



3M™ Scott™ Industrial Mobile Air Cart

General Specifications

The unit shall be capable of providing a portable source of compressed breathing air to supply users of any of three types of breathing apparatus: (1) self-contained breathing apparatus (SCBA) with an extended duration airline, (2) Type C airline respirators or (3) combination escape self-contained breathing apparatus (SCBA)/Type C respirators. The unit shall be used to provide Compressed Gas Association (CGA) Specification G-7.1 Grade D or better breathing air for human respiration.

The unit shall not exceed the following dimensions:

Height, handle fully extended: 40 9/16" (103.1 cm)
Height, handle fully contracted: 27 5/16" (69.4 cm)
Width:..... 18 1/2" (47.0 cm)
Depth: 15 1/4" (38.7 cm)
Weight of 2 respirator outlet, less cylinders: no more than 41 lbs. (18.6 kg)
Weight of 4 respirator outlet, less cylinders: no more than 43 lbs. (19.5 kg)
Weight of 4 respirator outlet, 2 tool outlet, less cylinders: no more than 46 lbs. (20.9kg)

The unit shall consist of six major assemblies: removable high pressure manifold assembly panel, auxiliary high pressure inlet for cascade or breathing air compressor supply, low pressure manifold assemblies, pneumatic alarm, cylinder valve couplings and the mobile air cart frame with wheels.

The unit shall be suitable for use in atmospheres that are considered not Immediately Dangerous to Life and Health (non-IDLH), including atmospheres containing not less than 19.5% oxygen, unless respirators in use are equipped with an emergency backup air supply of sufficient duration to permit escape from an IDLH atmosphere.

The successful bidder agrees to provide, at his own expense, a factory-trained instructor for such time as the mobile air cart user shall require for complete instruction in the operation and maintenance of the mobile air cart. Any exceptions to these specifications must be detailed in a separate attachment and failure to do so will automatically disqualify the bidder. The successful bidder must be a sales distributor, authorized by the factory, to sell the equipment specified herein.

Operational Requirements

High Pressure Manifold Assembly Panel

The unit shall consist of a high pressure manifold assembly panel that shall be constructed of 14 gage, ASTM 569 commercial grade steel sheet and coated with DuPont polyester powder coat in red. All inlets, outlets, gauges, regulators, and warning devices shall be silk-screened on the assembly panel in white, per ANSI Z535.4-1998 Standards. The removable high pressure manifold assembly panel shall be available in three configurations for modularity in design, including a two respirator outlet, a four respirator outlet, and a four respirator outlet/two tool outlet panel. The panels shall consist of quick disconnects for respirator and tool supply, respirator and tool outlet pressure gauges reading in psig and bar, and respirator and tool outlet pressure regulator that may be dialed up as more users connect to the manifold supplies.

The four respirator outlet panel shall be equipped with punch-outs in the steel sheet to enable field upgrades to the two tool outlet option. The assembly panel shall be mounted on the mobile air cart frame with wheels and held in place with 2 screws and washers. The high pressure manifold assemblies and pneumatics are guarded by the steel sheet from entanglements and mechanical damage. Removable high pressure manifold assembly panel can be easily disassembled for maintenance and service

Auxiliary High Pressure Inlet

The unit shall consist of an auxiliary standard valved air supply inlet with stainless steel quarter turn ball valve. The auxiliary inlet shall be a standard CGA 347 male thread and dust cap with lanyard for cascade or breathing air compressor supply up to 5500 psig (379 bar). Auxiliary high pressure inlets are supplied standard with all mobile air carts for use with high pressure cascade systems and/or breathing air compressors supplying Grade D or better breathing air.

Low Pressure Manifold Assemblies

The unit shall come equipped with either two, four or six quick disconnect low pressure outlet ports for distributing CGA Grade D or better compressed breathing air for human respiration. The quick disconnect outlets shall be supplied standard with dust caps with lanyards.

Two Respirator Outlet Supply Manifold

The two respirator outlet supply manifold shall be capable of supplying two respirator users with breathing air at 3.5 scfm (100 slpm), at 30 breaths per minute with no respirator exhibiting negative pressure. The respirator supply regulator and manifold assembly shall be capable of supplying a 22.2 scfm (630 slpm) minimum flow with a regulator inlet supply pressure between 4500 psig and 500 psig (310 bar and 35 bar). The inlet pressure range shall be between 0-5500 psig (0-380 bar) with the inlet pressure gauge range reading between 0-7500 psig (0-517 bar). The respirator supply outlet pressure range shall be between 0-125 psig (0-9 bar) +/- 10 psig (+/- 0.7 bar) maximum (preset at the factory). The respirator supply outlet pressure gauge range shall read between 0-160 psig (0-11 bar).

Four Respirator Outlet Supply Manifold

The four respirator outlet supply manifold shall be capable of supplying four respirator users with breathing air at 3.5 scfm (100 slpm), at 30 breaths per minute with no respirator exhibiting negative pressure. The respirator supply regulator and manifold assembly shall be capable of supplying a 49.4 scfm (1400 slpm) minimum flow with a regulator inlet supply pressure between 4500 psig and 500 psig (310 bar and 35 bar). The inlet pressure range shall be between 0-5500 psig (0-380 bar) with the inlet pressure gauge range reading between 0-7500 psig (0-517 bar). The respirator supply outlet pressure range shall be between 0-125 psig (0-9 bar) +/- 10 psig (+/- 0.7 bar) maximum (preset at the factory). The respirator supply outlet pressure gauge range shall read between 0-160 psig (0-11 bar).

Four Respirator Outlet, Two Tool Outlet Supply Manifold

The four respirator outlet supply manifold shall be capable of supplying four respirator users with no respirator exhibiting negative pressure under the following conditions (conditions are occurring simultaneously):

- Breathing air at 3.5 scfm (100 slpm) at 30 breaths per minute
- Flowing air through the tool supply manifold at a minimum of 10.6 scfm (300 slpm)

The respirator supply regulator and manifold assembly shall be capable of supplying a 49.4 scfm (1400 slpm) minimum flow with a regulator inlet supply pressure between 4500 psig and 500 psig (310 bar and 35 bar). The inlet pressure range shall be between 0-5500 psig (0-380 bar) with the inlet pressure gauge range reading between 0-7500 psig (0-517 bar). The respirator supply outlet pressure range shall be between 0-125 psig (0-9 bar) +/- 10 psig (+/- 0.7 bar) maximum (preset at the factory). The respirator supply outlet pressure gauge range shall read between 0-160 psig (0-11 bar).

The tool supply manifold shall be supplied as a factory installed component. The tool supply, fed by the respirator supply manifold shall be equipped with two outlets that shall flow a minimum of 10.6 scfm (300 slpm) at 90 psig (6.2 bar). A check valve shall be installed to prevent cross flow from the tool manifold to the respirator supply manifold. The tool supply inlet pressure range shall be between 0-125 psig (0-9 bar). The tool supply inlet pressure gauge range shall read between 0-160 psig (0-11 bar). The tool supply outlet pressure range shall be between 0-125 psig (0-9 bar). The tool supply outlet pressure gauge range shall read between 0-160 psig (0-11 bar).

The relief valve on all configurations shall be factory preset to 150 psig (10 bar) ASME preset 136 scfm (3851 slpm) flow rate.

Pneumatic Alarm

The unit shall come equipped with a pneumatic aspirating whistle alarm to warn of low cylinder pressure. The pneumatic alarm shall be factory preset to function at 500 psig +/- 25 psig (35 bar +/- 1.7 bar), regardless of cylinder pressure that is being utilized for supply through cylinder valve couplings or auxiliary high pressure inlet. The pneumatic alarm shall stay in active mode until the system pressure falls below 100 psig (7 bar).

Cylinder Valve Couplings

The unit shall come equipped with two cylinder whip assemblies, designed to be adjustable to accommodate any Scott Safety cylinder. The cylinder valve couplings shall be equipped with standard CGA 347 handtight nuts and nipples, rated at a 4:1 safety factor. The cylinder valve couplings shall be equipped with bleeder valves for depressurization of hand-tight nuts, also equipped with check valves to facilitate independent cylinder operation. The unit shall be capable of using 2216, 3000, 4500 and 5500 psig (or 153, 200, 300, and 379 bar) cylinders in any combination of 30, 45, 60 and 75-Minute durations.

Mobile Air Cart Frame with Wheels

The unit shall come equipped with a cart frame with wheels that shall be constructed of 14 gage, ASTM 569 commercial grade steel sheet and coated with DuPont polyester powder coat in red. The cart frame shall have a fixed wheel assembly with low center of gravity. The cart handle shall be vertically adjustable with handwheel rosette on reverse of frame. The cart frame shall be supplied standard with drain holes in cylinder deck for removal of moisture. The unit shall provide for retention of cylinders of varying diameters with adjustable polyester straps equipped with Velcro and alligator clip closures. The cylinder deck shall be lined with a removable EPDM rubber bumper strip to prevent wear and tear during change-out of cylinders.

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