

**CITY OF KENOSHA
KENOSHA FIRE DEPARTMENT BREATHING AIR COMPRESSOR AND FILL STATION
EQUIPMENT
NO. #18-16**

ISSUED: NOVEMBER 17, 2016

NOTICE TO BIDDERS

Sealed bids will be accepted by the City of Kenosha, in the Department of Finance, Municipal Office Building, 625 52nd Street, Room 208, Kenosha, Wisconsin until:

Tuesday November 29, 2016 at 3:30 P.M.

for providing breathing air compressor and fill station equipment per City of Kenosha specifications.

Bids shall be sealed and submitted on the attached bid form. Sealed envelopes shall be clearly marked with the scheduled date and time of opening, clearly marked "Breathing Air Compressor / Fill Station" and procurement number 18-16. Submittals received after this deadline will not be considered. Forms must be thoroughly completed, signed and dated. No faxed or other electronically communicated submittals will be considered.

The City of Kenosha reserves the right to accept or to reject any or all proposals or to accept any proposals deemed the most advantageous for the City in terms of quality of product, product design, product capabilities and cost. Additionally, the respondent's approach in satisfying the requirements of the Kenosha Fire Department will be key. It is the intent of the Kenosha Fire Department to have the compressor, fill station and purification system of the same manufacturer.

Specifications for a high pressure compressor fill station and purification system to supply breathing air shall meet or exceed the requirements of CGA Pamphlet G-7, Compressed Air for Human Respiration, and the requirements of ANSI / CGA G-7.1, Commodity Specifications for Air, Grade E and all other recognized standards for respirable air. System shall be designed for a maximum working pressure of 6000 p.s.i.g. (capacity at 70 degrees fahrenheit).

Equipment shall be new, of current design and manufacturer, and not refurbished or used. The equipment shall be fully intact and operable at time of delivery, with no damages or defects sustained during its manufacturing or delivery.

All costs provided are complete and exact amounts. Key components of these costs including the installation and equipment training of Fire personnel should be specified. Technical literature that demonstrates compliance to the specifications shall be provided with the bid submittal.

On-site inspections for verification purposes of footprint location / size and other resources is not mandatory but highly recommended. To correct any unforeseen circumstances or situations not addressed in the bid price because of unfamiliarity with the project is entirely the respondent's responsibility.

Award shall be made within thirty (30) days of the submittal deadline to the lowest responsive and responsible respondent.

Equipment delivery shall be F.O.B. Destination to the following address: 4810 60th Street, Kenosha, WI. 53144. The installation shall be at the same location.

The City of Kenosha is exempt from Federal Excise Tax and State Sales Tax, therefore, proposals should be made exclusive of any such taxes. A Tax Exemption Certificate and/or Tax Exemption Registry Number will be furnished to the successful proposer.

Any questions, inquiries, or concerns regarding the equipment specified shall be directed to Breathing Protection Specialist John Vos of the Kenosha Fire Department at (262) 925-5841 or (262) 358-2725. His e-mail is jvos@kenosha.org Please contact Mr. Vos to schedule an on-site inspection as well. Questions and inquiries related to the solicitation process shall be directed to Mark Willing, Purchasing Manager, City of Kenosha at (262) 653-4180 or mwilling@kenosha.org

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SPECIFICATIONS

1.0 General.

- 1.1 The entire breathing air module shall be integrated into a single free standing unit. The system shall consist of a fill station, compressor, electric drive motor, electrical control system, purification system, and instrumentation mounted on a steel frame. The steel frame shall be designed for both static and dynamic loads of the system and of sufficient size to adequately accommodate all of the system's components. The arrangement of components on the frame shall permit installation flush against a wall without restricting cooling air flow to the compressor and the electric drive motor. Location shall provide access for operation and maintenance. The unit shall be designed so that all operating controls and performance indicators are located on a front panel. The enclosure shall contain sufficient sound absorbing material to reduce sound levels to 95 decibels or less.
- 1.2 All high pressure air plumbing shall be rated for 6000 p.s.i. working pressure and utilize seamless stainless steel tubing. All piping and tubing shall be installed in a neat and orderly arrangement. The electrical control system shall include components with UL, NEMA or IEC approval and housed within a NEMA 1 enclosure. The new compressor will be installed at Fire Station 4 located at 4810 60th Street Kenosha, WI 53144.
- 1.3 Cited Standards. Specifications for a high pressure compressor fill station and purification system to supply breathing air shall meet or exceed the requirements of CGA Pamphlet G-7, Compressed Air for Human Respiration, and the requirements of ANSI / CGA G-7.1, Commodity Specifications for Air, Grade E and all other recognized standards for respirable air.

2.0 Compressor.

- 2.1 The compressor shall be an air cooled, oil lubricated, five (5) or four (4)- stage reciprocating type designed for continuous duty at 6000 p.s.i. To reduce operating temperatures and subsequent early failure, an aluminum alloy crankcase is preferred. Charging rate shall be at minimum 20 c.f.m. at 6000 p.s.i.
- 2.2 Intercoolers shall be provided after each stage of compression to cool the discharged air to eighteen (18) degrees fahrenheit above ambient temperature.
- 2.3 Accumulated condensation collected from the moisture separators shall be discharged from the unit using an automatic condensate drain. A separator will be utilized after the second, third, fourth, and fifth (when applicable) stage of compression. The automatic drain shall also operate prior to the compressor shut down to purge the system from condensation. A condensation reservoir is to have a high level alarm to alert the operator with an automatic shut down of the compressor. Manual operated valves are to be installed in addition to automatic drain.
- 2.4 Low oil pressure will cause a system shutdown to prevent any damage. Filling SCBA's will be available during a shutdown by utilizing storage.

- 2.5 Compressor is to be a low pressure system with a positive displacement oil pump, oil pressure regulator, full-flow oil filter (replaceable element), and sight glass for oil level. Oil drain is to be plumbed to the outside of unit to reduce oil spills within the confinement of the compressor.
- 2.6 The compressor shall be equipped with an inlet filter with replaceable elements.

3.0 Electric Motor.

The compressor shall be V-belt driven by a 15-20 HP, open drip proof electric motor and wired for single or three (3) phase, 60 Hz, 120/208 volt current. The belt drive shall be designed to adjust the belts automatically. The V-belt drive shall be suitably guarded.

4.0 Electrical Control.

4.1 The Breathing air compressor system shall include all necessary controls to assure efficient safe operation and monitor performance. Control panel is to be built to UL standards. A label is to be affixed to include UL label, system voltage, and electrical requirements.

4.1.1 As a minimum the electrical control system must include the following:

- .1 On/off switch
- .2 Hourmeter – Non-resettable
- .3 Low oil pressure shutdown
- .4 Temperature shutdown switch
- .5 Pressure switch to start compressor by based on demand
- .6 Emergency stop button
- .7 Overtime timer
- .8 Carbon Monoxide/Moisture monitor with shut off
- .9 Auto condensation drain

4.2 The compressor is to have the ability to fill SCBA cylinders from storage cylinders (with adequate pressure) in the event of a fault shut down.

4.3 All electrical wiring is to be protected with a flexible cover. Each wire is to be numbered and factory crimped.

4.4 All components mounted on the electrical box and/or instrument panel shall be located and arranged for visibility and accessibility by the operator for inspection and maintenance. All components shall be securely supported to eliminate vibration and undue force on instrument piping and to prevent damage during shipment, storage, operation, and maintenance. Each component shall be properly labeled.

5.0 Purification System.

5.1 The purification system shall purify high pressure air to a quality that meets or exceeds the requirements of CGA Pamphlet G-7, Compressed Air for Human Respiration, ANSI / CGA G-7.1, Commodity Specification for Air Grade E, and all other recognized standards for breathing air. The high pressure purification chambers shall be constructed of stainless steel with a working pressure of 6000 p.s.i.

5.2 The purification system shall utilize replaceable cartridges. The purification system shall be designed so that the replacement of the cartridges can be accomplished without disconnecting system piping.

The design of the chambers shall preclude the possibility of operating the system without cartridges or improperly installed cartridges. A bleeder valve shall be provided to vent the purification system to facilitate replacing the cartridges. A pressure maintaining valve and a check valve shall be supplied downstream of the purification system to increase the efficiency of the purification system by maintaining a positive back pressure. A check valve shall be supplied to maintain a positive pressure in the purification system when the compressor shuts down.

5.3 Monitoring system is to include moisture and carbon monoxide detection.

6.0 Air Storage.

6.1 Storage cylinders are to be integral to the compressor. Storage shall have a capacity of four (4) ASME cylinders. Each storage cylinder is to have a capacity of 491 cubic feet at 6000 p.s.i.g. (capacity at 70 degrees fahrenheit). Storage cylinders are to be mounted in a fashion for visual inspection. Each cylinder will be mounted with manual drain valve, isolation valve, and safety relief valve.

6.2 The bid shall not include the trade-in value of any ASME storage cylinders. All four (4) storage cylinders will be provided from current compressor at Fire Station 4.

7.0 Fill Control.

7.1 SCBA cylinder fill control system shall include a regulated panel with all necessary components. Components shall include control devices and piping arrangement necessary to direct the compressed high pressure breathing air to the air storage system and the SCBA cylinders being filled. An auxiliary outlet to fill remote air storage shall also be provided (100 ft. retractable reel) as an option.

7.2 Fill control will allow filling minimum of three (3) SCBA units either independently or simultaneously. The cascade control system shall permit filling or drawing down each air storage cylinder, independently of each other, while filling SCBA cylinders. An air storage by-pass valve shall be included to permit filling SCBA cylinders or through the auxiliary outlet directly from the compressor.

7.3 All airflow components and indicators must be labeled and mounted on a steel control panel on the front of the unit and located above the fill enclosure. The panel shall be illuminated.

7.4 At a minimum, the air control panel must include the following:

- .1 Inlet pressure gauge.
- .2 Adjustable, 0-6000 p.s.i. self-relieving regulator.
- .3 Regulator outlet pressure gauges.
- .4 Storage *fill or by-pass* (a) valve
- .5 SCBA cylinder(s) fill control valve.
- .6 SCBA cylinder(s) fill pressure gauge.
- .7 Auxiliary outlet with flow control valve and CGA fitting.
- .8 Panel lights on/off switch.

8.0 Fill Station.

8.1 Fill Station is to be designed to house minimum of three (3) SCBA cylinders with a maximum height of 31" including valve and fill attachment.

- 8.2 The enclosure shall be designed to contain the impact of suddenly expanded high pressure air and all displaced fragments in the unlikely event of a cylinder or fill component rupture. The loading door must be designed to be trapped inside the fill enclosure cabinet frame when closed. The design must include an automatic, safety interlock to prevent filling unless the loading door is completely in the closed position.
- 8.3 The external construction of the high pressure, breathing fill station shall be appliance-like; using formed fabricated steel structures and panels without visible welds, burrs or grind marks.
- 8.4 The fill station must allow the fill process to be accomplished from the front. The front loading shall be designed so that, when opened, the SCBA cylinder holder sleeves tilt forward to ease loading and minimize operator fatigue. Each fill whip to be fabricated with a cylinder fill adapter and shut-off valve, shall be located within the enclosure.
- 8.5 When fully closed, the door shall trip a safety interlock allowing air to flow to the air station. The access door shall be designed in such a fashion that it is balanced and effortless to operate.
- 8.6 In order to minimize operator handling of pressurized components, a bleed valve shall be located on the control panel to relieve all fill hoses of pressure after opening front loading door and before disconnection from the SCBA cylinders.

9.0 Installation.

- 9.1 The bid price should include shipping, handling, training, and installation including fresh air intake from the outside. An electrician will be provided by the City for electrical needs of installation.
- 9.2 The complete system shall not exceed the dimensions of 80"H x 108"W x 48"D.
- 9.3 The system shall not require a special foundation. On-site evaluation is recommended by any parties submitting a bid. If awarded the project, a respondent who did not perform an on-site inspection shall not ask for additional payment for a situation that was unforeseen because they did not familiarize themselves to the location of installation.

10.0 Testing.

The system shall be tested by the manufacturer prior to shipment. A copy of the manufacturer's test reports shall accompany the system at shipment.

11.0 Training / Maintenance Manuals.

Two (2) operators instruction and maintenance manuals shall be provided along with a spare parts list, warranty information and startup/ warranty registration form. A list of available accessories and prices can be included with the submittal.

12.0 Certification.

Kenosha Fire Department would like to entertain the option of sending minimum of two (2) members to technician schooling. This option should be provided in the bid to cover costs associated with such education, (not to include associated travel costs).

13.0 Warranty.

The system shall be warranted free from defects in material and workmanship for a period of not less than two (2) years from the date of installation. The engine block is to have a warranty to be a minimum of five (5) years. The warranty shall not impose limitations on the systems accumulated operating hours during that period. Warranty provisions / exclusions to be stated on the bid form.

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BID FORM

Make/Model: _____

	<u>QTY.</u>	<u>EXTENDED COST</u>
Breathing Air Compressor:	1	\$ _____ *
SCBA Fill Station: (minimum of 3 cylinders)	1	\$ _____ *

* Extended costs shall include all installations (including installation of an exterior fresh air intake BUT NO ELECTRICAL) and staff training on the equipment.

Optional Costs:

Auxiliary Outlet for Fill Remote Air Storage
(w/ 100 ' retractable reel) \$ _____

Technician Training for two (2) Department
Staff (excluding travel). \$ _____

Specify exceptions to Warranty Coverage Provision(s) / Requirements in Specifications:

Submitted by: _____

Firm: _____

Signature: _____

Print name: _____

Date: _____

Address: _____

Phone: () _____

Fax: () _____

E-mail: _____

Payment Terms: _____ % _____ days Net _____ days