

MIL-B-24535(SH)
 AMENDMENT-2
 29 December 1978
 SUPERSEDING
 AMENDMENT-1
 8 August 1977

MILITARY SPECIFICATION

BURNER, CARBON MONOXIDE AND HYDROGEN, CATALYTIC TYPE (MARK V)

This amendment forms a part of Military Specification MIL-B-24535(SH), dated 6 April 1976 and is approved for use by the Naval Sea Systems Command and is available for use by all Departments and Agencies of the Department of Defense.

PAGE 1

2.1, under "SPECIFICATIONS, FEDERAL", add:

"QQ-S-763 - Steel Bars, Wire, Shapes, and Forgings, Corrosion-Resisting."

PAGE 2

3.1, first sentence: Delete and substitute: "The burner shall extract carbon monoxide and hydrogen from ambient air in a submarine. Carbon monoxide and hydrogen burn efficiencies shall be measured on the first production burner and recorded in the technical manual for the concentrations shown in table I."

Sixth sentence: Delete and substitute: "The burner's control system shall operate automatically to maintain the 600°F + 10°F catalyst bed temperature. Control of the temperature in the afterfilter chamber shall be maintained by a high temperature shutdown switch."

3.2, delete and substitute:

"3.2 Capacity. With the filters (air and lithium carbonate) and catalyst installed, the burner shall provide a minimum air flow of 650 cubic feet per minute (ft³/min) with 3 inches water gage excess pressure at entrance to the afterfilter chamber."

3.3.2.2, second sentence: Delete and substitute: "The burner power requirements shall be a maximum of 50 kilowatts (kW) during warmup and 35 kW during operation under normal conditions."

PAGE 5

3.3.10.1, fourth and fifth sentences: Delete and substitute: "Space required for maintenance and operation shall be limited to 30 inches from the leading edges of the bottom mounting bracket and 12 inches on each side of the burner. The rear of the burner shall not be used for accessibility."

PAGE 7

3.9.2, add as fifth sentence: "The flexible connection shall not be damaged by shock, vibration, or maintenance near the connection."

3.9.3.2, first sentence: Delete and substitute: "The heat exchanger shall be a plate type design with a minimum plate thickness of 0.013 inch."

3.9.5, add: "Seals to prevent air from by-passing the catalyst bed shall not utilize a cloth type asbestos material. Thermocouples in the catalyst bed shall be installed so that damage to wiring and junctions will not occur during loading and unloading of catalyst."

3.9.6, first sentence: Add "(see 6.3)."
 Second sentence: Delete.

3.9.7, first sentence: Add "(see 6.3)."
 Second sentence: Delete.

PAGE 8

3.9.13, add as second sentence: "The catalyst bed temperature shall be controlled at the inlet edge."

FSC 4460

MIL-B-24535 (SH)
AMENDMENT-2

PAGE 9

3.9.14, line 3: Delete "650°F" and substitute "675°F".

3.9.14, add as third sentence: "The system shall be fabricated with corrosion resisting steel of the 300 series in accordance with QQ-S-763."

3.9.15, add as third sentence: "Cloth type asbestos material shall not be used for seals."

3.9.17, line 3: Delete "fuses" and substitute "overload protectors".

3.9.19, fifth sentence: Delete and substitute: "Components such as indicator lights, switches, and information and face identification plates, shall be mounted conveniently on the front of the control panel. Fuse receptacles, overload reset pushbutton, and similar devices shall be conveniently accessible from the front or side of the control panel."

PAGE 12

4.4, items (d), (f) and (h): Delete.

Add as item (o): "(o) Airflow calibration (see 4.6.7.8)."

PAGE 14

4.6.7.2, delete and substitute:

"4.6.7.2 Catalyst bed temperature. The uniformity of temperature across the face of the catalyst bed shall be demonstrated to be 600°F + 25°F. A minimum of 24 equally-spaced thermocouples located at the inlet screen in a single horizontal plane shall be utilized to measure these temperatures. Data shall be recorded each hour for 2 hours."

4.6.7.3, delete and substitute:

"4.6.7.3 Ambient temperature. The burner shall be operated for 4 hours at normal operating conditions of 600°F + 10°F and 650 ft³/min at a room temperature of 100°F minimum to demonstrate the capability of its control system to function at elevated ambient temperatures."

PAGE 16

5.2.1, item (a), line 1: Delete "not".
Item (b), line 1: Delete "not".

PAGE 18

Add as paragraph 6.3:

"6.3 Availability of catalyst and lithium carbonate. Contractor may purchase the catalyst and Li₂CO₃ necessary for testing from the Government."

PAGE 19

Figure 1: Delete and substitute the attached figure 1.

PAGE 20

Figure 2: Delete and substitute the attached figure 2.

NOTE: The margins of this amendment are marked "#" to indicate where changes from the previous amendment were made. This was done as a convenience 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 issue.

Preparing activity:
Navy - SH
(Project 4460-N031)

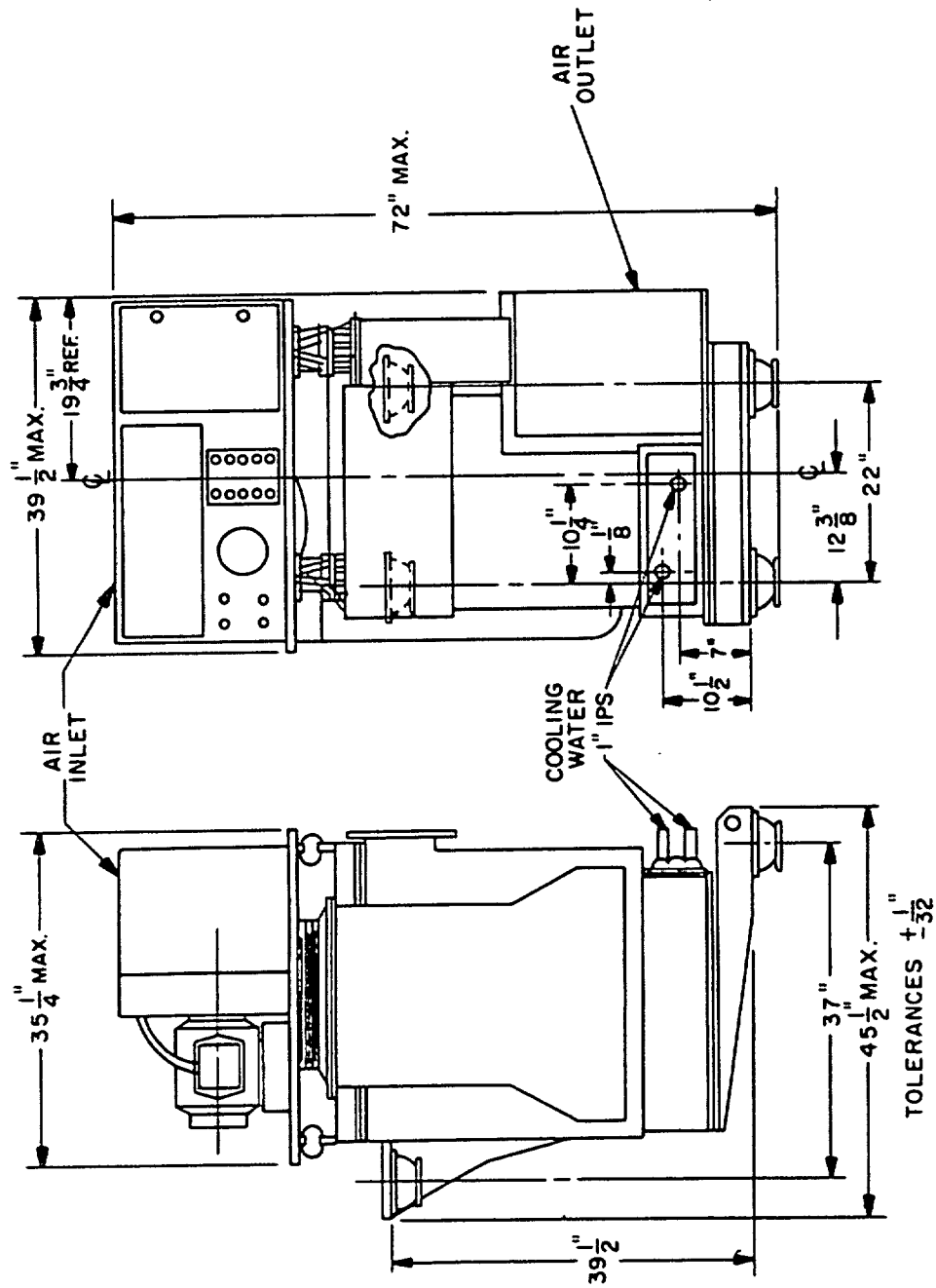


FIGURE 1. Weight, overall dimensions, and mount location.

SH 11027

MIL-B-24535 (SH)
AMENDMENT-2

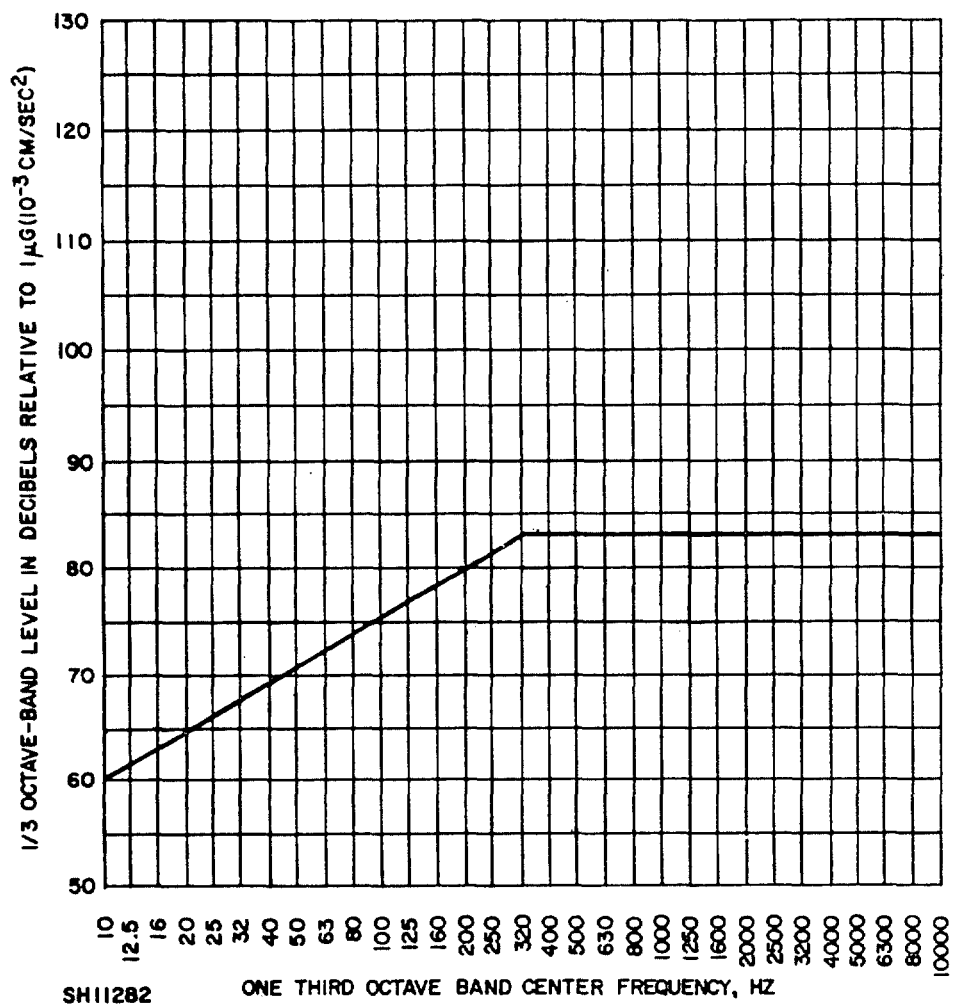


FIGURE 2. Structureborne noise acceptance criteria.