

# Rock Ram & Saginaw Super Pump Installation Instructions for Ford Super Duty

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## ROCK RAM INSTALLATION

### Mounting the Rock Ram Cylinder

- Step 1** Install the steering box as instructed in the “Gearbox Installation” chapter in the AGR Instruction Booklet stock # 061212IB. 1999 ½ and later models require a 1998 Ford Super Duty pitman arm — Ford OEM Part Number F81Z3590BA. (This part number is cast in the pitman arm.) This is the stock pitman arm on 1997 to early 1999 Super Duty trucks. If you have an aftermarket lift kit requiring a drop pitman arm, you will need one for the 1997 to early 1999 Ford trucks. Consult the lift kit manufacturer for proper application.



NOTE

— The AGR Rock Ram cylinder can be mounted using the factory steering stabilizer mounting brackets (see [Figure 1 on page 2](#)). The cylinder end can be bolted to the axle bracket and the shaft end can be attached to the tie-rod bracket.

Or, if you wish to mount the Ram cylinder higher on the axle for added ground clearance, four universal mounting tabs are included with the kit. Welding is required when using universal mounting tabs. Refer to Chapter 3 “Rock Ram Installation” in the AGR Instruction Booklet, stock # 061212IB, for complete instructions on mounting the Ram cylinder.

- Step 2** Unbolt and move the tie-rod end bracket.

- Step 3** Grind or file holes in the tie-rod bracket to allow the u-bolts to spread over the larger diameter of the tie-rod when the bracket is moved. Be sure to center the Ram cylinder before securing the tie-rod bracket. Refer to the “Rock Ram Installation” chapter in the AGR Instruction Booklet stock # 061212IB for information on centering the Ram cylinder.



NOTE

— AGR recommends that you tack weld the tie-rod bracket in place after tightening the u-bolts.

- Step 4** Drill a 5/8” hole in the tie-rod bracket (using the existing hole as a pilot) for the heim joint bolt.
- Step 5** Use the provided spacer washers to locate the Rock Ram cylinder so that it does not rub against the tie-rod or axle housing.



CAUTION

— The Ram cylinder cannot rub against any component or incur a side load. This will cause the cylinder to flex, resulting in a bent or broken shaft.

**Figure 1** Rock Ram Installed with Factory Stabilizer Bracket



## SAGINAW SUPER PUMP INSTALLATION

### Removing the Old Pump

The first step to installing a new pump is to remove the old one from the vehicle.

- Step 1** Disconnect the battery.
- Step 2** Remove the fan belt from the power steering pulley.
- Step 3** Unbolt the alternator and set it on top of the engine. It is not necessary to remove the wiring.
- Step 4** Disconnect the high pressure and return hydraulic lines from the power steering pump. Fluid will drain out of the pump and lines, so have a waste oil container available.
- Step 5** Remove the four bolts that secure the power steering pump bracket to the engine.
- Step 6** Remove the power steering pump and mounting bracket assembly as a single unit from the vehicle.
- Step 7** Using a power steering pump pulley remover, remove the pulley from the pump.

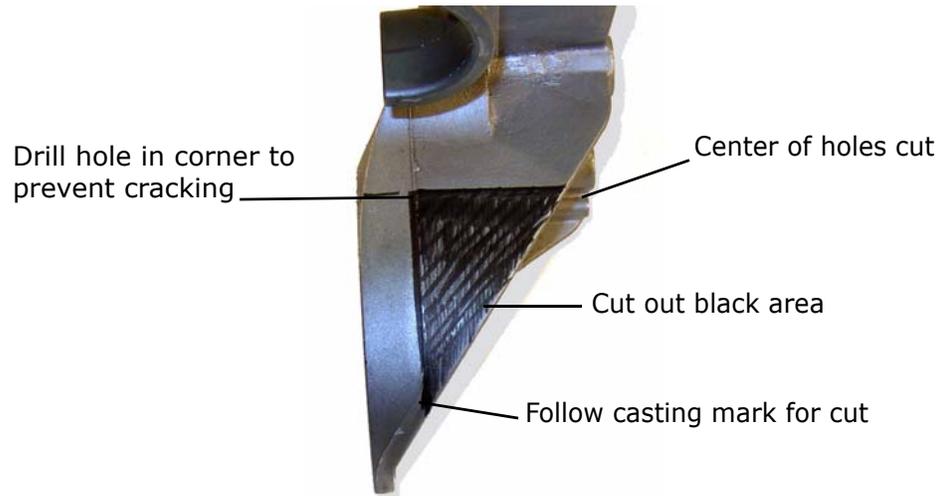


*You must use a power steering pump pulley puller. DO NOT use a three-jaw puller, this will destroy the pulley.*

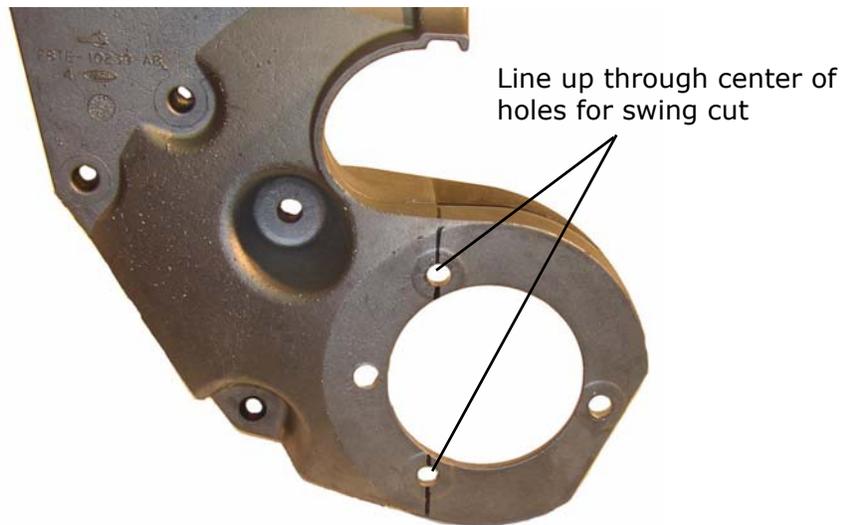
### Removing the Pulley, Bracket, and Reservoir from the Pump

- Step 1** Remove the power steering pump from the mounting bracket.
- Step 2** Mark the pump bracket as shown in Figures 2 through 4.

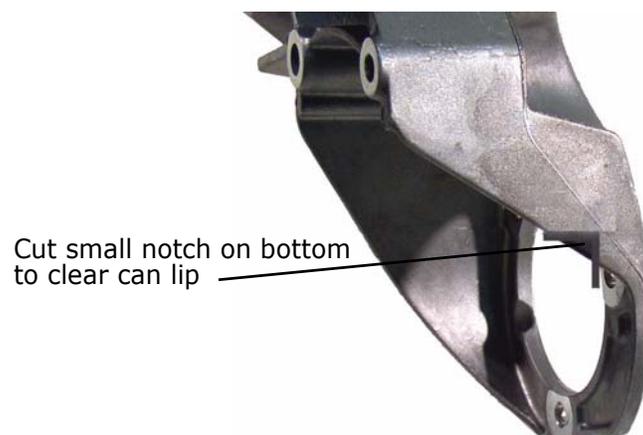
**Figure 2** Pump Bracket Trim Markings—1



**Figure 3** Pump Bracket Trim Markings—2



**Figure 4** Pump Bracket Trim Markings—3



**Step 3** Trim the bracket using a hacksaw, die grinder, or similar cutting tool.



NOTE

- Drill a 1/4" diameter hole in the corner of the area to be trimmed before you start cutting. This will prevent the bracket from developing a stress crack over time.
- Do not remove material using a grinding wheel.

**Step 4** Use the front ring as a guide to drill a 7/16" hole in the aluminum pump bracket.



NOTE

- Align the front ring on the aluminum bracket so that the flat side and the remaining three holes align before drilling the hole. The fourth hole in the front ring will line up over a raised dimple in the aluminum bracket. The fourth hole and ring are added for extra support and may not be needed for all applications.
- When installing the AGR Super Pump on non-Super Duty vehicles, you will need to cut your own pump bracket, as we have not yet installed the Super Pump on all Ford vehicles.
- Vehicles without adequate clearance to install the Saginaw pump and reservoir combination can install the pump with the remote reservoir option.

### Installing the New Pump

**Step 1** Install the AGR Super Pump in the bracket. Bolts will be inserted through the front ring, then through the pump bracket and then screwed into the pump. Start and hand tighten all bolts before tightening with a wrench.

**Step 2** Replace the Teflon ring on the high pressure line with the new white Teflon ring provided with the kit.

**Step 3** Press the pulley on to the shaft. The pulley will stop at the shoulder on the pump shaft.

**Step 4** Install the pump and bracket assembly on the vehicle by performing the steps in reverse order contained in the section "[Removing the Old Pump](#)" on page 2.



NOTE

*Lines may need to be rerouted on some vehicles. Bend the pressure line to mate with the rear fitting on the Saginaw pump. Check before tightening.*

**Step 5** Reinstall lines onto the new pump. Return lines can be connected to either return line on the reservoir.



NOTE

*Use a new teflon ring on the factory Ford hose between the threads and hex part of the nut. Torque the nut to approximately 16 ft. lbs. In most applications, you should be able to slightly move the hose with your hands after tightening.*

**Step 6** Install and adjust the fan belt around the power steering pulley.

**Step 7** Bleed the power steering system. For complete instructions, refer to "Bleeding Air From Power Steering Systems" in the AGR Instruction Booklet stock # 061212IB. Failure to follow these bleeding instructions will void the warranty.

**Figure 5** New AGR Power Steering Pump Mounted

