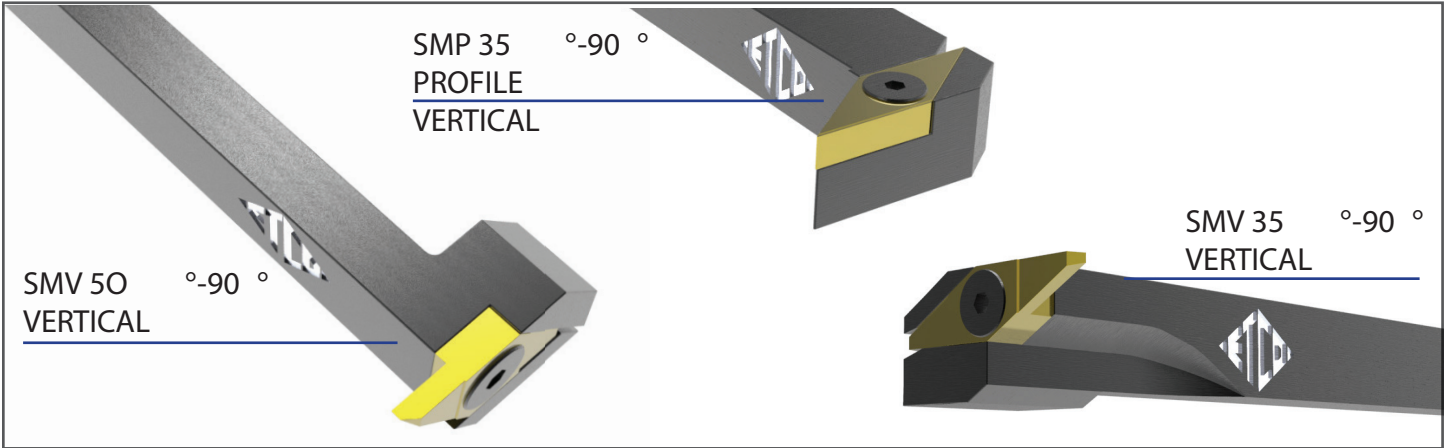
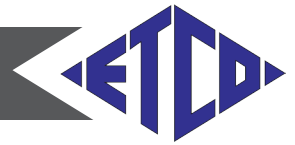


TOOLHOLDER NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	A	B	C	I.C.
SMA-60-L00	SMA-60-R00	5/16"	5/16"	5"	.375
SMA-60-L2	SMA-60-R2	3/8"	3/8"	5"	.375
SMA-60-L4	SMA-60-R4	1/2"	1/2"	5"	.375

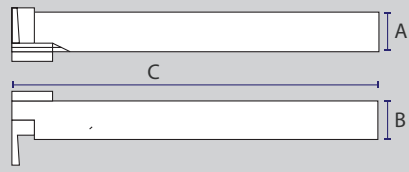
60° PROFILING INSERTS



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	WIDTH	RADIUS	I.C.
TAL-603-000	TAR-603-000	.125	.000	.375
TAL-603-005	TAR-603-005	.125	.005	.375
TAL-603-015	TAR-603-015	.125	.015	.375
TALB-603-005	TARB-603-005	.125	.005	.375
TALB-603-015	TARB-603-015	.125	.015	.375



35° -90° OFFSET VERTICAL TOOLHOLDERS

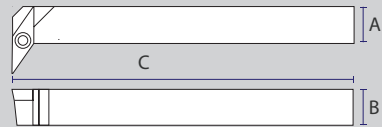


TOOLHOLDER NUMBER	DIMENSION			TOOLHOLDER CHOICE	
	A	B	C	BLOK	
SMV-35904 L1/R1	.375	.375	4"	H-375-BLOK	H-375-2-BLOK
SMV-35904 L3/R3	.500	.500	4"	H-500-BLOK	H-500-2-BLOK

USE SMV-35 SERIES INSERTS ON PAGE 8&9

HOLD DOWN SCREW FOR ABOVE ETCO-54038AFSCS

35°-90° OFFSET PROFILING TOOLHOLDERS

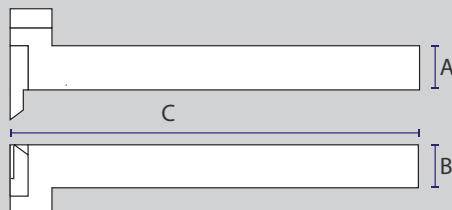


TOOLHOLDER NUMBER	DIMENSION			TOOLHOLDER CHOICE	
	A	B	C	BLOK	
SMP-35904-L1/R1	.375	.375	4"	H-375-BLOK	H-375-2-BLOK
SMP-35904-L3/R3	.500	.500	4"	H-500-BLOK	H-500-2-BLOK

USE VBGB SERIES INSERTS ON PAGE 11

HOLD DOWN SCREW FOR ABOVE ETCO-54038AFSCS

50° -90° OFFSET VERTICAL TOOLHOLDERS



TOOLHOLDER NUMBER	DIMENSION			TOOLHOLDER CHOICE	
	A	B	C	BLOK	
SMV-50904-L1/R1	.375	.375	4"	H-375-BLOK	H-375-2-BLOK
SMV-50904-L3/R3	.500	.500	4"	H-500-BLOK	H-500-2-BLOK

INSERTS FOR THIS TOOLHOLDER

LEFT HAND TURNING

RIGHT HAND TURNING

TGL-50-AR2 (.002R)

TGR-50-AB2 (.002R)

TGL-50-AR7 (.007R)

TGR-50-AB7 (.007R)

TGL-50-AR15 (.015R)

TGR-50-AB15 (.015R)

LEFT HAND BACKTURNING

RIGHT HAND BACKTURNING

BTL-50-DR1 (.001R)

BTR-50-CR1 (.001R)

BTL-50-DR3 (.003R)

BTR-50-CR3 (.003R)

BTL-50-DR5 (.005R)

BTR-50-CR5 (.005R)

BTL-50-DR7 (.007R)

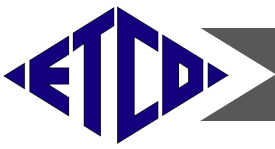
BTR-50-CR7 (.007R)

HOLD DOWN SCREW FOR ABOVE ETCO-83250AFSCS


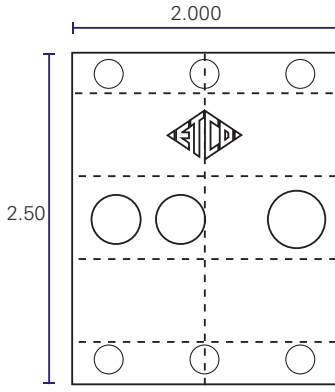
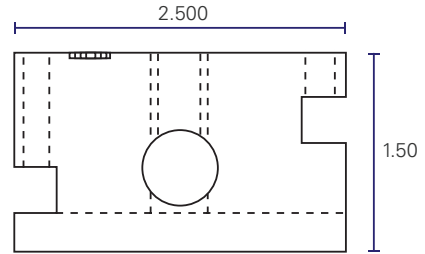
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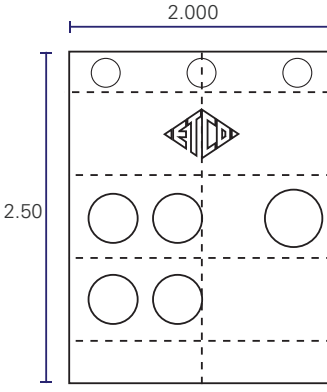
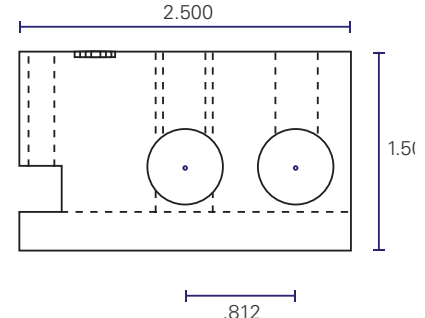
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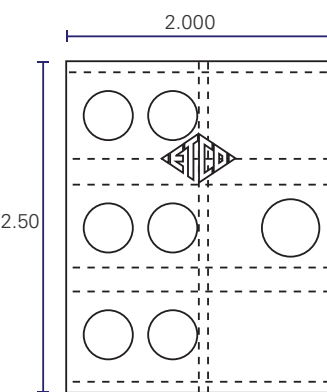
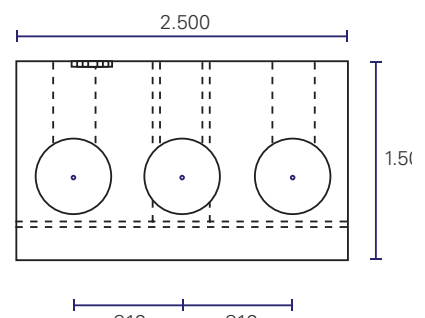
HARDINGE® STYLE TOOLHOLDER BLOCKS

BLOCK NUMBER	
H-375-BLOK	3/8"
H-500-BLOK	1/2"

BLOCK NUMBER	
H-375-2-BLOK	3/8"
H-500-2-BLOK	1/2"

BLOCK NUMBER	
H-375-3-BLOK	3/8"
H-500-3-BLOK	1/2"

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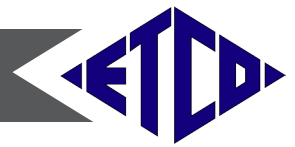
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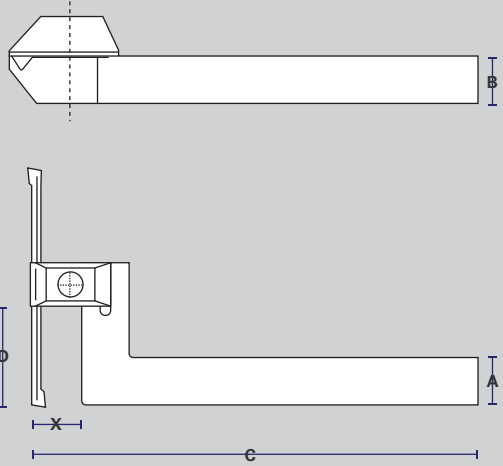
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BORING TOOLHOLDERS



TOOLHOLDER NUMBER		DIMENSION			
LEFT HAND	RIGHT HAND	A	B	C	INSERT
EBTL-1	EBTR-1	3/8"	5/16"	3.5"	BBR/L375
EBTL-2	EBTR-2	3/8"	3/8"	5"	BBR/L375
EBTL-3	EBTR-3	1/2"	1/2"	3.5"	BBR/L500
EBTL-4	EBTR-4	1/2"	1/2"	5"	BBR/L500
◇EBTL-5	◇EBTR-5	5/8"	5/8"	3.5"	BBR/L625
◇EBTL-6	◇EBTR-6	5/8"	5/8"	5"	BBR/L625
◇EBTL-7	◇EBTR-7	5/8"	5/8"	5"	BBR/L750
◇EBTL-8	◇EBTR-8	3/4"	3/4"	5"	BBR/L750

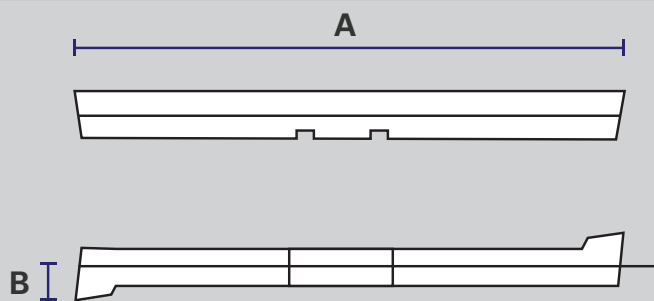
FRONT SLIDE BAR FOR SHALLOW BORING LEAVES REAR POSITIONS FREE FOR OTHER OPERATIONS.

DOUBLE ENDED INSERTS ASSURES REPEATABILITY NO TWIST, NO PULL OR PUSH.

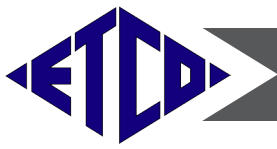
MODIFICATIONS TO INSERT ALLOWS ID THREADING-GROOVING-UNDER CUTTING.

LEFT-HAND: SPECIAL ORDER.

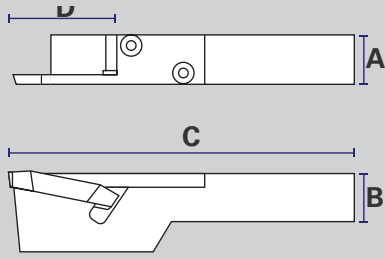
BORING INSERTS



INSERT NUMBER		DIMENSION	
LEFT HAND	RIGHT HAND	A	B
BBL-375	BBR-375	2.250"	.093
BBL-500	BBR-500	2.500"	.125
BBL-625	BBR-625	2.750"	.125
BBL-750	BBR-750	3.000"	.125



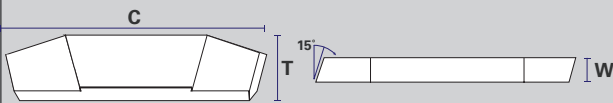
CUT-OFF TOOLHOLDERS



TOOLHOLDER NUMBER		DIMENSION					
LEFT HAND	RIGHT HAND	A	B	C	D	INSERT	
NCBL-1	NCBR-1	3/8"	3/8"	3.5"	.550	ADBL/R-28	
NCBL-2	NCBR-2	3/8"	3/8"	5"	.550	ADBL/R-28	
NCBL-4	NCBR-4	1/2"	1/2"	5"	.800	ADBL/R-33	
NCBL-6	NCBR-6	5/8"	5/8"	5"	.800	ADBL/R-33	
NCBL-20mm	NCBR-20mm	20mm	20mm	5"	.800	ADBL/R-33	
◇NCBL-8	◇NCBR-8	3/4"	3/4"	5"	.800	ADBL/R-33	
◇NCBL-9	NCBR-9	1"	1"	5"	.800	ADBL/R-33	

HOLD DOWN SCREW FOR ABOVE ETCO-53238AFSC

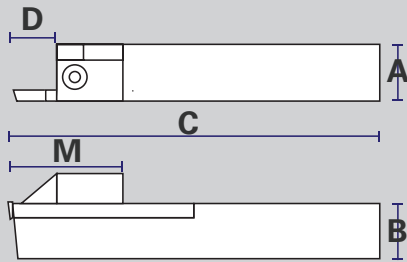
CUT OFF INSERTS



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	A	B	C
ADBL-28	ADBR-28	.115	.199	1.000
ADBL-33	ADBR-33	.120	.199	1.115

SPECIAL GEOMETRY IS AVAILABLE

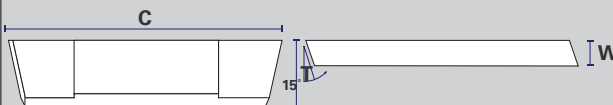
CUT-OFF TOOLHOLDERS



TOOLHOLDER NUMBER		DIMENSION					
LEFT HAND	RIGHT HAND	A	B	C	D	INSERT	
DBCL-1	DBCR-1	3/8"	3/8"	3.5"	.550	DBCL/R-28	
DBCL-2	DBCR-2	3/8"	3/8"	5"	.550	DBCL/R-28	
DBCL-3	DBCR-3	1/2"	1/2"	3.5"	.800	DBCL/R-33	
DBCL-4	DBCR-4	1/2"	1/2"	5"	.800	DBCL/R-33	
DBCL-6	DBCR-6	5/8"	5/8"	5"	.800	DBCL/R-33	
DBCL-8	DBCR-8	3/4"	3/4"	5"	.800	DBCL/R-33	
◇DBCL-10	◇DBCR-10	1"	1"	5"	.800	DBCL/R-33	

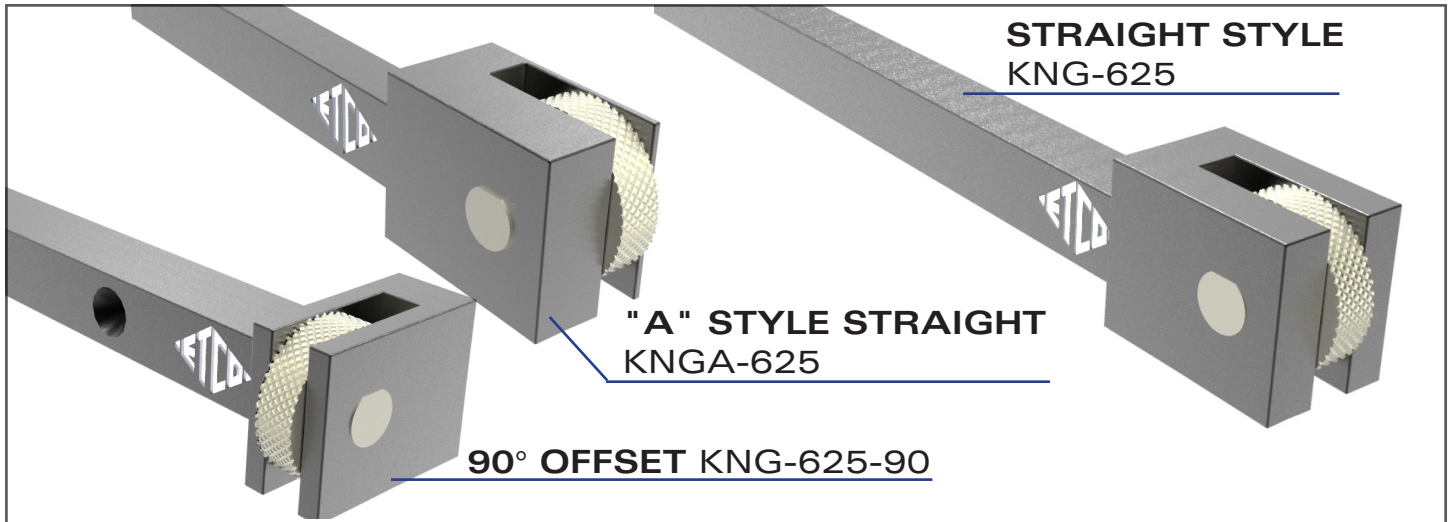
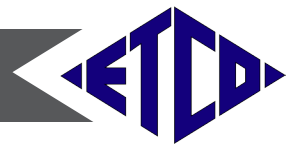
HOLD DOWN SCREW FOR ABOVE ETCO-63238AFSC

DOG BONE INSERTS



INSERT NUMBER		DIMENSION		
LEFT HAND	RIGHT HAND	A	B	C
DBCL-28	DBCR-28	.115	.199	1.000
DBCL-33	DBCR-33	.120	.199	1.115

SPECIAL GEOMETRY IS AVAILABLE



90° KNURLING HOLDERS

TOOLHOLDER NUMBER	DIMENSION			
RIGHT HAND	A	B	C	D
KNG-625-90R2	.375	.500	4"	.375
KNG-625-90R4	.500	.500	4"	.500

USE STANDARD .625 X .250 FORM KNURLS
USE CARBIDE PIN # .500X.250 DIAMETER

A STYLE KNURLING HOLDERS

TOOLHOLDER NUMBER	DIMENSION					
RIGHT HAND	A	B	C	D	F	G
KNGA-625-90R2	.375	.375	.375	.400	.300	.050
KNGA-625-90R4	.500	.500	.500	.400	.300	.050

USE STANDARD .625 X .250 FORM KNURLS
USE CARBIDE PIN # .655X.250 DIAMETER

KNURLING HOLDERS

TOOLHOLDER NUMBER	DIMENSION					
RIGHT HAND	A	B	C	D	E	F
KNG-625-R2	.375	.375	.375	4.00"	.375	.125
KNG-625-R4	.500	.500	.500	4.00"	.450	.200
KNG-625-R6	.625	.625	.625	4.00"	.450	.200
◇KNG-625-R8	.750	.750	.750	4.00"	.500	.250
◇KNG-625-R10	1.00	1.00	1.00	4.00"	.500	.250

USE STANDARD .625 X .250 FORM KNURLS
USE CARBIDE PIN # .687X.250 DIAMETER

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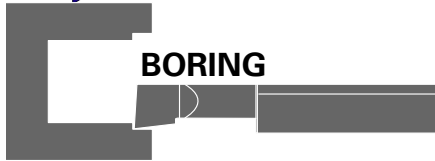
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XS TOOLHOLDERS FOR ET SERIES



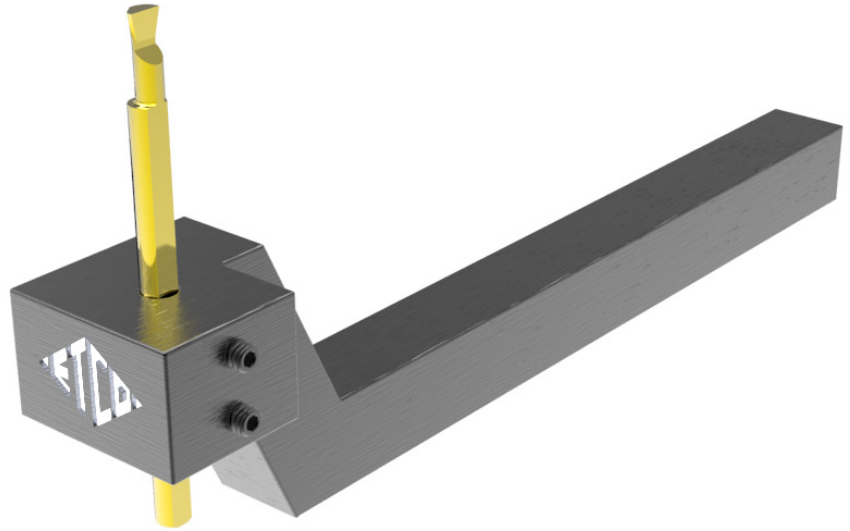
BORING



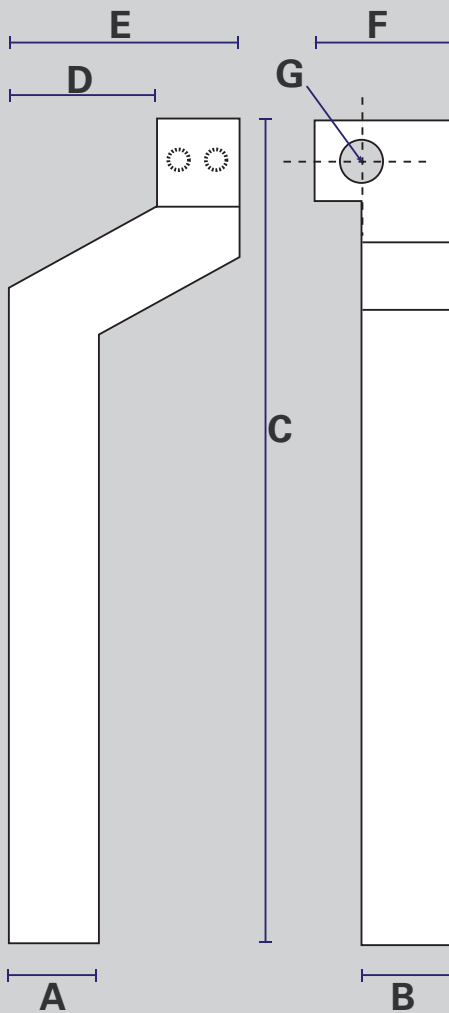
GROOVING



THREADING



CUT-OFF TOOLHOLDERS



TOOLHOLDER NUMBER

DIMENSION

RIGHT HAND	A	B	C	D	E	F	G
BBXS-125-R2-S	.375	.375	4.5	.500	.875	.750	.125
BBXS-125-R2-M	.375	.375	4.5	.750	1.125	.750	.125
BBXS-125-R2-L	.375	.375	4.5	1.00	1.375	.750	.125
BBXS-250-R2-S	.375	.375	4.5	.500	.875	.750	.250
BBXS-250-R2-M	.375	.375	4.5	.750	1.125	.750	.250
BBXS-250-R2-L	.375	.375	4.5	1.00	1.375	.750	.250
BBXS-125-R4-S	.500	.500	4.5	.500	1.000	.875	.125
BBXS-125-R4-M	.500	.500	4.5	.750	1.250	.875	.125
BBXS-125-R4-L	.500	.500	4.5	1.00	1.500	.875	.125
BBXS-250-R4-S	.500	.500	4.5	.500	1.000	.850	.250
BBXS-250-R4-M	.500	.500	4.5	.750	1.250	.850	.250
BBXS-250-R4-L	.500	.500	4.5	1.00	1.500	.850	.250
BBXS-125-R6-S	.625	.625	5.0	.500	1.125	1.00	.125
BBXS-125-R6-M	.625	.625	5.0	.750	1.375	1.00	.125
BBXS-125-R6-L	.625	.625	5.0	1.00	1.625	1.00	.125
BBXS-250-R6-S	.625	.625	5.0	.500	1.125	1.00	.250
BBXS-250-R6-M	.625	.625	5.0	.750	1.375	1.00	.250
BBXS-250-R6-L	.625	.625	5.0	1.00	1.625	1.00	.250

BBXS-187 AVAILABLE SPECIAL ORDER

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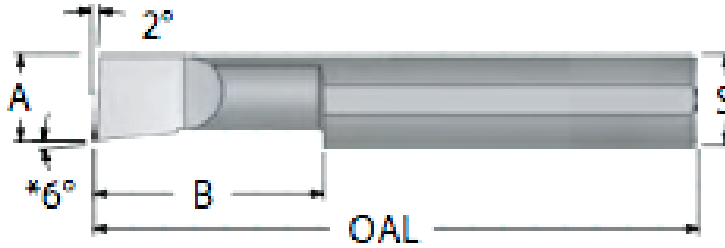
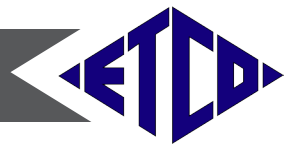
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ET SERIES-BORING BARS



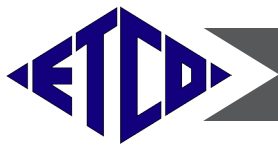
BORING BARS			
.125" SHANK DIAMETER 1.125" OVERALL LENGTH UNCOATED		MIN HOLE A	MAX DEPTH B
UNCOATED	ALTiN		
B050150	B050150C	.050	.150
B050200	B050200C	.050	.200
B050300	B050300C	.050	.300
B050400	B050400C	.050	.400
B060150	B060150C	.060	.150
B060200	B060200C	.060	.200
B060300	B060300C	.060	.300
B060400	B060400C	.060	.400
B060500	B060500C	.060	.500
B080150	B080150C	.080	.150
B080200	B080200C	.080	.200
B080300	B080300C	.080	.300
B080400	B080400C	.080	.400
B080500	B080500C	.080	.500
B080600	B080600C	.080	.600
B100150	B100150C	.100	.150
B100200	B100200C	.100	.200
B100300	B100300C	.100	.300
B100400	B100400C	.100	.400
B100500	B100500C	.100	.500
B100600	B100600C	.100	.600
B100700	B100700C	.100	.700
B110150	B110150C	.110	.150
B110200	B110200C	.110	.200
B110300	B110300C	.110	.300
B110400	B110400C	.110	.400
B110500	B110500C	.110	.500
B110600	B110600C	.110	.600
B110700	B110700C	.110	.700
.1875" SHANK DIAMETER 2" OVERALL LENGTH UNCOATED		MIN HOLE A	MAX DEPTH B
UNCOATED	ALTiN		
B120250	B120250C	.120	.250
B120350	B120350C	.120	.350
B120500	B120500C	.120	.500
B120600	B120600C	.120	.600
B120700	B120700C	.120	.700
B120800	B120800C	.120	.800
B140250	B140250C	.140	.250
B140400	B140400C	.140	.400
B140500	B140500C	.140	.500
B140600	B140600C	.140	.600
B140700	B140700C	.140	.700
B140750	B140750C	.140	.750
B140800	B140800C	.140	.800
B160250	B160250C	.160	.250
B160400	B160400C	.160	.400
B160500	B160500C	.160	.500
B160600	B160600C	.160	.600
B160750	B160750C	.160	.750
B160900	B160900C	.160	.900
B1601000	B1601000C	.160	1.000

BORING BARS			
.250" SHANK DIAMETER 2.250" OVERALL LENGTH UNCOATED		MIN HOLE A	MAX DEPTH B
UNCOATED	ALTiN		
B180350	B180350C	.180	.350
B180500	B180500C	.180	.500
B180600	B180600C	.180	.600
B180750	B180750C	.180	.750
B180900	B180900C	.180	.900
B1801000	B1801000C	.180	1.000
B1801100	B1801100C	.180	1.100
B200400	B200400C	.200	.400
B200500	B200500C	.200	.500
B200600	B200600C	.200	.600
B200700	B200700C	.200	.700
B200800	B200800C	.200	.800
B200900	B200900C	.200	.900
B2001000	B2001000C	.200	1.000
B2001100	B2001100C	.200	1.100
B2001200	B2001200C	.200	1.200
B2001300	B2001300C	.200	1.300
.250" SHANK DIAMETER 2.250" OVERALL LENGTH UNCOATED		MIN HOLE A	MAX DEPTH B
UNCOATED	ALTiN		
B230400	B230400C	.230	.400
B230500	B230500C	.230	.500
B230600	B230600C	.230	.600
B230700	B230700C	.230	.700
B230800	B230800C	.230	.800
B230900	B230900C	.230	.900
B2301000	B2301000C	.230	1.000
B2301150	B2301150C	.230	1.150
B2301200	B2301200C	.230	1.200
B2301250	B2301250C	.230	1.250
B2301400	B2301400C	.230	1.400
B2301500	B2301500C	.230	1.500
B2301600	B2301600C	.230	1.600
B290500	B290500C	.290	.500
B290600	B290600C	.290	.600
B290750	B290750C	.290	.750
B290900	B290900C	.290	.900
B2901000	B2901000C	.290	1.000
B2901100	B2901100C	.290	1.100
B2901250	B2901250C	.290	1.250
B2901350	B2901350C	.290	1.350
B2901500	B2901500C	.290	1.500
B2901600	B2901600C	.290	1.600
B2901750	B2901750C	.290	1.750

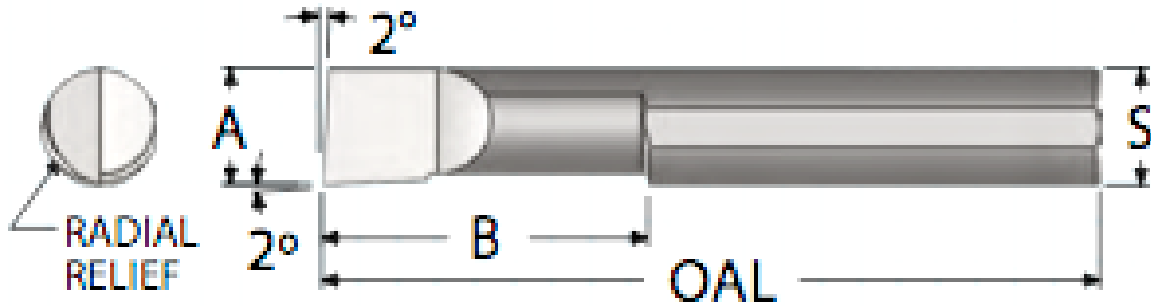
BORING BARS			
.375" SHANK DIAMETER 2.5" OVERALL LENGTH UNCOATED		MIN HOLE A	MAX DEPTH B
UNCOATED	ALTiN		
B320500	B320500C	.320	.500
B320600	B320600C	.320	.600
B320750	B320750C	.320	.750
B320900	B320900C	.320	.900
B3201000	B3201000C	.320	1.000
B3201100	B3201100C	.320	1.100
B3201250	B3201250C	.320	1.250
B3201500	B3201500C	.320	1.500
B3201600	B3201600C	.320	1.600
B3201800	B3201800C	.320	1.800
.375" SHANK DIAMETER 4" OVERALL LENGTH UNCOATED		MIN HOLE A	MAX DEPTH B
UNCOATED	ALTiN		
B3202000	B3202000C	.320	2.000
B3202500	B3202500C	.320	2.500
B3203000	B3203000C	.320	3.000
.375" SHANK DIAMETER 2.5" OVERALL LENGTH UNCOATED		MIN HOLE A	MAX DEPTH B
UNCOATED	ALTiN		
B360500	B360500C	.360	.500
B360600	B360600C	.360	.600
B360750	B360750C	.360	.750
B360900	B360900C	.360	.900
B3601000	B3601000C	.360	1.000
B3601150	B3601150C	.360	1.150
B3601250	B3601250C	.360	1.250
B3601500	B3601500C	.360	1.500
B3601600	B3601600C	.360	1.600
B3601800	B3601800C	.360	1.800
.375" SHANK DIAMETER 4" OVERALL LENGTH UNCOATED		MIN HOLE A	MAX DEPTH B
UNCOATED	ALTiN		
B3602000	B3602000C	.360	2.000
B3602500	B3602500C	.360	2.500
B3603000	B3603000C	.360	3.000
.500" SHANK DIAMETER 3" OVERALL LENGTH UNCOATED		MIN HOLE A	MAX DEPTH B
UNCOATED	ALTiN		
B490750	B490750C	.490	.750
B4901000	B4901000C	.490	1.000
B4901250	B4901250C	.490	1.250
B4901500	B4901500C	.490	1.500
.500" SHANK DIAMETER 4" OVERALL LENGTH UNCOATED		MIN HOLE A	MAX DEPTH B
UNCOATED	ALTiN		
B4902000	B4902000C	.490	2.000
B4902500	B4902500C	.490	2.500
B4902600	B4902600C	.490	2.600
B4902750	B4902750C	.490	2.750
.500" SHANK DIAMETER 6" OVERALL LENGTH UNCOATED		MIN HOLE A	MAX DEPTH B
UNCOATED	ALTiN		
B4903000	B4903000C	.490	3.000
B4903500	B4903500C	.490	3.500
B4903000	B4903000C	.490	3.000
B4904500	B4904500C	.490	3.500

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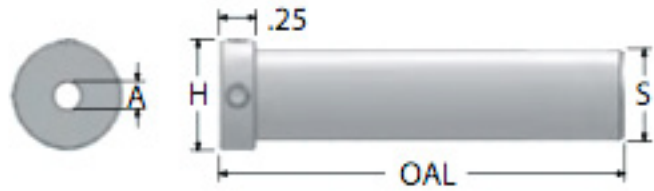
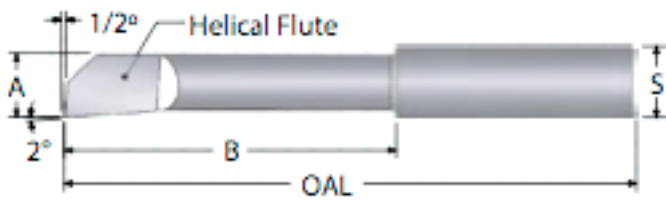
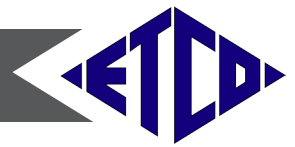
ET SERIES-BORING BARS



BORING BARS			
RADIAL RELIEF STRAIGHT FLUTE			
<i>.125" SHANK DIAMETER</i>		MIN	MAX
<i>1" OVERALL LENGTH</i>		HOLE	DEPTH
UNCOATED	ALTiN	A	B
BB61	BB61C	.060	.125
BB62	BB62C	.060	.250
BB63	BB63C	.060	.375
BB71	BB71C	.075	.125
BB72	BB72C	.075	.250
BB73	BB73C	.075	.375
BB91	BB91C	.090	.125
BB92	BB92C	.090	.250
BB93	BB93C	.090	.375
BB102	BB102C	.105	.250
BB103	BB103C	.105	.375
BB122	BB122C	.120	.125
BB123	BB123C	.120	.375
<i>.1875" SHANK DIAMETER</i>		MIN	MAX
<i>1.5" OVERALL LENGTH</i>		HOLE	DEPTH
UNCOATED	ALTiN	A	B
BB153	BB153C	.155	.375
BB154	BB154C	.155	.500
BB155	BB155C	.155	.625
BB156	BB156C	.155	.750
BB183	BB183C	.185	.375
BB184	BB184C	.185	.500
BB185	BB185C	.185	.625
BB186	BB186C	.185	.750
<i>.1875" SHANK DIAMETER</i>		MIN	MAX
<i>2" OVERALL LENGTH</i>		HOLE	DEPTH
UNCOATED	ALTiN	A	B
BB158	BB158C	.155	1.000
BB188	BB188C	.185	1.000
BB1812	BB1812C	.185	1.250
<i>.250" SHANK DIAMETER</i>		MIN	MAX
<i>1.5" OVERALL LENGTH</i>		HOLE	DEPTH
UNCOATED	ALTiN	A	B
BB224	BB224C	.220	.500
BB225	BB225C	.220	.625
BB254	BB254C	.248	.500
BB255	BB255C	.248	.625

BORING BARS			
RADIAL RELIEF STRAIGHT FLUTE			
<i>.250" SHANK DIAMETER</i>		MIN	MAX
<i>2" OVERALL LENGTH</i>		HOLE	DEPTH
UNCOATED	ALTiN	A	B
BB226	BB226C	.220	.750
BB228	BB228C	.220	1.000
BB256	BB256C	.248	.750
BB258	BB258C	.248	1.000
<i>.3125" SHANK DIAMETER</i>		MIN	MAX
<i>2" OVERALL LENGTH</i>		HOLE	DEPTH
UNCOATED	ALTiN	A	B
BB314	BB314C	.310	.500
BB316	BB316C	.310	.750
<i>.3125" SHANK DIAMETER</i>		MIN	MAX
<i>2.5" OVERALL LENGTH</i>		HOLE	DEPTH
UNCOATED	ALTiN	A	B
BB316L	BB316LC	.310	.750
BB318	BB318C	.310	1.000
BB3112	BB3112C	.310	1.250
BB3114	BB3114C	.310	1.500
<i>.3125" SHANK DIAMETER</i>		MIN	MAX
<i>3" OVERALL LENGTH</i>		HOLE	DEPTH
UNCOATED	ALTiN	A	B
BB3114	BB3114C	.310	1.750
<i>.375" SHANK DIAMETER</i>		MIN	MAX
<i>2" OVERALL LENGTH</i>		HOLE	DEPTH
UNCOATED	ALTiN	A	B
BB374	BB374C	.373	.500
BB376	BB376C	.373	.750
<i>.375" SHANK DIAMETER</i>		MIN	MAX
<i>2.5" OVERALL LENGTH</i>		HOLE	DEPTH
UNCOATED	ALTiN	A	B
BB376L	BB376LC	.373	.750
BB378	BB378C	.373	1.000
BB3712	BB3712C	.373	1.250
BB3714	BB3714C	.373	1.500
<i>.375" SHANK DIAMETER</i>		MIN	MAX
<i>3" OVERALL LENGTH</i>		HOLE	DEPTH
UNCOATED	ALTiN	A	B
BB3714L	BB3714LC	.373	1.500
BB3716	BB3716C	.373	1.750
BB3718	BB3718C	.373	2.000

ET SERIES-BORING BARS



BORING BARS HELICAL BACK RAKE

UNCOATED	ALTiN	MIN HOLE A	MAX DEPTH B	LENGTH
HB25	HB25C	.025	3/32	1
HB27	HB27C	.027	1/8	1
HB31	HB31C	.031	5/32	1
HB31L	HB31LC	.031	3/16	1
HB36	HB36C	.036	5/32	1
HB36L	HB36LC	.036	1/4	1
HB42	HB42C	.042	1/4	1
HB42L	HB42LC	.042	5/16	1
HB52	HB52C	.052	5/16	1
HB57	HB57C	.057	5/16	1
HB60	HB60C	.060	3/8	1
HB60L	HB60LC	.060	1/2	1.5
HB70	HB70C	.070	7/16	1.5
HB80	HB80C	.080	1/2	1.5
HB85	HB85C	.085	1/2	1.5
HB90	HB90C	.090	1/2	1.5
HB90L	HB90LC	.090	5/8	1.5
HB100	HB100C	.100	9/16	1.5
HB100L	HB100LC	.100	5/8	2
HB110	HB110C	.110	9/16	1.5
HB110L	HB110LC	.110	5/8	2
HB120	HB120C	.120	5/8	1.5
HB120L	HB120LC	.120	5/8	2

BORING BARS SINGLE END HOLDERS

HOLDER#	O.D. A	I.D. B	LENGTH
H50 7/64	1/2	7/64	2.25
H50 1/8	1/2	1/8	2.25
H50 5/32	1/2	5/32	2.25
H50 3/16	1/2	3/16	2.25
H50 7/32	1/2	7/32	2.25
H50 1/4	1/2	1/4	2.25
H50 7/64	5/8	7/64	2.25
H50 1/8	5/8	1/8	2.25
H50 5/32	5/8	5/32	2.25
H50 3/16	5/8	3/16	2.25
H50 7/32	5/8	7/32	2.25
H50 1/4	5/8	1/4	2.25

BORING BARS HELICAL BACK RAKE ADJUSTABLE MAX BORE

UNCOATED	ALTiN	MIN HOLE A	SHANK DIA. B	LENGTH
HB135	HB135C	.135	7/64	1.25
HB150	HB150C	.150	1/8	1.25
HB150	HB150C	.150	1/8	2.25
HB180	HB180C	.180	5/32	1.25
HB180	HB180C	.180	5/32	1.5
HB180	HB180C	.180	5/32	3
HB210	HB210C	.210	3/16	1.5
HB210	HB210C	.210	3/16	3
HB240	HB240C	.240	7/32	1.5
HB240	HB240C	.240	7/32	3
HB300	HB300C	.300	1/4	1.5
HB300	HB300C	.300	1/4	3
HB360	HB360C	.360	5/16	3
HB360	HB360C	.360	5/16	4.25
HB480	HB480C	.480	7/16	3
HB480	HB480C	.480	7/16	5.25

BORING BARS DELUX HOLDERS

HOLDER#	O.D. A	I.D. B	LENGTH
DH37-1/8	3/8	1/8	2.75
DH37-5/32	3/8	5/32	2.75
DH37-3/16	3/8	3/16	2.75
DH37-7/32	3/8	7/32	2.75
DH37-1/4	3/8	1/4	2.75
DH50-1/8	1/2	1/8	2.75
DH50-5/32	1/2	5/32	2.75
DH50-3/16	1/2	3/16	2.75
DH50-7/32	1/2	7/32	2.75
DH50-1/4	1/2	1/4	2.75
DH50-5/16	1/2	5/16	2.75
DH50-3/8	1/2	3/8	2.75
DH62-1/8	5/8	1/8	2.75
DH62-5/32	5/8	5/32	2.75
DH62-3/16	5/8	3/16	2.75
DH62-7/32	5/8	7/32	2.75
DH62-1/4	5/8	1/4	2.75
DH62-5/16	5/8	5/16	2.75
DH62-3/8	5/8	3/8	2.75
DH75-1/8	3/4	1/8	2.75
DH75-3/16	3/4	3/16	2.75
DH75-1/4	3/4	1/4	2.75
DH75-5/16	3/4	5/16	2.75
DH75-3/8	3/4	3/8	2.75
DH75-1/2	3/4	1/2	2.75

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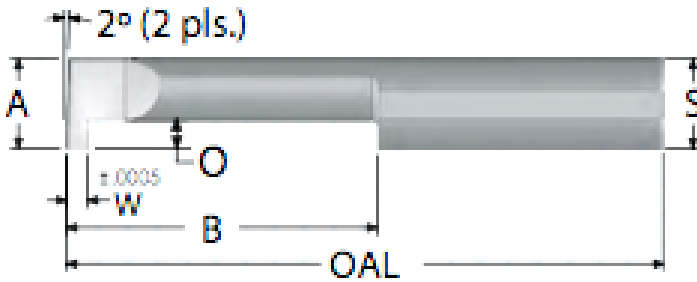
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GROOVE TOOL



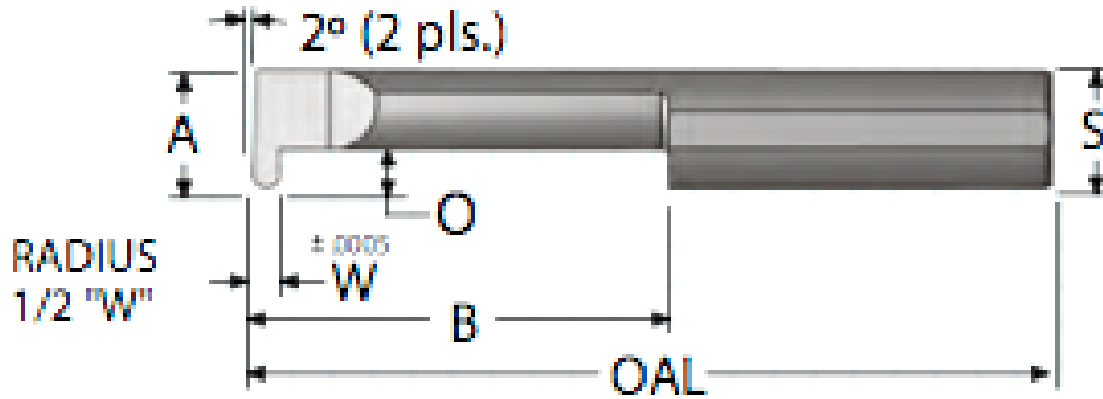
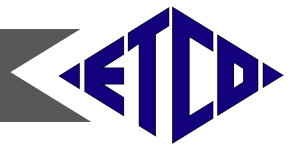
GROOVE TOOL						
UNCOATED	ALTiN	MIN HOLE A	MAX DEPTH B	GROOVE WIDTH C	LENGTH	
GTO31-3	GTO31-3C	.060	3/16	.032	1.5	
GTO31-4	GTO31-4C	.060	1/4	.032	1.5	
GTO31-6	GTO31-6C	.060	3/8	.032	1.5	
GTO45-4	GTO45-4C	.090	1/4	.046	1.5	
GTO45-6	GTO45-6C	.090	3/8	.046	1.5	
GTO45-8	GTO45-8C	.090	1/2	.046	1.5	
GTO61-4	GTO61-4C	.120	1/4	.062	1.5	
GTO61-6	GTO61-6C	.120	3/8	.062	1.5	
GTO61-8	GTO61-8C	.120	1/2	.062	1.5	
GTO61-10	GTO61-10C	.120	5/8	.062	1.5	
GTO17K-4	GTO17K-4C	.187	1/4	.0175	2	
GTO17K-6	GTO17K-6C	.187	3/8	.0175	2	
GTO17K-8	GTO17K-8C	.187	1/2	.0175	2	
GTO17K-10	GTO17K-10C	.187	5/8	.0175	2	
GTO25K-4	GTO25K-4C	.187	1/4	.0255	2	
GTO25K-6	GTO25K-6C	.187	3/8	.0255	2	
GTO25K-8	GTO25K-8C	.187	1/2	.0255	2	
GTO25K-10	GTO25K-10C	.187	5/8	.0255	2	
GTO30K-4	GTO30K-4C	.187	1/4	.0305	2	
GTO30K-6	GTO30K-6C	.187	3/8	.0305	2	
GTO30K-8	GTO30K-8C	.187	1/2	.0305	2	
GTO30K-10	GTO30K-10C	.187	5/8	.0305	2	
GTO62K-4	GTO62K-4C	.187	1/4	.063	2	
GTO62K-6	GTO62K-6C	.187	3/8	.063	2	
GTO62K-8	GTO62K-8C	.187	1/2	.063	2	
GTO62K-10	GTO62K-10C	.187	5/8	.063	2	
GTO17Q-4	GTO17Q-4C	.250	1/4	.0175	2.5	
GTO17Q-6	GTO17Q-6C	.250	3/8	.0175	2.5	
GTO17Q-8	GTO17Q-8C	.250	1/2	.0175	2.5	
GTO17Q-10	GTO17Q-10C	.250	5/8	.0175	2.5	
GTO25Q-4	GTO25Q-4C	.250	1/4	.0255	2.5	
GTO25Q-6	GTO25Q-6C	.250	3/8	.0255	2.5	
GTO25Q-8	GTO25Q-8C	.250	1/2	.0255	2.5	
GTO25Q-10	GTO25Q-10C	.250	5/8	.0255	2.5	
GTO30Q-4	GTO30Q-4C	.250	1/4	.0305	2.5	
GTO30Q-6	GTO30Q-6C	.250	3/8	.0305	2.5	
GTO30Q-8	GTO30Q-8C	.250	1/2	.0305	2.5	
GTO30Q-10	GTO30Q-10C	.250	5/8	.0305	2.5	
GTO92Q-4	GTO92Q-4C	.250	1/4	.093	2.5	
GTO92Q-6	GTO92Q-6C	.250	3/8	.093	2.5	
GTO92Q-8	GTO92Q-8C	.250	1/2	.093	2.5	
GTO92Q-10	GTO92Q-10C	.250	5/8	.093	2.5	
GTO33-4	GTO33-4C	.312	1/4	.0335	2.5	
GTO33-6	GTO33-6C	.312	3/8	.0335	2.5	
GTO33-8	GTO33-8C	.312	1/2	.0335	2.5	
GTO33-12	GTO33-12C	.312	3/4	.0335	2.5	
GTO38-4	GTO38-4C	.312	1/4	.0385	2.5	
GTO38-6	GTO38-6C	.312	3/8	.0385	2.5	
GTO38-8	GTO38-8C	.312	1/2	.0385	2.5	
GTO38-12	GTO38-12C	.312	3/4	.0385	2.5	
GT124-6	GT124-6C	.312	3/8	.125	2.5	
GT124-8	GT124-8C	.312	1/2	.125	2.5	
GT124-12	GT124-12C	.312	3/4	.125	2.5	
GT124-16	GT124-16C	.312	1	.125	2.5	

GROOVE TOOL						
UNCOATED	ALTiN	MIN HOLE A	MAX DEPTH B	GROOVE WIDTH C	LENGTH	
GTO39-4	GTO39-4C	.375	1/4	.040	2.5	
GTO39-6	GTO39-6C	.375	3/8	.040	2.5	
GTO39-8	GTO39-8C	.375	1/2	.040	2.5	
GTO39-12	GTO39-12C	.375	3/4	.040	2.5	
GTO39-16	GTO39-16C	.375	1	.040	2.5	
GTO39-20	GTO39-20C	.375	1.25	.040	2.5	
GTO46-4	GTO46-4C	.375	1/4	.047	2.5	
GTO46-6	GTO46-6C	.375	3/8	.047	2.5	
GTO46-8	GTO46-8C	.375	1/2	.047	2.5	
GTO46-12	GTO46-12C	.375	3/4	.047	2.5	
GTO46-16	GTO46-16C	.375	1	.047	2.5	
GTO46-20	GTO46-20C	.375	1.25	.047	2.5	
GTO55-4	GTO55-4C	.375	1/4	.056	2.5	
GTO55-6	GTO55-6C	.375	3/8	.056	2.5	
GTO55-8	GTO55-8C	.375	1/2	.056	2.5	
GTO55-12	GTO55-12C	.375	3/4	.056	2.5	
GTO55-16	GTO55-16C	.375	1	.056	2.5	
GTO55-20	GTO55-20C	.375	1.25	.056	2.5	
GTO62-4	GTO62-4C	.375	1/4	.063	2.5	
GTO62-6	GTO62-6C	.375	3/8	.063	2.5	
GTO62-8	GTO62-8C	.375	1/2	.063	2.5	
GTO62-12	GTO62-12C	.375	3/4	.063	2.5	
GTO62-16	GTO62-16C	.375	1	.063	2.5	
GTO62-20	GTO62-20C	.375	1.25	.063	2.5	
GTO69-4	GTO69-4C	.375	1/4	.070	2.5	
GTO69-6	GTO69-6C	.375	3/8	.070	2.5	
GTO69-8	GTO69-8C	.375	1/2	.070	2.5	
GTO69-12	GTO69-12C	.375	3/4	.070	2.5	
GTO69-16	GTO69-16C	.375	1	.070	2.5	
GTO69-20	GTO69-20C	.375	1.25	.070	2.5	
GTO87-4	GTO87-4C	.375	1/4	.088	2.5	
GTO87-6	GTO87-6C	.375	3/8	.088	2.5	
GTO87-8	GTO87-8C	.375	1/2	.088	2.5	
GTO87-12	GTO87-12C	.375	3/4	.088	2.5	
GTO87-16	GTO87-16C	.375	1	.088	2.5	
GTO87-20	GTO87-20C	.375	1.25	.088	2.5	
GTO126-6	GTO126-6C	.375	3/8	.127	2.5	
GTO126-8	GTO126-8C	.375	1/2	.127	2.5	
GTO126-12	GTO126-12C	.375	3/4	.127	2.5	
GTO126-16	GTO126-16C	.375	1	.127	2.5	
GTO126-20	GTO126-20C	.375	1.25	.127	2.5	
GTO157-6	GTO157-6C	.375	3/8	.158	2.5	
GTO157-8	GTO157-8C	.375	1/2	.158	2.5	
GTO157-12	GTO157-12C	.375	3/4	.158	2.5	
GTO157-16	GTO157-16C	.375	1	.158	2.5	
GTO157-20	GTO157-20C	.375	1.25	.158	2.5	
GTO93-8	GTO93-8C	.500	1/2	.094	3	
GTO93-12	GTO93-12C	.500	3/4	.094	3	
GTO93-16	GTO93-16C	.500	1	.094	3	
GTO93-20	GTO93-20C	.500	1.25	.094	3	
GTO93-24	GTO93-24C	.500	1.5	.094	3	
GTO125-8	GTO125-8C	.500	1/2	.126	3	
GTO125-12	GTO125-12C	.500	3/4	.126	3	
GTO125-16	GTO125-16C	.500	1	.126	3	
GTO125-20	GTO125-20C	.500	1.25	.126	3	
GTO125-24	GTO125-24C	.500	1.5	.126	3	
GTO156-8	GTO156-8C	.500	1/2	.157	3	
GTO156-12	GTO156-12C	.500	3/4	.157	3	
GTO156-16	GTO156-16C	.500	1	.157	3	
GTO156-20	GTO156-20C	.500	1.25	.157	3	
GTO156-24	GTO156-24C	.500	1.5	.157	3	
GTO187-8	GTO187-8C	.500	1/2	.188	3	
GTO187-12	GTO187-12C	.500	3/4	.188	3	
GTO187-16	GTO187-16C	.500	1	.188	3	
GTO187-20	GTO187-20C	.500	1.25	.188	3	
GTO187-24	GTO187-24C	.500	1.5	.188	3	
GTO250-8	GTO250-8C	.500	1/2	.251	3	
GTO250-12	GTO250-12C	.500	3/4	.251	3	
GTO250-16	GTO250-16C	.500	1	.251	3	
GTO250-20	GTO250-20C	.500	1.25	.251	3	
GTO250-24	GTO250-24C	.500	1.5	.251	3	

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GROOVE TOOL-FULL RADIUS



GROOVE TOOL

UNCOATED	ALTiN	MIN HOLE A	MAX DEPTH B	GROOVE WIDTH C	LENGTH
GFR017K-4	GFR017K-4C	.187	1/4	.0175	2
GFR017K-6	GFR017K-6C	.187	3/8	.0175	2
GFR017K-8	GFR017K-8C	.187	1/2	.0175	2
GFR017K-10	GFR017K-10C	.187	5/8	.0175	2
GFR025K-4	GFR025K-4C	.187	1/4	.0255	2
GFR025K-6	GFR025K-6C	.187	3/8	.0255	2
GFR025K-8	GFR025K-8C	.187	1/2	.0255	2
GFR025K-10	GFR025K-10C	.187	5/8	.0255	2
GFR030K-4	GFR030K-4C	.187	1/4	.0305	2
GFR030K-6	GFR030K-6C	.187	3/8	.0305	2
GFR030K-8	GFR030K-8C	.187	1/2	.0305	2
GFR030K-10	GFR030K-10C	.187	5/8	.0305	2
GFR017Q-4	GFR017Q-4C	.250	1/4	.0175	2.5
GFR017Q-6	GFR017Q-6C	.250	3/8	.0175	2.5
GFR017Q-8	GFR017Q-8C	.250	1/2	.0175	2.5
GFR017Q-10	GFR017Q-10C	.250	5/8	.0175	2.5
GFR025Q-4	GFR025Q-4C	.250	1/4	.0255	2.5
GFR025Q-6	GFR025Q-6C	.250	3/8	.0255	2.5
GFR025Q-8	GFR025Q-8C	.250	1/2	.0255	2.5
GFR025Q-10	GFR025Q-10C	.250	5/8	.0255	2.5
GFR030Q-4	GFR030Q-4C	.250	1/4	.0305	2.5
GFR030Q-6	GFR030Q-6C	.250	3/8	.0305	2.5
GFR030Q-8	GFR030Q-8C	.250	1/2	.0305	2.5
GFR030Q-10	GFR030Q-10C	.250	5/8	.0305	2.5
GFR033-4	GFR033-4C	.312	1/4	.0335	2.5
GFR033-6	GFR033-6C	.312	3/8	.0335	2.5
GFR033-8	GFR033-8C	.312	1/2	.0335	2.5
GFR033-12	GFR033-12C	.312	3/4	.0335	2.5
GFR038-4	GFR038-4C	.312	1/4	.0385	2.5
GFR038-6	GFR038-6C	.312	3/8	.0385	2.5
GFR038-8	GFR038-8C	.312	1/2	.0385	2.5
GFR038-12	GFR038-12C	.312	3/4	.0385	2.5
GFR039-4	GFR039-4C	.375	1/4	.040	2.5
GFR039-6	GFR039-6C	.375	3/8	.040	2.5
GFR039-8	GFR039-8C	.375	1/2	.040	2.5
GFR039-12	GFR039-12C	.375	3/4	.040	2.5
GFR039-16	GFR039-16C	.375	1	.040	2.5
GFR039-20	GFR039-20C	.375	1.25	.040	2.5
GFR046-4	GFR046-4C	.375	1/4	.047	2.5
GFR046-6	GFR046-6C	.375	3/8	.047	2.5
GFR046-8	GFR046-8C	.375	1/2	.047	2.5
GFR046-12	GFR046-12C	.375	3/4	.047	2.5
GFR046-16	GFR046-16C	.375	1	.047	2.5
GFR046-20	GFR046-20C	.375	1.25	.047	2.5
GFR055-4	GFR055-4C	.375	1/4	.056	2.5
GFR055-6	GFR055-6C	.375	3/8	.056	2.5
GFR055-8	GFR055-8C	.375	1/2	.056	2.5

GROOVE TOOL

UNCOATED	ALTiN	MIN HOLE A	MAX DEPTH B	GROOVE WIDTH C	LENGTH
GFR055-12	GFR055-12C	.375	3/4	.056	2.5
GFR055-16	GFR055-16C	.375	1	.056	2.5
GFR055-20	GFR055-20C	.375	1.25	.056	2.5
GFR062-4	GFR062-4C	.375	1/4	.063	2.5
GFR062-6	GFR062-6C	.375	3/8	.063	2.5
GFR062-8	GFR062-8C	.375	1/2	.063	2.5
GFR062-12	GFR062-12C	.375	3/4	.063	2.5
GFR062-16	GFR062-16C	.375	1	.063	2.5
GFR062-20	GFR062-20C	.375	1/25	.063	2.5
GFR069-4	GFR069-4C	.375	1/4	.070	2.5
GFR069-6	GFR069-6C	.375	3/8	.070	2.5
GFR069-8	GFR069-8C	.375	1/2	.070	2.5
GFR069-12	GFR069-12C	.375	3/4	.070	2.5
GFR069-16	GFR069-16C	.375	1	.070	2.5
GFR069-20	GFR069-20C	.375	1/25	.070	2.5
GFR087-4	GFR087-4C	.375	1/4	.088	2.5
GFR087-6	GFR087-6C	.375	3/8	.088	2.5
GFR087-8	GFR087-8C	.375	1/2	.088	2.5
GFR087-12	GFR087-12C	.375	3/4	.088	2.5
GFR087-16	GFR087-16C	.375	1	.088	2.5
GFR087-20	GFR087-20C	.375	1.25	.088	2.5
GFR124-4	GFR124-4C	.375	1/4	.125	2.5
GFR124-6	GFR124-6C	.375	3/8	.125	2.5
GFR124-8	GFR124-8C	.375	1/2	.125	2.5
GFR124-12	GFR124-12C	.375	3/4	.125	2.5
GFR124-16	GFR124-16C	.375	1	.125	2.5
GFR124-20	GFR124-20C	.375	1.25	.125	2.5
GFR093-8	GFR093-8C	.500	1/2	.094	3
GFR093-12	GFR093-12C	.500	3/4	.094	3
GFR093-16	GFR093-16C	.500	1	.094	3
GFR093-20	GFR093-20C	.500	1.25	.094	3
GFR093-24	GFR093-24C	.500	1.5	.094	3
GFR125-8	GFR125-8C	.500	1/2	.126	3
GFR125-12	GFR125-12C	.500	3/4	.126	3
GFR125-16	GFR125-16C	.500	1	.126	3
GFR125-20	GFR125-20C	.500	1.25	.126	3
GFR125-24	GFR125-24C	.500	1.5	.126	3
GFR156-8	GFR156-8C	.500	1/2	.157	3
GFR156-12	GFR156-12C	.500	3/4	.157	3
GFR156-16	GFR156-16C	.500	1	.157	3
GFR156-20	GFR156-20C	.500	1.25	.157	3
GFR156-24	GFR156-24C	.500	1.5	.157	3
GFR187-8	GFR187-8C	.500	1/2	.188	3
GFR187-12	GFR187-12C	.500	3/4	.188	3
GFR187-16	GFR187-16C	.500	1	.188	3
GFR187-20	GFR187-20C	.500	1.25	.188	3
GFR187-24	GFR187-24C	.500	1.5	.188	3
GFR250-8	GFR250-8C	.500	1/2	.251	3
GFR250-12	GFR250-12C	.500	3/4	.251	3
GFR250-16	GFR250-16C	.500	1	.251	3
GFR250-20	GFR250-20C	.500	1.25	.251	3
GFR250-24	GFR250-24C	.500	1.5	.251	3

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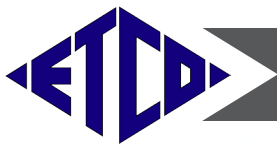
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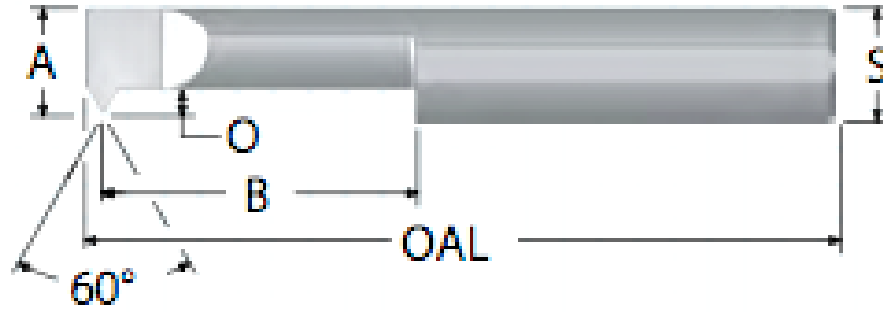
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THREADING & O RING TOOLS

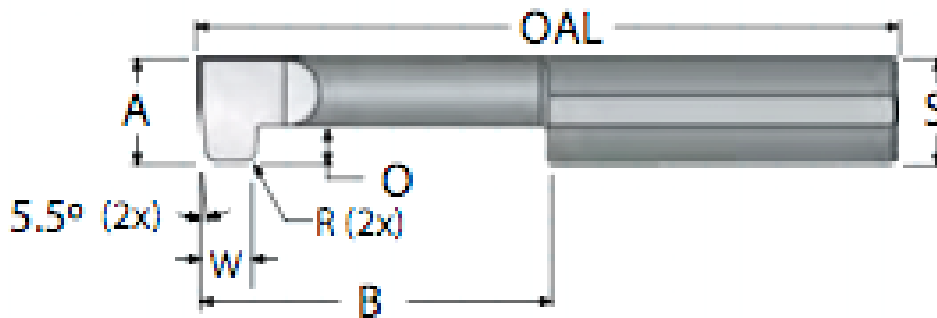


THREADING TOOLS

UNCOATED	ALTiN	MIN HOLE A	MAX DEPTH B	MIN. OFFSET C	LENGTH
TT04080	TT04080C	.040	.080	.013	1.5
TT04100	TT04100C	.040	.100	.013	1.5
TT04130	TT04130C	.040	.130	.013	1.5
TT050100	TT050100C	.050	.100	.017	1.5
TT050150	TT050150C	.050	.150	.017	1.5
TT050200	TT050200C	.050	.200	.017	1.5
TT060150	TT060150C	.060	.150	.020	1.5
TT060200	TT060200C	.060	.200	.020	1.5
TT060250	TT060250C	.060	.250	.020	1.5
TT060300	TT060300C	.060	.300	.020	1.5
TT075200	TT075200C	.075	.200	.020	1.5
TT075300	TT075300C	.075	.300	.020	1.5
TT075400	TT075400C	.075	.400	.020	1.5
TT090200	TT090200C	.090	.200	.025	1.5
TT090300	TT090300C	.090	.300	.025	1.5
TT090400	TT090400C	.090	.400	.025	1.5
TT090500	TT090500C	.090	.500	.025	1.5
TT120250	TT120250C	.120	.250	.030	2
TT120400	TT120400C	.120	.400	.030	2
TT120600	TT120600C	.120	.600	.030	2
TT120750	TT120750C	.120	.750	.030	2
TT150350	TT150350C	.150	.350	.035	2
TT150500	TT150500C	.150	.500	.035	2
TT150750	TT150750C	.150	.750	.035	2
TT180350	TT180350C	.180	.350	.040	2.5
TT180500	TT180500C	.180	.500	.040	2.5
TT180750	TT180750C	.180	.750	.040	2.5
TT1801000	TT1801000C	.180	1.000	.040	2.5

THREADING TOOLS

UNCOATED	ALTiN	MIN HOLE A	MAX DEPTH B	MIN. OFFSET C	LENGTH
TT200400	TT200400C	.200	.400	.045	2.5
TT200600	TT200600C	.200	.600	.045	2.5
TT200800	TT200800C	.200	.800	.045	2.5
TT2001000	TT2001000C	.200	1.000	.045	2.5
TT230400	TT230400C	.230	.400	.055	2.5
TT230600	TT230600C	.230	.600	.055	2.5
TT230750	TT230750C	.230	.750	.055	2.5
TT2301000	TT2301000C	.230	1.000	.055	2.5
TT2301250	TT2301250C	.230	1.250	.055	2.5
TT290500	TT290500C	.290	.500	.070	2.5
TT290750	TT290750C	.290	.750	.070	2.5
TT2901000	TT2901000C	.290	1.000	.070	2.5
TT2901250	TT2901250C	.290	1.250	.070	2.5
TT2901500	TT2901500C	.290	1.500	.070	2.5
TT320500	TT320500C	.320	.500	.075	2.5
TT320750	TT320750C	.320	.750	.075	2.5
TT3201000	TT3201000C	.320	1.000	.075	2.5
TT3201250	TT3201250C	.320	1.250	.075	2.5
TT3201500	TT3201500C	.320	1.500	.075	2.5
TT360500	TT360500C	.360	.500	.085	2.5
TT360750	TT360750C	.360	.750	.085	2.5
TT3601000	TT3601000C	.360	1.000	.085	2.5
TT3601250	TT3601250C	.360	1.250	.085	2.5
TT3601500	TT3601500C	.360	1.800	.085	2.5
TT490750	TT490750C	.490	.750	.120	3
TT4901500	TT4901500C	.490	1.500	.120	3
TT4902000	TT4902000C	.490	2.000	.120	3

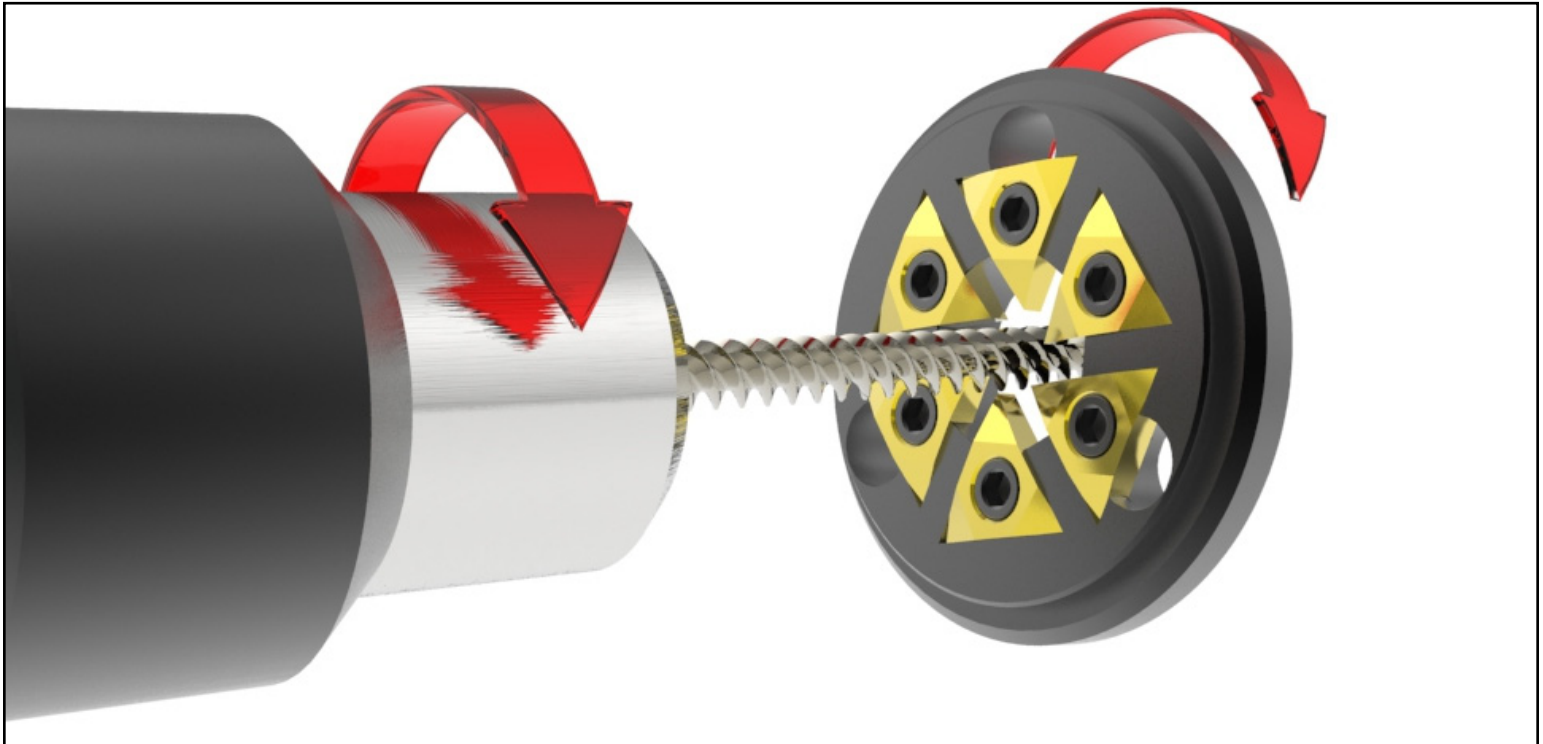
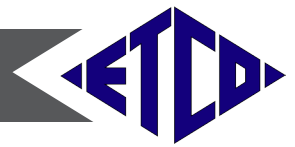


O RING GROOVE TOOLS

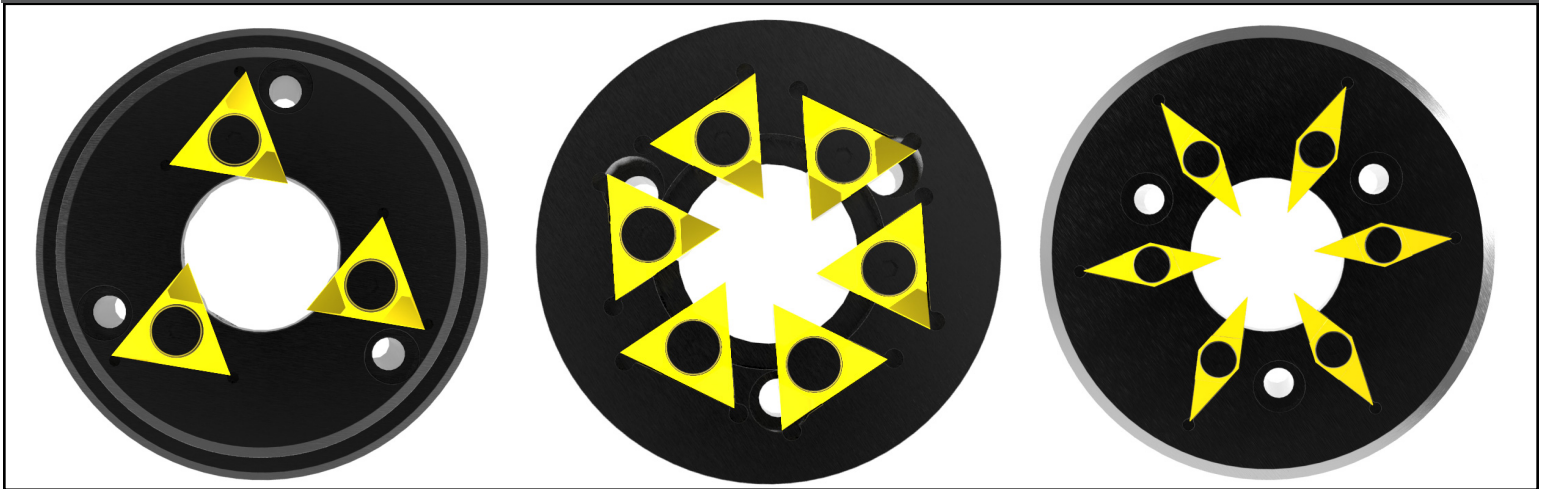
UNCOATED	ALTiN	MIN HOLE A	MAX DEPTH B	GROOVE WIDTH C	LENGTH	RADIUS
GOR096-8	GOR096-8C	.250	1/2	.097	2.5	.015
GOR096-9	GOR096-9C	.250	9/16	.142	2.5	.040
GOR096-10	GOR096-10C	.250	5/8	.145	2.5	.040

O RING GROOVE TOOLS

UNCOATED	ALTiN	MIN HOLE A	MAX DEPTH B	GROOVE WIDTH C	LENGTH	RADIUS
GOR174-8	GOR174-8C	.250	1/2	.097	2.5	.015
GOR208-9	GOR208-9C	.250	9/16	.142	2.5	.040
GOR241-10	GOR241-10C	.250	5/8	.145	2.5	.040



TWB THREAD WHIRLING BODIES



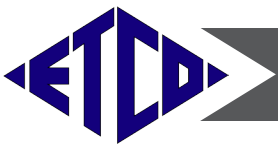
**ETCO TWB Bodies available in 3, 6 and 9(35° inserts only) Inserts.
Available for all CNC Swiss Machines.
TWB Specials Also Available**

**ETCO Thread whirling inserts available in both partial and full form.
Different IC's Available.
All screw forms quoted.**

**ETCO Tooling specializes in
custom grinding of thread
whirling bodies and inserts.
Email or Call us for more
information.**

Engineered Tooling Corp.
57 Grant Street . Waltham, MA 02451
781 788 8888 FAX 781 736 1987
VISIT US AT: www.etcotooling.com
e-mail info@etcotooling.com

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CUSTOM INSERT GEOMETRY ORDER FORM

Please check appropriate insert style box - specify toolholder to be used.

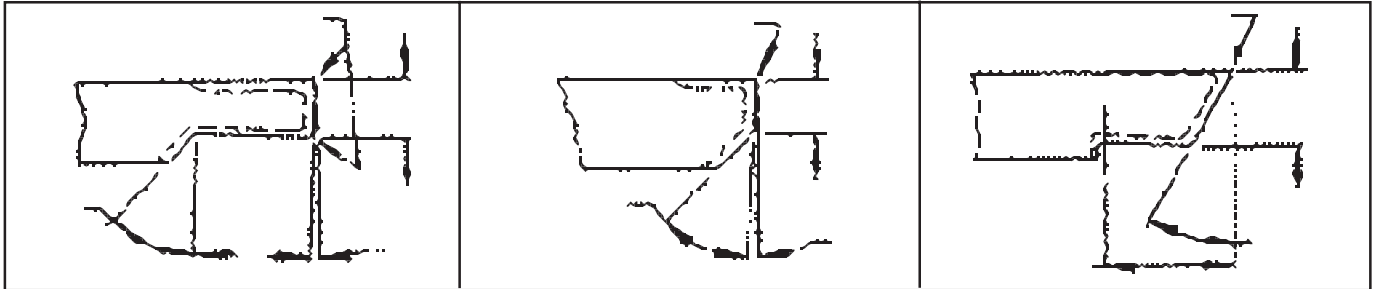
INSERT STYLES (Check Box)

- 35°
- 35°T
- 50°
- 60°
- BORING
- DOGBONE
- TURNING
- GROOVING
- CUT-OFF
- BACK TURN
- THREADING

TOOLHOLDER (Fill in number) Left or Right Hand

- | | |
|---------------|-----------------|
| SMV-35 _____ | SMA-60 _____ |
| SMV-35T _____ | SMV-60 _____ |
| SMP-35 _____ | |
| SMP-35T _____ | SDFL-50 _____ |
| SMA-50 _____ | SMV-50-2H _____ |
| SMV-50 _____ | DBC _____ |
| | NCB _____ |

EXAMPLE DRAWINGS:



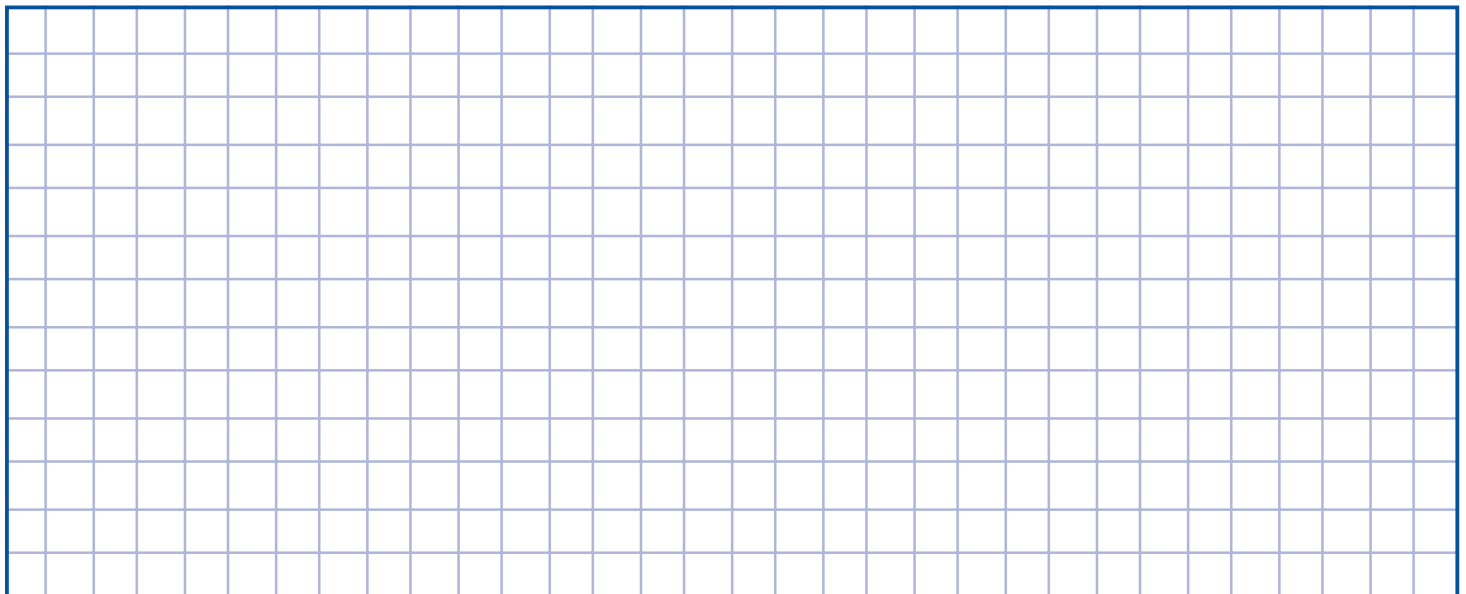
COMPANY _____ PHONE _____

FAX _____

CONTACT _____

MACHINE TYPE _____ MODEL # _____

INSERT/DRAW CUSTOM TOOL DRAWINGS BELOW:



Engineered Tooling Corp.

57 Grant Street . Waltham, MA 02451

781 788 8888 FAX 781 736 1987

VISIT US AT: www.etcotooling.com

e-mail info@etcotooling.com

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