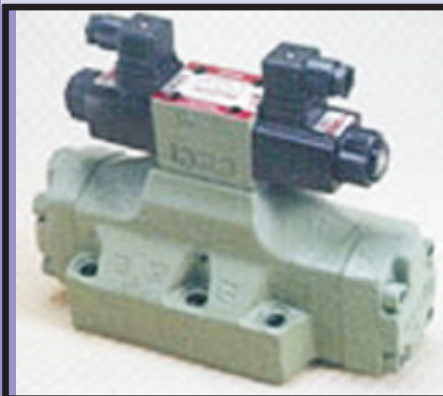


MALIK'S manufacture tailor made Hydraulic presses suitable for wide range of pressing applications viz. Bakelite moulding, Rubber moulding, Extrusion, general pressing jobs in the workshop, etc. Capacities range from 30 tons to 250 tons.

The presses are manufactured in down-stroking or up-stroking types. The Hydraulic cylinder is made out of honed steel tube and piston is made out of close grained cast iron. The piston rod is hard chrome plated for smooth finish. Both platens are made out of graded cast iron and duly ground on the faces for absolute parallelism. The moving platen slides in adjustable guides or bronze bushes for precision movement and alignment. The presses are powered by our own designed power pack unit, fitted with high quality hydraulic elements for reliability and trouble free performance.

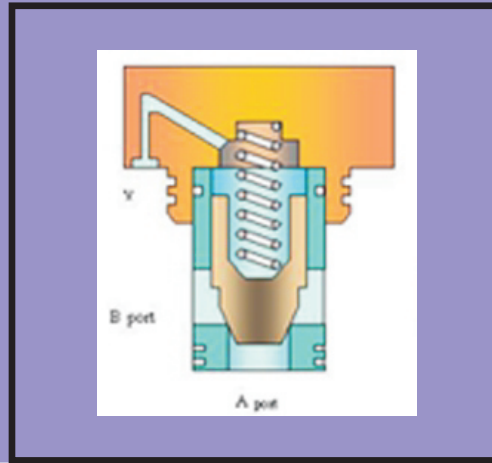
These are supplied complete with associated electronic/electrical control panels to control the operation cycle, automatically.

Hydraulic power packs are also manufactured as per client's specific requirements to control a single or multiple actuators and fitted with manually operated or solenoid operated valves and associated control panel. We manufacture power pack units suitable for handling continuous working pressure of upto 400 bars (kg/cm<sup>2</sup>) and flow rates upto 170 LPM.

**A****B****C****D****E****F**



**G**



**H**

**Description of figures illustrated above:**

- A- Column type 100 Tons capacity Up-stroke press.**
- B- 200 Tons capacity Downstroke press with Twin pressing cylinders.**
- C- 160 bar x 30 LPM capacity power pack for controlling 2 cylinders.**
- D- Pilot operated solenoid controlled directional valve used on our power pack for flow rates of 170 LPM and operating pressure of 350 bars.**
- E- 200 Tons capacity Press power pack for operating pressure of 350 bars.**
- F- Radial piston pump (fixed delivery) as used on our power pack for pressure upto 350 bars.**
- G- Vane pump 30 LPM x 160 bars as used on our power pack.**
- H- Cross section of Cartridge Valve for operating principle.**

Cartridge valves are employed to handle large flow rates with control from relatively smaller sized solenoid valves. These valves fit in precision bore machined in the manifold, and are very compact and simplify the circuit. They operate with very short spool movement and are noiseless. In principle, the load on the spool of a cartridge valve will consist of the spring pressure plus the system pressure which act towards the "A" port thus keeping the valve closed. Flow path is from "A" to "B" ports. Hydraulic pressure present between "A" and "B" ports acting towards the "X" port tend to open the valve. Hence, the condition for this valve depends upon the hydraulic pressure present at the "X" port plus the spring load, the hydraulic pressure at "A" and "B" port.

Large presses have large cylinders and call for high flow rates. A double pump or "hi-lo" hydraulic circuit is employed, where deliveries from both pumps (one is high pressure-low delivery, other is low pressure high delivery) is supplied to the cylinder for faster approach. During the final pressing operation, pressure is important, thus the high delivery pump un-loads to the tank, at low pressure and low delivery pump which has high pressure capacity maintains the pressure required for developing the force. Alternatively, a prefill tank could be mounted on the top of cylinder which draws oil from the prefill tank via a prefill valve, which avoids pumping large volume oil through pumps. Two auxiliary cylinders which are smaller in size, use oil from the pumps for faster approach. The high pressure pump supplies oil to the main pressing cylinder for developing the required force. Without the prefill tank, the flow requirements would have been very large resulting in very high input power.

Manufacturers:

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