

TSB-1003: PROPORTIONAL VALVE ADJUSTMENT

The Proportional Valve is the device used to control the output pressure of the hydraulic pump. When a pressure setting is input at the operator input screen, a signal is sent to the proportional valve. The proportional valve then controls the hydraulic pump output and pressure. This valve comes preset from the factory when a pump is purchased, but there are situations where one would need to re-adjust it. One instance would be if there is a large discrepancy between the pressures entered on the OIT screen and the actual pressure output by the pump. Additionally, if you happen to replace the proportional valve due to wear it will need to be recalibrated. Follow this procedure for adjusting the proportional valve settings.

The Part Numbers for the Hand-Held Controller and Cable needed are 610037-1 and 610037-2, respectively.

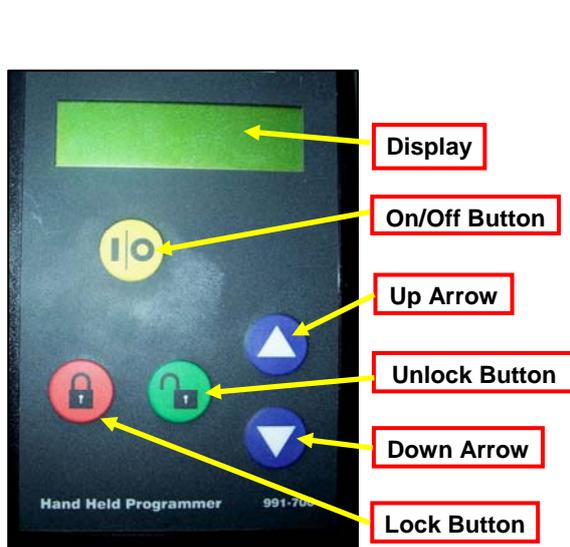


FIGURE 1

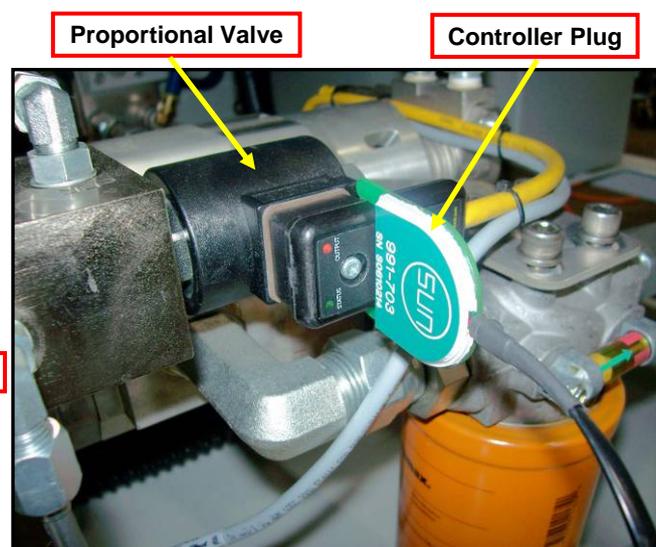


FIGURE 2

PROCEDURE:

1. Press the E-Stop button to shut off the pump. Leave the power to the unit on.
2. Open the front door and locate the hydraulic manifold bolted to the hydraulic pump. On the side of the manifold is the proportional valve. Plug the controller into the proportional valve as shown. **See Figure 2.**
3. Turn the controller on by pressing the I/O button. **See Figure 1.**

Note: Power must be turned on to the pump in order for the control to respond.

4. Press the red lock button.
5. Press the blue down arrow until you get to "MINIMUM INPUT." This setting should already be at 0.00 volts. If not, press the green unlock button and use the blue up/down arrows until 0.00 volts is obtained. Once this setting is reached, press the red lock button. This will lock the setting at 0.00 volts. **See Figure 3.**



FIGURE 3

6. Press the down arrow once to get to "MAXIMUM INPUT." Press the unlock button and adjust the setting to 10.00 volts using the up/down arrows. Press the lock button to lock the setting at 10.00 volts.

Note: The minimum/maximum is the 0 to 10v signal that the proportional card receives from the PLC.

7. Start the pump. Set the pump to 10,000psi.

-On the Advantage Pump (50HP and 100HP), press the "START PUMP" button and press the the "HI ADJ" button on the OIT screen and type 10000 and press "ENTER" to set the pressure to 10,000psi. **See Figure 4.**

-On the Skid Pump (30HP), press the "START" button and then the "LOW" button on the OIT Screen. Press the "F2" button, then press "Edit". Type 17 then press "Enter" two times. Finally, press the "LOW" button to set the pump to 17% (10,000psi). **See Figure 5.**

8. Shut off all water flow out of the pump to "dead head" the pump.
9. Using the controller, press the down arrow until you get to "MINIMUM OUTPUT." Press the unlock button. With the pump at minimum pressure (10,000psi), press the up/down buttons to adjust the mA value until 500psi is achieved on the hydraulic gauge. The mA value on the controller should be between 35-50 mA. Press the lock button to lock the value. **See Figure 6.**
10. Press the down arrow until you get to "MAXIMUM OUTPUT." Press the unlock button, and then use the down arrow to adjust the mA value to 300mA.
11. With the pump "dead headed" set the pump to 60,000psi or 100% using the same procedure as in step 7. The hydraulic gauge will still read very low. Use the up arrow on the controller to increase the mA value until the hydraulic gauge reads 3000psi. Verify that 60,000psi water pressure is achieved. Press the lock button to lock the value.

Note: Any time you adjust the "MINIMUM OUTPUT", the "MAXIMUM OUPUT" will need to be re-adjusted to ensure safe operation.

12. Press the down arrow until you get to "DITHER FREQ." Press the unlock button. This setting is obtained by listening to the sound of the pump and the stability of the hydraulic pressure when the pump is "dead headed." Using the up/down arrows, adjust this Hz value to either 220 Hz or 240 Hz based off of stability of the pressure and the sound. Press the lock button to lock the value.
13. Press the down arrow until you get to "RAMP UP TIME." This setting controls how fast the pump transitions from a low pressure to a high pressure. If the value is not set to 7.0 seconds, press the unlock button and using the up/down arrows, adjust until 7.0 seconds is achieved. Press the lock button to lock the value.
14. Press the down arrow until you get to "RAMP DOWN TIME." This setting controls how fast the pump transitions from a high pressure to a low pressure. If the value is not set to 0.0 seconds, press the unlock button and use the down arrow to adjust until 0.0 seconds is achieved. Press the lock button to lock the value.

Note: This setting must be set to 0.0 seconds in order to ensure safe operation.

15. Remove the controller from the pump.
16. The pump can now be used for normal operation.



FIGURE 4



FIGURE 5



FIGURE 6