

# FORSTER PRODUCTS

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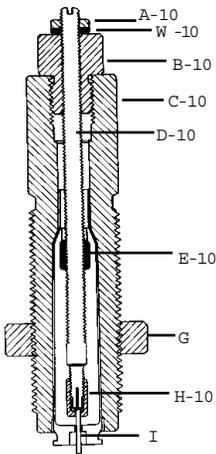
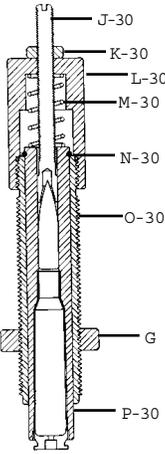
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## FORSTER BENCH REST® DIE INSTRUCTIONS

### PREPARATION

Note: Half-inch yellow square tab is a anti-rust agent—keep with dies. We suggest that you clean the dies' inside surfaces using a patch saturated with gun-cleaning solvent. This will help to prevent scratching of your dies and cases. Clean and inspect all cases before resizing. Dispose of split or separated cases. Check the case length and trim to length if necessary. Chamfer the sharp corners of trimmed cases with a Forster Deburring Tool.

| SIZER DIE PARTS   | SEATER DIE PARTS  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
|---|---|------|-----------------|------|----------------|------|---------|------|---------------|------|---------------|---|----------|------|---------------|-----|-------------------|--|---------------|------|---|---------------------|------|----------|------|----------|------|---------------|------|---------------|------|--------|------|---------------------|------|---------------|---|
|   |  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| <table border="0"> <tr><td>Spindle Lock Nut</td><td>A-10</td></tr> <tr><td>Spindle Bushing</td><td>B-10</td></tr> <tr><td>Sizer Die Body</td><td>C-10</td></tr> <tr><td>Spindle</td><td>D-10</td></tr> <tr><td>Expander Ball</td><td>E-10</td></tr> <tr><td>Die Lock Ring</td><td>G</td></tr> <tr><td>Lock Nut</td><td>H-10</td></tr> <tr><td>Decapping Pin</td><td>I *</td></tr> <tr><td colspan="2">(S-short, L-long)</td></tr> <tr><td>Co-Ax® Washer</td><td>W-10</td></tr> </table> | Spindle Lock Nut  | A-10 | Spindle Bushing | B-10 | Sizer Die Body | C-10 | Spindle | D-10 | Expander Ball | E-10 | Die Lock Ring | G | Lock Nut | H-10 | Decapping Pin | I * | (S-short, L-long) |  | Co-Ax® Washer | W-10 | <table border="0"> <tr><td>Bullet Seating Stem</td><td>J-30</td></tr> <tr><td>Lock Nut</td><td>K-30</td></tr> <tr><td>Die Body</td><td>L-30</td></tr> <tr><td>Return Spring</td><td>M-30</td></tr> <tr><td>Retainer Ring</td><td>N-30</td></tr> <tr><td>Sleeve</td><td>O-30</td></tr> <tr><td>Die Sliding Chamber</td><td>P-30</td></tr> <tr><td>Die Lock Ring</td><td>G</td></tr> </table> | Bullet Seating Stem | J-30 | Lock Nut | K-30 | Die Body | L-30 | Return Spring | M-30 | Retainer Ring | N-30 | Sleeve | O-30 | Die Sliding Chamber | P-30 | Die Lock Ring | G |
| Spindle Lock Nut  | A-10  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Spindle Bushing   | B-10  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Sizer Die Body  | C-10  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Spindle   | D-10  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Expander Ball   | E-10  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Die Lock Ring   | G   |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Lock Nut  | H-10  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Decapping Pin   | I *   |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| (S-short, L-long)   |   |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Co-Ax® Washer   | W-10  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Bullet Seating Stem   | J-30  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Lock Nut  | K-30  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Die Body  | L-30  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Return Spring   | M-30  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Retainer Ring   | N-30  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Sleeve  | O-30  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Die Sliding Chamber   | P-30  |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| Die Lock Ring   | G   |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| <p>* PPC and BR cases with small flash holes require special decapping pins.</p>  | <p>Parts J, K, L, O and P vary with caliber.</p>                                    |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |
| <b>Figure A</b>   | <b>Figure B</b>   |      |                 |      |                |      |         |      |               |      |               |   |          |      |               |     |                   |  |               |      |   |                     |      |          |      |          |      |               |      |               |      |        |      |                     |      |               |   |

### CASE RESIZING (SEE FIGURE A)

With the shellholder at its highest point, screw the sizing die in the press until the bottom of the die firmly contacts the top of the shellholder. Tighten the Die Lock Ring (G) against the top of the press and tighten the set screw.

Apply a thin coat of Forster/Bonanza Case Lube to your cases. Do not overlubricate, as this may create pressure dents during resizing. Next, push your cases down over the brushes of a Forster Case Graphiter. This will apply a thin coat of dry lubricant to the inside of the case neck.

Resize the case. This operation reduces the outside diameter of your case, removes the spent primer, and expands the inside of the case neck. Resizing will stretch the case neck, so check the overall length and trim if necessary. Refer to a reliable reloading manual for repriming and powder weighing and charging instructions.

### BENCH REST® BULLET SEATING (NON-CRIMPING) (SEE FIGURE B)

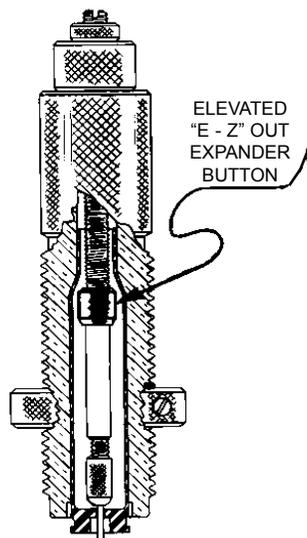
#### ACCURACY INFORMATION

Before setting up your new Forster Bench Rest® Seater Die, give some thought to how the system works. This understanding will help you make necessary adjustments.

In order to guarantee uniform alignment of bullet and casing, both are held in a Die Chamber (P-30) which travels up inside a Sleeve (O-30) where both components are joined by the Bullet Seating Stem (J-30). This puts the components in concentric alignment before and during the seating operation to ensure match-grade alignment. Only Forster Bench Rest® Dies provide this degree of accuracy.

#### ADJUSTING THE SEATER DIE IN YOUR PRESS

First, check to see that the Die Body (L-30) is securely threaded to the Sleeve (O-30). With the press ram and shellholder at their highest points, screw the seater die in the press until the bottom of the Die Chamber (P-30) touches the shellholder. Continue screwing the seater die until you have compressed the Die Chamber (P-30) 1/4" to 1/2". Tighten the Die Lock Ring (G) and secure the lock-ring screw. Screw the Bullet Seating Stem (J-30) almost all the way out of the Die Body (L-30). Lower the shellholder and place a prototype cartridge in it. Raise the shellholder into the die completely. Screw the Bullet Seating Stem (J-30) down until it contacts the bullet. Tighten the Lock Nut (K-30). Check the overall cartridge length when you seat the first bullet.

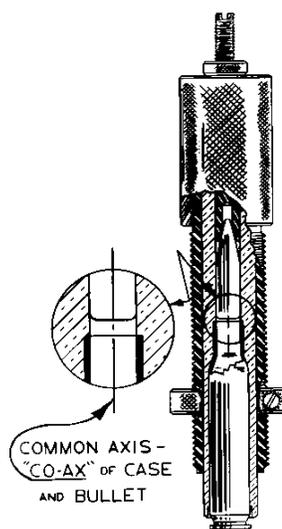


**Figure C**

**BENCH REST® SIZING DIE**

**Figure C.** When the cartridge case has been full length sized, our "E-Z" OUT Expander Ball is in its elevated position near the neck of the case. When the case is withdrawn from the die, most of the neck is still in the neck-sizing portion of the die. This tends to keep the axis of neck and case in alignment. Furthermore, you will scarcely feel the effort required to draw the expander through the case neck. The neck expanding, in this design, is done at a point where you have the full mechanical advantage of the power developed in the linkage of your press. (See the diagram of the Co-Ax® Press). This unique feature is supplied on all our full-length and neck sizers for bottleneck cases at no extra cost. This is the type of sizer we supply with all our Quality Bench Rest® Die Sets. As a result of the "E-

Z" OUT Expander used on our sizer, you will not need as heavy a loading bench as would be required with the standard or conventional sizing die.



**Figure D**

**BENCH REST® SEATING DIE**

**Figure D.** The bullet is held in a close-fitting Chamber (P-30). The cartridge case also is held in a close-fitting Chamber (P-30) for its entire length. Both your bullet and case are held in perfect alignment while the bullet is being seated. Figure D shows the position of the sliding Unisleeve (P-30) after the bullet has been seated. This seater is supplied with all Forster Bench Rest® Die Sets. Patent 3440923.

**FINE-TUNING THE SIZING DIE**

Rifle chambers and cartridge cases are made within a range of tolerances. Bench Rest® resizing dies must be made to resize the cases smaller than a minimum acceptable rifle chamber. Because most rifle chambers are larger than minimum, you should only resize your cases enough to fit your particular rifle chamber. The following procedure will custom-fit your cases to your rifle and enhance your accuracy potential. We recommend this precision resizing method when you're loading for accuracy in one rifle.

Remove the decapping-expander assembly from your die. With the shellholder at its highest point, turn the sizing die down until it contacts the shellholder. Size a fired case in the die and check its fit in your rifle. If the bolt will not close or closes hard, turn the die down slightly and size the case again. Continue this process until you obtain the feel (resistance to closing) on the bolt that you want. Now tighten the Lock Ring (G) in place. The headspace of the die is now adjusted for your rifle.

Reinstall the decapping-expander assembly which is **preset at the factory. You should check the decapping assembly to ensure that shipping vibration did not change the critical settings. Refer to the yellow Spindle Adjustment instructions.** The Expander Ball (E-10) should be lined up with the small hole drilled in the coarse, outside threads of your die. The primer decapping pin should be centered at the bottom of the die. If you must adjust the assembly, be sure to position the Expander Ball (E-10) just below the neck portion of the die. This is accomplished by setting the Lock Nuts (A-10 and B-10) so that the Expander Ball (E-10) is even with the small hole located in the threads of your die.

**WARNING — Positioning the expander too high will crush your case neck and may damage the decapping assembly.**

Tighten the Lock Nuts (A-10 and B-10). This position will ensure that the Expander Ball (E-10) is as true (co-axial) as possible with the inside of the case neck. Your sizing die is now accurately customized for your rifle.

**FINE-TUNING THE SEATING DIE**

The Forster Bench Rest® Seater holds the bullet, case and seater stem in perfect alignment for straight line (co-axial) seating. Minor variations (.005") in bullet-seating depth can cause significant changes in accuracy. It is important to position the bullet as close to the rifling as possible. Remember, the overall length measured from the head of the loaded cartridge to the tip of the bullet is not as critical as the distance from the head of the case to the ogive (point at which the bullet contacts the lands of the rifling). Tools that measure this dimension are available. The following chart will help you adjust seating depth. **NOTE — Brass from oversize or otherwise out-of-tolerance chambers may not fit in Bench Rest® Seater Dies.**

| SEATING DEPTH CHART            | BULLET MOVEMENT     |                      |
|--------------------------------|---------------------|----------------------|
|                                | 17-243 caliber Dies | 257-375 caliber Dies |
| Seating Stem (J-30) Adjustment |                     |                      |
| 1/8 Turn                       | .004"               | .0045"               |
| 1/4 Turn                       | .008"               | .009"                |
| 1/2 Turn                       | .016"               | .018"                |

Thank you for purchasing a Forster Precision Product. Please wear safety glasses. Forster Catalogs are available upon request.