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 XX-C-2812  
 April 23, 1993  
 SUPERSEDING  
 MIL-C-82086C  
 18 February 1989

# FEDERAL SPECIFICATION

COMPRESSOR, AIR, DIESEL-ENGINE-DRIVEN, PORTABLE, WHEEL-MOUNTED

This specification is approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

## 1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers commercial, portable, wheel-mounted, diesel-engine-driven air compressors of rotary screw design.

### 1.2 Classification.

1.2.1 Class. The compressors are of the following classes, as specified (see 6.2 and 6.5):

Class A - Wheeled-undercarriage with fixed tongue  
 Class B - Wheeled-undercarriage with automotive steering and hinged towbar

1.2.2 Size. The compressors are of the following sizes, as specified (see 6.2 and 6.5):

Size 125 - 125 cubic feet per minute (cfm) at 100 pounds per square inch gage (psig) (3.54 cubic meters per minute (m3/min) at 689 kilopascals (kPa))  
 Size 250 - 250 cfm at 100 psig (7.07 m3/min at 689 kPa)  
 Size 365 - 365 cfm at 100 psig (10.33 m3/min at 689 kPa)  
 Size 600 - 600 cfm at 100 psig (16.98 m3/min at 689 kPa)  
 Size 750 - 750 cfm at 100 psig (21.22 m3/min at 689 kPa)

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 \*Beneficial comments (recommendations, additions, deletions) and any pertinent\*  
 \*data which may be of use in improving this document should be addressed to: \*  
 \*Commanding Officer (Code 156), Naval Construction Battalion Center, \*  
 \*621 Pleasant Valley Road, Port Hueneme, CA 93043-4300, by using the \*  
 \*Standardization Document Improvement Proposal (DD Form 1426) appearing at \*  
 \*the end of this document or by letter. \*  
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FSC 4310

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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## 2. APPLICABLE DOCUMENTS

### 2.1 Government publications.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

#### Federal Specification

WW-C-633 - Coupling Halves, Cap and Wye; Quick Disconnect Pneumatic Hose, Two-Lug Universal Tape

#### Federal Standard

FED-STD-123 - Marking for Shipment (Civil Agencies)

#### Military Specification

MIL-C-3600 - Compressors, Rotary, Power-Driven; and Compressors, Reciprocating, Power-Driven; Air and Gas (except Oxygen and Refrigerant), Packaging of

#### Military Standards

MIL-STD-129 - Marking for Shipment and Storage  
MIL-STD-209 - Slings and Tiedown Provisions for Lifting and Tying Down Military Equipment  
MIL-STD-1474 - Noise Limits for Military Materiel (Metric)  
MS51336 - Lunette-Coupler, Drawbar, Ring

(Unless otherwise indicated, copies of federal and military specifications and standards are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply (see 6.2).

#### Department of the Air Force:

Drawing 7545352 - Requirement for Finishes, Protective, and Codes for San Antonio ALC Ground and Ground Support Equipment

(Application for copies should be addressed to SA-ALC/MMEDO, Kelly AFB, TX 78241-5990.)

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American Society of Mechanical Engineers (ASME):

ASME Boiler and Pressure Vessel Code  
Section VIII, Division 1 - Rules for Construction of Pressure  
Vessels

ASME Power Test Code PTC-9 - Displacement Compressors, Vacuum Pumps and  
Blowers

(Application for copies should be addressed to the American Society of  
Mechanical Engineers, United Engineering Center, 345 East 47th Street, New  
York, NY 10017.)

(Non-Government standards and other publications are normally available  
from the organizations that prepare or distribute the documents. These  
documents also may be available in or through libraries or other informational  
services.)

2.3 Order of precedence. In the event of a conflict between the text of  
this document and the references cited herein (except for associated detail  
specifications, specification sheets, or MS standards), the text of this  
document takes precedence. Nothing in this document, however, supersedes  
applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 Description. The air compressor shall consist of a diesel engine, air  
end, receiver, air pressure regulating system, lubricating and cooling  
systems, safety controls, housing, and the piping, instruments, gages, and  
other accessories specified herein, all assembled and mounted on a fully  
suspended wheel-mounted carriage.

3.2 First article. When specified in the contract or purchase order, a  
sample shall be subjected to first article inspection (see 4.2.1, 6.2, and  
6.4).

3.3 Standard commercial product. The compressor shall, as a minimum, be  
in accordance with the requirements of this specification and shall be the  
manufacturer's standard commercial product. Additional or better features  
which are not specifically prohibited by this specification but which are a  
part of the manufacturer's standard commercial product, shall be included in  
the compressor being furnished. A standard commercial product is a product  
which has been sold or is being currently offered for sale on the commercial  
market through advertisements or manufacturer's catalogs, or brochures, and  
represents the latest production model.

3.4 Materials. Materials used shall be free from defects which would  
adversely affect the performance or maintainability of individual components  
or of the overall assembly. Materials not specified herein shall be of the  
same quality used for the intended purpose in commercial practice. Unless  
otherwise specified herein, all equipment, material, and articles incorporated  
in the work covered by this specification are to be new and fabricated using  
materials produced from recovered materials to the maximum extent possible  
without jeopardizing the intended use. The term "recovered materials" means  
materials which have been collected or recovered from solid waste and  
reprocessed to become a source of raw materials, as opposed to virgin raw  
materials. Unless

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otherwise specified, none of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification.

3.5 Interchangeability. All compressors of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to ensure interchangeability of component parts, assemblies, accessories, and spare parts.

3.6 Performance. The compressor shall be capable of compressing and delivering not less than the nominal volume of free air (minus 3 percent tolerance allowance) applicable to the compressor size specified at a receiver pressure of 100 psig (689 kPa) under the following atmospheric conditions:

- a. 14.696 pounds per square inch absolute (sea level) (10.3 kPa)
- b. 60 degrees Fahrenheit (oF) (15 degrees Celsius (oC))
- c. Five percent humidity

Under the conditions specified, the air discharge temperature shall not exceed 250oF (121oC). The compressor shall be capable of operating satisfactorily when tilted 15 degrees longitudinally or transversely from a level position.

3.6.1 Regulation. Regulation of compressor output shall be accomplished by a stepless, pneumatic control or electronic system. The system shall be adjustable within limits established by the manufacturer and shall be set to automatically maintain a nominal discharge pressure of 100 psig (689 kPa) when the compressor is operating at full rated capacity. The system shall also provide for automatic regulation of compressor output from zero to 100 percent of rated capacity. Primary regulation shall be effected by the proportional and automatic reduction of engine speed within the range of full-rated-capacity speed to a speed not less than the engine manufacturer's recommended idle speed. Supplemental control may be accomplished by the proportional and automatic actuation of a compressor inlet unloader valve.

3.6.2 Environmental conditions. The compressor shall be capable of starting and operating under the following atmospheric conditions:

- a. Plus 120oF to -20oF (+49oC to -29oC) at sea level (29.92 inches of mercury (101 kPa))
- b. Plus 102oF to -20oF (+39oC to -29oC) at an elevation of 5,000 feet (1.5 kilometers) (24.98 inches of mercury) (84 kPa)

3.6.3 Safety shutdown. The compressor shall be equipped with a safety shutdown system designed to automatically stop the engine under any of the following conditions:

- a. Compressor discharge air temperature in excess of safe limit established by the manufacturer but in no case exceeding 250oF (121oC)
- b. Engine coolant temperature in excess of manufacturer's established safe limit
- c. Engine lubricating oil pressure below engine manufacturer's required safe limit

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3.6.4 Sound level. The exterior sound level produced by the compressor shall not exceed the noise limits established by MIL-STD-1474.

3.7 Engine. The air end shall be driven by a liquid- or air-cooled diesel engine of a size and type used or recommended for use by the compressor manufacturer on standard commercial compressors. The engine, at full-rated compressor output, shall have an intermittent horsepower rating sufficient to properly and adequately operate the air end and all connected auxiliaries at the speed required to develop rated compressor capacity under the atmospheric conditions specified in 3.6. Instruments and gages specified in 3.7.1 shall be of the type recommended by the manufacturer. All engine accessories supplied commercially as standard equipment shall be furnished. The engine shall be equipped with an electrical starting system rated either at 12 volts (V), or 24V in accordance with the standard voltage for the engine being furnished. The diesel engine shall be capable of starting within 5 minutes and shall be ready for full-load operation within 15 minutes under any of the environmental conditions specified in 3.6.2. The fuel tank shall be sized for continuous operation at rated compressor output of at least 8 hours. The diesel engine shall start in any temperature above -20°F (-29°C). Starting aids may be either electric glow plug or ether primer. When an ether priming system is required, it shall be the measured shot type, with storage capacity of not less than 12 fluid ounces (0.35 liter). A compressor of enbloc design is excluded from this specification.

3.7.1 Instruments and controls. The following engine instruments and controls, as a minimum, shall be furnished:

- a. Control, starter
- b. Control, shutoff
- c. Control, manual engine warm-up
- d. Gage, lubricating oil pressure
- e. Gage, engine coolant temperature
- f. Ammeter or battery charging indicator
- g. Safety controls (see 3.6.3)
- h. Priming aid controls (see 3.7)
- i. Hour meter

All instruments shall be mounted on a panel or panels located near the operating controls and shall be visible to the operator. The instrument panel(s) shall be furnished with illumination for night operation. The engine hour meter shall have totalizing mechanism capable of registering not less than 9,999.9 hours of engine operating time.

3.8 Storage battery(s). Unless otherwise specified (see 6.2), the manufacturer's standard commercial storage battery(s) normally furnished to make a complete electrical system shall be furnished wet charged, filled with electrolyte and fully charged. When specified (6.2), dry charged battery(s) shall be furnished without electrolyte, with sealed caps to prevent the intrusion of atmospheric moisture.

3.9 Air cleaners. Air cleaners shall be of the two-stage dry-type design wherein the first stage provides centrifugal separation and the second stage provides impingement filtration with use of a suitable filter medium. When handling dust concentration of 0.025 grams per cubic foot (0.88 grams per cubic

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meter), the air cleaners shall be capable of operating not less than 8 hours without exceeding an air restriction which could adversely affect the rated output of the compressor. When located outside the compressor housing, air intake shall be fitted with a rain cap and screen. Connections of components associated with the air cleaner installation shall be water- and gas-tight. The cleaner shall have an indicator that shows when the cartridge is ready for replacement and shall be visible to the operator when the instrument panel door is open.

3.10 Radiators/heat exchangers. Radiators/heat exchangers shall be configured so that they may be cleaned from both sides with compressed air or water spray without disconnecting the associated hoses and piping. Cleaning of radiators/heat exchangers shall be completed in less than 1 hour.

3.11 Air end. Unless otherwise specified (see 6.2), the air end shall be of the rotary screw design.

3.12 Receiver. The air receiver shall be designed, constructed, and stamped for a pressure of not less than 150 psig (1033 kPa), in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1. The receiver shall be equipped with a drain valve or plug and shall be protected against excessive pressure by the manufacturer's standard relief valve. The receiver discharge system shall include a pressure gage, a manual blowdown valve and an automatic blowdown valve or sonic orifice in the discharge designed to blow the complete air system down to atmospheric pressure when the engine stops. When a pressure in excess of 10 psig (69 kPa) must be maintained in the receiver to insure adequate circulation of compressor oil or elimination of carry-over, the air discharge piping shall include a minimum pressure valve or device set to maintain a predetermined minimum back pressure on the compressor oil system.

3.13 Manifold and service outlets. The air receiver discharge line shall be equipped with an air service manifold having individually controlled service outlets with standard universal type pneumatic hose couplings. The air service manifolds of each size of compressor shall be fitted with not less than the number and sizes of outlets specified in table I. All 3/4-inch (1.9-centimeter (cm)) outlets shall be equipped with the manufacturer's standard lever-type air cocks. Couplings conforming to WW-C-633, type II, or type III, shall be provided. The compressor shall be equipped with a check valve installed in the air line between the receiver and the manifold outlets to prevent reverse flow of air into the receiver during blowdown. When specified (see 6.2), a manual shutoff valve shall be installed in the air line between the receiver and the manifold.

TABLE I. Service outlets.

*-----*			
* Compressor	* Number of	* Number of 1-1/2-inch	*
* size	* 3/4-inch (1.9-cm)	* (3.8-cm) outlets with gate,	*
*	* outlets	* globe, or plug valve	*
* 125	* 2	* -	*
* 250	* 4	* 1	*
* 365	* 4	* 1	*
* 600	* 4	* 2	*
* 750	* 4	* 2	*
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3.14 Housing. A suitable housing shall be provided to enclose the engine, compressor, and instrument panel(s). Housing and panels shall be not less than 0.0568 inch (0.15 cm) thick. Supporting members and braces shall be furnished as required. The housing shall be sufficiently rigid to support a 300-pound (136-kilogram (kg)) load applied to any single 1-square-foot area on the top of the housing. The housing shall include hinged access openings to the fuel service, engine, air end, and instrument panel(s). Access panel(s) shall be equipped with devices to hold the panel(s) in an open position and clamps or latches to retain the panel(s) in the closed position. Access panel(s) to fuel service and instrument panels shall be lockable and keyed alike. Fenders shall be sufficiently supported to not permanently deform under that load of a person weighing not less than 175 pounds (79 kg).

3.15 Mounting. The complete compressor unit shall be securely mounted on a wheel-mounted undercarriage equipped with parking brakes. Compressors shall be equipped with a wheeled or footed landing leg and drawbar lunette-coupler. Drawbar couplers shall conform to MS51336. All compressors shall be equipped with suspension components with a rated capacity at least equal to the loads imposed on each member, measured at the ground, with compressor loaded to capacity. When rating suspension capacity, unsprung weight shall be deducted. Two safety chains shall be furnished on each compressor. Each compressor shall be designed for towing over graded gravel roads at speeds up to 20 miles per hour (mph) (80 kilometers per hour (km/h)), and paved surfaces at speeds up to 50 mph (32 km/h).

3.15.1 Class A. The complete compressor unit shall be securely mounted on a wheel-mounted undercarriage with a fixed towing tongue. When specified (see 6.2), the undercarriage shall be equipped with a towing tongue having minimum adjustable hitch heights as specified. Size 125 shall be of the two-wheel single axle type. Sizes 250, 365, and 600 shall be of the four-wheel type with tandem axles. Size 750 shall be of the four-wheel or six-wheel type with tandem axles. The size 250 tandem and larger undercarriage shall be equipped with surge-type brakes and shall incorporate a positive mechanical lockout to prevent brakes from locking when the compressor is pushed rearward by the towing vehicle.

3.15.2 Class B. The complete compressor unit shall be securely mounted on a wheel-mounted undercarriage with automotive type steering and hinged towbar. Sizes 250, 365, 600, and 750 shall be of the four-wheel type.

3.15.3 Tires and wheels. Tires shall be of rated capacity at least equal to the load imposed on each tire, measured at each wheel at the ground with compressor loaded to rated gross vehicle weight. Tires shall not drag on fenders when making turns. Unless otherwise specified (see 6.2), tire size for 125 compressor shall be not less than F78 X 14, 6-ply; tire size for 250 and 365 compressors shall be not less than 8.75 X 16.5, 8-ply; tire size for 600 and 750 compressors shall be not less than 9.5 X 16.5, 8-ply.

3.15.4 Parking brake. Unless otherwise specified (see 6.2), a lever type handbrake shall be provided. The parking brake shall be capable of holding the compressor in a stationary position on a 15 percent grade. Frictional parking brakes utilizing the exterior surface of the tires are not acceptable.

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3.16 Air transportability. The compressor dimensions shall not exceed 105 inches (266 cm) in width and 102 inches (259 cm) in height in a reduced configuration, to conform to air transportability requirements. In addition, the weight of the compressor shall not exceed 20,000 pounds per tandem axle with the fuel tank three-quarters full in a reduced configuration. Achieving a reduced configuration shall be limited to the removal or relocation of mechanically attached (non-welded) components and shall not affect the transportability of the item, including the ability to negotiate, without interference, a 15-foot (4.6-m) ramp at an angle of 17 degrees between two horizontal surfaces. Removal and reinstallation or reinstallation time of all components required to achieve the reduced configuration shall not exceed 4 manhours. When delivered to the Government, the compressor shall not be in the reduced configuration.

3.17 Lubrication. Means for lubricating shall be provided in accordance with the manufacturer's standard practice. Parts requiring lubrication shall be so located as to make the lubricating points easily visible and accessible. All parts requiring lubrication shall be properly lubricated before delivery. The equipment shall be tagged to indicate the temperature range and grades of lubricants used.

3.18 Cleaning, treatment, and painting. Surfaces normally painted in good commercial practice shall be cleaned, treated, and painted as specified herein. The color of the exterior finish coat shall be as specified (see 6.2). The end item, allied equipment, and attachments shall be of the same color. Surfaces to be painted shall be cleaned and dried to ensure that they are free from contaminants such as oil, grease, welding slag and spatter, loose mill scale, water, dirt, corrosion product, or any other contaminating substances. As soon as practicable after cleaning and before any corrosion product or other contamination can result, the surfaces shall be prepared or treated to ensure the adhesion of the coating system. The exterior painting shall consist of at least one coat of primer and one finish coat. The primer shall be applied to a clean, dry surface as soon as practicable after cleaning and treating. Painting shall be with manufacturer's current materials according to manufacturer's current processes and the total dry film thickness shall be not less than 2.5 mils over the entire surface. The paint shall be free from runs, sags, orange peel, or other defects.

3.18.1 Air Force compressor. When specified for Air Force use (see 6.2), compressors shall be cleaned, treated, and painted in accordance with Air Force Drawing 7545352.

3.19 Lifting and tiedown attachments. The compressor shall be equipped with a lifting eye for handling by a crane or a hoist. The eye shall be located at the top of the machine at the normal center of balance. The lifting eye shall be capable of supporting 2-1/2 times the weight of the machine and shall be mounted in such a manner that the machine and its accessories retain alignment during lifting operations. The compressor shall be equipped with tiedown attachments which conform to type II, or type III of MIL-STD-209. Tiedown attachments may be identified by stenciling or other suitable marking. Tiedown marking shall clearly indicate that the attachments are intended for the tiedown of the compressor on the carrier when shipped.



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3.20 Instruction plates. The compressor shall be provided with instruction plates describing special or important procedures for operating and servicing equipment or warning of hazardous procedures. The plates shall be durable and legible throughout the life of the compressor. The plates shall be conspicuously located. Brass screws, bolts, or rivets not less than 1/8-inch (0.3175 cm) in diameter shall be used to affix the plates to the compressor.

3.21 Identification plate. An identification plate will be furnished by the contracting officer for each compressor. The contractor shall stamp all necessary data in the blank spaces of the plate provided for that purpose, and securely affix a plate to each compressor in a conspicuous place with nonferrous screws, rivets, or bolts not less than 1/8-inch (0.3174 cm) in diameter. The applicable nomenclature contained in the contract item description shall be placed in the top blank.

3.22 Workmanship.

3.22.1 Steel fabrication. The steel used in fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finished product. Manufacturing processes shall not reduce the strength of the steel to a value less than intended by the design. Manufacturing processes shall be done neatly and accurately. All bends shall be made by controlled means to ensure uniformity of size and shape.

3.22.2 Castings. All castings shall be sound and free from patching, misplaced coring, warping, or any other defect which reduces the casting's ability to perform its intended function.

3.22.3 Bolted connections. Bolt holes shall be accurately punched or drilled and shall have the burrs removed. Washers or lockwashers shall be provided as required; and all bolts, nuts, and screws shall be tight.

3.22.4 Riveted connections. Rivet holes shall be accurately punched or drilled and shall have the burrs removed. Rivets shall be driven with pressure tools and shall completely fill the holes. Rivet heads, when not countersunk or flattened, shall be of approved shape and uniform size for the same diameter of rivet. Rivet heads shall be full, neatly made, concentric with the rivet holes, and in full contact with the surface of the member.

3.22.5 Welding. Welding procedures shall be in accordance with a nationally recognized welding code. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Welds shall be of sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subjected to proof and service loadings. Copies of welder qualification records shall be made available to authorized Government inspectors.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor

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may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this document where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this document shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in this document shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2.1)
- b. Quality conformance inspection (see 4.2.2)
- c. Packaging inspection (see 4.5)

4.2.1 First article inspection. The first article inspection shall be performed on the compressor unit when a first article is required (see 3.2 and 6.2). This inspection shall include the examination of 4.3 and the tests of 4.4.1, 4.4.2, 4.4.4, and when applicable, 4.5. The first article may be either a first production item or a standard production item from the supplier's current inventory provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.2 Quality conformance inspection. Each compressor furnished under a contract shall be examined in accordance with 4.3 and tested in accordance with 4.4.3.

4.3 Examination. Each compressor shall be examined for compliance with the requirements specified in section 3 of this document. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirement or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.4 Tests. Prior to the tests specified herein which require the compressor(s) be operated, the compressor(s) shall be serviced with oils and greases recommended by the manufacturer for use in the ambient temperature at

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the test location. Battery(s) used for test purposes shall be supplied by the manufacturer in lieu of the battery(s) to be shipped with the compressor.

4.4.1 Performance test. The compressor shall be tested to determine capacity and power consumption in accordance with the rules, procedures, and instrumentation specified in ASME PTC-9. The duration of the test shall be sufficient to record all data required under Report Test of ASME PTC-9, but in no case shall the test duration be less than 1 hour. Test results shall be corrected to the atmospheric conditions specified in 3.6. Prior to the actual performance test, preliminary tests shall be run, as required, to verify that the compressor and associated system are in suitable condition, that speed controls have been properly adjusted, and that gages and instruments are functioning properly. Following the successful completion of the performance test, the compressor shall be operated for a period of not less than 30 minutes in each of the four tilted positions specified in 3.6. Inability of the compressor to meet the performance requirements of this specification or to operate satisfactorily in any of the four tilted positions shall be cause for rejection.

4.4.2 Functional test. The compressor shall be operated continuously for a period of not less than 8 hours during which time a log shall be maintained of the capacity, discharge pressure, operating speed, and temperature of compressed air at the receiver discharge outlet. For a 1-hour period during the test, the air discharge valve shall be alternately opened and closed so as to operate the compressor through the complete loading cycle (from zero to full-rated capacity to zero capacity) not less than once every 5 minutes. The compressor shall operate at zero capacity for not more than 1 minute between cycles. Cycling operation shall be observed to determine if, when the air discharge valve is closed, the engine speed reduces from full-rated capacity speed to a speed within the idling range recommended by the engine manufacturer. Failure of the compressor to meet the performance requirements of 3.6, 3.6.1, and 3.7, or malfunction or failure of any parts, components, or controls shall be cause for rejection.

4.4.3 Operational test. Each compressor, excluding first article samples, shall be tested for a period of not less than 30 minutes to verify satisfactory operation of the compressor and all controls. During the test all necessary adjustments in controls shall be made as required to insure that performance requirements relating to compressor output and regulation and engine speed will be met.

4.4.4 Mobility test. The compressor shall be towed over graded gravel roads for a distance of not less than 25 miles (40 km) at speeds up to 20 mph (32 km/h), and over paved roads for a distance of not less than 25 miles (40 km) at speeds up to 50 mph (80 km/h). After successful completion of the road test, the compressor shall be towed on off-road cross-country terrain for 10 miles (16 km) at average speeds of approximately 5 mph (8 km/h). Off-road terrain is defined as open fields, ungraded roadways, and generally uneven terrain normally encountered at construction sites where compressors are used. During the mobility test, the compressor shall be checked for suspension capability and the parking brake shall be operated to verify that the brake will hold the unit on a 15 percent grade.

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4.5 Preparation for delivery inspection. The preservation, packaging, packing, and marking of the item shall be inspected to verify conformance to the requirements of section 4 of MIL-C-3600. When specified (see 6.2), a preproduction pack inspection shall be performed in accordance with MIL-C-3600.

## 5. PREPARATION FOR DELIVERY

5.1 Preservation, packaging, and packing. The compressors shall be preserved, packaged, and packed in accordance with the requirements of MIL-C-3600, with the level of preservation, packaging and the level of packing as specified (see 6.2).

## 5.2 Marking.

5.2.1 Military agencies. Shipments to military agencies shall be marked in accordance with MIL-STD-129.

5.2.2 Civil agencies. Shipments to civil agencies shall be marked in accordance with FED-STD-123.

## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The air compressors are intended as portable sources of compressed air. Each compressor is a self-contained unit readily movable and suitable for field service at construction sites.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in acquisition documents:

- a. Title, number, and date of this specification
- b. Class and size of the unit required (see 1.2)
- c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2)
- d. When a first article is required (see 3.2 and 4.2.1)
- e. When a dry charged battery shall be furnished (see 3.8)
- f. Type of air end, if different (see 3.11)
- g. When a manual shutoff valve is required (see 3.13)
- h. When the undercarriage shall be equipped with a rigid towing tongue having adjustable hitch heights, and the minimum adjustable hitch heights required (see 3.15.1)
- i. Type and size of tire, if different (see 3.15.3)
- j. When a parking brake is not required (see 3.15.4)
- k. Color of exterior finish coat required (see 3.18)
- l. If, for Air Force acquisitions, cleaning, treatment, and painting shall conform to Air Force Drawing 7545352 (see 3.18.1)
- m. When a preproduction pack inspection is required (see 4.5)
- n. Level of preservation and level of packing required (see 5.1)

6.3 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements shall be developed

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as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL, DD Form 1423) incorporated into the contract. When the provisions of DoD Federal Acquisition Regulations (FAR) Supplement, Part 27, Sub-Part 27.475-1, are invoked and the DD Form 1423 is not used, the data should be delivered by the contractor in accordance with the contract or purchase order requirements.

6.4 First article. When a first article inspection is required, the item will be tested and should be a first production item or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The first article should consist of one unit. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, test, and approval of the first article.

6.5 Part or identifying number (PIN). The PIN to be used for air compressors applied to this specification is assigned as follows:

	XXC2812	-	XX
	*		*
Specification part number	-----*		*
Class and size code	-----*		*

6.5.1 Type and style code. The class and size of the compressor (see 1.2) are identified by a two-digit number (see table II).

TABLE II. Code number to class and size.

*	-----*	*	-----*	*
*		*		*
*	Size	*	Class A	* Class B *
*	-----*	*	-----*	*
*		*		*
*	125	*	01	* 06 *
*	250	*	02	* 07 *
*	365	*	03	* 08 *
*	600	*	04	* 09 *
*	750	*	05	* 10 *
*	-----*	*	-----*	*

6.6 Supersession data. This specification replaces military specification MIL-C-82086C dated 18 February 1989.

6.7 Subject term (key word) listing.

Rotary compressor  
Undercarriage

6.8 Classification cross reference. Classifications used in this specification (see 1.2) are identical to those found in the superseded military specification, MIL-C-82086C.

XX-C-2812

MILITARY INTERESTS:

Military Coordinating Activity

Navy - YD

Custodian

Air Force - 99

Review Activity

DLA - CS

User Activity

Army - ME

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY:

Navy - YD

(Project 4310-0195)

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\* METRIC \*  
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XX-C-2812  
AMENDMENT-1  
March 25, 1994  
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FEDERAL SPECIFICATION

COMPRESSOR, AIR, DIESEL-ENGINE-DRIVEN, PORTABLE, WHEEL-MOUNTED

This amendment, which forms a part of XX-C-2812, dated April 23, 1993, is approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

Page 5

Paragraph 3.7.1. Add: j. Tachometer  
k. Fuel gage  
l. Air receiver pressure  
m. Air discharge temperature

Page 7

Paragraph 3.14, line 2. Delete "compressor" and substitute "receiver".

Page 8

Paragraph 3.18, line 14. Add, after "2.5 mils", "(0.0635 millimeters)".

MILITARY INTERESTS:

CIVIL AGENCY COORDINATING ACTIVITY:

Military Coordinating Activity

GSA - FSS

Navy - YD1

PREPARING ACTIVITY:

Custodian

Navy - YD1

Air Force - 99

(Project 4310-0205)

Review Activities

Army - ME

Air Force - 82

DLA - CS

AMSC N/A

FSC 4310

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