1. MEDICAL AIR TREATMENT SYSTEM WITH DESICCANT AIR DRYERS

A. Furnish and install, where shown on the drawings a prefabricated Medical Air Treatment system with desiccant air dryers model 3DDF_____ as manufactured by EMSE Corporation, Fairfield, NJ (1-800-935-EMSE).

B. 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.

C. The EMSE CORPORATION Duplex Desiccant Air Dryer system shall be a completely packaged NFPA 99 and NEC compliant assembly featuring redundant twin tower desiccant air dryers with integral purge saver control, dual 0.3 micron pre-filters, dual 1 micron after-filters, line pressure regulating valves, dew point monitor, CO monitor, test port, and other accessories required to meet and exceed the current code requirements.

D. All components shall be pre-piped and pre-wired to single-point service connections in the field to eliminate field assembly errors, simplify installation and reduce installation costs. The only field connections are air intake, air discharge and power connection. All interconnecting copper/brass piping as well as wiring is completed and operationally tested prior to shipment.

E. Each unit shall consist of two identical banks of air treatment equipment, piped in parallel and provided with valves to by-pass either bank for filter element replacement, maintenance and repair work while still treating medical compressed air through the other bank without any sacrifice in air quality. Each bank consists of three stages of treatment.

1. The first stage is a prime efficiency coalescer with particle removal down to 0.3 micron with 99.9999% retention. This filter removes aerosols and solid particles. The filter is equipped with electronic drain and element change indicator.
2. The second stage is a desiccant heatless air dryer. Each dryer is sized for 100% of the system NFPA peak calculated demand. The dryer is designed to provide a maximum dew point below the frost point of 0o C (+32oF) per NFPA 99. The dew point is attained by directing the flow of saturated compressed air over desiccant which is contained in two separate but identical "twin" towers. As the saturated compressed air flows though the "on line" tower, its moisture adheres to the surface of the desiccant. A solid state controller automatically cycles the flow of compressed air between the towers. While the "on line" tower is drying, the "off line" tower is regenerating. Built-in purge saver control will automatically minimize and adjust the amount of purge air to match the variable air flow.

3. The third stage is a prime efficiency particulate after filter with particle removal down to 1 micron. The after filter element is provides high particle retention, low pressure drop and long element life.

F. Downstream pressure regulators will maintain constant discharge pressure of 55 PSIG (field adjustable).

G. Digital dew point and CO monitors with alarm set points at +390F and 10 PPM are provided with dry contacts for connection to remote alarm panels. A "demand check" for maintenance is included per current NFPA 99 for each instrument.

H. The system includes a UL labeled control panel in a NEMA 12 enclosure. The panel includes a power "On-off" switch and individual dryer dual control selector switches for "Purge saver" and "Desiccant regeneration. Local audible and visual alarms are provided per NFPA 99 for high dew point and high carbon monoxide. The alarms include indicating lights as well as the horn. The audible alarm can be acknowledged with the "Silence" button. The visual alarm will remain energized until the problem has been corrected. Each alarm function includes a set of dry contacts for connection to the master alarm.

I. The Medical Air Treatment System and its component parts will undergo a complete electric and pneumatic test prior to shipment.

J. The Medical Air Treatment System is guaranteed 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.

K. The service of a factory trained representative will be available at the jobsite to check installation, start-up and instruct operating personnel in proper operation and maintenance.