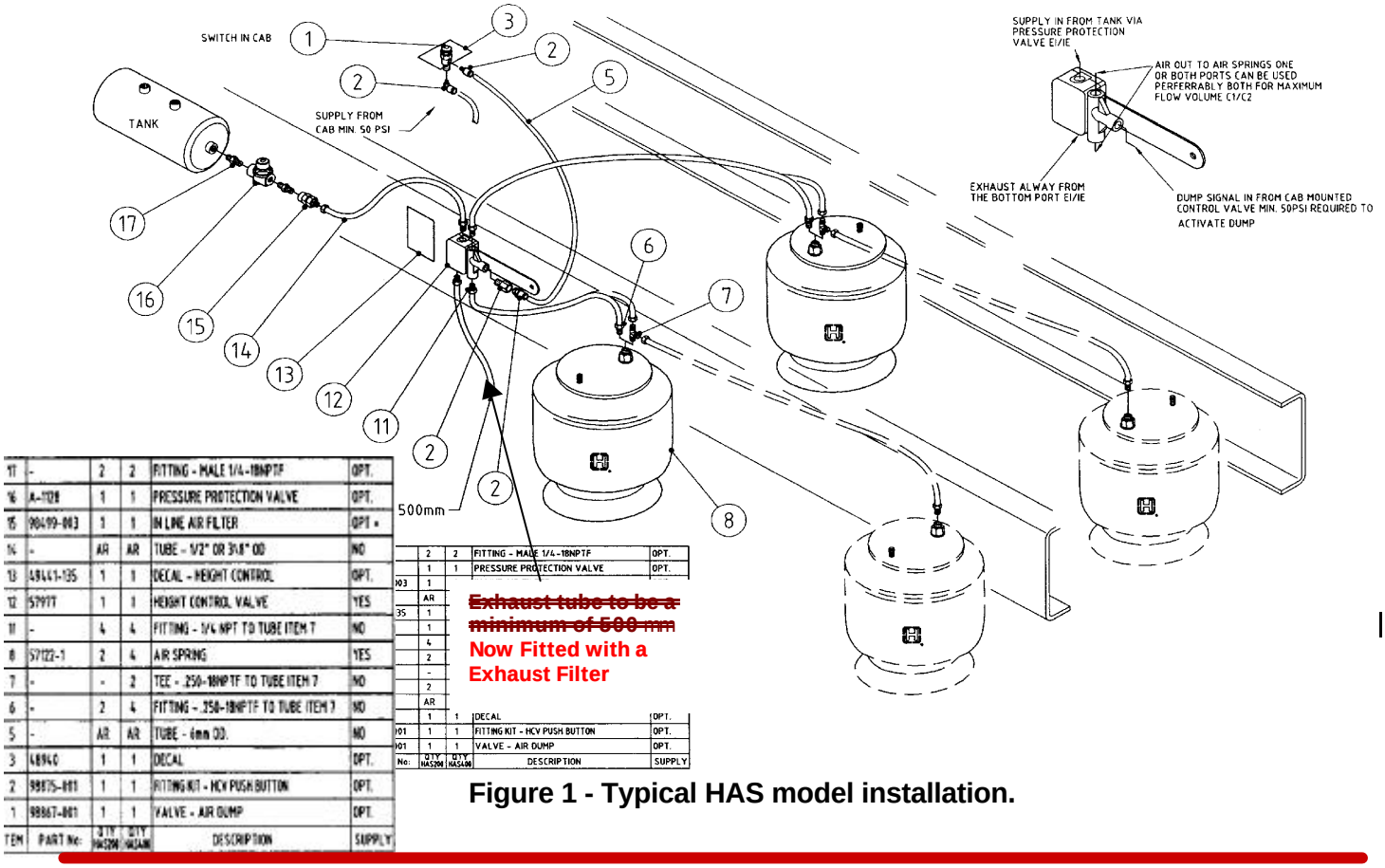
TECHNICAL BULLETIN

HAS, WD, AR2, HT, INTRAAX
TRUCK AIR SUSPENSIONS
HEIGHT CONTROL VALVE
AIR SYSTEM INFORMATION

No: TRUCK AUS - 014
Subject: *Product Information*
Date: October 2000 **Revision:** A



ITEM	PART No:	QTY HAS2W	QTY HASAW	DESCRIPTION	SUPPLY
17	-	2	2	FITTING - MALE 1/4-18NPTF	OPT.
16	A-1109	1	1	PRESSURE PROTECTION VALVE	OPT.
15	98499-003	1	1	IN LINE AIR FILTER	OPT.
14	-	AR	AR	TUBE - 1/2" OR 3/8" OD	NO
13	48441-135	1	1	DECAL - HEIGHT CONTROL	OPT.
12	57977	1	1	HEIGHT CONTROL VALVE	YES
11	-	4	4	FITTING - 1/4 NPT TO TUBE ITEM 7	NO
8	57122-1	2	4	AIR SPRING	YES
7	-	-	2	TEE - .250-18NPTF TO TUBE ITEM 7	NO
6	-	2	4	FITTING - .250-18NPTF TO TUBE ITEM 7	NO
5	-	AR	AR	TUBE - 4mm OD.	NO
3	48940	1	1	DECAL	OPT.
2	99875-001	1	1	FITTING KIT - HCV PUSH BUTTON	OPT.
1	98867-001	1	1	VALVE - AIR DUMP	OPT.

Figure 1 - Typical HAS model installation.

As part of our continuous product improvement program, Hendrickson wish to advise general information on height control valves and air systems.

AIR CONTROL SYSTEM

The air system's main function is to regulate vehicle height. Many types of air control systems are available for Hendrickson suspensions.
The most common automatically regulates ride height by altering the air supply to air springs. If using axle lifts or other special features, other air control circuits and components are added.

All systems operate from the vehicle's compressed air supply. A protection valve prevents loss of air pressure to the vehicle brake system should the air system suffer a leak.

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HEIGHT CONTROL VALVE

The HCV automatically responds to the relative position of the axle and vehicle frame. It meters air into or out of the air springs. Variations of load and temperature affect the adding or exhausting of air within air springs. Hendrickson generally recommend the HCV be positioned on the front axle in tandem arrangements and the centre axle in tri-axle arrangements. (front axle on tip over axle trailers)

When the actuating lever of the HCV moves up, the valve opens and connects the air supply to the air spring. When the actuating lever moves down, the valve shuts off the air supply and opens the exhaust port to vent excess air from the air springs.

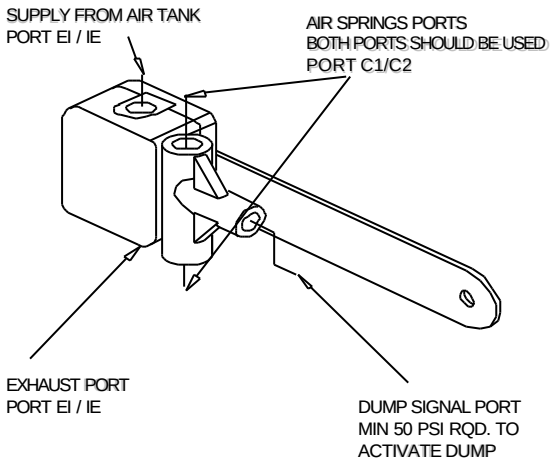


Figure 2

Hendrickson's current HCV as shown in Figure 2, utilises the following benefits:

- Simple Installation with common 1/4"NPT fittings used and mounting bracket included.
- Compact, robust design.
- High flow, quick response action with narrow lever dead band.
- Integrated air dump feature simplifies air plumbing and eliminates the need for additional components.
- Valve redesigned in September 2000 to include more durable internal components and heavy duty 'o' rings.

AIR DUMP VALVES

Air dump (or exhaust) valves increase stability during loading and unloading. When suspension air is exhausted, rubber bumpers located within the air springs limit the suspension vertical travel (jounce). The air spring bumpers adequately support the rated suspension capacity with the suspension air exhausted. Air dump control is approved for the following situations only:

- A vehicle parked for a length of time.
- A dump truck or trailer during the dump mode only.
- A vehicle experiencing a sudden off loading of cargo.

AIR SYSTEM PLUMBING

The air system should utilise a minimum of 3/8" airlines. A brake protection valve and high quality filter should be placed between air tank and HCV.
Hendrickson has plumbing diagrams for all suspensions available. Please contact Hendrickson for individual requirements.

Hendrickson recommend the use of only one HCV for HAS series and trailer axle groups such as typical trailer tri-axle configurations. Some suspensions however operate with multiple HCV.

RIDE HEIGHT ADJUSTMENT

The vehicle ride height should not be altered as designed. To do so may affect vehicle handling or induce driveline vibrations. Refer technical bulletin "Truck AUS-005" for further information.

AIR SYSTEM MAINTENANCE

Suspension air system maintenance is as per normal workshop practice and should include:

A high quality filter should be placed between air tank and HCV.
The air supply to suspension should be clean, constant dry air as generated by a vehicle with quality compressor and air drier.
The air system moisture should be removed on a daily basis.
The HCV linkage ends should be in good condition.
Airlines should be routed to eliminate sharp bends.

AIR SYSTEM AND VALVE INSPECTION

Air system components are often replaced unnecessarily due to incorrect diagnosis. Leaks can usually be detected by a constant audible hissing and by using a soapy water solution.

NOTE:

A vehicle will often exhaust all air from its air system over some time. This is normal due to a small amount of leakage usually found within fittings, and valves.

Height control valves will often continue to exhaust air for several minutes after vehicle has stopped. This is a normal operating function of the valve, which should not be replaced.

AIR FITTING INSPECTION

If a leak is suspected, begin by building up the air system to normal operating pressure.

Spray all nylon tube connections and fittings with a soapy water solution to detect leak.

Airlines should not be blocked or have sharp bends.

HEIGHT CONTROL INSPECTION

The height control valve can be tested in the field using the following procedure. An air pressure gauge with 5-psi graduation marks will be needed. Fittings to connect gauge to HCV will also be needed.

Disconnect linkage from HCV.

Rotate valve arm up and down to verify operation. Move lever to neural position and check leakage from exhaust port.

If leakage detected disconnect air spring supply lines. (C1 and C2)

Plug C2 port.

Attach gauge tubing on C1 port. Refer figure 3 below.

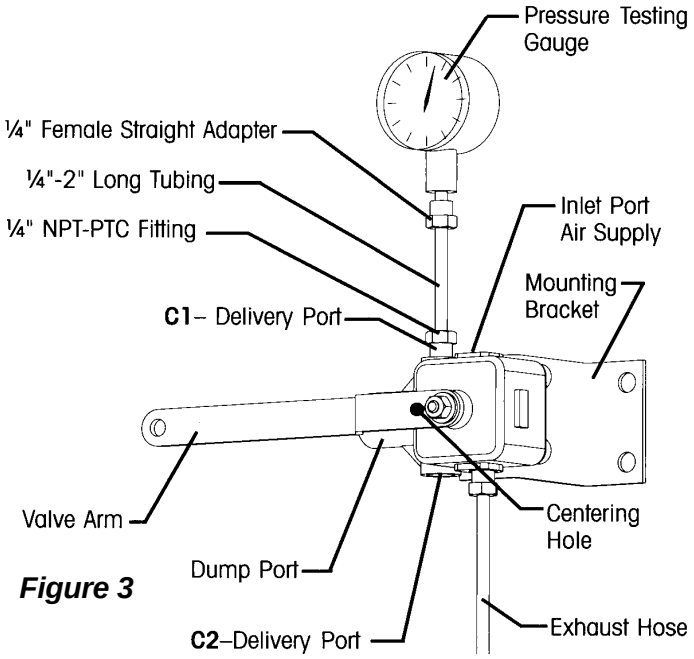


Figure 3

Move valve arm up to the fill mode to pressurise the test gauge.

Move valve arm towards centre and install centring pin in holes on the arm and valve housing. Care must be taken not to overshoot the centre (blocked) mode of the HCV as this will cause the test volume to be

Figure 4

exhausted. Refer Figure 4.

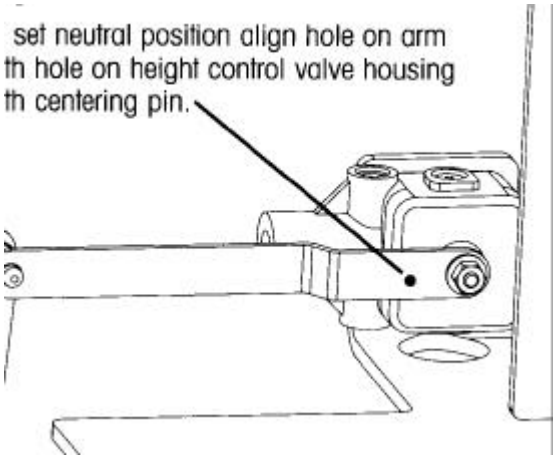
Note pressure reading on valve.

Observe pressure reading for a period of 30 seconds.

HCV is within specification if pressure drop does not exceed 10psi.

Replace HCV if allowable pressure drop is exceeded. Do not attempt to disassemble or repair the valve as this will void warranty.

If any further installation details or assistance is required, contact the Hendrickson Product Support Department on (03) 9767 3400.



WARNING - HENDRICKSON REMINDS USERS TO ADHERE TO THE PUBLISHED CAPACITY RATINGS FOR SUSPENSIONS. DO NOT MODIFY PARTS OTHER THAN OUTLINED IN THIS PUBLICATION.

USE OF A MODIFIED OR SUBSTITUTE PART IS NOT RECOMMENDED BECAUSE THE PART MAY NOT MEET HENDRICKSON'S SPECIFICATIONS, WHICH COULD LEAD TO FAILURE OF THE PART, LOSS OF VEHICLE CONTROL AND PERSONAL INJURY.