

INCH-POUND

MIL-DTL-24788A

22 May 2008

SUPERSEDING

MIL-C-24788

09 September 1993

DETAIL SPECIFICATION  
COUPLING ASSEMBLY, SEMI-DRY-BREAK,  
QUICK-DISCONNECT FUEL  
WITH OR WITHOUT CONTINUITY SWITCH

This specification is approved for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 Scope. This specification covers the requirements for acquisition of a semi-dry-break, quick-disconnect fuel coupling assembly, with or without continuity switch used in connecting fueling nozzles to aircraft refueling hoses and refueling pantographs in aircraft refueling systems.

1.2 Classification. Quick-disconnect coupling assemblies are of the following classes, as specified (see 6.2):

Class 1 – Semi-Dry-Break, Quick-Disconnect Assembly without Continuity Switch

Class 2 – Semi-Dry-Break, Quick-Disconnect Assembly with Continuity Switch

## 2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

Comments, suggestions, or questions on this document should be addressed to: Commander, Naval Sea Systems Command, ATTN: SEA 05M2, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard, DC 20376-5160 or emailed to [CommandStandards@navy.mil](mailto:CommandStandards@navy.mil), with the subject line "Document Comment". Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <http://assist.daps.dla.mil>.

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## FEDERAL STANDARDS

FED-STD-H28 - Screw-Thread Standards for Federal Services

## DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-370 - Hose and Hose Assemblies, Nonmetallic: Elastomeric, Liquid Fuel

MIL-PRF-680 - Degreasing Solvent

MIL-DTL-5624 - Turbine Fuel, Aviation, Grades JP-4 and JP-5

MIL-PRF-7024 - Calibrating Fluids, Aircraft Fuel System Components

MIL-S-8512 - Support Equipment, Aeronautical, Special, General Specification for the Design of

MIL-H-17902 - Hose, End Fittings and Hose Assemblies, Synthetic Rubber, Aircraft Fuels

MIL-DTL-83133 - Turbine Fuels, Aviation, Kerosene Types, NATO F-34 (JP-8), and NATO F-35, and JP-8+100

## DEPARTMENT OF DEFENSE STANDARDS

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

(Copies of these documents are available online at <http://assist.daps.dla.mil/quicksearch/> or <http://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

## AMERICAN PETROLEUM INSTITUTE (API)

API/IP STD 1529 - Aviation Fuelling Hose and Hose Assemblies

(Copies of this document are available online at [www.api.org](http://www.api.org) or from API Publications, Global Engineering Documents, 15 Inverness Way East, M/S C303B, Englewood, CO 80112-5776.)

## ASTM INTERNATIONAL

ASTM D1655 - Standard Specification for Aviation Turbine Fuels (DoD adopted)

(Copies of this document are available online at [www.astm.org](http://www.astm.org) or from ASTM International, 100 Barr Harbor Dr., PO Box C700, West Conshohocken, PA 19428-2959.)

## INTERNATIONAL ORGANIZATION FOR STANDARDS (ISO)

ISO 68-2 - ISO General Purpose Screw Threads, Basic Profile, Part 2: Inch Screw Threads

(Copies of this document are available online at [www.iso.org](http://www.iso.org) or from ISO, 1, rue de Varembe, CH-1211 Geneva 20, Switzerland.)

## SAE INTERNATIONAL

SAE AS5877 - Detailed Specification for Aircraft Pressure Refueling Nozzle (DoD adopted)

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(Copies of this document are available online at [www.sae.org](http://www.sae.org) or from SAE World Headquarters, 400 Commonwealth Drive, Warrendale, PA 15096-0001.)

2.4 **Order of precedence.** In the event of a conflict between the text of this document and the references cited herein, 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 **Qualification.** Semi-dry-break, quick-disconnect coupling assemblies (or components) furnished under this specification shall be products that are authorized by the qualifying activity for listing on the applicable qualified products list before contract award (see 4.2 and 6.2).

3.2 **Components.** A complete semi-dry-break, quick-disconnect coupling assembly shall consist of male (otherwise known as nipple) and female (otherwise known as quick-disconnect coupling or coupling) halves. The dry-break feature shall be included within the female (hose) half only. The female half mates to the aircraft refueling hose as depicted in Figure 2. The male half shall mate with the standard SAE AS5877 aircraft pressure fuel nozzle and shall be in accordance with Figure 1. When the male and female halves are mated to the nozzle and aircraft refueling hose, respectively, the male and female halves are connected to complete the semi-dry-break, quick-disconnect coupling assembly.

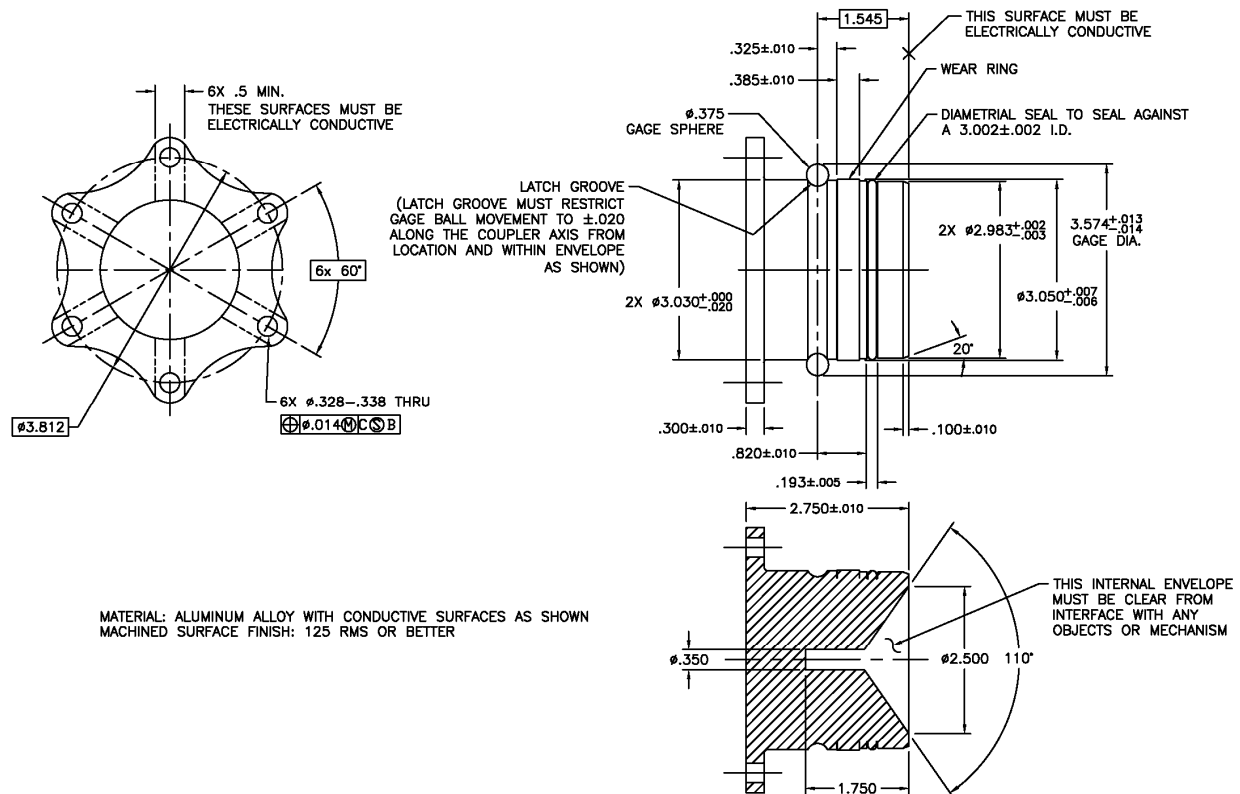


FIGURE 1. Requirements for male half of quick-disconnect assembly.

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3.2.1 Strainers. Strainers shall be 60-mesh screen or as specified by the procuring activity (see 6.2).

3.3 Materials. Materials and processes used by the manufacturer of the dry-break quick-disconnect assemblies shall be suitable for the intended purpose and shall conform to the applicable specifications listed (see 2.2.1). All wetted components of the quick-disconnect assembly shall be compatible with MIL-DTL-5624, MIL-DTL-83133, and ASTM D1655.

3.3.1 Metals. Metals used in the manufacturing of the assemblies shall be lightweight aluminum alloys or stainless steel suitable for use in a marine environment. All aluminum surfaces shall be protected to resist corrosion. To prevent galvanic action, the use of dissimilar metals in contact with each other shall be minimized. Dissimilar metals in contact with each other must be protectively coated. The use of magnesium, manganese, copper, zinc, cadmium, or their alloys (alloys containing more than 5 percent of the subject materials) thereof is prohibited.

3.3.1.1 Component examination. Castings shall be clean, sound, and free of defects that would interfere with components working as specified (see 4.4).

3.3.2 Test fluids. Where tests are conducted requiring the use of test fluids, the test fluids shall be in accordance with MIL-PRF-680, MIL-DTL-5624, MIL-DTL-83133, MIL-PRF-7024, or ASTM D1655.

3.4 Design. The female half of the semi-dry-break, quick-disconnect coupling assembly shall not exceed the envelope dimensions or the weight limitations shown on Figure 2. The semi-dry-break, quick-disconnect coupling assembly shall connect or disconnect a hose and nozzle easily by a single person wearing winter gloves without using tools. The semi-dry-break, quick-disconnect coupling assembly shall consist of a male and a female half of which the female half shall incorporate an automatically operated mechanism to prevent spillage of liquid from the hose when the units are disconnected. A strainer of specified mesh opening shall be provided between the two halves of the units. The strainer shall be removable from the male half for checking, cleaning, or replacing without the use of tools. All normal replacement parts shall be the same regardless of the thread or inlet size of the unit. The interface seal between the male and female halves shall engage the female half immediately when the semi-dry-break in the female half is opened, or immediately thereafter to minimize any fuel leakage during connection. During disconnection, the interface seal between the male and female halves shall disengage immediately when the semi-dry-break in the female half is completely closed, or immediately thereafter to minimize any fuel leakage during disconnection.

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THE FEMALE HALF OF THE  
SEMI-DRY-BREAK, QUICK-DISCONNECT  
COUPLING ASSEMBLY SHALL NOT  
WEIGH GREATER THAN 6 POUNDS

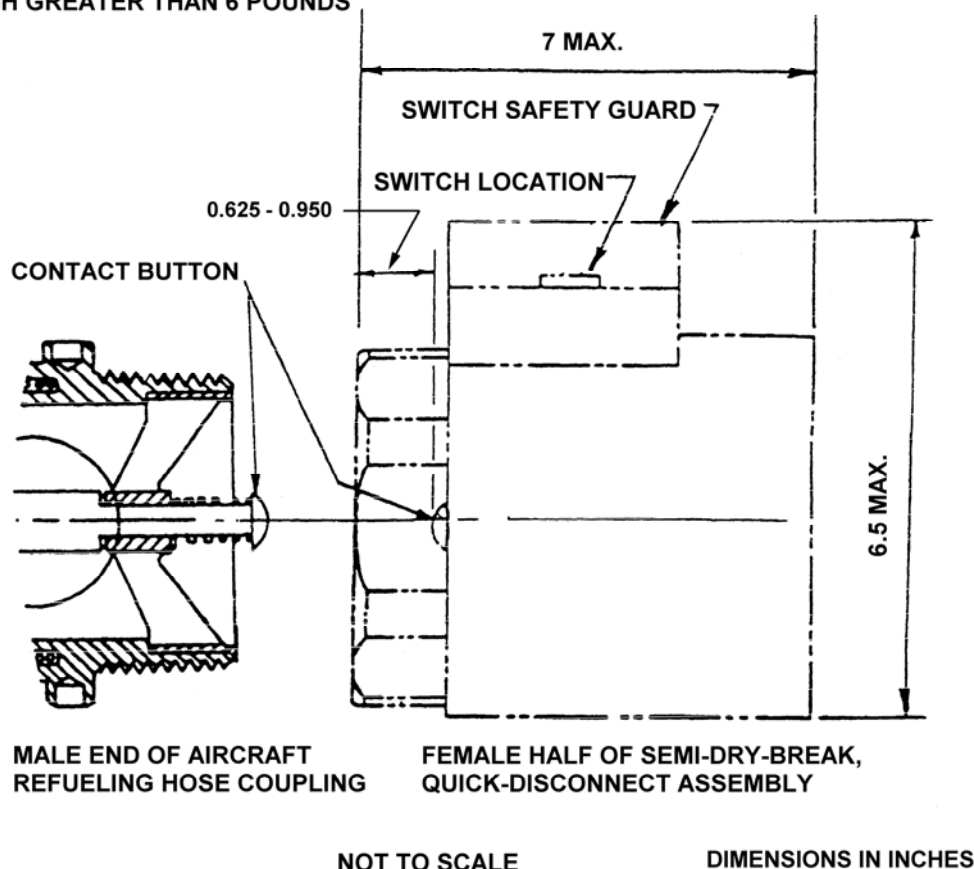


FIGURE 2. Envelope and weight limitations and contact assembly location.

3.4.1 Control (or continuity) switch. The female half of the semi-dry-break, quick-disconnect coupling assembly, Class 2, shall contain a sealed single pole, single throw control switch. The switch mechanism must be shielded by a protective guard. The top of the switch mechanism shall not extend above the switch guard so as to prevent abrasion of the switch mechanism, and to prevent inadvertent actuation. One side of the continuity switch shall be electrically connected to the body of the female half of the semi-dry-break, quick-disconnect coupling assembly and the other side of the switch shall be isolated from the body and shall make electrical contact with the spider assembly protruding from the end of the mating aircraft refueling hose, as shown in Figure 2.

3.4.1.1 Protective boot. The switch mechanism must be sealed by a rubber boot or cover; or be designed to resist deterioration in its performance when subjected to a severe marine environment without a rubber boot or cover.

3.4.2 Commercial standard tools. Design of the semi-dry-break, quick-disconnect coupling assemblies shall enable disassembly, reassembly, and service maintenance to be accomplished by means of commercially standard tools as defined in MIL-S-8512.

3.5 Construction. Semi-dry-break, quick-disconnect coupling assemblies shall withstand the strains, jars, vibrations, and other conditions incident to shipping, storage, and service usage. The assembly shall withstand a drop of 6 feet onto a steel plate without any damage affecting operation as specified in 4.5.12.

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3.5.1 Strainer. The strainer in a clogged condition shall withstand 15 pounds per square inch (PSI) differential pressure in the fueling direction without collapse, tearing, or other damage to the screen.

3.6 Screw threads. Screw threads shall be in accordance with FED-STD-H28 or ISO 68.

3.6.1 Screw-thread locking devices. Threaded fasteners that, if loosened or disengaged, could fall into the fuel system, shall be locked by self-locking nuts, thread locking inserts, lock wires, or cotter pins.

3.7 Synthetic rubber parts.

3.7.1 Elastomeric compatibility. O-rings, seals, and other elastomeric parts shall be compatible with aviation fuels as specified in 3.3.2.

3.7.2 Elastomeric serviceability. Elastomeric parts shall be readily replaceable with a minimum teardown of attaching parts.

3.8 Interchangeability. Parts having the same manufacturer's part number shall be directly and completely interchangeable with each other with respect to installation and performance. Regardless of manufacturer, all male halves (nipple), per Figure 1, shall be completely interchangeable in terms of installation and performance when used with all female halves.

3.9 Identification of product. Assemblies and parts shall be marked for identification in accordance with MIL-STD-130.

3.9.1 Identification. The female half of the semi-dry-break, quick-disconnect coupling assembly shall be identified in accordance with MIL-STD-130. The information shall contain the following:

- a. Manufacturer's name or logo
- b. The number of this specification
- c. Contract or order number
- d. Manufacturer's part number
- e. Manufacturer's serial number
- f. Date of manufacture

3.10 Performance requirements.

3.10.1 Proof pressure. When tested as specified in 4.5.1, there shall be no evidence of leakage, distortion, or failure of any part or component.

3.10.2 Operating force. When tested as specified in 4.5.2, the force to engage the male and female halves of the semi-dry-break, quick-disconnect coupling assembly shall not exceed 60 pounds and the force to disengage shall not exceed 20 pounds.

3.10.3 Leakage. When tested as specified in 4.5.3, there shall be no evidence of leakage from the semi-dry-break, quick-disconnect coupling assembly under positive pressure. When under negative pressure leakage of air into the semi-dry-break, quick-disconnect coupling assembly shall not be greater than 50 cubic centimeters (cc) per minute.

3.10.3.1 Semi-dry-break leakage. When tested as specified in 4.5.3.1, there shall be no leakage through the female half of the semi-dry-break, quick-disconnect coupling assembly.

3.10.4 Extreme temperature. When tested as specified in 4.5.4, there shall be no signs of leakage, cracking, or other evidence of failure to the semi-dry-break, quick-disconnect coupling assembly.

3.10.5 Total pressure loss. When tested as specified in 4.5.5, the pressure drop across the entire semi-dry-break, quick-disconnect coupling assembly shall not be greater than 12 PSI at 300 gallons per minute (gal/min).

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3.10.6 Strength. When tested as specified in 4.5.6, there shall be no damage which causes malfunctioning of the semi-dry-break, quick-disconnect coupling assembly, nor shall there be any leakage exceeding one drop per minute.

3.10.7 Angular movement. When tested as specified in 4.5.7, there shall be no damage which causes malfunctioning of the semi-dry-break, quick-disconnect coupling assembly, nor any visible external leakage.

3.10.8 Endurance, wet and dry. When tested as specified in 4.5.8.1 and 4.5.8.2, the semi-dry-break, quick-disconnect coupling assembly shall pass the operating force test and leakage tests, as specified in 4.5.8.1 and 4.5.8.2.

3.10.9 Electrical resistance. When tested as specified in 4.5.9, the electrical resistance across the semi-dry-break, quick-disconnect coupling shall be less than or equal to 10.0 ohms.

3.10.10 Insulation breakdown. When tested as specified in 4.5.10, there shall be no insulation breakdown either during or as a result of the test.

3.10.11 Accelerated corrosion. When tested as specified in 4.5.11, there shall be no evidence of corrosion which might adversely affect subsequent operation of the semi-dry-break, quick-disconnect coupling assembly. The semi-dry-break, quick-disconnect coupling assembly shall also pass the specified operating force, electrical resistance, and insulation breakdown tests.

3.10.12 Rough handling. When tested as specified in 4.5.12, there shall be no leakage or physical damage that causes malfunction of the semi-dry-break, quick-disconnect coupling assembly components.

3.10.13 Burst pressure. When tested as specified in 4.5.13, there shall be no evidence of leakage, distortion, or failure of any component of the semi-dry-break, quick-disconnect coupling assembly.

3.10.14 Disassembly and inspection. After the requisite testing, the semi-dry-break, quick-disconnect coupling assemblies shall be disassembled for inspection. There shall be no evidence of corrosion, wear, or distortion which would adversely affect the performance of the assembly (see 4.5.14).

3.11 Cleanliness. When prepared for shipment, all components of the semi-dry-break, quick-disconnect coupling assembly shall be free of dirt, manufacturing oils, and debris. There shall be no exposed sharp edges on machined surfaces. Castings shall be free of blowholes. Mold parting seams shall be smooth.

#### 4. VERIFICATION

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

- a. Qualification inspection (see 4.2).
- b. Conformance inspection (see 4.3).

4.1.1 Inspection lot. For the purpose of conformance inspection and test sampling, a lot is defined as all semi-dry-break, quick-disconnect coupling assemblies and components of the same class, produced in one facility, using the same production, processes, and materials, and being offered for delivery at one time.

4.2 Qualification inspection. Unless otherwise specified (see 6.2), qualification inspection shall be performed on three complete semi-dry-break, quick-disconnect coupling assemblies, each consisting of a male half, female half, and any necessary adapters required to conduct the qualification tests. The inspection shall include the examination and the tests specified in Table I. A manufacturer may qualify either or both of the components; male or female half of the semi-dry-break, quick-disconnect coupling assembly. In the event a manufacturer only qualifies one of the two components, the non-test subjected items shall be a previously approved item under this specification. Upon completion of qualification testing, any semi-dry-break, quick-disconnect coupling assemblies used for qualification testing shall be clearly marked with the words "TEST UNIT" (or equivalent). Semi-dry-break, quick-disconnect coupling assemblies used for qualification testing shall not be provided for any procurement. The qualification test assembly(ies) may be a standard production item from the contractor's current inventory provided the assembly meets the requirements of this specification and is representative of the design, construction, and manufacturing techniques applicable to the remaining units to be furnished under the contract.

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TABLE I. Qualification test schedule.

Test	Requirement	Test Method	No. 1 Assembly	No. 2 Assembly	No. 3 Assembly
Component examination	3.3.1.1	4.4	X	X	X
Proof pressure	3.10.1	4.5.1	X	X	X
Operating force	3.10.2	4.5.2	X	X	X
Leakage	3.10.3	4.5.3	X	X	X
Semi-dry-break leakage	3.10.3.1	4.5.3.1	X	X	X
Extreme temperature	3.10.4	4.5.4	X		
Total pressure loss	3.10.5	4.5.5		X	
Strength	3.10.6	4.5.6		X	
Angular movement	3.10.7	4.5.7		X	
Endurance	3.10.8	4.5.8			X
Electrical resistance	3.10.9	4.5.9			X
Insulation breakdown	3.10.10	4.5.10			X
Accelerated corrosion	3.10.11	4.5.11			X
Rough handling	3.10.12	4.5.12			X
Burst pressure	3.10.13	4.5.13			X
Disassembly and inspection	3.10.14	4.5.14	X	X	X

4.3 Conformance inspection. Conformance inspection shall consist of the inspections and tests as listed in Table II.

TABLE II. Conformance inspections and tests.

Test	Requirement	Test Method
Component examination	3.3.1.1	4.4
Proof pressure	3.10.1	4.5.1
Electrical resistance	3.10.9	4.5.9
Insulation breakdown <sup>1/</sup>	3.10.10	4.5.10
NOTE: <sup>1/</sup> Class 2 couplings		

4.3.1 Sampling for conformance inspection. As a minimum, the contractor shall randomly select a sample quantity of completed and test subjected semi-dry-break, quick-disconnect coupling assemblies, male and/or female halves, in accordance with Table III and examine them in accordance with Table II.

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TABLE III. Sampling for conformance inspections and tests.

<b>Lot Size</b>	<b>Sample Size</b>
5 - 20	5
21 - 100	10
101 - 500	35
501-2000	50
More than 2000	75

4.4 Visual and dimensional examination. Each semi-dry-break, quick-disconnect coupling assembly, male half (nipple), and strainer shall be thoroughly examined for rough edges and castings, sharp edges where machining has been performed, and for compliance to 3.3.1.1 and the manufacturer's drawings.

4.5 Test methods. CAUTION: Tests requiring the use of a flammable test fluid should be conducted in an area where hot work (welding), smoking, and other activities that could produce sparks are prohibited.

4.5.1 Proof pressure. The mated male and female halves of the semi-dry-break, quick-disconnect coupling assembly shall be subjected to an internal test pressure of not less than 120 PSI for not less than 1 minute using test fluids specified in 3.3.2. Failure to meet the requirements of 3.10.1 shall be cause for rejection.

4.5.2 Operating force. With the male half (nipple) of the semi-dry-break, quick-disconnect coupling assembly mounted on a solid support, the female half of the assembly shall be engaged and locked. The female half of the assembly shall then be unlocked and disengaged. Failure to meet the requirements of 3.10.2 shall be cause for rejection.

4.5.3 Leakage. The mated male and female halves of the semi-dry-break, quick-disconnect coupling assembly shall be subjected to internal fluid pressures of minus 4 PSI to plus 4 PSI in 2-PSI increments and from 10 PSI to 60 PSI in 10-PSI increments using test fluids specified in 3.3.2 for positive pressures and air for negative pressures. The pressures shall be maintained at each increment for not less than 1 minute. Failure to meet the requirements of 3.10.3 shall be cause for rejection.

4.5.3.1 Semi-dry-break leakage. With the male half (nipple) removed from the semi-dry-break, quick-disconnect coupling assembly, the female half of the assembly shall be connected to a test fluid (see 3.3.2) pressure source. Five and 60 PSI pressure shall be applied to the inlet of the female half and held for not less than 1 minute. The outlet of the female half shall be observed for leakage. Failure to meet the requirements of 3.10.3.1 shall be cause for rejection.

4.5.4 Extreme temperature. Semi-dry-break, quick-disconnect coupling assemblies (male half; 60-mesh strainer; female half) shall be subjected to fuel resistance and extreme temperature testing as follows:

- The outlet of the male half of the semi-dry-break, quick-disconnect coupling assembly shall be connected to a suitable blank plate to prevent fuel leakage.
- The inlet of the female half of the semi-dry-break, quick-disconnect coupling assembly shall be connected to a 3-foot length of API 1529, Grade 2, Type C, semi-hardwall 3-inch diameter hose. Provisions shall be made to seal the inlet of the hose during testing.
- The test unit (hose; semi-dry-break, quick-disconnect coupling assembly) shall be half filled with test fluid (see 3.3.2) and placed in a suitable chamber. The temperatures, soak time, and order of testing shall be as specified in Table IV.

4.5.4.4 Tests after each extreme temperature soak period. At the conclusion of each soak period, the semi-dry-break, quick-disconnect coupling assembly shall be subjected to several tests at the temperature conditions prescribed in Table IV. The semi-dry-break, quick-disconnect coupling assembly shall be disconnected and then reconnected. Following this functional test, the assembly shall be subjected to a positive leakage test (see 4.5.3) (no negative pressures). Failure to meet the requirements of 3.10.3 shall be cause for rejection.

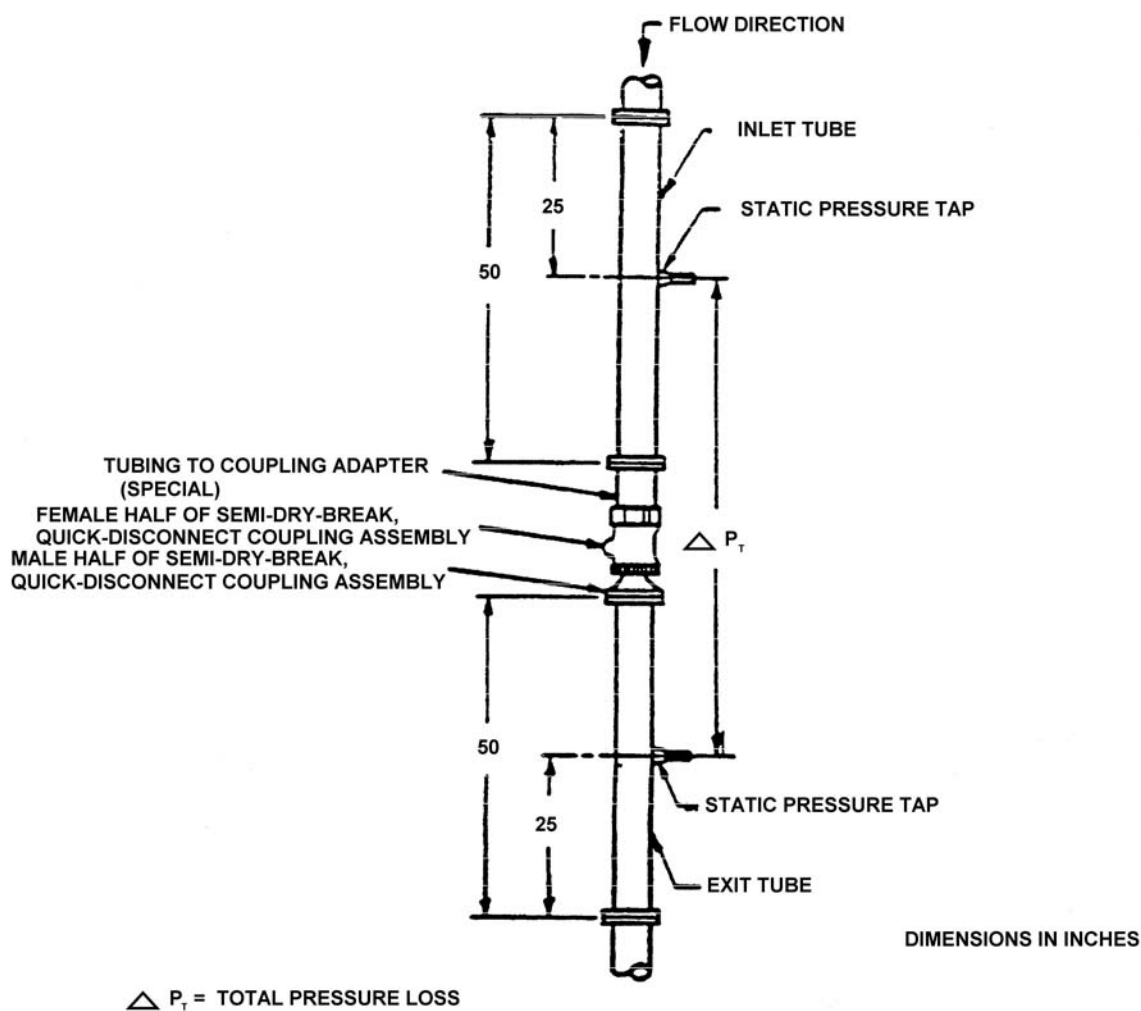
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TABLE IV. Temperature and fuel resistance test parameters.

<b>Test Period</b>	<b>Temperature Condition (+/- 1°C/2°F)</b>	<b>Soak Time</b>
1	Ambient (22 °C/72 °F)	24 hours
2	High (54 °C/130 °F)	24 hours
3	Ambient (22 °C/72 °F)	24 hours
4	Low (-34 °C/-30 °F)	24 hours

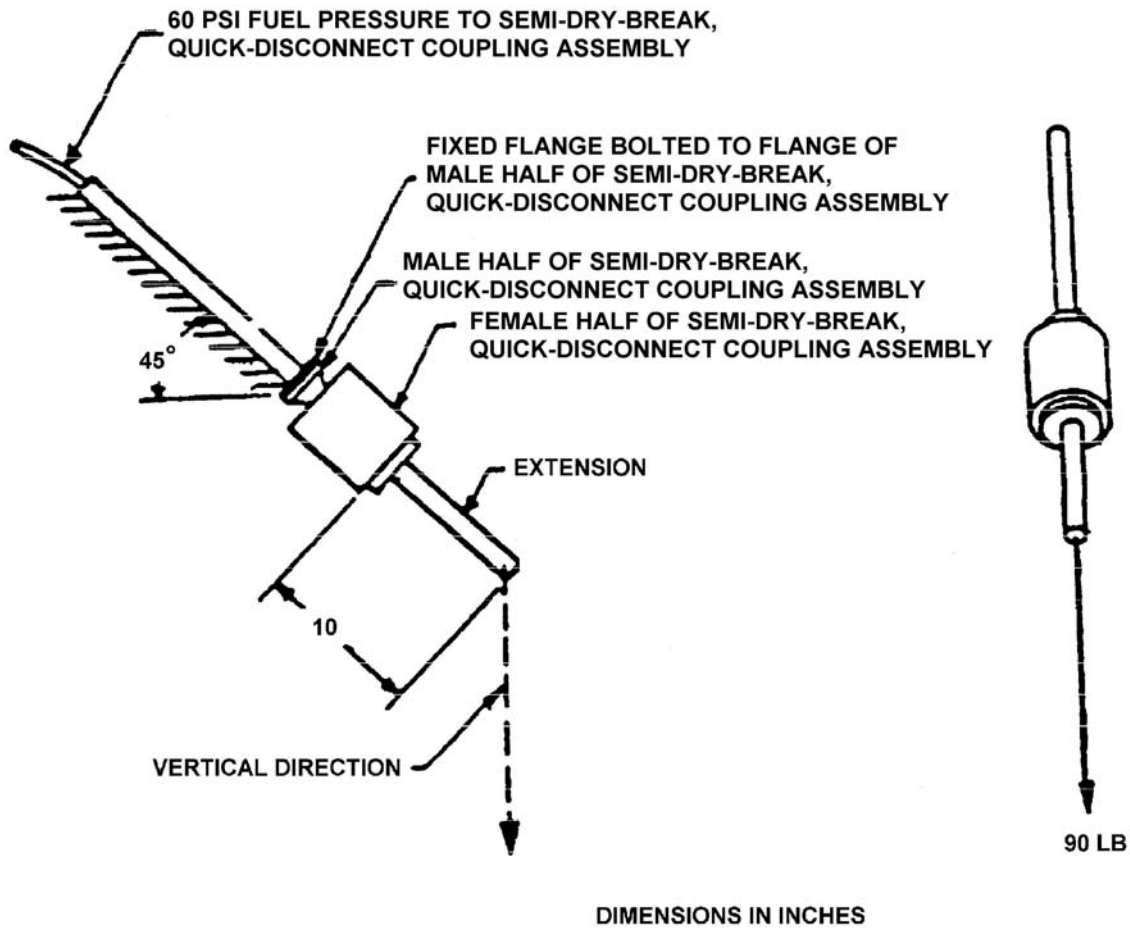
4.5.5 Total pressure loss. The semi-dry-break, quick-disconnect coupling assembly, with a 60-mesh strainer installed, shall be installed in a test set up similar to Figure 3. The test shall be conducted at flow rates from 0 to 600 gal/min using test fluids specified in 3.3.2. Sufficient data shall be taken to plot a "Total Pressure Loss vs. Flow" curve. Failure to meet the requirements of 3.10.5 shall be cause for rejection.

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FIGURE 3. Pressure loss test set-up.

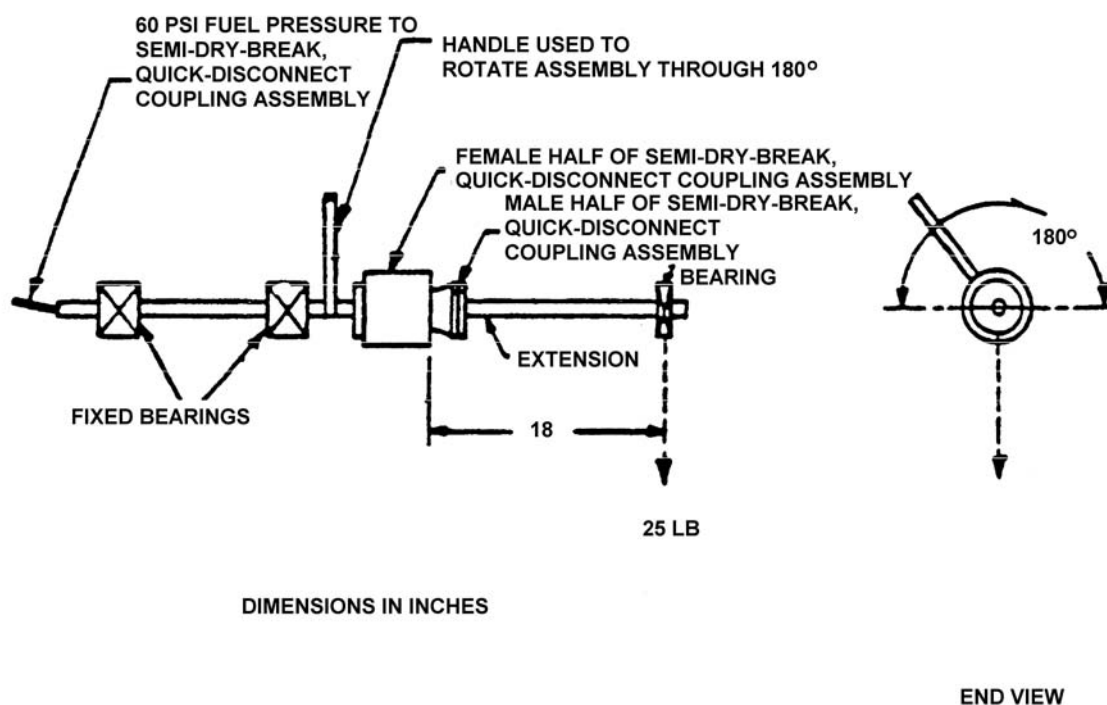
4.5.6 Strength. With the test setup as shown in Figure 4, the 90-pound force shall be applied and removed 1,000 times while a pressure of 60 PSI is maintained internally on the semi-dry-break, quick-disconnect coupling assembly. The test fluid shall be as specified in 3.3.2. Failure to meet the requirements of 3.10.6 shall be cause for rejection.

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FIGURE 4. Strength test set-up.

4.5.7 Angular movement. With the test setup as shown in Figure 5, the male-female interface of the semi-dry-break, quick-disconnect coupling assembly shall be rotated alternately 180 degrees in each direction for 200 complete cycles (one complete cycle consists of rotation from 0-180 degrees in either direction) while an internal test fuel (see 3.3.2) pressure of 60 PSI is applied to the assembly. At the conclusion of the test, the assembly shall be subjected to the operating force and leakage test as specified in 4.5.2 and 4.5.3, respectively. Failure to meet the requirements of 3.10.7 shall be cause for rejection.

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FIGURE 5. Angular test set-up.

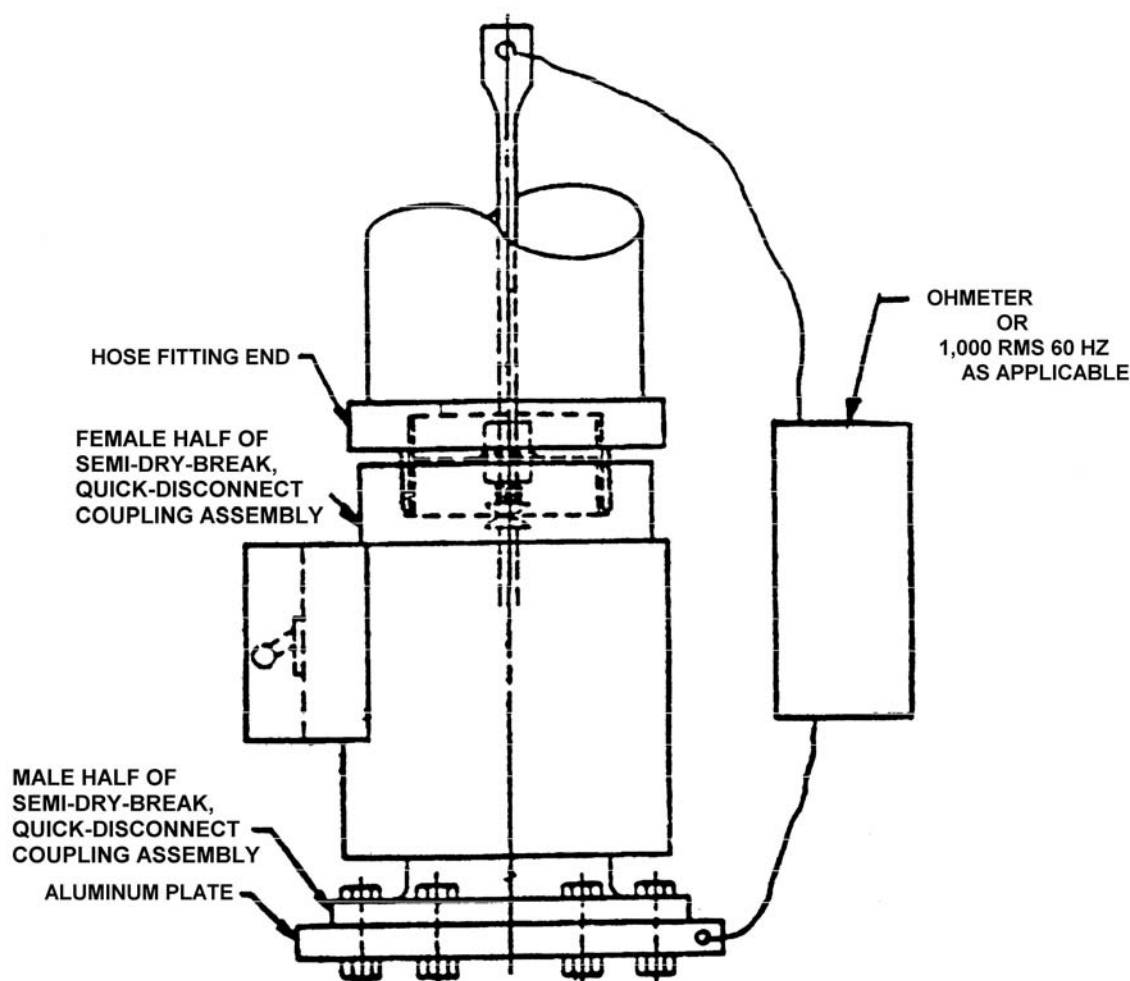
4.5.8 Endurance. Failure to meet the requirements of 3.10.8 after either of the following two tests shall be cause for rejection.

4.5.8.1 Wet. The wet endurance test shall consist of connecting and disconnecting the male and female halves of the semi-dry-break, quick-disconnect coupling assembly in the normal manner 2000 times. The assembly shall be pressurized to 60 PSI with test fluid (see 3.3.2) each time after the connection is made. The operating force test (see 4.5.2) shall be conducted after each 200 connect-disconnect cycles. At the completion of this test, the leakage test (see 4.5.3) shall be conducted.

4.5.8.2 Dry. The dry endurance test shall be conducted in a manner similar to the wet endurance test, except that the duration of the test shall be 500 cycles, the male and female halves of the semi-dry-break, quick-disconnect coupling assembly shall remain dry throughout the test, and no pressure shall be applied to the connected components. The operating force test (see 4.5.2) shall be conducted at the completion of the dry endurance test followed by the leakage test (see 4.5.3).

4.5.9 Electrical resistance. This test is applicable to all semi-dry-break, quick-disconnect coupling assemblies. The electrical resistance shall be measured from an aluminum plate bolted to the flange of the male half of the semi-dry-break, quick-disconnect coupling assembly through the male and female halves of the coupling to an adapter threaded onto the inlet of the female half. The test setup shall be similar to Figure 6. The electrical resistance shall meet the requirements of 3.10.9. Failure to meet these requirements shall be cause for rejection.

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FIGURE 6. Electrical resistance test set-up.

4.5.10 Insulation breakdown. This test is applicable to Class 2 semi-dry-break, quick-disconnect coupling assemblies. One thousand volts root mean square (rms), 60 hertz, shall be applied as indicated on Figure 6, with the control switch in the open position. Failure to meet the requirements of 3.10.10 shall be cause for rejection.

4.5.11 Accelerated corrosion. The complete semi-dry-break, quick-disconnect coupling assembly (60-mesh strainer, male half, and female half) shall be immersed in a 2.5 percent solution by weight of sodium chloride and water for a period of between 5 to 10 seconds. The assembly shall then be dried for a period of 1 hour at a temperature of  $130 \pm 5$  °F. The procedure shall be repeated for a total of 50 cycles. Immediately after this test, the assembly shall be washed with warm water to remove all salt accumulations and then dried. The assembly shall then be subjected to the operating force, leakage, and electrical resistance tests of 4.5.2, 4.5.3, and 4.5.9, respectively. For Class 2 couplings, the insulation breakdown test of 4.5.10 shall also be conducted. Failure to meet the requirements of 3.10.11 shall be cause for rejection.

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4.5.12 Rough handling. The female half of the semi-dry-break, quick-disconnect coupling assembly shall be attached to a length (12 feet minimum) of 2.5-inch collapsible hose (MIL-H-17902 or MIL-PRF-370). With the female half of the semi-dry-break, quick-disconnect coupling assembly axis horizontal, the test assembly shall be dropped a total of nine times from a height of 6 feet to a 0.625-inch thick steel plate, which is horizontal and supported by a table or floor. For Class 2 couplings, the test assembly shall strike the plate three times with the electrical control switch in each of the following positions:

- a. Top
- b. Side
- c. Bottom

The female half of the semi-dry-break, quick-disconnect coupling assembly shall then be connected to a male half and subjected to the operating force and leakage tests of 4.5.2 and 4.5.3, respectively. Failure to meet the requirements of 3.10.12 shall be cause for rejection.

4.5.13 Burst pressure. The complete semi-dry-break, quick-disconnect coupling assembly (60-mesh strainer, male half and female half) shall be subjected to an internal test pressure of 180 PSI using the test fluids specified in 3.3.2. The pressure shall be held for 1 minute then reduced to 60 PSI and held for an additional 1 minute. Failure to meet the requirements of 3.10.13 shall be cause for rejection.

4.5.14 Disassembly and inspection. Failure to meet the requirements of 3.10.14 shall be cause for rejection.

4.6 Inspection of packaging. Sample packs and the inspection of packaging (preservation, packing, and marking) for shipment, stowage, and storage shall be in accordance with the requirements of section 5.

## 5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

## 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 semi-dry-break, quick-disconnect coupling assemblies covered by this specification are intended for use in connecting fuel nozzles to aircraft refueling hoses or refueling pantographs in aircraft refueling systems.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of the specification.
- b. Part number of each component to be furnished (see 1.2).
- c. Whether qualification is required (see 3.1).
- d. Strainer mesh size (see 3.2.1).
- e. Packaging (see 5.1).

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6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Products List QPL-24788 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from Commander, Naval Sea Systems Command, ATTN: SEA 05M2, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard, DC 20376-5160 or emailed to [CommandStandards@navy.mil](mailto:CommandStandards@navy.mil).

6.4 Subject term (key word) listing.

Aircraft refueling hose

Aircraft refueling system

Fueling nozzle

Refueling nozzle

Refueling pantograph

6.5 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:

Army – CR4

Navy – SH

Air Force – 99

Preparing Activity:

Navy – SH

(Project 4730-2006-024)

Review Activity:

Air Force – 71

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.