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[METRIC]
A-A-52175A
April 3, 1998
SUPERSEDING
A-A-52175
May 28, 1992

COMMERCIAL ITEM DESCRIPTION

PISTONS, HYDRAULIC BRAKE, WHEEL CYLINDER: SINTERED IRON (METRIC)

The General Services Administration has authorized the use of this Commercial Item Description (CID) for all federal agencies.

1. SCOPE. This CID covers the chemical, physical, and performance requirements of fluid impregnated sintered iron pistons used in hydraulic brake wheel cylinders systems using silicon brake fluid. The pistons are not to be procured as a separate item of supply but as a component of the brake wheel cylinder assembly.

2. SALIENT CHARACTERISTICS.

2.1 Material. Material composition and manufacturing process selected shall be the prerogative of the contractor as long as all articles submitted to the government fully meet the physical and performance characteristics of this CID. All material used shall be compatible with silicone brake fluid. The use of recovered material shall be in accordance with the manufacture's material specification (see 3.1).

2.2 Design and construction. The pistons shall be designed and constructed to conform to the particular wheel cylinder in which it is being used (see 6.2).

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

AMSC N/A FSC 2530

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2.3 Physical properties. The physical properties of the impregnated pistons, such as, hardness, density, porosity, and surface roughness shall be suited to satisfy the performance requirements specified herein.

2.4 Performance requirements. The performance requirements of the impregnated piston shall be verified at assembly in its associated brake wheel cylinder and using silicon-based hydraulic brake fluid for use in hydraulic brake systems at ambient temperature ranging from +55 degrees Celsius (°C) to -55°C, and fluid temperature ranging from +205°C to -55°C. The flash point of the impregnate shall be above 216°C.

2.4.1 Pressure resistance. The piston shall be capable of withstanding an internal fluid pressure of 20 685 kilopascals (kPa) for 30 seconds without doming and an internal fluid pressure of 34 475 kPa or cylinder burst pressure (whichever is lower), for 30 seconds without puncturing, penetrating, or cracking the piston.

2.4.2 Crush resistance. The piston shall withstand a radial crush pressure of 34 475 kPa minimum applied at a rate of 900 kilograms (kg) per minute until failure or maximum crush load is observed. Crush resistance requirement is waived for insert type-shoe loaded sintered iron pistons.

2.4.3 Stroking (endurance). The piston shall show no signs of wear (less than 0.026 mm) and no scoring of the piston or cylinder wall after being subjected to 70 000 strokes under a pressure of 6 890 kPa at 120°C.

2.4.4 Corrosion resistance. The piston shall show no evidence of iron deposits after being immersed in the brake fluid solution for 14 days at 46°C and 95 percent relative humidity.

3. REGULATORY REQUIREMENTS.

3.1 Recovered materials. The offeror/contractor is encouraged to use recovered material to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

4. QUALITY ASSURANCE PROVISIONS.

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

4.2 Product conformance. The products provided shall meet the salient characteristics of this commercial item description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial market. The government reserves the right to require proof of such conformance.

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5. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or order (see 6.2)

6. NOTES.

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

6.1 Address for obtaining copies of referenced documents.

6.1.1 Government publications. The Code of Federal Regulations (CFR) may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

6.2 Ordering data. Acquisition documents must specify the following:

a. Title, number, and date of this CID.
b Issue of the DoDISS to be cited in the solicitation, and if required, the specified issue of individual documents referenced.
c. Brake wheel cylinder drawing number, revision letter and date.
d. Packaging requirements.

6.3 Supersession and cross-reference data. This CID supersedes MIL-P-62108A, dated 25 May 1973. Pistons conforming to this CID are interchangeable/substitutable with pistons conforming to MIL-P-62108A.

MILITARY INTERESTS:

Custodians:
Army - AT
Air Force - 99

Review Activities:
Air Force - 84
DLA - CC

CIVIL AGENCY COORDINATING ACTIVITY:
GSA-FSS

Preparing Activity:
Army - AT

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