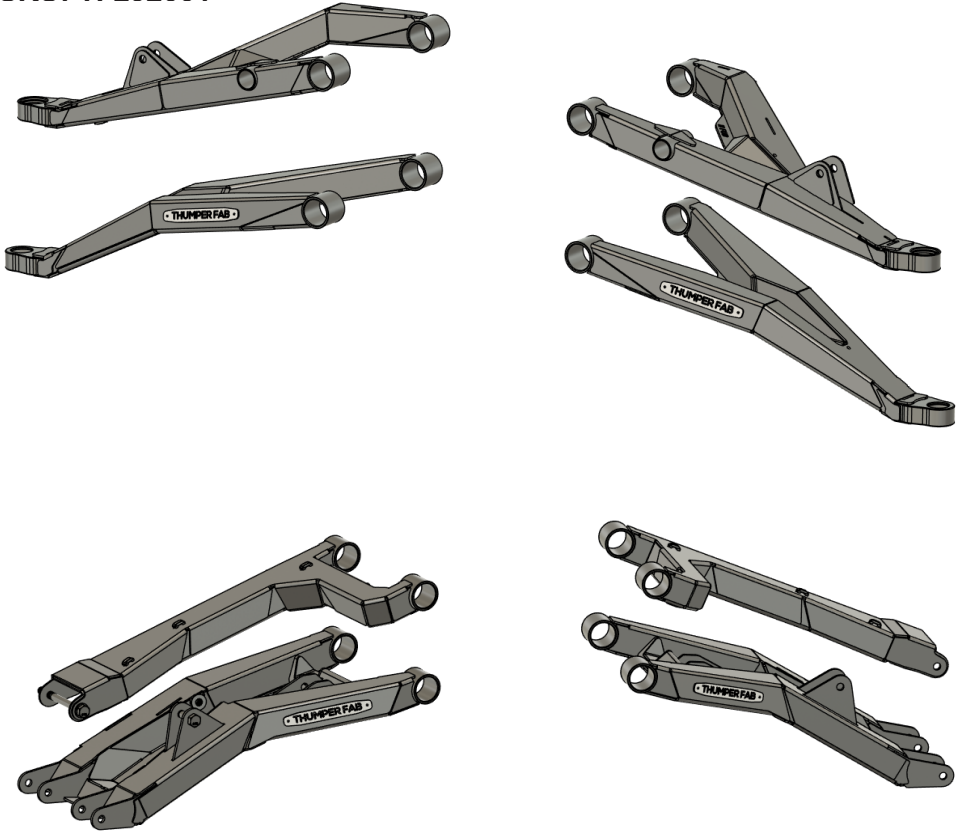


CanAm Defender HD11
Long Travel

SKU: TF292001



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Ver. 0426

CanAm Defender HD11

Long Travel



SKU: TF292001

PARTS

REF	QTY	DESCRIPTION
1	1	Front Upper Driver Control Arm
2	1	Front Upper Passenger Control Arm
3	1	Front Lower Driver Control Arm
4	1	Front Lower Passenger Control Arm
5	1	Rear Upper Driver Control Arm
6	1	Rear Upper Passenger Control Arm
7	1	Rear Lower Driver Control Arm
8	1	Rear Lower Passenger Control Arm
9	4	Axles
10	2	Tie Rods (Main Body)
11	2	Steering Boots
12	1	Brake Line Kit
HARDWARE KIT		
A	2	3/4" Left Hand Thread Heim Joint
B	2	3/4" Left Hand Thread Jam Nut
C	2	Steering Misalignments
D	2	Inner Tie Rods
E	16	Zip Ties
F	2	Steering Stops

TOOLS

- 10mm Socket and Wrench
- 12mm Socket and Wrench
- 13mm Socket and Wrench
- 15mm Socket and Wrench
- 18mm Socket and Wrench
- 19mm Socket
- 30mm Socket
- Crescent Wrench
- Snips
- Channel Locks
- Pick
- Loctite
- Anti-Seize
- Impact
- Drill
- Grinder with cut-off wheel

BEFORE YOU BEGIN

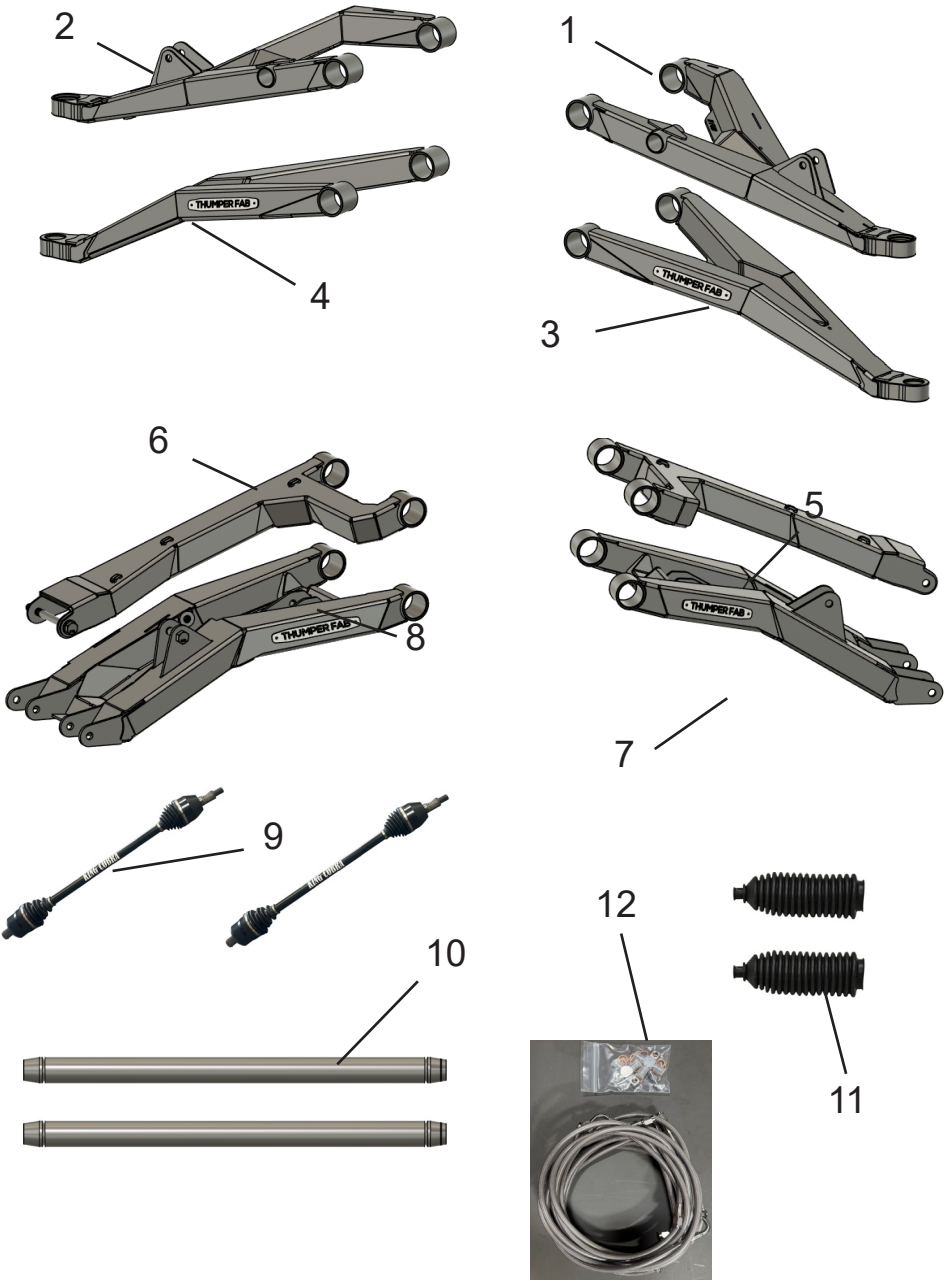
If you do not feel comfortable installing your **Thumper Fab Long Travel**, please see your nearest Thumper Fab Dealer for installation.

CanAm Defender HD11

Long Travel



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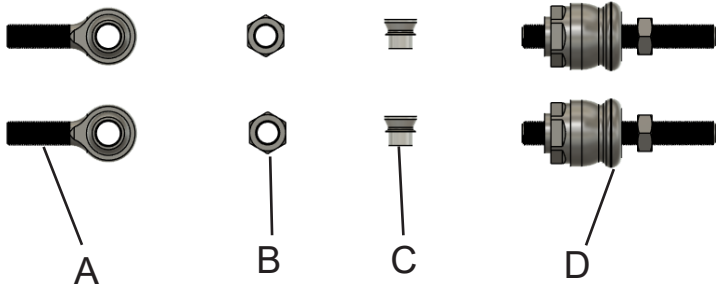


CanAm Defender HD11

Long Travel



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CanAm Defender HD11

Long Travel



SKU: TF292001



Length: 29"
Master: From master
cylinder to front



Length: 118"
Master 1: From
master cylinder to
rear



Length: 31"
Master 2: Crew
extension



Length: 42"
Left Front



Length: 42"
Right Front



Length: 44"
Left Rear



Length: 44"
Right Rear

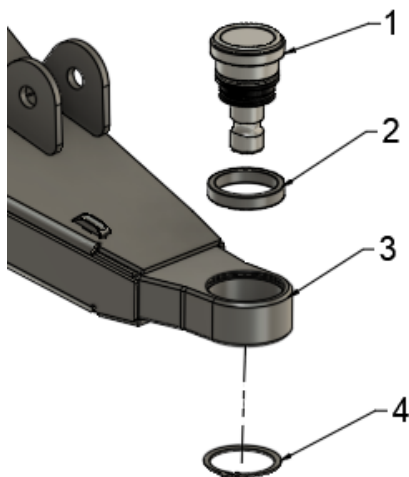
CanAm Defender HD11

Long Travel

SKU: TF292001



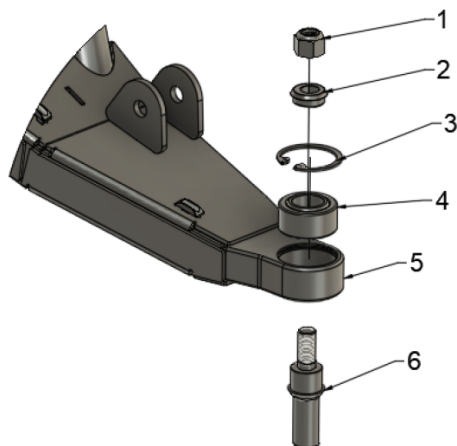
OEM



PARTS LIST	
ITEM #	DESCRIPTION
1	OEM BALL JOINT
2	RING INSERT
3	CONTROL ARM / HOUSING
4	EXTERNAL RETAINING RING

1. Press RING INSERT into CONTROL ARM / HOUSING.
2. Press OEM BALL JOINT into RING INSERT & HOUSING.
3. Install EXTERNAL RETAINING RING.

UNIBALL



PARTS LIST	
ITEM #	DESCRIPTION
1	LOCKNUT
2	MISALIGNMENT
3	INTERNAL RETAINING RING
4	UNIBALL
5	CONTROL ARM / HOUSING
6	UNIBALL PIN

1. Press in UNIBALL into HOUSING.
2. Ins tall INTERNAL RETAINING RING.
3. Insert UNIBALL PIN into UNIBALL.
4. Ins tall MISALIGNMENT onto threaded end of UNIBALL PIN
5. Thread and tighten LOCKNUT onto UNIBALL PIN

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Long Travel

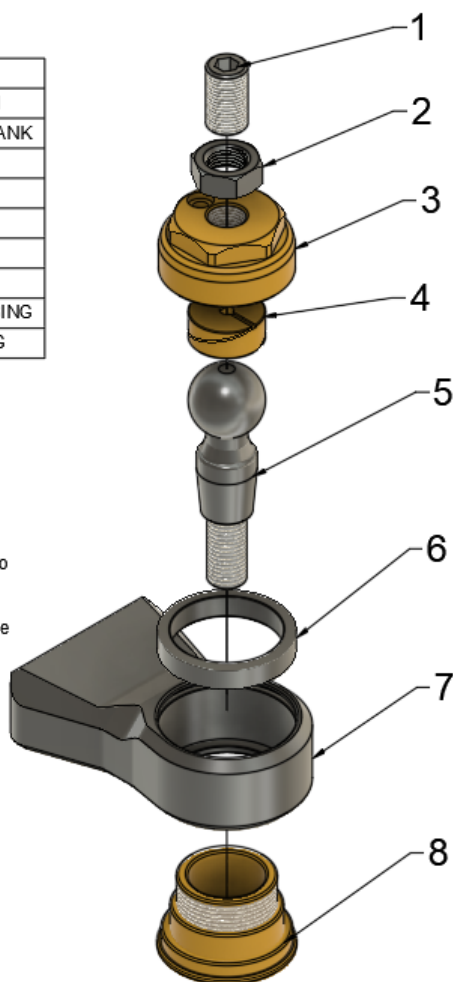


SKU: TF292001

Thumper Fab ELITE

PARTS LIST	
ITEM #	DESCRIPTION
1	ADJUSTMENT SHANK
2	JAM NUT
3	UPPER CAP
4	TRUNION
5	TAPERED PIN
6	INSERT RING
7	BALL JOINT HOUSING
8	MAIN HOUSING

1. Press BALL JOINT RING INSERT into BALL JOINT HOUSING
2. Press MAIN HOUSING into BALL JOINT RING INSERT
3. Insert TAPERED PIN and TRUNION into the MAIN HOUSING
4. Thread UPPER CAP onto MAIN HOUSING
5. Thread ADJUSTMENT SHANK into UPPER CAP, lightly tighten
6. Thread JAM NUT onto ADJUSTMENT SHANK. Tighten while using an Allen Wrench to hold ADJUSTMENT SHANK in place
7. Install Boot



CanAm Defender HD11

Long Travel



SKU: TF292001

INSTALLATION PREPARATION

1) Position Vehicle on a clean and level work area. Lift the vehicle and support with jack stands and remove wheels.



FRONT SUSPENSION REMOVAL

2) Remove bolts fastening brake line clamps to factory arms. Then remove the 2 bolts fastening the brake caliper to the back of the knuckle assembly using a 15mm socket.



3) Remove axle cotter pins and nuts with 27mm socket. Remove hub and rotor assemblies.

CanAm Defender HD11

Long Travel



SKU: TF292001



4) Remove the tie rod end from the hub assembly using a 15mm socket and wrench.



5) Unfasten the shock from the upper control arm using 18mm socket and wrench.



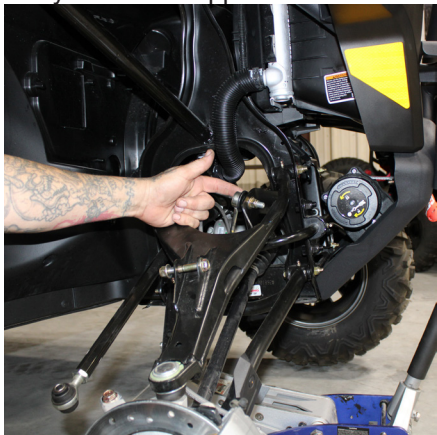
CanAm Defender HD11

Long Travel



SKU: TF292001

6) If equipped use a 18mm socket and wrench to remove the nut fastening the sway bar to the upper control arm.



7) Remove the cotter pin on the upper ball joint, then use a 18mm wrench to remove the nut. A dead blow may be needed to separate upper ball joint from the knuckle.



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Long Travel



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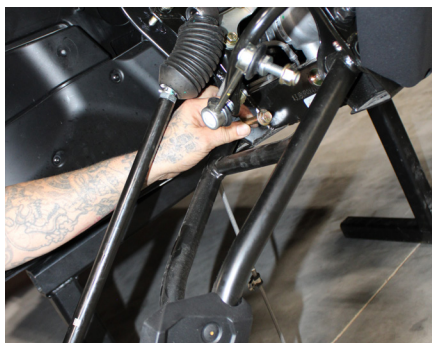
8) Remove the cross bolt that fastens the lower ball joint to the steering knuckle using a 15mm socket and wrench.



9) Remove the upper control arm mounting bolts using 18mm socket and wrench. Remove the control arm from vehicle.



10) Remove the lower control arm mounting bolts using 18mm socket and wrench. Remove the control arm from vehicle.



CanAm Defender HD11

Long Travel

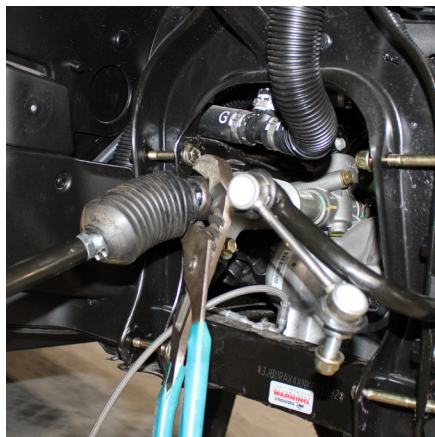


SKU: TF292001

11) Remove axle from differential.



12) Break the clamps on the steering rack dust boot and remove tie rod from vehicle by using a crescent wrench on inner tie rod. Keep dust boot for future use.



13) Repeat for opposite side.

CanAm Defender HD11

Long Travel



SKU: TF292001

REAR SUSPENSION REMOVAL

14) Remove the rivets fastening brake line clamps to factory arms. Then remove the 2 bolts fastening the brake caliper to the back of the hub assembly using a 18mm socket.



15) Remove axle cotter pins and axle nuts.



16) Remove hub and rotor assemblies. Hubs are secured with Loctite from the factory. Splines may be required to be heated to remove hub.



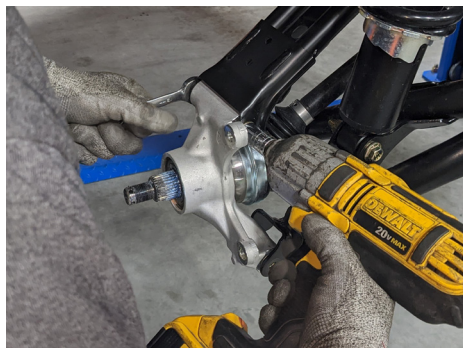
CanAm Defender HD11

Long Travel



SKU: TF292001

17) Remove bolts securing rear bearing carrier to upper and lower control arms using 18mm socket and wrench.



18) Remove axle from differential.



19) Remove the shock using a 18mm socket and wrench.



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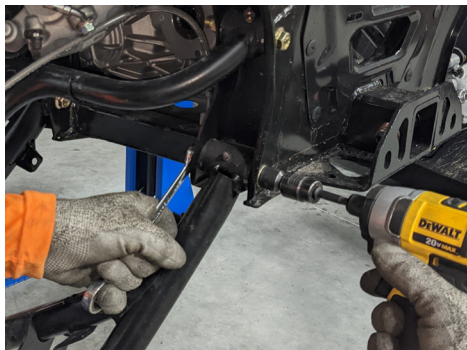
Long Travel



SKU: TF292001

20) If required, remove the nut fastening the sway bar to the lower control arm using a 18mm socket and wrench.

21) Remove the upper and lower control arms using 18mm socket and wrench.



22) Repeat for opposite side.

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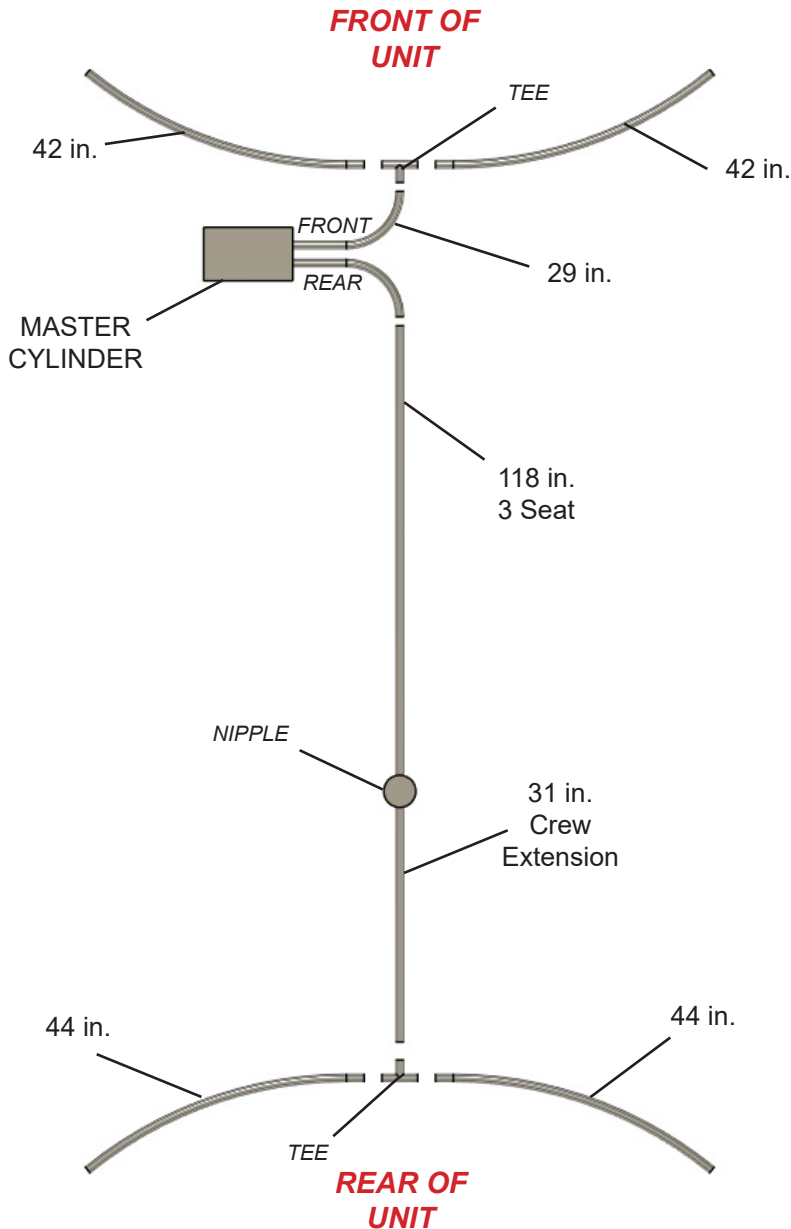
Long Travel



SKU: TF292001

BRAKE LINE INSTALLATION

(See page 14 to reference brake line lengths)



CanAm Defender HD11

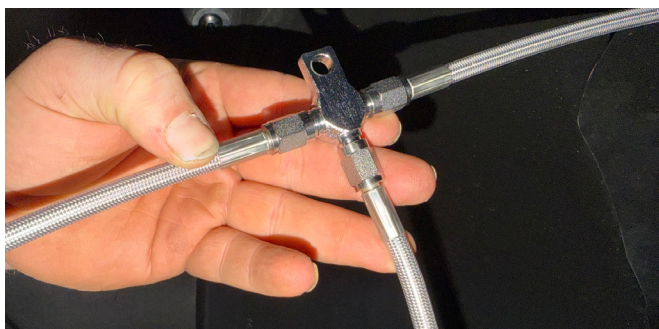
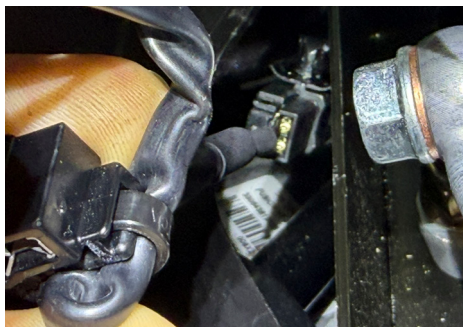
Long Travel



SKU: TF292001

BRAKE LINE REMOVAL AND INSTALL

23) Remove OEM Brake Line from rear port on master cylinder, and replace with front brake line provided in Long Travel kit. To access the master cylinder, remove the push-in rivet holding the panel at the driver fender well. Unplug the brake light switch. In the front of the cab. Trimming of the plastic cover will be required, shown below.



CanAm Defender HD11

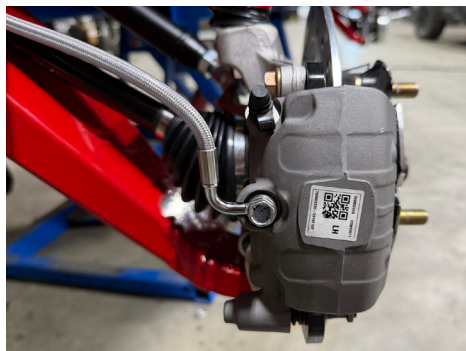
Long Travel



SKU: TF292001

24) Replace factory brake lines with the TF brake line kit according to the diagram on the following page. Remove stock loop clamps from factory brake lines and reuse to secure the TF brake line kits in original location. Attach the lines using provided self-tapping screws and cable ties from the hardware kit.

25) Remove and replace remaining lines according to the provided diagram. Use the stock banjo bolt and supplied copper washers on each side of banjo to attach lines to brake caliper.



26) Fasten brake lines to control arms using provided cable ties. Be sure the brake lines do not rub the axles.



CanAm Defender HD11

Long Travel



SKU: TF292001

COMPONENT PREPARATION

30) If reusing factory ball joints, remove joints from factory control arms.

31) If required, Install Uni-ball or ball joint on control arms according to provided diagrams.

32) If you did not purchase the kit with pre-installed bushings, you will be required to remove the bushings from the OEM arms and install them into the Long Travel arms. See section at end on bushing removal & installation.

SHOCK RELOCATION BRACKETS **(ONLY IF USING STOCK SHOCKS)** (PG. 28-29)

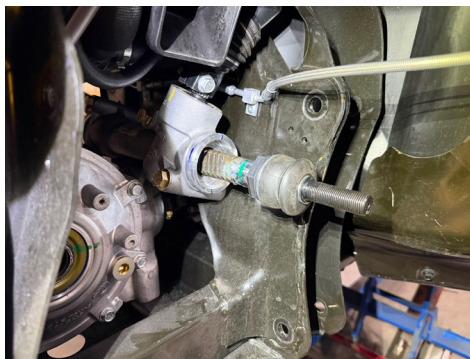
32) Install the front and rear shock relocation brackets at the factory shock locations using the hardware provided in the kit.



33) Install provided M8-1.5x25mm bolt, fender washer, and nut on lower mounting position.

TIE ROD INSTALL

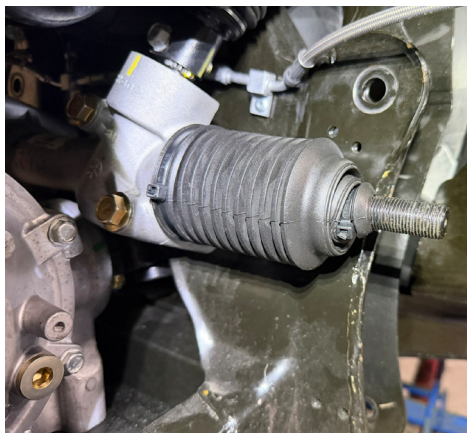
34) Install new inner tie rod end onto the rack. Use blue lock-tite. If you choose to use the steering stops provided in the kit, do that at this time. Place the steering stop on the rack and "snap" it over the shaft.



INSTALLATION INSTRUCTIONS



35) Slip the new boot, provided in the kit, over the inner tie rod end and over the rack housing. Secure the boot with the provided zip ties.



INSTALLATION INSTRUCTIONS

36) Next, thread one end of the tie rod onto the inner tie rod end and then thread the heim end with jam nut into the opposite end of the tie rod.



FRONT CONTROL ARM INSTALLATION

37) Begin installing the front upper and lower control arms. Replace the OEM hardware that was removed during OEM disassembly. Also, install the new Cobra axle into the front differential.



INSTALLATION INSTRUCTIONS

38) Install knuckle, brake disc, and axle nut. Torque the axle nut down.



39) Connect the outer tie rod end to the knuckle as shown.



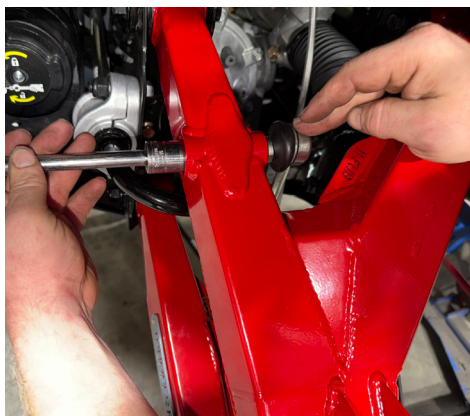
*** BE SURE TO LEAVE THE BOLTS/NUTS FASTENING THE ARMS TO THE CHASSIS MOUNTS SLIGHTLY LOOSE FOR NOW. IF THEY ARE NOT TIGHTENED AT THE END OF INSTALLATION, WHILE THE UNIT IS ON THE GROUND AT RIDE HEIGHT, IT WILL BIND UP THE CONTROL ARM BUSHINGS IN A "FULL DROOP" POSITION AND CREATE PREMATURE WEAR ON BUSHINGS. ***

INSTALLATION INSTRUCTIONS

- 40) Re-attach the brake caliper and tighten the bolts that fasten it.

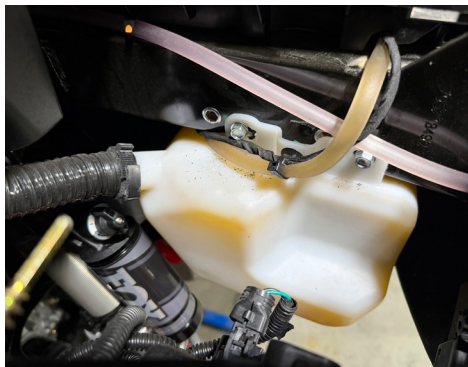


- 41) Attach sway bar link to upper arm.



INSTALLATION INSTRUCTIONS

42) Next, install the shock with shock reservoir facing outward. You will need to move the windshield wiper reservoir (if applicable). The shock will contact the reservoir if it is not moved. Remove the hardware fastening the reservoir into place, then swing the shock outward. Assess where the reservoir will need to be moved to and then re-fasten with the provided self-tapping screws from the kit. Trimming of plastics may be required as well. See photos below.



43) Connect bottom end of shock to upper control arm and tighten.

INSTALLATION INSTRUCTIONS

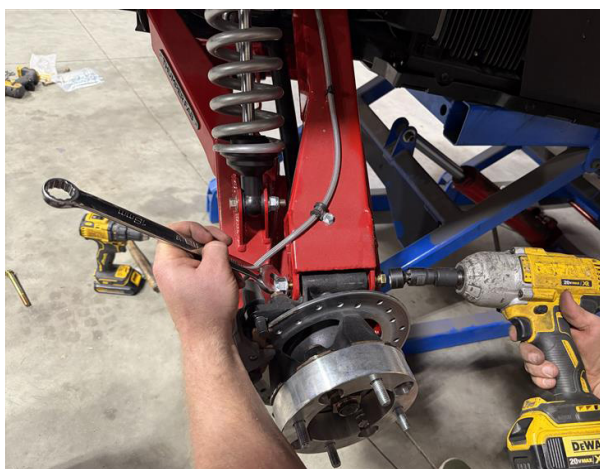
REAR CONTROL ARM INSTALLATION

44) Install the lower and upper control arms using the OEM hardware previously removed. Also, install the new axle into the rear differential.



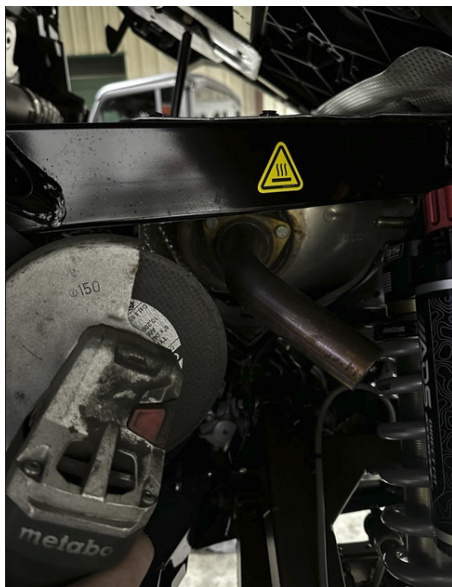
INSTALLATION INSTRUCTIONS

45) Also, install the new FOX shock with the reservoir facing forward as shown below, as well as the disc, knuckle, and caliper. There will be a longer bolt provided in the kit for the upper arm mount to the knuckle due to the thicker tabs on the upper arm.



INSTALLATION INSTRUCTIONS

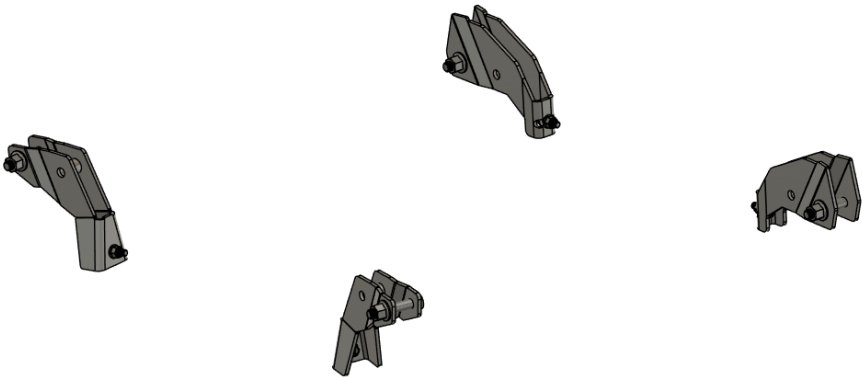
46) Also, when installing an aftermarket shock (either FOX or ADS) on the rear driver corner of the vehicle, the exhaust trim will need to be trimmed to keep the exhaust off the shock reservoir. Use a grinder to cut the exhaust tip as shown below





CanAm Defender HD11 **Long Travel - OEM Shock Relocation**

SKU: TF292001



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CanAm Defender HD11

Long Travel



SKU: TF292001

PARTS

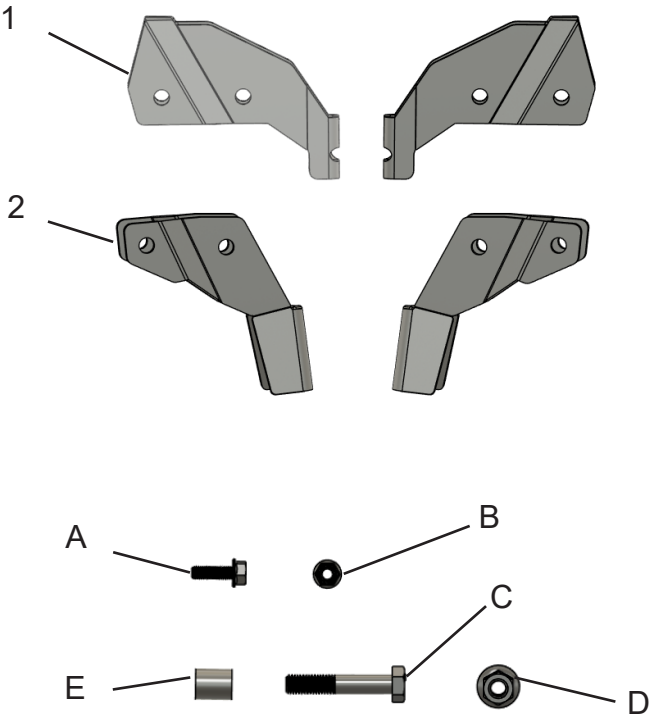
REF	QTY	DESCRIPTION
1	2	Front OEM Shock Relocation Brackets
2	2	Rear OEM Shock Relocation Brackets
HARDWARE KIT		
A	4	M8 x 20mm Flange Bolts
B	4	M8 x Flange Nylon Lock Nuts
C	4	M12 x 100mm Flange Bolts
D	4	M12 Flange Nylon Lock Nuts
E	4	Spacers

TOOLS

- 18mm Socket and Wrench

BEFORE YOU BEGIN

If you do not feel comfortable installing your **Thumper Fab** Long Travel OEM Shock Relocation Kit, please see your nearest Thumper Fab Dealer for installation.



INSTALLATION INSTRUCTIONS

Installation - Front

If using OEM Shocks with Thumper Fab Long Travel Kit, an OEM Shock Relocation Kit need to be installed. For the installation on the front, place the front bracket into place as shown and loosely fasten with the M8 bolt and nut from the kit. Next, using the OEM shock bolt and a spacer from the kit, run the bolt through the frame mount, the bracket and the spacer. Then tighten all hardware.



Installation - Rear

Repeat the same process for the rear. As shown below.



Can-Am defender HD11
Bushing Tool Kit

SKU: TF290001



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Can-Am Defender HD11

Bushig Tool Kit

SKU: TF290001



PARTS

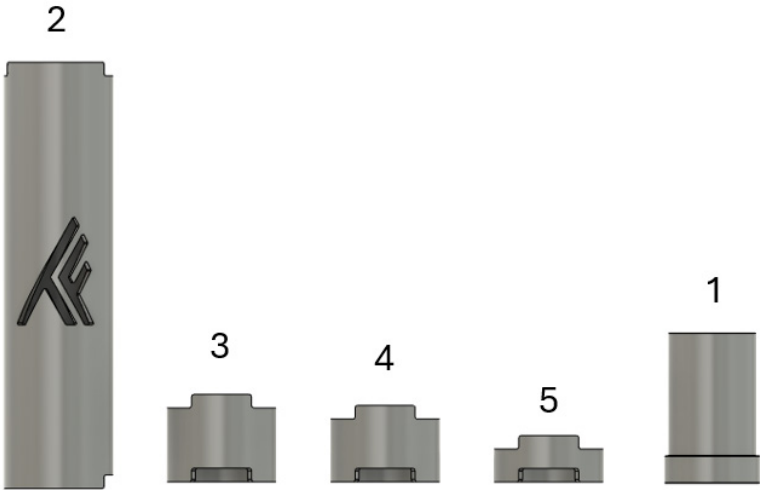
REF	QTY	DESCRIPTION
1	1	Machined Press Tool
2	1	Rear Upper Arm Support Tube
3	1	Front Upper Arm Add-On Tube
4	1	Front Lower Arm Add-On Tube
5	1	Rear Lower Arm Add-On Tube

BEFORE YOU BEGIN

If you do not feel comfortable using your **Thumper Fab** Bushing Tool Kit, please see your nearest **Thumper Fab®** Dealer for installation.

Torque Specs:

SIZE (STANDARD)	GRADE 5	GRADE 8	SIZE (METRIC)	CLASS 8.8	CLASS 10.9
5/16"	15 ft/lbs	20 ft/lbs	8MM	5 ft/lbs	9 ft/lbs
3/8"	30 ft/lbs	35 ft/lbs	9MM	10 ft/lbs	23 ft/lbs
7/16"	45 ft/lbs	60 ft/lbs	10MM	32 ft/lbs	45 ft/lbs
1/2"	65 ft/lbs	90 ft/lbs	12MM	55 ft/lbs	75 ft/lbs
9/16"	95 ft/lbs	130 ft/lbs	14MM	85 ft/lbs	120 ft/lbs
5/8"	135 ft/lbs	175 ft/lbs	16MM	130 ft/lbs	165 ft/lbs
3/4"	185 ft/lbs	280 ft/lbs	18MM	170 ft/lbs	240 ft/lbs



INSTALLATION INSTRUCTIONS

Bushing Tool Kit Operation

This bushing tool kit can be used to remove the bushings from OEM arms and install in Thumper Fab Control Arms designed for HD11 Defenders. To remove the bushings from the OEM control arms, use the support tube between the bushing collars of each arm. Besides the rear upper control arm, an add-on tube will be needed for the specific control arm to properly take up the gap between the bushing tubes to allow the pressing out of the bushings without distorting the control arms geometry (**FIG 1**).

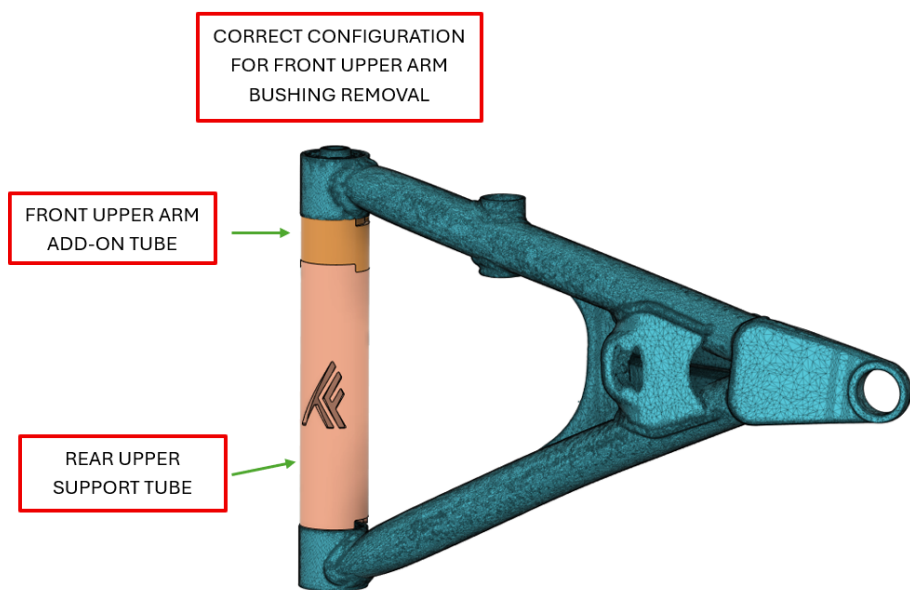


FIG 1 - Select correct configuration of support tubes

INSTALLATION INSTRUCTIONS

Bushing Tool Kit Operation

Once the correct configuration of support tube and add-on tubes is selected, use the small end of the machined press tool to press the bushing out of the control arm (**with the control arm safely supported on the press**). Once the bushing is removed from one side of the control arm, flip the arm over and repeat the process until all of the bushings are removed from the OEM control arms (**FIG 2**).

PRESS DOWN ON MACHINED PRESS TOOL
TO REMOVE BUSHING FROM CONTROL ARM

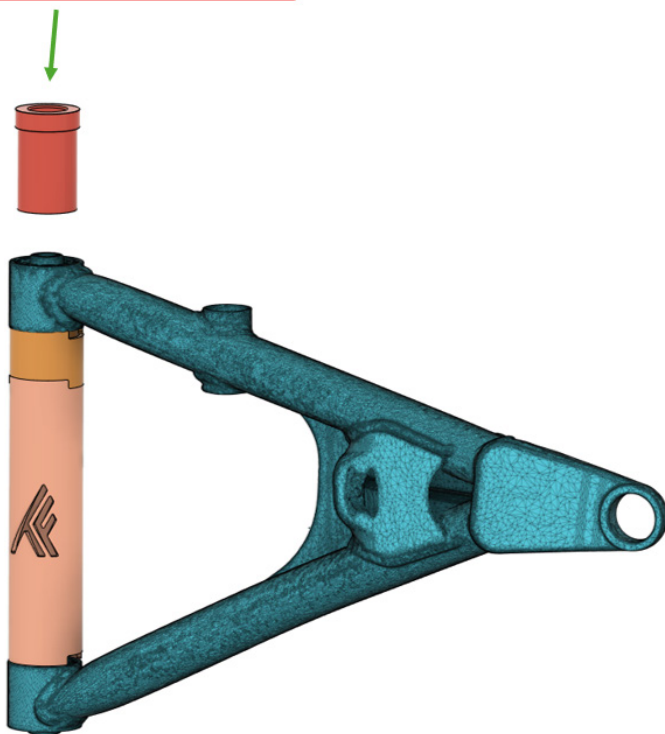


FIG 2 - Remove bushings from OEM control arms

INSTALLATION INSTRUCTIONS

Bushing Tool Kit Operation

The process for bushing installation is very similar. Select the correct support tube and press the bushing into the bushing collar of the Thumper Fab control arm using the large end of the machined press tool (**with the control arm safely supported on the press**). Press until the large end of the machined press tool contacts the control arm and repeat the process for the remaining 15 bushings (**FIG 3**).

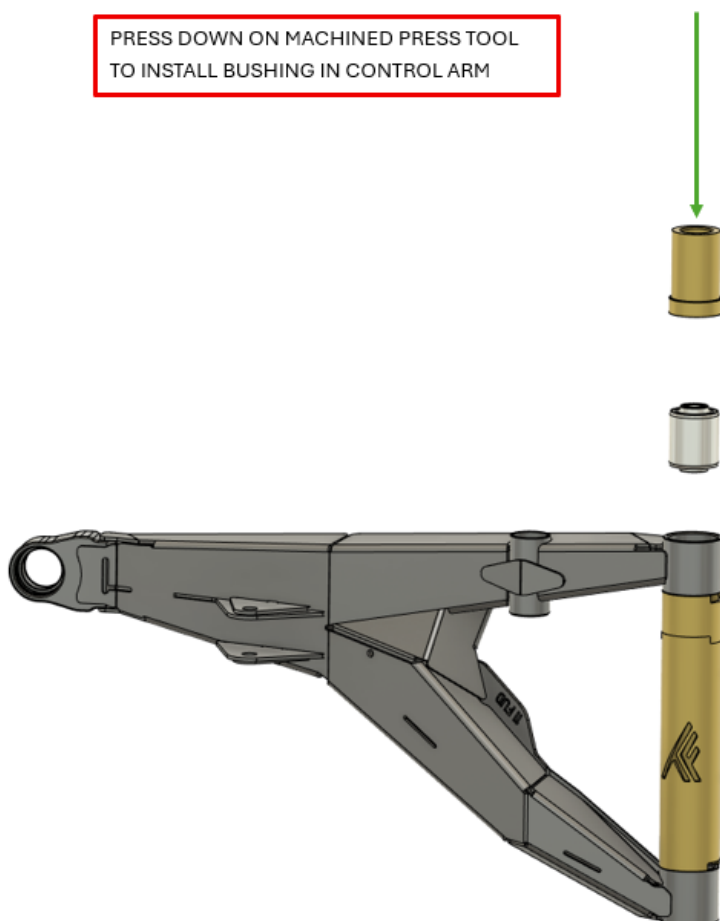


FIG 3 - Install bushings using the large end of the machined press tool

INSTALLATION INSTRUCTIONS

PRODUCT DISCLAIMER

The installation of products sold or manufactured by Thumper Fabrication, LLC (Thumper Fab) including, but not limited to suspension components such as lift kits, audio roofs, roll cages, frame stiffener kits, and tires that exceed the original specifications for the vehicle, may change the vehicle's center of gravity and handling characteristics both on- and off-road. You are aware that the installation of tires that are larger than original vehicle specifications may reduce the effectiveness of the braking system. Use of these products may place added stress to the original factory vehicle components which could cause them to weaken or possibly fail.

Products sold or manufactured by Thumper Fab are intended for off-road use only. Operation of a vehicle modified with these products on a road could result in serious bodily injury or death, and such operation may violate the laws of your state or municipality. You agree to operate your vehicle exclusively in the manner intended by the vehicle manufacturer. You agree that failure to safely and reasonably operate your vehicle could result in serious bodily injury or death, and that, as a result of installation of this product(s) to your vehicle, extreme care must be taken to prevent vehicle rollover or loss of control, which may be more likely to occur as a result of said modifications. You will avoid unsafe maneuvers, including sudden sharp turns or other abrupt maneuvers, which could make a vehicular accident more likely. You understand that Thumper Fab is not responsible or liable for any damages or any injuries to yourself or your passengers that could occur upon possible accidents due to driver error, incorrect installations, bad judgment, incompatibility with other aftermarket accessories or natural disasters to the fullest extent allowable by law. You will have all vehicle occupants fasten seatbelts, if equipped, and wear proper safety equipment, such as DOT approved helmet and eye protection prior to operating the vehicle. You understand and acknowledge that failure to wear proper safety equipment may increase the risk of serious bodily injury or death to yourself and any passengers.

Proper installation of products sold or manufactured by Thumper Fab requires knowledge of the factory recommended procedures for removal and installation of original equipment components. Installation of these products without proper knowledge and experience may affect the performance of these components and the safety of the vehicle and cause serious bodily injury or death. It is strongly recommended that a certified mechanic familiar with the installation of similar components perform the product(s) installation.

Prior to installing any products sold or manufactured by Thumper Fab, you will perform or cause to be performed an inspection of their vehicle to confirm its condition is suitable for the installation of these products. A proper inspection of the vehicle includes confirmation that the vehicle has not been in a collision and is free of corrosion. If the vehicle is suspected to have been in a collision or misused, or is otherwise unsuitable for modification, you will not install the product(s). You will continue to inspect the vehicle prior to each use to confirm its condition is suitable for its intended use, and you acknowledge that the failure to do so may result in serious bodily injury or death, as well as damage to the vehicle itself.

You will install any warning labels provided with the product so it may be prominently seen by yourself and all passengers. You will notify all passengers of the modifications performed to your vehicle prior to operation.

Insurance companies may handle coverage of a modified vehicle differently. Please check with your insurance carrier prior to modifying the vehicle to ensure your coverage remains sufficient. Installation of this product(s) may void your vehicle warranty. If this is a concern, please check with the manufacturer or dealer before purchase or installation of this product(s).



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