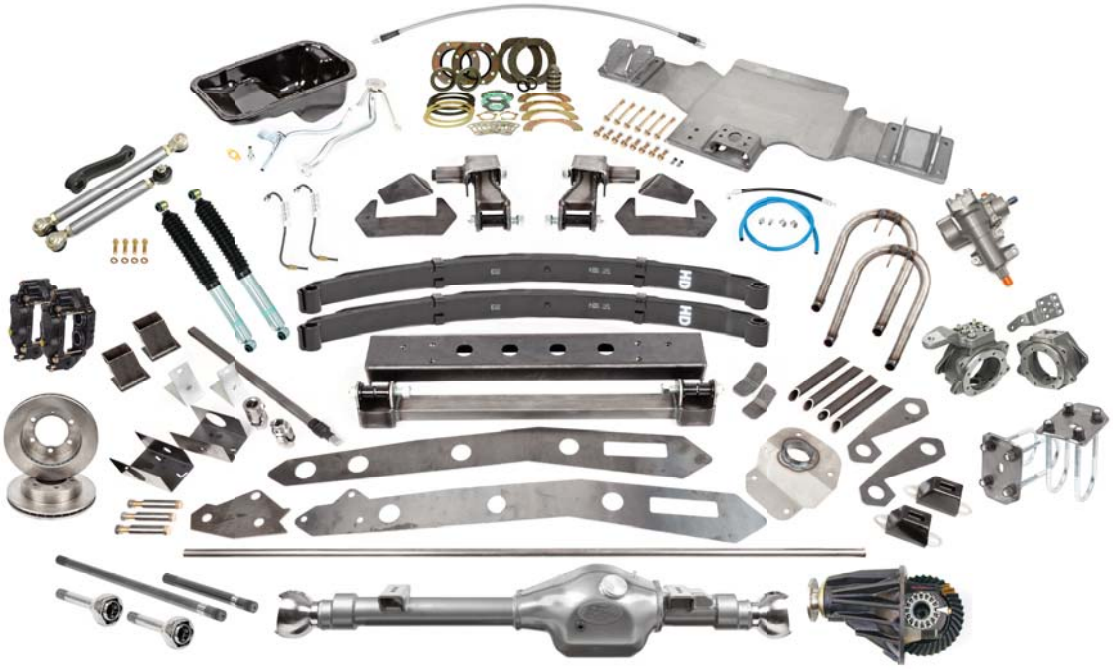
TACOMA SAS KIT A, B, & C

110213-1-K (SAS KIT A)
110209-1-K (SAS KIT B)
111243-1-K (SAS KIT C W/DETROIT LOCKER)
111244-1-K (SAS KIT C W/ARB LOCKER)

KIT CONTENTS

Kit C shown below. Your kit contents may vary.



NOTE

This build is so in-depth that not every step could be covered in these instructions. If anything is not clear, please call our tech support line at 1.877.4X4.TOYS before proceeding. We have trained technicians waiting to help you.

RECOMMENDED TOOLS

- Loctite
- Cutoff Wheel
- Welder
- Grinder
- Plasma Cutter
- Paint Pen
- Tape Measure
- Jack Stands
- Floor Jack
- 3/8" Ratchet
- 1/2" Drive Ratchet
- Hammer
- Level
- Straight Edge
- Punch
- C-Clamps (2)
- Gasket Scraper
- Drill
- 5/16" Drill Bit (2.4 Engines Only)
- Allen Set
- Flathead Screwdriver
- Pliers
- 12" Extension
- 2 Qts Power Steering Fluid

Sockets	Wrenches
8mm	8mm
10mm	10mm
12mm	12mm
13mm	13mm
14mm	14mm
17mm	17mm
18mm	18mm
19mm	19mm
21mm	21mm
3/8" Drive 17mm	3/4"
	15/16"

CAUTION

1. Read all instructions completely and carefully before you begin.

2. Check to make sure the kit is complete and that no parts are missing (refer to the Kit Contents List on the first page of these instructions). If anything is missing, please contact Trail-Gear at 559.252.4950.

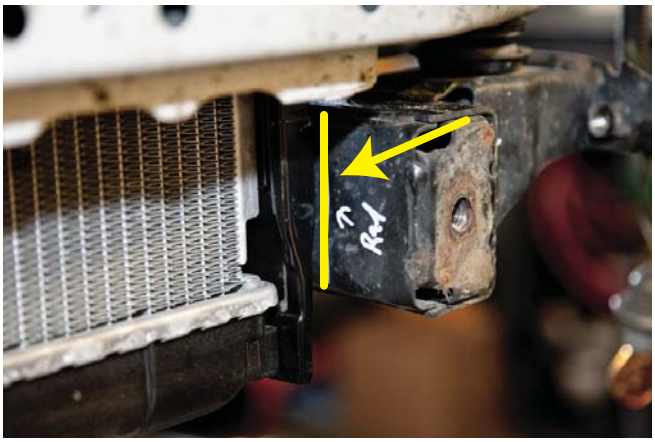
3. Park vehicle on a clean, dry, flat, level surface and block the tires so the vehicle can not roll in either direction.

INSTALLATION INSTRUCTIONS

STEP 1
Remove front bumper, skid plate, and splash guards.

STEP 2
On vehicles with a 3.4L V6 engine that have a radiator that hangs below the frame like shown, you will need to replace the radiator with the following part numbers. (Performance Radiator #1774, Napa # APD 2740)

STEP 3
Mark the edge of the radiator for future use.



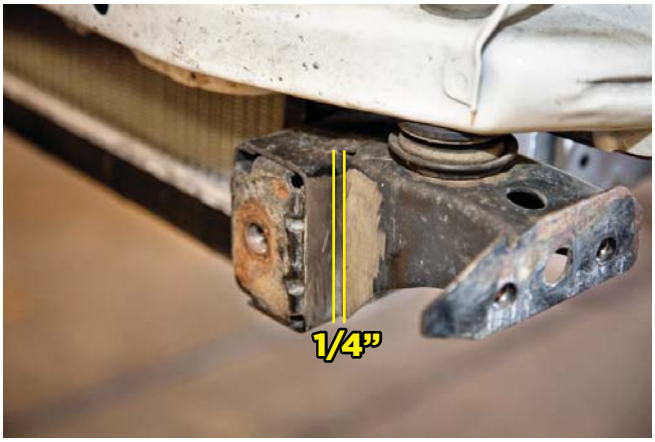
STEP 4
Remove the radiator.

STEP 5
Unbolt and remove all IFS components.

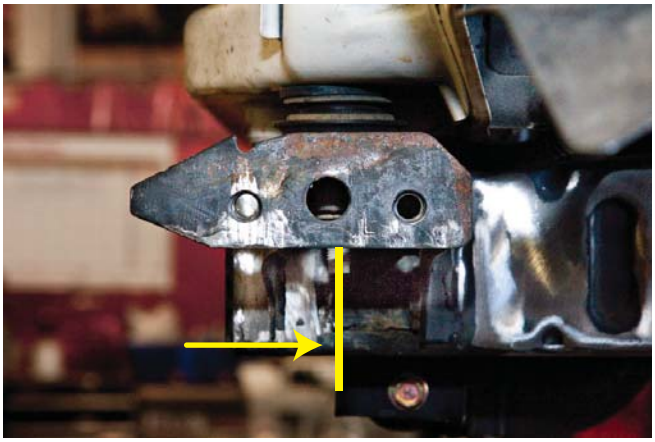
STEP 6
Mark the body mount as close to the weld as possible.

INSTALLATION INSTRUCTIONS

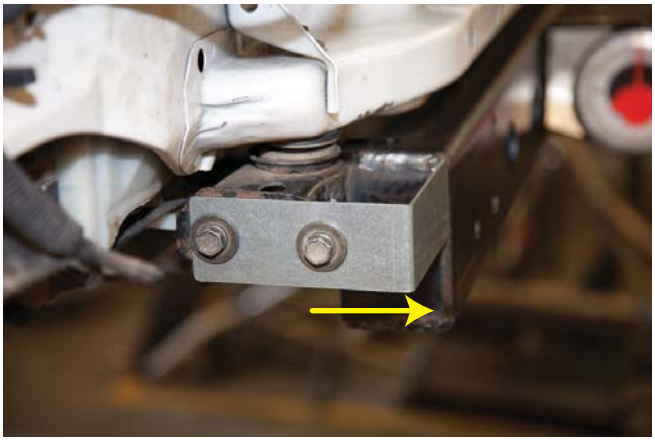
STEP 7
Cut the body mount along the previously drawn line and grind the weld down. You want an approximately 1/4" gap between the frame and the edge of the mounting bracket when finished.



STEP 8
Cut the inner support plate of the body mount 1/2 of the way in.



STEP 9
Slide front hanger mount onto the frame rails. Mount hanger locating jig to the body mount and slide it all the way forward.

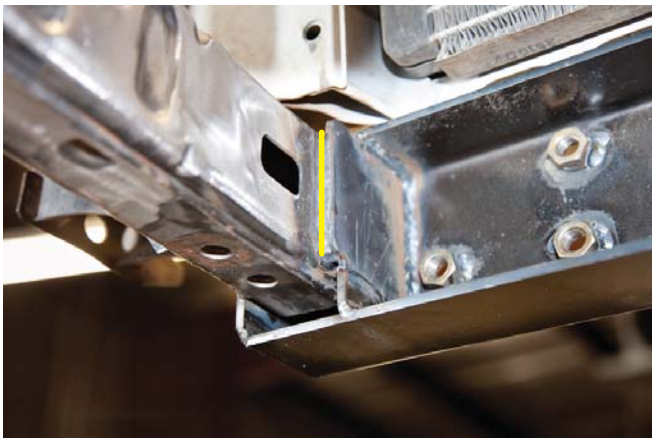


STEP 10
Use a straight edge to ensure that the mount is flush with the jig.

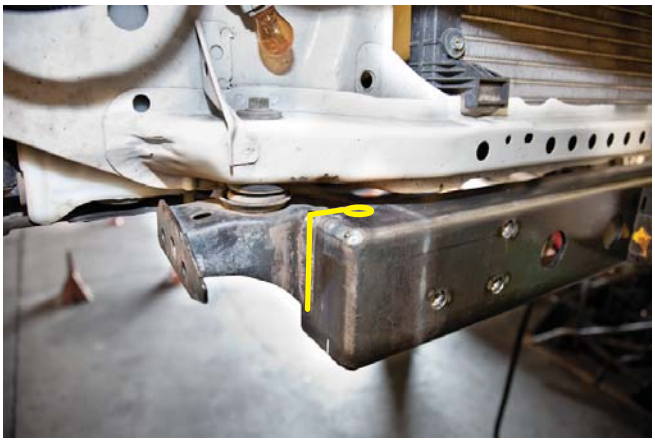
STEP 11
Make sure the mount is square and straight to the truck.

STEP 12
Tack the mount in place. Verify the mount is still straight and weld it completely.

STEP 13
Weld the area shown below.



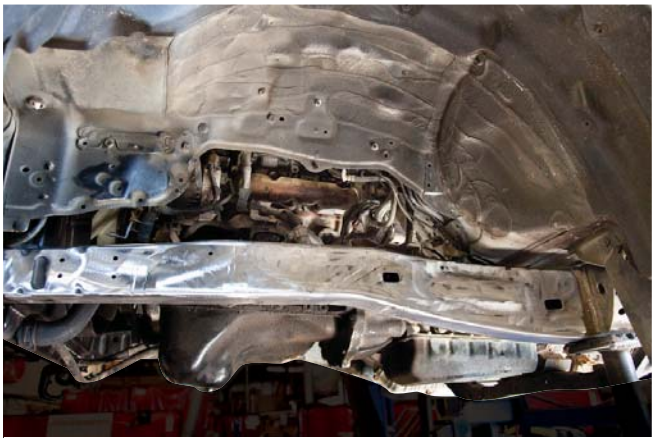
STEP 14
Weld the areas shown below.



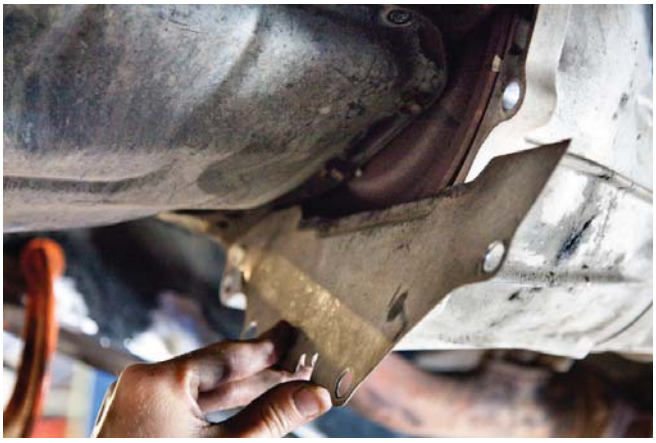
STEP 15
Cut the brake line tab off as shown for future use.

STEP 16
After all of the other brackets have been unbolted or removed, brackets 1, 2, 3, and 4 will need to be removed with a torch or plasma cutter.

STEP 17
Grind the frame clean.



STEP 18
If you have a 2.7L engine, start here to remove the oil pan. If you have a 3.4L engine, skip to step 36. Remove the dust shield.



INSTALLATION INSTRUCTIONS

STEP 19
Remove the oil pan.

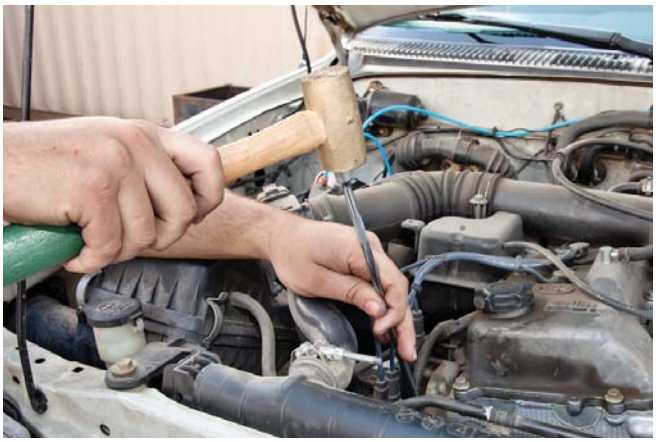
STEP 20
Remove dipstick bracket hardware.

STEP 21
Remove the stock dipstick.

STEP 22
Apply Ultra Grey to bottom of freeze plug.

STEP 23
Place freeze plug in stock dipstick hole.

STEP 24
Lightly tap freeze plug to secure it into place.

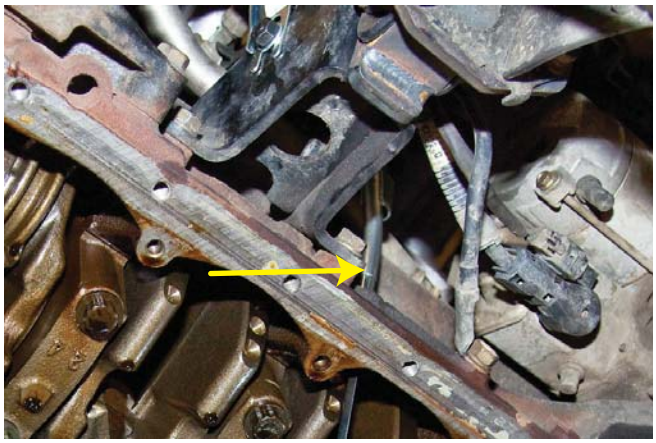


INSTALLATION INSTRUCTIONS

STEP 25
Locate the small freeze plug approximately 2" behind motor mount.

STEP 26
Using a punch, remove the freeze plug.

STEP 27
Install the new dipstick tube into the block using ultra grey at the mating surface.



STEP 28
Mark and drill a hole in the motor mount bracket to mount the dipstick tube. We drilled a 5/16" hole and used an 8mm bolt.

STEP 29
Fasten the dipstick tube to the motor mount.

STEP 30
Remove the stock strainer and install the new one.

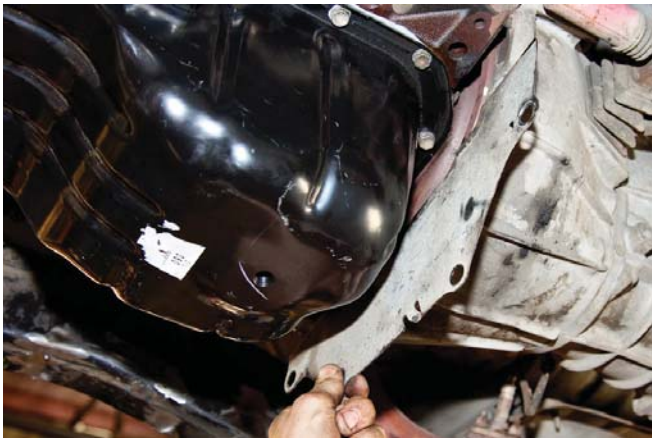
INSTALLATION INSTRUCTIONS

STEP 31
Using a razor, clean the oil pan mating surface on the block.

STEP 32
Apply a bead of ultra grey to the oil pan mating surface.

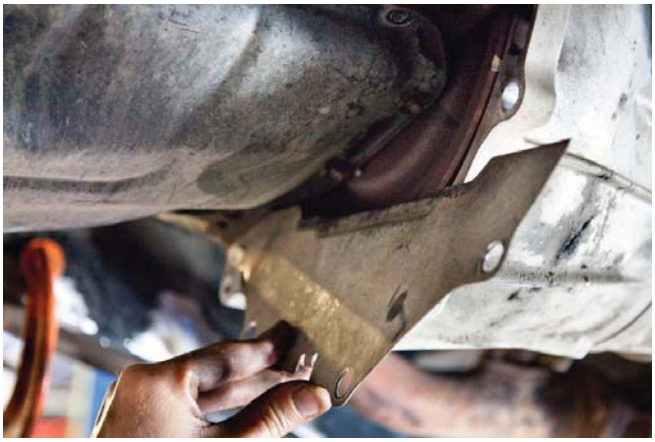
STEP 33
Install the new oil pan. The strainer now sits towards the back of the truck.

STEP 34
Re-install the dust shield.



STEP 35
Install the drain plug with gasket.

STEP 36
If you have a 3.4L engine, follow these instructions to replace your oil pan. Remove dust shield.



INSTALLATION INSTRUCTIONS

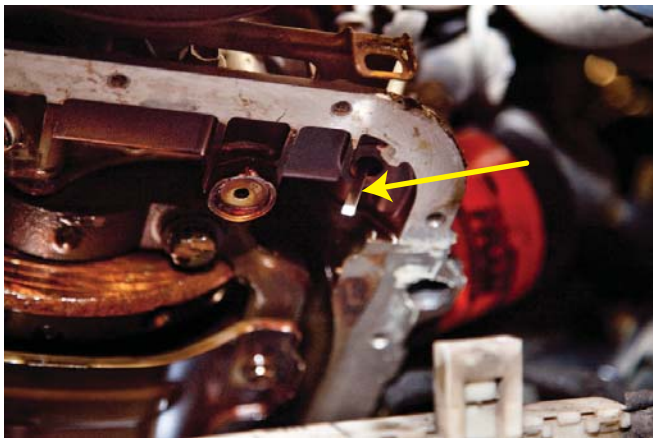
STEP 37
Remove the oil pan.

STEP 38
Remove the stock strainer and replace it with the new one.

STEP 39
Using a razor, clean the oil pan mating surface on the block.

STEP 40
Mark the stock dipstick 1/8" below the full line and cut off the excess. The stock full level on the dipstick will still be used and 6 1/2 quarts of oil are used.

STEP 41
Re-install the dip stick into the block.



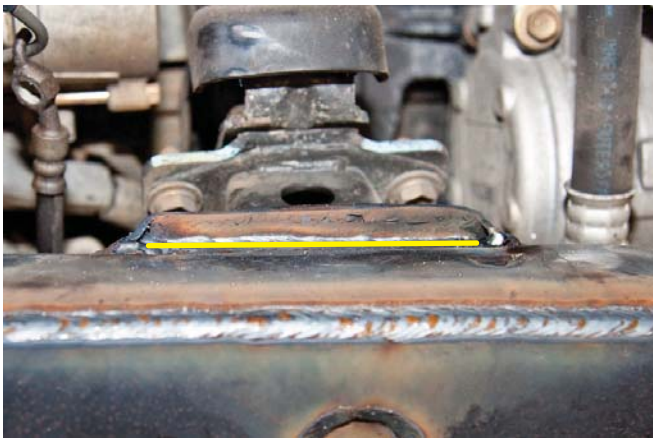
STEP 42
Apply a bead of ultra grey to the oil pan mating surface.

STEP 43
Install the new oil pan. The strainer now sits towards the back of the truck.

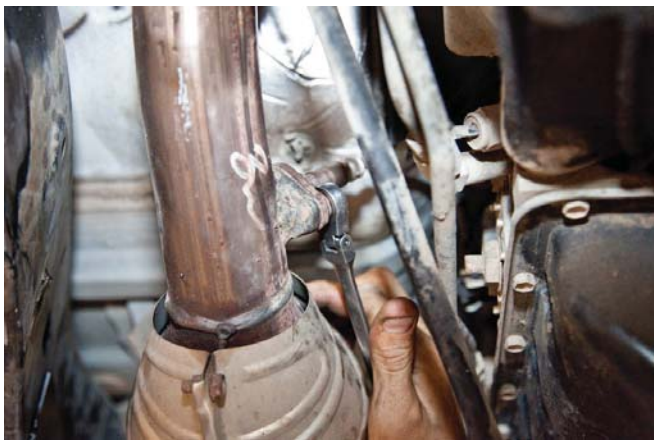
STEP 44
Re-install the dust shield. The circled bolt will need to be shortened by 3/8”

STEP 45
Install the drain plug with gasket.

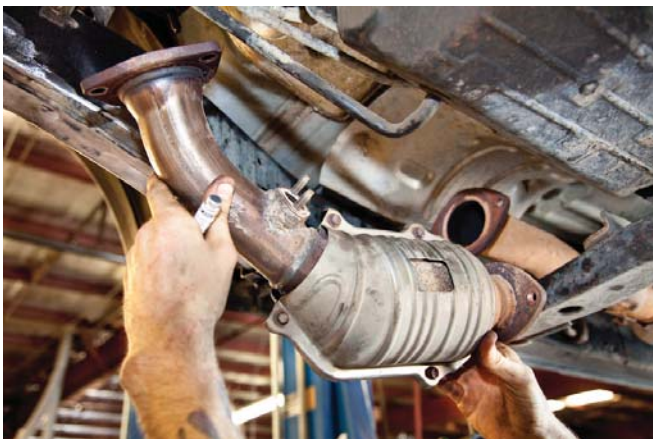
STEP 46
Weld off the body mount.



STEP 47
If you have a 3.4L motor, remove the O^2 sensor above resonator and follow step 48, otherwise, skip to step 49.

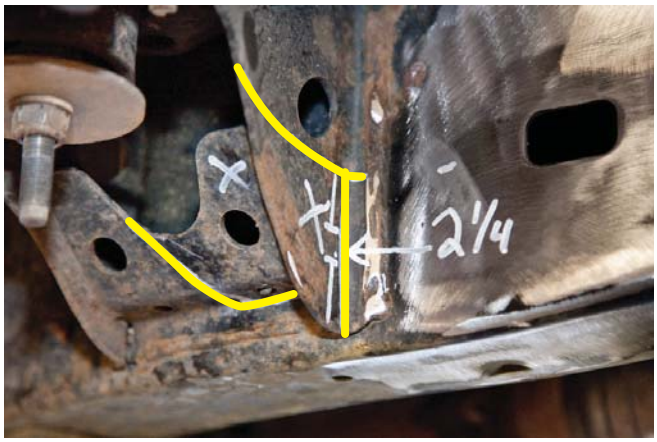


STEP 48
Remove the resonator to give yourself room to cut out the frame rail for the shackle mount.



STEP 49

The body mount modification is located under the floorboard for the shackle mount. Mark 2 1/4" up from the bottom of the front side of the body mount bracket. Mark 2 1/2" from the outside of the body mount towards the centered of the body mount. Follow factory edge and draw lines as shown.



STEP 50

Cut along the lines and remove the bracket as shown. Grind the frame clean.

STEP 51

Measure from the inside of the face of the front hanger mount 45 7/8" and mark the frame. The mark should be in the center of the big hole in the template. Align the frame jig as shown with the large hole facing the outside of the vehicle. Make sure the rear of the jig is in contact with the frame. Tack weld it in place.

STEP 52

A small gap between the frame and the front of the jig is normal due to frame curvature.

STEP 53

Mark the frame through the holes in the bottom of the jig.

STEP 54

Outline the jig on the inside of the frame as shown.

STEP 55

Cut the larger hole on the outside of the frame with the jig in place with a hole saw or plasma cutter and then remove the jig.

STEP 56

Use a straight edge to connect the lines made with the jig like the image below.

STEP 57

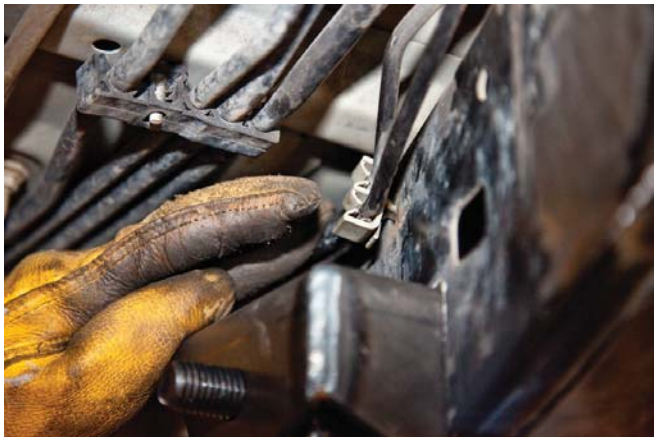
Cut the frame with a plasma cutter along the ***inside*** of the line, clean slag off of the frame.

STEP 58

Cut the internal frame support to be flush with the previous cut and grind clean.

STEP 59

Remove the brake line clip from the frame on the driver's side above the shackle location.

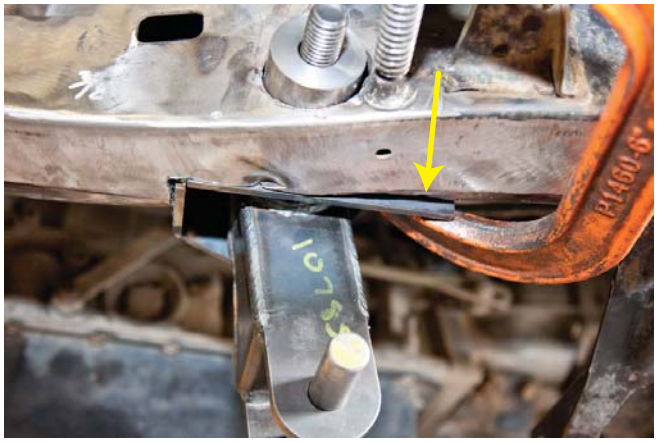


STEP 60

Install shackles into the shackle mount and clamp into frame with alignment bar installed to make sure the shackles are square. Make sure the shackles are 29" center to center. Note: Manual transmissions can run the alignment tube through shackle box mount.

STEP 61

Below is an example of ***incorrect*** fitment. Notice the mount sticking out below the frame.

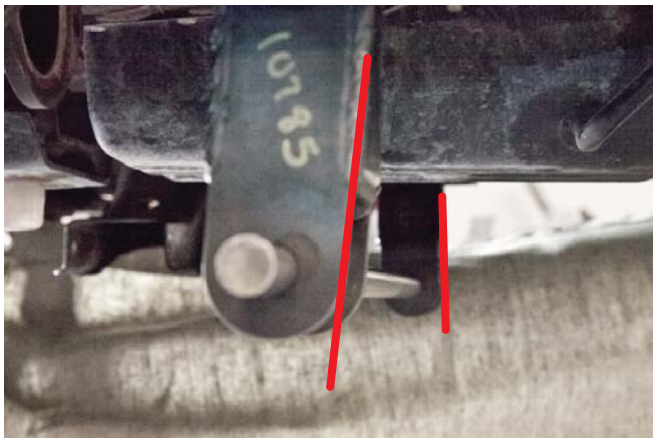


STEP 62

Below is the correct fitment of the mount. Notice how the bottom of the mount is even and almost flush against the bottom of the frame.

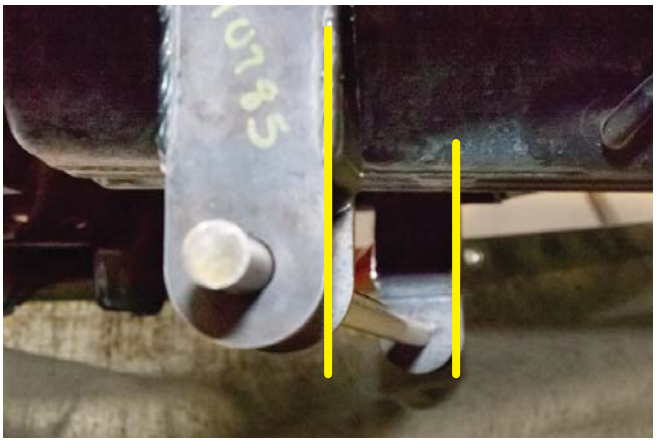
STEP 63

Below is an example of ***incorrect*** fitment. The shackles need to be parallel.



STEP 64

Below is the correct fitment of the shackles. Notice how they are parallel.



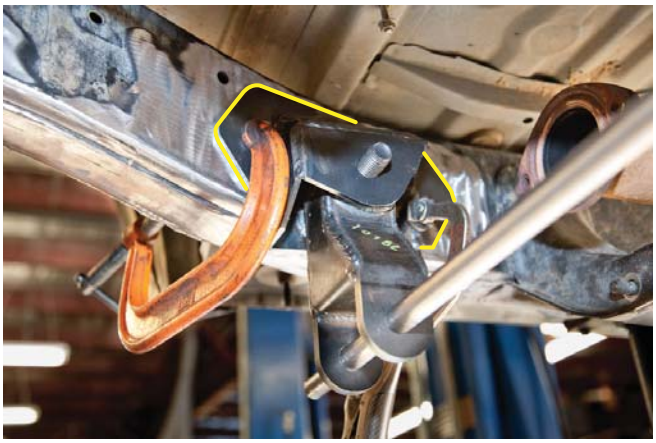
Verify that all parts are in the correct location before welding into the frame.

STEP 65

Once the shackles are straight and at the correct distance apart (29" center of shackle to center of shackle), tack weld the tube into the frame.

STEP 66

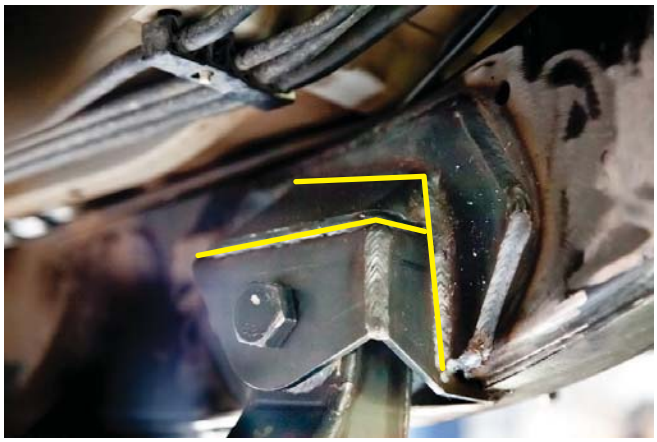
Once the shackle mount is tacked into the frame, clamp the support plate to the frame and tack it into place.



STEP 67
Weld the support plate to the frame.

STEP 68
Remove poly bushing and weld the shackle tube to the frame.

STEP 69
Install the shackle mount boxing bracket on top of the shackle mount and weld it into place.



STEP 70
Weld the shackle mount to the bottom of the frame.

STEP 71
Grind the weld smooth.

STEP 72
Place the bottom frame support bracket on the bottom of the frame and tack the rear portion to the frame.

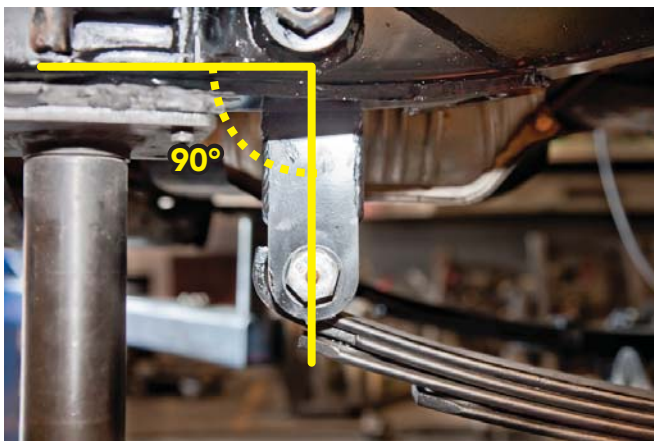
STEP 73
Clamp the front portion of the support to the frame to form it to the frame curve and tack it into place.

STEP 74
Finish welding the bottom support plate.

STEP 75
For 3" springs we recommend starting off with the front hanger 44 1/2" from the shackle bolt center to bolt center and move it approximately 3/8" forward for 4" springs and 3/4" forward for 5" springs. Note, these are only recommendations to verify location.

STEP 76
Tack weld the spring hanger into place, centering it upon the mount.

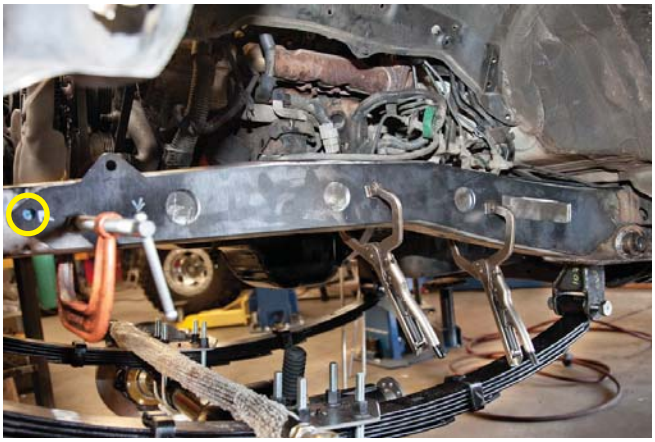
STEP 77
Install springs and axle. Place the weight of the vehicle on the springs to ensure proper shackle angle is achieved. We recommend a 90° shackle angle during initial setup to allow for spring break-in. If so, move to step XXX, if not, take the weight of of the springs and move the hanger to achieve desired shackle angle. Once correct, move to step XXX.



STEP 78
With weight still on springs, clamp the steering box in desired location and mark the front hole.

STEP 79
Make sure the tie rod and drag link will not make contact when the vehicle flexes.

STEP 80
Clamp the frame plate the the frame, centering it on the frame and aligning it with the previously marked hole.



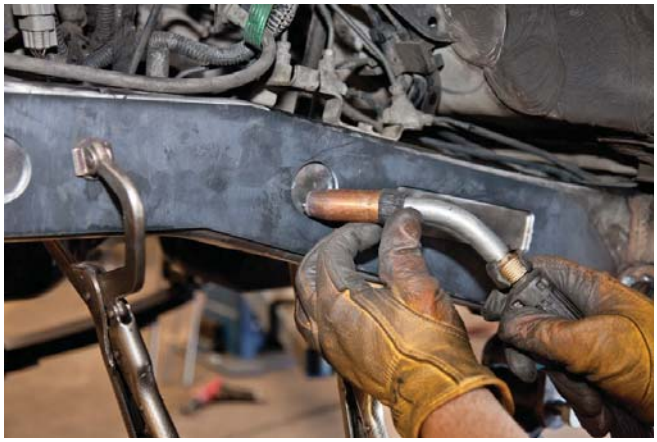
STEP 81
Using the frame plate as a template.Drill the 2 marked holes in the frame to 1/2". Be sure to drill straight through both sides of the frame.

STEP 82
On the ***inside of the frame only***, drill holes to 3/4" to allow the sleeves to be installed in the frame.

STEP 83
Install (3) 1/2" bolts through the previously drilled holes. Install sleeves over bolts and inner frame plate as shown.

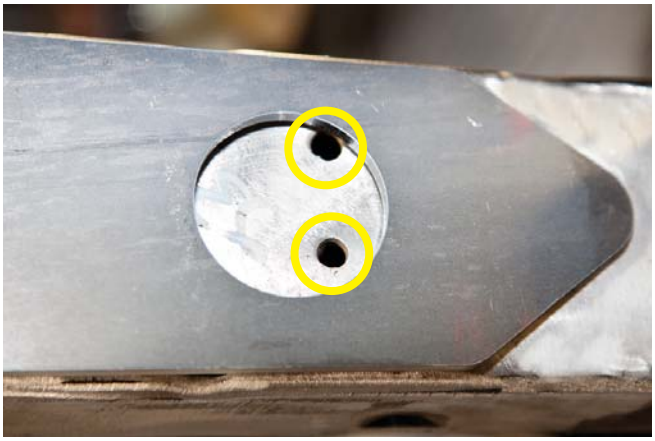
STEP 84
Tack weld the inner frame plate and sleeves in place.

STEP 85
Tack weld the frame plate to the frame and then weld in sections to avoid frame warping. At this time you can also weld off inner frame plate and sleeves.



STEP 86
On the passenger side, position and clamp the frame plates to the frame, aligning the rectangle hole and centering the rest of the place on the frame.

STEP 87
You may want to plug weld the frame holes shown.



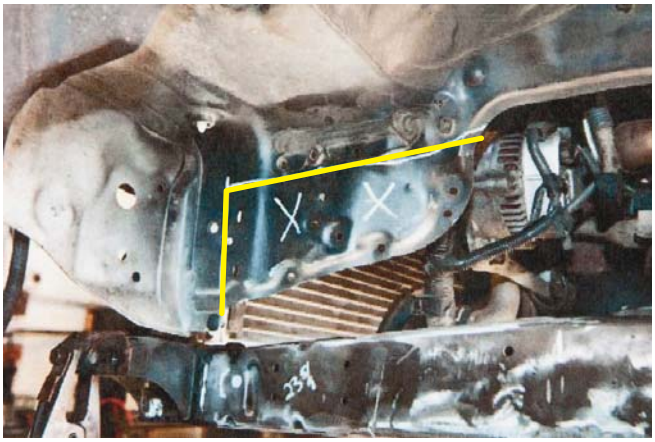
STEP 88
Tack weld the frame plate to the frame and remove the clamps.

STEP 89
We recommend welding the frame plate onto the frame in steps, allowing the frame to cool to prevent warping. First, weld the frame plate inner holes.

STEP 90
Next, weld the front and rear and the angled section of the frame plate to the frame.

STEP 91
Finish welding the frame plate to the frame.

STEP 92
Mark the inner fender well as shown in the picture below. Be careful not to cut out the pinch weld.



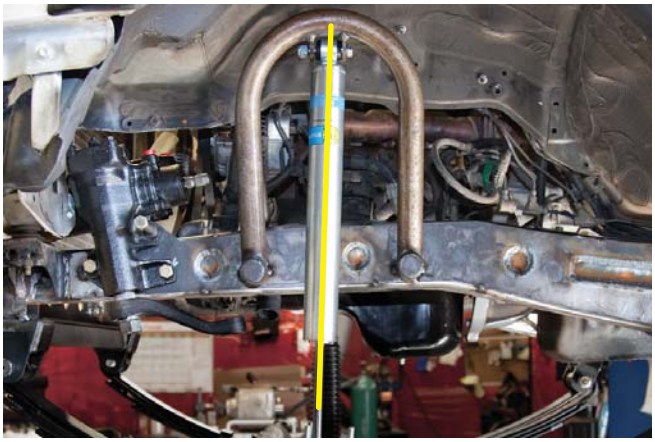
STEP 93
Cut the inner fender well along the previously marked cut lines.

STEP 94
Set the vehicle on jack stands and install shock hoops and shocks. At ride height, shock should be centered in shock hoop and perpindicular to the floor, not slanted forwards or backwards.

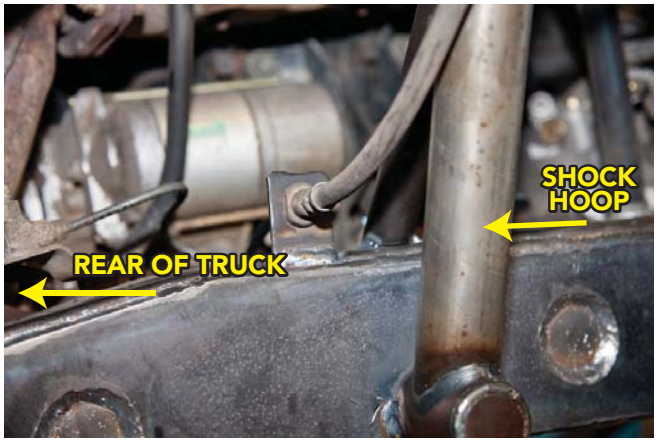
STEP 94 CONTINUED

STEP 95
Install shock hoop support tubes.

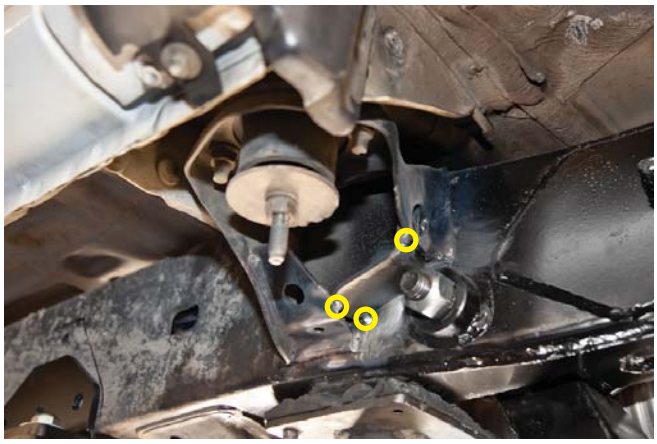
STEP 96
During full extension of the suspension it is normal for the shock to angle forward slightly because the shackle allows the axle to swing forward.



STEP 97
Weld previously cut brake line tab to frame as shown.



STEP 98
Tack weld the body mount gussets into place.



STEP 99
Fully weld the body mount gussets to the frame and body mount bracket.

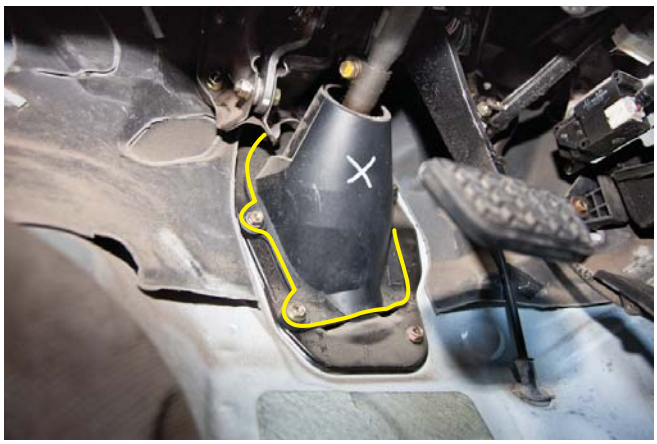
STEP 100
Flex the truck until the springs are nearly flat in the front passenger corner. Place the bump stop extension against the frame. Center it with the bump stop and mark the frame and extension. Some trimming of the bumpstop extension may be required.

STEP 101
Weld the bump stop extension to the frame.

STEP 102
At this point, all welding should be completed. You can now paint the frame and raw metal parts as desired.

STEP 103
Install the IFS steering box.

STEP 104
Remove the steering shaft dust cover located behind the brake pedal.



STEP 105
Remove the steering shaft and coupler from the column.

STEP 106
Remove the seal housing from the firewall.

STEP 107
Remove the seal from the seal housing.

STEP 108
Install the factory seal from your seal housing into the supplied seal housing. Paint the housing.

STEP 109
Install the seal housing into the firewall.

STEP 110
Install the supplied steering box coupler to the supplied steering shaft. Tighten long set screw to make a mark on shaft. Remove the coupler.

STEP 111
Using the previously made mark, drill one side of the shaft out to 3/8".

STEP 112
Once the hole is drilled, install the coupler using red loctite on the set screws.

STEP 113
Loosen the set screw to allow for adjustment.

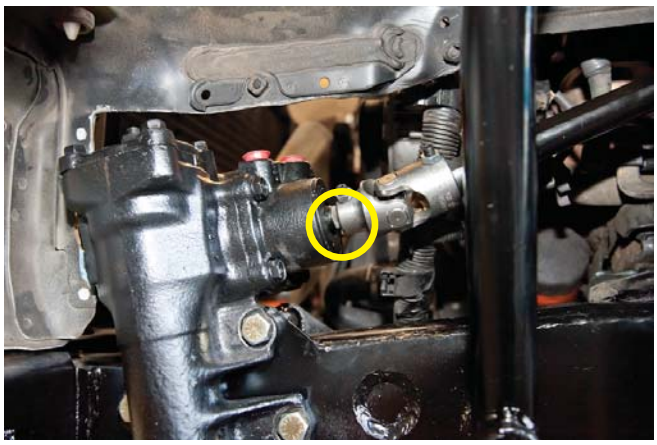
STEP 114
Slide the steering shaft through the seal housing and install to the new coupler and column as shown. Make sure to use red loctite on all set screws.

STEP 114 CONTINUED

Note: 95.5 Tacoma steering shafts are a different spline and size than 96-04. Because of this, when installing the steering joint in a 95.5, you will get a 9/16" x 3/4" double-d steering joint. The 9/16" end will have no splines, this is the side of the steering joint that you will put over the splined section of your steering rod.

Use the set screw to make the same type of mark you did on the first end, then drill out the hole. Install the joint and tighten the set screw, we recommend putting a small tack weld on each side of the joint as a safety precaution.

STEP 115
Install coupler to steering box using red loctite on set screw.



STEP 116
Remove the half moon piece from your original fan shroud and reuse it on the new fan shroud.

STEP 117
The lower fan shroud tab on the driver's side might need to be trimmed to clear the steering box.

STEP 118
A self tapping screw may also be required to secure the fan shroud to the radiator. Be careful not to drill through the radiator.

STEP 119
Slight notching of the fan shroud may be necessary to clear the steering box mount.

STEP 120
The new radiator should be approximately 2" shorter than the original radiator.

STEP 121
By this point you should have your Rock Assault™ or OEM Toyota axle housing all painted and ready to install six stud knuckles and brake components.

STEP 122
This is how your axle will look with the six stud knuckles, spindle, and birfield installed.

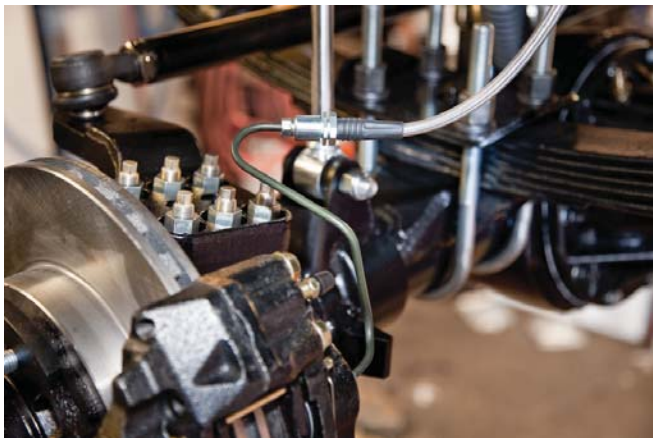
STEP 123
Rock Assault™ axle housing with vented rotor and V6 caliper installed.

STEP 124
Attach leaf springs to axle with provided u-bolts. Center the leaf spring center pin over the centering hole on the spring perch and install u-bolt flip kit as shown in the picture. Tighten by hand until snug. Retighten after initial test drive.

INSTALLATION INSTRUCTIONS

STEP 125

Install provided hard caliper line and extended brake line and hand tighten. Assembly should look similar to the picture below when completed.



STEP 126

Install lower shock mount.

STEP 127

Finish welding shock mount and tighten shock mount bolt. Assembled product should look similar to the image below.

STEP 128

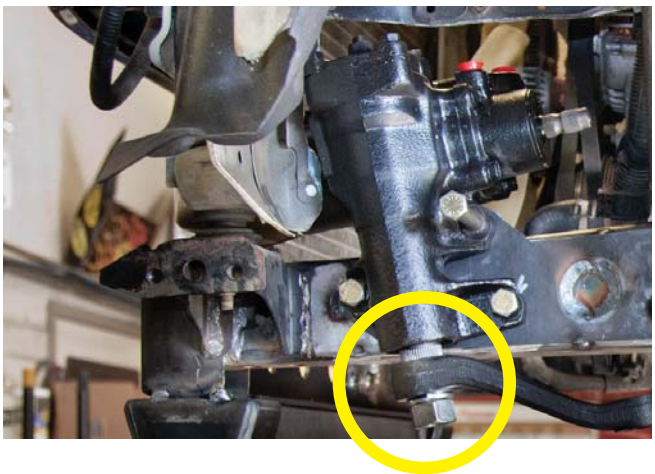
Place the steering wheel so that it is in the center of it's movement left to right. Bolt on the pitman arm using the stock nut and washer. Connect the left side of the steering Drag Link to the front most hole in the right side steering arm. Tie rod ends should have approximately 3 exposed threads. Do not expose more than 1/2 of the tie rod end threads as this can cause an unsafe driving condition.

With the truck on the ground, set the tow-in of the front tires at 1/8". This is done by turning the Tie Rod with the jam nuts loose. Measure the widest part of the tire at the front and rear of the tire. Adjust the Tie Rod until the front is 1/8" narrower than the rear.

Once completed, turn the steering wheel all the way left and right. Verify that the wheels turn the same amount left and right. If not, adjust the length of the drag link or adjust the position of the pitman arm.

Tighten the pitman nut to 130 ft/lbs. Tighten the jam nuts on the Tie Rod and Drag Link using an adjustable wrench.

STEP 128 CONTINUED



STEP 128 CONTINUED

STEP 129

Now you are ready to install your power steering hose conversion kit. If you have a 2.7L, see steps 130-141. If you have a 3.4L, see steps 142-147.

STEP 130

Remove the OEM rack and pinion unit from the truck.

STEP 131

Remove the high pressure hose that ran from the power steering pump to the rack and pinion.

STEP 132

Remove the return line that ran from the rack and pinion to the power steering cooler.

STEP 133

Remove the return line that runs from the power steering cooler to the power steering reservoir.

Now that everything has been removed you are now ready to install your new IFS power steering box and your hoses. See IFS box installation instructions for IFS box installation.

STEP 134

After installing your IFS gear box, you will want to route, measure, and cut a piece of the blue low pressure return line from the IFS box to the factory power steering cooler.

STEP 135

Next you will take your remaining length of low pressure return line and run it from the power steering cooler to the power steering reservoir.

STEP 136
Included in the kit is a "banjo eliminator" fitting, install that into the outlet port of your power steering pump.

STEP 137
Install your provided high pressure line from the banjo eliminator fitting to the newly installed IFS box.

STEP 138
Make sure all lines are tight and secure, fill with power steering fluid.

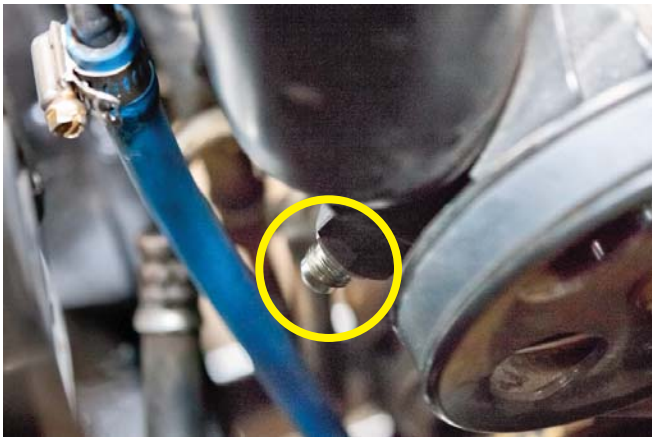
STEP 139
Start motor and began bleeding the power steering system while checking for leaks.

STEP 140
The system is bled and no leaks were found, you are ready for a test drive.

STEP 141
After test drive check again for leaks.

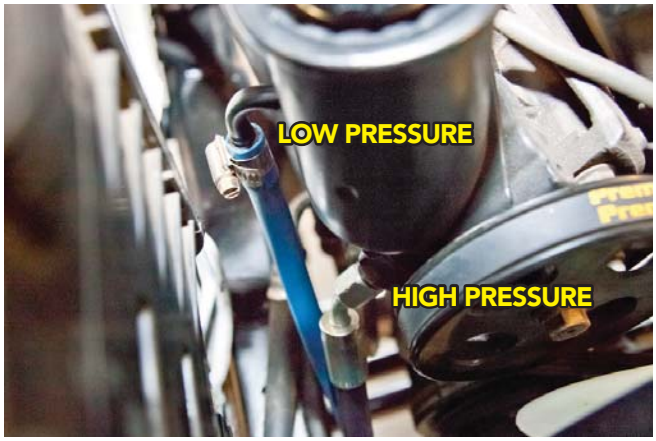
STEP 142
Remove factory high pressure and low pressure lines from the pump and reservoir.

STEP 143
Install supplied high pressure fitting into pump and low pressure line onto reservoir.



STEP 144

Tighten hose clamp on low pressure line. Install high pressure line and tighten.

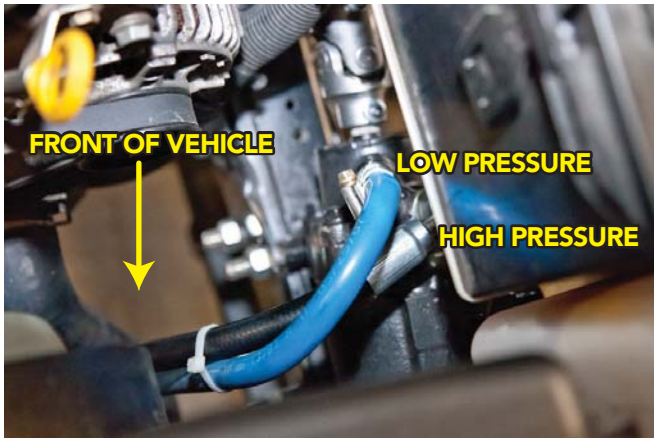


STEP 145

Route hoses and show being sure to keep away from moving parts.

STEP 146

Install hoses to steering box as shown and tighten.



STEP 147

Fill system with fluid. Bleed steering system. Top off fluid, start engine, and finish bleeding. Once complete, top off fluid and test drive.

STEP 148

Before installing your driveline to your newly attached axle housing, you will need to install the provided t-case crossmember.

STEP 149

After crossmember is installed, you will want to install your front driveline. Front or rear driveline may need to be lengthened or shortened depending on whether single or dual cases were installed and the size of the lift that was installed.

STEP 150

After putting the tires on the axle, please inspect everything to ensure that all welds are complete, all bolts are tightened, all fluids are refilled, and the truck is ready for a test drive.

STEP 151

After test drive, please check all bolts for tightness, check all welds, check for leaks, and enjoy.