

Low Pressure Accumulator System Specification

General

An 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 vertical cylindrical pressure tank, rectangular oil sump tank, electrical cabinet, two (2) air compressors, two (2) motor driven oil pumps, and all necessary controls and appurtenances mounted and piped on a fabricated steel base with lifting eyes for floor mounting. The system shall be designed to use petroleum base hydraulic oil with viscosity of 90 SUS at 100°F. The system shall be the Pratt Low Pressure Oil Accumulator System as manufactured by the Henry Pratt Company.

Pressure Tank

The pressure tank shall be constructed and tested in accordance with the latest ASME Code for Unfired Pressure Vessels and code stamped. The tank shall be sized to stroke the hydraulic cylinders three (3) times between the pressures of 80 and 150 psig, with no electric power available. Under normal operation, with electric power for operating the oil pumps, the controls shall function to start the oil pumps when the pressure drops to 100 psig and stop the oil pumps when the proper oil level is reached. The pressure tank shall be equipped with a relief valve, gauge glass with ball check gauge cocks, float switch, drain, and a cleanout hole.

Oil Return Reservoir

The oil return reservoir shall be a JIC style constructed of a welded steel plate and shall be of ample size to receive the working capacity of oil stored in the pressure tank. It shall be fitted with a gauge glass, a low level oil cut off float switch, a drain connection, and a screened fill cap.

Air Compressors/Oil Pumps

Two (2) motor-driven air compressors with relief valves, isolation valves, a common outlet filter, and controls necessary to maintain proper air pressure in the pressure tank shall be furnished. The units shall be sized to initially charge the pressure tank in less than 15 minutes. Two (2) motor-driven oil pumps with relief valves, isolation valves, suction filters, and controls necessary to maintain proper oil level in the pressure tank shall also be furnished. The oil pumps shall be sized to pump the useable oil volume in less than 10 minutes, 5 gpm minimum. Both the oil pump and compressor shall work in an alternating lead/lag circuit so that, if the unit is unable to build pressure, the lag unit shall start.

Control Cabinet

A NEMA 4X control cabinet containing a panel interlocked main circuit breaker, motor circuit breakers, motor circuit protectors, motor starters, control transformer, alarm reset buttons, Hand-Off-Auto switches, pilot lights, control relays, terminal strip, pressure gauge, three pressure switches, and any additional equipment necessary for proper operation of the system shall be provided. Motors shall be suitable for 480 volt, 3 phase, 60 cycle power and of the open drip proof construction. Lights, alarm contacts, and reset buttons shall be provided for the low oil level and low pressure alarm conditions.

Miscellaneous

Interconnected piping between the hydraulic and pneumatic components shall be Schedule 40 carbon steel pipe or steel tubing. The supply and return lines shall be sized to assure minimum pressure loss at the emergency cylinder flow rate.

The accumulator shall be connected to the hydraulic cylinders in the manufacturer's shop, filled to the normal

LOW PRESSURE OIL ACCUMULATOR

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operating level with oil, and tested to verify correct mechanical and electrical operation. All exposed carbon steel surfaces are to be cleaned thoroughly, removing all rust, scale, dirt, and grease, and painted with an industrial rust resistant primer and a water-proof industrial enamel. In preparation for shipment, all openings shall be plugged and all instrumentation adequately protected.



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