



## BMW F8x Rear Upper Control Arm Monoball Upgrade

Introducing the new Turner Rear Upper Control Arm Monoball Upgrade! The Turner engineering team set out to design a no-compromise solution that requires no modification and offers instantaneous cornering and braking response. This upgrade offers a considerable improvement in both precision and durability compared to other unsealed poly and Delrin® bushing inserts available, which can wear prematurely due to contamination. This bearing assembly utilizes the highest quality materials, precision machining, and components to ensure a perfect fit and longest lasting component life possible.

This is the perfect upgrade for exceptional steering precision, turn-in response, and direct braking feedback with a minimal increase in NVH. These spherical bearings are a must have for any track car, but they can also be a great upgrade for any enthusiast that enjoys spirited driving on their daily commute.

**Installation time:** ½ hour with the control arms removed



**These installation instructions have been broken up into several sections:**

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|--|--------------------------|
| <b>Section 1:</b> Control Arm Removal        | <a href="#">(Page 2)</a> |
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| <b>Section 3:</b> Bearing Pressing Procedure | <a href="#">(Page 4)</a> |
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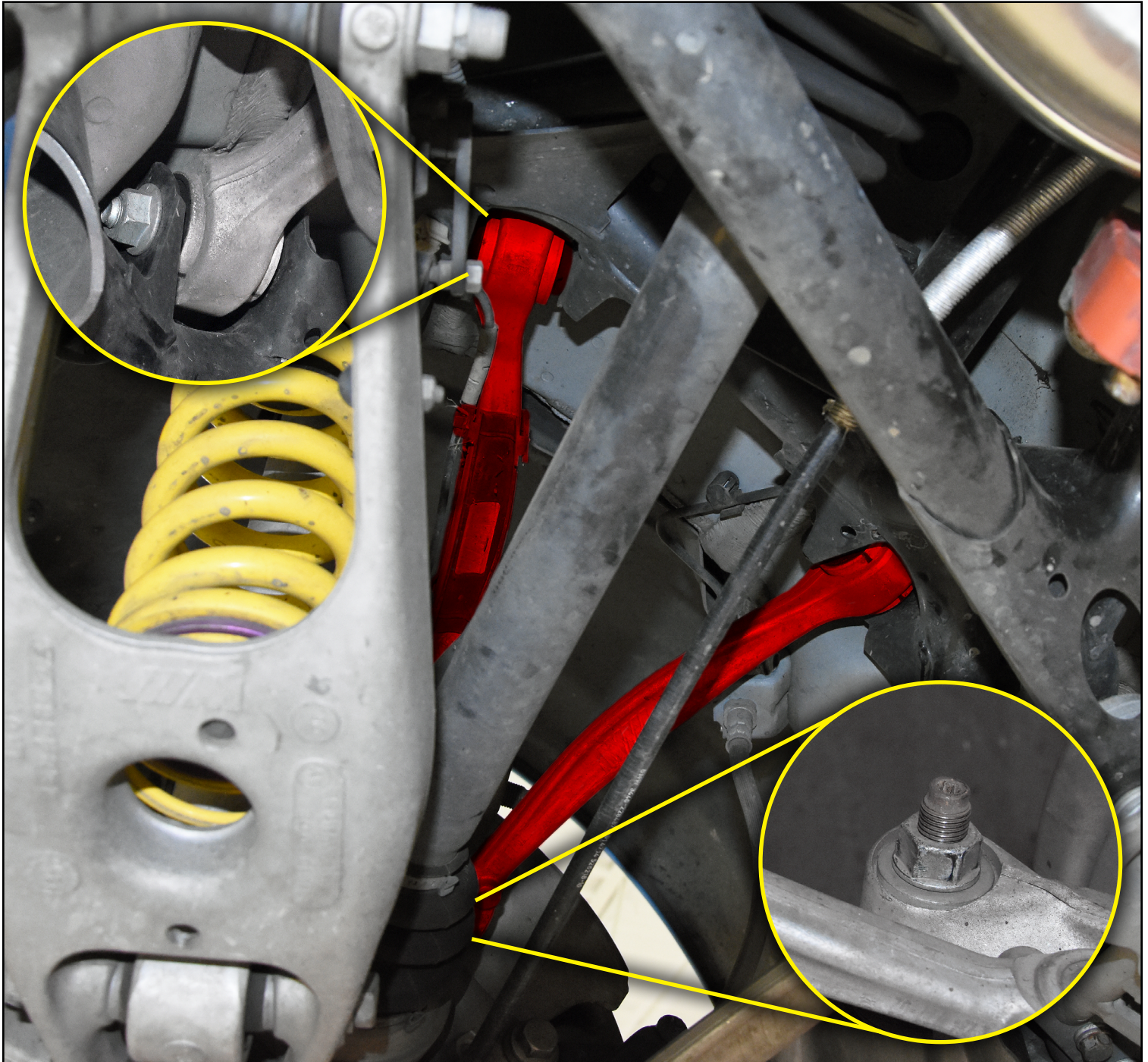
Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

## Section 1: Control Arm Removal

There are two upper control arms (highlighted in **RED**) on each side. Our monoball kit can be installed into just the front or rear position arms on each sides, or into both arms on each side for a complete upgrade.

The control arms are secured to the subframe with an 18mm bolt and nut (as shown in the upper inset photo), and to the spindle housing by a 21mm nut (as shown in the lower inset photo). We have found that it may be necessary to disconnect the sway bar end links and swing the sway bar out of the way to gain enough clearance to remove the bolts.

Unclip any wires from the control arms then remove the arms from the vehicle and proceed to the next page.

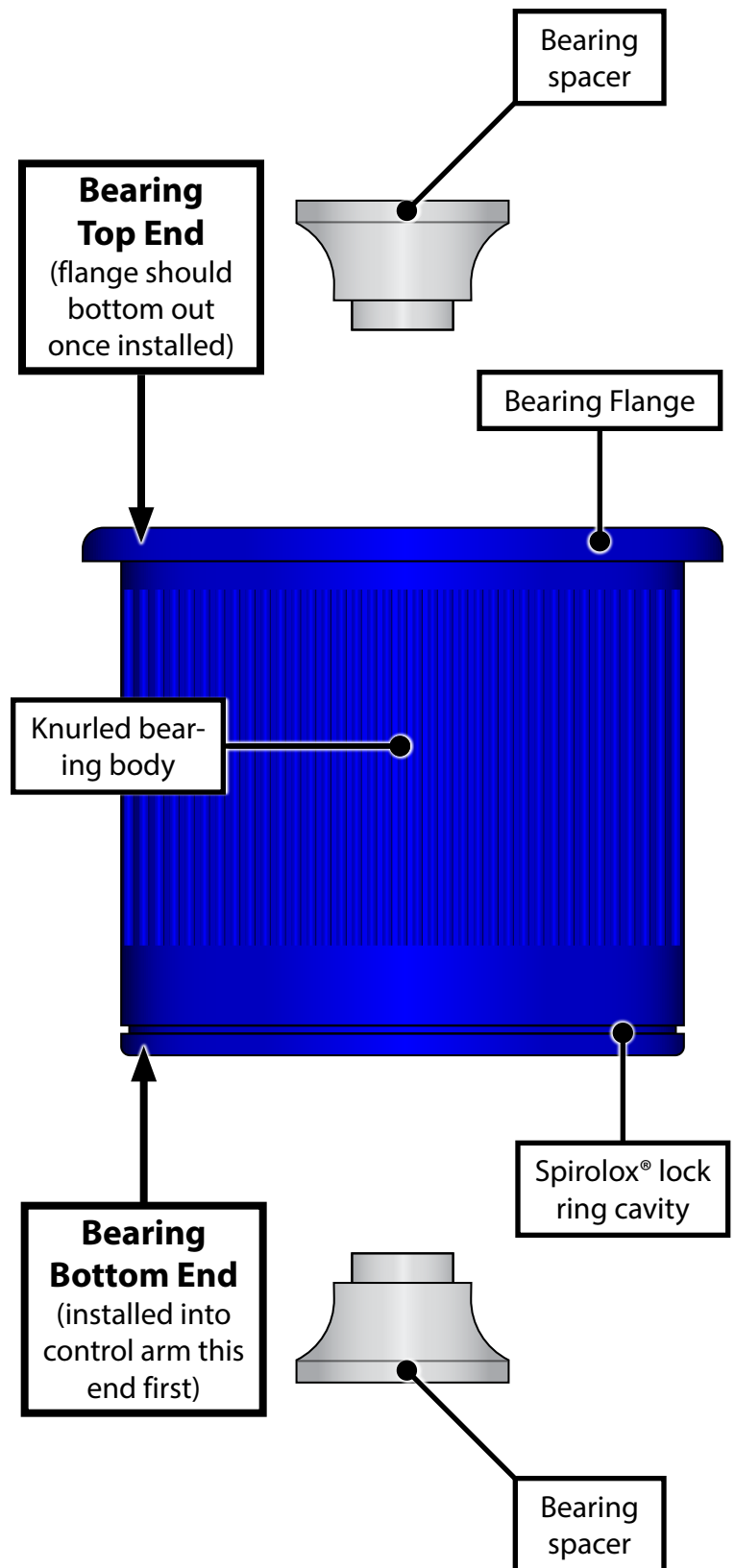




## Section 2: The Bearings

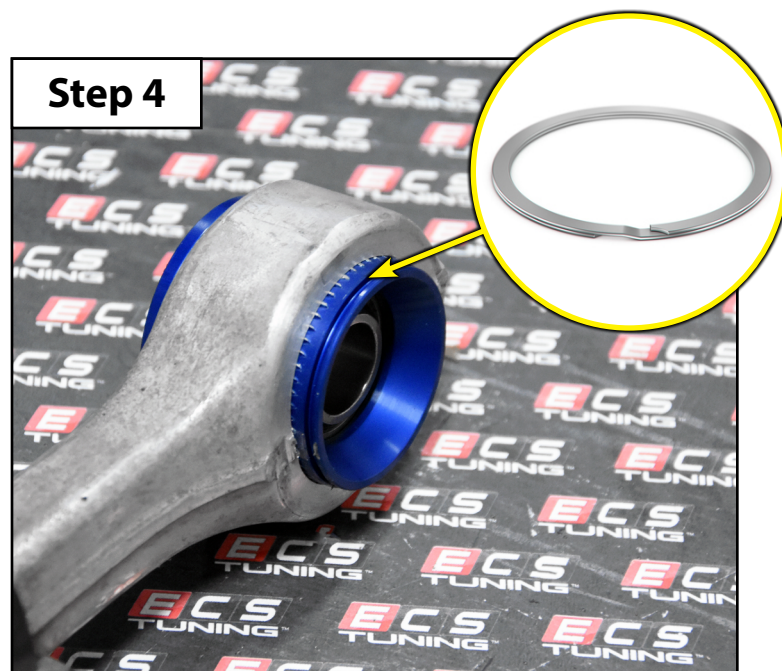
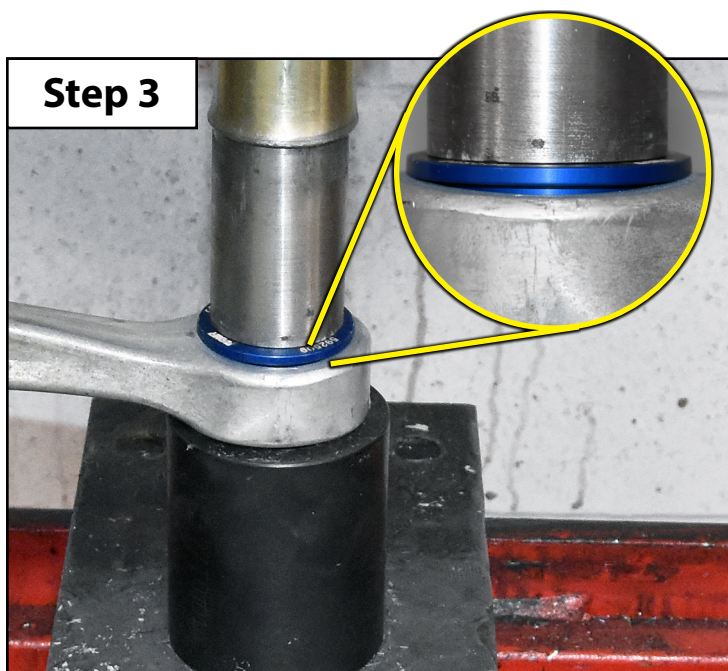
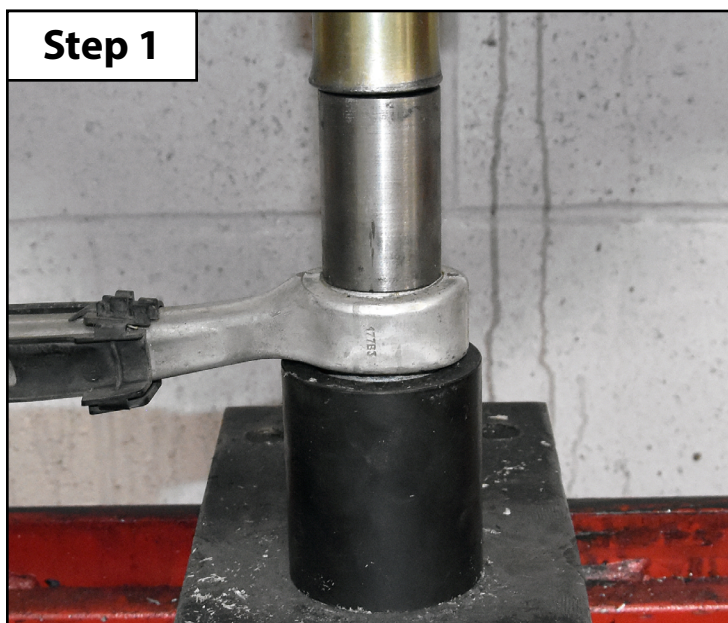
- Take a moment and familiarize yourself with the bearing assemblies and their components.
- The side view of the bearing (shown on the right) illustrates where the bearing flange, knurled bearing body, Spirolox® lock ring cavity, and the two bearing spacers are located. Be sure to note that the two bearing spacers are the exact same size and length, they are not side specific.
- Take note of the top end and bottom end of the bearing assembly. The top end is the flanged end, and the bottom end is where the Spirolox® lock ring cavity is located. The bottom end will be pressed into the control arm until the flanged end bottoms out, then we'll add a Spirolox® lock ring for added security.

**Now let's get to it!**



## Section 3: Bearing Pressing Procedure

- Step 1** • Place the control arm into the press then completely remove the old bushing and discard it.
- Step 2** • Thoroughly clean the bore to remove any leftover bushing material, then align the bottom end of the new bearing with the taper in the control arm bushing bore (arrow).
- Step 3** • Using a tool which evenly distributes the load across the bearing flange, press the new bearing into the arm slowly and carefully, ensuring that it remains square to the arm and presses in straight the entire way during installation.
- **STOP IMMEDIATELY** once any part of the bearing flange bottoms out against the arm (as shown in inset photo). Continuing to press on the bearing after it is seated may cause irreparable damage to the internals.
- Step 4** • Remove any excess material from around the bearing with a pick or other suitable tool, then install the Spirolox® lock ring (inset photo) into the groove in the bearing.





## Section 4: Control Arm Installation

The bearing spacers on this application are the same length, so they are not side specific. Simply slide them in each side of the bearing assembly, then install the control arms into the vehicle.

Install each monoball upgraded control arm (highlighted in **GREEN**) in the reverse order of removal. Be sure to replace any one time use (torque to yield) hardware then torque the bolt and nut (upper inset photo) to 100 Nm (74 Ft-lbs) and the nut (lower inset photo) to 165 Nm (122 Ft-lbs).

***Congratulations, your installation is complete!***

