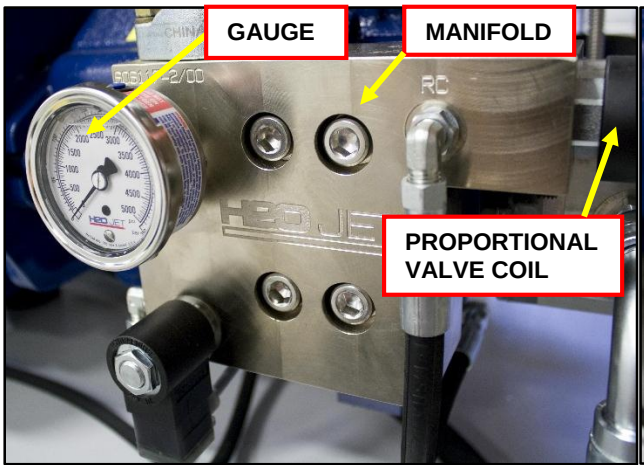
302032-1 100HP STROKE BALANCING TEST GAUGE KIT

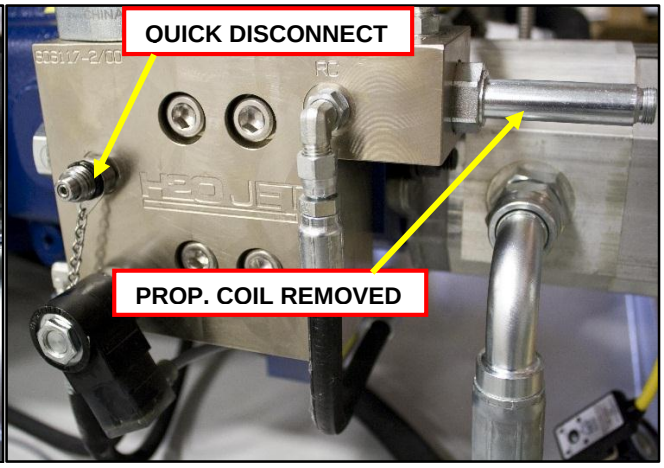
This document details the procedure to properly setup a 100HP dual hydraulic pump system. Getting both hydraulic pumps setup identical to one another is critical in maintaining the balance between the intensifiers. In a system that is out of balance, one intensifier will shift much faster than the other. Once the pumps are setup properly, both intensifiers will share the work load, increasing life on both intensifiers.

This procedure requires the use of high accuracy test gauges, available in a kit (302032-1). A handheld programmer and cable are also needed. The part numbers for the Hand-Held Controller and Cable needed are 610037-1 and 610037-2, respectively.

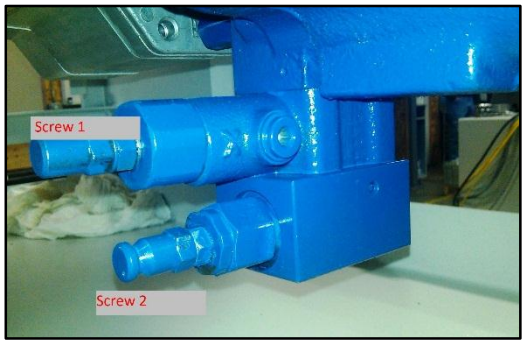
Adjusting the idle pressure:

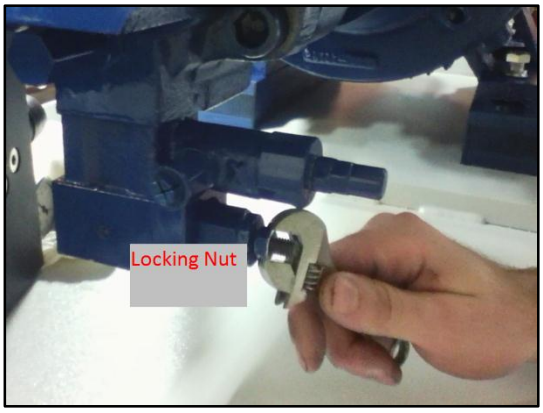
1. Run the pump until the oil temperature is between 37.7°C - 43.3°C (100°F - 110°F).
2. Shut down the system. Press the E-Stop Button. Ensure no pressurized water is in the HP lines and that both hydraulic gauges read 0 psi/bar.
3. **Note:** Hydraulic Oil will leak from the lines. Place a catch pan underneath each part/fitting when disconnecting.
4. Identify the hydraulic manifold mounted on each hydraulic pump. Identify the Gauge port on each manifold, marked with a “G” next to the port. The right manifold will have a gauge in this port, the left manifold will have a hydraulic hose connected to the port.
5. Remove the nut from the end of the Proportional Valve on both manifolds. Slide the Coil from both manifolds. Do not disconnect the electrical plug.



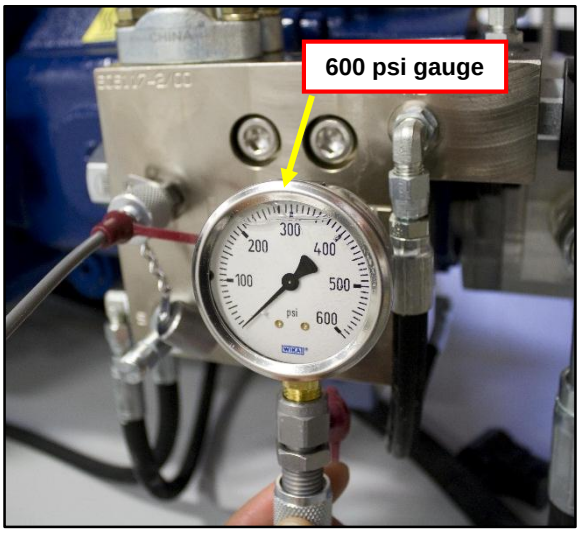


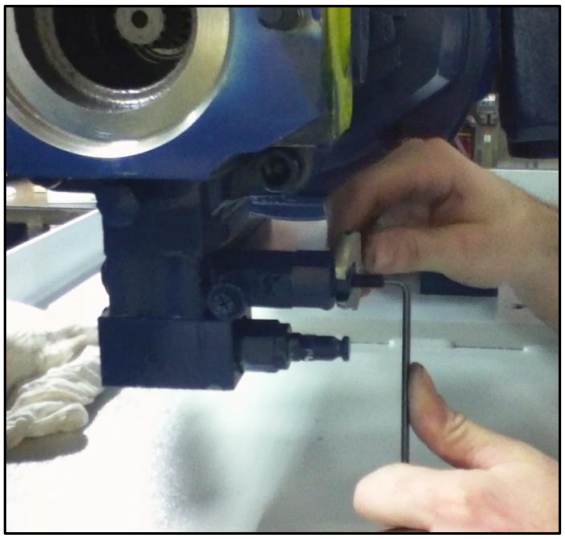
6. Remove the gauge from the right manifold and install the quick disconnect in its place. Tighten.
7. Remove the hydraulic hose and fitting from the left manifold and install the quick disconnect in its place. Tighten.
8. On the hydraulic pump, identify and locate the compensator screws. These are located on the bottom of the hydraulic pumps.
    a. The screw closest to the pump (1) controls the pressure at idle or minimum.
    b. The screw farthest to the pump (2) controls the maximum pressure.





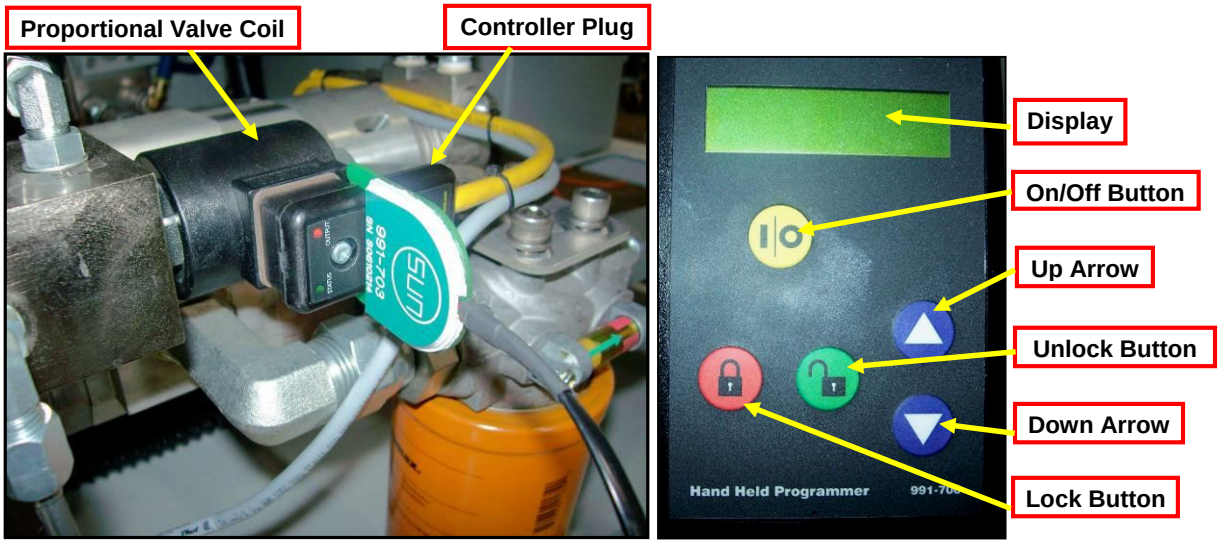
9. Using an adjustable wrench loosen and remove the protective caps of both screws on both pumps.
10. Using and adjustable wrench, loosen all 4 locking nuts.
11. Close the flow valve to prevent the flow of pressurized water out of the machine.
12. Set the pump pressure to 10,000 psi (689 bar) on the touch screen.
13. Turn on the machine and allow it to generate pressure for about 10 to 15 seconds.
14. Connect the 600 psi gauge to the quick disconnect port on the left pump.





15. With an Allen wrench, loosen the compensator screw (1) by turning counter-clockwise as needed in turns of 10° or less until the gauge gives a reading of 250 psi. Allow pressure to adjust for about 5 seconds between each rotation of 10° or less.
16. Adjust the compensator screw (1) by turning clockwise as needed in turns of 10° or less until the gauge gives a reading of 300 psi. Allow pressure to adjust for about 5 seconds between each rotation of 10° or less.
17. Once the pressure reads 300 psi tighten the locknut while holding the screw with the Allen wrench to prevent movement of the adjustment.
18. Replace and tighten the protective cap.
19. Remove the 600 psi gauge from the quick disconnect and connect it to the right manifold.

20. Repeat steps 15 through 17 for the right pump.
21. Reinstall the Proportional Valve Coils.
22. Using the Hand Held Programmer and Cable (610037-1 and 610037-2), connect the controller plug to the Proportional Valve Coil on the right manifold. Note the proper orientation of the plug.



23. Turn the controller on by pressing the I/O button.
24. Press the down arrow button until you get to “MINIMUM OUTPUT”. Press the unlock button.
25. Press the up/down buttons to adjust the mA value until 500 psi is achieved on the hydraulic gauge. The mA value on the controller should read between 35-50 mA. Press the lock button to lock the value.
26. Remove the pressure gauge from the right manifold and install on the left manifold.
27. Remove the controller plug and install it on the left manifold Proportional Valve Coil.
28. Repeat steps 22 through 25 for the left manifold.
29. Remove the 600 psi gauge.

Adjusting the maximum pressure:

30. Install the 5000 psi pressure gauge on the left manifold.
31. Ensure that the controller plug still on the left proportional valve coil.
32. Unplug the shift sensor wires on the intensifier (yellow) so that only hydraulic pressure is built.

    Note: Failure to remove the shift sensor cables will result in over-pressurization of the intensifier, causing damage to the parts
33. Enter 60,000 psi on the touchscreen.
34. With the Allen wrench, loosen the compensator lower screw (2) by turning counter-clockwise in increments of 45° until the pressure is 2800 psi. Allow the pressure to adjust for about 5 seconds between each rotation of 45°.
35. Press the down arrow button on the Hand Held Programmer until you get to “MAX OUTPUT”. Press the unlock button.
36. Press the up/down buttons to adjust the mA value until you reach 600mA.

37. With the Allen wrench, adjust the compensator lower screw (2) by turning clockwise in increments of 45° until the pressure is 3350 psi. Allow the pressure to adjust for about 5 seconds between each rotation of 45°.
38. After reaching the pressure of 3350 psi, tighten the locknut while holding the screw with the Allen wrench to prevent movement of the adjustment.
39. Replace and tighten the protective cap.
40. Adjust the “MAX OUTPUT” until 2800 psi is reached. Do not skip this step, as the proportional valve adjustments are most accurate when the pressure is being increased.
41. Slowly adjust the “MAX OUTPUT” until 3000 psi is reached.
42. Press the Lock button to lock the value.
43. Remove the 5000 psi pressure gauge and controller plug from the left manifold and install on the right manifold.
44. Repeat steps 34 through 40 for the right pump.

Reassembly:

45. Remove the pressure gauge from the quick disconnect.
46. Shut down the system. Press the E-Stop Button. Ensure no pressurized water is in the HP lines.

    Note: Hydraulic Oil will leak from the lines. Place a catch pan underneath each part/fitting when disconnecting.
47. Remove the controller plug from the proportional valve.
48. Remove the quick disconnect fitting from the left manifold and re-install the hydraulic tubing. Tighten.
49. Remove the quick disconnect fitting from the right manifold and install the original pressure gauge. Tighten.
50. The pump can now be returned to routine operation.