

MIL-C-14076B(ME)  
25 October 1983  
SUPERSEDING  
MIL-C-14076A(ME)  
28 May 1975

MILITARY SPECIFICATION  
CLEANING ELEMENT, PIPELINE,  
FLUID PRESSURE, BRUSH TYPE

This specification is approved for use by the Belvoir Research and Development Center, Department of the Army, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers a fluid-propelled, rubber-cup, self-adjusting wire-brush pipeline cleaner used in cleaning the interior of pipe conforming to MIL-T-425.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: USA Belvoir Research and Development Center, ATTN: STRBE-DS, Fort Belvoir, VA 22060 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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1.2 Classification. The cleaning element shall be the following nominal sizes, as specified (see 6.2).

Size 1 - 6-inch  
Size 2 - 8-inch  
Size 3 - 12-inch

## 2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. Unless otherwise specified, the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein.

## SPECIFICATIONS

## FEDERAL

PPP-B-601	- Boxes, Wood, Cleated Plywood.
PPP-B-621	- Boxes, Wood, Nailed and Lock Corner.
PPP-B-636	- Boxes, Shipping, Fiberboard.
PPP-P-40	- Packaging and Packing of Hand Tools.

## MILITARY

MIL-P-116	- Preservation, Methods of.
MIL-P-514	- Plate, Identification, Instruction and Marking, Blank.
MIL-T-704	- Treatment and Painting of Materiel.
MIL-G-20241	- Gasket Material, Wool Felt, Impregnated, Adhesive, Pressure-Sensitive.
MIL-P-23377	- Primer Coating, Epoxy Polyamide, Chemical and Solvent Resistant.
MIL-S-81733	- Sealing and Coating Compound, Corrosion Inhibitive.

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## STANDARDS

## FEDERAL

FED-STD-601 - Rubber, Sampling and Testing.

## MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.

MIL-STD-129 - Marking for Shipment and Storage.

MIL-STD-130 - Identification Marking of U.S. Military Property.

MIL-STD-810 - Environmental Test Methods.

MIL-STD-831 - Test Reports, Preparation of.

MIL-STD-889 - Dissimilar Metals.

MIL-STD-1188 - Commercial Packaging of Supplies and Equipment.

(Copies of specifications and standards required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer).

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 27 - Mild-to-Medium-Strength Carbon-Steel Castings for General Application.

ASTM A 47 - Malleable Iron Castings.

ASTM A 229 - Steel Wire, Oil-Tempered, for Mechanical Springs.

ASTM A 680 - Steel, Carbon, Strip, Cold Rolled Hard, Untempered Spring Quality.

ASTM A 684 - Steel, Carbon, Strip, Cold Rolled Soft, Untempered Spring Quality.

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ASTM D 395	- Rubber Property-Compression Set.
ASTM D 412	- Rubber Properties in Tension.
ASTM D 573	- Rubber-Deterioration in an Air Oven.
ASTM D 1229	- Rubber Property-Compression Set at Low Temperatures.
ASTM D 2240	- Rubber Property-Durometer Hardness.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

### 3. REQUIREMENTS

3.1 Description. The intermediate pipeline cleaning element (hereinafter called "element") (see 6.8 and figure 1) shall consist of an integral shaft and body with rubber cups and wire brushes of the size specified (see 1.2) and shall be as specified herein.

3.2 First article. When specified (see 6.2), a sample shall be subjected to first article inspection (see 4.3 and 6.3).

3.3 Materials. Materials shall be as specified herein. Materials not specified shall be selected by the contractor and shall be subject to all provisions of this specification (see 6.7).

3.3.1 Material deterioration and control. The cleaning element shall be fabricated from compatible materials, inherently corrosion and deterioration resistant or treated to provide protection against the various forms of corrosion and deterioration that may be encountered in any of the applicable storage and operating environment to which the item may be exposed.

3.3.1.1 Dissimilar metals. Dissimilar metals, as defined in MIL-STD-889, shall be electrically insulated from one another to minimize or prevent galvanic corrosion. Insulation may be provided by an insulating barrier such as a coat of epoxy primer conforming to MIL-P-23377, or corrosion inhibiting sealant con-

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forming to MIL-S-81733 or chromate tape conforming to MIL-G-20241. Protection against any galvanic corrosion could also be obtained by exclusion of the electrolyte if feasible.

3.3.1.2 Identification of materials and finishes. The contractor shall identify the specific material, material finish or treatment for use with components and sub-components, and shall make information available, upon request, to the contracting officer or designated representative.

3.4 Construction.

3.4.1 Shaft body. When the element has a hollow shaft body throughout its entire length, the design shall include not less than four outlet holes located as close as practical in front of each rubber cup for liquid bypass. The holes shall be .025 inch, plus or minus .032 inch, in diameter and shall be spaced symmetrically at 90 degrees, plus or minus 5 degrees, around the shaft body.

3.4.1.1 Shaft-body assembly. The shaft-body assembly, consisting of a nose piece, tube body, spacers, and tail pieces, shall be cast steel conforming to ASTM A 27, grade optional, or malleable iron conforming to ASTM A 47, grade optional.

3.4.2 Wire brushes. Wire brushes shall be mounted on flat spring steel conforming to ASTM A 680 or ASTM A 684, hardness intermediate, to provide the required pressure for thorough cleaning action and required resilience to permit passage through the restriction at the end nipples of the pipeline sections. Mountings shall hold the brushes securely during operation of the element and shall enable an operator to replace brushes quickly and simply without special tools. Not less than eight brushes shall be utilized and shall be arranged so as to afford complete coverage of the interior pipe wall at point of contact. Each brush bristle shall be tempered steel wire conforming to ASTM A 229, class I or II, shall be ironoxide coated or parkerized to prevent rusting, and shall be not less than one inch long. Brush guides shall be installed on the brush mounting springs to prevent the element from lodging in segmental and miter-welded fittings of the pipeline section.

3.4.3 Rubber cups. Cups shall be resistant to all grades of gasoline and jet hydrocarbon fuel and shall provide sufficient flexibility during operation at a fuel temperature of minus 25° F, plus or minus 5° F. The cups shall be of molded synthetic rubber with the physical properties specified in table I.

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TABLE I. Physical properties

Tensile strength, initial, psi, minimum . . . . .	1600
Tensile strength, oven aged 46 hours at 212° F, percent of initial, minimum . . . . .	80
Tensile strength, after immersion in Medium No. 5 for 94 hours at 73.4° F, percent of initial, minimum . . . . .	45
Tensile strength, after immersion in distilled water for 14 days at 160° F, percent of initial, minimum . . . . .	65
Ultimate elongation, initial, percent, minimum . . . . .	300
Ultimate elongation, oven aged 46 hours at 212° F, percent of initial, minimum . . . . .	80
Ultimate elongation, after immersion in medium No. 5 for 94 hours at 73.4° F, percent of initial minimum. . . . .	60
Shore A hardness, initial durometer, points . . . . .	65 $\pm$ 5
Hardness, durometer, oven aged 46 hours at 212° F, points change, maximum . . . . .	$\pm$ 10
Volume increase in medium No. 5, 94 hours at 73.4° F, percent, maximum . . . . .	25
Volume change in medium No. 4, 94 hours at 73.4° F, percent increase . . . . .	zero to 15
Volume change in distilled water, 14 days at 160° F, percent increase . . . . .	zero to 25
Compression set, 46 hours at 212° F, percent, maximum . . . . .	40
Compression set, 94 hours at minus 25° F, (fuel extracted specimens), percent, maximum . . . . .	45
Torsional stiffness ratio at minus 25° F (fuel extracted specimens), maximum . . . . .	5

The cups shall have a tapered lip that expands to maintain a liquid-tight seal during traverse of the element through the varying inside diameters at the end nipples of the pipeline sections and that will compensate for wear when subjected to fluid pressure specified herein. Prior to fabrication, the rubber cup material shall be tested as specified herein.

### 3.5 Environmental conditions.

3.5.1 Operational temperature. The element shall perform as specified herein in any ambient temperature from plus 110° F to minus 25° F.

3.5.2 Storage temperature. The element shall not be damaged by storage in any ambient temperature from plus 145° F to minus 28° F.

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3.6 Safety. Since the inherent design of the element employs numerous wire brushes mounted on spring steel, thereby creating a potential handling hazard, elements shall be furnished with legible precautionary information declaring the need for handling the element with gloves.

3.7 Performance. The element shall require not more than 15 pounds per square inch (psi) line pressure for successful traverse through straight runs of clean pipe and not more than 75 psi line pressure through full-diameter round-opening gate, plug, and swing-check-type valves. The element shall traverse through small breaks in pipe continuity at the couplings and changes in diameter at the end nipples of the pipeline sections. The element shall traverse smooth field bends of not less than 12 pipe diameters or wrinkle bends of not more than five degrees bend per foot of pipe when tested as specified herein.

3.8 Identification marking. Each element shall be permanently and legibly marked with the contractor's identification in accordance with MIL-STD-130. The marking shall be applied to the element on plates in accordance with MIL-P-514, type III, composition B, material optional. Each plate shall be attached by screws, bolts or rivets in a location where the plate shall be both visible and legible.

3.9 Treatment and painting. The portions of the element normally painted shall be cleaned, treated and painted in accordance with MIL-T-704, type B.

3.10 Interchangeability. All parts of any single size element having the same part number shall be functionally and dimensionally interchangeable. Interchangeable parts are defined as two or more like parts possessing such functional and physical characteristics as to be equivalent in performance and durability, and capable of being exchanged one for the other without alteration of the parts themselves or of adjoining parts, except for adjustment, and without selection for fit or performance.

3.11 Workmanship. All parts, components and assemblies of the element including castings, forgings, molded parts, stampings, machined surfaces, and welded parts shall be free from such defects as misaligned parts or components, incomplete welds, cracks, corrosion, or extraneous material. External surfaces shall be free from burrs, sharp edges and corners, except when sharp edges and corners are required. The elements shall be free of any other defects that could adversely affect the strength, reliability, maintainability, and serviceability required for their intended use.

#### 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 as specified herein. Except as otherwise specified in the

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contract or purchase order, the contractor 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 the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Component and material inspection. The contractor is responsible for insuring that components and materials used are manufactured, examined, and tested in accordance with referenced specifications and standards, as applicable.

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

- a. First article inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).
- c. Inspection of packaging (see 4.6).

4.3 First article inspection.

4.3.1 Rubber cup material.

4.3.1.1 Sampling. Prior to fabrication of rubber cups, rubber material specimens shall be collected for the testing specified in 4.5.2, and shall be from a batch (see 6.6.1) of the same dimensions and of the same composition of a single shipment offered for delivery at one time. Quantity and size of specimens shall be as specified herein for the applicable test.

4.3.1.2 Tests. Specimens of the rubber cup material shall be tested as specified in 4.5.2. Failure of any test shall be cause for rejection of the rubber material from which the specimens were taken.

4.3.2 Element.

4.3.2.1 Examination. The first article element shall be examined as specified in 4.5.1. Presence of one or more defects shall be cause for rejection.

4.3.2.2 Tests. The first article element shall be tested as specified in 4.5.5. Failure of this test shall be cause for rejection.

4.4 Quality conformance inspection.

4.4.1 Lot. An inspection lot shall consist of not more than 50 elements of the same size.



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4.4.2 Sampling. Sampling of elements for examination and tests shall be in accordance with MIL-STD-105.

4.4.3 Examination. Elements selected in accordance with 4.4.2 shall be examined for the defects specified in 4.5.1. AQL shall be 2.5 percent defective for major defects and 6.5 percent defective for minor defects.

4.4.4 Tests. Elements selected in accordance with 4.4.2 shall be tested as specified in 4.5.5. AQL shall be 4.0 percent defective.

4.5 Inspection procedure.

4.5.1. Examination. The elements shall be examined as specified herein for the following defects:

Major

101. Materials not as specified.
102. Materials are not corrosion and deterioration resistant or treated to be made corrosion and deterioration resistant for the applicable storage and operating environment.
103. Dissimilar metals as defined in MIL-STD-889 are not effectively insulated from each other.
104. Contractor does not have documentation available for identification of material, material finishes or treatments.
105. Finish plan not adequate.
106. Plugged bypass through shaft body and outlet holes.
107. Quantity, size and location of outlet holes not as specified.
108. Shaft-body assembly not as specified.
109. Inadequate spring resiliency to provide proper cleaning action of pipe interior.
110. Inability of the spring mountings to hold wire brushes securely during cleaning action of piping interior.
111. Spring mountings improperly designed for quick and simple replacement.
112. Quantity of wire brushes less than specified.
113. Wire brush mountings not as specified.
114. Alinement of wire brushes in relationship to piping walls not as specified.
115. Corrosion-resistant coating of wire-brush bristles not as specified.
116. Size of wire-brush bristle not as specified.
117. Wire-brush guides not furnished or not as specified.
118. Rubber cup(s) missing.
119. Interchangeability of parts not as specified.
120. Workmanship not as specified.

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Minor

201. Safety handling statement illegible or not furnished as specified.
202. Identification marking missing, incomplete or not legible as specified.
203. Treatment and painting not as specified.

4.5.2 Tests of rubber specimens. Specimens shall be tested as from samples selected as specified in 4.3.1.1.

4.5.2.1 Test conditions. Test conditions shall be as specified herein and in applicable test methods.

4.5.2.2 Rubber cup material. The rubber cup material shall be tested in accordance with FED-STD-601 or ASTM as specified in table II, and as specified herein. Nonconformance to the applicable requirements of 3.4.3 shall constitute failure of any part of this test.

TABLE II. Rubber cup material tests

Description	FED-STD-601 Method or ASTM
Tensile strength, initial . . . . .	D 412
Tensile strength, after oven aging . . . . .	D 573 <u>1/</u>
Tensile strength, after immersion in medium No. 5 . . . . .	6111 <u>2/ 3/</u>
Tensile strength, after immersion in distilled water (pH - 7.0 plus or minus 0.2) . . . . .	6111 <u>3/ 9/</u>
Ultimate elongation, initial . . . . .	D 412
Ultimate elongation, after oven aging . . . . .	D 573 <u>1/</u>
Ultimate elongation, after immersion in Medium No. 5 . . . . .	6111 <u>2/</u>
Hardness, initial . . . . .	3021 <u>4/</u>
Hardness, after oven aging . . . . .	D 573 <u>1/</u> and D 2240 <u>4/</u>
Volume increase in medium No. 4 . . . . .	6211 <u>5/ 2/</u>
Volume increase in medium No. 5 . . . . .	6211 <u>5/ 2/</u>
Volume increase in distilled water . . . . .	6211 <u>5/ 9/</u>
Compression set at 212° F, at 25 percent deflection . . . . .	D 395 <u>4/ 7/ 1/</u>
Compression set at minus 25° F, at 40 percent deflection . . . . .	D 1229 <u>6/ 4/ 7/ 8/</u>

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- 1/ Test specimens shall be conditioned at 212° F, plus or minus 1.8° F, for 46 hours, plus or minus 1 hour.
- 2/ Test specimens shall be immersed in medium No. 4 or No. 5 as applicable, in accordance with FED-STD-601, method 6001, at 73.4° F, plus or minus 3.6° F, for 94 hours, plus or minus 15 minutes.
- 3/ Tensile strength calculations shall be based on swollen cross-sectional area of the specimen (see 4.8.1 of method 6111).
- 4/ Test specimen shall be 1.125 inches x 0.875 inch x 0.500 inch, plus or minus 0.005 inch; thickness shall be attained by adding a number of plies.
- 5/ Test specimen shall be 2.125 inches x 0.875 inch and not over 0.062 inch thick.
- 6/ Test specimen shall be cut from strips that have been prepared as follows:
  - a. Buff to required thickness.
  - b. Immerse in medium No. 5, as prescribed in 4.4 of method 6001, at 73.4° F, plus or minus 3.6° F, for 94 hours, plus or minus 2 hours.
  - c. Blot and dry while exposed on all sides to circulating air at room temperature for 24 hours.
  - d. Dry in air-circulating oven at 130° F, plus or minus 5° F, for 72 hours, plus or minus 15 minutes.
  - e. Cool to room temperature for not less than 4 hours.
- 7/ Test specimens shall be compressed to the deflection indicated, regardless of hardness.
- 8/ Compressed specimens shall be stored at minus 25° F, plus or minus 2° F, for 94 hours, plus or minus 30 minutes, before testing. Thickness readings shall be recorded 30 minutes after release from clamps.
- 9/ Test specimens shall be immersed in medium No. 10 - distilled water (pH - 7.0, plus or minus 0.2) in accordance with FED-STD-601, method 6001, at 160° F for 14 days, plus or minus 1 hour.

4.5.2.3 Torsional stiffness ratio.

4.5.2.3.1 Test specimens. Test specimens shall be 0.080 inch wide x 1.50 inches long x 0.080 inch thick, with a 0.250-inch-square stub at each end. The specimens shall be cut from strips prepared in accordance with Note 6 of table II.

4.5.2.3.2 Test apparatus. The test apparatus shall be a Gehman torsional tester in accordance with FED-STD-601, method 5611, except the torsion apparatus, the stand, a suitable bracket to hold the lower clamp, a beryllium-copper tension wire are required.

4.5.2.3.3 Test procedure. The test procedure shall be as follows:

- a. With the specimen and the test apparatus at 73° F, plus or minus 5° F, secure the lower end of the specimen in the

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rigidly mounted clamps of the test apparatus and secure the upper end in the upper pinch clamp attached to the lower end of the torsional wire.

- b. Adjust the pointer to the zero position by rotating the protractor scale. Turn the torsional head 180 degrees and record the pointer reading after a period of 10 seconds.
- c. After conducting the tests specified in a and b above, place the specimen in a chamber in an atmosphere of air or a mixture of air and carbon dioxide at minus 25° F, plus or minus 2° F, for 94 hours, plus or minus 1 hour. Condition the torsional apparatus and tongs for handling specimens in the chamber for not less than 2 hours before use.
- d. Repeat the tests specified in a and b above while specimens and apparatus are still in the conditioning chamber at minus 25° F, plus or minus 2° F.

4.5.2.3.4 Calculations. The tests shall be conducted on three specimens from each lot sample, and the results shall be averaged. If the torsional stiffness ratio for any specimen is greater than 5, the ratio for each of the three specimens shall be within 20 percent of the averaged value of the three specimens. The torsional stiffness ratio at minus 25° F shall be calculated by means of the following formula:

$$\text{Torsional stiffness ratio at minus 25° F} = \frac{\text{Torsional stiffness factor at minus 25° F}}{\text{Torsional stiffness factor at plus 73° F}}$$

$$\text{where torsional stiffness factor} = \frac{180 \text{ degrees minus angle of twist of specimen}}{\text{angle of twist of specimen}}$$

Average torsional stiffness ratio greater than 5 shall constitute failure of this test.

#### 4.5.3 Environmental.

4.5.3.1 High temperature. The element shall be tested as specified in MIL-STD-810, procedure I, method 501. The maximum ambient storage temperature shall be 145° F and the maximum ambient operating temperature shall be 110° F. The operating period of procedure I shall be 2 hours. The element shall be operated at rated capacity. Nonconformance to 3.5 shall constitute failure of this test.

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4.5.3.2 Low temperature. The element shall be tested as specified in MIL-STD-810, procedure I, method 502. The minimum ambient storage temperature shall be minus 28° F. The minimum ambient operating temperature shall be minus 25° F. The element shall be operated at rated capacity. Nonconformance to 3.5 shall constitute failure of this test.

4.5.4 Safety. The element shall be evaluated for safety requirements throughout the testing. Nonconformance to 3.6 shall constitute failure of this test.

4.5.5 Performance test.

4.5.5.1 Certification and test report. In lieu of performance tests the contractor shall provide the procuring activity certification within the time frame specified (see 6.2) that the element meets the performance requirement of 3.7 and that all other provisions of this specification have been met. The certification shall be supported by three copies of a technical report in accordance with MIL-STD-831 delineating the conformance to requirements specified herein (see 6.4).

4.6 Inspection of packaging.

4.6.1 Quality conformance inspection of pack.

4.6.1.1 Unit of product. For the purpose of inspection, a completed pack prepared for shipment shall be considered a unit of product.

4.6.1.2 Sampling. Sampling for examination shall be in accordance with MIL-STD-105.

4.6.1.3 Examination. Samples selected in accordance with 4.6.1.2 shall be examined for the following defects. AQL shall be 2.5 percent defective.

NO.	DEFECT	A	B	COMM
121.	Data items, when required, not preserved as specified.	5.1.1.1		5.1.2
122.	Repair parts, when required, not preserved as specified.	5.1.1.2		5.1.2
123.	Maintenance tools, when required, not preserved as specified.	5.1.1.3		5.1.2
124.	Complete element, including data, parts and tools, not consolidated as specified.	5.1.1.4		5.1.2
125.	Shipping containers not as specified.	5.2.1	5.2.2	5.2.3

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NO.	DEFECT	A	B	COMM
126.	Element sizes mixed in shipping containers.	5.2.1	5.2.2	5.2.3
127.	Box closure and strapping not as specified.	5.2.1	5.2.2	
128.	Container markings not as specified.	5.3.1	5.3.1	5.3.2

## 5. PACKAGING

5.1 Preservation. Preservation shall be level A or commercial, as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Data items. Data items, when required (see 6.4), shall be preserved in accordance with MIL-P-116, method IC-1 or IC-3.

Special note: When more than one data item (such as parts list, operation manual, maintenance manual or others) is required for each element, all such items shall be preserved as a set in one method IC-1 or IC-3 bag.

5.1.1.2 Repair parts. Repair parts for each element, when required (see 6.5), shall be preserved in accordance with the applicability, selection and application provisions of MIL-P-116.

5.1.1.3 Maintenance tools. Maintenance tools for each element, when required (see 6.5), shall be preserved in accordance with the level A requirements of PPP-P-40.

5.1.1.4 Element. Each element and, when required, the preserved data items, repair parts and maintenance tools for each element, shall be consolidated into a close-fitting fiberboard box conforming to PPP-B-636, class weather resistant. The contents shall be blocked and cushioned to prevent damage and movement. The boxes shall be closed by method IV of the appendix to the box specification.

5.1.2 Commercial. Commercial preservation for each complete element shall be in accordance with MIL-STD-1188.

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5.2 Packing. Packing shall be level A, level B, or commercial (see 6.2).

5.2.1 Level A. Elements of like size, preserved as specified in 5.1, shall be packed in close-fitting boxes conforming to PPP-B-601, overseas type or PPP-B-621, class 2. Box closure and strapping shall be as specified in the applicable box specification or in the appendix thereto except that the strapping shall be flat and, unless otherwise specified, the finish shall be B. When specified, the strapping may be A.

5.2.2 Level B. Elements of like size, preserved as specified in 5.1, shall be packed as specified in 5.2.1 except that boxes shall be domestic type or class 1 and that strapping may be finish A.

5.2.3 Commercial. Elements of like size, preserved as specified in 5.1, shall be packed in accordance with the requirements of MIL-STD-1188.

5.3 Marking.

5.3.1 Levels A and B. In addition to any special or other identification marking required by the contract or purchase order, each container shall be marked in accordance with MIL-STD-129.

5.3.2 Commercial. Commercial marking shall be in accordance with MIL-STD-1188.

6. NOTES

6.1 Intended use. The elements are used in removing scale, oxide, paraffin, and other restrictive deposits from the inside surfaces of pipelines used in transporting petroleum products.

6.2 Ordering data. Acquisition documents should specify the following:

- a. Title, number and date of this specification.
- b. Size required (see 1.2).
- c. When a first article is required for inspection and approval, and numbers of cleaning elements required (see 3.2).
- d. Time frame for submission of certification and test report (see 4.5.5.1).
- e. Degree of preservation and degree of packing required (see 5.1 and 5.2).
- f. When level A strapping is to be finish A (see 5.2.1).

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6.3 First article. When a first article inspection is required, the item will be tested and should be a first produced element. The first article should consist of one or more cleaning elements. The contracting officer should include specific instruction in acquisition documents regarding arrangements for examinations, tests, and approval of the first article.

6.4 Data requirements. The contracting officer should include requirements for such data as technical reports, technical publications, instructional materials, illustrated parts lists, and contractor's operation and maintenance manual to be furnished with each element. One copy of the certification and test report should be furnished to: Commander, USA Mobility Equipment Research and Development Command, ATTN: DRDME-GE, Fort Belvoir, VA 22060, for approval.

6.5 Provisioning. The contracting officer should include provisioning requirements for repair parts and maintenance tools as necessary (including any special tools), and instructions on shipment of elements.

6.6 Definition.

6.6.1 Batch. A batch is defined as that quantity of material which has been subjected to some unit chemical or physical mixing process intended to make the final product substantially uniform.

6.7 Recycled material. It is encouraged that recycled material be used, when practical, as long as it meets the requirements of this specification (see 3.3).

6.8 Information figure. Figure 1 illustrates an intermediate-size element which delineates an acceptable configuration; however, the figure is included for illustration only and is not intended to preclude the furnishing of another element which conforms to this specification.

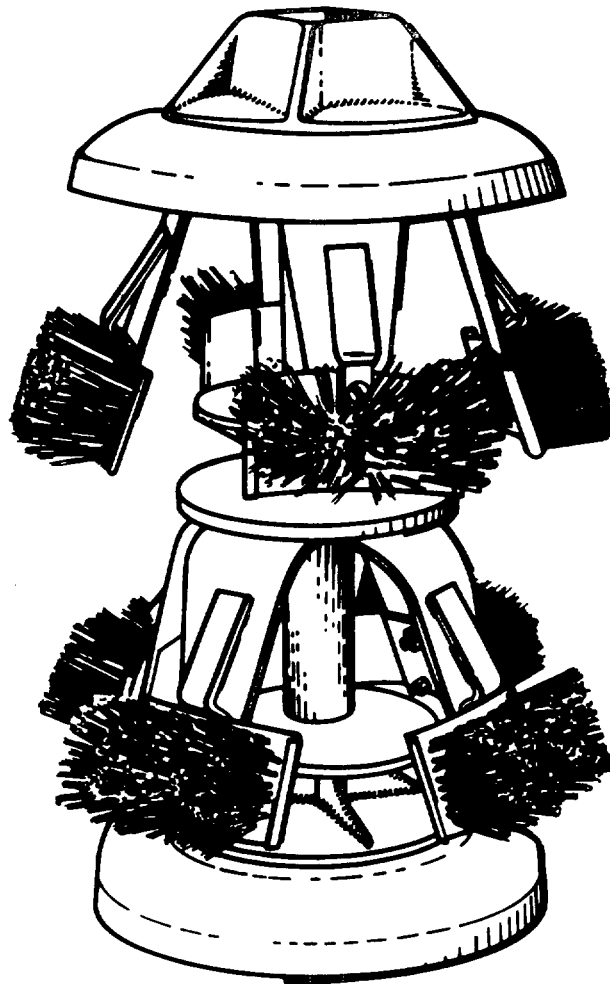
Custodian:  
Army - ME

Preparing activity:  
Army - ME

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**FIGURE 1. Pipeline cleaning element.**

**X-3012A**