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## Dana 60 Crossover Steering Instructions

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If you ordered our complete crossover steering kit, you should have received:



**#U9004 - Pitman arm** – The pitman arm bolts onto the sector shaft of your steering box.



**#U9001 - RH D60 Steering arm** – The steering arm bolts to the top of your passenger side steering knuckle. It is supplied with 4 tapered nuts to attach the arm to the knuckle studs. The arms come drilled with a 5th hole in front for the extra attachment point on our Reid Racing HD knuckles. The RH arms also come with 2 tapered holes in the front so you can run the tie rod over the leaf springs using our High Steer conversion. The draglink will attach to the front hole.



**# U9002 - D60 ARP High Strength stud kit** - 4 studs for stock knuckles, 5 for HD Reid Racing knuckles



**#U9015 Draglink** - The threaded tube that links the pitman arm and steering arm. It may or may not be bent depending on application



**# U9016 - Tie rod ends.** The tie rod ends screw into your draglink to attach to the steering arms and pitman arm. The same end kit is used for the High Steer tie rod. The ends should come with the jam nuts and castle nuts in the package. 1 right hand thread and 1 left hand thread.

For taller trucks, we include a riser block (#U9018) and a longer stud kit (#U9002-Long) to go under the passenger side steering arm. This improves steering geometry and helps with leaf spring clearance.

If you ordered the crossover and high steer kit, you will have the above listed parts plus the driver's side steering arm (U9003), a second tie rod end kit, the high steer tie rod and a second stud kit.

### **Make sure you have the correct steering gear box**

'67-'91 (straight axle body style only) Chevy's will need to have a 2wd GM steering box in order to use the crossover steering conversion. The year breaks for steering boxes are:

'67-'76 (flare fitting, 36 spline input)

'77-'79 (flare fitting, 30 spline input)

'80-'91 (o-ring, 30 spline input, applies to old body style straight axle trucks)

As long as you get a 2wd box from a truck in your vehicle's year group, it should be a 100% bolt on installation.

For 88-98 Chevy trucks (IFS style), the factory box will work regardless of whether the truck was 2WD or 4WD.

For non-Chevy applications, as long as it's a domestic power steering box it will likely work as-is but check with us to confirm.

For '77 and older Dodge trucks, the steering box needs to be replaced. The replacement box can be from a '72-'79 2WD Dodge truck or '78-79 4WD truck with power steering. The new box needs to be installed in the 2WD location on the side of the frame and further back, those holes are usually already there.

For '78-'93 Dodge applications, the existing steering box works but will need to be relocated to the 2WD location. That is further back on the frame, the holes are usually already drilled in the frame. The bracket that the steering box used to bolt to is no longer used, the box is bolted directly to the side of the frame. You may need to shorten the steering column shaft.

1. Put the front axle on jack stands and remove the wheels. You can remove the factory sway bar at this point also (if there is one), you will not be able to re-install it due to interference with the crossover steering. If using a sway bar is critical, give us a call and we'll walk through the options. Remove the factory draglink, and if necessary, swap the steering box (see above).
2. Your steering arm is built to attach to the passenger knuckle with our new high strength ARP stud kit. If you ordered new studs from ORD, you can just remove

the sheet metal kingpin cap from the top of the passenger side knuckle and screw the new studs into the knuckle. The short, threaded end goes into the knuckle. We do recommend a thread locking compound on the threads in the knuckle to make sure they stay in the knuckle. Hand tight is enough here, forcing them in further doesn't make the assembly any stronger.

3. Our steering arms have the kingpin spring caps built into them so there is no need for any spacers, the steering arm will simply bolt to the top of the knuckle just like the factory steering arm did. Before you put the arm on, clean the mating surfaces and apply some gasket sealer (RTV, etc.) to the top of the knuckle, then drop the arm over the studs. We do not recommend using a gasket and do not paint or powdercoat the mating surfaces.
4. Once you have the tapered nuts run down a few threads by hand (you may have to compress the kingpin spring by pushing down on the steering arm), you can use them to tighten the arm to the knuckle. You may notice the small amount of clearance in the hole between the ARP stud and the steering arm. This clearance is normal and the tapered fit on the nut will center the arm over the stud while the clamping pressure keeps the arm secured on the knuckle.
5. If you use our high strength ARP studs with the steering arm bolted directly to the knuckle, lubricate the threads and tapered seat with motor oil and tighten to 110 ft-lb. Loosen and retighten each fastener 3-5 times, then torque to the final value of 110 ft-lb. This will seat the threads in the stud and nut properly to help achieve the correct clamp load on the steering arms. If you have a High Steer kit, the left arm will install with the same procedure.
6. For applications using our steering riser block and long studs, once the studs are installed the end of the riser block with the pocket is installed pointing down and then the steering arm is installed on top of the riser block.



Tighten the locking nuts on top of the tapered cone adapters to 90 ft-lb and only loosen and re-tighten one time. The kingpin spring is held down by our billet riser block. Once installed and when you're greasing the zerk in the steering arm, grease will fill the cavity in the steering arm first then flow through the hole in the top of the riser block into the upper kingpin parts.

7. To install the pitman arm on the steering box, center the box in its travel by turning it all the way one direction, then count the turns to the stop the other direction. Come back half that number and you're there. Most of the time the crossbar in the steering wheel will be level at this point.

8. Once the box is centered, you can bolt the pitman arm on with the arm pointing straight back and torque the nut to the factory spec of 192 ft-lb with no lubrication. If you need a nut, it's a thin nut (like a jam nut), 7/8"-14 thread.
9. Make sure each tie rod end has a jam nut on it and thread the tie rod ends into the draglink, one is right hand thread and one is left hand thread.
10. Point the wheels straight ahead and adjust the draglink till the ends drop into the holes in the pitman arm and steering arm. If your draglink is bent on one end, the bent end of the draglink will install nearest the pitman arm and the straight end of **the draglink will drop into the farthest forward hole** on the steering arm. If you using the High Steer conversion, **the tie rod will drop into the rearward tapered hole.**
11. Install the castle nuts on the tie rod ends and tighten to approximately 40 ft. lbs., then continue tightening the nut until the hole in the tie rod end lines up with a gap in the castle nut. DO NOT loosen the nut to make the holes line up, if you over-shot the hole, back everything all the way off and start over. Install the cotter key through the nut and tie rod and and fold it over to insure that the nut can't come loose.
12. You do not need to take your truck to an alignment shop to make the steering wheel straight. The best way to adjust the draglink is to drive the truck (make sure the jam nuts are snug) and pay attention to the position of the steering wheel when the truck is going straight down the road. Now park it with the steering wheel at that same position. Loosen the jam nuts on the draglink and adjust it one way or the other (making the draglink shorter moves the wheel to the right and vice versa) until the steering wheel is straight. Repeat until the steering wheel is straight. For finer adjustments on bent draglinks, you can take one of the tie rod ends loose and rotate it one turn.
13. If you have the High Steer conversion, leave your factory tie rod on the knuckles and adjust the new tie rod to drop into the holes in the High Steer arms, this will let you retain your toe in adjustment. You will need to move your steering stabilizer, simple tabs on one of the u-bolt plates works fine. If you're mounting a hydro assist ram, you'll need a short tower coming off the axle tube near the leaf spring mount for the fixed end of the cylinder.

We build the draglinks to operate with the ends almost all the way in so you probably won't see many extra threads showing. If you need to adjust the draglink longer, there's enough thread to add about 2" to the overall length. If it needs to be shorter, we thread the tube extra deep so there's room to cut some off the ends to shorten it up without bottoming the threads. If the draglink needs to be shorter by more than 1.5-2", call us and we'll get you a different draglink. You may need to adjust the draglink a couple times to get it just right, you'll want to adjust it so that the steering box is running in the center of its travel when you're going straight down the road.

Here is what the completed crossover steering system should look like:



Be sure to check the fastener torque after a test drive and verify after any hard trail use.

The factory steering arm can be left of the driver's side knuckle, though many customers choose to replace it with the sheet metal cap that was on the passenger side knuckle. This is not necessary but many people do it for looks.

We understand that our customers have varying levels of experience and that you may have questions about your installation that are not covered in the instructions. As usual, if you have any questions, call us and we'll be happy to help you out.