

INCH-POUND

A-A-52485A
April 6, 1995
SUPERSEDING
A-A-52485
January 11, 1994
MIL-V-46704A(AT)
10 September 1968

COMMERCIAL ITEM DESCRIPTION

VALVE, RELAY EMERGENCY: BREAKAWAY AIR BRAKE

The General Services Administration has authorized the use of this commercial item description (CID) for all federal agencies.

1. SCOPE.

This CID covers air operated relay emergency valve used in vehicle air brake systems referred to herein as relay valve.

2. SALIENT CHARACTERISTICS.

2.1 Materials. All metals used in the construction of the relay valve shall be made of corrosion resistant material or protected to resist corrosion. The use of recovered material made in compliance with regulatory requirements is acceptable providing that all requirements of this CID are met (see 5.5).

2.1.1 Dissimilar metals. Dissimilar metals shall not be used in intimate contact with each other unless protected against galvanic corrosion.

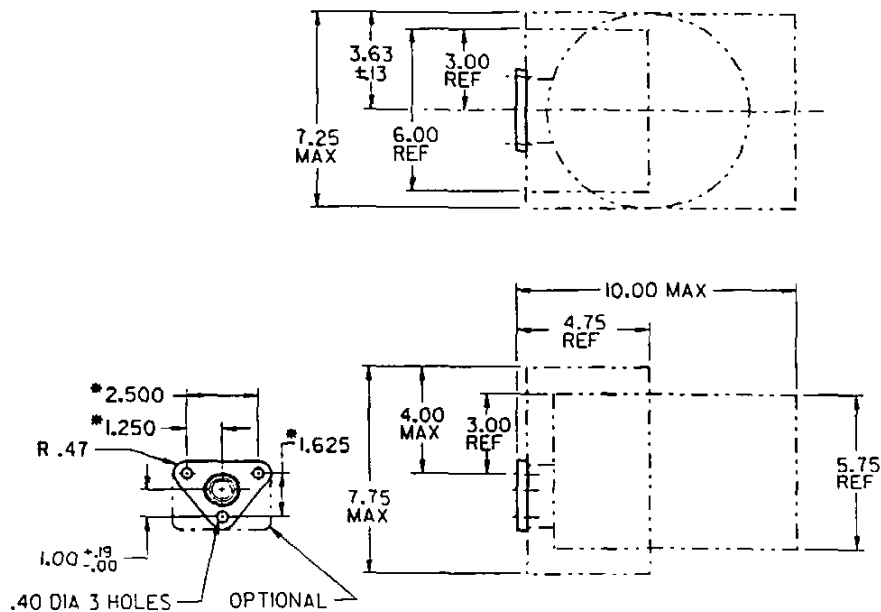
2.2 Design and construction. Unless otherwise specified in figure 1, the relay valve shall be designed and constructed in accordance with the manufacturer's specifications and drawings.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and other data which may improve this document should be sent by letter to: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-T, Warren, MI 48397-5000.

FSC 2530

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

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| PIN no. | Former MS part no. | Former part no. |
|-----------|--------------------|--|
| A 52485-1 | MS 53004-1 | 8330051, 8327378, 7979304, 7411025, 8380978, 8016936, 8327581 |
| A 52485-2 | MS 53004-2 | None |

NOTE:

1. Location of service, emergency, delivery (cylinder), reservoir, and exhaust ports optional. However, ports shall provide optimum access for connection in any of the referenced mounting positions.
2. Port thread dimensions: Service port - 1/4-18 NPTF, one (1) minimum required: Emergency port (charging) - 1/4-18 NPTF, one (1) minimum required: Delivery ports (brake) - 1/4-18 NPTF, four (4) minimum required: Reservoir ports - two (2) minimum required - valve mounting pad port 3/4-14 NPTF. The other reservoir port 3/8-18 NPTF.
3. All ports, except one (1) service, one (1) emergency, and one (1) delivery port, shall be fitted with metallic dryseal (NPTF) pipe plugs. Unplugged ports shall be fitted with closures to prevent intrusion of dust and moisture, and protect the threads.
4. All designated valve ports and elbows shall be so positioned to allow assembly of ninety degrees (90°).
5. Dimensions are in inches (in). Tolerances are $\pm .031$ unless otherwise specified. Use of an asterisk (*) indicates tolerance $\pm .005$, casting dimensions shall be $\pm .062$.
6. PIN number A 52485-2 is a replacement kit.

FIGURE 1. Relay valve.

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2.3 Port marking. All ports shall be clearly and permanently marked and identified to indicate the proper air line application and connection to be made.

2.4 Performance. Unless otherwise specified, performance and test requirements of the relay valve shall conform to SAE J1409 and SAE J1410.

2.5 Cracking pressure. Service line pressure required to actuate the valve allowing pressure to enter delivery line shall not be more than 5 pounds per square inch (psi).

2.6 Charging rate. The time required to build up trailer reservoir (1,000 cubic inches) pressure from 0 to 65 psi shall be 7 ± 1 second, and from 0 to 100 psi shall not be more than 30 seconds.

2.7 Pressure differential. The pressure differential between the service line pressure and the brake chamber pressure shall not be more than 5 psi at an air pressure of 50 ± 5 psi. The air pressure in the brake chamber at all times.

2.8 Service time. The time between application of 100 psi air pressure to the service port and build up of 60 psi in the brake chamber shall be a maximum of 0.22 seconds.

2.9 Emergency application. The pressure in the 75 cubic inch reservoir shall increase approximately three times the rate that the emergency line pressure decreases. The time between the start of emergency line pressure decrease and build up of 60 psi in the reservoir shall not exceed .19 seconds.

2.10 Bleed-down rate. The relay valve shall have an automatic means to gradually reduce trailer air reservoir and brake system pressure to the atmosphere when the trailer is detached from the towing vehicle. The rate of this pressure reduction shall be between .065 standard cubic feet per minute (scfm) and .025 scfm when measured in the range of 88 to 82 psig. Pressure shall be maintained for no less than 3 minutes and shall not bleed back through the supply line.

2.11 Finish. External surfaces of the valve shall be cleaned, treated and painted to provide protection against rust, corrosion, and deterioration. Color and type of paint final top coat shall be as specified in the contract or order (see 5.2).

2.12 Identification and marking. Identification markings shall be permanent and legible and shall include as a minimum, the manufacturer's identification code (CAGE) and part number, and the military part identification number (PIN) (see figure 1, 5.2 and 5.3).

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2.13 Mounting. The relay valve shall be capable of mounting in the following positions:

- a. Direct mounted to reservoir.
- b. Mounted to reservoir bracket.
- c. Remote mounted.

2.14 Replacement kit. Replacement kit shall include relay valve, instructions for mounting, provisions for tank nipple, tank flange, or remote mounting plus the following fittings which shall conform to SAE J246:

Quantity:

- (1) Adapter - 1/4 NPTF with nut and sleeve for 3/8 air line.
- (2) 90° elbow - 1/4 NPTF with nut and sleeve for 3/8 air line.
- (1) 90° elbow - 3/8 NPTF with nut and sleeve for 3/8 air line.
- (1) 90° elbow - 3/8 NPTF with nut and sleeve for 1/2 air line.
- (4) 90° street elbow - 1/4 NPTF.

3. QUALITY ASSURANCE PROVISIONS.

3.1 Responsibility for inspection. The contractor is responsible for the performance of all inspections (examinations and tests).

3.2 Contractor certification. The contractor shall certify and maintain substantiating evidence that the product offered meets the salient characteristics of this CID and that the product conforms to the producer's own drawings, specifications, workmanship standards, and quality assurance practices. Items with known defects shall not be submitted for Government acceptance. The Government reserves the right to require proof of such conformance prior to the first delivery and thereafter as may be otherwise provided for under the provisions of the contract.

4. PRESERVATION, PACKAGING, PACKING, LABELING, AND MARKING.

Preservation, packaging, packing, labeling, and marking for the desired level shall be as specified in the contract (see 5.2).

5. NOTES.

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

5.1 Addresses for obtaining copies of referenced documents.

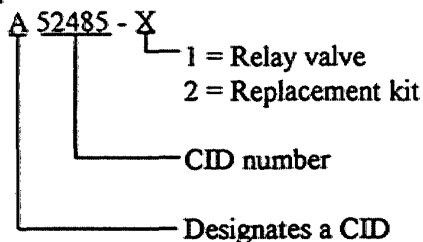
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5.1.1 Non-Government publication. Copies of SAE J246 "Spherical and Flanged Sleeve (Compression) Tube Fittings", SAE J1409, June 1988 "Air Brake Valves Test Procedure", and SAE J1410, October 1986 "Air Brake Valve-Performance Requirements" are available from the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.

5.2 Ordering data. Acquisition documents must specify the following:

- a. Title, number, and date of this CID.
- b. Issue of Department of Defense Index of Specifications and Standards (DODISS) to be cited in the solicitation.
- c. Nomenclature, PIN, and quantity of each item required.
- d. Color of paint final top coat and if Chemical Agent Resistant Paint (CARC) is required.
- e. Applicable level and packaging requirements.

5.3 Part identification number (PIN). The PIN to be used for the relay valve and replacement kit acquired to this CID are as follows:



5.4 Cross-reference. Relay valves conforming to this CID are interchangeable/substitutable with relay valves conforming to MIL-V-46704A(AT) and MS53004C.

5.5 Regulatory requirements. The offeror/contractor is encouraged to use recovered materials in accordance with Public Law 94-580 to the maximum extent practicable.

MILITARY INTERESTS:

Custodians

Army - AT
Navy - MC
Air Force - 99

Review activities

Army - MI
Air Force - 84
DLA - CS

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY:

Army - AT

(Project 2530-0376)