

**SPECIFICATION
FOR
COMPRESSOR, AIR
PORTABLE**

(This specification is released for procurement purposes until revised, or rescinded.)

SCOPE

This specification covers self-contained, portable, trailer mounted and skid-mounted gasoline and diesel engine driven air compressors.

I. CLASSIFICATION

Compressors shall be of the following types and shall deliver the following minimum capacities:

Type I - Trailer mounted
Type II - Skid mounted

Size A - 125 CFM @ 100 PSI
Size B - 150 CFM @ 100 PSI
Size C - 170 CFM @ 100 PSI
Size D - 250 CFM @ 100 PSI

II. APPLICABLE STANDARDS

The following documents of issue in effect on the date of the Invitation for Bids shall form a part of this specification to the extent described in REQUIREMENTS:

ASME Boiler and Pressure Vessel Code
American Society of Mechanical Engineers (ASME)
345 E. 47th Street
New York, NY 10017

Federal Occupational Safety and Health Act Standards
U.S. Department of Labor
200 Constitution Avenue, NW
Washington, DC 20210

State Occupational Safety and Health Act Standards
N.C. Department of Labor
OSHA Division
4 West Edenton Street
Raleigh, NC 27611

EPA Noise Emission Standard
Environmental Protection Agency (EPA)

III. REQUIREMENTS

A. DESCRIPTION

The unit shall be provided with complete cooling, lubricating, regulating, electric starting, air receiver, oil separator (if oil-cooled), fuel system, and all equipment necessary to constitute a complete self-contained unit.

B. EPA NOISE EMISSION STANDARD

The air compressor shall not produce an average sound level in excess of 76 dBA when measured and evaluated according to the procedures in Title 40, Protection of Equipment, Code of Federal Register (Section 204.50 et seq.).

C. OCCUPATIONAL SAFETY AND HEALTH ACT

The compressor shall be furnished with all applicable equipment and accessories as required by the Occupational Safety and Health Acts of both the United States and the State of North Carolina and shall comply with all regulations, rules, standards and interpretations lawfully adopted there-under.

The compressor noise shall not exceed OSHA requirements for 8-hour personnel exposure when measured on the A-scale of a standard sound meter. Ear plugs or other personnel protective devices are not acceptable to comply with this requirement.

D. ENGINE

1. Type

Unless otherwise specified in the Invitation for Bids, the engine may be gasoline or diesel fueled, and either air or liquid cooled. The engine unit including radiator, fuel tank and battery compartment shall be readily accessible for operation and maintenance.

2. Power Requirements

The engine, with accessories, shall produce the power required by the compressor, under full load without overheating.

3. Cooling

The liquid cooled engine shall have a cooling system of the pressure type and shall include a thermostat, radiator, fan, permanent type antifreeze to 0°F and circulating pump. It shall insure a cooling liquid temperature below 210°F when operating in an ambient temperature of 115°F at sea level. The air cooled engine shall have an efficient cooling fan to insure proper engine operating temperatures.

4. Lubrication

Pressure lubrication shall be provided for all main, connecting rod and camshaft bearings by means of a positive displacement oil pump. The system shall include a relief valve, oil filter, oil level indicator, crankcase ventilator, and an oil drain.

5. Air Cleaner

The engine air inlet shall have a rain cap and a heavy duty, dual element (primary and safety dry type elements), or a two-stage dry type air cleaner.

6. Starting and Electric System

A 12-volt starting and electrical system shall be furnished and will include starter switch, battery, generator or alternator, voltage and current regulator.

7. Muffler

The exhaust muffler will include a rain cap, rain deflector or other means to prevent rain entering the muffler.

8. Fuel Tank

The fuel tank will have a filler cap lock, if located outside of lockable hood, and fuel gauge. Tank capacity will allow for eight hours of continuous operation.

E. COMPRESSOR

1. Type

The compressor may be either a rotary or reciprocating type.

2. Capacity

The compressor shall deliver at least the cubic feet of free air per minute (Cfm) at the pressure (psig) as specified in the Invitation for Bids, under standard atmospheric conditions (14.7 psia), 60°F., 36% R.H.).

3. Compressor Oil System - (For oil cooled type)

The oil system shall cool the compressed air, seal compressor against air slippage, and lubricate moving parts.

A heat exchanger shall be used to cool compressor oil and shall include a thermostatic valve, oil filter and separator.

4. Air Cleaner

The compressor air intake shall have a heavy duty, dual-element (primary and safety dry type elements), or a two-stage dry type air cleaner.

5. Regulation

The regulation system shall maintain a receiver pressure of not less than 100 PSI for air demands up to full capacity.

F. AIR RECEIVER

The compressor unit shall be furnished with combined or individual oil separator and air receiver tanks designed according to the ASME Code for Unfired Pressure Vessels (Section VIII. Pressure Vessels). Two 3/4" air outlet valves shall be furnished on all size units. The 250 cfm unit shall also have one 1: (min.) outlet valve.

G. UNLOADER

An unloading system shall be provided.

H. PROTECTIVE DEVICES

Protective devices shall all be automatic and include, as applicable, the following:

1. Compressor high air discharge temperature shutdown.
2. Engine low oil pressure shutdown.
3. Engine high water temperature or high air temperature shutdown.
4. Blow-down valve.
5. Minimum air pressure check valve.
6. Air discharge check valve.

I. MOUNTING

1. Trailer Mounted

Compressor shall have a welded steel frame trailer, spring mounted, equipped with tires, heavy duty drawbar with lunette eye, safety chains and rear reflectors. Single axle trailers shall contain a retractable, swivel, pneumatic third wheel that locks into either position. A retractable drop leg may be furnished in lieu of the third wheel, provided the trailer can be easily handled by the drawbar.

2. Skid Mounted

Steel base shall consist of skid runners with a base plate for mounting components of the unit.

J. BRAKES

If specified in the Invitation for Bids, trailer mounted compressors shall be equipped with brakes controlled or operated by the driver of the towing vehicle as required by State of North Carolina General Statute 20-124.

K. HOUSING, LOCKS AND FENDERS

The unit shall be housed in a metal enclosure with a lifting bail and sliding or hinged side doors.

Locks shall be provided for side doors and control panel cover. Tool boxes shall have locks if not located within the lockable housing.

Fenders shall be provided.

L. INSTRUMENTATION

The instrument panel shall include:

1. Engine

- Coolant temperature gauge or indicator light.
- Lubricating oil pressure gauge or indicator light.
- Ammeter
- Hour meter

2. Compressor

- Oil pressure gauge or indicator light, if applicable.
- Interstage pressure gauge, if applicable.
- Discharge air pressure gauge.

M. EQUIPMENT AND ACCESSORIES

The following equipment and accessories shall be provided when specified in the Invitation for Bids:

1. Weatherproof tool boxes

Weatherproof tool boxes shall be built-in on each side of the unit of sufficient size to hold two (2) pneumatic paving breakers and one (1) tamper.

2. Hose reels

Double live hose reels, with 50' hose capacity each, shall be furnished with anchor for free end.

3. Hose

100' of 2-ply, 3/4" air hose, with oil resistant inner tube. Hose to be made up of two 50' coupled lengths, 50'in each reel. Each section to have 3/4" quick detachable couplings.

4. Automatic line oiler

- a) Install automatic line oiler without automatic shutoff (2 quart capacity minimum).
- b) Install automatic line oiler with automatic shut off(1 pint capacity minimum).

N. TOOLS

Any special tools required for maintenance of the unit shall be provided.

The compressor is to be equipped with the following air tools when specified in the Invitation for Bids:

- 1. Paving breaker
- 2. Jackhammer
- 3. Backfill tamper
- 4. Digging tool: (Spade) T-handle

IV WARRANTY

The contractor warrants to the owner that all equipment furnished under this specification will be new, of good material and workmanship, and agrees to replace promptly any part or parts which by reason of defective material or workmanship shall fail under normal use, free of negligence or accident, for a minimum period of 12 months from date put in operation. Such replace shall be free of any charge to the owner or his representative.

V. SERVICE, PARTS, AND MANUALS

If specified in the Invitation for Bids, the contractor shall furnish a qualified representative to instruct the owner's operator(s) in the operation and maintenance of the equipment for a minimum period of eight hours.

Operator's manuals, shop manuals and parts books shall be furnished as specified in the Invitation for Bids.

VI. ACCEPTANCE EVALUATION AND QUALITY ASSURANCE

Upon receipt of each compressor at the receiving point, the purchaser or his authorized representative shall arrange for an acceptance inspection for compliance with the provisions of this specification.

If specified in the Invitation for Bids, the contractor shall furnish a pilot model for examination, tests and possible modification and/or adjustment of attachments in accordance with this specification.

VII. DELIVERY AND PAYMENT

Delivery of and payment for compressors under this specification shall be in accordance with the terms and conditions of the Invitation for Bids. The contractor shall be responsible for any packing, packaging, or protection required to insure delivery in an undamaged condition.

Compressors shall be completely serviced and ready for operation when delivered.

VIII. ORDERING DATA

Purchasers should exercise any desired option offered herein and should specify the following:

1. Title, number, and date of the specification.
2. Type and size required (see Section I. CLASSIFICATION).
3. If gasoline or diesel engine is to be specified.
4. If air or liquid cooled engine is to be specified.
5. Accessories and air tools desired.
6. If trailer brakes are to be furnished.
7. Number of sets of manuals to be furnished.
8. If instruction in the operation and maintenance of the compressor is required (specify number of hours and site).
9. Whether or not a pilot model is to be furnished.