

" THIS ARTICLE IS INTENDED FOR YOUR REFERENCE ONLY.

ACTUAL PARTS, YEARS AND BODY STYLES CONTAINED

IN THIS ARTICLE MAY DIFFER SLIGHTLY FROM YOUR APPLICATION. "

1955-57 670 POWER STEERING UPGRADE

In the late 1970's classic customizers started modifying the "new" GM 605 power steering box for use on a 1955-57. This was a huge improvement over the stock non-power or power assist steering system. The beauty of the 605 power steering upgrade is that it is a very simple, straightforward installation. The 605 box is about the same size as the stock steering box so exhaust and shift linkage clearance is not much of an issue. Like any upgrade, there is always room for improvement! The 605 is a converted box that actually uses the pitman shaft and lower half of the stock 1955-57 steering box and the sector and top of a 605 box. This creates a two-piece unit that requires welding, during the manufacturing process, of a bracket on the frame to hold the top and bottom together. In addition, the 605's are prone to leakage, which can be pretty frustrating on your driven classic. Now it's time to move forward again. The all-new 670 power steering box is now available. It is an all-new part manufactured specifically for your 1955-57. This one-piece box bolts directly to the frame using the stock steering box bolt holes on 1 or 2-piece frames. There is no welding or fabrication involved in the manufacturing process. The 670 box has a quicker steering ratio of 14:1 instead of the 605's slower 16:1 ratio. This will give you a much better road feel and improved handling. The installation procedure is identical to the 605, so if you wish to upgrade your 605 system to a 670, all you need to do is buy the new box and bolt it in!

This article shows a small block installation. Big block installations are very similar.

Tools Needed:

Floor Jack or Engine Hoist
9/16" Wrench
1/2" Wrench
5/8" Wrench
3/4" Wrench
Screwdriver

Time Frame:

8 Hours



Photo 1a



Photo 1b

Photo #1a & 1b: The power steering pump bracket P/N 53-27 doubles as the left front motor mount bracket if the engine is front mounted. If the engine is side mounted the bracket is used for the power steering pump only. To remove the original front engine mounting bracket, first remove the 9/16" nut, flat washer and rubber grommet.

#53-216



#53-217



Parts Needed:

- 53-133 1955-57 670 Power Steering Box ▲
- 53-216 Complete Small Block 670 P/S Kit ▲ ▲
- 53-217 Complete Big Block 670 P/S Kit ▲ ▲
- 53-27 Small Block Power Steering Pump Bracket
- 53-28 Power Steering Pump
- 53-29 Pump Upper Adjusting Arm
- 53-30 P/S Pump Pulley
- 18-35 Small Block Harmonic Balancer
- 51-03 Double Groove Crankshaft Pulley
- 53-34 3rd Groove Crankshaft Pulley
- 51-05 Double Groove Small Block Water Pump Pulley
- 18-115 Small Block Alternator Bracket
- 53-31 605/670 Inverted Flare Return Hose
- 53-32 605/670 Small Block Inverted Flare Pressure Hose

53-400 Steering Column Conversion Kit

* Complete Kits Include: 670 Power Steering Box, Fan Belt, P/S Pump, P/S Pump Mounting Bracket, P/S Pump Adjusting Arm, P/S Pump Pulley, Crankshaft Pulley, Pressure and Return Hoses.

To order parts call 1-800-456-1957 or visit ClassicChevy.com



Photo #2a & 2b: The engine must be supported on the driver's side using a floor jack or engine hoist. Raise the driver's side of the engine so that there is no load on the left front engine mount. Remove the two 9/16" X 1" bolts and lock washers and the angle mount.



Photo #3: The new power steering bracket bolts to the front of the engine with two 9/16" X 1-1/4" bolts and lock washers supplied with the bracket. This bracket fits short water pump small block Chevys only.

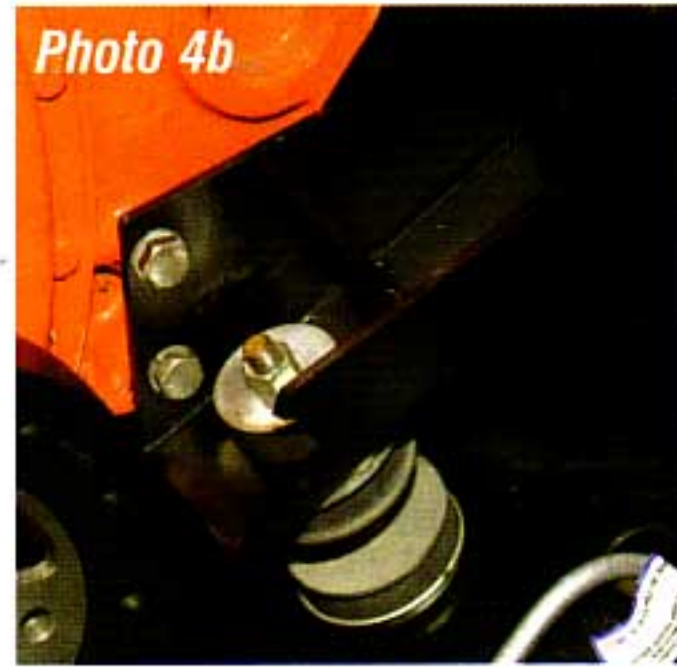
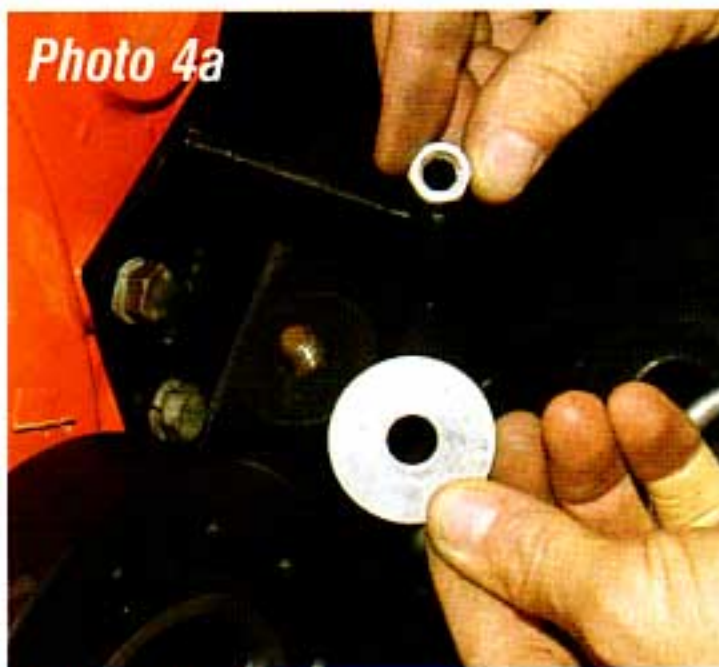


Photo #4a & 4b: Once the bracket is bolted to the front of the engine, lower the engine back onto the mount. Using the original nut, install the new rubber grommet and large flat washer supplied with the bracket.



Photo #5a & 5b: The power steering pump P/N 53-28 mounts to the bracket using a 9/16" X 1" bolt and lock washer on the front and a 9/16" nut, lock washer and flat washer on the rear stud of the power steering pump.



Photo #6: The power steering pump adjusting arm bolts to the top of the water pump using the original bolt. The slotted end of the adjusting

arm attaches to the upper rear stud on the back of the power steering pump with a 9/16" flat washer, lock washer and nut supplied with the P/N 53-27 bracket.

Photo #7: The double groove power steering pump pulley P/N 53-30 has a slotted keyway and is held to the pump with a 3/4" nut supplied with the power steering pump.



Photo #8: If your engine has a harmonic balancer with the lower crankshaft pulley riveted on, it must be replaced with a balancer that will accept bolt-on crankshaft pulleys. P/N 18-35 is a 6-3/4" diameter small block harmonic balancer that will work with the front engine mounts and any internally balanced small block Chevy.

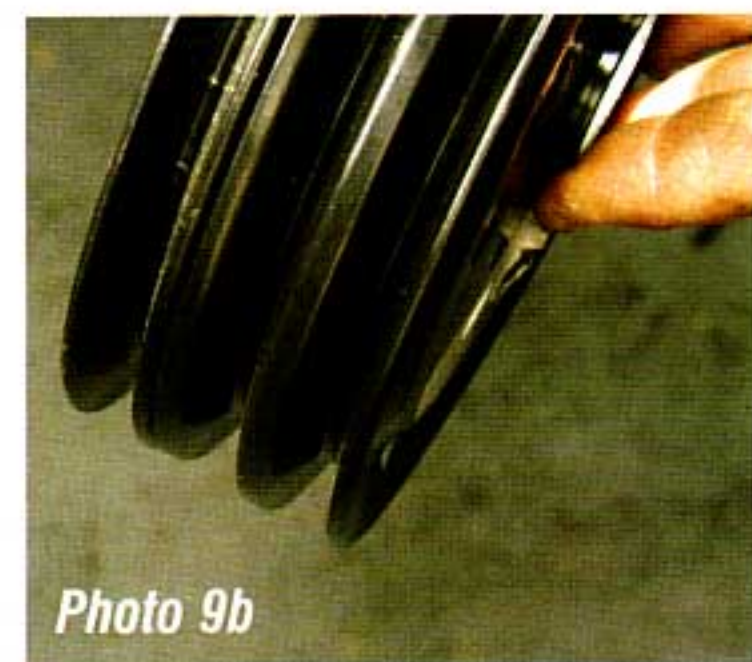


Photo #9a & 9b: The first groove (closest to the timing cover) on the crankshaft pulley P/N 51-03 drives the water pump and generator or alternator belt. The second groove drives the water pump and air conditioning compressor. The third groove pulley P/N 53-34 drives the power steering pump. The pulleys are held to the harmonic balancer with three 3/8" fine thread bolts.

YOU CAN DO IT MODIFICATION

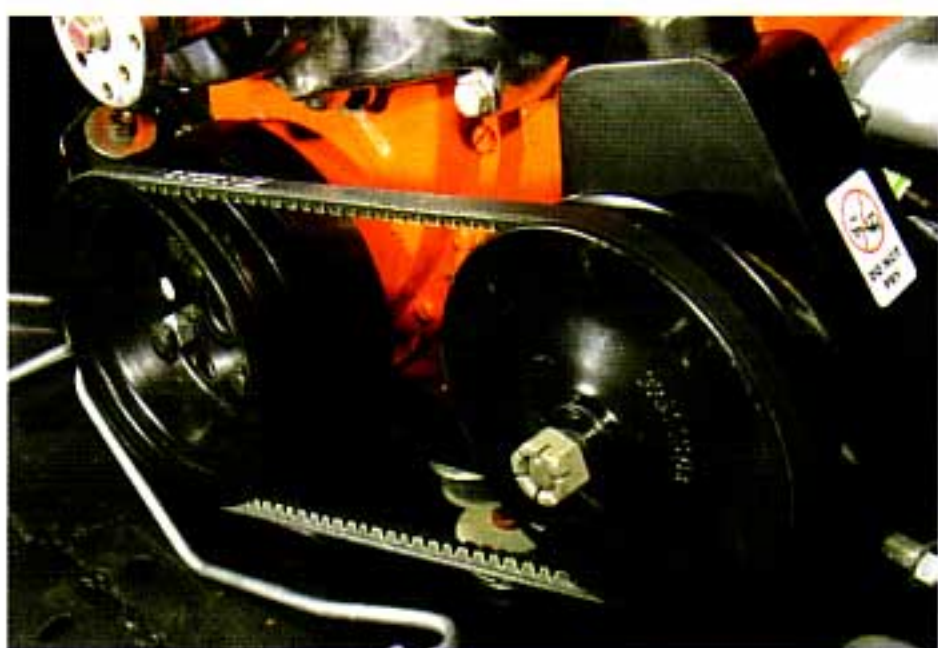


Photo #10: The forward groove on the power steering pump pulley lines up with the third groove on the crankshaft pulley. If air conditioning is not installed, the third groove pulley on the

crankshaft is not required. The power steering belt P/N 41-12 may be installed on the rear groove of the power steering pump pulley and the forward groove on the crankshaft pulley.

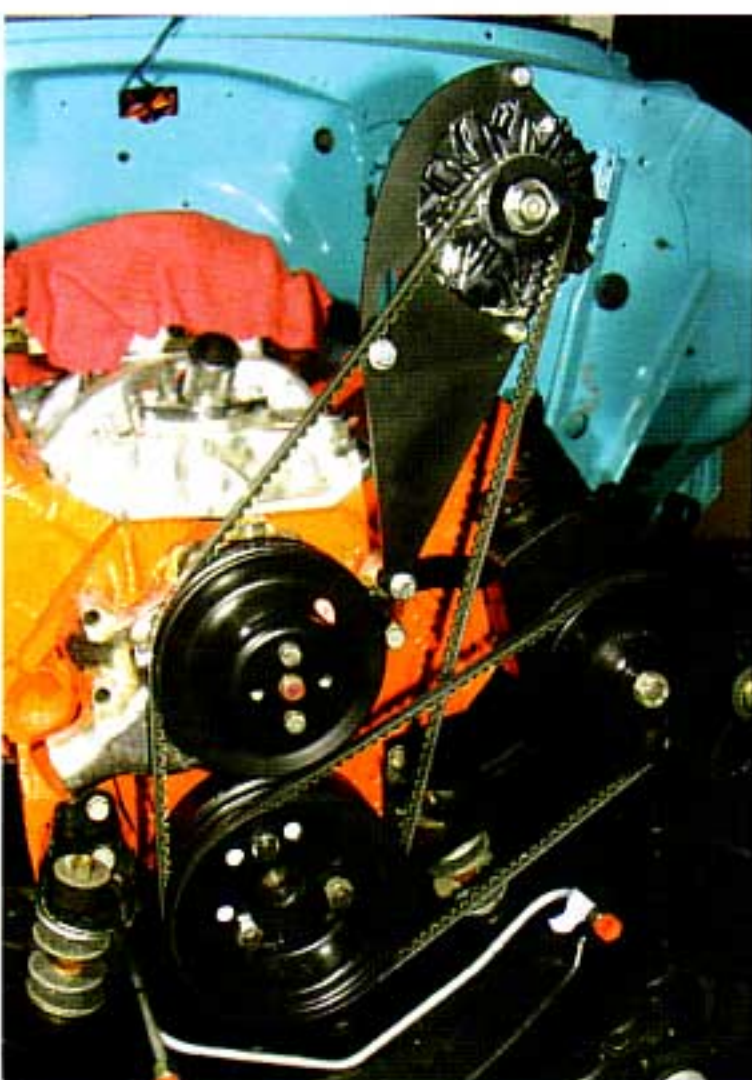


Photo #11: The alternator or generator must be adjusted inboard far enough so the belt will not interfere with the power steering pump. The P/N 18-115 alternator mounting bracket mounts the alternator inboard of the driver's side valve cover. This allows the alternator belt to pass by the power steering pump with no interference. The bracket attaches to the two front intake manifold bolts and the upper water pump bolt on the drivers side.

Photo #12: The pressure port on the rear of the power steering pump is a 3/8" female inverted flare fitting. A brass adapter is included with the power steering pressure hose P/N 53-32. The brass fitting allows the female end of the pressure hose to connect to the power steering pump.



Photo #13a, 13b & 13c:

The 670 box bolts to the frame using the stock steering box bolts. The input shaft is the same size and location as the 605 power steering box and uses the same pressure and return hoses as an inverted flare type 605 steering box.



Photo #14: The male end of the pressure hose has an 3/8" inverted flare and screws into the larger of the 2 ports on the steering box.



Photo #15a & 15b: The return hose P/N 53-31 connects to the barbed nipple on the back of the power steering pump with a hose clamp and the smaller port on the power steering box.

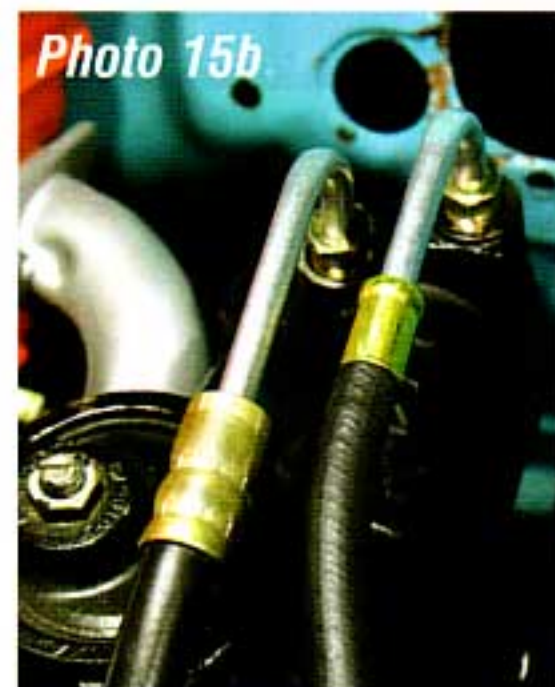


Photo #16: When installing a 605 or 670 power steering box, original non-power steering linkage must be used. The original pitman arm fits directly on to the 670 pitman shaft.

Photo #17: A steering flex coupler (rag joint) must be used between the steering box and the steering column. If the stock steering column is used, it must be shortened to accommodate the flex coupler. P/N 53-400 column conversion kit will need to be used to convert your column. Refer to August 2005 *Classic Chevy World*.

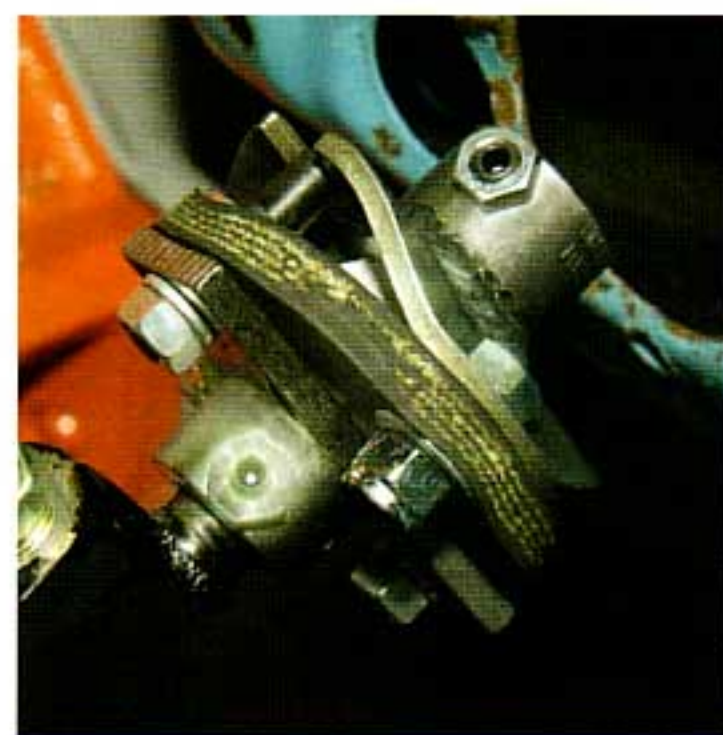




Photo #18a & 18b: There are several flex couplers available for different applications. The 605 and 670 steering gear boxes have a 3/4"-30 spline input shaft. The stock column has a 3/4" smooth lower shaft. Other aftermarket columns have a 3/4"-36 spline or a 1" double-D or a 1"-40 spline. Refer to the chart below to choose the correct coupler for your application.

Part Number	Description	Application
53-26	3/4" Smooth Bore to 3/4"-30 Spline	Stock column to 605 or 670 Box
53-102	3/4"-36 Spline to 3/4"-30 Spline	Aftermarket column w/ 36-spline to 605 or 670 Box
53-105	1" Double-D to 3/4"-30 Spline	Aftermarket column w/1" double-D to 605 or 670 Box
53-109	1"-40 Spline to 3/4"-30 Spline	Aftermarket column w/1"-40 spline to 605 or 670 Box

Once everything is installed, fill the power steering pump with power steering fluid and start the engine. Make sure all the belts are running true and there are no fluid leaks. The front end will need to be realigned. We have found the below specifications work best with the 605 or 670 power steering box:

Drivers Side

Caster: 2-1/2 to 3-1/2 degrees positive
 Camber: 0-degrees
 Toe In: 1/8" to 3/16"

Passenger Side

2-1/2 to 3-1/2 degrees positive
 1/4-degree negative

With your new 670 power steering and the proper alignment specifications, your classic will drive like a dream!

Good Luck. 