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PERFORMANCE SPECIFICATION

PUMP, FUEL, ELECTRICAL: 12 AND 24 VOLT DIRECT CURRENT (METRIC)

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

1. SCOPE

1.1 Scope. This specification covers two types of electrically operated, in-line fuel pumps for use with 12 and 24 volt direct current (Vdc) automotive electrical systems (see 6.1).

1.2 Classification. Pumps are classified according to type, voltage, polarity, and metric thread designation, as specified (see 6.2 and 6.3).

Type I	-	Standard duty (630 hours)
Type II	-	Long life (5040 hours)

Grade:

1	-	12 Vdc nominal
2	-	24 Vdc nominal

Class:

1	-	Negative ground
2	-	Positive ground

Thread designation:

1	-	1/8-27 NPTF Female
2	-	1/4-18 NPTF Male
3	-	1/4-18 NPTF Male

Comments, suggestions, or questions on this document should be addressed to U.S. Army RDECOM, Tank Automotive Research, Development and Engineering Center, ATTN: RDTA-EN/STND/TRANS MS #268, 6501 E. 11 Mile Road, Warren, MI 48397-5000 or emailed to DAMI_STANDARDIZATION@conus.army.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.daps.dla.mil.

AMSC N/A FSC 2910

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents 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 requirement documents cited in sections 3 and 4 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 (see 6.2).

FEDERAL SPECIFICATIONS

A-A-52557	- Fuel Oil, Diesel; for Posts, Camps, and Stations

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-DTL-5624	- Turbine Fuel, Aviation, Grades JP-4, JP-5 and JP5/JP-8 ST.
MIL-DTL-13486/1	- Cable, Special Purpose, Electrical: Low Tension, Heavy-Duty, Single-Conductor, Unshielded.
MIL-PRF-680	- Degreasing Solvent

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-461	- Requirements for the Control of Electromagnetic Interference Emissions and Susceptibility.
MS27142	- Connector, Plug, Electrical - Pin Contact No. 12, 14, and 16 A.W.G., Waterproof.

(Unless otherwise indicated, copies of the above specifications and standards are available from the Document Automation and Production Service, Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094 or website: http://assist.daps.dla.mil/quicksearch/.)

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications 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 (see 6.2).

NUCLEAR REGULATORY COMMISSION (NRC)

Code of Federal Regulations (CFR) - Title 10, Part 30 and 40

(Copies of the Code of Federal Regulations (CFR) are available from the U.S. Government Printing Office, 732 North Capitol St. NW, Washington, DC 20401 or website: http://www.gpoaccess.gov/cfr/.)

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 the documents are those cited in the solicitation or contract (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM B117	- Salt Spray (Fog) Testing, Method of.
ASTM D235	- Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent) Specification For.
ASTM D471	- Standard Test Method for Rubber Property-Effect of Liquids.
ASTM D4814	- Standard Specification for Automotive Spark-Ignition Engine.
ASTM G21	- Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

(Application for copies of ASTM publications may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959 or website http://www.astm.org/.)

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 First article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.3.

3.2 Materials. Materials used shall be in accordance with the manufacturer's materials specifications for pumps. The materials shall be capable of meeting all the operational and environmental requirements specified herein. Asbestos, cadmium, and radioactive material shall not be used in this item. Radioactive material is defined by CFR, Title 10, Parts 30 and 40, and other radioactive material in which the specific activity is greater than 0.002 microcuries per gram or the activity per item equals or exceeds 0.01 microcuries (see 4.6.1).

3.2.1 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs (see 4.6.1).

3.3 Design and construction. The design and construction of the pumps shall be in accordance with figure 1 with the exception of the thread designation for inlet/outlet connections (see 6.2) and the electrical connector, which shall conform to MS27142-2 (see 4.6.1 and 4.6.2).

3.3.1 Filter. The pump shall incorporate a filter to protect the fuel supply system. The filter shall be freely removable for cleaning (see 4.6.1).

3.3.2 Inlet/outlet connections. The inlet and outlet connections shall be threaded to interface with the mating threaded part and shall protrude from pump body enough to facilitate mechanical connection of fittings. Installation design shall allow 7.92 ±0.790 millimeters (mm) (0.312 ± 0.031 inch (in.)) variation between planes of faces of inlet and outlet (see 4.6.2 and 6.2).

3.3.3 Electrical connector and cable. The electrical connector shall be as specified in the applicable drawing or standard (see 6.2). Cable shall be No. 14 American Wire Gauge (AWG) and shall conform to MIL-DTL-13486/1-5 or equivalent. A separate cable ground shall be used, with installation clearance as indicated in figure 1, view A. Cable shall exit pump within or before area marked “CABLE CLEARANCE”. Both cable and cable ground shall be exterior to pump body (see view A). Installation shall allow for cable assembly clearance (see 4.6.2).

3.3.4 Interchangeability. All pump parts shall be interchangeable with parts of other manufacturers having the same military part number.

3.4 Performance.

3.4.1 Output. The pump output for all types shall equal or exceed the performance curves specified in figure 2. The pump shall operate at a nominal voltage of 12 or 24 Vdc within the voltage range listed in table I. During testing, the load current shall not exceed 1.75 amperes (see 4.6.3.1).

TABLE I. Voltage.

Nominal voltage	Minimum voltage	Maximum voltage
12	6	18
24	18	30

3.4.2 Dielectric strength. When operating the pump with the internal ground and the radio suppressor ground strap disconnected, insulation shall show no loosening, cracking, charring, burning or smoking (see 4.6.3.2).

3.4.3 Electromagnetic interference suppression. The pump shall meet the requirements of MIL-STD-461 for the applicable methods (see 4.6.3.3).

3.4.4 Fuel resistance. The pump shall evidence no damage or leakage when submerged in fuel for 336 hours minimum and shall subsequently meet the performance requirements as specified in 3.4.1 (see 4.6.3.4).

3.4.5 Environmental.

3.4.5.1 Extreme temperature resistance. Pump fuel flow, at any given pressure, shall be not less than 67 percent (%) of the value reflected by the performance curves of figure 2, in ambient temperatures ranging from -54 to +71 degrees Celsius (°C) (-65 to 160 degrees Fahrenheit (°F) (see 4.6.4.1).

3.4.5.2 Fungus resistance. If all materials used in construction are not metallic, the pump shall evidence no damage when subjected to fungus and high humidity conditions for 90 continuous days and shall subsequently meet the performance requirements as specified in 3.4.1 (see 4.6.4.2).

3.4.5.3 Vibration resistance. The pump shall evidence no damage or leakage and shall subsequently meet the requirements as specified in 3.4.1 when subjected to a simple harmonic motion amplitude of 0.76 mm (0.03 in.) at a frequency range from 10 to 55 Hertz (Hz) and return to 10 Hz in approximately 1 minute. This motion shall be applied for a period of 2 hours in each of three mutually perpendicular axes (total 6 hours) (see 4.6.4.3).

3.4.5.4 Shock resistance. The pump shall evidence no damage or leakage and shall meet the requirements as specified in 3.4.1 when subjected to sawtooth wave shocks of 25 gravity units (g) at 18 milliseconds (ms) along three mutually perpendicular axes (see 4.6.4.4).

3.4.5.5 Corrosion resistance. The pump shall evidence no damage or leakage due to corrosion and shall subsequently meet the requirements as specified in 3.4.1, when subjected to a salt laden atmosphere for a minimum of 100 hours (see 4.6.4.5).

3.4.6 Endurance. The pump shall maintain a delivery versus pressure relationship not less than that specified in Figure 2 for a period described below (see 4.6.5.1):

Type I	-	630 hours
Type II	-	5040 hours

3.5 Marking. Pump marking shall include, as a minimum, the following information permanently marked on the exterior of the pump (see 4.6.2):

a. Pump, fuel, electrical
b. Manufacturer's identification
c. Military part number
d. Polarity
e. Voltage

f. Federal stock number
g. Manufacturer's part number
h. Date of manufacture
i. U.S.
j. Inlet shall be marked "IN" and outlet shall be marked "OUT."

3.6 Workmanship. Workmanship shall be such as to assure a product free of chips, burrs, sharp edges, rust, loose or defective connectors, or faulty soldering and shall not compromise, limit or reduce the capability of the pump in the performance of its intended use (see 4.6.2).

4. VERIFICATION

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

a. First article inspection (see 4.3).
b. Conformance inspection (see 4.4).
c. Control tests (see 4.5).

4.2 Inspection conditions. Unless otherwise specified (see 6.2), all inspections shall be conducted under the following conditions:

a. Air temperature: 24 ± 10°C (75 ± 50°F)
b. Barometric pressures: 96 (+7, -10) kilopascals (kPa) (13.9 (+1.04, -1.4) pounds per square inch (psi))
c. Relative humidity: 50 ± 30%

4.3 First article inspection. First article inspection shall be performed on seven samples of each type, grade, and class when a first article sample is required (see 3.1 and 6.2). This inspection shall include the examinations of table V and the tests of table II.

TABLE II. Classification of inspections.

Title	Requirement	Inspection	First article	Conformance		Control
				Examination	Tests	
Group A:						
Materials and construction	3.2 thru 3.3.1	4.6.1	X			
Defects (see 4.6.2 and table V)	3.3, 3.5 and 3.6	4.6.2	X	X		X
Group B (Performance):						
Output	3.4.1	4.6.3.1	X			
Dielectric strength	3.4.2	4.6.3.2	X		X	X
Electromagnetic interference suppression	3.4.3	4.6.3.3	X			X
Fuel resistance	3.4.4	4.6.3.4	X			
Group C (Environmental):						
Extreme temperature resistance	3.4.5.1	4.6.4.1	X			
Fungus resistance	3.4.5.2	4.6.4.2	X			
Vibration resistance	3.4.5.3	4.6.4.3	X			X
Shock resistance	3.4.5.4	4.6.4.4	X			X
Corrosion resistance	3.4.5.5	4.6.4.5	X			
Group D (Life):						
Endurance	3.4.6	4.6.5.1	X			

4.3.1 First article test sequence. First article tests shall be conducted on the samples in accordance with the test sequence specified in table III.

TABLE III. Order of first article testing.

Sample No.	Test	Paragraph No.
1	Output Endurance Output	4.6.3.1 4.6.5.1 4.6.3.1
2	Output Dielectric strength	4.6.3.1 4.6.3.2
3	Output Electromagnetic interference suppression	4.6.3.1 4.6.3.3

TABLE III. Order of first article testing - Continued.

Sample	Test	Paragraph No.

No.		
4	Output Extreme temperature resistance Output	4.6.3.1 4.6.4.1 4.6.3.1
5	Output Fuel resistance Output	4.6.3.1 4.6.3.4 4.6.3.1
6	Output Vibration resistance Output Fungus resistance Output	4.6.3.1 4.6.4.3 4.6.3.1 4.6.4.2 4.6.3.1
7	Output Shock resistance Output Corrosion resistance Output	4.6.3.1 4.6.4.4 4.6.3.1 4.6.4.5 4.6.3.1

4.4 Conformance inspection. Conformance inspection shall include the examinations of 4.4.2 and the conformance tests of table II. Failure of any tests shall be cause for rejection.

4.4.1 Sampling plan. Unless otherwise specified (see 6.2), the sampling plan specified herein shall be used for definitions of sampling inspection terms (see 6.4).

4.4.1.1 Lot formation. An inspection lot shall consist of all the pumps of a single type, grade, class, and part identification number (PIN), from an identifiable production period, from one manufacturer, from one manufacturing location, submitted at the same time for acceptance.

4.4.1.2 Sample. The sample for conformance inspection examinations and tests shall be randomly selected from the inspection lot in accordance with table IV.

4.4.2 Examinations. Samples selected in accordance with 4.4.1.2 shall be subjected to the examinations of table V. The acceptance number in all cases shall be zero.

4.4.3 Tests. Samples selected in accordance with 4.4.1.2 shall be subjected to the conformance tests specified in table II. The acceptance number in all cases shall be zero.

TABLE IV. Sampling plan for conformance inspection.

Inspection lot size	Sample size		
	Examination		
	Major	Minor	Test
2 to 8	*	5	2
9 to 15	13	5	2
16 to 25	13	5	2
26 to 50	13	5	5
51 to 90	13	7	5
91 to 150	13	11	6
151 to 280	20	13	7
281 to 500	29	16	9
501 to 1200	34	19	11
1201 to 3200	42	23	13
3,201 to 10,000	50	29	15
10,001 to 35,000	60	35	15
35,001 to 150,000	74	40	15
150,001 to 500,000	90	40	15
500,001 and over	102	40	15

*Indicates entire lot must be inspected (100% inspection).

4.4.4 Conformance inspection failure. Any item that fails to conform to any specified requirement shall be rejected; any failure (one or more) of the selected sample in either the Major/Minor categories or test for the appropriate inspection lot size shall constitute a failure of the entire lot. The rejected item(s) may be repaired or corrected and resubmitted for inspection. If the contractor utilizes sampling inspection as an element of his inspection system, rejected inspection lots may be resubmitted for acceptance if the contractor performs 100 percent inspection on the lot for those characteristics which were defective and resulted in rejection of the lot and removes all defective units or obtains procuring activity approval to resample the lot due to the insignificance of the defects. Resubmitted lots shall be kept separate from new lots and shall be clearly identified as resubmitted lots.

4.5 Control tests. Control tests shall be conducted on three pump assemblies from each lot of 500 units consecutively produced, except that not more than six tests shall be performed in a one month period, nor less than three tests in a one month period. The pump shall be subjected to the control tests specified in table II in the order listed in table VI.

TABLE V. Classification of defects

Category	Defect	Method of examination
Critical	None	
Major:		
101	Assembly, incomplete (see 3.3)	Visual
102	Dimensions affecting interchangeability, out of tolerance (see 3.3 and 3.3.3)	SIE 1/
103	Inlet/outlet threaded connections do not interface with mating threaded part (see 3.3.2).	SIE
104	Faulty workmanship affecting performance (see 3.6)	Visual
Minor:		
201	Dimensions not affecting interchangeability, out of tolerance (see 3.3 and 3.3.3).	SIE
202	Identification marking, improper (see 3.5).	Visual
203	Faulty workmanship affecting appearance (see 3.6).	Visual

1/ SIE = Standard Inspection Equipment.

TABLE VI. Control test sequence.

Sample No.	Test	Paragraph No.
1	Output test Dielectric strength test	4.6.3.1 4.6.3.2
2	Output test Vibration resistance test Output test	4.6.3.1 4.6.4.3 4.6.3.1
3	Output test Shock resistance test Output test	4.6.3.1 4.6.4.4 4.6.3.1

4.5.1 Failure. Failure of any pump assembly to pass any of the control tests shall be cause for the Government to refuse acceptance of the production quantity represented, until action taken by the contractor to correct defects and prevent recurrence has been approved by the Government.

4.6 Methods of inspection.

4.6.1 Materials and design. Conformance to 3.2 through 3.3.1 shall be determined by inspection of contractor records providing proof or certification that design, construction, processing, and materials conform to requirements. Applicable records shall include drawings, specifications, design data, receiving inspection records, processing and quality control standards, vendor catalogs and certifications, industry standards, test reports, and rating data.

4.6.2 Defects. Conformance to 3.3, 3.3.2, 3.3.3, 3.5, and 3.6 shall be determined by examination for the defects listed in table V (see 4.4.2). Examination shall be visual, tactile, or by measurement with standard inspection equipment.

4.6.3 Performance tests.

4.6.3.1 Output. To determine conformance to 3.4.1, the pump shall be tested for output at the minimum and maximum voltages listed in table I for the grade of pump under test. Unless otherwise specified herein (see 6.2) the test fuel shall be gasoline conforming to one of the following: ASTM D235, type I; MIL-PRF-680, type I; A-A-52557, ASTM D4814 or MIL-DTL-5624. The pump inlet and the test fuel level shall be maintained at the same height within ±51 mm (±2 inches). A minimum of five values each of discharge pressure, volume, and current consumption shall be obtained at each voltage setting. The readings shall be taken at points approximately equidistant between pressure at zero delivery and delivery at zero pressure. All pressure readings shall be taken at the pump outlet.

4.6.3.2 Dielectric strength. To determine conformance to 3.4.2, the pump shall be disassembled or cut open to the extent necessary to permit the internal ground connection to be disconnected or isolated and to permit observation of the internal wiring. The pump shall then be subjected to 500 volts root mean square (vrms) at a frequency of 60 cycles per second (cps) applied between each conductor and ground for a period of 1 minute.

4.6.3.3 Electromagnetic interference suppression. To determine conformance to 3.4.3, the pump shall be tested in accordance with the applicable methods of MIL-STD-461.

4.6.3.4 Fuel resistance. To determine conformance to 3.4.4, pumps shall be submerged in fuel in accordance with the fuel resistance schedule specified in table VII. Except for the first 48 hours of phase I and phase III testing, pumps shall be operated at rated flow for 2 hours per day. After testing, the pumps shall be subjected to the test as specified in 4.6.3.1 to verify conformance to 3.4.1.

TABLE VII. Fuel resistance schedule.

T Phase	Period	Medium	Temperature °C ± 3° (°F ± 5.4°)
Phase I soak	168 hours	ASTM D471, type III	24 (75)
Phase II dry	4 hours	Air	68 (154)
Phase III soak	168 hours	ASTM D471, type III	24 (75)
Phase IV dry	4 hours	Air	68 (154)

4.6.4 Environmental tests.

4.6.4.1 Extreme temperature resistance. To determine conformance to 3.4.5.1, the pump shall be mounted and operated as specified in 4.6.3.1, except that the values shall be recorded at -53 ±1°C (-63 ±2°F) and +70 ± 1°C (+158 ±2°F) and the pump shall not be reoperated at 18V at

the higher temperature. The fuel used shall conform to ASTM D4814, type I, for +70°C (+158°F) operation and ASTM D4814type II for -53°C (-63°F) operation.

4.6.4.2 Fungus resistance. To determine conformance to 3.4.5.2, pump shall be subjected to the fungus resistance test as specified in ASTM G21. After testing, the pump shall be subjected to the test as specified in 4.6.3.1 to verify conformance to 3.4.1.

4.6.4.3 Vibration resistance. To determine conformance to 3.4.5.3, the pump shall be mounted as in intended use using suitable mounting apparatus to assure that mounting is free from resonances over the test frequency range. The pumps shall be subjected to a simple harmonic motion having an amplitude of 0.76 mm (1.52 mm maximum total excursion) (0.03 inch (0.06 inch maximum total excursion)), the frequency being varied uniformly between the approximate limits of 10 and 55 Hz. The entire frequency range, from 10 to 55 Hz and return to 10 Hz, shall be traversed in approximately 1 minute. This motion shall be applied for a period of 2 hours in each of 3 mutually perpendicular directions (total of 6 hours). At the end of the test, the pump shall be subjected to the test as specified in 4.6.3.1 to verify conformance to 3.4.1.

4.6.4.4 Shock resistance. To determine conformance to 3.4.5.4, the pump shall be mounted on vibration isolators and equipment racks as in intended use. The isolators shall be functional during the test. The assembly shall be subjected to three sawtooth shock pulses of 25 g at 18 ms duration in each direction along three mutually perpendicular axes of the pump (total of 18 shocks). The shock pulse shape shall be in accordance with figure 3 of amplitude and time duration as specified. At the end of the test, the pump shall be subjected to the test as specified in 4.6.3.1 to verify conformance to 3.4.1.

4.6.4.5 Corrosion resistance. To determine conformance to 3.4.5.5, the pump shall be subjected to the 20% salt spray test of ASTM B117 for a duration of 100 hours. At the end of the test, the pump shall be subjected to the test as specified in 4.6.3.1 to verify conformance to 3.4.1.

4.6.5 Life test.

4.6.5.1 Endurance. To determine conformance to 3.4.6, the pump shall be operated as specified in table VIII. The test fuel shall be diesel fuel oil, grade DF-2, conforming to A-A-52557.

TABLE VIII. Endurance.

Voltage grades		Delivery per hour		Time-hours	
1	2	Gallons	Liters	Type I	Type II
6	18	0	0	15	120
		3	11.5	150	1200
		15	57	150	1200
18	30	0	0	15	120
		3	11.5	150	1200
		25	95	150	1200

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. 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.)

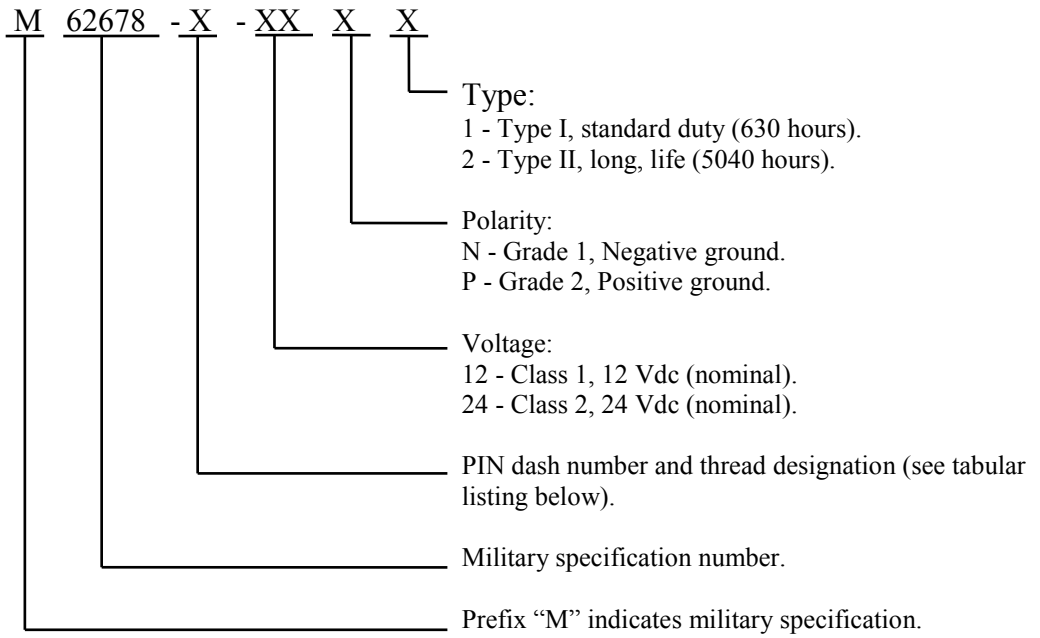
6.1 Intended use. Type I fuel pumps furnished under this specification are intended for use in military motor vehicles or other military equipment (personnel heaters and winterization kits, for example) requiring fuel distribution. Type II fuel pumps are intended primarily for use in engine driven portable electric generator sets where long life is a requirement.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of this specification.
b. Type, grade, class, and applicable drawing or MS standard (see 1.2).
c. If required, the specific issue of individual documents referenced (see 2.2.1, 2.2.2 and 2.3).
d. Thread designation of the inlet/outlet connections that interface with the mating threaded part (see 3.3 and 3.3.2).
e. The drawing or standard no. of the electrical connector (see 3.3.3).
f. If first article inspection is required (see 3.1 and 4.3).
g. If inspection conditions should be other than as specified (see 4.2).
h. If sampling plan should be other than as specified (see 4.4.1).
i. Fuel should be other than as specified (see 4.6.3.1).

j. Packaging requirements (see 5.1).

6.3 Part or identifying number (PIN). The following describes the PIN number construction for use with pumps acquired under this specification:



Cross-reference of PIN dash no. to former part numbers.

Former MS Part No.	Former Part No.	PIN dash no.
MS51321-1	7392887	M62678-1
MS51321-2	10910278	M62678-2
MS51321-3	10861299	M62678-3

6.4 Definitions.

6.4.1 Definitions of terms used in sampling inspection.

a. Classification of defects. A classification of defects is the enumeration of possible defects of the unit of product classified according to their seriousness. A defect is any nonconformance of the unit of product with specified requirements. Defects will normally be grouped into one or more of the following classes: critical, major and minor defects. Also, defects may be grouped into other classes, or into subclasses within these classes.

b. Critical defects. A critical defect is a defect that judgement and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending upon the product, or a defect that judgement and experience indicate is likely to prevent

performance of the tactical function of a major end item such as a ship, aircraft, tank, missile, or space vehicle.

c. Critical defective. A critical defective is a unit of product which contains one or more critical defects and may also contain major and/or minor defects.

d. Defective. A defective is a unit of product which contains one or more defects.

e. Formation of lots or batches. The product should be assembled into identifiable lots, sub-lots, batches, or in such other manner as may be prescribed (see l). Each lot or batch should, as far as is practicable, consist of units of product of a single type, grade, class, size, and composition, manufactured under essentially the same conditions, and at essentially the same time.

f. Lot or batch. The term lot or batch means Ainspection lot@, or Ainspection batch'@ i.e., a collection of units or product from which a sample is to be drawn and inspected and may differ from a collection of units designated as a lot or batch for other purposes (e.g., production, shipments, etc.).

g. Lot or batch size. The lot or batch size is the number of units of product in a lot or batch.

h. Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

i. Major defective. A major defective is a unit of product which contains one or more major defects, and may also contain minor defects but contains no critical defect.

j. Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

k. Minor defective. A minor defective is a unit of product which contains one or more minor defects but contains no critical or major defect.

l. Presentation of lots or batches. The formation of the lots or batches, lot or batch size, and the manner in which each lot or batch is to be presented and identified by the supplier should be designated or approved by the responsible authority. As necessary, the supplier should provide adequate and suitable storage space for each lot or batch, equipment needed for proper identification and presentation, and personnel for all handling of product required for drawing of samples.

m. Representative sampling. When appropriate, the number of units in the sample should be selected in proportion to the size of sub-lots or sub-batches, or parts of the lot or batch,

identified by some rational criterion. When representative sampling is used, the units from each part of the lot or batch should be selected at random.

n. Sample. A sample consists of one or more units of product drawn from a lot or batch, the units of the sample being selected at random without regard to their quality. The number of units of product in the sample is the sample size.

o. Sampling plan. A sampling plan indicates the number of units of product from each lot or batch which are to be inspected (sample size or series of sample sizes) and the criteria for determining the acceptability of the lot or batch (acceptance and rejection numbers).

p. Time of sampling. Samples may be drawn after all the units comprising the lot or batch have been assembled, or samples may be drawn during assembly of the lot or batch.

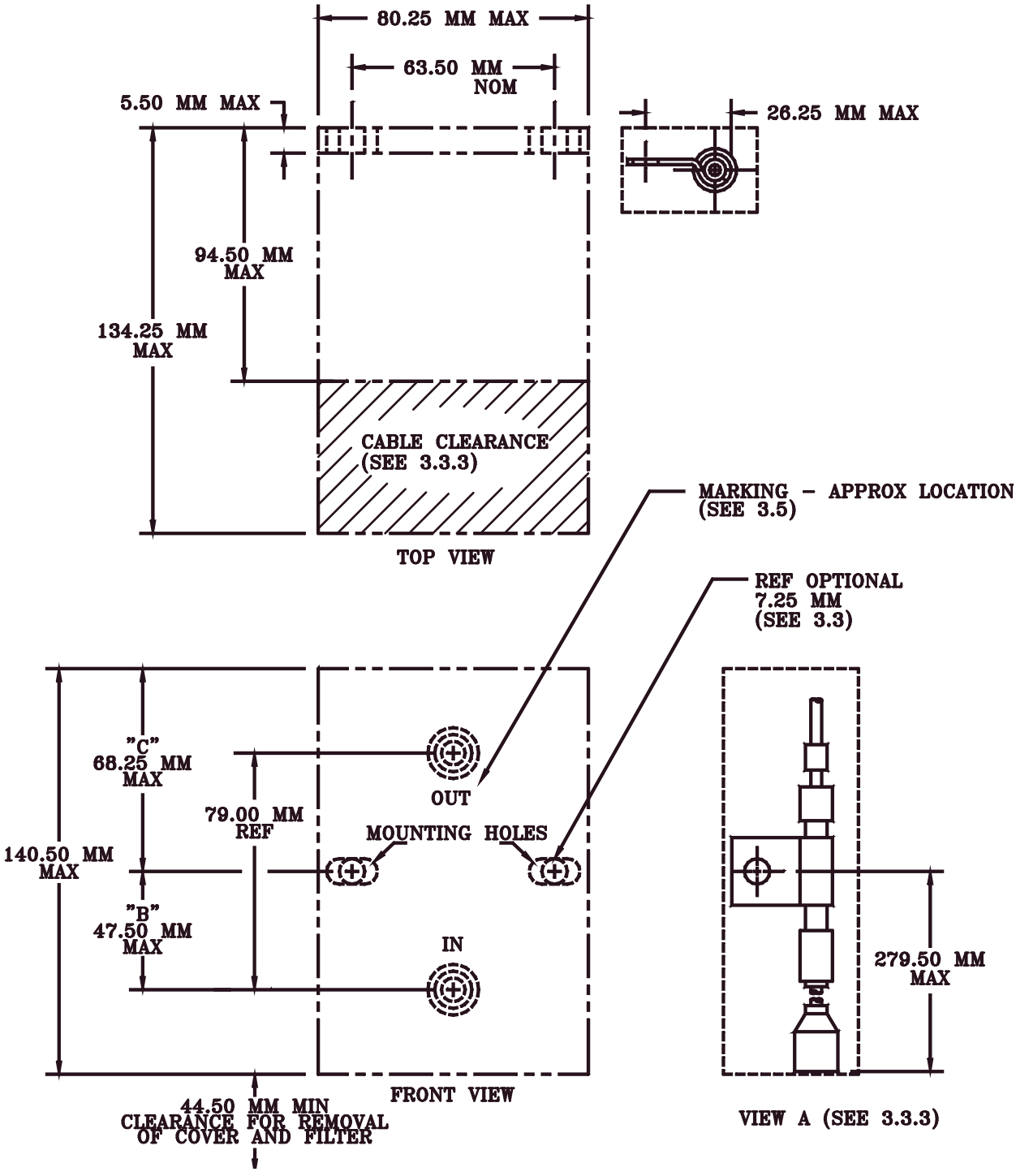
6.5 Disposition of test assemblies. Pumps undergoing destructive tests should not be used and should be indelibly marked "DO NOT USE".

6.6 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.

6.7 Subject term (key word) listing.

Corrosion resistance
Electromagnetic interference suppression
Extreme (high and low) temperature resistance
Fungus resistance
Recovered material
Shock resistance
Vibration resistance

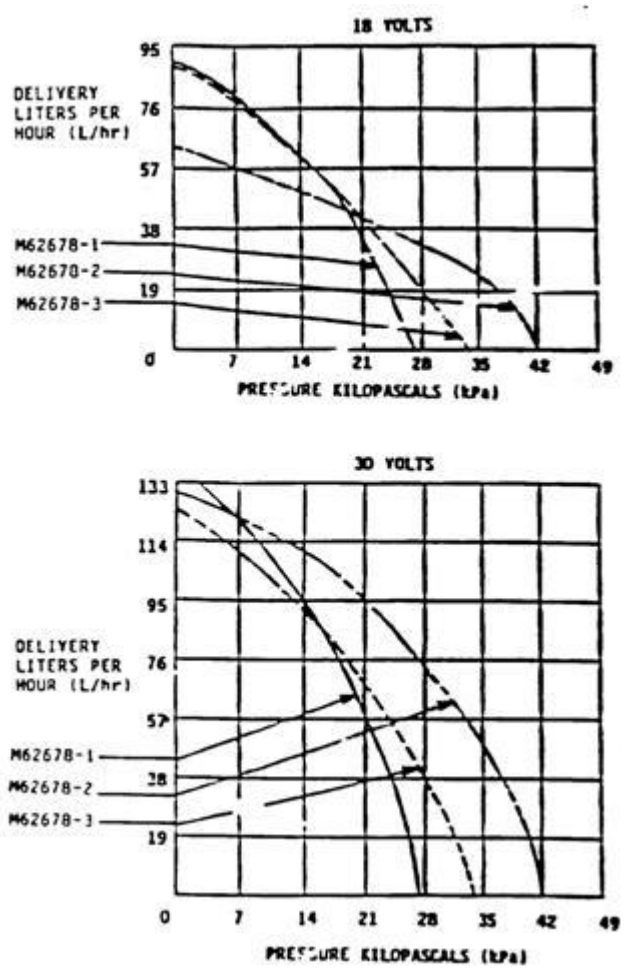
FIGURE 1. Pump, fuel, electrical.



NOTES:

1. Mounting location shall be central with inlet/outlet location within >B= dimension.
2. Mounting location shall be central within overall height within >C= dimension.
3. Pump configuration must allow clearance within envelope dimensions for installation of pump through mounting holes.
4. Mounting holes may be 7.25 mm (0.281 in) diameter or 7.25 mm by 8.75 mm (0.281 in by 0.344 in) oblong.

FIGURE 1. Pump, fuel, electrical (continued).



Pin Dash No.	Max. Output (kPa (psi))
M62678-1	31 +1.7/-3.4 (4.5 +0.25/-0.5)
M62678-2	48 ±69 (7 ±1)
M62678-3	38 +1.7/-3.4 (5.5 +0.25/-0.5)

FIGURE 2. Performance curve.

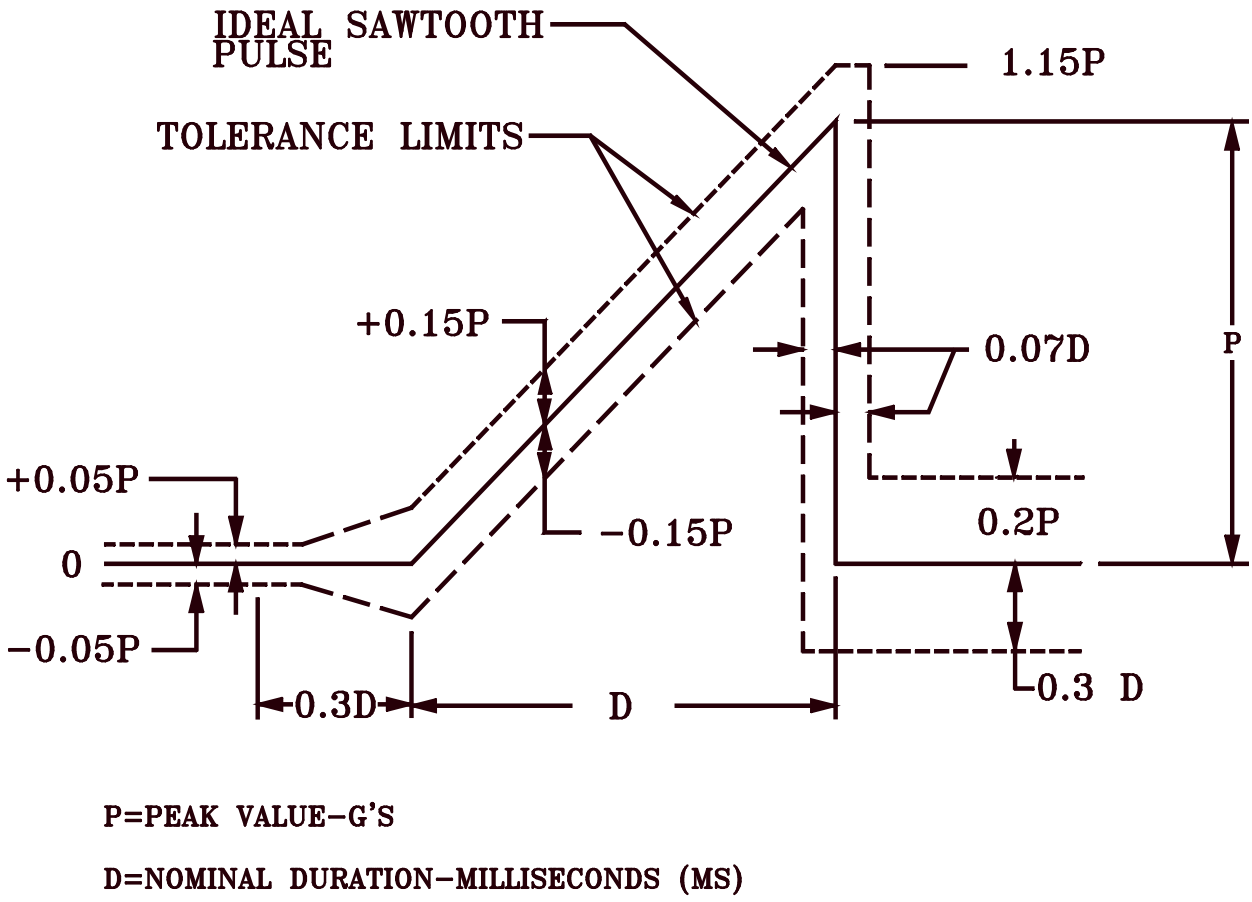


FIGURE 3. Terminal-peak sawtooth shock pulse configuration.

Custodians:
Army - AT
Air Force - 99

Review Activities:
Army – CR4
Air Force - 70
DLA - CC

Preparing Activity:
Army - AT

(Project 2910-2010-001)

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.