Medical Air & Vacuum System Specialists

1. RECIPROCATING COMPRESSOR:

A. TRIPLEX BASE MOUNTED COMPRESSED AIR SYSTEMS

1. Furnish and install, where shown on the drawings a triplex base mounted prefabricated medical compressed air system model_____ as manufactured by EMSE Corporation, Fairfield, NJ (1-800-935-EMSE)
2. The unit furnished shall be a standard catalog item of the supplier regularly engaged in the business of providing packaged systems for hospitals and laboratories and shall meet and exceed the requirements of NFPA 99.
3. The package shall include three oil-less air compressors and associated equipment, one ASME tank and one triplex control panel. The entire system including the receiver shall be mounted on a common structural steel stack base. The only field connections required will be system intake, exhaust and power connection at the control panel. All components shall be completely pre-piped and pre-wired to single-point service connections. All interconnecting piping and wiring shall be completed and operationally tested prior to shipment. Provide liquid tight conduit, fittings and junction boxes for all control and power wiring.
4. The medical air compressors shall be of the totally oil-less reciprocating air-cooled 2-stage design. The air compressors feature a cast iron crankcase, Teflon-composite compression and rider rings, lubricated and totally sealed bearings, stainless steel reed valves, non-asbestos gaskets.
5. Each compressor shall be belt driven by a ____ HP, 3 phase, 60 cycle, _____ volt, 1750 RPM, ODP NEMA construction motor. Slide bases for convenient belt tension adjustment and totally enclosed OSHA approved belt guards shall be provided.
6. Each air compressor shall have a capacity of _____ SCFM at 100 PSIG.
7. The system shall include individual compressor inline intake filters, discharge check valves of bronze construction, safety relief valves, bronze intake and discharge flexible connectors, solenoid unloaders, isolation valves, air cooled after coolers for each compressor, high discharge temperature shut down switches on each cylinder, pressure control switches, as well as copper tubing with shut-off cock for gauge and switches.
8. The system shall include a 240 gallon pressure storage tank of ASME construction rated for 200 PSI MWP service. The tank shall be equipped with a pressure gauge, safety relief valve, 3 way by-pass, gauge glass and automatic electronic tank drain

with manual override. The inside of the tank shall be coated for rust protection with a two component coating which provides a hard, durable lining.

9. Provide vibration mounting per NFPA 99.
10. Control System:
    a. The system shall include a UL listed control panel in a NEMA 12 enclosure with the following accessories for each pump:
        i. Externally operable circuit breaker with door interlock, control circuit transformer with fused primary and secondary coils, H-O-A switch, magnetic starter with 3 leg overload protection, hour meter and motor running light and minimum run timer to prevent short cycle operation.
        ii. Provide the panel with a plug-in type programmable controller with removable terminals to allow quick and easy replacement in the field. The system should be designed to function even if the programmable controller fails. If one of the pumps is out of service the system control shall omit the pump from the alternating cycle, automatically alternating between the remaining pumps only. The system shall revert to normal alternation automatically when the condition is corrected. In addition to standard automatic alternation, the system shall be equipped with forced time alternation in the event that the pump is unable to satisfy the demand in 30 minutes. The system shall be equipped with a flashing light pump failure alarm/shutdown at any of the following conditions: motor overload tripped, main disconnect is off, blown fuse, control transformer failure, starter coil failure, H-O-A is off.
        iii. Provide audible and visual local alarm (complete with indicating lights and individual sets of auxiliary contacts wired to the terminal strip for remote alarm indication) for the following: compressor temperature malfunction and reserve compressor in use.
        iv. Provide manual reset for thermal malfunction shut-down. All control and alarm functions shall remain energized while any compressor in the system remains electrically on-line. The lag compressor shall be able to start automatically if the lead compressor fails to operate.

11. The compressed air system shall be guaranteed in writing by the manufacturer for a period of 12 months from the date of start-up or 18 months from the date of shipment (whichever comes first) against defects in design, materials, or construction.
12. The service of a factory trained representative shall be made available at the jobsite to check installation, start-up and instruct operating personnel in the proper operation and maintenance.