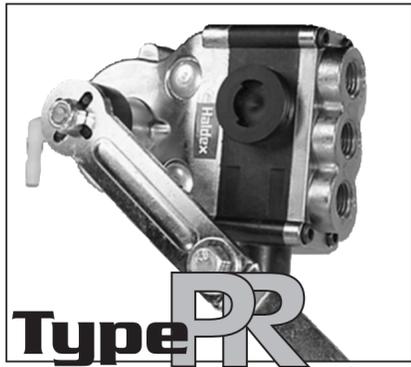


**L31178  
(XL-AV119-01)  
Rev. 12/02**



**Precision Response  
Height Control Valve**

**INSTALLATION INSTRUCTIONS (continued)**

- Confirm the control arm is properly installed by raising the control arm approximately 20° above horizontal. Air pressure should inflate air springs. If the air springs do not inflate:
  - Verify the air supply pressure is sufficient to open the pressure protection valve (usually greater than 85 psi).
  - Recheck the air lines for proper port connection.
  - If your valve has a dump feature confirm the dump switch is not activated.
  - Determine the control arm and alignment identifier dimple on black cap are in the proper orientation (Fig. 2).

If air system still fails to inflate air springs contact Haldex Technical Service.

If the Type PR HCV properly inflates the air springs rotate the control arm down approximately 20° below horizontal. Verify air is flowing through the exhaust port of the Type PR HCV and the air springs are deflating.

- Bring the suspension to the vehicle manufacturer's recommended ride height. Ride height is measured from the bottom of the frame rail to the center of the axle. (Fig. 4)
- With the suspension at ride height and the HCV control arm at center position, measure the distance from the control arm linkage mounting hole to the axle tab bracket mounting hole (Dim. "A" - Fig. 3). This is the required linkage length.
- Assemble linkage kit to pre-determined length. Connect linkage to the control arm and axle tab bracket. For correct linkage assembly consult the suspension service manual or contact Haldex Technical Service.

**IMPORTANT:** Adjustments to the suspension ride height requires system air pressure. Adequate system air pressure must be maintained throughout adjustment procedures.

**NOTE:** The following procedure requires the vehicle to be parked over an inspection pit or two people working simultaneously when using a two HCV system.

- CHECK LINKAGE(S) FOR CLEARANCE.** Disconnect lower linkage connection(s) and move the HCV control arm(s) down to fully exhaust suspension. Reconnect lower linkage(s) to verify linkage does not connect frame rail, electrical wiring or air lines. If there is linkage interference, the valve position and/or linkage axle tab need to be moved.
- CHECK LINKAGE OPERATION WITH SUSPENSION AT FULL EXTENSION.** Disconnect lower linkage(s) from axle tab(s) and move the HCV control arm(s) up to raise suspension to full extension.

**IMPORTANT: DO NOT** continue to inflate air springs after full extension is reached. Damage to shock absorbers and/or air springs could result.

Immediately reconnect lower linkages to axle tabs. Verify the control arm/linkage connection rotates smoothly and is free of tension. If the rubber link end is being pulled along the rod at full extension, the valve position and/or linkage axle tab will need to be moved.

**GENERAL INFORMATION**

The Haldex Precision Response (PR) Height Control Valve (HCV) automatically adds air to, or exhausts air from air suspension to maintain a constant static design ride height.

- All valve ports are 1/4" NPT.
- The Haldex Type PR HCV can be used for right hand or left hand and long or short control arm applications. Refer to installation instructions herein for proper hook-up.
- The integral dump valve has a 1/4" tube pilot port push-in fitting.
- The integral dump valve is **NOT** sold separately and **CAN NOT** be interchanged on valves in the field.

Adjustable linkage assembly kits can be purchased by ordering 48100374 (16") or 48100375 (22"). Contact your Haldex distributor.

**NOTE:** The Haldex Type PR valve can be interchanged with other brands of height control valves.

**PERIODIC AIR CONTROL MAINTENANCE**

Drain all moisture from air reservoir at regular intervals. Normal air system maintenance should be practiced.

The air filter in the Haldex Pressure Protection Valve is removable and can be cleaned or replaced, if necessary.

**PRE-INSTALLATION INFORMATION**

**IMPORTANT:** The Height Control Valve (HCV) and linkage are designed to maintain the vehicle ride height as loads increase and decrease. Proper set up of the HCV(s) is critical to the system performance. Prior to any assembly or disassembly, please read all instructions. Should you feel unable to properly perform the installation and adjustments of a Haldex Type PR HCV contact Haldex Technical Services or have a certified mechanic install or adjust the valve.

**CAUTION:** Incorrect installation of valves and associated components can impair suspension and vehicle performance. It is extremely important that the original equipment manufacturer's specifications of a one- or two-HCV system be followed when installing the air control system. Refer to vehicle and suspension manufacturer's instructions for recommended valve location.

**DO NOT** install a single height control valve of any type if the suspension or vehicle manufacturer specifies a two (2) height control valve system.

**DO NOT** use a time delay valve with a Type PR valve on the same vehicle.

**DO NOT** use antifreeze or other solvents in air supply line. Use of solvents or antifreeze can damage seals and void the valve warranty.

**ALWAYS** use a Pressure Protection Valve (PPV) and filter such as the Haldex Part Number 90554107. Attach PPV directly to the air reservoir for supply to the Type PR HCV.



**INSTALLATION INSTRUCTIONS (continued)**

13. **CENTERING SUSPENSION/AXLE.** Ride height cannot be set correctly if the suspension is not centered between the frame rails. Large suspension movements can cause it to move off center. Re-center the suspension by driving a short distance (30-40 feet) in a straight line backwards and forward to your work area. **DO NOT** set the parking brakes, instead replace safety wheel chocks to secure the vehicle before proceeding.

**WARNING:** Failure to use wheel chocks could allow vehicle to roll resulting in death or serious personal injury.

**RIDE HEIGHT ADJUSTMENT INSTRUCTIONS**

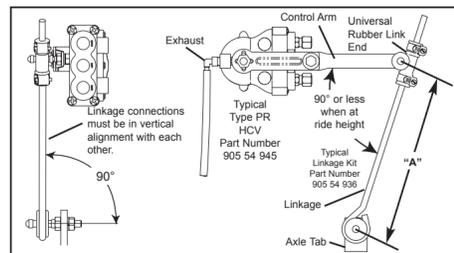
- CHECK FOR PROPER RIDE HEIGHT.** Disconnect lower linkage end(s) from the axle tab(s). Lower control arm(s)/linkage assembly(s) about 1" and hold for 15 seconds to lower suspension. Reconnect the lower linkage end(s), suspension should return to ride height. Measure the ride height on both sides of the vehicle to verify that the suspension is within the manufacturer's specified tolerance (Fig 4).
- FINE ADJUST RIDE HEIGHT IF NECESSARY.** Carefully adjust the linkage assembly or control arm to bring suspension to ride height. After each adjustment of the linkage or control arm repeat Step 1. This may require several attempts, repeat until proper ride height is obtained twice in a row.
- FINAL CHECK.** Soap spray test all air line connections for air leaks and verify that all fasteners are tight.

**NOTE:** Ride heights may vary slightly from the loaded to the unloaded condition.

**NOTE:** The vehicle should maintain air spring volume and remain near ride height during normal periods out of service. If the system deflates, check fittings, hoses and air springs for leaks before performing HCV adjustment procedures.

**NOTE:** A small amount of air may escape from the exhaust tube, this is normal and should not cause alarm or require replacement of the valve.

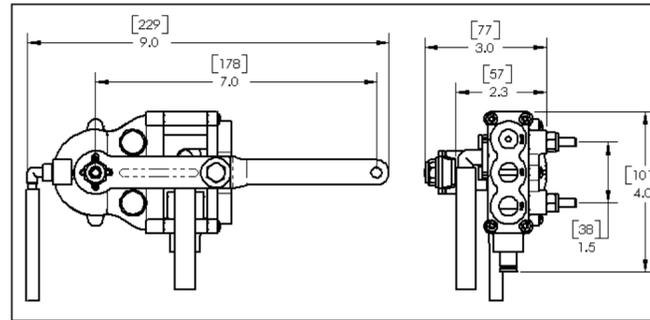
**NOTE:** TYPE PR-HCV has two air spring ports, if only one port is used the other port must be plugged (Fig. 5). If two valves are used on a chassis, then valves must be located in the same position and location on each side of vehicle.



**Figure 3. PR HCV Detail**

**INSTALLATION INSTRUCTIONS**

Part Number	905 54 945	905 54 950
Operating Medium	Air	Air
Delivery	Dual Port Delivery	
Port Fitting Size	1/4" NPT	1/4" NPT
Dump Valve Port Size	N/A	1/4" Tube Push-In



**Figure 1. Type PR HCV Reference Dimension Details**

**NOTE:** Prior to installation, rotate control arm 3-5 times 360 degrees in both the intake and exhaust directions to remove any adverse effects of storage.

- Prepare the vehicle for installation.** The vehicle should be in an unloaded condition before starting installation procedures. **Be certain** all dump switches are off. Park the vehicle making sure all vehicle wheels are on a hard, level surface. Raise and properly support all auxiliary axles. **Do not** set the parking brakes. Instead use safety wheel chocks to secure the vehicle.

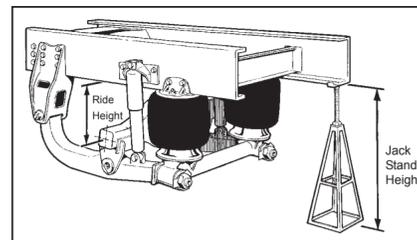
**WARNING:** Failure to support auxiliary axles could allow axle to drop causing death or serious personal injury. Failure to use wheel chocks could allow vehicle to roll resulting in death or serious personal injury.

Check to make sure there is enough room to work around and under the axle where the HCV and linkage are attached.

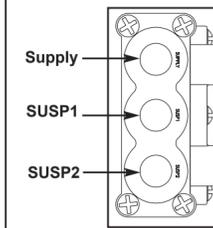
- Determine desired HCV control arm position and valve orientation on the vehicle.

**NOTE:** The Haldex Type PR HCV can be installed in a vertical or horizontal position with the control arm in either left hand or right hand position (Fig 2).

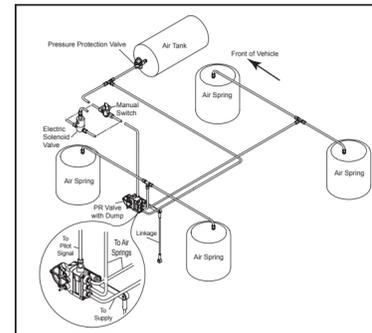
Fasten the control arm to the valve body making sure the alignment identifier dimple on the black cap is in the proper position for your valve orientation (Fig. 2). Use the provided nylok nut and tighten to 20 in. lbs.



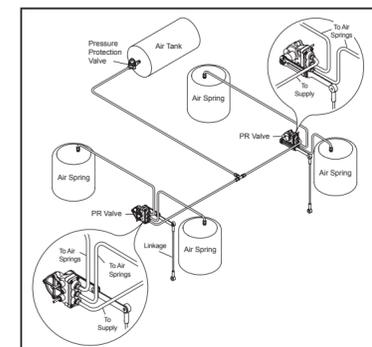
**Figure 4. Ride Height**



**Figure 5. PR HCV Ports**

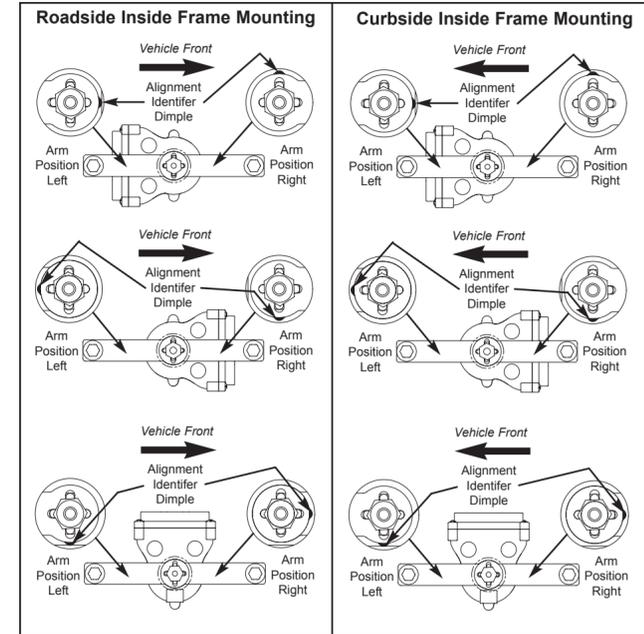


**Figure 6. Single PR HCV with Dump Valve Piping Diagram**



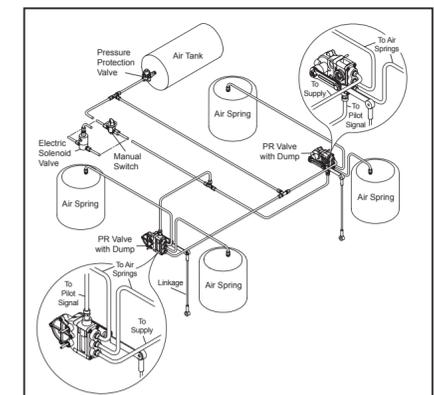
**Figure 7. Dual PR HCV Piping Diagram**

**INSTALLATION INSTRUCTIONS (continued)**



**Figure 2. HCV Control Arm Orientation**

- Determine location of the lower linkage tab. A typical Type PR HCV and linkage assembly are shown in Fig. 3. Note the recommended angle between the HCV and linkage connection.
- Install fittings in valve before mounting to vehicle if possible. Haldex recommends fittings with pre-applied seal compound. If they are not available use a drop of oil or threadlocker. Use small amounts of sealant on threads only. **DO NOT** use Teflon tape or pipe sealing compound.
- Mount the Type PR HCV on the frame rail or a bracket, torque to 35-45 in. lbs. The integral mounting bolts can be used or removed from the valve and replaced with different fasteners without effecting valve performance. For proper mounting bolt spacing see Fig. 1. HCV(s) should be mounted as level as possible. A small torpedo level or mason's line level can help in this positioning.
- Connect air line from air springs to "SUSP" ports on valve. (Fig. 5)
  - Connect supply air line from air tank to "SUPPLY" port on valve.
  - Charge air supply system.



**Figure 8. Dual PR HCV with Dump Valve Piping Diagram**

**These Additional Parts Available From Haldex Will Enable You To:**

- Upgrade your Pressure Protection Valve to include an inline filter.**
- | Part No. | Description                 |
|----------|-----------------------------|
| 90554107 | .... PPV With Inline Filter |
- Add a suspension dump feature to your truck or trailer.**
- | Part No. | Description   |
|----------|---|
| 90554088 | .... For Switch To Pilot Manual Dump Valves                 |
| 90554615 | .... For Remote Mounted "Auto" or Manual Dump Installations |
- Weigh your vehicle.**
- | Part No. | Description  |
|----------|--|
| 42123039 | .... SM130 Economic Pressure Gauge and Decal   |
| 42123040 | .... SM140 Robust Pressure Gauge and Decal; Mounted in a Weatherproof Fiberglass Box |
| 42123041 | .... SM240 Robust Pressure Gauge and Decal; Mounted in a Weatherproof Fiberglass Box |
- Or both weigh your vehicle and lower your suspension.**
- | Part No. | Description  |
|----------|--|
| 42123026 | .... SMD111 Robust Pressure Gauge, Pilot Valve, Switch and Decal mounted in a Weatherproof Fiberglass Box. |
| 42123031 | .... SM115 Robust Pressure Gauge, Switch and Decal mounted in a Weatherproof Fiberglass Box.               |



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