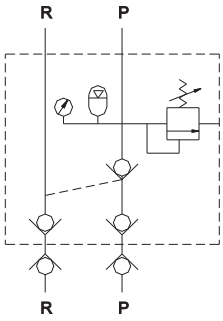
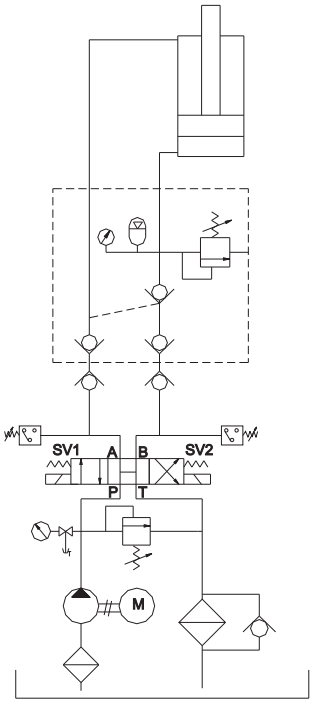
Hydraulic Coupling Unit
for double acting elements

Part No. 4500137



Hydraulic circuit - Coupling Unit



Hydraulic Circuit - Power Unit

Hydraulic coupling units are used whenever the fixture is separated from the pressure generator, e.g. In flexible manufacturing systems. This fully equipped coupling unit has been developed for manual coupling and uncoupling for the purpose of clamping and unclamping.

Description
This unit includes two quick disconnect coupling (QDC) to connect / disconnect 'Hydraulic Power Unit', Pilot operated check valve to hold pressure in clamping line, Accumulator to compensate leakage (if any) in clamp line, Glycerin filled pressure gauge , Pressure relief valve to avoid excess pressure.

Coupling Unit Specifications
- Minimum operating Pressure: 50 bar
- Maximum operating Pressure: 250 bar
- Accumulator charging Pressure: 0.9x Minimum operating pressure
- Accumulator Volume: 75 cc
- Total volume of the cylinder: 500 cc

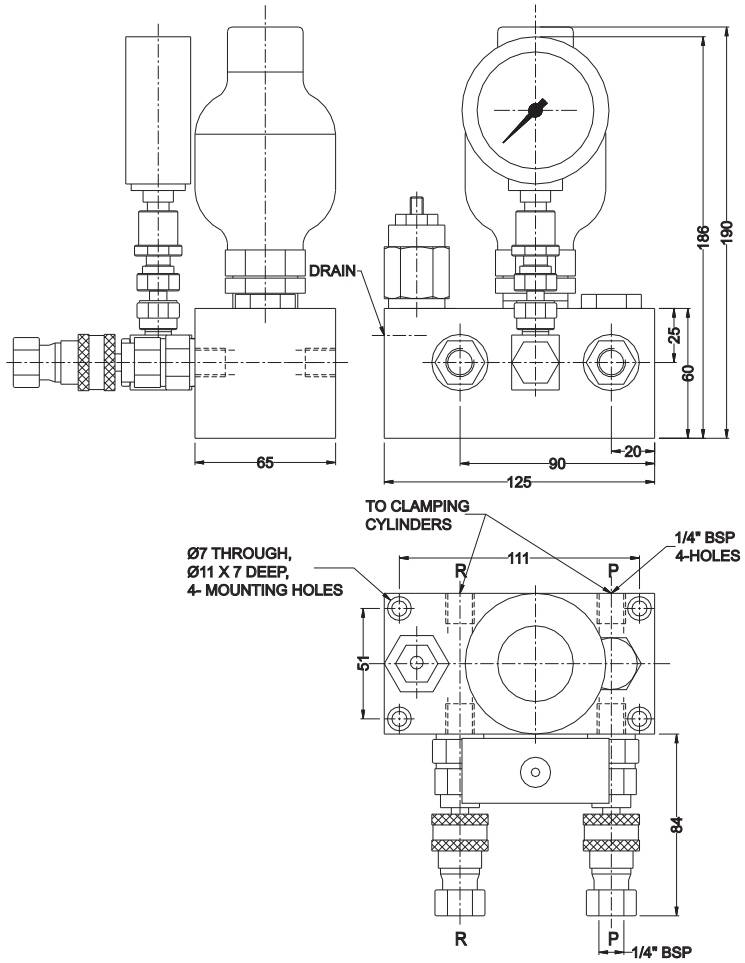
Power Unit Specifications
- Hydraulic power unit with control panel - **4500051**
- Pump output: 1.8 lpm
- Motor: 3 phase,1hp
- Tank Capacity: 30 liters approximately
- Useful oil volume - 25 liters approximately

Power Unit Hydraulic Circuit
This unit has direction control valve, which is double solenoid, spring centered, and center open. At center position pressure line is connected to tank line and motor is unloaded. Due to this one can connect / disconnect quick disconnect coupling at center position. Push buttons are provided on pendent for ease of operation.

Sequence of operation
A) Clamping
1. QDC is connected if it is not in coupled position.
2. Push the clamp button, pressure will build and Ready for Disconnection lamp (green) will glow.
3. Disconnect QDC and put dust caps.
4. Now job is in clamped condition and pallet is ready to move.

B)Unclamping
1. Remove dust cap and clean quick disconnect coupling
2. In un-pressurized mode connect QDC. (Ready for Connection / Disconnection lamp is on)
3. Push unclamp button, all elements will retract and gauge show zero pressure . And ready for Disconnection lamp will glow.
4. Now job can be removed and new job can be placed.

All dimensions are in mm
Overall dimension tolerance ± 0.5 mm



Notes:-

1. Clamping and unclamping time is more because every time accumulator is charged and discharged.

2. Accumulator is to support small leakages. Accumulator charging pressure should be approximately 75% of operating pressure. If operating pressure is reduced below Accumulator charging pressure, then there will not be any oil output for leakage compensation. This is unsafe situation.

3. In conventional clamping, live hydraulic line is always connected. Pump output can make-up leakages and Pressure switch can give signal for low or no pressure and machine can be stopped. Both options are not possible for moving pallet, hence one should critically check that leakage is nil or negligible.

Preventive checking procedure:

A) Clamp the job as per defined procedure and disconnect QDC.

B) After 8-24 hours check following points.

- ♦ Pressure drop is not more than 20 bar.