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Revisions			
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G	Revised Per ECO 21-027	3/25/2021	KB
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JEEP JL/JT TRACK BAR AND SECTOR SHAFT BRACE

Installation Instructions

Applications:

JEEP WRANGLER (JL)

JEEP GLADIATOR (JT)



TITLE:

**JEEP JL/JT TRACK BAR AND
SECTOR SHAFT BRACE**

SIZE

DWG NO:

REV

A

8869-01-INST

H

SCALE: N/A

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JEEP JL/JT TRACK BAR AND SECTOR SHAFT BRACE INSTALLATION INSTRUCTIONS

Thank you for purchasing the best aftermarket products available for your vehicle. We strongly feel that the parts you are about to install should meet or exceed your expectations for performance. Proper assembly is critical to the performance of these components and the vehicle as a whole. Please take the time to carefully read these instructions and familiarize yourself with the installation procedure before working on your vehicle. If you have any questions PLEASE contact Synergy Manufacturing BEFORE beginning installation. Thanks again for supporting Synergy – enjoy the performance benefits of the best aftermarket products available for your vehicle!

Synergy Manufacturing

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Modifying or otherwise altering vehicle components may cause the vehicle to handle differently than originally designed. It is the driver's responsibility to familiarize themselves with the performance and handling characteristics of the modified vehicle. Vehicles with larger diameter than stock tires must be driven carefully and cannot be expected to perform as stock or meet OEM performance with regard to handling, braking or crash performance. Ensure all replacement components are compatible with vehicle capacities so as not to overload components, especially tires. It is up to the individual to ensure that the vehicle and all components are compatible with the intended vehicle use, including load ratings, road conditions, and driver abilities. Thorough and frequent vehicle inspections are recommended to ensure a safe and reliable state of readiness, especially after off-highway use.

PARTS LIST

8869-01 JL/JT FRONT TRACK BAR AND SECTOR SHAFT BRACE		
QTY	Part Number	Description
1	886904-PC	FRONT TRACK BAR BRACE
1	886902.B	SECTOR SHAFT BRACE, BRONZE BEARING
1	886903-01-PL	SECTOR SHAFT NUT, PLATED
1	ZERK-11-04-28	ZERK GREASE FITTING, 11/16 LENGTH, 1/4-28 THREAD
1	SS4-28-2.5-ET	EXTENDED TIP SETSCREW, 1/4-28 X 5/16 LONG, ALLOY STEEL
1	OR-028-70A-BN	O-RING, NUM 28, 70A DURO, BUNA-N
1	OR-127-70A-BN	O-RING, NUM 127, 70A DURO, BUNA-N
4	HM12-1.50-120-10.9	M12 - 1.50 X 120MM LONG BOLT, GR 10.9, CLEAR ZINC
2	HF8-6-03	3/8-24UNF x 3/4" HEX HEAD BOLT, GRADE 8
1	HC8-8-10	1/2-13UNC x 1.0" HEX HEAD BOLT, GRADE 8
1	LHC-8-10	1/2-13UNC x 1.0" LOW PROFILE HEX HEAD BOLT
1	HM14-2.00-80	M14-2.00 x 80MM HEX HEAD BOLT, GRADE 10.9
2	NSC-8	TOP LOCK NUT, 1/2-13UNC
1	NSM14-2.0	M14-2.00 TOP LOCK NUT
2	WF8-6	3/8" FLAT WASHER, GRADE 8, SAE
3	WF8-8	1/2" FLAT WASHER, GRADE 8 SAE
2	WF-M14	14MM WASHER, CLASS 10.9
4	WF-M12	12MM WASHER, CLASS 10.9
1	4105-20	.5ML CAPSULE HIGH STRENGTH (LOCTITE 263) THREADLOCKER



GENERAL NOTES

- These instructions are also available on our website; www.synergymfg.com. Check the website before you begin for any updated instructions and additional photos or videos for reference.
- No bump stop spacing is required if the 8869-01 Synergy Jeep JL/JT Front Track Bar and Sector Shaft Brace is used in conjunction with an 8875-01 Synergy Front Track Bar.
- If using the 8869-01 Synergy Jeep JL/JT Front Track Bar and Sector Shaft Brace with the stock front track bar, a minimum 2" of bump stop spacing is required.
- If using the 8869-01 Synergy Jeep JL/JT Front Track Bar and Sector Shaft Brace with an aftermarket front track bar, the front springs should be removed and the suspension cycled to full bump to determine the bump stop spacing required to prevent the track bar from contacting the sector shaft nut, or any other interference.
- This is a track bar bracket BRACE and requires the stock track bar bracket to function as designed. This is not intended to repair or replace the stock track bar bracket. If the stock track bar bracket is damaged, complete required repairs before installing the Synergy Track Bar Brace.
- When installing the track bar brace bracket, many holes must line up. The key to getting the bracket on is to loosely get all the bolts inserted, then start tightening them up. It is best to start by fitting the track bar brace to the frame and then fitting the track bar bolt through the bracket. In addition, there are a couple of frame welds that may need to be ground flush in order to get the brace to fit properly and all the bolts to line up.
- If you have a PSC Big Bore Steering Box, you must use the Synergy MFG 8869-10 Big Bore Steering Box Nut. The PSC Big Bore Steering Box uses a larger diameter thread on the sector shaft.

TOOLS REQUIRED

- Basic Hand Tools
- Sockets: 9/16", 3/4", 18mm, 21mm, 22mm, 42mm
- Wrenches: 9/16", 3/4", 21mm, 22mm
- Floor Jack and Jack Stands

ESTIMATED INSTALLATION TIME

1 Hour

PRE-INSTALLATION CHECKLIST

- ☐ Inspect the stock front track bar bracket for damage or faulty welds.
- ☐ Inspect the front track bar bushings for wear and replace as necessary.
- ☐ Inspect the front sway bar bushings for wear and replace as necessary.

INSTALLATION

1. Park the vehicle on a flat, level surface, or safely raise the vehicle on a lift. Chock the rear wheels, make sure the vehicle is in park or in gear, and set the parking brake.
2. Unbolt the front track bar from the frame side mount and let it hang down. This is usually easiest with the vehicle on the ground. If the bolt is still under tension, use ratchet straps to pull the axle to one side or the other in order to free up the bolt to get it out, or have someone turn the steering wheel if the vehicle is still on the ground. See **Figure 1**.



Figure 1. Removing Frame Side Track Bar Bolt

3. Jack the front axle up, support on jack stands and remove the front driver side wheel.
4. Disconnect the front sway bar links at the axle, then swing the sway bar and sway bar links down and out of the way. See **Figure 2**.

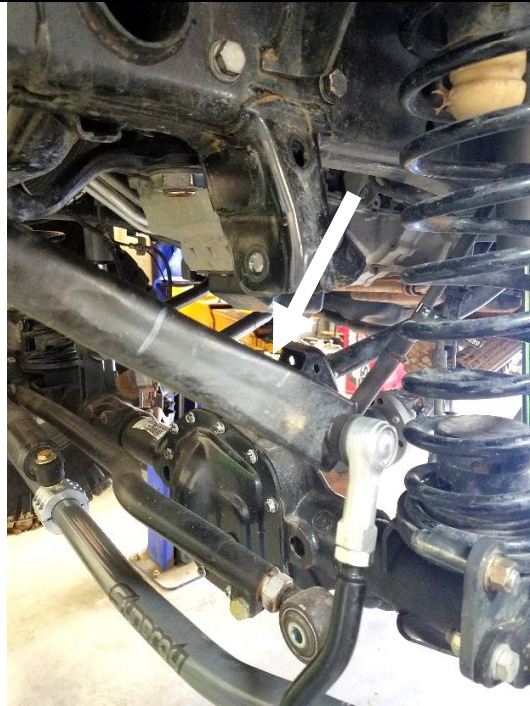


Figure 2. Sway Bar Disconnected and Moved Down

5. Use a 42mm socket to remove the factory pitman arm nut. The pitman arm is a tapered splined fit on the sector shaft and should not come off. You may have to use heat to loosen the factory applied thread locker on the nut. See **Figure 3**.

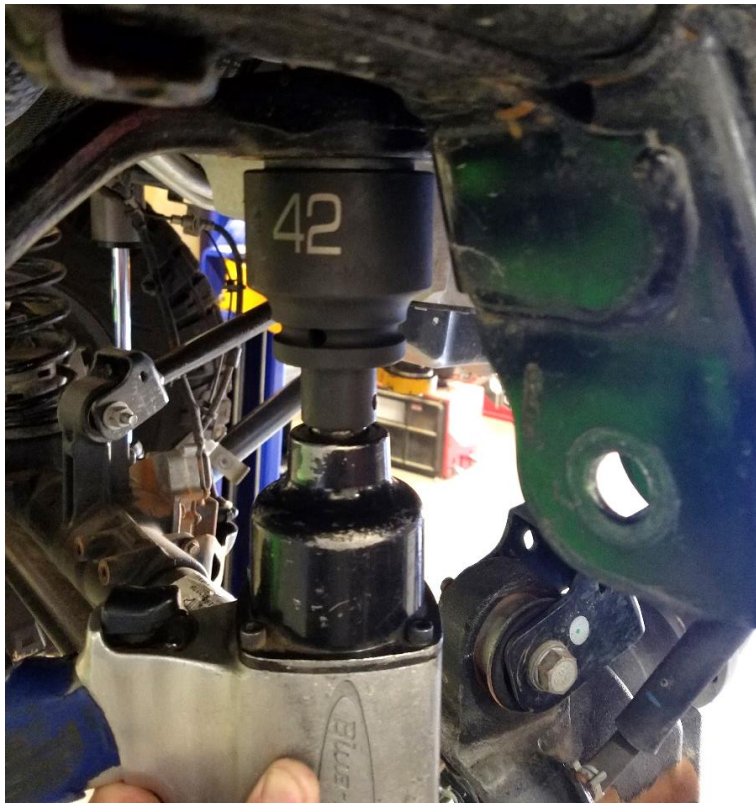
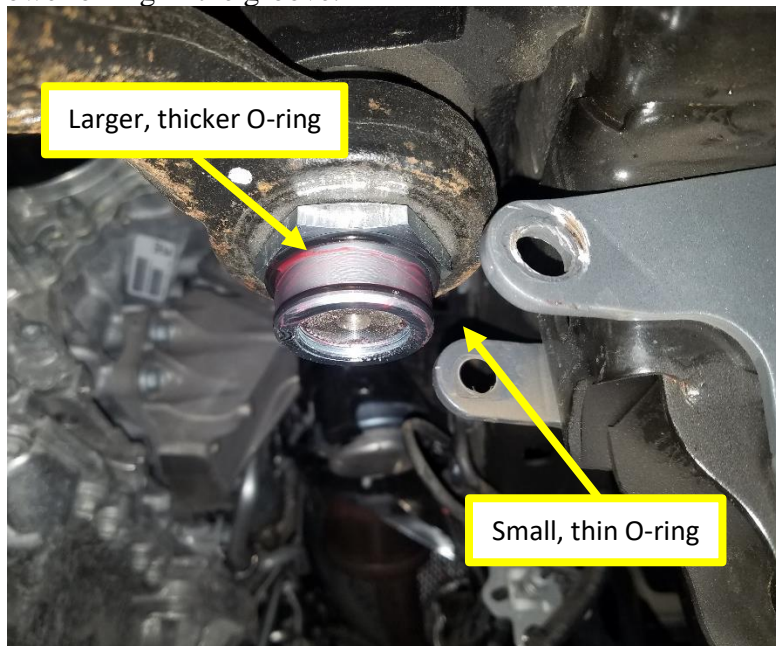


Figure 3. Removing Pitman Arm Nut.

1. Install the new pitman arm nut. If you have a PSC Big Bore Steering Box, you will need the 8869-10 pitman arm nut. Make sure the sector shaft and sector shaft nut threads are clean, dry, and free of any oil or debris. Apply some of the provided threadlocker to the threads and torque to 184lb-ft. This torque spec applies to either the stock steering box or the PSC Big Bore box. Let the threadlocker cure for 24 hours before driving the jeep. Continue on with the rest of the 8869-04 assembly. See **Figure 4, 5, and 6.**

**Figure 4. Adding Thread Locker to Nut****Figure 5. Torquing Pitman Arm Nut**

2. Push the thicker of the two o-rings up over the bottom of the nut and all the way up as far as it will go. Then roll the smaller, thinner o-ring into the groove at the bottom of the nut. Make sure the thin o-ring seats fully in the groove. See **Figure 6.** Apply a light amount of grease around the nut making sure to coat the lower o-ring in the groove.

**Figure 6. Installing the O-rings**

3. Unbolt all 4 bolts holding the steering box on. The box will drop slightly and rest against the top of the frame once all the bolts are out. If you still have the aluminum steering box, note which bolts go where. The two longer bolts go in the front two bolt holes.
4. Slide the Synergy Track Bar Brace up from the bottom, over the factory track bar mount. Use the track bar bolt to hold the brace loosely in place. The key to bolting the track bar brace on is to get all the bolts that hold it in loosely in place **before** you tighten any of them. Some Jeep frames may have welds that need to be ground down to get the bracket to fit properly. See **Figure 7 and 8**.



Figure 7. and 8. Track Bar Welds That May Need to be Ground Down.

5. You will have to lift the steering box slightly to get the steering box bolts started. It is easiest to start with the front lower bolt, then the rear lower bolt to get the box and frame holes lined up correctly. Slide in all 4 steering box bolts and get the threads started by hand. Thread the bolts in most of the way, but leave them loose at this time. See **Figure 9**.

NOTE:

- If the vehicle features an aluminum steering gear box, then the factory steering gear box bolts are sufficient for securing the 8869 bracket to the frame rail of the vehicle.
- If the vehicle features a steel steering gear box, then the factory steering gear box bolts are not sufficient due to their length and will need to be replaced with the four M12 - 1.50 x 120mm bolts now included in the 8869 assembly.



Figure 9. Threading Bolts into Steering Box

6. Install one 1/2"x 1" long bolt and 1/2" washer into the upper side hole on the track bar bracket. Use one 1/2" top lock nut and 1/2" washer on the inside of the mount. Do not tighten yet. See **Figure 10**.

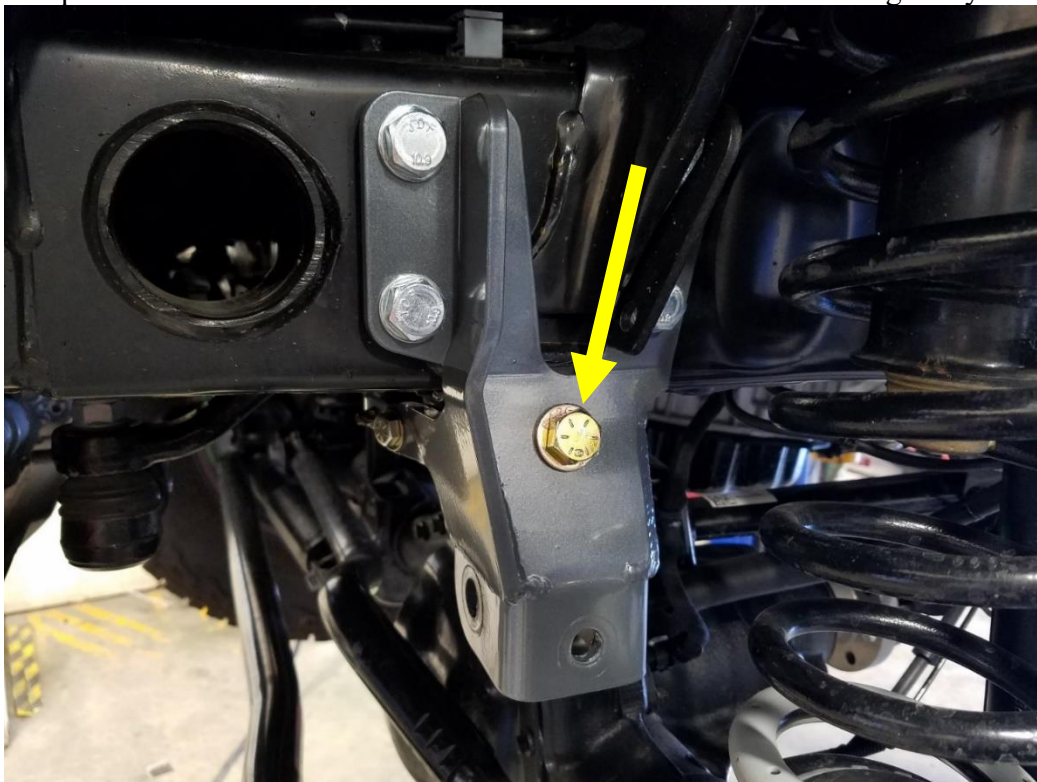


Figure 10. Installing Upper Track Bar Mount Hardware

7. Install the 1/2" low profile bolt, **Figure 11**, in the bottom side hole on the track bar bracket. Install the bolt so the low-profile head is on the inside of the factory track bar mount and the threads come out the side of the Synergy Track Bar Brace. Put a 1/2" washer and 1/2" top lock nut on the outside. Do not tighten yet. See **Figure 12**.

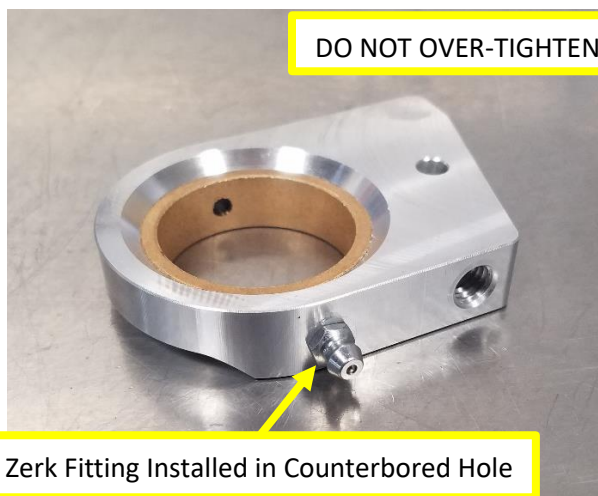


Figure 11.



Figure 12.

8. Begin tightening hardware, starting with the upper 1/2" side bolt, then the lower 1/2" low profile bolt, and then the 4 steering box bolts. See **Table 1**.
9. Install the set screw and zerk fitting into the aluminum bearing block at this point. The front of the bearing block has a threaded hole with a counterbore that receives the zerk fitting. Tighten the zerk fitting by hand until the hex head seats on the outside of the block and the threaded end protrudes into the hole in the bearing. Be careful to not overtighten the zerk and break the head off. The back of the bearing block also has a threaded hole and this side gets the 1/4-28 extended tip set screw installed into it. Use some red Loctite on the setscrew threads and tighten by hand also making sure the setscrew tip indexes into the hole in the bearing. Do not overtighten! See **Figures 13 and 14**.



Zerk Fitting Installed in Counterbored Hole

Figure 13. Grease Zerk Installed in Front



1/4-28 Extended Tip Setscrew

Figure 14. Setscrew Installed in Rear

15. Put a light coating of grease on the bearing surface and slide the machined Sector Shaft Brace up between the ears on the Synergy Track Bar Brace and over the pitman arm nut. Note that there should be a small gap between the ears and the aluminum block to allow for variances in fitment. These will close up when the hardware is tightened. See **Figure 15**.



Figure 15. Installing Synergy Sector Shaft Brace on Pitman Arm Nut

16. Apply provided thread locker to the 3/8" x 3/4" hex bolts. Thread in the 3/8" x 3/4" hex bolts with one 3/8" washer each through the track bar mount ears and into the sector shaft brace. Torque to 30 lb-ft. See **Figure 16**.



Figure 16. Installing Hardware in Synergy Sector Shaft Brace

17. Remove the track bar bolt at this time.
18. Put the front wheels back on and lower the vehicle back on the ground. Torque lug nuts to 130 lb-ft.
19. With the weight of the vehicle back on the ground, re-install the track bar with the included M14x 80mm bolt and 14mm washer through the front of the trackbar brace, and the 14mm washer and M14 top lock nut on the back side. Once again you may have to use a ratchet strap between the axle and

frame to get the track bar to line up with the holes in the track bar mount or have someone turn the steering wheel to help align the bolt. Tighten the track bar bolt to 125 lb-ft. See **Figures 15 and 16.**



Figure 17.

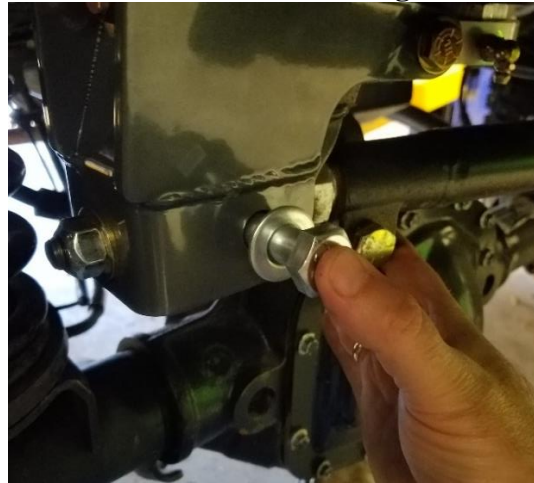


Figure 18.

20. Swing the sway bar up and reattach the sway bar links to the lower axle mounts. Tighten the bolts to 59 lb-ft.
21. Lubricate the sector shaft brace bearing with grease through the zerk fitting. The bearing doesn't need much grease to function. Start with a half a pump from a grease gun, turn the steering wheel lock to lock, then another half pump. Wipe the excess off the bottom of the bearing. We recommend lubricating the bearing every oil change or as needed. See **Figure 19.**



Figure 19. Greasing Bearing

INSTALLATION IS COMPLETE



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Table 1. Recommended Bolt Torques

Bolt	Wrench Size	Torque
1/2" Hex Bolt	3/4"	60lb-ft
1/2" Low Profile Hex Bolt	3/4"	60lb-ft
M12 Steering Box Bolts	19mm	99lb-ft
3/8" Hex Bearing Mount Bolts	9/16"	50lb-ft
Track Bar Bolt	22mm	125lb-ft
Pitman Arm Nut	42mm	184lb-ft
Lug Nuts	19mm	130lb-ft
Lower Sway Bar Bolts	18mm	59lb-ft