



1967-1979 F100, F150, F250, and F350 2wd Super Duty Front Axle and Steering Conversion

Installation Instructions:

While there are a lot of small variations in the frames and parts for 2wd trucks, the installation process is mostly the same. Here is a quick summary of what to expect:

- Drilling several 7/16" and 1/2" holes
- Engine crossmember cutting and welding for drop height kits and some standard height kits
- 10 to 80 hours labor depending on transfer case, rear axle and leaf spring mods, replacing parts on the donor axle, etc.

This conversion will lift your truck 7 to 8" from its factory 2wd height (with standard height buckets, or 3" less than that with drop buckets) and you will want 33" tires minimum. You can likely go up to 38's without clearance issues. The drop height kit is good with 33" tires, or a 2" lift spring and 35" tires.

Parts you will need to purchase separately:

- Front axle, 2005-2016
- Front coil springs, 2005-2016
- Front radius arms, 2005-2016
- Front Shocks, 2005-2016, Bilstein 24-186674 work great
- Steering gear- must be 2005 to 2007, some early 2008, with 36 spline input. Buy Lares 11610 from Rockauto if its in the budget
- Pitman arm, oem style, 2005-2016
- Front track bar, 2005-2016
- Length of 1.5" OD 1.0" ID DOM tube such as TU1031 from Summit Racing for drag link
- Front rubber brake hoses for a 2005-2007 super duty (other years work, these are convenient
- Steering shaft with 3/4" 36 spline shafts on either end such as Borgeson 000970
- Prothane Bump Stops part no. 19-1311-BL, unless cutting engine crossmember for clearance. If cutting, you'll want a smaller bump stop but I don't have a good part number. A 1" +/- bump stop will work well for that application.

Step One: Remove factory components

Securely place the truck on jack stands and remove these parts:

- Front wheels
- Front brake hoses (the rubber portion)
- Front shocks and brackets
- All steering components
- Front i beams and springs
- Brake line support bracket on outside of frame

Clean the front outer frame rails with an angle grinder and wire wheel and spray it with a coat of paint. A thick layer of undercoating may prevent the spring buckets from seating correctly so this is important.

No.1



No.2



No.3



Remove all rivets holding OEM bucket to frame. Three on the outside vertical surface and three underneath.
Remove brake line tabs held on by bolts.

No.4



Remove 2 rivets per side from engine crossmember holding i-beam tabs in place

Step Two: Install front spring buckets

-Place spring buckets on frame, use a C clamp to push it flush against bottom of frame

-Start all 7/16" X 1.25" horizontal bolts/nuts before tightening any 40 ft/lbs

NO.5



2wd spring buckets use F05 and F06 hardware bags

No.6



SD brake hoses bolt to buckets here on forward side. 05-07 brake hose shown

No.7



No.8



No.9



The two nuts are just for holding this together for mock up.
The spacer without a step in the outside diameter gets welded in the top of the frame rail.
The 2" long spacer gets sandwiched between this plate and the frame rail at the smallest hole of the plate.

No.10



This shows how the hardware is used on the track bar bracket

No.11



The TBB and steering box plate will sandwich the driver frame rail

No.12



No.13



Steering box plate and TBB install:

-Position the TBB on the driver frame rail so it is touching or nearly touching the spring bucket as pictured below.

-Clamp TBB snug to frame.

-Drill three horizontal holes through frame rail using TBB to locate. One 9/16 hole and two 7/16" holes, consistent with TBB holes

-Drill one 7/16 hole that holds bottom of TBB to frame rail

-Get steering plate and spacers. Weld the 7/8" OD 2" long steel spacer and the other steel spacers with a stepped outside diameter to the steering box plate

-Position the steering box plate on the inside of the frame rail by running a 9/16 and 7/16 by 3.5" bolt through the holes drilled from the track bar bracket side. The plate should touch the engine crossmember or be very close

-Tack weld the steering box plate in place, don't fully weld yet

-drill from inside the frame rail with a 9/16" bit the holes that will correspond with the stepped outside diameter spacers (these are for the steering box)

-drill

No.14



No.15



Install the 2 hole spacer between track bar bracket and engine cross member. When using a weld in piece for the engine crossmember, the 2 hole spacer is not needed

Use 1/2" x 3.5" bolts with washers

This will be a tight fit- what I normally do is use a large Phillips screwdriver to locate one side, and then ream the other side out with a 1/2" drill bit. It is normal to take off about .040" or so, but do not be drilling new holes! If this isn't lining up, don't compensate by drilling- double check if something is holding it from lining up.

Note that F35C and some F25C applications have a longer engine crossmember that has an extra layer of steel on the forward side. The process is the same but your crossmember will look different

If you will be using the weld in crossmember pieces, there is no need for the 2 hole spacer. The weld in piece basically fills this void and allows you to cut the engine crossmeber to gain clearance at the front of the differential. A little further down under the steering box installation instructions there is a picture of it installed. Also under the for sale ad for the weld in pieces there are more pictures

No.16

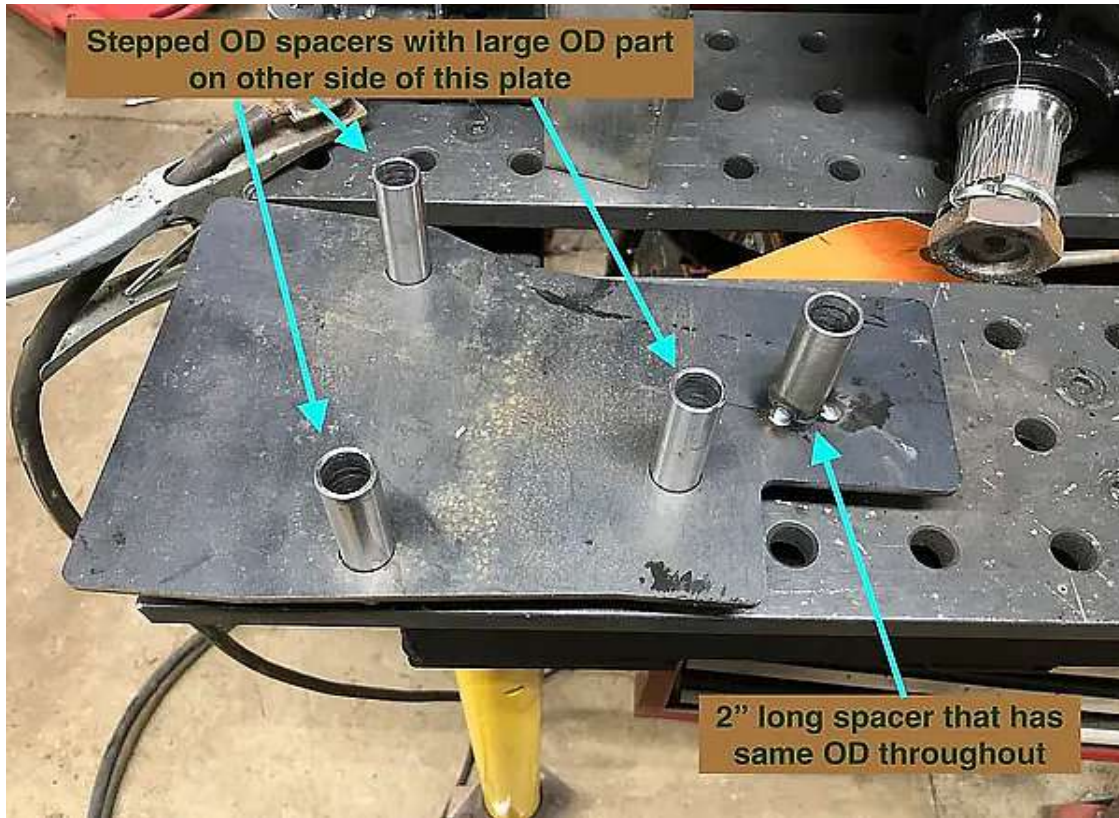


No.17



After all track bar bolts are started, torque the 1/2" bolts to 75 ft-lbs and the 7/16" bolts to 45 ft-lbs

No.18



No.19



No.20



No.21



Above: have all three bolts and spacers connected to the 05-07 steering box as pictured, then weld the spacers in place. Most non-supercabs have the straight upper frame rail and require cutting this slot in the top frame rail for the large steering box spacer to be welded here.

Below: after welding, install this plate into the front driver frame rail as pictured. The 7/16 X 3.5" bolt that goes through the track bar bracket and the 14 bolt that goes through the spring bucket can now be installed with nuts that temporarily hold the steering plate in place for drilling and later welding.

do not weld until you have drilled all three holes, test fit the steering box in place, and also have installed all 14mm bolts with nuts to hold the plate while welding.

No.22



Even though you have 2 bolts/nuts holding this plate in place, still use a C clamp to secure it

Drill the remaining 2 holes with a 9/16" drill bit

Test fit the steering box and check for clearance issues before welding

No.23



Clean the frame in preparation for welding

It is common to have a fuel pump and fuel lines near this area- double check there are no fuel leaks and use a temporary shield barrier such as pieces of sheet metal or a welding blanket to prevent sparks from reaching the area with fuel lines.

Have a fire extinguisher handy.

**Have someone else there watching for flames and ready to put them out immediately.
Seriously, don't burn your truck down!**

**Weld the steering plate in the frame at the points indicated in green below. It may not be possible to weld every surface of this as the flanges of the frame are different size.
As long as you weld the good majority of it, it will do fine.
this is a supercab plate pictured- others will look a little different but same idea.**

No.24



No.25



No.26



Step Four: Steering shaft

Bolt steering plate against outside of frame using three 7/16" bolts and nuts. Now use the plate combined with the pictured step spacers as a template to drill the two new holes in the frame. Use a 9/16" drill bit. You'll notice that these steps have some overlap with the track bar bracket installation. Borgeson part no 000970 works great

No.27



Step Five: steering drag link

Weld included tube ends onto 1.5" DOM tube that you buy separate. Part number TU1031 from summit racing works great and is what I have here.

The goal is to have this tube be an overall length of 32" and therefore you will cut the 1.5" DOM tube to a length of 26 7/8" to accomplish this. Please tack weld for testing before fully welding!

You will want to install jam nuts before installing the drag link. The below picture does not show the jam nuts

Also the pitman arm nut requires a 46mm socket in case you need to remove or install this.

No.28



No.29



Step Six: Install radius arm brackets

These radius arm brackets use 5 factory drilled holes. Most trucks seem to have all 5 of these holes drilled but only use 2 or 3 holes for the transmission cross member.

Remove the rivets one at a time and before you move onto the next rivet, install a 1/2" bolt and nut in its place. This lets you drill or pound out the other rivet on the same bracket without removing the small bracket that sits inside the frame.

Also its helpful to do one side at a time start to finish, that way both sides of the transmission crossmember are not loose at the same time.

Support the transmission in the middle of the transmission crossmember. Don't press too hard up against this, it weighs a lot less than an engine.

The drilling template will line up with the holes on the side of the frame. If it only lines up with one or two holes at a time, you likely have right/left mixed up. It is common to need to ream out the holes going through the vertical side of the frame.

No.30



Driver side pictured above, passenger side below

No.31



Bolts installed through vertical surface of frame:

This require reaming but not drilling new holes

No.32



Bolts installed through vertical surface of frame- this requires drilling 3 new 1/2" holes

No.33



Install both radius arm brackets with a total of eight 1/2" bolts/nuts/washers per side and torque to 75 ft/lbs

No.34



F25C Applications:

On the F25C frames, you don't have the 5 bolt pattern up on the frame, you just have one vertical bolt holding the engine crossmember in place. That [7/16](#) bolt becomes the locator for the radius arm brackets. Those [7/16](#) bolts don't seem to be consistently spaced on the frame so I make that multi slot hole to allow you to place the radius arm bracket where it needs to go. To make it easier to locate, I made the horizontal holes the same as F25a both in pattern and in intended location relative to the axle centerline. So use the [11/58](#) measurement shown in the F25a fitment guide to locate that bracket over the multi slop hole and see the pictures in the f25a fitment guide to make sure the correct side is forward. I would recommend only drilling one hole per side to begin with, then mock up the radius arms and axle to make sure the front/back location is correct. Here is a link to the fitment guide. you'll be going about 1/4 the way down this page:

<https://www.battlebornbrakes.com/f25-fitment>

Step Seven: Bump Stops

There are two components to the bump stops- Prothane Bump Stops part no. 19-1311-BL that connect to the spring buckets and frame, discussed earlier, and then this passenger side axle bump stop extender.

These are important as the differential will contact the engine cross member without.

Use the bump stop extender as a drilling template. Drill a [7/16](#)" hole, and bolt down the extender with the included [7/16](#) bolt.

No.35



No.36



No.37



Step Eight: Brake Lines

Use common 3/16" brake lines. You will likely need 40" for the driver side and 60" for the passenger. The lines are not included, but are readily available at most parts stores.

For the rubber brake hoses, use 2005 Super Duty rubber brake hoses. They mount to the axle itself, and then the top front of the new spring buckets have 2 holes. use the 1/4" bolts and nuts to attach the rubber lines here.

No.38



No.39



No.40



Other Tips and Info

Shock Absorbers

The shocks will match the springs. If you are using a 2005 F350 front axle/spring, then get a shock for that same application. A factory spring and Bilstein 24-186674 work great together.

Brake Booster/ Master

Most factory brake systems will not put out enough brake fluid volume to feed the large Super Duty calipers. Your brake pedal will feel squishy and be hitting the floor even when the brakes are properly bled. I recommend upgrading to a Super Duty booster and master at the same time you do this swap. Those systems come with a 1 3/8" bore master that puts out plenty of fluid.

Lift

This kit will have the effect of lifting your 2wd about 7". If you want more, it will accept a Super Duty lift.

Rear Axle

A sterling 10.5 works great and will match your new front axle. I am working on brackets to make this a direct bolt in conversion with SD lift springs.

Front Driveline

The 2005 SD axle I used for the swap in these pictures accepted a common 1350 U joint. You can either get a conversion U joint to make your original driveline work or you can get a 1350 yoke for your NP205 transfer case and upgrade to a new higher quality driveline meant for 1350 joints. 1350's and a new driveline are really the way to go if you have the budget.

Sway bars

I am working on this but it looks like the best rear sway bar option is a Ford Ranger sway bar, and the front SD sway bar should be able to be fashioned to the highboy frame easy enough. More info to come!

Alignment

Have the alignment shop align the vehicle as if they were aligning the Super Duty donor vehicle, not your old truck

Death Wobble ?

Super Duty trucks have been plagued with death wobble issues and the fix is simple. These parts wear out and now is a great time to replace them if your donor vehicle had high miles or unknown miles- track bar ball joint, track bar bushing, tie rod ends, and ball joints. Rockauto has good prices. You will get it aligned anyways so bite the bullet and do it now!

Wheels and Tires

The Super Duty axles are wider so to keep a factory-like track width, you will want wheels that have a larger backspacing. A minimum of 17" wheel size is required to clear the brakes. I measured the overall tread width on the original super duty wheels/tires and compared them to my original highboy axles/wheels and 33" tires and it was within an inch of the same. The 33" tires are a good amount wider than a skinny factory tire though. I ended up going with a 17X9 wheel with 5.71" backspacing- the part number is KMC XD82979087918. The tires I used were Yokohama Geolandar LT285/70R17, part number 110133320. These work great with factory height SD springs, right great, look great, and have great traction. With this wheel/tire combo I gained only 1/2" of overall tire width from an original highboy axles/wheels/285/75r16 tires.

