MILITARY SPECIFICATION

PUMPS, CENTRIFUGAL SELF-PRIMING,

FRAME MOUNTED 1-1/2-INCH, 65-GPM AX

50 FEDERAL HEAD (FOR WRITER)

This interim ammendment is approved for use within the US Army Belvoir Research, Development, and Engineering Center Department of the Army with MIL-P-14514G, dated 18 August 1987 .

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* 1.2, delete in its entirety and substitute:

"1.2 Classification. Pumping assemblies shall be of the following types, as specified (see 6.2 and 6.8):

Type I - Electric-motor-driven.
Type II - Diesel-engine-driven."

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2.1.1, under SPECIFICATIONS, MILITARY, add:

"MIL-C-5501 - Caps and Plugs, Protective, Dust and moisture seal.
MIL-P-14105 - Paint, Heat-Resisting (For Steel Surfaces) .
MIL-F-46162 - Fuel, Diesel, Referee Grade.
MIL-C-52404 - Connections: Hose, Fire and Water."

* 2.1.1, under STANDARDS, FEDERAL, add:

"FED-STD-595 Colors used in Government Procurement."

2.1.2, under DRAWINGS, ME, delete "TA13200E7200" and substitute "TA13228E5173"

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3.1, delete "TA13200E7200" and substitute "TA13228E5173"

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3.4, delete in its entirety and substitute:

"3.4 Fasteners. The components shall be retained by removable-type fasteners such as nuts and bolts. Screw threads shall conform to FED-STD-H28."

* 3.6, lines 7 and 8, delete "Fuel tanks shall ... , or electrical equipment."

* 3.7 and 3.7.1, delete in their entirety and substitute:

"3.7 Human factors engineering, noise limits, and noise enclosure.

"3.7.1 Human factors engineering. The pumping assembly shall conform to the human factors engineering design criteria as described in MIL-STD-1472. Special design emphasis shall be given to 4.6, 4.8, 4.9, 4.10, 5.4.1, 5.5, 5.6, 5.9, and 5.13, as applicable. The pumping assembly shall be operable and maintainable by 5th through 95th percentile male and female personnel dressed appropriately for the environments of intended use.

"3.7.2 Noise limits. The noise produced by the type II pumping assembly shall conform with MIL-STD-1474 requirements, with the exception of MIL-STD-1474, 5.2, 5.3, and 5.4, when tested in accordance with 4.5.2.7. The provisions of MIL-STD-1474, 4.2 and 4.3, shall be provided if and only if MIL-STD-1474, 5.1.1.2 procedures have been pursued and documented to the satisfaction of the procuring activity and written permission to exceed the 85 dB(A) limit is obtained from the procuring activity. Hazard signs shall conform with MIL-STD-1474, 4.2.

"3.7.3 Noise enclosure. The type II pumping assembly shall be equipped with a permanent noise enclosure. The enclosure shall completely encompass the pumping assembly. The enclosure shall be completely contained within the volume defined by the frame assembly. If the total weight of the pumping assembly with enclosure is less than or equal to 147 pounds, the enclosure shall be labeled or stencilled "4 PERSON CARRY". If the total weight of the pumping assembly with enclosure exceeds 147 pounds, the enclosure shall be labeled or stencilled "MECHANICAL LIFT ONLY".

"3.7.3.1 General enclosure requirement. The enclosure shall be designed in accordance with the requirements stated in this specification and accepted acoustical engineering practices.

"3.7.3.2 Sound absorptive material. The walls of the enclosure and any ducts shall be lined with sound absorptive material. The random incidence sound absorption coefficient of the absorptive material shall be appropriate. The random incidence sound absorption coefficient of the absorptive material shall not be significantly decreased by exposure to oil, diesel fuel, water, and temperature extremes.

"3.7.3.3 Wall vibration. Noise produced by vibration of the enclosure walls shall not significantly contribute to the overall noise level.

"3.7.3.4 Vibration isolation. The noise enclosure shall be vibrationally isolated from the other pumping assembly components.

"3.7.3.5 Oil sump temperature. The oil sump temperature of the engine shall not exceed the engine manufacturer's recommended maximum operating sump temperature when the pump is operating at full load and an ambient air temperature of 125 °F.

"3.7.3.6 Access. All components of the pumping assembly used by the operator during normal operation and maintenance shall be accessible without the use of tools of any kind. These components shall include, but not be limited to, the starting system controls, the throttle control, the fuel fill port, the pump casing drain port, the pump priming port, the inlet and outlet connections, the engine oil dipstick, and the engine oil fill port. The throttle control shall be accessible without opening or removing any panels or doors. The enclosure shall be removable or have access doors to the extent necessary to perform maintenance. Removal of the enclosure to perform preventative maintenance checks and services (PMCS) shall not be permitted. Opening of access panels or doors to perform PMCS shall be permitted. Access panels shall be removable. Access doors shall be self supporting in the open position.

"3.7.3.7 Enclosure labeling. If the enclosure is provided with access panels or doors, the panel or door shall be labeled or stencilled to indicate the items accessed through it. All fluid fill and drain ports shall be labeled or stencilled to indicate the fluid filled or drained through them (i.e., "DIESEL FUEL ONLY", "ENGINE OIL DRAIN", "ENGINE OIL FILL", "PUMP PRIME", "PUMP DRAIN"). The outlet connection shall be labeled "OUTLET". The inlet shall be labeled "INLET". A label stating "CLOSE TO RUN" shall be stencilled on both sides of all access panels and doors, if possible."

* 3.8.1, line 2, insert the words "not less than" between "be" and "320".

* 3.0.2, line 1, insert the Words "not less than" between "be" and "140"*

* 3.13, line 2, delete "pumps" and substitute "type I pumping assembly".

* 3.14, delete in its entirety and Substitute:

"3.14 Engine (type II). The engine shall be an industrial, 2 or 4 stroke cycle, diesel engine selected in accordance with MIL-STD-1410, class II. The engine shall deliver power at its continuous duty rating to meet the pump requirements specified in 3.10. The engine shall be equipped with but not limited to the following:

a. Recoil starting system.
b. Dry type air cleaner.
c. Fuel tank.
d. Ability to operate at rated capacity using fuel in accordance with VV-F-800 (grades DFA w-l, DF-2) , MIL-T-5624 (grade JP-5), and MIL-T-83133 (grade JP-8)." . "

* 3.16, delete in its entirety and substitute:

"3.16 Identification and label markings. The pumping assembly shall be identified in accordance with MIL-STD-130 and shall include part or identifying number (see 6.8). Label markings, as specified in MIL-STD-1472 (see 3.7.1), shall be applied to plates made of material conforming to MIL-P-514, type III, composition C, grade B, class 1, 0.020 inch minimum thickness. Each plate shall be attached to the pumping assembly by screws, bolts, or rivets."

* 3.17, delete in its entirety and substitute:

"3.17 Treatment and painting. Treatment and painting of the entire pumping assembly shall be in accordance with with MIL-T-704, type F or G and as stated herin.

a. All external surfaces of the pumping assembly (except those that reach a temperature of 350 °F), regardless of the material selected, shall have a finish coat of CARC paint in accordance with MIL-C-46168. All marking and caution lettering shall be flat black. Any external surface that reaches a temperature of 350 °F during operation shall be finish coated with paint conforming to MIL-P-14105. Unless otherwise specified (see 6.2), color shall be camouflage green 383, color chip No. 34094 in accordance with FED-STD-595.
b. All other surfaces of the pumping assembly, to include those within the noise enclosure and those behind insulation material, shall be treated and painted using manufacturers commercial practices. The engine, pump, internal components, hardware, fasteners and fittings may be finished with the manufacturer's standard commercial paint and color, plating or treatment."

After 3.18.5, add the following new paragraphs:

* "3.19 Frame. The pump-engine combination shall be mounted on a common frame. Individual mountings shall be furnished as required on the frame for supporting engine, pump, and other components in vertical alignment. The frame shall provide rollover protection in all directions to all components. When a noise enclosure is used, the requirements stated herein shall be incorporated in the enclosure.

* "3.20 Connectors.

* "3.20.1 Inlet connector. The pumping assembly inlet connector shall be a brass adapter conforming to MIL-C-52404, type XVI, class C, 1-1/2 external (NPT) to 1-1/2 external (NPSH).

* "3.20.2 Outlet connector. The pumping assembly outlet connector shall be a brass adapter conforming to MIL-C-52404, type XVI, class B, 1-1/2 external (NPT) to 1-1/2 internal (NPSH).

* "3.20.3 Intermediate connections. The intermediate connections from the adapters to the pump shall be malleable iron or steel pipe fittings.

* 3.20.4 Adapter closures. The inlet and outlet adapters shall be sealed with closures conforming to MIL-C-5501.

"3.21 Rollover. The pump assembly shall be capable of being rolled over in any direction without sustaining cracks or permanent deformation."

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* 4.4.1, 4.4.1.1, and 4.4.1.2, delete in their entireties and substitute:

"4.4.1 Sampling. Sampling for examination and tests shall be in accordance with MIL-STD-105. Sample size shall be determined by Usirg MIL-STD-105, table I and table IIa. A lot shall be accepted when zero defects are found and rejected when one or more defects are found."

* 4.4.2, delete the last sentence and substitute:

"Presence of one or more defects shall be cause for rejection."

* 4.4.3.1.2, delete in its entirety

* 4.4.3.2, delete the last sentence and substitute

"Failure of any test shall be cause for rejection."

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4.5.1, at the end of the paragragh, add:

"123a. Frame not as sepcified.
123b. Connectors not as specified.
* 123c. Noise enclosure not as specified."

* 4.5.2.1, at the end of the paragraph add the following new sentence:

"all performance tests for the type II pump shall be performed using fuel conforming to MIL-F-46162 (DF-2) to run the diesel engine."

* 4.5.2.3, delete in its entirety.

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* 4.5.2.4, line 2, delete "procedure II, method 501" and substitute "method 501, procedures I and II."

* 4.5.2.5, line 2, delete "procedure I, method 502" and substitute "method 502, procedures I and II."

* 4.5.2.7, delete in its entirety and substitute:

4.5.2.7 Noise level test. Noise levels shall be measured in accordance with MIL-STD-1474 requirements and reported in the format indicated by MIL-STD-1474, figure 11. As a minimum, noise levels shall be measured when equipment is operating under full load. MIL-STD-1474, 5.1.2.1.4 contours shall be taken at not fewer then 12 equal arc increments, one increment shall include data from the noisiest position. Per MIL-STD-1474, 5.1.2.1.2, the operator position shall be defined as the point 24 inches horizontally from the throttle control and 12 inches vertically above the throttle control. Occasionally occupied positions shall be defined as those points a horizontal distance of 39 inches from the enclosure and a vertical distance of 55 inches above the ground. Failure to comply with MIL-STD-1474 provisions shall constitute failure of this test.

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* 4.5.2.11, paragraph identifier, insert "(type I)" after "interference".

After 4.5.2.12, add the following new paragraph:

"4.5.2.13 Rollover. The pump assembly shall be balanced on one longitudinal edge and then allowed to fall over. The assembly shall then be inspected for damaged or broken components. Nonconformance to 3.21 shall constitute failure of this test. Nicks, dents, scrapes, and marred finishes shall not be considered as defects."

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* 6.2, delete in its entirety.

* 6.2.1, add the following:

"j. Part or identifying number required (see 3.16 and 6.8)."

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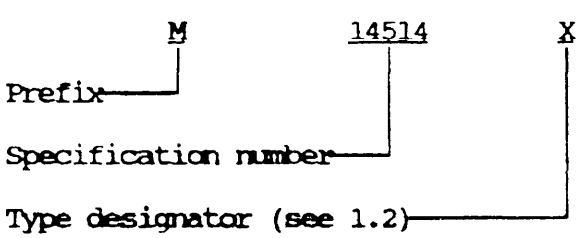
* After 6.7, add the following new paragraph:

"6.8 Part or identifying number (PIN). The PIN to be used for pumping assemblies covered by this specification are designed as follows (see 3.16 and 6.2):



Example: M14514-II - A type II, diesel-engine-driven pumping assembly conforming to MIL-P-14514."

Delete figure 1 (X-3399) and substitute new figure 1 (X-4281A).

The margins of this amendment are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous amendment were made. This was done as a convienience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous amendment.

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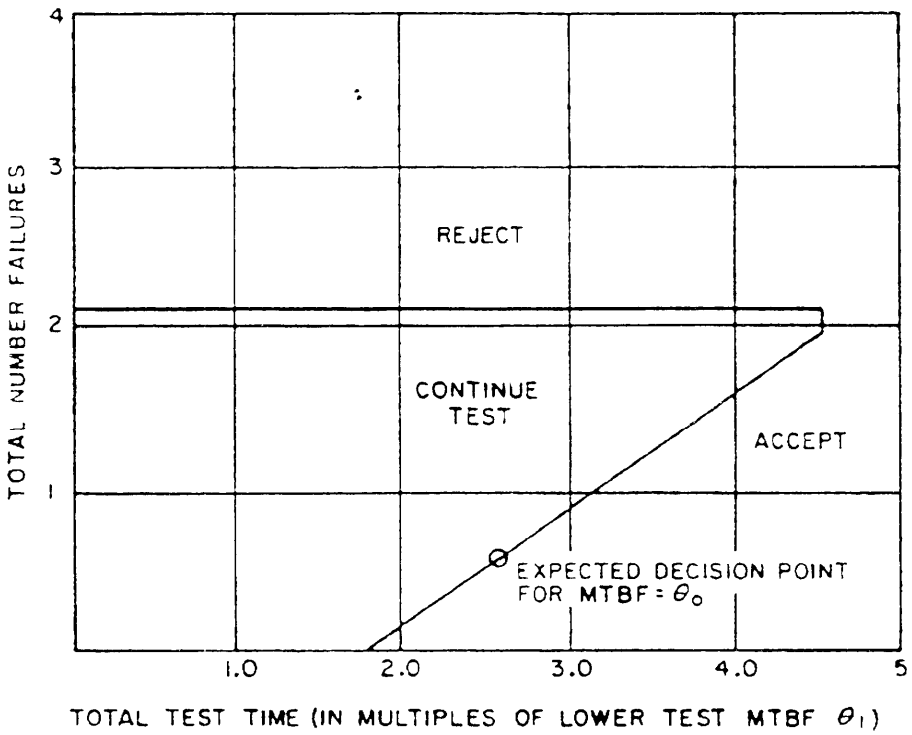
DECISION RISKS (NOMINAL) 30 PERCENT

DISCRIMINATION RATIO 2.0, 1



TOTAL TEST TIME *

NUMBER OF FAILURES	REJECT (EQUAL OR LESS)	ACCEPT (EQUAL OR MORE)
0	N/A	1.72
1	N/A	3.10
2	N/A	4.50
3	4.5	N/A

* TOTAL TEST TIME IS TOTAL UNIT HOURS OF EQUIPMENT ON TIME AND IS EXPRESSED IN MULTIPLES OF THE LOWER TEST MTBF. REFER TO 4.5.2.8 FOR MINIMUM TEST TIME PER EQUIPMENT.

FIGURE 1. Accept-reject criteria.

X-4281A