

Hi-Force HYDRAULIC TOOLS		<u>ELECTRIC DRIVEN SPLIT FLOW PUMP</u> <u>FOR USE WTH:- HSP</u>		TDS:- 1345
Prepared by:-	Mark Dalley	Approved by:-	Matthew Hughes	Date:-12/10/12
REV NO.:- 0002				
ECO:- 3936				

HI-FORCE ELECTRIC DRIVEN SPLIT FLOW PUMP **HSP OPERATING INSTRUCTIONS**

Hi-Force HSP series pumps are designed to operate high pressure hydraulic cylinders and tools with a maximum working pressure of 700Bar.

Note: All diagrams on these instructions show three valves, the number of valves may vary on these pumps depending on the model supplied.

SAFETY

READ THIS MANUAL BEFORE OPERATING THE PUMP. FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN SERIOUS BODILY INJURY

- Ensure that all equipment connected to the pump is in good condition and is all rated for 700Bar operating pressure.
- Always stand the pump on a stable level surface during operation.
- Never invert the pump or lay it on its side either in use, transport or in storage.
- Inspect hoses regularly for damage and wear. Do not use hoses that are frayed, abraded or leaking.
- Never move the pump by pulling the hoses.
- Do not work with hoses sharply bent or kinked.
- Do not handle hoses that are pressurised. Oil escaping under pressure can penetrate the skin causing serious injury. If oil is injected under the skin see a doctor immediately.
- Never pressurise uncoupled couplers.
- Always use eye, ear and hand protective equipment when using this pump and associated equipment.
- Beware of hot surfaces on the motor. Do not obstruct the flow of cooling air around the motor.
- A split flow pump delivers an equal amount of oil to each valve and will give controlled extension or retract of cylinders. However additional protection against uncontrolled lowering of a load may be required e.g. needle valves, such as Hi-Force HFV66 valves.

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MAINTENANCE

- Inspect the pump for damage after each use.
- Change the oil every 500 working hours using Hi-Force HFO46 oil.
- Have the pump serviced regularly by a Hi-Force authorised repair centre.

IDENTIFICATION OF COMPONENTS

Refer to figure 1 and 2 on following pages.

1. Hydraulic oil drain plug
2. Hydraulic directional control valve (fitted with pilot operated check valve for positive load holding)
3. Motor
4. Oil filler breather cap
5. Tank
6. Hydraulic oil level gauge
7. Electrical control box
8. Hydraulic service connections
9. Adjustable pressure relief valve
10. Return line filter with pressure gauge

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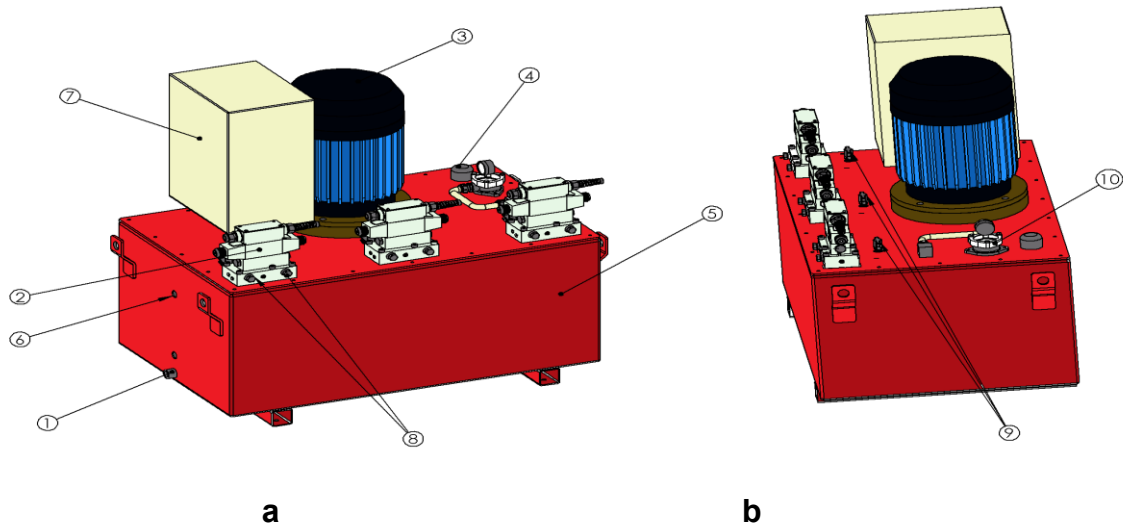


Fig 1 general view

PREPARING THE PUMP FOR FIRST USE

1. Immediately after unpacking, examine the pump for signs of transit damage and if found contact the shipping company.
2. Establish the oil level in the oil reservoir using the level gauge on the end of the tank. Depending on the shipping method used, the reservoir may either be supplied full or empty. If the reservoir is empty it must be correctly filled before use. Remove the temporary transit plate which is fitted in the position of the filler breather cap (4) by undoing the 3 screws. Fit the filler breather cap (packed separately) using the 3 screws which held the transit plate.
3. To fill the reservoir: Remove the filler cap (4) and fill the tank with clean HFO46 oil to the upper level indicator (6).
4. Remove steel or plastic hexagon headed plugs and make hydraulic connections to service ports (8). These ports have a 3/8" NPT female thread and the corresponding male connections should be wrapped with PTFE tape or other suitable sealant. Note: connection to "extend" port of cylinder should be made to the right hand service port as shown in fig 1a. This will ensure correct cylinder motion corresponding to pendant buttons.
5. Make sure that the voltage indicated on the motor rating plate corresponds with the available supply and fit suitable connections appropriate to the area where the pump is being used.
6. Ensure switch (11) is set to 'off'. Connect motor to required power source. Motor rotation direction is not important on this type of pump.

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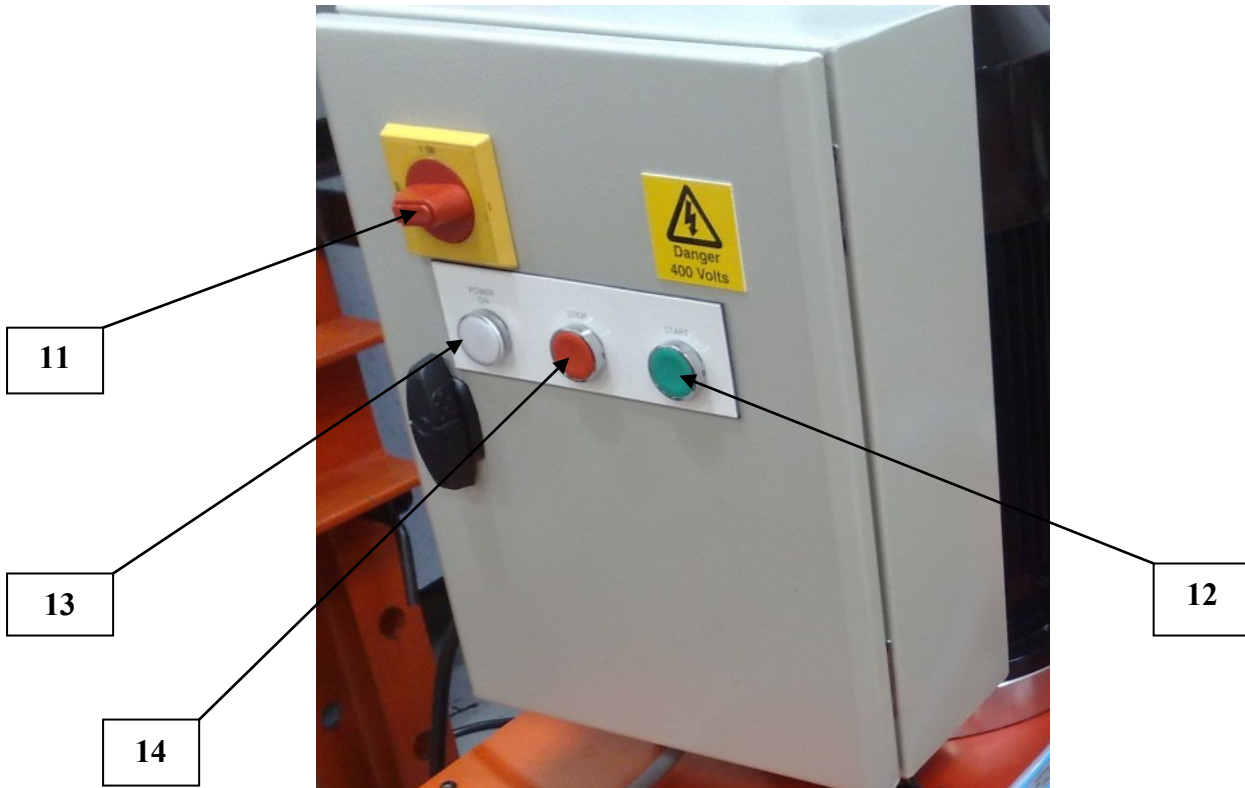


Fig 2 motor control panel

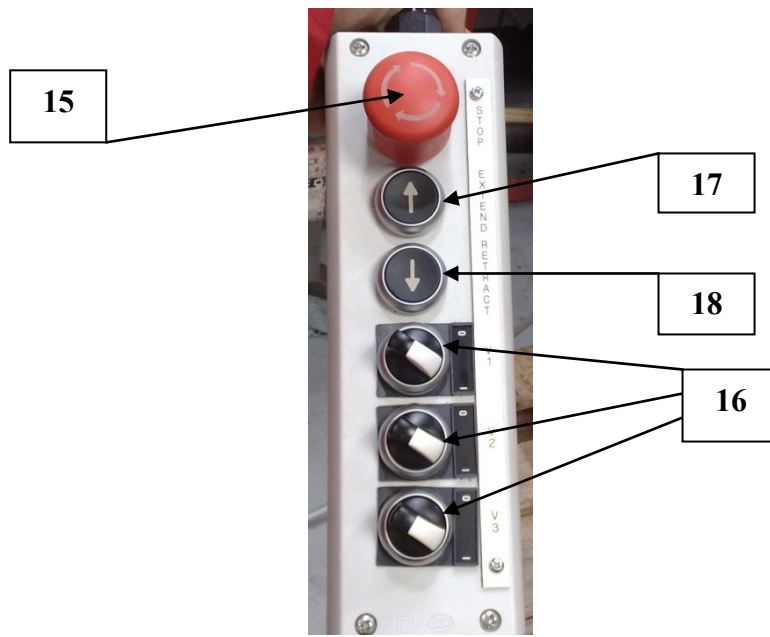


Fig 3 pendant controls

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OPERATION OF PUMP

1. Turn main (11) switch (11) to 'on' position (type of switch may vary) and power indicator (13) will light up.
2. Ensure Emergency stop (15) on pendant is released (twist clockwise to release). Depress start button (12) and motor will start.
3. Select the required hydraulic valves to control using selector switches (16). These may be selected in any combination.
4. Press Extend button (17) to extend cylinder(s) and retract button (18) to retract cylinders. Cylinder motion will stop when the buttons are released.
5. The maximum pressure of each cylinder can be independently adjusted by means of the pressure relief valves (9) up to a maximum of 700Bar.
6. To stop the pump, either press the emergency stop (15) on the pendant or the stop button (14) on the motor panel.

MAINTENANCE OF PUMP

Monitor the oil level in the tank and do not allow the level to fall below the minimum level marked by the lower indicator. Retract all cylinders before filling tank with HFO46 oil.

Check the gauge on the return line filter (10) periodically. Replace the filter element when the gauge pointer is showing in the red sector.

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