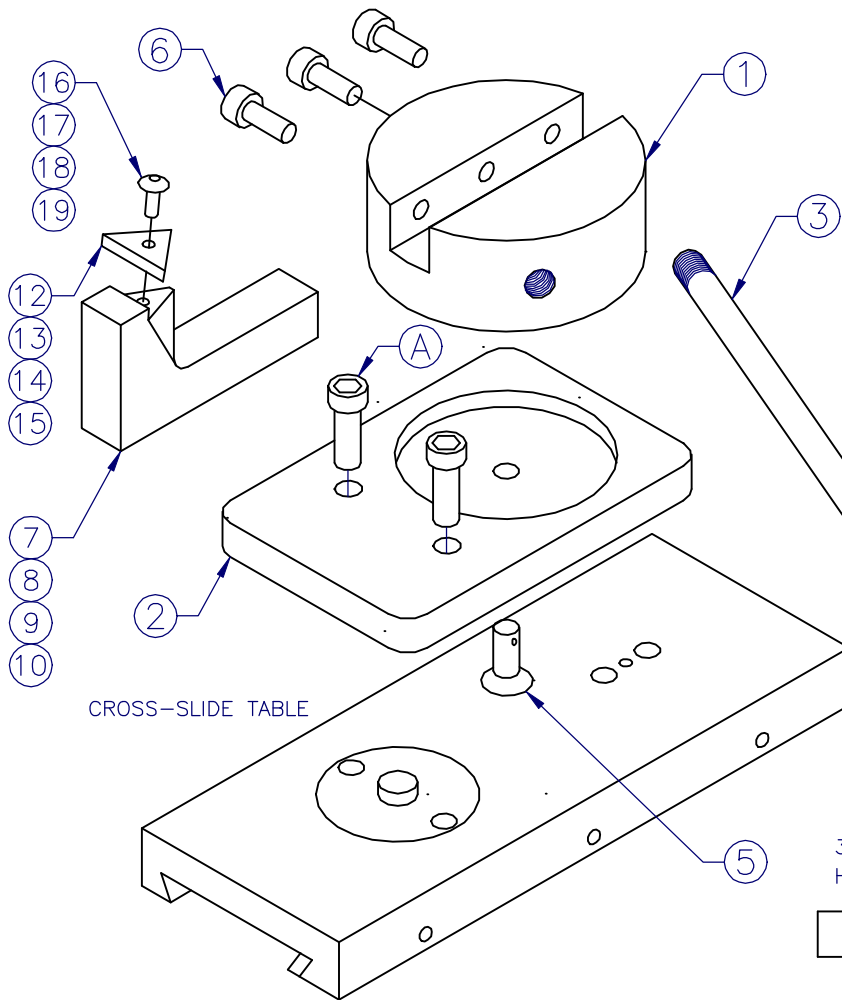
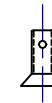


BALL TURNING APPLIANCE
 FOR USE WITH THE 7X** MINILATHE MACHINES
 ADAPTED FROM STEVE BEDAIR'S DESIGN FOR THE 9X20 LATHE
<http://bedair.org/ball/ball.html>



OPERATING HANDLE & KNOB ARE NOT INSTALLED

OFFSET BASE ALLOWS CUTTER TO OPERATE CLOSE TO CENTER OF CROSS SLIDE
 ORIGINAL DESIGN REQUIRED MORE CS TRAVEL



PRESS LENGTH OF .085 STRING-TRIMMER
 CORD THROUGH CROSS HOLE & TRIM FLUSH
 TO CREATE A SELF-LOCKING SCREW.

GREASE SCREW HEAD AND MATING PARTS
 OF PIVOT BLOCK AT ASSEMBLY.

A USE THE MOUNTING SCREWS FOR THE COMPOUND (M6.0X1.0X16mm)

CROSS-SLIDE TABLE

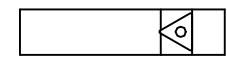
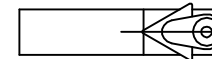
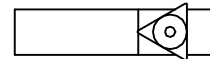
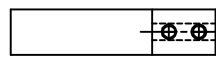
CHOOSE THE HOLDER/CUTTER/SCREW COMBINATION YOU PREFER.

3/16 ROUND
 HSS CUTTER

3/8 I.C. INSERT
 TNMG 322

3/8 I.C. INSERT
 TPG 321

1/4 I.C. INSERT
 TNMG 222

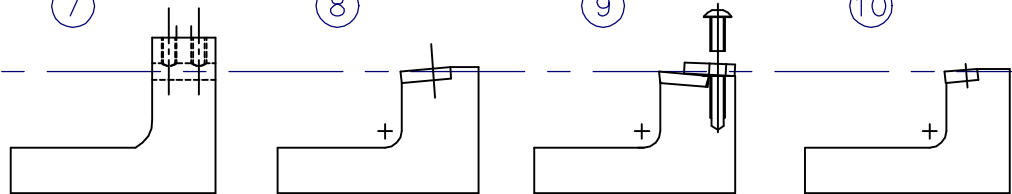
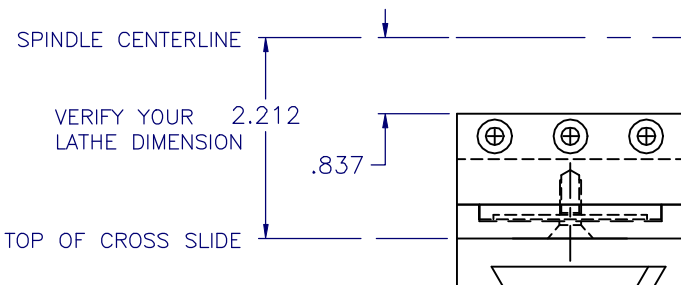


7

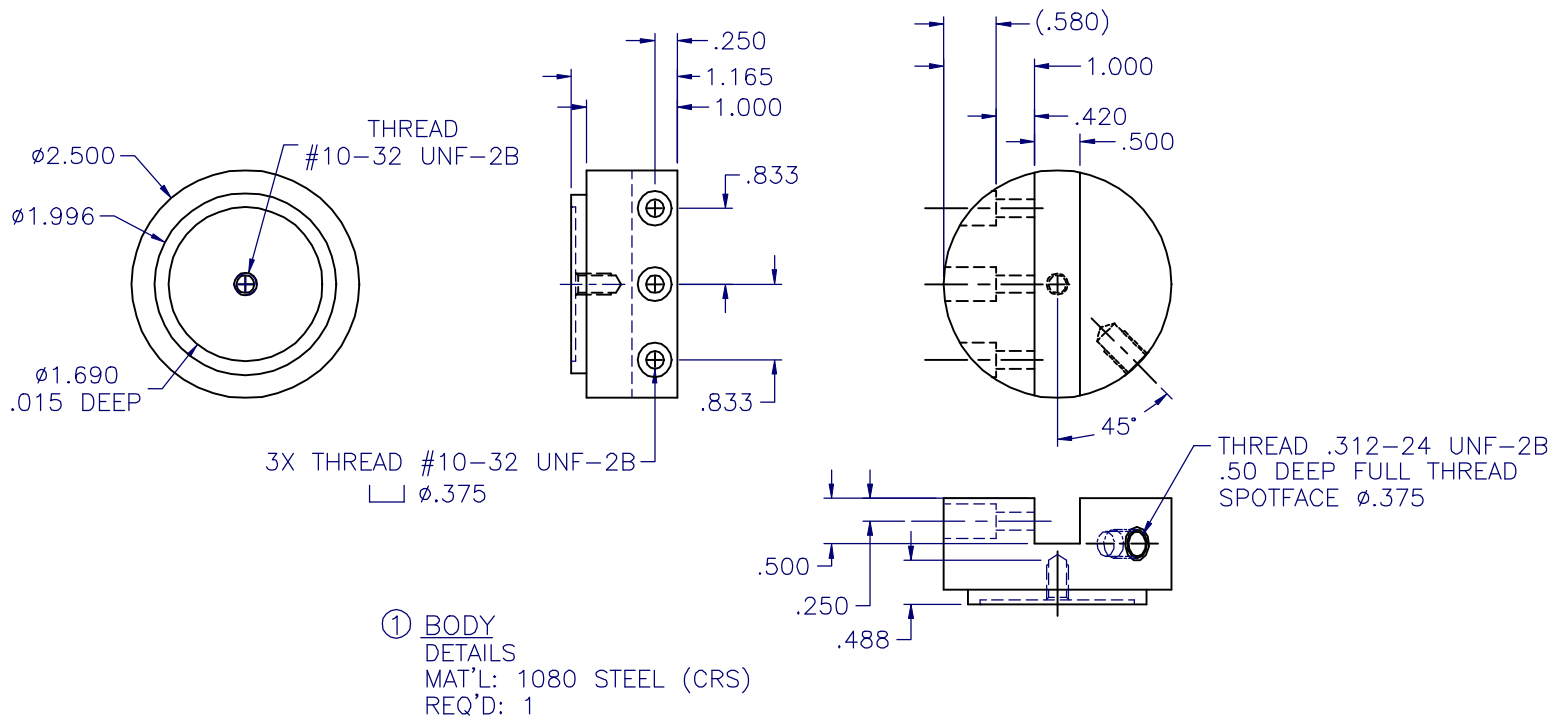
8

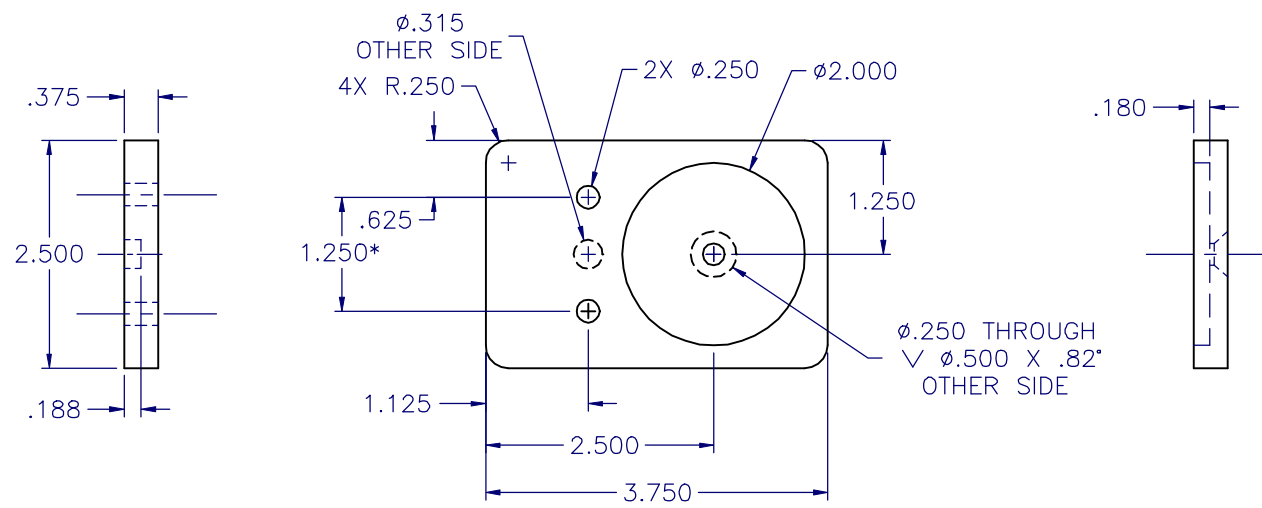
9

10



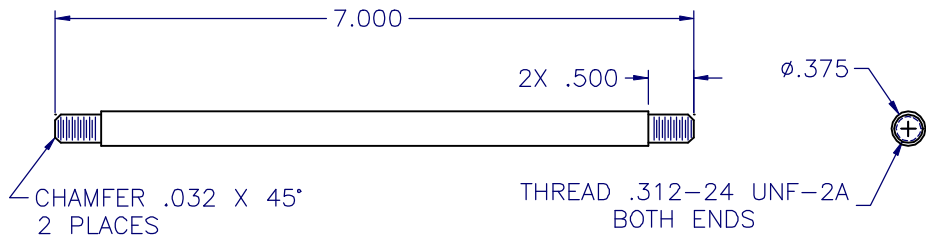
ASSEMBLY ARRANGEMENT



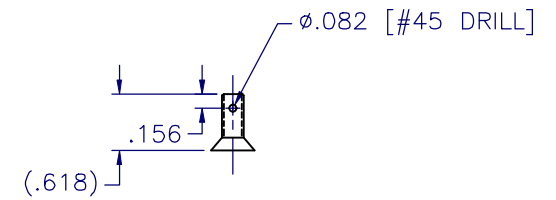


② BASE PLATE
 DETAILS
 MAT'L: 1080 STEEL (CRS)
 REQ'D: 1

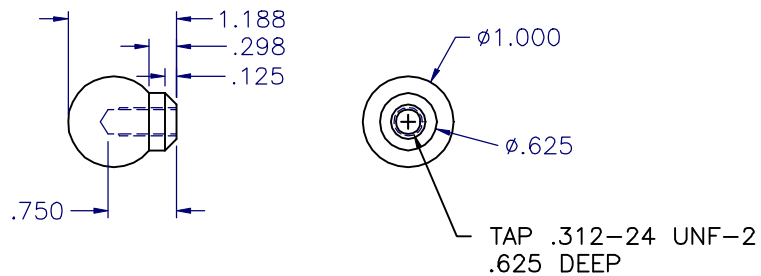
* TEMPLATE THE HOLE SPACING
 TO YOUR CROSS SLIDE ADAPTER PIECE



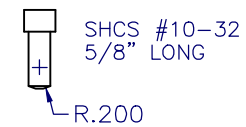
③ SHAFT, LEVER ARM
 DETAILS
 MAT'L: 1080 STEEL (CRS)
 REQ'D: 1



⑤ SCREW, PIVOT
 MODIFICATION
 MAT'L: STEEL
 REQ'D: 1



④ KNOB, LEVER ARM
 DETAILS
 MAT'L: BRASS
 REQ'D: 1

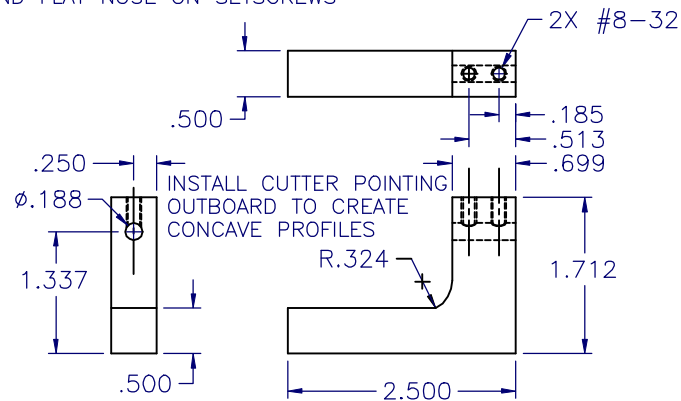


⑥ SCREW, CLAMP
 MODIFICATION
 MAT'L: STEEL
 REQ'D: 3

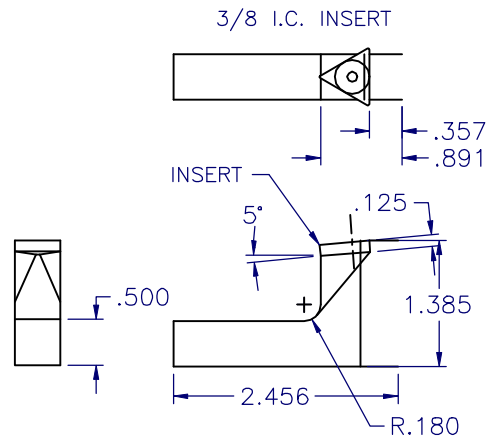
NOTE:

GRIND CUTTER FROM 3/16 DIA CENTER DRILL
OR LENGTH OF 3/16 DIA DRILL BLANK

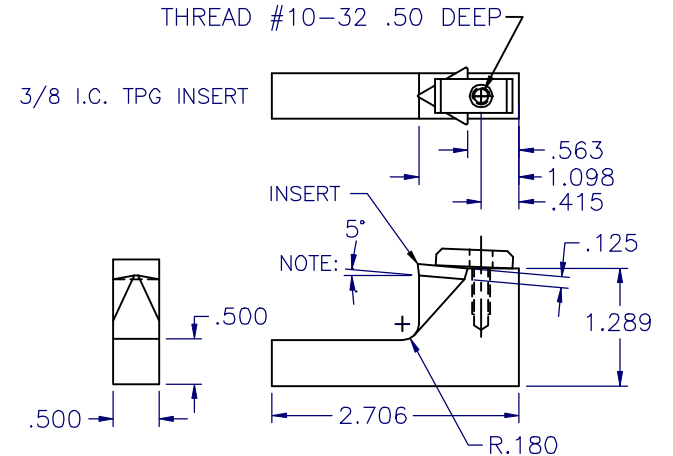
GRIND FLAT NOSE ON SETSCREWS



⑦ HOLDER, HSS CUTTER
MODIFICATION
MAT'L: STEEL
REQ'D: 1



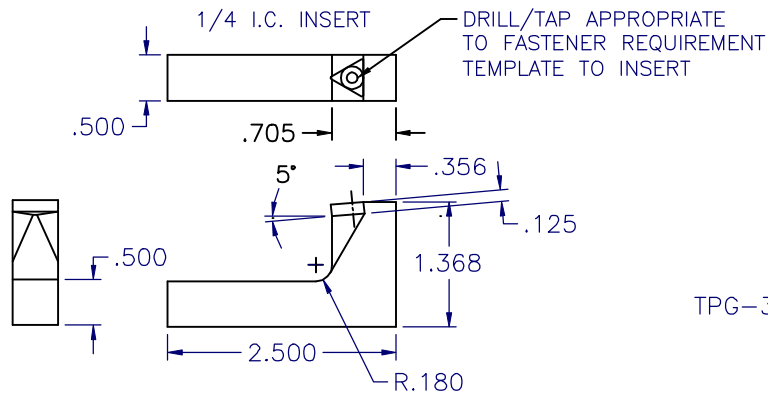
⑧ HOLDER, TNMG INSERT (3/8 IC)
MODIFICATION
MAT'L: STEEL
REQ'D: 1



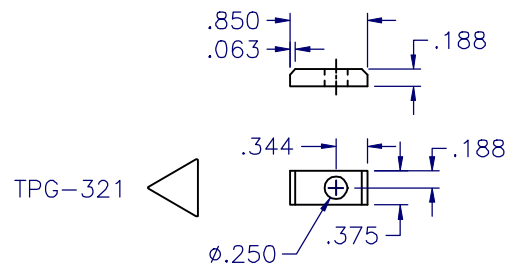
⑨ HOLDER, TPG INSERT (3/8 IC)
MODIFICATION
MAT'L: STEEL
REQ'D: 1

NOTE:
CUTTING POINT MUST BE
AT SPINDLE CENTERLINE

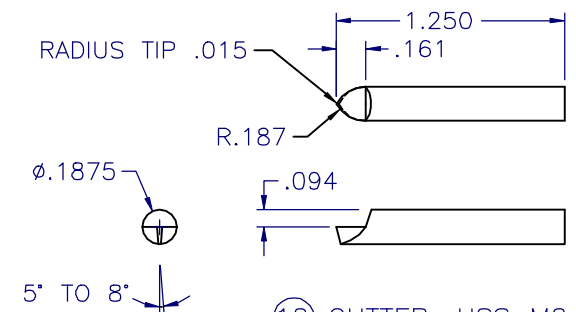
NOTE:
TYPE TCMT CUTTER SHOULD BE
MOUNTED AT ZERO INCLINATION ANGLE



⑩ HOLDER, TNMG INSERT (1/4 IC)
MODIFICATION
MAT'L: STEEL
REQ'D: 1



⑪ CLAMP, TPG INSERT (3/8 IC)
(W/O SCREW HOLE)
MAT'L: STEEL
REQ'D: 1



⑫ CUTTER, HSS M2
DETAILS
MAKE FROM DRILL BLANK
REQ'D: 1

AR	AROUND PIVOTING PARTS	PTFE	TEFLON BASE GREASE (NLGI GRADE 2)	LUBRICANT	20
1	#8-32 X 3/8 UNC-2A	BLACK	STEEL, BUTTON HEAD (3/8 IC TCMT)	SCREW, CLAMP	19
1	#10-32 X 1/2 UNC-2A	BLACK	STEEL, BUTTON HEAD (TPG CLAMP)	SCREW, CLAMP	18
1	#2-56 X 1/2 UNC-2A	BLACK	STEEL, BUTTON HEAD (1/4 IC TNMG)	SCREW, CLAMP	17
1	#6-32 X 1/2 UNC-2A	BLACK	STEEL, BUTTON HEAD (3/8 IC TNMG)	SCREW, CLAMP	16
1	3/8 INCLUDED CIRCLE	C-6	TCMT 322 (HOLE DIA .173)	INSERT, CARBIDE	15
1	3/8 INCLUDED CIRCLE	C-6	TPG 322 (NO HOLE)	INSERT, CARBIDE	14
1	1/4 INCLUDED CIRCLE	C-6	TNMG 222 (HOLE DIA .089)	INSERT, CARBIDE	13
1	3/8 INCLUDED CIRCLE	C-6	TNMG 322 (HOLE DIA .150)	INSERT, CARBIDE	12
1	7/8 X 3/8 X 3/16	1018 CRS	STEEL FLAT BAR	CLAMP FOR TPG	11
1*	2.50 X 1.5 X .50	1018 CRS	STEEL FLAT BAR	HOLDER, INSERT, 1/4 IC	10
1*	2.50 X 1.5 X .50	1018 CRS	STEEL FLAT BAR	HOLDER, INSERT, 3/8 IC	9
1*	2.50 X 1.5 X .50	1018 CRS	STEEL FLAT BAR	HOLDER, INSERT, 3/8 IC	8
1*	2.75 X 1.5 X .50	1018 CRS	STEEL FLAT BAR	HOLDER, HSS CUTTER	7
2	#8-32 X 5/8 UNC-2A	BLACK	STEEL, SOCKET HEAD	SCREW, CLAMP	6
1	#10-32 X 5/8 UNF-2A	BLACK	STEEL, FLAT HEAD	SCREW, PIVOT	5
1	1.00 ROUND BAR	BRASS	ROUND BAR	KNOB, LEVER ARM	4
1	ø.375 X 7.0 LONG	303	STAINLESS ROUND BAR	SHAFT, LEVER ARM	3
1	ø2.5 X 3.75 X .375	6061-T6	ALUMINUM FLAT BAR	BASEPLATE	2
1	ø2.50 ROUND BAR	6061-T6	ALUMINUM ROUND BAR	BODY	1
REQ'D	SIZE	SPEC	MATERIAL	DESCRIPTION	ITEM

COMPONENTS AND MATERIALS REQUIRED FOR ONE ASSEMBLY

NOTES:

1. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
2. TOLERANCES: .XX, .010; .XXX, ±.005; ANGLES ±.5°; FINISH √32.
BREAK EDGES .01 MAX; FILLET INSIDE CORNERS .01 MAX.
3. THIS ACCESSORY IS ADAPTED FOR THE 7X** MINILATHE FROM STEVE BEDAIR'S DESIGN FOR THE 9X20 LATHE.
4. THE OFFSET BASE ALLOWS THE CUTTER PIVOT TO REACH THE SPINDLE CENTERLINE WITHOUT MOVING THE CROSS SLIDE TABLE OFF THE DOVETAIL WAYS.
5. VARIOUS CUTTER STYLES ARE SHOWN; TNMG HAS ZERO FRONT CLEARANCE, SO MUST BE TILTED DOWN.
6. CUTTER STYLE TCMT HAS 7 DEGREES OF FRONT CLEARANCE, BEST MOUNTED AT ZERO TILT ANGLE.
7. CUTTER STYLE TPG HAS 11 DEGREES OF SIDE ANGLE, CAN BE TILTED UP 5 DEGREES FOR SMOOTHEST CUT.
8. THE PIVOT SCREW (PC 5) ADJUSTMENT IS DELICATE. WHEN FIRST ADJUSTED WITH LUBRICANT, IT WILL SEEM TO BE QUITE SNUG. LATER TWEAKS ARE TO BE EXPECTED.
9. THE MAXIMUM PRACTICAL BALL SIZE WILL BE ABOUT 1-3/4 INCHES DIAMETER.
10. THE HANDLE KNOB (PC 4) CAN BE YOUR FIRST PROJECT.

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All ideas, procedures, modifications and whatever is described or shown here is to be used at risk of the reader.

Take care and work safely.