

**SPECIFICATION  
FOR  
COMPRESSORS, AIR  
INDUSTRIAL**

(This specification is released for procurement purposes until revised, or rescinded.)

**SCOPE**

This specification covers self-contained industrial air compressor units consisting of a compressor, electric motor, v-belt drive with controls, and other necessary components.

**I. CLASSIFICATION**

Compressors shall be of the following types and classes:

- Type I - Reciprocating, Single Stage
- Type II - Reciprocating, Double Stage
- Type III - Rotary, Vane or Screw

- Class 1 - Base Mounted
- Class 2 - Tank Mounted

**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:

Applicable NEMA Standards  
National Electrical Manufacturers Association (NEMA)  
155 East 44th Street  
New York, NY 10017

ASME Boiler and Pressure Code, Section VIII  
American Society of Mechanical Engineers (ASME)  
345 East 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

### **III. REQUIREMENTS**

#### **A. DESCRIPTION**

The compressor and its associated components shall be the manufacturer's standard product and shall consist of new and unused parts. The compressor unit shall be one of the types and classes under I. CLASSIFICATION, as called for in the Invitation for Bids. Suitable wiring and interconnecting piping between the compressor and controls shall be included.

#### **B. 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 (14.7psig, 60°F, 36% R.H.)

#### **C. COMPRESSOR**

The compressor shall be air cooled, self-oiling and insure adequate and complete lubrication to all working parts. When oil is mixed with air in the compression chamber, a means shall be provided to remove and recover the oil from the discharge air.

The compressor air intake shall be fitted with an air filter in accordance with the manufacturer's latest standard practice. The filter shall be of the dry type, with replaceable element readily removable for cleaning. An inlet silencer shall be furnished when specified in the Invitation for Bids.

#### **D. MOTOR**

The motor electrical characteristics and minimum horsepower shall be as specified in the Invitation for Bids. The motormount shall provide for belt tension adjustment and have an OSHA approved belt guard.

#### **E. STARTER**

The motor starting switch shall be suitable for operation with the specified motor. A magnetic starter shall be furnished for 5 hp and larger motors.

#### **F. INTERCOOLER**

Two stage compressors shall contain an air cooled intercooler with a safety valve for preventing excessive intercooler pressure.

#### **G. AFTERCOOLER**

If specified in the Invitation for Bids, a separate and independent water or air cooled aftercooler shall be furnished. The aftercooler shall contain a moisture separator and automatic condensate drain for removing accumulated moisture from the aftercooler.

## **H. AIR RECEIVER TANK**

The air receiver tank shall be of horizontal or vertical design as specified and shall be constructed in accordance with the ASME Boiler and Pressure Code, Section VIII. The minimum capacity and operating pressure required shall be specified in the Invitation for Bids. The tank shall be equipped with an ASME safety valve, air pressure gauge, line shut-off valve, and a suitable drain valve-and outlet cock.

## **I. CONTROLS**

Controls shall be one of the following, as specified in the Invitation for Bids.

### 1. Constant Speed Control

The compressor shall operate continuously at constant speed with provisions to automatically load and unload the compressor at preset minimum and maximum pressure settings respectively. Means shall be provided for the automatic release of pressure within the cylinders when the unit is operating without load. Means shall also be provided for the automatic unloading of the cylinders during the starting of the unit.

### 2. Automatic Start-And-Stop Control

When set for automatic start-and-stop control, the motor shall stop automatically when the discharge pressure reaches the maximum pressure setting and start automatically when the discharge pressure falls to the minimum setting. Means shall also be provided for the automatic unloading of the cylinders during the starting of the compressor.

### 3. Dual Control

The dual system shall consist of a combination of constant speed control and an automatic start-and-stop with adjustable pressure or range. A selector switch for automatic or constant speed control shall be provided.

### 4. Timed Control

When specified in the Invitation for Bids, the compressor shall be equipped with a timed control to stop the compressor after a 10-minute unloaded period if air is not used.

## **J. SAFETY FEATURES**

The manufacturer's standard safety features shall be provided. Additional safety features shall be furnished, as specified in the Invitation for Bids.

## **K. LABELING**

The air compressor unit shall be labeled as follows:

1. The name of the manufacturer, model number, and serial number shall be shown in a conspicuous place on the unit.
2. Air receiver tank shall have an ASME label denoting approval.

3. Electric motor shall have a nameplate stating name of the manufacturer, model number and the electrical characteristic. (Horsepower, volts, cycles, phase)

#### **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 of acceptance. Such replacement shall be free of any charge to the owner or his representative.

#### **V. SERVICE, PARTS, AND MANUALS**

The contractor shall furnish at least one copy of each of the installation (including wiring diagram), maintenance, and parts manuals.

#### **VI. ACCEPTANCE EVALUATION AND QUALITY ASSURANCE**

This section is not applicable.

#### **VII. DELIVERY AND PAYMENT**

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

#### **VIII. ORDERING DATA**

Purchasers should exercise any desired option offered herein and should specify the following in the Requisition and Invitation for Bids:

1. Title, number, and date of this specification
2. Type and class of compressor
3. Rated capacity (Cfm) at the maximum operating pressure (psig).
4. Size, type, and operating pressure of air receiver
5. Motor horsepower and electrical characteristics
6. If separate and independent aftercooler (air or water cooled) is to be furnished
7. Type controls
8. Special safety features and controls
9. If an air inlet silencer is desired
10. If more than one copy each of manual is required