400 W. Artesia Blvd. Fax: (310) 747-3912
Compton, CA 90220 Ph: (877) 695-7812
www.trailmastersuspension.com

FORD F-150 4WD SUSPENSION LIFT KIT
'09- '13 KIT# TM403N

WARNING

Installation of a Trail Master suspension lift kit will change the vehicle's center of gravity and handling characteristics both on- and off-road. You must drive the vehicle safely! Extreme care must be taken to prevent vehicle rollover or loss of control, which could result in serious injury or death. Avoid sudden sharp turns or abrupt maneuvers and always make sure all vehicle occupants have their seat belts fastened.

WARNING

Before you install this kit, read and understand all instructions, warnings, cautions, and notes in this instruction sheet and in the vehicle owner's manual.

CAUTION

Proper installation of this kit requires knowledge of the factory recommended procedures for removal and installation of original equipment components. We recommend that the factory shop manual and any special tools needed to service your vehicle be on hand during the installation. Installation of this kit without proper knowledge of the factory recommended procedures may affect the performance of these components and the safety of the vehicle. We strongly recommend that a certified mechanic familiar with the installation of similar components install this kit.

WARNING

This kit should only be installed on a vehicle that is in good working condition. Before you install the kit, thoroughly inspect the vehicle for corrosion or deformation of the sheet metal. If the vehicle is suspected to have been in a collision or misused, do not install this kit. Off-road use of your vehicle with this kit installed may increase the stress applied to the factory components. Failure to observe this warning may result in serious personal injury and/or severe damage to your vehicle.

WARNING

Many states and municipalities have laws restricting bumper heights and vehicle lifts. Consult state and local laws to determine if the changes you intend to make to the vehicle comply with the law.

WARNING

The installation of larger tires may reduce the effectiveness of the braking system.

WARNING

Always wear eye protection when operating power tools.

WARNING

Before you install this kit, block the vehicle tires to prevent the vehicle from rolling.

WARNING

DO NOT combine suspension, body, or other lift devices. Use of vehicle with combined lifts may result in unsafe and/or unexpected handling characteristics.

NOTE

Lift height may vary depending on vehicle configuration, engine size, additional accessories, the factory suspension package, and vehicle's condition.

NOTE

Trail Master recommends using thread locking compound on the threads of all kit nuts and bolts unless specified otherwise in these instructions.

INSTALLATION WORKSHEET—SAVE WITH VEHICLE RECORDS

Product Information

Part Number:	Date Purchased:	Purchased From:

Vehicle Information

Make:	Model:	Year:
VIN:	Mileage:	Engine:

Owner Information

Name:		
Address:		
City:	State:	Zip:

Vehicle Measurements

Axle Center to Fender Lip (on level ground, at ride height):	OE	Kit Installed
Right Front		
Right Rear		
Left Front		
Left Rear		

Bump Stop to Contact Point (on level ground, at ride height):	OE	Kit Installed
Right Front		
Right Rear		
Left Front		
Left Rear		

Tire & Wheel Information

Tire Size:	Tire Brand:	
Actual Tire Diameter (measured):	Wheel Size:	
Wheel Style:	Wheel Brand:	Wheel Backspacing:

Other Equipment and/or Accessories

Installer Information

Shop Name:	Installer:	
Address:		
City:	State:	Zip:
Phone Number:	Fax Number:	

Attach: Copy of Purchase Receipt
Copy of Vehicle Wheel Alignment Results

Before Starting Installation

NOTE

Kit parts are prefaced by the word *kit* and appear in **bold** print.

1. Carefully read all warnings and instructions completely before beginning.

2. Verify all parts have been received in this kit by checking the parts list at the end of this document.

3. **Only install this kit on the vehicle for which it is specified.** If anytime during the installation you encounter something different from what is outlined in the instructions, call technical support at **(877) 695-7812.**

4. Park vehicle on a clean, dry, flat, level surface and block tires so vehicle cannot roll in either direction.

5. Measure ride height with the vehicle supporting its own weight on level ground. To settle the suspension, the vehicle should be driven forward at least 10 feet immediately prior to taking these measurements. Ride height is the measurement from the center of the axle straight up (vertical) to the fender lip. Record this measurement for all four wheels.

NOTE

Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the factory service manual. When re-assembling the vehicle it is recommended by the vehicle manufacturer that certain fasteners are replaced in order to maintain proper retention characteristics. This system may not include all replacement hardware as recommended by the factory service manual. Additional replacement hardware should be obtained prior to installation of this system to meet the requirements of the factory service manual.

Engine Compartment

1. Disconnect both battery cables. Disconnect negative cable first, then positive cable.

Wheel & Tire Requirements

Stock 17” & 18” wheels will not work in conjunction with this kit.

Fits 2011-UP w/ Electric steering rack.

Torque Specifications:

See factory service manual for torque values when reusing OE fasteners.

See factory service manual for torque values when re-using OE fasteners.

Bolt Size	Grade 5 (ft.-lbs.)	Grade 8 (ft.-lbs.)
1/4”-20	10	10
1/4”-28	10	12.5
5/16”-18	17	22.5
5/16”-24	20	25
3/8”-16	30	40
3/8”-24	35	45
7/16”-14	50	65
7/16”-20	55	70
1/2”-13	75	100
1/2”-20	80	115
9/16”-12	105	135
9/16”-18	115	150
5/8”-11	150	195
5/8”-18	160	210
3/4”-16	175	225

Tire & Wheel Information:

Due to differences in manufacturing, dimensions and inflated measurements, tire and wheel combinations should be test fit prior to installation. Tire and wheel choice is crucial in assuring proper fit, performance, and the safety of your Trail Master equipped vehicle. For this application, 18” and larger wheel not to exceed 9” in width with a maximum backspacing of 5 1/2” is acceptable. A quality tire of radial design, not exceeding 35” tall X 13.5” wide is recommended. Please note that the use of a 35” X 13.5” tire may require fender modification. Violation of these recommendations will not be endorsed as acceptable by Trail Master Suspension and will void any and all warranties either written or implied.

Prepare to Install Front Suspension

1. Place your floor jack under the front cross member and raise vehicle. Place jack stands under the frame rails behind the front wheel wells and lower the frame onto the stands. Remove the jack and remove the front wheels.
2. Remove any skid plates if necessary.
3. Work on one side of the vehicle at a time.
4. Unbolt the **OE** brake line and bracket from the side of the knuckle. Save the hardware for reinstallation.
5. Remove the front caliper and bracket assembly from the front knuckle by removing the **(2)** retaining bolts.

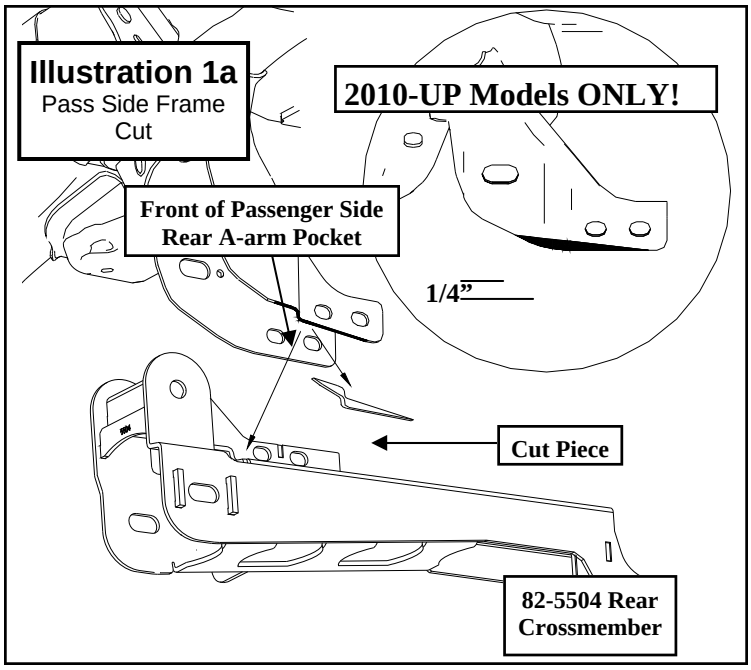
   NOTE: Make sure you do not let the calipers hang on the brake lines or damage will occur.
7. Remove the front rotors from the front hub.
8. Remove the dust cap and the nut from the end of the CV in the hub.
9. Remove the anti-lock wiring and sensor from the hub if applicable.
10. Remove the vacuum line from the rear of the hub.
11. Disconnect the sway bar end links from the sway bar. Save hardware for reinstallation.
12. Unbolt and remove the sway bar from the vehicle. Save hardware for reinstallation.
13. Remove the tie rod end nut and separate from the knuckle using the appropriate tool.
14. Remove the upper ball joint nut from the knuckle and separate using the appropriate tool.
15. Remove the lower ball joint nut, separate using the appropriate tool. Remove the knuckle from the vehicle while pulling it away from the CV and set the knuckle aside.
16. Remove the three nuts from the top of the coil over assembly and the one large nut and bolt on the bottom. Remove the coil from the vehicle. Save hardware for reinstallation.
17. Remove the two bolts that retain the lower a-arms and remove them from the truck.
18. Repeat on the other side of the vehicle.
19. Mark the driveshaft orientation and disconnect the front drive shaft from the differential. Secure the driveshaft up and out of the way of the work area.
20. Remove the rear cross member brace; retain **(2)** of the bolts and nuts for reinstallation.

    NOTE: Careful heating of the OE bolts may be necessary to loosen the factory thread locker.
21. Make sure that the front differential is well supported, remove the existing hardware from both passenger and driver side differential mounting areas. Carefully lower differential out of vehicle and set aside. Note the vent routing for reinstall. Be careful the differential is heavy.
22. In order to install the rear crossmember, the driver side control arm mounting pocket needs to be removed. Measure up **3 3/4”** from the top of the cam bolt hole and draw a horizontal line across the entire pocket. See **Illustra-**

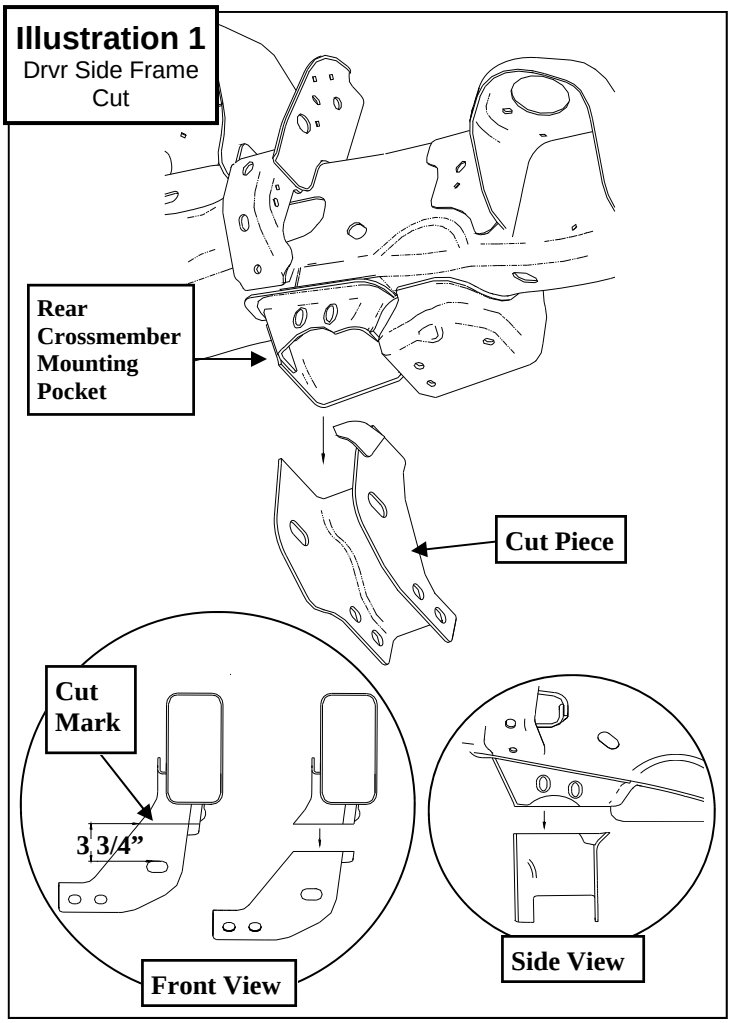
tion 1.

IMPORTANT!: For 2010-UP models ONLY, the front of the passenger side rear A-arm pocket will need to be trimmed approximately 1/4" in order to install the rear crossmember. See ILLUSTRATION 1a.

23. Using a suitable cutting tool, (abrasive cutoff wheel, Sawz-all, etc.) cut the frame along the previously marked lines as shown in **Illustration 1 & 1a (For 2010 Models only)**. After cutting the section out of the frame, clean the area thoroughly and paint the exposed metal with a good quality paint.



Install Front Suspension



1. Install the driver side and passenger side front differential drop brackets **82-5526 drvr** and **pass)** to the frame with the previously removed **OE** bolts and hardware. Leave the bolts loose. See **Illustration 2.**

NOTE: The jog in the brackets will face towards the front of the truck.

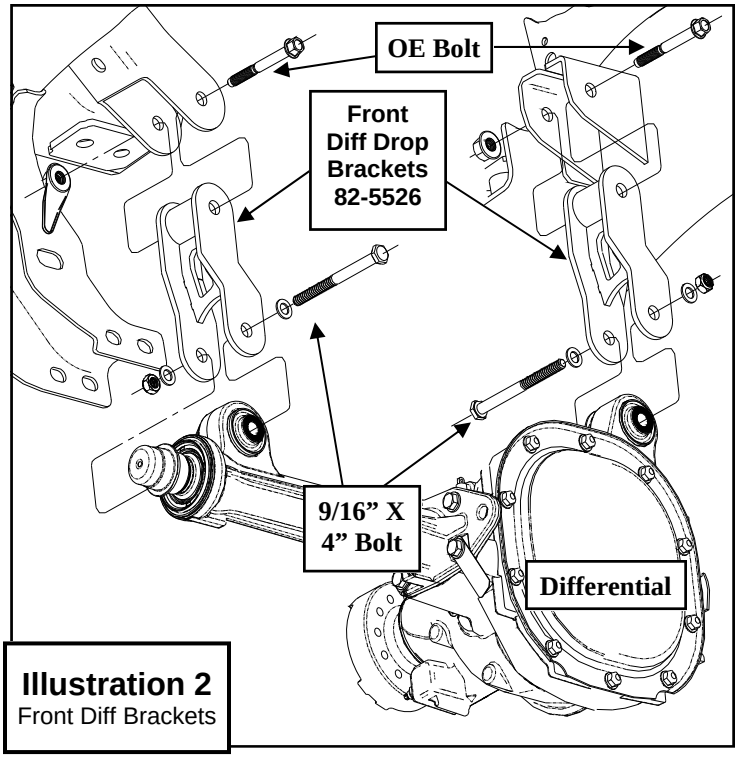


Illustration 3
Rear Crossmember Install

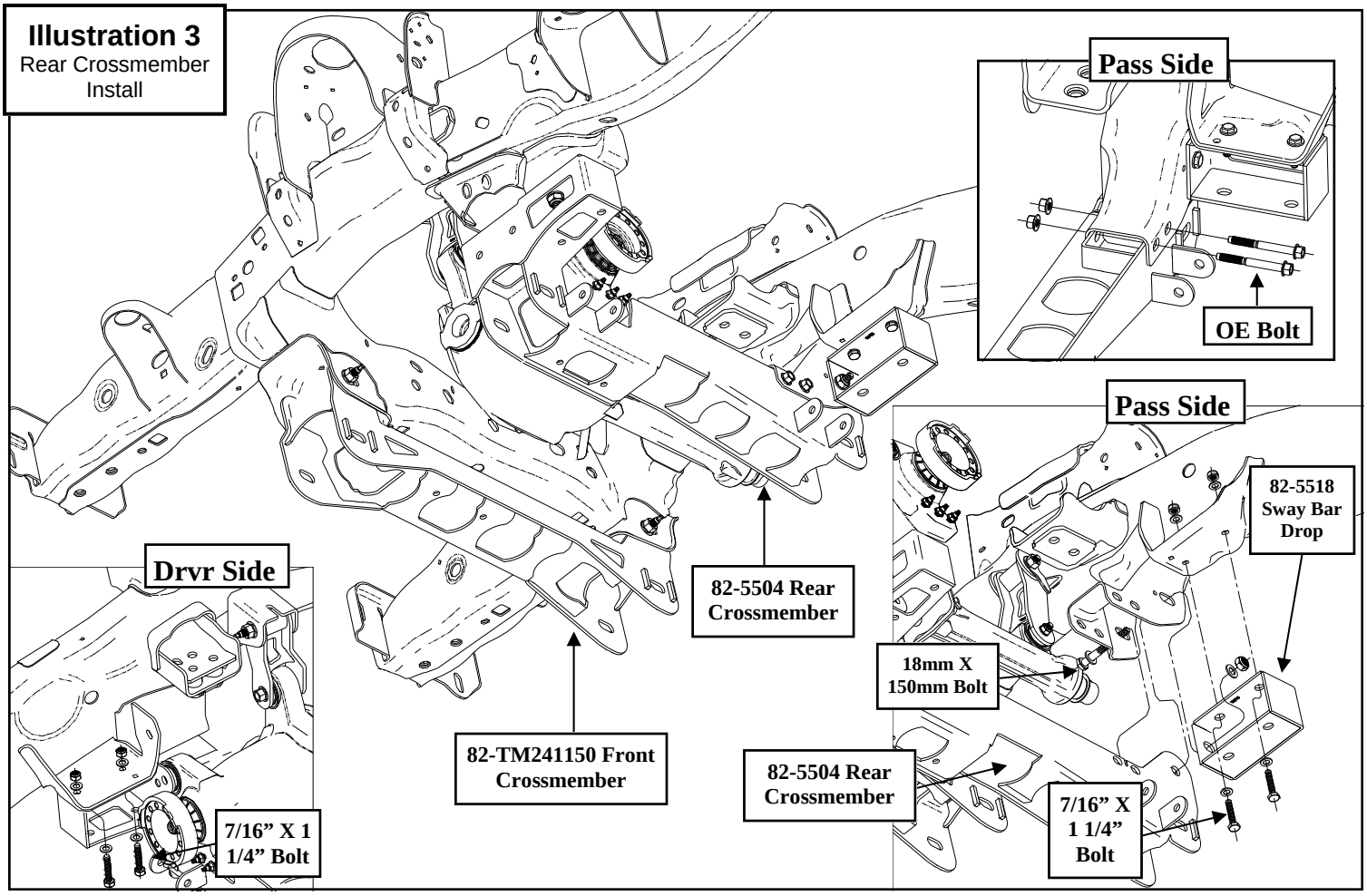
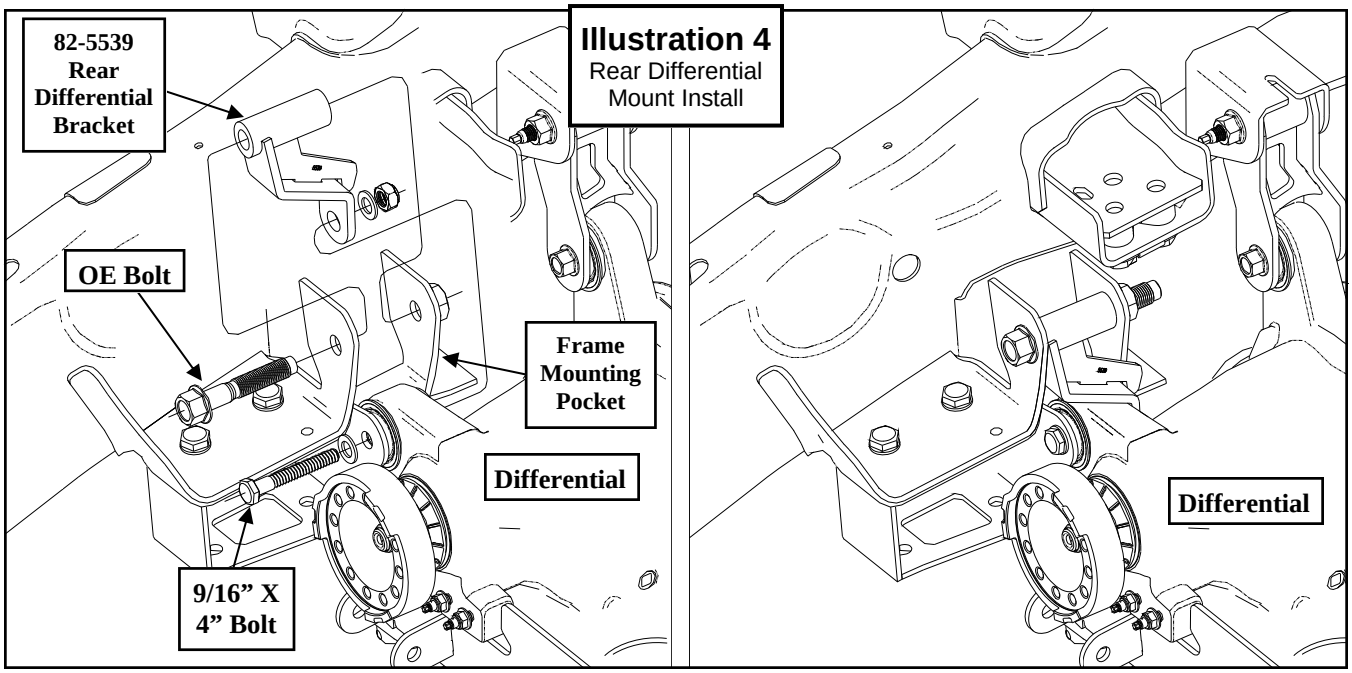


Illustration 4
Rear Differential Mount Install



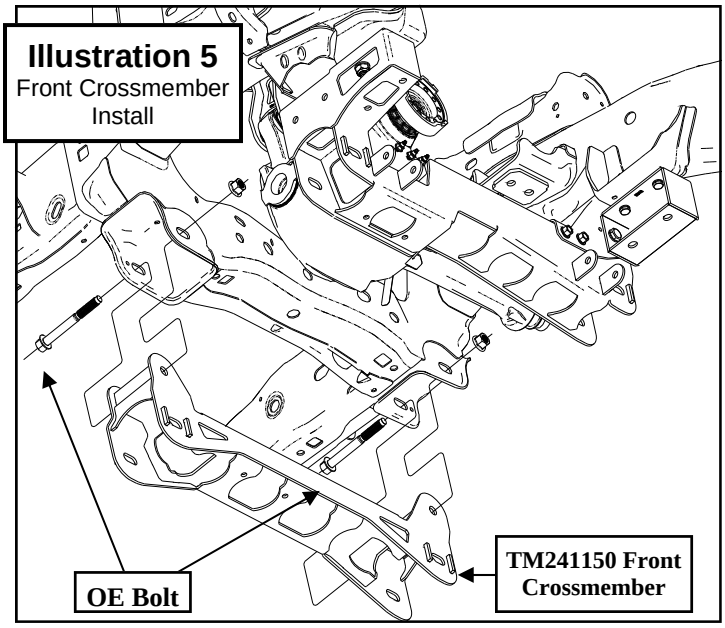


Illustration 5
Front Crossmember Install

2. Carefully hang the differential into the front differential drop brackets with the supplied **9/16" X 4"** bolts and hardware from pack **(90-6302)**. Leave the bolts loose. See **Illustration 2**.

3. Using the differential drop extension pack **(90-6189)** fit the new hose to the differential. Place the supplied plug in the end of the tube and connect the factory tube to it. Route the vent hose as previously noted. Use the supplied zip ties to secure the hose.

4. Raise the rear crossmember **(82-5504)** into place and install the supplied passenger side **18mm X 150mm** crossmember bolt. Install the bolt with the head to the front. Do not install the nut at this time. See **Illustration 3**.

5. Install the passenger side sway bar drop bracket **(82-5518)** onto the previously installed **18mm** crossmember bolt. Install the nut onto the crossmember bolt. Leave the bolts loose. See **Illustration 3**.

6. Secure the passenger side sway bar drop bracket **(82-5518)** to the **OE** sway bar mounting holes in the frame using the supplied **7/16" X 1 1/4"** bolts and hardware. Leave the bolts loose. See **Illustration 3**.

7. Install the **(2) OE** crossmember support brace bolts into the **(2)** remaining holes on the pass side of the rear crossmember. Leave the bolts loose. See **Illustration 3**.

8. Secure the rear crossmember **(82-5504)** to the driver side **OE** sway bar mounting holes in the frame using the supplied **7/16" X 1 1/4"** bolts. Leave the bolts loose. See **Illustration 3**.

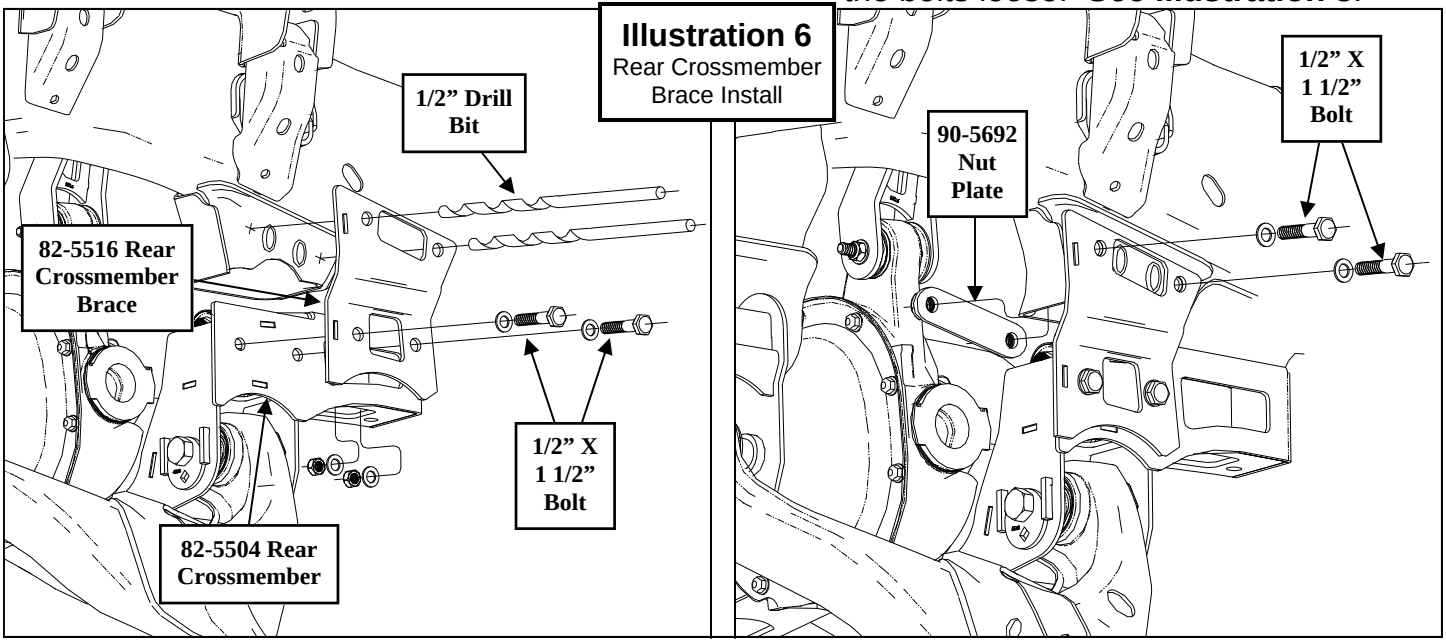
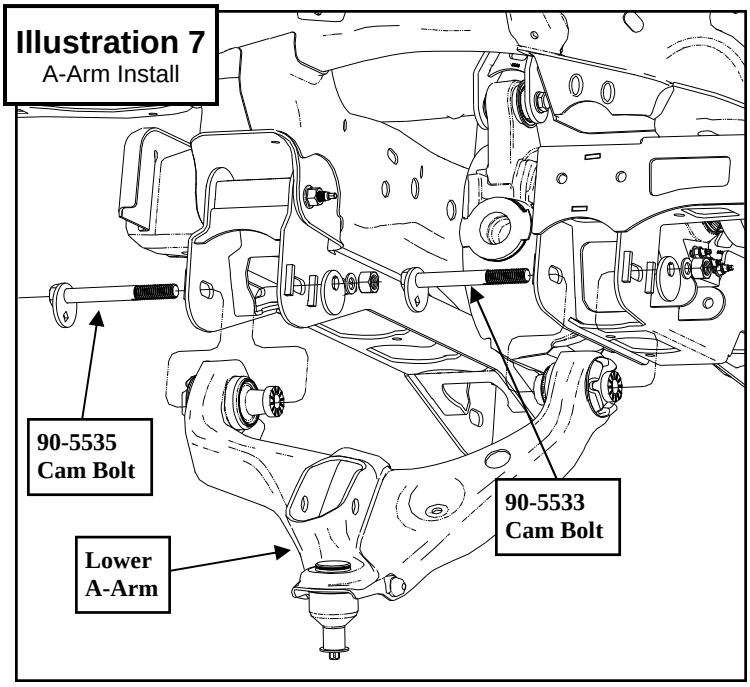


Illustration 6
Rear Crossmember Brace Install

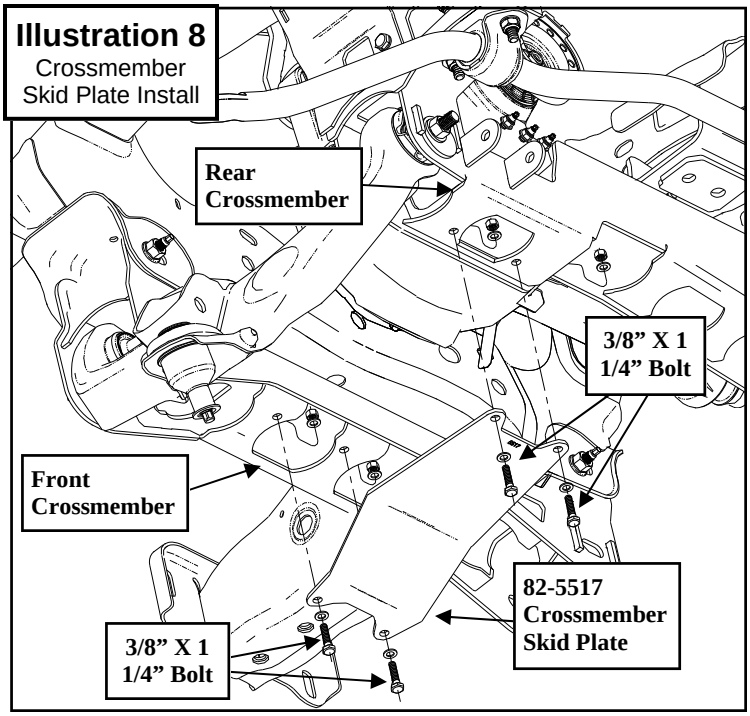
Illustration 7
A-Arm Install



9. Install the rear differential drop bracket **(82-5539)** to the differential using the supplied **9/16" X 4"** bolt, through the mounting hole in the rear crossmember, with the head facing the rear of the vehicle. Leave the bolts loose. See **Illustration 4**.

10. Install the front cross member **(82-TM241150)** into original front A-arm mounting locations, using the factory bolts with the heads to the front, leave loose. See **Illustration 5**. ***IMPORTANT!: 2012 –Up models, the bottom of the A-arm pocket may need to be trimmed approximately 1/4" in order to fully install the front crossmember.***

Illustration 8
Crossmember
Skid Plate Install



11. To ensure proper rear crossmember placement, test fit the driver side A-arm in the crossmember mounting pockets. Secure using the supplied cam bolts **(90-5533 rear** and **90-5535 front)**, cam eccentric **(90-5532), 18mm** washers and nuts.

12. Once the A-Arm is securely in place, tighten the previously installed **7/16"** hardware and the **OE** pass side crossmember bolts and hardware. Remove the A-Arm and cam bolts from the vehicle.

13. Install the rear crossmember brace **(82-5516)** to the rear crossmember using the **1/2" X 1 1/2"** bolts and hardware. Tighten the bolts. See **Illustration 6**.

14. Use the upper holes in the crossmember brace as a guide for drilling through the frame. See **Illustration 6**.

15. Center punch and drill the holes using a **1/2"** drill bit. See **Illustration 6**.

16. Secure the upper holes in the rear crossmember brace **(82-5516)** to the frame using the **1/2" X 1 1/2"** bolts and nut plate **(90-5692).** See **Illustration 6**.

17. Secure the rear upper differential mount to the frame using the previously removed **OE** bolt. See **Illustration 4**.

18. Install the lower a-arms into the new cross members with the supplied cam

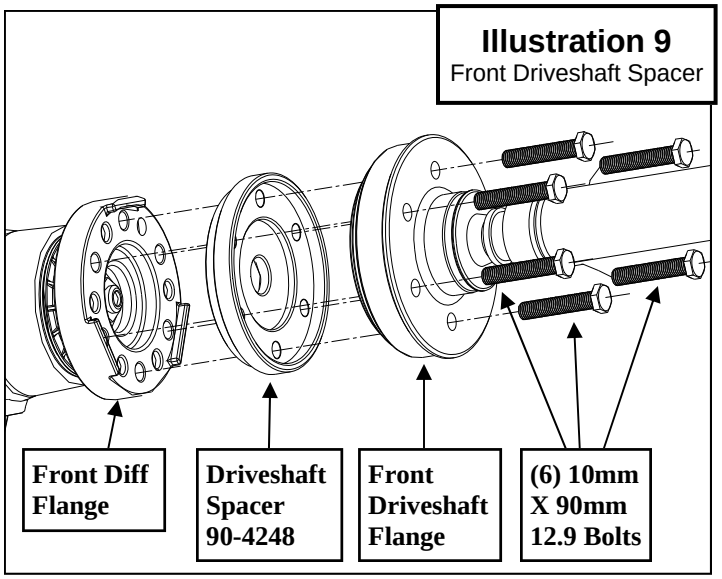


Illustration 9
Front Driveshaft Spacer

bolts **(90-5533 front** and **90-5535 rear)**, cam eccentric **(90-5532), 18mm** washers and nuts. The cams should fit between the cam guides on the cross members. Center the cams in the guides. You will torque the bolts at the end of the install when the vehicle is on the ground. See **Illustration 7**.

19. Install the crossmember skid plate **(82-5517)** to the front and rear crossmembers using the supplied **3/8" X 1 1/4"** bolts and hardware. See **Illustration 8**.

20. Torque all differential, sway bar and crossmember hardware according to the torque chart on page 18 or to manufacturers specifications.

NOTE: The rear cross member is slotted, the rear cross member needs to be pushed as far to the Passenger side as possible before it is tightened.

21. Reinstall the front driveshaft to the differential by slipping in the new aluminum front driveshaft spacer **(90-4248)** and fasten with **(6)** supplied **10mm– 1.5 X 90mm 12.9** bolts. Be sure to use red thread locker on these bolts. See **Illustration 9**. Torque the bolts according to the chart on page 3. Rotate driveshaft to check for binding. If it binds the driveshaft must be clearanced by a qualified driveline shop.

NOTE: The use of this driveshaft spacer is intended for light usage only. If the intended usage is for high speed off road, this spacer should not be installed. The factory front driveshaft should be lengthened by a qualified driveline shop.

Trail Master takes <u>NO</u> responsibility for damage caused as a result of the installation of this spacer.

22. Install the sway bar frame mounts to the sway bar drop brackets using the previously removed **OE** bolt plates, spacer plates **(90-9434), OE** and hardware. See **Illustration 10.**

23. Secure the sway bar end links to the sway bar using the previously removed **OE** hardware.

24. Torque the sway bar mount hardware to 60 ft./lbs.

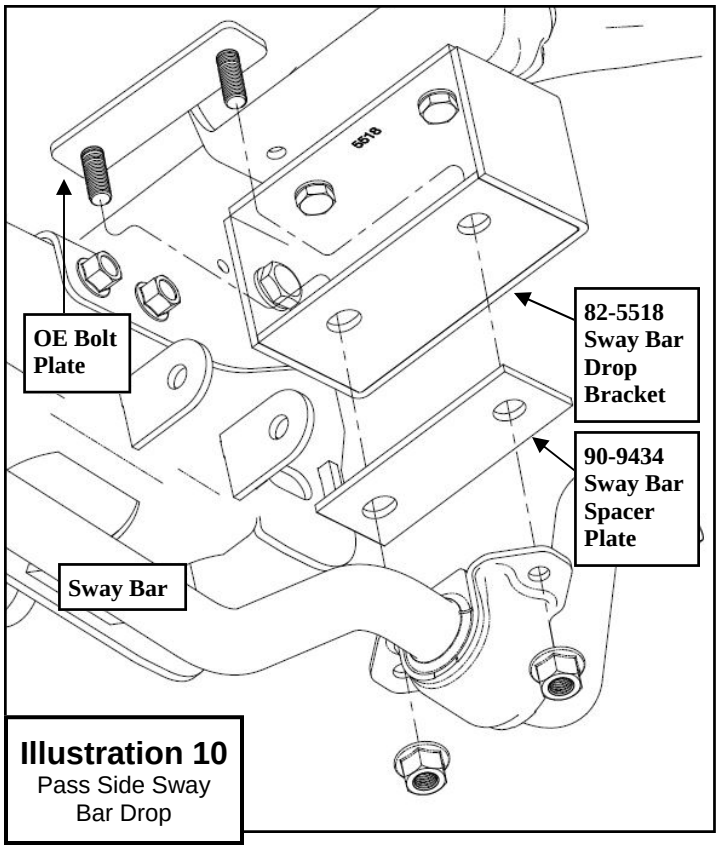
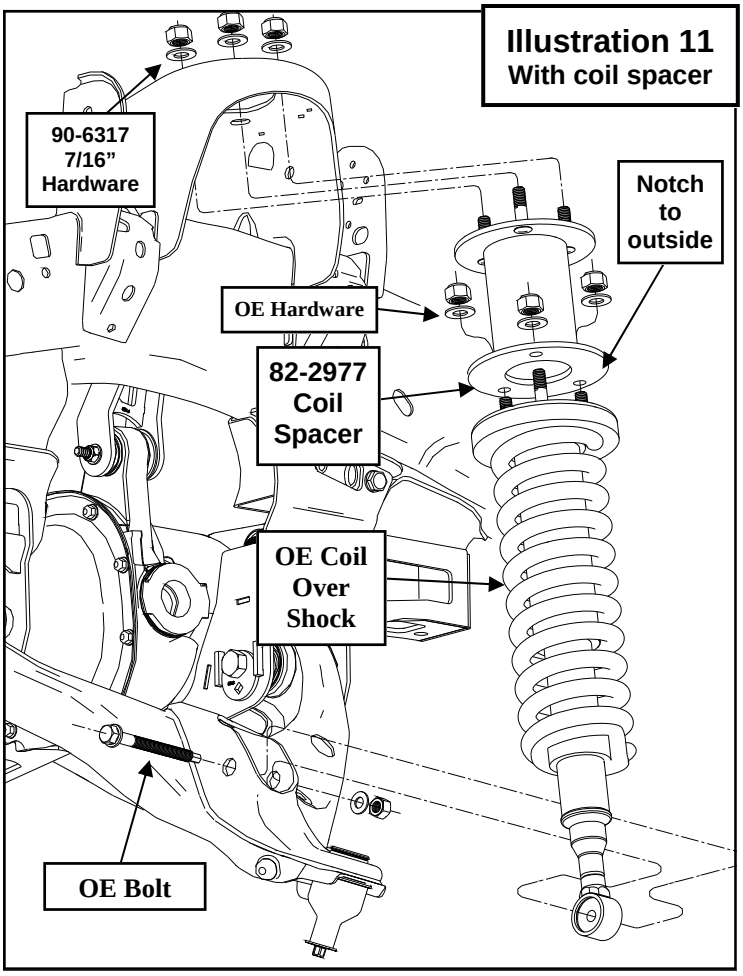


Illustration 10
Pass Side Sway Bar Drop



25. Transfer all the parts from the factory knuckles to the supplied Trail Master knuckles **(90-4253 drvr** and **90-4254 pass)** except the vacuum actuator.

    NOTE: Tighten all the factory hardware carefully. Be sure to follow the factory assembly procedures and torque specifications.

26. Attach the spacer **(82-2977)** to the top of the shock using the previously removed **OE** hardware. See **Illustration 11.**

    NOTE: The notch in the bottom ring face toward the outside of the truck.

27. Install the strut assembly into the strut mounting locations. Secure using the **7/16"** supplied hardware on the top from hardware pack **(90-6317).** Torque to 45-50 ft./lbs. See **Illustration 11.**

28. Install the **OE** bolt through the lower shock mount and a-arm. Torque to factory specifications.

29. Support the lower A-arms. Position the new front knuckles. Attach the knuckle to the lower ball joint.

    NOTE: Correctly position and slide the vacuum actuator over the CV before the next step.

30. While raising the knuckle and lower control arm slide the CV through the vacuum actuator and the knuckle. Attach the nut to the end of the CV shaft. Torque to 17 ft/lbs. and attach the dust cap. Torque the small aluminum vacuum cover bolts to 11 ft/lbs.

31. Attach the knuckle to the upper ball joint. Torque to 85 ft/lbs. Torque the lower A-arms nut to 111 ft/lbs.

    NOTE: Check lower control arm to CV boot clearance at full droop. The lower control arm may need to be trimmed and sanded to prevent contact.

32. Connect the anti-lock wiring harness and sensor to the hub if applicable.

33. Install the supplied brake line bracket **(82-7210)** to the trailing edge of the knuckle using the previously removed **OE** bolt.

34. Secure the **OE** brake line bracket on the front brake line to the new bracket **(82-7210)** using the **5/16" X 1"** bolt and hardware.

35. Attach the vacuum lines to the rear of the hub.

36. Install the front rotors on to the front hub.

37. Install the front calipers on to the front rotors by reinstalling the retaining bolts. Torque to factory specifications.

NOTE: On 2010-Up models, the installation of the caliper bolt spacers (90-6736 2 per side) will be necessary to keep the end of the bolts from contacting the brake rotor.

NOTE: For 2012-Up models, the brake caliper mounting bracket holes will need to be drilled out to 5/8". Also the casting nubs on the caliper mounting brackets (the bottom flat surface near the mounting holes) may need to be sanded smooth for brake caliper installation.

38. Install the tie rod end to the knuckle. Torque to 111 ft/lbs.

39. Repeat the installation on the other side of the vehicle.

40. Remove stock brake line bracket from frame. Carefully remount the brackets with the supplied brake line drops **(90-3202 drvr** and **pass**) in between bracket and frame. Use factory hardware to fasten the shorter end of the bracket to the frame. Position the drops, best for your application. Use the supplied hardware from pack **(90-6299)** to fasten **OE** bracket to the new brake line drop.

WARNING!: Make sure the brake lines that you just modified are not resting against any moving parts.

41. Reinstall the wheels and tires and lower the vehicle to the ground. Torque the factory wheels to 150 ft/lbs. If you are using aftermarket wheels follow the manufacturers recommended specifications.

42. Recheck all hardware for proper installation and torque at this time.

43. Torque the **18MM** cam bolts to 180-200 ft/lbs.

44. On both sides of the vehicle, check the routing of the brake lines and the ABS wire harnesses. There must be no pinching, rubbing, or stretching of either component. Use zip ties to secure these items. At full droop, cycle the steering from lock to lock while observing the reaction of these components. Reposition them if needed.

45. Reconnect the previously removed positive and negative battery cables.

IMPORTANT! BE SURE TO BRING THE VEHICLE IMMEDIATELY TO A REPUTABLE ALIGNMENT SHOP TO BE ALIGNED!

IMPORTANT!: AFTER INSTALLATION OF KIT AND BEFORE THE VEHICLE IS FIRST STARTED, BE SURE TO CENTER THE FRONT WHEELS AND THE STEERING WHEEL. IF THE FRONT WHEELS AND THE STEERING WHEEL ARE NOT CENTERED BEFORE STARTING THE VEHICLE, IT MAY TRIGGER A DIAGNOSTIC TROUBLE CODE THAT WILL HAVE TO BE RESET BY THE MANUFACTURERS SERVICE FACILITY.

NOTE: SEE PAGE 16 FOR STEERING STOP ADJUSTMENT INSTRUCTIONS.

Prepare to Install Rear Suspension

1.Block the front tires and raise the rear of the vehicle. Support the frame with jack stands forward of the rear springs.

2. Remove the rear wheels.

3. Remove the shocks on both sides of the vehicle. It may be necessary that you slightly raise the axle to unload the shocks for removal.

4. Unbolt the rear driveshaft from the rear differential. Secure out of the work area.

5. On drivers side, unbolt the existing brake line bracket from the frame.

6. Install the supplied brake line extension bracket **(82-5502)** to the frame using the previously removed **OE** hardware. Then bolt the factory bracket to the new bracket using the supplied **5/16" X 1"** hardware from hardware pack **(90-6314).**

7. Reroute rear ABS as necessary use the supplies zip ties to secure lines.

8. Unhook the emergency brake cable and remove from **OE** metal wire clip by pinching the tangs on the line.

9. Support the rear axle with a floor jack and remove the **U-bolts** on the driver side. Loosen the **U-bolts** on the passenger side.

10. Remove the factory lift block from the spring assembly. This will not be reinstalled.

Install Rear Suspension

1.Bolt the supplied emergency brake bracket **(82-7826)** to the **OE** emergency brake frame bracket using the supplied **1/2" X 1 1/2"** Bolt. See **Illustration 12.**

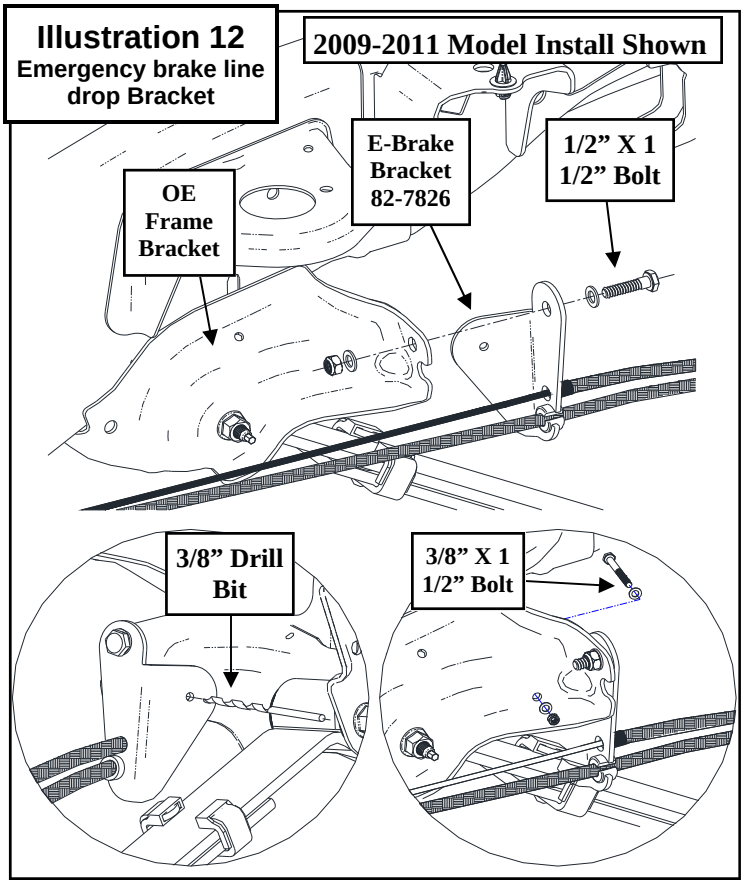
2. Use the inside hole in the emergency brake bracket as a guide for drilling through the frame. See **Illustration 12.**

3. Center punch and drill the holes using a **3/8"** drill bit. See **Illustration 12.**

4. Secure the emergency brake bracket **(82-7826)** to the frame using the **3/8" X 1 1/2"** bolt. See **Illustration 12.**

5. Slip the cable through new bracket **(82-7826)** and re-connect the emergency brake cable.

Illustration 12
Emergency brake line drop Bracket



NOTE: 2012-Up models will reuse the previously removed OE metal wire clip and OE bolt to secure the emergency brake cables to the new bracket.

6. Install the lift block **(95-405F)** onto the axle pad, making sure the pins are fitted into the holes on the spring perch. Use your floor jack to raise the axle to the spring making sure the tabs on the spring block fit into the holes on the lift block. See **Illustration 13.**

7. Secure the assembly with the U-bolts **(13-90390)** supplied in hardware pack and new high-nuts and washers from hardware pack **(20-65302)**. Do not tighten the **U-bolts** at this time. See **Illustration 13.**

NOTE: Make sure the block sits flush on the axle perch.

8. Repeat the installation on the other side of the vehicle.

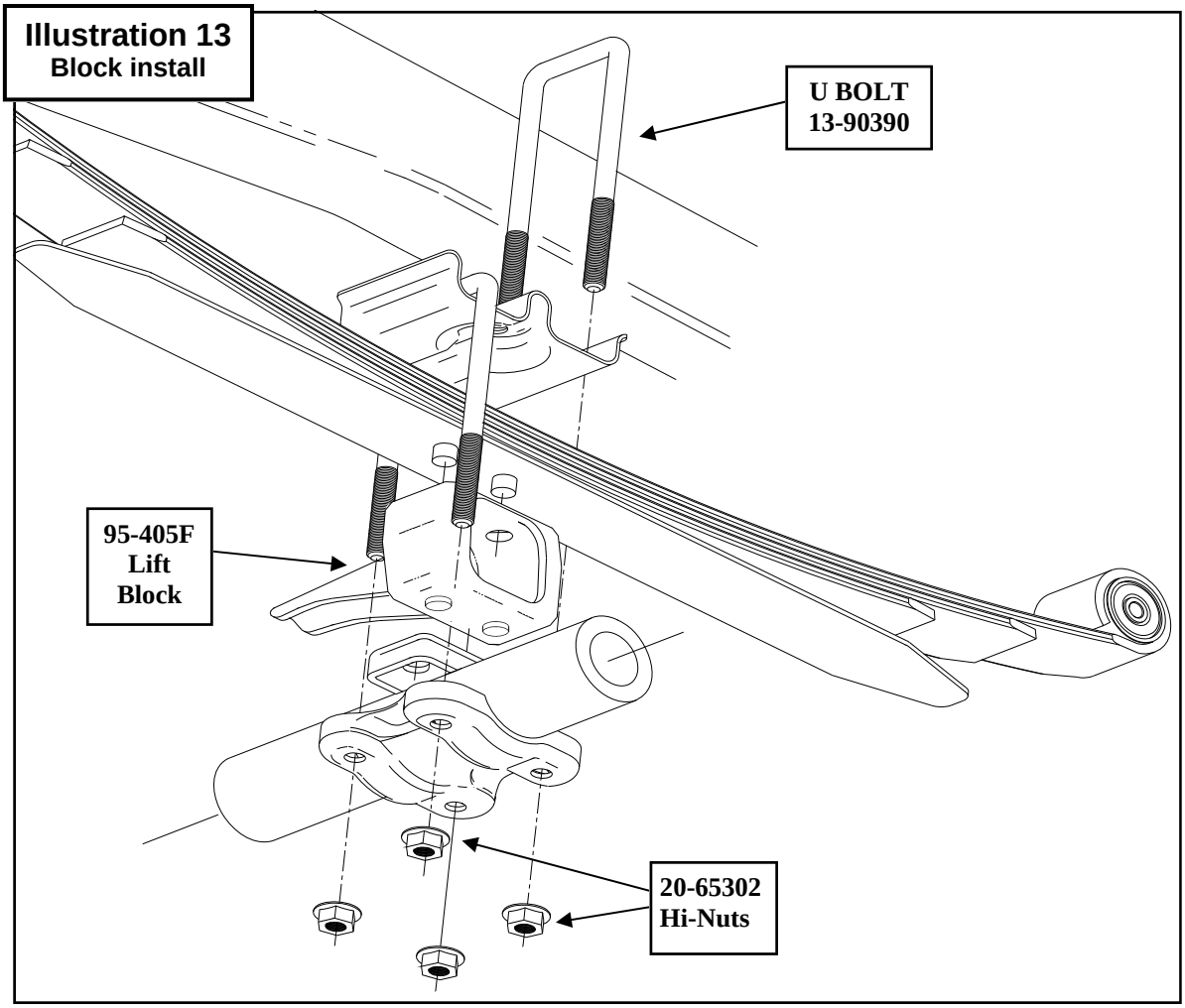
9. When the installation of the remaining side is complete, torque the **U-bolts** to 105 ft. lbs.

10. Insert the supplied sleeves **(60859)** in both end of the shocks.

11. Install your new Trail Master shocks **(TM75790W w/ shaft end up)** and torque this hardware to 66 ft./lbs.

12. Slip in new aluminum rear driveshaft spacer **(90-4338)** and fasten with supplied **12mm X 60mm** bolts and washers from hardware pack **(90-6493)**. Be sure to use thread locker on these bolts. **See**

Illustration 13
Block install



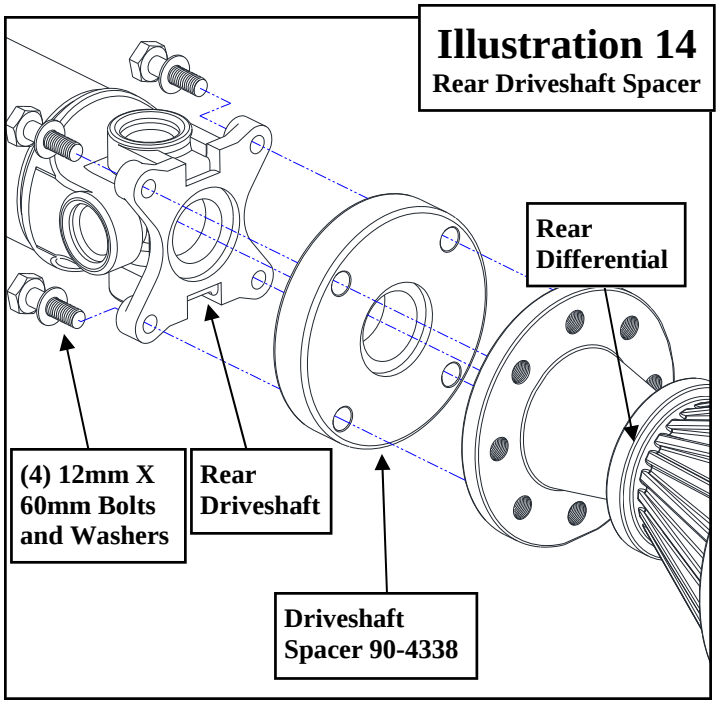


Illustration 14. Rotate the driveshaft to check for binding. If it binds the driveshaft must be clearanced by a qualified driveline shop.

NOTE: The use of this driveshaft spacer is intended for light usage only. If the intended usage is for high speed off road, this spacer should not be installed. The factory rear driveshaft should be lengthened by a qualified driveline shop.

IMPORTANT!: Fully cycle the rear suspension and check for driveshaft plunge. If the driveshaft is too long it will destroy the transfer case. Trail Master takes NO responsibility for damage caused as a result of the installation of this kit.

13. Reinstall the wheels and tires and lower the vehicle to the ground.

14. Reinstall the wheels and tires and lower the vehicle to the ground. Torque the factory wheels to 150 ft/lbs. If you are using aftermarket wheels follow the manufacturers recommended specifications.

15. Recheck all hardware for proper installation and torque at this time.

Dynamic Vehicle Check

1. Check steering and suspension in all positions to ensure that there is no bind and adequate clearance between all moving, fixed, and heated members. Check operation of clutch, brake system, and parking brake. Check operation of transmission and transfer case. Ensure there is full engagement in all gears and 4WD ranges. Check battery connections and electrical component operations. Test-drive vehicle.

WARNING

Re-torque all fasteners after 500 miles and after off road use. All suspension lift components should be visually inspected and fasteners re-torqued during routine vehicle servicing.

Caution:

Larger wheel and tire combinations increase stress and wear on steering and suspension components, which leads to increased maintenance and higher risk for component failure. Larger wheel and tire combinations also alter speedometer calibration, braking effectiveness, center of gravity, and handling characteristics. Consult an experienced local off road shop to find what wheel and tire combinations work best with your vehicle.

IMPORTANT!: 18” OR LARGER WHEELS MUST BE USED IN CONJUNCTION WITH THIS LIFT KIT!

NOTE

All warranty information, instruction sheets, and other documents regarding the installation of this product must be retained by the vehicle owner. Information contained in the instructions and on the warranty card will be required for any warranty claims. The vehicle owner needs to understand the modifications made to the vehicle and how they affect vehicle handling and performance. Failure to provide the customer with this information can result in damage to the vehicle and severe personal injury.

NOTES:

⇒ On completion of the installation, have the suspension and headlights re-aligned.

⇒ After 100 miles recheck for proper torque on all newly installed hardware.

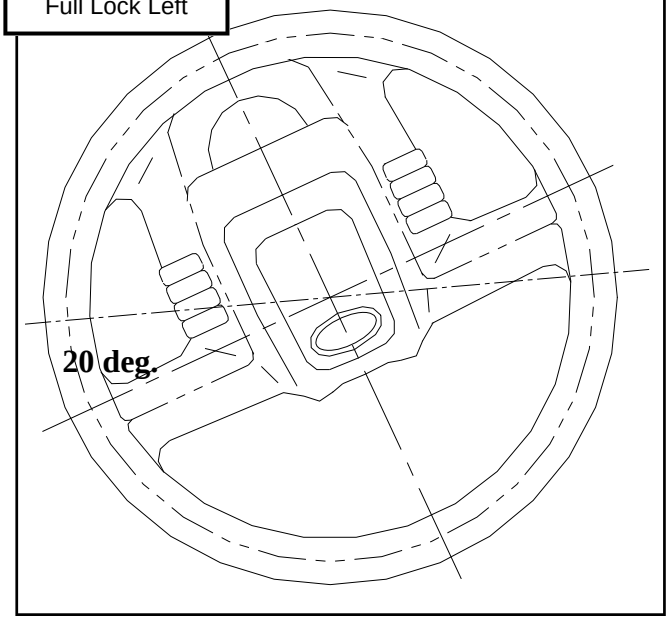
⇒ Recheck all hardware for tightness after off road use.

Steering Stop Shim Adjustment Instructions:

1. After having the vehicle properly aligned by a qualified alignment shop, ensure that your work space is of adequate size and the work surface is level. Place the vehicle in park and set parking brake. Place blocks both in front of and behind the rear wheels.
2. With the vehicle on the ground make sure the steering wheel and the tires are straight.
3. Turn the steering wheel to full lock left and remove the appropriate shims from the passenger side front stop and the driver side rear stop until the steering wheel at full lock is in the same position as **Illustration A.**
4. Turn the steering wheel to full lock right and remove the appropriate shims from the driver side front stop and the passenger side rear stop until the steering wheel at full lock is in the same position as **Illustration B.**
5. Be sure to use thread locking compound on the **5/16" X 1"** shim retaining bolts. See **Illustration C.**

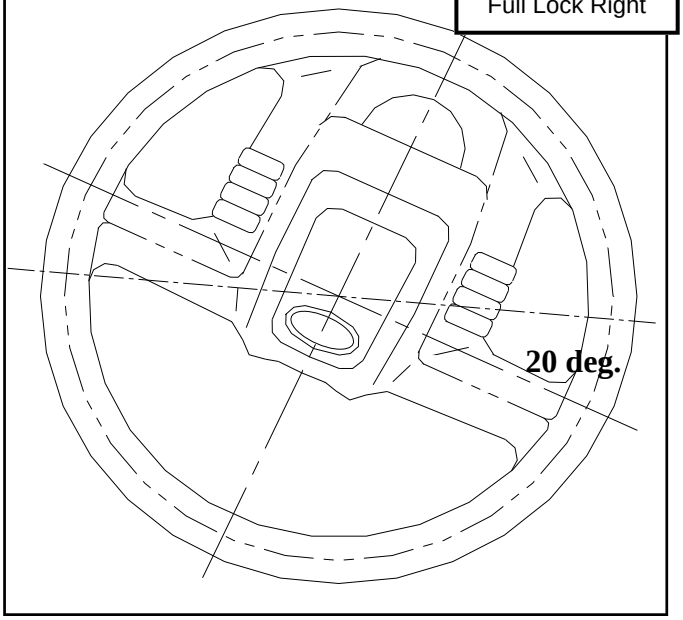
Full Lock Left

Illustration A
Full Lock Left



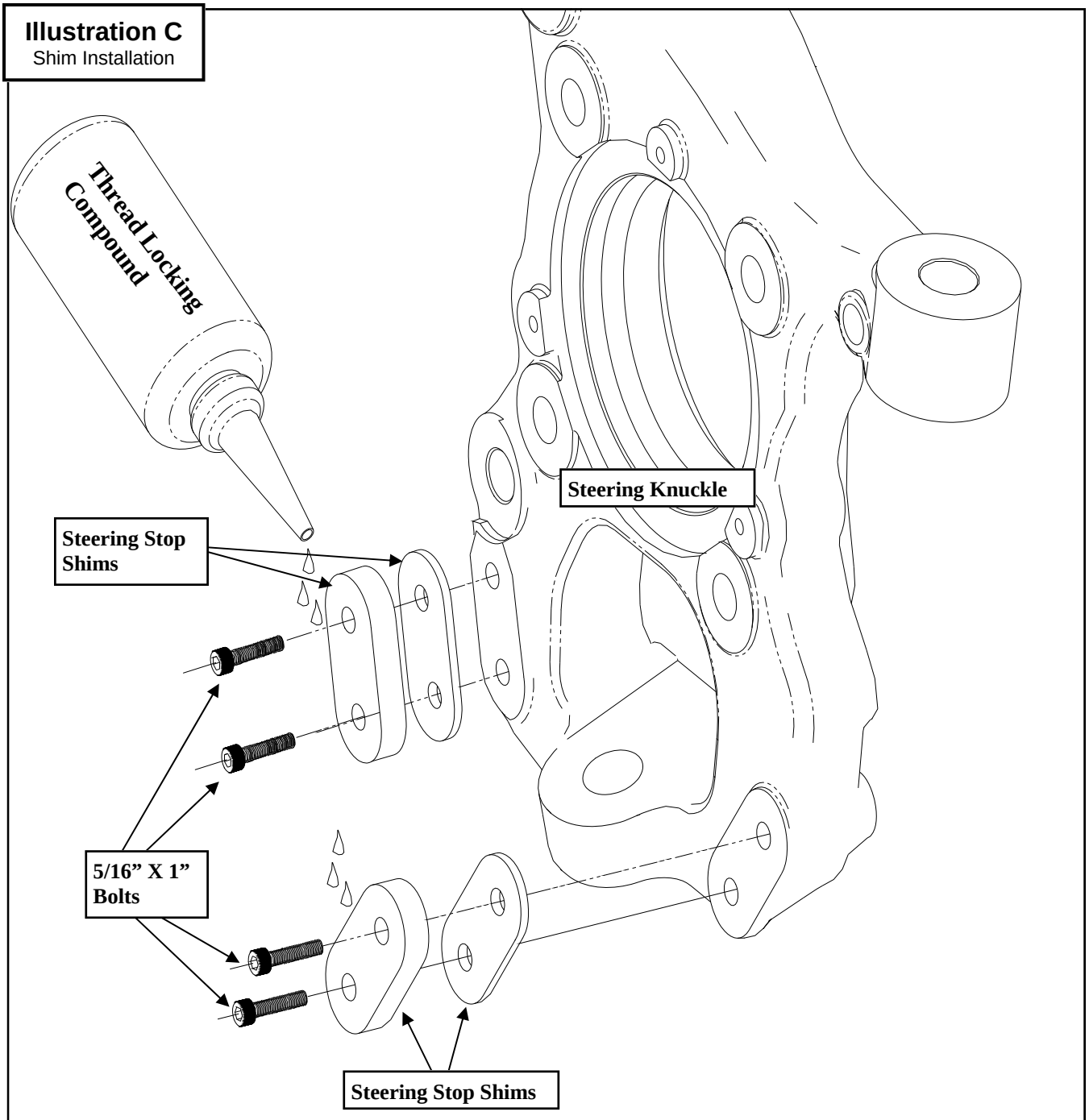
Full Lock Right

Illustration B
Full Lock Right



IMPORTANT!: Any more steering angle than shown in the illustrations may result in CV failure.

Illustration C
Shim Installation



NOTE: This Illustration is just a representation and every application will be different

Box 1 of 4-PN 52209B/52209BMX-1

Kit Parts List:

Box TM403N-1

82-5504	**REAR CROSSMEMBER**	**1**
82-5516	**REAR CROSSMEMBER BRACE**	**1**
90-6705	**HARDWARE PACK: Brace**	**2**
70-0501501800	1/2" X 1 1/2" HEX BOLT Gr. 8	2
72-050100816	1/2" STOVER NUT Gr. C - Not Used	2
73-05000834	1/2" SAE HARDENED FLAT WASHER - 2 Not Used	4
91-5517	**CROSSMEMBER SKID PLATE**	**1**
90-6223	**HARDWARE PACK: Skid Plate**	**1**
70-0371251800	3/8" X 1 1/4" HEX BOLT Gr. 8	4
72-037100816	3/8" STOVER NUT Gr. C	4
73-03700034	3/8" HARDENED FLAT WASHER	8
82-5526	**DIFFERENTIAL DROP: Front Drvr and Pass**	**2**
90-6189	**HARDWARE PACK: Differential**	**1**
90-2217	HOSE: 5/16" ID X 3 1/2"	1
90-2216	HOSE MENDER: BRASS (5/16")	1
90-6302	**HARDWARE PACK: Differential**	1
70-0561251800	9/16" X 4" HEX BOLT Gr. 8– 1 Not Used	4
73-05600034	9/16" HARDENED FLAT WASHER– 2 Not Used	8
72-056100816	9/16" STOVER NUT Gr. C– 1Not Used	4
82-5539	**DIFFERENTIAL DROP: Rear Drvr**	**1**
90-6701	**HARDWARE PACK: Rear Crossmember**	**1**
71-181502501000	18mm-2.5 X 150mm HEX BOLT 10.9	1
72-01810932	18mm-2.5 STOVER NUT Gr. C	1
73-01810934	18mm USS FLAT WASHER	2
90-4248	**FRONT DRIVESHAFT SPACER**	**1**
90-6716	**HARDWARE PACK: Front Driveshaft Spacer**	**1**
71-181502501000	10mm- 1.5 X 90mm HEX BOLT 12.9	6
90-6493	**HARDWARE PACK: Rear Driveshaft Spacer**	**1**
.120C600HCS1Y	12mm- 1.75 X 60mm 10.9 HEX BOLT	4
73-01200830	12mm SAE FLAT WASHER	4
90-4338	**REAR DRIVESHAFT SPACER**	**1**
90-5692	**NUT PLATE: Brace**	**1**

Box TM403N-2

90-4253	**KNUCKLE: Drvr**	**1**
82-2977	**COIL SPACER**	**2**
90-6317	**HARDWARE PACK: Spacer Mount**	**1**
72-043200810	7/16" GR. 8 HEX NUT	6
73-04300830	7/16" SAE FLAT WASHER	6

73-04300836	7/16” SPLIT LOCK WASHER	6
90-6299	**HARDWARE PACK: Front Brake Lines**	**1**
70-0311001500	5/16" X 1" Gr. 5 HEX BOLT	2
72-03100100512	5/16" NYLOCK NUT	2
73-03100030	5/16" SAE FLAT WASHER	4
82-7210	**BRAKE LINE BRACKET: Front Knuckle**	**2**
90-6736	**HARDWARE PACK: Caliper Bolt Spacers**	**1**
62NWHDY/SAEXT	5/8” (thick) Hardened Flat Washer	4

Box TM403N-3

90-4254	**KNUCKLE: Pass**	**1**
95-405F	**4" LIFT BLOCK**	**2**

Box TM403N-4

82-TM241150	**FRONT CROSSMEMBER**	**1**
82-5502	**REAR BRAKE LINE DROP**	**1**
82-7826	**EMERGENCY BRAKE BRACKET**	**1**
90-6422	**HARDWARE PACK: E-Brake Bracket**	**1**
70-0501501800	1/2” X 1 1/2 HEX BOLT Gr. 8	1
73-05000034	1/2” HARDENED FLAT WASHER	2
72-0501100816	1/2” NYLOCK NUT Gr. 8	1
90-6314	**HARDWARE PACK: Brake Line Drop/ Bump Kit**	**1**
70-0311001800	5/16” X 1” HEX BOLT Gr. 8 -Not Used	1
72-031100816	5/16” STOVER NUT Gr. C -Not Used	1
73-03100832	5/16” USS FLAT WASHER -Not Used	2
70-0371501800	3/8” X 1 1/2” HEX BOLT Gr. 8	2
72-037100816	3/8” STOVER NUT Gr. C	2
73-03700034	3/8” HARDENED FLAT WASHER	4
90-6393	**HARDWARE PACK: Front Brake Line Drops**	**1**
90-3202	F150 BRAKELINE DROP	2
90-6299	**HARDWARE PACK: Front Brake Lines**	**1**
70-0311001500	5/16" X 1" Gr. 5 HEX BOLT	2
72-03100100512	5/16" NYLOCK NUT	2
73-03100030	5/16" SAE FLAT WASHER	4
82-5518	**SWAY BAR DROP: Pass**	**1**
90-6340	**HARDWARE PACK: Sway Bar Drop**	**1**
70-0431751800	7/16” X 1 1/4" HEX BOLT Gr. 8	4
72-043100816	7/16” STOVER NUT Gr. C	4
73-04300830	7/16” SAE FLAT WASHER	8
90-6319	**HARDWARE PACK: Zip Ties**	**1**
10999	ZIP TIE, 11", BLACK	12
90-6700	**HARDWARE PACK: Cam Bolts**	**1**
90-5532	**CAM ECCENTRIC: F-150 Slotted**	**4**
90-5533	**CAM BOLT– Rear: 18mm-2.5 X 150MM 10.9**	**2**
90-5535	**CAM BOLT– Front: 18mm-2.5 X 160MM 10.9**	**2**
90-6313	**HARDWARE PACK: Crossmember**	**1**

72-01810932	18mm STOVER NUT	4
73-01810934	18mm FLAT WASHER	4
13-90390	**U-BOLT: 9/16"-18 x 3.36" x 12.50"**	**4**
20-65302	**HARDWARE PACK: 9/16" HI-NUTS**	**1**
90-9434	**SWAY BAR MOUNT WASHER PLATE**	**2**
Box TM403N-5		
TM75790W	**9000 SERIES SHOCK**	**2**

Revision Page:

Notice to Owner Operator, Dealer and Installer:
Vehicles that have been enhanced for off-road performance often have unique handling characteristics due to the higher center of gravity and larger tires. This vehicle may handle, react and stop differently than many passenger cars or unmodified vehicles, both on and off–road. You must drive your vehicle safely! Extreme care should always be taken to prevent vehicle rollover or loss of control, which can result in serious injury or even death. Always avoid sudden sharp turns or abrupt maneuvers and allow more time and distance for braking! **Trail Master Suspension** reminds you to fasten your seat belts at all times and reduce speed! We will gladly answer any questions concerning the design, function, maintenance and correct use of our products.

Please make sure your Dealer/Installer explains and delivers all warning notices, warranty forms and instruction sheets included with Trail Master Suspension product.
Application listings in this catalog have been carefully fit checked for each model and year denoted. However, **Trail Master Suspension** reserves the right to update as necessary, without notice, and will not be held responsible for misprints, changes or variations made by vehicle manufacturers. Please call when in question regarding new model year, vehicles not listed by specific body or chassis styles or vehicles not originally distributed in the USA.

Please note that certain mechanical aspects of any suspension lift product may accelerate ordinary wear of original equipment components. Further, installation of certain **Trail Master Suspension** products may void the vehicle's factory warranty as it pertains to certain covered parts; it is the consumer's responsibility to check with their local dealer for warranty coverage before installation of the lift.

Warranty and Return policy:
Trail Master Suspension warranties its full line of products to be free from defects in workmanship and materials. **Trail Master Suspension's** obligation under this warranty is limited to repair or replacement, at **Trail Master Suspension's** option, of the defective product. Any and all costs of removal, installation, freight or incidental or consequential damages are expressly excluded from this warranty. **Trail Master Suspension** is not responsible for damages and / or warranty of other vehicle parts related or non-related to the installation of **Trail Master Suspension** product. A consumer who makes the decision to modify his vehicle with aftermarket components of any kind will assume all risk and responsibility for potential damages incurred as a result of their chosen modifications. Warranty coverage does not include consumer opinions regarding ride comfort, fitment and design. Warranty claims can be made directly with **Trail Master Suspension** or at any factory authorized **Trail Master Suspension** dealer.

IMPORTANT! To validate the warranty on this purchase please be sure to mail in the warranty card.
Claims not covered under warranty-
• Parts subject to normal wear; this includes bushings, bump stops, ball joints, tie rod ends and heim joints
• Discontinued products at **Trail Master Suspension's** discretion
• Bent or dented product
• Finish after 90 days
• Leaf or coil springs used without proper bump stops
• Products with evident damage caused by abrasion or contact with other items
• Damage caused as a result of not following recommendations or requirements called out in the installation manuals
• Products used in applications other than listed in **Trail Master Suspension's** catalog
• Components or accessories used in conjunction with other manufacturer's systems
• Warranty claims without "Proof of Purchase"
• **Trail Master Suspension** accepts no responsibility for any altered product, improper installation, lack of or improper maintenance, or improper use of our products.

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