If two valves are used on a chassis, then the valves must be located in the same position and should not cause alarm or require replacement of the valve.

NOTE: The vehicle should maintain air spring volume and remain near ride height during short periods twice in a row.

- Maintain air pressure throughout adjustment procedures.
- Adjustments to the suspension ride height require system air pressure. Adequate system air pressure must be maintained to open the pressure protection valve (usually 60 psig).
- Use antifreeze or other solvents in an air supply line. Use of solvents or antifreeze can damage seals and void the valve warranty.
- Do not use antifreeze or other solvents in an air supply line. Use of solvents or antifreeze can damage seals and void the valve warranty.
- Do not use a single height control valve with a PR or PR Plus HCV on the same vehicle.
- Do not attempt to change or replace the valve in an air supply line. Use of solvents or antifreeze can damage seals and void the valve warranty.

- Conduct routine air system maintenance can help prevent any damage to air system components. Lower intensity routine inspection can be done in any system. Drain all moisture from storage at regular intervals.

- The Haldex Pilot Valve, part number 90554615, can be used in conjunction with the PR HCV to provide air suspension exhausting. The Haldex Pilot Valve is ideal for applications where a pilot pressure is required to operate the PR HCV. The Haldex Pilot Valve is a two height control valve assembly or disassembly, please read all instructions. Should you feel unable to properly perform the installation or adjustments of a Haldex PR or PR Plus HCV contact Haldex Technical Services or have a certified mechanic install or adjust the valve.

- Damage to the valve, linkage and other suspension components may result if the recommended angles are not followed. Measure the distance from the control arm mounting hole to the axle tab mounting hole (Fig. 6 - Fig. 9). This is the required linkage length.

- The HCV and linkage are designed to maintain the vehicle ride height as loads increase or decrease. Proper setup of the PR and PR Plus HCV(s) is critical to system performance. Prior to any installation or adjustments of a Haldex PR or PR Plus HCV contact Haldex Technical Services or have a certified mechanic install or adjust the valve.

- If you feel valves are used on a chassis, then the valves must be located in the same position and location on each side of the vehicle. In the installation of all a HCV system is required to ensure the air suspension system operates correctly.

- The Haldex Pilot Valve, part number 90554107, can be used in conjunction with the PR HCV to provide air spring exhausting. The Haldex Pilot Valve is ideal for applications where a pilot pressure is required to operate the PR HCV. The Haldex Pilot Valve is a two height control valve.

- Certain applications may require that a vehicle air suspension has the ability to fully lower or exhaust the air springs from ride height. The PR Plus HCV has the option of an integrated Normally Closed or Normally Opened dummy valve. The Normally Opened dummy valve is typically operated in conjunction with a manual switch or electric solenoid valve as shown in Fig. 5. This Normally Opened dummy valve allows air to be supplied to the air springs when a pilot pressure is applied. The Normally Closed dummy valve allows air to be exhausted from the air springs when a pilot pressure is removed. It should be noted that the optional dummy valve for the PR Plus HCV is not sold separately and cannot be replaced in the field.

- The Haldex Pilot Valve, part number 90554107, can be used in conjunction with the PR HCV to provide air spring exhausting. The Haldex Pilot Valve is ideal for applications where a pilot pressure is required to operate the PR HCV. The Haldex Pilot Valve is a two height control valve.

- Do not use a single height control valve with a PR or PR Plus HCV on the same vehicle.

- Do not attempt to change or replace the valve in an air supply line. Use of solvents or antifreeze can damage seals and void the valve warranty.

- Use antifreeze or other solvents in an air supply line. Use of solvents or antifreeze can damage seals and void the valve warranty.

- The vehicle should maintain air spring volume and remain near ride height during short periods twice in a row.

- 2. Be sure the suspension is centered between the frame rails before beginning installation. The vehicle should be in an unloaded condition before starting installation procedures. Be careful of any sharp edges on the vehicle.

- 3. Make sure that any suspension exhausting device is not activated.

- 4. Disconnect lower linkage and exhaust air from any air suspension to maintain a constant static design ride height. The PR line of normally open or normally closed operation.

- 5. Set the parking brakes. Instead use safety wheel chocks to secure the vehicle.

- 6. Confirm the control arm is properly installed by raising the control arm approximately 20° above horizontal. Air pressure should inflate the suspension. The air springs do not inflate.

- a) Verify the air supply pressure is sufficient enough to open the pressure protection valve (usually greater than 85 psig).

- b) Recheck the air lines for prep or port connections.

- c) Make sure that any suspension exhausting device is not activated.

- 7. Determine the desired arm position and valve orientation on the vehicle. Scale the control arm to the shock tower and shaft making sure to align the adjustable bracket on the shock tower rail in line with the valve.
Installation Instructions for the PR and PR Plus Height Control Valve

**Installation Guide**

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**Fig. 1**

Reference Dimensions Details for PR Plus HCV

**Fig. 2**

Reference Dimensions Details for PR HCV

**Fig. 3**

Verify System Operation

1. Confirm the control arm is properly installed by raising the control arm approximately 20° above horizontal. Air pressure should inflate the air springs. If the air springs do not inflate:
   a) Verify the air supply pressure is sufficient enough to open the pressure protection valve (usually greater than 85 psi).
   b) Backbleed the air lines for prep or post connected.
   c) Make sure that any suspension dump/exhausting feature is not actuated.
   d) Determine if the control arm is correctly oriented and aligned on the interface cap as in the component information. Refer to Fig. 3 a & b.
   e) If air system still fails to inflate air springs contact Haldex Technical Service.

**Fig. 4**

**Fig. 5**

Adjustable Linkages:

Verify System Operation

a) Perform all linkages dump/exhausting feature is not actuated.

**Fig. 6**

**Fig. 7**

**Fig. 8**

Upgrade Pressure Protection Valve to include an inline filter:

a) Upgrade pressure protection valve to include an inline filter (filter type: Haldex 90554088 – PPV With Inline Filter).

b) Install the pressure protection valve before connecting the air spring complaints. Remove the air line connections and set the parking brakes. Instead use safety chocks to secure the vehicle.

**Fig. 9**

Upgrade Pressure Protection Valve to include an inline filter:

a) Upgrade pressure protection valve to include an inline filter (filter type: Haldex 90554088 – PPV With Inline Filter).

b) Install the pressure protection valve before connecting the air spring complaints. Remove the air line connections and set the parking brakes. Instead use safety chocks to secure the vehicle.

**Fig. 10**

These Additional Parts Are Available From Haldex

- Upgrade Pressure Protection Valve to include an inline filter.
- Approved linkages:
  - Haldex 90554107 – Alignment Identifier Orientation
  - Haldex 90554106 – Alignment Identifier Orientation

**Warning:**

The products described within this literature, including outtake, product features, specifications, designs, availability and pricing are subject to change by Haldex and its subsidiaries at any time without notice.

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**NOTE:**

- If two valves are used on a chassis, then the valves must be located in the same position and orientation from each side of the vehicle. A combination of a PR and PR Plus HCV is required to ensure the air suspension system operates correctly.

**Fig. 11**

**Fig. 12**

**Fig. 13**

Upgrade Pressure Protection Valve to include an inline filter:

a) Upgrade pressure protection valve to include an inline filter (filter type: Haldex 90554088 – PPV With Inline Filter).

b) Install the pressure protection valve before connecting the air spring complaints. Remove the air line connections and set the parking brakes. Instead use safety chocks to secure the vehicle.

**Fig. 14**

Commercial Vehicle Systems

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L3231 US LSB ART ONLY
NOTE: Prior to installation, rotate control arm 3-5 times 360 degrees in both the intake and exhaust directions to remove any adverse effects from storage.

1. Be sure the suspension is centered between the frame rails before beginning installation. The vehicle should be in an unloaded condition before starting installation procedures. Be certain of any dump switches are off. Park the vehicle making sure all wheels are on a hard, level surface. Raise and properly support the vehicle, if using the parking brake, instead of the safety wheel. Check to secure the vehicle.

WARNING: Failure to follow auxiliary safety rules could allow auto to drop or the vehicle to roll resulting in death or serious personal injury.

Preparation For Installation

1. Connect the linkage to the control arm and axle tab bracket. For correct linkage assembly consult tab bracket mounting hole location of the lower linkage tab. A typical PR HCV and linkage assembly are shown in Figure 2.

2. Determine the desired control arm position and valve orientation on the vehicle. The control arm is to the street-facing up and shaft facing downward. Mounting diagrams on the interface cap show the proper position to orient the valve(s) for correct function. Refer to Fig. 3 & 4 for proper alignment identification of the PR HCV.

3. Move the PR & PR Plus HCV on the frame rail or in a bracket and torque mounting nuts to 15-45 in-lbs. Hexagonal head screws must be used to mount the PR HCV. Integrated systems are already installed in the PR Plus HCV. For proper mounting bolt spacing see Fig. 3 & 4. The PR & PR Plus valve should be mounted as level as possible. A small torpedo level or mason’s line level can help in this positioning. DO NOT move the HCV control arm down to fully exhaust the suspension. Reconnect the lower linkage tab bracket mounting hole.

4. Connect the air line from the air springs to the supply (S/P) port on the valve. DO NOT connect air from the air supply tank to the supply (S/P) port on the valve.

5. Check for linkage interference with suspension at full extension. Damage to shock absorbers and/or air springs could result.

6. Connect the valve to the control arm tab and the valve orientation. Use the provided nylok nut and tighten to 25-30 in-lbs.

NOTE: If air system still fails to inflate air springs, check for proper alignment on the interface cap as shown in Fig. 6. Verify air is flowing from under the interface cap and the air springs are deflating.

Lowering/Exhausting Your Air Suspension

1. Verify the air supply pressure is sufficient enough to open the pressure protection valve (usually greater than 85 psi).

2. Be sure the air lines for proper connections.

3. Make sure that any suspension dumping/loading function is not actuated.

4. Determine if the control arm is centered between the frame rails before beginning installation. The vehicle should be in an unloaded condition before starting installation procedures. Be certain of any dump switches are off. Park the vehicle making sure all wheels are on a hard, level surface. Raise and properly support the vehicle, if using the parking brake, instead of the safety wheel. Check to secure the vehicle.

NOTE: If air system still fails to inflate air springs, check for proper alignment on the interface cap as shown in Fig. 6. Verify air is flowing from under the interface cap and the air springs are deflating.

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

1. Be sure the suspension is centered between the frame rails before beginning installation. The vehicle should be in an unloaded condition before starting installation procedures. Be certain of any dump switches are off. Park the vehicle making sure all wheels are on a hard, level surface. Raise and properly support the vehicle, if using the parking brake, instead of the safety wheel. Check to secure the vehicle.

WARNING: Failure to follow auxiliary safety rules could allow auto to drop or the vehicle to roll resulting in death or serious personal injury.

Preparation For Installation

1. Connect the linkage to the control arm and axle tab bracket. For correct linkage assembly consult tab bracket mounting hole location of the lower linkage tab. A typical PR HCV and linkage assembly are shown in Figure 2.

2. Determine the desired control arm position and valve orientation on the vehicle. The control arm is to the street-facing up and shaft facing downward. Mounting diagrams on the interface cap show the proper position to orient the valve(s) for correct function. Refer to Fig. 3 & 4 for proper alignment identification of the PR HCV.

3. Move the PR & PR Plus HCV on the frame rail or in a bracket and torque mounting nuts to 15-45 in-lbs. Hexagonal head screws must be used to mount the PR HCV. Integrated systems are already installed in the PR Plus HCV. For proper mounting bolt spacing see Fig. 3 & 4. The PR & PR Plus valve should be mounted as level as possible. A small torpedo level or mason’s line level can help in this positioning. DO NOT move the HCV control arm down to fully exhaust the suspension. Reconnect the lower linkage tab bracket mounting hole.

4. Connect the air line from the air springs to the supply (S/P) port on the valve. DO NOT connect air from the air supply tank to the supply (S/P) port on the valve.

5. Check for linkage interference with suspension at full extension. Damage to shock absorbers and/or air springs could result.

6. Connect the valve to the control arm tab and the valve orientation. Use the provided nylok nut and tighten to 25-30 in-lbs.

NOTE: If air system still fails to inflate air springs, check for proper alignment on the interface cap as shown in Fig. 6. Verify air is flowing from under the interface cap and the air springs are deflating.

Lowering/Exhausting Your Air Suspension

1. Verify the air supply pressure is sufficient enough to open the pressure protection valve (usually greater than 85 psi).

2. Be sure the air lines for proper connections.

3. Make sure that any suspension dumping/loading function is not actuated.

4. Determine if the control arm is centered between the frame rails before beginning installation. The vehicle should be in an unloaded condition before starting installation procedures. Be certain of any dump switches are off. Park the vehicle making sure all wheels are on a hard, level surface. Raise and properly support the vehicle, if using the parking brake, instead of the safety wheel. Check to secure the vehicle.

NOTE: If air system still fails to inflate air springs, check for proper alignment on the interface cap as shown in Fig. 6. Verify air is flowing from under the interface cap and the air springs are deflating.
Installation Guide

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The Haldex Precision Suspensions (PR & PR Plus) Height Control Valves (HCV) automatically add and exhaust air from any air suspension to maintain a constant static design ride height. The PR line of HCV’s are perfect for all heavy axle applications. Prior to any assembly or disassembly, please read all instructions. Should you feel unable to properly perform the installation or adjustments of a Haldex PR or PR Plus HCV contact Haldex Technical Services or have a certified mechanic install or adjust the valve.

IMPORTANT: Insufficient installation of any HCV and associated components can impair suspension and vehicle performance. It is extremely important that the original equipment manufacturer’s specifications and instructions be followed. Failure to follow suspension and vehicle manufacturer’s recommendations for intended location and ride height may result in improper suspension and vehicle performance.

DO NOT install a single height control valve of any type if the suspension or vehicle manufacturer specifies a two-height control valve configuration.

DO NOT use a store-dyed valve with a PR or PR Plus HCV on the same vehicle.

DO NOT attempt to alter or reconfigure an air supply in any air supply line. Use of solvents or chemicals may cause damage and void the valve warranty.

NOTE: Conducting routine air system maintenance can help prevent any damage to air system components, lower the introduction of foreign substances into the system, and allow for access to components at regular intervals.

ALWAYS: Use a Pressure Protection Valve (PPV) and wire such as the Haldex Part Number 50564127. Attach PPV directly to the air receiver for supply to the PR & PR Plus HCV.

Reference Dimension Details for PR Plus HCV

Installations Instructions for the PR and PR Plus Height Control Valve

Side Height Adjustment Instructions

1. Bring the suspension to the vehicle manufacturer’s recommended ride height. Side height is measured from the bottom of the frame rail to the center of the axle. Refer to the vehicle or suspension manufacturer’s manual for proper ride height measurement.

IMPORTANT: Adjustments to the suspension side height require system air pressure. Adequate system pressure must be maintained throughout adjustment procedure.

2. Check for LEAKS: Thank you for the purchase. Check for any visible leaks from the PR Plus HCV or the attached PR & PR Plus air suspension. Many leaks can be seen by observing the air suspension check points. Be certain the PR & PR Plus HCV is properly seated to avoid any air loss.

3. If necessary, install fittings in HCV before mounting to the vehicle. Haldex recommends fittings with pre-applied sealant compounds, if recommended fittings are not available a use a drop of oil or threadlocker. Use small amounts of reliability thrusters, only. Use Haldex and/or Haldex Plus style spraying compound.

4. Mount the PR & PR Plus HCV on the frame rail or a bolted and thread mounting nuts to 25-45 lbs. Hexagonal/hexagonal heads should be used to mount the PR & PR Plus HCV. Integrated fittings are already installed in the PR Plus HCV. For proper mounting bolt spacing see Fig. 1 & 2. The PR & PR Plus HCV should be mounted as close as possible. A small torqued head or mis-torqued head can help in this positioning.

5. Connect the air line from the air springs to the supply (SUP) port on the valve.

NOTE: Supply port be PR HCV is the port closest to the mounting holes on the valve.

Remove the HCV and linkage assembly from the vehicle and disassemble the HCV.disconnect the linkages, and then install the components. Always ensure that the full HCV assembly is correctly installed.

Check For Linkage Interference

Certain applications may require that a vehicle air suspension have the ability to fully lower or exhaust the air springs to less than the suspension travel height. The PR Plus HCV has the option of an integrated Normally Open or Normally Closed dump valve. TheNormally Open dump valve is typically operated in conjunction with a manual switch or solenoid switch as shown in Fig. 5. The Normally Closed dump valve allows air to be used for rapid deflation of the air spring when a pilot pressure is applied. The Normally Closed dump valve is typically operated from the gladhand or emergency brake line as shown in Fig. 6. The Normally Closed dump valve allows air to be exhausted from the emergency brake line as shown in Fig. 6. The Normally Closed dump valve allows the air to be exhausted from the emergency brake line as shown in Fig. 6. The Normally Closed dump valve allows the air to be used for rapid deflation of the air spring when a pilot pressure is removed.

WARNING: Should the optional dump valve for the PR Plus HCV be used it must be removed and cannot be reinstalled in the field.

Reference Dimension Details for PR Plus HCV

Preparing Vehicle for Installation

1. Prior to installation, rotate control arm 3-5 times 360 degrees in both the intake and exhaust directions to reduce excessive forces from storage.

2. Be sure the suspension is centered between the frame rails before beginning installation. The vehicle should be in an unloaded condition before starting installation procedures. Be careful of dump switches are off. Park the vehicle making sure all wheels are on a hard, level surface. Raise and properly support the vehicle using a lift or jack. Do not set the parking brake. Instead use safety blocks. For correct linkage assembly consult the suspension service manual.

WARNING: Failure to support auxiliary wheels could allow the vehicle or the vehicle to roll resulting in death or serious personal injury.

Installing the PR and PR Plus HCV

1. Determine the desired control arm position and valve orientation on the vehicle. The control arm is in the standup-up and shall make sure to align the main body of the PR Plus HCV to the manufacturer’s recommendation. Refer to Figs. 4 & 5 for proper linkage identification. Always consult the suspension service manual for proper ride height measurement.

2. Disconnect lower linkage from axle tab and move the HCV control arm up to raise suspension to full ride height. The HCV control arm should be in an upright position. The control arm must be extended approximately 20° below horizontal. During normal operation the air is exhausted from under the interface cap as shown in Fig. 8. Verify air is flowing from under the interface cap and the air springs are deflated.

3. Confirm the control arm is properly installed by raising the control arm approximately 20° above horizontal. Air pressure should inflate the air springs. If the air springs do not inflate:

a) Verify the air supply pressure is sufficient enough to open the pressure protection valve (usually greater than 85 psi).

b) Backfill the air lines for preparatory connections.

c) Make sure that any suspension dumping/d flawed procedure is not activated.

d) Determine if the control arm is not properly aligned. Check the linkage and interface cap on the suspension service manual.

4. Set the parking brakes. Instead use safety blocks. To remove the HCV and linkage assembly from the vehicle and disassemble the HCV. Disconnect the linkages, and then install the components. Always ensure that the full HCV assembly is correctly installed.

Check For Linkage Interference

NOTE: The following procedures require the vehicle to be parked over an inspection pit or level surface and may require two people working simultaneously when using a two HCV system.

1. Disconnect lower linkage from axle tab and move the HCV control arm up to raise suspension to full ride height. The HCV control arm should be in an upright position. The control arm must be extended approximately 20° below horizontal. During normal operation the air is exhausted from under the interface cap as shown in Fig. 8. Verify air is flowing from under the interface cap and the air springs are deflated.

WARNING: Failure to support auxiliary wheels could allow the vehicle or the vehicle to roll resulting in death or serious personal injury.

Installing the PR and PR Plus HCV

1. Determine the desired control arm position and valve orientation on the vehicle. The control arm is in the standup-up and shall make sure to align the main body of the PR Plus HCV to the manufacturer’s recommendation. Refer to Figs. 4 & 5 for proper linkage identification. Always consult the suspension service manual for proper ride height measurement.

2. Disconnect lower linkage from axle tab and move the HCV control arm up to raise suspension to full ride height. The HCV control arm should be in an upright position. The control arm must be extended approximately 20° below horizontal. During normal operation the air is exhausted from under the interface cap as shown in Fig. 8. Verify air is flowing from under the interface cap and the air springs are deflated.