

(This Instruction Sheet supersedes all previous flow testing instructions)

**Description: P Series Flow Test Kit (Part Number 70661)**

(Part Number 70661 Supersedes Part Numbers 70511 and BB-76810)

**Purpose:** The design purpose of the P Series Flow Test Kit is to allow the customer to isolate the pump from the wheel motor and determine if the pump is acceptable. The following information can be used to install and test the pump by simulating a wheel motor load.

**WARNING**

Certain procedures require the vehicle engine to be operated and the vehicle to be raised off of the ground. To prevent possible injury to the servicing technician and/or bystanders, insure the vehicle is properly secured.

**WARNING**

Do not attempt any adjustments with the engine running. Use extreme caution while working in or around all vehicle linkage! High temperatures can be generated. Follow all safety procedures outlined in the vehicle owner's manual!

**INSTALLATION AND TESTING PROCEDURES:**

1. Disconnect the system hoses at the wheel motor, or system hoses from the pump and connect the P Series Flow Test Kit. (Special care should be taken to prevent contamination debris from entering pump or wheel motor system ports).

**Note:** Using the Bi-Directional Flow Test Kit, determination of directional flow is not necessary. The flow meter may be connected in either direction into the forward and reverse high pressure system lines.

**CAUTION:** Ensure all fittings and hoses are attached securely. This test is being completed on the vehicle's high pressure system lines. Failure to perform this properly could result in bodily injury.

**TESTING PROCEDURES:**

1. Raise the drive tires off the ground. Block the remaining tires on the ground to prevent accidental vehicle movement.
2. Open the restriction valve all the way.
3. Make certain all external pump directional control stops are removed or backed off on the vehicle linkage to obtain full pump directional control arm travel.
4. Start the engine and engage the drive pulley if necessary.
5. Bring the engine to maximum operating speed.  
(This should not exceed 3600 rpm input speed on the PC, PL, PG, and PJ Series Pumps)  
(This should not exceed 3400 rpm input speed on the PR)  
(This should not exceed 2600 rpm input speed when testing the PW)  
Engine speed adjustment may be necessary to obtain 2600 rpm.

**CAUTION:** Damage to the flow meter and/or re-calibration may result from testing at input speeds that exceed 2600 rpm on the PW and 3400 rpm on the PR Pumps.

6. With the directional control lever (on the vehicle) for the pump being tested, move the control arm in full forward motion. (It may be necessary to lock the control arm into full forward position to prevent false readings).
7. Operate without any load for approximately 30 seconds to 1 minute. This allows the system oil temperature to rise.

**Note:** Raising the system oil temperature will make a difference in the readings you receive. It has been determined that to complete this test accurately, the oil temperature must be near system operating temperatures. Suggested temperature range 160°- 210°F (71.1°- 98 .9°C)

8. On the PC, PG, PJ, PL, PR and PW, tighten the flow meter restriction valve until the gauge reads 300 psi (21bar). Record the flow reading on the Bi-Directional Flow Meter.

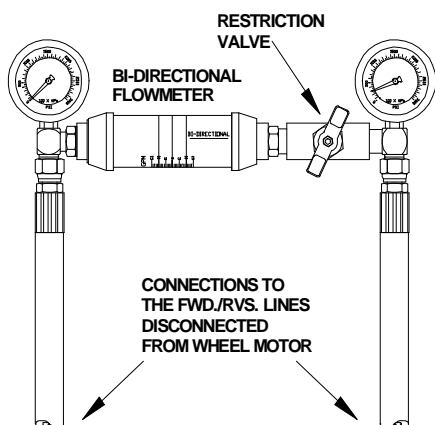
9. Increase the pressure to 1100 PSI (76 bar) for all models (PC, PG, PJ, PL, PR and PW). Record the flow reading on the Bi-Directional Flow Meter.

10. The acceptable gpm “flow droop” or (difference) is:

<b>PC</b>	<b>1.0 gpm (3.7 l/min)</b>
<b>PG/PL</b>	<b>1.5 gpm (5.6 l/min)</b>
<b>PJ</b>	<b>2.0 gpm (7.6 l/min)</b>
<b>PR</b>	<b>2.5 gpm (9.4 l/min)</b>
<b>PW</b>	<b>2.5 gpm (9.4 l/min)</b>

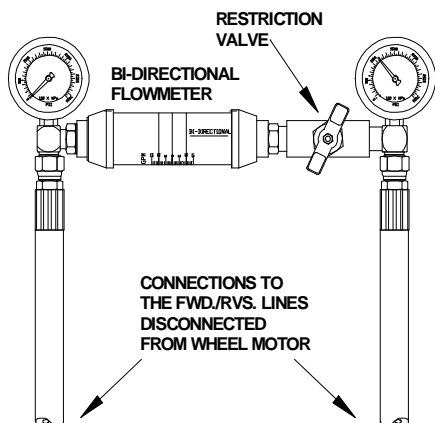
If the difference exceeds these values the pump would not be operating efficiently and should be replaced.

**TEST EXAMPLE: PG/PL**



300 psi (21 bar) reading

7 gpm (26 l/min) (1st reading)



1100 psi (76 bar) reading

3 gpm (11 l/min) (2nd reading)

(PG/PL)

300 psi (21 bar) reading

7 gpm (26 l/min) (1st reading)

1100 psi (76 bar) reading

- 3 gpm (11 l/min) (2nd reading)

4 gpm (15 l/min) (the difference)

Subtract the 1st reading from the 2nd.  
(In this example, 4 gpm difference would indicate further pump examination).