

High Pressure Oil Accumulator System Specification

General

A high pressure oil accumulator system shall be furnished to supply oil under pressure to actuate the hydraulic cylinder operated valves. The oil accumulator system shall consist of a pump/motor set mounted on and oil sump tank, an electrical motor control cabinet, a bank of accumulators, and all necessary controls and appurtenances. The system shall be designed to use petroleum base hydraulic oil with a viscosity of 90 SUS at 100°F. The system shall be the Pratt High Pressure Oil Accumulator System as manufactured by the Henry Pratt Company.

Sump Tank

The sump tank shall be constructed of welded steel plate and shall be of ample size to receive the working capacity of the oil stored in the accumulators, 10 gallons minimum. The tank shall contain flanges for floor mounting. It shall be fitted with a flush type fluid level indicator, a clean out cover, filler/breather, and a drain connection. In addition, the return connection shall contain a 10 micron screw canister type fluid filter with internal bypass.

Pump/Motor Set

The positive displacement pump/motor set shall be sized to charge the accumulators with oil in less than five minutes, 1 GPM minimum. The motor shall be suitable for 480 volt, 3 phase, 60 cycle power and of the open drip-proof construction.

Control Cabinet

A NEMA 4X electrical control cabinet for wall mounting shall house a motor starter, Hand-Off-Auto selector switch, start button, and circuit breaker. Using the pressure switch, the unit shall function to automatically start the oil pump when the pressure is below 2000 psig and stop the oil pump at 2500 psig.

Accumulator Bank

The oil pump shall charge a bank of accumulators (quantity two minimum) sized to stroke the hydraulic cylinders three (3) times between the pressures of 2000 and 1500 psig. The accumulators are to be nitrogen pre-charged, and built in accordance with the ASME Code for Unfired Pressure Vessels. The accumulators shall be affixed to a metal rack assembly for floor or wall mounting. Each accumulator shall be fitted with an isolation ball valve and piped to a common header containing a system isolation valve and an accumulator drain valve. Supplied with the assembly shall be a charging gauging assembly.

Miscellaneous

All piping at a minimum shall be seamless steel tubing, and fittings shall be bite type with SAE straight thread with o-Ring. All equipment shall have a rated working pressure of 3000 psi. All exposed carbon steel surfaces are to be cleaned thoroughly, removing rust, scale, dirt, and grease, and painted with industrial enamel. The pump motor set, electrical cabinet, and accumulators shall be connected to the hydraulic cylinders in the manufacturer's shop, filled to the normal operating level with oil, and tested to verify correct mechanical and electrical operation. In preparation for shipment, all openings shall be plugged and all instrumentation adequately protected.