

### Installation of the M16, Mini M16, Medium Sako and Large Sako Style Extractors

Will work for Remington 700, 721, 722, 40X, XP-100, 7, 78, 600 and 660 bolts

#### WARNING!

This Extractor must be installed by a competent gunsmith familiar with this type of work, failure to install this upgrade correctly will cause the bolt to be rendered unusable! Making sure that the firearm is unloaded, Remove the bolt from the rifle and disassemble the firing pin assembly per manufacturer's instructions also remove extractor and ejector.

#### Installation of the M16, Mini M16 Style

1. You will need to make a filler ring and open the bolt face to match, fig. 1 When making the ring we find Barrel steel works well for this application however, any good grade of steel will do. Make the ID of the ring slightly smaller than the final diameter listed in the legend by at least .010" and at least .010" longer than the depth of your bolt nose (.165 +/- .005).

#### NOTE:

If you use a Standard face bolt (30-06) for Lapua/Rigby based cartridges, it is not necessary to make a filler ring, just open the bolt face to the .594 +.003 diameter.

2. Using Soft silver solder, solder the ring into the bolt nose fig. 2 re-cut the bolt nose to the new specifications, fig. 1 Dimension "A" (See Legend) Cut a roll out chamfer in the bolt nose fig 1 this aids in the cartridge rolling out of the bolt during ejection, you may need to cut this bigger than the spec.

3. Set the bolt up at 45° per fig. 1 Cut the Extractor pockets per the dimensions in fig. 1

#### CAUTION!

It is absolutely critical that the cross hole pin be exactly 90° to the extractor cutout!

4. After cutting the pockets, rotate the bolt 90° and locate the position for the cross pin hole, Spot face with a 1/8" center cutting end mill, center drill with a #0 center drill, drill through with a #43 drill being very careful when you break through the bottom of the bolt so as not to break the drill or elongate the hole.

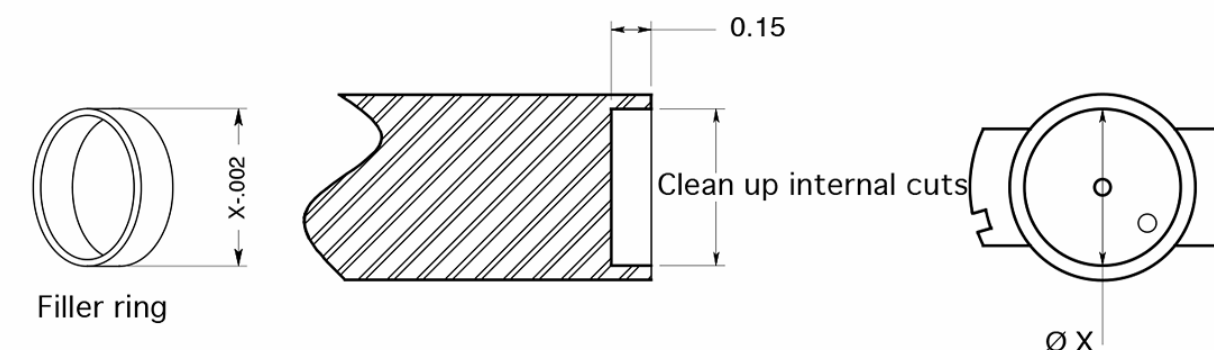
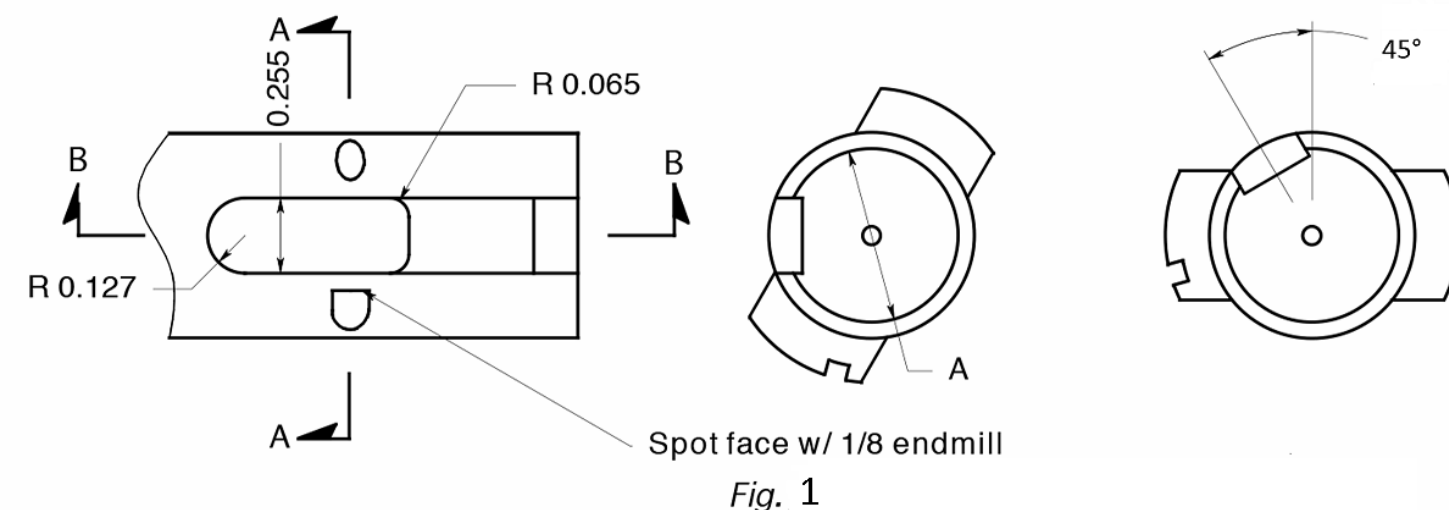
5. Ream the hole with a 3/32" chucking reamer, clean up any burrs and refinish the bolt as necessary.

6. IMPORTANT! You may need to open the counter bore in the barrel for the extractor to work!

7. Install the Extractor spring into the Extractor, the spring is tapered, insert the large end into the spring recess in the Extractor, use a clockwise twisting motion when inserting. Once properly installed the spring will remain captured in the Extractor

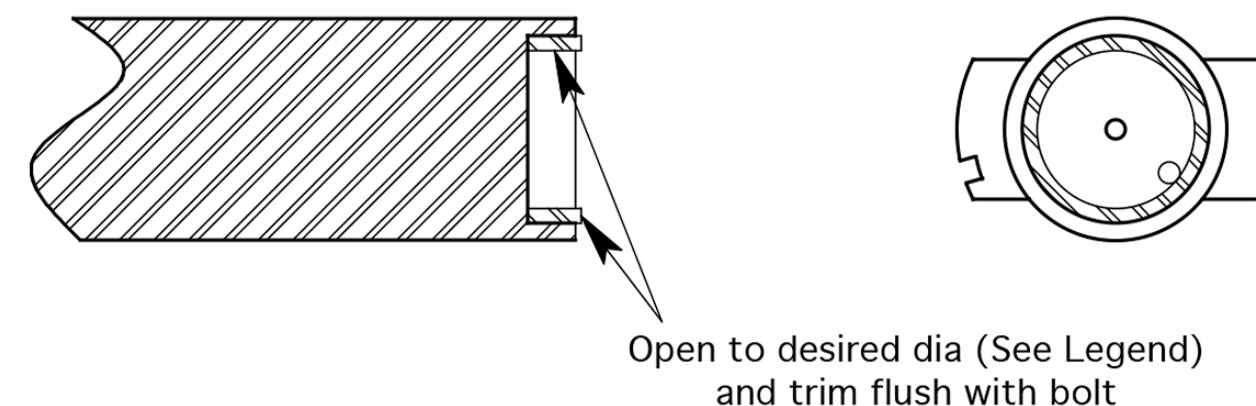
8. Slip the Extractor into the bolt, line up the hole with a slave pin and install the roll pin and check to make sure the Extractor moves freely. Re-install ejector and firing pin assemblies.

9. For Lapua conversions, it will not eject a live round properly unless you open the rear of the ejection port.



For Magnum X= .625"  
For Lapua X= .640"

Boltface Legend	
Cartridge	Dim A
Standard	.484 ±.003
Magnum	.550 ±.003
Lapua	.593



### Installation of Medium Sako and Large Sako Style

#### NOTE:

Use the above stated Instructions for opening up the bolt face and removal of the factory extractor

1. Remove firing pin, original extractor, ejector, and ejector spring from the bolt.

2. The bolt must be rotated to an angle of 45° and secured at that orientation for the first operation. This provides correct positioning of the replacement extractor. The easiest way to secure and position the bolt is with an "Extractor Installation Jig (Pacific Tool & Gauge Extractor Jig P/N PTG-EJ-000). Otherwise, use a V-block or other secure means to mount the bolt horizontally in the milling machine. Center the milling cutter to the firing pin hole.

3. Use the appropriate end mill to cut the groove for the extractor. The length of the slot cut is shown in Figure 2. The depth of the slot is dependent on the diameter of the case the gun is chambered for. Refer to Figure 1 and its accompanying table for the correct slot depths and dimensions for different applications. Cut the slot in several passes; do not attempt to make the cut in one pass. Figure 3 shows the relationship of the slot to the bolt face.

4. Check the width of the slot and adjust the slot to fit. We recommend .004" clearance per side.

5. Measure the extractor retaining finger and drill a hole .010" larger at the rear of the slot. This hole should be located so the rear edge of the hole touches the rear edge of the slot. Drill through into the firing pin hole in the center of the bolt body (Figure 2 and 3).

6. Test fit the extractor in the slot. Place the rim of a dummy round into the bolt face. Make sure the extractor will cam over the rim of a case without being forced. If it will not cam over the edge, enlarge the hole slightly to give more clearance.

7. Change the bolt to a vertical position in the milling machine with the bolt face pointing upward. Drill a .104" diameter hole .450" deep for the extractor spring. This hole should be centered in the back of the slot and appropriately spaced from the bottom of the slot. (Figure 1 and 3)

8. Install the extractor by putting the spring and plunger into the .104" inch diameter hole just drilled. The notch on the plunger must face the center of the bolt. Push the extractor back and down until the round shank drops into the retaining finger hole in the bolt body and the plunger rides up over the small flat at the rear of the extractor.

9. Use dummy rounds to check the new extractor for function. Reassemble the firearm according to manufacturer instructions. Check again for proper functioning using dummy rounds. If these tests prove satisfactory, test fire with live ammunition in a safe and appropriate manner.

	A	X	Y	D
223	.1390	.1046	.1550	.3991
PPC	.1770	.1220	.1811	.4545
STANDARD	.1860	.1311	.1944	.4861
MAGNUM	.2160	.1476	.2189	.5471

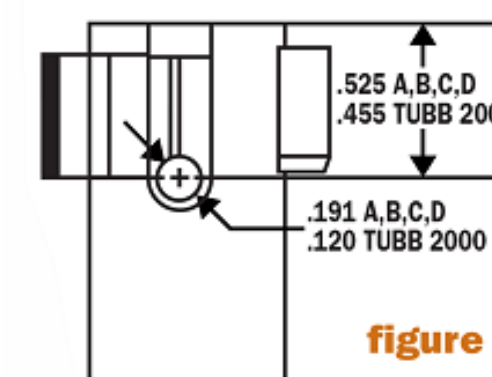
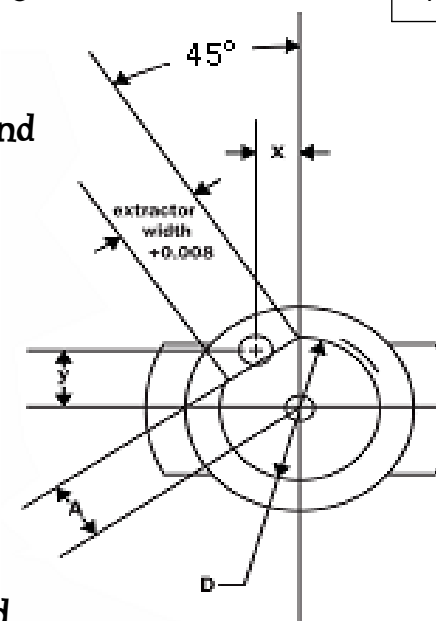


figure 2.

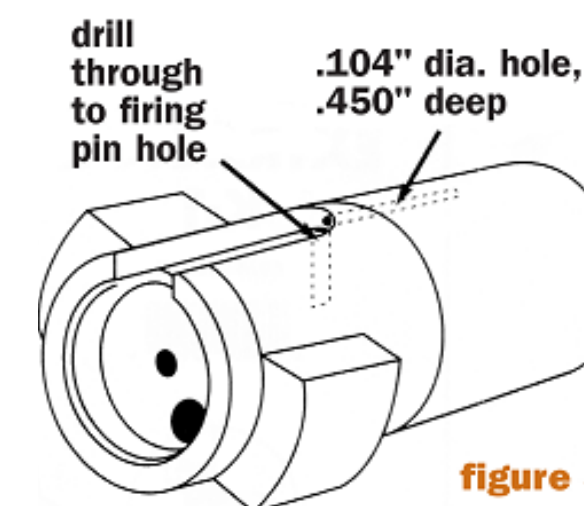


figure 3.



PROPRIETARY AND CONFIDENTIAL  
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF PACIFIC TOOL AND GAUGE. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF PACIFIC TOOL AND GAUGE IS PROHIBITED.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/16 ANGULAR: MACH ± 1/4 DEG TWO PLACE DECIMAL ± .010 THREE PLACE DECIMAL ± .005 FOUR PLACE DECIMAL ± .0005	DRAWN	NAME	DATE
INTERPRET GEOMETRIC TOLERANCING PER: ANSI	CHECKED	BBAILEY	
MATERIAL	ENG APPR.		
FINISH	MFG APPR.		
DO NOT SCALE DRAWING	Q.A.		

### PACIFIC TOOL AND GAUGE

TITLE:		
SIZE	DWG. NO.	REV
C		
SCALE: 2:1	WEIGHT:	SHEET 6 OF 6