INSTALLATION INSTRUCTIONS

Front Stabilizer Bar

Kit Contents

Number	Part Name	Quantity
1	Sway Bar	1
2	Component Kit	2
3	D-Bushing	2
4	Instruction Sheet	1
5	Warranty form	1
6		
7		

Bag Contents

Number	Part Name	Quantity
1	lube	1
2	3/8” Washers	2
3		2
4		1
5		
6		
7		

Basic Tools:


Ratchet


8mm Socket


15mm Deep Socket

Torque Wrench


21mm Socket Wrench


Allen Head Key

Professional Tools:


Air Ratchet


8mm Impact Socket


15mm Deep Impact Socket


21mm Ratcheting Socket Wrench


Impact Allen Driver Socket


Electric Impact Driver


Impact Socket Adapter

General Notes:

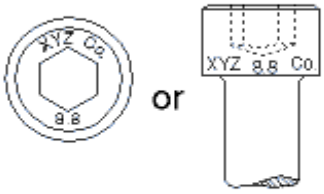
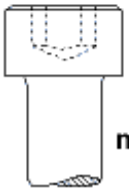
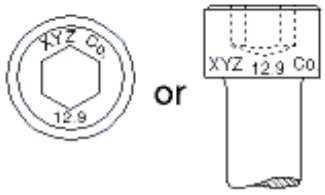
- Don’t forget to lube all bushings.
- Always use impact grade sockets with air ratches or impact drivers.

Size	Recommended Torque											
	Grade 2		Grade 5		Grade 8		18-8 S/S		Bronze		Brass	
	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine	Coarse	Fine
#4*	-	-	-	-	-	-	5.2	-	4.8	-	4.3	-
#6*	-	-	-	-	-	-	9.6	-	8.9	-	7.9	-
#8*	-	-	-	-	-	-	19.8	-	18.4	-	16.2	-
#10*	-	-	-	-	-	-	22.8	31.7	21.2	29.3	18.6	25.9
1/4"	4	4.7	6.3	7.3	9	10	6.3	7.8	5.7	7.3	5.1	6.4
5/16"	8	9	13	14	18	20	11	11.8	10.3	10.9	8.9	9.7
3/8"	15	17	23	26	33	37	20	22	18	20	16	18
7/16"	24	27	37	41	52	58	31	33	29	31	26	27
1/2"	37	41	57	64	80	90	43	45	40	42	35	37
9/16"	53	59	82	91	115	129	57	63	53	58	47	51
5/8"	73	83	112	128	159	180	93	104	86	96	76	85
3/4"	125	138	200	223	282	315	128	124	104	102	118	115
7/8"	129	144	322	355	454	501	194	193	178	178	159	158
1"†	188	210	483	541	682	764	287	289	265	240	235	212

* Sizes from #4 to #10 are in lb-in.
Sizes from 1/4" up are in lb-ft.
† Fine thread figures are for 1"-14.
Grade 2, 5, and 8 values are for slightly lubricated bolts.

***Socket head cap screws are **not grade designated** as are hex head cap screws. A standard inch series socket head cap screw is 20% stronger than a Grade 8 hex head cap screw and 50% stronger than a Grade 5 hex cap screw.

Socket Head Cap Screws

Inch				Metric			
Grd.	Head marking	Dia.	Tensile Strength	Prop. class	Head marking M5 & above	Dia.	Tensile Strength[1]
Not normally made in lower grade				8.8		M17 thru M36	120,350 PSI
Alloy	 No marking	Up to 1/2	180,000 PSI	12.9		M1.6 thru M36	176,900 PSI
		5/8 - 3	170,000 PSI				

Standard Socket Head Cap Screw torque spec settings chart

(Torque in pounds/foot)

Nominal Size (Basic Screw Diameter	Allen Key Tool Size	Torque Specs	
		Lubricated	Non-Lubricated
1/4 - 20	3/16	11	14
1/4 - 28	3/16	13	16
5/16 - 18	1/4	23	29
5/16 - 24	1/4	26	33
3/8 - 16	5/16	39	49
3/8 - 24	5/16	44	54
7/16 - 14	3/8	61	76
7/16 - 20	3/8	68	85
1/2 - 13	3/8	90	113
1/2 - 20	3/8	100	126
9/16 - 12	7/16	130	163
9/16 - 18	7/16	144	181
5/8 - 11	1/2	184	230
5/8 - 18	1/2	204	255
3/4 - 10	5/8	320	400
3/4 - 16	5/8	350	440
7/8 - 9	3/4	510	640
7/8 - 14	3/4	560	700

Metric Socket Head Cap Screw torque spec settings chart

(Torque in pounds/foot) unless noted

Nominal Size (Basic Screw Diameter	Allen Key Tool Size	12.9 Torque Specs	
		Lubricated	Non-Lubricated
M5 x 0.80 (inch pounds)	4mm	5.66(68)	7.5(91)
M6 x 1.00 (inch pounds)	5mm	9.66(116)	13(156)
M7 x 1.00 (inch pounds)	6mm	16.25(195)	21.67(260)
M8 x 1.25 (inch pounds)	6mm	23.66(284)	31.41(377)
M10 x 1.50	8mm	47	62
M12 x 1.75	10mm	81	108
M14 x 2.00	12mm	130	173
M16 x 2.00	14mm	202	269
M18 x 2.50	14mm	279	372
M20 x 2.50	18mm	394	525
M22 x 2.50	20mm	537	716
M24 x 3.00	22mm	681	908

Lubricated means - cleaned dry bolts lubricated with a standard medium viscosity machine oil. Lubricate all contact reas of the bolts and washer.

Standard TAP - DRILL RECOMMENDATIONS

Inch Sizes (all measurements in inches)

Tap Size and Pitch	Drill Size	Cutting Taps Decimal Equiv.
0-80	3/64	0.0469
1-64	53	0.0595
1-72	53	0.0595
2-56	50	0.07
2-64	50	0.07
3-48	47	0.0785
3-56	46	0.081
4-40	43	0.089
4-48	42	0.0935
5-40	38	0.1015
5-44	37	0.104
6-32	36	0.1065
6-40	33	0.113
8-32	29	0.136
8-36	29	0.136
10-24	26	0.147
10-32	21	0.159
12-24	16	0.177
12-28	15	0.18
1/4-20	7	0.201
1/4-28	3	0.213
5/16-18	F	0.257
5/16-24	I	0.272
3/8-16	5/16	0.3125
3/8-24	Q	0.332
7/16-14	U	0.368
7/16-20	25/64	0.3906
1/2-13	27/64	0.4219
1/2-20	29/64	0.4531
9/16-12	31/64	0.4844
9/16-18	33/64	0.5156
5/8-11	17/32	0.5312
5/8-18	37/64	0.5781
3/4-10	21/32	0.6562
3/4-16	11/16	0.6875
7/8-9	49/64	0.7656
7/8-14	13/16	0.8125
1-8	7/8	0.875
1-12	59/64	0.9219
1-1/8 - 7	63/64	0.9844
1-1/8 - 12	1 3/64	1.0469
1-1/4 - 7	1 7/64	1.1094
1-1/4 - 12	1 11/64	1.1719
1-3/8 - 6	1 7/32	1.2188
1-3/8 - 12	1 19/64	1.2969
1-1/2 - 6	1 11/32	1.3438
1-1/2 - 12	1 27/64	1.4219

Metric TAP - DRILL RECOMMENDATIONS

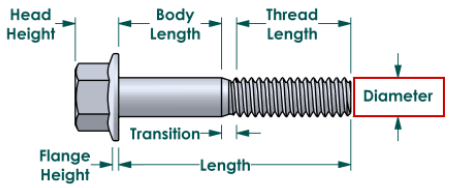
(measurements in millimeters and inches)

Tap Size and Pitch mm	Drill Size mm	Cutting Taps Dec. Equiv. in
M1.6 x 0.35	1.25	0.0492
M1.8 x 0.35	1.45	0.0571
M2 x 0.40	1.60	0.063
M2.2 x 0.45	1.75	0.0689
M2.5 x 0.45	2.05	0.0807
M3 x 0.50	2.50	0.0984
M3.5 x 0.60	2.90	0.1142
M4 x 0.70	3.30	0.1299
M4.5 x 0.75	3.70	0.1476
M5 x 0.80	4.20	0.1654
M6 x 1.00	5.00	0.1969
M7 x 1.00	6.00	0.2362
M8 x 1.25	6.70	0.2638
M8 x 1.00	7.00	0.2756
M10 x 1.50	8.50	0.3346
M10 x 1.25	8.70	0.3425
M12 x 1.75	10.20	0.4016
M12 x 1.25	10.80	0.4252
M14 x 2.00	12.00	0.4724
M16 x 2.00	14.00	0.5512
M16 x 1.50	14.50	0.5709
M18 x 2.50	15.50	0.6102
M18 x 1.50	16.50	0.6496
M20 x 2.50	17.50	0.689
M20 x 1.50	18.50	0.7283
M22 x 2.50	19.50	0.7677
M22 x 1.50	20.50	0.8071
M24 x 3.00	21.00	0.8268
M24 x 2.00	22.00	0.8661
M27 x 3.00	24.00	0.9449
M27 x 2.00	25.00	0.9843
M30 x 3.50	26.50	1.0433
M30 x 2.00	28.00	1.1024
M33 x 3.50	29.50	1.1614
M33 x 2.00	31.00	1.2205
M36 x 4.00	32.00	1.2598
M36 x 3.00	33.00	1.2992
M39 x 4.00	35.00	1.378
M39 x 3.00	36.00	1.4173

How to Measure a Bolt

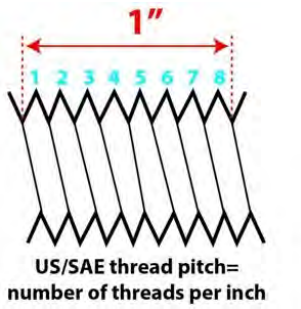
Step 1: Measure the shank's diameter

The shaft of the bolt is called the shank, and its diameter is the first dimension used to describe a bolt size. This can be done using calipers or a bolt gauge.



Step 2: Determine the thread pitch

Thread pitch is a designation related to the number of threads per inch on the bolt's shank. You can complete this measurement by simply counting the number of threads in an inch worth of shank. If the shank is less than one inch, you'll need to multiply the number of threads to reach a full inch worth of threading. Or use a thread pitch gauge finder too.



Step 3: Determine the bolt's grade

The grade of a bolt is determined by the type of metal used in the manufacturing of the bolt, as indicated by the bolt's head markings. No one expects you to know all of the head markings by heart, just use our handy bolt head marking chart to make the determination.

Metric

Class of Material	Marking	Appearance	Nominal Size Range	Proof Load (MPA*/PSI)	Yield Strength (MPA*/PSI)	Tensile Strength (MPA*/PSI)
Class 8.8	8.8		<16mm	580 / 84,100	640 / 92,800	800 / 116,000
			16mm - 72mm	600 / 87,000	660 / 95,700	830 / 120,000
Class 10.9	10.9		5mm - 100mm	830 / 120,350	940 / 136,300	1040 / 150,800

Standard - Hex Head

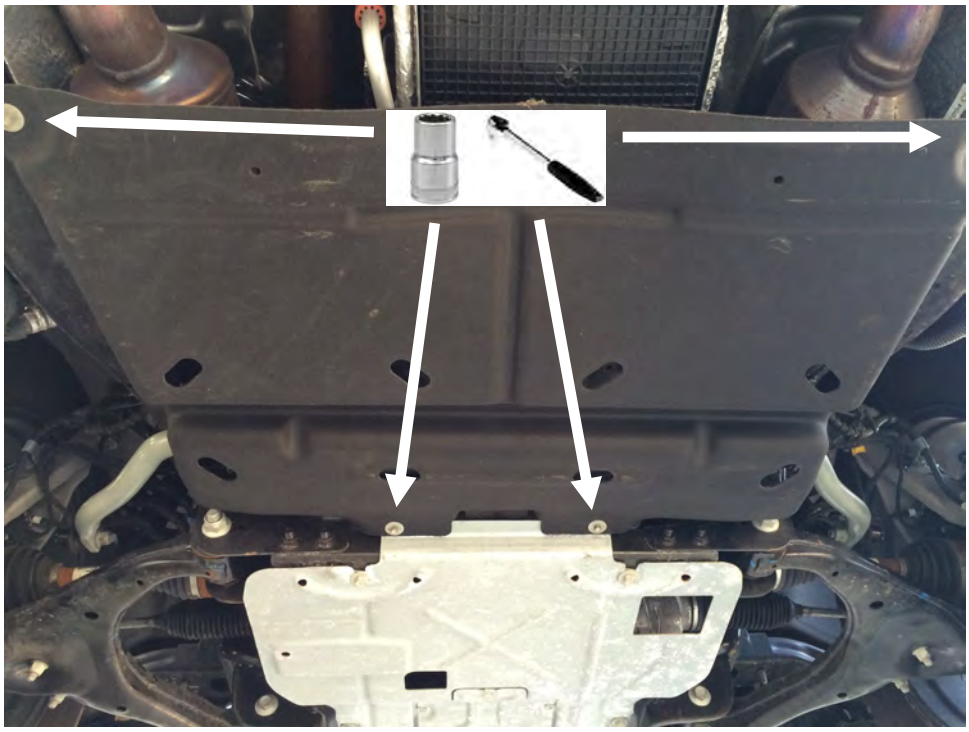
Grade of Material	Marking	Appearance	Nominal Size Range	Proof Load (PSI)	Yield Strength (Min. PSI)	Tensile Strength (Min. PSI)
Grade 2	No Marking		1/4" - 3/4"	55,000	57,000	74,000
			3/4" - 1 1/2"	33,000	36,000	60,000
Grade 5	3 Radial Lines		1/4" - 1"	85,000	92,000	120,000
			1" - 1 1/2"	74,000	81,000	105,000
Grade 8	6 Radial Lines		1/4" - 1 1/2"	120,000	130,000	150,000
18-8 & 316 Stainless	No Standard Marking		Up to 1"		45,000 minimum	85,000 minimum
A325 Structural Bolts	A325		1/2" - 1"	85,000	92,000	120,000
			1 1/8" - 1 1/2"	74,000	81,000	105,000

When should you apply torque to the bolt or the nut?

In many situations you can apply torque to either the nut or the bolt head. Both will result in a tight connection and neither will avoid breakage more often (that occurrence can be avoided through other means). In certain circumstances, however, you will need to torque one and not the other. These situations include:

- Holes Are Producing an Interference – If the holes you are bolting through (whether existing or drilled for the purpose) provide an interference, you are better to apply torque to the nut.
- Nut and Bolt Head are Different Diameters or Shapes – When the nut or bolt head are different shapes (hex head with a square nut, for instance) or significantly different diameters, you are best to apply torque to the side with the smaller bearing face. This also applies when the hole diameters are different. It is generally recommended that you apply torque to the component opposite the smaller hole.
- When Clamping Two Different Materials Together – It is always better to apply torque on the component that is against the material with a lower frictional coefficient. If you are clamping together different materials and you know which one will produce less friction, it is best to torque that side.
- Long Bolts Are Being Used – When torque is applied to the head of a very long bolt, you may see the effects of torsional wind-up. Applying torque to the nut in this situation will help to avoid that issue.

There will be many instances where you can apply torque to either the nut or the bolt head. But if one of the above situations applies, remember to follow the guidelines for a better fit and more durable installation.

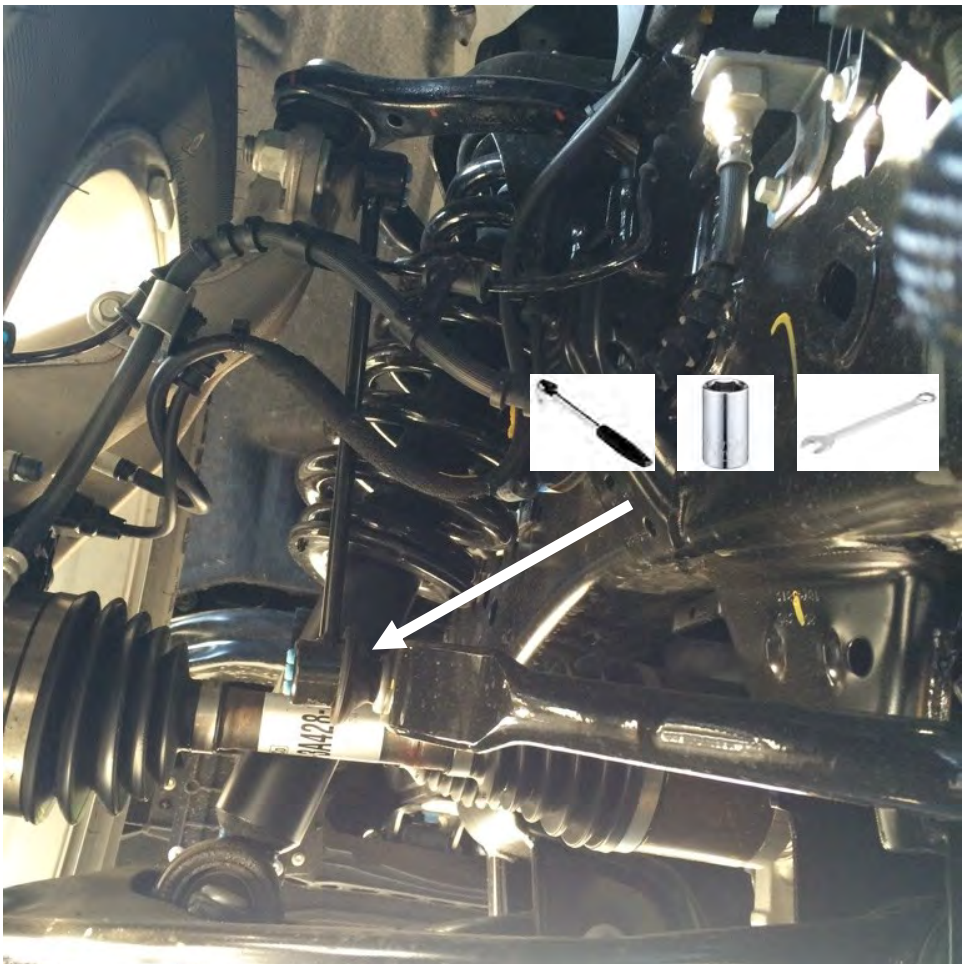


Step 1: Remove Cover

Utilizing a ___ socket and rachet, remove the 4 bolts. This will allow the plastic cover to be removed, gaining access to the factory sway bar.

Air tools may also be used if desired.

*__Do not__ discard factory fasteners. They will be reused. Measure the bolt diameter and grade. Take note of these measurements as they will be needed when torquing. See pages 7&8 for assistance.



Step 2:Remove End-Link

Remove the end-link from the sway bar utilizing a 21mm socket wrench and a 8mm socket and ratchet.

Air tools may also be used if desired.

Leave upper part of end-link attached to upper A-Arm

*__Do not__ discard factory fasteners. They will be reused. Measure the bolt diameter and grade. Take note of these measurements as they will be needed when torquing. See pages 7&8 for assistance.

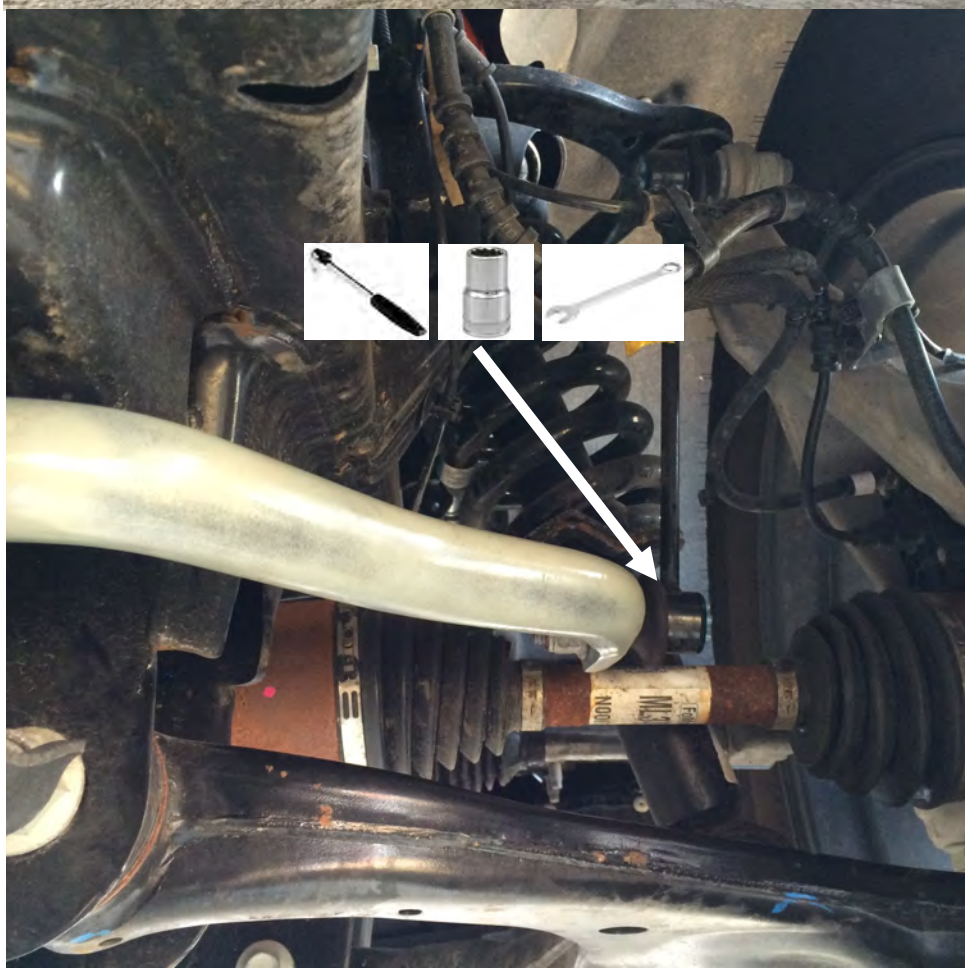
Step 3: Remove Sway Bar

With the end-links free from the sway bar. Remove the 4 nuts holding the sway bar in place with a 15mm deep socket and ratchet.

Air tools may also be used if desired.

Gently remove the sway bar, using two hands. Slide the U-Plates past the threaded studs and set to the side.

*__Do not__ discard factory fasteners. They will be reused. Measure the bolt diameter and grade. Take note of these measurements as they will be needed when torquing. See pages 7&8 for assistance.

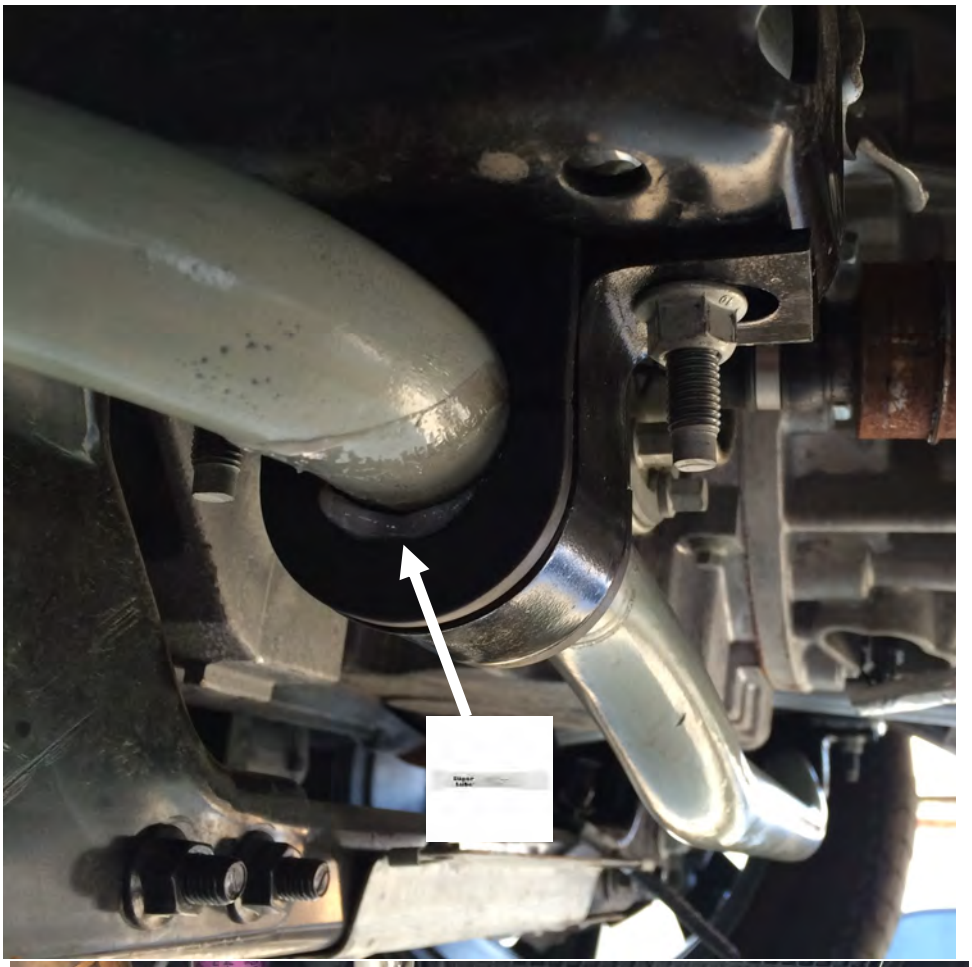


Step 4: Attach Factory End -Links

Attach your new Hellwig sway bar to the factory end-links. Use original fasteners with a 21mm socket wrench and a 8mm socket and ratchet.

Air tools may also be used if desired.

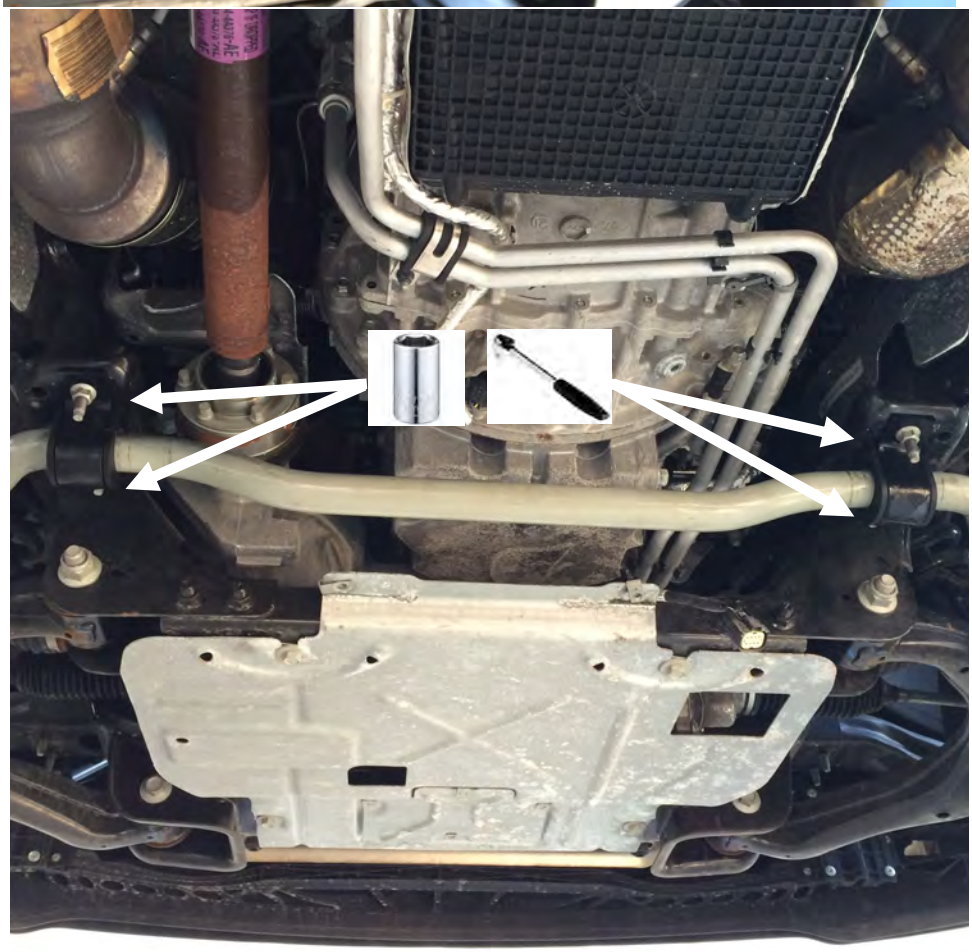
Tighten original fasteners but do not torque yet, allowing the bar to rotate up into position.



Step 5: Lubricate Bushings

Apply ample amount of lubricant to each D-Bushing. Install the D-Bushings on the bar in the approximate location of mounting.

Note:
(The picture in Step 5 center hump is facing the wrong direction. Install the bar facing the direction like the factory sway bar)

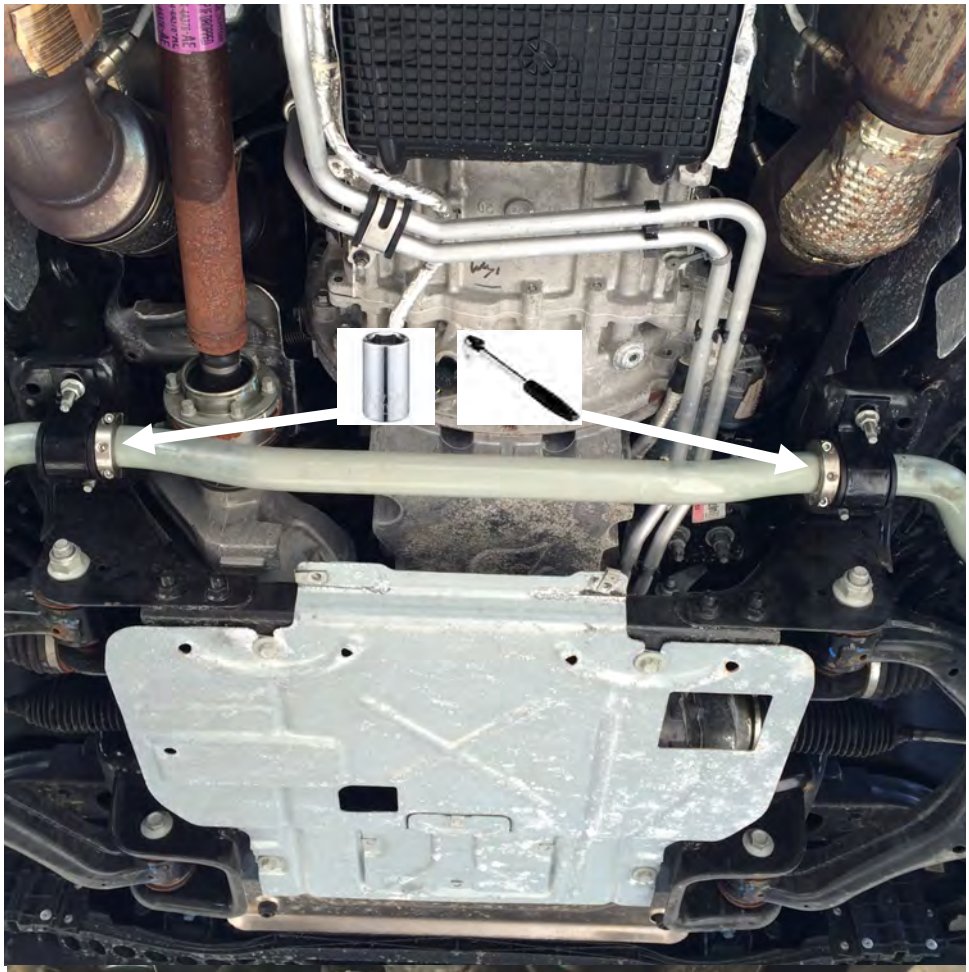


Step 6: Install U-Plates

Finalize attaching your new Hellwig sway bar. Take the provided U-pates and slide them over the D-Bushings and onto the threaded studs. Utilizing a 15mm deep socket and ratchet thread the original nuts onto the factory studs.

Air tools may also be used if desired.

Tighten nuts but do not torque yet.



Step 7: Collar Clamps

Now with everything mounted and hanging in place, line up and square the sway bar by sliding it slightly to the left or right. Once in desired position, install collar clamps against D-Bushings.

These clamps will keep the sway bar from sliding left or right once centered.
Tighten clamps to torque specified on page 4.

Step 6: Torque

Use torque specification table to find what torque each fastener should be torqued down to, based off your measurements of OE hardware, during removal of the OE sway bar.

With this information, go back to each fastener on the U-Plates and End-Links and tighten to torque specs.

1. **Fasteners:**

   All Hellwig supplied fasteners must be utilized and installed in accordance with the installation instructions and apply torque to the specifications as defined. Double check all fasteners before initial use, and periodically in the future to ensure proper function and safety.

2. **Drilling:**

   Most Hellwig products do not require drilling and or tapping for installation. If drilling is defined as required, use caution when drilling a vehicle. Failure to review an area to be drilled, may result in personal injury and/or injury to other as well as vehicle damage.

3. **Eye Protection:**

   Always wear safety glasses or goggles during the installation process to avoid personal injury.

4. **Maximum Towing/Carrying Capacity:**

   User should never exceed the vehicle manufacture's maximum tow and weight rating. Failure to follow these guidelines will void the Hellwig warranty and may result in personal injury and/or injury to others as well as vehicle damage.

5. **For California Residents Only—Prop 65 Warning:**

   Some products may contain chemicals such as DEHP, which can cause cancer, birth defects or other reproductive harm. For more info go to www.p65warning.ca.gov