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How to Set Single Stage Press Pressures

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1. Testing for a working pump and proportional valve

Before preparing to get press pressures, remove the power from machine, and check that the proportional valve is fully operational by screwing a plug into the horsepower valve outgoing oil port (Figure 3). This simulates a fully closed proportional valve. The hose end does not have to be plugged. Turn the machine on and watch the top pressure gauge. System should pressurize to maximum system psi (Table 1) under the following conditions:

- The system relief is set above the maximum system psi (indicated by an amperage draw at or above the motor nameplate rating). If the amperage draw is significantly lower than the nameplate rating, the horsepower valve second stage is set too low. See Step 2 in “Setting amperage draw at higher pressures.”
- The pressure compensator is set at or above the maximum psi (indicated by an amperage draw below the motor nameplate rating).
- The pump is not damaged.
- The first stage of the horsepower valve is adjusted for full rated amperage (Figure 5).

Table 1: Pump Reference Table

Press model rating	Pump manufacturer	Maximum system psi
MP1603 35 Bar	Kawasaki	4600
MP1604 50 Bar	Kawasaki	4350

If the pump pressurizes to maximum system psi during this procedure, but fails to reach maximum system psi during the “Verify that machine reaches full system pressure” procedure, then check for a faulty proportional valve and/or incorrect voltage output to the proportional valve.

2. Setting idle pressure adjustment

Adjust idle pressure to 400 psi at the idle pressure adjustment (Figure 5). Set pressure by turning idle pressure adjustment until system pressure gauge (top gauge) needle rises above 400 psi then reverse adjustment until pressure drops back to 400 psi.

If the idle pressure will not adjust, unplug the DBET card. Unplugging this card removes all voltage from the proportional valve. If machine idles, then test card voltages and associated wiring. If idle pressure still cannot be adjusted then inspect valves and piping.

3. Setting horsepower valve first stage

Note 1: The ram relief valve (Figure 4) can be adjusted with the system pressurized.






1. Disconnect the ram up proximity switch.
2. Raise ram with **7** (output 7). Continue holding **↑** key during this step.
3. Start by screwing the ram relief valve adjustment all the way in, then backing out the adjustment one-half turn. Continue adjusting relief until pressure reaches the following value on the ram gauge (middle gauge):
 - 35 bar machines- 1200 psi for 60 cycle, 1350 psi for 50 cycle.
 - 50 bar machines- 625 psi for 60 cycle, 750 psi for 50 cycle.

4. Observe motor amperage draw.
5. If necessary, loosen the big nut on the horsepower valve first stage (Figure 5) and adjust the allen screw to full rated amperage.
6. Secure big nut.


4. Verify that machine reaches full system pressure

Note 2: The system relief valve (Figure 4) can not be adjusted with the system pressurized. Release pressure, adjust relief valve then repressurize.

Note 3: The pressure compensator valve can be adjusted with the system pressurized.

1. Load goods in the can.
2. Lower ram using  (output 9). Hold  key during step.
3. Verify press reaches maximum system psi (top gauge).
 - If system pressure goes over the maximum system psi (Table 1), then the system pressure compensator (Figure 5) is set too high, and must be backed out while observing the top pressure gauge.
 - If system pressure won't reach maximum system psi, **but does pressurize**, verify that the system relief valve (Figure 4) is not releasing pressure prematurely as follows:
4. Verifying that the system relief valve is not releasing pressure prematurely,
 - Release the  key.
 - Turn the system relief valve adjustment in one turn clockwise, then depress the  key again and observe the top pressure gauge.
 1. If the top gauge shows increased pressure, then repeat the above step until the maximum system psi (Table 1) is reached.
 2. If the top gauge does not show increased pressure after turning the system relief adjustment, then slowly screw in the pressure compensator (Figure 5) then depress , while observing the top pressure gauge.
5. If the system will not pressurize, then check if the bypass valve is closing (by checking that the LED is on?) Check wiring for errors if bypass valve is not closing. Cap the valve connection to simulate closed valve.

5. Setting amperage draw at higher pressures (Horsepower valve second stage)

1. Back out the system relief valve (Figure 4) about one turn. Stop, then hold the  key while observing the pressure gauge and motor amperage. Repeat this step until the system maintains approximately 3600-3700 psi. If motor amperage draw is too high at this pressure, loosen the small nut on the horsepower valve (second stage) and slowly turn the allen screw counterclockwise to lower the amperage draw.
2. If motor amperage draw is too low at this pressure, slowly turn the allen screw clockwise to increase amperage draw then lock down the setting.
3. Screw pressure relief valve adjustment in one-half turn, setting the system relief valve above maximum system psi.

6. Verify the system pressure compensator valve setting (Figure 5)

1. Using , depress the  key and observe the top pressure gauge and motor amperage.

2. System should reach maximum system psi and motor amperage drop.

7. Setting the system relief valve

1. After verifying the system pressure compensator is set, the system relief valve (Figure 4) must be set slightly higher than maximum system psi.
2. After setting the system pressure compensator, back out the system relief valve adjustment one turn, then pressurize the system and observe gauge. Repeat, backing out the system relief valve until system pressure drops below maximum system psi. This indicates that the system relief valve is now controlling the system pressure. Set the system relief slightly higher than maximum system psi by turning the system relief valve in a half a turn, and locking down adjustment.

8. Setting the ram relief valve (Figure 4)

1. Disconnect the upper proximity switch.
2. Raise ram and using mode **7**, hold the **↑** key.
3. Watch the system pressure gauge and motor amperage while turning in the ram relief valve (Figure 4).
4. The ram relief should reach 1200 psi.
5. Motor amperage draw can exceed nameplate rating by one or two amps.
6. Test by raising ram. Ram should reach 1200 psi.
7. Reconnect upper proximity switch.

9. Setting the can relief valve (Figure 4)

1. Disconnect the can up proximity switch.
2. Raise can and maintain up key depressed.
3. Watch the can pressure gauge (bottom gauge) while adjusting the can relief valve.
4. Continue adjusting can relief until it reaches 800 psi.
5. Test by raising can. Can should reach 800 psi.
6. Reconnect the can up proximity switch.

10. Set the Pre-Fill Valve

1. Load machine with goods.
2. Using mode **9**, hold the **↓** while watching the system pressure gauge (top gauge).
3. Adjust the prefill valve relief until prefill pressure gauge indicates 2000 psi.

11. Adjusting the Proportional Valve Ramp Down Adjustment

Check to see if the **DBET** card proportional valve circuit returns the pump swash plate to the vertical position quickly after a press cycle. Damaging vibrations result if the circuit returns the plate too slowly,

Note 4: Two testers are required for the following system test and adjustment.

1. Load machine with damp laundry.

How to Set Single Stage Press Pressures

2. One tester stands on top of the machine and holds the two hydraulic lines at the points indicated in Figure 1.
3. The other tester operates the machine in manual mode while watching the system pressure gauge carefully.
4. System pressure should climb smoothly until the press reaches maximum system psi.
5. Release the pressure. System pressure should drop smoothly to idle pressure.
6. If the tester on top of the machine hears chattering noises and feels vibrations in the hydraulic tubing, and the tester watching the system pressure gauge notices that the system pressure drops abruptly to 0 then bounces back to 2500 to 3500 psi, then adjust the **DBET** ramp down adjustment as follows:
 - a. Turn the ramp down adjustment (Figure 2) approximately 20 turns clockwise.
 - b. Test machine again. Continue adjustment until chattering and pressure spikes are minimized.

Figure 1: Where to hold pipes for chattering test

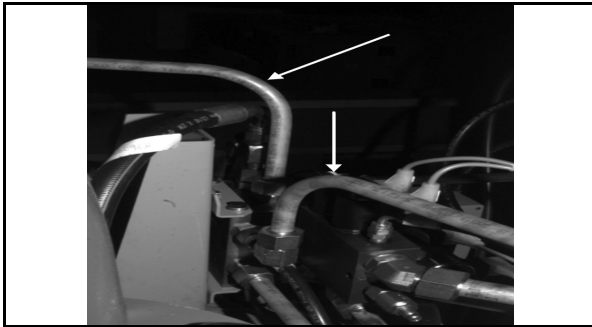


Figure 2: DBET card (ramp down adjustment)

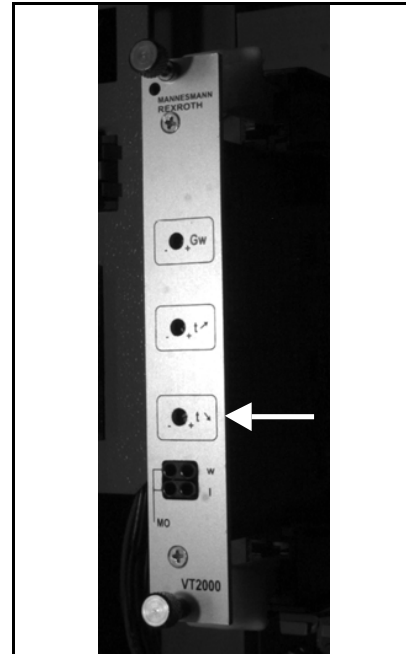
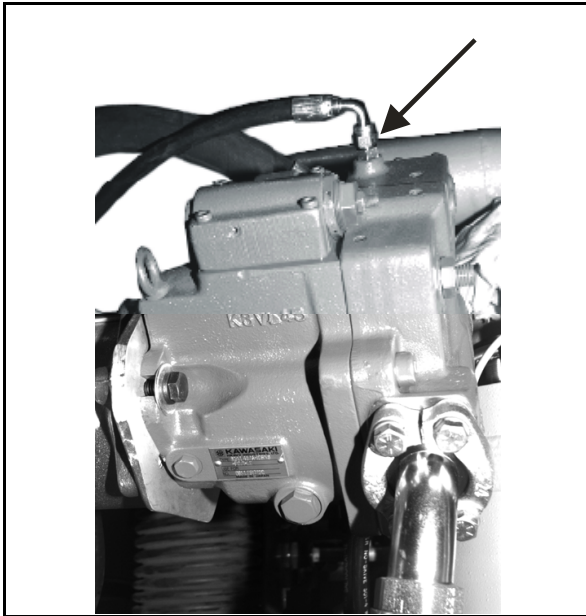


Figure 3: Outgoing oil port for 35 Bar Machines



How to Set Single Stage Press Pressures

Figure 4: System and can relief for All Machines

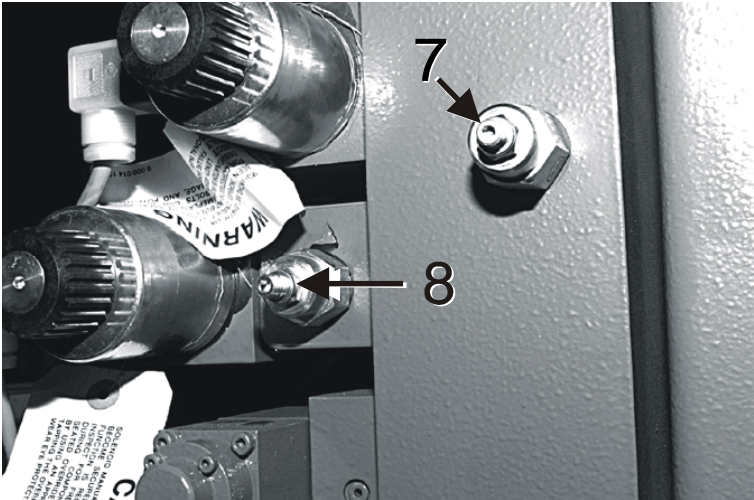
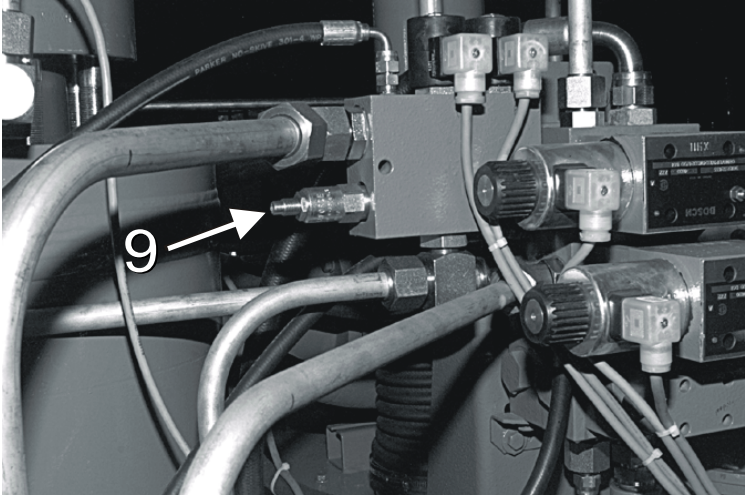
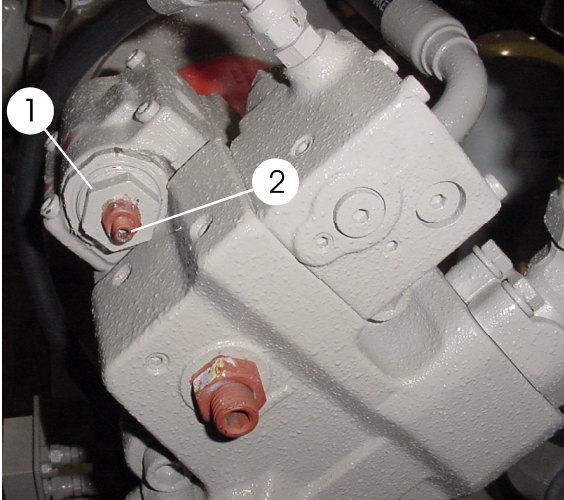
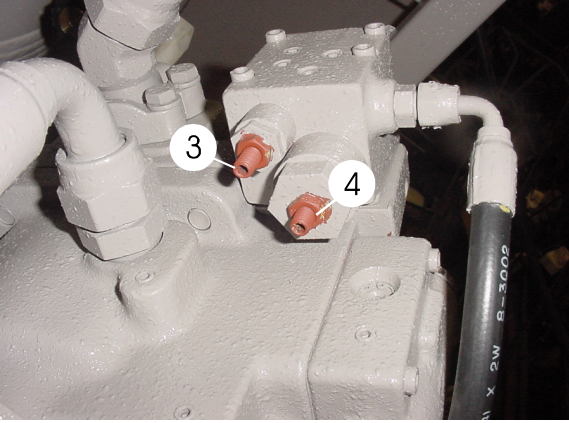
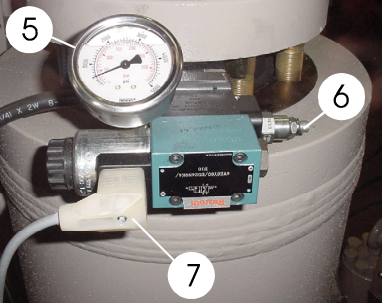
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<p data-bbox="602 816 737 850">Ram relief</p> 	

Figure 5: Kawasaki pump adjustment and pre-fill valve

<p>Horsepower first and second stage adjustments</p> 	<p>Idle and system pressure compensator adjustment</p> 
<p>Prefill valve pressure gauge and relief</p> 	<p>Legend</p> <ol style="list-style-type: none">1. First stage adjustment2. Second stage adjustment3. Idle pressure adjustment4. System pressure compensator adjustment5. Prefill regulator pressure gauge6. Prefill regulator relief valve7. Prefill pilot valve electrical connector (LED within)

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