

INSTRUCTIONAL & MAINTENANCE MANUAL

WEIR USA INC.

WC-SC SELF CONTAINED HYDRAULIC PUMP



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1. Summary

This manual covers Operation, Maintenance and Troubleshooting and for WCSCLP (Low Pressure) and WCSCHP (High Pressure) Self Contained Hydraulic Pump.

2. Technical & Application Data

Standard temperature range: Low Temp = -47F

Low temperature range: Low Temp = -58F

Operating Media: UNVIS HVI 13 or equivalent Hydraulic Fluid

3. Handling and Lifting

NOTE: Only trained and experienced personnel should handle the pump. The use of PPE (protective clothing, gloves, and eyewear) should always be used when performing any installation or maintenance.

3.1 Lifting Recommendations

3.1.1 Use industry standard practices as it pertains to suitability rated lifting devices, slings and chains that are safe for use.

3.1.2 Do not lift the actuator/pump combination or complete valve & actuator/pump using the pump only

3.2 Lifting Instructions

3.2.1 Prior to lifting the pump/actuator remove electrical power and pneumatic lines to ensure that the actuator is fully depressurized and powered down.

4. Installation (NEED TO REVIEW FOR ANY DIFFERENCES BETWEEN THIS AND HP INSTALLATION AS WELL AS APPLICABLE SCHEMATICS)

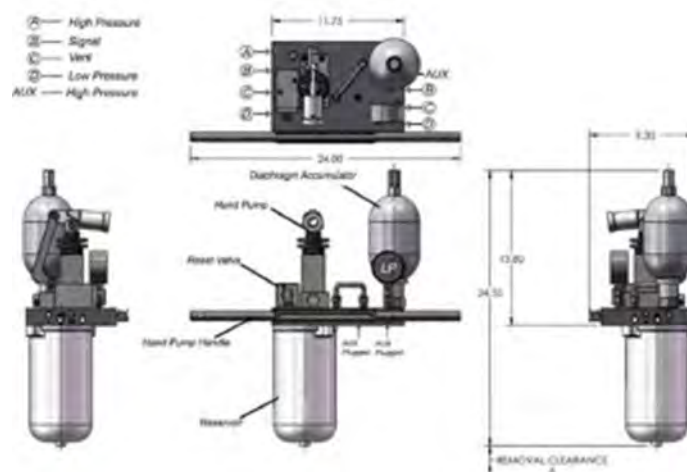
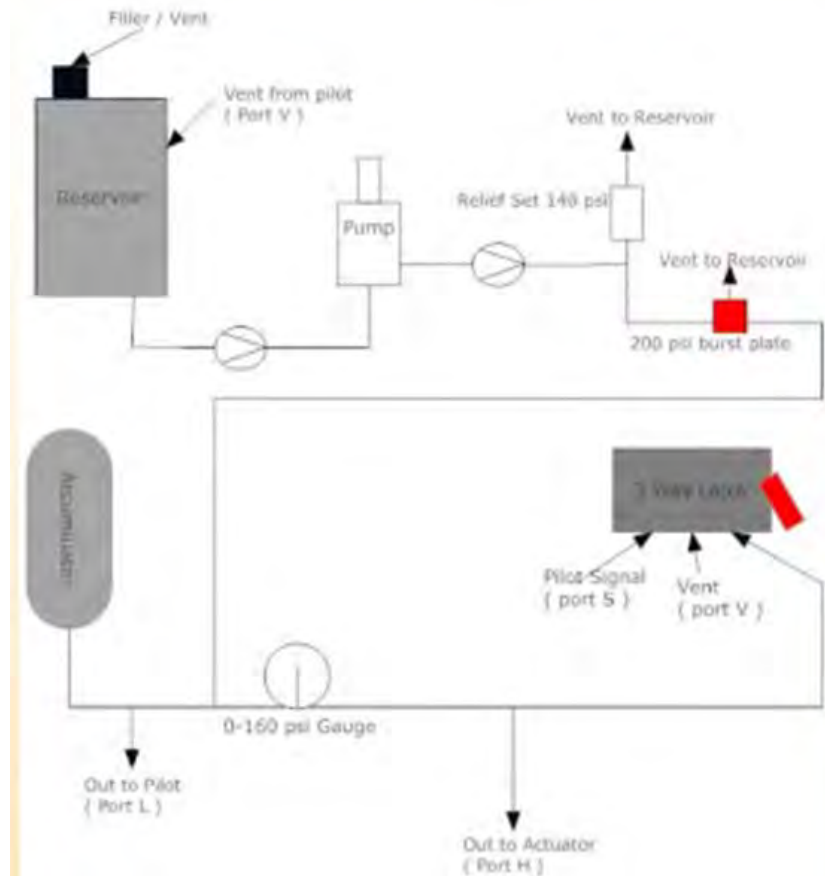
NOTE: Installation shall be performed by trained personnel using industry best practices.

1. Mount the Weir hydraulic system securely to the actuator or to the flow line.
2. Tube the actuator and line monitoring pilot as per the schematic diagram provided.
 - a. Port H: Actuator & Pilot Supply / Port S: Pilot Signal / Port V: Pilot Exhaust.

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LP SELF CONTAINED HYDRAULIC SHUTDOWN SYSTEM SCHEMATIC



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3. Fill the tank with clean low-temperature hydraulic fluid.
4. Flip the manual arm lever to allow the system to bypass switches or the solenoid.
5. Pump the WC-Hydraulic Pump until the actuator is completely open. If the actuator does not fully open, add oil as required.
6. Continue pumping until the gauge on the pump reads 100psi **(PRESSURE FOR HP?)**
7. Check the manual override latch. If the line monitoring pilot is within its set range, the latch will be in automatic mode. With the latch fully extended from the valve body, the latch should move freely. If the latch is still in its manual locked position, the line monitoring pilot is in a high or low-pressure condition.

5. Operation

Self Contained Hydraulic Pump - Manual Latch Mode

1. When the actuator is open, do not leave the latch in the manual position without a signal from the line monitoring pilot. The relay is not armed and unable to close the actuator.
2. To close the actuator while in the manual latch mode, push the latch in until it disengages and releases.
3. To close the valve actuator in the automatic condition, bleed down the line for the monitoring pilot signal. If an isolator valve is installed, block and bleed the line sensing signal.
4. To re-open the actuator, follow steps 1–7 from the installation procedure and step 1 from the manual latch mode.
5. Fully open and then cycle the actuator to purge any air in the system and ensure proper operation.
6. The system should be cycled once a month to ensure proper operation.

To Open the Valve

1. Latch the reset valve so the actuator can be opened.
2. Operate the manual hand pump to transfer hydraulic oil from a reservoir (24), compressing the actuator's spring and opening the valve to its normal operating position.
3. The WCSCHP enters its automatic mode when the pilot (14) senses pressure build-up within set points and the solenoid (20) is energized.

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To Close the Valve

1. The line valve closes when the hydraulic oil in the actuator's cylinder is released back to the reservoir, decompressing the spring and activating the valve. This occurs when:

- a) The reset valve (23) is released manually.
- b) The pressure pilot (14) senses that the pressure is out of range.
- c) The selector valve is switched to "manual."
- d) The solenoid (20) is de-energized.

***CONDESNSSED VERSION OF THE SYSTEM SCHEMATIC FROM BROCHURE WITH
DRAWING AND BOM IN ONE IMAGE GOES HERE***

NOTE: BEFORE DISASSEMBLING OR SERVICING ANY PUMP COMPONENTS ENSURE THE SYSTEM IS FULLY DEPRESSURIZED.

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6. Maintenance/Repair

Regular maintenance should be performed as typical maintenance intervals or as required. Autumn months are preferable as this will drain any condensation that may have accumulated in the reservoir.

1. Empty the fluid reservoir of any accumulated moisture.
2. Check filter element(s). Clean and/or replace as necessary.
3. Check set points on pressure relief valve(s). Reset valves if required.
4. Check the operation and calibration of the pressure pilot or optional solenoid.

Top up with UNVIS HVI 13 or equivalent hydraulic fluid.

Please contact Weir Concepts' tech support if you have any questions or concerns

Regulator Maintenance/Repair

Remove top cap of regulator

Remove poppet and inspect all sealing surfaces on the poppet and body

*****FOLLOWING STEPS TO DETAIL FURTHER DISASSEMBLY, REWORK/REPAIR AND RE-ASSEMBLY*******

7. Troubleshooting

Leakage Troubleshooting

1. Disconnect the vent line from the pilot/solenoid vent port. This isolates it from the WCSCHP module and allows for checking oil leakage throughout the device. *Note: This procedure also checks O-ring seals of poppets/spool and spool/sleeve in operating positions.*
2. Remove the reservoir from the module and check for oil leakage at the relief valve under operating conditions.
3. Remove fitting and tubing or plug from the second vent port of the module.
4. Check for oil leakage that may be caused by manifold leakage between the low-pressure (LP) channel and the vent (V) channel.
5. Remove the operator inspection cover or plate and/or tubing from the cylinder plate to check for oil leakage across the piston seal and the piston center O-ring.

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Pumping Difficulties

Pumping difficulties are usually caused by a dirty filter element, contaminated oil (with water or methanol), or using incorrect fluid in the unit. In the event you experience pumping problems, access the pump suction valve by removing the pump assembly from the sub-plate.

When the unit fails to regulate, it is noticeable by a low-pressure gauge reading of 130 psi or more after two strokes. Service the regulator according to the appropriate maintenance manual.

Other potential troubleshooting specifics

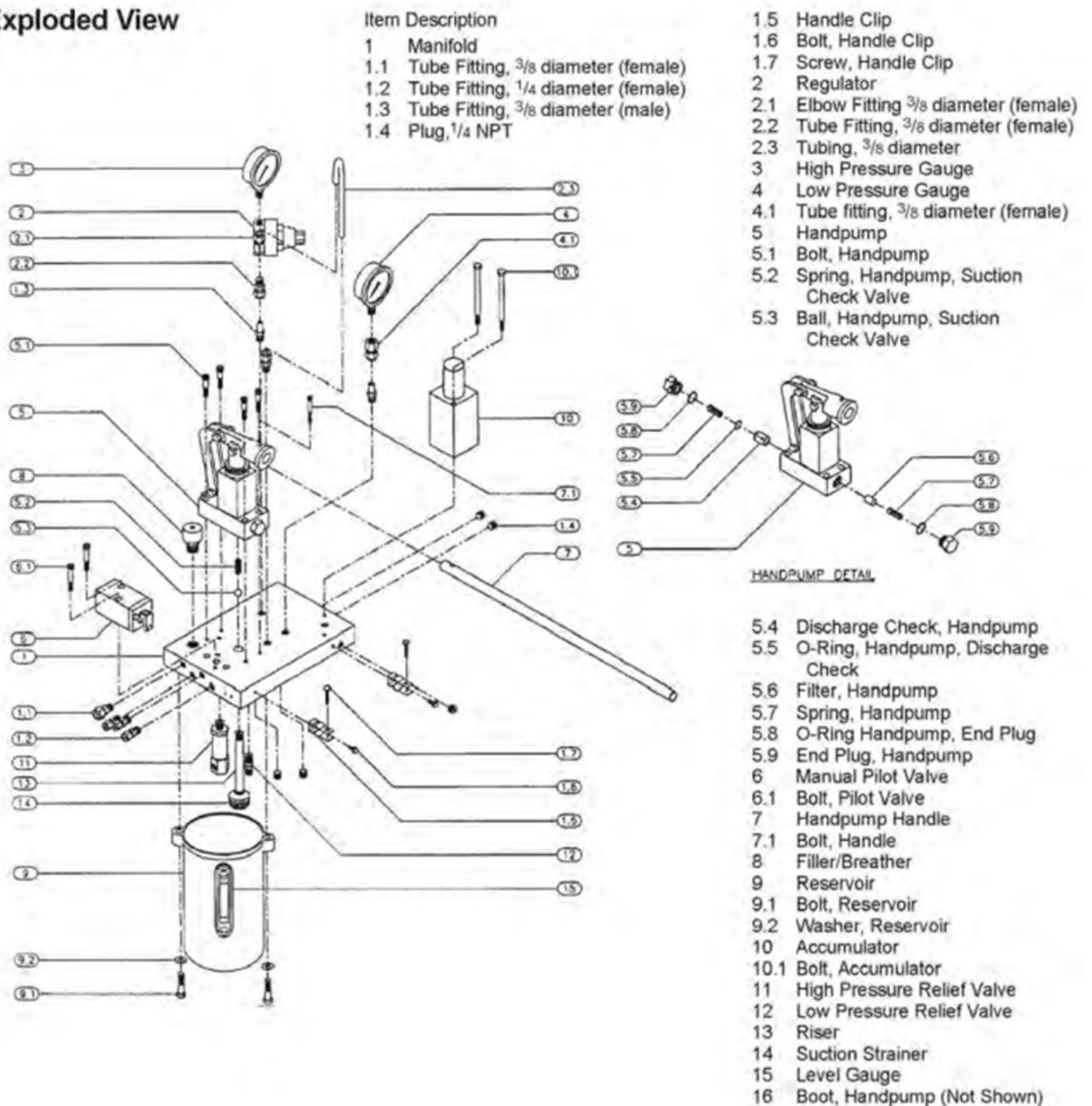
More detailed troubleshooting on any of the following:

Relief Valve

Check Valve

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Exploded View



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