

City of Minot Specifications

Breathing Air Compressor

The unit described under these specifications shall be the manufacturer's latest breathing air compressor/fill station and meet the following minimum specifications. Any deviations from the following minimum specifications must be noted and may be accepted if approved by the Fire Chief. Bidder shall provide brochure showing the following minimum specifications. Any deviations from the specifications shall be clearly explained and attached to the bid proposal. Bid must also contain warranty information.

General Specifications:

Comply Y/N

The unit shall be an enclosed package. The unit shall be packaged in an appliance style fashion and all exposed ferrous metal panels shall be powder coat painted. The unit shall be manufactured with (4) through holes on the base mount plate to facilitate the customers' needs to bolt the unit to the floor if deemed necessary. All components on the unit shall be located inside the confines of the base dimensions of the unit. The standard dimensions shall be 94" L x 34" D x 72" T.

There shall be (2) bolt on style, panels on the rear of the unit. The rear top panel shall be designed to be removed if major work on the compressor block is required and the rear lower panel shall be designed to be removed to gain access to the electric drive motor. There shall be a left hand and a right hand hinged access door to facilitate service and minor repairs on the unit. Each door shall have dual latching locks that require only a one finger push action to perform the function of deactivating the lock(s). The left door shall be equipped

City of Minot Specifications

Breathing Air Compressor

with a safety switch. The safety switch shall be integrally wired to the PLC to eliminate the possibility of startup of the unit while the door is in the open position. If the unit is in the operational mode and the access door is dislodged the unit shall immediately cease operation as well as provide the operator with the correct information, on the display screen, that the left door is ajar. An audible alarm shall also sound if the door is dislodged, while in the operating mode.

There shall be a lower door on the front of the unit to gain access to the purification system and other vital control components. This door shall have dual latching locks that require only a one finger push action to perform the function of deactivating the lock(s). The operator panel shall be located on the front of the machine. It shall be located at a reasonable height so that the operator can perform all the operational and calibrating duties required as well as monitor vital visual components without stress to oneself. The operator panel shall have a clearly marked and labeled gauge for each stage of compression. The oil pressure, purification pressure and the control pressure shall be displayed digitally on the display screen. The operator panel shall have an interactive display screen that can notify the operator of the current status of the unit, allow for further interactions, as well as perform the ON/OFF feature. The operator panel shall have a palm style Emergency Stop button, a non-resettable analog hour-meter, and an audible alarm. The operator panel shall have a centrally located hinged fold down door to gain rear access to all the panel mounted components.

There shall be a removable top panel on the unit. The top panel shall contain an electric fan to discharge heat from the internal cabinet, while the unit is in the operational mode. The fan shall be covered and shrouded to eliminate the chance of foreign objects entering the bladed area. Additionally, there shall be a 1 1/2" FNPT port mounted on the top panel. This port shall facilitate the use of an outside air intake, if desired.

Compressor Package features.

City of Minot Specifications

Breathing Air Compressor

Comply Y/N

A PLC (programmable logic controller) shall be located in the main electrical box. A key pad interface and display screen shall be located on the operators' panel. All compressor functions and faults are viewed on the display screen as their function occurs. The ON/OFF function shall be controlled from the same location. A blue colored background is displayed, on the screen, for all normal information. A red colored background is displayed, on the screen, for information such as a fault input. The standard fault inputs shall be displayed as motor overload, door switch(s), high CO, high temperature, high ambient temperature, low oil pressure, power loss, auto condensate failure and high condensate fluid level. All faults shall be accompanied by an audible alarm. All audible alarms shall be accompanied by an "Acknowledge" button on the screen. This shall allow the operator the choice to silence the alarm after the fault has been signaled. All electrical solenoids and control related appliances shall operate at 24 VDC. (1) Exception is the cabinet exhaust fan that shall operate at 120 VAC.

Sample Tap System (STS). There shall be an air quality sampling port located on the operators' panel. This system shall facilitate the process of retrieving an air sample, using a Lawrence Factor brand air testing vessel. It shall have an interactive tutorial on the display screen to guide the operator through the process of retrieving an air sample.

A standard ODP electric motor shall be used as the prime mover. The horsepower and voltage of the motor shall be 10 horse power 220/1/60 VAC. It shall have an adjustable motor base plate and utilize standard "V" belts to transfer its rotational properties to the compressor block.

The unit shall be equipped with an Automatic Condensate Drain system (ACD). This system shall drain the compressor condensate every 20 minutes of continuous run time as well as every time the compressor shuts off. The ACD shall be equipped with an electronic monitoring system that will automatically turn the unit off if it has determined that the ACD has not satisfactorily

City of Minot Specifications

Breathing Air Compressor

depressurized and released the proper amount of condensate during either one of the above-mentioned conditions.

Compressor block statistical requirements.

Comply Y/N

- Rated at 13 SCFM, 6000 PSI at 1080 RPM's.
- 5 stage, 5 cylinder reciprocating radial design. No stacked pistons.
- Cast iron block and cylinders.
- Cast iron connecting rods with needle bearings.
- Pressurized oil lubrication system with external spin-on style disposable filter. 5 quart oil sump capacity. (synthetic oil)
- Interstage relief valves on 1st through 4th stage.
- Aluminum interstage coolers on 1st, 2nd, and 3rd stage. A stainless steel interstage cooler on 4th stage as well as a stainless steel after cooler on 5th stage.
- Water separator on 2nd, 3rd, and 4th stage.
- All compressor pistons are of the ringed variety.
- Single piece flywheel. 1 groove, B-section, belt drive.
- Ambient temperature operating range. 32-115 degrees Fahrenheit.

Purification system statistical requirements.

Comply Y/N

- Processes on average 40,000 cu. ft. at STP.
- (1) 33" aluminum chambers with disposable style purification cartridges.
- (1) Aluminum mechanical separator chamber with disposable coalescing element.
- Service vent valve.
- Final pressure relief valve.
- Serviceable check valve.

City of Minot Specifications

Breathing Air Compressor

- . Back pressure maintaining valve.
- . Final pressure gauge.
- . Purification isolation valve.
- . Dual pressure adjustable final pressure transducer with adjustable dead band feature.

Fill Station:

Comply Y/N

There shall be an integrated, UL Classified front loading 2 position containment fill station within the unit. It shall be designed to fill a single cylinder or up to (2) SCBA's or 80 cu. ft. SCUBA cylinders simultaneously. There shall be an individual shut off valve and vent valve for each point of attachment. It shall be equipped with an interlocking safety switch that will prohibit the transfer of air into the cylinder if the fill station door is dislodged from its most upright position. The side walls and rear wall of the fill station shall be comprised of dual layers of 3/16" steel and shall be designed to vent and misdirect the air flow in the event of a ruptured vessel. The front door shall be designed with a major formed door panel that shall be comprised of 3/16" steel. There shall be a steel form fitted exterior door panel that shall be designed to move vertically into the locked and unlocked position as the operator moves the door handle. The exterior door panel shall be designed as to not require any supplemental lubrication or air operated valves to aid in the advancement or contraction of the doors position. The complete containment fill door shall be designed with 2 separate door height openings. The first door height opening position shall stop at a comfortable height for the operator to remove or attach the fill adapter to the cylinder. The second door height option shall allow the operator to fold the door down to comfortable load height as if loading vessels from ground level. The door handle shall be designed with a positive latching mechanism to secure the door in its most upright position. To unlock the door the operator shall be required to apply a light amount of downward force on the handle then rotate the cylindrical gripped portion of the handle towards the operator then advance the complete door handle in an upward motion. To lock the door the operator shall push down on the complete

City of Minot Specifications

Breathing Air Compressor

door handle assembly until the positive latching mechanism has been engaged. Both the door handle operation and the door opening and closing functions shall require minimal operator force, as in a single hand operation.

Air Control Panel:

Comply Y/N

There shall be an integrated 4 bank air control panel mounted on the cabinet. It shall have an individual liquid filled gauge and shut off valve for each bank. There shall be an adjustable 0-6000 psi regulator with a regulated pressure gauge. There shall be an individual shut off valve and SCBA gauge for each point of fill in the cabinet. There shall be an automatic refill circuit for the storage system. The auto refill circuit shall be equipped with a priority fill system and a storage refill isolation valve. There shall be a high pressure unregulated outlet port on the front of the panel. A regulated port can be chosen at no extra charge in lieu of the unregulated circuit. It shall be plumbed common with the existing SCBA adjustable regulator. The panel shall be strategically color coded striped to offer the operator a clear account of the air transferring process.

Storage:

Comply Y/N

The unit shall be equipped with (4) ISO/UN cylinders rated at 510 cu. ft. @ 6000 psi. They shall be securely mounted in the rear of the unit in a vertical configuration. The storage system shall be factory plumbed to the air control panel and leak checked prior to shipping.

City of Minot Specifications

Breathing Air Compressor

Optional equipment requested.

Comply Y/N

- CO monitor wired for auto shut down per NFPA standard.
- Electronic moisture monitor that displays in ppm's. Shut off shall occur if the unit exceeds 24 ppm.
- Maintenance/parts manuals, including wiring, plumbing diagrams, engine breakdown and overhaul manuals.
- 1 set of service filters (oil, purification, and coalescing element) and 5 quarts oil.
- 2 air sample bags.

Other options

Comply Y/N

Delivery to Minot