

JRi Hydraulic Ride Height



Installation Manual

Tools required

- Standard hand tools (wrenches, sockets, allen wrenches, etc)
- Wiring tools (wire strippers, crimpers, etc.)
- Brake line flare tool - 37° single flare (AN) tool for 3/16" line (available at any auto parts store)

Additional parts required

A few parts will need to be purchased in addition to the kit because they are vehicle/fitment specific.

- Springs (JRi can assist in selection)
- Wire – 8 and 18 gauge
- 5/16" ring terminal for 8 gauge wire (qty 2)
- 3/16" ring terminal for 18 gauge wire
- 1/4" spade connector for 18 gauge wire, 90degree (flag style)
- 3 position toggle switch – (on)-off-(on)
- 3/16" brake hardline (available at any auto parts store in various lengths)
- -3AN Tube Nuts and Tube Sleeves (see step 3 for further information)
- -3AN stainless braided flex lines (see step 4 for further information)
- -3AN Tees (see step 3 for further information)

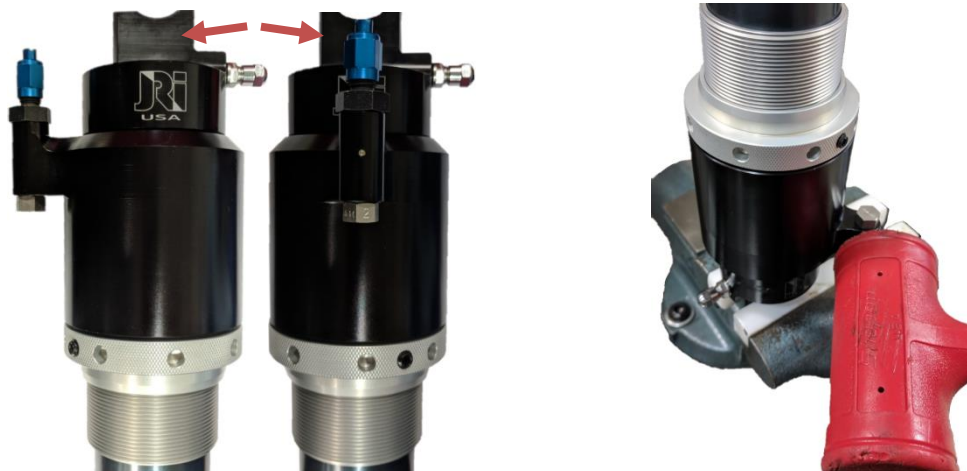
Overview

This manual provides the details necessary for installation in the following order:

1. Install the shocks
2. Install the pump
3. Build/install the hardlines
4. Install the flex lines
5. Wire the pump
6. Bleed the hydraulics
7. Set the static ride height and corner balance

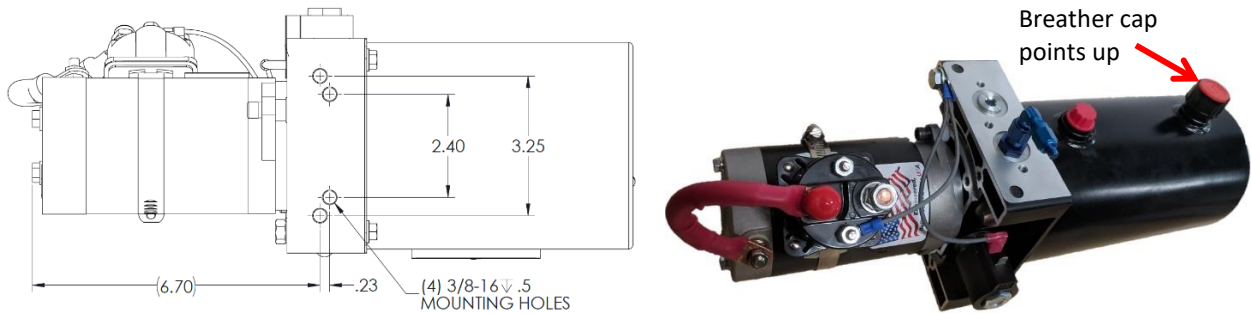
1. Install the shocks

The hydraulic cylinders can be spun to clear a suspension part, or simplify hose routing. If unable to rotate the cylinder by hand, mount the shock in a soft jaw vise, clamping on the flat shown by the red arrow in the first picture below. Use a rubber mallet to lightly tap the cylinder, being careful not to hit the fitting.



2. Install the pump

The pump is mounted by 2 bolts, into 3/8"-16 threaded holes in the center of the pump on the bottom, as shown below. There are 2 sets of holes for mounting width options. The pump must be mounted horizontal so that the tank breather/fill cap points up.

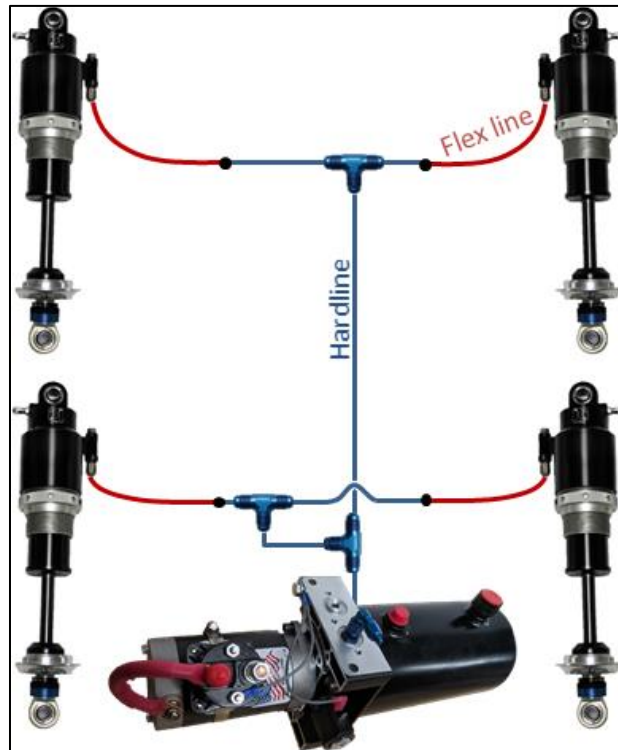


3. Install the hardlines

The ride height kit is designed to be used with standard -3AN (3/16") brake lines with 37 degree single-flare ends. -3AN Tube Nuts and Tube Sleeves are required and available from retailers such as Summit Racing and JEGS.



The plumbing layout is similar to a brake system. A single hose or hardline is run from the pump to a -3AN tee, which splits to front and rear. Hardlines are then routed to each corner of the vehicle and split to each side using tees.

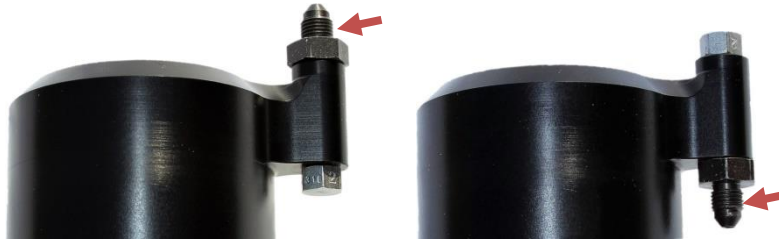


4. Install the flex lines

A braided stainless steel flex line is connected from the hardline to the shock to allow movement with suspension travel, as shown below. Pre-made braided stainless hoses are readily available such as the Aeroquip FBPA series, which is available in a variety of fitting angles and hose lengths from retailers such as Summit Racing and JEGS.



At the shock, the flex line can be connected in one of two orientations by swapping the fitting and plug, as shown in the images below. Make sure the o-rings stay on the fittings and are not damaged during the swap.

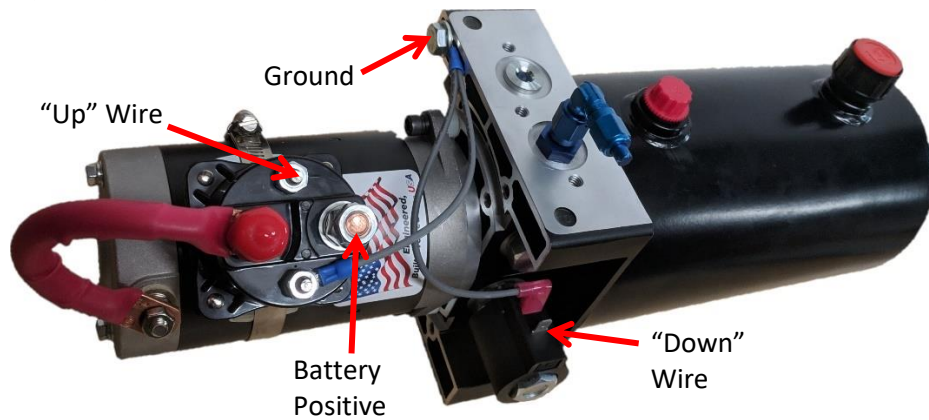


Note on rear flow control valve:

In front-engine applications, the rear typically lifts quicker than the front due to the weight difference. When using the system in a “full up” or “full down” application, this is not a problem as both axles will still achieve their maximum and minimum heights. However, if the user wishes to stop the system at a middle position, the timing difference would be undesirable. To remedy this, JRi recommends using an adjustable needle valve as a restriction in the rear hydraulic lines. This will slow down the flow to the rear and allow the user to adjust the valve during installation to match the movement of the axles.



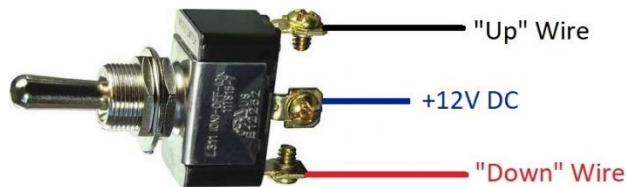
5. Wire the pump



The pump has 4 total electrical connections; positive, negative and two signals.

Battery positive and ground should be connected via 8 gauge or larger wire to the pump studs shown in the image above. A 100-amp fuse should be used on the battery positive wire.

The "up" wire and "down" wire shown above are used to operate the pump. To run the pump in the stated direction, connect that wire to 12v. JRi recommends using an (on)-off-(on) toggle switch, as shown below. This means the normal position of the switch is in the center position, and the two directions are momentary so the pump only runs while the user holds the switch. The center terminal should be connected to 12v.



If a custom pump control system is to be used rather than a switch, it simply needs to supply 12v to the wire corresponding to the desired direction of motion.

6. Bleed the hydraulics

After the pump and shocks are mounted and the hydraulic lines are connected add 1 quart of the supplied Maxima 3wt hydraulic fluid to the pump by removing the breather cap on the tank and inserting a funnel.

The lines will have air pockets at this point and require a bleed procedure. Do this by loosening the hose fitting connecting to the shock by about ¼ turn. Then, toggle the pump in the “up” direction with few short bursts. When the air has been bled out and the fluid comes out steady retighten the line. Do this one-at-a-time for each shock, starting with the longest hydraulic line and ending with the shortest.



7. Set the static ride height and corner balance

Adjust the static ride height or corner balance by loosening the set screw using a 1/8” allen wrench, rotating the spring adjuster, and retightening. Do not attempt to rotate the spring adjuster without loosening the set screw.

