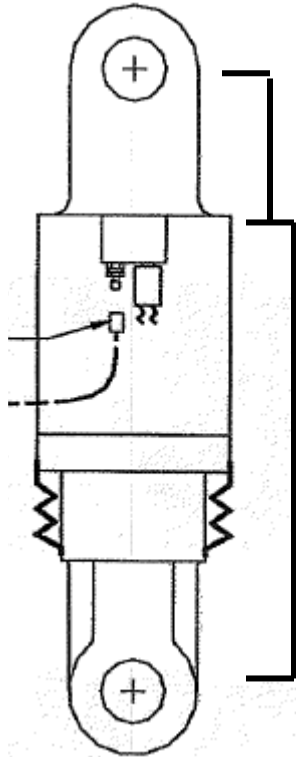


Strut Measurement

Measure the struts to determine need for the charging/discharging of nitrogen

*must be done without truck's friction brakes applied on level ground. Use of neutral roll test with wheel chock is appropriate.

Easy technique for strut measurement:



Distance x is from strut pin center to strut upper

“x” is:
18” for the front
15 5/16” for the rear

Distance y

“y” can be measured with tape measure hooked on the upper lip and extended to line of the strut bottom pin

Empty Weight struts before Charging/Discharging Truck # _____

Front Left Strut Measure: (18+ _____) = _____

Front Right Strut Measure: (18+ _____) = _____

Rear Left Strut Measure: (15 5/16+ _____) = _____

Rear Right Strut Measure: (15 5/16+ _____) = _____

If the front or rear are outside of the these ranges proceed with **only** the charging/discharging procedure for **nitrogen**:

Front 69-1/8 (+/- 1/2”)

Rear 61-7/8 (+/- 1/2”)

Struts after Charging/Discharging

Front Left Strut Measure: (18+ _____) = _____

Front Right Strut Measure: (18+ _____) = _____

Rear Left Strut Measure: (15 5/16+ _____) = _____

Rear Right Strut Measure: (15 5/16+ _____) = _____

Please ensure this page is given to the supervisor for transfer back to the Reliability Engineer

Boron MT4400 Suspension discharging and check procedures **(Nitrogen/Oil)**

1. Park the truck in a SAFE POSITION. For adjusting the rear struts chock the front tires, for adjusting the front struts chock the rear tires. Lock out the truck per the isolation standard. (Chock/Block and Isolation/locked out)
 - a. Ensure the steering accumulators have bled down before opening the disconnect to lock out the truck.



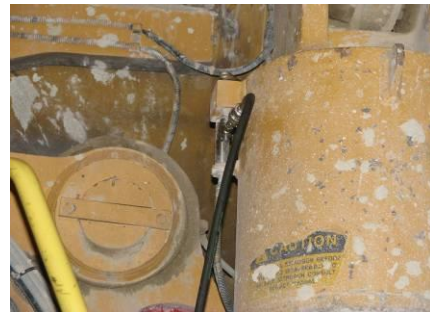
2. Raise the truck until the suspensions are fully extended. Secure in this position.
 - a. Front 72 3/4 inches
 - b. Rear 64 7/8 inches



3. Remove the protective covers over the charge valves. Install the Schrader charge adapters with quick disconnects and install drain tubes connected to an oil drain bucket.
 - a. Carefully open both valves, releasing the gas charge until venting stops.



4. Connect a vacuum pump to the charge valve assemblies to allow a vacuum to be drawn.



5. Start the vacuum process and monitor its progress until all gas has been extracted.

NOTES:

1. Do not draw oil from the suspension with the vacuum pump after the nitrogen has been removed.
2. Typically this process will take approximately 15 minutes (with a vacuum of 29 inches Hg) to 30 minutes (with a vacuum of 10 inches Hg).
3. If the truck did not sit overnight, this will take up to 2 hours to remove all the nitrogen from the oil

6. Stop the vacuum process 30 minutes after oil has stopped 'burping'. If oil did not 'burp' then stop the vacuum process after 30 minutes.
7. Close the Schrader valve
8. Slowly lower the truck frame until the distance between the upper and lower mounting pins are approximately :
 - a. Front $62 \frac{3}{4} \pm \frac{1}{2}$ inch
 - b. Rear $59 \frac{5}{8} \pm \frac{1}{2}$ inch



9. Reconnect the drain tubes to the quick disconnects on the Schrader valves.
10. Open the Schrader valve and observe if oil flows from the drain hole connected to the Schrader valve. If not, the oil level is low and adding oil as outlined below is required.

NOTE:

1. *There may be slight residual pressure from lowering the truck on the strut due to any remaining nitrogen in the strut. This will vent off in the next step.*

11. Remove the transducer port adapter fitting near the top of the suspension and replace with the appropriate charging adapter.



12. Attach the 30W oil charging kit to this port.



13. Connect the 30W from the oil rack (Conoco Hydroclear Power Tran or equivalent). The approximate volumes of oil required for the initial filling of each suspension is:

- a. Front 9.7 gallons
- b. Rear 8.9 gallons

14. Add oil until it comes out of the drain hose. Stop adding oil.

NOTE: *During the filling operation, loosen the charge valve body slightly to remove pressure and to check the oil level. Oil and gas under minimum pressure will escape through the vent hole.*

15. When the process is complete, remove the oil charging kit and charging fittings.
16. Reinstall the weigh system transducer port adapter previously removed this is a #4 JIC fitting. Torque to 14 +/- 1 ft-lb (19 +/- 1 Nm). (#4 JIC)



The suspensions are only to be charged with nitrogen when mounted on a truck. Use only dry nitrogen. Do not use oxygen, compressed air or other gases as their use may result in a violent explosion.

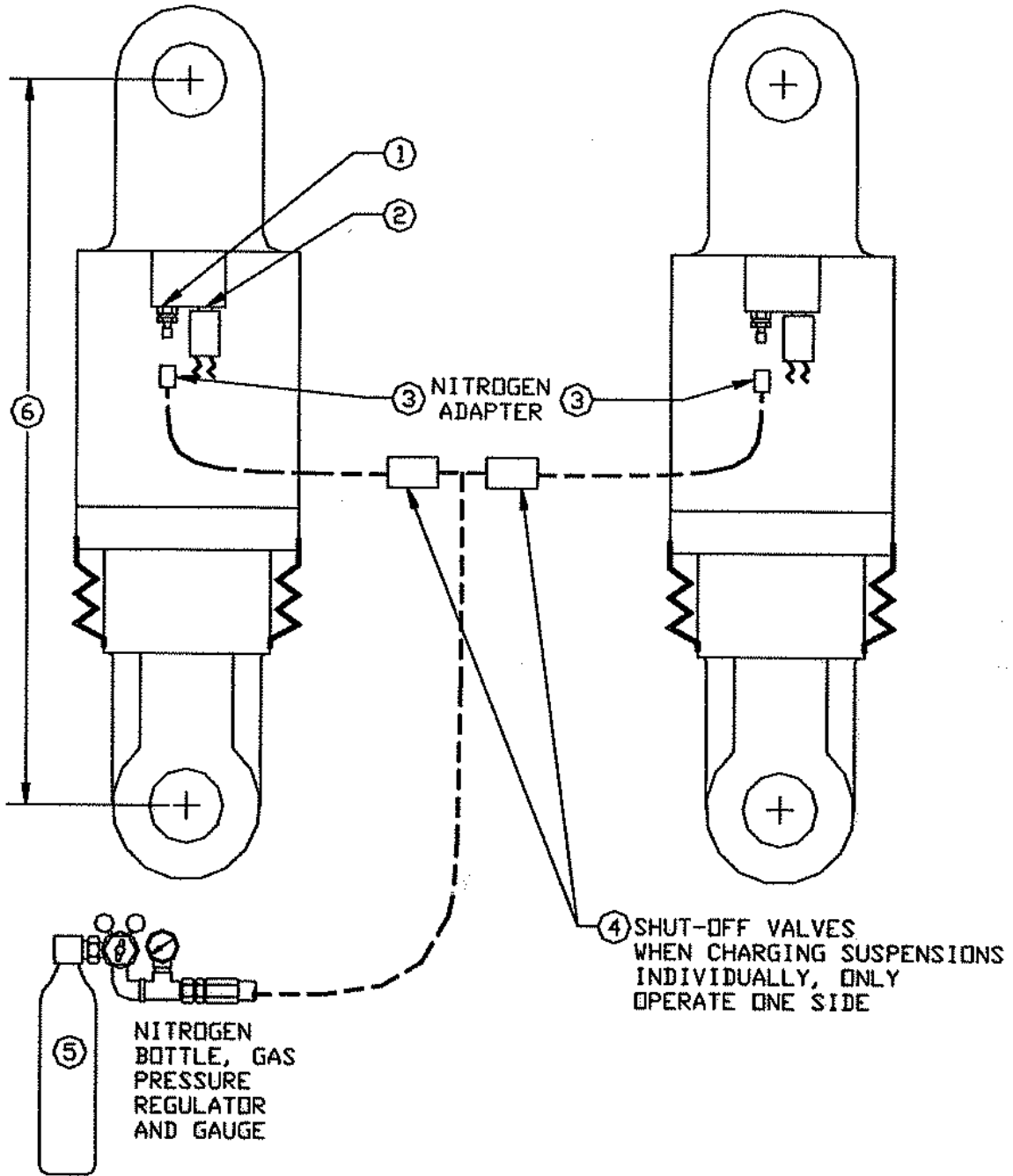
17. Disconnect the oil check/drain hoses
18. Charge the suspensions with nitrogen as outlined in the separate procedures.

MT4400 Suspension charging procedures (Nitrogen/Oil)

1. Park the truck in a SAFE POSITION. For adjusting the rear struts chock the front tires, for adjusting the front struts chock the rear tires. Lock out the truck per the isolation standard. (Chock/Block and Isolation/locked out)
 - a. Ensure the steering accumulators have bled down before opening the battery disconnect switch to lock out the truck.
2. Carefully remove the charging valve protective covers, as residual gas pressure may be present.



3. Connect the gas charging kit to the charging valves on the suspensions (with the shut-off valves closed) and to the regulator on the nitrogen supply bottle.



a. Connect the shorter hose assemblies to the two suspensions at the charge valves.



b. Connect the longer supply hose to the nitrogen supply.



4. Adjust the pressure regulator to approximately 600 psi.



NOTE:

Use care to protect the pressure gauge against over-pressurization. Pressures in excess of 2000 psi are easily obtainable.

5. Open the charge valve and charge the suspension until the distance between the centers of the upper and lower mounting pins is approximately
 - a. **Front 69-1/8 (+/- 1/2 inch):**
 - b. **Rear 61-7/8 (+/- 1/2 inch):**



NOTE:

During the filling process, gas should be added slowly enough and the flow stopped periodically to allow the suspensions to equalize. The exact process will vary slightly with equipment, material, and operator.

NOTES:

1. *If the resulting empty ride height is not correct, repeat the above procedure raising or lowering the charge pressure in 20 psi (140 kPa) increments. The important parameter is to charge the suspensions to provide the correct empty ride height.*
2. *If the truck will be operated in ambient conditions significantly colder than that in the work area, it is recommended that the adjusted empty truck ride height be increased 1/2 to 1 inch (12 to 25 mm) to compensate for the effects to the reduced temperatures.*

6. Close the individual shut off valves and then the gas pressure regulator.
7. Remove the charging equipment and check for leaks using a soap solution.

NOTE:

If a leak is found in the charge valve core area:

1. *Check the torque on the valve core. It should be torqued to 3 to 4 in-lb (0.35 to 0.45 Nm).*
2. *If this does not stop the leak it may be necessary to check the valve core area for damage or contamination or replace the valve core. It is important that all pressure in the suspension be relieved prior to removal of the valve core using the charging unit.*

8. Install the protective covers. Torque to 40 to 50 in-lb (4.5 to 5.5 Nm).
9. Remove the blocking and lower the truck to the ground.
10. Operate the truck for approximately 24 hours, and then repeat the empty ride height checking process. Adjust as required.

Tools Required for Discharging and Check Procedures

Nitrogen Bottle



Valves, Gauges



Hoses Hook-up



Vacuum Pump Hook-up



Jacks



Oil Fill Fitting Set-up



Wheel Chocks

