



Rebuildable Rear Upper Control Arm

To Suit Maserati 3200, 4200 and GranSport





Version

Design Version	0001-NA-0.1.2.3.4-RUCAA-a000-v001_TOP_LEVEL
Assembly Manual Version	v002

Fitment Guide

The below models are supported fitment for 0001-0002-NA-0.1.19.2.3.4.5.6.7-2PRBRK:

Brand	Model	Year From	Year To	Cross-Reference
Maserati	3200 GT Assetto Corsa	2001	2002	#196779
	3200 GT Automatica	1999	2002	#196040
	3200 GT	1998	2002	
	4200 Cambiocorsa Spyder	2001	2007	
	4200 Cambiocorsa	2001	2007	
	4200 GT Spyder	2001	2007	
	4200 GT	2001	2007	
	GranSport MC Victory	2006	2006	
	GranSport Spyder	2004	2007	
	GranSport	2004	2007	

Product Description

Enhance the durability and serviceability of your Maserati 3200, 4200, or GranSport with our premium rear upper control arm. The factory design is prone to premature failure due to the horizontal loading of the integrated ball joint—a load case that inherently shortens its lifespan.

Our redesigned control arm addresses this issue with a user-replaceable ball joint, allowing for straightforward maintenance and extended service life. Instead of replacing the entire arm when the ball joint wears out, simply swap out the ball joint, saving time and cost while maintaining optimal performance.

Crafted with precision engineering to ensure a perfect fit and maintain the handling characteristics of your Maserati, this control arm is the ideal solution for enthusiasts and owners looking to invest in long-term reliability.



Cause of Premature Failure in Factory Rear Upper Control Arms

Premature failure of the factory rear upper control arms has been a known issue since the early production of the Maserati 3200. Initially, Maserati misdiagnosed the problem as a failure of the ball joint dust boot, issuing a field service notice to replace the dust covers. However, this did not address the root cause, as the failure stems from the unique suspension design and its effect on the ball joint.

Suspension Design and Dynamic Effects

The Maserati suspension uses an unconventional layout where ball joints are subjected to horizontal loads rather than vertical ones. This design creates two dynamic effects that lead to premature failure:

Net Pull-Out Force

- Visualize the forces on the suspension as two pins with rotational torque in the centre.
- Unlike the lower arms, which have a toe rod for support, the upper control arm lacks opposing support structures.
- As the car drives forward, the upper control arm's alignment with the hub rotation creates a constant net force that pulls the ball joint out of its socket.

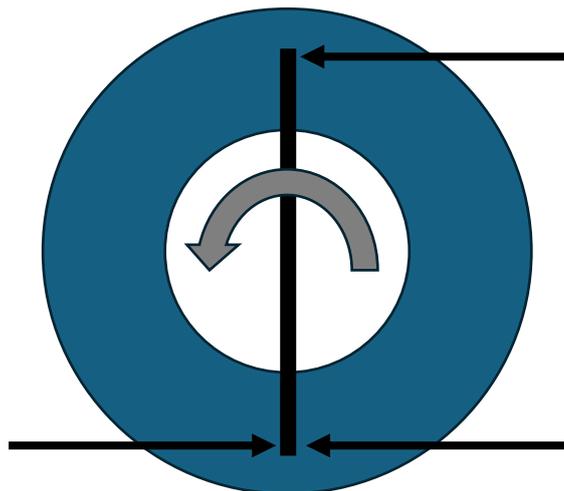


Figure 1 Simplified forces on the rear hub



Ball Joint Rotation

- In typical suspension systems, ball joint stems move primarily side-to-side.
- Due to the horizontal arrangement in the Maserati, suspension travel induces a rotational force on the ball joint stem.
- This rotation causes uneven wear at the top of the ball joint seat, eventually forming a small gap.



Figure 3 Typical ball joint stem movement



Figure 2 Maserati ball joint stem movement

Ball Joint Construction and Failure

Ball joints are designed to handle one of two primary load cases: compression or tension. The factory ball joint was engineered for compression, the most common load case, but in this suspension layout, it experiences both compression and tension, with tension being predominant. The combination of rotational wear and the net pull-out force results in a small gap inside the ball joint. This gap allows the joint to "hammer" against its retaining collar under acceleration, like the effect of a slide hammer on a press-fit part. Over time, this repeated force loosens the ball joint, leading to failure.

Unfortunately, in the factory control arm design, the ball joint seat is integrated into the arm itself. Once the ball joint fails, the entire control arm must be replaced, increasing maintenance costs and downtime. To solve this issue the Rebuildable Rear Upper Control Arm implements a threaded body ball joint that can be replaced when the ball joint eventually fails. Since the factory suspension layout is the cause of failure and it is impractical to redesign the entire suspension system, the most practical solution is to implement a user replaceable ball joint.



Assembly Manual

ITEM NO.	PART NUMBER	Qty.	Manufacturer
1	0001-NA-0.1.2.3.4-RUCAA-p001-v001_REAR_UPPER_CONTROL_ARM	1	Devil Performance Parts
2	M6 x 1.00p Metric Coarse Stainless A4-70 G316 Cup Point Socket (3mm Key) Set Screws Grub DIN 916	2	-
3	PFR17-411	2	Powerflex
4	0001-NA-0.1.2.3.4-CBJ-a001-v000_BALL_JOINT	-	Devil Performance Parts
5	0001-NA-0.1.2.3.4-RUCAA-p003-v000_BALL_JOINT_STUD	1	Devil Performance Parts
6	M6x1x16_SHEAR_BOLT-v000	2	Devil Performance Parts
7	0001-NA-0.1.2.3.4-CBJ-p008-v000_BALL_JOINT_SLEEVE	1	Devil Performance Parts
8	186496	Optional (x2)	Maserati
9	0001-NA-0.1.2.3.4-CBJ-p010-v000_BALL_JOINT_STEM_WRENCH	Optional (x1)	Devil Performance Parts
10	0001-NA-0.1.2.3.4-CBJ-p009-v000_BALL_JOINT_WRENCH	Optional (x1)	Devil Performance Parts
11	0001-NA-0.1.2.3.4-CBJ-p011-v000_BALL_JOINT_SLEEVE_WRENCH	Optional (x1)	Devil Performance Parts

NOTE: Assembly of this product is high difficulty, and it is recommended that a qualified mechanic or equivalent undertake the assembly. It is assumed that several consumable items are readily available to the service technician completing the work.

NOTE: When utilizing a product or consumable from a third party, use the product in accordance with the safety manual and directions provided by the manufacturer.



Assembly Guide

This assembly guide covers the full assembly of the control arms, which may not apply to all situations. In most cases, only ball joint replacement is necessary (**which begins at Step 7**) however for completeness the entire assembly process is included.

To replace the ball joint, you will need to remove the control arm from the vehicle and have access to a drill press.

It is highly recommended that installation be carried out by a qualified mechanic to ensure correct fitment and safety

Ball Joint Removal

1. Remove both M6 set screws, leaving the security bolts untouched.
2. Unscrew the existing ball joint using either:
 - a. Special tool: 0001-NA-0.1.2.3.4-CBJ-p009-v000_BALL_JOINT_WRENCH, or
 - b. A suitable C-spanner.
3. Clean the internal threads thoroughly using a wire brush and an appropriate solvent. Compressed air may also be used to remove debris and ensure a clean mating surface.
4. Proceed to **Step 7**.



Assembly Manual

1. Cover the external thread of 0001-NA-0.1.2.3.4-CBJ-p008-v000_BALL_JOINT_SLEEVE and the matching internal thread of 0001-NA-0.1.2.3.4-RUCAA-p001-v001_REAR_UPPER_CONTROL_ARM with Henkel Adhesives LOCTITE® 273 High Strength Threadlocker and assemble.

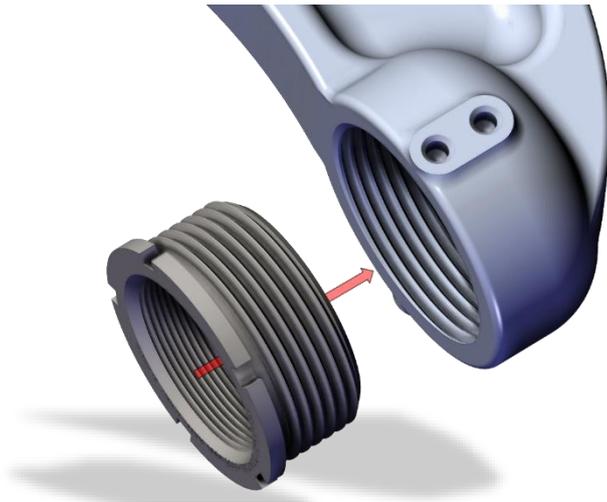


Figure 5 Assembly direction

2. Using special tool 0001-NA-0.1.2.3.4-CBJ-p011-v000_BALL_JOINT_SLEEVE_WRENCH, tighten 0001-NA-0.1.2.3.4-CBJ-p008-v000_BALL_JOINT_SLEEVE to 200Nm. Allow 24 hours for the thread locker to cure.

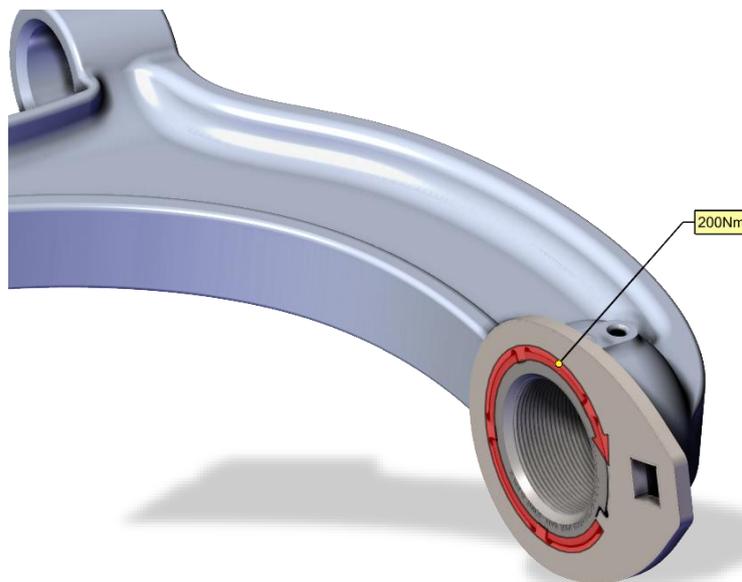


Figure 6 Assembly torque



3. There are four 5mm pilot holes in 0001-NA-0.1.2.3.4-RUCAA-p001-v001_REAR_UPPER_CONTROL_ARM. These will need to be completed as through holes and tapped to M6x1.0, this requires a 5mm pilot hole. The holes should be drilled using an appropriate drill press with a cobalt bit and an appropriate speed.

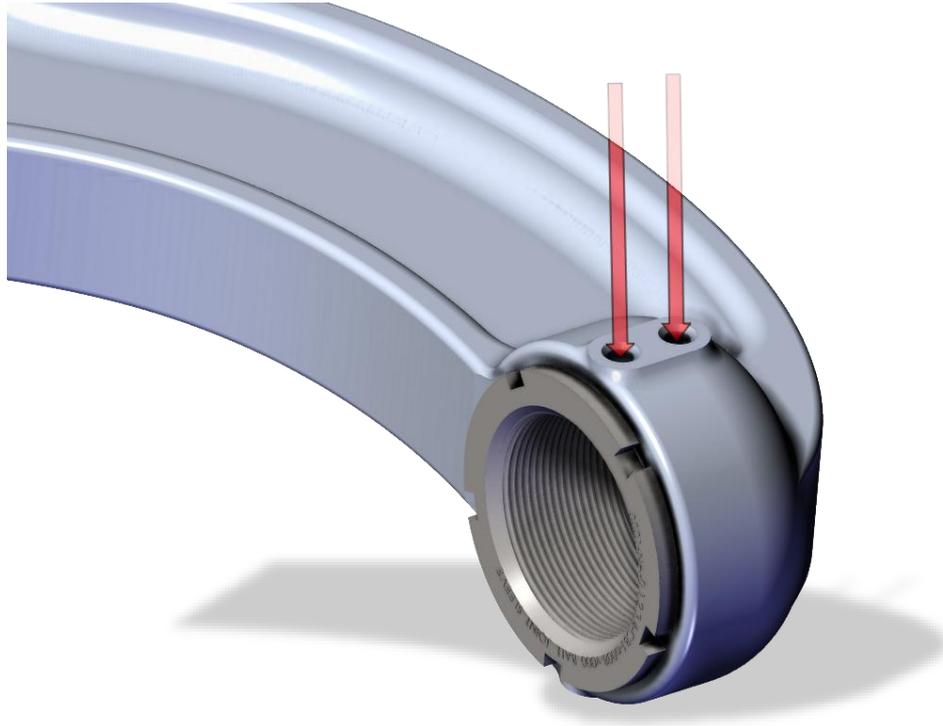


Figure 7 Completing M6 pilot holes

4. The internal thread on 0001-NA-0.1.2.3.4-CBJ-p008-v000_BALL_JOINT_SLEEVE may need to be deburred and cleaned to allow for smooth installation of 0001-NA-0.1.2.3.4-CBJ-a001-v000_BALL_JOINT. A diamond bit on a rotary tool or an appropriate thread file (1.5mm pitch) may be required.

IMPORTANT: Inadequate preparation of the threads on 0001-NA-0.1.2.3.4-CBJ-p008-v000_BALL_JOINT_SLEEVE will cause CBJ-a001-v000_BALL_JOINT to be inadequately tightened in later steps and can risk the component backing out. It is essential to clear the thread and ensure CBJ-a001-v000_BALL_JOINT runs through cleanly before progressing.



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5. Install both M6x1x16_SHEAR_BOLT-v000 in the rear most threaded holes with Henkel Adhesives LOCTITE® 263 High Strength Threadlocker and tighten until the drive has sheared. A file may be required to smooth the surface where the head has sheared from the bolt body.

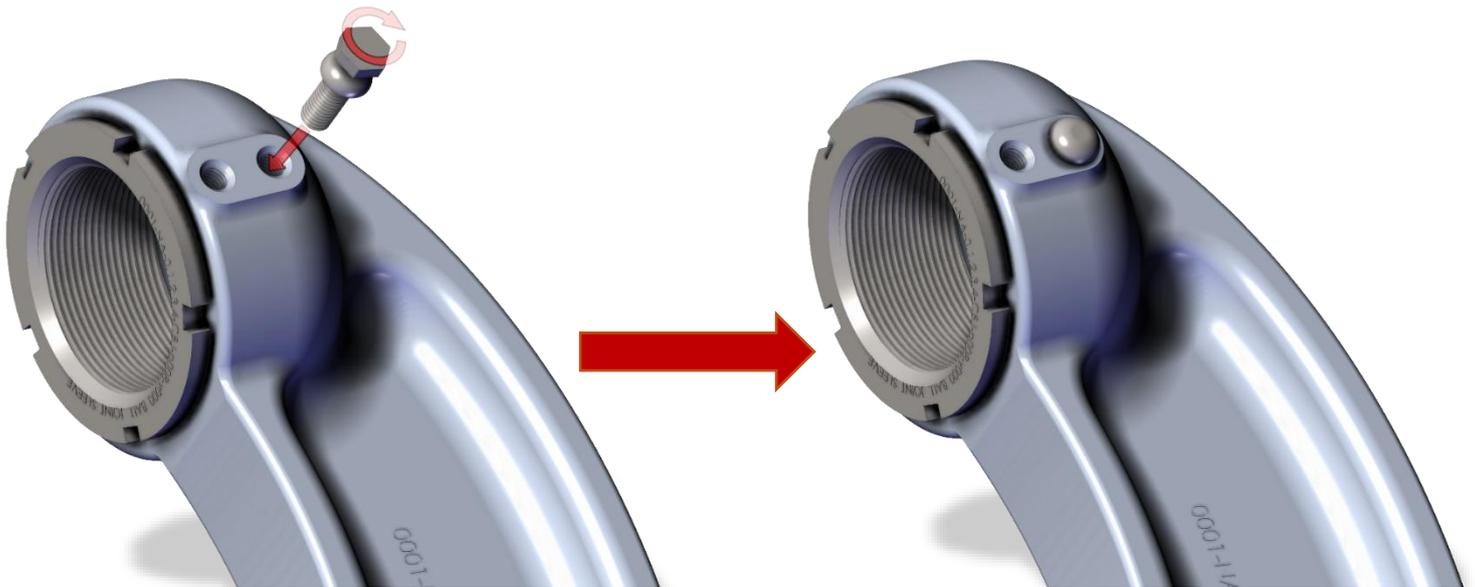


Figure 8 Assembling shear bolts

6. It should be possible to run CBJ-a001-v000_BALL_JOINT through 0001-NA-0.1.2.3.4-CBJ-p008-v000_BALL_JOINT_SLEEVE smoothly, as well as the two M6 grub screws. The M6 grub screws must be removed before continuing.

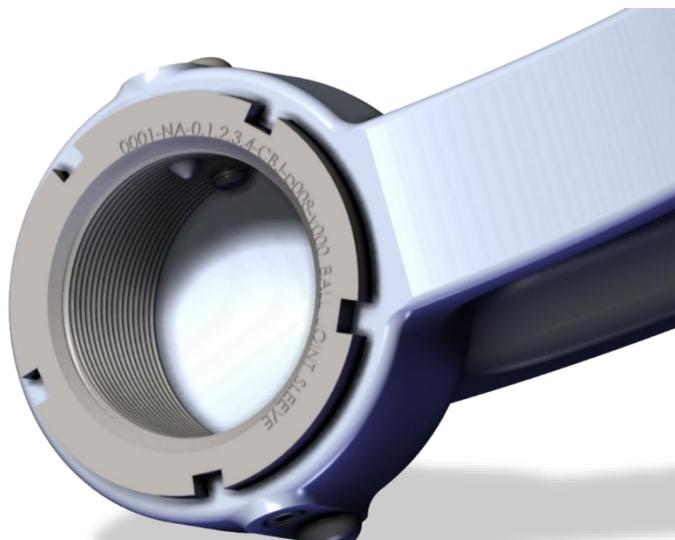


Figure 9 Example assembly



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7. Apply four evenly spaced strips of Henkel Adhesives LOCTITE® 243 Blue Medium Strength Threadlocker onto the threads of CBJ-a001-v000_BALL_JOINT, and to the thread of 0001-NA-0.1.2.3.4-CBJ-p008-v000_BALL_JOINT_SLEEVE.

NOTE: Inadequate application of thread locker can allow CBJ-a001-v000_BALL_JOINT to work loose. Excessive use of thread locker can make CBJ-a001-v000_BALL_JOINT difficult to remove however is safer to use excess than an inadequate amount.

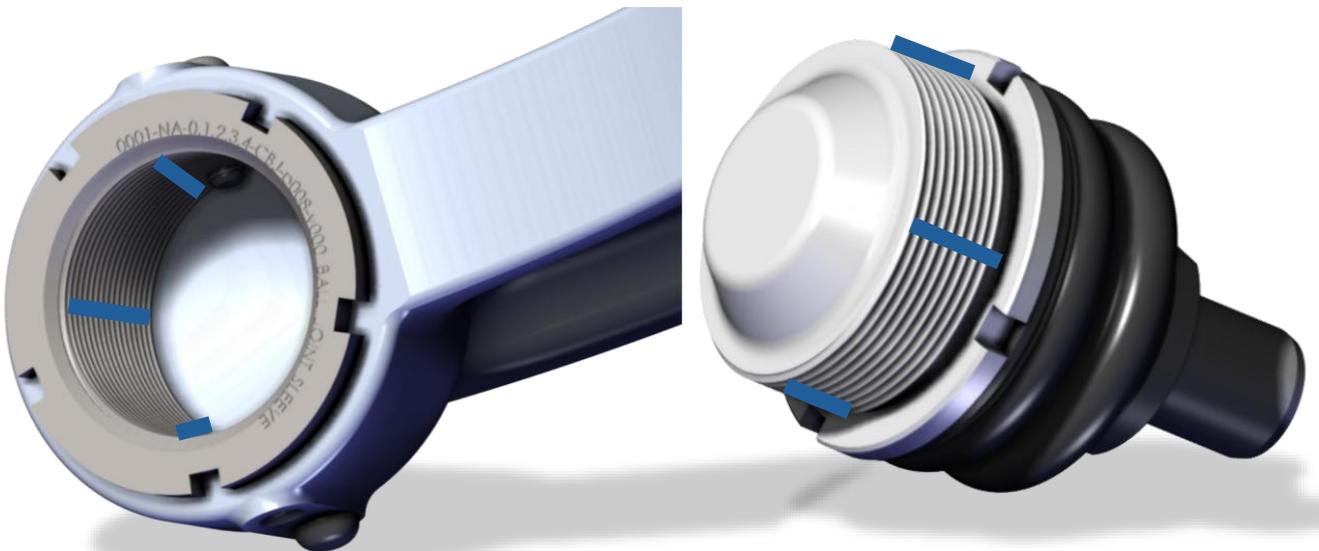


Figure 10 Threadlocker application



Figure 11 Threadlocker application



- Using 0001-NA-0.1.2.3.4-CBJ-p009-v000_BALL_JOINT_WRENCH tighten CBJ-a001-v000_BALL_JOINT into 0001-NA-0.1.2.3.4-CBJ-p008-v000_BALL_JOINT_SLEEVE at 140Nm. Allow 24 hours for the thread locker compound to cure.

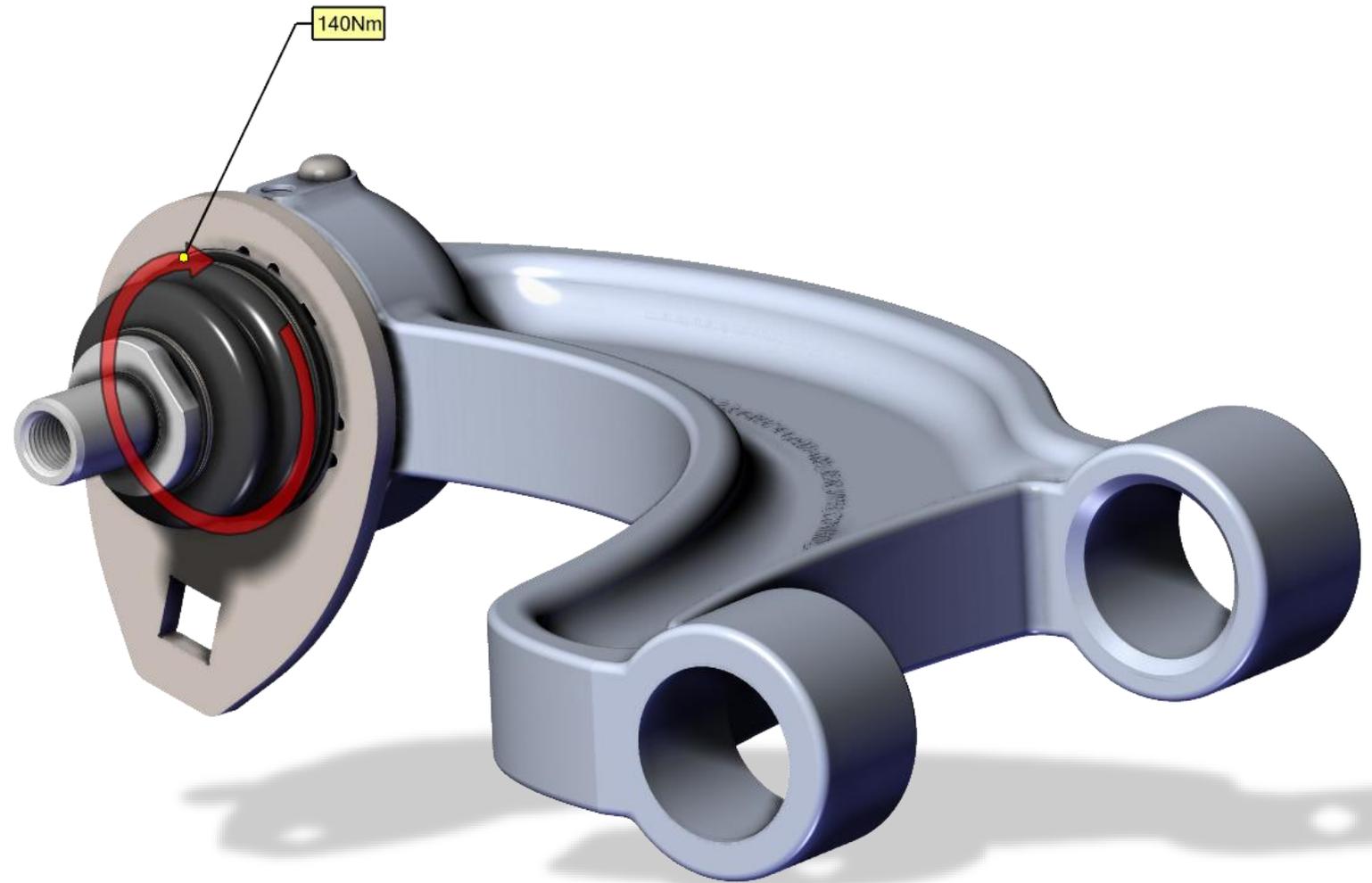


Figure 12 Assembly torque



Assembly Manual

- Using a 5mm cobalt drill bit and a drill press, drill a 2mm deep detent into the body of CBJ-a001-v000_BALL_JOINT through the tapped hole made earlier for the M6 grub screws.

NOTE: 5mm is the pilot hole size for the M6 threads, so careful alignment of the parts on the drill press will allow the detent to be placed without damaging the threads.

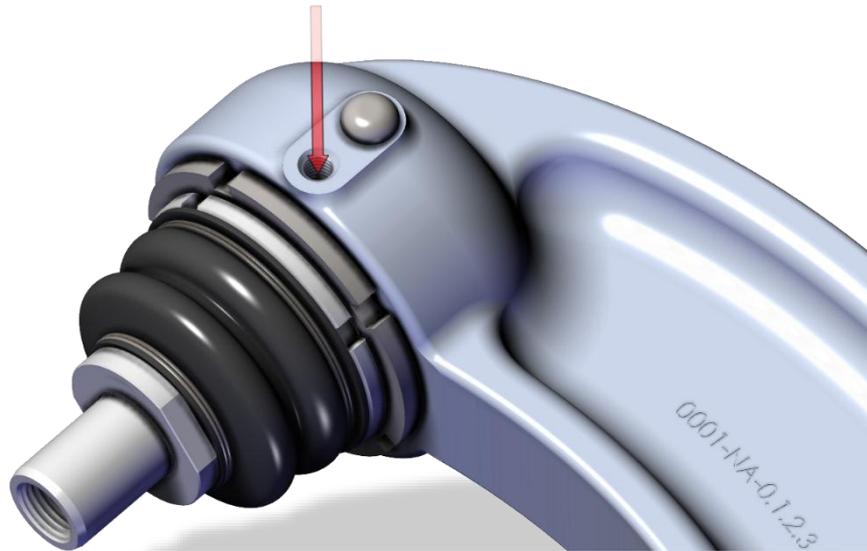


Figure 13 Apply detent

- Install the set screws into the threaded hole using a liberal amount of Henkel Adhesives LOCTITE® 222 Low Strength Threadlocker and tighten until 6 Nm.

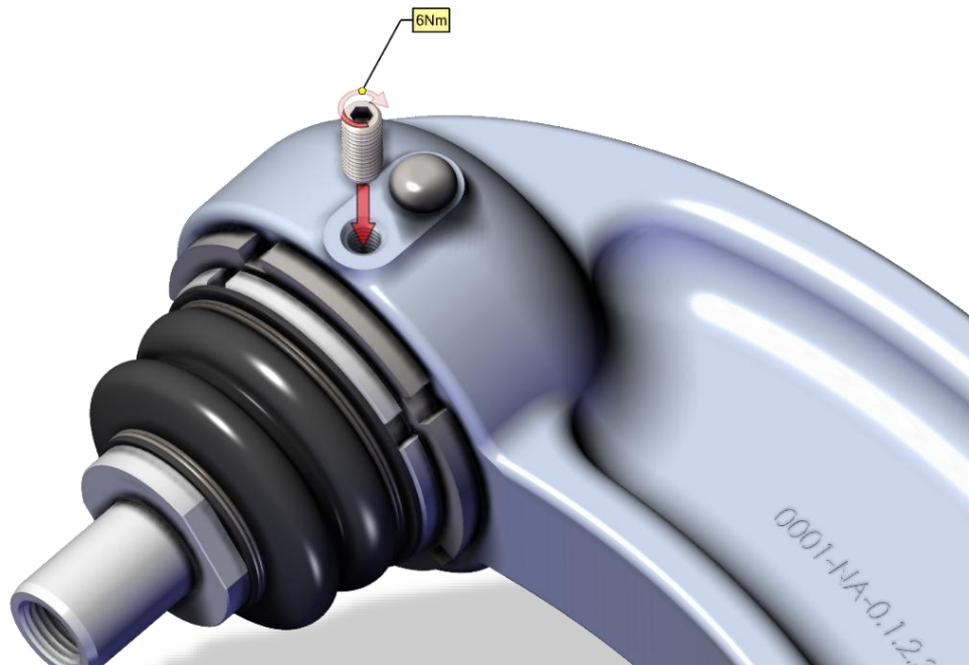


Figure 14 Assembly torque



11. Installation of bushings should be done using a press. When using the OEM flambloc 186496, the parts can be pressed in as a single piece.

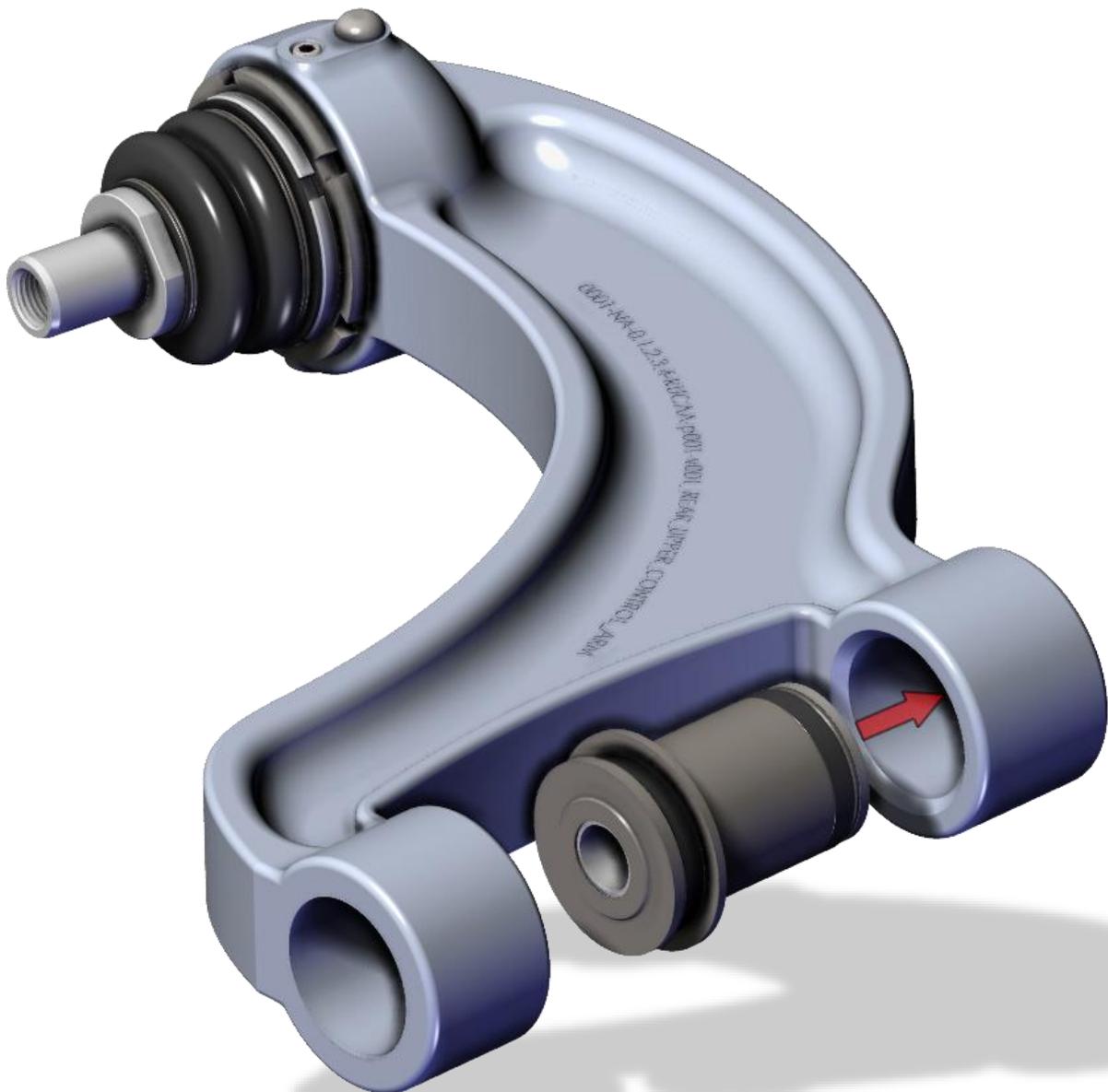


Figure 15 Flambloc assembly



12. Care should be taken when installing Powerflex PFR17-411 to not damage the urethane by applying excessive force. It may be required to install the components of the bushings separately rather than pressing in as a single piece.

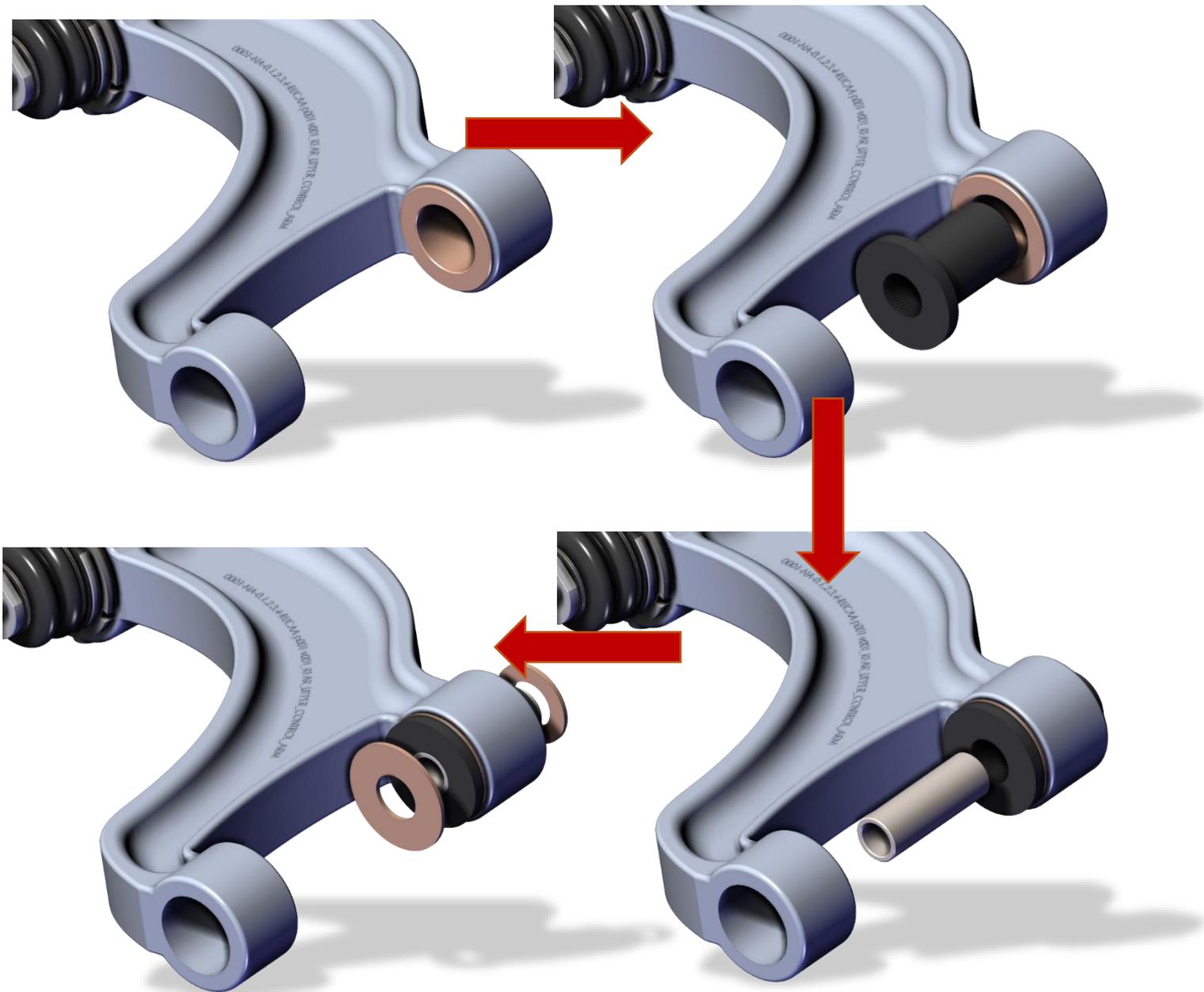


Figure 16 Powerflex assembly



13. 0001-NA-0.1.2.3.4-RUCAA-p003-v000_BALL_JOINT_STUD can be installed prior to installation in the vehicle. A thin wrench such as the optional 0001-NA-0.1.2.3.4-CBJ-p010-v000_BALL_JOINT_STEM_WRENCH is recommended when installing in the vehicle otherwise there is the risk of dislodging the dust boot from CBJ-a001-v000_BALL_JOINT.

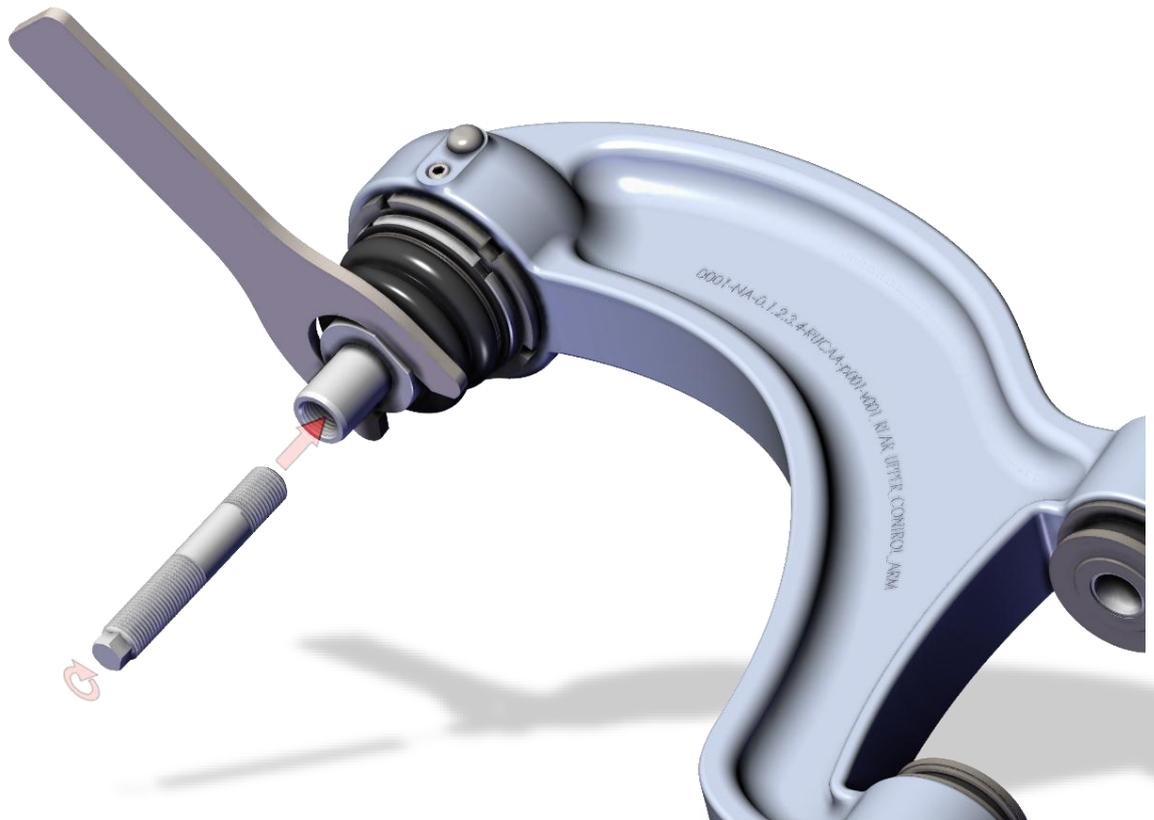


Figure 17 Stud assembly

14. 001-NA-0.1.2.3.4-RUCAA can now be installed in the vehicle.



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