

GGG-M-125/11A  
September 20, 1982  
SUPERSEDING  
GGG-M-125/11  
March 28, 1975

## FEDERAL SPECIFICATION

### RESPIRATOR ASSEMBLY: HELMET WITH POWERED AIR-PURIFYING UNIT (PORTABLE BACK-PACK)

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

The complete requirements for procuring the respirators described herein shall consist of this document and the issue in effect of GGG-M-125/GEN.

#### 1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers the specific requirements for a protective helmet and hood respirator, with a portable rechargeable battery operated back-pack air-purifying unit, for removing particulate matter larger than 0.3 microns in diameter, and to supply a positive pressure to the wearer of the respirator system.

1.2 Classification. Respirators covered by this specification shall be of the following types as specified (see 6.2).

- Type I - Helmet (impact resistant) respirator.
- Type II - Disposable hood and vest respirator.

#### 2. APPLICABLE DOCUMENTS

Latest issue of GGG-M-125/GEN and documents referenced therein and the additional documents specified herein.

#### 3. REQUIREMENTS

3.1 Approval and certification. (See GGG-M-125/GEN).

3.2 Design. Respirator assemblies shall be powered by centrifugal blowers designed to supply purified respirable air to the wearer of a protective hood or helmet (see figure 1). The respirators power source and air-purifying components shall be packaged as a back-pack weighing not more than 15 pounds (including the rechargeable battery power supply). Provisions for recharging the battery in the pack shall be included. The back-pack operating cycle shall be a minimum of 4 hours continuous service for each battery recharge. The positive powered back-pack filter system shall be capable of removing 99.9 percent of particles 0.3 microns and larger and toxic vapors specified in 30 CFR, part 11.

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3.3 Principal parts. Respirators shall consist of the following parts where required:

- a. Back-pack containing batteries, blower motor assembly, and air-purifying system (see 3.3.1).
- b. Breathing tube (see 3.3.2).
- c. Helmet and shroud or disposable hood and vest (see 3.3.3 and 3.3.5).
- d. Cover shields (see 3.3.4).
- e. Battery recharger (see 3.3.6).

3.3.1 Back-pack air supply and purifying system. The back-pack air supply and purifying system shall be capable of cooling the air supplied to the hood or helmet by at least 30 deg F with a relative humidity of 50 +/- 10 percent.

3.3.1.1 Harness assembly. Each respirator assembly shall be provided with an adjustable harness assembly that will comfortably support the power pack and purifying system.

3.3.2 Breathing tube. Unless otherwise specified (see 6.2), a 36-inch flexible 1-1/4 inch inside diameter rubber or vinyl-clad tubing (steel helix reinforced) shall be supplied to connect the air-purifying subassembly to the wearer's helmet. The ends of the tubing shall be fitted with suitable fittings for attachment to the helmet and the air cleaner subassembly.

3.3.4 Type I helmet with shroud enclosure. Each helmet respirator assembly shall incorporate an impact protective helmet with a detachable shroud (see 3.3.3.1). The shroud shall be sealed to the helmet in a manner to prevent penetration of airborne particulate matter, vapors, and gases into the helmet with shroud enclosure. The helmet shall meet the impact and penetration resistance requirements specified in ANSI Z89.1. The helmet shall be equipped with a face shield which can be opened during the wearing of the respirator to permit access to the face, eyes, nose, and mouth. The face shield, when closed, shall be sealed to the helmet in a manner to prevent penetration of airborne particulate matter, vapors, and gases into the helmet with shroud enclosure. Face shields shall be free of visible distortion as specified in GGG-M-125/GEN. The outside surface of the face shield viewing area shall be capable of being protected with a replaceable cover shield to prolong the useful life of the viewing area (see 3.3.4). The respirator assemblies shall incorporate a head suspension system which is adjustable and fits all head sizes and shapes in accordance with ANSI Z89.1. When worn, the helmet respirator assembly shall accommodate the use of glasses, ear plugs, or communication equipment. The communication equipment shall not violate the seal of the respiratory-inlet covering. The helmet respirator assembly shall have an internal air distribution system for proper ventilation within the helmet, face shield, and shroud enclosure.

3.3.3.1 Shroud enclosure. A shroud shall consist of one or more layers of a suitable material(s). The shroud shall cover the neck and also, may cover the upper part of the respirator wearer's chest and back. The shroud shall be easily removed and replaced on the helmet.

3.3.3.2 Air distribution system. The air distribution system shall distribute air within the helmet, face shield, and shroud enclosure for proper ventilation with the air flow rate and the noise level meeting the requirements given in 30 CFR, part 11, section 11.120 and 11.124-7.

3.3.4 Cover shield. Unless otherwise specified (see 6.2), 200 self-adhering transparent sheets, a metal screen or other suitable material which does not interfere with the vision of the wearer shall be furnished (at the contractor's option). The protective screen shall attach over the outside surface of the viewing area of the type I helmet face shield.

3.3.4.1 Cover and face shield cleaners. Unless otherwise specified (see 6.2), two 8-ounce bottles or one 16 ounce-bottle of cleaner, at the option of the manufacturer, shall be furnished with each respirator.

3.3.5 Type II. Type II hood assembly shall consist of a vinyl-coated nylon vest fabricated to cover the chest, back, and the upper part of the arms. The opening for the arms and the chest shall be elasticized for snug fit. The vest shall have a rigid ring around the neck opening for attaching the inflatable hood and a fitting for attaching a breathing tube (see 3.3.2). The disposable hood shall be made of a transparent flexible polyethylene film with a polyester film facepiece, sewn in the front of the hood for better visibility. The facepiece shall be capable of being protected with a replaceable cover shield to prolong the life of the viewing area. When inflated, the hood shall be of sufficient size to allow the average person to wear a hard hat without being able to touch interior surfaces of the hood.

3.3.6 Battery charger. The battery charger shall be capable of charging the 12 vdc battery from a 115 vac power source. Unless otherwise specified (see 6.2), the design of the charger and the output in amperes shall be at the option of the manufacturer.

3.4 Sanitization. Helmet and flexible tubing shall conform to the sanitizing requirement specified in GGG-M-125/GEN.

3.5 Spare parts. When specified (see 6.2), spare parts or accessories shall be furnished.

3.6 Interchangeability. Requirements in accordance with GGG-M-125/GEN.

3.7 Instructions. Requirements in accordance with GGG-M-125/GEN.

3.8 Marking. Requirements in accordance with GGG-M-125/GEN.

3.9 Workmanship. Requirements in accordance with GGG-M-125/GEN.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Quality assurance provisions shall be in accordance with the requirements of GGG-M-125/GEN and the additional requirements specified herein.

4.2 Examination. Respirators selected in accordance with GGG-M-125/GEN shall be examined to verify compliance with this specification and for the defects listed in table I.

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TABLE I. Classification of defects.

Categories	Defects
Major:	
101	Type not as specified.
102	Respirator not in accordance with NIOSH/MSHA requirements.
103	Principal parts missing.
104	Breathing tube not the correct length.
105	Adjustable harness missing.
106	Cover shields missing or not correct quantity when specified.
107	Spare parts missing when specified.
108	Instructions missing.
109	Marking not as specified.
110	Poor workmanship.

4.3 Tests. Respirators sampled in accordance with GGG-M-125/GEN shall be subjected to the following tests:

- a. Cleaning and sanitization test type I only (see GGG-M-125/GEN).
- b. Helmet impact and penetration tests (see GGG-M-125/GEN).
- c. Leakage test (see GGG-M-125/GEN).
- d. Lens test (see GGG-M-125/GEN).

5. PREPARATION FOR DELIVERY (In accordance with GGG-M-125/GEN).

6. NOTES

6.1 Intended use. Respirator assemblies covered by this specification are intended to supply respirable clean air to the wearer of the helmet from a self-contained portable back-pack air cleaner. The respirator assembly is intended to give protection to the wearer working in dusty and dirty atmosphere around operations, such as agriculture, construction, earth moving, open-pit mining, trash disposal, and sandblasting.

6.2 Ordering data. Purchasers shall select the preferred options offered herein and include the following data in procurement documents:

- a. Title, number, and date of this specification.
- b. Title and date of general specification GGG-M-125/GEN.
- c. Type of respirator required (see 1.2).
- d. If different length of tubing is required (see 3.3.2).
- e. If numbers of cover shields required are different (see 3.3.4).
- f. If quantity of cover and face shield cleaner is different (see 3.3.4.1).
- g. If a particular design and amperage of charger is required (see 3.3.6).
- h. If spare parts are required (see 3.5).
- i. Level of packaging and level of packing required (see GGG-M-125/GEN).

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6.3 Cross reference of classifications. The following respirators were previously classified as indicated:

New  
GGG-M-125/11A  
Type I  
Type II

Old  
GGG-M-125/11  
Style I  
Style II

## MILITARY INTEREST:

## Custodians

Army - EA  
Navy - YD  
Air Force - 99

## Review Activities

Army - MD, ME  
DLA - GS

## User Activities

Navy - SH, CG, MC

## CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS  
TVA  
DCG

## PREPARING ACTIVITY:

Navy - YD

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Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.

NOTICE OF  
VALIDATION

GGG-M-125/11A  
NOTICE 1  
17 August 1987

FEDERAL SPECIFICATION

RESPIRATOR ASSEMBLY: HELMET WITH POWERED AIR-PURIFYING UNIT  
(PORTABLE BACK-PACK)

GGG-M-125/11A, dated September 20, 1982, has been reviewed and determined to be valid for use in acquisition.

Custodians:

Army - EA  
Navy - YD  
Air Force - 99

Preparing Activity:

Navy - YD

Civil Agency Coordinating Activities:

GSA - FSS  
TVA  
DCG

Review Activities:

Army - MD, ME  
DLA - GS

User Activities:

Navy - CG, MC, SH

AMSC N/A

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