



SPX Corporation
5885 11th Street
Rockford, IL 61109-3699 USA

Tech. Services: (800) 477-8326
Fax: (800) 765-8326
Order Entry: (800) 541-1418
Fax: (800) 288-7031

Internet Address:
<http://www.hytec.com>

**Operating Instructions
for:**

100211
100211-230
100216

MODEL C
SUPER ELECTRIC TWO-STAGE HYDRAULIC PUMP

This new hydraulic pump incorporates precision design and engineering features which make it the most outstanding pump of its kind on the market!

All moving parts are made from high grade tool steel, heat-treated, machined, ground and lapped to extremely close tolerances to assure efficient operation and long life. Watch-like precision insures peak efficiency for continuous operation and at the full range of pressures up to 5,000 PSI.

Your pump will give you uninterrupted, trouble-free service if you keep it clean, use only high grade, filtered, hydraulic oil and take care of it as you would any fine machine. (For wiring information, see Parts List #19262.)

ELECTRICAL HOOK-UP AND OPERATION



WARNING:

1. Any electrical work should be done by a qualified electrician.
2. Disconnect power supply before removing electrical box cover.
3. All voltages must be wired for CCW rotation viewed from lead end of motor.
 - A. The electric motor is a single phase 60 cycle motor and can be wired for 115 or 230 volt. The unit is prewired at the factory for 115 volt and it is supplied with a power cord but not a plug.* This pump may also be ordered with a 50 cycle 110 or 220 volt motor.
 - B. Plug cord into proper electrical outlet or provide wiring as required. To rewire motor from one voltage to another, see diagram on motor nameplate and electrical schematic section in parts list.
 - C. Reset button: when overheating occurs, the thermal overload will kick out. To restart the motor, place valve in neutral and push the start button once the unit has cooled.
 - D. Power outage: the electrical design of this unit is such that when the unit is in operation and the power goes off and back on again, the unit's start button must be pushed. To restart the unit place valve in neutral before restarting.

*NOTE: An appropriately rated plug should be selected for the current rating of the pump shown on the specifications decal on the pump (See Parts List form no. 19262, sheet 3 of 7, item no. 10).

FILLING RESERVOIR

NOTE: The pump has been shipped without oil in the reservoir. Four one gallon containers of high grade hydraulic oil have been shipped with the pump. If additional oil is required use only Power Team hydraulic oil.

- A. Before removing filler cap, clean area around cap. Use a clean cloth to remove all dust and grit. This pump is a precision built pump and any foreign particles in the oil could damage polished surfaces resulting in a loss in performance.
- B. Remove filler cap and insert a clean funnel with a filter. Fill with oil within 1" to 1 1/2" from top of filler hole. (5 gallons) Replace cap and make sure that breather-hole in the cap is open.

CONNECTING HOSES

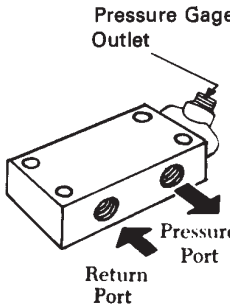
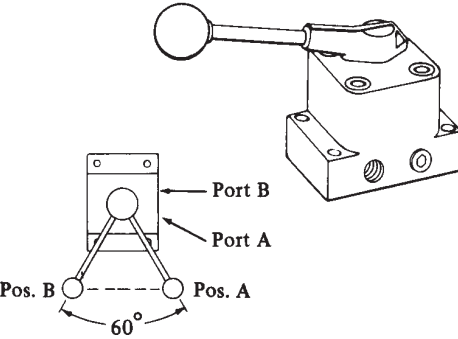
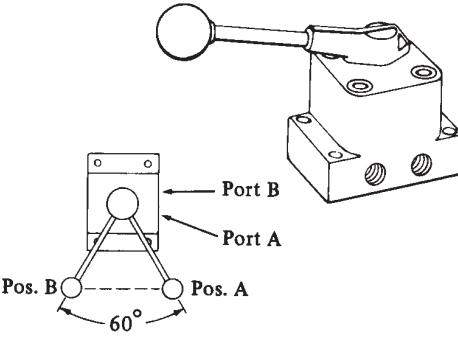
- A. Clean the areas around the valve ports to remove all dust and grit.
- B. Remove plastic caps and connect hose or fittings from the cylinder to the proper valve ports. (See valve operation illustrations.) Make sure all connections are tight.

Note: Shaded areas reflect last revision(s) made to this form.

Sheet No. 1 of 2

Rev. 1 Date: 10 May 2000

VALVE OPERATION

MANIFOLD	3 WAY VALVE	4 WAY VALVE
<p>Provides 1/4" pipe thread pressure outlet and pressure inlet.</p> 	 <p>For single acting cylinders plug A or B. When handle is in Pos. "A", Port "A" is the pressure line and Port "B" is blocked. When the handle is in Pos. "B" Port "B" is the return line and Port "A" is blocked.</p>	 <p>The pressure follows the direction of the handle. When handle is in Pos. "A" Port "A" is the pressure line and Port "B" is the return. When the handle is in Pos. "B", Port "B" is the pressure line and Port "A" is the return.</p>

PUMP OPERATION

The following instructions should be followed when operating the pump for the first time.

- A. Make sure all valve and hose connections are tight, then plug in the electric motor.
- B. Set valve in the neutral or return position. Jog pump several times with the "jog" switch, then set switch on "run" and let pump idle for a few minutes.
- C. Run cylinder out to its full travel several times to eliminate air from the system.
- D. Pump is now ready to be put into regular operation.

NOTE: If a large double acting cylinder or a large system is being operated, after eliminating the air from the system, refill the pump reservoir to within 1 1/2" from the top of the filler hole with the cylinder in the retracted position, since the forward part of the cylinder acts as a reservoir in this instance.

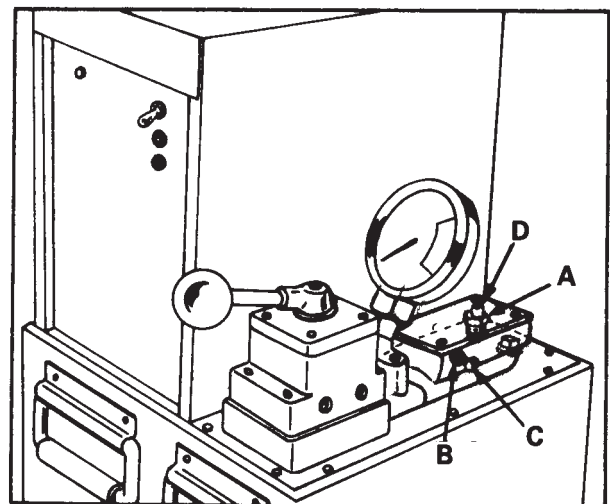
ADJUSTING THE PRESSURE REGULATING CONTROLS

The pressure regulating valve (A) and the pressure switch (B) are shown in the illustration below right. The pressure regulating valve can be adjusted to by-pass oil at a given pressure setting while the pump continues to run. The pressure switch can be adjusted to stop the pump motor at a given pressure setting, and to restart the pump when the pressure falls below that setting. The pressure switch should be used only in conjunction with the pressure regulating valve, in order to insure accuracy and a low pressure differential (approx. 500 PSI) throughout the pressure range (1000 - 3000 PSI).

- A. ADJUSTING THE PRESSURE REGULATING VALVE
 1. Loosen the locknut on the pressure regulating valve (A) and back the adjusting screw (D) out a few turns with a screwdriver by turning in a counterclockwise direction. This will decrease the setting to a lower than desired pressure.
 2. Pump must be completely connected and the control valve in operating position. Turn the pump toggle switch to "Run" position and start pumping.
 3. With the screwdriver, slowly turn the adjusting screw (D) in a clockwise direction. This will gradually increase the pressure setting. When the desired pressure is reached lock the adjusting screw in position by tightening the locknut.



WARNING: Always adjust the pressure regulating valve by increasing to the desired pressure. Do not attempt to adjust by decreasing from a higher to a lower pressure.



B. ADJUSTING THE PRESSURE SWITCH

The pressure switch should be used only in conjunction with the pressure regulating valve:

1. Loosen the locknut on the pressure switch (B) and with a screwdriver turn the adjusting screw (C) in a clockwise direction. This will increase the pressure setting to a higher than desired pressure.
2. Adjust the pressure regulating valve (A) to the desired pressure setting by using the procedure outlined on back sheet 1 of 2.
3. With the pump running and by-passing oil at the desired pressure, slowly turn the pressure switch, adjusting screw (C) in a counterclockwise direction decreasing the pressure switch setting until the pump motor shuts off. Then lock the adjusting screw (C) in position by tightening the locknut.
4. Break pressure with the control valve, then run the pump to check the pressure setting and cut-out of the motor. It may be necessary to make a second fine adjustment.

NOTE: When the pressure switch setting is reached the motor will cut-out. However, the "coast" of the motor continues for a brief period to deliver oil. The pressure regulating valve by-passes this surplus oil preventing it from going into the system. As a result lower settings can be obtained (1000 PSI) and the pressure differential can be held to approximately 500 PSI.

UL LISTING: 5 AMP, 250 VAC

ADJUSTING THE LOW PRESSURE UNLOADING VALVE

This unit is a two stage, high pressure pump. The low pressure, high volume stage provides fast cylinder piston travel. The unloading valve pressure is preset at the factory at lower 850-950 PSI. In the event this valve needs to be reset, reference should be made to parts list form number 19262, sheet number 6 of 7 high pressure pump assembly.

Loosen the jam nut (item #24) and turn in the socket head cap screw (item #25) clockwise to increase the unloading pressure or counterclockwise to decrease the pressure. Once this is done the jam nut should be locked in place.

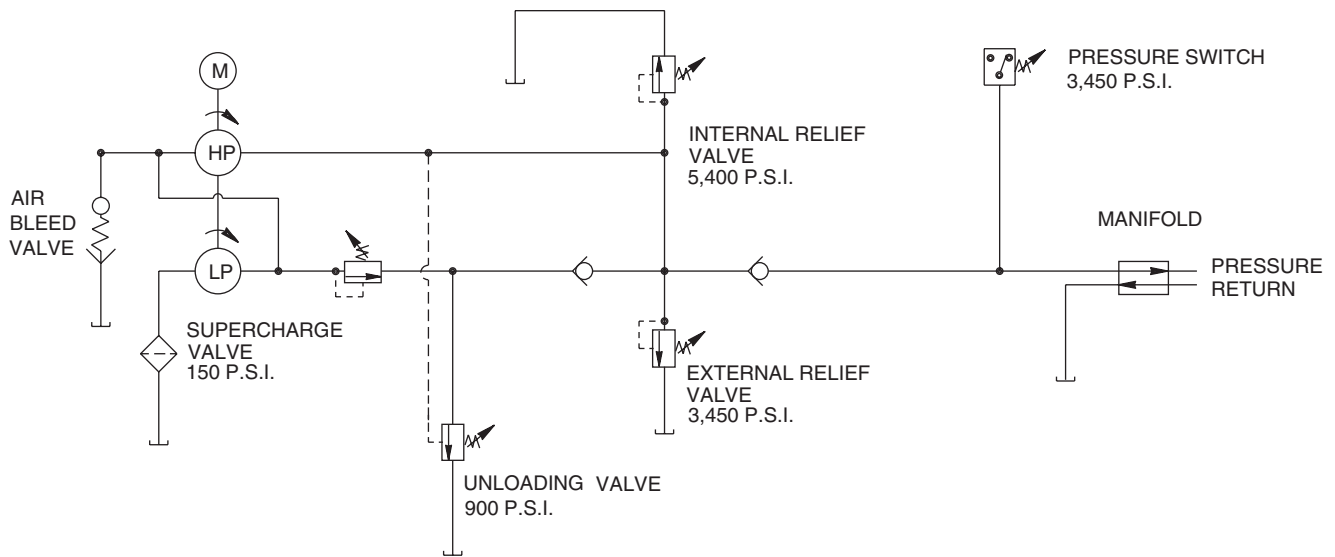
ADJUSTING THE SUPERCHARGE VALVE

The supercharge valve pressure is preset at the factory at lower 100-200 PSI. In the event this valve needs to be reset, reference should be made to parts list form number 19262, sheet number 6 of 7 high pressure pump assembly.

Loosen the jam nut (item #4) and turn in the socket head cap screw (item #3) clockwise to increase the unloading pressure or counterclockwise to decrease the pressure. Once this is done the jam nut should be locked in place.

Note: Added the "ADJUSTING THE SUPERCHARGE VALVE" section at last revision(s) made to this form.

HYDRAULIC SCHEMATIC FOR NO. 100211 & 100211-230



HYDRAULIC SCHEMATIC FOR NO. 100216

