MIL-STD-760
2 January 1962

MILITARY STANDARD

CONDENSERS, REFRIGERATING, WATER-COOLED, REFRIGERANT-12

FSC 4130

ARMED FORCES SUPPLY SUPPORT CENTER

WASHINGTON 25, D. C.

Condensers, Refrigerating, Water-cooled, Refrigerant-12

MIL-STD-760 2 January 1962

1. This standard has been approved by the Department of Defense and is mandatory for use by the Departments of the Army, the Navy, and the Air Force, effective 2 January 1962.

2. Recommended corrections, additions, or deletions should be addressed to the Standardization Division, Armed Forces Supply Center, Washington 25, D. C.

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FIGURES

1. SCOPE

1.1 SCOPE. This standard covers capacities, rating conditions, and dimensions of military standard water-cooled condensers.

1.1.1 *Application.* Condensers covered by this standard are for use with military standard open-type and hermetic compressors.

1.2 CLASSIFICATION. The water-cooled condensers covered by this standard shall be of the following types and sizes:

Type I — Closed shell-and-tube.

Type II — Closed shell-and-coil.

Type III — Double tube.

Heat Rejection.

Size 1 — 25,000 B.t.u. per hour.

Size 2 — 37,500 B.t.u. per hour.

Size 3 — 50,000 B.t.u. per hour.

Size 4 — 65,000 B.t.u. per hour.

Size 5 — 85,000 B.t.u per hour.

2. REFERENCED DOCUMENTS

2.1 The issue of the following document in effect on the date of invitation for bids forms a part of this standard to the extent specified herein:

Military Specification —

MIL-C-23136 — Condensers, Refrigerating; Water-Cooled, Refrigerant—12.

3. DEFINITIONS

(Not applicable)

4. GENERAL REQUIREMENTS

4.1 **REFRIGERANT USE.** Types I, II, and III water-cooled condensers shall be for use with dichlorodifluoromethane (R-12) refrigerant.

4.2 **TUBING.** Tubing for types I, II, and III condensers shall be cleanable by mechanical or chemical means. Type I condensers shall have provisions for multipass water flow. Type I and II condensers shall have replaceable finned tubing. The entire tube bundle of the type II condensers shall be removable for the purpose of replacing tubes.

4.3 **STRENGTH.** Type I, II, and III condensers shall have a working pressure of 300 p.s.i. on the refrigerant side and 125 p.s.i. on the water side.

4.4 **INTERCHANGEABILITY.** Condensers shall be interchangeable functionally and physically, size for size within a type and size for size between types with piping and mounting plate modifications.

4.5 **PROCUREMENT SPECIFICATION.** The procurement specification for compressors covered by this standard is Specification MIL-C-23136.

5. DETAIL REQUIREMENTS

5.1 RATING CONDITIONS.

(a) Saturated temperature of entering refrigerant vapor 105F

(b) Minimum actual temperature of entering refrigerant vapor 135F

(c) Temperature of entering water 85F

(d) Temperature of leaving water 98F

(e) Temperature of ambient air 110F

(f) Maximum water pressure drop 10psi

(g) Water flow rate in gallons per minute for 13F water temperature rise in condenser:

Condenser size number	*Water flow (includes 4 percent fouling allowance)*
1. (25,000 B.t.u./hr heat rejection)	4.0
2. (37,500 B.t.u./hr heat rejection)	6.0
3. (50,000 B.t.u./hr heat rejection)	8.0
4. (65,000 B.t.u./hr heat rejection)	10.4
5. (85,000 B.t.u./hr heat rejection)	13.6

5.2 DIMENSIONS. Dimensions for types I and II condensers are shown on figure 1; and for type III condensers on figure 2.

5.3 MARKING. The following piping connections shall be permanently marked on the condensers:

(a) Water in.
(b) Water out.
(c) Refrigerant hot gas in.
(d) Refrigerant liquid out.

Custodians:
Army—QMC
Navy—Docks
Air Force—MOA

Preparing activity:
Army—QMC

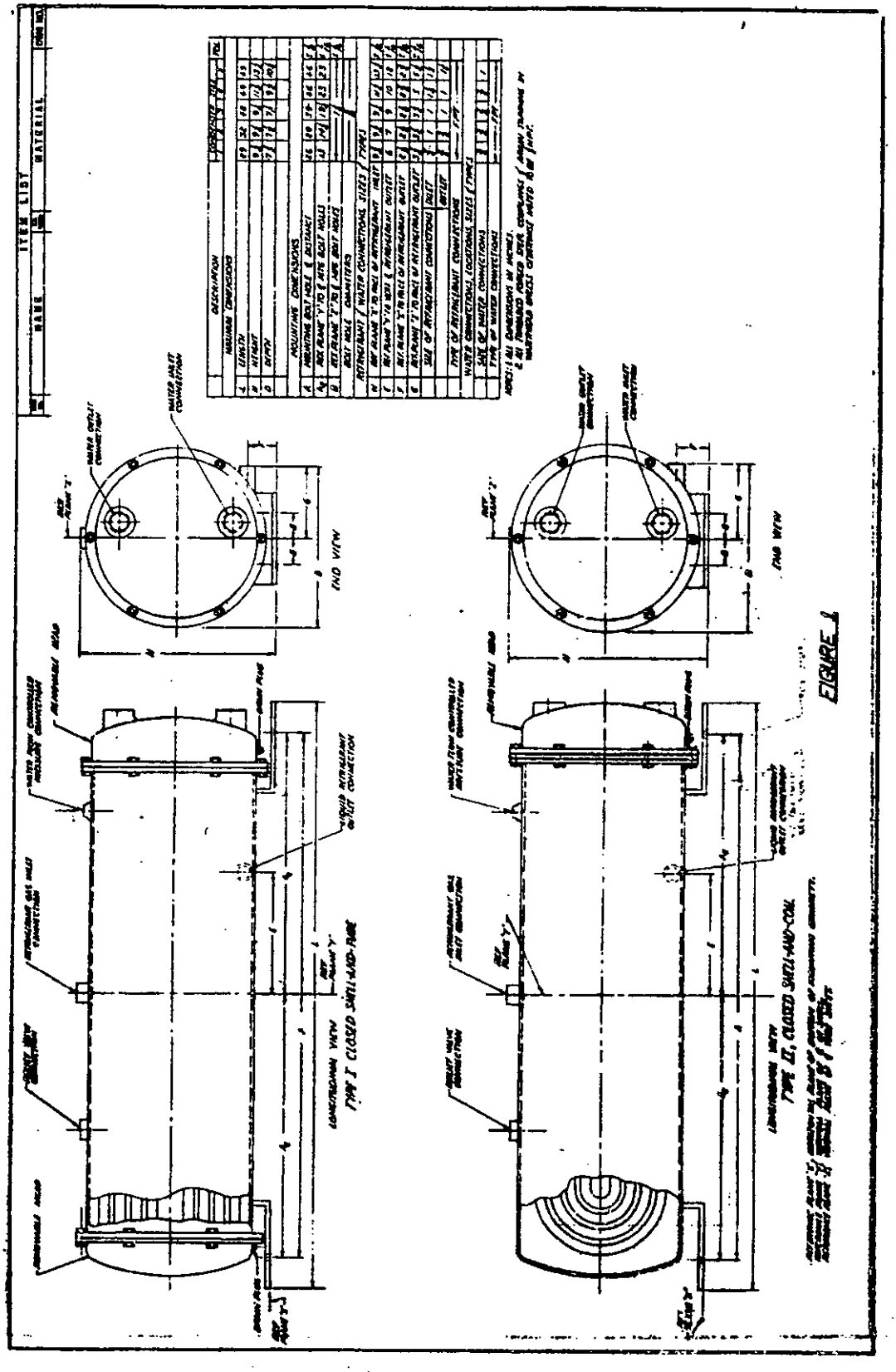

FIGURE 1

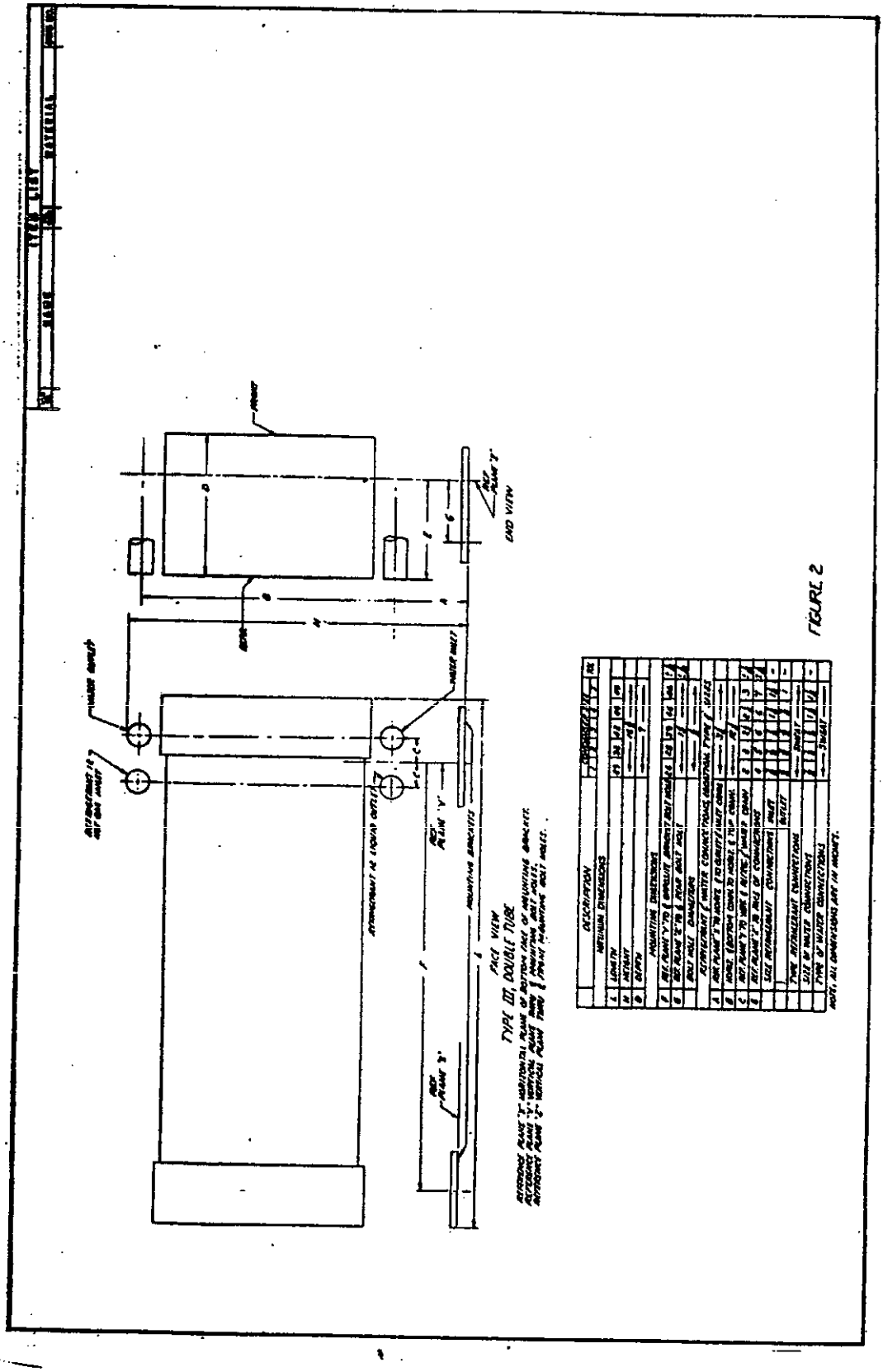

FIGURE 2