ALL-PRO MODULAR LONG TRAVEL KIT

INSTALL INSTRUCTIONS

FOR 2005-2023 TOYOTA TACOMA

PART 6 - STEERING ALIGNMENT AND WELDING
PART 7 - SKID PLATE MOUNTING
PART 8 - BUMPSTOP MOUNTING
PART 9 - PAINT AND PREP

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PART 6 - STEERING ALIGNMENT AND WELDING:

STEP 67

Unwrap and position rack on a strong bench for mount modifications

a. A non-marring surface or using a towel / moving blanket on your bench is ideal to not damage the aluminum body of the rack.

STEP 68

Using a small chisel and punch, remove the factory rubber bushings from the rack.

a. The top bushing can be chiseled out, allowing a punch to quickly remove the bottom bushings.

b. The bushing on the opposite side from the input shaft will be difficult to remove due to the lines, but if the lip of the bushing is bent up, it will gently wiggle loose. If it does not come out, bend the lip more until it does. Putting significant force on the line can cause leaks down the line.


STEP 68.1


STEP 68.2


STEP 68.3


STEP 68.4

PART 6 - STEERING ALIGNMENT AND WELDING:

STEP 69

Install the new heavy duty aluminum bushings, short on top (to avoid the issues with the lines) and long on the bottom.

a. They should install with light taps from a mallet or slide in by hand. If they are very difficult to install, please stop and contact us before permanent damage to the rack is done.


STEP 69.1


STEP 69.2

STEP 70

Remove the two bolts holding in the top crossmember and remove the crossmember from the vehicle

STEP 71

Install steering rack onto the top of the front crossmember, reinstalling the top crossmember on top of it. Use the 2 supplied rack bolts, passing through the two holes in the top crossmember all the way through to the 2 holes in the front crossmember.

a. It is easiest to install the rack from the differential side, using the differential clearances to work it side to side. It is still removable from the front of the truck if needed for service later.

b. The third crossmember mount is not necessary for the test fit of the steering components, it can be left for final install.


STEP 71.1


STEP 71.2


STEP 71.3


STEP 71.4

STEP 71.5

PART 6 - STEERING ALIGNMENT AND WELDING:

STEP 72

Tighten down the front two rack bolts to the point where there is no gaps on the top or bottom of the rack mounts.

a. This is not torqued to spec, but it needs to be tight enough to reflect the final position of the rack.

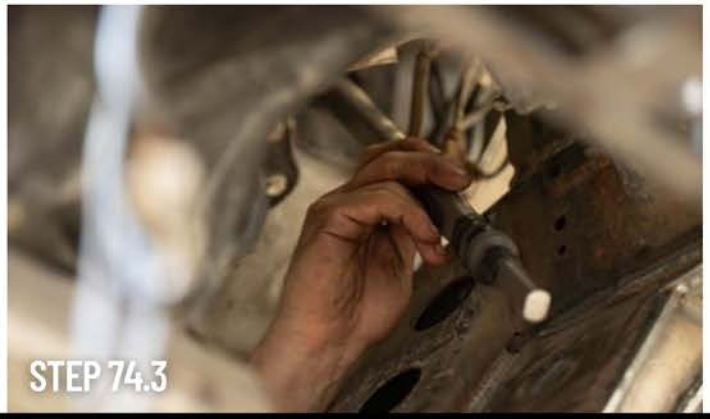
STEP 73

Gather all parts of the new steering column including all the set screws. The locking nuts will not be used for test fitting.

STEP 74

Install splined U-joint below steering column to the splined end of the steering column and to the 1" double-D end of the collapsible steering shaft. The collapsible shaft can be left hanging through the firewall for now.

a. Trimming of the boot through the firewall may be necessary to prevent rubbing. This depends on final alignment in subsequent steps.



PART 6 - STEERING ALIGNMENT AND WELDING:

STEP 75

Install the double U-joint onto the steering rack

STEP 76

Slide the intermediate shaft into the intermediate bearing assembly

STEP 77

Install the double joint onto the intermediate shaft.

STEP 78

Install the ¾" double-D to ¾" double-D U-joint onto the other end of the intermediate shaft

PART 6 - STEERING ALIGNMENT AND WELDING:

STEP 79

Hold the intermediate bearing surround against the back of the bulkhead and tack into place as seen in the pictures below.

a. Check that all U-joints are spinning freely and there are no interferences along any of the shafts or against the rack input itself.

b. Watch for set screws interfering with the motor mount, frame, and other OEM interferences.

c. Tack weld in very accessible places, as several test fits might be necessary.

d. Grinding of mount may be necessary to improve fitment for welding. This will depend on the angle of the shafts and the motor mount.

STEP 80

Mark the collapsible shaft at the length required to fit fully into the ¾"DD to ¾"DD. This should be able to be measured entirely on the 1" section as shown in the picture below.

PART 6 - STEERING ALIGNMENT AND WELDING:

STEP 81

Uninstall the collapsible shaft and measure the overall length when the shaft is adjusted to the same length as when you made your mark.

a. This length will end up being almost the maximum length of the collapsible shaft when you cut it, allowing the collapsing action in the event of a crash or break.


STEP 81.1


STEP 81.2

STEP 82

Extend the shaft to the measured length plus approximately 1" , marking the length on the 1" side.

a. The shaft should be cut approximately 1" longer than your measurement and mark in order to facilitate the collapsing and adjustment of the steering wheel inside the truck.

b. Please DO NOT cut on the ¾" side of the shaft. This removes the recesses that lock in the set screws and causes the entire steering assembly to be far more dangerous.

c. Remember that you can always test fit multiple times and cut a little off each time. If in doubt, always cut to a longer length and test fit.


STEP 82

STEP 83

When you are confident in your mark, cut the shaft on the 1" side.


STEP 83

PART 6 - STEERING ALIGNMENT AND WELDING:

STEP 84

Grind the newly cut edge to a very small 45 degree angle

a. This is to make installation into the U-joint under the steering wheel slightly easier

b. Slight indentations can be drilled into the 1" section for the set screws under the steering wheel if desired. This will give the set screws slightly more engagement but are not required.


STEP 84.1


STEP 84.2


STEP 84.3


STEP 84.4

PART 6 - STEERING ALIGNMENT AND WELDING:

STEP 85

Reinstall the collapsible shaft on the top and bottom, making sure all the shafts in the entire assembly are properly installed into their respective U-joints.

STEP 86

Snug down all set screws.

a. All shafts should not protrude into the center of the U-joints. This can cause binding. They should be even with the internal surface of the U-joints or slightly below.

b. Slight grinding adjustments can be made to the shafts to clear the U-joints internally, but this can only solve very minor interferences.

STEP 87

Grind the newly cut edge to a very small 45 degree angle

a. Any binding discovered at this step can be fixed, but any binding after the intermediate bearing surround is welded is very hard to fix. Please test extensively.

b. Pictures of our steering setup may differ from your positioning, please do not take our location as the solution for your truck.

c. Allow plenty of clearance to the motor mount, as the set screws and nuts must still be accessed.

d. The snap ring to remove and install the intermediate bearing must also be accessed, do not angle the surround in such a way that you cannot remove the snap ring later.

PART 6 - STEERING ALIGNMENT AND WELDING:

STEP 88

Once satisfied that all positions of the steering will not bind throughout the rotation of the wheel, disassemble the steering fully for welding. This includes everything besides the U-joint below the steering wheel, which can be left installed on the steering column. The collapsible shaft must be removed.

STEP 89

Uninstall steering rack using the ***inverse of step 71***

STEP 90

Remove the snap ring and intermediate bearing

PART 6 - STEERING ALIGNMENT AND WELDING:

STEP 91

Fully weld the bearing surround into place and grind if desired.

PART 7 - SKID PLATE MOUNTING:

STEP 92

Drill out the original rear skid plate mounting holes as shown below, making at least a 7/8" hole where the original holes appear

STEP 93

Grind the paint off the material immediately surrounding both holes

STEP 94

Install the 4 main skid plate bolts with the new mounts on the back. As shown below, the towers go at the front, taller one on the passenger side. The plates with PEMs go in the back, sitting in the holes in the frame that were just drilled.

PART 7 - SKID PLATE MOUNTING:

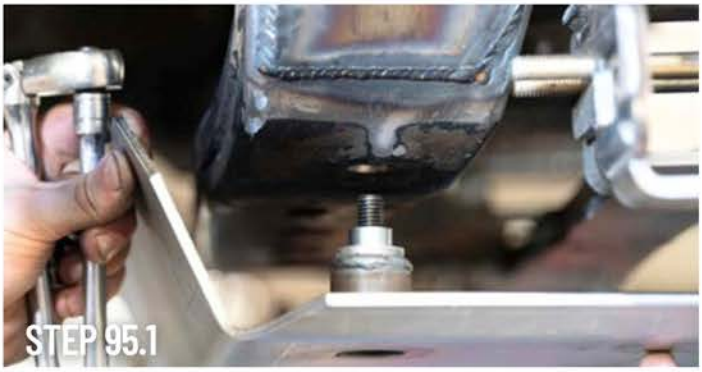
STEP 95

Install the skid plate with the front two bolts and use a jack to press the rear of the skid plate into place. The mounts should be as centered as possible on the bolt holes, allowing for a smooth installation later in the process.

a. They should install with light taps from a mallet or slide in by hand. If they are very difficult to install, please stop and contact us before permanent damage to the rack is done.

b. The front two towers should sit on sections of the front crossmember and LCA mount that provide enough material to weld to.

c. Be sure to measure side to side and shift if necessary. This will ensure your skid appears even from the front of the truck when it is fully assembled.



STEP 96

Tack weld on all the mounts, making sure they will not move when the skid plate is removed.

PART 7 - SKID PLATE MOUNTING:

STEP 97

Remove the skid plate, carefully unbolting from the mounts as to not break the welds.

STEP 98

Finish weld all the mounts into place

PART 8 - BUMPSTOP MOUNTING:

STEP 99

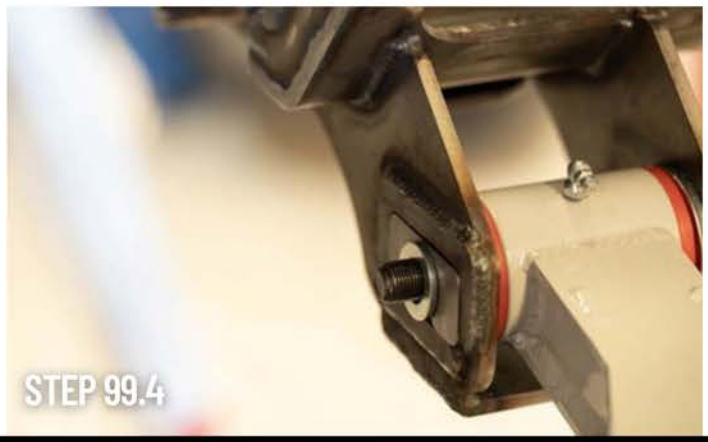
To mount both the Superbumps and the TG air bumps, the LCAs will need to be loosely installed on the bulkhead. Using the 5/8" bolts included in the kit, install the LCAs as shown below.

a. The large zinc plated washers go on either side of the polyurethane bushings installed in the LCA

b. Bolts can be finger tight, the LCA just needs to be in the correct position, not necessarily torqued to spec

c. Utilize the "centered" alignment tabs for this step, as they will give the best overall idea no matter how the final alignment ends up

d. Utilize a 1/16" or 1/8" offset tab in any slots that are not aligning exactly, so long as most slots are using the "centered" tabs. It is common for aligning these trucks to utilize different measurements at different slots along the LCA due to welding and variance among all the parts. This is similar to the factory alignment system, just more apparent due to the physical swapping of the tabs.



PART 8 - BUMPSTOP MOUNTING:

STEP 100

Install the Superbumps and / or air bumps into their mounting brackets as shown below.

a. For our Superbump mounts in this kit, we have included a PEM nut backing plate which slides into a slot in the bottom of the Superbump mount. This is replaceable even when the mount is fully welded.

b. For the air bumps, when installing them into their respective mount, please adjust them approximately into the center of their range. They will need to be adjusted for final testing and tuning, but this will give a good idea of our landing area on the LCAs.


STEP 100.1


STEP 100.2


STEP 100.3

PART 8 - BUMPSTOP MOUNTING:

STEP 101

Tack weld all bumpstop mounting brackets as shown below, taking care to make sure they are vertical and impacting the LCAs at the correct points.

a. The Superbumps impact the LCAs in the rear section behind the secondary shock mount

b. The air bumps impact the LCAs between the secondary shock mount and the axle shaft channel.

c. We have provided etched lines where the mounts are approximately going to land. Your specific build may require slight adjustment left and right, but should fall almost exactly at the height of the etched lines.

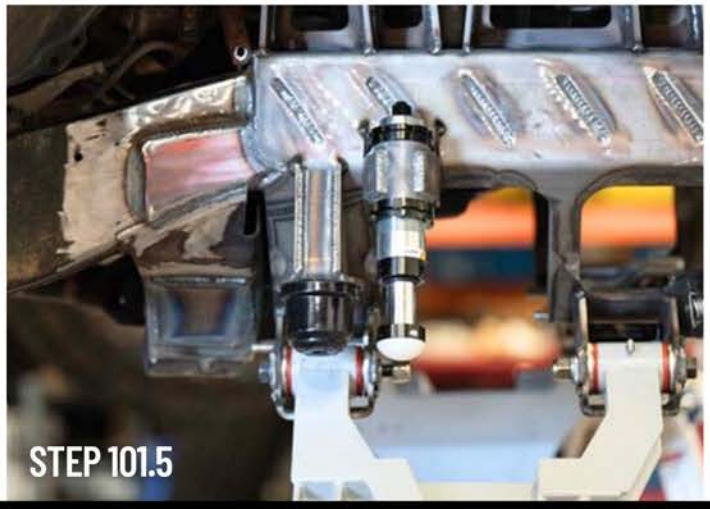
d. Please check several times before final welding that your bumpstop alignment is to your liking before continuing.


STEP 101.1


STEP 101.2


STEP 101.3


STEP 101.4


STEP 101.5

PART 8 - BUMPSTOP MOUNTING:

STEP 102

Finish weld all bumpstop mounts to the frame

STEP 103

Remove all bumpstops and the LCAs in preparation for the painting process.

PART 9 - PAINT AND PREP:

STEP 104
Tape any surfaces that you would like to protect from paint, including all engine surfaces.

STEP 105
Tape off internal surface of the steering bearing surround.

STEP 106
Remove powder coated crossmembers

STEP 107
The front crossmember can be removed for paint, however, if the bulkhead warped at all from welding, it may be difficult to get back in. Often, it may be easier to tape off the bolts with the crossmember installed for paint.

STEP 108
Clean and sand any rough surfaces or edges

STEP 109
Paint all exposed surfaces with your preferred black spray paint.

a. We have provided reservoir mounting brackets that will be welded in just behind the bulkhead assembly. This can be done by either grinding a small amount of paint off later or leaving the small section of frame between the bulkhead and body mounts unpainted.