

# SS: 1033256 - WST Frame Beaming - Rough Ride Vibration in bob tail mode

---

## ***WST Frame Beaming - Rough Ride Vibration in bob tail mode***

### **Applicable Vehicles**

WST 4900 with rear Airline Suspension 40K and 46K

### **Symptoms**

Cab vibration above acceptable limits reported in bob tail mode.

### **Issue**

After extensive field test investigation supported by the dealer network, the WST Field Service team has found that severe vibration/cab shaking/rough ride issues reported in vehicles specified with A/L Suspensions, 40-46K and operated in bob tail mode is caused by:

- Incorrect adjustment of suspension ride height.
- Failure of suspension leveling valve to maintain/adjust quickly enough the suspension ride height.

These two factors have the major impact on the severity of the frame beaming/cab vibration/cab shacking issues.

There are also additional rotating components in the vehicle that contribute to abnormal/non acceptable vibration levels that need to be corrected to improve the vehicle ride quality and reduce vibration levels to acceptable limits.

- Tires, wheels, drums radial and lateral run outs.
- Tires mounting, tires pressure, tires flat spots, damaged tires.
- Drivelines balance and run outs.

Refer to SB 00-15 and SB 32-31 for proper vibration diagnostic steps. In addition, we recommend the use of an approved vibration diagnostic tool to identify the system/component causing the reported issues.

The field investigation included the use of EVA, DVA and NVH Vibration Diagnostic tools.

### **Solution**

In order to eliminate the major contributor to the frame beaming/severe cab vibration issues the production leveling valve needs to be replaced by a Hadley Kit Valve that has been effective to maintain/properly adjust the suspension ride height.

Hadley Kit part number is: H01601DA.

This Kit needs to be ordered directly from Hadley. Contact information follows:

## **Hadley (Global Headquarters)**

2851 Prairie St, S.W.  
Grandville, MI 49418  
P: +1 (616) 530-1717  
F: +1 (616) 530-3283

Kit information and installation instructions are attached.

If you have comments or questions please contact your WST DSM or our WST Field Support Team.

# WST Hadley Suspension Leveling Valve Retrofit



## NGHCV Rear Suspension Leveling Valve

# New Hadley provided required fittings:



Fitting style required  
to install new Hadley  
valve.

# Original Suspension Leveling Valve mounting location:



# Original leveling valve installation



# Original air piping to the rear rhs air bag



# Modified RHS Air Bag air piping:



# Side view of new Hadley Leveling Valve installation.



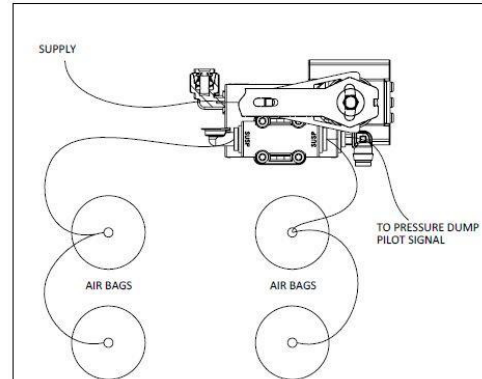
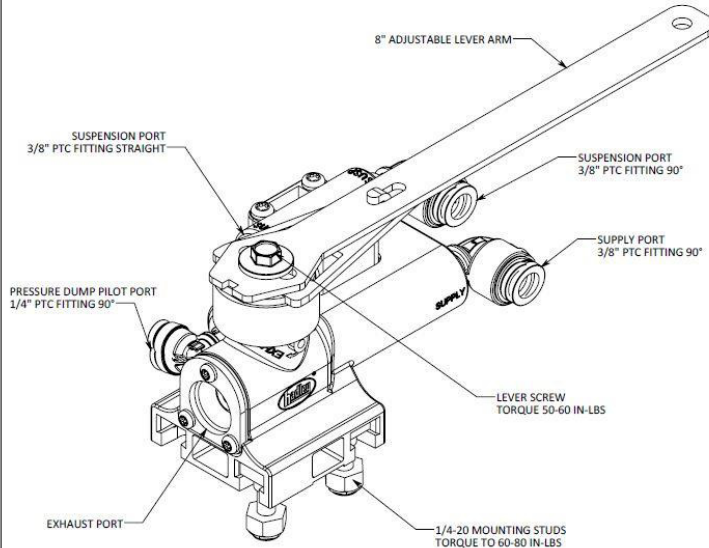
View of new Hadley valve installed at same place on same bracket.

## Hadley Leveling Valve final installation:



Pics of Hadley valve installed taken from under the truck.

H01601 SERIES  
NEW GENERATION HEIGHT CONTROL VALVE  
PRESSURE DUMP CONFIGURATION  
WESTERN STAR APPLICATION

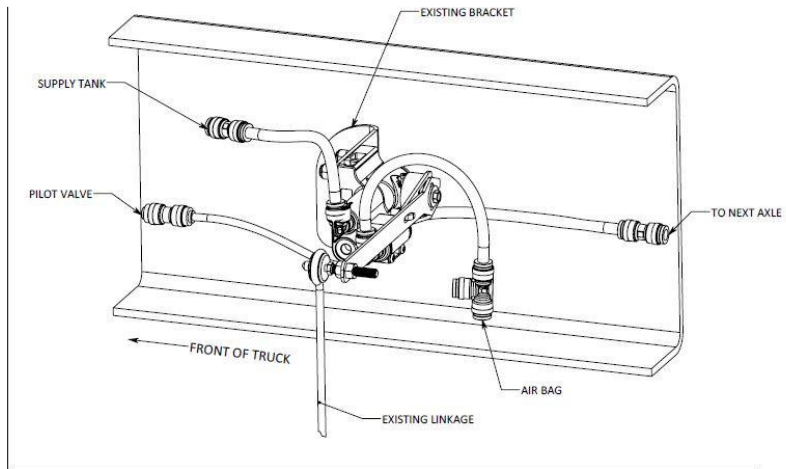


PLUMBING OVERVIEW

NEW GENERATION HEIGHT CONTROL VALVE  
PRESSURE DUMP CONFIGURATION

**INSTALLATION INSTRUCTIONS**

1. REMOVE EXISTING VALVE
  - a. DUMP REAR SUSPENSION VIA CAB CONTROLS
  - b. DISCONNECT AIR LINES FROM EXISTING VALVE
    - i. REMOVE TUBING FROM EXISTING VALVE
    - ii. LABEL WHICH LINE IS USED FOR SUPPLY, DUMP PILOT PORT, AND SUSPENSION LINES
  - c. REMOVE UPPER LINKAGE BOLT FROM EXISTING LEVER
    - i. DO NOT DISCONNECT THE LOWER LINKAGE BOLTS—LEAVE AS IS. THE EXISTING LINKAGE WILL BE USED TO CONNECT TO THE NGHCV.
    - ii. MOVE THE LINKAGE TO THE SIDE
  - d. REMOVE THE MOUNTING NUTS FROM THE EXISTING VALVE AND REMOVE VALVE FROM BRACKET.
    - i. DO NOT REMOVE THE BRACKET. IT WILL BE USED TO MOUNT THE NGHCV
2. INSTALL NGHCV
  - a. MOUNT THE HADLEY VALVE TO THE EXISTING BRACKET USING THE PREASSEMBLED BOLTS
  - b. BOLT THE VALVE TO THE BRACKET USING THE NYLOCK NUTS PROVIDED AND TORQUE TO 60-80 IN-LBS
3. AIR LINE CONNECTIONS
  - a. CONNECT EACH OF THE LINES TO THE APPROPRIATE PORT. (SEE NOTES 2 & 3)
  - b. USE THE DIAGRAMS FOR REFERENCE TO ENSURE PROPER CONNECTIONS
4. ASSEMBLE EXISTING LINKAGE TO LEVER
  - a. CONNECT THE LINKAGE TO VALVE LEVER USING THE EXISTING MOUNTING BOLT



5. RIDE HEIGHT ADJUSTMENT
  - a. VERIFY MANUFACTURERS RIDE HEIGHT
  - b. AIR UP THE SUSPENSION
  - c. MEASURE THE RIDE HEIGHT
  - d. READJUST THE RIDE HEIGHT BY LOOSENING THE LEVER SCREW ENOUGH TO ROTATE THE BOTTOM LEVER TO FILL OR EXHAUST THE AIR UNTIL THE CORRECT RIDE HEIGHT IS ATTAINED.
  - e. TIGHTEN THE LEVER SCREW TO 50-60 IN-LBS
  - f. DUMP THE SUSPENSION AND ALLOW THE VALVE TO FILL TO RIDE HEIGHT
  - g. REMEASURE RIDE HEIGHT AND ADJUST AS NECESSARY

NOTES:

1. TO AVOID PINCHING USE TUBE CUTTERS ONLY
2. PUSH TUBES IN TO FITTINGS UNTIL THEY BOTTOM OUT
3. ADDITIONAL TUBE TO TUBE FITTINGS AND/OR EXTENSION PIECES MAY BE REQUIRED TO COMPLETE PLUMBING INSTALLATION