INSTALLATION MANUAL:

COR-4810200
COR-5010200

JEEP GLADIATOR JT LONG ARM UPGRADE KIT, OVERLAND AND PREMIUM SERIES

Fits 3.6L V6 and 3.0L V6 Eco-Diesel engine options

CLAYTON OFF ROAD

REV: A | DATE: 10/05/2026 | AUTH: KW35

ATTENTION:

Please review the Long Arm Upgrade Kit Compatibility chart below.
Note that both the JT 3.6 V6 and JT 3.0L V6 use the same parts; however, depending on what series you purchased (OVERLAND+ or PREMIUM), the SKU for that specific part may change.

OEM part disassembly is required for both 3.6 and 3.0L engine options. Follow the instructions carefully, noting that some vehicle-specific steps are outlined. Follow the instruction steps in order and skip steps that do not pertain to your engine/model.

CLAYTON OFF ROAD	LONG ARM UPGRADE KIT COMPATABILITY	
	JT 3.6L V6 OR JL 3.0L V6 Eco-Diesel	
COMPONENTS	**OVERLAND+**	**PREMIUM**
COMPLETE UPGRADE KIT	5010200	4810200
FRONT UPGRADE KIT	5009201	4809201
FRONT BRACKETS	2209100	
FRONT UPPER ARMS	1709101	1809101
FRONT LOWER ARMS	1909010	1909210
REAR UPGRADE KIT	5010210	4810210
REAR BRACKETS	2210200	
REAR UPPER ARMS	1910030	1910230
REAR LOWER ARMS	1910020	1910220

DISCLAIMER:

WARNING:

Suspension systems and their components are designed to enhance your vehicle's off-road performance. This may cause your vehicle to handle differently, on and off-road. Always wear your seatbelt and take extra care when driving a modified vehicle. Failure to do so can result in loss of control which may result in a rollover causing serious injury, or even death to the driver and/or passengers of the vehicle. Regular maintenance and consistent inspections are required to keep your modified vehicle safe and functioning properly. These suspension systems and any components should be installed by certified technicians only. Attempts to install these products without proper knowledge can lead to poor performance, or possible failure, which may jeopardize the safety of the vehicle and its passengers. The installer is responsible for proper installation ensuring a safe and properly functioning vehicle. Take extra care when operating a modified vehicle and thoroughly inspect your vehicle before and after every off-road use.

Read the instruction set in its entirety before attempting the installation.

NOTE:

This product may require general welding, fabrication, and automotive mechanic skills. Welding should only be done by a competent welder. Clayton Off Road implies no guarantees or warranties and is not liable for improper installation. Some grinding and fitment may be required when installing this product. Every vehicle varies slightly, and some fabrication and/or modification may be required.

ATTENTION:

It is the customer's responsibility to thoroughly inspect all received parts to ensure they are assembled correctly and fully welded. Please carefully examine all weld seams and verify that bolt-through holes are properly aligned. Some Clayton Off Road products are permanent, non-removable, weld-on solutions. **If a defect or issue is found after installation, especially with permanent weld-on components, it may be difficult or impossible to correct.** Inspecting the part(s) received beforehand helps prevent unnecessary and avoidable complications.

ATTENTION: TORQUE SPECIFICATION

When working on any vehicle, it is good practice to torque suspension/weight-bearing components while the vehicle is resting under its load. This instruction set, as well as any other Clayton Off Road instruction set, assumes the installer will tighten any suspension-related components properly, to the recommended torque specification, when the vehicle is resting safely under its own weight.

CONTROL ARM OVERVIEW

*****Please review the following information so you can become familiar with our purchasable options*****

OVERLAND PLUS

Designed for the daily driver/weekend warrior. Features dual-durometer, maintenance-free bushings for comfort on-road and capability on the trails. One of our two available suspension systems that utilize a unique long arm design for perfecting suspension geometry. Fully adjustable, 100% bolt on, and Made-In-The-USA with a Lifetime Warranty.

PREMIUM SERIES

Designed for the off-road enthusiast. Features both maintenance-free bushings and forged Johnny Joint adjusters for maximum versatility and flex. One of our two available suspension systems that utilize a unique long arm design for perfecting suspension geometry. Fully adjustable, 100% bolt on, and Made-In-The-USA with a Lifetime Warranty.

*****Arms, frame brackets, and hardware are identical, meaning you can swap to a different series at any point*****

FRONT SUSPENSION COMPONENTS

*****Please review the part numbers you have purchased to familiarize yourself with the product(s)*****

5009201 - INCLUDED ITEMS

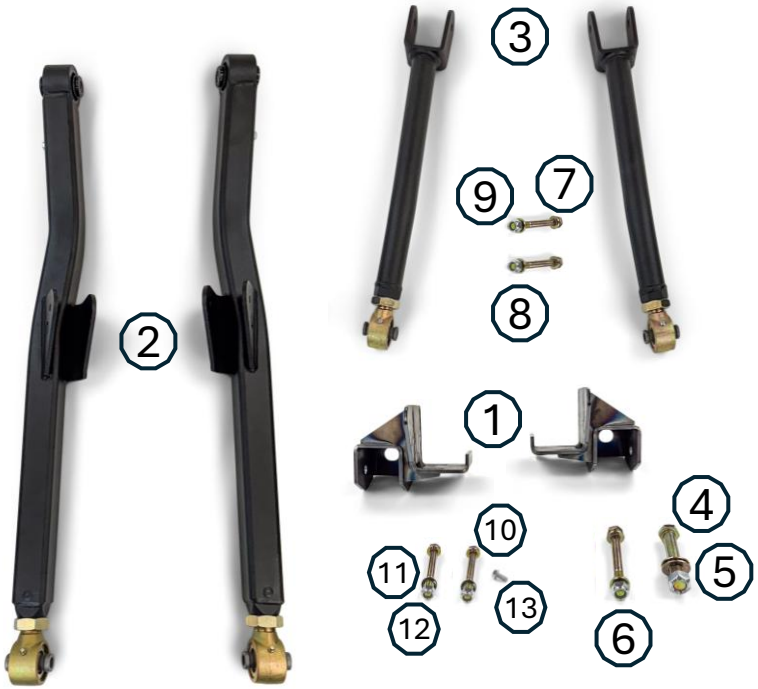
5009201 Jeep Wrangler FRONT Overland+ 3.6 V6 Long Arm Upgrade Kit (2018+, JL/JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	2209100	Jeep Front Left/Right Long Arm Frame Brackets	N/A	1
1	1909010	Jeep Overland+ Long Front Lower Control Arms	N/A	2
1	1709101	Jeep Overland+ Short Front Upper Control Arms	N/A	3
2	18968	5/8″-18 x 4″ Zinc Finish Hex Cap Screw	Grade 8	4
4	33819	5/8″ x 1.312″ OD Zinc Finish Flat Washer	N/A	5
2	37312	5/8″-18 Zinc Finish Top Lock Nut	Grade C	6
2	0128794	M12-1.75 x 80mm Zinc Finish Hex Cap Screw	Class 10.9	7
4	11103710	M12 x 24mm Zinc Finish Flat Washer	Grade HV200	8
2	90683	M12-1.75 DIN 980 Zinc Finish Top Lock Nut	Class 10	9
2	11114711	M12-1.50 x 110mm Zinc Finish Hex Cap Screw	Class 10.9	5
4	11103710	M12-1.5 Zinc Finish Flat Washer	Grade HV200	6
2	0145171	M12-24mm OD Zinc Finish Top Lock Nut	Class 8	7
1	32448	5/16″-18 x ¾″ Hex Unslotted Self-Tapping Screw	N/A	8

Product Notes and Features:

- Weld-on frame brackets made of ¼″ thick steel construction
- Utilizes the factory axle mounting points, no axle modification required
- Reduced suspension angles for a smoother, more controlled ride
- Longer arms to deliver greater articulation and climbing ability
    - **Lower arm dimensions: MIN = $37\frac{1}{16}$ ", MAX = $38\frac{13}{16}$ ", INSTALL = $37\frac{1}{2}$ "**
    - **Upper arm dimensions: MIN = $19\frac{3}{4}$ ", MAX = $21\frac{1}{8}$ ", INSTALL = 20"**
- GIIRO Joint bushings on the lower axle side and at the adjuster for smoother on-road handling, superior off-road articulation, and long-lasting reliability

4809201 - INCLUDED ITEMS

4809201 Jeep Wrangler FRONT Premium 3.6 V6 Long Arm Upgrade Kit (2018+, JL/JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	2209100	Jeep Front Left/Right Long Arm Frame Brackets	N/A	1
1	1909210	Jeep Premium Long Front Lower Control Arms	N/A	2
1	1809101	Jeep Premium Short Front Upper Control Arms	N/A	3
2	18968	5/8″-18 x 4″ Zinc Finish Hex Cap Screw	Grade 8	4
4	33819	5/8″ x 1.312″ OD Zinc Finish Flat Washer	N/A	5
2	37312	5/8″-18 Zinc Finish Top Lock Nut	Grade C	6
2	0128794	M12-1.75 x 80mm Zinc Finish Hex Cap Screw	Class 10.9	7
4	11103710	M12 x 24mm Zinc Finish Flat Washer	Grade HV200	8
2	90683	M12-1.75 DIN 980 Zinc Finish Top Lock Nut	Class 10	9
2	11114711	M12-1.50 x 110mm Zinc Finish Hex Cap Screw	Class 10.9	10
4	11103710	M12-1.5 Zinc Finish Flat Washer	Grade HV200	11
2	0145171	M12-24mm OD Zinc Finish Top Lock Nut	Class 8	12
1	32448	5/16″-18 x ¾″ Hex Unslotted Self-Tapping Screw	N/A	13

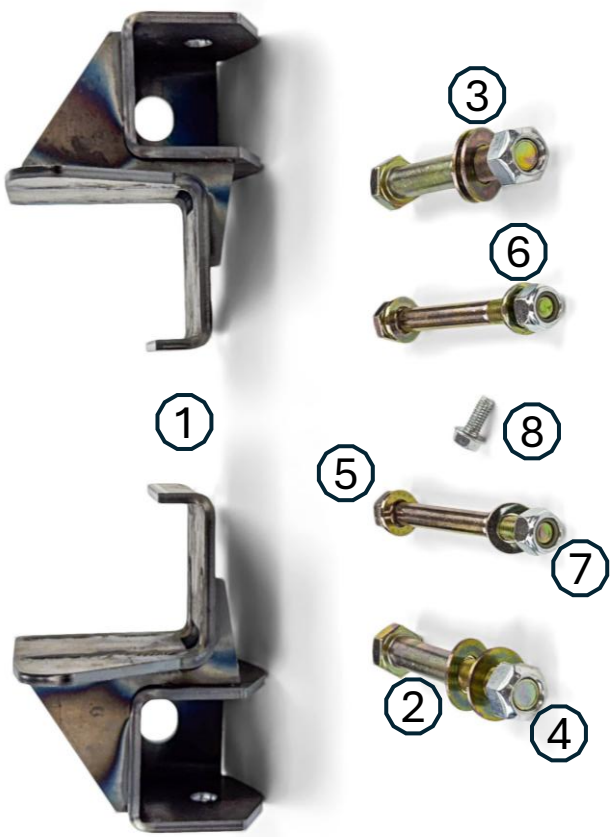


Product Notes and Features:

- Weld-on frame brackets made of ¼″ thick steel construction
- Utilizes the factory axle mounting points, no axle modification required
- Reduced suspension angles for a smoother, more controlled ride
- Longer arms to deliver greater articulation and climbing ability
    - **Lower arm dimensions: MIN = 37 $\frac{1}{4}$ ", MAX = 38 $\frac{3}{16}$ ", INSTALL = 37 $\frac{1}{2}$ "**
    - **Upper arm dimensions: MIN = 19 $\frac{5}{8}$ ", MAX = 22 $\frac{1}{4}$ ", INSTALL = 20 "**
- GIIRO Joint bushings on the axle end and Johnny Joints at the adjusters for superior off-road articulation, maximum versatility, and long-lasting reliability

2209100 - INCLUDED ITEMS

2209100 Jeep Wrangler FRONT Long Arm Frame Brackets (2018+, JL/JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	2209100	Jeep Front Left/Right Long Arm Frame Brackets	N/A	1
2	18968	5/8"-18 x 4" Zinc Finish Hex Cap Screw	Grade 8	2
4	33819	5/8" x 1.312" OD Zinc Finish Flat Washer	N/A	3
2	37312	5/8"-18 Zinc Finish Top Lock Nut	Grade C	4
2	11114711	M12-1.50 x 110mm Zinc Finish Hex Cap Screw	Class 10.9	5
4	11103710	M12-1.5 Zinc Finish Flat Washer	Grade HV200	6
2	0145171	M12-24mm OD Zinc Finish Top Lock Nut	Class 8	7
1	32448	5/16"-18 x ¾" Hex Unslotted Self-Tapping Screw	N/A	8



Product Notes and Features:

The Jeep Wrangler Front Long Arm Frame Brackets (2018+, JL/JT) are designed to relocate the control arm mounting points for a long arm kit upgrade. Built tough and engineered for performance, these brackets are essential for achieving the improved geometry and handling that a long arm kit provides.

- Weld-on frame brackets made of ¼" thick steel construction
- formed using the latest CAD software and manufacturing techniques
- Complete hardware kit included (comes with 5/8" bolts, washers, and nuts)
    - Comes with M12-1.5 x 110mm bolts, washers, and nuts for replacing the outer cross-member bolts if they were not swapped around
- Cutting and welding required
- Control arms not included

1709101 - INCLUDED ITEMS

1709101 Jeep Wrangler Overland+ FRONT Upper Control Arms (2018+, JL/JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	1709101	Jeep Overland+ Short Front Upper Control Arms	N/A	1

Product Notes and Features:

Achieve superior performance and durability with the **Ultimate Jeep Control Arms**, engineered for unmatched comfort and reliability. Designed with meticulous attention to detail, these control arms are built to handle the toughest terrains while delivering a smooth and quiet driving experience.

- Maintenance-free, dual-durometer design isolates road noise and vibration for a quieter ride
- Self-centering with 26.6 degrees of total articulation, ensuring smooth suspension movement
- Heavy-duty DOM tubing for maximum strength and durability
- Foraged adjusters for precise alignment and adjustability
- Bolt-in design resulting in an easy installation with no modifications required
- No hardware included
- **Arm dimensions: MIN = 19 $\frac{3}{4}$ ", MAX = 21 $\frac{1}{8}$ ", INSTALL = 20"**

1809101 - INCLUDED ITEMS

1809101 Jeep Wrangler Premium FRONT Upper Control Arms (2018+, JL/JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	1809101	Jeep Premium Short Front Upper Control Arms	N/A	1

Product Notes and Features:

Achieve superior performance and durability with the **Ultimate Jeep Control Arms**, engineered for unmatched comfort and reliability. Designed with meticulous attention to detail, these control arms are built to handle the toughest terrains while delivering a smooth and quiet driving experience.

- Smooth and quiet performance that isolates road noise and vibration for a quieter ride
- Reliable, greaseable, and rebuildable joints with 40 degrees of misalignment
- Heavy-duty DOM tubing for maximum strength and durability
- Foraged adjusters for precise alignment and adjustability
- Bolt-in design resulting in an easy installation with no modifications required
- No hardware included
- **Arm dimensions: MIN = $19\frac{5}{8}$ ", MAX = $22\frac{1}{4}$ ", INSTALL = 20 "**

1909010 - INCLUDED ITEMS

1909010 Jeep Wrangler Overland+ Long FRONT Lower Control Arms (2018+, JL/JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	1909010	Jeep Overland+ Long Front Lower Control Arms	N/A	1
2	0128794	M12-1.75 x 80mm Zinc Finish Hex Cap Screw	Class 10.9	2
4	11103710	M12 x 24mm Zinc Finish Flat Washer	Grade HV200	3
2	90683	M12-1.75 DIN 980 Zinc Finish Top Lock Nut	Class 10	4

Product Notes and Features:

Achieve superior performance and durability with the **Ultimate Jeep Control Arms**, engineered for unmatched comfort and reliability. Designed with meticulous attention to detail, these control arms are built to handle the toughest terrains while delivering a smooth and quiet driving experience.

- Maintenance-free, dual-durometer design isolates road noise and vibration for a quieter ride
- Self-centering with 26.6 degrees of total articulation, ensuring smooth suspension movement
- Heavy-duty square tubing and DOM housings for maximum strength and durability
- Foraged adjusters for precise alignment and adjustability
- Reduced suspension angles for a smoother, more controlled ride
    - Only tested and confirmed use in conjunction with COR-2209100, Front Long Arm Brackets
- Longer arms to deliver greater articulation and climbing ability
- Radius arm hardware (M12 – 1.75 x 80mm bolts, nuts and washers) included
- **Arm dimensions: MIN = $37\frac{1}{16}$", MAX = $38\frac{13}{16}$", INSTALL = $37\frac{1}{2}$"**

1909210 - INCLUDED ITEMS

1909210 Jeep Wrangler Premium Long FRONT Lower Control Arms (2018+, JL/JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	1909210	Jeep Premium Long Front Lower Control Arms	N/A	1
2	0128794	M12-1.75 x 80mm Zinc Finish Hex Cap Screw	Class 10.9	2
4	11103710	M12 x 24mm Zinc Finish Flat Washer	Grade HV200	3
2	90683	M12-1.75 DIN 980 Zinc Finish Top Lock Nut	Class 10	4

Product Notes and Features:

Achieve superior performance and durability with the **Ultimate Jeep Control Arms**, engineered for unmatched comfort and reliability. Designed with meticulous attention to detail, these control arms are built to handle the toughest terrains while delivering a smooth and quiet driving experience.

- Smooth and quiet performance that isolates road noise and vibration for a quieter ride
- Reliable, greaseable, and rebuildable joints with 40 degrees of misalignment
- Heavy-duty square tubing and DOM housings for maximum strength and durability
- Foraged adjusters for precise alignment and adjustability
- Reduced suspension angles for a smoother, more controlled ride
    - Only tested and confirmed use in conjunction with COR-2209100, Front Long Arm Brackets
- Longer arms to deliver greater articulation and climbing ability
- Radius arm hardware (M12 – 1.75 x 80mm bolts, nuts and washers) included
- **Arm dimensions: MIN = 37 $\frac{1}{4}$", MAX = 38 $\frac{3}{16}$", INSTALL = 37 $\frac{1}{2}$"**

REAR SUSPENSION COMPONENTS

*****Please review the part numbers you have purchased to familiarize yourself with the product(s)*****

5010210 - INCLUDED ITEMS

5010210 Jeep Gladiator REAR Overland+ Long Arm Upgrade Kit (2020+, JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	2210200	Gladiator Rear Left/Right Long Arm Frame Brackets	N/A	1
1	1910020	Gladiator Overland+ Long Rear Lower Control Arms	N/A	2
1	1910030	Gladiator Overland+ Long Rear Upper Control Arms	N/A	3
4	18968	5/8"-18 x 4" Yellow Zinc Finish Hex Cap Screw	Grade 8	4
8	33819	5/8" x 1.312" Yellow Zinc Finish Steel Flat Washer	Thru-Hardened	5
4	37312	5/8"-18 Zinc Finish Steel Top Lock Nut	Grade C	6

Product Notes and Features:

Achieve superior performance and durability with the **Ultimate Jeep Control Arms**, engineered for unmatched comfort and reliability. Designed with meticulous attention to detail, these control arms are built to handle the toughest terrains while delivering a smooth and quiet driving experience.

- Weld-on frame brackets made of ¼" thick steel construction
- Utilizes the factory axle mounting points, no axle modification required
- Reduced suspension angles for a smoother, more controlled ride
- Longer arms to deliver greater articulation and climbing ability
    - **Lower arm dimensions: MIN = 35 $\frac{5}{8}$ ", MAX = 37 $\frac{1}{4}$ ", INSTALL = 36"**
    - **Upper arm dimensions: MIN = 32 $\frac{1}{4}$ ", MAX = 33 $\frac{3}{4}$ ", INSTALL = 32 $\frac{5}{8}$ "**
- GIIRO Joint bushings on the axle and adjusters for smoother on-road handling, superior off-road articulation, and long-lasting reliability

4810210 - INCLUDED ITEMS

4810210 Jeep Gladiator REAR Premium Long Arm Upgrade Kit (2020+, JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	2210200	Gladiator Rear Left/Right Long Arm Frame Brackets	N/A	1
1	1910220	Gladiator Premium Long Rear Lower Control Arms	N/A	2
1	1910230	Gladiator Premium Long Rear Upper Control Arms	N/A	3
4	18968	5/8"-18 x 4" Yellow Zinc Finish Hex Cap Screw	Grade 8	4
8	33819	5/8" x 1.312" Yellow Zinc Finish Steel Flat Washer	Thru-Hardened	5
4	37312	5/8"-18 Zinc Finish Steel Top Lock Nut	Grade C	6

Product Notes and Features:

Achieve superior performance and durability with the **Ultimate Jeep Control Arms**, engineered for unmatched comfort and reliability. Designed with meticulous attention to detail, these control arms are built to handle the toughest terrains while delivering a smooth and quiet driving experience.

- Weld-on frame brackets made of ¼" thick steel construction
- Utilizes the factory axle mounting points, no axle modification required
- Reduced suspension angles for a smoother, more controlled ride
- Longer arms to deliver greater articulation and climbing ability
  - **Lower arm dimensions: MIN = 35 $\frac{15}{16}$", MAX = 36 $\frac{7}{8}$", INSTALL = 36"**
  - **Upper arm dimensions: MIN = 32 $\frac{1}{2}$", MAX = 33 $\frac{13}{16}$", INSTALL = 32 $\frac{5}{8}$"**
- GIIRO Joint bushings on the axle end and Johnny Joints at the adjusters for superior off-road articulation, maximum versatility, and long-lasting reliability

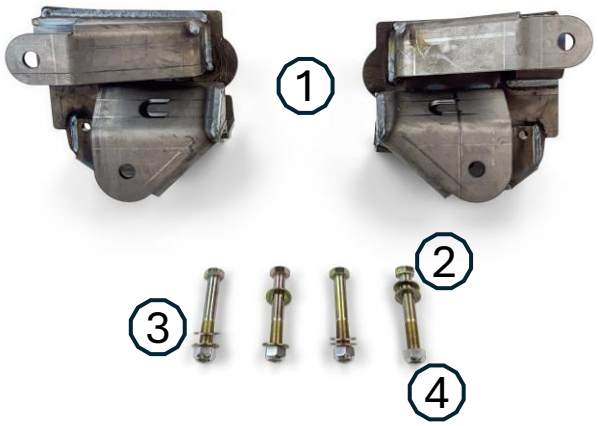
2210200 - INCLUDED ITEMS

2210200 Jeep Gladiator REAR Long Arm Frame Brackets (2020+, JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	2210200	Gladiator Rear Left/Right Long Arm Frame Brackets	N/A	1
4	18968	5/8"-18 x 4" Yellow Zinc Finish Hex Cap Screw	Grade 8	2
8	33819	5/8" x 1.312" Yellow Zinc Finish Steel Flat Washer	Thru-Hardened	3
4	37312	5/8"-18 Zinc Finish Steel Top Lock Nut	Grade C	4

Product Notes and Features:

The Jeep Wrangler Rear Long Arm Frame Brackets (2018+, JL) are designed to relocate the control arm mounting points for a long arm kit upgrade. Built tough and engineered for performance, these brackets are essential for achieving the improved geometry and handling that a long arm kit provides.

- Weld-on frame brackets made of ¼" thick steel construction
- formed using the latest CAD software and manufacturing techniques
- Complete hardware kit included (comes with 5/8" bolts, washers, and nuts)
- Cutting and welding required
- Control arms not included



1910030 - INCLUDED ITEMS

1910030 Jeep Gladiator Overland+ REAR Long Upper Control Arms (2020+, JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	1910030	Gladiator Overland+ Long Rear Upper Control Arms	N/A	1

Product Notes and Features:

Achieve superior performance and durability with the **Ultimate Jeep Control Arms**, engineered for unmatched comfort and reliability. Designed with meticulous attention to detail, these control arms are built to handle the toughest terrains while delivering a smooth and quiet driving experience.

- Maintenance-free, dual-durometer design isolates road noise and vibration for a quieter ride
- Self-centering with 26.6 degrees of total articulation, ensuring smooth suspension movement
- Heavy-duty DOM tubing and housings for maximum strength and durability
- Foraged adjusters for precise alignment and adjustability
- Reduced suspension angles for a smoother, more controlled ride
    - Only tested and confirmed use in conjunction with COR-2210200, Rear Long Arm Brackets
- Longer arms to deliver greater articulation and climbing ability
- No hardware included
- **Arm dimensions: MIN = 32 $\frac{1}{4}$ ", MAX = 33 $\frac{3}{4}$ ", INSTALL = 32 $\frac{5}{8}$ "**

1910230 - INCLUDED ITEMS

1910230 Jeep Gladiator Premium REAR Long Upper Control Arms (2020+, JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	1910230	Gladiator Premium Long Rear Upper Control Arms	N/A	1

Product Notes and Features:

Achieve superior performance and durability with the **Ultimate Jeep Control Arms**, engineered for unmatched comfort and reliability. Designed with meticulous attention to detail, these control arms are built to handle the toughest terrains while delivering a smooth and quiet driving experience.

- Smooth and quiet performance that isolates road noise and vibration for a quieter ride
- Reliable, greaseable, and rebuildable joints with 40 degrees of misalignment
- Heavy-duty DOM tubing and housings for maximum strength and durability
- Foraged adjusters for precise alignment and adjustability
- Reduced suspension angles for a smoother, more controlled ride
    - Only tested and confirmed use in conjunction with COR-2210200, Rear Long Arm Brackets
- Longer arms to deliver greater articulation and climbing ability
- No hardware included
- **Arm dimensions: MIN = 32 $\frac{1}{2}$ ", MAX = 33 $\frac{13}{16}$ ", INSTALL = 32 $\frac{5}{8}$ "**

1910020 - INCLUDED ITEMS

1901020 Jeep Gladiator Overland+ REAR Long Lower Control Arms (2020+, JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	1910020	Gladiator Overland+ Long Rear Upper Control Arms	N/A	1

Product Notes and Features:

Achieve superior performance and durability with the **Ultimate Jeep Control Arms**, engineered for unmatched comfort and reliability. Designed with meticulous attention to detail, these control arms are built to handle the toughest terrains while delivering a smooth and quiet driving experience.

- Maintenance-free, dual-durometer design isolates road noise and vibration for a quieter ride
- Self-centering with 26.6 degrees of total articulation, ensuring smooth suspension movement
- Heavy-duty square tubing and DOM housings for maximum strength and durability
- Foraged adjusters for precise alignment and adjustability
- Reduced suspension angles for a smoother, more controlled ride
    - Only tested and confirmed use in conjunction with COR-2210200, Rear Long Arm Brackets
- Longer arms to deliver greater articulation and climbing ability
- No hardware included
- **Arm dimensions: MIN = 35 $\frac{5}{8}$ ", MAX = 37 $\frac{1}{4}$ ", INSTALL = 36"**

1910220 - INCLUDED ITEMS

1910220 Jeep Gladiator Premium REAR Lower Control Arms (2020+, JT)				
QTY	Part Number	Description	Class/Grade	ID Number
1	1910220	Gladiator Premium Long Rear Upper Control Arms	N/A	1

Product Notes and Features:

Achieve superior performance and durability with the **Ultimate Jeep Control Arms**, engineered for unmatched comfort and reliability. Designed with meticulous attention to detail, these control arms are built to handle the toughest terrains while delivering a smooth and quiet driving experience.

- Smooth and quiet performance that isolates road noise and vibration for a quieter ride
- Reliable, greaseable, and rebuildable joints with 40 degrees of misalignment
- Heavy-duty square tubing and DOM housings for maximum strength and durability
- Foraged adjusters for precise alignment and adjustability
- Reduced suspension angles for a smoother, more controlled ride
    - Only tested and confirmed use in conjunction with COR-2210200, Rear Long Arm Brackets
- Longer arms to deliver greater articulation and climbing ability
- No hardware included
- **Arm dimensions: MIN = 35 $\frac{15}{16}$ ", MAX = 36 $\frac{7}{8}$ ", INSTALL = 36"**

INSTALLATION INSTRUCTIONS

*****Take this product to a licensed professional if you are hesitant about the installation process!*****

The following instructions are applicable to the listed components below:

- 5009201 / 4809201
- 2209100
- 1709101 / 1809101
- 1909010 / 1909210

The following instructions provide a complete guide for installing a full front upgrade kit, compatible with 3.6L V6 JL/JT, and the 3.0L V6 Eco-Diesel JT

*****The following steps apply to both 3.0 and 3.6 V6 vehicles, unless noted otherwise*****

If you purchased single arm sets, individual brackets, or an incomplete kit, your installation process may vary.

We strongly recommend having basic mechanic's hand tools, sockets, wrenches, vehicle jacks and stands, and other common tools readily available. Installing an aftermarket lift kit is a detailed process, and having the right tools on hand will ensure a smoother installation.

As always, feel free to contact us at any point during your installation – you can count on us to help!

INSTALLATION INSTRUCTIONS

TOOLS REQUIRED FOR INSTALLATION

- *Basic hand tools*
- *Metric wrench/socket set* *(10mm - 24mm)*
- *Standard wrench/socket set* *(7/16", 1/2", 15/16")*
- *MIG welder*
- *Cut-off wheel or plasma cutter*
- *Large box wrenches* *(1-1/2", 1-7/8")*
- *Jack stands and/or vehicle lift*

1. Position the vehicle either on the ground or on a lift. For this installation, it is recommended that the vehicle be supported by the frame. Support the front axle with an additional jack stand. Remove the front tires and disconnect the battery before welding.

*****Photos of control arm adjusters in the following photos may not match your selected series, but the installation remains the same!*****

Figure 1: Vehicle on four-post lift

INSTALLATION INSTRUCTIONS

2. If adjustable control arms are currently installed, loosen the jam nuts while the arms are still installed. Before installing the control arm brackets, please make sure the following pre-installation checklist is completed.

PRE-INSTALLATION CHECKLIST

- ❑ Remove the plastic fuel-line shield on the passenger side ***3.6 V6 ONLY*** (Figure 2)
- ❑ Cut off the stud on the frame for the gas tank shield (Figure 2)
- ❑ Remove the cross-member bolts and swap them around (Figure 3)
- ❑ Remove the exhaust section at the flange near the front, and the coupling before the resonator in the rear ***3.6 V6 ONLY*** (Figure 4)
- ❑ Remove the transmission guard

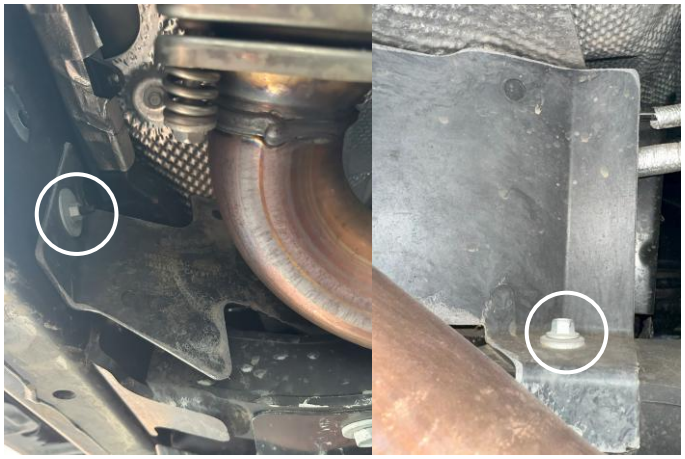


Figure 2: Fuel-line shield bolts (passenger side)

Figure 4: Exhaust section flanges and clamps

Figure 3: Cross-member bolts flipped around

INSTALLATION INSTRUCTIONS

2b. **3.0L DIESEL NOTE:** Temporary removal of the catalytic converter section of the diesel exhaust system is required for this installation, as it will provide greater room to work and to weld. Follow the checklist below to remove this component. **Take caution and try not to strain the ported sensors on the section. Retain all hardware.**

EXHAUST SECTION REMOVAL: 3.0L DIESEL ONLY

- ❑ Unbolt the x3 nuts holding the exhaust flange at the rear section (Figure 4a)
- ❑ Unbolt the v-clamp at the top of the exhaust section (Figure 4b)
- ❑ Remove the x2 bolts at the flange next to the main exhaust tube (Figure 4c)
- ❑ Unbolt the x1 exhaust hanger bolt (Figure 4d) **This bolt may be seized. Use penetrant, heat, and patience. For your convenience, the Mopar part number is 68524153aa if you need to order a new one.**
- ❑ **Proceed to step 2c for more removal items**

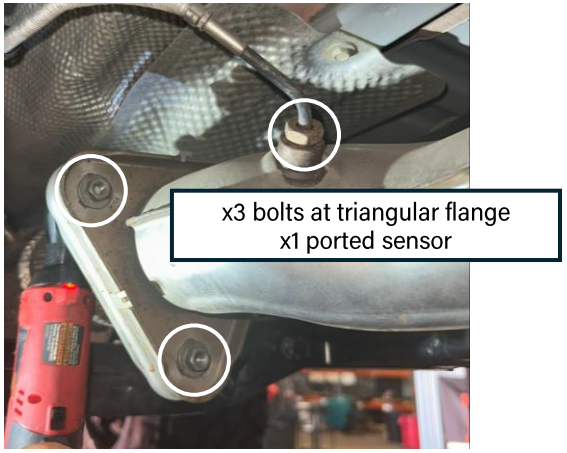


Figure 4a: Flange to be removed and sensor

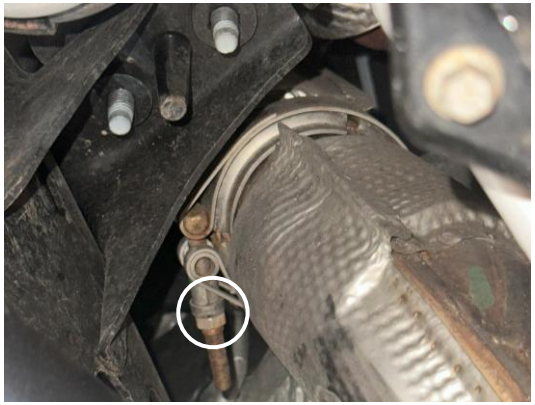


Figure 4b: V-clamp to be removed (x1 nut)

Figure 4c: Flange to be removed (x2 bolts)

Figure 4d: Flange to be removed (x2 bolts)

INSTALLATION INSTRUCTIONS

2c. **3.0L DIESEL NOTE:** Continue to the checklist below to complete the catalytic converter removal.

CATALYTIC CONVERTER REMOVAL CONTINUED: 3.0L DIESEL ONLY

- ❑ Remove the small, 8mm nut at the port hose retaining clip (Figure 4e)
- ❑ Unbolt and remove the x2 long bolts at the front hanger mount (Figure 4f)
- ❑ Unbolt the nut at the front hanger (Figure 4g)
- ❑ Gently wiggle the entire section and remove it free from its mounts to gain clearance to remove the ports (Step 2d)

Figure 4e: Small retaining clip

Figure 4f: Front hanger removal

Figure 4g: Hanger nut to be removed

INSTALLATION INSTRUCTIONS

2d. **3.0L DIESEL NOTE:** With hangers and the exhaust clamps loosened and/or removed, you may now remove the converter's ported sensors. These sensors have very little play, so take caution and make sure you are not straining any wires. Remove all three sensors in the front section at this time and slowly bring down the entire exhaust section. Double-check to make sure the single port at the front is also removed before trying to drop the section completely.

The ports may be challenging to get to, but take your time and maneuver the section around as carefully as possible. Use a normal box wrench to crack the fitting loose, and then finish the fitting by hand if it provides more clearance.

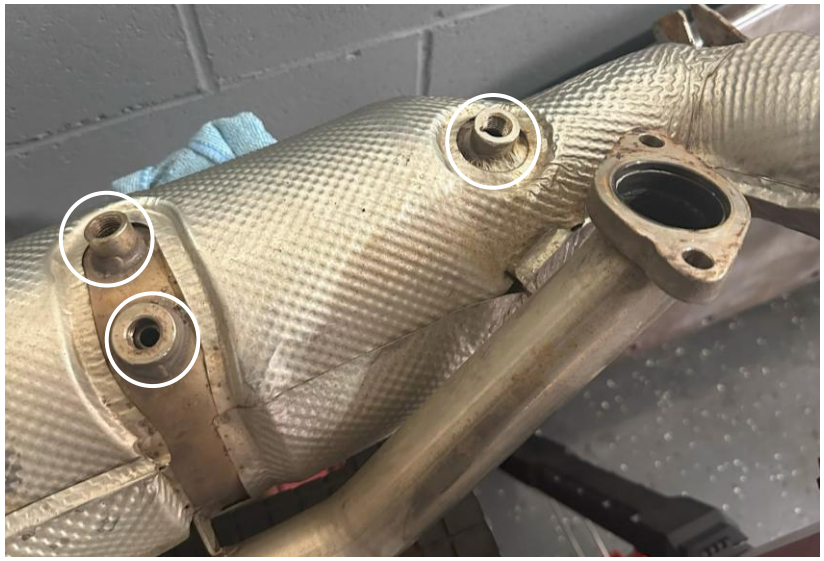


Figure 4h: x3 ports at front of section

Figure 4i: x1 port at rear of section

INSTALLATION INSTRUCTIONS

2e. **3.0L DIESEL NOTE:** Diesel models come equipped with a sensor mounted on the front passenger side frame rail. The sensor is mounted by two studs. Remove the x2 nuts holding the sensor, and grind/cut off the studs from the frame. Then, grind the surface completely flat. **Retain the heat shield, as it will be reused. This is necessary to make room for the new frame brackets.**

Gently unclip the grey sensor lock at the top of the clip and then push down on the connection to disconnect. Keep the sensor and plug away from the work area for now. Clayton Off Road supplies a self-tapping bolt to re-mount the sensor and the heat shield, but this will be done in a future step.

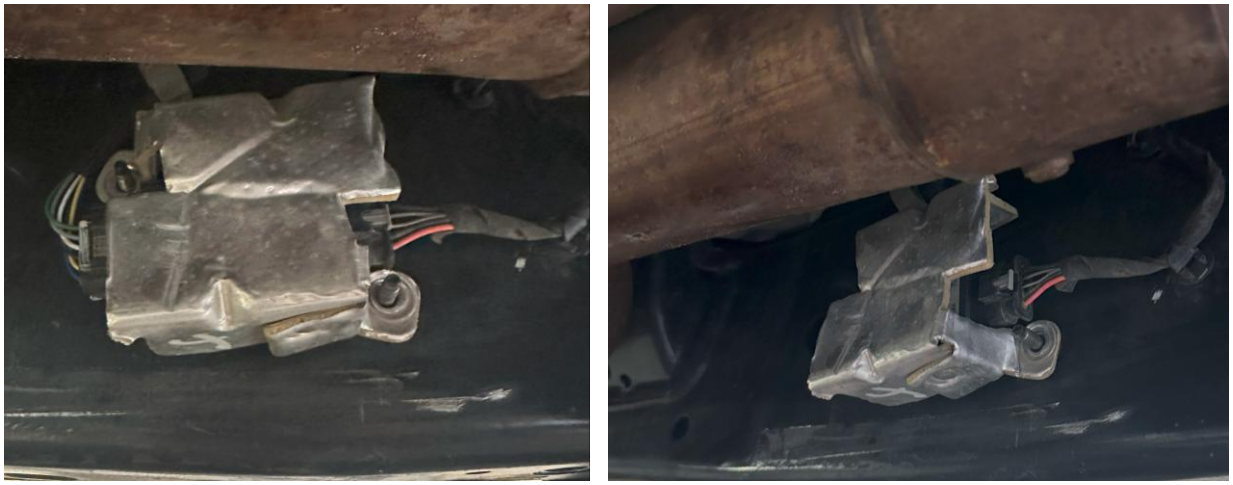


Figure 4j: Sensor to be removed off frame

INSTALLATION INSTRUCTIONS

3. Remove both front lower control arms and begin cutting off the lower control arm brackets from the frame. It is recommended to cut the bracket just below the weld and then grind the weld flat. Complete this step for both sides. See Figure 5 for the front lower control arm bracket on the passenger side of the vehicle (highlighted in blue).

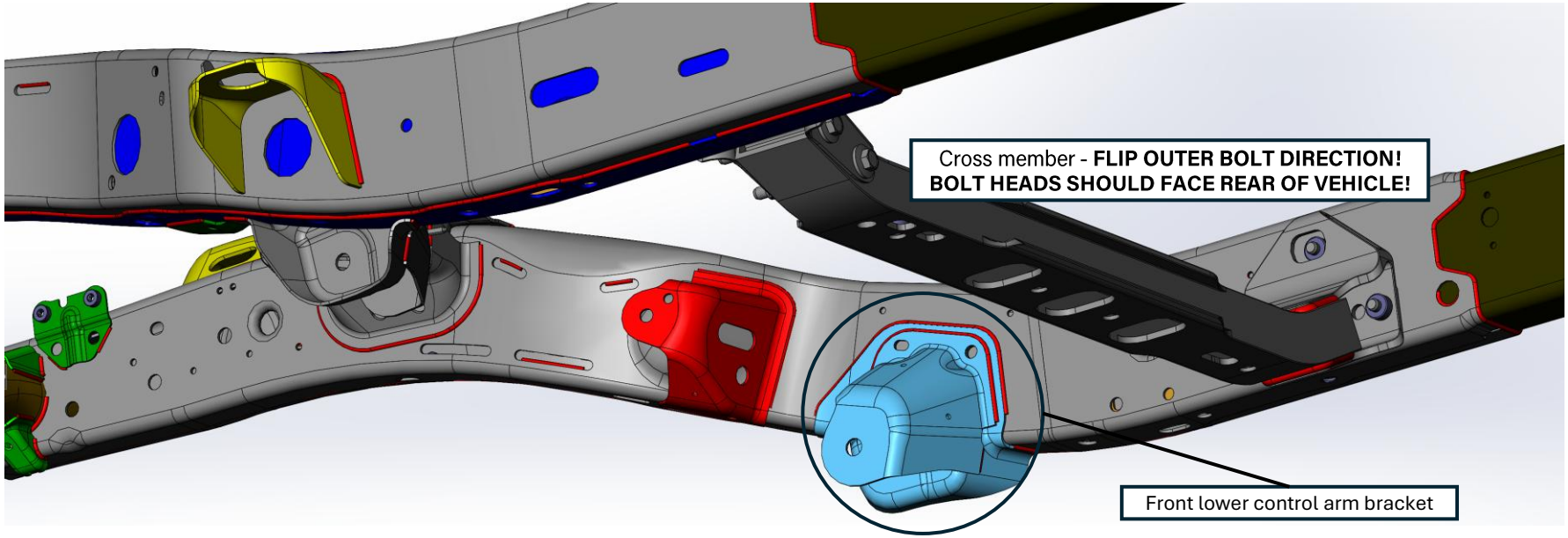


Figure 5: CAD model of original front upper and lower control arm bracket locations

INSTALLATION INSTRUCTIONS

4. Removal of the front upper control arm brackets might not be necessary depending on various suspension setup factors such as lift height, bump stops, and shocks. For a clean and finished look, remove the bracket as it won't be reused.

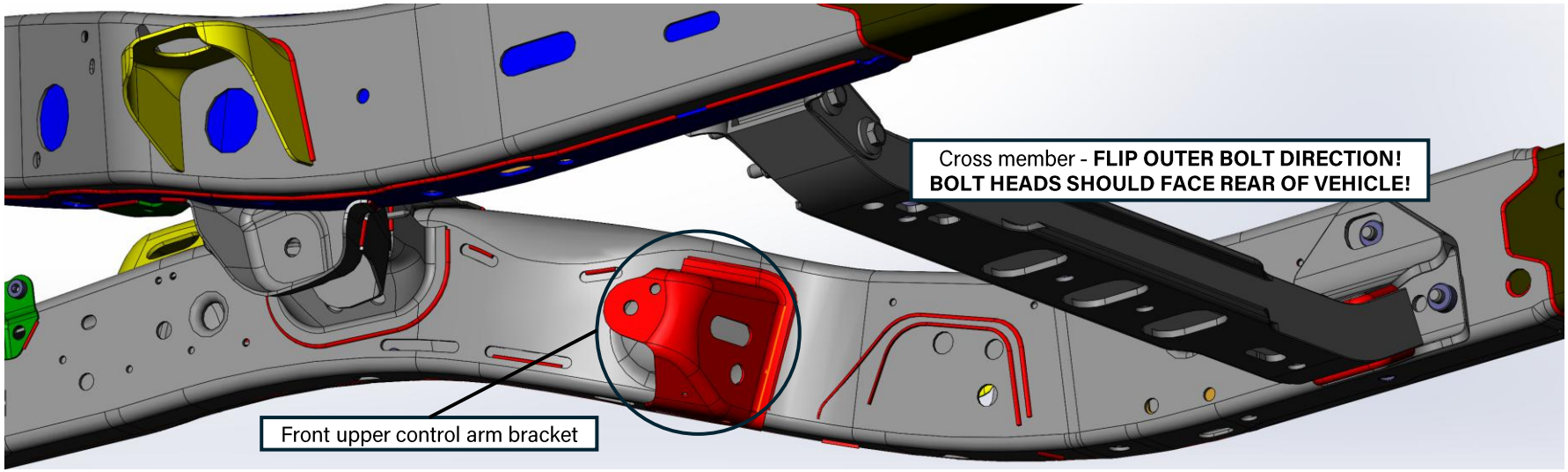


Figure 6: CAD model of original front upper control arm bracket location (front lower bracket already removed)

NOTE: At full flex, the upper radius arm on aggressive suspension setups (taller lifts with longer travel) may rub against this bracket, so removing it is the worry-free option.

INSTALLATION INSTRUCTIONS

5. Once the control arm brackets are cut off and the welds are ground flat, prepare the area for welding. Remove any paint and clean the bare metal surface.

Position the lower control arm brackets on the frame rail. Using the slotted hole on the frame, **measure back 3/16" and slide the bracket over the rail at this location. Mark this location with a sharp tool. <u>Make sure that the cross member bolt head is on the opposite side of the cross member.</u>**

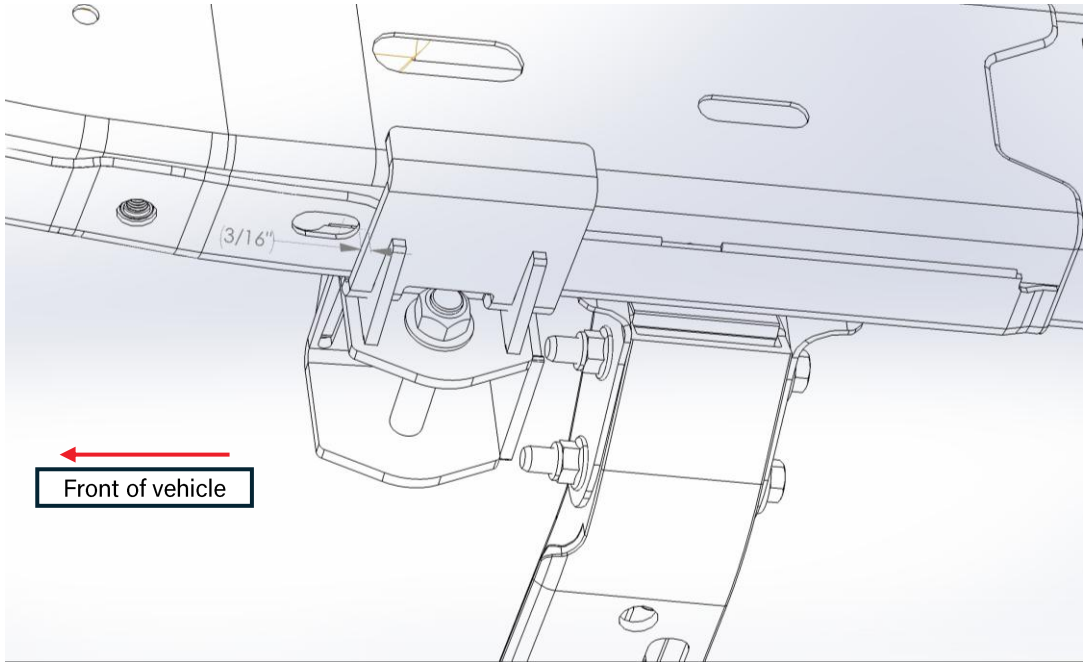


Figure 7: CAD model of bracket installed over frame rail (driver side)

INSTALLATION INSTRUCTIONS

6. Secure the brackets so that they sit flush on the frame rail by using a mallet or dead-blow hammer. Before welding, confirm that the bracket sits 3/16″ behind the slot in the frame.

Weld completely around the entire outside edge of the frame rail bracket. Be mindful of the coolant and brake lines when welding on the brackets. Unclip and move them out of the way or shield them using a piece of scrap metal.

Figure 8: Bracket welded along edge to frame rail and area painted black

NOTE: Hardware should be installed with the bolt head facing out (as pictured above), otherwise, the bolt will not be able to be removed due to the exhaust resonator being in the way.

INSTALLATION INSTRUCTIONS

6b. **3.0L DIESEL NOTE:** With the front long arm brackets installed, re-mount the sensor using the supplied self-tapping bolt (supplied in box with control arm frame brackets).

Tear or cut the heat shield as seen below, and mount the sensor with the single self-tapping screw into the existing hole in the frame. Also make sure that the sensor is plugged back in, and the clip-lock is pushed in.

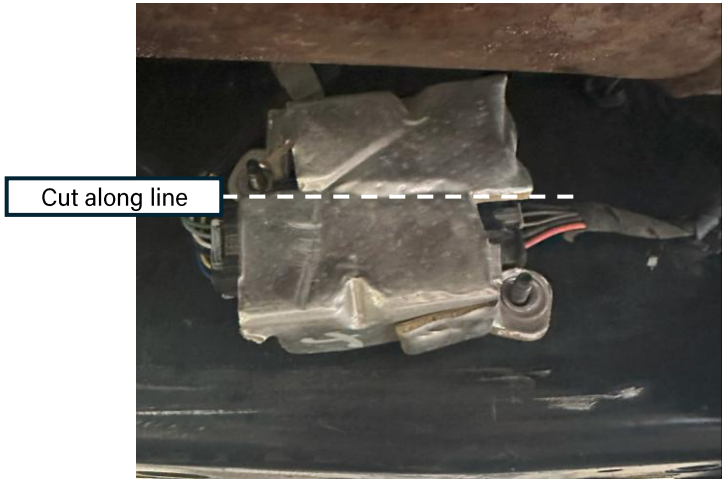


Figure 8b: Heat shield modification

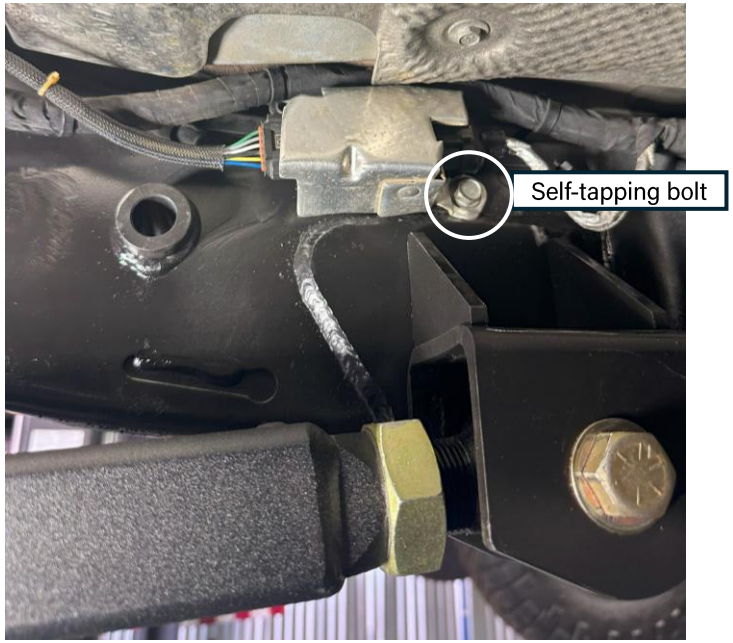


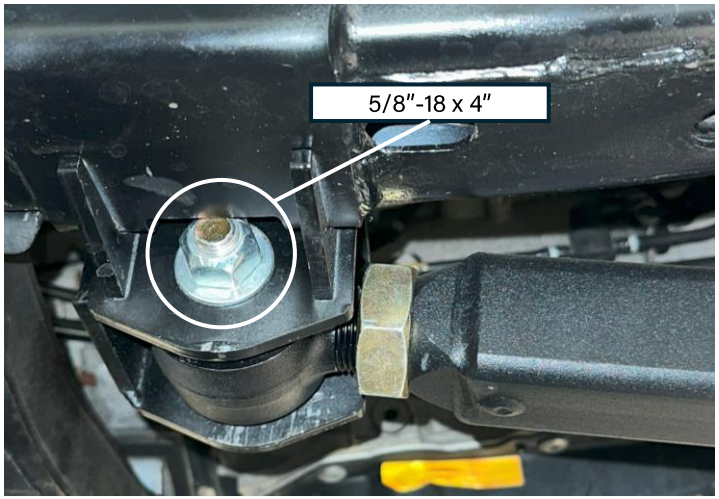
Figure 8c: Sensor relocated with modified heat shield

INSTALLATION INSTRUCTIONS

7. Install one lower control arm. The lower arms set the wheelbase of the axle. Set their length to the install length found at the beginning of this document. Ensure they are both the **same length.** Put the arms side by side and run a bolt through both ends to ensure they are equal in length.

Reuse the original hardware from the previous lower control arms on the axle. Use the supplied 5/8"-18 x 4" bolts along with washers and top lock nuts for the frame bolts.

Next, loosely install the short upper control arm using the supplied M12-1.75 x 80mm bolt, washers, and hardware at the radius linkage "C" mount. Set their length to the install length found at the beginning of this document. Reuse the original hardware for the upper control arm mount to the axle.



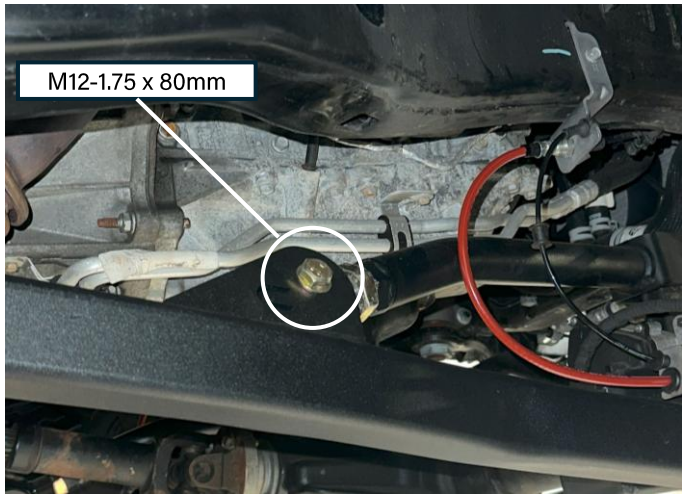


Figure 9: Frame bracket with lower arm (adjuster end) installed using supplied hardware

NOTE: Make sure that both upper and lower arm adjusters are positioned on the frame side, and that the upper arm mount is angled inward.

INSTALLATION INSTRUCTIONS

8. Install the other lower control arm (same length as the first side) using supplied and original hardware. **Leave this side's upper control arm out for now.** Visually check the wheelbase positioning by comparing the axle and frame coil buckets and shock positioning. Adjust the wheelbase length as needed by threading in/out **both lower control arm adjusters equally.**

Next, set the vehicle at ride height. Reinstall this side's tire and use a jack stand to support the other end. To set the pinion and caster angle:

- Support the pinion with a car jack
- Remove the upper control arm bolt at the "C" mount
- Use the jack to set the desired caster and pinion angle (use a digital angle finder). We recommend 5.5°-6°
- Lengthen or shorten the upper control arm adjuster to achieve the desired angle and tighten
- Installing the other upper control arm on the other side to fit, without touching the jack. **The upper control arms do not need to be the same length and can vary slightly!**

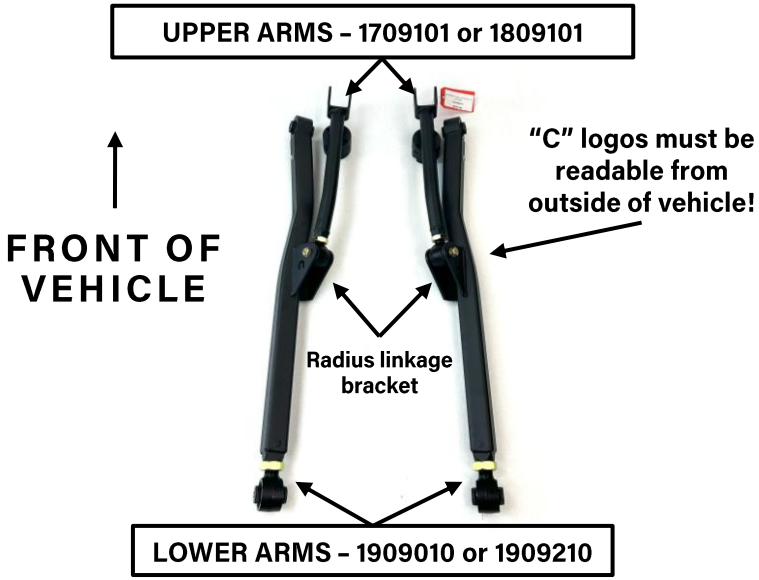


Figure 10: Passenger side lower and upper control arms installed

INSTALLATION INSTRUCTIONS

9. Torque all hardware. Refer to the table below for helpful torque specifications. It is recommended to retorque all bolts after the first 500 miles of driving.

Table 1: COR FRONT Long Arm Torque Specifications

Bolt Location	Wrench Size	Torque (ft-lbs)
Upper Control Arm Radius Link Bolt (M12-1.75 x 80mm)	19mm	80
Upper Control Arm Axle Bolt (Factory Size)	18mm	80
Lower Control Arm Frame Bolt (5/8”-18 x 4”)	15/16”	180
Lower Control Arm Axle Bolt (Factory Size)	21 and 24mm	180

INSTALLATION INSTRUCTIONS

10. Tighten down the jam nuts on the upper and lower control arms. Use a 1–7/8" wrench for the lower control arm jam nuts, and a 1-1/2" wrench for the upper control arm jam nuts. Use a breaker bar to gain additional leverage. Tighten all jam nuts down as tight as humanly possible.

Please note that not all wrenches are created with the same tolerances. If your wrenches are too loose around the jam nut, Clayton Off Road offers tight, wrap-around wrenches for purchase. Please search for the wrenches using the SKUs below.

Figure 11: COR Wrench-ends for control arm jam nuts (COR-2500125, COR-2500100)

INSTALLATION INSTRUCTIONS

11. Once the frame and brackets are painted, reinstall the exhaust and cross-member (if it was removed). Please follow the post-installation checklist to complete the installation. As always, feel free to contact us with any questions you may have about the installation.

POST-INSTALLATION CHECKLIST:

- ❑ Frame brackets are properly welded entirely to the frame
- ❑ The work area is fully painted
- ❑ Exhaust is reinstalled completely
- ❑ Coolant/brake lines are put back into place and are not damaged
- ❑ All hardware is torqued to specification (see Step 9)
- ❑ Control arm jam nuts are as tight as possible
- ❑ Lug nuts are torqued to the manufacturer's specification
- ❑ A licensed shop has professionally aligned the vehicle
- ❑ Retorque all hardware after 500 miles of driving

CLAYTON OFF ROAD

INSTALLATION INSTRUCTIONS

*****Take this product to a licensed professional if you are hesitant about the installation process!*****

The following instructions are applicable to the listed components below:

- 5010210 / 4810210
- 2210200
- 1910030 / 1910230
- 1910020 / 1910220

The following instructions provide a complete guide for installing a full rear upgrade kit, compatible with 3.6L V6, and the 3.0L V6 Eco-Diesel JT

*****The following steps apply to both 3.0 and 3.6 V6 vehicles, unless noted otherwise*****

If you purchased single arm sets, individual brackets, or an incomplete kit, your installation process may vary.

We strongly recommend having basic mechanic's hand tools, sockets, wrenches, vehicle jacks and stands, and other common tools readily available. Installing an aftermarket lift kit is a detailed process, and having the right tools on hand will ensure a smoother installation.

As always, feel free to contact us at any point during your installation – you can count on us to help!

INSTALLATION INSTRUCTIONS

TOOLS REQUIRED FOR INSTALLATION

- *Basic hand tools*
- *Metric wrench/socket set* *(10mm - 24mm)*
- *Standard wrench/socket set* *(15/16")*
- *Large box wrenches* *(1 - 1/2", 1 - 7/8")*
- *Jack stands and/or vehicle lift*
- *MIG welder*
- *Cut-off wheel or plasma cutter*

12. Position the vehicle either on the ground or on a lift. For this installation, it is recommended that the vehicle be supported by the frame. Support the rear axle with an additional jack stand. Remove the rear tires and disconnect the battery before welding.

*****Photos of control arm adjusters in the following photos may not match your selected series, but the installation remains the same!*****

Figure 12: Installation photo

INSTALLATION INSTRUCTIONS

13. Follow the pre-installation checklist below to ensure a smooth installation process. These steps are designed to simplify the later stages of the installation and create proper clearance for welding the frame brackets during the long-arm upgrade.

PRE-INSTALLATION CHECKLIST

- ❑ Remove the plastic fuel-line shield on the passenger side (Figure 13). If you have already installed the Front Long Arm Upgrade Kit, this shield will not be present. It will not be reused once the upgrade kit is installed
- ❑ Remove the rear exhaust section at the clamps near the muffler and the cross member (Figure 14) and fully remove the section

***3.6 V6 JL ONLY*. If installing the rear upgrade kit on a 3.0L Diesel, you will not need to remove any rear exhaust sections.**

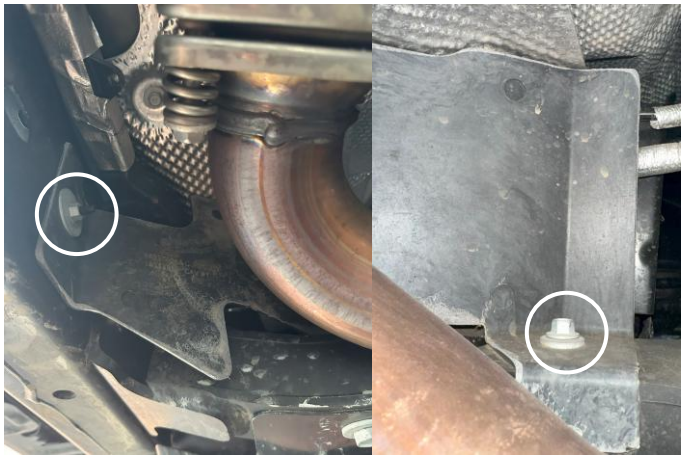


Figure 13: Fuel-line shield bolts (passenger side)

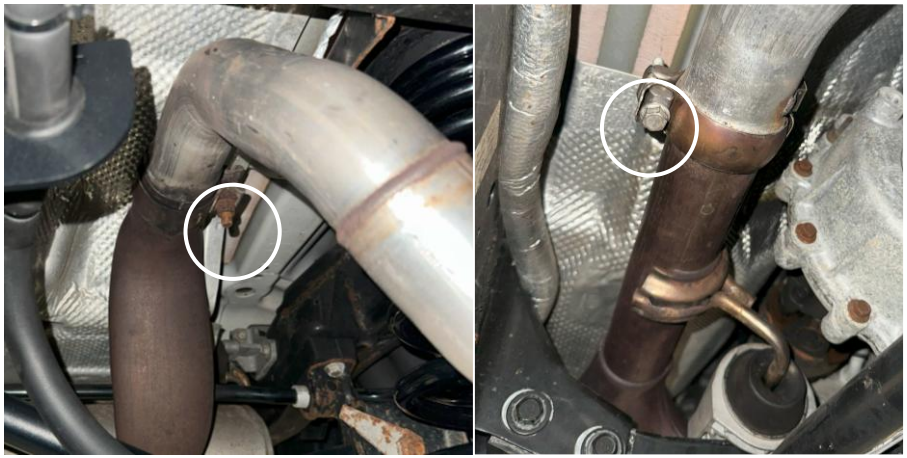


Figure 14: Rear exhaust section clamps to be removed (3.6 V6 JT)

INSTALLATION INSTRUCTIONS

14. If adjustable control arms are currently installed, loosen the jam nuts while the arms are still installed. The gas tank will need to be removed to install the driver's side control arm bracket. We recommend draining the gas tank to less than ¼ empty before removing it. **Support the gas tank with two additional jack stands** before continuing in this installation.

Follow steps 14 – 18 for regular fuel tanks, and steps 19-25 for diesel tanks.

GAS TANK REMOVAL – REGULAR GAS TANK

- ❑ Remove the transfer case skid plate using the socket sizes noted if it is not removed already (Figure 15)
- ❑ Remove the (6) bolts holding the gas tank in place and **slowly lower the tank 3-4 inches using the supporting jack stands**.

  You'll find 3 bolts on the frame rail, 1 on the front cross member, and 2 on the side closest to the driveshaft (Figure 16)

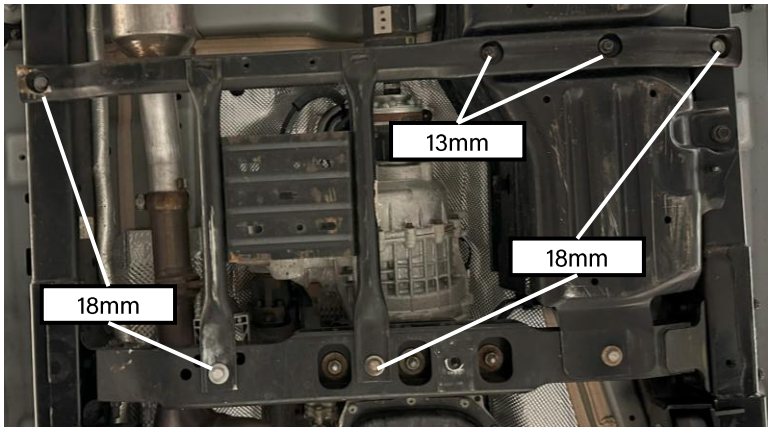


Figure 15: Transfer case skid plate bolts to remove

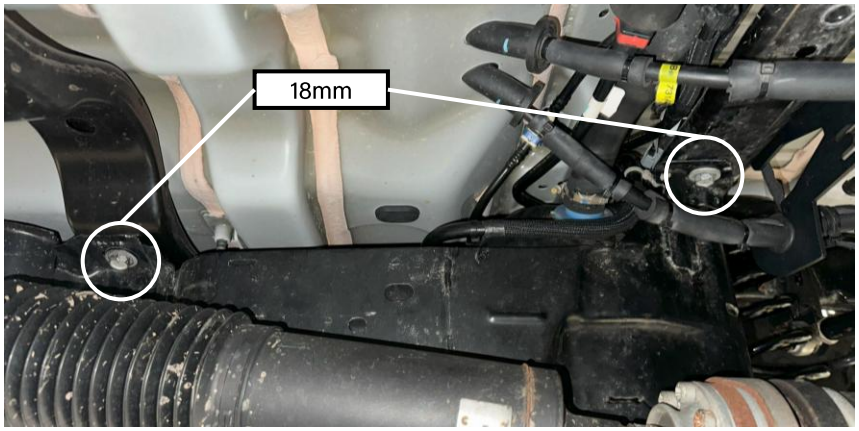


Figure 16: (2 of 6) gas tank bolts

INSTALLATION INSTRUCTIONS

15. With the gas tank bolts removed, support the tank and lower it by 3-4 inches. The following checklist needs to be completed to fully drop the tank out from under the vehicle. The tank has many lines that all need to be disconnected before the tank is fully dropped. **Take care in disconnecting these lines at the clips, because they are very fragile. KEEP ALL CLIPS.**

GAS TANK REMOVAL – REGULAR GAS TANK – REAR FUEL CONNECTIONS

- ❑ Loosen the filler neck clamp and slip it off the tube (Figure 17) using a 7mm socket or wrench
- ❑ Remove the filler breather by removing the blue, plastic retaining clip and gently pushing down on the spring clip on the opposite side (Figure 18)
- ❑ Remove the vapor system hose clip by removing the red, plastic retaining clip and gently pushing down on the spring clip on the opposite side (Figure 19)

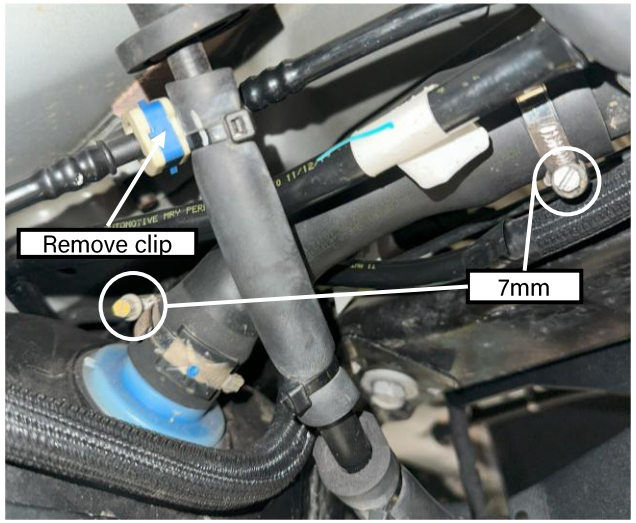


Figure 17: Gas filler neck to be loosened

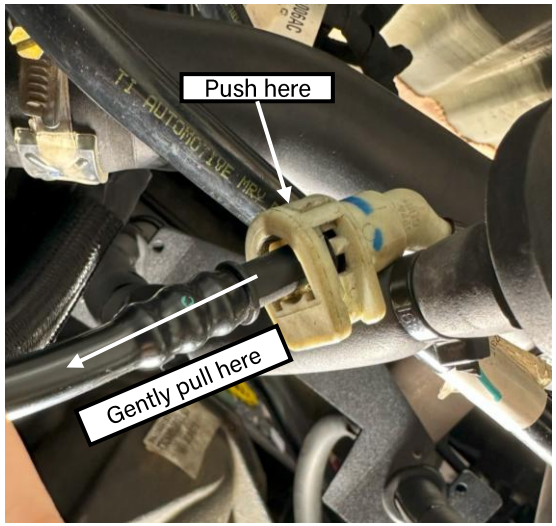


Figure 18: Filler breather clip disconnect

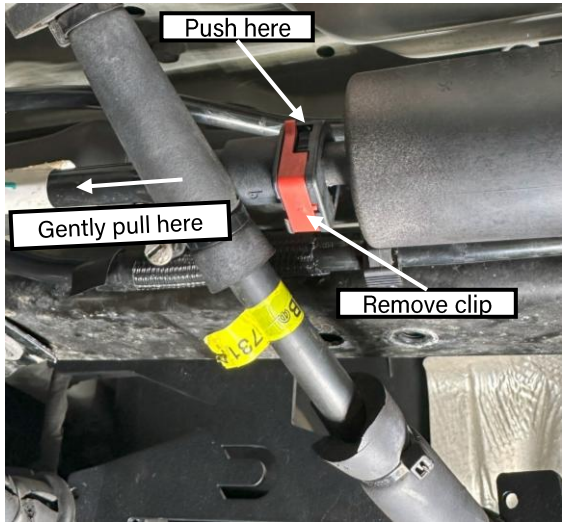


Figure 19: Vapor system hose clip

INSTALLATION INSTRUCTIONS

16. With the rear fuel lines disconnected, look at the top of the tank. The following list will outline what additional lines/cables need to be removed to safely drop the fuel tank out from under the vehicle. **KEEP ALL CLIPS.**

GAS TANK REMOVAL – REGULAR GAS TANK – TOP TANK CONNECTIONS

- ❑ Remove the evap canister hose by removing the green plastic clip, pressing in on the back of the spring clip, and gently pulling the line out (same as rear fuel connection clips) as seen in Figure 20
- ❑ Remove the electronic wiring harness located directly behind the evap canister hose clip. This may require the tank to be lowered further to gain additional clearance. **Be mindful of any existing hose retaining clips, remove them with a trim tool**

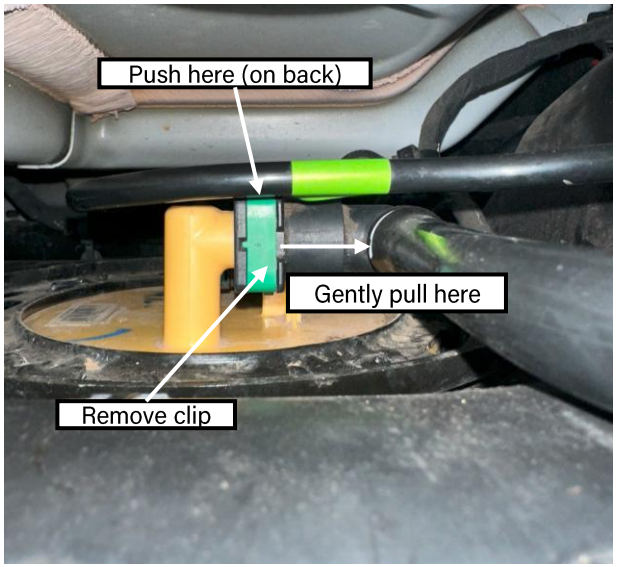


Figure 20: Evap canister hose clip

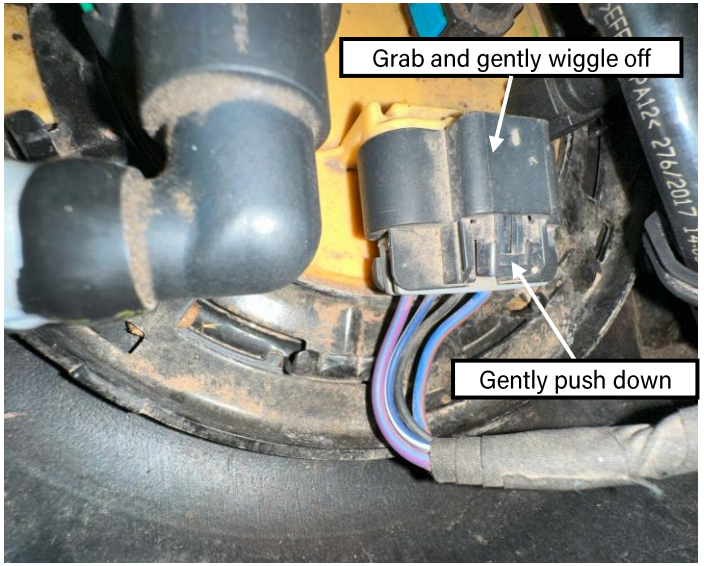


Figure 21: Tank wiring harness to be disconnected

INSTALLATION INSTRUCTIONS

17. With the rear and top fuel lines/cables disconnected, move to the front of the gas tank to complete the following steps. These lines may be under pressure and still contain fuel. We recommend using a rag to soak up any fuel that's leaking from these lines, or a cup to contain any mess.

GAS TANK REMOVAL – REGULAR GAS TANK – FRONT TANK CONNECTIONS

- ❑ Remove the two plastic red retaining clips from both lines pictured below (Figure 22)
- ❑ Push down on the opposite sides and pull the line out, gently (same process as previous clip removal)

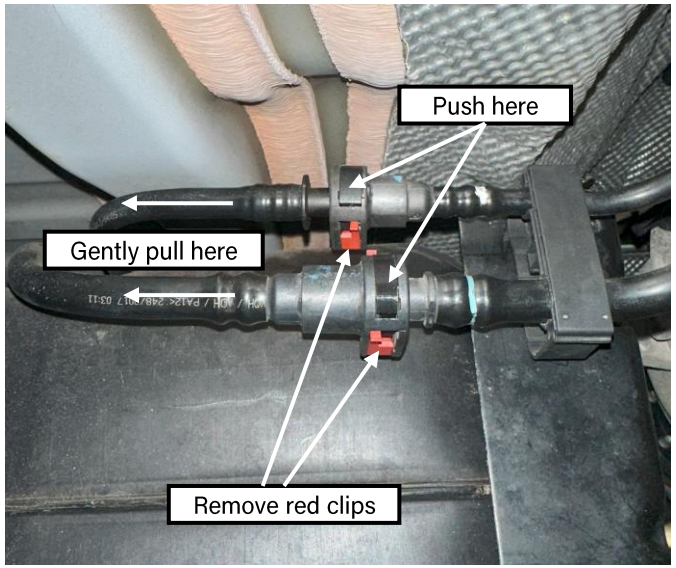


Figure 22: Front of tank connections

*****PUT ASIDE ALL PLASTIC RETAINING CLIPS, AS THEY WILL BE REUSED*****

INSTALLATION INSTRUCTIONS

18. Before fully dropping the tank, make sure that the tank is completely free of any remaining connections. Slowly drop the tank to gain visible clearance and ensure no hoses, plastic clips, or wires in the way. When the tank is fully dropped, please move it far away from the vehicle, as the installer will be grinding/welding.

GAS TANK REMOVAL – REGULAR GAS TANK – COMPLETE

- ❑ Move the tank far away from the vehicle (at least 20 feet)
- ❑ Put something over the front fuel connections and the filler tube to prevent leaks/fumes

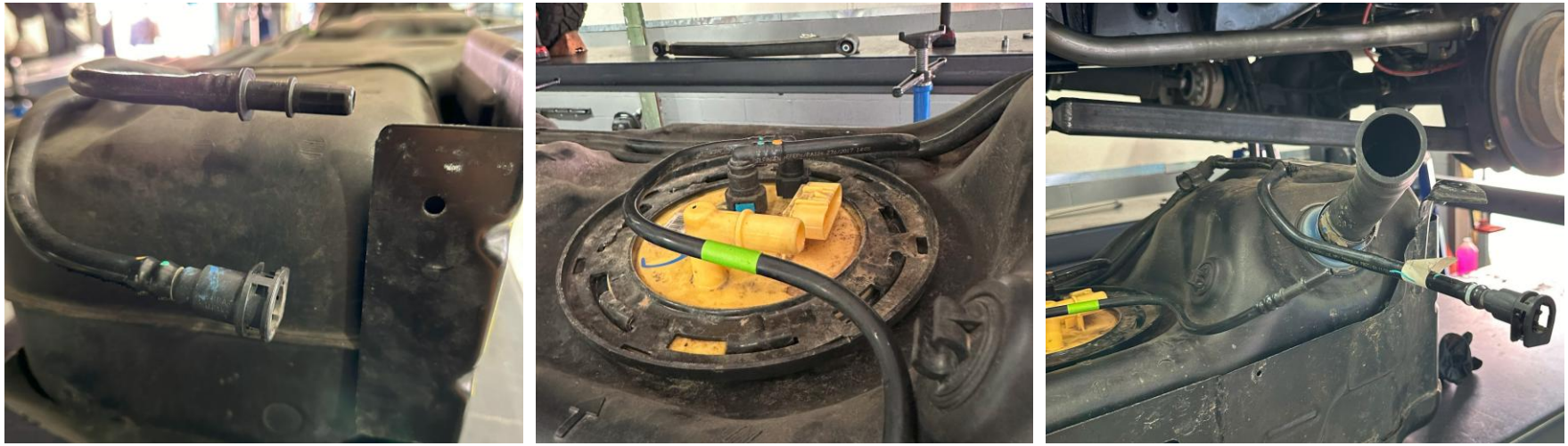


Figure 23: Front, top and rear fuel tank connections

*****PUT ASIDE ALL PLASTIC RETAINING CLIPS, AS THEY WILL BE REUSED*****

INSTALLATION INSTRUCTIONS

19. **DIESEL NOTE:** Complete the following steps if you have a diesel model vehicle. These steps are critical to assist in dropping the tank. **Retain all hardware.**

GAS TANK REMOVAL – DIESEL GAS TANK

- ❑ (A) Remove the x2 transfer case skid plate bolts (x2 18mm)
- ❑ (B) Remove the rear-most exhaust skid plate bolts (x2 18mm, opposite side of gas tank) as seen in Figure 25
- ❑ (C) Remove the x2 13mm bolts holding the exhaust skid to the skid cross member (Figure 25)
- ❑ (D) Fully remove the skid cross member by removing the x2 18mm bolts from both frame rails

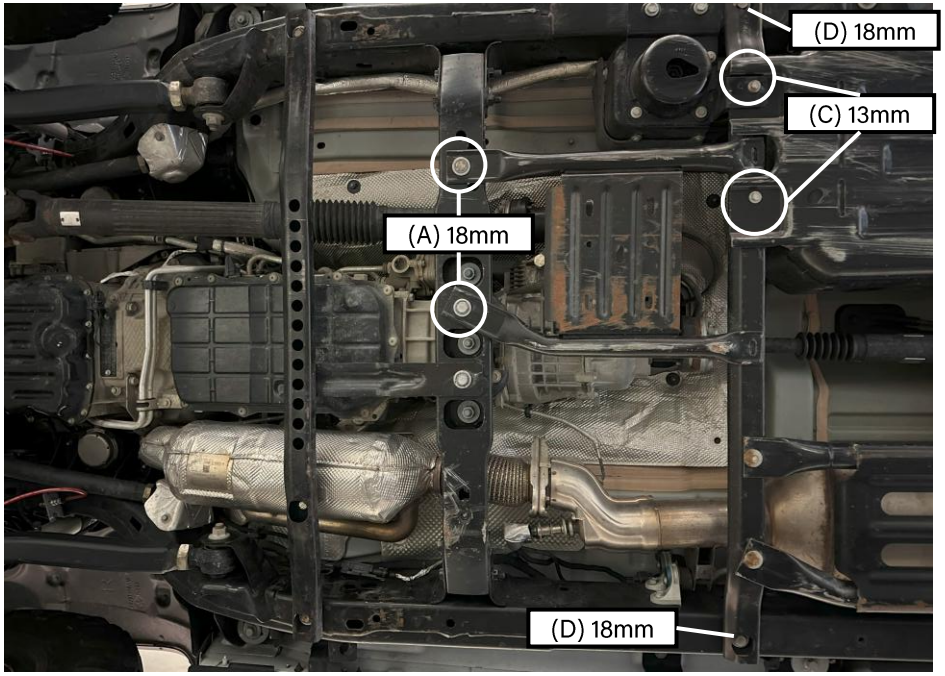


Figure 24: Bolts to remove

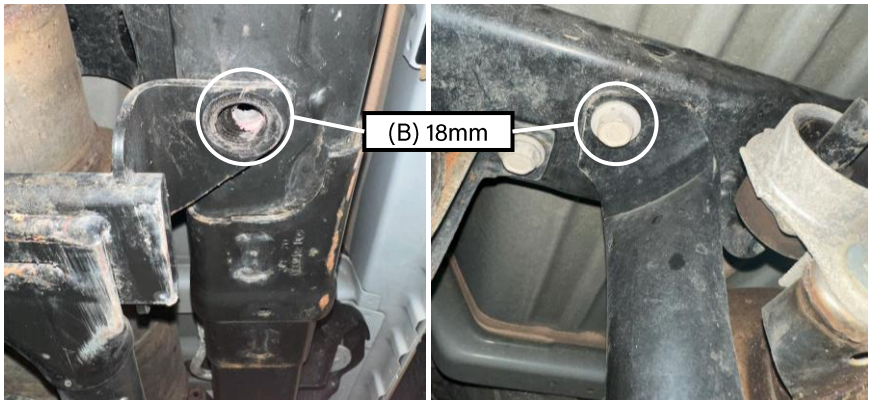


Figure 25: Rear skid plate bolts to remove

INSTALLATION INSTRUCTIONS

20. **DIESEL NOTE:** With the skid plates out of the way and the cross member removed, remove the diesel fuel filter from its mount. Follow the steps below to remove the fuel filter. **Retain all hardware.**

DIESEL TANK REMOVAL – DIESEL FUEL FILTER REMOVAL

- ❑ (A) Remove the OEM fuel filter skid plate by removing the x3, 10mm long bolts
- ❑ (B) Remove the x2, 16mm bolts holding the fuel filter skid to the frame rail
- ❑ (C and D) Remove the x1 13mm bolt (from previous step) and x1 18mm bolt (from previous step) if you haven't already
- ❑ (E) With the skid plate out of the way, remove the x3 10mm bolts fastening the plastic shield to the inner bracket
- ❑ (F) Shift the plastic shield out of the way to reveal and remove the x2 13mm stud nuts.

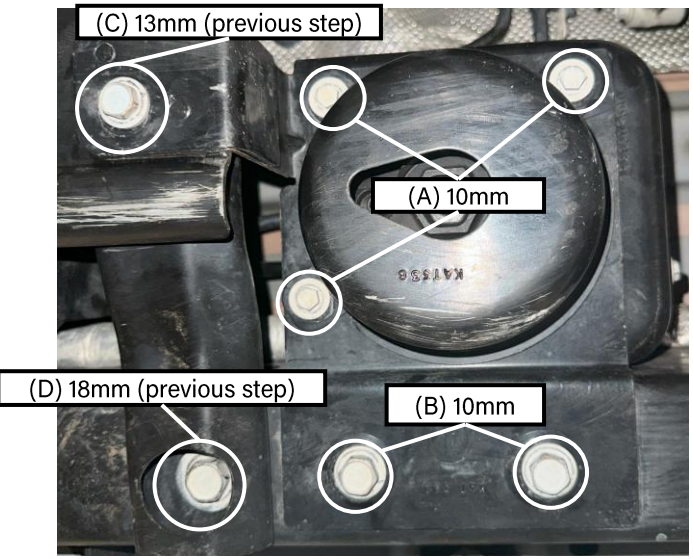


Figure 26: Bolts to remove

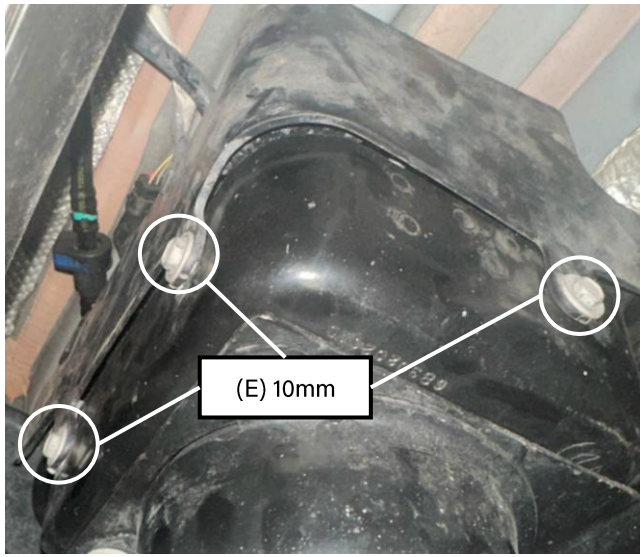


Figure 27: Plastic shield bolts

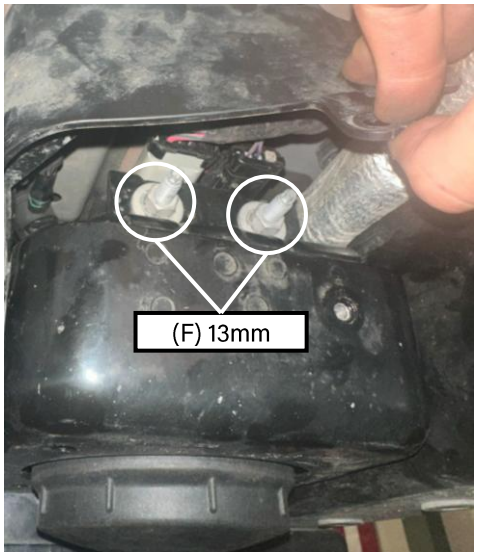


Figure 28: Stud nuts to be removed

INSTALLATION INSTRUCTIONS

21. **DIESEL NOTE:** Continue with the following steps to remove the fuel filter.

DIESEL TANK REMOVAL – DIESEL FUEL FILTER REMOVAL

- ❑ (G) Push the fuel filter up and into the bracket. Remove the final 13mm bolt holding the bracket to the rail
- ❑ Support the filter and move the inner bracket out of the way. Let the filter hang as seen in Figure 30
- ❑ Remove the x2 wiring harnesses on the studded side of the filter
- ❑ Remove the two plastic retaining clips from both lines pictured below (Figure 32). Then, push down on the opposite sides and pull the line out of the lock clip.

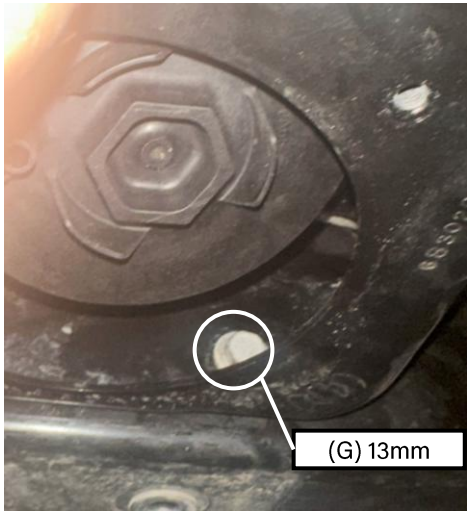


Figure 29: Final bracket bolt

Figure 30: Filter exposed

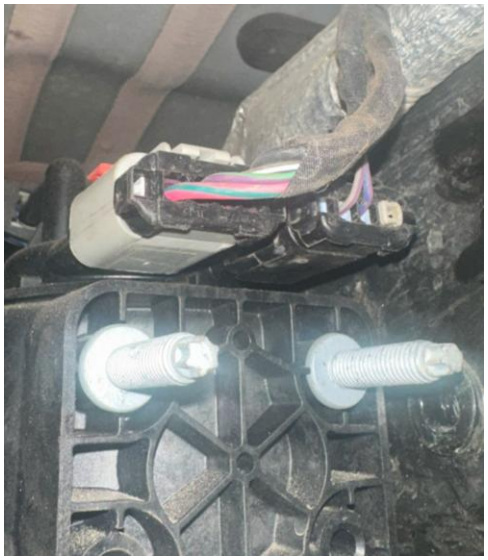


Figure 31: x2 wiring harnesses

Figure 32: x2 fuel lines to remove

*****PUT ASIDE ALL PLASTIC RETAINING CLIPS, AS THEY WILL BE REUSED*****

INSTALLATION INSTRUCTIONS

22. **DIESEL NOTE:** The fuel filter should now drop out of place. Note that fuel may be present inside the lines. Keep the filter upright to prevent any unwanted fuel spills. Save all hardware for reinstallation later.

Follow the steps below to remove the bottom of the tank connections. This is required to drop the tank safely.

DIESEL TANK REMOVAL – DIESEL GAS TANK – BOTTOM TANK CONNECTIONS

- ❑ Remove the x3 13mm nuts fastening the bottom, rear plate of the gas tank (Figure 33)
- ❑ Remove the plastic christmas tree tie out from the bottom of the plate (Figure 34)
- ❑ Remove the fuel line harness from the fuel module (Figure 35)

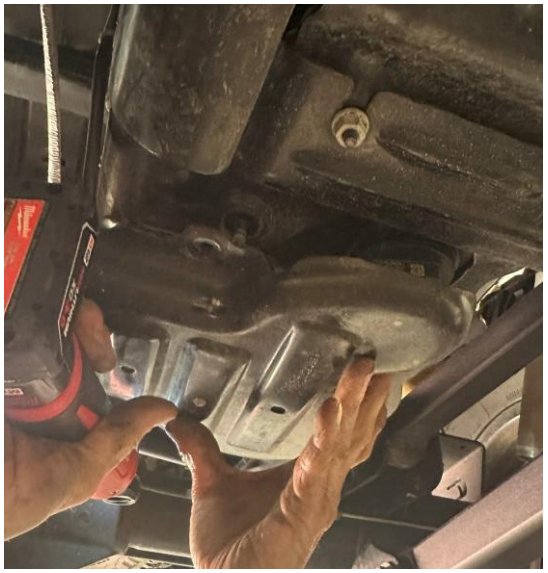


Figure 33: Removing x3 nuts at bottom plate

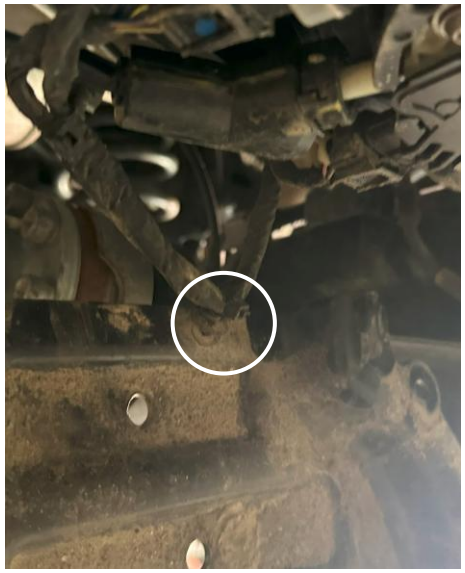


Figure 34: plastic clip

Figure 35: Remove fuel harness at module

INSTALLATION INSTRUCTIONS

23. **DIESEL NOTE:** Continue with the following steps to remove the gas tank completely.

DIESEL TANK REMOVAL – ADDITIONAL STEPS

- ❑ Remove any/all plastic clips retaining the fuel line from the side of the tank skid (Figure 36)
- ❑ Remove the (8) bolts holding the gas tank in place and **slowly lower the tank 3-4 inches using the supporting jack stands**. You'll find 3 bolts on the frame rail, 4 near the rear of the tank, and 1 on the side closest to the carrier bearing (Figure 37)
- ❑ Slowly position the tank so that there is enough clearance to access the top of the tank connections

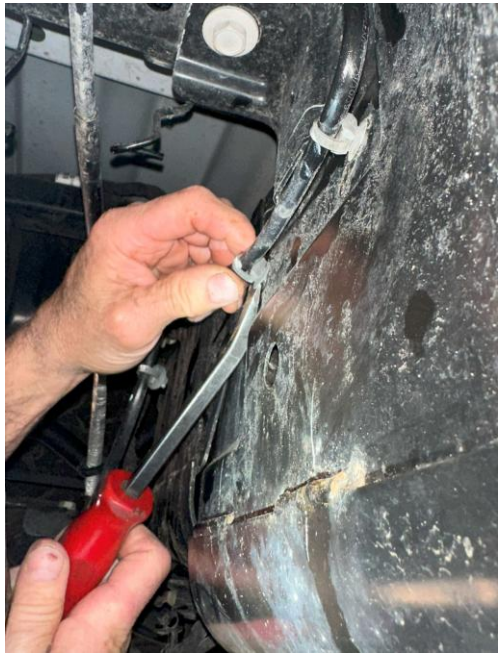


Figure 36: Line plastic clips

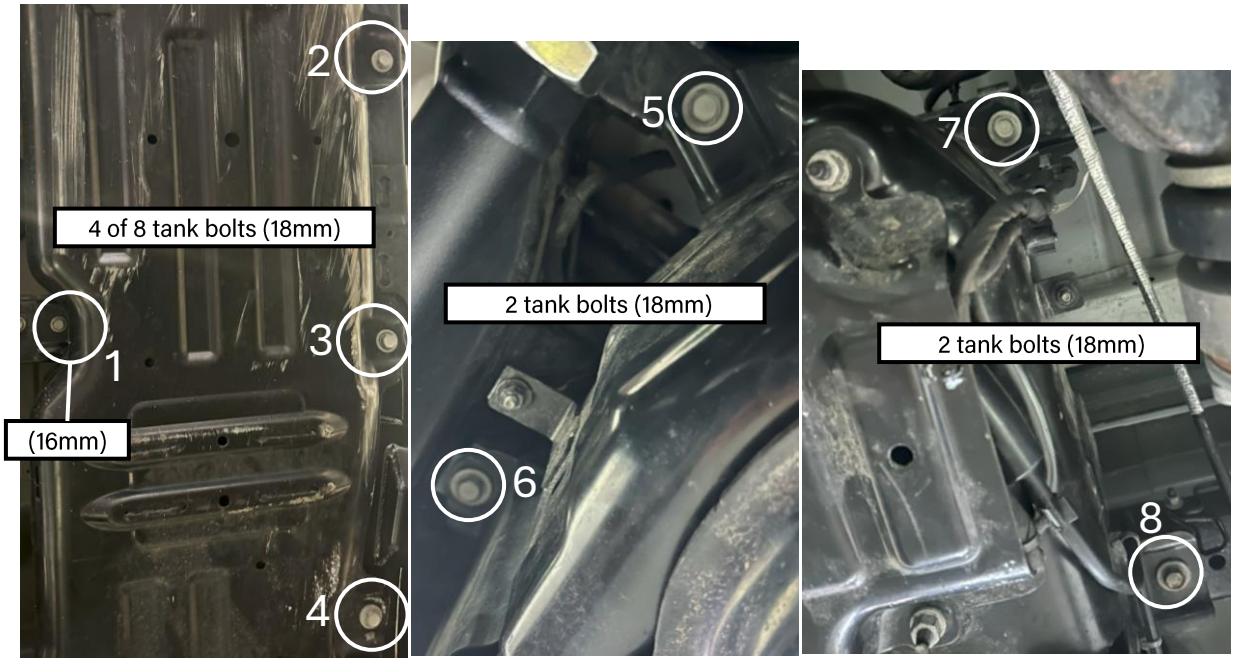


Figure 37: 8 Gas tank bolts

INSTALLATION INSTRUCTIONS

24. **DIESEL NOTE:** Continue with the following steps to remove the gas tank completely. Disconnect the following from the top of the tank.

DIESEL GAS TANK REMOVAL – TOP TANK CONNECTIONS

- ❑ (H) Access the middle top of the tank and remove the two large wiring harnesses as well as the small fuel tube (Figure 38)
  - ❑ (J) The small fuel tube will have a push-lock fitting. First, remove the plastic locking clip (Figure 38) . Then, push in on the back of the lock to disconnect the push lock tube. **Put aside the plastic locking clip, as it will be reused.**
- ❑ (K) Access the top-rear of the tank and remove the filler tube, vent tube, and the two small push-lock tubes (Figure 39)
- ❑ (L) Disconnect the final wiring harness closest to the filler tube (Figure 40)

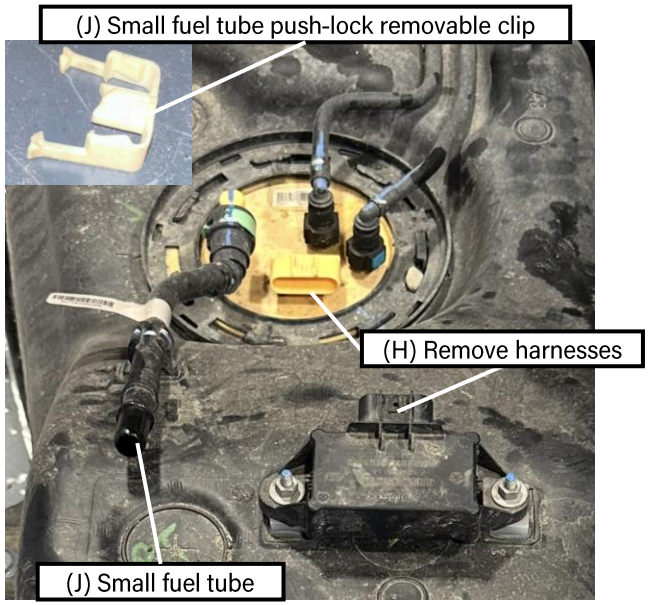


Figure 38: Line plastic clips

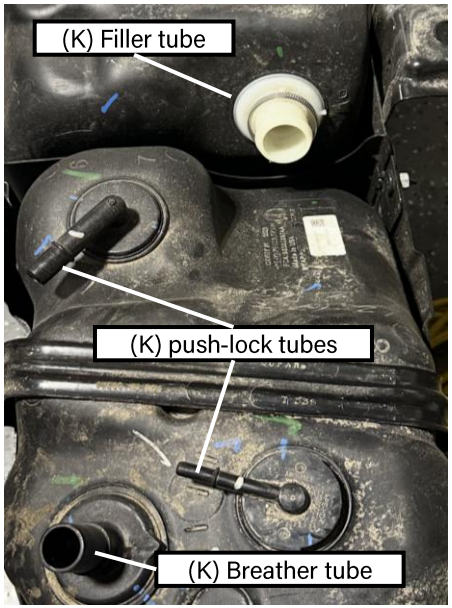


Figure 39: Top-rear connections

Figure 40: Final wiring harness

INSTALLATION INSTRUCTIONS

25. **DIESEL NOTE:** As a final check, ensure you have removed all 11 connections to the fuel tank (1 on the bottom, 5 at the rear-top of the tank, 3 at the middle-top of the tank, and 2 at the front of the tank near the fuel filter). Save any and all clamps, plastic clip-locks, and/or hardware for re-connection once the rear long arm kit is installed. Slowly drop the tank to gain visible clearance and ensure no hoses, plastic clips, or wires are in the way. When the tank is fully dropped, please move it far away from the vehicle, as the installer will be grinding/welding.

GAS TANK REMOVAL – REGULAR GAS TANK – COMPLETE

- ❑ Move the tank far away from the vehicle (at least 20 feet)
- ❑ Put something over the front fuel connections and the filler tube to prevent leaks/fumes

*****PUT ASIDE ALL PLASTIC RETAINING CLIPS, AS THEY WILL BE REUSED*****

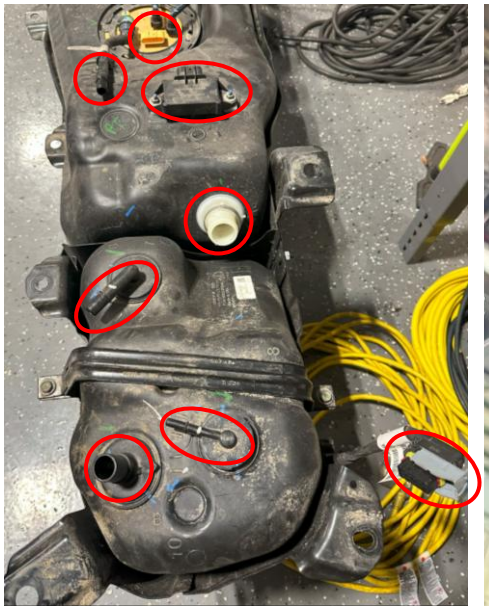


Figure 41: Top connections

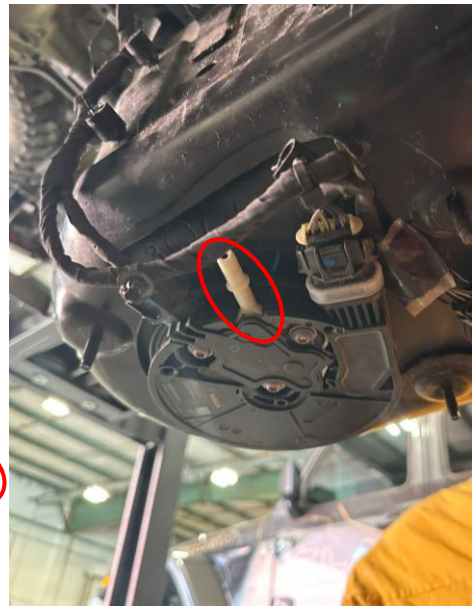


Figure 42: bottom connection

Figure 43: Front connections

INSTALLATION INSTRUCTIONS

26. Prepare the weld-on locations for the brackets. The brackets will sit on both frame rails, with the control arm mounts now positioned on the outside of the rail. **NOTE: You may need to remove the wiring harness above the frame rail on both sides for clearance, as seen circled below. The guard is fastened by two nuts; remove the nuts and put them aside for reinstallation later.**

Grind down all paint and the lap joint welds on the frame to provide a smooth and weldable surface. See Figure 44 below.

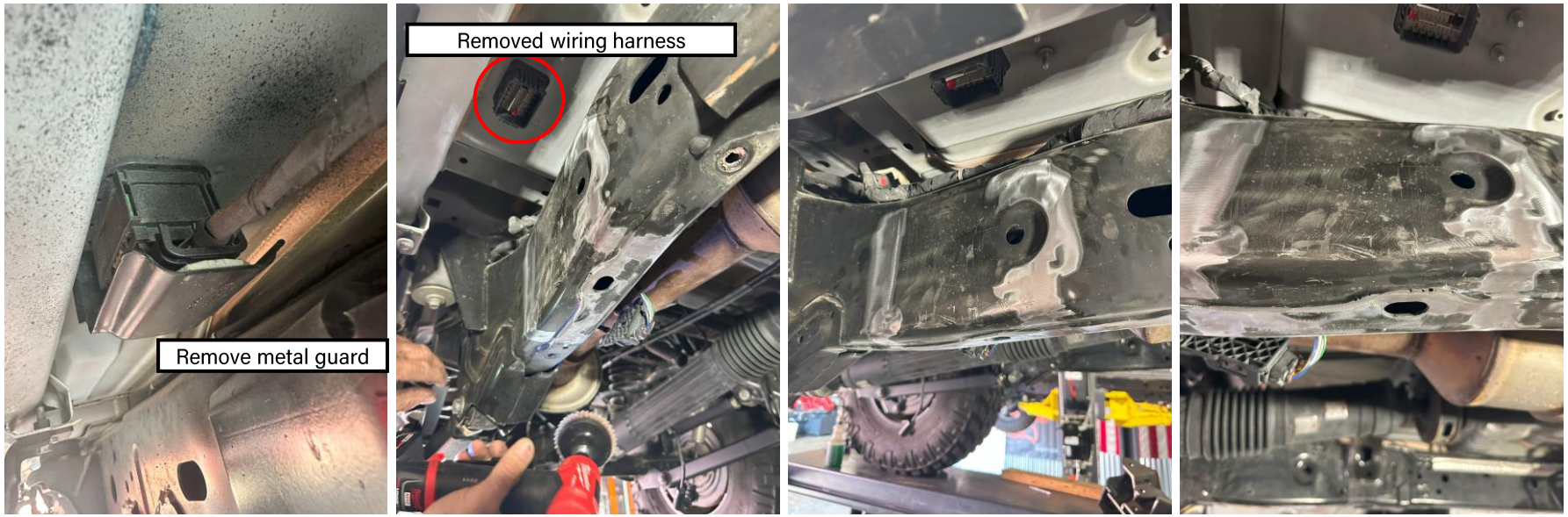


Figure 44: Frame rails prepped for bracket positioning

INSTALLATION INSTRUCTIONS

27. Position the brackets onto the frame. **On both sides, measure $4\frac{1}{8}$" back from the circle hole in the frame. The bump in the bracket will cover the indent on the frame, as seen in Figure 45.**

When positioning the bracket, you may need to use a bottle jack to fully seat the bracket onto the frame. **The fit will be tight.** Clamp the bracket using a large C-clamp to further secure the bracket into position. **See Figure 46 below.**

Complete this step for both sides, with both brackets. When the brackets are seated properly, you may tack-weld the brackets into position. **See Figure 47 below. <u>As seen below, the new brackets can be welded into place without removing the short arm brackets or arms.</u>**

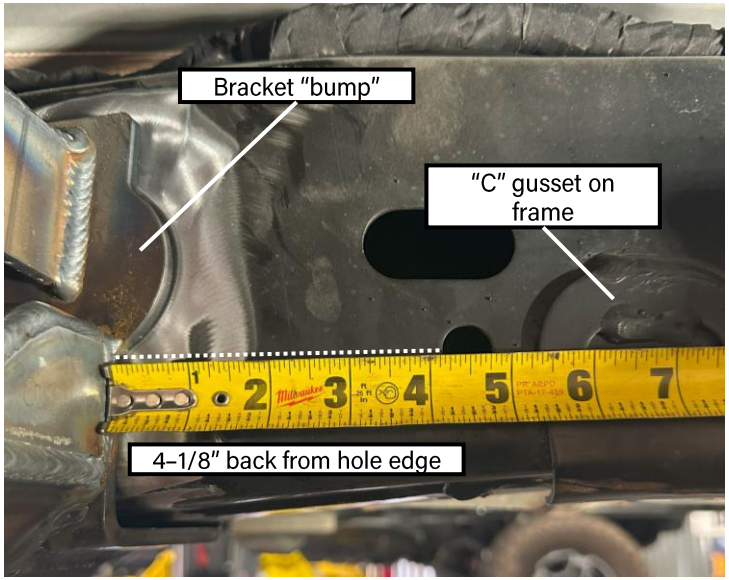


Figure 45: Locating bracket

Figure 46: Clamping bracket

Figure 47: Tack-welded bracket

INSTALLATION INSTRUCTIONS

28. Weld the brackets into place. Fully weld all points of contact between the bracket and the frame. **You will not be able to access the top seam of the bracket to weld, but do not worry- this does not compromise the strength of the bracket.**

There is an open gap between the bracket and the frame where the bracket meets the step in the frame- weld up until the gap **(See Figure 49 below). Attempting a weld here will result in burning through the frame and should be avoided.**

NOTE: The "front" of the bracket, where the bushings install, is not pictured. Please weld on this seam as well.

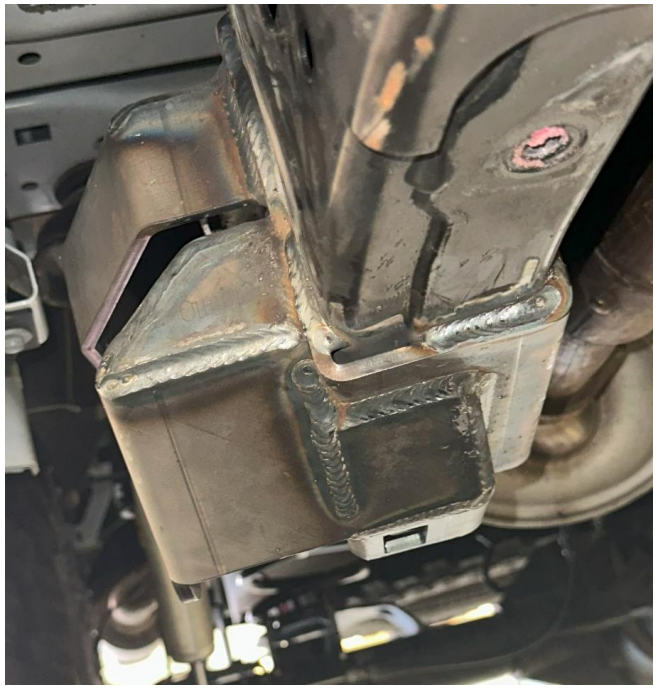


Figure 48: Rear of bracket welds

Figure 49: Inside of bracket welds

INSTALLATION INSTRUCTIONS

29. Paint the brackets when the welds have cooled. Fully allow the paint to dry before the next step. **See Figure 50.**

Remove the driver-side upper and lower control arms at the axle and frame. Chock the wheels to prevent any axle rotation during this time. You may also support the rear axle pinion with a bottle jack or similar to prevent any axle rotation.

Use a 21 and 24mm socket/wrench to remove the control arms (applies to OEM hardware only).

Figure 50: Painted brackets

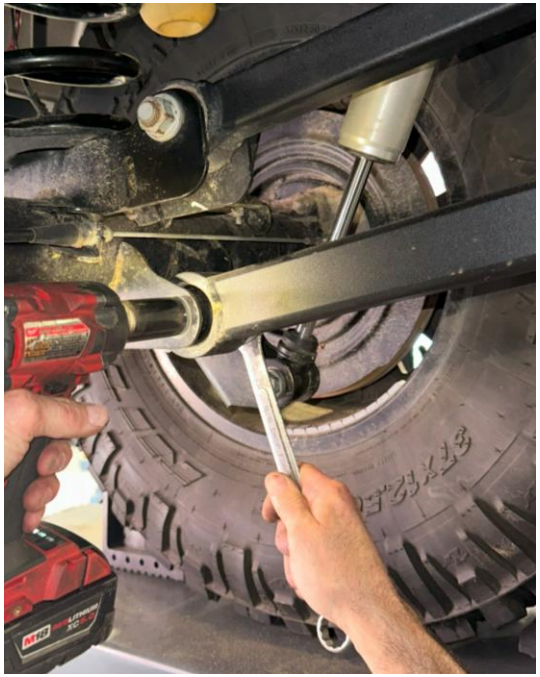


Figure 51: Removing rear lower short arm

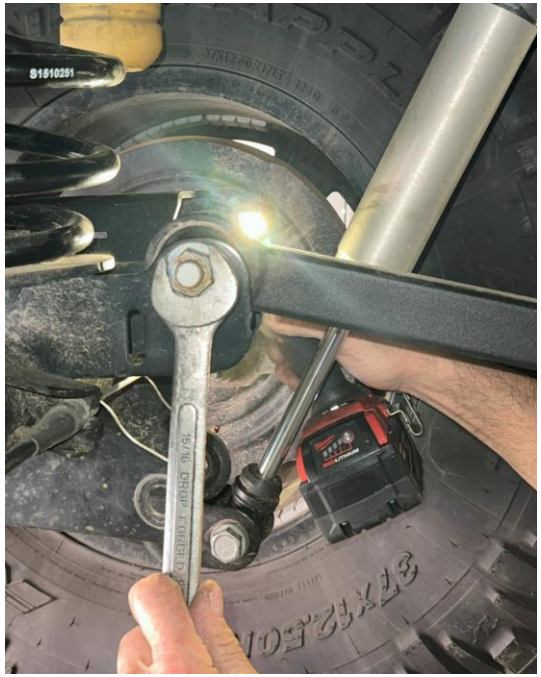


Figure 52: Removing rear upper short arm

INSTALLATION INSTRUCTIONS

30. Begin marking the OEM control arm bracket for removal. Following similar cuts marked in yellow (**as seen in Figure 53 below**) may help speed up the removal. Make multiple cuts and remove sections of the bracket at a time until none of the bracket remains on the frame. It is recommended to cut the bracket just below the weld and then grind the weld flat.

Also, mark the tail-end of the body mount and cut until the inside gusset joins the mount. **See Figure 53 below.** Grind the remaining welds on the frame from where the OEM bracket once sat. Paint the area and wait for the paint to dry before installing the new long arms.

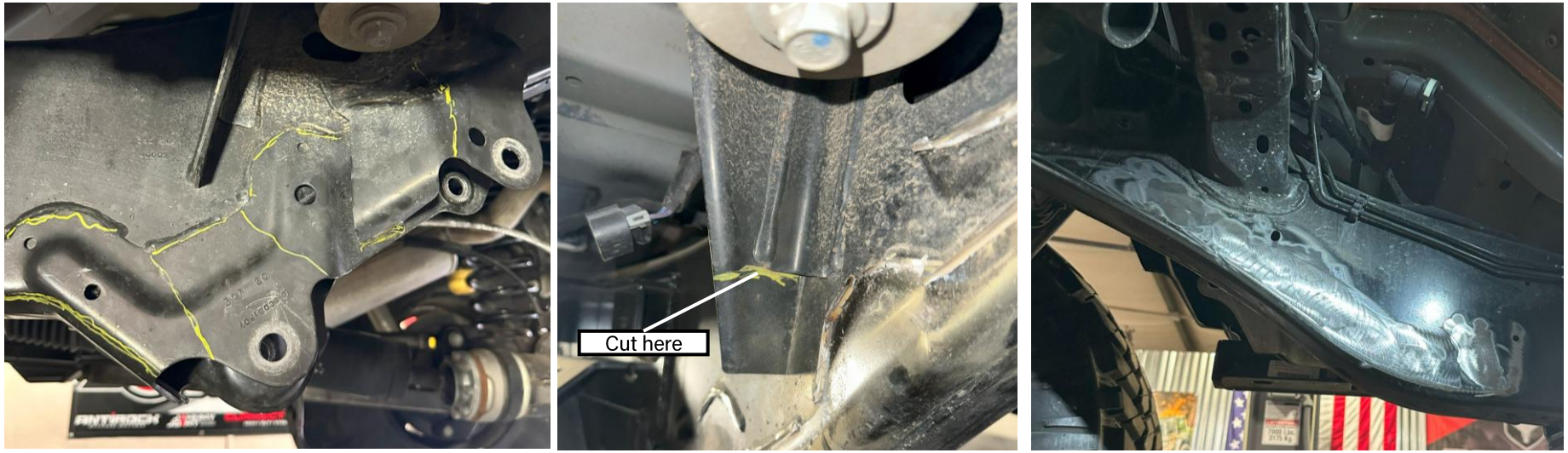


Figure 53: Grind lines to remove OEM control arm bracket and body mount

INSTALLATION INSTRUCTIONS

31. Install the lower control arm on the **driver-side.** The lower arms set the wheelbase of the axle. Set their lengths to the install length found at the beginning of this document. Ensure they are both the **same length.** Put the arms side by side and run a bolt through both ends to ensure they are equal in length. This starting length will get your wheelbase close, but cycling the suspension and checking your axle range will be needed to dial in the rear axle position.

Next, loosely install the upper control arm using the supplied 5/8"-18 x 4", washers and top lock nut at the frame bracket. Set their length to the install length found at the beginning of this document. This arm will simply hold the pinion at its current angle until you install the **passenger-side** bracket and arms.

Reuse the original hardware from the previous lower control arm on the axle-end for both the upper and lower arms.

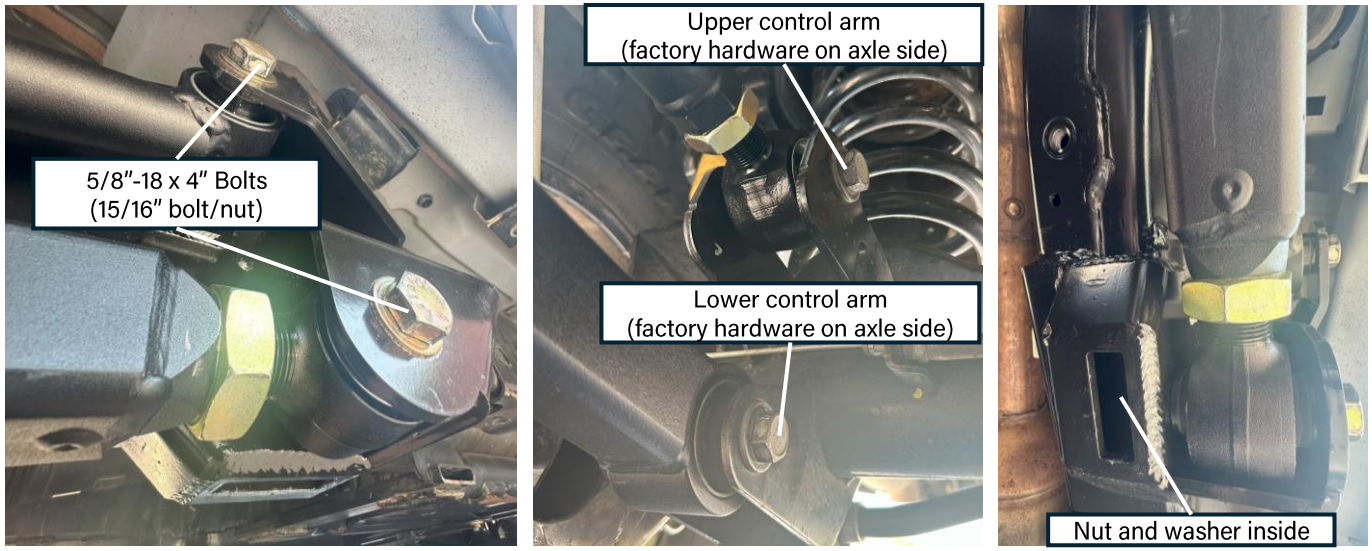


Figure 54: Control arms installed on one side (hardware left loose)

NOTE: Make sure that the adjuster of the lower arm is on the frame side, and the upper arm's adjuster is located on the axle side.

INSTALLATION INSTRUCTIONS

32. Repeat Steps 26-30 for the **passenger side of the vehicle.**

Then, install the other lower control arm (same length as the driver side) using the supplied and original hardware. **Leave this side's upper control arm out for now.** Visually check the wheelbase positioning by comparing the axle and frame coil buckets and shock positioning. Adjust the wheelbase length as needed by threading in/out **both lower control arm adjusters equally.**

Next, set the vehicle at ride height. Reinstall this side's tire and use a jack stand to support the other end. To set the pinion angle:

- Support the pinion with a car jack
- Remove the upper control arm bolt at the frame bracket
- Use the jack to set the desired pinion angle (use a digital angle finder). We recommend 5.5°-6°
- Lengthen or shorten the upper control arm adjuster to achieve the desired angle and tighten
- Installing the other upper control arm on the other side to fit, without touching the jack. **The upper control arms do not need to be the same length and can vary slightly!**

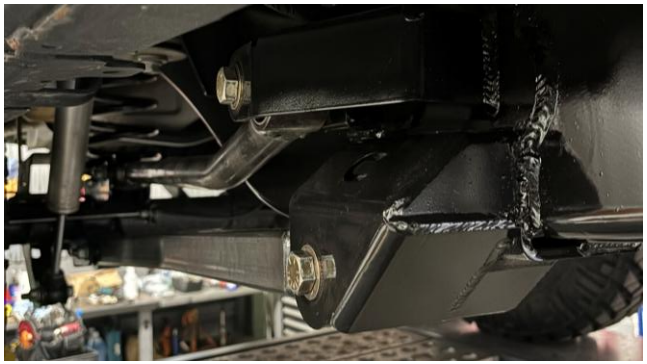


Figure 55: Control arms installed on one side (hardware left loose)

NOTE: Make sure that the adjuster of the lower arm is on the frame side, and the upper arm's adjuster is located on the axle side.

INSTALLATION INSTRUCTIONS

33. Prepare to fit the gas tank back into place. It is easier to balance the tank on two jack stands and slowly lift the tank back into its position. Once the tank sits 3-4 inches below its mounting location, reinstall the fuel lines and wiring harnesses at the front, top, and rear of the tank. Use the original plastic clips to lock connections that have them. Reinstall any removed trim clips and reconnect the filler and vent tube.

DIESEL NOTE: Reconnect the fuel filter and reinstall the support brackets. You will also need to reinstall the skid plate cross member that was removed in Step 19, **before the gas tank is reinstalled.**

Make sure no connections are missing or loose. After all the lines are reconnected, bolt the tank back into place using the original hardware.

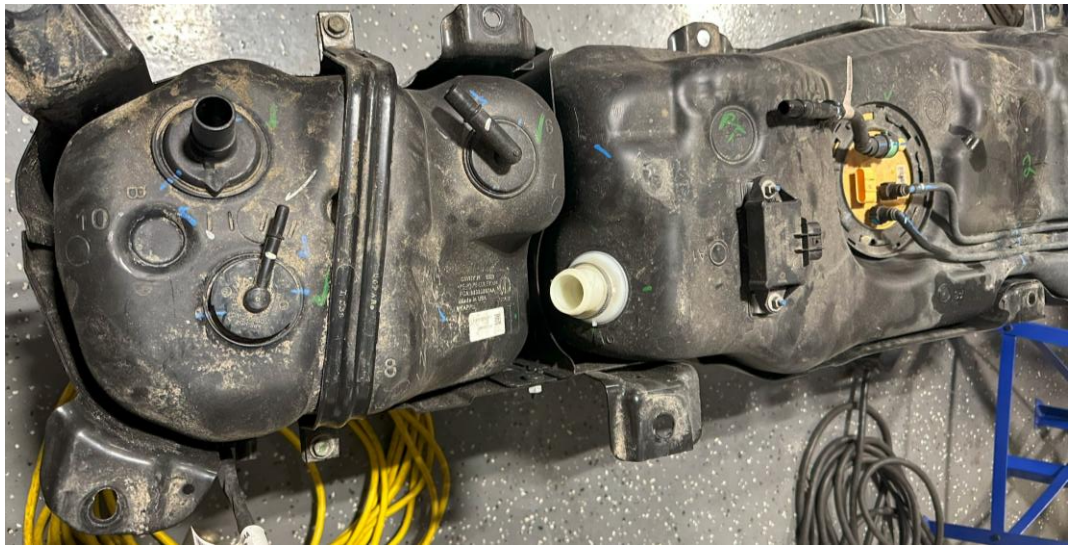


Figure 56: Gas tank ready to be installed back under the vehicle

INSTALLATION INSTRUCTIONS

34. **DIESEL NOTE:** Reinstall the catalytic converter. Follow Steps 20-21 in reverse to re-position the fuel filter in its mount. Keep all clamps and hanger brackets loose while tightening ported sensors. The sensors are hard to get to when the brackets are tightened, so take your time and be mindful of any strained wires.

Figure 57: Catalytic converter reinstalled under the vehicle

INSTALLATION INSTRUCTIONS

35. **DIESEL NOTE:** Reinstall the wiring harness located above the new rear control arm bracket. Push the locking lever back up to lock the harness into position. **See Figure 58 below.**

Figure 58: Wiring harness (both sides) reinstalled

INSTALLATION INSTRUCTIONS

36. Torque all hardware. Refer to the table below for helpful torque specifications. It is recommended to retorque all bolts after the first 500 miles of driving.

Table 2: COR REAR Long Arm Torque Specifications

Bolt Location	Wrench Size	Torque (ft-lbs)
Upper Control Arm Frame Bolt (9/16”-18 x 4”)	15/16”	170
Upper Control Arm Axle Bolt (Factory Size)	21mm, 24mm	125
Lower Control Arm Frame Bolt (9/16”-18 x 4”)	15/16”	170
Lower Control Arm Axle Bolt (Factory Size)	21mm, 24mm	125

INSTALLATION INSTRUCTIONS

37. Tighten down the jam nuts on the upper and lower control arms. Use a 1–7/8" wrench for the lower control arm jam nuts, and a 1-1/2" wrench for the upper control arm jam nuts. Use a breaker bar to gain additional leverage. Tighten all jam nuts down as tight as humanly possible.

Please note that not all wrenches are created with the same tolerances. If your wrenches are too loose around the jam nut, Clayton Off Road offers tight, wrap-around wrenches for purchase. Please search for the wrenches using the SKU's below.

Figure 59: COR Wrench-ends for control arm jam nuts (COR-2500125, COR-2500100)

INSTALLATION INSTRUCTIONS

38. Once the frame and brackets are painted and the control arms are torqued to specification, follow the post-installation checklist to complete the installation. As always, feel free to contact us with any questions you may have about the installation.

POST-INSTALLATION CHECKLIST:

- ❑ Frame brackets are properly welded entirely to the frame
- ❑ The work area is fully painted
- ❑ Exhaust is completely reinstalled and tightened at all flanges/clamps
- ❑ Differential sensors are plugged back in
- ❑ O_2 sensors are plugged back in
- ❑ Coolant/brake lines are put back into place and are not damaged
- ❑ All hardware is torqued to specification (see Step 36)
- ❑ Control arm jam nuts are as tight as possible
- ❑ Lug nuts are torqued to the manufacturer's specification
- ❑ A licensed shop has professionally aligned the vehicle
- ❑ Retorque all hardware after 500 miles of driving

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