

Jacobsen Information Bulletin

Product Type: JZT2

Ref. No. 000

Bulletin No: C-169-03

December 19, 2003

Hydraulic Testing

Product Information

ISSUE:

Testing of the hydraulic system before replacing hydraulic components.

CORRECTION:

It is required that a flow meter test be performed on the hydraulic system before replacing a hydraulic component. All readings will need to be reviewed by the warranty/service department before proceeding.

As part of the warranty program, all repairs exceeding \$300.00 will require an Instant Service Number (ISN). This should be obtained **prior** to performing the repair. All repairs must be made in accordance with the ISN. Although the ISN serves as pre-authorization, it is also subject to the same terms and conditions of the standard warranty program and does not guarantee payment of the claim. Failure to comply with this program will result in rejection of the claim.

AFFECTED SERIAL NUMBERS:

All serial numbers for the following models:

JZT2/ Hydro-midsized

WARRANTY:

This bulletin is for information purposes only. Warranty does not apply. If you have any questions please contact the Johnson Creek product support team at 1-800-848-1636 option 2,2.

CustomerOne™ Product Support

This bulletin is relevant to the departments shown below. Please circulate as appropriate.

SERVICE ☒ WARRANTY ☒ SALES ☐ PARTS ☐

BDP FLOW TEST INSTRUCTIONS

Purpose: The purpose of the BDP test is to allow the dealer to isolate the BDP from the wheel motor and determine if the BDP is faulty. The following information can be used to install and test the BDP 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 BDP and connect the Flow Meter. (Special care should be taken to prevent contamination debris from entering pump or wheel motor system ports).

Note: Using a Bi-Directional Flow Meter, 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 BDP 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 BDP-10A/10L)
(This should not exceed 3400 rpm input speed on the BDP-16A)
(This should not exceed 2800 rpm input speed when testing the BDP-21L)
Engine speed adjustment may be necessary to obtain 2800 rpm.

CAUTION: Damage to the flow meter and/or re-calibration may result from testing the BDP-21L at input speeds that exceed 2800 rpm.

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.

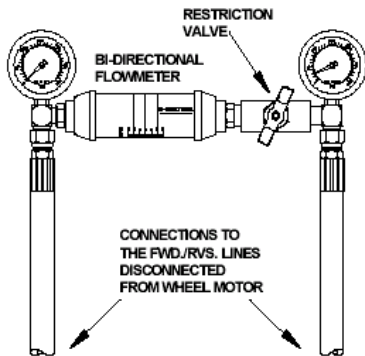
Note: Raising the system oil temperature will make a difference in the readings you receive. It has been determined that to complete this test accurately, the oil temperature must be near system operating temperatures.

Suggested temperature range 160° - 210°F (71.1° - 98.9°C)

8. (On the BDP-10A/10L, BDP-16A and BDP-21L), tighten the restriction valve until you read 300 psi (21 bar).
Record the flow reading from the Bi-Directional Flow Meter.
9. Increase the pressure to 1100 PSI (76 bar) for all models (BDP-10A/10L, BDP-16A and BDP-21L).
Record the flow reading from the Bi-Directional Flow Meter.
10. The acceptable gpm “flow droop” or (difference) is:
BDP-10A/10L 1.5 gpm (5.6 l/min)
BDP-16A 2.0 gpm (7.6 l/min)
BDP-21L 2.0 gpm (7.6 l/min)

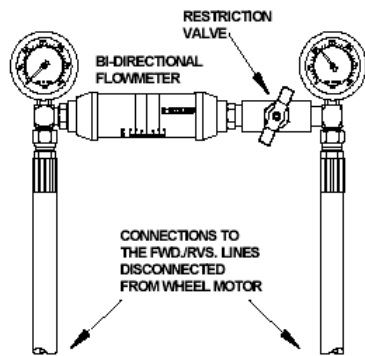
If the difference exceeds these values the pump would not be acceptable.

TEST EXAMPLE: BDP-10A/10L



300 psi (21 bar) reading

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



1100 psi (76 bar) reading

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

(BDP-10A/10L)
300 psi (21 bar) reading
1100 psi (76 bar) reading

7 gpm (26 l/min) (1st 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 a defective pump).

INITIAL WHEEL MOTOR TEST

1. A good wheel motor should turn hard in forward. To perform this grab the tire and try to rotate it forward.
2. A good wheel motor should not turn in reverse.
3. If the wheel motor turns easily and or clicks while turning, the wheel motor may have internal damage.

WHEEL MOTOR STALL TEST

1. To check wheel motor leak through, install a Bi-directional flow meter at the inlet port of each wheel motor.
2. Mark the tire with chalk or tape in at least 4 positions (3 o'clock, 6 o'clock, 9 o'clock and 12 o'clock).
3. With the flow meter plumbed in the position unit against a solid object, run engine to full speed.
4. Move the drive handle in the forward direction. Watch the pressure gauge on the flow meter, when it reaches 3000 psi, read the flow meter and record the Gallons per minute.
5. Rotate wheel 45 degrees and repeat this in the other three marked positions.

Pressure Filtering

1. When a hydraulic component has failed or if you open the closed loop traction circuit it will be necessary to pressure filter the system.
2. Part number of the Pressure Filter Kit is 2178196.
3. Part number of the 3-micron replacement filter for the kit is 2178196-01.

Pressure Filtering Instructions

1. Lift and support the machine off the ground so that the drive tires don't touch anything.
2. Install the pressure filter in the return side of the pump.
3. Run the machine at half throttle and half swash in the forward direction for 15 minutes.
4. Switch the filter for reverse filtering. Run in reverse for 15 minutes.
5. Then repeat procedures on other side of unit. This will allow the system to become totally free of damaging debris.