

INSTALLATION INSTRUCTIONS

TRACK BAR BRACKET REINFORCEMENT & STEERING BOX SECTOR SHAFT BRACE
SUITABLE FOR 2019-ON JEEP WRANGLER JL & JT GLADIATOR RIGHT HAND DRIVE



BOLT ON INSTALLATION

NO CUT, NO DRILL, NO WELD SOLUTION FOR WALLOWED OEM TRACK BAR HOLES



TOUGH DESIGN

INCORPORATING FULLY WELDED STEEL PLATE BRACING & A FULLY SEALED DEEP GROOVE BALL BEARING



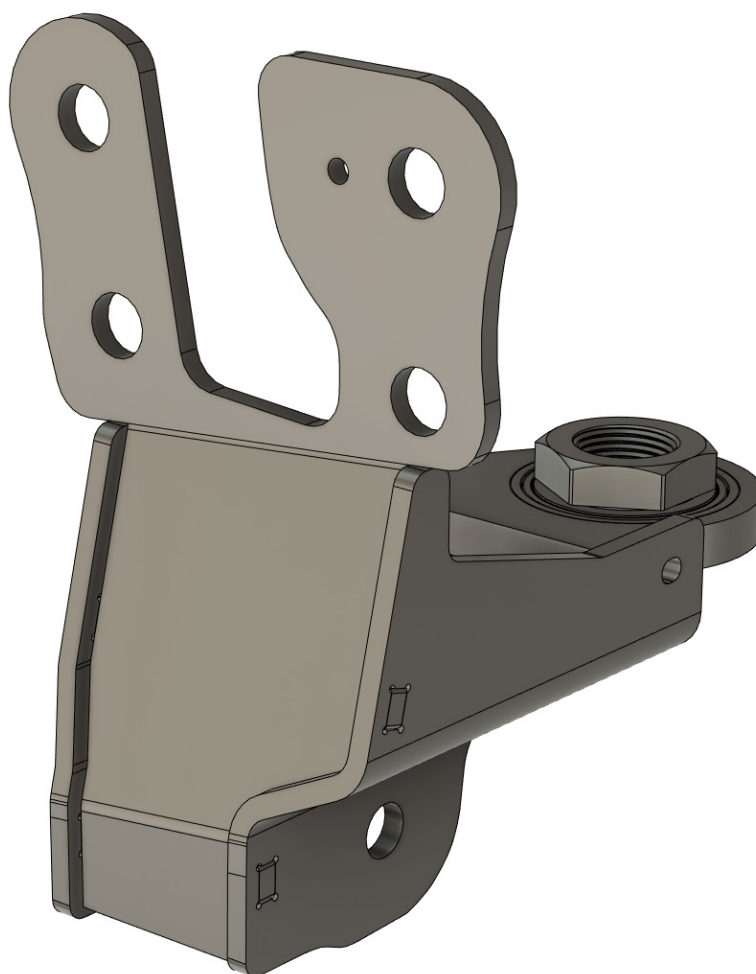
TESTED WITH 33" TYRES

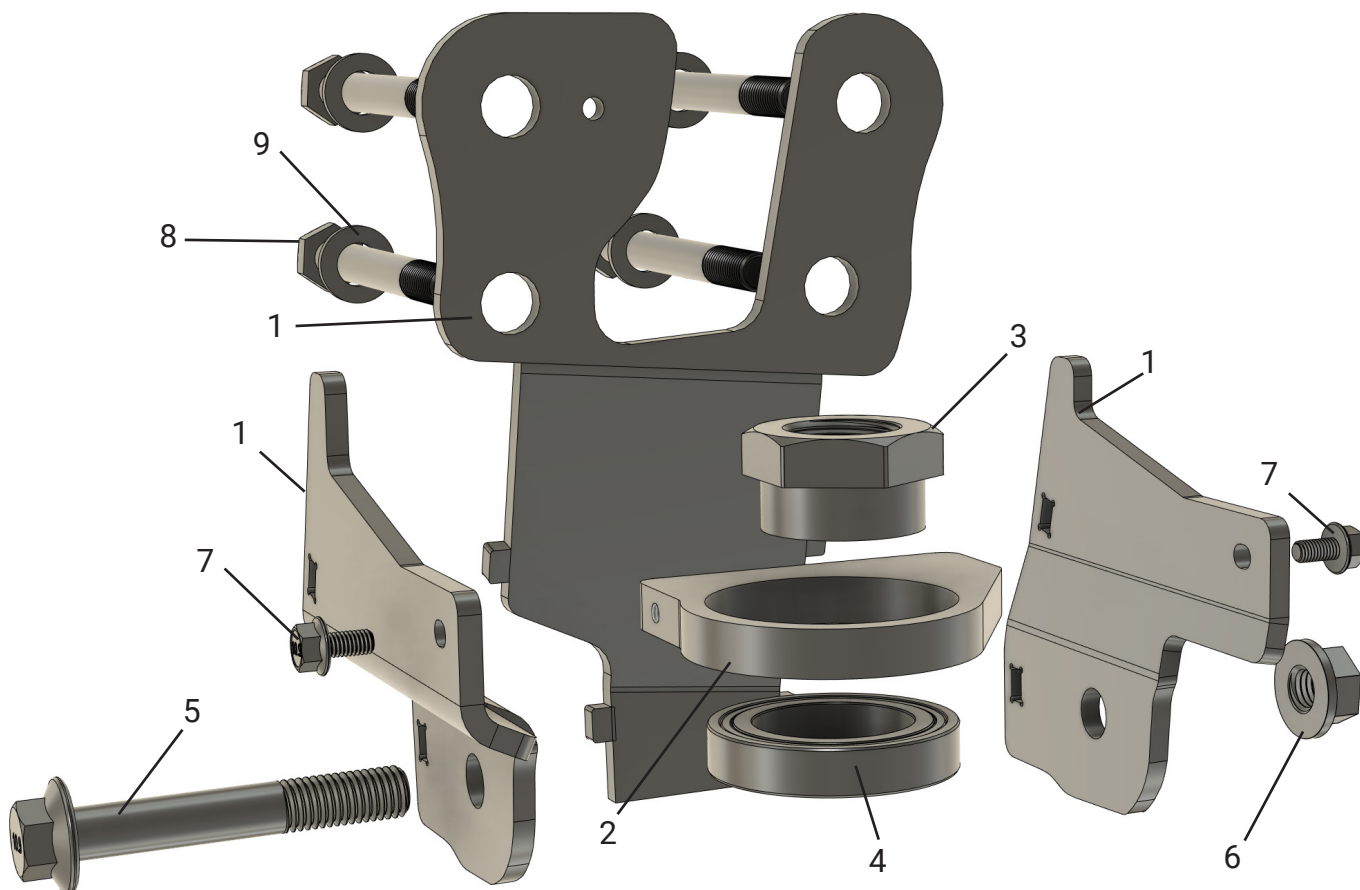
UPGRADED FASTENERS & NO CLEARANCE ISSUES FOR USE WITH BIG TYRES



AUSTRALIAN MADE

AUSTRALIAN DESIGNED FOR RHD & MADE FROM LASER CUT & POWDERCOATED STEEL
6MM PLATE BRACKET & 12MM SECTOR SHAFT BEARING BLOCK





Note: Track bar reinforcement bracket is supplied fully welded as a single piece. Exploded diagram for clarity.

COMPONENTS

ITEM	PART NO.	DESCRIPTION	QTY.
1	TT-TBBSSB-TBBRKJL	JL Track Bar Reinforcement Bracket (6mm Welded Steel)	1
2	TT-TBBSSB-SSBBJL	Sector Shaft Bearing Block (12mm Steel)	1
3	BDNF118	Sector Shaft Nut (1.1/8" - 12 UNF Steel Deep Shoulder Nut)	1
4	6908 2RS	Sector Shaft Sealed Bearing Deep Groove	1
5	BFD14X1.5X90YLW	Track Bar Bolt (M14X1.5 Fine Flange Bolt)	1
6	NTLH14X1.5YLW	Track Bar Nut (M14X1.5 Fine Flange Nut)	1
7	BFD6X16YLW	Sector Shaft Bearing Block Bolt (M6x1.0 Flange Bolt)	2
8	HTBOMF1212015	Steering Box Bolt (M12X1.5 Fine Hex Head Bolt)	4
9	EFWM12X24X2.5Z	Steering Box Washer (12mm ID Flat Washer)	4

TORQUE SETTINGS

M6 – 9Nm (7lb ft)
M12 – 135Nm (99lb ft)
M14 – 170Nm (125lb ft)
1.1/8" – 250Nm (185lb ft)

Note:
Follow manufacturer torque ratings for lug nuts and other vehicle specific mounting bolts.

TOOLS NEEDED

10mm 18mm
21mm 42mm Deep Impact Socket

Torque Wrench

Wear ear and eye protection at all times when using power tools

WARRANTY

This Track Bar Bracket Reinforcement & Sector Shaft Brace is warranted against defects in materials and workmanship for a period of twelve (12) months from the date of initial retail purchase. Do not use this bracket kit for anything other than it's intended purpose as a reinforcement bracket on a 2019-On Jeep Wrangler JL or JT Gladiator. Failure to follow these instructions or if any modifications to the product are made will void all warranty claims.

For more information visit <https://www.tough toys.com.au/about-us/warranty-policy/>

IMPORTANT

The Tough Toys - Track Bar Bracket Reinforcement & Sector Shaft Brace is a bolt on solution to encompass the OEM track bar bracket on the chassis of your Jeep JL Wrangler or JT Gladiator. It serves two purposes:

1. The prevention or repair of oval (wallowed out) holes on the OEM track bar bracket by providing a tight fit hole and partially threaded bolt with fully shanked section riding on both mounting holes. This is a common cause of what's known as "death wobble". The chassis track bar bracket is also reinforced for the extreme stress experienced when off-roading.
2. By utilizing a longer nut with shoulder for the sector shaft the design creates a double shear configuration when combined with a bearing installed in a block mounted under the steering box. This design enhances steering box longevity and stability, especially with larger tires. **Do NOT install this product if there is pre-existing play in the steering box sector shaft. Rebuild or replace the steering box first!**

As of the publication date, these instructions are correct. Tough Brands Pty Ltd cannot be held responsible for the impact of any changes subsequently made by the vehicle manufacturer.

During installation, it is the duty of the installer to check the correct operation and clearances of all components.

We strongly recommend having vehicle accessories products installed by a professional workshop for the best results and to ensure proper operation.

Additionally, please be aware that the installation of aftermarket modifications to your vehicle may affect its compliance with local road use regulations. We advise you to consult with your local authorities and verify the necessary certification or compliance requirements to remain legal for on-road use of your vehicle.

Estimated installation time: 1hr.

IDENTIFYING PRE-EXISTING ISSUES

With the vehicle on a flat paved surface, ensure that the handbrake is on, and the tyres are chocked. Grab a mate who can sit in the driver's seat and slowly turn the steering wheel to the left and right to the 1 and 11 o'clock positions. The engine does not need to be running for this procedure.

While the steering wheel is being turned back and forth, lay underneath the vehicle and thoroughly examine each connection point in your steering system. Check the ball joints, tie rod ends, drag link rod ends and track bar bushes for play. If any of these joints show signs of movement or play, they should be replaced.

If play is found in the chassis track bar mount, the Track Bar Bracket Reinforcement & Sector Shaft Brace is a solution to repair this.

Pay close attention to the pitman arm and sector shaft relative to the steering box housing. If any movement other than rotational occurs, then you have identified play in the sector shaft output bearing and this needs to be replaced.

Check around the steering box for fluid leaks. If there is power steering fluid leaking around the pitman arm, the sector shaft seal is leaking and needs to be replaced.

Check the threaded mounting tabs or "ears" that mount the steering box to the chassis as these have been known to crack or tear off. Repair damage prior to installation of the Track Bar Bracket Reinforcement & Sector Shaft Brace.

More tips and techniques are available at: <https://www.tough toys.com.au/how-to-4x4/>

STEERING BOX CARE

Special care must be taken when removing and installing the sector shaft nut. The steering box is a critical component of the vehicle's steering system, and mishandling during these procedures can lead to costly damage and compromised safety.

When removing and installing the sector shaft nut, never turn the steering box arm against the extreme left or right turn positions. Applying force in these positions can potentially cause damage to the steering box internal components. The steering box is not designed to withstand these kinds of forces at the ends of the worm or ball nut's travel.

Removal of the pitman arm is not required for the installation of this sector shaft brace kit.

Sector Shaft Nut Removal:

1. Maintain the steering gear and pitman arm close to the center or straight-ahead steering position.
2. When removing the sector shaft nut, the force required can be substantial. Use an air impact gun and socket to reduce the likelihood of the pitman arm rotating when undoing the nut.

Sector Shaft Shoulder Nut Installation:

1. Start the thread on the sector shaft nut onto the sector shaft by hand, making sure to align it carefully and thread it in a clockwise direction. This initial hand threading helps to ensure proper engagement and prevents any cross-threading, which could lead to damage to both the nut and the sector shaft threads.
2. Again, ensure that the steering gear and pitman arm are close to the center or straight-ahead steering position.
3. A 42mm socket and ratchet is then used to tighten the nut until it engages the pitman arm.
4. Use of an appropriately sized & calibrated torque wrench is required to achieve the proper torque for the sector shaft nut. The nut requires the application of a small amount of loctite and a final torque of 250Nm (185lb ft).

Should any damage occur during installation or if there is pre-existing play in the steering box sector shaft, it is essential to address these issues. In such cases, it is necessary to rebuild or replace the steering box before proceeding further with the installation of the Track Bar Bracket Reinforcement & Sector Shaft Brace.

PREPARATION

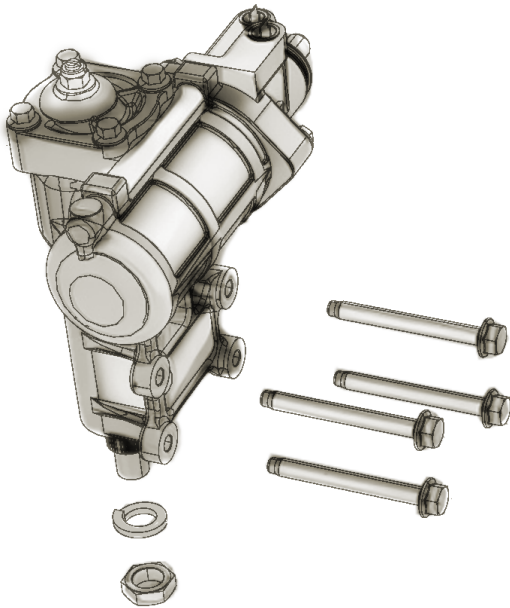
- ① Become familiar with the location of the steering box on the driver's side chassis of your Jeep. There are 4 bolts that mount the steering box to the chassis and a large nut that retains the pitman arm on the sector shaft.

Also note the track bar chassis bracket and mounting bolt.

Follow the procedure outlined in Identifying Pre-existing Issues (Page 3).

Rebuild the steering box if the sector shaft moves in any direction other than rotating the pitman arm prior to installing this product.

On some vehicles, a small cable clip may need to be removed from the chassis prior to installation. A hole is provided in the track bar reinforcement bracket in the final step of installation.



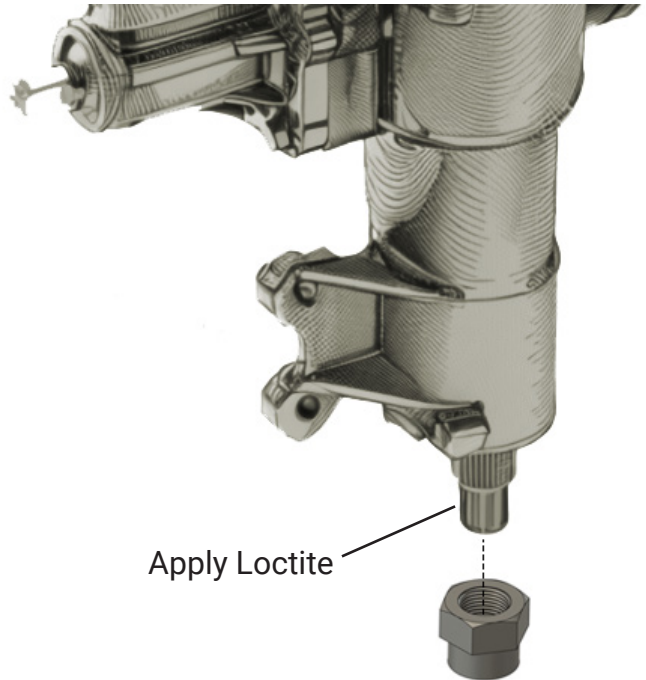
Note: Pitman arm not shown for clarity.

SECTOR SHAFT NUT

- ② **Important:** See Steering Box Care (Page 3) for detailed removal & installation procedure of the sector shaft nut.
- Remove the OEM sector shaft nut and split washer from the bottom of the steering box using a 42mm socket. Leave the pitman arm attached to the steering box.

Apply a small amount of red Loctite to the threads of the sector shaft.

Install the new Sector Shaft Deep Shoulder Nut (3) and torque to 250Nm (185lb ft).

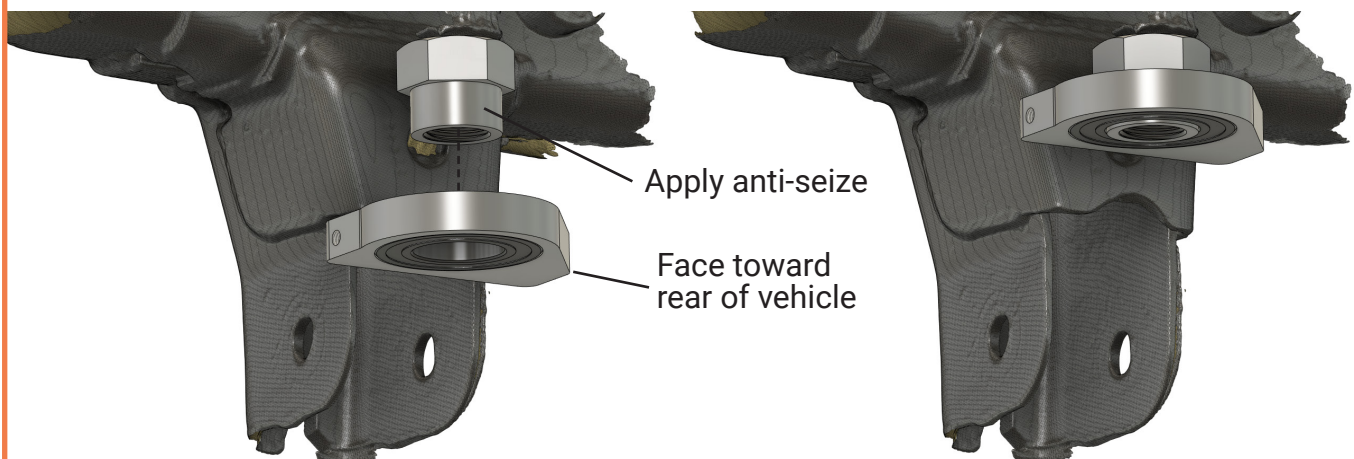


Apply Loctite

Note: Pitman arm not shown for clarity.

SECTOR SHAFT BEARING

- ③ Apply a small amount of anti-seize on the shouldered section of the Sector Shaft Deep Shoulder Nut (3).
- Slide the Sector Shaft Bearing Block (2) onto the nut making sure the straight edge of the block is facing toward the chassis.
- Note the orientation of the tapered side of the block is toward the rear of the vehicle.
- The anti-seize should retain the block temporarily until the next steps are completed.



Apply anti-seize

Face toward rear of vehicle

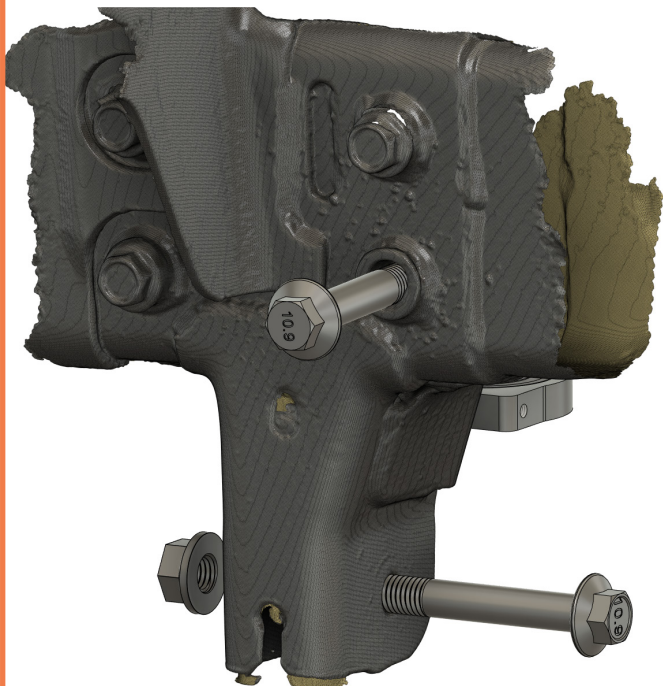
Note: Pitman arm and track bar not shown for clarity.

CHASSIS PREPARATION

- 4** Remove the 4x bolts that mount the steering box to the chassis using an 18mm socket. We recommend removing the upper bolts first and temporarily insert 2x long skinny screwdrivers or small diameter bolts into the holes to hang the steering box. Use a ratchet strap to gently pull the coil spring sideways out of the way if required to access bolts.

Be careful not to let the power steering box fall to avoid damaging power steering lines and other components.

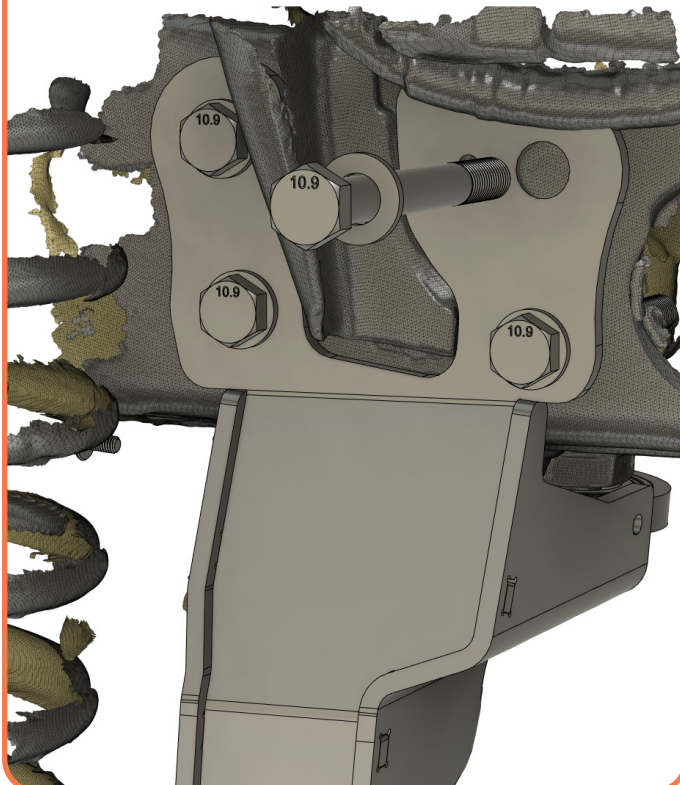
Remove the track bar bolt using a 21mm socket. The track bar may be under tension and care should be taken when removing the bolt, particularly if the vehicle is lifted.



REINFORCEMENT

- 5** Install the Track Bar Reinforcement Bracket (1) over the top of the chassis track bar bracket. Feed it up in a tilted back motion making sure it encompasses the Sector Shaft Bearing Block (2).

Loosely reinstall the 4x steering box mount bolts (8) with washers (9) provided in the kit. It is important to line up the steering box threads properly. Do not torque these bolts yet.



TRACK BAR

- 6** Loosely reinstall the track bar using the partially threaded Track Bar Bolt (5) and Track Bar Nut (6) supplied in the kit.

A ratchet strap may be required to shift the diff position to make track bar installation easier.

Do not torque this bolt yet. Final torque of this bolt must be performed with the vehicle on the ground.



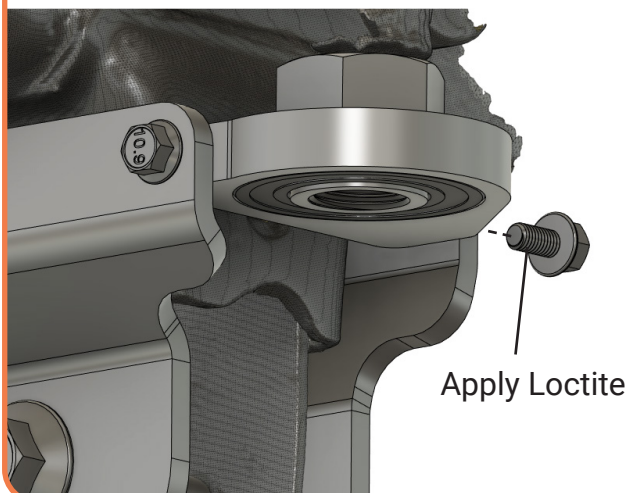
BEARING BLOCK

- 7** Mount the Sector Shaft Bearing Block (2) to the Track Bar Reinforcement Bracket (1) using 2x Sector Shaft Bearing Block Bolts (7) supplied in the kit. Apply a small amount of Loctite to these bolts.

Slotted holes are provided to allow for the alignment of the block with your steering box.

Care must be taken to ensure there is no radial load on the sector shaft or sector shaft bearing.

Do not torque these bolts yet.



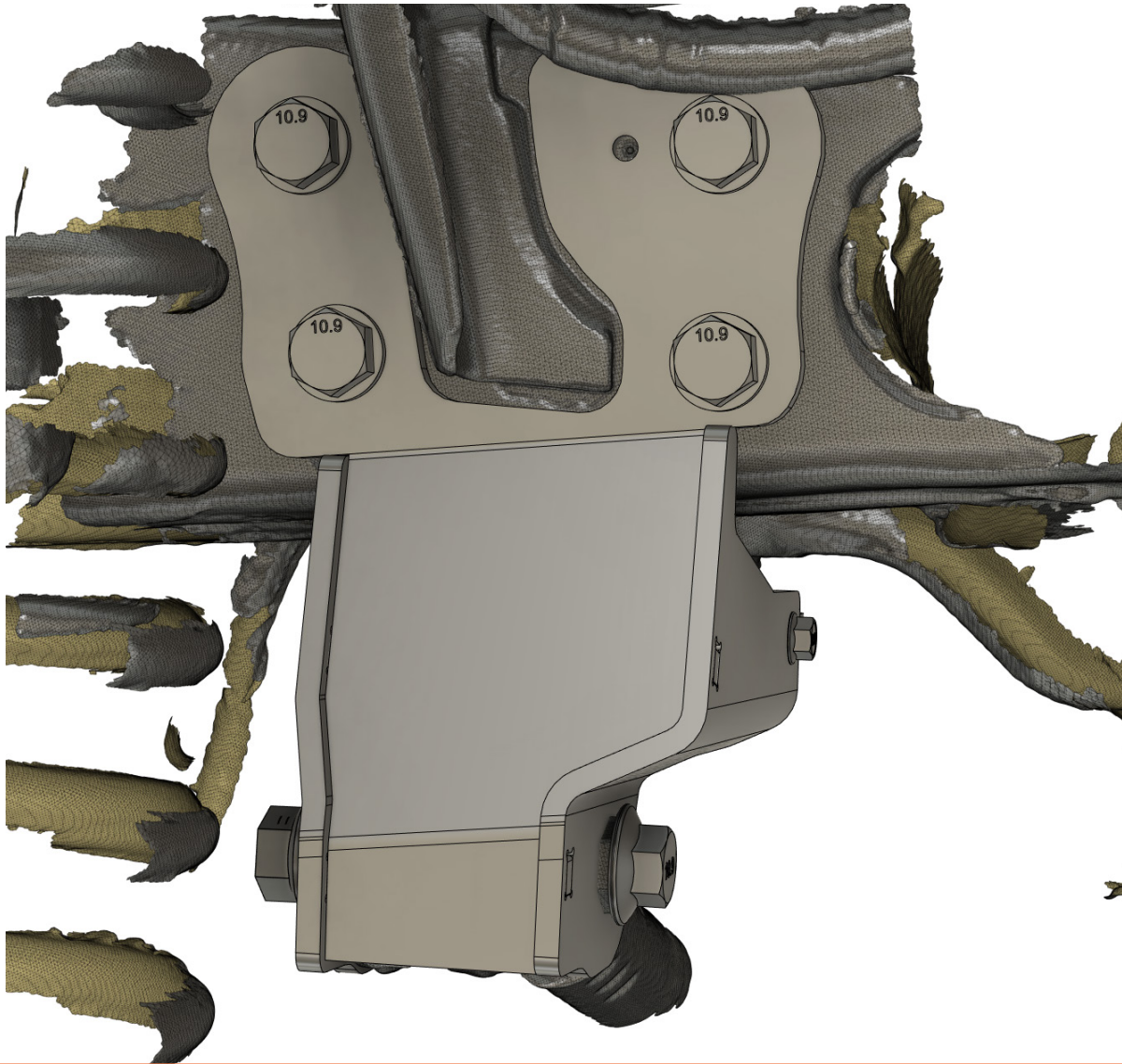
FINAL TORQUE

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Make sure vehicle is sitting on the ground and perform the final torque on all of the fasteners in this order:

1. Track Bar Bolt & Nut – 21mm Socket – 170Nm (125lb ft)
2. 2x Sector Shaft Bearing Block Bolts – 10mm Socket – 9Nm (7lb ft)
3. 4x Steering Box Bolts – 18mm Socket – 135Nm (99lb ft)

On some vehicles, a cable clip may have been removed in the installation of the track bar reinforcement bracket. Insert the clip into the small hole provided on the bracket once installation is complete.



FINISH

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Check that all fasteners are tight and mark across them to a fixed location with a paint pen once torqued. Refit wheels or any other items that were removed during the installation process.

Cycle the steering wheel completely left to right multiple times to check clearances and see if there is any binding. If binding is occurring, the bearing block is not aligned correctly and needs to be adjusted.

Cycle the suspension and check clearance between the Track Bar Reinforcement Bracket (1) and the spring perch on the diff housing. Adjust the panhard rod to center the diff and clear the Track Bar Reinforcement Bracket (1) if necessary.

Congratulations! You did it. Take a step back and admire your work.

Post Installation: Drive the vehicle for 100km and perform a torque check on all fasteners.