TM 43-0001-26-1

TECHNICAL MANUAL

ARMY EQUIPMENT DATA SHEETS

CHEMICAL DEFENSE EQUIPMENT

This copy is a reprint which includes current pages from Changes 1 through 4.

HEADQUARTERS, DEPARTMENT OF THE ARMY

12 MAY 1982

C H A N G E
NO. 4

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 30 September 1991

ARMY EQUIPMENT DATA SHEETS
CHEMICAL WEAPONS AND MUNITIONS

TM 43-0001-26-1,29 April 1982, and Changes 1,2, and 3 are changed as follows:

1. The purpose of this change is to update information.

2. New or changed material is indicated by a vertical bar in the margin of the page. Illustration changes are indicated by pointing hand symbols.

3. Remove old pages and insert new pages as indicated below.

Remove Pages	Insert Pages
1-3 and14	1-3and 1-4
1-11 thru 1-12.1	1-11 thru 1-12.1 (1-12.2 blank)
2-1/(2-2 blank)	2-1/(2-2 blank)
2-11 and 2-12	None
2-23 and 2-24	2-23 thru 2-24.4
2-25 and 2-26	2-25 thru 2-28
2-29 thru 2-32	2-29 thru 2-32
2-33 thru 2-40	None
3-1/(3-2 blank)	3-1/(3-2 blank)
None	3-4.1 thru 3-4.19/(3-4.20 blank)
3-5 and 3-6	3-5 and 3-6
None	3-6.3 thru 3-6.6
3-7 and 3-8	3-7 thru 3-8.6
3-13 and 3-14	3-13 and 3-14
3-17 and 3-18	3-17 thru 3-18.2
4-1/(4-2 blank)	4-1/(4-2 blank)
None	4-8.5 and 4-8.6
4-10.1 and 4-10.2	4-10.1 and 4-10,2
4-1 1/(4-1 2 blank)	4-11 thru 4-12.2
4-16.1 and 4-16.2	4-16.1 and 4-16.2
4-1 7/(4-1 8 blank)	None
5-5/(5-6 blank)	5-5/(5-6 blank)
7-11 and 7-12	7-11 and 7-12
7-15 and 7-16	7-15 and 7-16
8-3/(84 blank)	8-3/(8-4 blank)
A-1/(A-2 blank)	A-1/(A-2 blank)
Index 1 and Index 2	Index 1 thru Index 3/(Index 4 blank)

4. File this change sheet in front of publication for reference purposes.

By order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

THOMAS F. SIKORA
Brigadier General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-MB, requirements for Army Equipment Data Sheets - Chemical Weapons and Munitions.

CHANGE
NO. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 1 November 1988

ARMY EQUIPMENT DATA SHEETS
CHEMICAL DEFENSE EQUIPMENT

TM 43-0001-26-1 ,12 May1982, is changed as follows:

1. New or changed material is indicated by a vertical bar inthemarginofthe page.

2. Added or revised illustrations are indicated by a vertical adjaraent to the illustration.

3. Remove old pages and insert new pages as indicated below.

Remove peges	*Inserl peges*
1-1 (1-2 blank)	1-1(1 -2 blank)
None	1-12.1 (1-12.2 blank) (1-13 and 1-14 deleted)
1-13 thru 1-14.2	1-14.1 and 1-14.2
2-1 (2-2 blank)	2-1 (2-2 blank)
2-23 thru 2-28	2-23 thru 2-26 (2-27 and 2-28 deleted)
2-31 and 2-32	2-31 and 2-32
3-1 (3-2 blank)	3-1 (3-2 blank)
None	3-6.1 and 3-6.2
4-1 (4-2 blank)	4-1 (4-2 blank)
None	4-8.3 and 4-8.4
None	4-10.1 and 4-10.2
None	4-16.1 and 4-16.2
8-1 (8-2 blank)	8-1 (8-2 blank)
8-5 and 8-6	(8-5 and 8-6 deleted) 8-6.1 thru 8-6.3(8-6.4 blank)
A-1(A-2 blank)	A-1(A-2 blank)
Index 1 and Index 2	Index 1 and Index 2

4. File this change sheet and previous change sheets in back of the publication for reference purposes.

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

WILLIAM J. MEEHAN II
Brigadier General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-34, requirements for Army Equipment Data Sheets-Chemical Defense Equipment.

CHANGE
NO.2

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 30 December 1985

ARMY EQUIPMENT DATA SHEETS
CHEMICAL DEFENSE EQUIPMENT

TM 43-0001-26-1, 12 May 1982, is changed as follows:

1. New or changed material is indicated by a vertical bar in the margin of the page.

2. Added or revised illustrations are indicated by a vertical bar adjacnt to the illustration.

3. Remove old pages and insert new pages as indicated below.

Remove pages	*Insert pages*
i and ii	i and ii
1-1(1-2 blank)	1-1(1-2 blank)
1-3 thru 1-6	1-3 thru 1-6
None	1-14.1 and 1-14.2
1-17(1-18 missing)	1-17andl-18
1-21(1-22 blank)	1-21(1-22 blank)
1-29(1-30 blank)	1-29(1 -30 blank)
2-1(2-2 blank)	2-1(2-2 blank)
2-7 and 2-8	2-7 and 2-8
2-1 5(2-16 blank)	2-1 5(2-16 blank)
2-19(2-20 blank)	2-1 9(2-20 blank)
2-25 and 2-26	2-25 and 2-26
2-38.1 and 2-38.2	None
2-39(2-40 blank)	2-39 and 2-40
2-45(2-46 blank)	2-45(2-46 blank)
3-5 thru 3-8	3-5 thru 3-8
3-15 thru 3-18	3-15 thru 3-18
4-1(4-2 blank)	4-1(4-2 blank)
4-7 and 4-8	4-7 and 4-8
	4-8.1 and 4-8.2
4-1 1(4-12 blank)	4-1 1(4-12 blank)
4-17(4-1 8 blank)	4-1 7(4-1 8 blank)
6-1(6-2 blank)	6-1(6-2 blank)
6-5 thru 6-8	
6-11 and 6-12	None
7-5(7-6 blank)	7-5(7-6 blank)
7-8.1 (7-8.2 blank)	7-8.1 (7-8.2 blank)
7-9(7-1 O blank)	7-9(7-10 blank)
7-12.1 (7-12 .2 blank)	7-12.1 (7-12.2 blank)
8-3(8-4 blank)	8-3(8-4 blank)
8-7(8-8 blank)	8-7(8-8 blank)
A-1(A-2 blank)	A-1(A-2 blank)
Glossary 1 and Glossary 2	Glossary 1 and Glossary 2
Index 1 and Index 2	Index 1 and Index 2
Sample DA Form 2028-2	Sample DA Form 2028-2
DA Form 202&2	DA Form-2028-2

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By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

R.L. DILWORTH
Brigadier General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-34B, requirements for Army Equipment Data Sheets-Chemical Defense Equipment.

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 27 May 1983

ARMY EQUIPMENT DATA SHEETS
CHEMICAL DEFENSE EQUIPMENT

TM 43-0001-26-1, 12 May 1982, is changed as follows:

1. New or changed material is indicated by a vertical bar in the margin of the page.

2. Added or revised illustrations are indicated by a vertical bar adjacent to the illustration.

3. Remove old pages and insert new pages as indicated below.

Remove pages	Insert pages
i and ii	i and ii
1-1 (1-2 blank)	1-1 (1-2 blank)
1-3 thru 1-6	1-3 thru 1-6
None	1-16.1 (1-16.2 blank)
1-17(1-18 blank)	1-17 and 1-18
1-31 (1-32 blank)	1-31 (1-32 blank)
2-1 (2-2 blank)	2-1 (2-2 blank)
2-13 and 2-14	2-13 and 2-14
None	2-38.1 and 2-38.2
4-1 (4-2 blank)	4-1 (4-2 blank)
4-1 1(4-1 2 blank)	4-11(4-12 blank)
7-1 (7-2 blank)	7-1 (7-2 blank)
None	7-8.1 (7-8.2 blank)
None	7-12.1 (7-12.2 blank)
None	7-15 and 7-16
8-1 (8-2 blank)	8-1 (8-2 blank)
8-3(8-4 blank)	8-3(8-4 blank)
8-7(8-8 blank)	8-7(8-8 blank)
None	A-1 (A-2 blank)
Glossary 1 and Glossary 2	Glossary 1 and Glossary 2
Index 1 and Index 2	Index 1 and Index 2

4. File this change sheet in front of the publication for reference purposes.

By Order of the Secretary of the Army:

E. C. MEYER
General United States Amy
chief of staff

Official:

ROBERT M. JOYCE
Major Geneal United States ArmnY
The Adjutant General

DISTRIBUTION:

To be distributed in accordance with DA Form 12-28, requirements for General Information applicable to all Organizations which have a Chemical Mission.

*U.S. Government Printing Office: 1993 — 342-421/62664

WARNING

Do not use these data sheets as operating instructions. Serious injury or death could result from misuse of this data. Consult your operator's manual for instructions on how to operate this equipment.

FIRST AID

For first aid information, consult FM 21-11.

TECHNICAL MANUAL
NO. 43-0001-26-1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 12 May 1982

ARMY EQUIPMENT DATA SHEETS
CHEMICAL DEFENSE EQUIPMENT

NOTE: This manual is printed in two volumes, as follows:

TM 43-0001-26-1, CHEMICAL DEFENSE EQUIPMENT
TM 43-0001-26-2, CHEMICAL WEAPONS AND MUNITIONS

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2, located in the back of the manual direct to: Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-MAR-T (A), Aberdeen Proving Ground, MD 21010-5423. A reply will be furnished directly to you.

TABLE OF CONTENTS

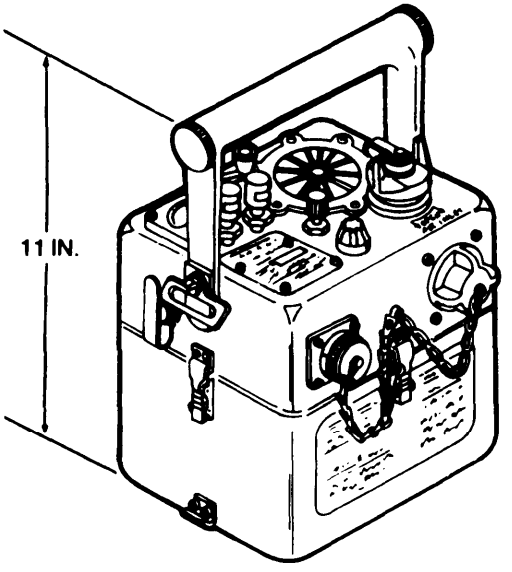
*This manual, together with TM 43-0001-28-2, supersedes TM 750-5-15,2 AUG 72, and all changes.

INTRODUCTION

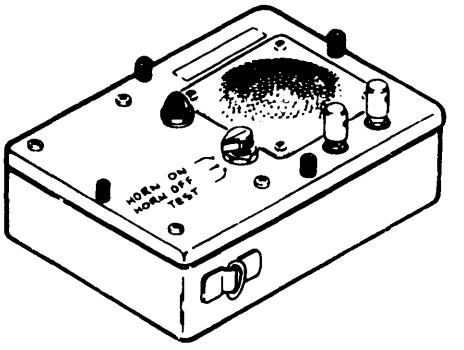
Purpose. This manual is a reference handbook published as an aid in training, familiarization, and identification of chemical defense equipment. This manual is not authorization for requisition, stockage, maintenance, or issue of the materiel described herein.

CHAPTER 1
DETECTION AND WARNING

ALARM, CHEMICAL AGENT, AUTOMATIC: PORTABLE, MANPACK, M8 AND M8A1



M43/M43A1 DETECTOR UNIT



M42 ALARM UNIT

Type Classification:

M8A1 . . . . . STD (LCC-A); MSR 02816012
M8 . . . . . STD(LCC-B); MSR 02816012

Use:

To detect very low concentrations of toxic nerve agent vapors or inhalable aerosols and automatically signal the presence of the chemical agent in the air,

Description:

a. The M8 or M8A1 alarm is a portable, point-sampling chemical agent alarm that can be hand-carried, backpacked, or mounted on a tactical vehicle. The M8 alarm consists of an M43 detector unit and an M42 alarm unit. The M8A1 alarm consists of an M43A1 detector unit and an M42 alarm unit.

b. The M43 or M43A1 detector unit consists of a top case assembly, a cell module, an electronics module, a pump assembly or module, and a bottom case. The cases are fiberglass. The top case has a molded, upright carrying handle, A flowmeter and rainshield are stored inside the handle. The top case assembly contains all controls and indicators. The cell module contains the detector cell and associated electronics. The electronics module contains the alarm circuit, the temperature control amplifier, and voltage regulator. The pump assembly or module contains an electric motor-driven pump. The bottom case protects detector components and contains heaters in its walls. It has hooks for attaching a BA3517/U battery,

c. The M42 alarm unit consists of a metal housing and panel assembly. The panel top contains the alarm loudspeaker, alarm lamp, trigger signal input terminals, and the operation-mode selector switch. The alarm horn electronic circuitry and BA3030/U batteries for powering the horn are mounted under the panel.

d. Accessories for operating and mounting the alarms are issued separately. The accessories include the following items: M229 refill kit for M8 alarm, M273 maintenance kit for M8A1 alarm, BA3517/U battery, BA3030/U batteries, M253 winterization kit, M10 and Ml0A1 power supplies, Ml 82 low profile mount, M226 high profile mount, and vehicle installation kits.

Differences Between Models:

The M43 detector unit for the M8 alarm uses electrolyte solution passing through an electrochemical cell for detection. The M43A1 detector unit for the M8A1 alarm uses an alpha radiation source for this purpose.

Functioning:

a. Power to operate the detector unit is supplied from a 36 Vdc BA3517/U battery; from a 24 Vdc BB501/U battery; through an M10 or M10A1 power supply, which converts 110/220 Vac to 27 ± 3 Vdc; or from the vehicle on which it is mounted.

b. Before and during operation, the M43 or M43A1 detector unit is serviced with components from the M229 refill kit or M273 maintenance kit respectively.

c. The M43 detector unit pump assembly draws air samples into the detector unit. The air is heated if cold," filtered, and passed through the cell module. The pump assembly also pumps electrolyte solution from a reservoir and mixes the solution with the sampled air. An electrical charge in the cell module will cause the chemical agent ions to cluster. The presence of the chemical agents in the air-solution mixture causes a sharp increase in the electrical output of the cell. The electronic module monitors this output and senses any voltage change. A change sets off the horn.

d. The M43A1 detector unit pump module draws air samples into the detector unit. The air is heated if cold, filtered, and passed through the cell module. When a contaminated air sample passes over the alpha (americium 241) radiation source, it causes the chemical agent jons to cluster. The air moves through a geometrically configured cell which collects the clusters in the form of an electric current. The electronic module monitors the electrical output and senses any voltage change. A change sets off the horn.

e. The M42 alarm unit is connected to the M43 or M43A1 detector unit by WD-1 fieid wire when a warning capability remote from the detector unit is desired. Electronic circuitry in the M42 alarm unit converts the dc triggering signal received from the detector unit into pulsating signals, which actuate the horn and indicator lamp.

Tabulated Data:

NSN:
- M8 6665-00-935-6955
- M8A1 6665-01-105-5623

Line item number
- M8 ..... A32060
- M8A1 ..... A32355

Unit of issue ..... Each

Basis of issue ..... TOE/MTOE; AR310-34

M43/M43A1 detector unit:
- Weight:
  - M43 (serviced) ..... 6.50 lb
  - M43A1 ..... 7.00 lb
- Length ..... 7.00 in.
- Width ..... 7.75 in.
- Height ..... 10.75 in.

M42 alarm unit:
- Weight ..... 4 lb (with batteries)
- Length ..... 8.00 in.
- Width ..... 6.00 in.
- Height ..... 6.00 in.

Performance:

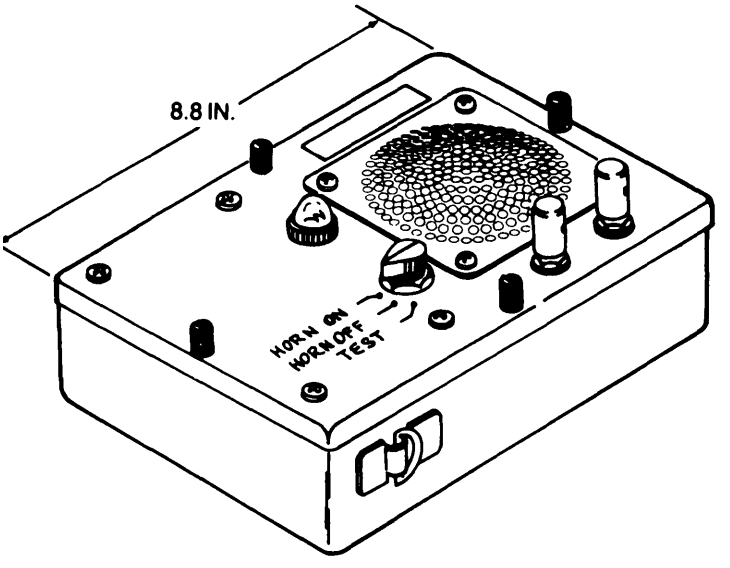
Chemical agents detected:
- M8 alarm ..... AC, CG, CK, CX GA, GB, GD, and VX vapors
- M8A1 alarm ..... GA, GB, GD and VX vapors

Shipping and Storage Data:
- Type pack ..... 0 Wooden Box
- Dimensions ..... 16.6 x11.1 x15.1 in.
- Weight ..... 44 lb
- Cube ..... 1.6 cu ft
- Storage temperature ..... From -65°F to 160°F
- M8 alarm:
  - Type storage ..... Warehouse
  - Drawing number ..... DL 5-15-8803
- M8A1 alarm:
  - DOT hazard classificatiion ..... Radioactive material
  - DOT shipping name ..... Radioactive material limited quantity NOS
  - Type storage ..... AR 385-30
  - Drawing number 5-15-8800

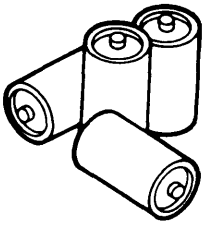
References:

SB 740-94-3
TB-3-6665-260-50
TB 3-6665-317-35
TM 3-6665-225-12
TM 3-66&260-14
TM 3-6665-260-24P
TM 3-6665-261-14
TM 3-6665-261-24P
TM 3-6665-273-20
TM 3-6665-274-20
TM 3-6665-302-20P
TM 3-6665-302-34
TM 3-6665-302-34P
TM 3-6665-312-12&P
TM 3-6665-312-30&P
TM 43-0002-31

ALARM UNIT, CHEMICAL AGENT, AUTOMATIC ALARM: M42



M42 ALARM UNIT



FOUR BA3030
BATTERIES

Type Classification:

STD (LCC-A); AMCTC 659869

Use:

To provide a remote warning capability for the M43 and M43A1 portable automatic chemical agent alarm detector unit to automatically signal the presence of chemical agent vapors or inhalable aerosols. An M42 alarm unit is issued as a component of each M8 or M8A1 automatic chemical agent alarm. To augment the remote warning capability of each detector unit, additional M42 alarm units maybe authorized and issued by line item number.

Description:

The M42 alarm unit consists of a metal housing and panel assembly. The panel top contains the alarm loud speaker, alarm lamp, trigger signal input terminals, and the operation-mode selector switch. The alarm horn circuitry and four BA3030/U batteries are mounted on the underside of the panel. A plug-in printed circuit board contains most of the required electronic components.

Functioning:

a. The M42 alarm unit is connected to the M43 or M43A1 detector unit by WD-1 field wire when a warning capability remote from the location of the point source is desired. The M42 alarm unit can be used at distances up to 400 meters from the M43 or M43A1 detector unit. Five M42 alarm units can be used simultaneously from one detector unit. Each M42 unit uses four BA3030/U batteries for power. A three-position mode selector switch allows selection of the “HORN ON,” “HORN OFF,” and “TEST” functions. The electronic circuitry in the M42 alarm unit converts the dc triggering signal received from detector unit into pulsating audiofrequency signals, which drive the remote alarm loudspeaker (horn) and actuate the indicator lamp.

b. To operate the M42 alarm unit from a vehicle, a mounting bracket is provided with the M228 or M182 mounting kit authorized for the particular vehicle.

Tabulated Data:

NSN 6665-00-859-2215
Line item number A33120
Unit of issue . . . . Each
Basis of issue . . . . . TOE/MTOE; AR 310-34
M42 alarm unit:
Weight . . . .4lb (with batteries)
Length . . . . . 8.8 in.
Width . . . . . 6.0 in.
Height . . . . . 3.0 in.

Performance:

Operating temperature . . . . . From -40°F to 120°F
BA3030/U batteries . . . . D size 1/2 volt dry batteries (four each)

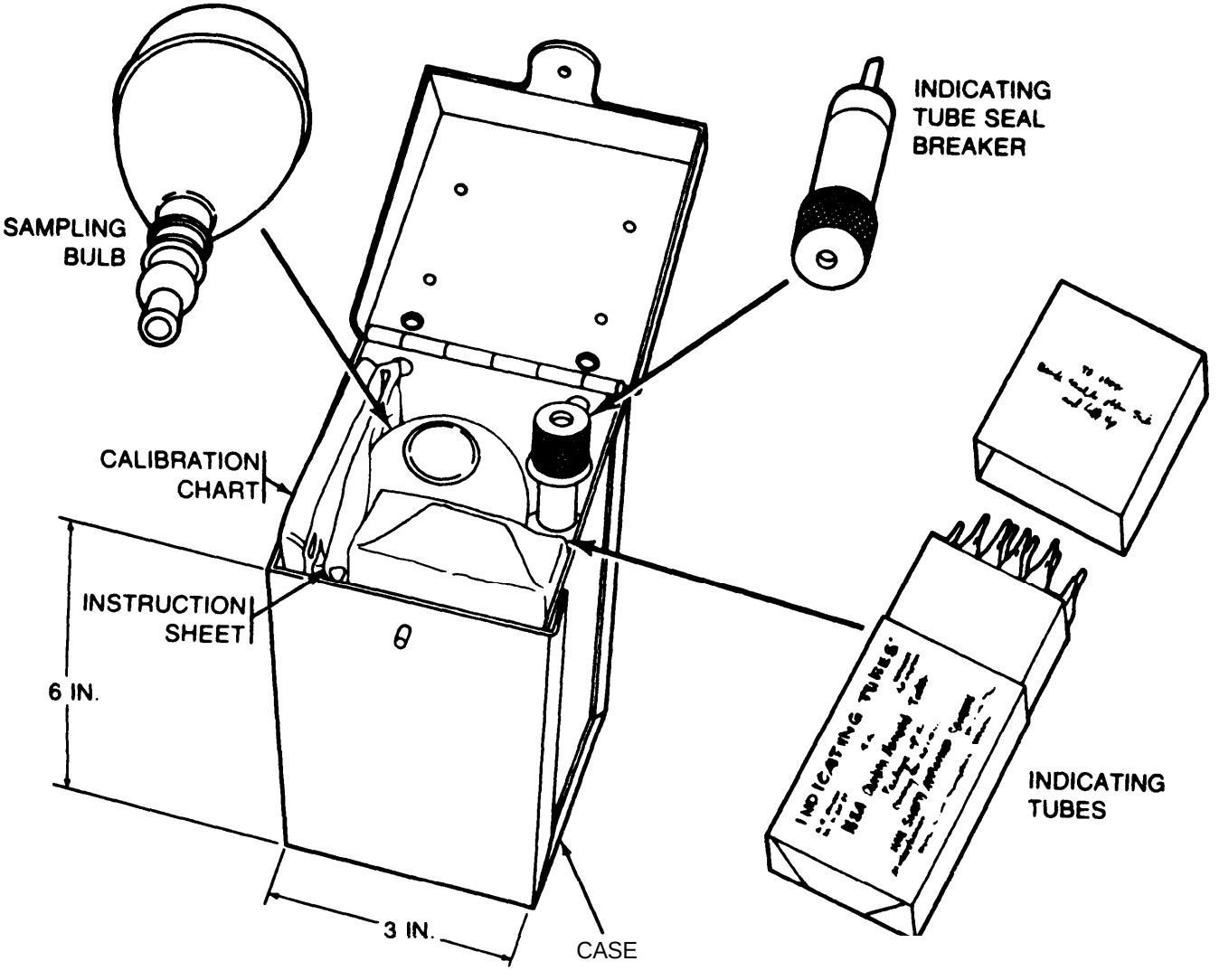
Shipping and Storage Data:

Type pack . . . . Woden box
Quantity of items in pack . . .. 1 each
Dimensions . . . .10.75 x 8 x 6 in.
Weight . . . . . 6.85 lb
cube . . . . 0.36 Cu ft
Type storage . . . . Warehouse
Storage temperature . . . . . From -65°F to 160°F
Drawing number . . . . . DL 5-15-4626

References:

FM 21-40
FM 21-46
SB 740-94-3
TB 3-6665-94-3
TM 3-6665-225-12
TM 3-6665-260-14
TM 3-6665-260-24P
TM 3-6665-261-14
TM 3-6665-261-24P
TM 3-6665-273-20
TM 3-6665-274-20
TM 3-6665-302-20P
TM 3-6665-302-34
TM 3-6665-302-34P
TM 3-6665-312-12&P
TM 3-6665-312-30&P
TM 43-0002-31

DETECTOR KIT, CARBON MONOXIDE, COLORIMETRIC: M23



Type Classification:
STD (LCC-A); CCTC 356059

Use:
To detect and measure harmful concentrations of carbon monoxide in air. The kit is used with the M4 compressed air adapter and valve assembly to test for carbon monoxide content in compressed air cylinders during and after charging breathing apparatuses.

Description:
The M23 detector kit consists of a black metal carrying case, a sampling bulb unit, an indicating tube seal breaker, a carton of 12C3 carbon monoxide calorimetric indicating tubes, a calibration chart, and an instruction sheet.

Functioning:
The indicating tube seal breaker is used to break the fuzed ends of the glass indicating tube just prior to performing the test. One end of the C3 carbon monoxide indicating tube is then inserted in the sampling bulb unit adapter. The rubber bulb on the sampling bulb unit is squeezed to draw air through the indicating tube. The yellow indicating gel in the tube changes color if carbon monoxide is present in the air sample. The colors are matched with the color comparator blocks on the calibration chart to measure the concentration of carbon monoxide in the air sample.

Tabulated Data:

NSN 6665-00-618-1482
Line item number G04163
Unit of issue . . . . . Each
Basis of issue .... CTA 50-909
weight 1.5lb
Length. . . . . 3 in.
Width . . . . 3 in.
Height . . . . 6 in.

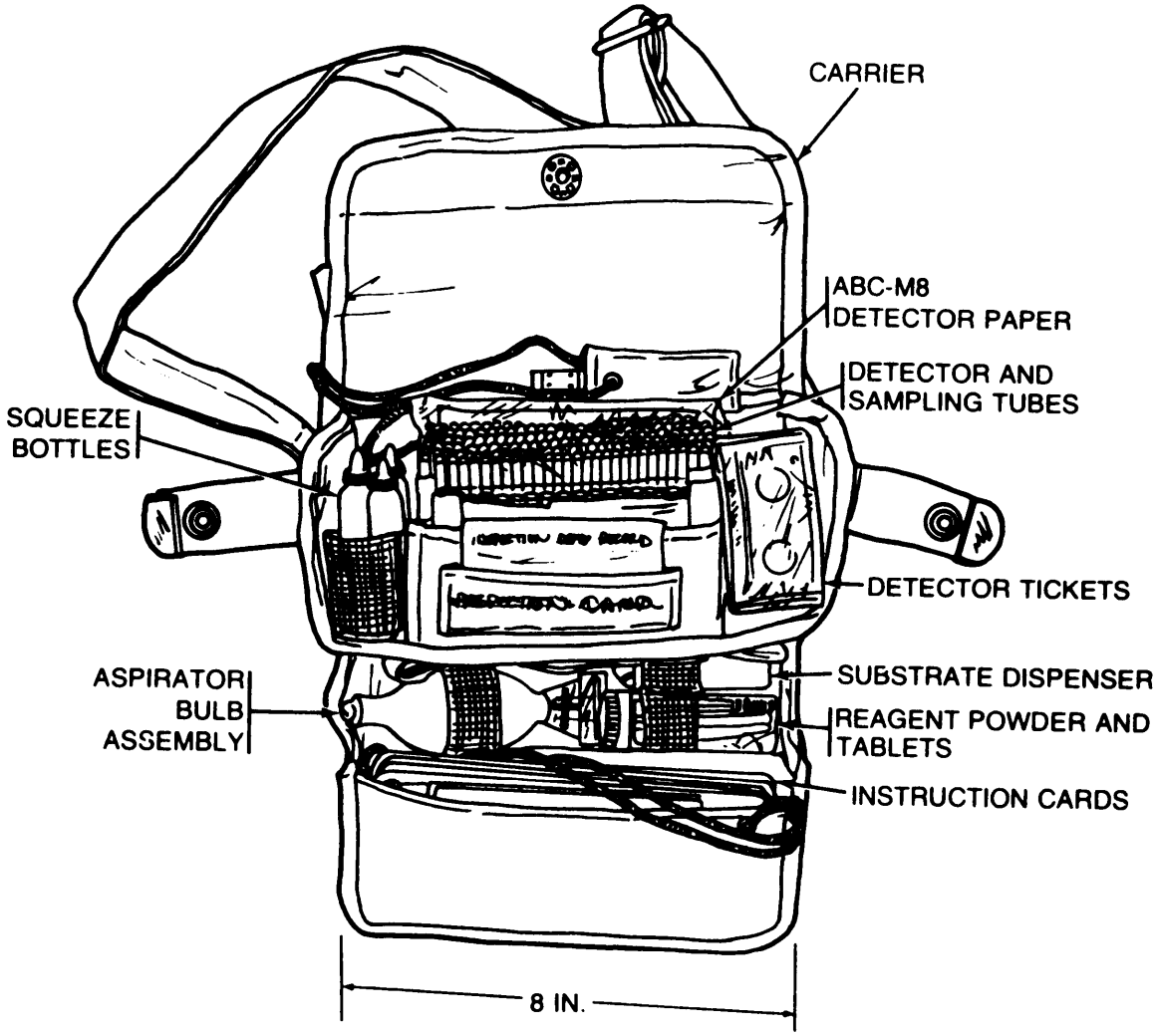
Shipping and Storage Data:

Type pack . . . . Two per fiberbaard box
Dimensions . . . .16 x 13 x 10 in.
Weight . . . . . 8 lb
cube . . . .1.7cu ft
Specification number MIL-D-3945

References

Sc 6665-95-CL-E07
TB CML 93
TM 3-4240-224-14&P

DETECTOR KIT, CHEMICAL AGENT: ABC-M18A2



Type Classification:
STD(LCC-B); MSR 09776017

Use:
To detect and classify danger cousconcentrations of toxic chemical agents in the air and liquid chemical agent contamination on exposed surfaces. The kit is also used to collect and forward samples of unidentified toxic chemical agents to a technical intelligence team or laboratory for identification.

Description:
The ABC-M18A2 detector kit consists of the following:

a. An olive-drab canvas carrier with a carrying strap for stowing the components

b. One belt of 40 detachable detector tickets in individual plastic envelopes

c. Two clips of 25 blue-band glass detector tubes

d One clip of 25 yellow-band glass detector tubes

e. One clip of 25 green-band glass detector tubes

f. One clip of 25 red-band glass detector tubes

9. One clip of 25 white-band glass sampling tubes

h. one aspirator bulb assembly

i. One blue-marked, plastic squeeze-bottle of sodium hydrbxide

j. One white-marked, plastic squeeze-bottle of buffered water

k. One empty green-marked squeeze-bottle

l. One plastic container containing 14 reagent tablets in green marked glass vial and 14 packets (straws) of powdered reagent

m. One plastic, substrate solution dispenser
n. One detector ticket adapter
o. One book of 25 sheets of ABC-M8 VGH chemical agent detector paper
p. Five report cards in envelopes and a pencil (attached to the carrier)
q. Instruction cards
r. An inspection data record card

Functioning:

a. Chemically treated discs on the detector tickets change color in the presence of G or V nerve agents (or both) in the air.

b. Chemically treated gel in the detector tubes change color in the presence of chemical agents (except V nerve agents) in the air. The reagent and substrate solutions are used to complete the chemical reactions of the detector tickets and tubes when exposed to toxic chemical agents in the air.

c. The aspirator bulb assembly draws air samples through the detector tickets, detector tubes, and sam-ling tubes when testing for chemical agents in the air.

d. Each sheet of M8 paper is impregnated with chemical compounds that change color when in contact with liquid nerve or blister agents.

Tabulated Data:

NSN 6665-00-903-4767
Line item number G04300
Unit of issue . . . . Each
Basis of issue . . . . . CTA 50-909
Weight . . . .2.5 lb
Length . . . .8 in.
Width . . . . .3 in.
Height . . . . . 6 in.

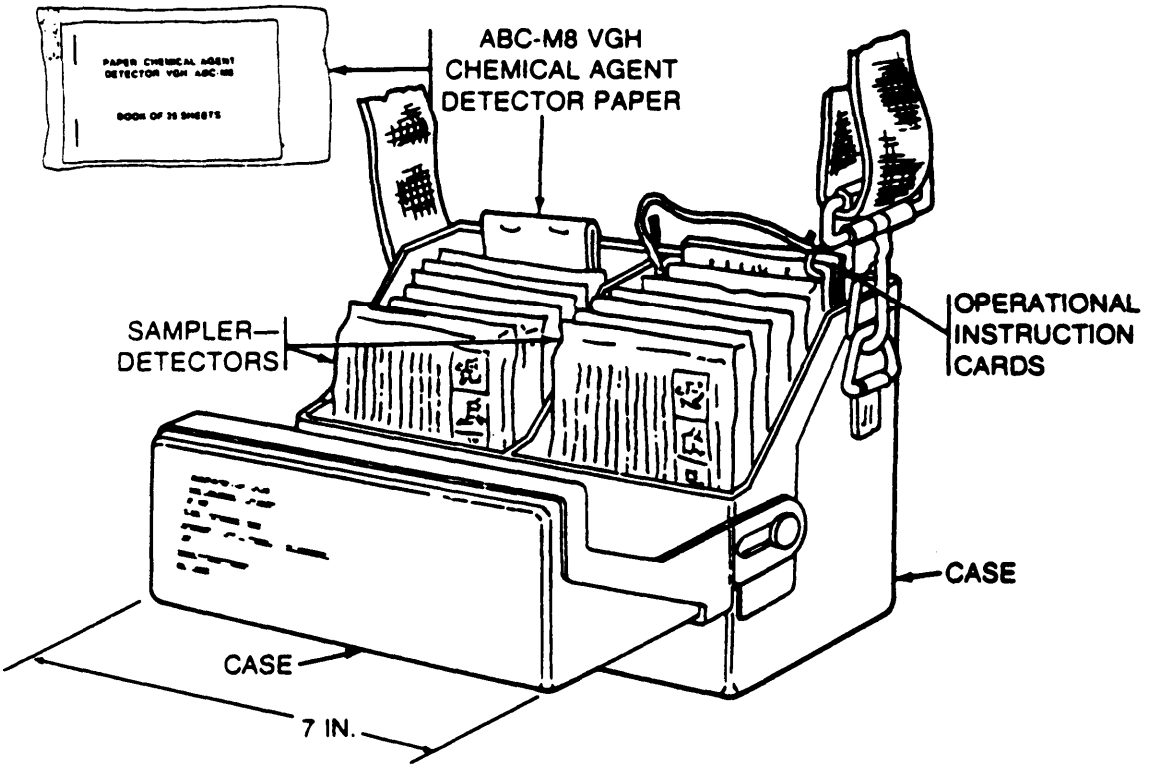
Shipping and Storage Data:

Shel life . . . . . .3 years
Type pack . . . . . 10 per caton
Dimensions . . . .22 x 30 x 10 in.
Weight . . . .30 lb
Cube . . . . . .1.7cu ft
Type storage . . . . . Warehouse
Drawing number 5-77-2092

References:

FM 21-40
FM 21-41
FM 21-48
TM 3-6665-254-12

DETECTOR KIT, CHEMICAL AGENT: M256



Type C/assificafion:

Expendable; MSR 10796026

Use:

To detect and classify dangerous concentrations of chemical agents in the air and liquid chemical agent contamination on exposed surfaces.

Description:

The M256 detector kit consists of a carrying case, 12 sampler-detectors, instruction cards, and ABC-M8 VGH chemical agent detector paper.

Functioning:

The sampler~detector is used to test for chemical agents in the air. When the ampoules are crushed between the fingers, formed channels in the plastic sheets direct the flow of the liquid reagents to wet the test spots. Each test spot of detecting tablet develops a distinctive color which indicates whether a chemical agent is or is not present in the air.

Tabulated Data:

NSN	6665-01-016-8399
Line item number	G04300
Unit of issue	Each
Basis of issue	CTA 50-909
Weight	1.20 lb
Length	7.00 in.
Width	3.00 in.
Height	5.00 in.

Performance:

Detects CX, H, HD, and L blister agents; V and G nerve agents; and AC and CK blood agents. The tests require about 15 minutes to complete.

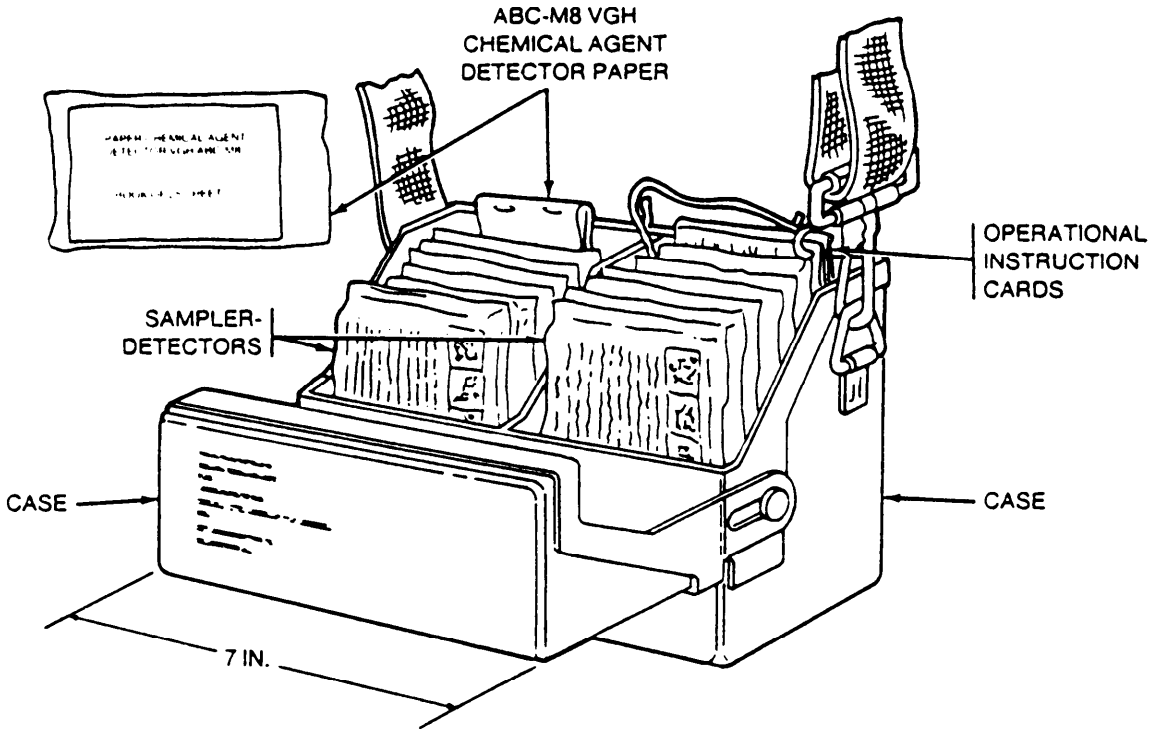
Shipping and Storage Data:

Shelf life	5 years
Type pack	24 per fiberboard box
Dimensions	19.75 x 18.50 x 17.00 in.
Weight	46 lb
cube	4.00 cu ft
Type storage	Warehouse
Drawing number	DL 5-77-2227

References:

TM 3-6665-307-10

DETECTOR KIT, CHEMICAL AGENT: M256A1



Type Classification:
Expendable; MSR 01865002

Use:
To detect and classify dangerous concentrations of chemical agents in the air and liquid chemical agent contamination on exposed surfaces.

Description:
The M256 detector kit consists of a carrying case, 12 sampler-detectors, instruction cards, and ABC-M8 VGH chemical agent detector paper.

Functioning:
The sampler-detector is used to test for chemical agents in the air. When the ampoules are crushed betwwn the fingers, formed channels in the plastic sheets direct the flow of the liquid reagents to wet the test spots. Each test spot or detecting tablet develops a distinctive color which indicates whether a chemical agent is or is not present in the air.

Tabulated Data:

NSN	6665-01-133-4964
Unit of issue	Kit
Basis of issue	CTA 50-970
Weight	1.20 lb
Length	7.00 in.
Width	3.00 in.
Height	5.00 in.

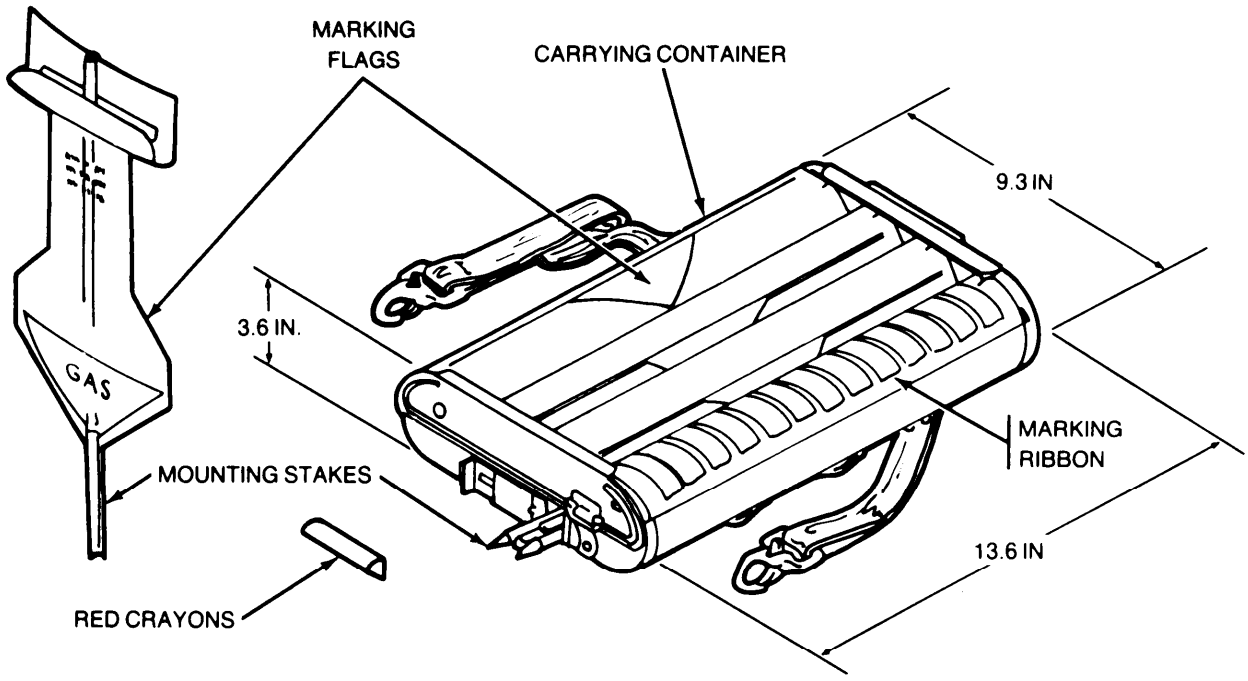
Performance:
Detects CX, H, HD, HN, and L blister agents; V and G nerve agents; and AC and CK blood agents. The tests require about 15 minutes to complete.

Shipping and Storage Data:

Shelf life	60 months
Type pack	24 per fiberboard box
Dimensions	19.75 x 18.50 x 17.00 in.
Weight	46 lb
cube	4.00 cu ft
Type storage	Warehouse
Drawing number	5-77-2240 P5-77-2240

References:
TM 3-6665-307-10

MARKING SET, CONTAMINATION: NUCLEAR, BIOLOGICAL, CHEMICAL (NBC)



Type Classification:
Expendable; DEVA 0781

Use:
To mark contaminated as defined by FM 3-3.

Description:
The NBC contamination marking set consists of a carrying container, three flag containers, a ribbon container, 48 mounting stakes, and red crayons. The carrying container holds all individual parts of the set and has adjustable straps for front or back wear. One flag container holds 20 white flags for marking nuclear contamination. Another holds 20 blue flags for marking biological contamination. The third holds 20 yellow flags for marking chemical contamination. The mounting stakes are stored in the bottom of the carrying container and are used to make poles for hanging flags and attaching the marking ribbons. The marking ribbons are used as lines to enclose and mark the dangerous area. The red crayons are used to mark information about the contaminated area on the flags.

Functioning:
Flags may be attached to single objects such as branches or small tree trunks to mark small contaminated areas or to one or several marking stakes to mark large contaminated objects or small areas or may be hung on the ribbons strung between mounting stakes implanted and braced in the ground.

Tabulated Data:

NSN 9905-12-124-5955
Unit of issue . . . . Each
Basis of issue . . . . CTA 50-970
Carrying container with components:
Weight 10.0lb
Length . . . .13.6in.
Width . . . .9.3in.
Height . . . .3.6in.
Mounting stakes:
Length . . . .11.4 in.
Quantity . . . .48 ea
Marking flags:
See a., b., c. below
Marking ribbon:
Seed. below
Quantity rolls . . . .13 ea
Length of each roll . . . .66 ft
Marking rods:
See e. below
Marking crayon:
See f.below

Rep/aceable items:

a. Sign (Warning flag BIO-color blue)
9905-12-132-2578
b. Sign (Warning flag ATOM -color white)
9905-12-132-2579
c. Sign (Warning flag GAS-color yellow)
9905-12-132-2580
d. Tape, textile (Ribbon, yellow)
8513-12-132-2577
e. Marking rods
9905-12-133-0113
f. Crayon, marking
7510-12-120-9355

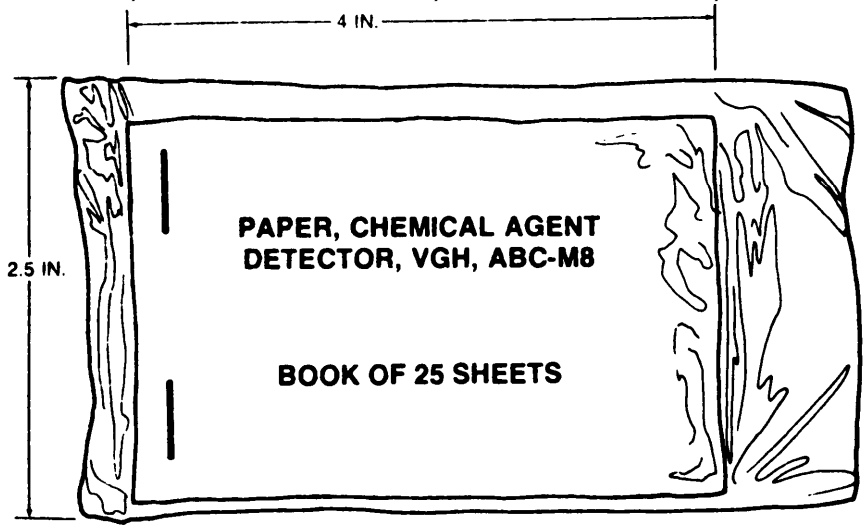
Shipping and Storage Data:

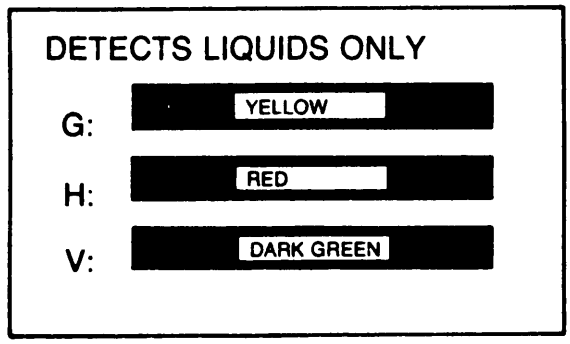
Type pack . . . . . 14 3/4 X 6 3/4 X 19 1/4 in.
Weight . . . .58 lb
Cube . . . . . 1.3 cu ft
Type storage . . . . Warehouse
Drawing number 5-51-573

References:

TM3-9905-001-10/C1

PAPER, CHEMICAL AGENT, DETECTOR: VGH, ABC-M8





Type Classification:
Expendable; MSR 01736026

Use:
To detect the presence of liquid VGH chemical agents.

Description:
The M8 paper is issued in a book of 25 sheets of chemically-treated, dye-impregnated paper, perforated for easy removal. A color comparison bar chart is printed on the inside of the front cover of the book.

Functioning:
When a sheet of M8 paper is brought in contact with liquid nerve or blister agents, they react with chemicals in the paper to produce agent specific color changes.

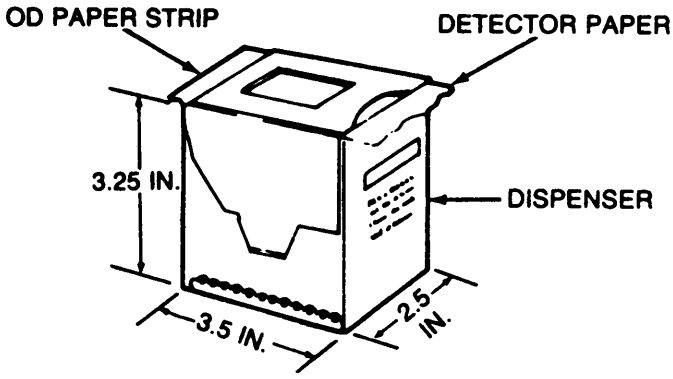
Limitations:
The ABC-M8 paper cannot be used to detect chemical agents in water or aerosol agents in the air.

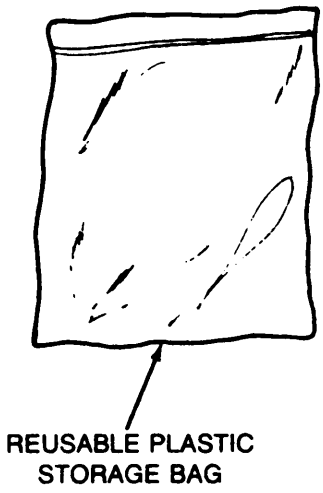
Tabulated Data:
NSN 6665-00-050-8529
Unit of issue . . . . . **Book**
Basis of issue . . . . CTA 50-970
Length . . . . . 4 in.
Width . . . . . 2.5 in.
Height . . . .0.25 in.

Shipping and Storage Data:
Type pack . . . . . 1,000 per fiberboard box
Weight . . . .40 lb
Cube . . . . 0.9cu ft
Type storage . . . . . .Warehouse
Drawing number . . . . . LM 5-67-266; 5-67-276

References:
FM 21-40
FM 21-41
TM 3-6665-205-10/1,-10/2
TM 3-6665-226-10
TM 3-6665-227-10
TM 3-6665-253-12
TM 3-6665-254-12
TM 3-6665-268-10
TM 3-6665-307-10

PAPER, CHEMICAL AGENT DETECTOR: M9





Type Classification:
Expendable: DEVA 0780

Use:
To detect presence of liquid chemical agents.

Description:
M9 chemical agent detector paper is issued in a roll, two inches wide and 30 feet long, contained in a cardboard dispenser with a cutter edge. The detector paper is gray-green and has an adhesive back protected by an 00 paper strip until dispensed from the roll. A reusable plastic storage bag is included for storing the dispenser after removal from the shipping bag.

Functioning:

The paper sticks to clothing, vehicles, and other equipment. When a liquid chemical agent touches the paper, dye in the paper reacts with the agent to form pink, red, red-brown, or red-purple spots or streaks.

Limitations:

a. The chemical agent detector paper is not effective below 32°F or above 125°F.

b. It will not detect chemical agent vapors.

c. May give false positive reading when exposed to heat above 125°F; scuffing; various petroleum products such as grease, gasoline, or oil; defoliants and insecticides; DS2 decontaminating agent; and many other chemicals encountered by the user.

d. Protective gloves should be worn when touching detector paper. The detector paper dye could cause cancer if placed in or near mouth or skin although the risk is small.

Tabulated Data:

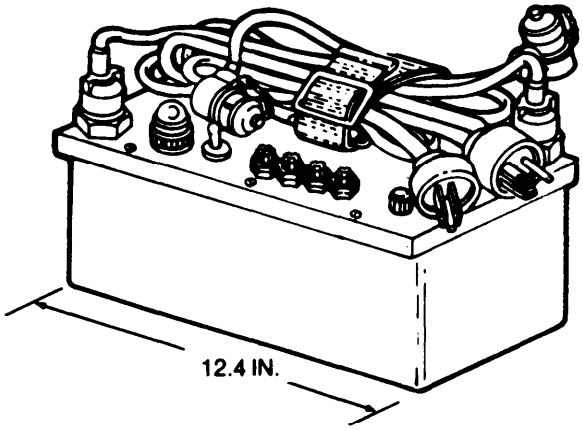
NSN	6665-01-049-8982
Unit of issue	Roll
Basis of issue	CTA 50-970
Weight	7 oz
Roll:	
Length	30 ft
Width	2 in.
Dispenser:	
Dimensions	3.5 x 2.5 x 3.25 in.

Shipping and Storage Data:

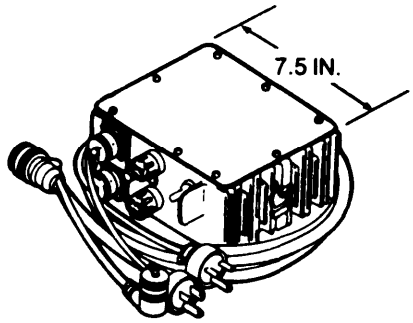
Type pack	Foil-type storage bag/250 per wooden box
Weight	98 lb
Cube	5.6 cu ft
Type storage	Warehouse
Drawing number	5-88-1

References
FM 21-40
FM 21-41
FM 21-48
TM 3-220
TM 3-6665-31-10

POWER SUPPLY, CHEMICAL AGENT, AUTOMATIC ALARM: M10 AND M10A1



M10 POWER SUPPLY



M10A1 POWER SUPPLY

Type Classification:

M10A1 . . . . . STD (LCC-A); MSR 02816012
M10 . . . . . STD (LCC-B); MSR 02816012

Use:

To convert electrical power from nearby installation or generator set sources of ac power to dc power for operating the M43 or M43A1 detector unit of the M8 or M8A1 automatic chemical agent alarm.

Description:

The Ml O and M10A1 power supplies are compact electrical power transformers with two input and two output power cables.

Differences Between Models:

The M10A1 power supply is more compact and lighter than the Ml O power supply. The M10A1 power supply can be attached to the bottom case of the M43 or M43A1 detector unit. A BA3517/U battery for standby power can be attached underneath the M10A1 power supply .

Functioning:

The input power cables connect the power supply transformer to 115 Vac or 230 Vac power sources. The power supply transformer/rectifier regulator converts 115 Vac or 230 Vac to a regulated 29 ± 3 Vdc output. The output cables connect the power supply to a standby battery (BA3517/U or BB501/U). If the ac power source fails, a power failure relay opens in the power supply. Then the detector unit automatically draws its power from the standby battery. A light on the power supply will glow to indicate that the ac power source is off. This light will continue glowing until ac power is restored and the circuit is reset manually.

Tabulated Data:

M10A1 NSN 6665-01-093-2739
M10 NSN 6665-00-859-2225
Line item number P28655
Unit of issue..... . . . . Each
Basis of issue . . . . TOE/MTOE. AR 310-34

M10A1 weight and dimensions:
- Weight . . . .6.5 lb
- Length . . . .7.50 in.
- Width . . . .6.62 in.
- Height . . . .3.25 in.

M10 weight and dimensions:
- Weight . . . .18 lb
- Length . . . .12.4 in.
- Width . . . . . 6.4 in.
- Height . . . .7.4 in.

Performance:

Power requirements:
- Input . . . .100 to 135 Vac or 200 to 260 Vat, single-phase, 50, 60 or 400 Hz
- Output . . . .26 to 32Vdc

Operating temperature . . . . . From -140°F to 120°F

Shipping and Storage Data:

M10A1 power supply:

Type pack . . . . Wooden Box
Weight . . . . . 17 lb
Cube . . . . 0.6 cu ft
Type storage . . . . Warehouse
Drawing number 5-15-6026

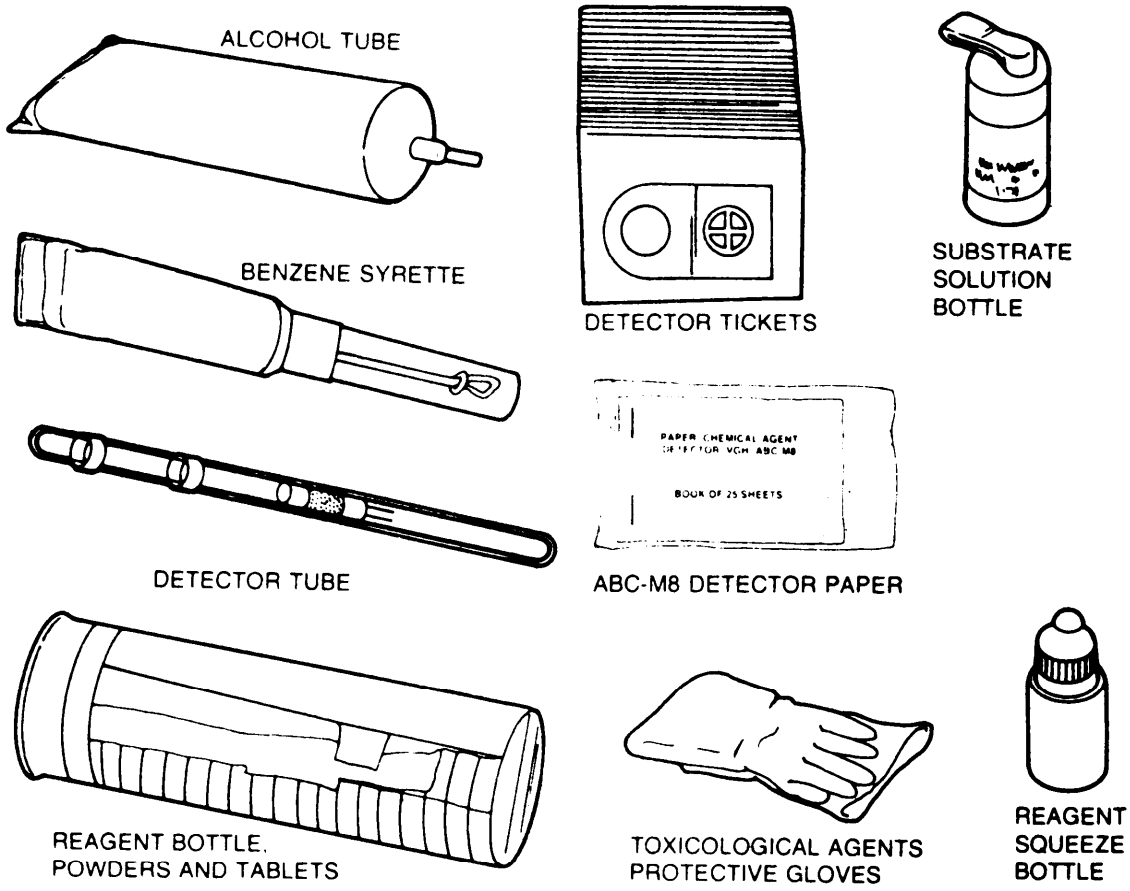
M10 power supply:

Type pack . . . . . Wooden box
Weight . . . . 41 lb
cube . . . . 1.3 cu ft
Type storage . . . . Warehouse
Drawing number 5-15-4727

References:

FM 21-40
FM 21-41
SB 740-94-3
TM 3-6665-225-12
TM 3-6665-261-14
TM 3-6665-261-24P
TM 3-6665-273-20
TM 3-6665-274-20
TM 3-6665-312-12&P
TM 3-6065-312-30&P
TM 43-0002-31

REFILL KIT, ANALYZING COMPONENTS, CBR AGENTS SAMPLING AND ANALYZING KIT: M33



NOTE. ONLY REPRESENTATIVE COMPONENTS ARE SHOWN

Type Classification:

Expendable: AMCTC 2175 64

Use:

To replace expendable components in the M19 CBR agent sampling and analyzing kit when the components have been consumed in use or their shelf life has expired.

Description:

The M33 refill kit contains the following components:

Component	*Quantify*
Paper, Chemical Agent Detector, VGH, ABC-M8	..4 books
Detector tubes (15 per clip)	...51 clips
Alcohol tube (10 per box)	.2 boxes
Benzene syrettes (30 per box)	...1 box
Swabs	..4 boxes
Capillary tubes	1 container
Combination filters (2 per packet)	..75 packets
Reagents sets	..2 sets
Detector tube end seals	1 box
Dragendorff paper (1paper perpacket)	75 packets
Matches	...1 box
Field notebook pads	..2 each
Test tubes (21 per box)	..4 boxes
Anticholinesterase (Anti-ChE) detector tickets (40 tickets per belt)	..6 belts
Substrate dispensers (2 dispensers)	...1 box
Needle, knitting	.. 1each
Ballpoint pen	..1each
Pencil, lead .,	.. 1each
Pencil, wax marking	.. 1each
Forceps, medium point, plastic coated tips	..1 each
Forceps, specimen	1 each
Gloves, neoprene	..2 pair
Shipping tags and envelopes	..15 sets
Filter paper dispenser ., ... ,	1 each
Instructions for use of refill kit (cards)	1 set
Rubber stoppers	..2 each

Wicks, braided . . . .3 each
Lamps, incandescent . . . .2 each
Writing paper . . . .1 pad
Wood clips . . . .2 each

Functioning:

The analyzing components of the M19 sampling and analyzing kit are replaced by the M33 refill kit.

Tabulated Data:

NSN 6665-00-776-8819
Unit of issue . . . .Each
Basis of issue . . . . CTA 50-970

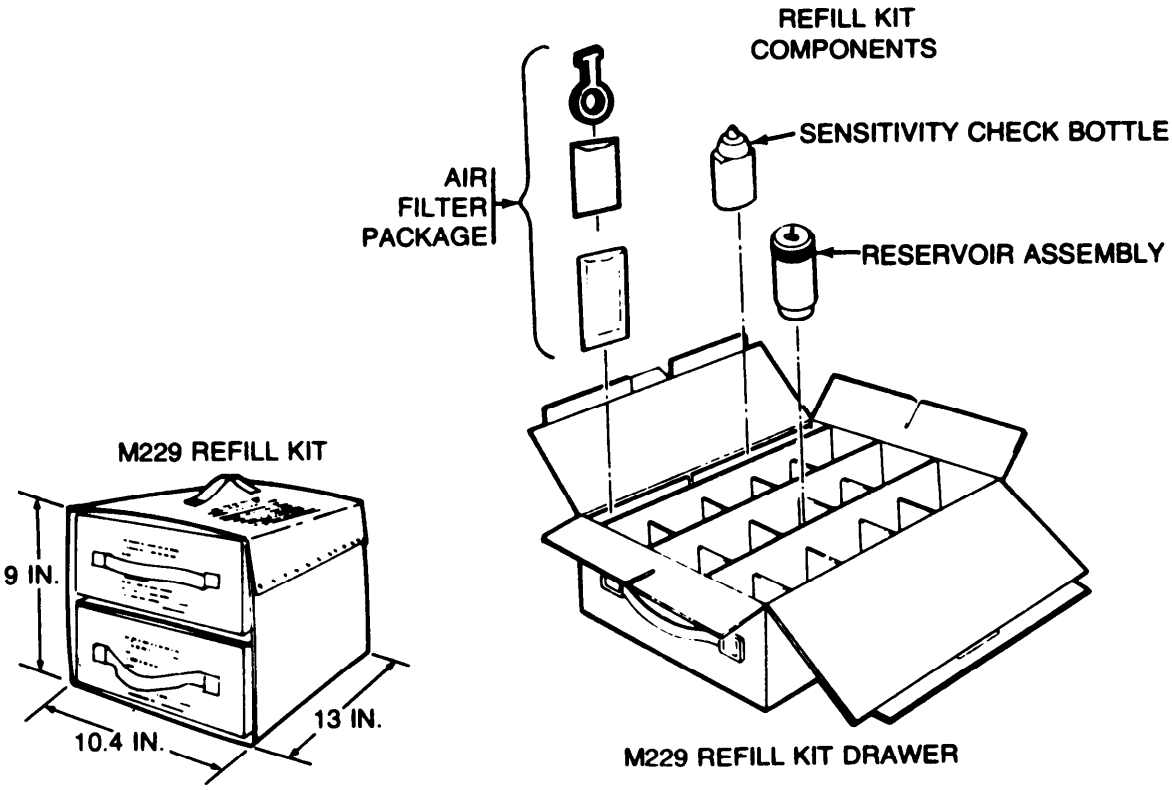
Shipping and Storage Data:

Shelf life . . . .2 years
Type pack . . . .4 per wood box
Dimensions . . . .39 x 26 x10 in.
Weight . . . .75 lb
cube . . . .5.9 cu ft
Type storage . . . . Warehouse
Specification MIL-R-51199

References:

TM 3-6665-205-10/1 and 10/2

REFILL KIT, CHEMICAL AGENT AUTOMATIC ALARM: M229



Type Classification:
Expendable; AMCTC 951272

Use:
To replace the consumable materials for sustaining the operation of the M43 detector unit for the M8 automatic chemical agent alarm.

Description:
The M229 refill kit contains a 15 day supply of mate rials for continuous operation of the M43 automatic chemical agent alarm detector unit. Each drawer contains 15 reservoir assemblies, one cell-sensithdty check bottle, and 30 air filter packages.

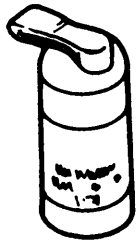
Functioning:
The M229 refill kit drawers are used to store the air filters, reservoir assemblies, and cell-sensitivity check bottles for operating and testing the M43 automatic chemical agent alarm detector unit

Tabulated Data:
NSN 6665-00-859-2214
Unit of issue . . . . . Each
Basis of issue . . . . . CTA 50-970
Weight . . . . . 13.8 lb
Length . . . . . 13 in.
Width . . . .10.4 in.
Height . . . . . 9 in.

Shipping and Storage Data:
Type pack . . . . . One per wooden box
Dimensions . . . .15 x 12 x 11in.
Weight . . . . . .28 lb
cube . . . . . 1.2 cu ft
Type storage . . . . . Warehouse
Storage temperature . . . . . From -65°F to 160°F
Drawing number . . . . DL 5-15-4700

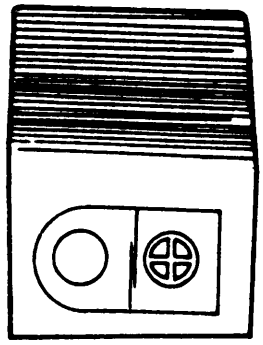
References:
TM 3-6665-225-12
TM 3-6665-260-14;-24P
TM 3-6665-302-20P;-34;-34P

REFILL KIT, CHEMICAL AGENT DETECTOR: VG COMPONENTS, ABC-M30A1

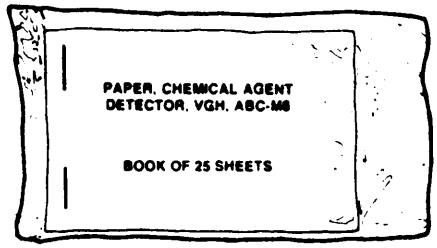


SUBSTRATE SOLUTION BOTTLE (FILLED)

WHITE DOT SQUEEZE BOTTLE (FILLED)



DETECTOR TICKETS (ONE BELT OF 40)



ABC-M8 DETECTOR PAPER

Type Classification:
Expendable; AMCTC 9512 72

Use:
To complement the G-agent detection capability of the AN-M2 chemical agents water testing kit. When used together, the ABC-M30A1 and AN-M2 kits are used to distinguish whether a water sample contains either V or G agents or both. The kit can also be used when performing extensive training or testing with detector tickets.

Description:
The ABC-M30A1 refill kit consists of a fiberboard box containing the following components:

a. One belt of 40 detector tickets
b. One filled white-dot squeeze bottle
c. One filled substrate bottle
d. An instruction card
e. One book (25 sheets) of ABC-M8 VGH Chemical Detector Paper

Functioning:
A chemically treated test spot on the square end of the detector ticket is used to sample the water. When solutions from the white dot squeeze bottle and the substrate solution bottle are applied to the wettest spot, a chemical reaction results. If there is no agent, the test spot turns blue. If G or V nerve agent is present, the test spot remains colorless or turns orange.

Tabulated Data:

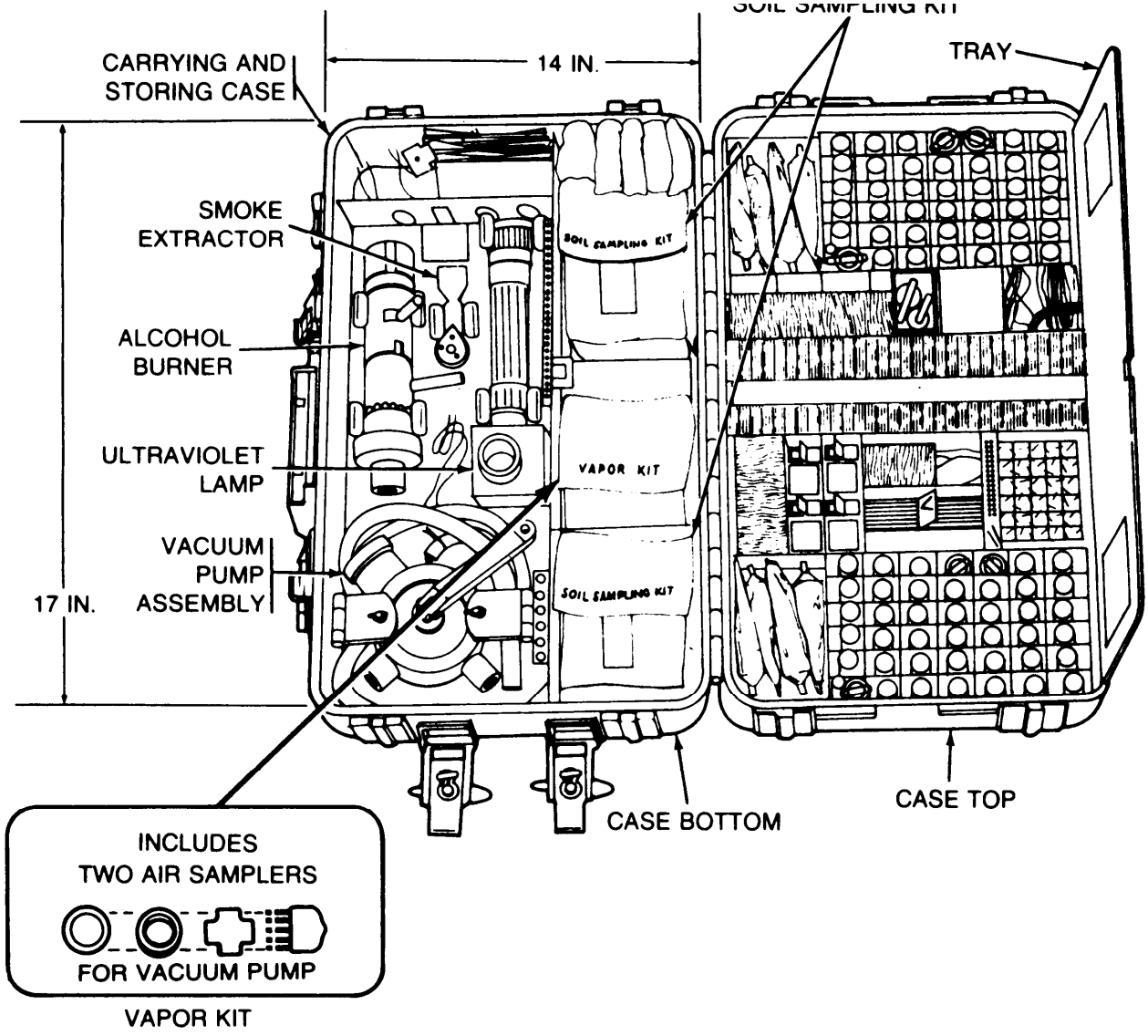
NSN	6665-00-909-3647
Unit of issue	Each
Basis of issue	CTA 50-970

Shipping and Storage Data:

Shelf life	3 years
Type pack	Fiberboard box
Dimensions	0.42 x0.29 x 0.25 in x 0.25 in.
Weight	0.52 lb
Cube	0.081 cu ft
Type storage	Warehouse
Specification	MIL-R-51237

References:
TM 3-6665-308-10

SAMPLING AND ANALYZING KIT, CBR AGENT: M19



Type Classification:

STD (LCC-A); AMCTC 217564

Use:

To detect and identify enemy chemical agents, perform preliminary processing of unidentifiable chemical or biological agent samples, and delineate contaminated areas.

Description:

The M19 kit consists of a metal or fiberglass carrying and storage case containing the following items:

a. A vacuum pump assembly
b. A vapor kit
c. An aspirator bulb assembly
d. A smoke extractor
e. An alcohol burner assembly
f. An ultraviolet lamp
g. Miscellaneous consumable sampling and analyzing supplies. When these components become unserviceable or are consumed, the M 19 kit is resupplied from the M34 sampling kit and the M33 analyzing components refill kit.

Functioning:

a. The vapor kit is used with the vacuum pump and other sampling components from the M 19 kit to collect chemical agent vapor, smoke, and aerosol samples from the air.

b. The smoke extractor is used to separate benzene-soluble smokes or aerosols from water-soluble smokes or aerosols.

c. The consumable sampling and analyzing supplies are used with the Ml 9 kit hardware for collecting, detecting, evaluating, analyzing, and packaging samples of suspected agents.

Tabulated Data:

NSN 6665-00-776-8810
Line item number S29577
Unit of issue . . . . Each
Basis of issue . . . . . .TOE/MTOE
Weight . . . . 48 lb
Length . . . . . 20 in.
Width . . . .13 in.
Height . . . . 8 in.

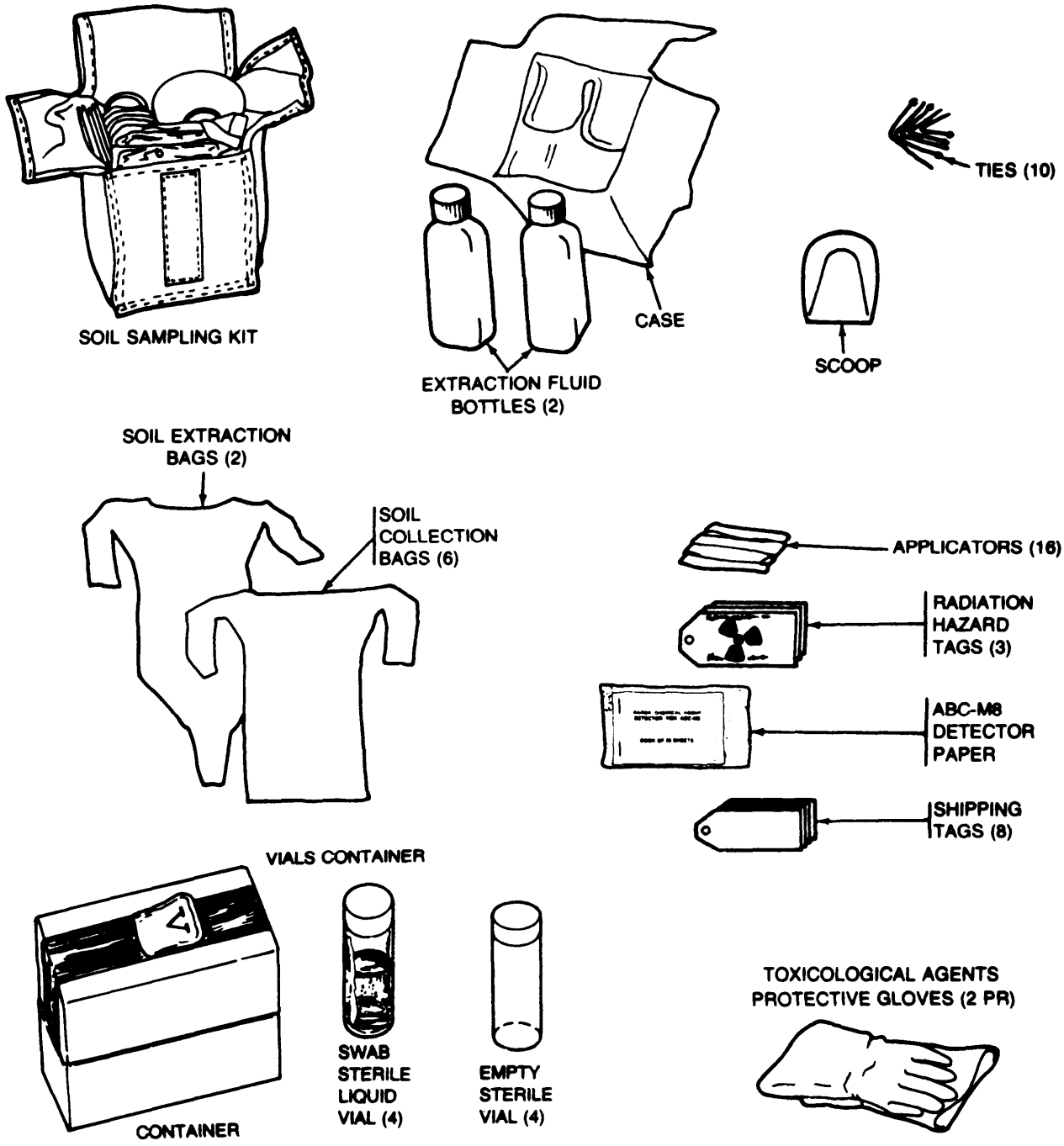
Shipping and Storage Data:

Shelf iife . . . . . 3 years (detector tubes, tickets, and reagents)
Type pack . . . . . Metal or fiberglass case
Dimensions . . . .20 x 13 x 8 in.
Weight . . . .48 lb
Cube . . . . . .1.5 cu ft (crated)
Type storage . . . . Warehouse
Drawing number 5-77-353

References:

SC 6665-94-CL-E03
TM 3-6665-205-10/1 and-10/2

SAMPLING KIT, CBR AGENT: M34
SOIL SAMPLING KITS (2)



Type Classification:
Expendable; AMCTC 2175 64

Use:

To sample soil, surfaces, and water for chemical agents and biological agents. The kit can also be used to perform preliminary processing of soil samples.

Description:

The M34 sampilng kit consists of two soil sampling kits, one vials container, two pairs of toxicological agents proactive gloves, and a set of instruction cards.

Functloning:

The soil sampling kits and vials are used for collecting, marking, and shipping suspected contaminated soil or water samples to a base chemical laboratory for analysis.

Tabulated Data:

NSN 6665-00-776-8817
Unit of issue . . . . Each
Basis of issue . . . . CTA 50-970 and as a component of the Ml 9 sampling and analyzing kit.
Weight . . . .4.5 lb
Length . . . .20 in.
Width . . . . . 18 in.
Height . . . . . 11 in.

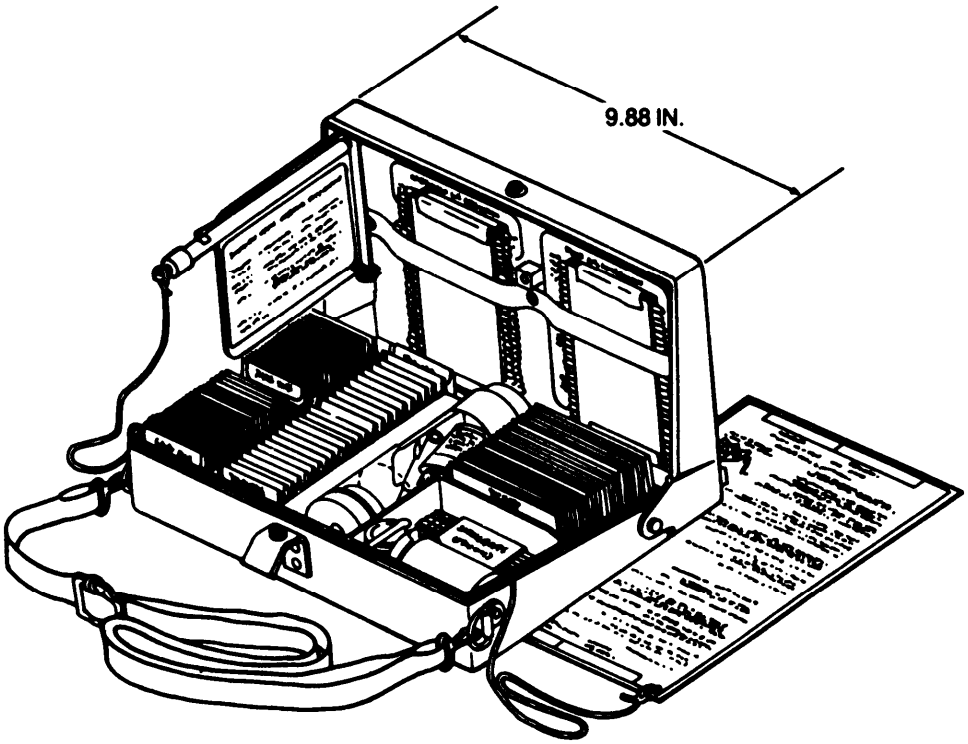
Shipping and Storage Data:

Type pack . . . .24 fiberboard carton
Weight . . . . . 43 lb
Cable. . . . . 2.3 cu ft
Type storage . . . . Warehouse
Drawing number 5-77-353

References:

TM 3-6665-205-10/1 and 10/2
TM 3-6665-268-10

WATER TESTING KIT, CHEMICAL AGENTS: M272



Type Classification:
Expendable;DEVA 0183

Use:
To detect and identify dangerous levels of common chemical agents in water sources.

Description:
Tha M272 klt *consists* of 25 containers of reagents, thermommeter and holder, test bottle, waterproof matches and Container, instruction cards,5 rubber connactors, and a carrylng case.

Functioning:
The M272 watartesting kit can be used to test 25 sampies of water for dangerous amounts of cyanide, mustard,i, lewisite, and, nerve agents. Reacts to these chemical agents or training simulants in raw or treated water.

Limitations:
Contains hazardous chemicals requiring special protective clothing and equipment and handlig precautions.

Tabulated Data:

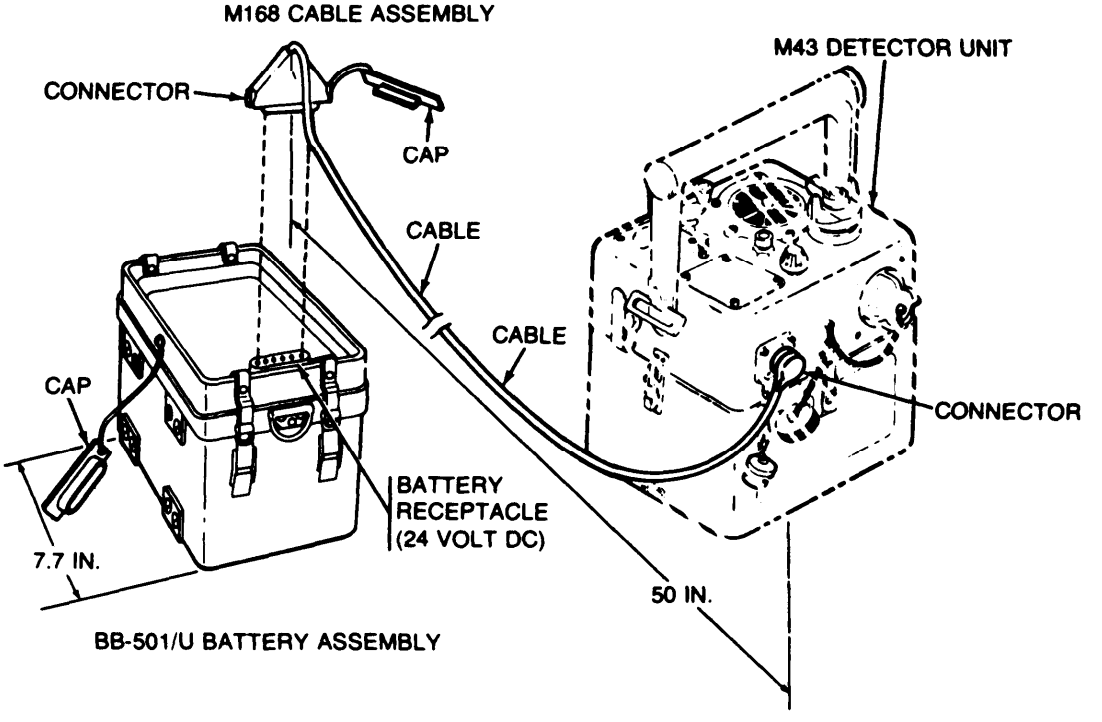
NSN	6665-01-134-0885
Unit of issue	Each
Basis of issue	CT A50-970
Weight	2.4 lb
Length	9.88 in.
Width	6.25 in.
Height	2.75 in.

Shipping and Storage Data:

Type pack	One per wooden box
Weight	3 lb
Cube	0.4 cu ft
Type storage	Warehouse
Drawing number	5-77-25

References
TM 3-6665-319-10

WINTERIZATION KIT, AUTOMATIC CHEMICAL AGENT ALARM: M253



Type Classification:
STD (LCC-A); AMCTC 8604 71

Use:
To provide an independent source of power for the M43 or M43A1 detector unit during operation of the M8 or M8A1 automatic chemical agent alarm in extremely cold climates.

Description:
The M253 winterization kit consists of two BB501/U battery assemblies and one Ml 68 cable assembly.

Functioning:
The BB501/U battery is used to supply 24 Vdc power to the M43 or M43A1 detector unit when operating temperatures of 20°F and below are expected.

Tabulated Data:
NSN 6665-00-169-1455
Line item number Y56067
Unit of issue . . . .Each
Basis of issue . . . . . TOE/MTOE for units operating in arctic temperature
BA501/U battery:
Weight . . . .28 lb
Length . . . .13 in.
Width . . . .6.5 in.
Height . . . . . 7.2 in.
M168 cable assembly:
Weight 1lb
Length . . . .50 in.

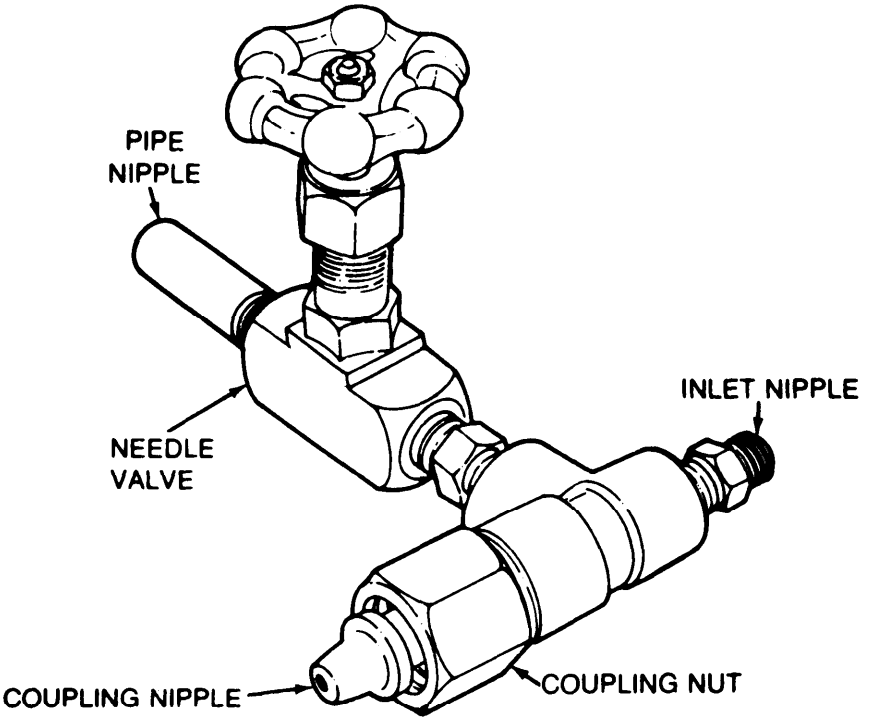
Performance:
Operating temperature . . . . . From -40° to 165°F.

Shipping and Storage Data:
Type pack . . .. Wooden box
Dimensions . . . .21.3 x 17 x14.5 in.
Weight . . . .85 lb
Cube . . . .3.0 cu ft
Type storage . . . . Warehouse
Storage temperature . . . . From -80°F to165°F
Drawing number . . . . . 5-15-6535; M168 cable assembly 5-15-5550

References;
TM 3-6665-225-12
TM 11-6140-203-15-3

CHAPTER 2
INDIVIDUAL PROTECTION

ADAPTER AND VALVE ASSEMBLY, COMPRESSED AIR: M4



Type Classification:
STD(LCC-A);CCTC 3585 59

Use:
To couple the air cylinders of the Ml 5 compressed air breathing apparatus to a 15 cfm 3,500 psi air compressor for charging. It also provides a chamber for sampling air for carbon monoxide during or after the charging operation.

Description:
The M4 adapter consiste of a heavy duty tee with:
a. A heavy duty inlet nippie at the air inlet end
b. A coupiing nlppie and coupling nut at the air outlet end
c. An air outlet end
d. A needle valve and pipe nlppie at the air sampiing

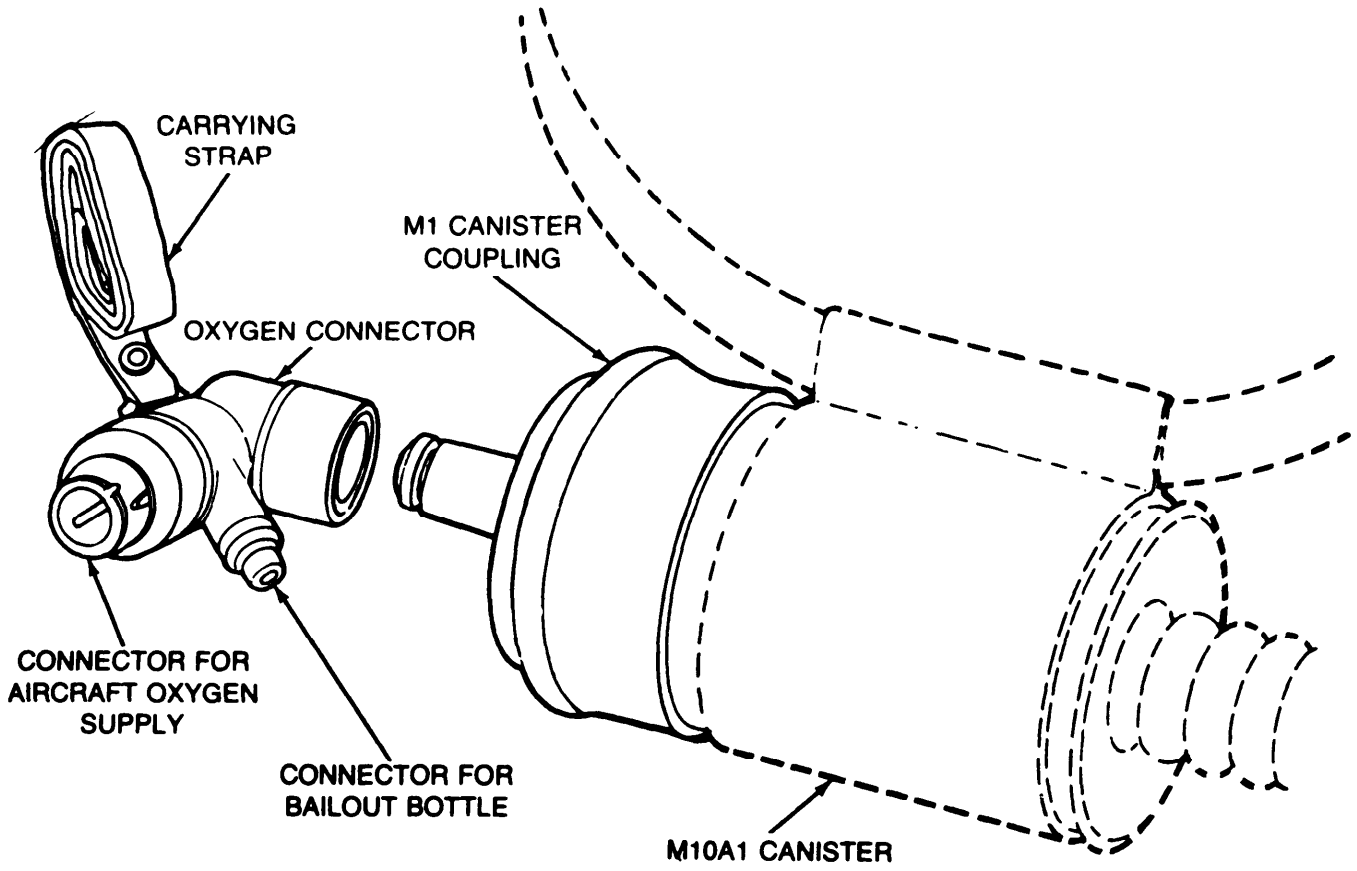
Functioning:
When the M4 adapter Is connected to an air compressor, air from the compressor enters the inlet nipple. This air passes through the pipe tee and coupling into the cylinders of the M15 breathing apparatus.

Tabulated Data:
NSN . . . . . *...4240-00-633-5792*
Unit of issue . ... Each
Basis of issue . . . . CTA 50-909
Weight . . . .2.5 lb
Length . . . . . 6 in.
width . . . . 5 in.
Height . . . . . , 4 in.

Shipping and Storage Data:
Type pack . . . . . 1 per fiberboard box
Weight . . . . 3 lb
cube . . . . . 0.1 cu ft
Type storage . . . . . Warehouse
Drawing number 5-82-8

References:
TM CML 93
TM 3-4240-224-12,-35,-20P,-35P

ADAPTER, OXYGEN SUPPLY, CB MASK, AIRCRAFT: ABC-M8



Type Classification:

Expendable; AMCTC 9512 72

Use:

To connect an ABC-M24 aircraft chemical biological mask to the oxygen supply system of an airplane or to an oxygen-bailout bottle.

Description:

The ABC-8 adapter is an oxygen connector with two small inlets leading from an elbow with a larger outlet at one end. A carrying strap is attached to the elbow of the connector. An M1 canister coupling is furnished with the adapter.

Functioning:

At high altitudes, oxygen flows from the oxygen sup ply system or bailout bottle through the connector and canister coupling to the canister inlet. The oxygen flows through the canister and hose to the facepiece of the mask.

Tabulated Data:

NSN 4240-00-848-6074
Unit of issue . . . .Each
Basis of issue . . . . CTA 50-970
Weight . . . . . 0.66 lb
Length . . . . . 5.1 in.
Width . . . .4.75 in.
Height . . . . . 3.75 in.

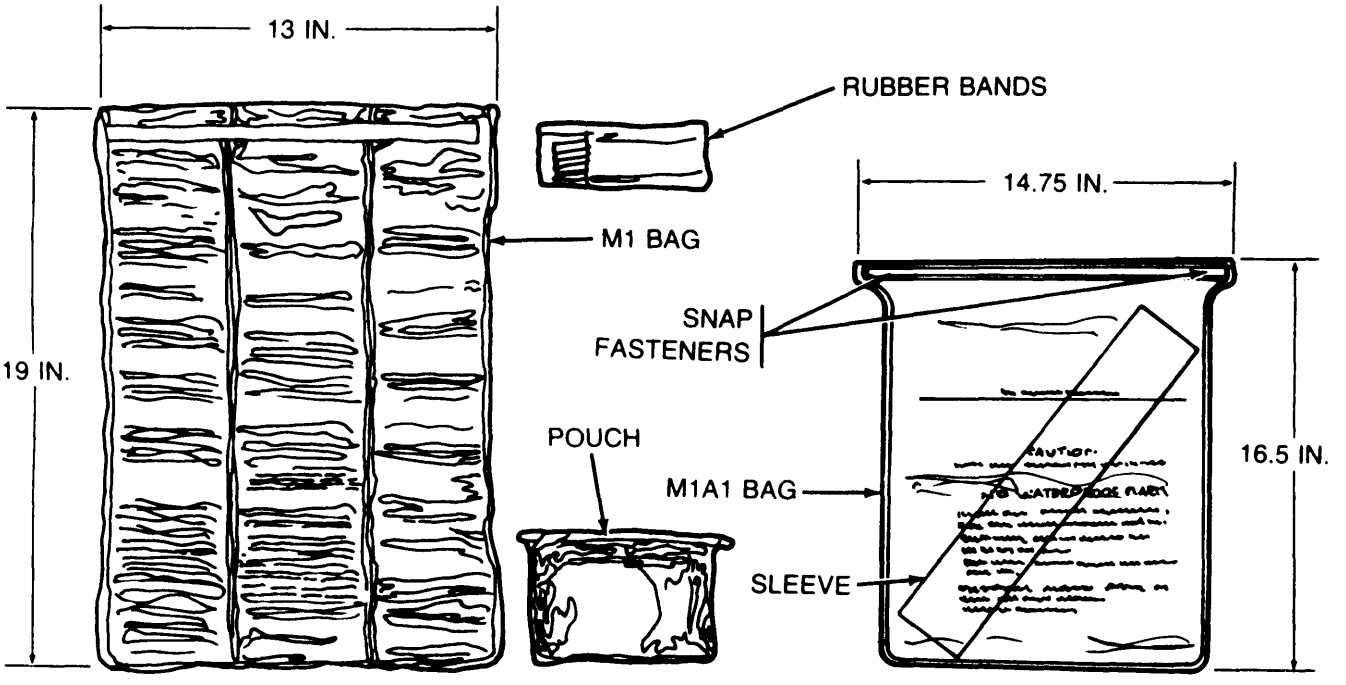
Shipping and Storage Data:

Type pack 30/carton
Weight . . . . . 8 lb
cube . . . . . 0.50cu ft
Type storage . . . . . Warehouse
Drawing number 5-82-13; 5-82-14; 5-1-271

References:

TM 3-4240-280-10
TM 3-4240-280-23&P

BAG, WATERPROOFING, CHEMICAL-BIOLOGICAL MASK: M1 AND M1A1



Type Classification:

Expendable: AMCTC 9512 72

Use:

a. M1 bag.

To protect the M9A1 chemical-biological, special-purpose mask and the ABC-M17, M17A1, and M17A2 chemical-biological field masks from wetting during amphibious operations or other anticipated water immersion.

b. M1A1 bag.

To protect the ABC-M17, M17A1, and M17A2 chemical-biological field masks under conditions of frequent wetting, water immersion, and continuous usage in warm-wet climates.

Description:

a. The M1 bag and its pouch are made of pliable translucent plastic. The bag is 19 inches long and 13 inches wide and folds to about 4 1/2 by 2 1/2 inches for insertion in its pouch.

b. The M1A1 bag is made of pliable translucent plastic. It is 12 1/2 inches by 16 1/2 inches when open. The open end is strengthened by two polyethylene stiffeners sealed into the edges, with snap fasteners at each end of the stiffeners. A plastic sleeve is issued with the bag.

Functioning:

a. Ml bag.

Immediately prior to waterborne operations, each chemical-biological mask is placed in the bag. The rubber bands are used to seal the bag.

b. M1A1 bag.

Prior to river crossings, beach landings, and similar waterborne or riverine operations, each chemical-biological mask is placed in the bag. The bag is sealed by rolling the open end and securing it with the snap fasteners. The sealed mask is then returned to its carrier.

Tabulated Data:

NSN
- M1 4240-00-377-9401
- M1A1 4240-00-803-5839

Unit of issue . . . . . Each
Basis of issue . . . . CTA 50-970
M1 bag:
- Length . . . . . 19 in. (open)
- width . . . . . 13 in. (open)

M1A1 bag:
- Length . . . . . 12.5 in. (open)
- width . . . . . 16.5 in. (open)

Shipping and Storage Data:

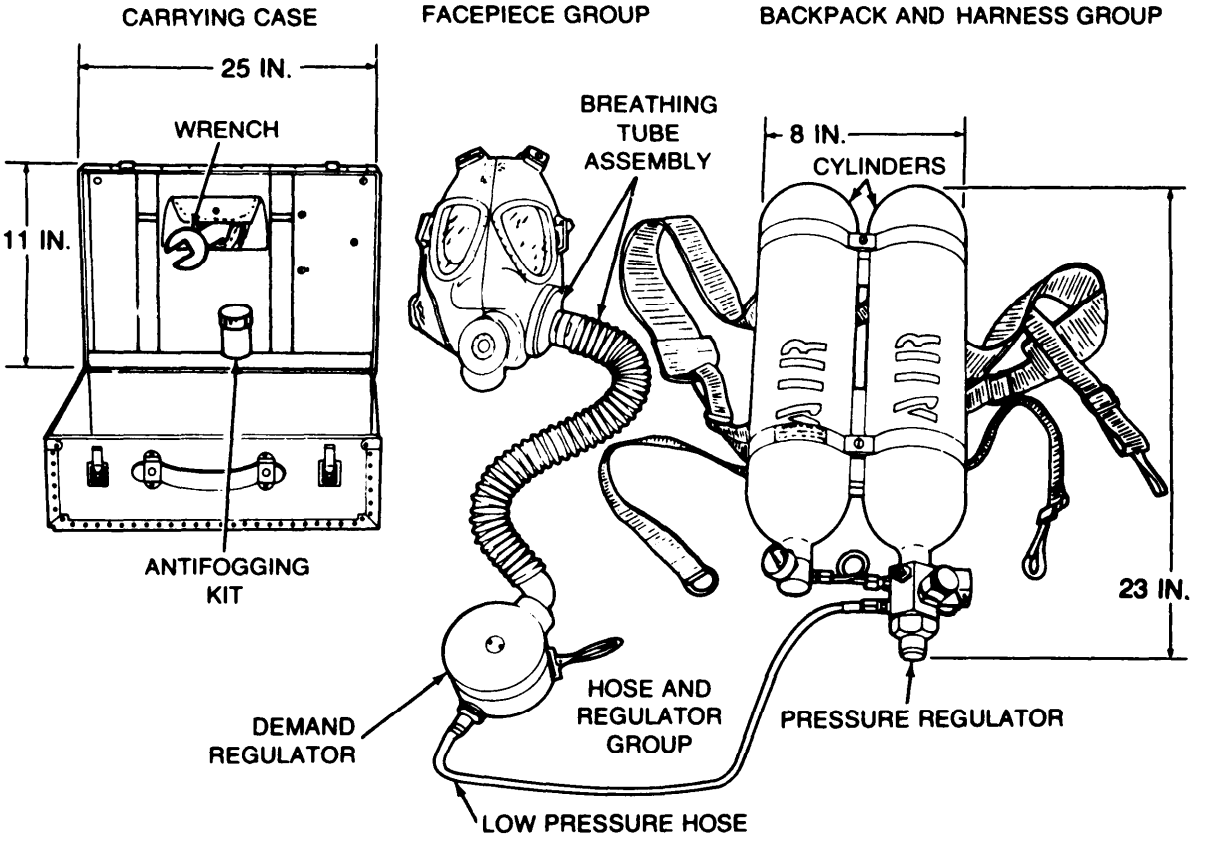
M1 bag:
- Type pack . . . .250 per wooden box
- Weight . . . . . 50 lb
- Cube . . .. 1.5 cu ft
- Type storage . . . . . Warehouse
- Drawing number 5-75-2

M1A1 bag:
- Typepack . . . .2O/fibefbmrd carton,10 cartons/plywood box
- Weight . . . . . 60 lb
- cube . . . . 3.0 cu ft
- Type storage . . . . Warehouse
- Drawing number 5-75-13

References:

TM 3-4240-204-12&P
TM 3-4240-279-10
TM 3-4240-279-20&P

BREATHING APPARATUS, COMPRESSED AIR: M15



Type Classification:

STD(LCC-B); CCTC 4119 63

Use:

To supply respirable air for breathing to handlers of liquid guided missile fuels and oxidizers. It is also used to supply air for breathing in an atmosphere which is deficient in oxygen.

Description:

The M15 breathing apparatus consists of a carrying case, facepiece group, a hose and regulator group, a backpack and harness group. The facepiece is a left-cheek canister, medium-size M9 facepiece. The hose and regulator group consists of a breathing tube assembly, a demand regulator, and a low-pressure hose assembly. The accessories include an M1 antifogging kit, a wrench, and a set of operating instructions.

Differnce Between Models:

a. There are two models of the M15 breathing apparatus. Both use the same facepiece group.

b. There is a difference in the construction of the breathing tube assembly, demand regulator, and the safety relief valve of each model.

c. Maintenance procedures and some replacement parts for the breathing tube assembly, the demand regulator, the pressure regulator, and the safety relief valve are different for each model.

Functioning:

The apparatus is backpacked. Two compressed gas cylinders contain respirable air for the user. A diaphragm in the demand regulator activates a demand valve that controls airflow through the regulator. When the pressure in the facepiece and breathing tube is below atmospheric pressure (user inhaling), the diaphragm opens the demand valve and low-pressure air flows into the facepiece. Exhaled air flows from the facepiece through the outlet valve.

Limitations:

The M15 breathing apparatus is not authorized for chemical-biobgical agent protection in atmospheres where full impermeable protective clothing is required.

Tabulated Data:

NSN 4240-00-04-5435
Line item number C19503
Unit of issue . . . . . Each
Basis of issue . . . . . CTA 50-900
M15 breathing apparatus less carrying case:
Weight .... 19 lb
Length .. . . . . 23 in.
Width . .. . 8 in.
Depth . . . . 4 in,

Performance:

Pressure
In cylinders (full) . . . .2,250 psi
From pressure regulator . . . .80 psi
From demand regulator . . . . Atmospheric
Equivalent volume of fully charged cylinders . . . .26 cu ft of air at atmospheric pressure
Maximum continuous use per charging:
Moderate physical exertion . . . . . 30 to 45 min
Heavy physical exertion . . . .20 min

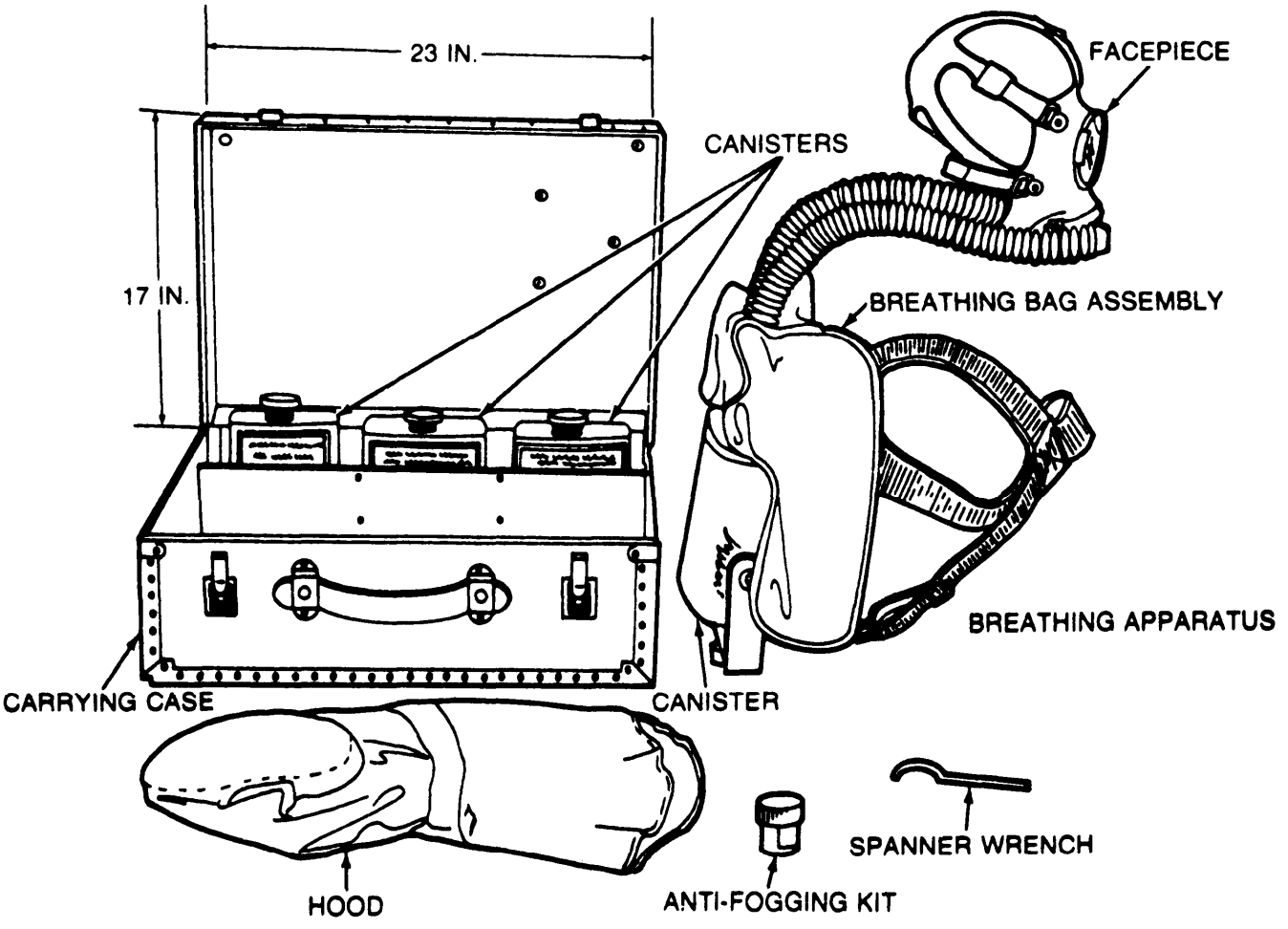
Shipping and Storage Data:

Type pack . . . . Box
Dimensions . . . .30 x 14 x 8in
Weight . . . . . 29-32 lb
Cube . . . . 1.9 cu ft
Type storage, ... Warehouse
Specification number MIL-B-51071

References:

TM 3-4240-224-146P

BREATHING APPARATUS, OXYGEN-GENERATING: M20



Type Classification:

STD (LCC-A); CCTC 3628 59

Use:

To supply respirable oxygen for breathing to personnel operating where there is a deficiency of oxygen in the air. It is also used in high concentrations of toxic vapor, gas, dust or smoke, where it is not safe to use an air-purifying filter or canisiter-type mask.

Descrlption:

The M20 oxygen-generating breathing apparatus consists of a facepiece group, a backplate assembly with a breathing bag and hoses, a harness assembly, *and a* quick-starting, oxygen-generating canister. The accesaories include two spare, quick-starting, oxygen-generating canisters, an M20 hood made of rubber-coated cloth, an M 1 antifogging kit and a spanner wrench,

Functioning:

The breathing apparatus is backpacked. it removes carbon dioxide and moisture from exhaled breath and generates oxygen to replace that consumed by the operator. Exhaled breath flows from the facepiece through an exhalation valve in the facepiece valve assembly and through the exhalation breathing tube to the plunger valve assembly. The plunger valve assembly routes the exhaled breath through the canister and into the breathing bag. The quick-starting canister is used under all weather conditions. The M20 hood is worn over the facepiece to protect the head and neck of the user.

Limitations:

The M20 apparatus is not authorized for:

a. Chemical-biological agent protection in atmospheres where full impermeable protective clothing Is required

b. Use in an explosive-gas atmosphere

Tabulated *Data:*

NSN 4240-00-678-5263
Line item number C19840
Unit of issue . . . . . .Each
Basis of issue . . . . . CTA 50-909
Carrying case dimensions . . . .23 x 17x 10 in.
Weights:
Breathing apparatus with canister . . . . . 18 lb
Carrying case (empty) . . . . . 13 lb
Carrying case, breathing apparatus, three canisters, and accessories . . . .40 lb

Performance:

Maximum safe, continuous use. . . . . 45 minutes from the time the canister begins to generate oxygen. (Permites a safety factor of 15 minutes).

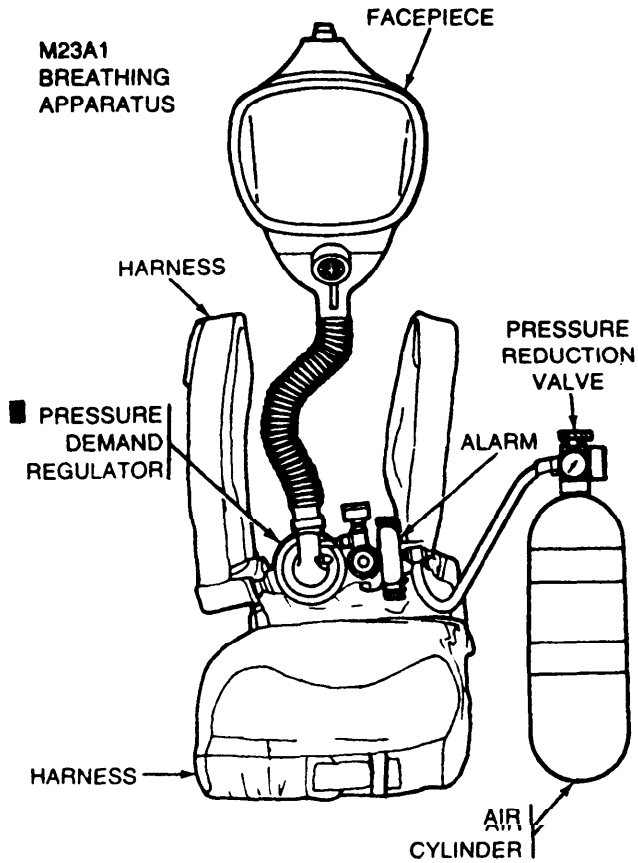
Shipping and Storage Data:

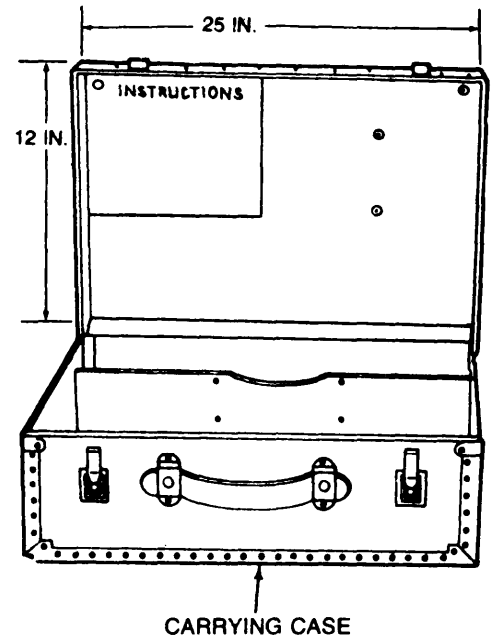
Type pack . . . . . Chest
Weight . . . . . 40 lb
cube . . . . . 2.2 cu ft
Type storage . . . . . Warehouse
Drawing number MIL-B-5124

References:

SB 3-4240-2
TM 3-4240-212-14&P

BREATHING APPARATUS, SELF-CONTAINED: M23 and M23A1





Type Classification:

M23A1 . . . . . STD(LCC-A); MSR 02816016
M23 . . . . . STD(LCC-B); MSR 02816016

Use:

To supply respirable air for breathing to personnel where there is a deficiency of oxygen in the air or high concentrations of smoke, toxic vapors, or gases.

Description:

The M23A1 breathing apparatus consists of a facepiece, a pressure-demand regulator, a low-pressure audible alarm, a high-pressure hose, a pressure reduction valve, a quick-disconnect high-pressure air cylinder, a harness, and a carrying cake. Weights, dimensions, and configurations vary with the manufacturer.

Differences Between Models:

The M23A1 breathing apparatus is a pressure-demand type and has a quick-disconnect air cylinder for rapid replacement. The M23A1 weighs 25 pounds when charged. The M23 breathing apparatus is a demand type. Its air cylinder is installed by using a wrench. The M23 weighs 33 pounds when charged.

Functioning:

The breathing apparatus is backpacked. The air cylinder is pressurized with respirable compressed air at 1,800 psi internal pressure. The pressure-demand regulator delivers a flow of air from the cylinder when the wearer inhales and reduces the flow when the wearer exhales. The pressure-demand regulator maintains positive pressure in the facepiece to prevent leakage of outside contaminated air into the facepiece.

Limitations:

Until an impermeable hood becomes available, the M23 and M23A1 breathing apparatuses are not authorized for chemical-biological protection in atmospheres where full impermeable protective clothing is required.

Tabulated Data:

NSN:
- M23A1 . . . .4240 -01-095-0892
- M23 4240-00-880-1728

Line item number C19777
Unit of issue . . . .Each
Basis of issue . . . . CTA 50-909

Weights:
- Breathing apparatus, fully charged:
  - M23A1 . . . .25 lb
  - M23 . . . . . 33 lb
- Carrying case, empty:
  - M23A1 metal case . . . .12 lb
  - M23A1plastic case . . . .9.5 lb
  - M23 plastic case . . . .14 lb

Performance:

Air cylinder pressure . . . . . 1,800 psi
Air cylinder capacity . . . .514 cu in.

Shipping and Storage Data:

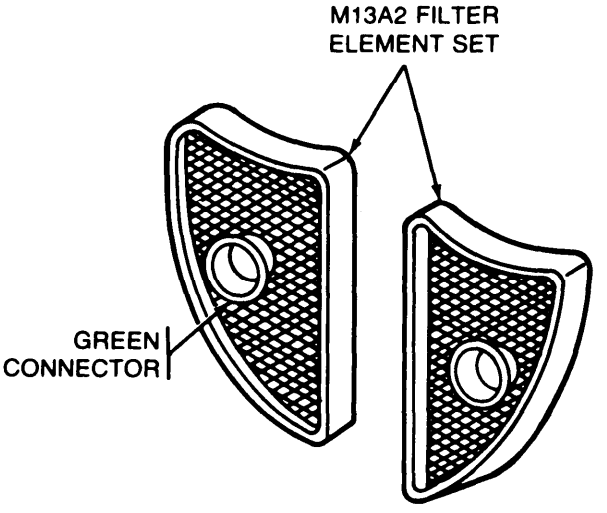
M23A1 breathing apparatus:
- Type pack . . . . Fiberboard box
- Weight . . . . . 50 lb
- Cube . . . . . .1.8 cu ft
- Type storage . . . . Warehouse
- Specification GG-B-675

M23 breathing apparatus:
- Type pack . . . . Fiberboard box
- Weight . . . . . 60 lb
- Cube . . . .3.1 cu ft
- Type storage . . . . Warehouse
- Specification GG-B-675

Reference:

SB3-4240-1
TM 43-0001-31

FILTER ELEMENT SET, CHEMICAL-BIOLOGICAL MASK: M13A2



Type Classification:
Expendable: TM authorized

Use:
To filter chemical and biological agents from the air being breathed by the wearer of an M17, M17A1, or M17A2 chemical-biological field mask or Protective Outfit Toxicological Microclimate Controlled (POTMC) in emergencies.

Description:
M13A2 filter elements are made in matched pairs. One filter element is marked right. The other is marked left. Both filter elements are marked with the same lot number. Each filter element consists of a kidney-shaped plastic form, which holds the filter material. The filter material contains activated charcoal and particulate filters. Around green plastic connector is located on each filter element. An inlet valve is mounted in each connector.

Functioning:
The filtering material in the filter elements filters toxic chemical agents, biological agents, and other particles from inhaled air. The connector on each filter element directs the incoming air through the filtering material.

Limitation:
The M13A2 filter element set does not protect against ammonia or carbon monoxide.

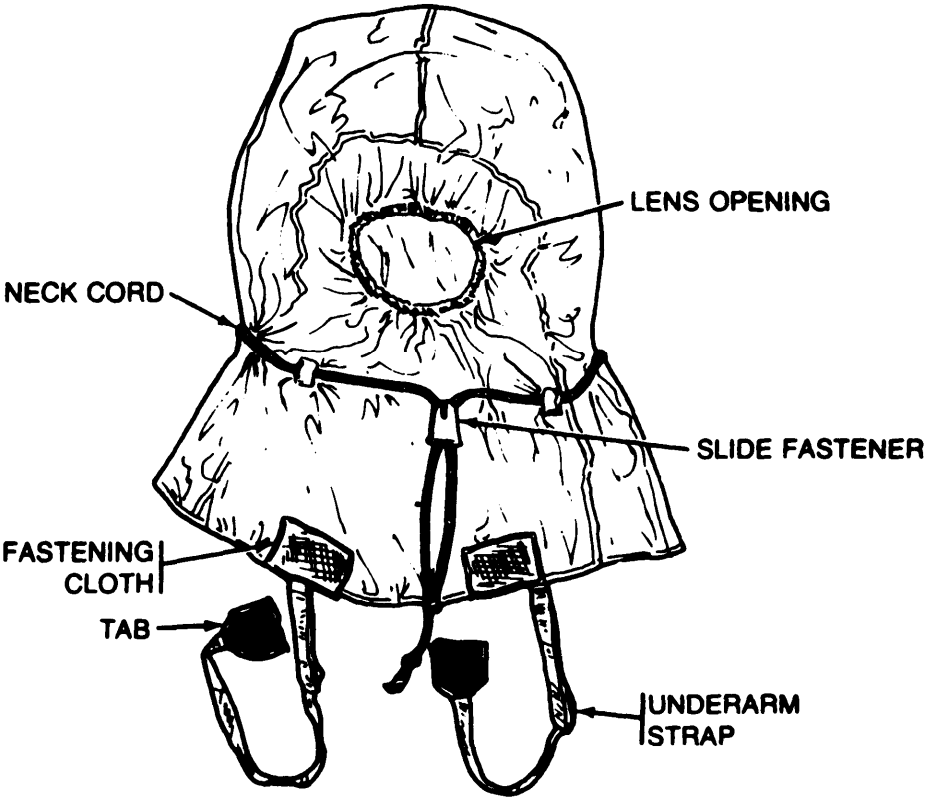
Tabulated Data:
NSN 4240-00-165-5026
Unit of issue . ... Set
Basis of issue . . . . . One set per M17, M17A1, or M17A2 mask and one set per M46 air filter. Two additional sets are authorized for each M17, M17A1, or M17A2 mask issued to elements of Major Oversea Commands and Joint Readiness Command (USREDCOM). These extra sets are retained at unit supply level.
Weight . . . . 0.40 lb

Performance:
Filters all known chemical, biological, and riot control agents.

Shipping and Storage Data:
Type pack . . . . . 10 sets per fiberboard box
Weight . . . . . 5.62 lb
cube . . . . . 1.03.cu ft
Type storage . . . . . .Warehouse
Drawing number 5-3-1000

References:
FM 21-40
FM 21-41
TM 3-4240-279-10
TM 3-4240-279-20&P
TM 3-4240-294-13&P

HOOD, CHEMICAL-BIOLOGICAL MASK: AIRCRAFT, ABC-M7



Type Classification:
EXPENDABLE; AMCTC 252164

Use:
To be worn with the M24 aircraft chemical-biobgical mask to cover and protect the wearer's head and neck against chemical or biological agent and droplets.

Description:
The ABC-M7 aircraft chemical-biological mask hood is a hood made of lightweight butyl-rubber-coated nylon cloth. An opening in the front of the hood is provided for the eyelens.

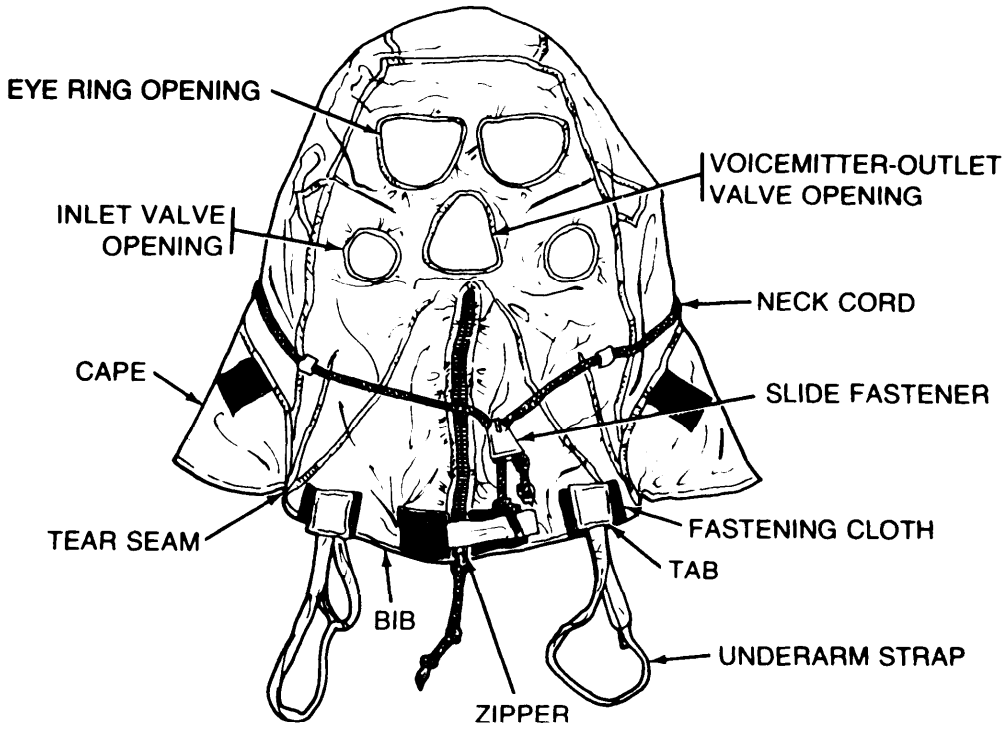
Functioning:
The butyl-rubber coating on the hood fabric repels vapors and droplets of chemical agents or biological agents.

Tabulated Data:
NSN 4240-00-021-8695
Unit of issue . . . . Each
Basis of issue . . . . CTA 50-970
Weight . . . . 0.5 lb

Shipping and Storage Data
Type pack . . . .100 per fiberboard box
Weight . . . . 20 lb
Cube . . . . 3.5 cu ft
Type storage . . . . Warehouse
Drawing number . . . . LM 5-35-73

References:
TM 3-4240-280-10
TM 3-4240-200-23&P

HOOD, CHEMICAL-BIOLOGICAL MASK: FIELD, ABC-M6A2



Type Classification:
Expendable; AMCTC 951272

Use:
To be worn with the ABC-M17, M17A1, or M17A2 field chemical-biological mask to cover and protect the wearer's head and neck against chemical or biological agent vapors and droplets.

Description:
The ABC-M6A2 field chemical-biological mask hood is made of lightweight butyl-rubber-coated nylon cloth. Openings in the front of the hood fit around the mask's eye rings, inlet valves, and voicemitter-outlet valve.

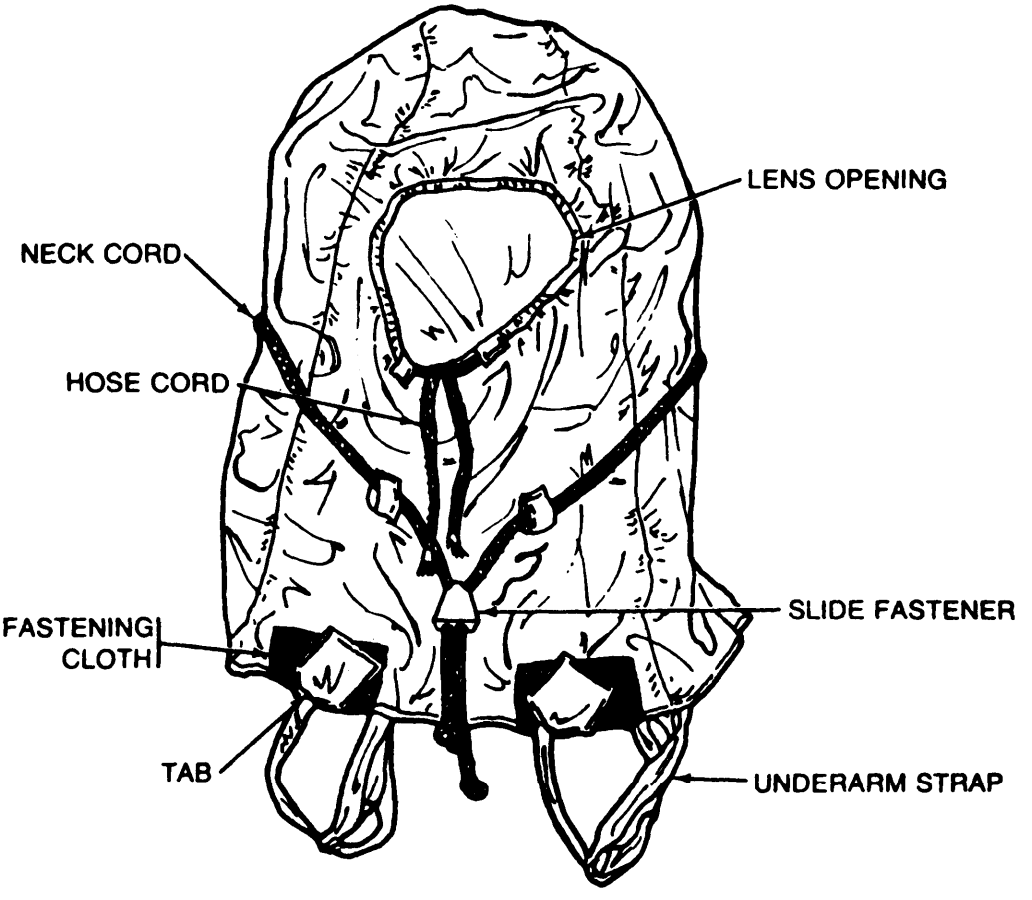
Functioning:
The butyl-rubber coating on the hood fabric repels vapors and droplets of chemical agents or biological agents.

Tabulated Data:
NSN:
M6A2 4240-00-999-0420
Unit of issue . . . . Each
Basis of issue . . . . CTA 50-970
Weight . . . .0.5 lb

Shipping and Storage Data:
Type pack . . . .100 per fiberboard box
Weight . . . . . 54 lb
Cube . . . .3.8 cu ft
Type storage . . . . Warehouse
Drawing number:
M6A2 . . . . LM 5-35-86

References:
TM 3-4240-279-10
TM 3-4240-279-20&P

HOOD, CHEMICAL-BIOLOGICAL MASK: TANK, ABC-M5



Type Classification:
Expendable; AMCTC 9512 72

Use:
To be worn with the M25 or M25A1 tank chemical-biological mask to cover and protect the wearer's head and neck against chemical or biological agent vapors and droplets.

Description:
The ABC-M5 tank chemical-biological mask hood is made of lightweight butyl-rubber-coated nylon cloth. An opening in the front of the hood is provided for the eyelens. It fits in back of the inlet stem and around the eyelens frame. Adjustable underarm straps at the bottom edge of the hood hold it in position on the shoulders.

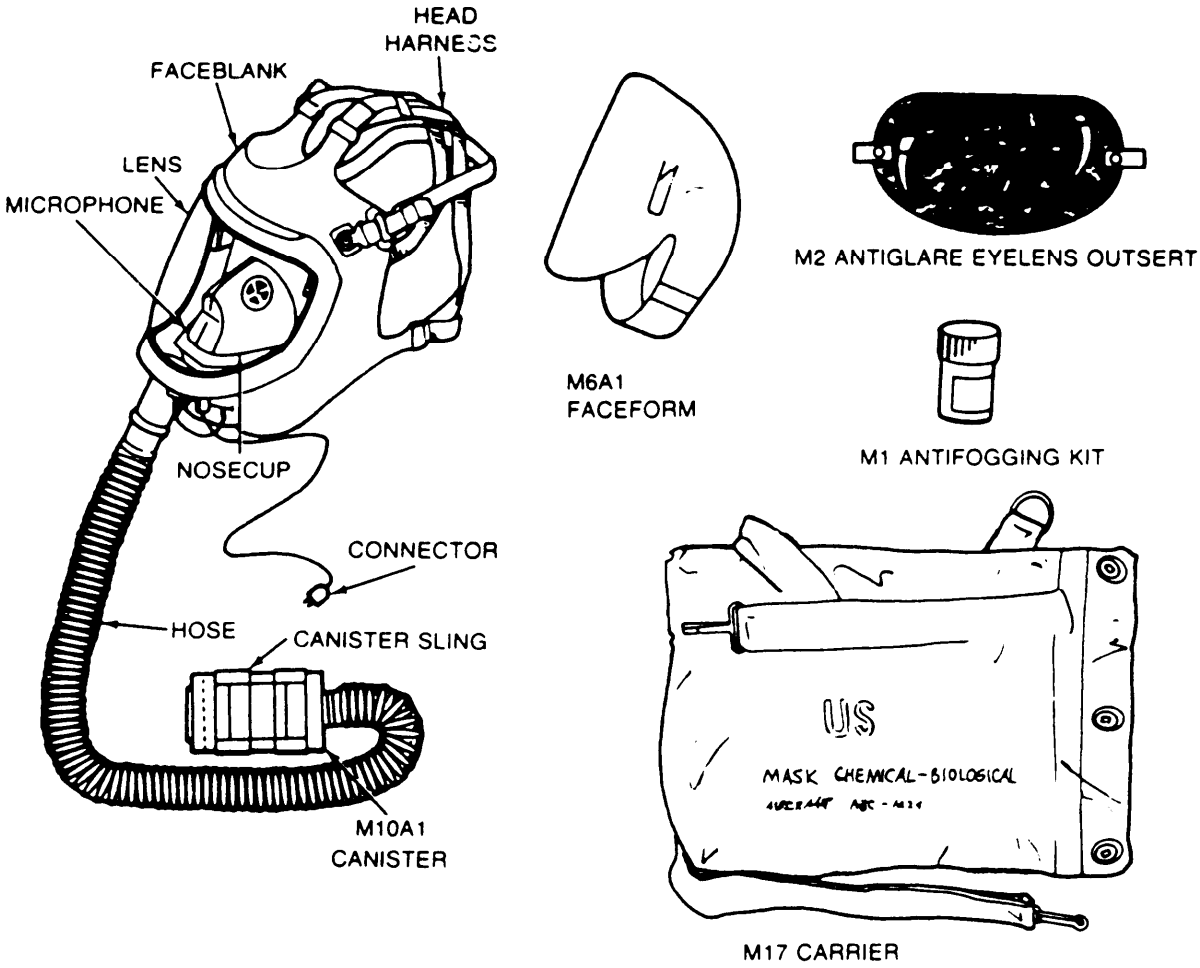
Functioning:
The butyl-rubber coating on the hood fabric repels vapors and droplets of chemical agents or biological agents.

Tabulated Data:
NSN 4240-00-860-8987
Unit of issue . . . . Each
Basis of issue . . . . CTA 50-970
Weight . . . .0.4 lb

Shipping and Storage Data:
Type pack . . . . . 10 per fiberboard box
Weight . . . . . 6 lb
cube . . . . 0.8 cu ft
Type storage . . . . . Warehouse
Drawing number LM5-35-59

References:
TM 3-4240-280-10
TM 3-4240-280-23&P

MASK, CHEMICAL-BIOLOGICAL: AIRCRAFT, ABC-M24



Type Classification:

STD (LCC-A); CCTC 4075 62

Use:

To protect the face, eyes, and respiratory tract of aircraft crew members from concentrations of chemical, biological, and riot control agents.

Description:

The ABC-M24 aircraft chemical-biological mask consists of a facepiece connected to an M10A1 canister by a 2-foot long corrugated hose. An M133/U microphone is installed in the mask facepiece. An M6A1 faceform is stowed in the facepiece to keep it from being distorted during storage. A canvas M17 carrier is provided with each mask for storing and carrying the mask and its accessories. An M2 antiglare eyelens and an M 1 antifogging kit are issued with each mask. The mask is issued in three sizes: small, medium, and large.

Functioning:

Inhaled air passes through the canister and hose into the facepiece. Exhaled air is discharged through an outlet valve at the chin position of the mask.

Limitations:

Except when connected to the oxygen supply system or to an oxygen bailout bottle by an ABC-M8 adapter:

a. The mask does not protect the wearer from ammonia or carbon monoxide.

b. The mask is not effective where the amount of oxygen in the air is too low to support life.

Tabulated Data:

NSN:

Small 4240-00-808-8799
Medium 4240-00-776-4384
Large 4240-00-808-8798

Line item number M11621
Unit of issue ..... Each
Basis of issue . . . . . TOE/MTOE/TDA; AR 310-34
Weight (with carrier) ..... 6.25 lb
Dimensions (in carrier) ..... 4.00 x 12.00 x 12.00 in.

Performance:

Filters all known chemical, biological, and riot control agents. The M10A1 canisters are replaced in accordance with the criteria in TM 3-4240-260-10 and 20&P.

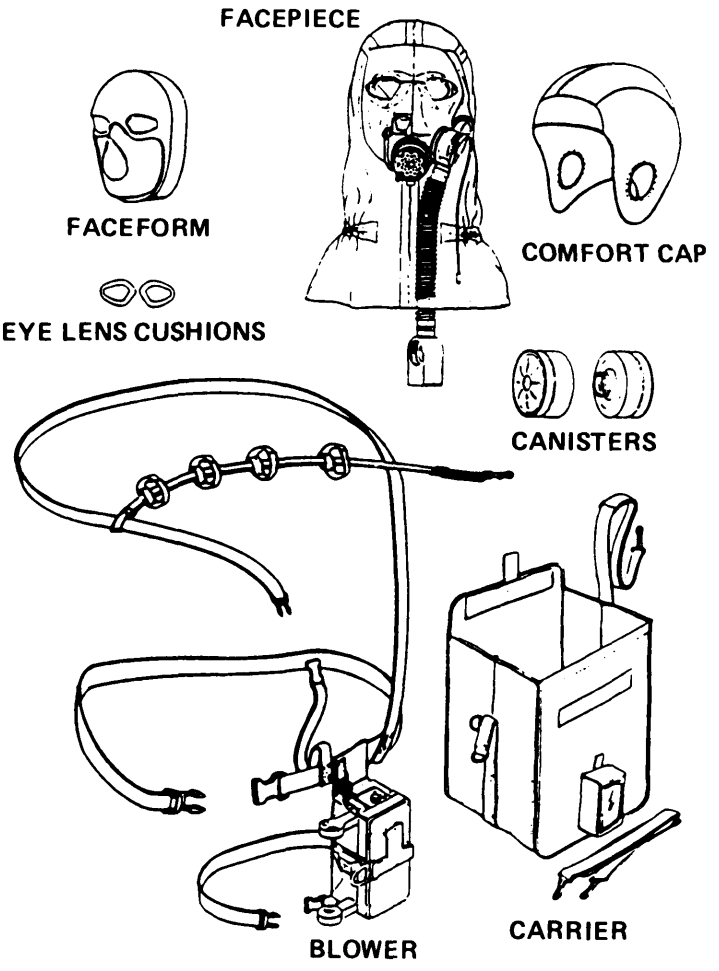
Shipping and Storage Data:

Type pack ..... 10 per fiberboard box
Weight ..... 65 lb
Cube . . . . . 5.7 cu ft
Type storage . . . . . Warehouse
Drawing number
Small ..... LM 5-1-296-10
Medium . . . . . LM 5-1-296-20
Large . . . . . LM 5-1-206-30

References:

TM 3-4240-280-20
TM 3-4240-280-10
TM 3-4240-280-20&P

MASK, CHEMICAL-BIOLOGICAL: AIRCRAFT, M43



Type Classification:

LP (LCC-U); MSR 02876006

Use:

Protects face, eyes, and respiratory system from field concentrations of chemical-biological agents, and riot control agents.

Description:

The M43 aircraft mask consists of a facepiece with integral hood connected to canisters and blower by corrugated hose. An Ml 71/AIC or M133/U microphone, mounted in the facepiece allows interface with aircraft communication systems, The facepiece is also equipped with voicemitter, drink tube, and optically correct lenses. The blower assembly is secured to the user by a harness for hands free operations outside the aircraft. A faceform holds the facepiece in proper shape when stored longer than 30 days. The M43 mask may be used with the Integrated Helmet and Display Sighting System (IHADSS). A comfort cap is provided to eliminate the need to adjust helmet when M43 facepiece is not worn. A canvas carrier is provided with each mask for storing and carrying the mask and its accessories. The mask is issued in four sizes: small, medium, large, and extra large.

Functioning:

The blower pushes air into the canisters, maintaining a positive pressure in the facepiece. The blower is powered by either a self-contained lithium battery or aircraft power when installed in mounting bracket. the blower has a motor speed control, low battery power indicayor, easily charged battery, and easily operated release-from-aircraft mechanism. Inlet airflow is directed by an inlet valve to cooling ducts, lens defog system, and breathing air. Two controIs mounted on the inlet valve regulate flow to the cooling duct and air distribution system. Exhaled air is expelled through the outlet valve assembly.

Limitations:

The M43 mask does not protect against ammonia or carbon monoxide gas. The mask is not effective where the amount of oxygen in the air is too low to support life. The mask is not to be used in ejection seat equipped aircraft. The mask is not to be used for high altitude, low pressure flight requiring crew member supplemental oxygen.

Tabulated Data:

NSN:

Type I

Small	4240-01-208-6966
Medium	4240-01-208-6967
Large	4240-01-208—6968
Extra Large	4240-01-208-6969

Type II

small	4240-01-265-2677
Medium	4240-01-265-2679
Large	4240-01-265-2678
Extra Large	4240-01-265-2680

Line item number	M12350.
Unit of issue	Each
Basis of issue	TOE/MTOE/TDA
Weight (with carrier)	12.3 lb

Performance:

Protects against chemical, biological, and riot control agents. Canisters are replaced in accordance with criteria in TM 3-4240-312-12&P.

Difference Between Models:

Type I mask:

Right lens in facepiece is notched for use with helmet dsplay unit. Uses M171/AIC microphone.

Type II mask:

Both lenses are spherical. Use M133/U microphone.

Shipping and Storage Data:

Type Pack	One per plywood container
Weight	31.2 lb
Dimensions	25.6 x 17.3x 14.7 in.
cube	3.77 cu ft
Type Storage	Warehouse
Specification	MIL-STD-2073
Drawing	P5-1-1300-10

Temporary Storage (less than 30 days)

Temperatures remain between -25°F and + 125°F (-31.7°C and +51.7°C).

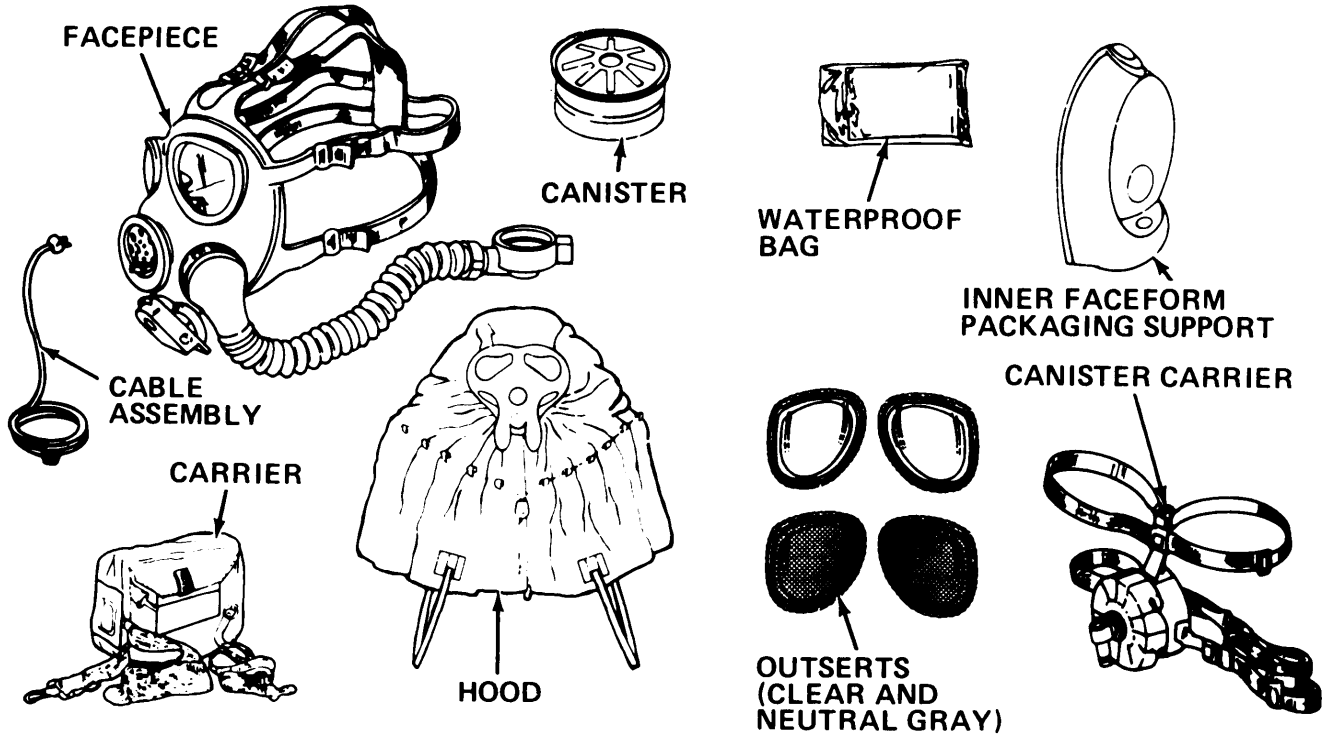
Extended Storage (30 days or more)

Temperatures remain between -60°F and +160°F(-51.1°C and +71.1°C)

References:

TM 3 4240-312-12&P

MASK, CHEMICAL-BIOLOGICAL: COMBAT VEHICLE, M42



Type Classification:

STD (LCC-A); MSR 11876009

Use:

Protects face, eyes, and lungs from field concentrations of chemical-biological agents, toxins, and radioactive fallout particles.

Description:

The M42 mask consists of a silicone rubber facepiece connected to a filter canister (with carrier), or directly to the vehicle collective protection equipment, by corrugated hose. A microphone and cable, mounted in the facepiece, allows interface with vehicle communication system. The facepiece is also equipped with front and side voicemitters, drink tube, and eyelenses, Clear and neutral gray outserts protect the eyelenses and reduce glare and lens fogging. A hood, not permanently attached to the facepiece, provides protection of the head and neck. A canvas carrier is provided with each mask for storing and carrying the mask and its accessories. A waterproof bag is provided for temporary storage of the facepiece when required by climate and mission. A faceform holds the facepiece in proper shape when stored longer than 30 days. The mask is issued in three sizes: small, medium, and large.

Functioning:

The silicone rubber facepiece fits closely against the face to form a seal. Air enters the canister, passes through a hose, and through an air deflector into the eye area of facepiece. The canister filters out CB agents, toxins, and radioactive particles. From the eye area, air enters a nosecup and is inhaled through the nosecup valves. Exhaled air passes through the nosecup area and is expelled through an outlet valve. Outserts are fitted with a rubber ring which hold them securely to the facepiece eyelenses. Optical inserts, available by medical prescription, are required for personnel who must wear glasses.

Limitations:

The M42 mask does not protect against ammonia or carbon monoxide. The mask is not effective where the amount of oxygen in the air is too low to support life.

Tabulated Data:

NSN:

Small	4240-01-258-0064
Medium	4240-01-258-0065
Large	4240-01-258-0066
Line item number	M18526
Unit of issue	Each
Basis of issue	TOE/MTOE/TDA
Weight (with carrier)	4.53 lb
Dimensions (in carrier)	9.0 x 11.0 x 4.5 in.

Performance:

Protects against chemical, biological, toxins, and radioactive fallout particles. Canisters are replaced in accordance with criteria in TM 3-4240-300-20&P.

Shipping and Storage Data:

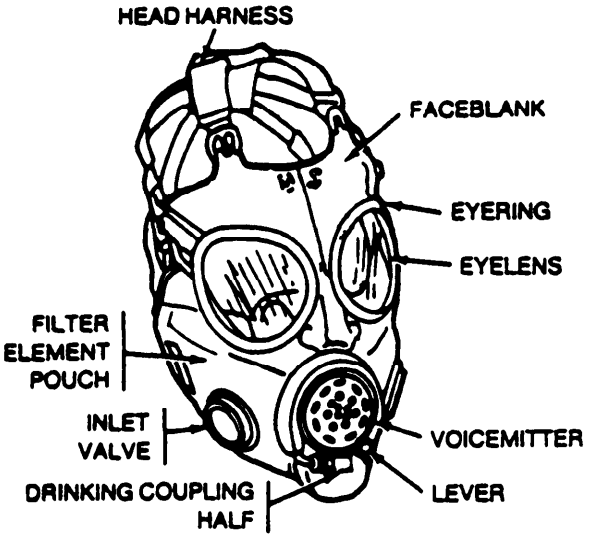
Instructions for storage and shipment are provided in TM 3-4240-300-20&P.

Type Pack	8 fiberboard boxes per fiberboard or plywood container
Weight	9.1 lb
Dimensions	11.9 x 11.8x9.2 in.
cube	0.747 cu ft
Storage	Cool dry place (40°F to 70°F)
Specification	MIL-STD-2073
Drawing	P5-1-1533-30

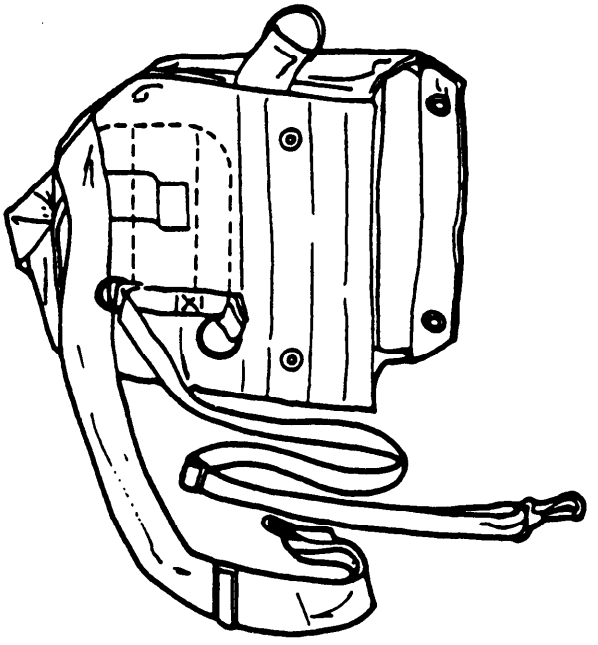
References:

TM 3-4240-400-10-2
TM 3-4240-300-20&P

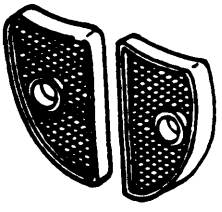
MASK, CHEMICAL-BIOLOGICAL: FIELD, ABC-M17, M17A1 , M17A2



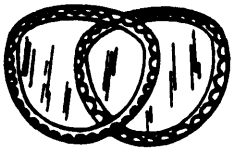
M17A1/M17A2 MASK



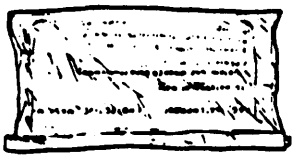
M15A1 CARRIER



FILTER ELEMENT SET



EYELENS OUTSERTS



M1 WATERPROOF BAG

Type Classification:

M17A2 ..... STD (LCC-A); MSR 03836001
M17A1 ....STD (LCC-B); MSR 03836001
ABC-M17 ..... CON (LCC-S); AMCTC 4664 66

Use:

To protect the face, eyes, and respiratory tract of the wearer from field concentrations of chemical, biological, and riot control agents.

Description:

The M17-series field chemical-biological masks consist of a facepiece with two replaceable filter elements inserted in the cheek pouches and a canvas M15A1 carrier. An M1 chemical-biological mask water-proofing bag and a pair of eyelenses outserts are issued with each mask and are stored in the carrier. The masks are issued in three sizes: small, medium, and large,

Differences Between Models:

The M17A2 voicemitter-outlet valve assembly contains a coated diaphragm to protect against DS2 decontaminating agent and is equipped with a drinking system.

The M17A1 voicemitter-outlet valve assembly is equipped with a drinking system and a resuscitation system.

The ABC-M17 mask is not equipped with these systems.

Functioning:

Inhaled air passes through inlet valves into the filter elements, which remove chemical, biological, or riot control agents from the air being breathed. Filtered air from the pouches passes through deflector tubes and across the inner surfaces of the eyelenses to keep them free of condensation. Air then passes through the nosecup valves. Exhaled air is discharged through the outlet valve. The eyelenses' outserts are installed over the eyelenses to protect them from scratching.

Limitations:

The masks do not protect the wearer from ammonia or carbon monoxide. The masks are not effective where the amount of oxygen in the air is too low to support life.

Tabulated Data:

NSN:

M17A2 Extra small	4240-01-143-2017
M17A2 Small	4240-01-143-2018
M17A2 Medium	4240-01-143-2019
M17A2 Large	4240-01-1-2020
M17A1 Small	4240-00-926-4199
M17A1 Medium	4240-00-926-4201
M17A1 Large	4240-00-926-4200
ABC-M17 Small	4240-00-5424450
ABC-M17 Medium	4240-00-5424451
ABC-M17 Large	4240-00-542-4452

Line item number: M11895

Unit of issue: Each

Basis of issue: TOE/MTOE/TDA; AR 310-34

Weight (with carrier):

M17A1/M17A2	3.11 lb
ABC-Ml 7	2.93 lb

Dimensions (in carrier): 5.50 x 7.50 x 11.00 in.

Performance:

Filters all known chemical, biological, and riot control agents.

Shipping and Storage Data:

Type pack: 10 per fiberboard or wooden box

Fiberboard box:

Weight	46 lb
cube	3.30 cu ft

Wooden box:

Weight	66 lb
cube	4 cu ft

Type storage: Warehouse

Drawing number:

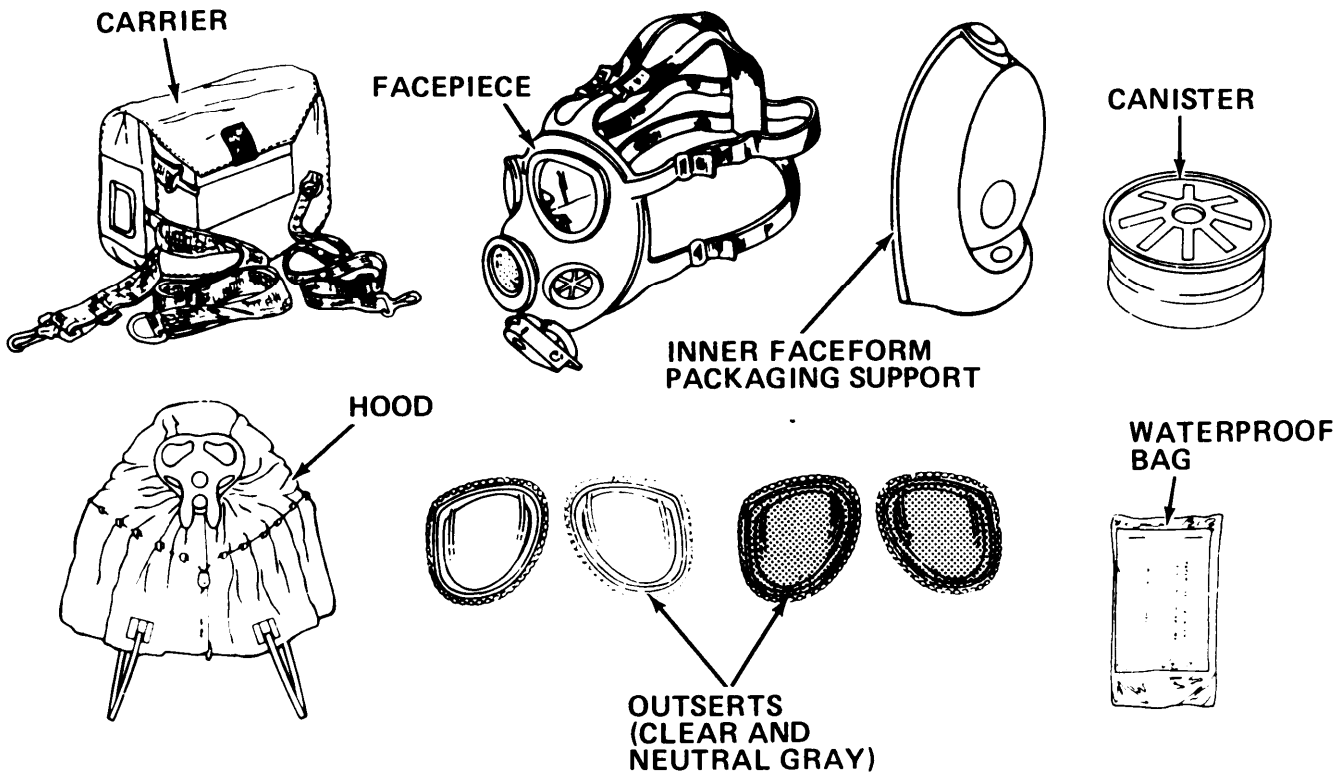
M17A2	5-1-552
M17A1	5-1-551
ABC-M17	5-1-292

References:

TM 34240-279-10

TM 34240-279-20&P

MASK, CHEMICAL-BIOLOGICAL: FIELD, M40



Type Classification:

STD (LCC-A); MSR 11876009

Use:

Protects face, eyes, and lungs from field concentrations of chemical-biological agents, toxins, and radioactive fallout particles.

Description:

The M40 mask consists of a silicone rubber facepiece with a filter canister. The facepiece is equipped with front and side voicemitters, drink tube, and eyelenses. Clear and neutral gray outserts protect the eyelenses and reduce glare and lens fogging. A hood, not permanently attached to the facepiece, provides protection of the head and neck. A canvas carrier is provided with each mask for storing and carrying the mask and its accessories. A waterproof bag is provided for temporary storage of the facepiece when required by climate and mission. A faceform holds the facepiece in proper shape when stored longer than 30 days, The mask is issued in three sizes: small, medium, and large,

Functioning:

The silicone rubber facepiece fits closely against the face to form a seal. Air enters the canister and passes through an air deflector into the eye area of the facepiece. The canister (screwed on to either the left or right side of the facepiece) filters out CB agents, toxins, and radioactive particles. From the eye area, air enters a nosecup and is inhaled through the nosecup valves. Exhaled air passes through the nosecup area and is expelled through an outlet valve. Outserts are fitted with a rubber ring which hold them securely to the facepiece eyelenses. Optical inserts, available by medical prescription, are required for personnel who must wear glasses.

Limitations:

The M40 mask does not protect against ammonia or carbon monoxide. The mask is not effective where the amount of oxygen in the air is too low to support life.

Tabulated Data:

NSN:

Small	4240-01-258-0061
Medium	4240-01-258-0062
Large	4240-01-258-0063
Line item number	M12418
Unit of issue	Each
Basis of issue	TOE/MTOE/TDA
Weight (with carrier)	4.53 lb
Dimensions (in carrier)	9.0 x 11.0 x 4.5 in.

Performance:

Protects against chemical, biological, toxins, and radioactive fallout particles. Canisters are replaced in accordance with criteria in TM 3-4240-300-20&P.

Shipping and Storage Data:

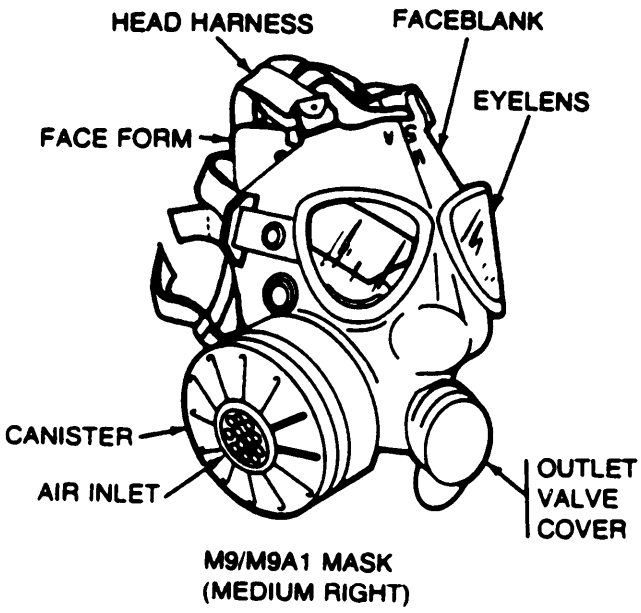
Instructions for storage and shipment are provided in TM 3-4240-300-20&P.

Type Pack	8 fiberboard boxes per fiberboard or plywood container
Weight	8.0 lb
Dimensions	11.9 x 11.8x9.2 in.
cube	0.747 cu ft
Storage	Cool dry place (40°F to 70°F)
Specification	MIL-STD-2073
Drawing	P5-1-1000-30

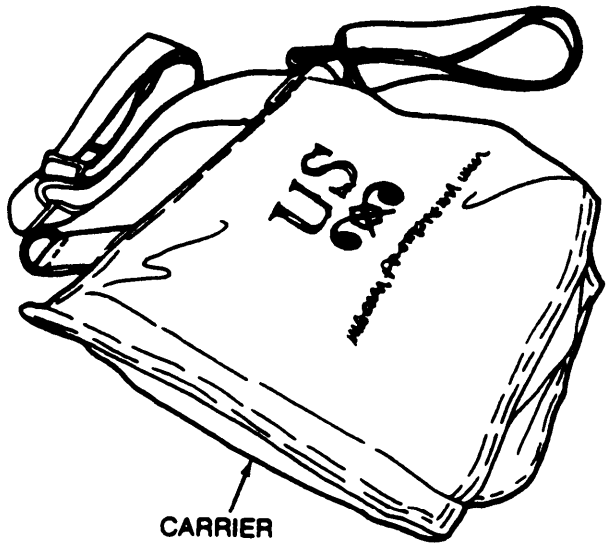
References

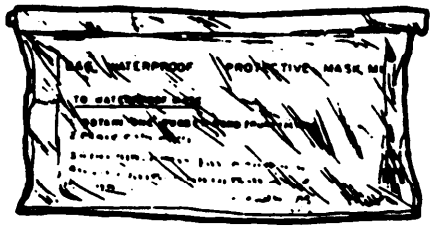
TM 3-4240-300-10-1
TM 3-4240-300-20&P

MASK, CHEMICAL-BIOLOGICAL: SPECIAL-PURPOSE, M9 AND M9A1



M9/M9A1 MASK
(MEDIUM RIGHT)





M1 WATERPROOFING BAG

Type Classification:

M9A1 . . . . . STD(LCC-B);AMCTC550867
M9 . . . . . STD (LCC-B); AMCTC 567967

Use:

To protect the face, eyes, and respiratory tract of the wearer from concentrations of chemical, biological, and riot control agents.

Description:

The M9 and M9A1 special-purpose chemical-biological masks consist of an M9 facepiece assembly, an M11 canister, and a carrier. The M11 canister is a metal cylinder containing a particulate filter and activated charcoal. The masks are issued in three sizes: small, medium, and large. An M1 antifogging kit and M1 waterproofing bag are issued with the mask and stored in the carrier.

Difference Between Models:

The only difference between the M9 and the M9A1 masks is their carriers.

Functioning:

Inhaled air enters and passes through the canister which removes chemical, biological, or riot control agents from the air being breathed. Filtered air passes from the canister through the inlet valve in the canister mounting and into the facepiece. The inlet valve allows fittered air to enter the facepiece but prevents exhaled air from flowing out through the canister. Filtered air passes from the inlet valve through the deflector tubes, which direct the air across the eyelenses to keep them free of condensation. Air then passes through the nosecup valves. Exhaled air is discharged through the outlet valve. The outlet valve allows exhaled air to leave the facepiece but prevents contaminated air from entering.

Limitations:

The mask does not protect the wearer from ammonia or carbon monoxide. It is not effective where the amount of oxygen in the air is too low to support life.

Tabulated Data:

NSN (by size, canister mounting, and model):

Size	Left cheek Canister Mounting	Right cheek Canister Mounting
Small	4240-00-368-6092 (M9)	4240-00-368-6091 (M9)
	4240-00-368-6097 (M9A1)	4240-00-368-6098 (M9A1)
Medium	4240-00-368-6090 (M9)	4240-00-368-6089 (M9)
	4240-00-368-6095 (M9A1)	4240-00-368-6096 (M9A1)
Large	4240-00-368-6088 (M9)	4240-00-368-6087 (M9)
	4240-00-368-6093 (M9A1)	4240-00-368-6094 (M9A1)

Line item number M11689
Unit of issue ..... Each
Basis of issue ..... TOE/MTOE/TDA; AR 310-34

Performance:

Filters all known chemical, biological, and riot control agents.

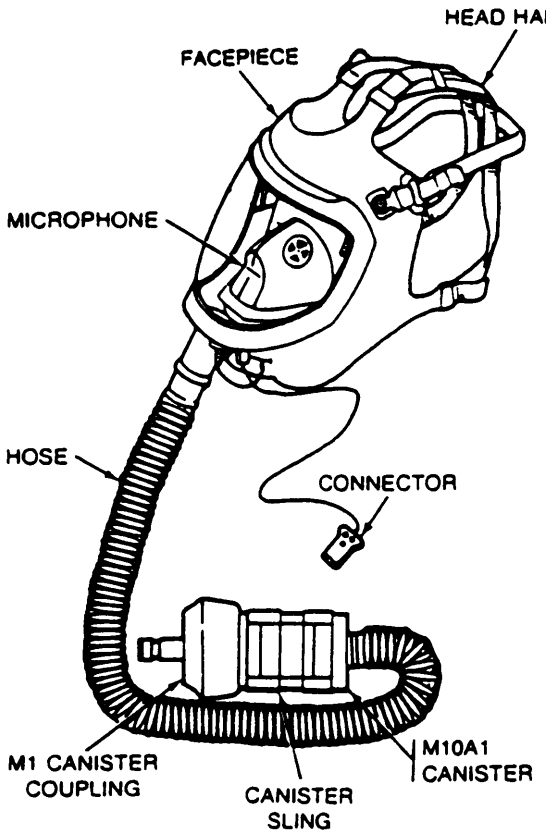
Shipping and Storage Data:

Type pack ..... 6 per wooden box
Weight ..... 56 lb
Cube ..... 3.3 cu ft
Type Storage ..... Warehouse
Drawing number ..... 5-1-276 and 277

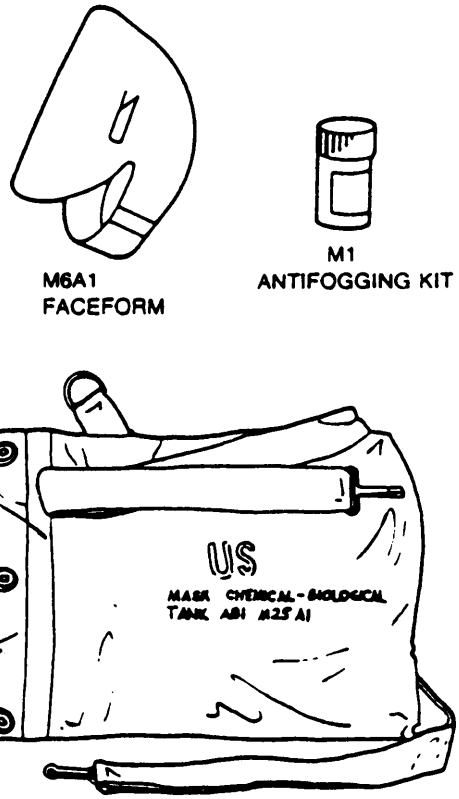
References:

TM 3-4240-204-12&P

MASK, CHEMICAL-BIOLOGICAL: TANK ABC-M25A1



M25A1 MASK



M13A1 CARRIER

Type Classification:

ABC-M25A1 . . . .STD(LCC-B); CCTC 4115 63

Use:

To protect the face, eyes, and respiratory tract of armored vehicle crew members from concentrations of chemical, biological, and riot control agents.

Description:

The ABC-M25A1 tank chemical-biological masks each consist of a facepiece connected to an M10A1 canister by a 2 foot long corrugated hose. An M1 canister coupling is attached to the inlet valve end of the canister. An M116G microphone is installed in the mask facepiece. The masks are issued in three sizes: small, medium, and large. An M1 antifogging kit and an M6A1 faceform are issued with the mask and stored in the M13A1 carrier.

Functioning:

a. Inhaled air passes through the canister and hose into the facepiece. Exhaled air is discharged through an outlet valve at the chin position of the mask.

b. The M1 canister coupling connects with a quick-disconnect coupling on each air hose leading from the armored vehicle gas-particulate filter unit. The fitter unit delivers filtered, pressurized air through the M10A1 canister to the facepiece. The microphone in the mask facepiece is used to communicate with other crew members and armored vehicles in its radio network. A connector on the microphone plugs into the armored vehicle's communication system.

c. The mask may be worn outside the tank with the canister fastened inside the carrier or using the canister carrying sling.

Limitations:

The masks do not protect the wearer from ammonia or carbon monoxide. They are not effective where the amount of oxygen is to low in the air to support life.

Tabulated Data:

NSN:
- M25A1 Small 4240-00-994-8751
- M25A1 Medium 4240-00-994-8750
- M25A1 Large 4240-00-994-6752

Line item number. M10936
Unit of issue ..... Each
Basis of issue ..... TOE/MTOE/TDA AR310-34
Weight (with carrier) ..... 6.25 lb
Dimensions (in carrier) . . . . . 6.50 x 10.75 x 12.40 in.

Performance:

Filters all known chemical, biological, and riot control agents.

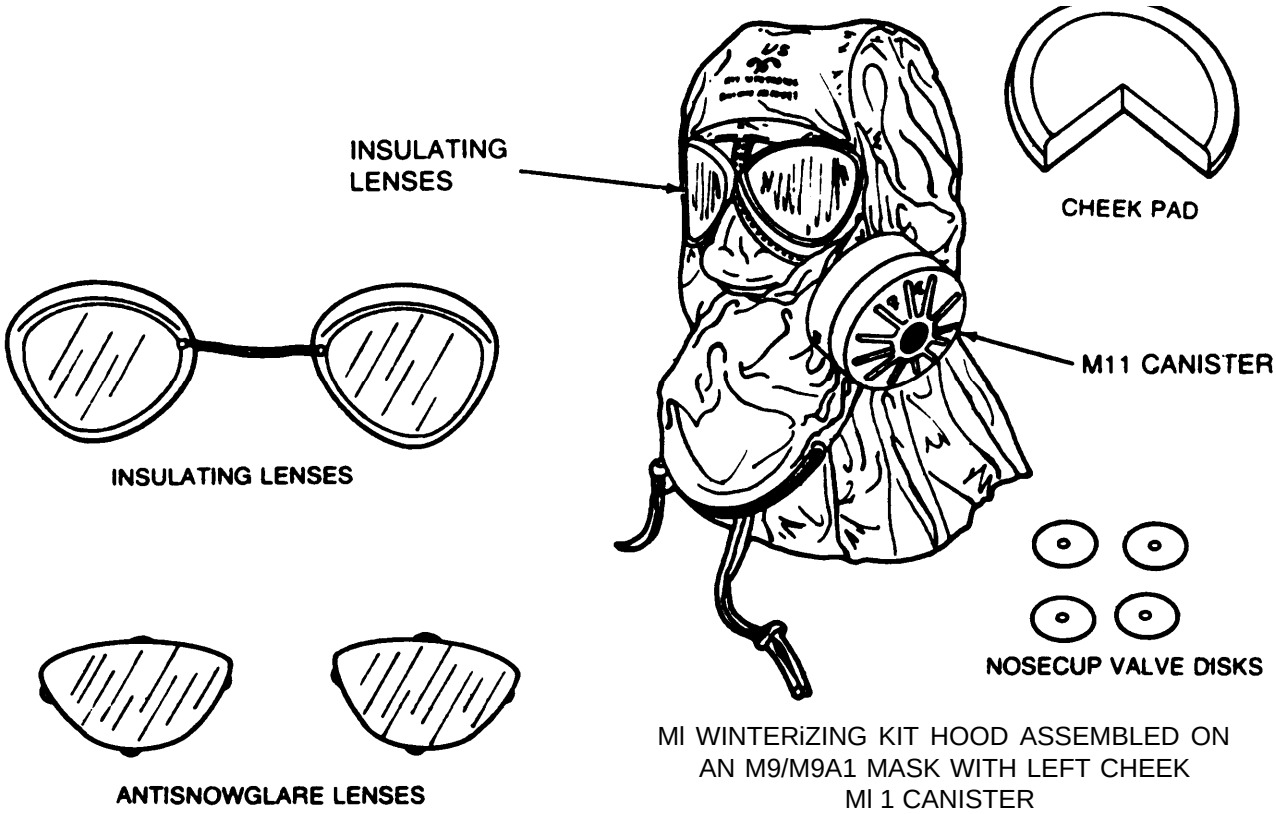
Shipping and Storage Data:

Type pack . . . . . 10 per fiberboard box
Weight . . . . . 65 lb
cube. . . . . 5.7 cu ft
Type storage ..... Warehouse
Drawing number ..... LM 5-1-325

References:

TB 3-4240-280-20
TM 3-4240-280-10
TM 3-4240-280-20&P
TM 750-162

WINTERIZATION KIT, CHEMICAL-BIOLOGICAL MASK: M1



MI WINTERiZING KIT HOOD ASSEMBLED ON AN M9/M9A1 MASK WITH LEFT CHEEK MI 1 CANISTER

Type Classification:

Expendable; AMCTC 9512 72

Use:

To winterize the M9 and M9A1 special-purpose chemical-biological masks, so that they can be worn in extremely cold weather. The hood of the kit also protects the wearer's head and neck against chemical or biological agent vapors and droplets.

Desription:

The M1 CB mask winterizing kit conslstsofahood, a pair of insulating lenses, a pair of anti-snow glare lenses, a cheek pad, and a plastic bag containing four spare nosecup valve disks. The hood is made of nylon and coated on both sides with butyl-rubber.

Functioning:

When installed on an M9 or M9A1 mask, the hood covers the wearer's head and the lower portion of the lacepbce; the insulating lenses cover the lenses inside the facepiece. The anti-snow glare lenses are installed over the lenses of the mask, and the cheek pad insulates the wearer's face from the metal canister mounting.

Tabulated Data:

NSN:

With hood for left cheek canister 4240-00-321-2080

With hood for right cheek canister 4240-00-542-5607

Unit of issue . . . . . Each

Basis of issue . . . . CTA 50-970

Weight . . . . 0.7 lb

Dimensions (folded) . . . . 6 x 4.5 x 2in.

Performance:

Makes the M9 or M9A1 mask wearable at temperatures down to minus 40 degrees Fahrenheit.

Shipping and Storage Data:

Type pack . . . . . 72 per wooden box

Weight . . . . 79.5 lb

cube . . . . . 3.2 cu ft

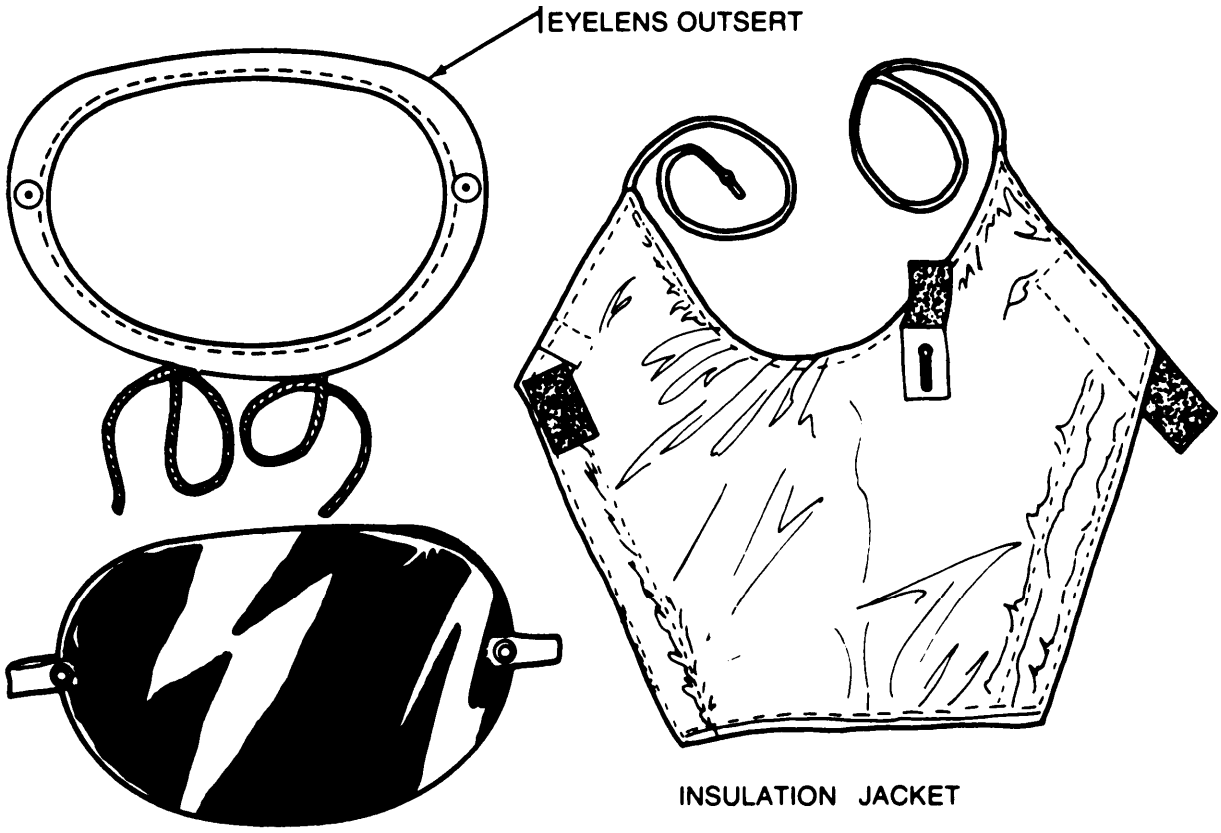
Type storage . . . . Warehouse

Drawing number 5-74-65

References:

TM 3-4240-204-12&P

WINTERIZATION KIT, CHEMICAL-BIOLOGICAL MASK: M3



Type Classification:
Expendable; AMCTC 9512 72

Use:
To winterize the M24 aircraft chemical-biological mask and the M25 and M25A1 tank chemical-biological masks, so that they can be worn in extremely cold weather.

Description:
The M3 winterization kit consists of a winterization eyelens outsert, an insulating jacket, and an M2 anti-glare eyelens outsert.

Functioning:
The winterization eyelens outsert prevents frost from covering the eyelens of the mask. The insulating jacket consumes heat inside the facepiece of the mask. The antiglare eyelens outsert reduces sunglare. When the kit is not in use, it is stored in the largest pocket of the mask carrier.

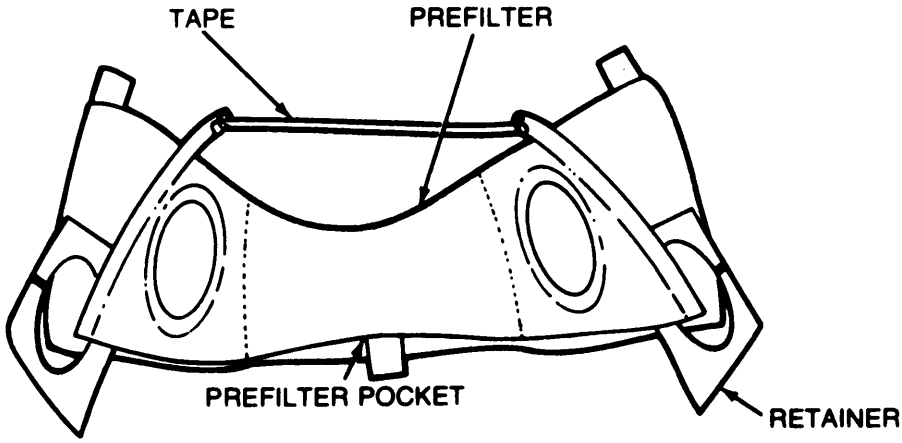
Tabulated Data:
NSN 4240-00-066-0181
Unit of issue . . . . Each
Basis of issue . . . . CTA 50-970

Performance:
Installed on the masks for wearing at temperatures below 20 degrees Fahrenheit.

Shipping and Storage Data:
Type pack . . . . . 10 per fiberboard box
Weight . . . .50 lb
cube . . . .4 cu ft
Type storage . . . . . Warehouse
Drawing number . . . . LM 5-77-934

References:
TM 3-4240-280-10
TM 3-4240-280-23&P

WINTERIZATION KIT, CHEMICAL-BIOLOGICAL MASK: M4



Type Classification:
Expendable; AMCTC 951272

Use:
To winterize the ABC-M17, M17A1, or M17A2 field chemical-biological mask for wear in extmmely cold weather.

Description:
The M4 winterization kit consists of an ice particle prefilter made of cotton duck and knitted nylon fleece.

Functioning:
The ice particle prefilter fits under the chin on the mask. The openings and retainers fit around the inlet valves, and the cotton tape fits over the top of the voicemitter-outlet valve cover. The cheek flaps cover the inlet valves.

Tabulated Data:
NSN 4240-00-065-0319
Unit of issue . . …. . ….. . . …… . . Each
Basis of issue . . . . CTA 50-970
Length (prefilter) . . . . 10 in.
Width (prefilter) . . . . 4 in.

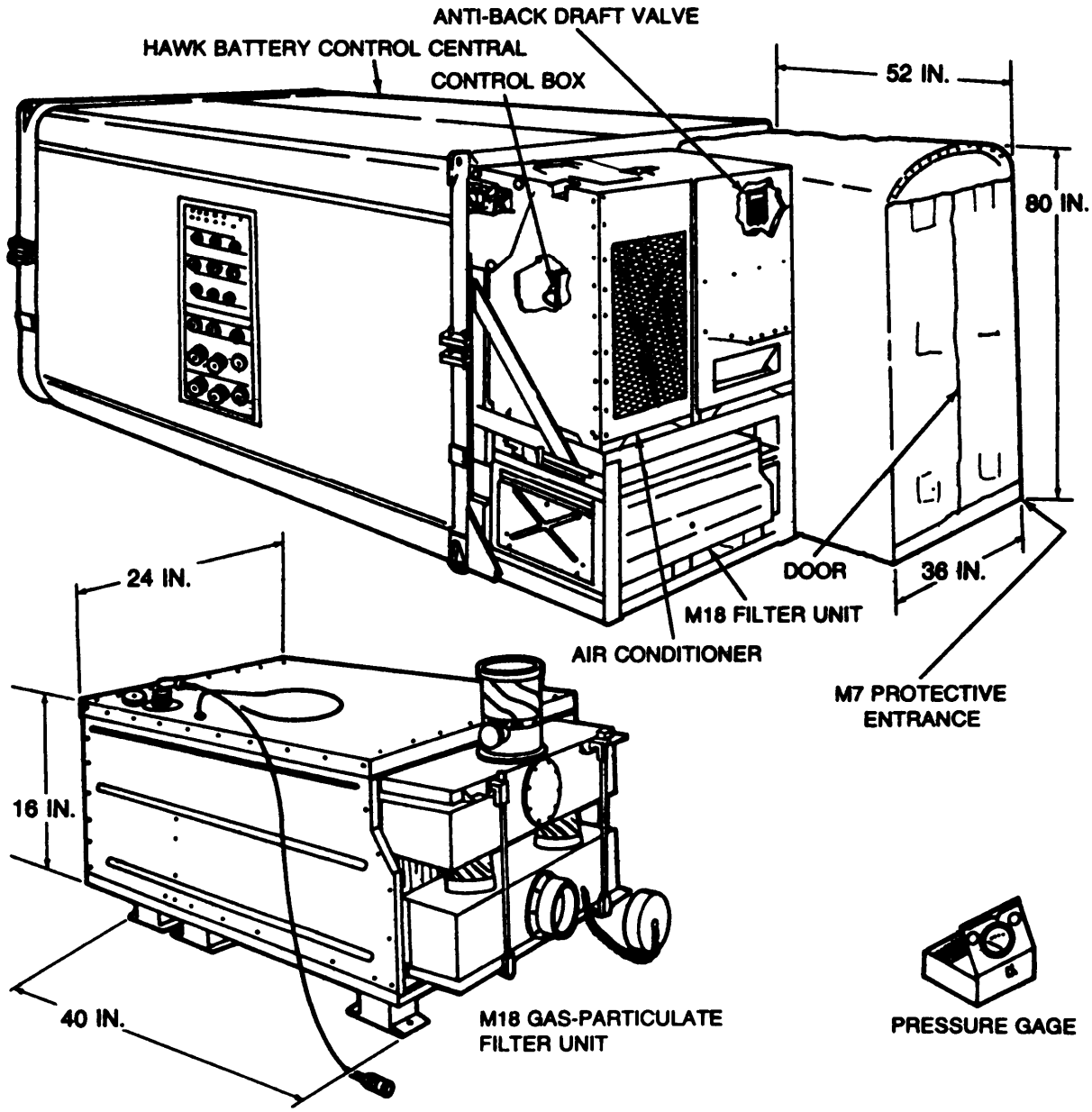
Performnance:
Installed on the masks for wearing at temperatures of below minus 20 degrees Fahrenheit (–28°C) to prevent frost from accumulating on the inlet valves of the mask.

Shipping and Storage Data:
Type pack . . . .100 per fiberboard box
Weight . . . . . 25 lb
Cube . . . . . 1.1 cu ft
Type storage . . . . Warehouse
Drawing number . . . . DL 5-77-944

References:
TM 3-4240-279-10
TM 3-4240-279-20&P

CHAPTER 3
COLLECTIVE PROTECTION

COLLECTIVE PROTECTION EQUIPMENT, CBR: BATTERY CONTROL CENTRAL, HAWK, M10



Type *Classification:*

STD (LCC-A); AMCTC 4663 66

Use:

To provide filtered, uncontaminated air for unmasked personnel working in the HAWK battery control central (BCC) during chemical or biological agent attacks. It also provides a means for personnel to enter and leave the BCC without admitting contaminated air into the interior.

Description:

The M10 collective protection equipment consieted an M18 300 CFM (cubic feet per minute) EMD (electric-motor driven) gas-particulate filter unit, an M7 protective entrance, and an M43 protective entrance shipping and storage container. A dial indicating pressure gage is issued as special test equipment.

Functioning:

The M18 filter unit provides purified air to the air conditioner at the rate of 125 cfm and to the protective

entrance at the rate of 175 cfm. The direct output from the fitter unit clears the protective entrance. The pressure gage is used to check the operating pressures in the BCC and CPE.

Tabulated Data:

NSN 4240-00-736-7743
Line item number E52453
Unit of issue . . . .Each
Basis of issue . . . . TOE/MTOE
M18 fitter unit:
Dimensions . . . .40 x 24 x 16 in.
Weight . . . . . 160 lb
Power source required
(from HAWK BCC) . . . .416 volt, 400Hz 3-phase ac
Capacity . . . . . 300 cfm
Types of filters:
M23 150 CFM gas filters . . . . Two
M24 150 CFM particulate filters . . . . Two
Air filter . . . . . One
Protective entrance:
Dimensions - erected . . . .80 x 36 x 52 in.
Dimensions -folded . . . .80 x 36 x 9 in.
Weight . . . .54 lb
Shipping and storage container:
Dimensions . . . .90 x 38 x 16 in.
Weight . . . .91 lb

Performance:

When the M10 CPE is properly adjusted, interior pressure in the BCC is maintained at 1.0 to 1.7 inches of water above atmospheric pressure. The air pressure difference between the BCC and the protective entrance is maintained at 0.3 to 0.5 inches of water.

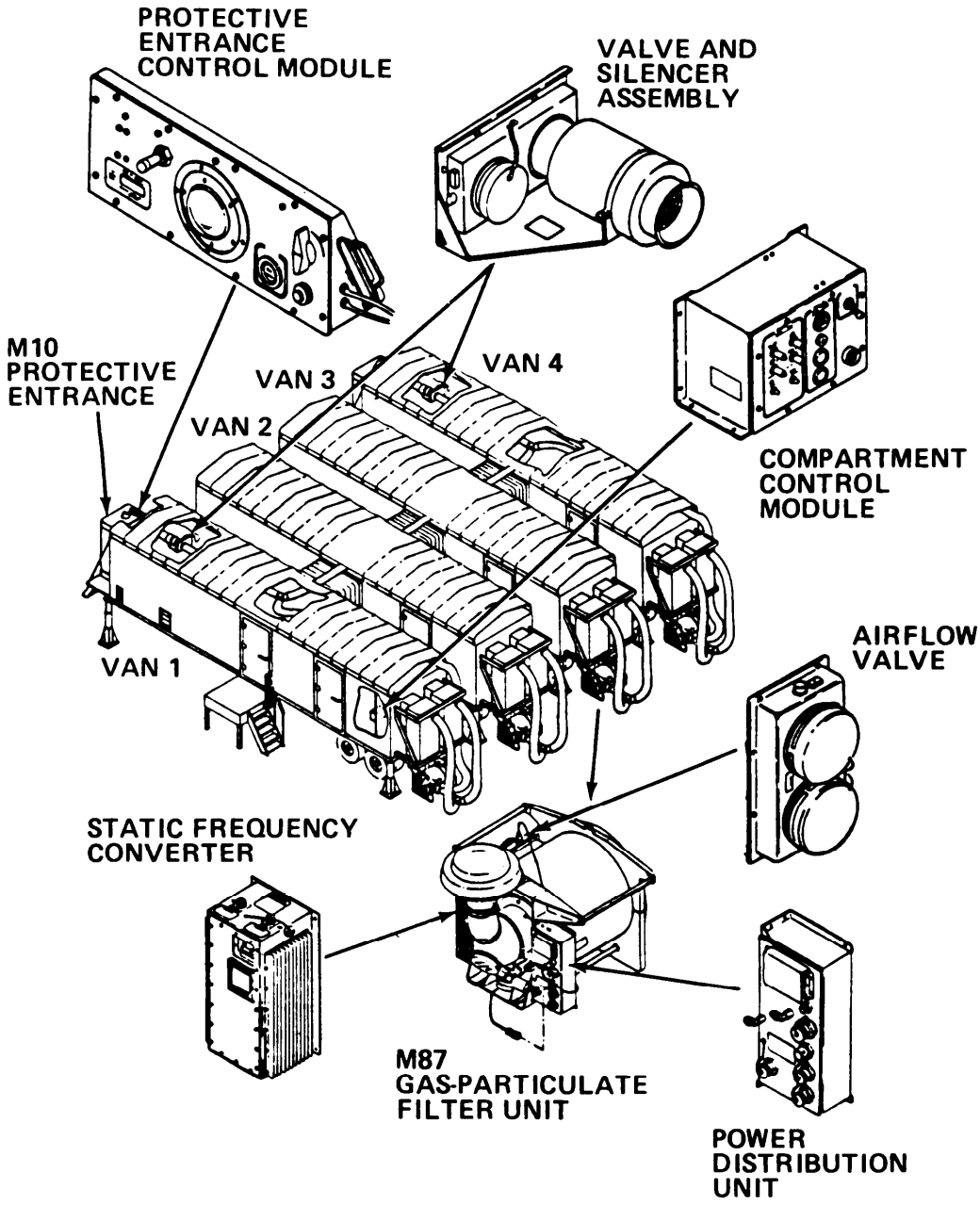
Shipping and Storage Data:

M18 fitter unit:
Type pack . . . .1 per wooden box
Weight . . . .300 lb
Cube . . . .24.6 cu ft
M7 protective entrance:
Type pack . . . . . 1 per M46 aluminum container crated in a wooden box
Weight . . . . . 437 lb
cube . . . .43.3 cu ft
Type storage . . . . Warehouse
Drawing number . . . . DL 5-19-3075

References:

TM 3-4240-229-12
TM 3-4240-229-20P
TM 3-4240-229-34
TM 3-4240-229-34P

COLLECTIVE PROTECTION EQUIPMENT, GUARDRAIL



Type Classification:

STD (LCC-A)

Use:

Provides filtered air under positive pressure to field shelters allowing operation in a chemical-biological agent contaminated area. Personnel enter and leave through a protective entrance without admitting contaminated air.

Description:

The GUARDRAIL collective protection equipment consists of M10 protective entrances with protective entrance control modules; M87 gas-particulate fitter units and compartment control modules, and M5 static frequency converters.

Functioning:

Four M87 gas-particulate fitter units remove toxic gases and dust from the air supplied to four vans and two M10 protective entrances. The airflow valves on the gas-particulate fitter units on vans 2 and 3 remain in the open position. The fans on vans 2 and 3 draw outside air through the inlet caps and dust separators and force the air into the filter units. The fans force filtered air into the vans. The fans on

vans 1 and 4 draw outside air through the inlet caps and dust separators and force it into the filter units. The fans force cleaned air from the filter units into the airflow valves. The airflow valves direct the filtered air to the vans and the M10 protective entrances. Air duct hoses carry the fittered air through airflow valves and silencers at each pro-tective entrance. Filtered air enters each van through air conditioners. The pressure sensing components in the compartment control modules in vans 1 and 4 automatically adjust the associated airflow valves to maintain positive pressure in all four vans.

The Ml O protective entrances provide pressurized transition areas between the vans (1 and 4) and the outside contaminated zone. A balance hose between the two protective entrance air duct hoses ensures balanced pressurization between the two protective entrances. Personnel entering from the outside must wait five minutes within either of the protective entrances before entering van 1 or 4. Contamination is purged by the flow of the filtered air. The protective entrance control modules automatically adjust the airflow valve and silencer assemblies to maintain the proper air pressure inside the protective entrances and contain purge timers and low pressure warning indicators.

Tabulated Data:

NSN:
- M1O Entrance 4240-00-229-2610
- M87 GPFU 4240-01-192-7234
- M5 SFC 4240-00-394-9571

Line item number ..... N/A
Unit of issue ..... Each
Basis of issue ..... TOE/MTOE
Weight:
- M10 Entrance ..... 145 lb
- M87 GPFU ..... 256 lb
- M5 SFC ..... 65 lb

Dimensions:
- M10 Entrance (packaged) ..... 49.30 x 43.30 x 12.50 in.
- M10 Entrance (erected) ..... 49.30 x 43.30 x 85.40 in.
- **M87 GPFU ..... 34 x 36 x 32 in.**
- M5 SFC ..... 8.50 x 10.50 x 20.00 in.

Performance:

Power requirements:
- Entrance control module ..... 2 A at 28 Vdc
- M87 GPFU 1600W
- Airflow valve ..... 1A max at 28 Vdc
- Compartment control module ..... 1 A max at 28 Vdc
- M5 SFC .... Input Voltage: 208 V, 60 Hz, 3-phase
  Output Voltage: 208 V, 400 Hz 3-phase

Input voltage:
- Entrance control module ..... 28 Vdc
- M87 GPFU 208V,400Hz,3phase
- Power distribution unit ..... 208 v, 400 Hz, 3-phase, max capacity 3.5 kW
- Airflow valve ..... 28 Vdc
- Compartment control module ..... 208 V, 400 Hz, 3-phase
- M5 SFC ..... 208 V, 60 Hz phase, max capacity 3.2 kW

Airflow:
- M87 GPFU ..... 400 cfm max
- Airflow valve ..... 40 cfm min at 20.0 in. wg
- Particulate filter ..... 200 cfm
- Gas filter ..... 200 cfm

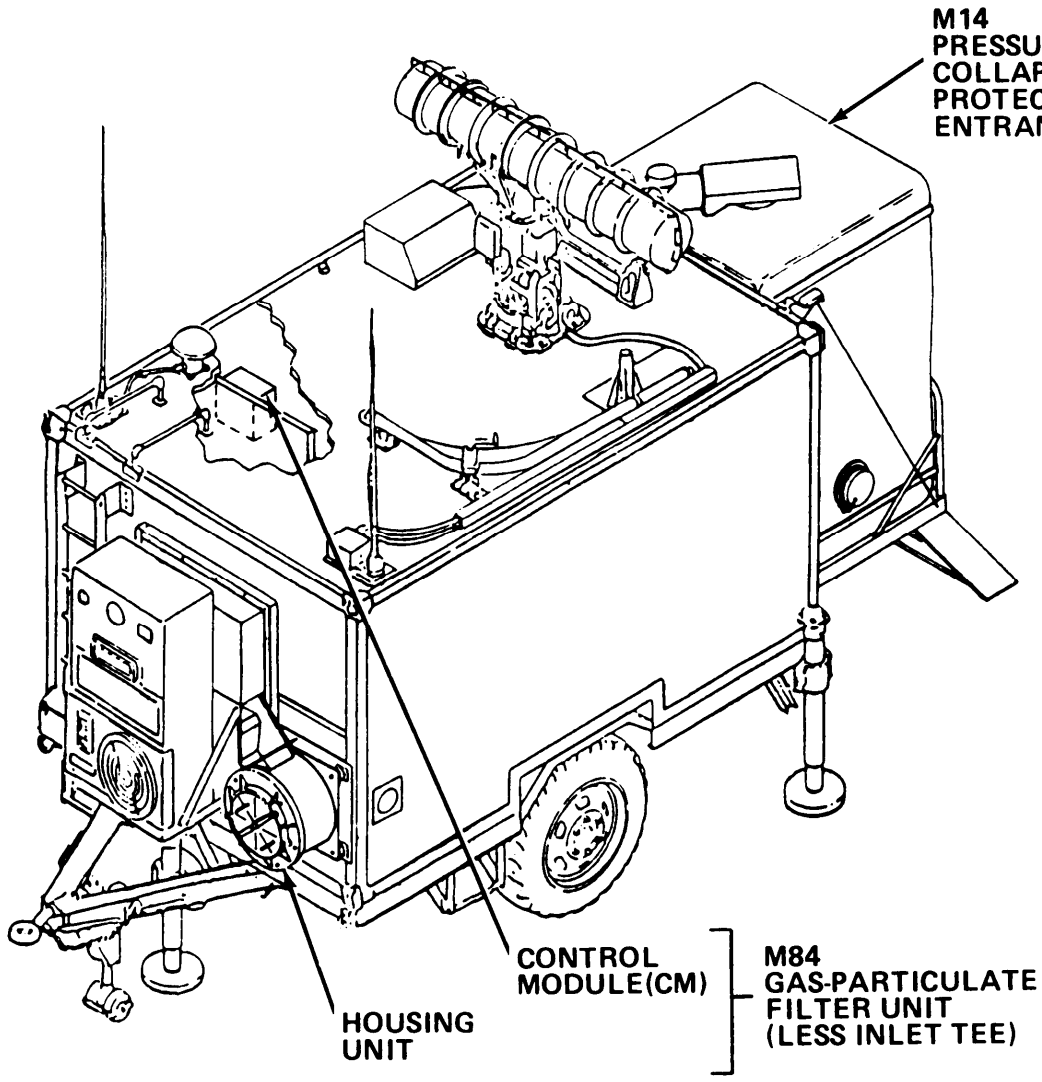
Shipping and Storage Data:

Not available.

References:

TM 3-4240-309-20&P
TM 3-4240-299-23&P
TM 3-4240-317-20&P
TM 3-4240-284-20&P
TM 3-4240-284-30&P
TM 3-4240-302-30&P-1
TM 3-4240-302-30&P-2
TM 3-4240-302-30&P-3
TM 3-4240-302-30&P-4
TM 3-4240-302-30&P-5
TM 3-4240-302-30&P-6

COLLECTIVE PROTECTION EQUIPMENT, GUIDED MISSILE SYSTEM, I-HAWK



Type Classification:
STD (LCC-A)

Use:
Provides filtered air under positive pressure to field shelters allowing operation in a chemical-biological agent contaminated area Personnel enter and leave through a protective entrance without admitting contaminated air.

Description:
The l-HAWK collective protection equipment consists of an Ml 4 protective entrance with protective entrance control module and M84 gas-particulate filter unit and compartment control module.

Functioning:
The M84 gas-particulate fitter unit (GPFU) removes toxic gases and dust from air supplied to the shelter and M14 protective entrance (PE). A fan in the fitter housing unit draws outside air through an air plenum and forces it through the gas and particulate fitters to the shelter. Filtered air passes from the shelter to the PE through an external air duct. Pressure sensing components in the compartment control module provide a low pressure warning.

The M14 protective entrance provides a pressurized transition area between the shelter and the outside environment. Personnel entering from the outside must wait five minutes in the PE before entering the shelter. The filtered airflow purges contamination from the PE during the 5-minute

waiting period. The protective entrance control module (PECM) contains a timer for measuring the purge period and a low pressure warning indicator.

Tabulated Data:

NSN:
- M14 Entrance 4240-01-105-5521
- M84 GPFU 4240-01-149-1719

Line item number . . . . . N/A
Unit of issue . . . . . Each
Basis of issue . . . . . TOE/MTOE
Weight:
- Ml 4 Entrance . . . . . 139 lb
- M84 GPFU . . . . . 256 lb

Dimensions:
- M14 Entrance (packaged) . . . . . 49.30 x 43.30 x 12.50 in.
- M14 Entrance (erected) . . . . . 49.30 x 43.30 x 85.40 in.
- M84 GPFU . . . . . 31 x 38 x 32 in.

Performance:

Power requirements:
- Entrance control module . . . . . 2 A at 28 Vdc
- M84 GPFU 1100W
- Compartment control module . . . . . 1 A max at 28 Vdc

Input voltage:
- Entrance control module . . . . . 28 Vdc
- M84 GPFU . . . . . 208 V, 400 Hz, 3-phase
- Compartment control module . . . . 208 V, 400 Hz, 3-phase, 3.5 kVA max

Airflow:
- M84 GPFU . . . . . 200 cfm rated (actual may be higher)
- Particulate fitter . . . . . 200 cfm
- Gas filter . . . . . 200 cfm

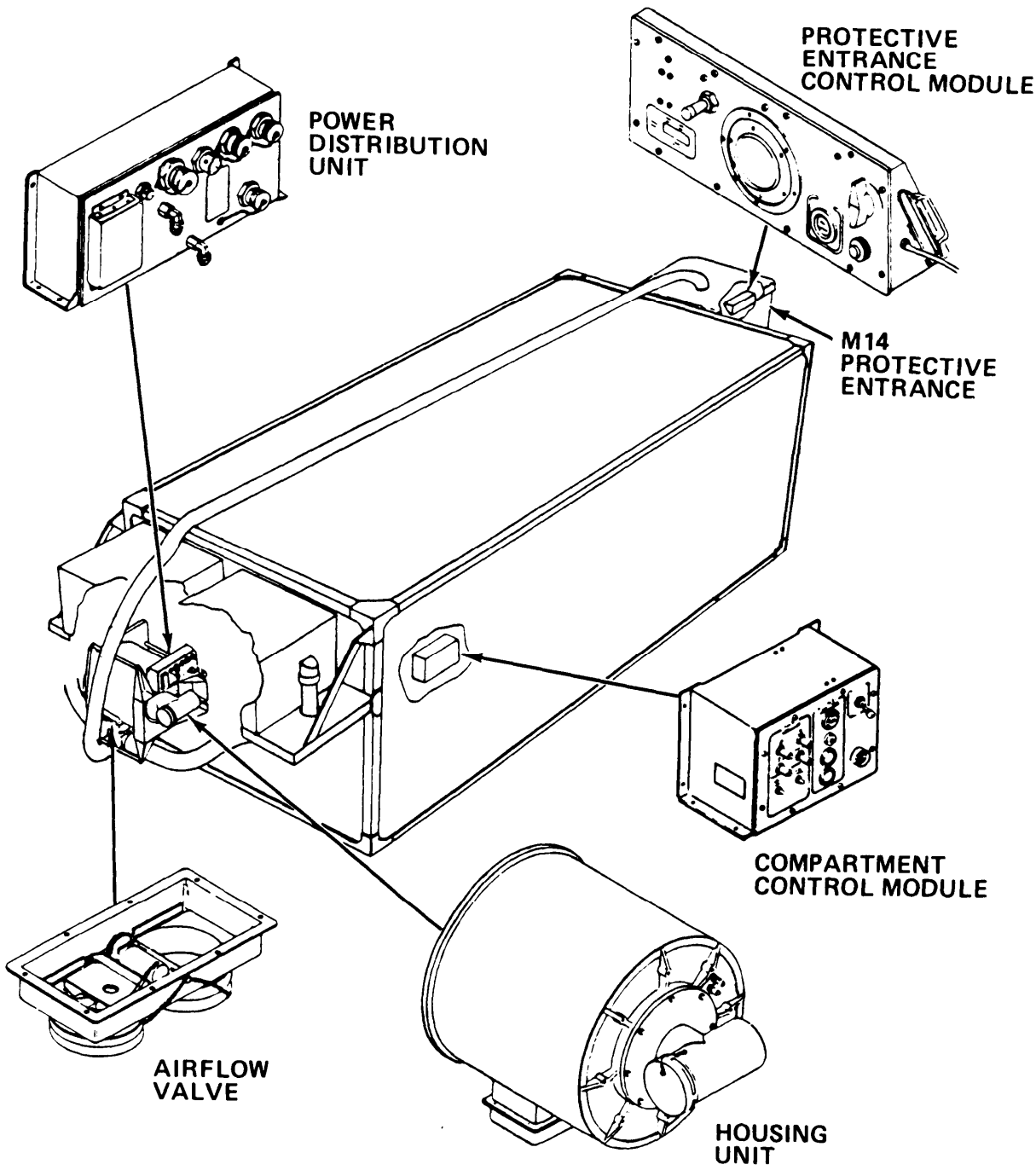
Shipping and Storage Data:

Instructions for administrative storage are provided in TM 3-4240-310-20-&P.

References:

TM 3-4240-311-20&P
TM 9-4935-393-14-2
TM 3-4240-302-30&P-2
TM 3-4240-302-30&P4

COLLECTIVE PROTECTION EQUIPMENT, GUIDED MISSILE SYSTEM, PATRIOT



Type Classification:

STD (LCC-A)

Use:

Provides filtered air under position pressure to field shelters allowing operation in a chemical-biological agent contaminated area. Personnel enter and leave through a protective entrance without admitting contaminated air.

Description:

The PATRIOT collective protection equipment consists of an M14 protective entrance with protective entrance control module, an M59 gas-particulate filter unit (GPFU), airflow valve, power distribution unit, compartment control module, and installation kit M265.

Functioning:

The M59 gas-particulate filter unit removes toxic gases and dust from the air supplied to the shelter and Ml 4 protective entrance. The fan draws outside air through the air inlet and forces it into the fitter unit. The fan forces filtered air from the fitter unit to the airflow valve. The airflow valve directs filtered air to the shelter and Ml 4 protective entrance. Air duct hoses deliver filtered air to the Ml 4 protective entrance. Filtered air enters the shelter through the air conditioner. Pressure sensing components in the compartment control module automatically adjust the airflow valve to maintain a positive pressure in the shelter.

The M14 protective entrance provides a pressurized transition area between the shelter and the outside contaminated zone. Personnel entering from the outside must wait five minutes within the protective entrance before entering the shelter. The flow of the filtered air purges con-lamination from the Ml 4 protective entrance. The protective entrance control module contains the purge timer and a low-pressure warning indicator.

Tabulated Data:

NSN:
- M59 GPFU 4240-00-237-0223
- M14 Entrance 4240-01-105-5521
- Installation kit M265 4240-01-110-7617

Line item number ..... N/A
Unit of issue ..... Each
Basis of issue ..... TOE/MTOE
Weight:
- M59 GPFU ..... 123 lb
- M14 Entrance ..... 139 lb
- Entrance control module ..... 7.5 lb
- Compartment control module ..... 9 lb
- Power distribution unit ..... 16 lb

Dimensions:
- M59 GPFU ..... 34 x 36 x 32in.
- M14 Entrance (packaged) ..... 49.3 x 43.3 x 12.5 in.
- M14 Entrance (erected) ..... 49.3 x 43.3 x 85.4 in.
- Entrance control module ..... 16.00 x 6.75 x 5.00 in.
- Compartment control module ..... 7.70 x 11.75x 6.50 in.
- Power distribution unit ..... 18.50 x 8.25x 4.25 in.

Performance:

Power requirements:
- Entrance control module ..... 2 A at 28 Vdc
- M59 GPFU 1700W
- Airflow valve ..... 1A max at 28 Vdc
- Compartment control module ..... 1 A max . at 28 Vdc

Input voltage:
- Entrance control module ..... 28 Vdc
- M59 GPFU ..... 208 V, 400 Hz, 3-phase
- Power distribution unit ..... 208 V, 400 Hz, 3-phase, max capacity 3.5 kW
- Airflow valve ..... 28 Vdc
- Compartment control module ..... 28 Vdc

Airflow:
- M59 GPFU ..... 400 cfm max
- Aidlow valve ..... 40 cfm min at 20.0 in.
- Particulate filter ..... 400 cfm
- Gas fitter ..... 400 cfm

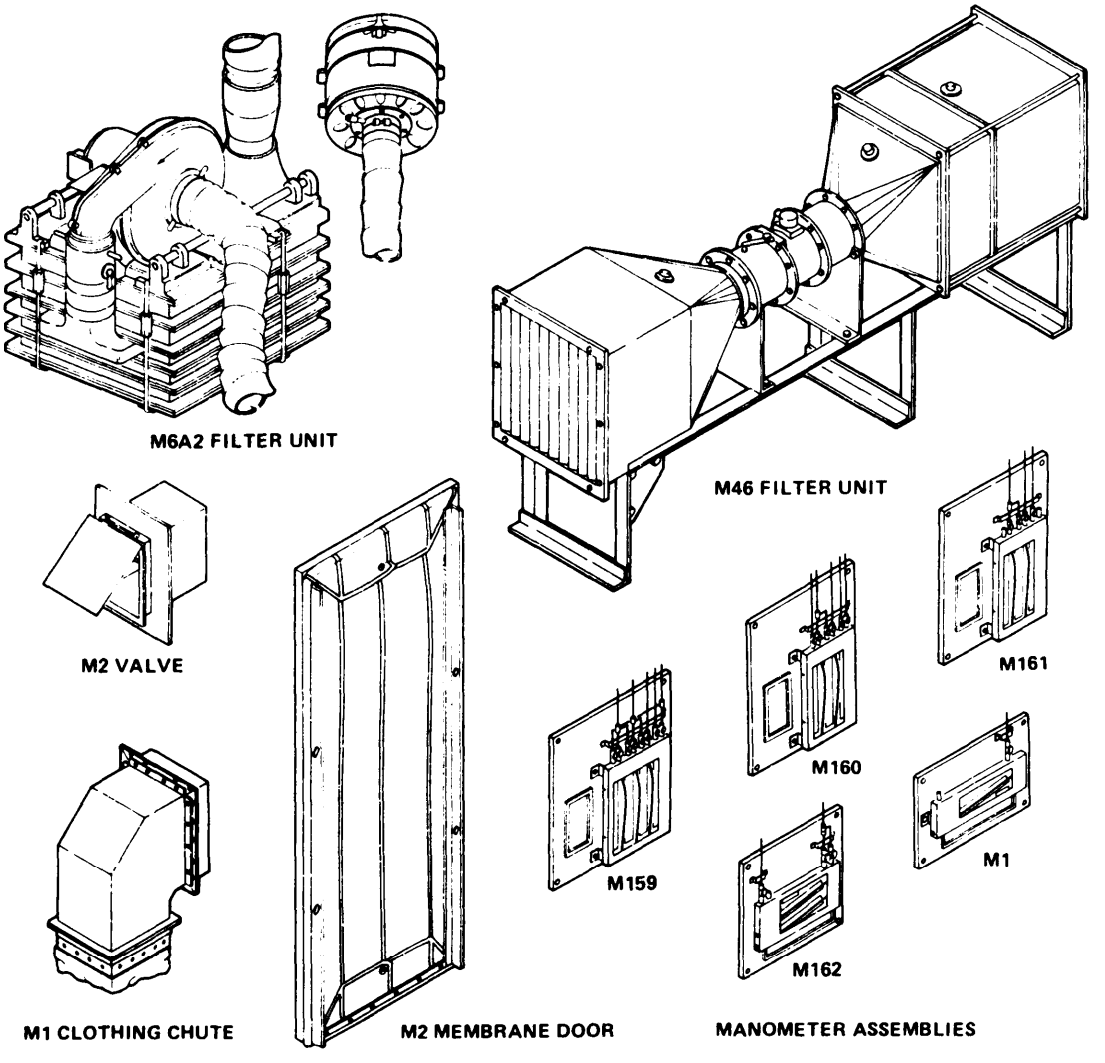
Shipping and Storage Data:

Not available.

References:

TM 3-4240-285-20&P
TM 3-4240-285-30&P
TM 3-4240-302-30&P-1
TM 3-4240-302-30&P-3
TM 3-4240-302-30&P-5
TM 3-4240-302-30&P-6

COLLECTIVE PROTECTION EQUIPMENT, CBR: NIKE-HERCULES, CONUS, M11, M12, AND M13



Type Classification:

STD (LCC-A): AMCTC 4663

Use:

Provides chemical, biological, and radiological (CBR) protection for the Nike-Hercules CONUS sites. Each site has three personnel area shelters that require protection: 60-man (M11 and M13) or 90-120-man (M12) IFC Control Area 60-man Launch Area, and 15-man Magazine Control Room shelters.

Description:

The Nike-Hercules collective protection equip ment consists of M46 filter units (IFC and Launch Areas), M6A2 filter units (Magazine), M1 clothing chutes, M2 antibackdraft valves, M2 membrane doors, and manometer assemblies Ml 59, M1 60, M161, M162, and M1.

Functioning:

Gas-particulate filter units generate a positive pressure within the shelter, minimizing CBR agent penetration from the outside. Adjustable anti-backdraft valves restrict exhaust airflow to maintain the required positive pressure. M162 and M1 manometer assemblies are used to monitor the static pressure in the shelter entry and personnel areas. Pressure drop across the fitters in the filter units are monitored via the M159, M160, and M161 manometers. A clothing chute is provided for disposal of contaminated clothing in the entry and shower area of the IFC and Launch shelters. Permeable membrane doors allow entry from the shower area to the personnel area while minimizing CBR agent penetration.

Tabulated Data:

NSN:
- M11 4240-00-937-7030
- M12 4240-00-937-7031
- M13 4240-00-937-7032

Line item number
- M11 ..... E52457
- M12 ..... E52461
- M13 ..... E52465

Unit of issue ..... Each
Basis of issue ..... TOE/MTOE
Weight:
- M46 filter unit ..... 1500 lb
- M6A2 filter unit ..... 500 lb
- Ml clothing chute ..... 52 lb
- M2 antibackdraft valve ..... 21 lb
- M2 membrane door ..... 65 lb
- M159 manometer assy ..... 45 lb
- M160 manometer assy ..... 45 lb
- M161 manometer assy ..... 45 lb
- M162 manometer assy ..... 45 lb
- M1 manometer assy ..... 45 lb

Dimensions:
- M46 filter unit ..... 108.00 x 29.50 x 51.25 in.
- M6A2 filter unit ..... 36 x 31 x 37 in.
- M1 clothing chute ..... 17.75 x 25.00 x 39.00 in.
- M2 antibackdraft valve ..... 18.0 x 10.5 x 17.0 in.
- M2 membrane door ..... 35.5 x 83.5 in.
- M159 manometer assy ..... 3.5 x 22.0 x 22.0 in.
- M160 manometerassy ..... 3.5 x 22.0 x 22.0 in.
- M161 manometer assy ..... 3.5 x 22.0 x 22.0 in.
- M162 manometer assy ..... 3.5 x 22.0 x 22.0 in.
- Ml manometer assy ..... 3.5 x 22.5 x 12.0 in.

Performance:
- M46 filter unit ..... 220V. 60 Hz, 3-phase, 1 hp motor, 600 cfm airflow
- M6A2 filter unit ..... 220 V, 60 Hz, 3-phase, 1 hp motor, 300 cfm airflow
- M2 antibackdraft valve ..... 50-400 cfm airflow, 0.08 -1.0 in. wg static pressure range
- M2 membrane door ..... 400 cfm airflow, 0.1 in. wg air resistance
- M159 manometer assy ..... Four single-tube vertical manometers, 0.00- to 8.00- in. of water sliding scale
- M160 manometer assy ..... Three single-tube vertical manometers, 0.00- to 8.00-in. of water sliding scale
- M161 manometer ashy ..... Three single-tube vertical manometers, 0.00- to 8.00 in. of water sliding scale
- M162 manometer assy ..... Two single-tube inclined manometers, 0.00- to 1.00- in. of water sliding scale
- M1 manometer assy ..... One single-tube inclined manometers, 0.00- to 1.00- in. of water sliding scale

Differences:

The Nike-Hercules sites consist of one IFC Area, one Launch Arm and two (M13) or three (M11 and M12) Magazine Control Room shelters. The table below identifies type and quantity of collective protection equipment used in each Nike-Hercules site and shelter.

Shipping and Storage Data:

Not available.

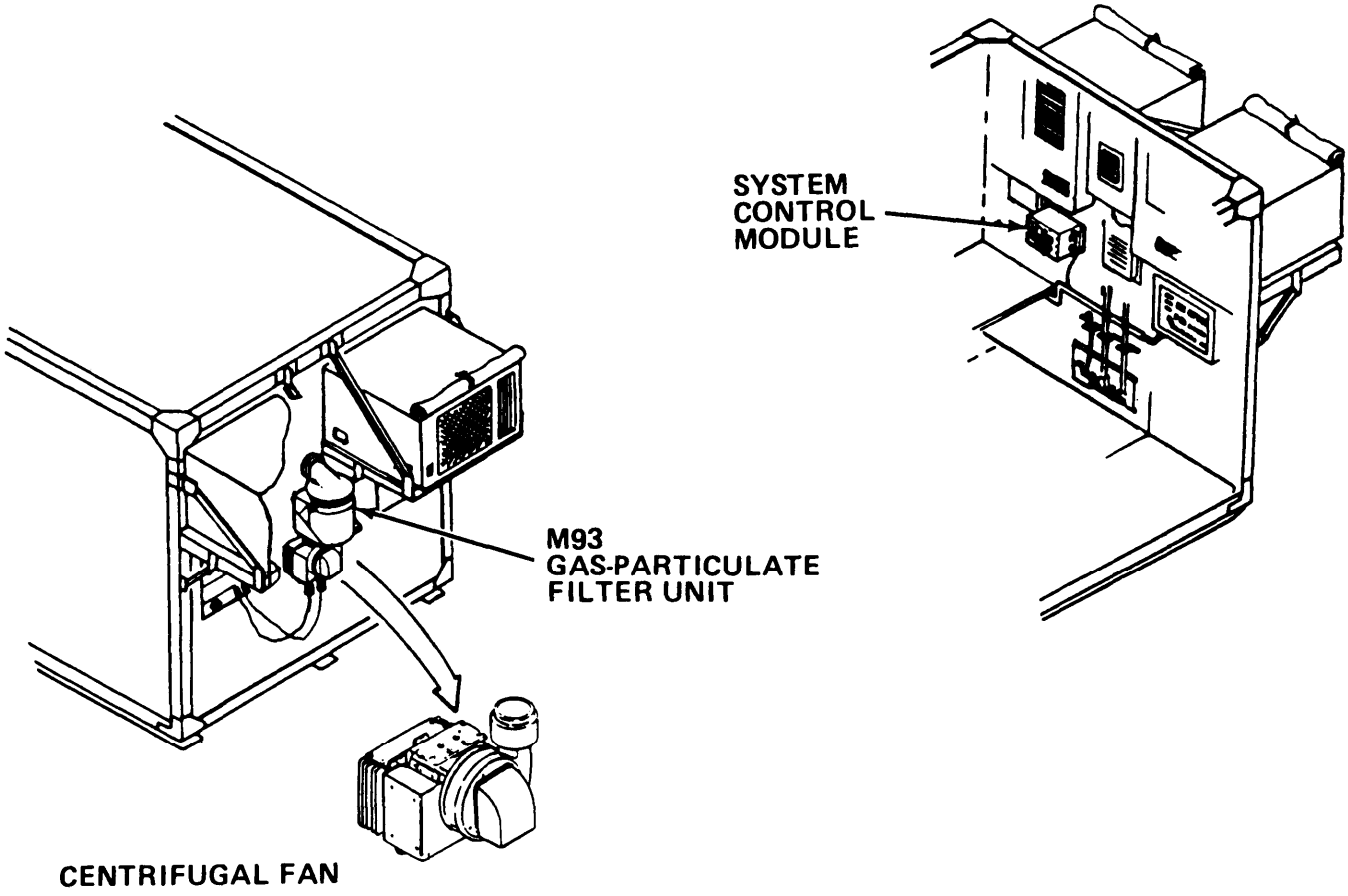
References:

TM 3-4240-265-12
TM 3-4240-265-20&P

Nike-Hercules Shelter Collective Protection Equipment

Shelter	Collective Protection Equipment (Type and Quantity)									
	M46 Filter Unit	M6A2 Filter Unit	M1 Clothing Chute	M2 Anti-Back Draft Valve	M2 Mem-brane Door	Manometer Assemblies				
						M159	M160	M161	M162	M1
60-Man IFC (M11, M13)	1		1	1	1	1			1	
90-120-Man IFC (M12)	2		1	2	1	1	1		1	
Launch	1		1	1	1	1			1	
Magazine Control Room		1		1				1		1

COLLECTIVE PROTECTION EQUIPMENT, REGENCY NET



Type Classification:

STD (LCC-A)

Use:

Provides filtered air under positive pressure to field shelters allowing operation in a chemical-biological agent contaminated area

Description:

The REGENCY NET collective protection equipment consists of an M93 gas-particulate filter unit (GPFU), compartment control module, and centrifugal fan.

Functioning:

The M93 gas-particulate filter system (GPFU) removes dust and toxic gases from the air it supplies to the shelter. Major components of the system include a 100 cfm fan, an M48 gas-particulate filter, and a system control module (SCM).

The fan and gas-particulate filter are mounted outside the shelter. The fan draws ambient air and pushes it through the filter. Filtered air passes from the filter outlet, through the transition, and into the shelter. Tne fan is an integral unit consisting of a radial wheel fan, motor, electronic commutation circuitry, and a 28 volt power supply. Motor speed range is infinitely variable providing required aidflow between 20 cfm and100 cfm.

The SCM is interconnected with the fan, but mounted inside the shelter. It is powered by a 28 volt power supply housed in the fan. The SCM monitors the pressure differential between inside and outside the shelter, converts it to a dc voltage, and electronically conditions the signal so that it is

of proper ampilitude and polar to increase or decrease fan speed to maintain shelter pressure at 0.75 inches water gage.

Tabulated Data:

NSN:
- M93 GPFU 4240-01-231-6515
- Control module 4240-01-234-2266
- centrifugal fan 4140-01-234-8170

Line item number . . . . . N/A
Unit of issue . . . . . Each
Basis of issue . . . . . TOE/MTOE
Weight
- M93 GPFU . . . . . 57.0 lb
- Control module . . . . . 3.5 lb
- Centrifugal fan . . . . . 14.0 lb

Dimensions
- M93 GPFU . . . . . 14.50 x 13.50 x 29.00 in.
- Control module . . . . . 11.52 x 6.94 x 7.69 in
- Centrifugal fan . . . . . 8.27 x 10.31 x 10.00 in.

Performance:

Power requirements:
- M93 GPFU 480W
- Control module . . . . . 250 mA 28 Vdc
- Centrifugal fan . . . . . 480 W

Input Voltage:
- M93 GPFU . . . . . 120 V, 50/60 or 400 Hz, 1-phase
- Control module . . . . . 28 Vdc
- centrifugal fan . . . . . 120V,50/60or 400 Hz, 1 -phase

Airflow:
- M93 GPFU . . . . . 20-100 cfm rated (actual may be higher)
- Gas-particulate filter . . . . . 100 cfm
- Centrifugal fan . . . . . 20-100 cfm

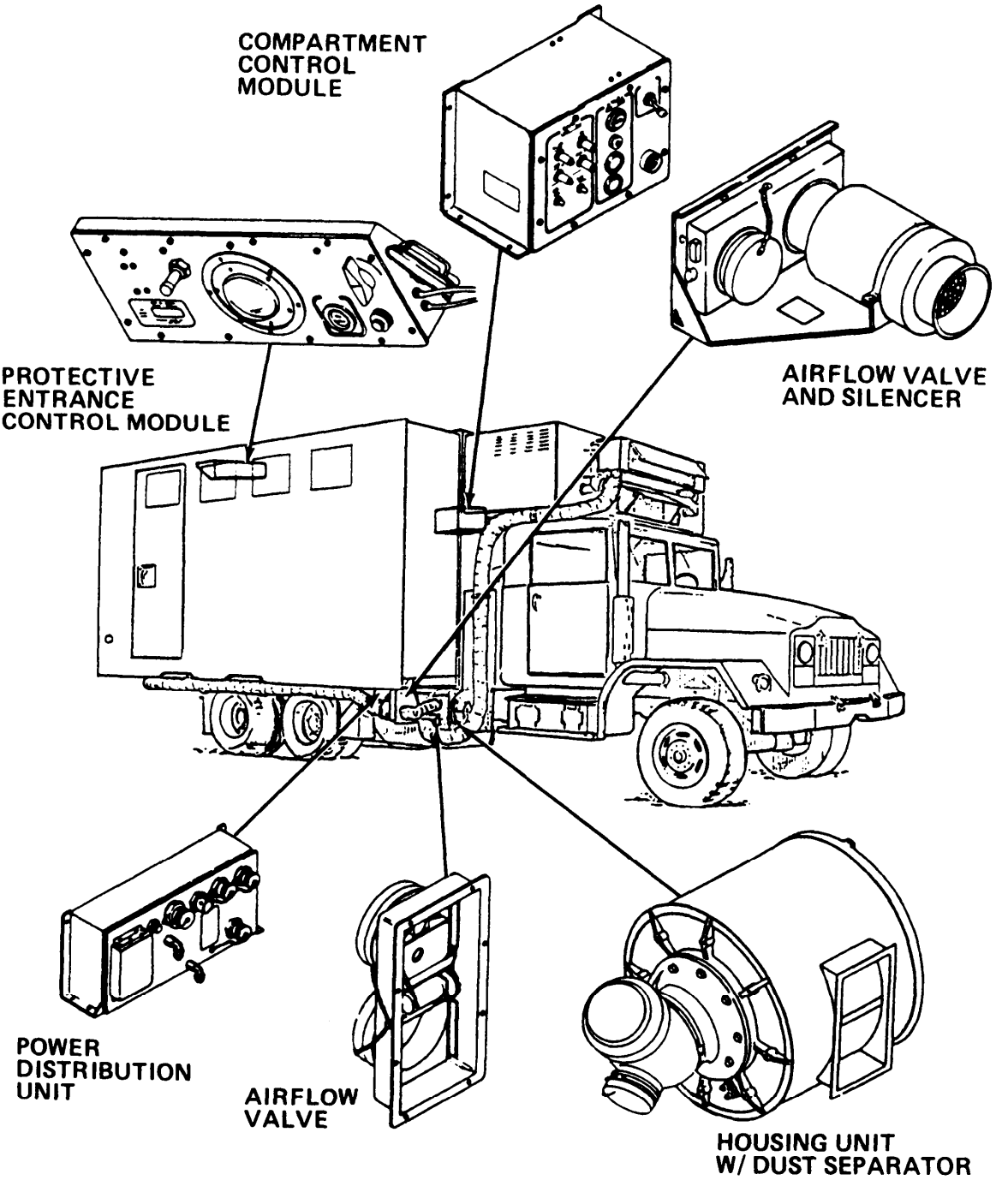
Shipping and Storage Data:

Instruction for administrative storage are provided in TM 3-4240-315-20&P.

References

TM 3-4240-315-20&P
TM 11-5895-1218/SPAWAR

COLLECTIVE PROTECTION EQUIPMENT, TACFIRE UCE



Type Classification

STD (LCC-A): MSR 05768018

Use:

Provides filtered air under positive pressure to field shelters allowing operation in a chemicaJ biological agent contaminated area Personnel enter and leave through a protective entrance without admitting contaminated air.

Description:

The TACFIRE collective protection equipment consists of an M59 gas-pmiculate filter unit (GPFU), airflow valves, power distribution unit, protective

entrance control module, compartment control module, and installation kit M277.

Functioning:

The M59 gas-particulate filter unit removes toxic gases and dust from the air supplied to the shelter and internal protective entrance. The fan draws outside air through the air inlet/dust separator and forces it into the filter unit housing. The fan forces air through the gas and particulate filters to the airflow valve. The airflow valve directs filtered air to the shelter and internal protective entrance. Air duct hoses deliver filtered air to the internal protective entrance. Filtered air enters the shelter through the Environmental Control Unit. Pressure sensing components in the compartment control module automatically adjust the aidflow valve to maintain a positive pressure in the shelter.

The internal protective entrance provides a pressurized transition area between the shelter and the outside contaminated zone. Personnel entering from the outside must wait five minutes within the protective entrance before entering the shelter. The flow of the filtered air purges airborne particles from the protective entrance control module. The internal protective entrance control module automatically adjusts the airflow valve and silencer assembly to maintain the proper air pressure inside the protective entrance and contains the purge timer and low pressure warning indicator.

Tabulated Data:

NSN:

- M59 GPFU 4240-00-237-0223
- installation kit M277 4240-01-186-8423

Line item number ..... N/A
Unit of issue ..... Each
Basis of issue ..... TOE/MTOE
Weight:

- M59 GPFU ..... 123 lb
- Entrance control module ..... 7.5 lb
- Airflow valve ..... 13 lb
- Compartment control module ..... 9 lb
- Power distribution unit 16lb

Dimensions:

- M59 GPFU ..... 34 x 36 x 32in.
- Entrance control module ..... 16.00 x 6.75 x 5.00 in.
- Airflow valve ..... 15 x8 x 4in.
- Compartment control module ..... 7.70 x 11.75 x 6.50 in.
- Power distrubution unit ..... 18.50 x 8.25 x 4.25 in.

Performance:

Power requirements:

- Entrance control module ..... 2 A at 28 Vdc
- M59 GPFU 1700W
- Airflow valve ..... 1A max at 28 Vdc
- Compartment control module ..... 1 A max at 28 Vdc

Input voltage:

- Entrance control module ..... 28 Vdc
- M59 GPFU ..... 208 V, 400 Hz, 3-phase
- Power distribution unit ..... 208 V, 400 Hz, 3-phase, max capacity 3.5 kW
- Airflow valve ..... 28 Vdc
- Compartment control module ..... 28 Vdc

Airflow:

- M59 GPFU ..... 400 cfm max
- Airflow valve ..... 40 cfm min at 20.0 in. wg
- Particulate filter ..... 400 cfm (200 cfm each)
- Gas filter ..... 400 cfm (200 cfm each)

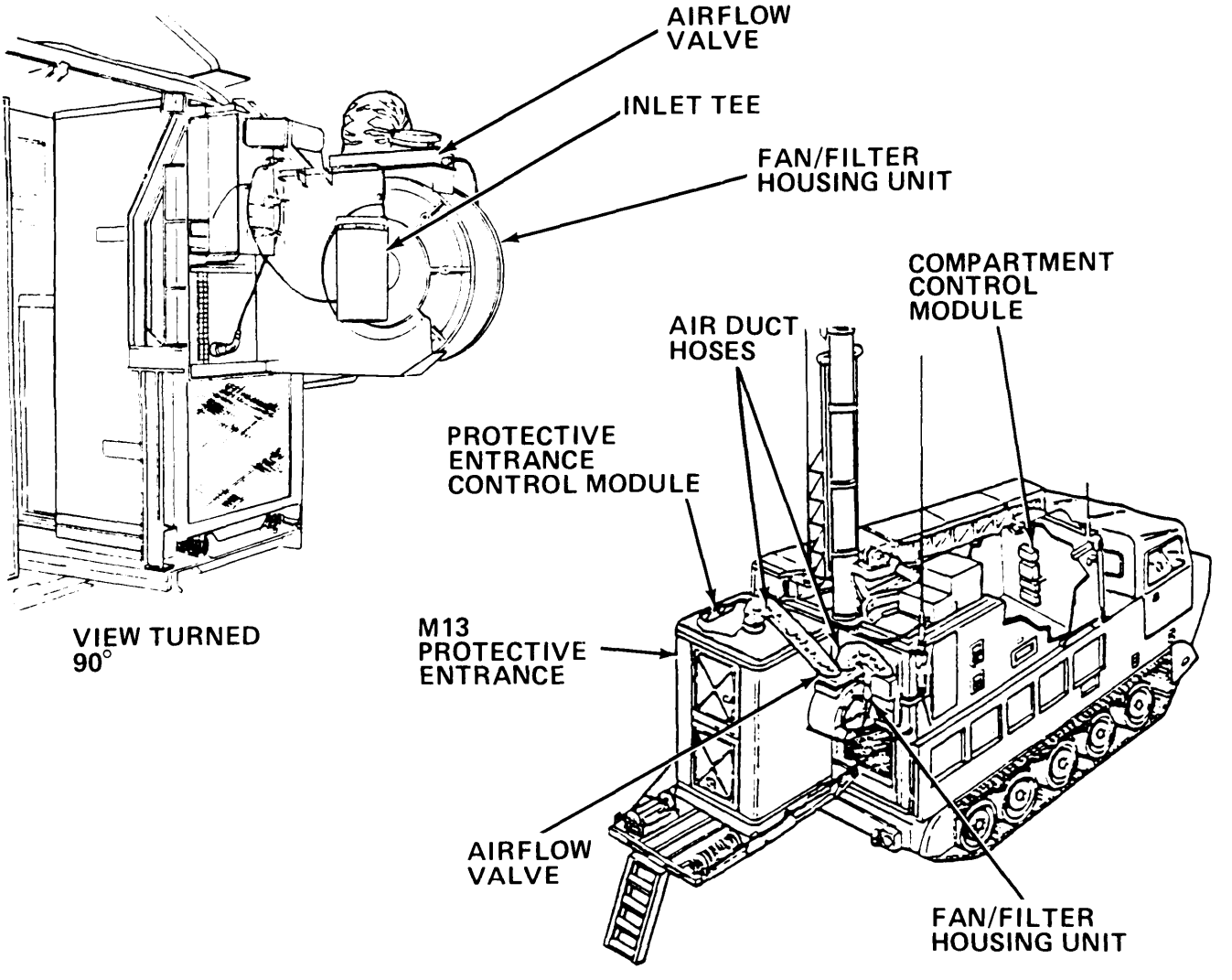
Shipping and Storage Data:

Instructions for administrative storage are provided in TM 3-4240-308-20&P.

References:

TM 3-4240-308-20&P
TM 9-2320-260-10-1
TM 11-7440-241-10
TM 9-4935-393-14-1.-2
TM 3-4240-302-30&P-1
TM 3-4240-302-30&P-3
TM 3-4240-302-30&P-5
TM 3-4240-302-30&P-6

COLLECTIVE PROTECTION EQUIPMENT, TRAILBLAZER



Type Classification:
STD(LCC-A)

Use:
Provides filtered air under positive pressure to field shelters allowing operation in a chemical-biological agent contaminated area. Personnel enter and leave through a protective entrance without admitting contaminated air.

Description:
The TRAILBLAZER collective protection equipment consists of an M 13 protective entrance with protective entrance control module, and an M56 gas-particulate filter unit and compartment control module.

Functioning:
The M56 gas-particulate fitter unit removes toxic gases and dust from the air supplied to the shelter and the M13 protective entrance. A fan in the fitter housing unit draws outside air through an inlet tee and forces it through gas and particulate filters to the airflow valve. The airflow valve directs filtered air to the shelter and M13 protective entrance through air duct hoses. Filtered air enters the shelter through the air conditioner. Pressure sensing components in the compartment control module automatically adjust the airflow valve to maintain a positive pressure in the shelter.

The M13 protective entrance provides a pressurized transition area between the shelter and the outside contaminated zone. Personnel

entering from the outside must wait ten minutes within the protective entrance before entering the shelter. The flow of the filtered air purges contamination from the M13 protective entrance. The protective entrance control module contains the purge timer and a low pressure warning indicator.

Tabulated Data:

NSN:

M13 Entrance 4240-0 1-155-997l
M58 GPFU . . . . . 4240-00-2374)227
Line item number . . . . . N/A
Unit of issue . . . . . Each
Basis of issue . . . . . TOE/MTOE
Weight:
M13 Entrance . . . . . 145 lb
M58 GPFU 123lb
Dimensions:
M13 Entrance (packaged) . . . . . 49.3 x 43.3 x 12.5 in.
M13 Entrance (erected) . . . . . 49.3x 43.3 x 85.4 in.
M56 GPFU 31 x 36 x 32 in.

Performance:

Power requirements:
Entrance control module . . . . . 2 A at 28 Vdc
M58 GPFU 930W
Airflow valve . . . . . 1A max at 28 Vdc
Compartment control module . . . . . 1 A max at 28 Vdc
Input voltage:
Entrance control module . . . . . 28 Vdc
M58 GPFU . . . . . 208 V, 400 Hz, 3-phase
Power distribution unit . . . . . 208V 400 Hz, 3-phase, max capacity 3.5 kW
Airflow valve . . . . . 28 Vdc
Compartment control module . . . . . 28 Vdc
Airflow:
M58 GPFU . . . . . 200 cfm max
Airflow valve . . . . . 40 cfm min at 20.0 in. wg
Particulate fitter . . . . . 200 cfm
Gas filter . . . . . 200 cfm

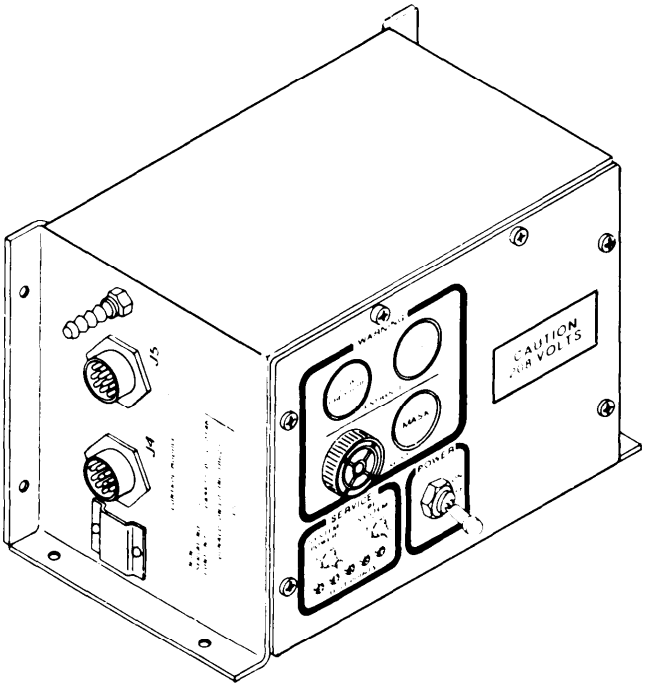
Shipping and Storage Data:

Instructions for administrative storage are provided in TM 3-4240-311-20&P.

References:

TM 3-240-311-20&P
TM 32-4240-001-14&P
TM 3-4240-302-30&P-1
TM 3-4240-302-30&-P4
TM 3-4240-302-30&P-5
TM 3-4240-302-30&P-6

CONTROL MODULE



Type Classification:

Not *separately type* classified.

Component of various other systems.

Use:

The control module controls pressurization of the shelter on which collective protection equip ment is installed and warns crew of low shelter pressure.

Description:

The control module, mounted inside the shelter, provides a visual (flashing MASK light) and audible (horn) warning whenever shelter pressure falls between *0.9 and* 1.1 in. wg., or if input power fails. A MASK light press-to-test feature allows testing of the warning system circuits. Press-to-test LOW PRESSURE and OCCUPIED warning indicator lamps provide protective entrance status information.

Functioning:

The control module is powered by input power of 208 V, 400 Hz. Operating power is provided by an integral 28 Vdc power supply or, during input power failure, a 28 Vdc battery system. A pressure sensing switch activates the MASK warning light and horn when pressure is between 0.9 and 1.1 in. wg. Entrance warning lights are controlled by the protective entrance control module. SYSTEM POWER and PE SYSTEM circuit breakers provide circuit protection at the 28 Vdc level. Test points are provided to aid testing and troubleshooting.

Tabulated Data:

NSN	4240-01-158-5904
Line item number	N/A
Unit of issue	Each
Basis of issue	TOE/MTOE
Weight	9.0 lb
Dimensions	7.70 x 11.75 x 6.50 in.

Performance:

Power requirements:	1 A max at 28 Vdc
Input voltage	208 V, 400 Hz, 3-phase

Battery system will not function during loss of power unless battery voltage is greater than 22 Vdc.

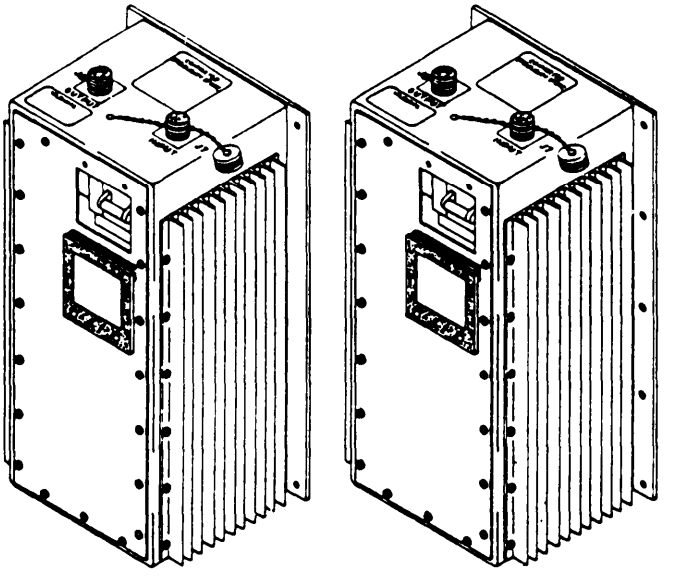
Shipping and Storage Data:

Weight	16.3 lb
Dimensions	13.9 x 9.4 x 10.0 in.
Cube	0.751 cu ft
Drawing	P5-19-6906

References:

TM 3-4240-302-30&P-2

CONVERTER, FREQUENCY, STATIC: M5



DAAK11-81-C-0020 DAAK11-82-C-0014

Type Classification:

Not separately type classified.

Component of various other systems.

Use:

The static frequency converter (SFC) converts 208 Vat, 3-phase, 4 wire, 60 Hz input to 208 Vat, 3-phase, 5 wire, 400 Hz electrical power.

Description:

The SFC is a small single unit system which is easy to install. The SFC provides up to 3.2 kVA of power. A circuit breaker turns the SFC on or off and provides overbad protection. Test points are provided to check output voltage and frequency. Electrical receptacles are used to connect the SFC to input and output power cables.

Functioning:

Frequency conversion is accomplished by converting input power to dc, then chopping the dc voltage into 400 Hz, 3-phase power using silicon controlled rectifiers. A 5-second start delay circuit per-mits input fitter capacitors to initially charge at a controlled rate.

Limitations:

Input power limits are 208 ±10 V rms, 3-phase, 3 wire line-to-line, 47 to 63 Hz. Input current is limited by a 30 A circuit breaker. Output voltage under load conditions of 1,600 VA to 3,200 VA is 208 ± 15 V rms line-to-line; 120 V rms line-to neutral, maximum. Output frequency is 390 to 410 Hz. Overload capacity is 150% of rated load at any power factors; 0.80 to unity for ten seconds.

Tabulated Data:

NSN	4240-00-394-9571
Line item number	N/A
Unit of issue	Each
Basis of issue	TOE/MTOE
Weight	65 lb
Dimensions	8.5 x 10.5 x 20.0 in.

Performance:

Input Voltage	208 V, 60 Hz, 3-phase
Output Vottage	208 V, 400 Hz, 3-phase
Maximum Load	3.2 kVA

Short circuit and overload protection circuits latch the converter in an off condition; reset by cycling the circuit breaker off and on.

Equipment cooling is provided by external heat sinks; area around SFC must be clear of obstruction to allow adequate airflow. The SFC may be installed in cooling shroud and fan (NSN 4240-01-227-5532) which provides forced ambient air cooling.

Difference Between Models:

SFC for contract DAAK11-81-C-0020 have four mounting holes on the base, DAAK11-8240014 SFC have ten. The design of SFC for contract DAAK11-82-C-0014 incorporates the addition of six biasing diodes in each of the power switching circuits.

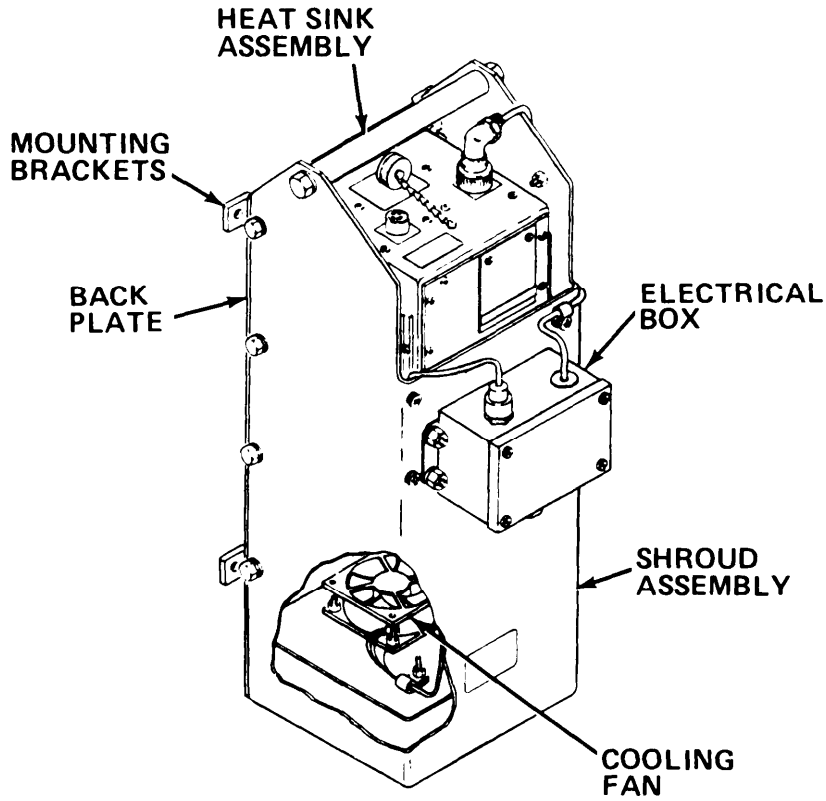
Shipping and Storage Data:

Weight	75.0 lb
Dimensions	21.2 x 15.2 x 13.6 in.
Cube	2.430 cu ft
Specification	MIL-STD-2073
Drawing	P5-19-6425

References:

TM 3-4240-299-23&P

COOLING SHROUD AND FAN



Type Classification:

Not separately type classified.

Component of various other systems.

Use:

The cooling fan and shroud provides forced air coding of the M5 static frequency converter (NSN 4240-00-394-9571).

Description:

The cooling shroud and fan is a self-contained assembly which may be factory installed during host weapon system manufacture or field retrofitted. An electrical box provides the power distribution functions, supplying 208 V, 60 Hz, 3-phase power to the static frequency converter and cooling fan.

Functioning:

The shroud provides 100 cubic feet per minute of ambient air over the heat sink cooling fins of the static frequency converter. Two additional heat sink assemblies are mounted to the back of the static frequency converter to provide additional cooling capacity. The shroud electrical box provides connectors for power distribution of 208 V, 60 Hz, 3-phase power to the static frequency converter and cooling fan via cables provided with the cooling shroud.

Tabulated Data:

NSN	4240-01-227-5532
Line item number	N/A
Unit of issue	Each
Basis of issue	TOE/MTOE
Weight	21 lb
Dimensions	13.50 x 13.75 x 27.25 in.

Performance:

Power requirements	23W
Input voltage	208 V, 60 Hz, 3-phase
Airflow	100 cfm

Shipping and Storage Data:

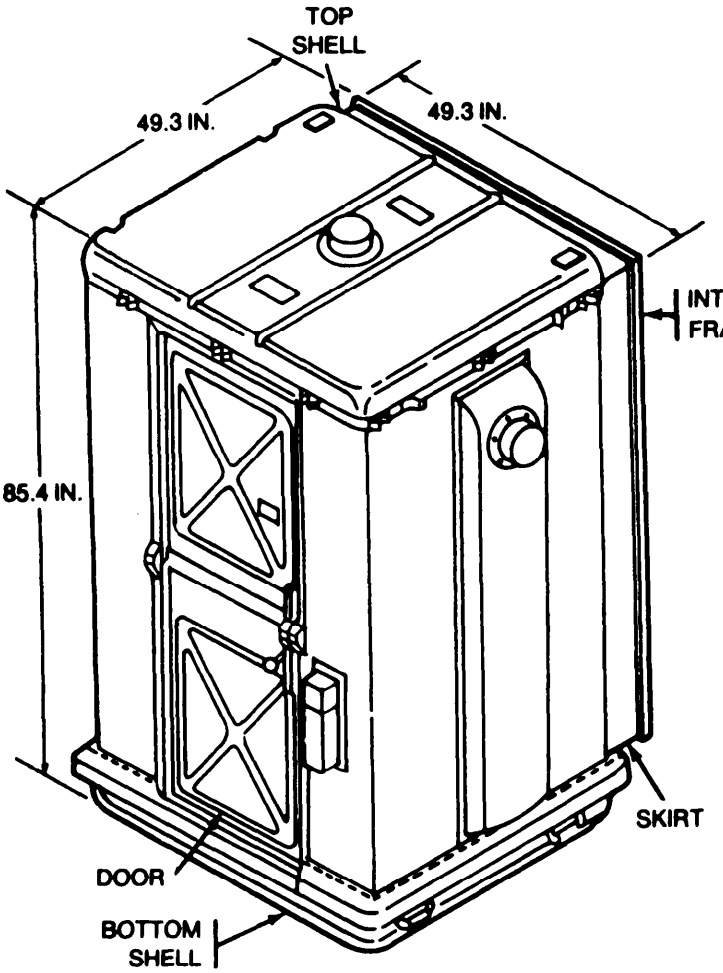
Specification	MIL-STD-2073
Drawing	P5-19-9628

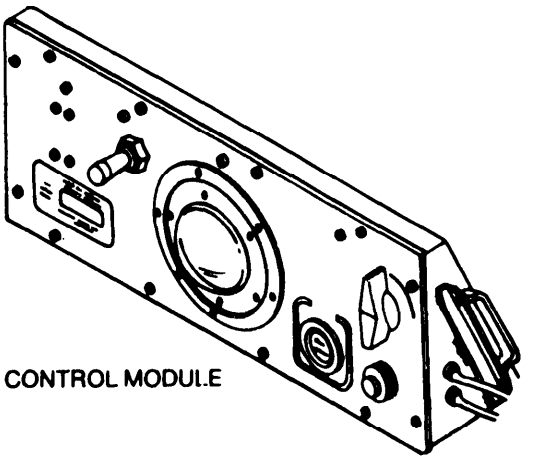
References:

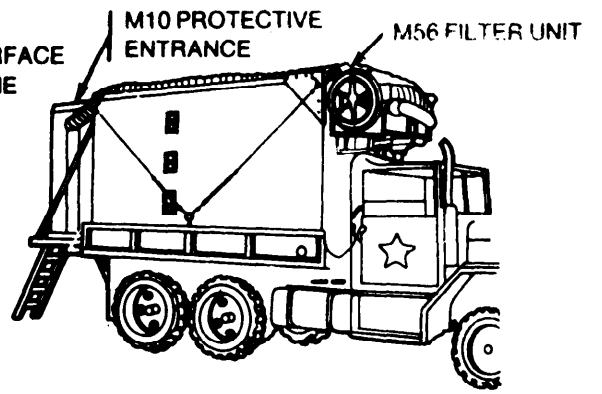
TM 3-4240-318-20&P

TM 3-4240-299-23&P

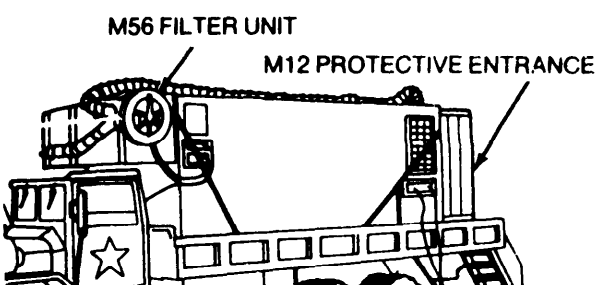
ENTRANCE, PROTECTIVE, PRESSURIZED, COLLAPSIBLE: M10 AND M12







M10 PROTECTIVE ENTRANCE MOUNTED ON AN/GSG-10(V) ARTILLERY FIRE DIRECTION CENTER SHELTER



M12 PROTECTIVE ENTRANCE MOUNTED ON AN/TSQ-73 AIR DEFENSE COMMAND AND CONTROL SYSTEM SHELTER

Type *Classification:*

M10 protective
entrance . . . . . STD (LCC-A); MSR 05766018

M1 2 protective
entrance . . . . . STD (LCC-A); MSR 07786017

Use:

To provide a pressurized change area for personnel entering or leaving a vehicle-mounted shelter during chemical or biological attacks. The M10 protective entrance is used with the AN/GSG-10(V) TACFIRE S490 and S-492 shelters. The M12 protective entrance is used with the AN/SQ-73 shelter.

Description:

The protective entrance consists of top and bottom shells (which form a stowage box when the entrance is collapsed), a supporting frame with a door and butyl rubber-ted nylon-fabric walls, a protective entrance control module, a skirt, and an interface frame.

Difference Between Models:

See tabulated data.

Functioning:

The protective entrance serves as a vestibule for personnel to enter and leave the shelter without introducing airborne contamination into the pressurized personnel compartment. A gas-particulate filter unit filters and pressurizes the air supplied to the entrance. An installation kit provides airduct hoses, cables, and connectors for installation and interface of the fitter unit and protective entrance on the shelter.

Tabulated Data:

M10 protective entrance:
- NSN 4240-00-229-2610
- Line item number H10908

M12 protective entrance:
- NSN 4240-01-048-2923
- Line item number E11043

Unit of issue ..... Each
Basis of issue ..... TOE/MTOE
Weight ..... 145 lb
Dimensions collapsed ..... 49.30 x 43.30 x 12,50 in.
Dimensions erected:
- M10 ..... 49.30 x 43.30 x 85.40 in.
- M12 ..... 49.30 x 49.30 x 85.40 in.

Skirt lengths:
- M10 ..... 13 in.
- M12 ..... 8 in.

Performance:

Power requirements ..... 2 amp at 28 Vdc
Input voltage ..... 28 Vdc

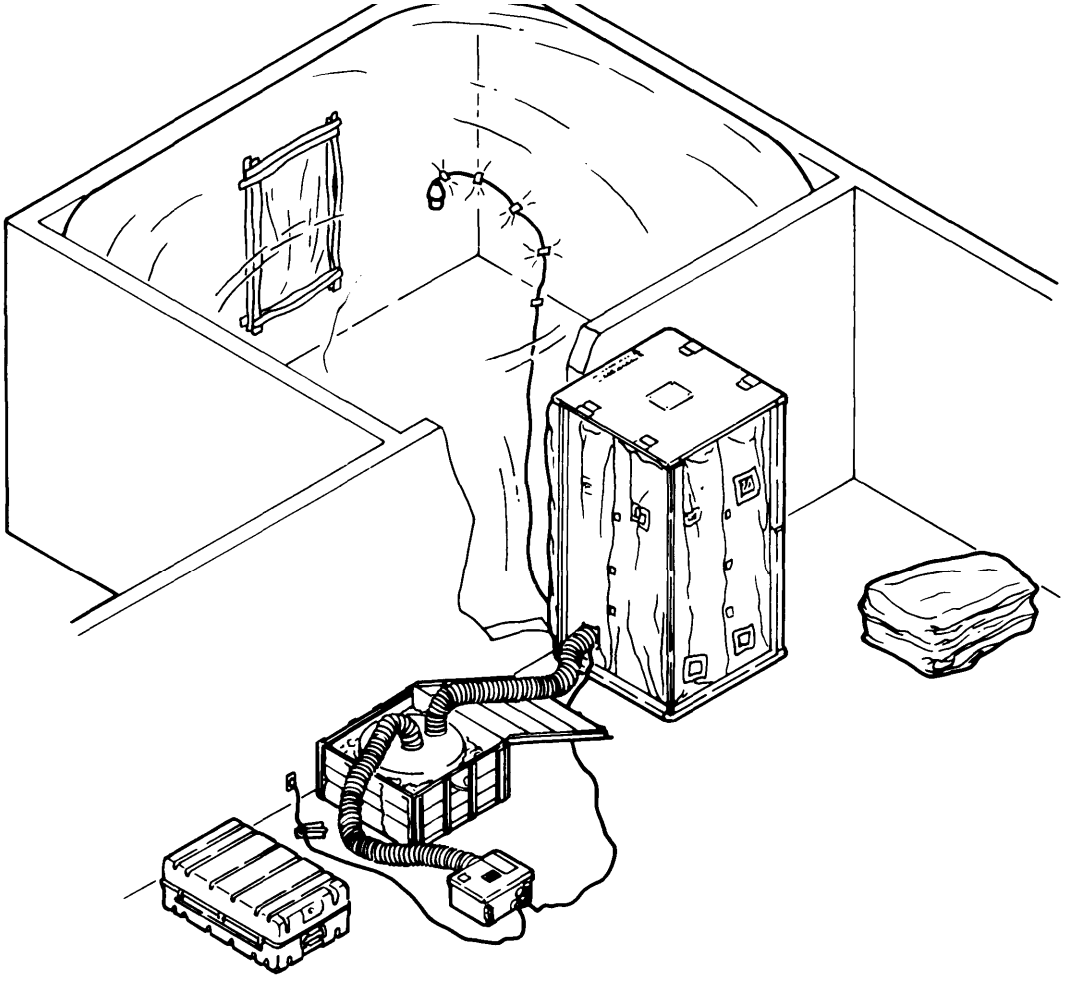
Shipping and Storage Data:

Type pack ..... One per wooden crate
Weight ..... 232 lb
cube ..... 22 cu ft
Type storage ..... Warehouse
Drawing numbers:
- M10 protective entrance 5-1 9-6201-40
- M12 protective entrance ..... 5-19-6201 -20

References:

TM 3-4240-284-20&P
TM 3-4240-284-30&P
TM 3-4240-286-20&P
TM 3-4240-286-30&P
TM 9-1430-651-12 (AN/TSQ-73)
TM 9-1430-652-10-3 (AN/TSQ-73)
TM 11-7440-240-10-1 (AN/GSG-10(V))
TM 11-7440-241-10-1 (AN/GSG-10(v))

M20 SIMPLIFIED NBC COLLECTIVE PROTECTION EQUIPMENT (SCPE)



Type Classification:
STD (LCC-A);MSR 08866013

Use:
The M20 Simplified Collective Protection Equipment provides a radioactive particle, chemical and/or biological, contaminant-free work and rest area for up to 10 personnel, eliminating the need to wear individual protective equipment.

Description:
The M20 Simplified Collective Protection Equipment consists of a protective entrance, filter canister, and a room liner package. The protective entrance consists of a free-standing collapsible aluminum frame, supporting self-closing rubber-coated fabric enclosure. The filter canister contains gas and particulate filters which remove chemical and biological agents and radioactive particles from input air. The room liners are made of plastic and attach to inside of protective entrance when inflated. A support kit contains all materials required to initiate and sustain operations of the SCPE. Included in the support kit are: plastic sheet, motor blower assembly, talking compound, talking gun, short air duct, protective adapter, power cable assembly, cable adapter, tape, extension light, support case, and long air duct.

Limitations:

The SCPE should be deployed in a structurally sound building. It must not be deployed outside, where it would be subjected to wind, rain, solar heat loading, or direct contact with liquid agents. The SCPE does not provide:

(1) Environmental control equipment (heating and cooling).

(2) A portable source of electrical power (electrical generator).

(3) NBC detection devices.

(4) Protection from liquid agents or nuclear radiation.

Tabulated Data:

NSN 4240-01-166-2254
Line item number C79000
Unit of issue . . . .EA
Basis of issue . . . . . TOE/MTOE/TDA

Dimensions and Weights:

Entrance
Packaged Dimensions:
Length . . . .42 in. (106.68 cm)
Width . . . . . 42 in. (106.68 cm)
Height: : : : . . . . . 6 in. (15.24 cm)
Weight . . . . . 118 lb(53.52 kg)
Erected Dimensions:
Length . . . .42 in. (106.68 cm)
Width . . . . . 42 in. (106.68 cm)
Height . . . .82 in.(208.28cm)
Weight . . . .118 lb(53.52 kg)
Support Kit:
Length . . . .38 in. (96.52 cm)
Width . . . . . 23 in. (58.42 cm)
Height . . . . . 14 in. (35.56 cm)
Weight . . . . . 102 lb(46.27 kg)

Room Liner Package:
Package
Length . . . .41in. (104.14 cm)
Width . . . . . 24 in.(60.96 cm)
Height . . . .22 in. (55.88 cm)
Weight . . . .90 lb (40.82 kg)
Deployed
Outer diameter . . . . . 16 ft(4.88m)
Height . . . .10 ft(3.05m)
Weight . . . . . .30 lb(13.61 kg)

Operating Power Requirements:

Simplified Collective Protection Equipment
Power requirement . . . .1500 watts at 120 Vac
Input voltages . . . . . 120V 50/60Hz or 240 V 50 HZ
Maximum capacity . . . . . 1500 watts
Airflow . . . . . 200 (cfm)
Blower
Power requirement . . . . . 13 amps at120Vac
Input voltages . . . . . 120 V 50/60Hz or 240 V 50Hz
Airflow . . . . . 200(cfm)
Extension Light
Power requirement . . . . . 100 watts
Input voltage . . . . . .110 Vac
Dome Light
Power requirement . . . . . 1 amp at 28 Vdc
Input voltage, ...110 Vac

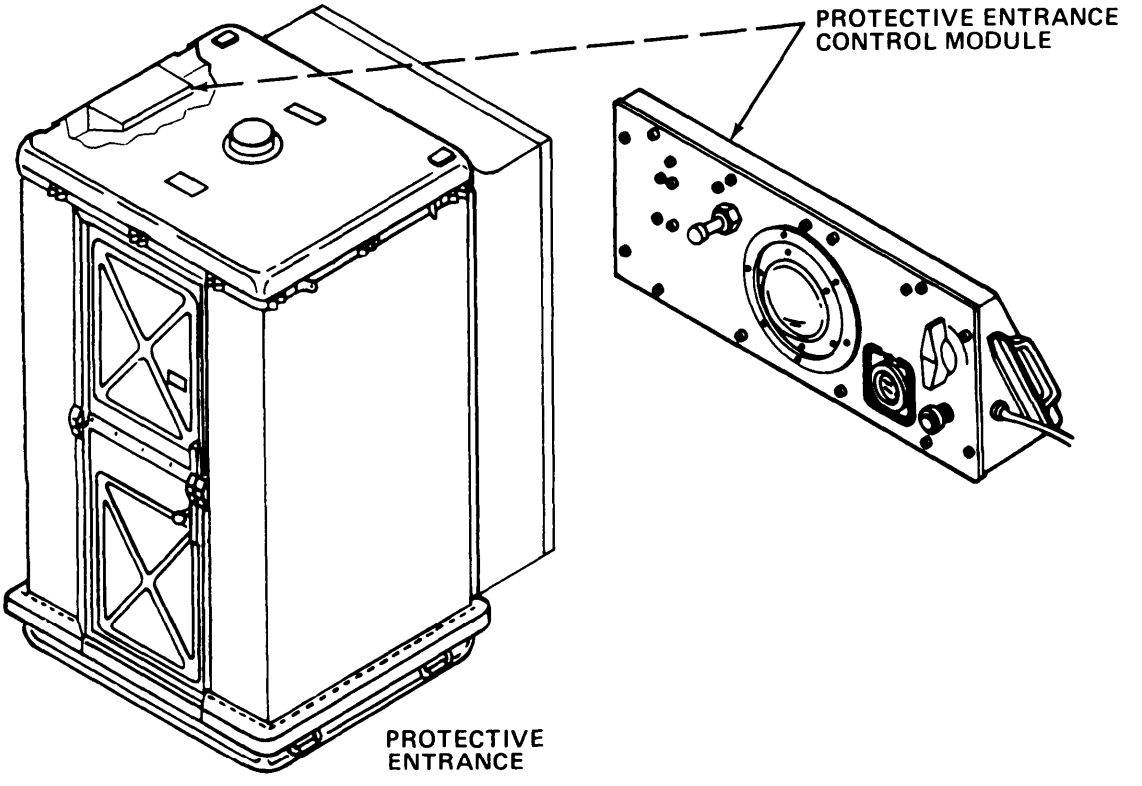
Shipping and Storage Data:

Type packing . . . . Special
Special packing number P5-19-8000
Type storage . . . . Warehouse

References:

TM 3-4240-288-12&P

ENTRANCE, PROTECTIVE, PRESSURIZED: COLLAPSIBLE, M13, M15, M16



Type Classification:

Not separately type classified.

Component of various other systems.

Use:

The protective entrance provides a pressurized transition area to allow individual decontamination and then entry or exit from afield shelter in a chemical or biological agent contaminated area.

Description:

The protective entrance consists of top and bottom shells, a door and frame assembly which supports the entrance front, two support assemblies which support the rear, an impermeable fabric wall assembly connecting the top and bottom shells, and a protective cap that covers the inlet air duct. A protective entrance control module provides purge timing, low pressure warning, and white or blackout red light for the protective entrance.

Functioning:

Filtered air and pressurization is provided by a gas-particulate filter unit through the air duct inlet. The protective entrance control module, operating on 28 Vdc power, contains a timer for measuring the purge period, low pressure warning indicator, and lighting.

Limitations:

Personnel entering the M15 and M16 protective entrance from the outside must wait five minutes before entering the shelter the M13 protective entrance requires a ten minute wait due to the larger total volume.

Tabulated Data:

NSN:

M13	4240-01-155-9971
M15	4240-01-165-6786
M16	4240-01-240-4367

Line item number ..... N/A
Unit of issue ..... Each
Basis of issue ..... TOE/MTOE
Weight ..... 145 lb
Dimensions (packaged) ..... 49.3 x 43.3 x 12.5 in.
Dimensions (erected) ..... 49.3 x 43.3 x 85.4 in.

Performance:

Control module

Power requirements ..... 2 A at 28 Vdc
Input voltage ..... *28* Vdc

Difference Between Models:

The main difference between the protective entrances is the size of the outlet plate and the length of the transition (fabric assembly between the entrance and shelter). The M 13 protective entrance contains an additional caution plate instructing performance of the purge cycle twice (ten minute purge period) before entering the shelter.

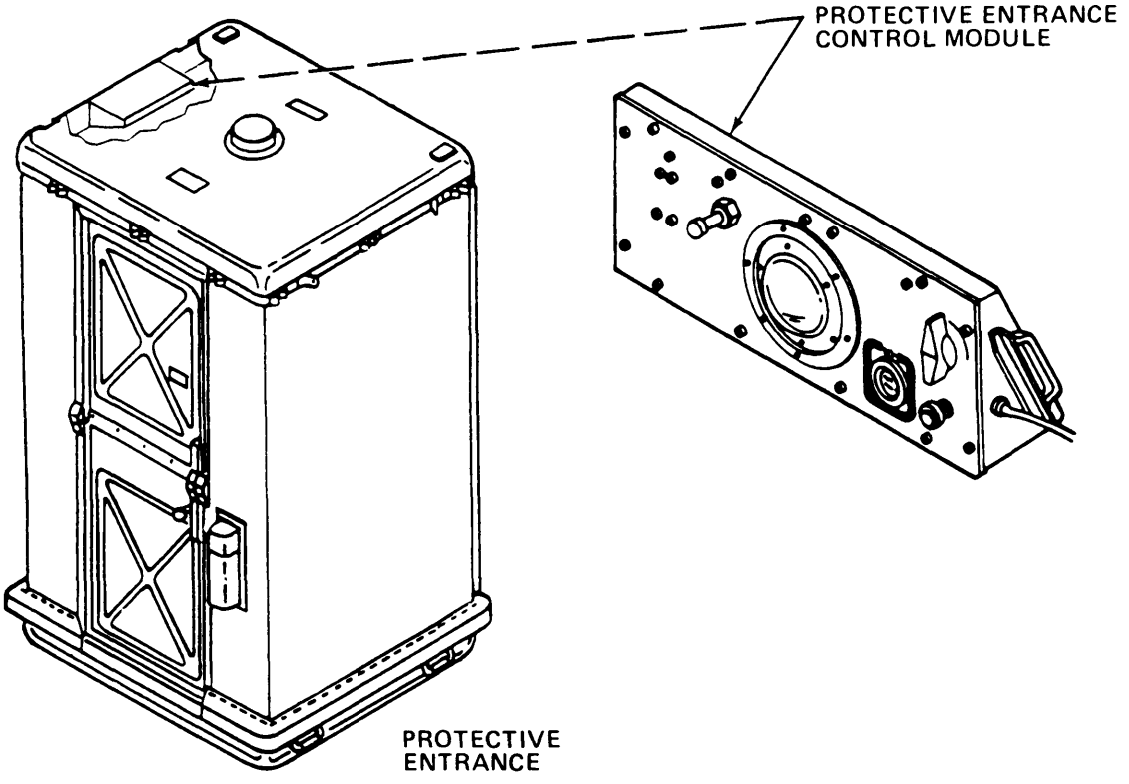
Shipping and Storage Data:

Not available.

References:

TM 3-4240-4318-20&P

ENTRANCE, PROTECTIVE, PRESSURIZED: COLLAPSIBLE, M14



Type Classification:

Not separately type classified,
Component of various other systems.

Use:

The protective entrance provides a pressurized transition area to allow individual decontamination and then entry to a field shelter in a chemical or biological agent contaminated area The M14 protective entrance is used with the l-HAWK and PATRIOT shelters.

Description:

The *protective* entrance consists of top and bottom shells, a door and frame assembly which supports the entrance front, two support assemblies which support the rear, impermeable fabric wall assembly connecting the top and bottom shells, and a protective cap that covers the inlet air duct. A protective entrance control module provides purge timing, low pressure warning, and white or blackout red light for the protective entrance.

Functioning:

Filtered air and pressurization is provided by a gas-particulate fitter unit through the air duct inlet. The protective entrance control module, operating on 28 Vdc power, contains a timer for measuring the purge period, low pressure warning indicator, and lighting.

Limitations:

Personnel entering the M14 protective entrance from the outside must wait five minutes before entering the shelter.

Tabulated Data:

NSN:

M14 entrance 4240-01-105-5521
Control module 4240-01-115-0996
Line item number . . . . . N/A
unit of issue . . . . . Each
Basis of issue . . . . . TOE/MTOE
Weight . . . . . 139 lb
Dimensions (packaged) . . . . . 49.3 x 43.3 x 12.5 in.
Dimensions (erected) . . . . . 49.3 x 43.3 x 85.4 in.

Performance:

Control module

Power requirements . . . . . 2 A at 28 Vdc
Input voltage . . . . . 28 Vdc

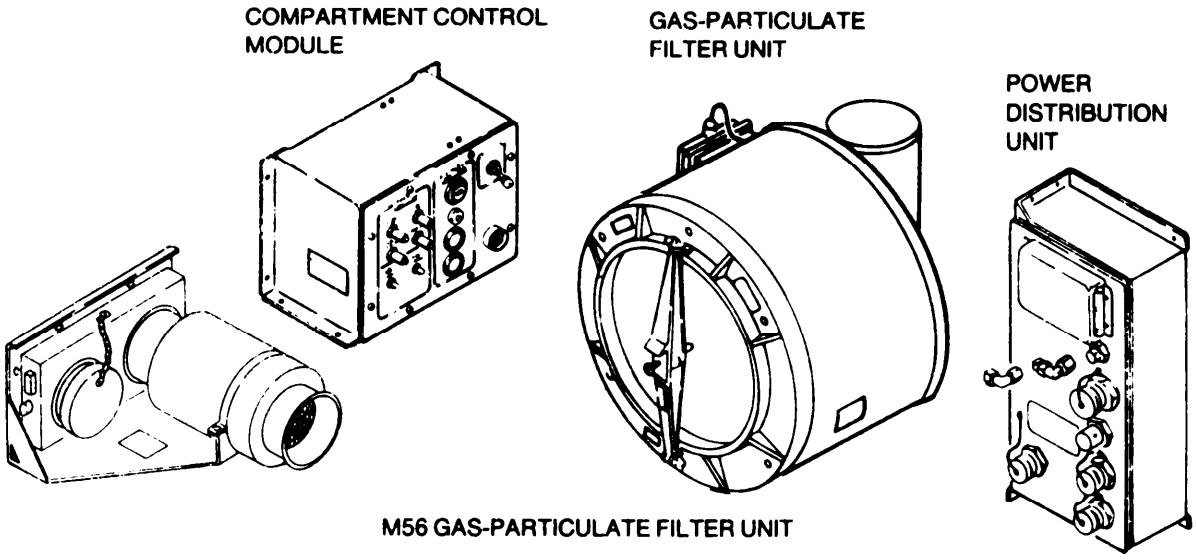
Shipping and Storage Data:

Weight . . . . . 295 lb
Dimensions . . . . . 53.6 x 46.8 x 18.0 in.
Cube . . . . . 26.091 cu ft
Drawing Number 5-9-6201-50

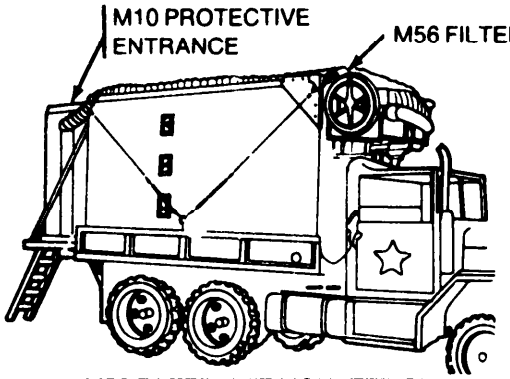
References:

TM 3-4240-302-30&P-4
TM 3-4240-323-20&P

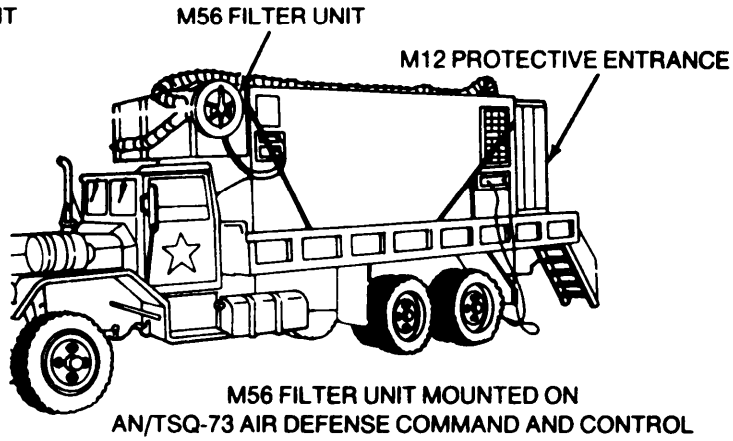
FILTER UNIT, GAS-PARTICULATE: 200 CFM, 208 V, 400 HZ, M56



M56 GAS-PARTICULATE FILTER UNIT



M56 FILTER UNIT MOUNTED ON AN/GSG-10(V) ARTILLERY FIRE DIRECTION CENTER SHELTER



M56 FILTER UNIT MOUNTED ON AN/TSQ-73 AIR DEFENSE COMMAND AND CONTROL SYSTEM SHELTER

Type Classification:

STG (LCC-A); MSR 05766018

Use:

To supply filtered air and maintain a positive pressure in a vehicle-mounted shelter and protective entrance during chemical or biological attacks. The M56 gas-particulate filter unit is used on the AN/GSG-10(V) TACFIRE S-490 and S-492 shelters and the AN/SQ-73 shelter.

Description:

The M56 gas-particulate filter unit consists of a gas-particulate filter set, a filter housing and fan assembly, an airflow valve, a power distribution unit, and a compartment control module.

Functioning:

The M56 gas-particulate filter unit removes chemical and biological agents and dust from the air it supplies to the protective entrance and shelter. The M56 filter unit generates internal positive pressure. This prevents toxic agents from infiltrating into personnel compartments, which are not airtight. Installation kits provide airduct hoses, cables, and connectors for installation and interface of the M56 filter unit and protective entrances on the shelters.

Tabulated Data:

NSN 4240-00-237-0277
Line item number H48904
Unit of issue . . . . . , ... Each
Basis of issue . . . . TOE/MTOE

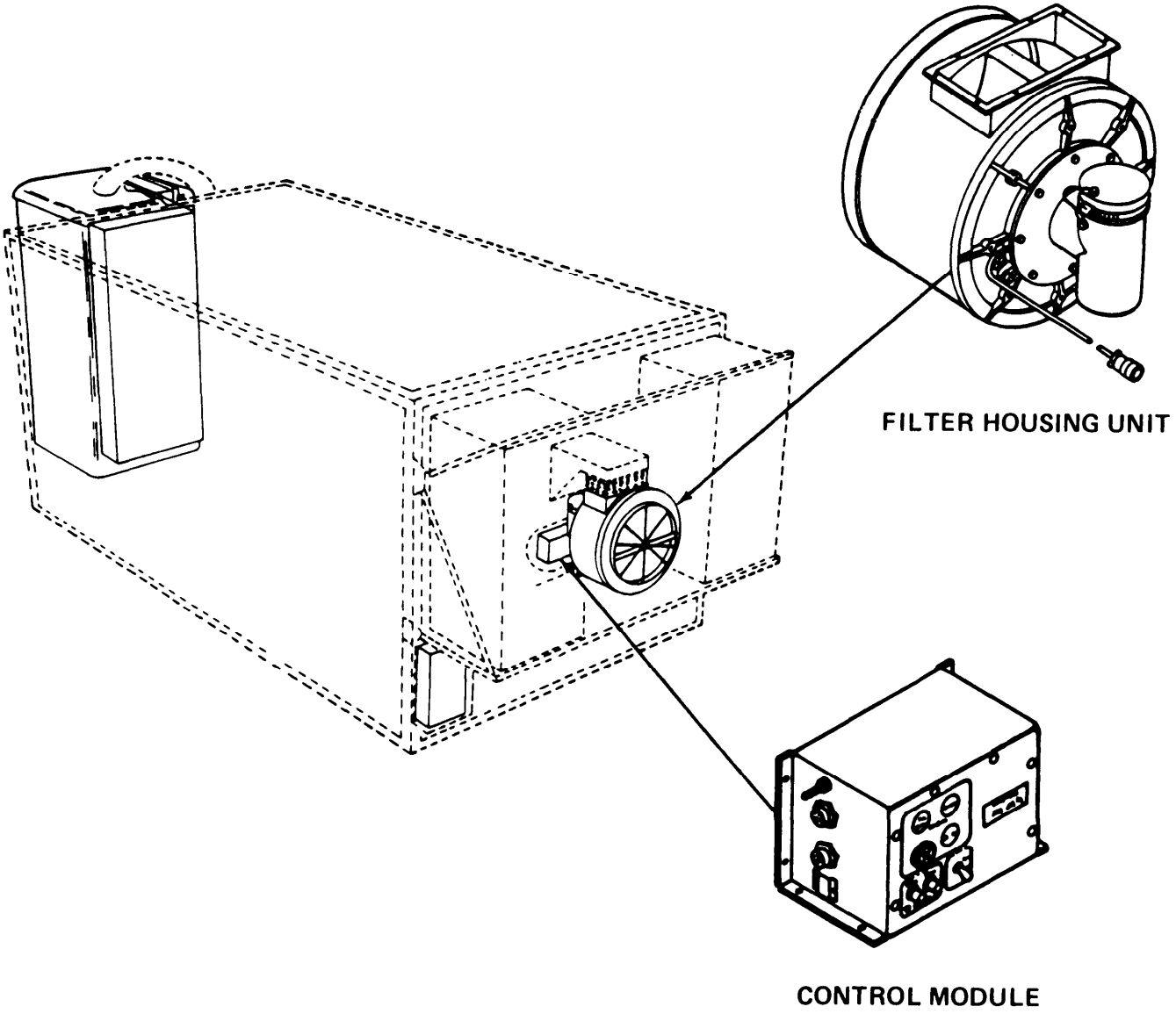
Filter unit:
Weight ..... 123 lb
Dimensions .....31 x 36 x 32 in.
Power distribution unit:
Weight .....16 lb
Dimensions ..... 18.50 x 8.25 x 4.25 in.
Compartment control module:
Weight .....9 lb
Dimensions .....7.70 x 11.75 x 6.50 in.

Performance:
Filter unit:
Power requirements .....800 Watts
Input voltage ..... 208 V, 400 Hz, 3-phase
AirFlow .....200 cfm maximum
Airflow valve:
Power requirements ..... 1 amp max at 28 Vdc
Airflow .....40 cfm min at 20 in. water gage
Power distribution unit:
Input voltage .....208 V, 400 Hz, 3-phase
Maximum capacity .....3.5 kW
Compartment control module:
Power requirements ..... 1 amp max at 28 Vdc

Shipping and Storage Data:
Type pack ..... 1 per wooden box
Weight . ... 214 lb
Cube.....23 cu ft
Type storage.....Warehouse
Drawing number.....5-19-6402

References:
TM 3-4240-284-20&P
TM 3-4240-284-30&P
TM 3-4240-286-20&P
TM 3-4240-286-30&P
TM 3-4240-322-20&P
TM 9-1430-651-12 (AN/TSQ-73)
TM 9-1430-652-10-3 (AN/TSQ-73)
TM 11-7440-240-10-1 (AN/GSG-10(v))
TM 11-7440-241 -10-1 (AN/GSG-10(V))

FILTER UNIT, GAS-PARTICULATE, 200 CFM, 208 V, M84



Type Classification:

Not separately type classified,
Component of various other systems.

Use:

Provides filtered air under positive pressure to field shelters allowing operation in a chemical-biological agent contaminated area

Description:

The M84 gas-particulate filter unit (GPFU) system includes the filter housing unit and compartment control module. Inner and outer access covers on the fitter unit housing permit changing of fitters.

Functioning:

The M84 GPFU removes toxic gases and dust from the air supplied to the vehicle, van, or shelter (with or without protective entrance). The main fan draws outside air through the inlet tee and forces it through the fitter unit to the enclosure. The continuous input of filtered air creates a positive pressure system that permits crew members to perform normal functions in the protected enclosure without protective masks and clothing. Pressure sensing components in the compartment control module provide a low pressure warning.

Tabulated Data:

NSN 4240-01-149-1719
Line item number ..... N/A
Unit of issue ..... Each
Basis of issue ..... TOE/MTOE
Weight:
- M84 GPFU ..... 256 lb
- Compartment control module ..... 16 lb

Dimensions:
- M84 GPFU ..... 31 x 36 x 32 in.
- Compartment control module ..... 7.70 x 11.75 x 8.25 in.

Performance:

Power requirements:
- M84 GPFU 1100W
- Compartment control module 1A max at 28 Vdc

Input voltage:
- M84 GPFU ..... 208 V, 400 Hz, 3-phase
- Compartment control module ..... 208 V, 400 Hz, 3-phase, max capacity 3.5 kW

Airflow:
- M84 GPFU 200 cfm rated (actual may be higher)
- Particulate filter ..... 200 cfm
- Gas fitter ..... 200 cfm

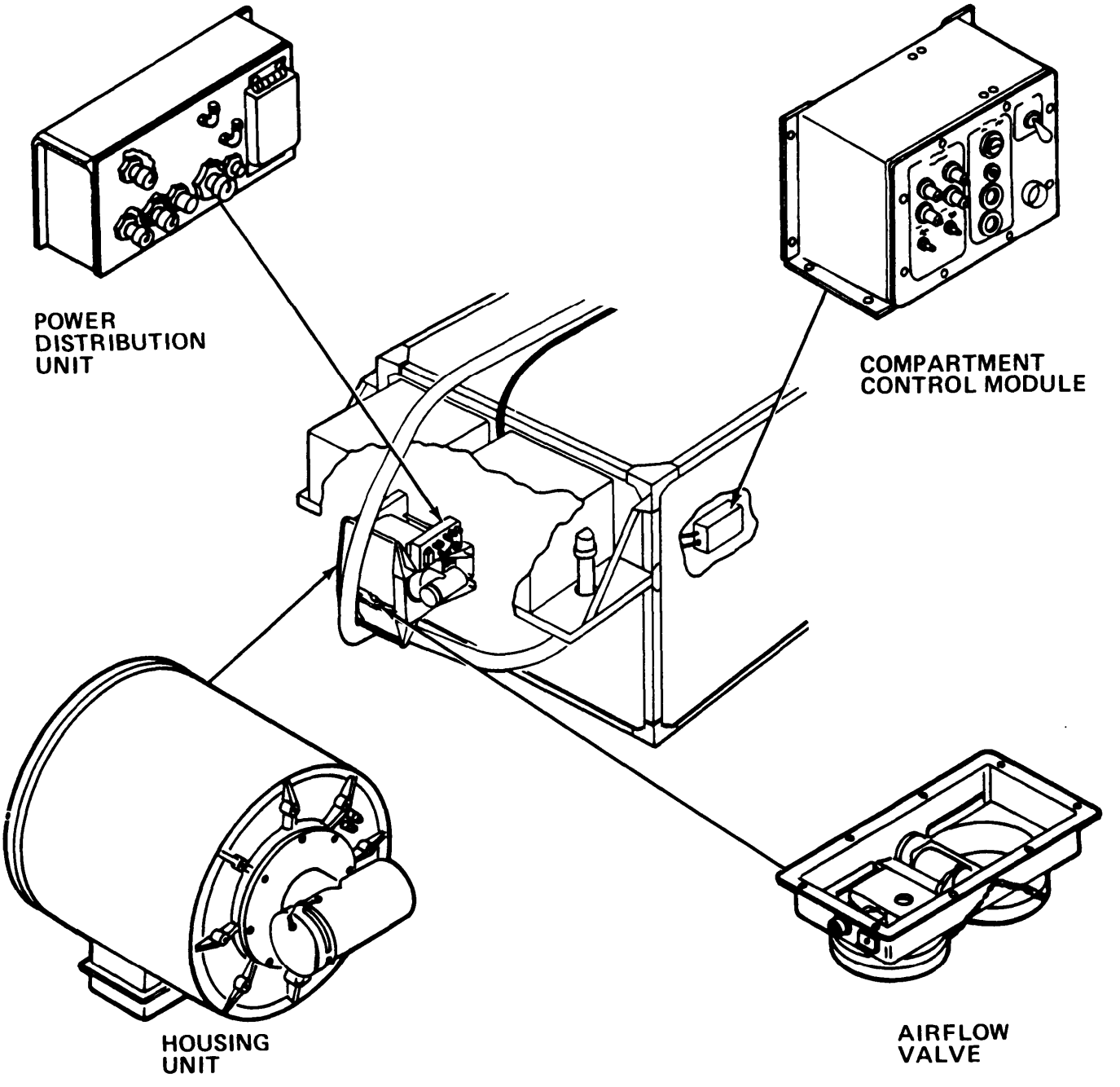
Shipping and Storage Data:

Weight ..... 19.0 lb
Dimensions ..... 17.7 x 12.9 x 13.0 in.
Cube ..... 1.718 cu ft
Specification MIL-F-51544
Drawing 5-9-6830

References:

TM 3-4240-302-30&P-2
TM 3-4240-333-20&P

FILTER UNIT, GAS-PARTICULATE, 400 CFM, 208 V, 400 Hz, M59



Type Classification:

Not separately type classified.

Component of various other systems.

Use:

Provides filtered air under positive pressure to field shelters allowing operation in a chernical-biological agent contaminated area

Description:

The M59 gas-particulate fitter unit (GPFU) system includes the filter housing unit, airflow valve, power distribution unit, and compartment control module. Inner and outer access covers on the filter unit housing permit changing of fitters.

Functioning:

The M59 GPFU removes toxic gases and dust from the air supplied to the vehicle, van, or shelter (with or without protective entrance). The main fan draws outside air through the air inlet and forces it into the fitter unit. The fan forces air from the filter unit to the airflow valve. The airflow valve directs filtered air to the protected enclosure. Pressure sensing components in the compartment control module automatically adjust the airflow valve to maintain a positive pressure within the vehicle, van, or shelter.

Tabulated Data:

NSN 4240-00-237-0223
Line item number ..... N/A
Unit of issue ..... Each
Basis of issue ..... TOE/MTOE
Weight:
- M59 GPFU ..... 256 lb
- Power distribution unit ..... 16 lb
- Compartment control module ..... 9 lb

Dimensions:
- M59 GPFU ..... 34 X 36 X 32 in.
- Power distribution unit ..... 18.50 x 8.25 x 4.25 in.
- Compartment control module ..... 7.70 x 11.75 x 6.50 in.

Performance:

Power requirements:
- M59 GPFU 1700W
- Airflow valve ..... 1A max at 28 Vdc
- Compartment control module ..... 1 A max at 28 Vdc

Input voltage:
- M59 GPFU ..... 208 V, 400 Hz, 3-phase
- Power distribution unit ..... 208 V. 400 Hz 3-phase, max capacity 3.5 kW
- Airflow valve ..... 28 Vdc
- Compartment control module ..... 28 Vdc

Airflow:
- M59 GPFU ..... 400 cfm max
- Airflow valve ..... 40 cfm min at 20.0 in. wg.
- Particulate filter ..... 400 cfm (200 cfm each)
- Gas filter ..... 400 cfm (200 cfm each)

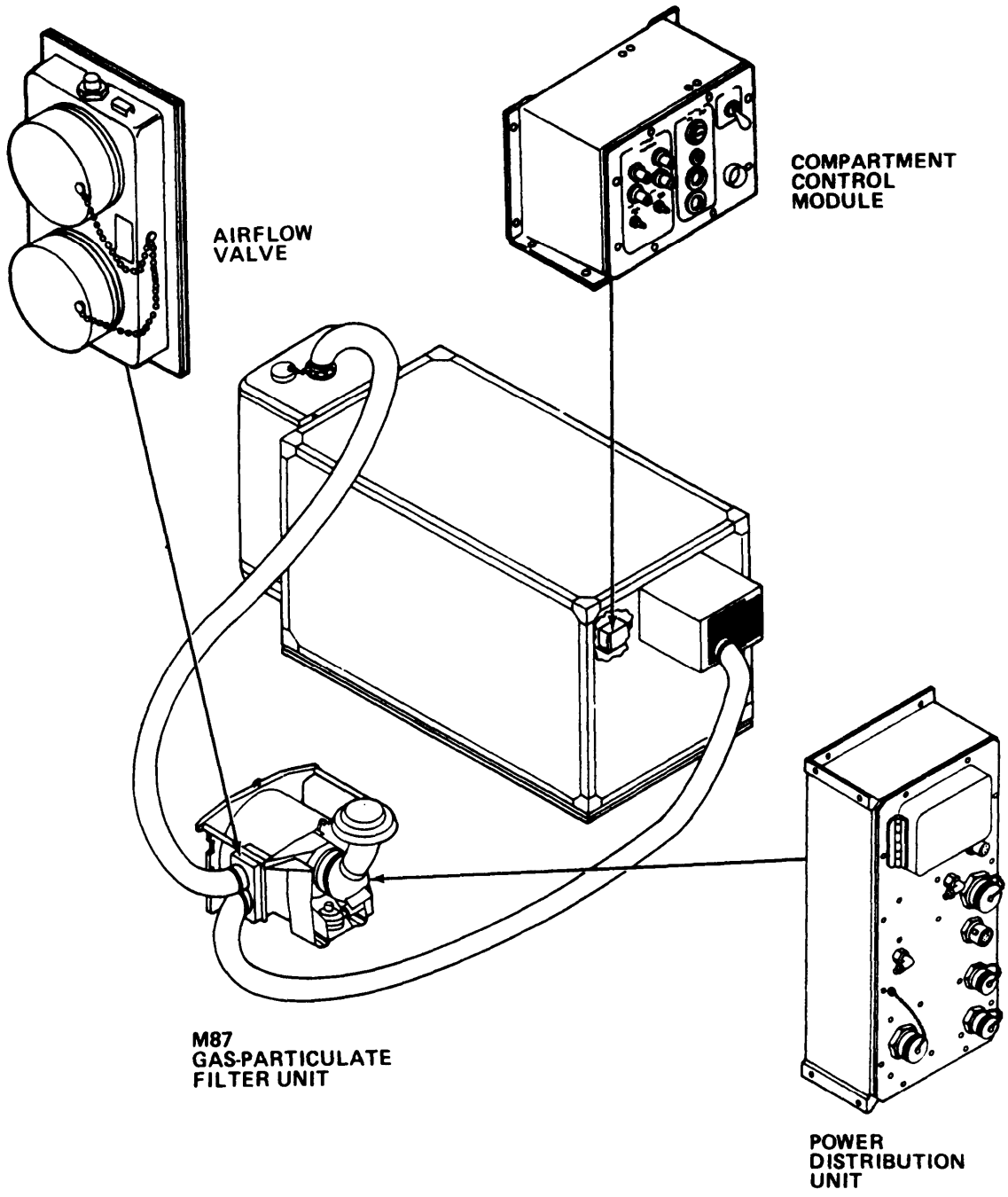
Shipping and Storage Data:

Instructions for administrative storage are provided in TM 3-4240-324-20&P.

References:

TM 3-4240-324-20&P
TM 3-4240-302-30&P-1
TM 3-4240-302-30&P-5
TM 3-4240-302-30&P-6

FILTER UNIT, GAS-PARTICULATE, 400 CFM, 208 V, 400 Hz, M87



Type Classification:

Not separately type Classified.

Component of various other systems.

Use:

Provides filtered air under positive pressure to field shelters allowing operation in a chemical-biological agent contaminated area

Description:

The M87 gas-particulate fitter unit (GPFU) system includes the filter housing unit, airflow valve, *power* distribution- unit and compartment control module. Inner and outer access covers on the fitter unit housing permit changing of filters.

Functioning:

The M87 GPFU removes toxic gases and dust from the air supplied to the vehicle, van, or shelter (with or without protective entrance). The main fan draws outside air through the air inlet and dust collector and forces air into the filter unit and airflow valve. The airflow valve directs filtered air to the protected enclosure. Pressure sensing components in the compartment control module auto matically adjust the airflow valve to maintain a positive pressure within the vehicle, van, or shelter.

Tabulated Data:

NSN 4240-01-192-7234
Line item number ..... N/A
Unit of issue ..... Each
Basis of issue ..... TOE/MTOE
Weight:
- M87 GPFU ..... 256 lb
- Power distribution unit ..... 16 lb
- Compartment control module ..... 9 lb

Dimensions:
- M87 GPFU ..... 34 x 36 x 32 in.
- Power distribution unit ..... 18.50 x 8.25 x 4.25 in.
- Compartment control module ..... 7.70 x 11.75 x 6.50 in.

Performance:

Power requirements:
- M87 GPFU ..... 1600 W
- Power distribution unit ..... 208 V. 400 Hz, 3-phase
- Airflow valve ..... 1A max at 28 Vdc
- Compartment control module ..... 1 A max at 28 Vdc

Input voltage:
- M87 GPFU ..... 208 V. 400 Hz, 3-phase
- Power distribution unit ..... 208 V. 400 Hz, 3-phase, max capacity 3.5 kW
- Airflow valve ..... 28 Vdc
- Compartment control module ..... 28 Vdc

Airflow
- M87 GPFU ..... 400 cfm max
- Airflow valve ..... 40 cfm min at 20.0 in. wg
- Particulate filter ..... 200 cfm each
- Gas fitter ..... 200 cfm each

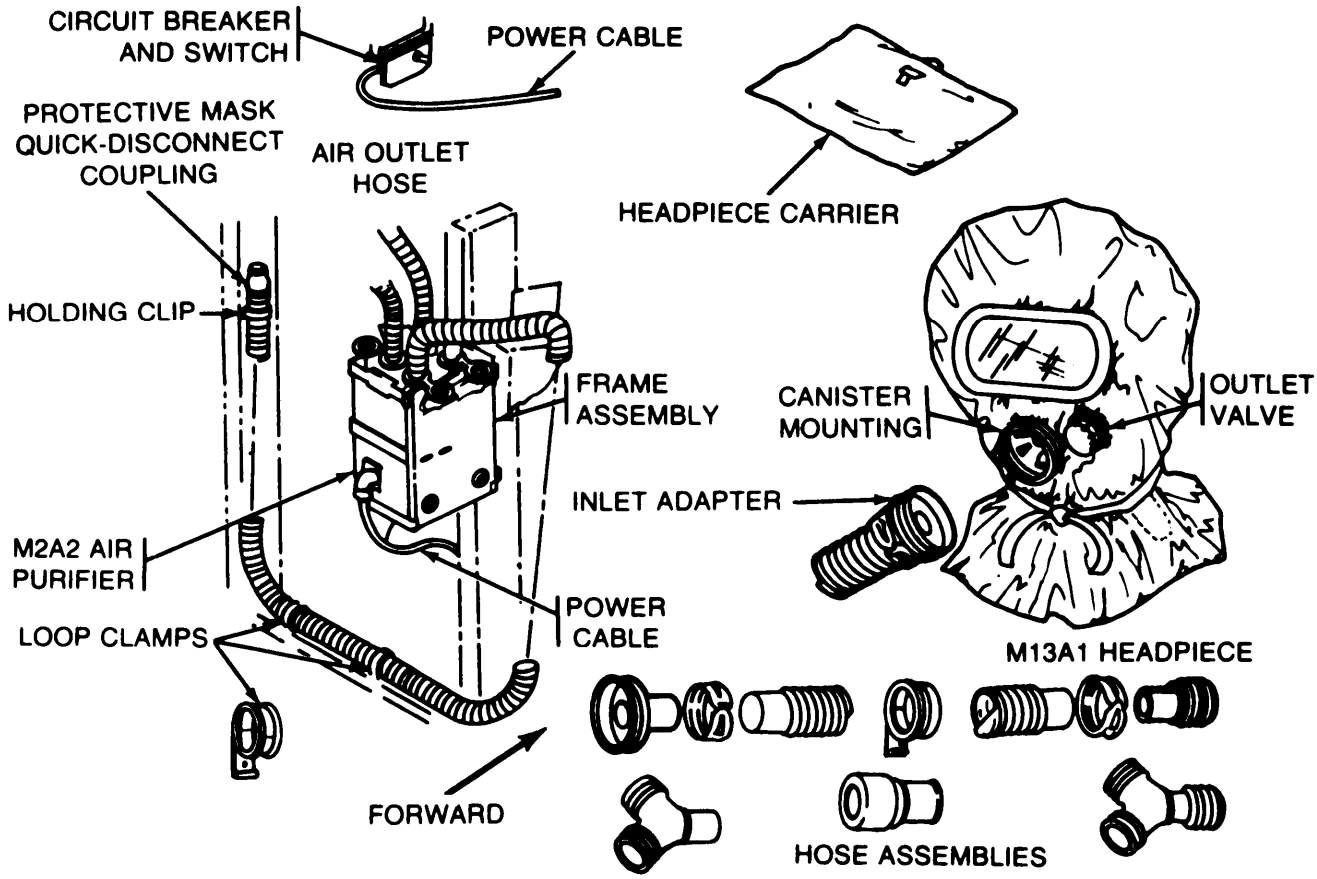
Shipping and Storage Data

Not available.

References:

TM 3-4240-317-20&P
TM 3-4240-302-30&P-1
TM 3-4240-302-30&P-5
TM 3-4240-302-30&P-6

FILTER UNIT, GAS-PARTICULATE: ARMORED AMBUIANCE, SIX-MAN, 12 CFM, M14



Type Classification:

STD (LCC-A); AMCTC 252064

Use:

To remove toxic chemical and biological agents from contaminated air and supply purified air to six or fewer occupants of an armored ambulance.

Description:

The M14 12 CFM six-man armored ambulance gas-particulate filter unit consists of an M2A2 air purifier, a circuit breaker and switch, airhose assemblies, six M13A1 hospital collective protector headpieces with carriers, and installation hardware.

Functioning:

The M14 filter unit is installed in an M113A1 APC, which has been converted to an armored ambulance with a litter kit. The M2A2 air purifier separates dust and the filters remove contaminants from the air. The purified air is forced through the hoses to the M13A1 headpieces and to the M25A1 mask of the ambulance driver. The positive pressure also aids breathing and reduces leakage of contaminated air around the edges of the headpieces and mask facepiece.

Limitations:

The filter unit does not protect against carbon monoxide gas.

Tabulated Data:

NSN 4240-00-010-5267
Line item number H48896
Unit of issue . . . . Each
Basis of issue . . . . MTOE
Air purifier:
Weight . . . . . 20 lb
Dimensions . . . .13 x 7.5 x 6 in.

Performance:

Electrical characteristics (air purifier):
Vac (60 Hz) . . . .27.5 volts
Vdc . . . .24 volts
Current . . . . 3 amperes
Airflow capacity . . . . 12 cfm

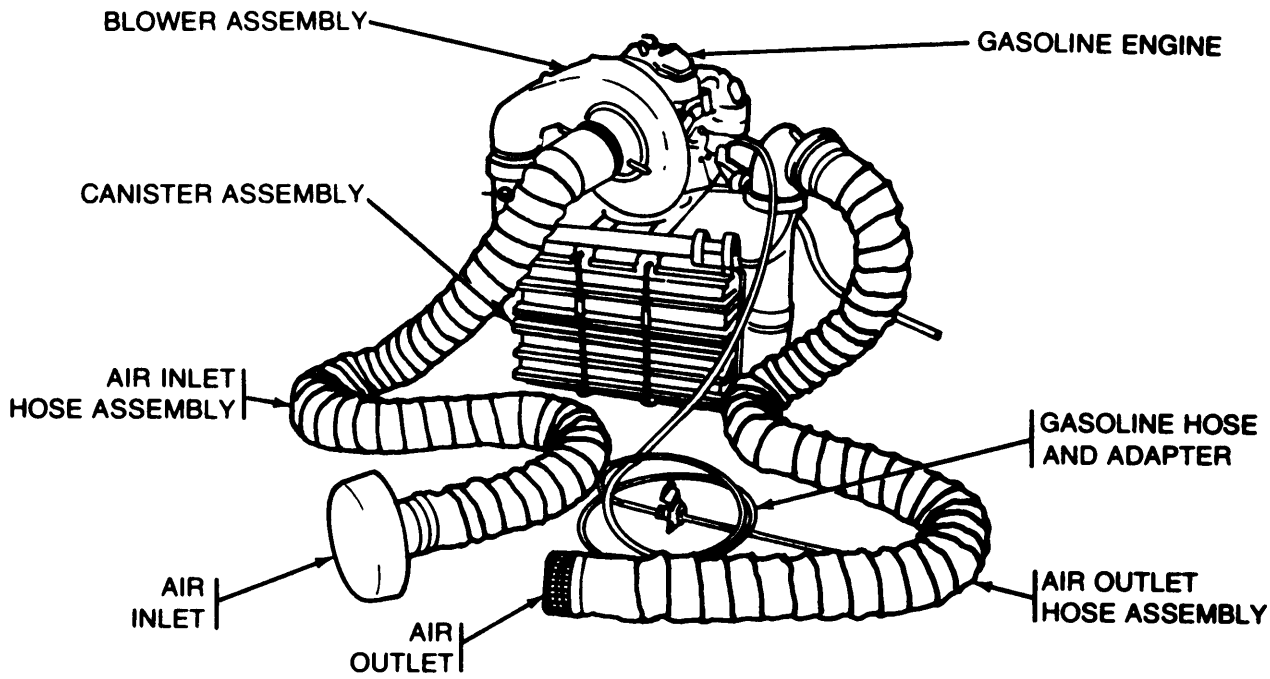
Shipplng and Storage Data:

Type pack . . . . . 1per fiberboard box
Weight . . . . . 53 lb
Cube . . . . . 2 cu ft
Type storage . . . . Warehouse
Drawing number . . . . LM 5-19-1828

References:

TB 43-0002-71
TM 3-4240-276-30&P
TM 3-4240-282-L
TM 9-2300-257-10
TM 9-2300-257-20
TM 750-154

FILTER UNIT, GAS-PARTICULATE: GAS ENGINE DRIVEN, 300 CFM, ABC-M6A1



Type Classification:

ABC-M6A1 : STD (LCC-A); AMCTC 164564

Use:

To supply filtered air to maintain a toxic-free pressurized atmosphere in a protective shelter for about 50 people.

Description:

The ABC-M6A1 300 CFM gas engine driven gas-particulate filter unit consists of a 300 CFM blower, a canister assembly containing two 150 CFM Ml O gas filters and two 150 CFM M9A1 particulate fitters, an air inlet hose assembly, an air outlet hose assembly, and a 1 1/2-horsepower gasoline engine.

Differences Between Models:

The 1 1/2-horsepower gasoline engine is issued in two versions. One has an integral gasoline tank. The other has an adapter for using a standard military 5-gallon gasoline can in lieu of a gasoline tank.

Functioning:

The ABC-M6A1 fitter unit can be operated either inside or outside a protective shelter.

a. *Inside Operation.* Contaminated air passes directly from the air inlet through the canister air inlet into the canister assembly. Purified air leaving the canister assembly passes through the canister air outlet into the blower air inlet. The blower forces purified air through the blower air outlet directly or through the air outlet hose assembly into the protective shelter.

b. *Outside Operafion. contaminated air passes* directly from the air inlet into the Mower air inlet. The blower forces the contaminated air through the blower air outlet and the canister air inlet into the canister assembly. Purified air leaving the canister assembly group passes through the canister air outlet and air outlet hose assembly into the protective shelter.

Tabulated Data:

NSN	4240-00-889-2316
Line item number	H49733
Unit of issue	Each
Basis of issue	MTOE/TDA: AR 310-34
Weight	325 lb
Length	36 in.
Width	31 in.
Height	37 in.
Floor space required	7.7 Sq ft

Performance:

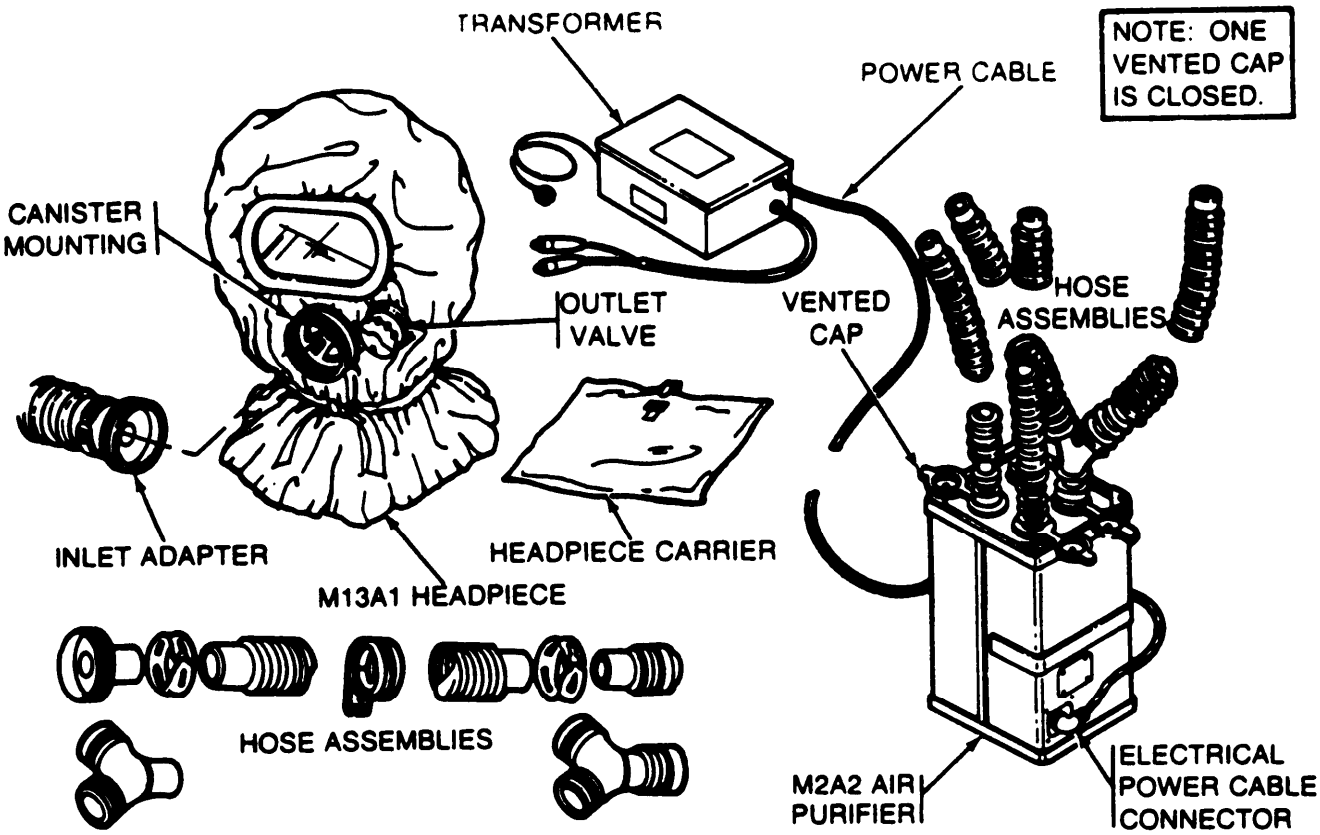
Rated output of the airblower	300 cfm
Gasoline engine classifications and ratings:	
Horsepower	1 1/2 rpm 3600rpm

Type . . . . . Single-cylinder, overhead air cooled, 4-cycle
Rated speed . . . .3600 rpm
starting . . . . . Manual; rope on starting
Spark plug gap . . . . 0.025 in.
Fuel consumption 1/2pt/hr
Rotation . . . . Power shaft end (counterclockwise)

Shipping and Storage Data:
Type pack . . . . . 1per wooden crate
Weight . . . . . 548 lb
cube . . . .37.1 cu ft
Type storage . . . . . Warehouse
Drawing number 5-19-18001

References:
TM 3-221
TM 3-4240-203
TM 3-4240-241-12
TM 3-4240-241-20P
TM 3-4240-241-35
TM 3-4240-241-35P

FILTER UNIT, GAS-PARTICULATE: HOSPITAL, SIX-MAN, 12 CFM, ABC-M7A1



Type Classification:
STD (LCC-A); CCTC 302755

Use:
To remove toxic chemical and biological agents from contaminated air and supply purified air to six or fewer bedridden hospital patients.

Description:
The ABC-M7A1 12 CFM, six-man hospital, gas-particulate filter unit consists of an M2A2 air purifier, a transformer unit, airhose assemblies, and six M13A1 hospital collective protector headpieces with carriers.

Functioning:
The centrifugal fan in the M2A2 air purifier draws air in and blows it through the air precleaned and gas and particulate filters. The air precleaned separates dust and the filters remove contaminants from the air, The purified air passes through the hoses to the M13A1 headpieces and to the M25A1 mask of the ambulance driver. The positive pressure also aids breathing and reduces leakage of contaminated air around the periphery of the headpieces and mask when worn.

Limitations:
The filter unit does not protect against carbon monoxide gas.

Tabulated Data:

NSN	4240-00-203-3999
Line item number	H50418
Unit of issue	Each
Basis of issue	AR 310-34; TOE/MTOE/TDA
Air purifier:	
Weight	20 lb
Dimensions	13.30 x 7.50 x 6.00 in.

Performance:

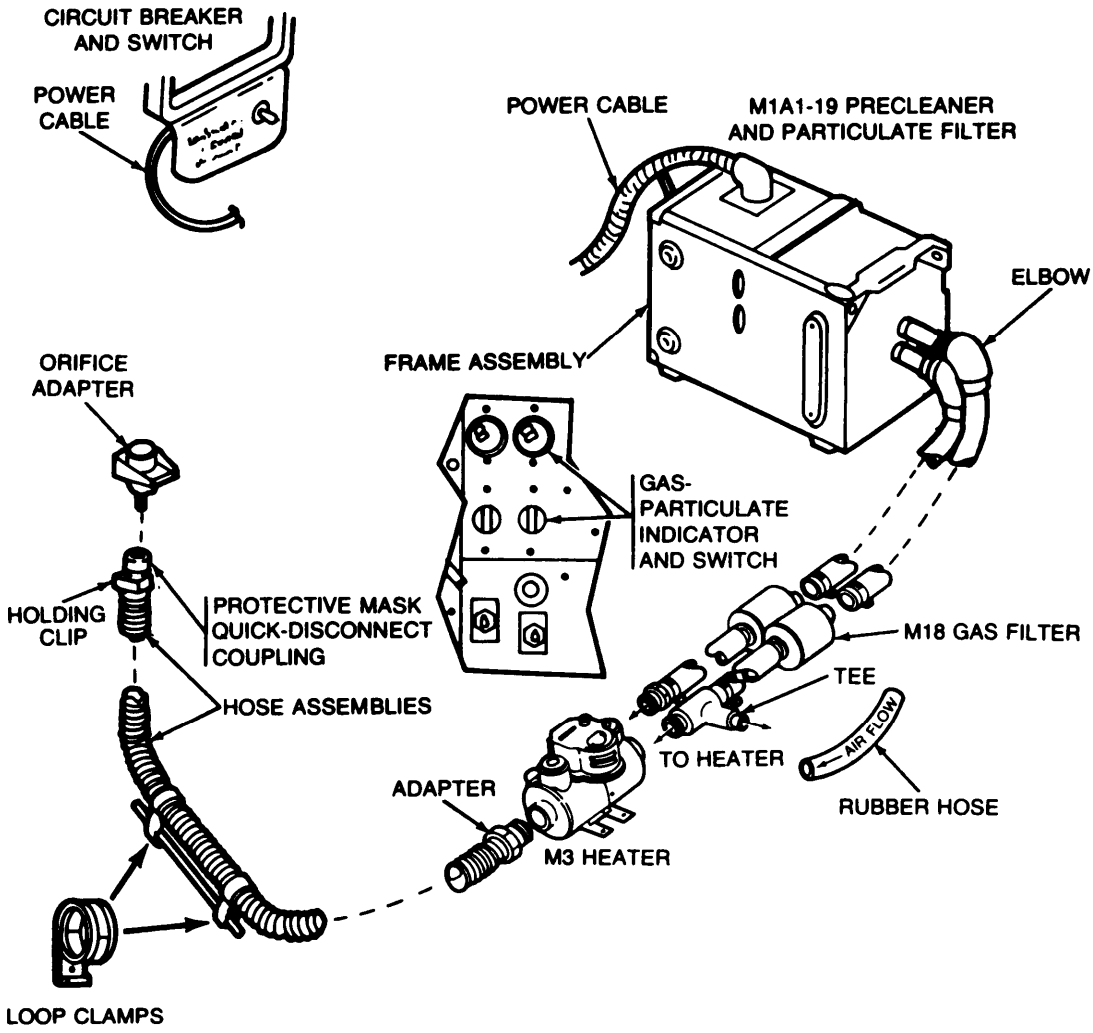
External electrical power sources	24 Vdc or 115 Vac (60 Hz)

Air purifier:
- Vac (60 Hz) . . . .27.5 volts
- Vdc . . . .24 volts
- current . . . . . .3 amperes
- Airflow capacity . . . .12 cfm
- Delivery to each headpiece . . . .1.75 to 2.3 cfm
- Maximum personnel (protected) . . . . . Six patients

Shipping and Storage Data:
- Type pack . . . . . 1per wooden box
- Weight . . . . . 138 lb
- Cube . . . . . .5.5 cu ft
- Type storage . . . .Warehouse
- Drawing number 5-66-273

References:
- TB 34-9-153
- TM 3-4240-201-13;-20P;-35P
- TM 3-4240-276-30&P
- TM 3-4240-282-L
- TM 750-154

FILTER UNIT, GAS-PARTICULATE: TANK, 20 CFM, M13 AND M13A1



Type Classification:

M13A1: STD (LCC-A); CCTC 411663
M13: STD (LCC-B); CCTC 411663

Use:

To remove toxic chemical and biological agents from contaminated air and supply purified air through the M25 and M25A1 tank masks of the crew members of armored vehicles.

Description:

The M13A1 20 CFM tank gas-particulate filter unit consists of an M1A1-19 precleaner and particulate filter assembly, two M1810 CFM gas fitter's, a circuit breaker and switch, four M3 electric air heaters, rubber air hoses and hose assemblies, and installation hardware such as a frame assembly, cables, loop damps, ratchet damp, holding dips, elbows, and tees.

Differences Between Models:

The M13 and M13A1 filter units are identical except for minor differences in installation hardware. The installation hardware for the M 13 filter unit is issued in an M29 installation kit. The installation hardware for the M13A1 filter unit is issued in an M29A1 installation kit. M13 filter units are installed solely on M60 combat tanks. Components of the M13A1 filter units are installed on numerous other combat vehicles such as M60-series tanks, Ml tanks, and the M728 combat engineer vehicle. The configuration of the M3 heater varies with the manufacturer, but its functions are the same.

Functioning:

The electric-motor driven, Mower fan in the M1A1 precleaner housing draws air in and blows in through the precleaner and the M19 particulate filter. The precleaner separates dust and the filter removes small particlse of contaminants from the air. The filtered air is then blown through the M18 gas fitters, which filter toxic chemical agent vapors from the contaminated air The purified air passes through the hoses to the M3 heaters where the air is warmed as required by the crew member. Pressurized purified air is provided to the mask. The positive pressure also aids breathing and reduces leakage around the edges of the mask facepiece when worn.

Limitations:

The filter unit does not protect against carbon monoxide gas. The filters must be changed in accordance with criteria established in the operator's and organizational maintenance manual for the vehicle.

Tabulated Data:

NSN:
- M13A1 4240-00-964-9061
- M13 4240-00-601-8372

Line item number H50555
Unit of issue . . . . Each
Basis of issue . . . . . AR 310-34: MTOE/TDA
M1A1 -19 precleaned and particulate fitter:
- Weight . . . . . 15.75 lb
- Dimensions,. . . . . ..13 x 7.5x 6 in,

Performance:

M1A-19 precleaned and particulate filter:
- Vac (60 Hz) . . … ……. . . . . 27.5 Volts
- Vdc . . . . 24 Volts
- Current . . . . . 3 amperes

Airflow capacity
- M3 heater . . . . . 20 cfm

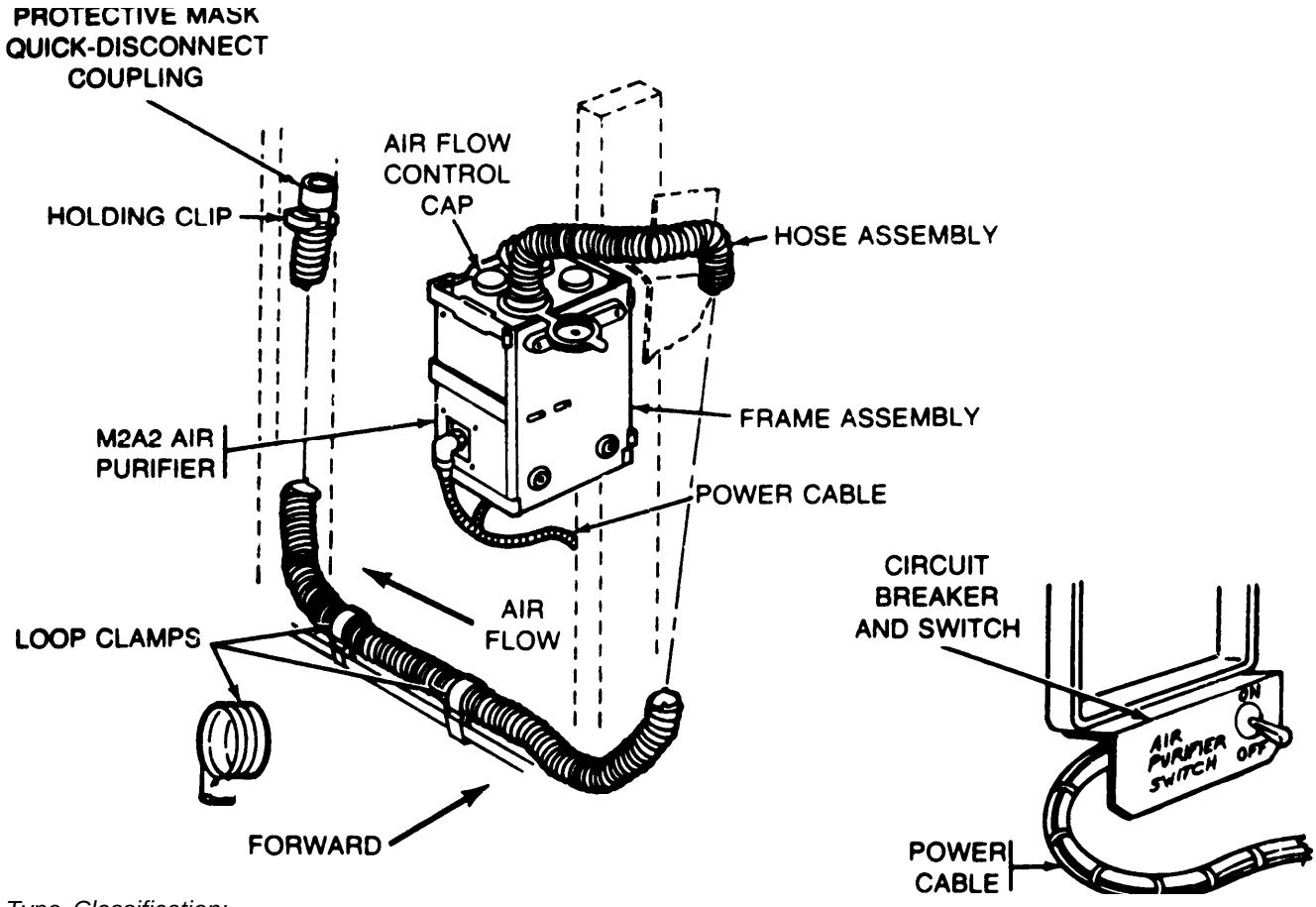
Shipping and Storage Data:

Type pack . . . . . 1 per fiberboard box
Weight . . . . 70 lb
cube . . . . . 2.7 cu ft
Type storage . . . . Warehouse
Drawing number:
- M13A1 . .. . LM 5-19-3051
- M13 . . . . LM 5-19-1790

References:

TM 3-4240-276-30&P
TM 3-4240-282-L
TM 750-155

FILTER UNIT, GAS-PARTICULATE: TANK, 12 CFM, M8A2 AND M8A3



Type Classification:

M8A3: STD (LCC-A); CCTC 393261
MBA2: STD (LCC-B); CGTC 393261

Use:

To remove toxic chemical and biological agents from contaminated air and supply purified air through the M25 or M25A1 tank masks of the crew members of armored vehicles.

Description:

The M8A3 12 CFM tank gas-particulate filter unit consists of an M2A2 air purifier, a circuit breaker and switch, four air hose assemblies with quick-disconnect couplings a frame assembly and a spring clip for the air purifier, a power cable, loop clamps and holding clips for the hose, and common hardware.

Difference Between Models:

The M8A2 filter unit uses an M2A1air purifier and has three quick disconnect sockets for attaching airhose assembies. The M8A3 filter unituses an M2A2 air purifier which has far quick-disconnect sockets.

Functioning:

The electric-motor driven, blower fan in the air purifier draws air in and btows it through the precleaner, the M13 particulate fitter, and the M12A1 gas-filter inside the purifier housing. The precleaner separates dust and the filters remove contaminants from the air. when the Ml canister coupling on the M10A1 canister of the M25 or M25A1 tank mask is inserted in the quick-disconnect Coupilng on the hose assmbly, purified air is provided to the mask. The positive presure also aid breathing and reduces leakage around the edges of the mask facepiece when worn.

Limitations:

The filter unit does not protect against carbon monoxide gas. The filters must be changed in accordance with the criteria in the operator's and organuational maintenance manual for the vehicle.

Tabulated Data:

NSN:
M8A3 4240-00-853-3201
M8A2 4240-00-691-1505

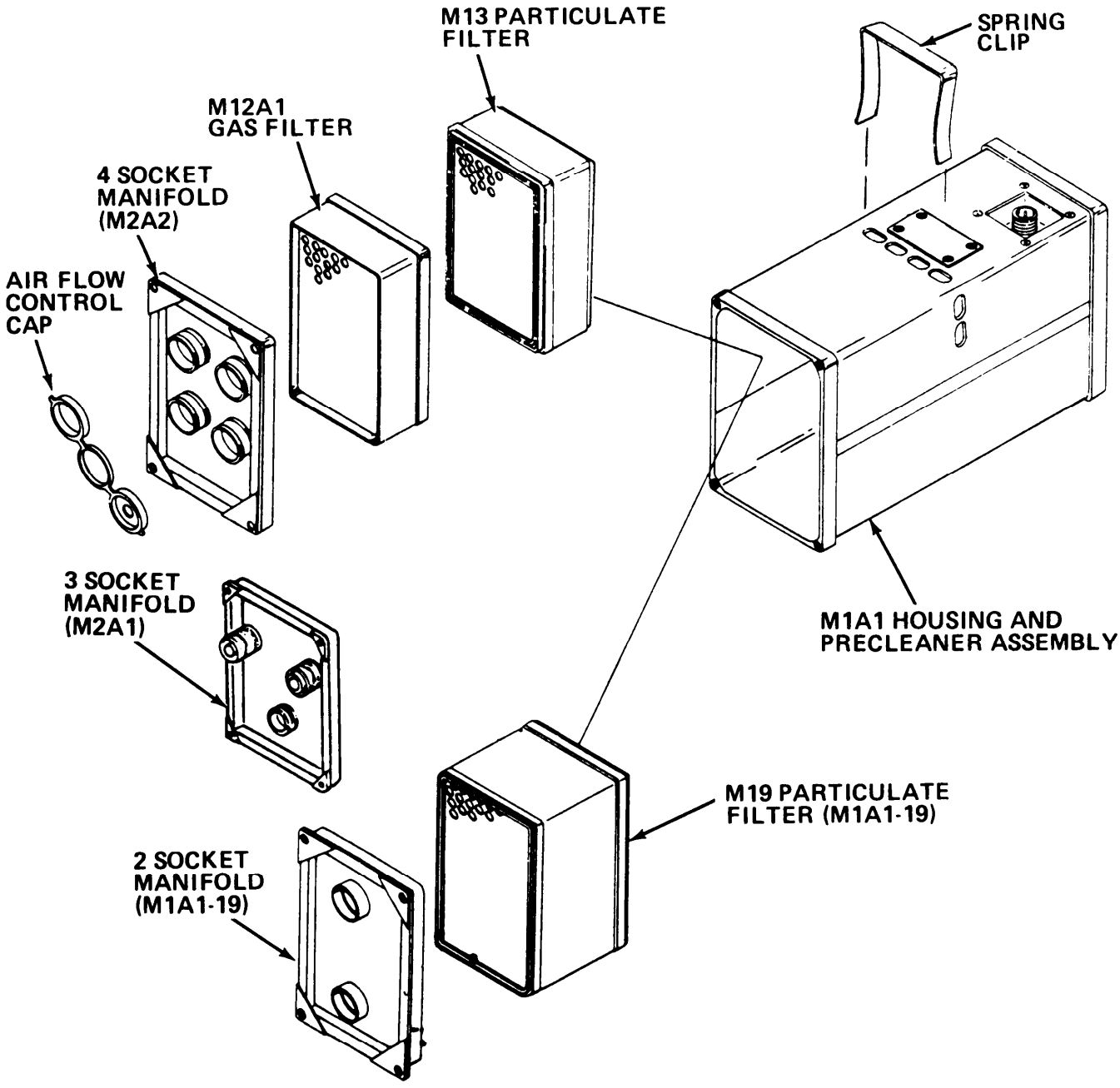
Line item number H50829
Unit of issue ..... Each
Basis of issue, ... AR 310-34, MTOE/TDA
Air purifier:
Weight ..... 20.25 lb
Dimensions ..... 13.00 x 7.50 x 6.00 in.

Performance:
Electrical characteristics (air purifier):
Vac (60 Hz) ..... 27.5 Volts
Vdc ..... 24 Volts
Current ..... 3 amperes
Airflow capacity ..... 12 cfm

Shipping and Storage Data:
Type pack ..... 1 per fiberboard box
Weight ..... 53 lb
Cube ..... 2cu ft
Type storage ..... Warehouse
Drawing number:
M8A3 5-19-1779
M8A2 5-19-1502

References:
TM 3-4240-276-30&P
TM 3-4240-282-L
TM 750-155

PURIFIER, AIR: M2A1 , M2A2 AND PRECLEANED AND PARTICULATE FILTER ASSEMBLY: M1A1-19



Type Classification:

Not separately type classified

Component of various other systems.

Use:

Removes toxic chemical and biological agents from contaminated air and supplies purified air as part of gas-particulate filter unit systems.

Description:

The M2A1 and M2A2 deliver up to 12 cfm and consist of a manifold assembly with airflow control caps, gas filter, particulate filter, housing and pre-cleaner assembly, and a spring clip. The M1A1-19 delivers up to 20 cfm and consists of a manifold assembly, particulate filter, housing and precleaned assembly, and a spring clip.

Functioning:

The electric-rndor-driven blower fan in the pre-cleanerhousing draws air in and blows it through the filters inside the purifier housing. The purifier separates dust and the filters remove contaminants from the air. Purified air is provided at positive pressure through the manifold which connects to hoses for distribution to the collective protection system. Airflow control caps are used for capping the manifold quick-disconnect sockets when not used.

Limitations:

The filter unit does not protect against carbon monoxide gas.

Tabulated Data:

NSN
- M2A1 ..., 4240-00-307-7805
- M2A2 4240-00-868-7906
- M1A1-19 4240-01-026-3112

Line item number N/A
Unit of issue Each
Basis of issue TOE/MTOE
Weight:
- M2A1/M2A2 20.25 lb
- M1A1-19 15.75 lb

Dimensions 13.0 X 7.5 X 6.0 in.

Performance:

Electrical Characteristics:
- AC Voltage 27.5 Vat, 60 Hz
- Dc Voltage 24 Vdc
- Current 3 A

Aidflow:
- M2A1/M2A2 12 cfm
- M1A1-19 20 cfm

Difference *Between Models:*

The M2A1 and M2A2 deliver air at 12 cfm; M1A1-19 delivers 20 cfm. The M2A1 manifold has three quick-disconnect sockets for attaching hose asemblies; M2A2 has four hose sockets; M1A1-19 has two sockets. The M2A1 and M2A2 contain M13 particulate filter and M12A1 gas fitter. The M1A1-19 contains an Ml 9 particulate filter and does not have a separate gas fitter,

Shipping *and Storage Data:*

M2A1
- Weight 23.4 lb
- Dimension 9.0 x 7.1 x 14.9 in.
- Cube 0.551 cu ft

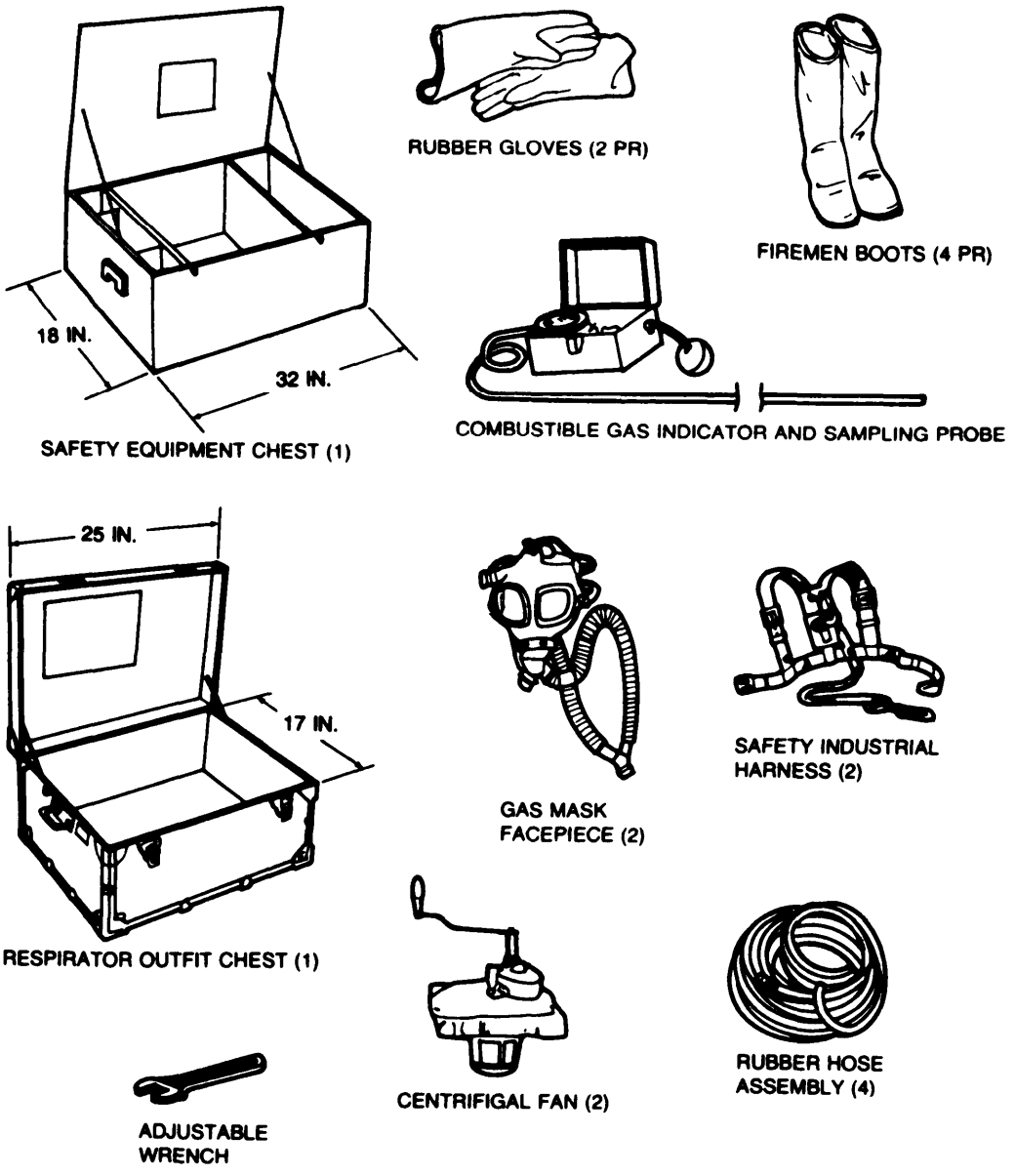
M2A2
- Weight 19.4 lb
- Dimensions 14.8 x 7.6 x 9.2 in.
- Cube 0.597 cu ft
- Specification MIL-STD-2073
- Drawing Number P5-19-1772

M1A1-19
- Weight 18.0 lb
- Dimensions 14.8 x 7.8 x 9.2 in.
- cube 0.616 cu ft
- Specification MIL-STD-2073
- Drawing Number P5-19-2353

References:

TM 3-4240-276-30&P

SAFETY EQUIPMENT SET, RESPIRATORY: TWO-MAN, GASOLINE TANK CLEANING



Type Classification:

STD (LCC-A); CCTC 355559

Use:

To provide protection and breathable air to teams cleaning internal portions of rail, truck, or ground mounted petroleum distribution or storage tanks.

Description:

a. The two-man respiratory safety equipment set for cleaning gasoline tanks consists of safety equipment and a respirator outfit.

b. The safety equipment includes two pairs of size 8 firemen boots, two pairs of size 10 firemen boots, four pairs of size 11 rubber gloves, a portable combustible gas indicator, a gas-indicator sampling probe, two industrial-safety harnesses; four rubber hose assemblies; and an adjustable wrench. A wood foot-locker serves as a storage chest for these components.

c. The respirator outfit consists of a respirator outfit chest, two gas mask facepieces, and a centrifugal-fan assembly.

Functioning:

a. The centrifugal fan is used to pump fresh air through the rubber hose assemblies to the gas mask facepieces being worn by the two-man team. This also creates positive pressure in the facepiece, further reducing leakage of fumes into the mask.

b. The portable combustible gas indicator is used to determine the explosibility of gas vapors in the tank before the team enters it. Squeezing and releasing an aspirator bulb on the Indicator, draws air samples through sampling lines connected to the probe. Readings from 0 to 100 pct of lower Iimlt of explosibility are taken from the scale on the indicator.

Tabulated Data;

NSN 4240-510-0204
Line item number S29227
Unit of issue . . . . . Each
Basis of issue . . . . . AR 310-34; TOE/MTDA

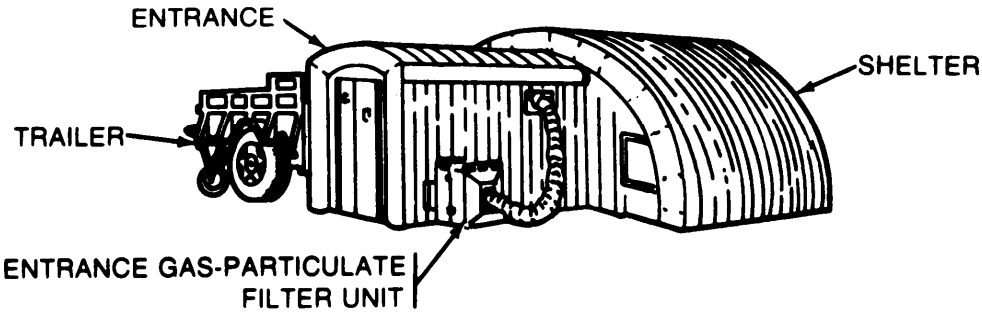
Shipping and Storage Data:

Type pack . . . . ..One set packed shipped In two separate chests
Weight . ...O 400 lb
Cube .... 19.5 Cu ft
Type storage . . . . Warehouse
Specification number . . . . MIL-S-51416 and MIL-R-17729

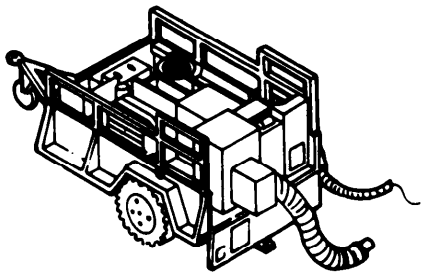
References:

SC 4240-95-CL-E01

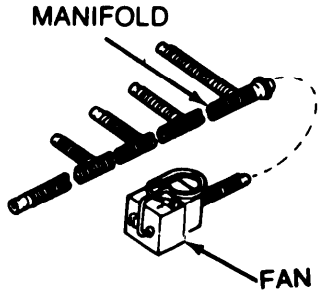
SHELTER SYSTEM, COLLECTIVE PROTECTION, CHEMICAL-BIOLOGICAL: INFLATABLE, TRAILOR-TRANSPORTED, M51

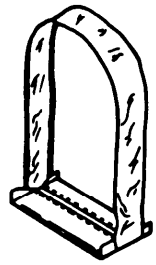


SHELTER & ENTRANCE EXTERIOR



M68 FILTER AND UTILITIES UNIT





TRANSITION

Type Classification:

STD(LCC-A); AMCTC 869971

Use:

to *serve as* a field shelter for collective protection of personnel against chemical and biological agents. Its main users are medical platoons of units operating forward of the division rear boundary, division medical clearing platoons, and nondivision medical learing companies.

Description:

The M51 shelter system is a transportable, pressurized enclosure consisting of an inflatable shelter, an inflatable protective entrance, the M68 filter and utilities unit, and an accessory package. Accessories include a transition and an evacuation fan and manifold. When inflated and pressurized, the shelter is capable of protecting up to 10 occupants. The entrance provides enough space for two stretcher patients and four stretcher bearers. An electric arctic blanket is issued to units operating in extremely cold weather.

Functioning:

a. The shelter serves as a toxic-free, pressurized personnel compartment. The shelter is maintained at a higher pressure than the protective entrance to prevent contaminated air from leaking into the shelter.

b. The protective entrance serves as a pressurized change area between the shelter and the outside contaminated zone. Air pressure in the entrance is maintained lower than in the shelter but higher than the outside air to prevent contaminated air from leaking into the shelter.

c. The M68 filter and utilities unit provides power, filtration, pressurization, inflation, and environmental control for system operation.

d. The entrance gas-particulate filter unit purges contaminants from the entrance and pressurizes it.

e. The evacuation fan and manifold are used to deflate or inflate the system.

f. The transition is used as a passage way connecting two shelters.

g. The arctic blanket is used to heat the shelter material prior to erecting and during striking operations in temperatures below -25 degrees Fahrenheit.

Limitations:

The gas and particulate filters do not protect against carbon monoxide.

Tabulated Data:

NSN 4240-00-854-4144
Line item number T00474
Unit of issue . . . . Each
Basis of issue . . . . . AR 310-34; MTOE/TDA
Complete system on the trailer:
Height . . . .8 ft
Length . . . .14 ft
Width . . . .7 ft
Weight . . . . . 5,405 lbs
Shelter and entrance assembled (exterior):
Height . . . . . 9 ft
Length . . . .27 ft
Width . . . .18 ft

Shelter inflated:	Interior	Exterior
Height	..8 ft	..9 ft
Length	..14 ft	..16 ft
Width	15 ft	..18 ft

Entrance inflated:	Interior	Exterior
Height	..7 ft	..8 ft
Length	..11 ft	..11 ft
Width	..4 ft	..6 ft

Performance:

Input voltage . . . . 206 Vac.3-phase.60 Hz
Output voltage . . . . . 110 Vac, 24Vdc, and 12 Vdc
Cooling . . . . . 42,000 Btu per hour dry coil at 150°''F ambientand 90°F return air
Heating:
High heat . . . . . 60,000 Btu per hour
Low heat . . . . . .30,000 Btu per hour
Air circulation . . . . 1.050 standard cubic feet per minute

Shipping and Storage Data:

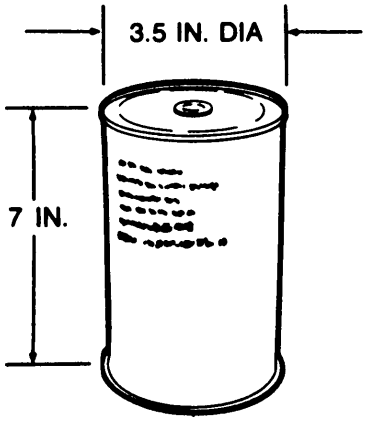
Type pack . . . . . 1 on an M105A2 1 1/2 ton trailer with plywood cap
Dimensions . . . .14 x 7x8.13 ft
Weight . . . .5,705 lb.
cube . . . .797 cuft
Type storage . . . .Shed
Drawing number DL5-19-6523

References:

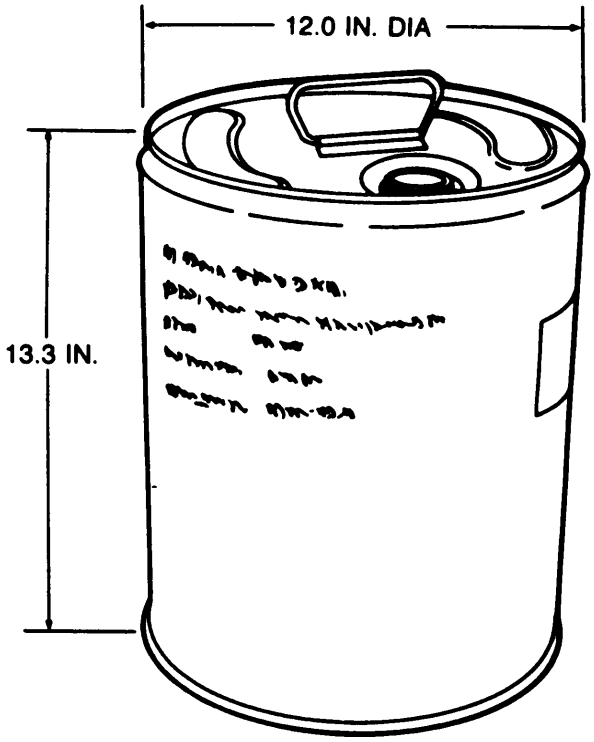
TM 3-221
TM 3-4240-264-12
TM 3-4240-264-20P
TM 3-4240-264-34
TM 3-4240-264-34P

CHAPTER 4
DECONTAMINATION AND IMPREGNATION

DECONTAMINATING AGENT: DS2



DS2 IN A 1 1/3-QUART CAN



DS2 IN A 5-GALLON PAIL

Type Classification:

Expendable; AMCTC 9512 72

Use:

To decontaminate equipment that has been contaminated with liquid blister or nerve agents and biological agents (except bacterial spores).

Description:

DS2 decontaminating agent is a clear, amber colored solution consisting of 70 percent active agent (diethylenetriamene), 28 percent solvent (ethylene glycol- monomethyl ether), and 2 percent active agent booster (sodium hydroxide). The 5-gallon cans provide bulk DS2 for large scale decontamination operations. The 1 1/3quart cans provide one DS2 charge for the M11 1/2quart portable decontaminating apparatus.

Functioning:

DS2 decontaminates by chemical reaction with chemical agents. One application of DS2 reacts with GB and HD to effectively reduce their hazards within five minutes. Within 30 minutes contact time, DS2 will neutralize all known toxic chemical agents.

Limitations:

a. Protective mask and gloves must be worn when using DS2.

b. DS2 is flammable and has a very low flash point It may start a fire when it comes in contact with other raw decontaminating agents such as STB.

c. DS2 corrodes aluminum, cadmium, tin, and zinc with prolonged contact. It softens leather. It may soften, remove, or discolor paint.

Tabulated Data:

NSN:

1 1/3-quart can	6850-00-753-4027
5-gallon pail	6850-00-753-4870
Unit of issue	Can or pail
Basis of issue	CTA 50-970

Performance:

By chemical reaction, DS2 neutralizes all known chemical agents within 30 minutes.

Shipping *and Storage Data:*

Shelf life . . . .Stable as long as hermetically sealed container remains sealed. After container is opened, DS2 must be used promptly as it absorbs moisture making it defective.

Can:

Type of pack . . . . . 12 cans per box
weight . . . . . 37.2 lb
Cube . . . . . 1.4 cu ft

Pail:

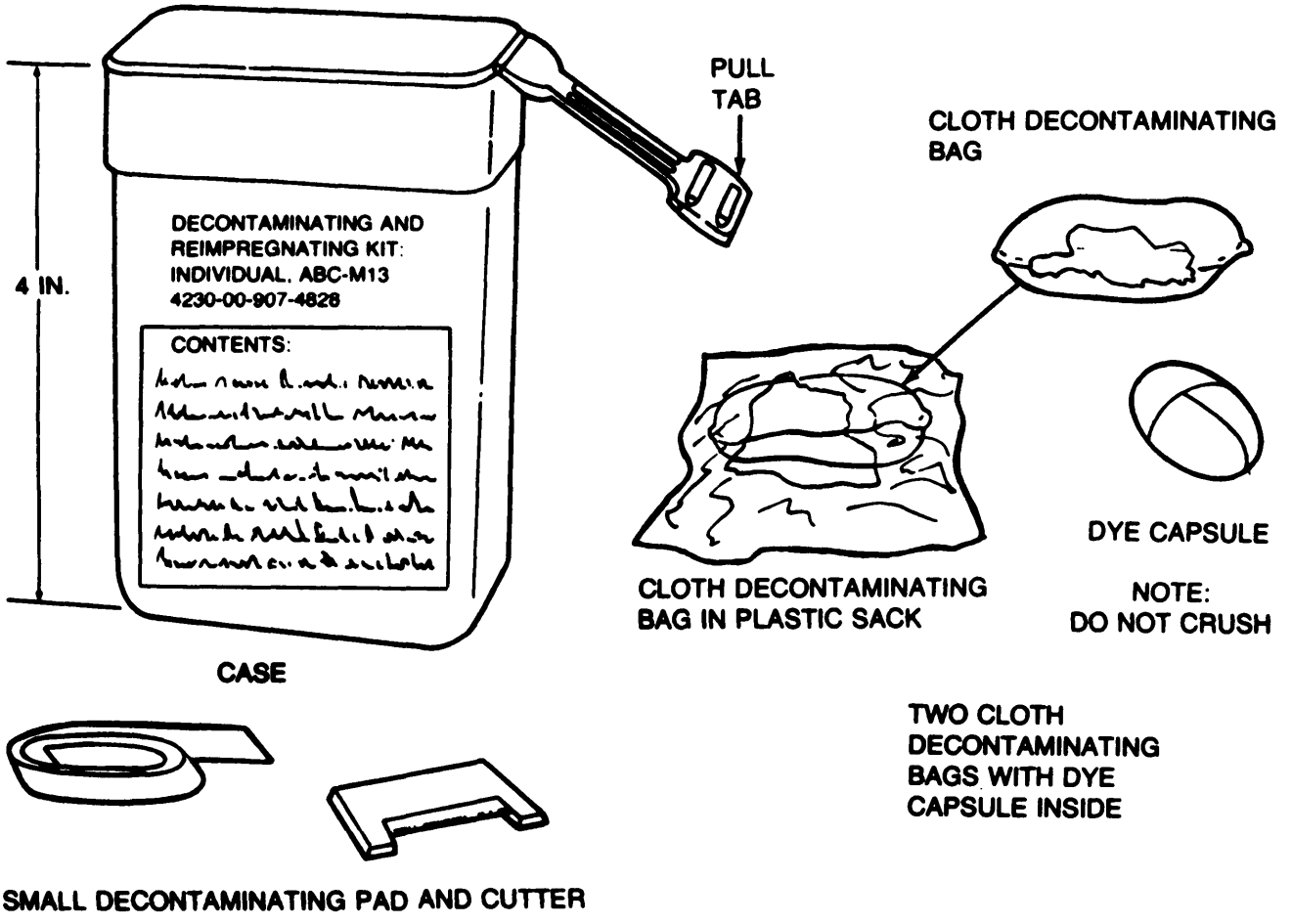
Type of pack . . . .1 pail per box
Weight . . . . 45 lb
Cube . . . . . 1.1 cu ft

DOT hazard classification . . . .. Corrosive material
DOT shipping name . . . . Corrosive liquid. NOS
Specification number MIL-D-50030

References:

FM 3-20
FM 3-21
TM 3-220
TM 3-4230-204-12

DECONTAMINATING AND REIMPREGNATING KIT: INDIVIDUAL, ABC-M13



Type Classification:

Expendable AMCTC 3398 65

Use:

To decontaminate the protective mask interior,indi-vldual clothing, and equipment that have been contaminated by liquid chemical agents .The kit is also used to reimpregnate the permable protective liner outflt in an emergency

Description:

The ABC-M13 individual decontaminating and reimpregnating kit consists 0f a plastic bag containing two cloth begs each filled with chloramide *(XXCC3)* decontaminating and reimpregnatlon powder and a capsule containing a dye a plastic bag containing a small decontaminating pad filled with Fuller's earth, and a cutter.

Functioning:

a. The chloramide powder reacts with and neutralizes vapors and small droplets of nerve and blister agents

b. The small decontaminating pad fits over gloved fingers and is used to blot visible liquid agents from the mask interior and contaminated materials. The Fuller's earth absorb small droplets of the chemical agents.

Limltations:

a. The decontaminating and reimpregnating powder is very irritating to the eyes and is poisonous.

b. Do not store in places where temperatures may exceed 120°F.

c. Laboratory tests indicat the dye may cause cancer. Do not crush the dye capsule. if a dye capsule is found to be crushed, dispose of the of kit.

Tabulated Data:

NSN 4230-00-907-4828
Unit of issue . . .. Each
Basis of issue . . . . . CTA 50-970
Weight ... . 0.7 lb
Dimensions . . . . . .4 x 3 x 2 in.

Performance:

The decontaminating and reimpregnating powder neutralizes most nerve and blister agents.

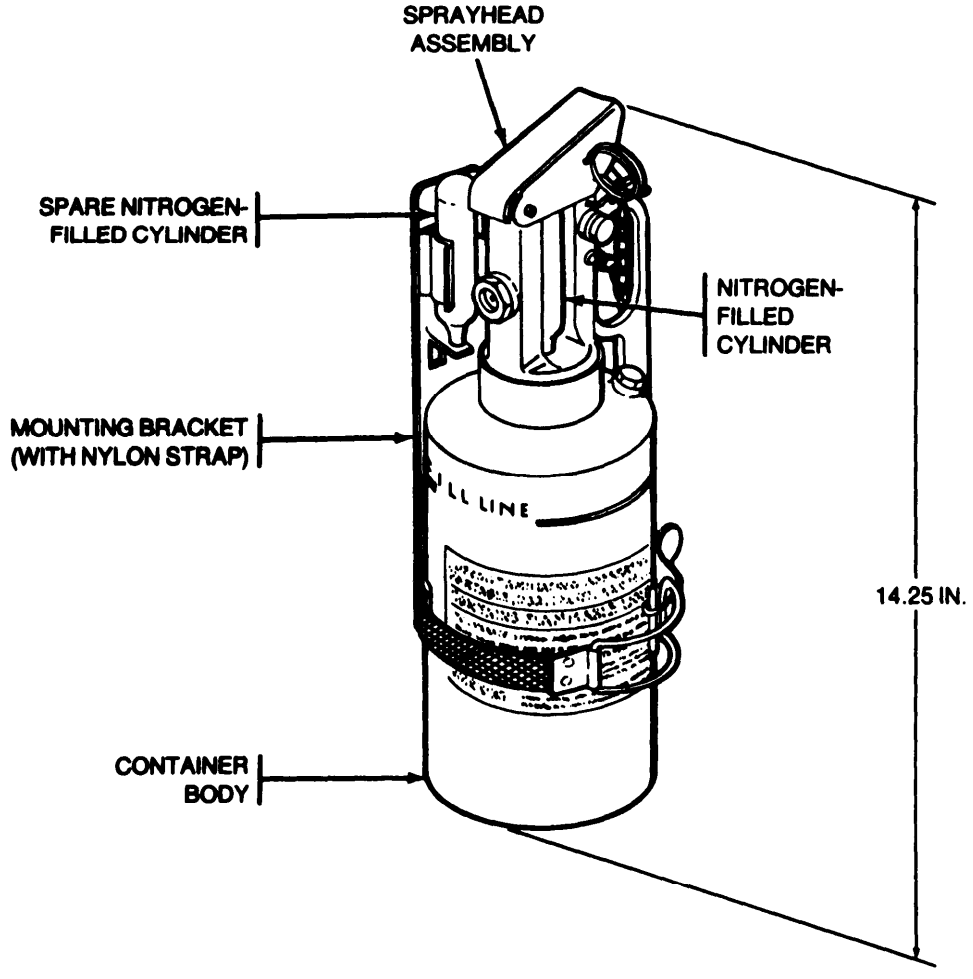
Shipping and Storage Data:

Type pack . . . . 100 per vapor-barrier taped fiberboard box
Weight . . ..0 70 lb
cube . . . . . 2.25 cu ft
Type storage . . . . Warehouse
Drawing number 5-77-763

References:

FM 3-21
FM 21-40
FM 21-41
TM 3-220
TM 3-4230-211-10
TM 10-277

DECONTAMINATING APPARATUS, PORTABLE: DS2, 1 1/2-QUART, ABC-M11



Type Classification

STD (LCC-A); CCTC 3801 61

Use:

To spray DS2 decontaminating agent to decontaminate vehicles or crew-sewed weapons to the minimum extent necessary to make them safe and allow their continued operation.

Description:

The ABC-M11, 1 1/2quart, DS2 portable decontaminating apparatus consists of a refillable cylindrical container with a spray head assmbly screwed to the top and a vehicle mounting bracket. The container body holds about 1 1/3-quarts of DS2 decontaminating solution. Each M11 apparatus has two nitrogen-filled pressure cylinders. One is set in place in the spray head assembly, and the other is emplaced on the mounting bracket.

Functioning:

Apparatus is handheld by handle on sprayhead. Pulling captive safety pin on sprayhead breaks antipilferage seal Wire and releases handle. Raising hands punctures pressurized nitrogen-filled cylinder. Pressure from nitrogen pressurizes DS2 in container. Pressing thumb lever allows pressure to force DS2 solution up syphon tube and out nozzle of sprayhead to form decontaminating spray. Decontamination is accomplished by spraying the DS2 on the contaminated equipment.

Tabulated Data:

NSN 4230-00-720-1618
Line item number F81469
Basis of issue . . . . . CTA 50-909
Capacity . …… . …… 1 1/3quarts
Filling . . . . . DS2 solution
Weight of empty apparatus . . . . . 3.0 lb
Weight of filling (1 1/3 quarts of DS2 solution) . . . .2.9 lb
Weight of filled apparatus . . . . 6 lb
Cylinder, nitrogen-filled . . . . . CTA 50-970
Decontaminating agent DS2 . . . . . CTA 50-970

Performance:

Effective spray range . . . .6 to 8 feet
Coverage per filling . . . . 15 square meters

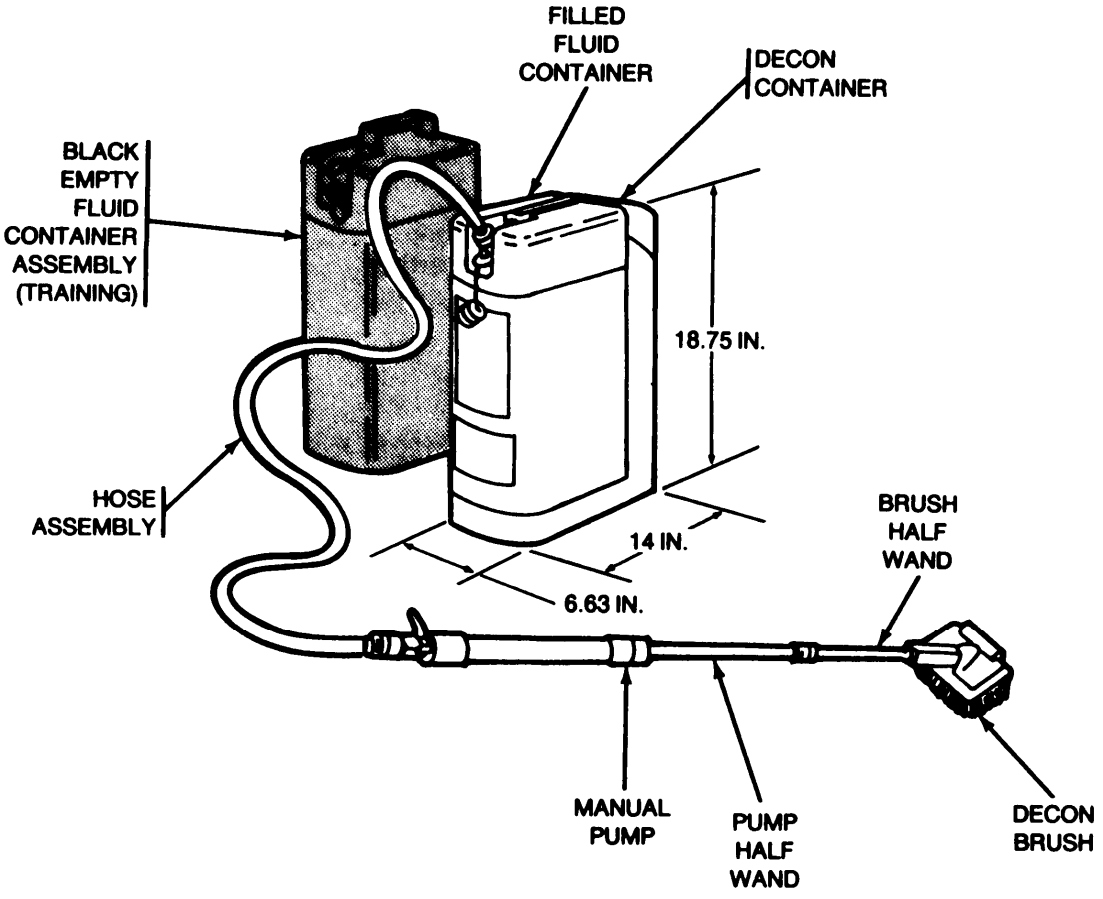
Shipping and Storage Data:

Type pack . . . .12 per box
Weight . . . .61 lb
Cube . . . .2.7 cu ft
Type storage . . . .Warehouse
Cylinder, nitrogen-filled:
DOT hazard classification . . . . Nonflammable gas
DOT shipping name . . ..Compressed gas. NOS
Drawing number 5-51-269

References:

TM 3-220
TM 3-4230-204-12&P

DECONTAMINATING APPARATUS: PORTABLE, 14 LITER, M13



Type Classification:
STD (LCC-A); MSR 09836002

To spray DS2 decontaminating agent onto surfaces of vehkicles and equipment to reduce the level of toxic Chemical agent contamination.

Description:
The M13 portable decontaminating apparatus consists of a decontaminating (DECON) brush, a brush half wand, a pump half wand, a manual pump, a nonmetallic hose assembly, a filled fluid container (painted green), and a decontaminating container. An empty fluid container assembly (painted black) is issued separately for training with water instead of DS2.

Functioning:
The brush is used forswbbing on the DS2 and removing mud or soil from the equipment. The brush half wand is used to attach the brush and extend the reach for scrubbing. The pump half wand is attached to the pump and extends the reach for scrubbing also. The pump is manually operated to deliver DS2 spray out the brush end to the surface being decontaminated. The hose feeds the DS2 from the fluid container to the pump. The fluid container holds the DS2 and is filled only at the factory. The decontaminating container stores all parts/accessories during transport and storage.

Limitations:

The filled fluid container holds DS2 decontaminating agent which is a hazardous chemical requiring special protective clothong and equipment and handling precautions. DS2 is corrosive and combustible.

Tabulated Data

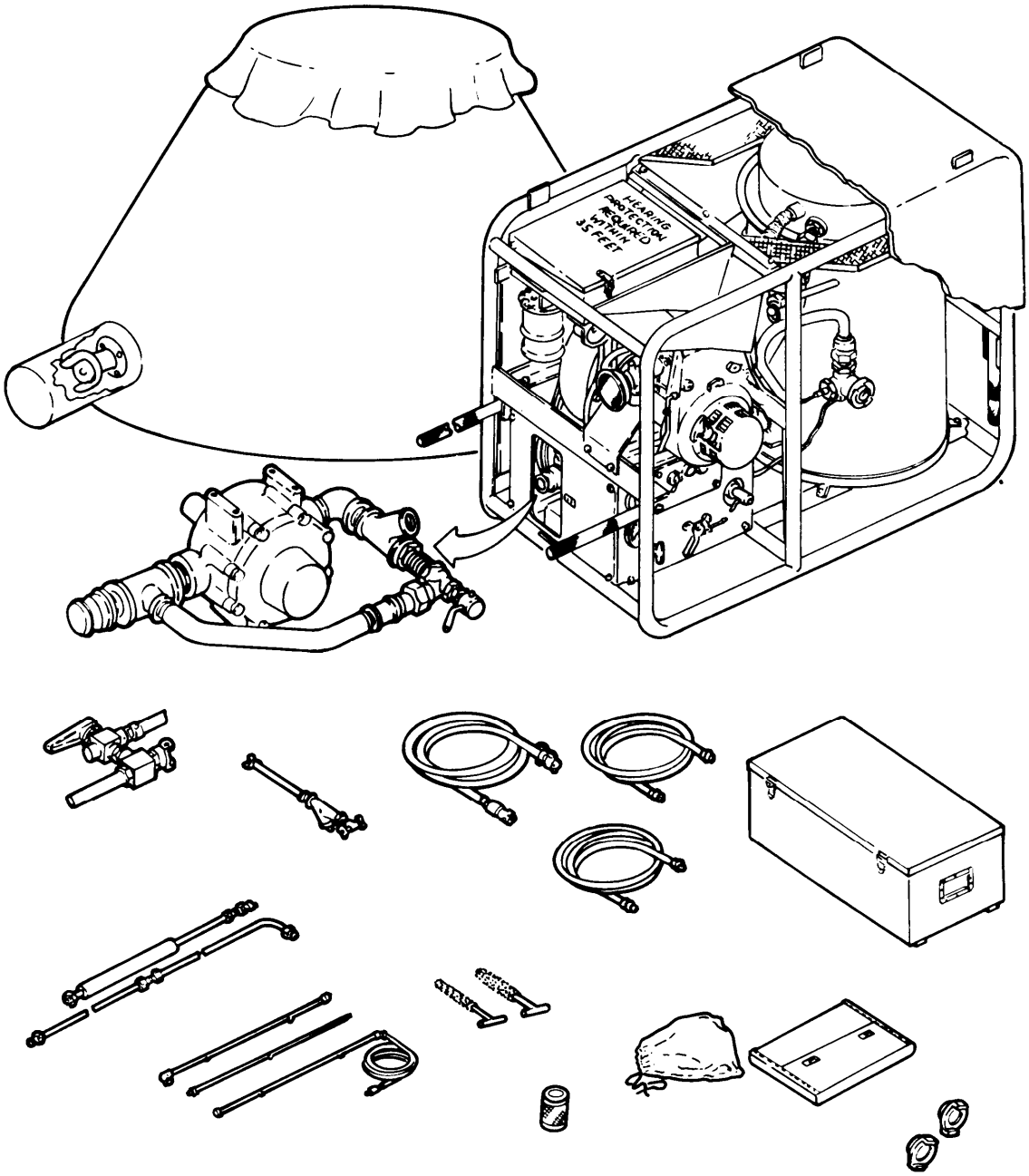
NSN 4230-01-133-4124
Line item number D81537
unit of issue . . . . . Each
Basis of issue . . . . CTA 50-909
Capacity. .... 14 liters (3.7 gallons)
Filling .. . . DS2 solution
Weight:
Empty . ... 24 lb
Filled with 14 liters of DS2 . . . . . 54 lb
Dimensions(unpackage, but not assembled);
Length.. .... 14. 00 in.
WEIGTH . .. . 6.63 in.
.Height . . .. 18.75 in.
Fluid container assembly (empty, painted black for trainer use only)
NSN 4230-01-136-8889
Basis of issue . . . . CTA 50-970

Performance:
Coverable .... 1200 sq ft at 75°F
Usable temperature range:.
Low. . . . . – 25° F
High . . . . 120° F

Shipping *and storage Data*
Type peck . . . .153/8 x 73/8 x 20in.lD
weight . . . . 64 lb
Cube. . . . . 1.5 cu ft
Type storage . . . . . Warehouse
Drawing number. 5-51-582

References:
TM 3-220
TM 3-250
TM 3-4230-214-12&P

DECONTAMINATING APPARTUS: POWER DRIVEN, PORTABLE, TYPE A/E32U-8



Type Classification:

LP (LCC-U): MSR 06846006

Use:

The equipment is used to decontaminate equipment, personnel, and other material exposed to nuclear, biological, or chemical contaminants. It is used with water and also water mixed with decontaminating agents.

Description:

The portable power-driven decontaminating apparatus type A/E32U-8 consists of an air-cooled 2 cycle gasoline engine, heat exchanger, and water pump. Also, a collapsible water tank that will holdup to 1580 gallons (6000 liters) of water, with a cover, is supplied. The accessories normally stored in the storage accessory case provide suction hoses, pressure hoses, shower bars, branch hoses, strainers, brushes, and various equipment needed.

Functioning:

The decontaminating apparatus has five major systems: the engine, the air system, the water system, the heater system, and the electronic control system. When operated with the water tank filled and various accessories used, the water can be heated and pumped through the hoses to areas to be decontaminated.

Tabulated Data:

NSN 4230-01-153-8660
Line item number D82404
Unit of issue . . . .Each
Basis of issue . . . . . TOE/MTOE/TDA

Decontaminating Apparatus:
Weight . . . .360 lbs(163 kg)
Length . . . .40.2 in. (102cm)
Width . . . . . 23.2 in. (59 cm)
Height 33.9in. (86cm)

Heater:
Type . . . . . Convection, high pressure fuel fired, sparkplug ignition
Heat output . . . . . 700,000 BTU(180,000 kilocalories) perhour
Primary fuel . . . . . Leaded or unleaded regular gasoline
Alternate fuel . . . . . Diesel (DF2), jet fuel (JP4), or kerosene
Fuel consumption . . . . Less than 9 gal(341iter) per hour
Fuel pump . . . . Belt driven. gear type

Engine:
Type . . . . . Single cylinder, two cycle
Displacement. . . . . .. 77.6 in.^{3}(197cc)
Compression ratio 7.5 to1
Output power . . . . 7.3 hp at 4250 rpm
Cooling . . . . Air-cooled
Fuel required . . . . . Leaded or unleaded regular gasoline (5gal of fuel mixed with 1qt of two-cycle motor oil)
Normal engine speed . . . . . 4250 ±50 rpm
Fuel consumption . . . . . 0.7 gal (2.7 liter) per hour
Starter type . . . . . Manual recoil
Ignition system . . . . . Resistive-discharge with breaker points
Electrical generator . . . . Flywheel mounted, provides 6V ac
Power transfer. . . . . Centrifugal clutch with engagement at 2700 rpm

Water pump (water inlet):
Type . . . . Belt driven, self-priming, high pressure, overcapacity roller

Centrifugal Fan Assembly:
Type . . . . Shrouded. axial vane

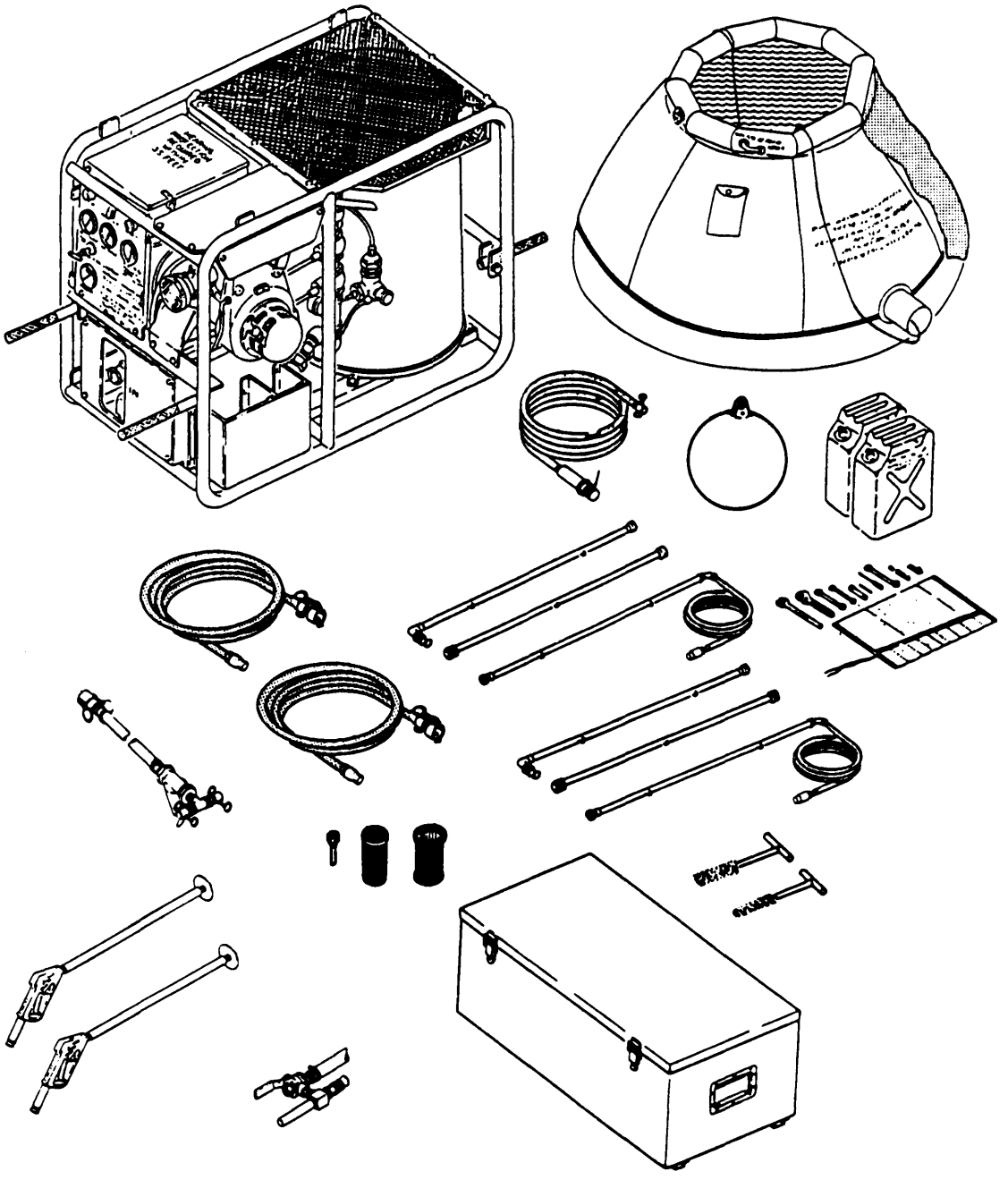
Storage Accessory Case:
Weight (loaded) . . . . . 165 lbs(65kg)
Length . . . . . 41.8 in. (106cm)
Width 20.5in. (52cm)
Height 15.4in. (39cm)

Water Tank:
Type . . . . . Self-erecting, rubberized nylon
Weight (empty) . . . . . .70 lbs(32kg)
Height (full) . . . . . 5.8 ft (1.7m)
Capacity . . . . . 1580 gal (6000liters)

Reference:

TM3-4230-218-12&P

DECONTAMINATING APPARATUS: POWER-DRIVEN, LIGHTWEIGHT, M17



Type Classification:

STD (LCC-A); MSR 08876013

Use:

The equipment is used to decontaminate equipment, personnel, and other material exposed to nuclear, chemical, or biological contaminants. It is used with water and also with water mixed with decontaminating agents.

Description:

The lightweight portable power-driven decontamination apparatus consists of an air-cooled 2-cycle gasoline powered engine, heat exchanger, and water pump. A collapsible water tank (1580 gallon capacity) with cover is supplied. Accessories, normally stored in the accessory box, include suction hose, pressure hoses, spray wands, decontaminant injector, shower bars, branch hose, fitter, strainer, suction hose float, and cleaning brushes.

Functioning:

The decontaminating system has five major systems: engine, air, water, heater, and electronic control. When operated with the filled water tank or from natural water source, water can be heated and pumped through hoses to areas to be decontaminated. Spray wands and shower bars deliver heated water or a mixture of water and decontaminating agent using the injector accessory.

Tabulated Data:

NSN 4230-01-251-8702
Line item number D82404
Unit of issue ..... Each
Basis of issue ..... TOE/MTOE/TDA
Weight:
- Decon apparatus ..... 360 lb
- Accessory Kit ..... 143 lb
- Water tank ..... 70 lb

Dimensions:
- Decon apparatus ..... 40.2 x 23.2 x 33.9 in.
- Accessory kit ..... 41.8 x 20.5 x 15.4 in.
- Water tank ..... 68 in. high (full, 1580 gal)

Performance:

Heater
- Type ..... Convection, jet-fired, igniter plug ignition
- Heat output ..... 700.000 Btu (180,000 Kilocalories per hour)
- Primary fuel ..... Leaded or unleaded regular gasoline
- Alternate fuel ..... Diesel (DF2), Jet Fuel (JP4), or kerosene
- Fuel consumption ..... Approximately 9 gal (34 I) per hour
- Igniter ..... Single electrode, spark producing element
- Fuel pump ..... Belt driven, gear type

Engine:
- Type ..... Single cylinder, two cycle
- Displacement ..... 77.6 in (197 cc)
- Compression ratio ..... 7.5 to 1
- Output power ..... 7.3 hp at 4250 rpm
- Cooling ..... Air cooled
- Fuel required ..... Gasoline and oil (5 gal of gasoline mixed with 1 qt of two-cycle oil)
- Lubrication ..... 2-cycle oil mixed with fuel
- Normal engine ram ..... 4250 ± 50 rpm
- Fuel consumption ..... Approximately 0.7 gal (2.7 liter) per hour
- Starter type ..... Manual recoil
- ignition system ..... Resistivedischarge with breaker points
- Breaker point gap ..... 0.012 to 0.015 in. (0.30 to 0.40 mm)
- Timing ..... 0.087 to 0.102 in. (2.2 to 2.6 mm) BTDC
- spark plug ..... Champion RL87Y/RL87YC
- Spark plug gap ..... 0.020 to 0.035 in. (0.51 to 0.89 mm)
- Electrical generator ..... Flywheel mounted, providing 6 Vac
- Power transfer ..... Centrifugal clutch with engagement at 2700 rpm
- Engine Fuel Can ..... 5 gal (18.9 liter)
- Heater Fuel Can ..... 5 gal (18.9 liter)
- Water Pump ..... Belt driven, self-priming, medium pressure, over-capacity roller
- Fan Assembly ..... Shrouded, axial vane

Suction Hose (1):
- Length ..... 33 ft(10 m)
- Coupiing type ..... cam

Branch Hose (1):
- Length ..... 3 ft (0.9 m)
- Coupling type ..... cam
- Capacity ..... 250 psi

Pressure Hose (2):
- Length ..... 50 ft (15m)
- Coupling type ..... cam
- capacity ..... 250 psi

Shower (2 sets):
- Type ..... 3-section with 6 jets each
- Coupling type ..... cam
- Length ..... 8 ft (2.44 m)

Spray Wand (2):
- Type ..... Single section, trigger actuator
- Coupling type ..... cam
- Length ..... 3 ft (0.9m)
- Nozzle ..... Adjustable fan stream

Injector
- Type ..... 80/20 Siphon (80 water, 20 decontaminant or, 4 to 1
- Coupling type ..... Cam

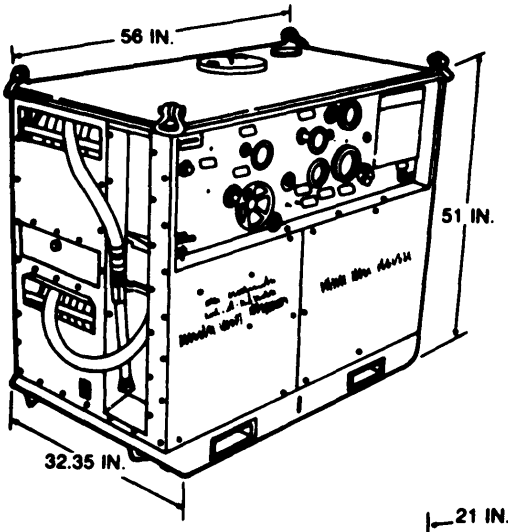
Shipping and Storage Data

see TM 3-4230-228-23&P

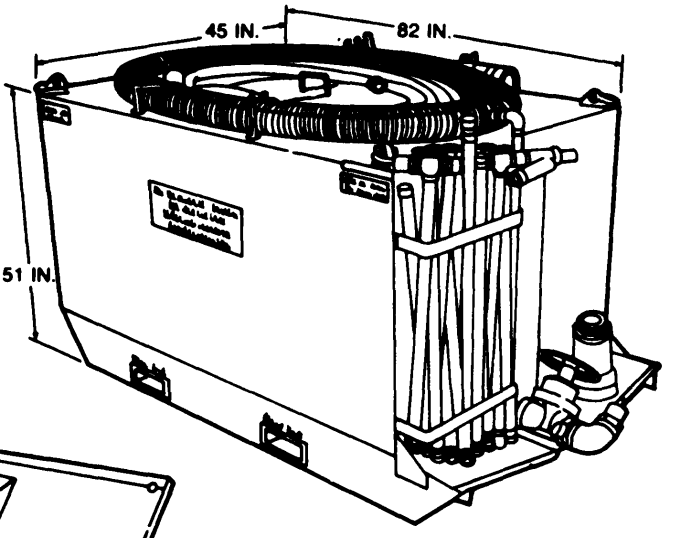
References:

TM 3430-228-10
TM 3-4230-228-23&P

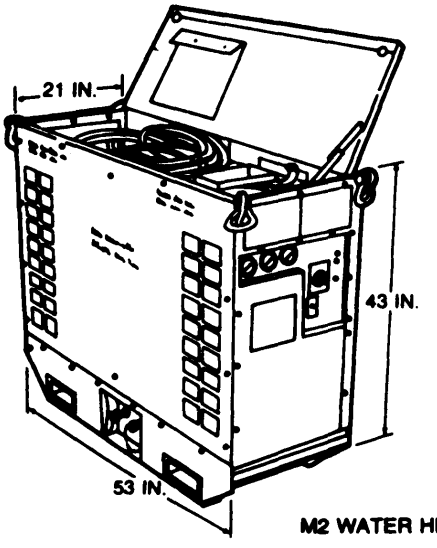
DECONTAMINATING APPARATUS, POWER-DRIVEN, SKID-MOUNTED: MULTIPURPOSE, NONINTEGRAL, 500-GALLON, ABC-M12A1



PUMP UNIT ASSEMBLY



TANK UNIT ASSEMBLY AND PERSONNEL SHOWER ASSEMBLY



M2 WATER HEATER

Type *Classification:*

STD(LCGA);AMCTC 4923 66

Use:

To mix and spray decontaminating agent slurries and solutions and hot, soapy water rinses during field decontamination operations. It is also used for fire fighting with water or foam, for deicing operations, washing vehicles, pumping various fluids, and showerm Personnel in the field.

Description:

The ABC-M12A1 decontaminating apparatus consists of a pump unit assembly, a tank unit assembly and Personnel shower assembly, and an M2 water heater. Each unit is mounted on skids.

Functioning:

The pump unit assembly prime-detergent tank holds priming water, detergent, or foaming liquids. The pump delivers up to 50 gallons of waterer STB decontaminatng agent slurry per minute at a working pressure of about 105 pounds per square inch, using both hoses. The skid-mounted, 500-gallon, stainless-steel tank has a working capacity of 447 gallons of water or 317 gallons of slurry. The hopper-blender assembly and fluid agitation system in the tank are used to blend STB decontaminating agent and water. The shower assembly is used to form a field shower for showering up to 24 persons at one time. The M2 water heater is used with the pump unit and tank unit to provide hot water for decontaminating and for showering troops in the field.

Limitations:

The ABC-M12A1 decontaminating apparatus is not authorized for use with defoliants, herbicides, or insecticides.

Tabulated Data:

NSN 4230-00-926-9488
Line item number F81880
Unit of issue . . . . . Each
Basis of issue . . . . . AR 31-34; TOE/MTOE/TDA
Pump unit:
Height . . . . . 51 in.
Length . . . . . 58 in.
Width . . . . . 32 in.
Weight . . . . . 1,120 lb
Tank unit:
Height . . . . . 51 in.
Length . . . . . 82 in.
WIDGTH . . . . . 45 in.
Weight . . . . . 996 lb
M2 water heaters:
Height . . . . . 43 in.
Length . . . . . 53 in.
Width. . . . . 21 in.
Weight . . . . . 575 lb
Capacities:
Tank (water only) . . . . . 447 gallons
Tank (slurry) . . . . . 317 gallons

Performance:

Working pressure . . . . . 60 to 120 lb per square in.
Coverage per filling (average for smooth surface . . . . . 1,300 square meters
Discharge rate for slurry or water (one spray gun) . . . 25 gallons per minute
Discharge rate for slurry or water (two spray guns) . . . 50 gallons per minute
Heating water . . . . . 600 gallons per hour at 100°F

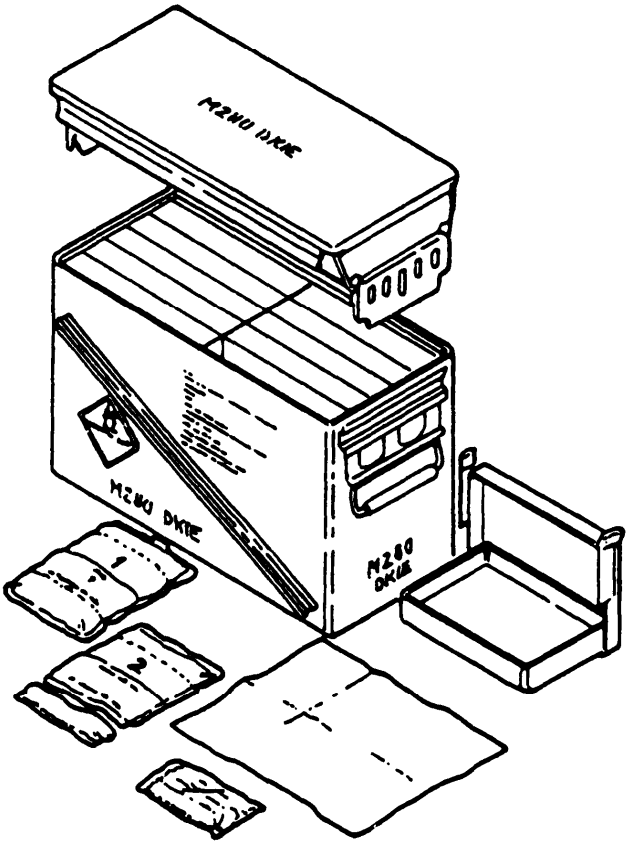
Shipping and Storage Data:

Type pack . . . . . 3 crates
Pump:
Weight . . . . . 1,550 lb
Cube . . . . . 93.3 cu ft
Tank:
Weight . . . . . 1,460 lb
Cube . . . . . 180 cu ft
Heater:
Weight . . . . . 725 lb
Cube . . . . . 37.2 cu ft
Type storage . . . . . Warehouse
Drawing number . . . . . DL 5-45-3284

References:

LO 3-4230-209-12
LO 5-2805-259-12
TB 750-94-42
TM 3-220
TM 3-4230-209-12
TM 3-4230-209-20P
TM 3-4230-209-35
TM 3-4230-209-35P
TM 3-4230-209-ESC
TM 3-4410-201-20P
TM 3-4410-201-35
TM 3-4420-201-35P
TM 5-2805-204-14
TM 5-2805-204-24P
TM 34-9-31 1 1

DECONTAMINATION KIT, INDIVIDUAL EQUIPMENT: M280 (DKIE)



Type Classification:

Expendable; MSR 08855001

Use:

The DKIE eliminates contamination of individual equipment (CB protective gloves, overboots, mask/ hood and rifle). The Individual Equipment Decontamination Training Aid (lEDIA) is used to teach you how to use your DKIE.

Description:

. The M280 Individual equipment decontamination kit consists of 20 plastic decon containers. The decon containers hold one DECON 1 WIPE packet and one DECON 2 WIPE packet. Each DECON 1 WIPE contains a gauze pad soaked with a decontamination solution. The DECON 1 packet has a tab on top. Each DECON 2 contains a gauze pad and glass ampoules filled with decontamination solution.

Limitations:

DKIE is not used for skin decontamination, load bearing equipment, or porous materials.

Tabulated Data:

NSN	4230-01-208-4252
Unit of issue	KT
Basis of issue	CTA 50-970
Weight	35 lb(15.88 kg)

Dimensions:

Squad containers:

Thickness	0.720 ft (21.95 cm)
Width	1.555 ft (47.24 cm)
Height	1.190 ft (36.27 cm)

Individual containers:

Thickness	1.35 in. (3.429 cm)
Width	6.00 in. (15.24 cm)
Height	8.00 in. (20.32 cm)

Packets:

Width	5.50 in. (13.97 cm)
Length	7.50 in. (19.05 cm)

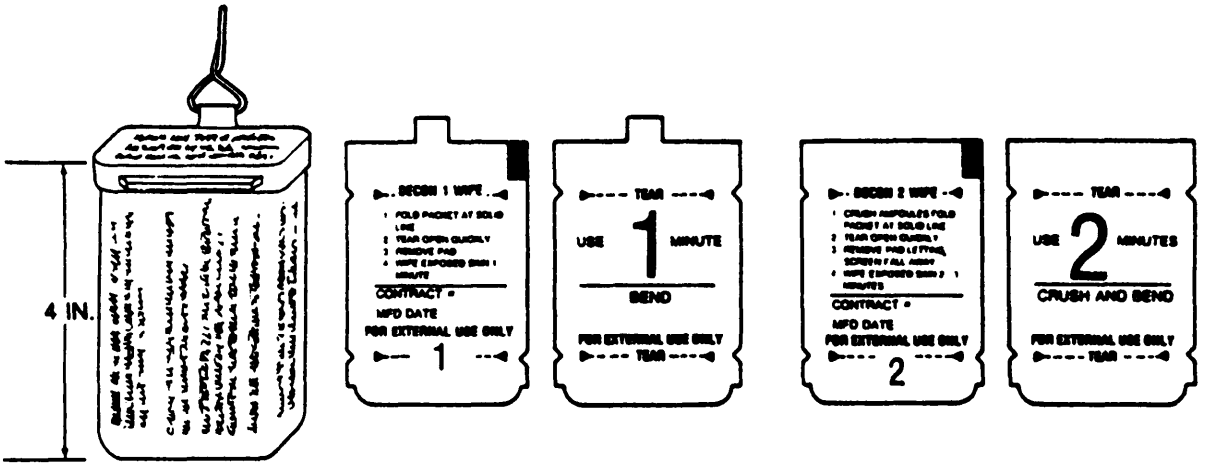
Shipping and Storage Data:

Stability in storage	Unstable at temperatures over 110° F
Type pack	20 per squad container (M584)
Cube	1.328 cu ft
Weight	35 lb
Type storage	Warehouse
Drawing number	P5-77-2652 5-77-2652 5-77-2659

References:

TM 3-4230-224-10

DECONTAMINATING KIT, SKIN: M258A1



CASE DECON 1 WIPE PACKET (3) DECON 2 WIPE PACKET (3)

Type Classification:

Expendable; DEVA 1180

Use:

To decontaminate the skin (but not the upper part of the face) when it has been contaminated by liquid chemical agents. It can be used in an emergency to decontaminate outside of protective mask, butyl rubber gloves, hood, and individual weapon.

Description:

The M258A1 skin decontaminating kit consists of a plastic case and six packets. The case is marked DECONTAMINATION KIT, PERSONAL M258A1 . Three packets are marked DECON 1 WIPE. Each contains a gauze pad soaked with a decontamination solution. The other three packets are marked DECON 2 WIPE. Each contains a gauze pad and glass ampoules filled with decontamination solution. Instructions for use are marked on the case and packets.

Functioning:

The decontamination solutions in DECON 1 WIPE and DECON 2 WIPE react with chemical agents to neutralize them.

Limitations:

The decontamination solutions are poisonous and caustic and must be kept out of eyes, mouth, and wounds. For training, harmless simulants are available in the M58A1 skin decontaminating training kit.

Tabulated Data

NSN	4230-01-101-3984
Unit of issue	Each
Basis of issue	CTA 50-970
weight	3.02 oz
Dimensions	1.75 x 2.75 x 4.00 in.

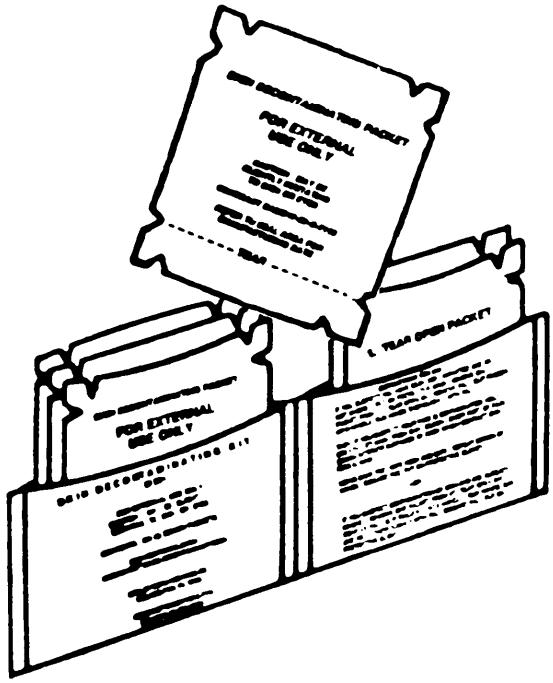
Shipping and Storage Data

Stability in storage	Unstable at temperatures over 110°F
Type pack	100 per wooden box
Weight	3.2 lb
Cube	0.2 cu ft
Type storage	Warehouse
Specificationrl	MIL-D-51468
Drawing number	5-77-2366

References:

TM 3-4230-216-10

DECONTAMINATING KIT, SKIN: M291



Type Classification:

Expendable

Use:

Allows complete decontamination of skin through physical removal, absorption, and neutralization of toxic agents.

Description:

Each skin decontaminating kit consists of a wallet-like carrying pouch containing six individual tear-open decon packets; enough to do three complete skin decontamination. Each packet contains an applicator pad filled with decon powder.

Functioning:

Decontamination is accomplished by application of a black powder decontamination agent contained in the applicator pad. Application to skin areas exposed to contamination is accomplished as described in TM 3-4230-229-10. The M291 skin decontaminating kit may be used for actual combat and training purposes.

Limitations:

The decontaminating agent may be slightly irritating to skin and should not be used to decontaminate eyes, cuts, and wounds.

Tabulated Data:

NSN	4230-01-276-3905
Line item number	N/A
Unit of issue	1 box (20 kits)
Basis of issue	CTA 50-970
Weight	1.6 oz(1 kit)
Dimensions:	
Folded kit	4.4 x 4.7 x 1.4 in.
Unfolded kit	4.4 x 9.3 x 1.4 in.

Performance:

Operating temperature . . . . . -50° F to 120° F

Shipping and Storage Data:

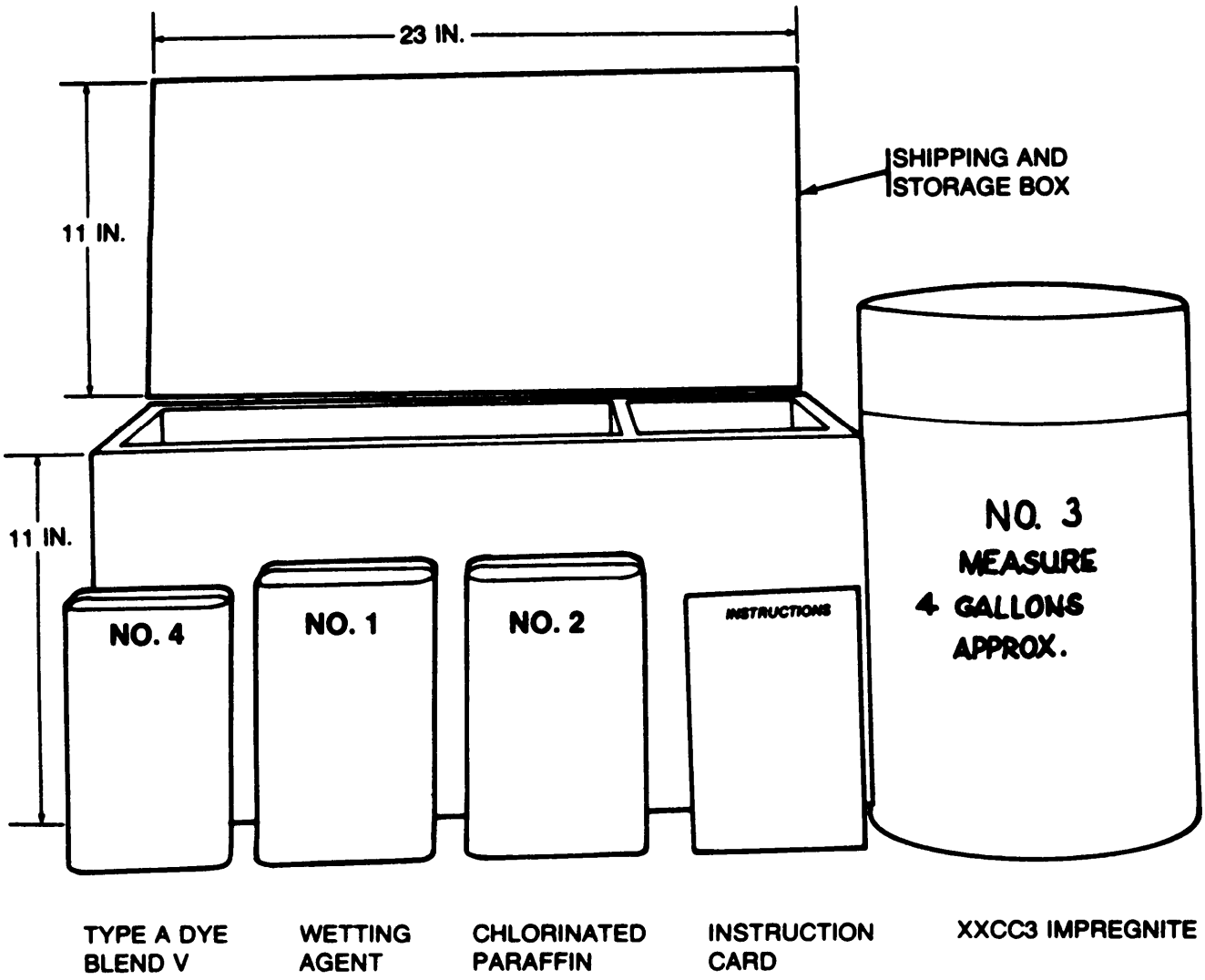
Storage temperature . . . . . -60° F to 160° F
Type Pack . . . . . 20 kits per box
Weight . . . . . 3.0 lb
Dimensions . . . . . 15.0 x 9.7 x 5.0 in.
Cube . . . . . 0.425 cu ft

Specification MIL-STD-2073-1
Drawing P5-77-2301

References:

TM 3-4230-229-10

IMPREGNATING SET, CLOTHING: FIELD, M3



Expendable; AMCTC 951272

Use:

To reimpmgnate the permeable protective outfit liners for 20 men in an emergency before of after a chemical agent attack when impregnating plant facilities are not availabie.

Description:

The M3 field clothing impregnating set consists of four containers of chemicals and an instruction card, packed in a wood box. The containers are numbered 1 to 4 for identification. They contain wetting agent (Santomerse 80), chlorinated paraffin, XXCC3 impregnate (chioramide), and dye mix (type A dye, blend V), respectively

Functlonlng:

The wetting agent aids in the absorption of the other chemicals into the clothhg. The chlorinated paraffin binds the impregnate in the clothing and delays absorption of liquid agents through the cloth. The chloramide in the impregnate neutralize liquid nerve or blister agents. The dye mix is applied for camouflaging the white powders and chlorine bleach marks.

Tabulated Data:

NSN 4230-00-368-6145
Unit of issue . . . . . Each
Basis of issue . . . . . CTA 50-970
Weights (net):
Container 1
(Wetting agent) . . . .1.65 lb

Container 2 (Chlorinated paraffin) . . . . . 4.33 lb
container 3 (XXCC3 impregnite) . . . . . 16.50 lb
Container 4 (type A dye, blend V) . . . . . 1.00 lb

Performance:

The set provides the capability to reimpregnate 24 protective liner outfits.

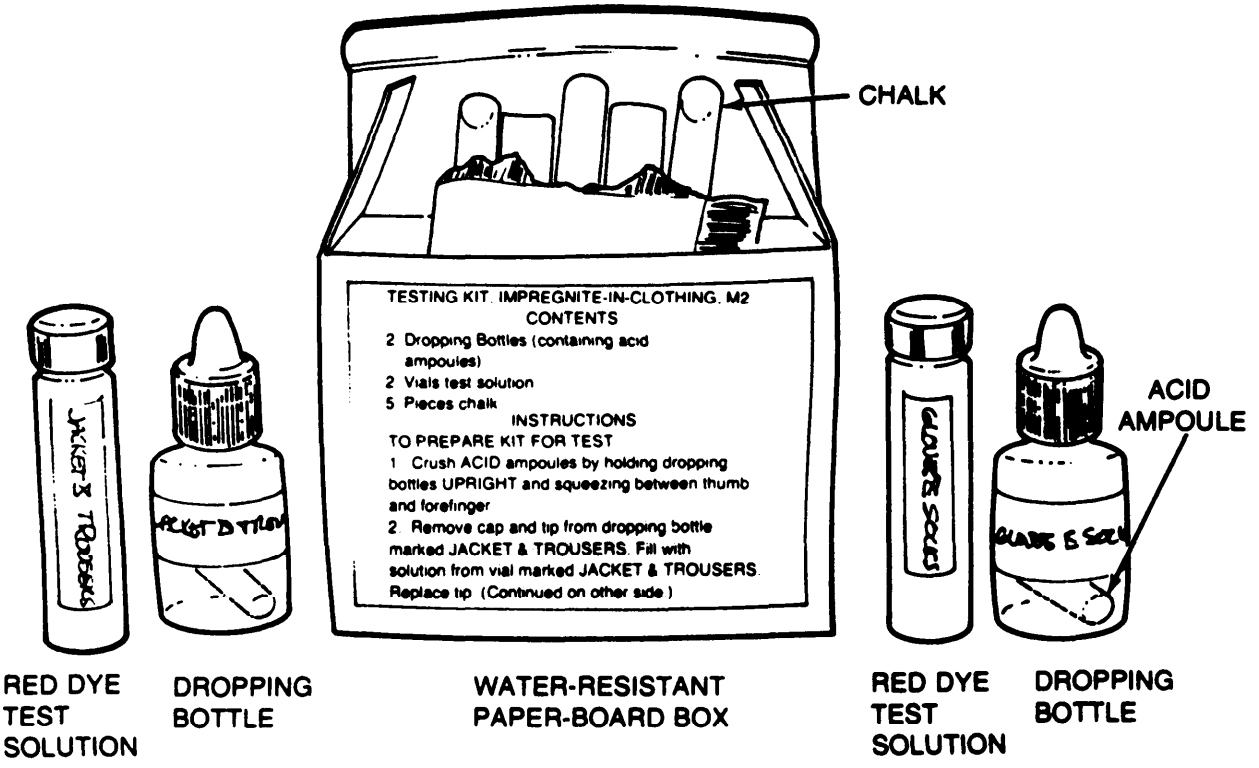
Shipping and *Storage* Data:

Type pack . . . . . 1 set per wooden box
weight . . . . . 53 lb
Cube. . . . . 1.7 cuft
Type . . . . . Warehouse
Drawing number 5-57-29

References:

TM 3-4230-208-10

TESTING KIT, IMPREGNATE-IN-CLOTHING: ABC-M2



Type Classification:

Expendable; CCTC 375360

Use:

To determine whether permeable protective clothing contains sufficent impregnate (XXCC3) to afford the wearer protection against chemical agents.

Description:

The M2 impregnate-in-ciothing testing kit consists of a water resistant paperboard box containing 2 glass vials of red dye test solution, 2 polyethylene dropping bottles, and 5 pieces of white backboard chalk.

Functioning:

The dropping bottles each contain a small glass ampoule of hydrochloric acid. Test solution from the vial is added to the acid after the ampoule has been crushed in the dropping bottle. The dropping bottle is used to drop droplets on the impregnated clothing being tested. The chalk is used to rub the test droplet into the clothing and aid the reaction.

Limitations:

The kit is designed for use at temperatures above 35 degrees Farenheit.

Tabulated Data:

NSN 6630-00-783-8192
Unit of issue . . . . . Each
Basis of issue . . . . CTA 50-970
Weight . …. . . . . 0.3 lb
Dimensions . . . .4.25 x 3.2x 1.5 in.

Performance:

Chemical reaction with chlorine in impregnate.

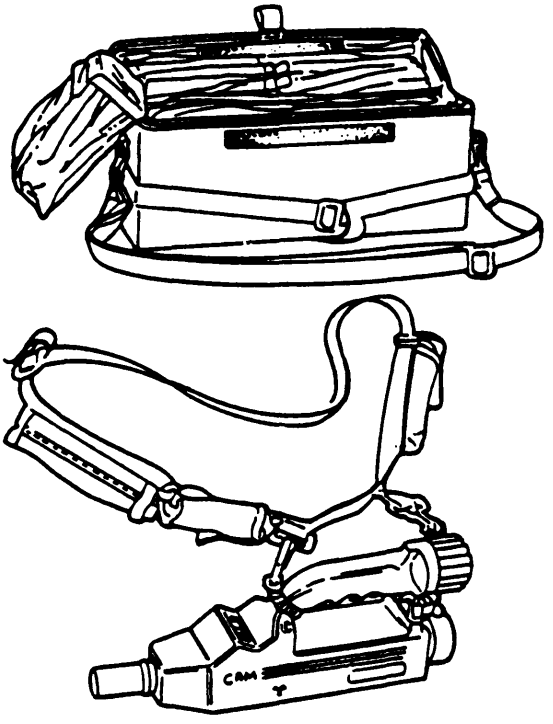
Shipping and Storage Data:

Type pack . . . .60 per fiberboard carton
Weight . . . . 23 lb
Cube . . . . 1.0cu ft
Type storage . . . . . Warehouse
DOT hazard classification . . . . . Corrosive material
DOT shipping name . . . . Corrosive liquid. NO 1
Drawing number 5-7-236

References:

TM 3-4230-208-10

CHEMICAL AGENT MONITOR SYSTEM (CAM)



Type Classification:

STD (LCC-A) .....MSR 04886001

Use:

Used by ground force to search out clean areas, to search and locate contamination on personnel, equipment, ship's structures, aircraft and land vehicles, buildings and terrain, and to monitor the effectiveness of decontamination. CAM can also be used for monitoring collective protection. The Chemical Agent Monitor responds to nerve and blister agent vapors down to the lowest concentrations that could affect personnel over a short period.

Description:

The Chemical Agent Monitor system consists of a carrying case assembly, to provide stowage for all equipment and provide protection when not in use. The CAM consists of a battery to power the CAM, a display to show contamination concentration levels and malfunction information, a pneumatic system to draw in samples, a cell containing a beta radiation source (10 millicuries of Nickle-63) to detect the presence of agent contamination, and a printed circuit board flexible wiring assembly containing a microcomputer to control operation of the CAM and detection of agents.

Functioning:

The CAM samples air in the immediate vicinity of the nozzle for the presence of nerve (G) or blister (H) chemical agents. Air sample conditions a short distance away from the CAM may be quite different, and a change in wind direction could quickly bring a hazardous level of agent vapor to a previously safe area.

The CAM has two operating modes, selectable by means of the GH mode pushbutton switch. In the G mode, CAM monitors for nerve agents; in the H mode, CAM monitors for blister agents. The selected mode is indicated on the display assembly by a G or H. An ON/OFF pushbutton switch applies 6 Vdc battery power to the CAM. A nozzle protective cap assembly contains material to clean the air within the CAM and is normally located on the front of the CAM whenever not in use.

Limitations:

The CAM is a monitor and not a detector. Since it is a monitor, it can become contaminated and overloaded (saturated). CAM can only report conditions at the front of the inlet probe. It is, therefore, a point monitor only and cannot give a realistic assessment of the vapor hazard over an area from one position.

Tabulated Data:

NSN 6665-01-199-4153
Unit of issue . . . .EA
Basis of issue . . . . . TOE/MTOE/TDA
Line item CO5701

Weights and Dimensions:

Weight . . . .3.74 lb (1.7 kg)
Length . . . .15.35 in. (38.987 cm)
Width . . . . . 3.15 in. (8.001 cm)
Height. . . . . .. 5.71 m. (14.4907 cm)

Power Requirement:

One internal 6-volt lithium-sulfur dioxide battery

Air Temperature Versus Battery Life (continuous operation):

113°F(45°C) . . . .14 hours
68° F(20°C) . . . .12 hours
32 °F(0°C) . . . .10 hours
–13° F(– 25°C) . . . . . 2 hours

Operating and Performance Range:

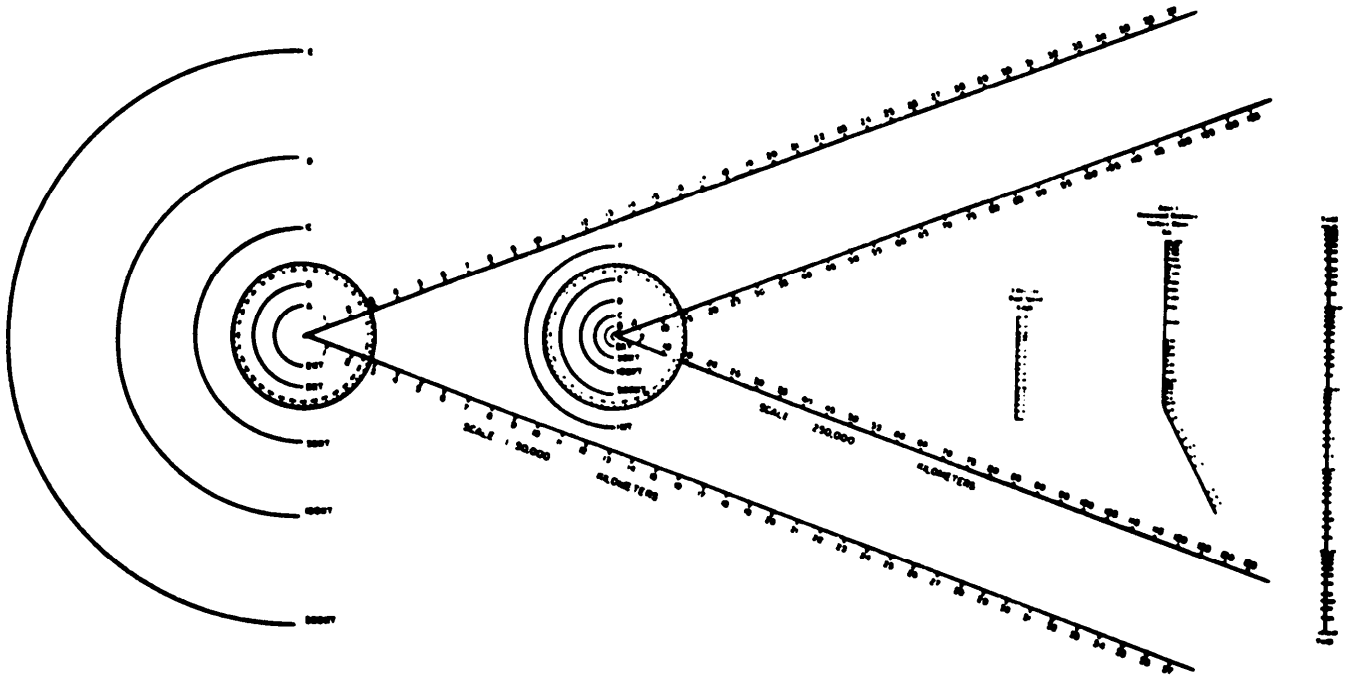
Operating . . . . . –13°F(– 25°C) to 113°F (45°C)
Storage . . . . . –67°F(–55°C) to 158°F (70°C)

Reference:

TM3-6665-327-13&P

CHAPTER 5
HAZARD CALCULATION

AREA PREDICTOR, RADIOLOGICAL FALLOUT: M5A2



AR 600734

Type classification

Expendable; AMCTC 951272

Use:

To outline potential radioactive fallout hazard zones resulting from surface or near suface nuclear bursts when superimposed on maps scaled 1:50,000 or 1:250,000.

Description:

The ABC-M5A2 radiogical fallout area predictor is a transparent sheet of plastic that has two prediction *scales and a* nomograph for outlining *three zones of hazard. The* scales *each an azimuth dial with the* center representing ground zero for the nuclear burst One is scalad for a 1:50,000 map; and the other for a 1:250,000 map. The semicircles represent nuclear cloud radii for nuclear yield groups. The nomograph has three logartithmic scales for windspeed, nuclear yield and downwind distance.

Functioning:

Downwind distance for two prediccted fallout zones can be determined and plotted using information obtained from the appropriate NBC reports.

Tabulated Data:

NSN 6665-00-106-9595
Unit of issue . . . .Each
Basis of issue . . . . CTA 50-970
Dimensions . . . .23.5 x 40in.

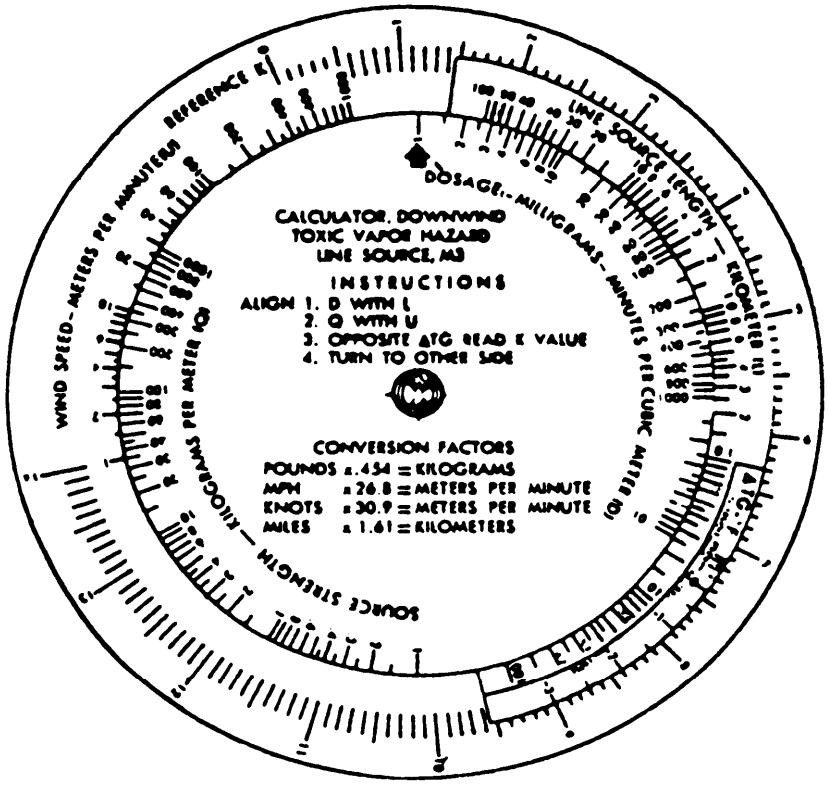
Shipping and Storage Data:

Type pack . . .. 1 area perdictor and TM per plastic case packed 25m per box
weight . . . . 1.20 lb
cube . ... 1.0 cu ft
Type storage . . . .Warehouse
Drawing number .... DL 124-13-27
Specification number MIL-A-51356

Reference:

FM *3-22*
FM 21-40
TM 3-6665-304-10

CALCULATOR, DOWNWIND TOXIC VAPOR HAZARD: LINE SOURCE, M3



Type Classification:

Expendable; MSR 03786004

Use:

To make a quick and accurate calculation of the distance downwind that a toxic vapor cloud of a given dosage may be expected to exist when a toxic chemical agent is released from a one-time line source.

Description:

The M3 line source, downwind toxic vapor hazard calculator consists of three plastic disks mounted concentrically on a larger plastic disk. A DOSAGE (D) scale is imprinted in red on 1/3 of the outer edge of the inner disk. A SOURCE STRENGTH (Q) scale is imprinted in blue on the outer edge of the disk opposite the D scale. A LINE SOURCE LENGTH (L) scale is imprinted in red on the outer edge of the middle disk followed by a temperature gradient scale imprinted in black. A WIND SPEED (U) scale is imprinted in blue on 1/4 of the outer edge of the outer disk. A REFERENCE K scale is also imprinted in black around the outer edge covering about 3/4 of the circumference. INSTRUCTIONS, a REFERENCE K scale, and vertical temperature gradient curves are imprinted in black on the reverse side.

Functioning:

The downwind toxic vapor hazard distance can be determined when given values of dosage, wind-speed, source strength, line source length, and vertical temperature gradient are applied according to instructions printed on the calculator.

Tabulated Data:

NSN	6665-00-893-0985
Unit of issue	Each
Basis of issue	CTA 50-970
Dimensions	6 in. (diameter)

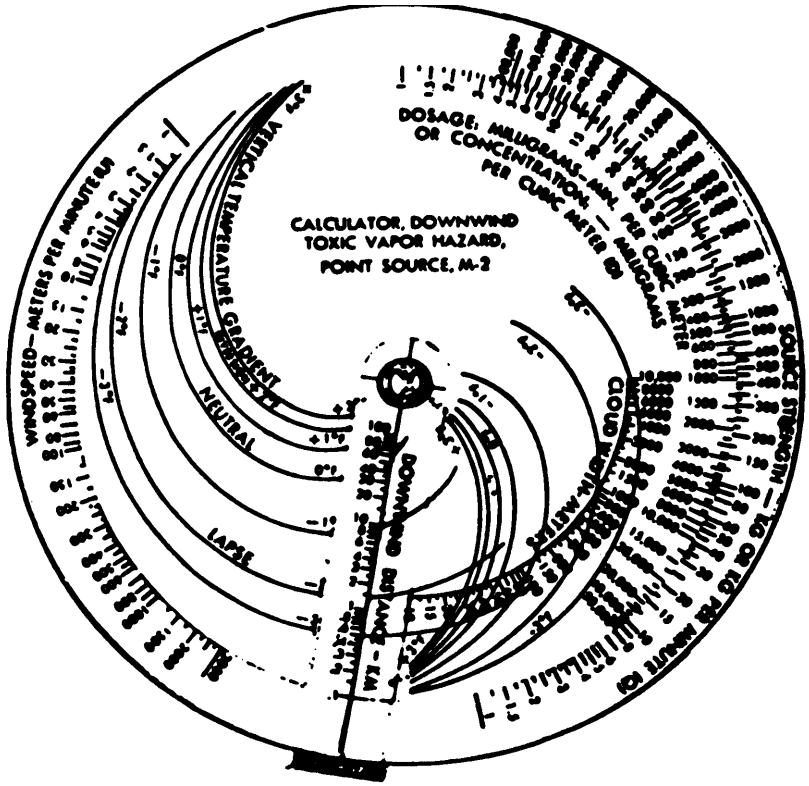
Shipping and Storage Data:

Type pack	100 per fiberboard or plywood box
Weight	16 lb
Cube	0.5 cu ft
Type storage	Warehouse
Specification number	MIL-C-51212
Drawing number	DL 5-86-10

Reference:

FM 3-10

CALCULATOR, DOWNWIND TOXIC VAPOR HAZARD: POINT SOURCE, ABC-M2



Type *Classification:*

Expendable; MSR 03786004

Use:

To make a rapid determination of the distance downwind that a toxic vapor cloud of a given dosage may be expected to exist when a toxic chemical agent is released from a point source.

Description:

The ABC-M2, POINT SOURCE, DOWNWIND TOXIC VAPOR HAZARD calculator consists of an outer disk and a smaller, inner disk with a swing scale superimposed on the two plastic disks. A DOSAGE (D) scale is imprinted in red on the edge of the inner disk. A cloud width scale in meters and two sets of vertical temperature gradient curves are imprinted in black on the inner surface of the disk. A WINDSPEED (U) scale is imprinted in red, and a SOURCE STRENGTH(Q) scale is imprinted in black on the edges of the outer disk. The swing scale is made of transparent plastic and is imprinted in black with a DOWNWIND DISTANCE-KM scale.

Functioning:

The downwind to vapor hazard distance can be determined when given values of dosage, windspeed, source strength, and vertical temperature gradient are applied according to instructions printed on the calculator.

Tabulated Data:

NSN 6665-00-893-0986
Unit of issue . . . . Each
Basis of issue . . . . CTA 50-970
Dimensions . . . .6 in. (diameter)

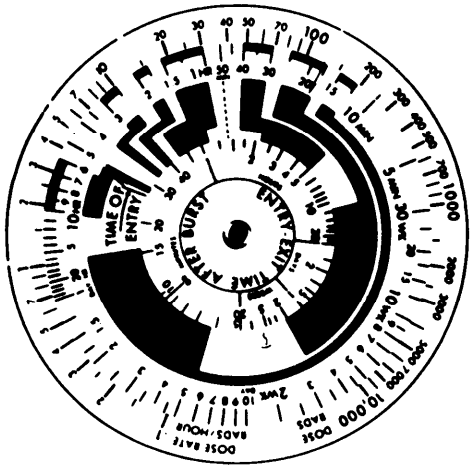
Shipping and Storage Data:

Type pack . . . . 100 per fiberboard or plywood box
Weight . . . . 16 lb
cube . ... 0.5 cu ft
Type storage . . . . Warehouse
Specification number MIL-C-5121 1B
Drawing number DL5-86-3

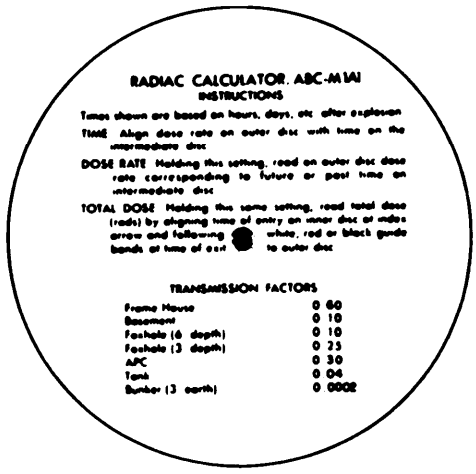
References:

FM 3-10
FM 3-21

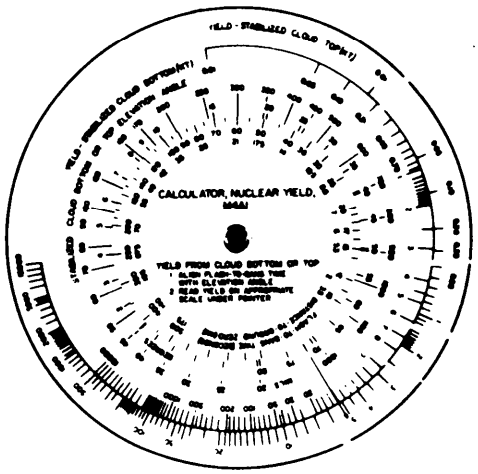
CALCULATOR SET, RADIAC AND NUCLEAR YIELD: ABC-M28A1



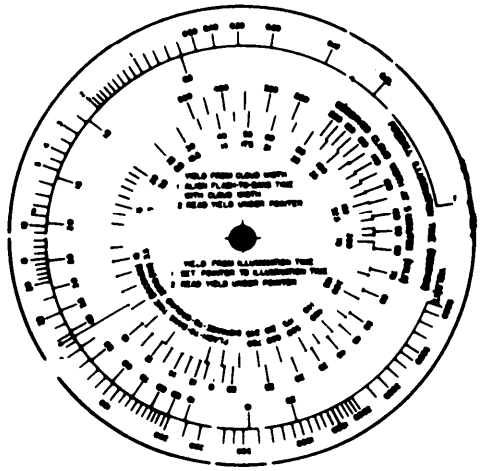
ABC-M1A1 CALCULATOR
(FRONT)



ABC-M1A1 CALCULATOR
(BACK)



M4A1 CALCULATOR
(FRONT)



M4A1 CALCULATOR
(BACK)

Type Classification:

Expendable; AMCTC 870071

Use:

To make quick and accurate calculations of radiation hazards due to radioactive fallout and nuclear yield from a nuclear burst.

Description:

The ABC-M28A1 radiac and nudear yield calculator set consists of an ABC M1A1 radiac calculator and an M4A1 nuclear yield calculator. The plastic calulator disks are marhed with scales on the decay rate of the radioactive fallout present, the dose rate to be expeced in the monitored area, the nuclear yield, and other information about local radioactivity required by the area commander.

Functioning:

a. The ABC-M1A1 radiac calculator provides a rapid method of calculating radiation hazards from a nuclear burst, using data from radiological survey reports and other sources.

b. The M4A1 nuclear yield calculator provides a rapid method of calculating nuclear yield from a nuclear burst when the appropriate sets of data are known:

(1) Flash-to bang time and angle to top or bottom of stabilized nuclear aloud.

(2) Flash-to-bang time and cloud width after bang time.

(3) Fireball illumination time.

Limitations:

The ABC-M1A1 radiac calculator is not Intended for use during buildup of radioctivity or for use by civil Defense personnel in civil defefence situations..

Tabulated Data:

NSN 6685-00-130-3616
unit of issue . ... Each
Basic of issue . . . . . CTA 50-970
Dimensions . . ..0.. 5x5in.

Shipping and Storage Data:

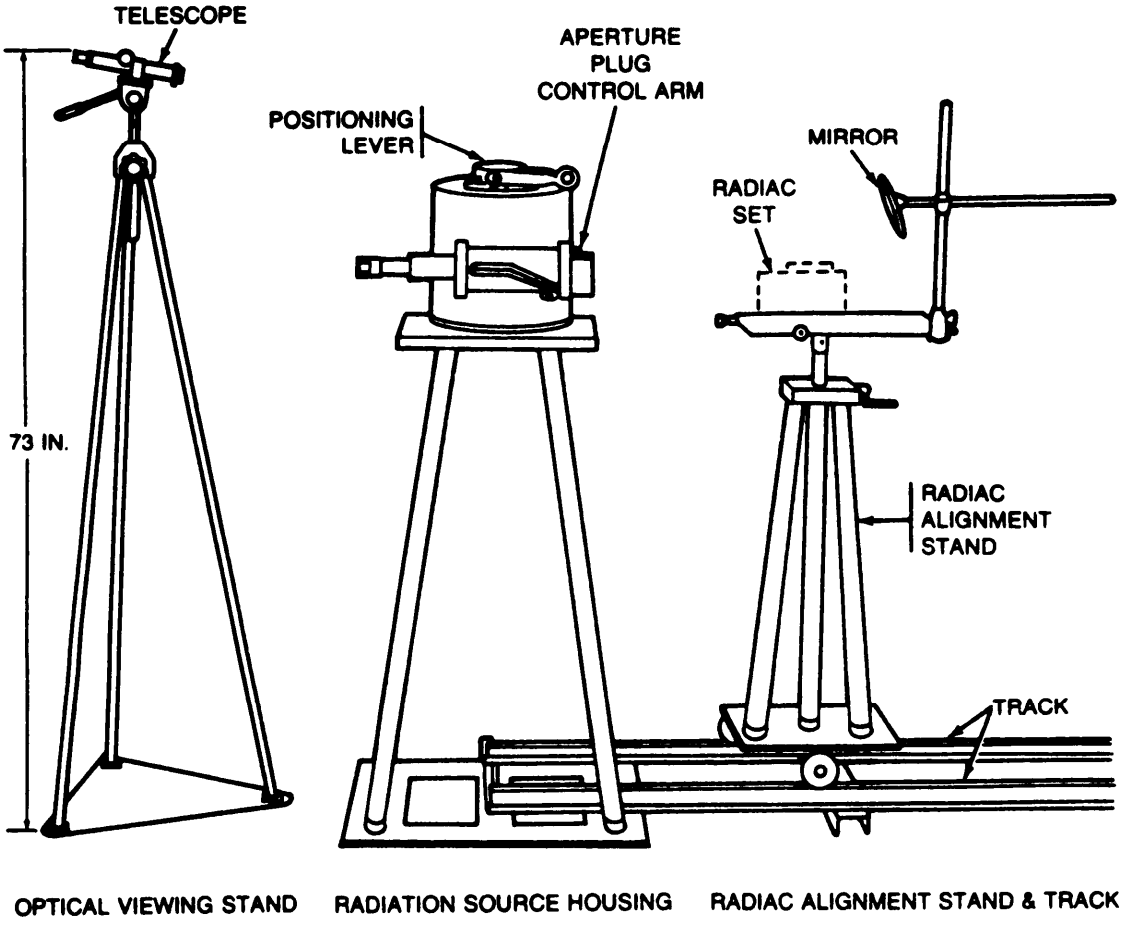
Type pack . . . . . 100per fiberboard or plywood box
Weight . . . . . 33.20 lb
Cube.. . . . . 0.04 cu ft
Type Storage . . . . . Warehouse
Specification number MIL-G-51327
Drawing number .... DL 5-86-34

Reference:

FM 3-22
TM 3-6665-303-10

CHAPTER 6
RADIOACTIVE SOURCES

CALIBRATOR SET, RADIAC: AN/UDM-1 AND AN/UDM-1A



Type Classification:

AN/UDM-1A; STD(LCC-A); AMCTC 88383
AN/UDM-1 ; STD(LCC-A); SIGNAL CORPS
TC 302752

Use:

To provide calibration standards and suitable radioactive source for calibrating radiac instruments of both low and high range and the TS-784 ( )/PD radiac calibrator.

Description

The AN/UDM-1 and 1A radiac calibrator sets consist of a radiation source housing and stand, a radiac alignment stand, an optical viewing stand, and radiac alignment stand tracks. The radiation source housing is a bad-lined brass container or chamber with a removable top used to house the radioactive isotope gamma radiation source safety.

Differences *Between Models:*

The AN/UDM-1 A has a Cesium 137 radbactive isotope; whereas the AN/UDM-1 has a Cobalt 60 radioactive isotope.

Functioning:

A capsule containing a small quantity of radioactive isotope, encased in the lead-shielded container with a cone-shaped opening in one side, furnishes a beam of radiation. Two controls, located a safe distance behind the container, provide all means of raising and lowering the Capsule within the container and regulating the radiation intensity of the beam.

Tabulated Data:

NSN:
AN/UDM-1A 6665-00-556-8825
AN/UDM-1 6665-00-669-0077
Line item number C75466

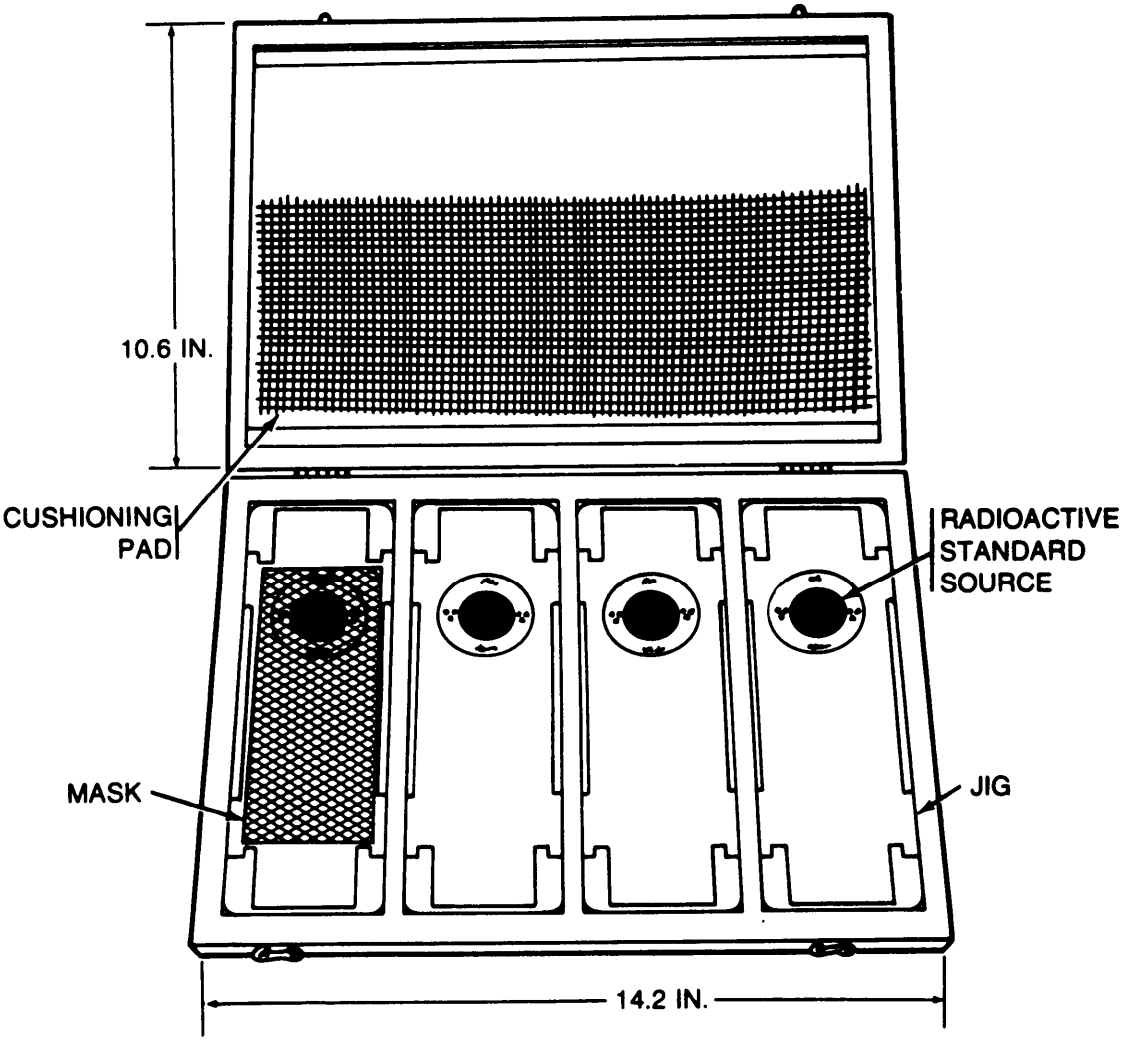
Unit of issue . . . . . .Each
Basis of issue . . . . . MTOE/TDA
Radiation source housing and stand (1A):
Weight . . . . . 600 lb
Length . . . . . 25 in.
Width . . . . . 25 in.
Height . . . . . 56 in.
Radiac alignment stand (1A):
Weight . . . . . 35 lb
Length . . . . . 14.5 in.
Width. . . . . 16.5 in.
Height . . . . . 40 in.
Optical viewing stand (1A):
weight . . . . . 16 lb
Length . . . . . 19 in.
Width. . . . . 19 in.
Height . . . . . 73 in.
Radiac aligment stand tracks (1A):
weight . . . . . 120-180 lb
Length . . . . . 20-30 ft
Width. . . . . 17.5 in.
Height. . . . . 4 in.

Performance:
Type of radiation . . . . . Gamma
AN/UDM-1A:
Radiation source . . . . . Cesium 13 7
Initial rate of radioactivity . . . . . 120 curies
Half life . . . . . 30.4 years
AN/UDM-1 :
Radiation source . . . . . Cobalt 60
Initial rate of radioactivity . . . . . 9 curies
Half life . . . . . 5.3 years

Shipping and Storage Data:
Type pack (1A) . . . . . 1 set packed in 4 wood boxes
Radiation source housing (1A):
Weight 800lb
Cube . . . . . 16.2 cu ft
Radiac alignment stand (1A):
Weight . . . . . 100 lb
Cube . . . . . 7.2 cu ft
Optical viewing stand and radiation-source housing stand (1A):
Weight . . . . . 152 lb
Cube . . . . . 5.2 cu ft
Radiac alignment stand tracks (1A):
Weight . . . . . 200 lb
Cube . . . . . 9.8 cu ft
DOT hazard classification . . . . . Radioactive material
DOT shipping name . . . . . Radioactive material special form NOS
Type storage . . . . . As prescribed by AR 385-30
Specification number:
AN/UDM-1A . . . . . BUSHIPS Notice 9673
AN/UDM-1 . . . . . MIL-R-16131

References:
TM 3-260
TM 3-281
TM 11-1176 (AN/UDM-1)
TM 11-6665-217-15 (AN/UDM-1A)

CALIBRATOR, RADIAC: AN/UDM-6



Type Classification:
STD (LCC-B); AMCTC 2679 64

Use:

To provide calibration standards and suitable radioactive sources for calibrating the AN/PDR-54 and the AN/PDR-60 alpha radiac sets.

Description:

The AN/UDM-6 radiac calibrator consists of four jigs in a hardwood carrying case, a perforated steel mask for attenuating alpha particies, and a cushioning pad. Each jig is equipped with a Plutonium 239 radioactive standard source marked with an alpha particle counting rate.

Functioning:

After controls are set and the radac set has been checked, the alpha detector probe face on the radiac set is positioned over the active side of the radioactive source (side with the symbol). The instrument meter indications for three evenly distributed positions on the probe face area are recorded and averaged to check the calibration. The standards are used primarily to calibrate one point on each scale of the radiac sets. A second point on each scale may be calibrated by using a mask.

limitations:

The AN/UDM-6 radiac calibrator cannot be used to calibrate the AN/PDR-56 (F) radiac set which replaces the AN/PDR-54 and AN/PDR-60 radiac sets. (An AN/UDM-7B radiac calibrator is required to calibrate the AN/PDR-56 (F) radiac set.)

Tabulated Data:

NSN 6665-00-767-7497
Line item number C74507
Unit of issue . . . . . Each
Basis of issue . . . . . MTOE/TDA. AR 310-34: CTA 50-900
Jig (approx)
Length . . . . . 9 3/8 in.
Width . . . . . 3 3/16 in.
Height . . . . . 11/16 in.
Case (approx)
Length . . . . . 14 3/16 in.
Width , ... 10 5/8 in.
Height . . . . . 1 3/16 in.

Performance:

Radioactive material . . . . . Plutonium 239
Type of radiation . . . . . Alpha particle
Energy of alpha particles . . . . . 5.15 MeV
Total quantity incalibrator . . . . . 1.4 microcuries
Half life . . . . . 24,360 years
Number of jigs 4
Number of radioactive standard sources 4
Transmission factor of mask . . . . . 36 percent

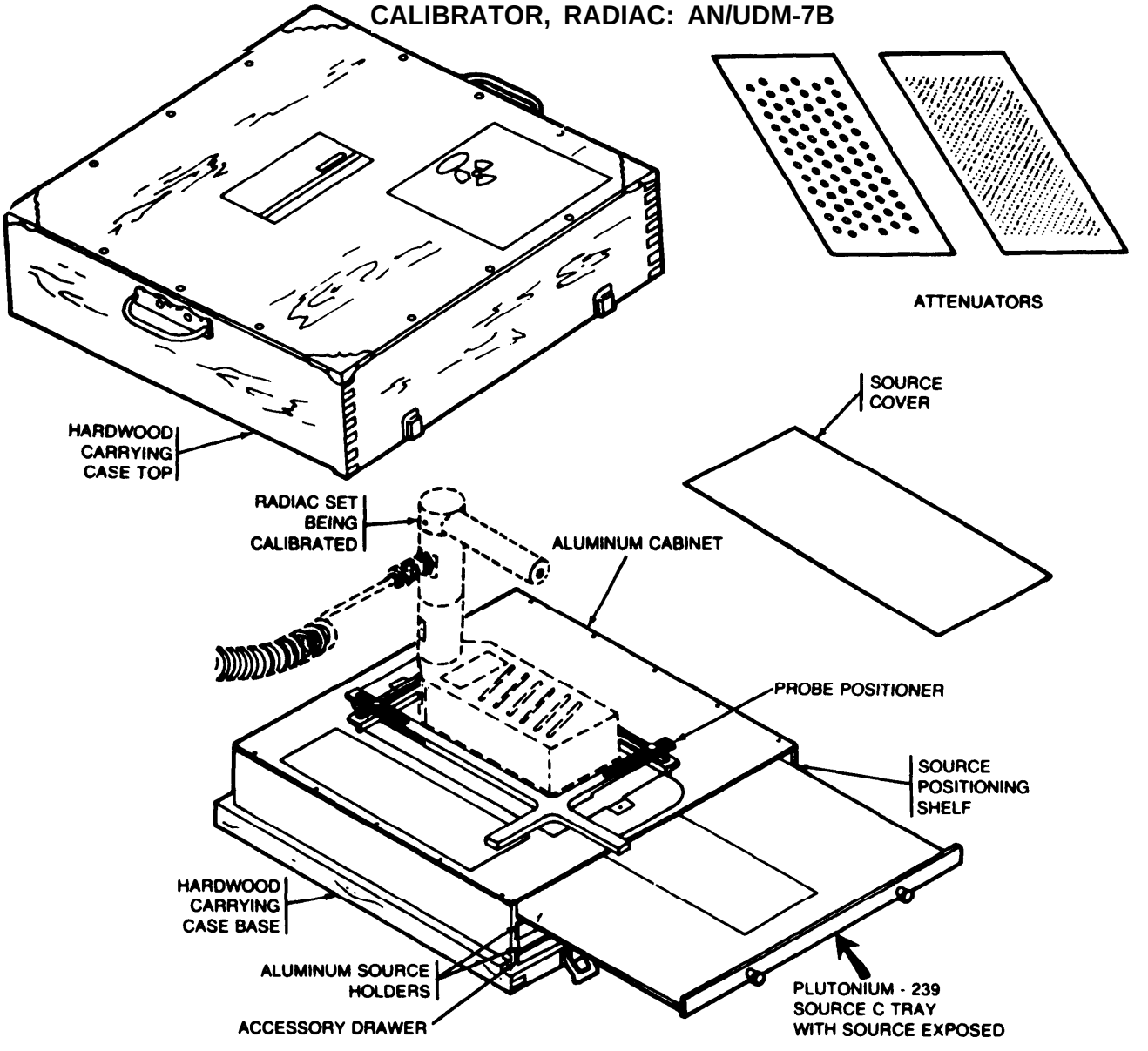
Shipping and Storage Data:

Type pack . . . . . 1 per wood case in a fiberboard carton
Weight . . . . . 9 lb
Cube . . . . . 0.5 cu ft
DOT hazard classification . . . . . Radioactive material, limited quantity NOS
Type storage . . . . . As prescribed by AR 365-30
Drawing number S94-1

References:

TM 3-260
TM 3-261
TM 3-6665-203-10
TM 11-6665-206-15
TM 11-6665-221-15

CALIBRATOR, RADIAC: AN/UDM-7B



Type Classification:

STD (LCGA); MSR 01778001

Use:

To provide calibration stanards and suitable radioactive sources for calibrating the AN/PDR-54, the AN/PDR-56F, and the AN/PDR-60 alpha radiac sets.

Description:

The AN/UDM-7B radiac calibrator consists of the following components:

a. A hardwood carrying case

b. An aluminum cabinet used for housing the Sources and accessory drawer

c. Aluminum source holders for housing sources and accessory equipment

d. Two alpha sources, Plutonium 239, on plastic discs labeled A and C

e. An accessory drawer containing attenuators, a card of calibration check meter readings, an operator's manual, tweezers, and an adjustable probe positioner.

Functioning:

The probe positioner is used to position and clamp the alpha detector probe face so that it will be aligned with the effective radiation area of the source. The desired Plutonium 239 source (A or C) is inserted into the source portioning shelf. After the controls on the radiac set probe have been turned on, the meter readings from the appropriate scale on the radiac set are compared with those on the calibrator's table.

Tabulated Data:

NSN 6665-00-400-5388
Line item number C75673
unit of issue . . . . . Each
Basis of issue . . . . . MTOE/TDA
Weight . . . . . 24.5 lb
Dimensions . . . . . 15.1 X 14.8 X 4 in.

Performance;

Plutonium 239 sources:
Source A . . . . . Order 10^7 disintegrations per minute
Source C . . . . . Order of 10^5 disintegrations per minute

Attenuator:
No. 1 . . . . . Approximately 10% of transmission
No. 2 . . . . . Approximately 2.5% of transmission

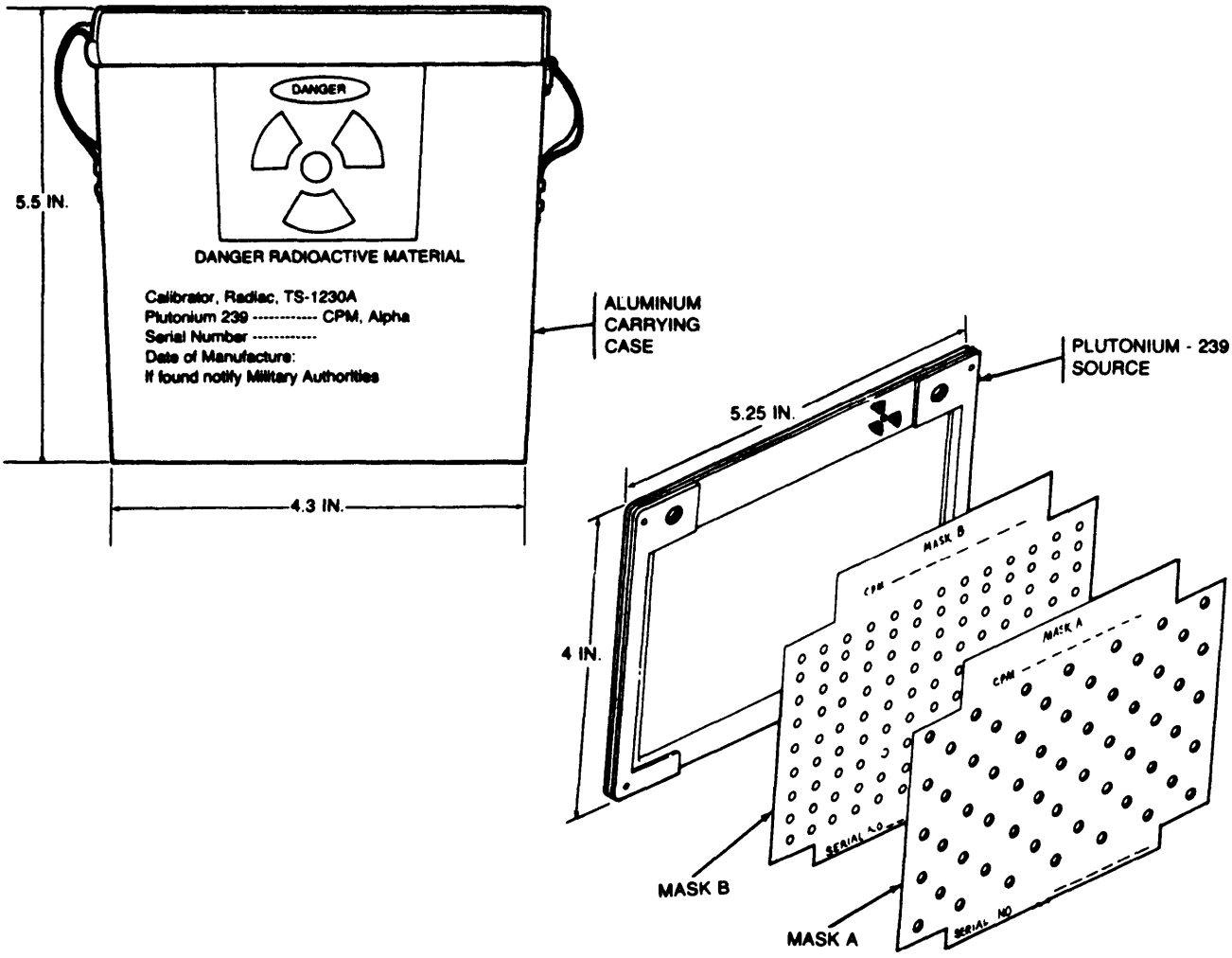
Shipping and Storage Data:

Type pack . . . . . 1 per wood box
Weight . . . . . 30 lb
cube . . . . . 1.0 cu ft
DOT hazard classification . . . . . Radioactive material
DOT shipping name . . . . . Radioactive material limited quantity NOS
Type storage . . . . . As prescribed by AR 385-30
Drawing number ANUDM7B

References:

TM 3-280
TM 3-281
TM 3-6665-213-10
TM 11-6665-203-10
TM 11-8865-208-15
TM 11-6665-221-15
TB 43-180

CALIBRATOR, RADIAC: TS-1230 A



Type Classification:

STD(LCGA):AMCTC 3940 65

Use:

To provide calibration standards and a suitabie radioactive source for calibrating the three ranges of the IM-156/PD (Juno SRJ-6) radiacmeter for alpha radiation.

Description:

The TS-1230A radiac calibrator consists of an aluminum carrying case; a test sample of plutonium 239 having a normal activity of 4,000,000 counts per minute; and two masks, mask A and mask B.

Functioning:

After controls are set and the radiac set has been checked, the alpha detector probe face on the radiac set is positioned over the active side of the radioactive source (side with the symbol). The instrument meter indications for three evenly distributed positions on the probe face area are recorded and averaged to check the calibration. The standards are used primarily to calibrate one point on each scale of the radiac sets. A second point on each scale may be calibrated by using a mask. Mask A and mask B attenuate the alpha radioactivity of the test sample by factors of 5 and 50, respectively. Used together, the masks attenuate the radioactivity of the sample by a factor of 100.

Tabulated Data:

NSN 6665-00-973-1123
Line item number C74370
Unit of issue . . . . Each
Basis of issue . . . . . 1 per Radiacmeter, lM-156/PD
Source:
Length. . . . . 5.25 in.
Width. . . . . 4 in.
Case:
Height . . . . . 5.5 in.
Width. . . .. 4.25 in.
Depth . . .. 0.35 in.

Performance:

Radioactive material . . . . Plutonium 239
Type of radiation. . . . . .2 π alpha particle emission
Energy of alpha particles . . . . 5.15 million electronic volts
Total quantity of calibrator . . . .4 microcuries
Half life . ... 24,360 years
Rate of alpha emission . . . .4,000,000 cpm

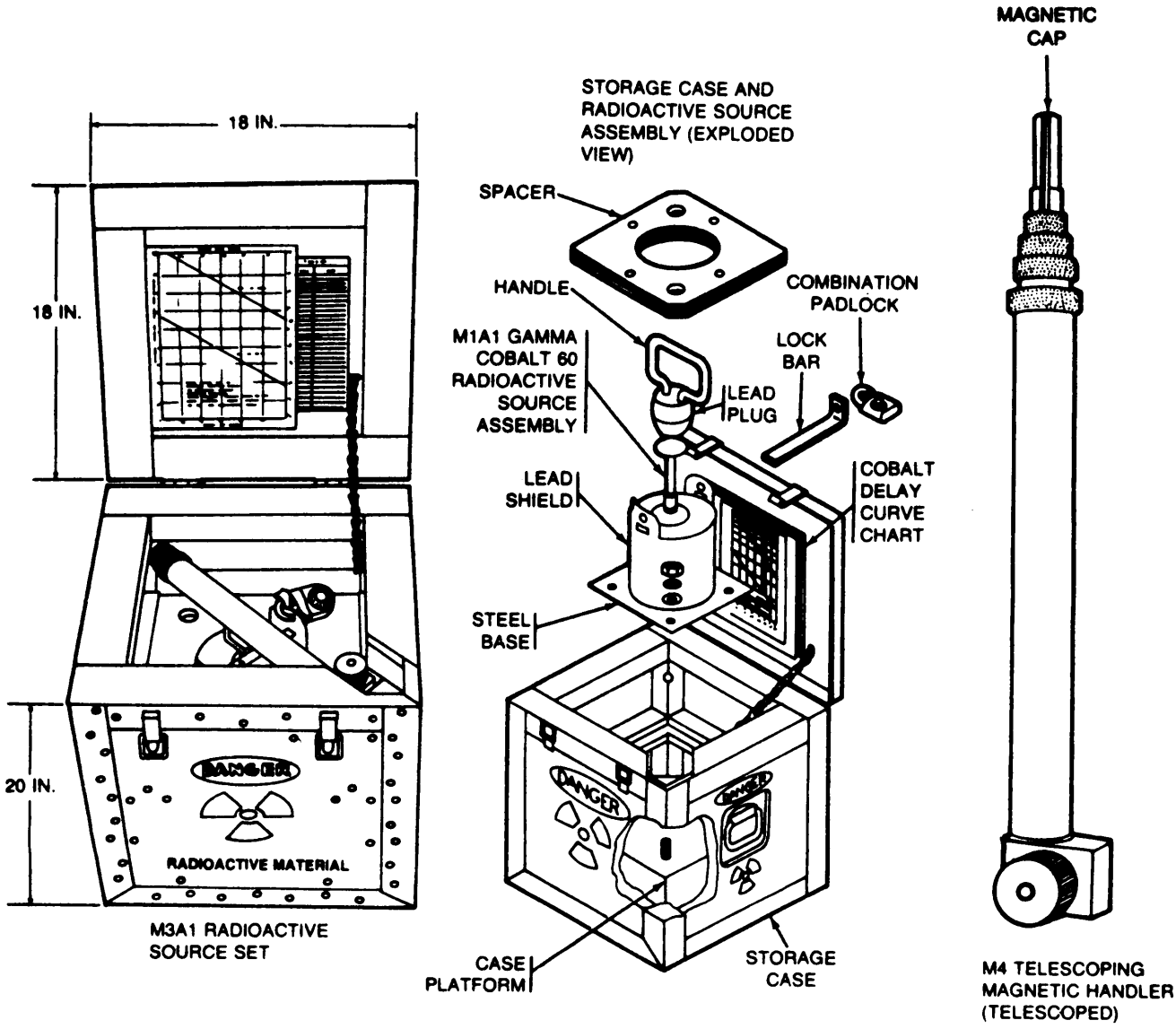
Shipping and Storage Data:

Type pack . . . .20 per wooden box
weight 12lb
Cube . . . . . 0.1 cu ft
DOT hazard classification . . . . Radioactive material
DOT shipping name . . . . . .Radioactive material limited quantity Nos
Type storage . . . . As prescribed by AR 385-30
Drawing number TS1230A

References:

TB 43-180
TM 3-260
TM 3-261
TM 3-6655-202-10
TM 11-6665-207-12
TM 11-6665-208-15
TM 11-6665-221-15

RADIOACTIVE SOURCE SET: M3A1



Type C/assification:

STD (LCC-A):CCTC 3968 62

Use:

To train personnel in the techniques of radiological *defense* and to calibrate radiac instruments.

Description:

The M3A1 radioactive source set consists of a storage case,an M1A1 gamma cobalt 60 radioactive source assembly, and an M4 telescopling radioactive source magnetic handler.

Functioning:

The M4 telescoping radioactive source magnetic handler is used to lift and handle the radioactive source at a safe distance. To move the source capsule, the magnetic cap on the extended handler is brought in

contact with a lifting disk on the M1A1 gamma Cobalt 80 radioactive source assembly. The radiac sets are operated from a prescribed safe distance from the radioactive source capsule. After the controls on the radiac sets have been turned on, the meter readings on the radac set are compared with those in the instructions.

Tabulated Data:

NSN 6665-00-856-8235
Line item number Q933303
Unit of issue . . . . . Each
Basis of issue . . . . CT 50-909
Weight:
M3A1 radioactive source set . . . . . 150 lb
Magnetic handler . . . .2 1/2 lb
Dimensions (storage box) .. . . 18 x 18 x 20 in.

Performance:

Radioactive material . . . . . Cobalt
Activity at time of initial calibration . . . . . 80-130 millicurie
Exposure rate at activity level of 100 millicure Cobait 60 . . . .132 mrad/hr at 1 meter, (158 mrad/hr at 1 yard)
Dose rate at surface of capsule . . . . . Greater than 10,000 rad/hr
Half life . . . . 5.3 years

Shipping and Storage Data:

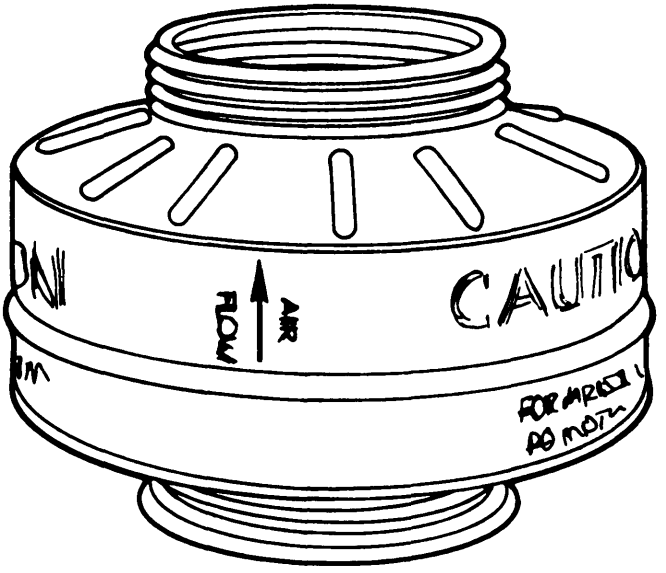
Type pack . . .. 1 lper wood box
Weight . . . . 152 lb
cube . . . . 3.75 cu ft
DOT hazard classification . . . . . Radiactive material
DOT shipping name .. . . .Radioactive material limited quantity NOS
Type storage . ... As prescribed by AR 385-30
Drawing number . . . .124..12-3

References:

TM 3-280
TM 3-281
TM 3-6665-214-15
TM 43-180

CHAPTER 7
MAINTENANCE AND REPAIR

CANISTER, PARTICULATE: M14



Type Classification:

Expendable: AMCTC 9512 72

Use:

To prevent particulates from entering the piping to test head on the M14 dioctylphthalate (DOP) protective mask leakage tester. It is also used with respiratory devices such as masks or supplied air outfits to protect personnel engaged in research with biological and radiological agents against all types of particulate contaminants (aerosols) in the atmosphere.

Description:

The M14 particulate canister is a squat, cylindrical canister 4 1/4 inches in diameter by 3 1/2 inches deep with an internally threaded nozzle at the inlet end and an externally threaded nozzle at the outlet end.

Functioning:

When the M14 canister is used on the M14 DOP protective mask leakage tester, air required to simulate breathing through a mask is drawn through the M14 canister. Any aerosols such as DOP smoke are tittered from the air before it flows on through the piping to the test head. When used on respirators, breathing in draws air through the canister which filters any aerosols.

Limitations:

The M14 particulate canister does not protect against toxic gases.

Tabulated Data:

NSN 4240-00-203-3733
Unit of issue . . . . . Each
Basis of issue . . . . CTA 50-970
Weight . . . . . 0.25 lb
Diameter . . . . . 4.25 in.
Depth . . . . . 3.5 in.

Performance:

Filters aerosols with particle sizes of less than one micron.

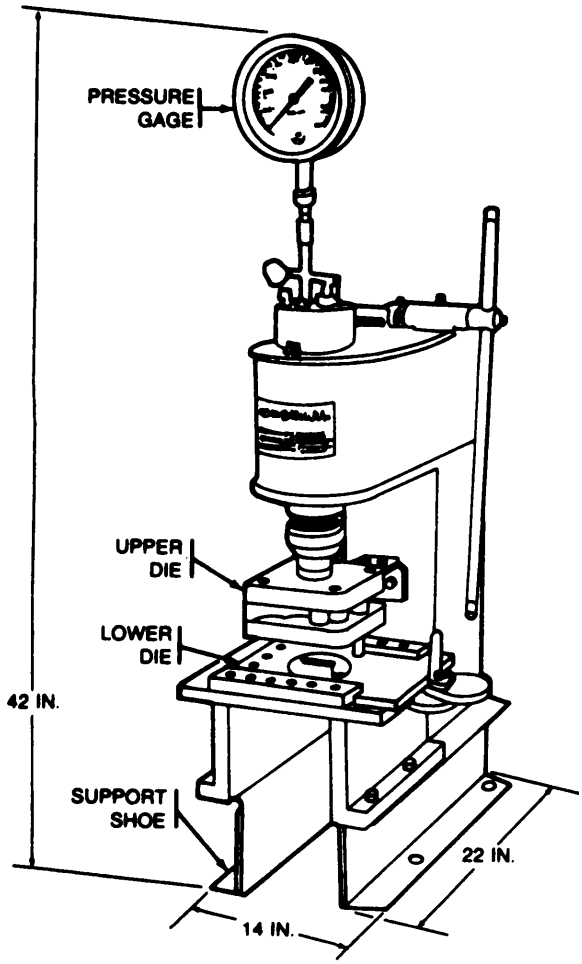
Shipping and Storage Data:

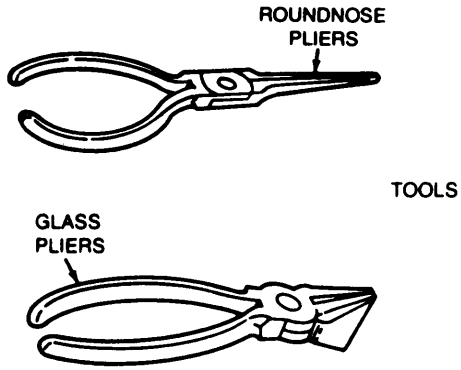
Type pack . . . .24 per fiberboard box
Weight . . . . . 38 lb
cube . . . .2 cu ft
Type storage . . . . . Warehouse
Drawing number 5-3-876
Specification number MIL-C-10082

References:

TB 3-205-1
TM 3-6665-257-15
TM 3-6665-257-25P

CRIMPING OUTFIT, HYDRAULIC, VOICEMIITER-OUTLET VALVE ASSEMBLY: ABC-M1





Type Classification:
STD (LCC-A): AMCTC 3934 65

Use:
To crimp the voicemitter-outtet valve aasmbly and the nose cup on ABGM17, M17A1, and M17A2 chemical-biological masks.

Description:
The M1 voicemitter-outlet valve assembly hydraulic crimping outfit consists of a hand-operated, single-column hydraulic press with a pressure gage, crimping dies, support shoes, roundnose pliers, and glass pliers.

Functioning:
A prepared mask faceblank is positioned between the two dies on the hydraulic press. The press is preset to operate at 1,200 pounds per square inch. This is the pressure required for uniformly crimping the voicemitter-outilet valve assemblies and nose cups to the mask faceblanks. When the crimping has been completed, the mask is tested for leakage using the Ml 4 protective mask leakage tester.

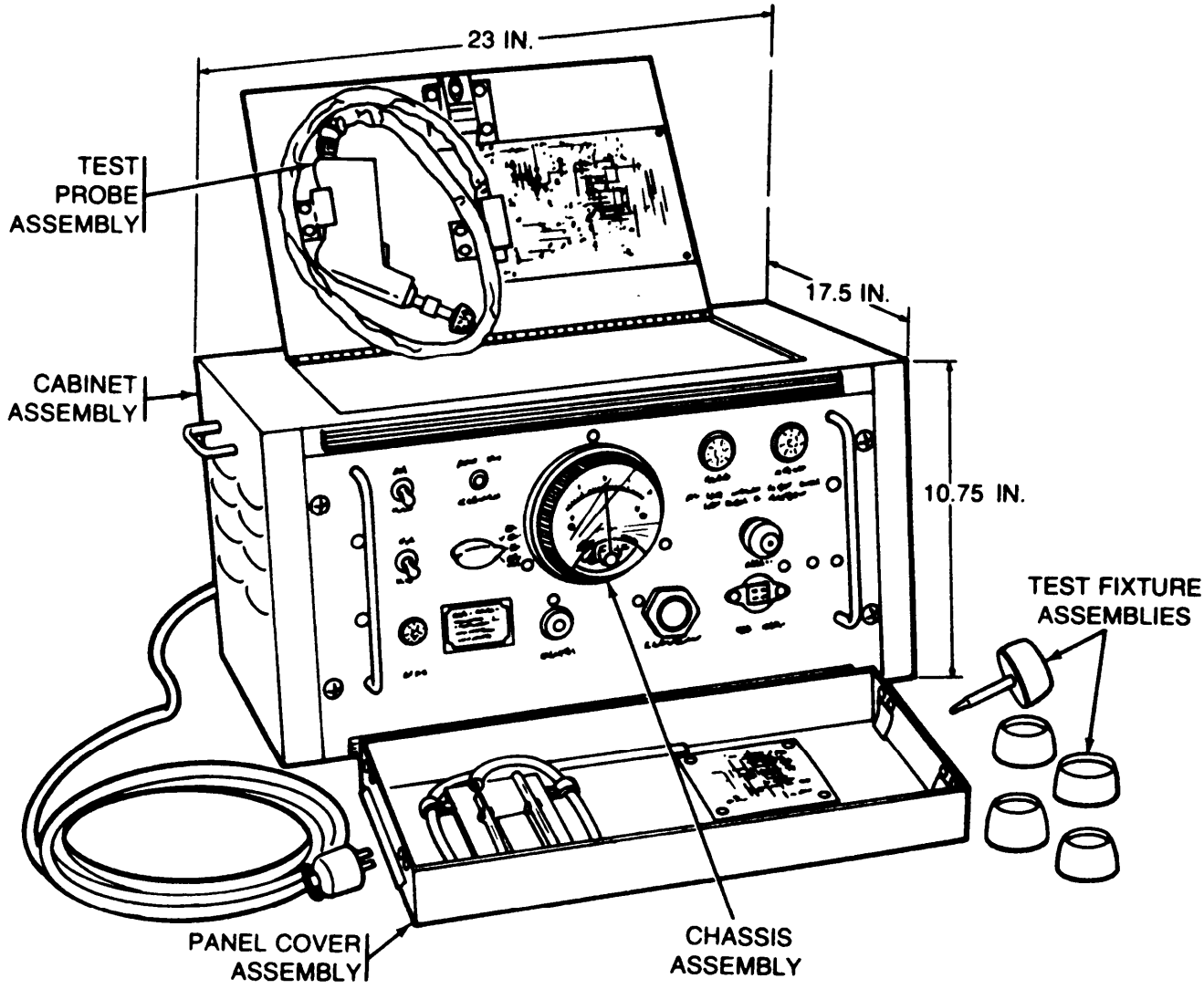
Tabulated Data:
NSN 5180-00-911-1366
Line item number F46089
Unit of issue . . . . Each
Basis of issue . . . . . .MTOE/TDA
Weight . . . .309 lb
Dimensions . . . .42 x 14 x 22 in.

Performance:
Rated pressure of
hydraulic press . . . . 10 tons
Pressure used for crimping . . . .1,200 psi

Shipping and Storage Data:
Type pack . . . . . 1 per wood box
Weight . . . .343 lb
cube . . . . . 11.84cu ft
Drawing number . . . . . .LM 77-1-1

Reference:
TM 3-5180-210-15

INDICATOR, OUTLET VALVE LEAKAGE: M4A1



Type Classification:
STD (LCC-A): CCTC 3853 61

Use:
To test outlet valve assemblies on chemical-biological masks during production, surveillance, and maintenance, either separately or when assembled to the masks.

Description:
The M4A1 outlet valve leakage indicator is a portable test set consisting of a cabinet assembly, a panel cover assembly, a chassis assembly, a test probe assembly, and accessory equipment.

Functioning:
The M4A1 outlet valves leakage indicator tests air leakage through outlet valves of various chemical-biological masks by comparing their leakage with leakage through a calibrated orifice of the indicator. Leakage is checked either under pressure or vacuum. Outlet valves alone can be tested directly on the indicator. Several test assemblies are provided to adapt the indicator to the various outlet valves which can be tested. Outlet valves installed in the facepieces are tested using a test probe connected to the indicator.

Tabulated Data:
NSN 6665-00-738-2128
Line item number K72050
Unit of issue . . . . . Each

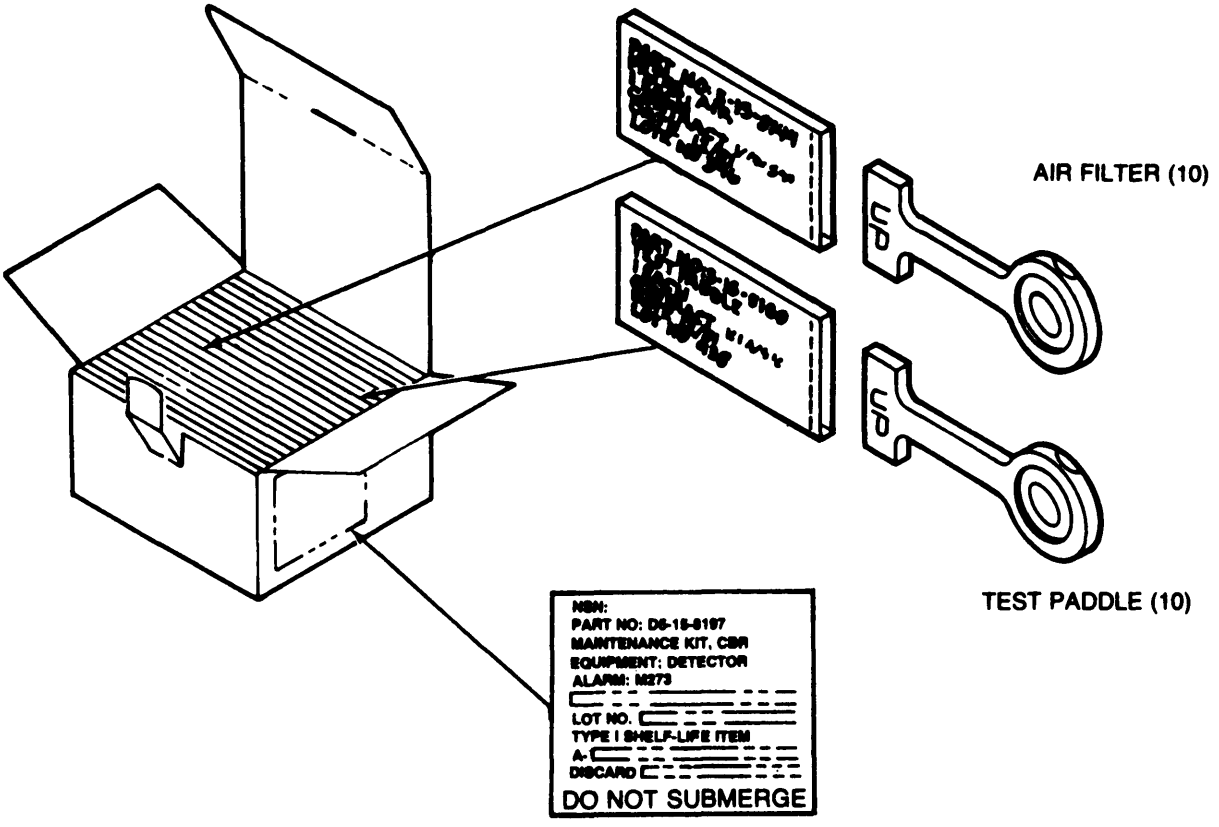
Basis of issue... .. .. MTOE/TDA
Weight . ... 75 lb
Dimensions . . . .23 x 17.5 x 23 in.

Performance:
Power source requirement . . .. 115 Vac, 1.5 amp
Compressed air ....65 psi
Blower capacity . . . . Pressure or vacum of 2 inches of water with a leak of 280 milliliters per minute (max)
Sensitivity . ... 1 milliliter of air per minute at a pressure or vacuum of 1inch of water

Shipping and Storage *Data:*
Type pack . . . . 1 per wood box
Weight . . . . 90 lb
Cube . . . . 7.2 cu ft
Drawing number 136-45-201

References:
TM 3-6665-209-12
TM 3-6665-209-20P
TM 3-6665-209-35
TM 3-6665-209-35P

MAINTENANCE KIT, CBR EQUIPMENT: DETECTOR, ALARM, M273



Type Classification:
Expendable; MSR 02816012

Use:
To replace air filters and test paddles expended while operating and testing the M43A1 detector unit of the M8A1 automatic chemical agent alarm.

Description:
The M273 maintenance kit consists of a fiberboard box containing ten air filters and ten test paddies for the M43A1 detector unit. Each air filter and test paddle is packed in a kraft and aluminum foil bag.

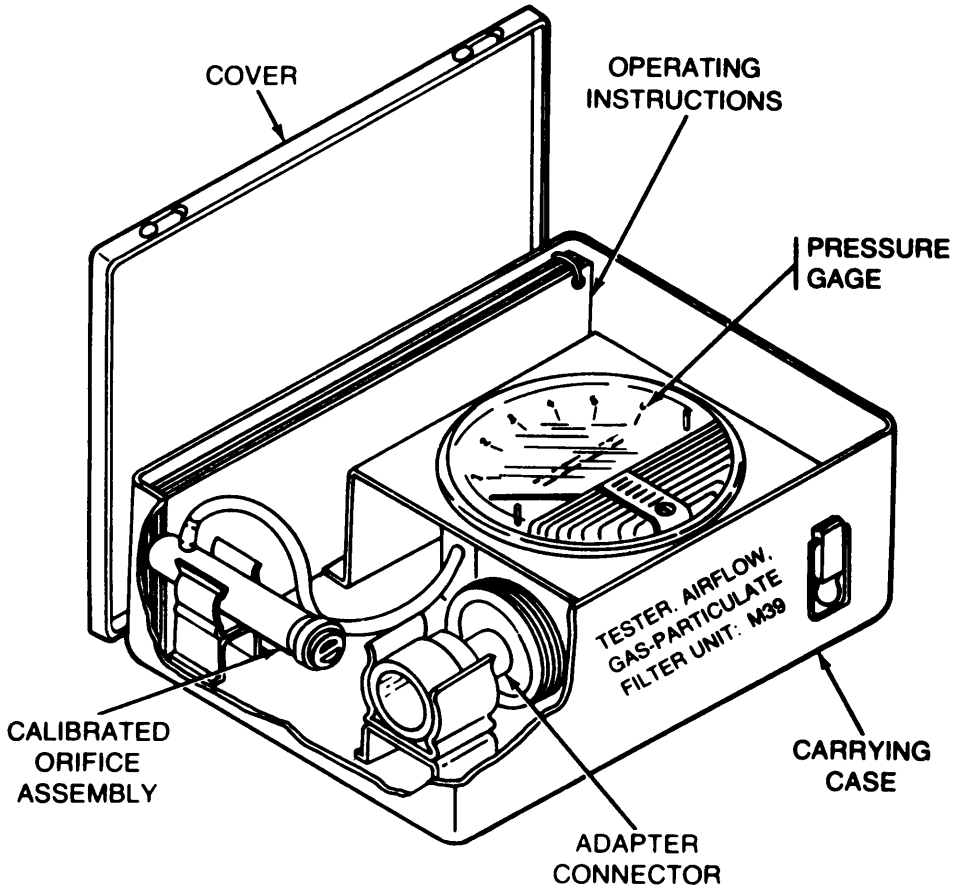
Functioning:
The air filter filters the air samples being drawn into the M43A1 detector unit air inlet. The test paddle is inserted in the air inlet in lieu of the air filter to simulate the presence of a chemical agent. If the detector cell responds, the detector unit is functioning properly. it can be assumed that it will respond to the presence of chemical agents in the air.

Tabulated Data:
NSN 5180-01-108-1729
Unit of issue . . . . . Each
Basis of issue . . . . CTA 50-970
Weight . . . . Not available
Dimensions . . . .5 x 4.75 x 3 in.

Shipping and Storage Data:
Type pack . . .. Fiberboard box/ 50 per wooden box
Weight . . . . 47 lb
Cube . . . .3.23 cu ft
Type storage . . . . . .Warehouse
Drawing number 5-15-8194/97

References:
TM 3-6665-312-12&P
TM 3-6665-312-30&P

TESTER, AIRFLOW, GAS-PARTICULATE FILTER UNIT: M39



Type Classification:

STD (LCC-A); MSR 11806011

Use:

To measure airflow for gas-particulate filter units used on armored vehicles, for the M7A1 hospital gas-particulate filter unit, for the M2A1 and M2A2 air purifiers, and for Ml Al -19 precleaned and particulate fitter assemblies being required.

Description:

The M39 gas-particulate filter unit airflow tester is a test kit consisting of a magnehelic pressure gage, a calibrated orifice assembly, an adapter connector, and plastic tubing assembled in an aluminum carrying case.

Functioning:

Turning on the gas-particulate filter switch activates the blower fan in the air purifier or precleaned and filter assembly. The air flows through the hose assembly and calibrated orifice to the magnehelic pressure gage. The gage measures the pressure in inches of water. Required airflow adjustments are then made on the air purifier or precleaned and particulate filter assembly being tested.

Tabulated Data:

NSN	6680-00-436-4212
Line item number	W02526
Unit of issue	Each
Basis of issue	TOE/MTOE/TDA
Weight	3.50 lb
Dimensions	7.6 x 6.8 x 3.5 in.

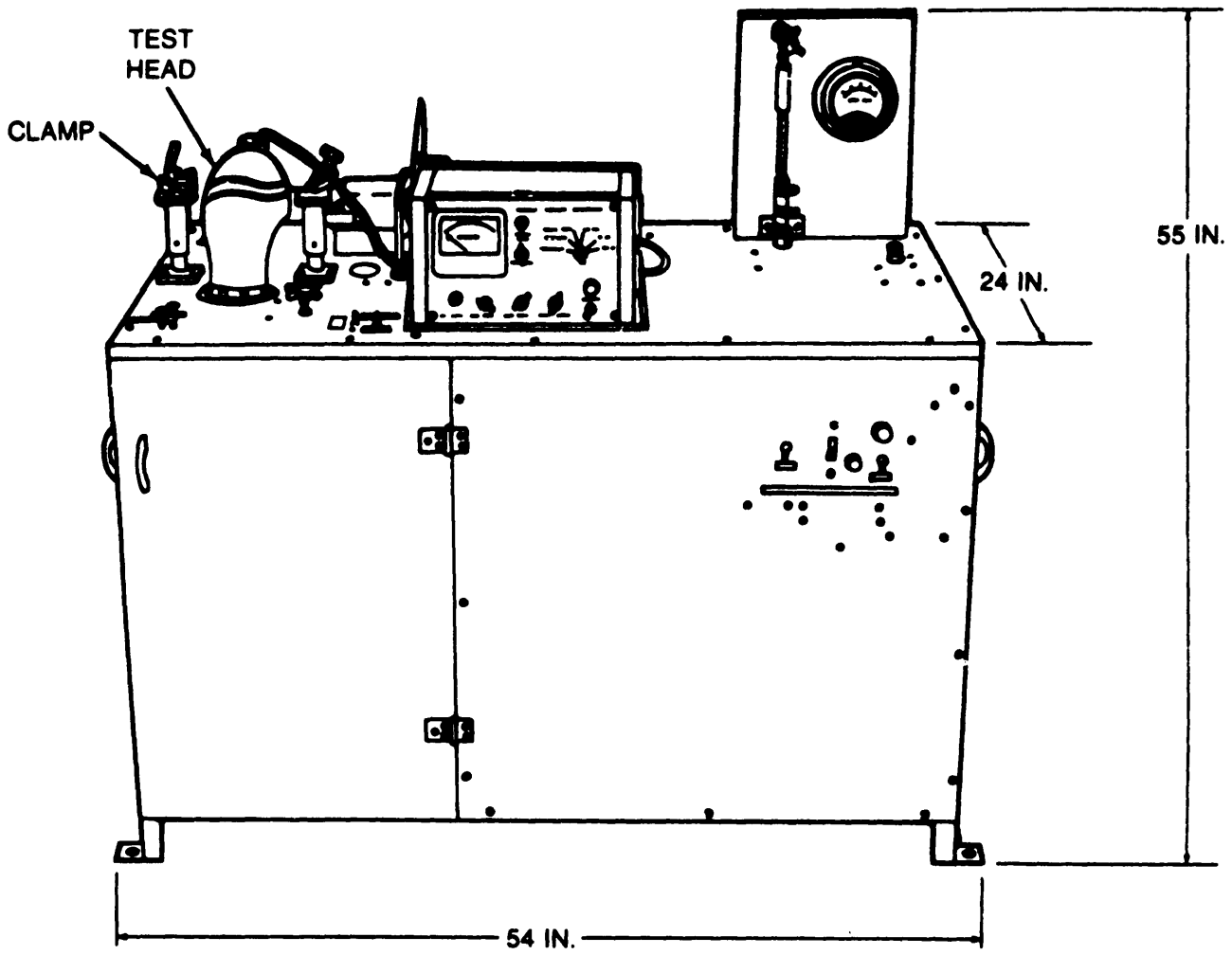
Shipping and Storage Data:

Type pack	One per fiberboard box
Weight	5.25 lb
cube	0.37 cu ft
Drawing number	5-77-2120

References:

TM 3-4240-276-30&P
TM 3-4240-282-L (Lists all reference)
TM 3-6680-316-10

TESTER, LEAKAGE, PROTECTIVE MASK: DOP, M14



Type Classification:
STD (LCC-A): AMCTC 4891 66

Use:
To test chemical-blologloal masks for leakage during repair operation.

Description:
The M14 DOP proteotive mask leakage tester is an electtrical-mechanical testing unit housed in a steel cabinet Different types of test heads and clamps are provided to fit the different mask configurations to be tested

Functioning:
Four operating cycles are performed on the M14 leakage tester. These are the clear, toot, and purge operating cycles and calibrating for 100 percent DOP Indication.

Tabulated Data:

NSN	6665-00-911-3552
Line Item number	W03346
Unit of issue	Each
Basis of issue	MTOE/TOE/TDA
Weight	747 lb
Dimensions	54 x 24 x 55 in.

Performance:

Power requirement ..... 115 ± 5Vac
Air supply pressure ..... 50-70 psi
DOP smoke generator
Reservoir capacity ..... 1 gal
Type liquid ..... dioctylphthalate (DOP)
Air Pressure ..... 3 psi
Vacuum pump:
Capacity ..... 8 cfm
Motor (electric) ..... 1/2 hp

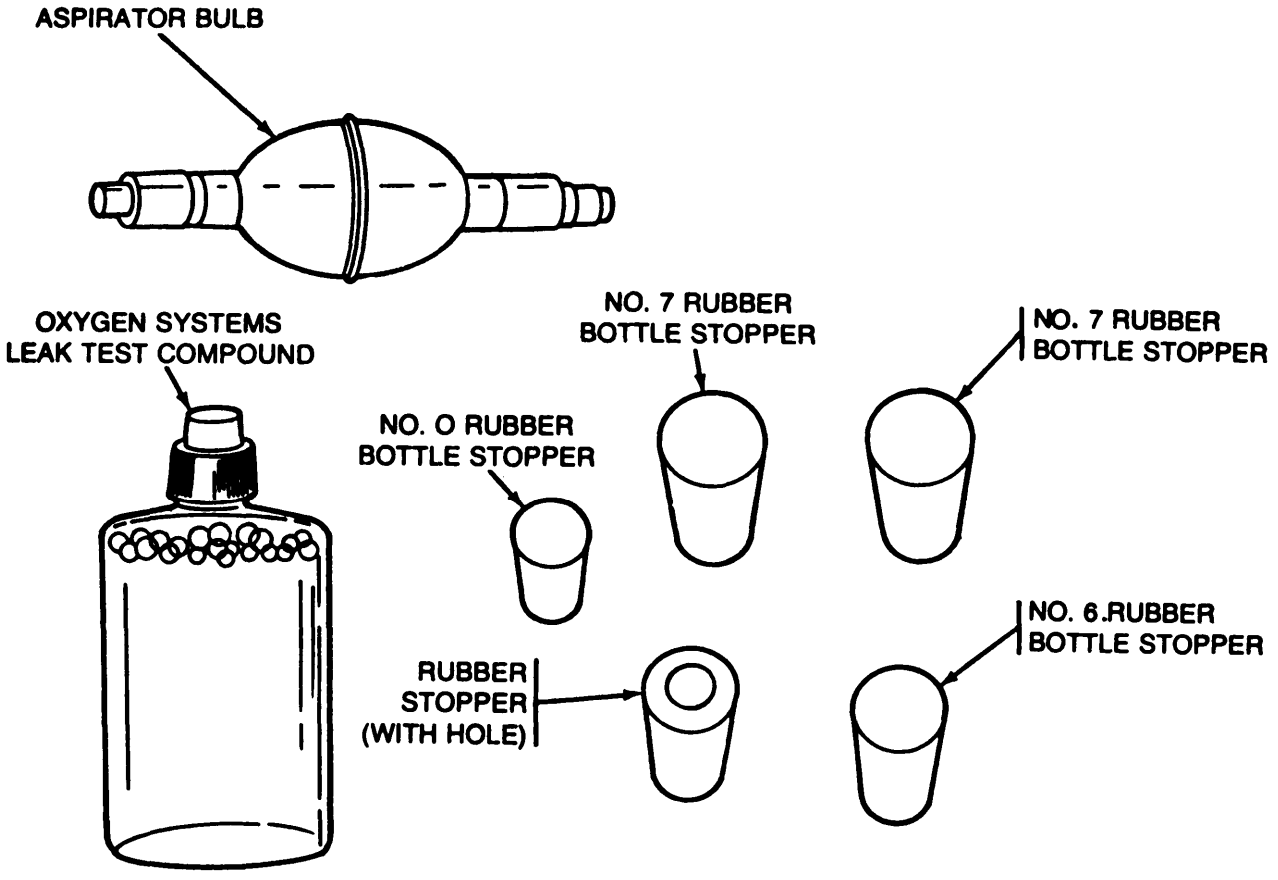
Shipping and Storage Data:

Type pack ..... 1 per wood crate
Weight ..... 922 lb
cube ..... 94 cu ft
Type storage ..... Warehouse
Drawing number 136 42-750

References:

DM3-6665-257-1

TEST KIT, LEAKAGE, CHEMICAL-BIOLOGICAL AIR FILTER: M257



Type Classification:
Expendable; MSR 07766002

Use:
To test the M46 chemical-biological air fitter of the Protective Outfit, Toxicological: Microclimate Controlled (POTMC) for air leaks.

Description:

The M257 chemical-biological air filter leakage test kit consists of an aspirator bulb, two No. 7 solid rubber bottle-stoppers, a No. 6 solid rubber bottle-stopper, a No. 0 solid rubber bottle-stopper, a robber bottle-stopper with ahole, and a 4 oz bottle of oxygen systems leak test compound.

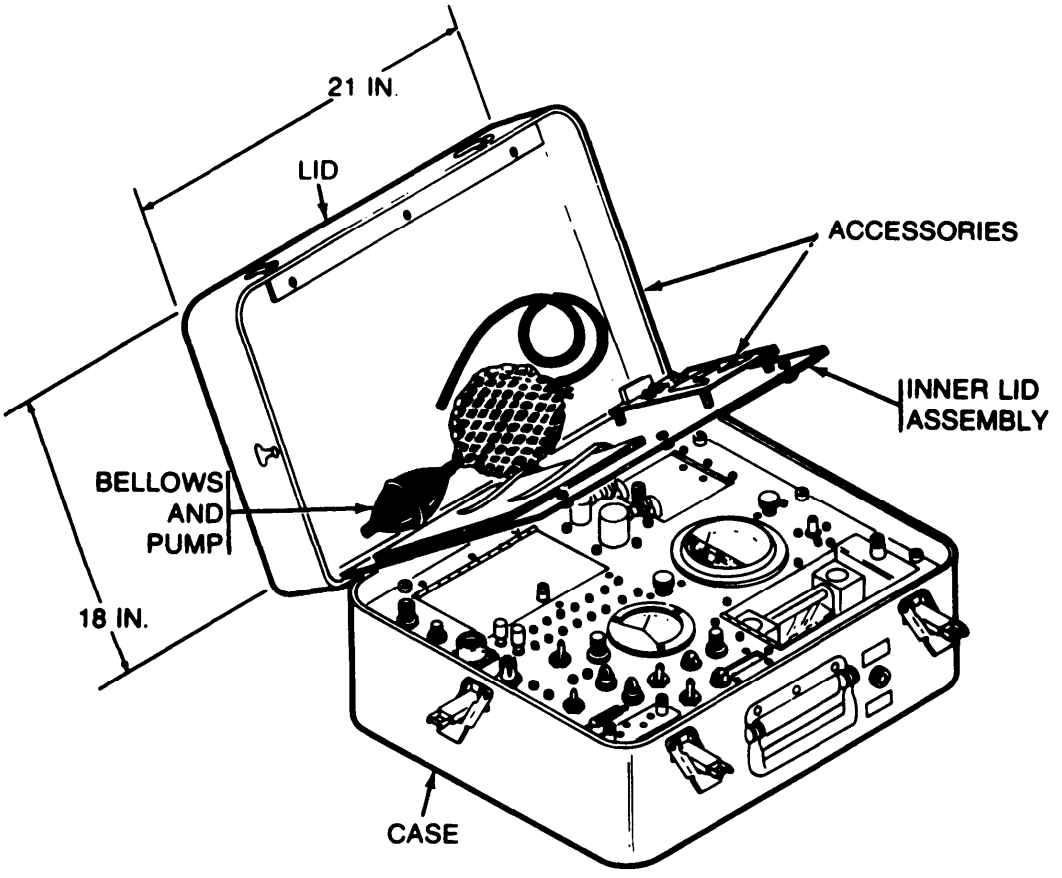
Functioning:
The components of the M257 test kit are used to test for leaks in the front housing manifold or in the assembled front housing of the M46 air filter. The rubber stoppefs are plugged into connectors on the rubber components of the filter. The aspirator bulb is used to inflate the rubber components of the M46 filter unit. The component being tested is then submerged in water. (As an alternate,the leak test compound can be applied around the manifold.) Tests for air leakage are made by tracing any bubbles formed in the water or the alternate leak test compound.

Tabulated Data:
NSN 4240-00-300-0776
Unit of issue . . . . Each
Basis of issue . . . . CTA 50-970
Weight . . . . 0.7 lb
Dimensions . . . .6 x 2.5 x 4 in.

Shipping and Storage Data:
Type pack . . . . 1 per fiberboard box
Weight . . . . 0.7 lb
Cube . . . . . 0.035 cu ft
Type storage . . . . Warehouse
Drawing number DL5-3-1004

References
TM 3-4240-273-20&P
TM 3-4240-294-13&P

TEST SET, CHEMICAL AGENT AUTOMATIC ALARM: M74



Type *Classification:*
STD (LCGB); MSR 02816012

Use:
To test and calibrate the M43 detector unit and test the M42 alarm unit of the M8 automatic chemical agent alarm.

Description:
The M74 chemical agent automatic alarm test set consists of electrical, pneumatic, and mechanical circuits and components housed in a portable, watertight case with a hinged lid and folding handle. Accessories are secured under the lid by an inner lid assembly.

Functioning:
The electrc circuits in the M74 test set are used to check the Operati onal status of the M42 alarm unit circuit card and the electronic module, pump motor, air-inlet heater cycling, and the electronic chassis components of the M43 detector. Power for operation is obtained from BA3517/U and BB501/U batteries, the M10 power supply, or any other power source supplying 24 to 38 Vdc at 2 amperes. The pneumatic system operates under differential pressure up to 62.5 cm of water and is used to check the pneumatic system components of the M43 detector unit for proper flow capacity and leakage. Test fixtures and gages mounted in the lid of the M74 test set are used to check alignment of certain critical parts and to adjust spring tension in the M43 detector unit pump module.

Tabulated Data:

NSN	...6665-00-854-4147
Line item number	.. V70559
Unit of issue	.... . Each
Basis of issue	.. TOE/MTOE. AR 310-34
Weight	... 29 lb
Dimensions	..21 x 18 x 10 in.

Peformance:

Operating temperature range	From 0°F to 120°F
Power requirements	..24 to 36 Vdc, 2 amps
Pressure-vacuum	..0 to 62.5 cm of water

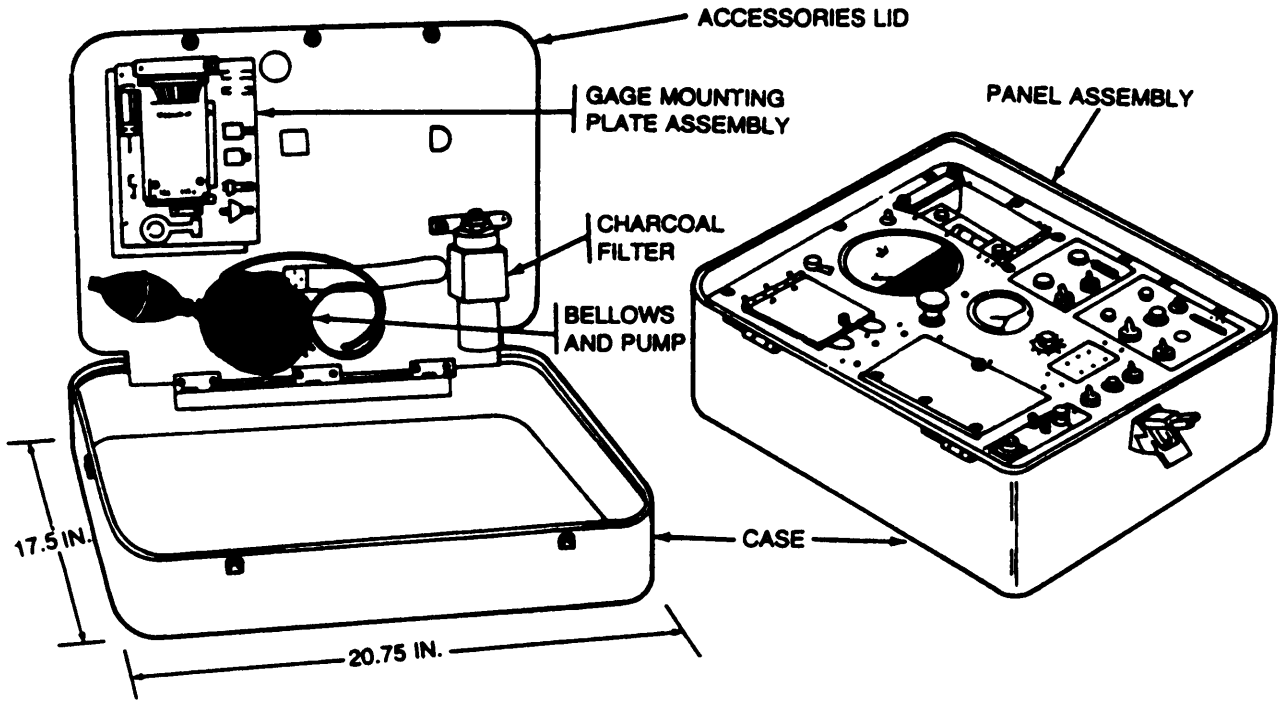
Shipping and Storage Data:

Type pack . . . . . Wood box
weight . . . . . 66 lb
Cube . . . . . 5 cu ft
Dimensions . . . . . 26 x 22 x15 in.
Type storage . . . . . Warehouse
storage temperature . . . . . From -65°F to160°F
Drawing number 5-15-5360

References:

TB 3-6665-260-50
TB 43-180
TM 3-6665-260-14
TM 3-6665-260-24P
TM 3-6665-302-34

TEST SET, CHEMICAL AGENT AUTOMATIC ALARM: M140



Type Classification:

STD (LCC-A); MSR 02816012

Use:

To test the M43A1 detector unit and M42 alarm unit for operational capability of the M8A1 automatic chemical agent alarm.

Description:

The M140 test set consists of a panel assembly, an electronic components assembly, and a two-section aluminum case. The panel assembly contains the electrical and pneumatic circuits, meters, and controls. The electronic components assembly is a single circuit board containing electronic testing components. it is located underneath the panel assembly, A lid on the case contains test set accessories such as charcoal filter, bellows and pump, and gage mounting plate assembly.

Functioning:

The M140 test set operates on an electrical power source that supplies 24 Vdc to 36 Vdc at two amperes such as a BA3517/U or BB5501 /U battery or an M10 or M10A1 power supply. Fixtures from the gage mounting plate assembly are used to prepare the test set for testing. The charcoal filter is used for the detector unit input voltage test. Pneumatic lines and electrical cables in the panel assembly are used to connect the detector unit or its modules to the test set. The bellows and pump are used to pressurize the pneumatic testing system in the panel assembly. The pneumatic system operates under differential pressure up to 62.5 cm of water. It is used to check the M43 detector unit and its pump module and cell module for proper air flow capacity and leakage. The electronic circuits of the test set are used to check the electronics module, pump motor, airinlet heat cycling, and the electronic chassis components of the M43A1 detector unit. They can also be used to check the M42 alarm unit circuit board.

Tabulated Data:

NSN 6665-01-063-2749
Line item number T70627
Unit of issue . . . . . Each
Basis of issue . . . . . TOE/MTOE
Weight . . . . . 30 lb
Dimensions . . . . . 20.7 x 17.50 x 10.00 in

Performance:

Operating temperature range . . . . . 0° to 120°F
Power requirements . . . . . 24 to 36 Vdc, 2 amperes
Pressure - Vacuum . . . . . 0 to 62.5 cm of water

Shipping and storage Data:

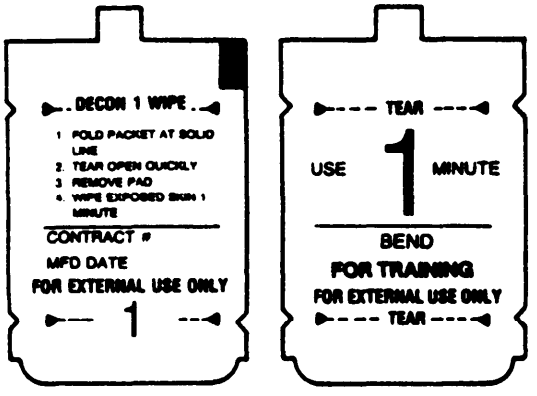
Type pack . . . . . Wood box
Weight . . . . . 67 lb
Cube . . . . . 5 cu ft
Type storage . . . . . Warehouse
Drawing number 5-15-8200

References:

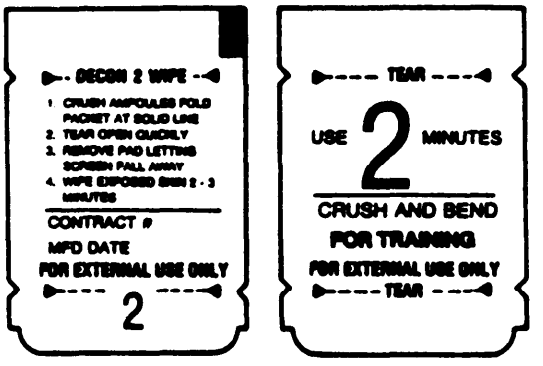
TM3-6665-329-13&P
TB 3-6665-317-35
TM 3-6665-312-12&P
TM 3-6665-312-30&P
TM 43-0002-31

CHAPTER 8
TRAINING

REFILL KIT, TRAINING AID, SKIN DECONTAMINATING (FOR M58A1 TRAINING AID)



DECON 1 WIPE PACKET (30)



DECON 2 WIPE PACKET (30)

Type Classification:

Expendable; DEVA 1180

Use:

To resupply training aid packets for refilling ten M58A1 skin decontaminating training aid kits when their components have been consumed during training.

Description:

The training aid refill kit consists of thirty blue simulant DECON 1 WIPE packets and thirty blue simulant DECON 2 WIPE packets. Instructions for use are marked on the packets. Each training packet is marked "FOR TRAINING."

Functioning:

When the simulant skin decontaminating packets of an M58A1 training aid have been consumed, three blue DECON 1 WIPE packets and three blue DECON 2 WIPE packets are placed in the black case for the M58A1 training aid.

Tabulated Data:

NSN	6910-01-113-2434
Unit of issue	Each
Basis of issue	CTA 50-970
Weight	Not available
Dimensions	10 x 6 x 5 in.

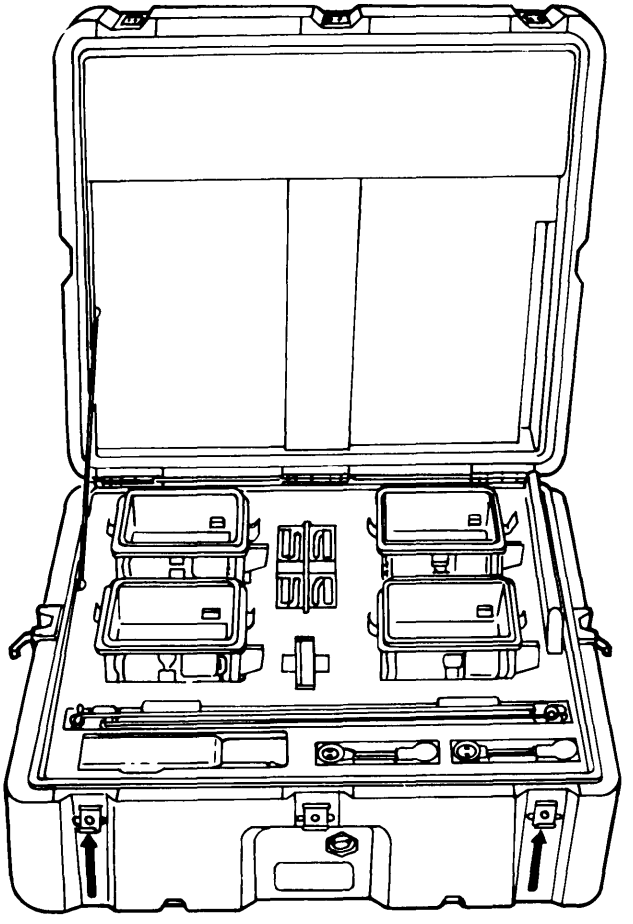
Shipping and Storage Data:

Stability in storage	Unstable at temperatures over 110°F
Type pack	Fiberboard box
Weight	Not available
cube	0.2 cu ft
Type storage	Warehouse
Specification	MIL-R-51472
Drawing number	5-77-2381 ; -82

References:

TM 3-4230-216-10

SIMULATOR, DETECTOR UNIT, CHEMICAL AGENT AUTOMATIC ALARM, M81



Type Classification:
Std (LCC-A) 06856003

Use:
To train personnel to detect simulated chemical agents detection using electrical signals instead of chemical sources.

Description:
The M81 chemical agent automatic detector simulator transit case houses and protects four receivers, five antennas, four extender cables, one transmitter, one tone module case, and four interface cables.

Functioning:
The simulator can imitate a moving chemical-agent cloud by causing detectors to alarm one at a time or in groups. The transmitter signals are coded so that only certain predetermined receivers will pick up the signal and alarm. The number of receivers that are required can be varied, depending on the training exercise. The receivers and transmitters are parts of a set, and will only operate as sets; therefore, mixed units will not work together.

Limitations:
Temperature
Operating . . . . . 20 °F(–6.7°C)to 100° F(37.8°C)
Storage . . . . . –40°F(–40°C)to 140°F(60°C)
Humidity . . . . . Up to 100 % relative humidity
Operational in rain or snow, but must not be submerged.

Tabulated Data:

NSN 6665-01-088-4789
Unit of issue . . . .Kit
Basis of issue . . . . . TOE/MTOE
Line item number S55624
Receiver:
Length . . . .7.54 in. (19.2 cm)
Width . . . . . 6.28 in. (16.0 cm)
Height . . . .5.75 in. (14.6 cm)
Weight . . . . . .2.5 lb(1.13 kg)
Transmitter:
Length . . . .8.75 in. (22.2 cm)
Width . . . . . 3.76 in. (9.6 cm)
Height . . . . . 2.10 in. (5.3 cm)
Weight . . . . . .2.5 lb(1.13kg)
Transit Case (full):
Length . . . .24.25 in. (61.6 cm)
Width . . . . . 25.88 in. (65.7 cm)
Height . . . .12.31 in. (31.3 cm)
Weight . . . . . .45 lb (20.4 kg)

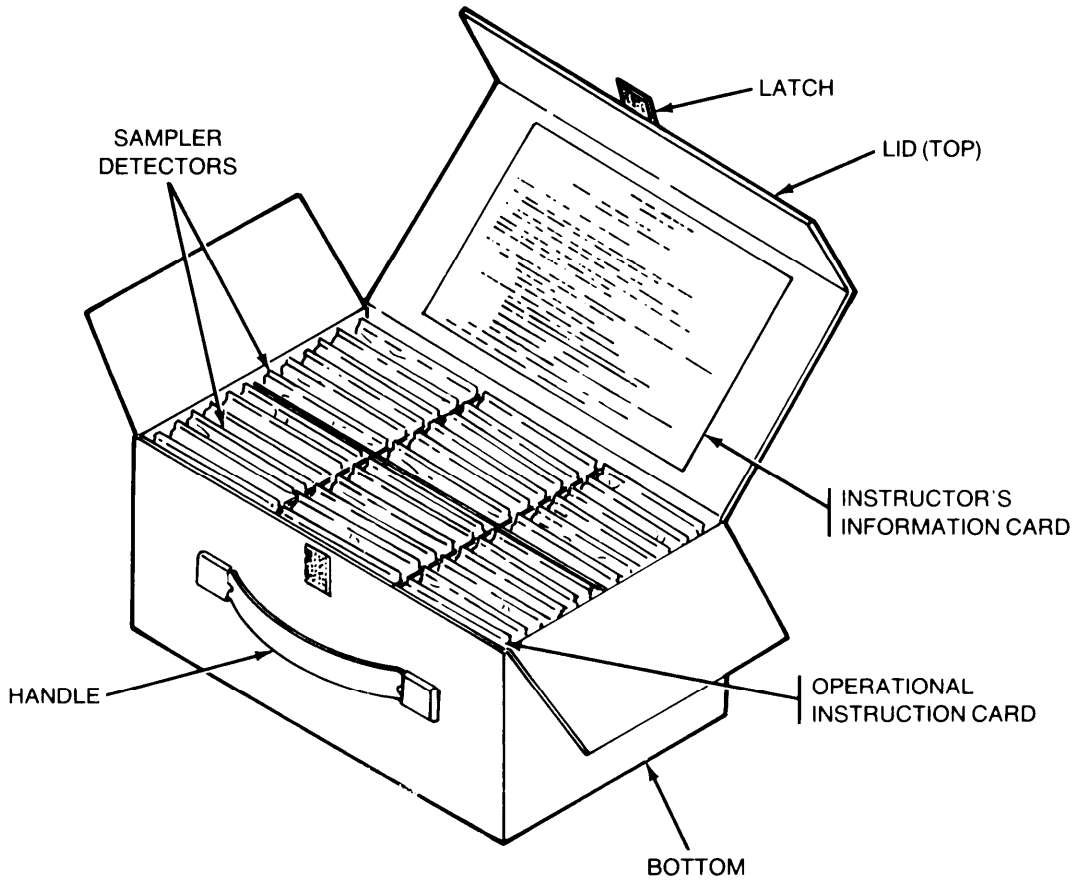
Electrical Characteristics:

Receiver:
Frequency type and range: . . . VHF, 141.925MHz
Operating voltage: . . . . . +12V± 15%
Max standby current: . . . . . 20 mA at +12 V
Max receive current: . . . . . 150 mA at+12V
Transmitter:
Frequency type and range: . . VHF, 141.925 MHz
Operating voltage: . . . . . + 15V±15%
Operating current: . . . . . 180mA (max) at +15V
Operating Range:
Nominal . . . . . 3280 ft (1000meter) range
Very heavy vegetation, uneven terrain, or very hard rain . . . . . less than 3280 (meter) range

Reference:

TM 3-6665-316-2

SIMULATOR, DETECTOR TICKETS, CHEMICAL AGENTS: TRAINING M256 (TRAINS)



Type Classification:
Expendable; DEVA 9/83

Use:
To train personnel in detection of chemical agent response in the absence of agent or simulant in a training environment.

Description:
The M256 Training Simulator is a portable expendable item that consists of a carrying box with handle and 36 sampler-detectors.

Functioning:
The trainee uses the hinged protective strip that contains needed ampoules for simulating of blood, blister, or nerve agents as prescribed in the appropriate operator's manual.

Limitations:
The sampler-detector is stamped "FOR TRAINING ONLY."

Tabulated Data:

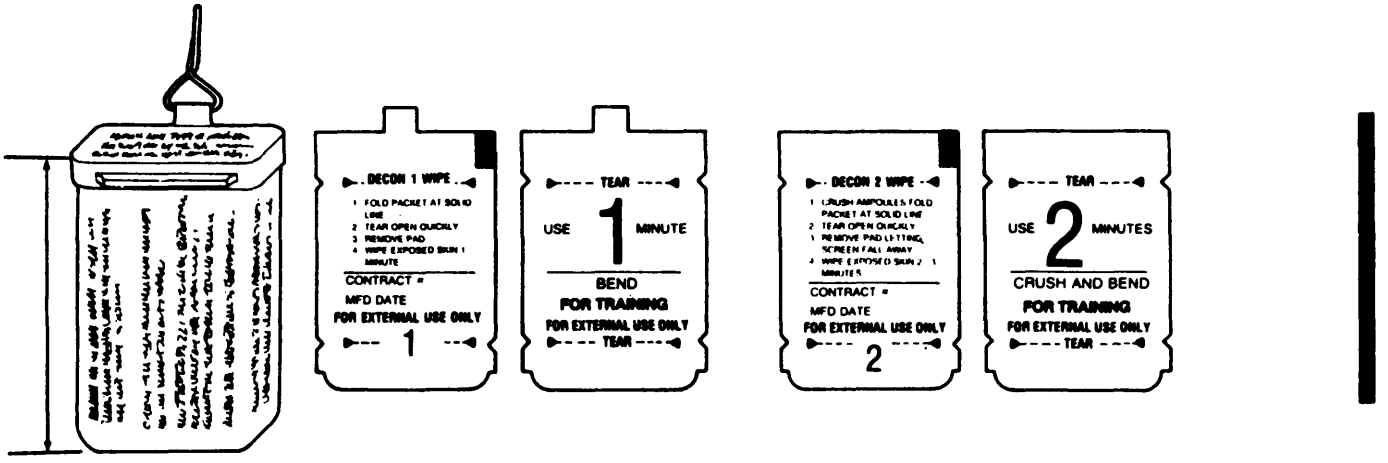
NSN	6665 -01-112-1644
Unit of issue	EA
Basis of issue,	CTA 50-970
Weight	21/2 lb (1.135 kb)
Dimension	5 3/4 X 71/2 X 113/4 in. (13.652 cm X 19.050 cm X 29.845 cm)

Shipping and Storage Data:

Type pack	10 per wooden box
Weight	2.55 lb
Cube	259 cu ft
Drawing number:	5-77-2550
	P5-77-2550
Specification	MIL-B-117

References:
TM 3-6665-320-10

TRAINING AID, SKIN DECONTAMINATING: M58A1



CASE **DECON 1 WIPE PACKET (3)** **DECON 2 WIPE PACKET (3)**

Type Classification:

Expendable; DEVA 1180

Use:

To train troops in the use of the M258A1 skin decontaminating kit:

Description:

The M58A1 skin decontaminating training aid consists of a black plastic case and six blue packets. The case is marked TRAINING AID, PERSONAL DECONTAMINATION KIT, M58A1. Three packets are marked DECON 1 WIPE. Each contains a gauze pad soaked with decontamination solution. The three other packets are marked DECON 2 WIPE. Each contains a gauze pad and glass ampoules containing simulant decontamination solution. Instructions for use are mafked on the case and packets. Each packet is marked FOR TRAINING."

Functioning:

The M58A1 training aid serves as a safe substitute for training in the use of the M258A1 kit. The M58A1 simulant decontamination solutions are harmless; whereas the decontamination solutions in the M258A1 kit are poisonous and caustic.

Tabulated Data:

NSN 6910-01-101-1788
Unit of issue . . . . . Each
Basis of issue . . . . CTA 50-970
Weight 3.02oz
Dimensions . . . . . .1.75 x 2.75 x 4.00 in.

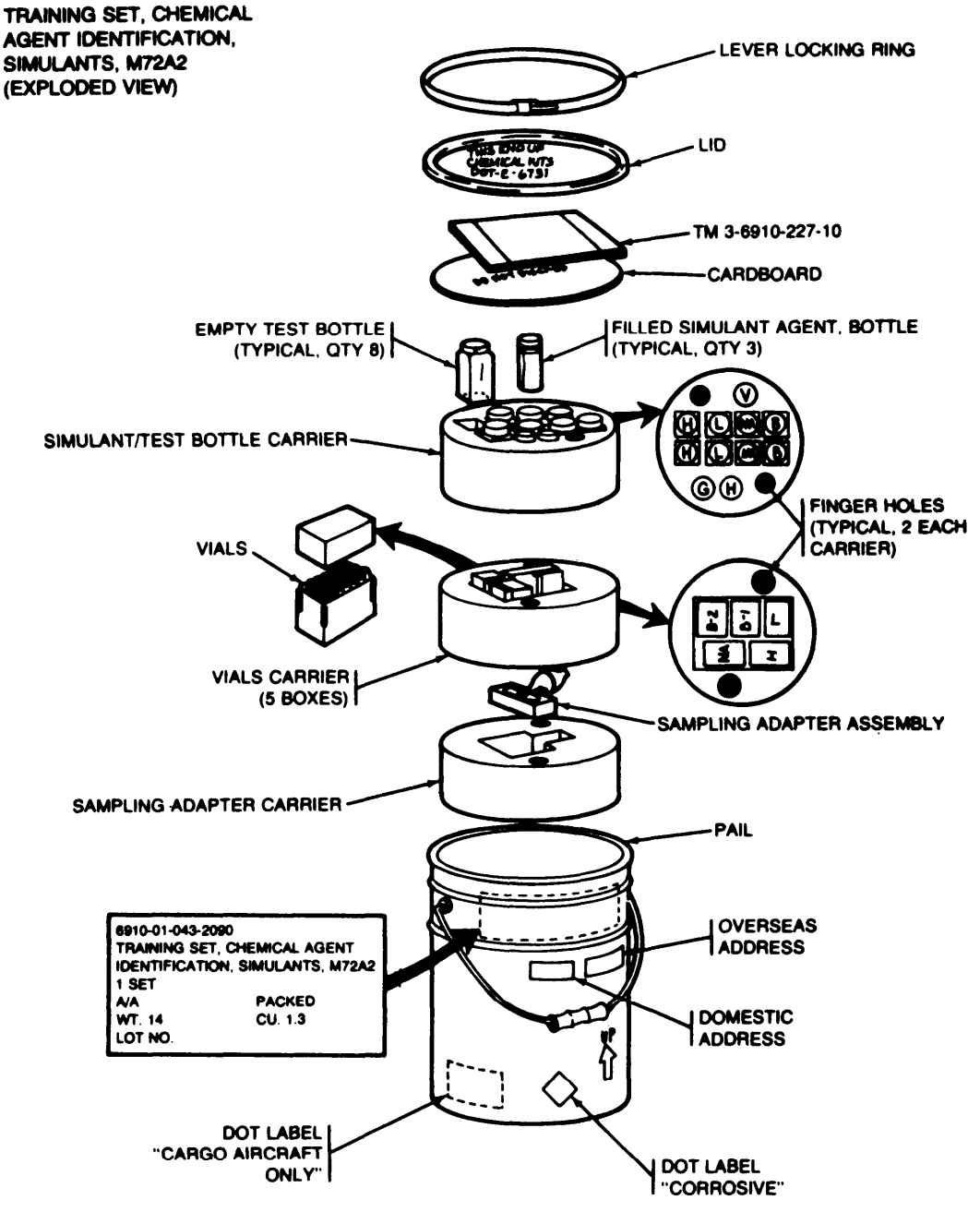
Shipping and Storage Data:

Stability in storage . . . . Unstable at temperatures over 110°F
Type pack . . . .100 per wooden box
Weight . . . .3.2 lb
Cube . . . . 0.2 cu ft
Type storage . . . . Warehouse
specification MIL-T-51489
Drawing number 5-77-2387

References:

FM 21-40
FM 21-41
TM 3-4230-216-10

TRAINING SET, CHEMICAL AGENT IDENTIFICATION: SIMULANTS, M72A1 AND M72A2



Type Classification:

Expendable; MSR 09786001 (M72A2 replaces M72A1)

Use:

To train personnel in the use of chemical agent detector kits by demonstrating the color change in detector tubes, detector tickets, detector paper, and the M256 sampler-detector when exposed to chemical agent simulante.

Description:

a. The M72A2 simulants chemical agent identification training set consists of a 6-gallon steal pail containing three bottles of liquid agent sirnulants, eight empty test bottles, 250 ampoules of vapor agent simulants, and a sampling adapter assembly.

b. The M72A1 simulants chemical agent idenification training set consists of 450 vapor agent simulant vials, three bottles of liquid agent simulants, and a pleastic carrying case.

Difference Between Models:

The M72A2 set can be used for training with the M256 chemical agent detector kit. The M72A1 set cannot. It does not have a sampling adapter assembly.

Functioning:

a. The liquid agent simulants are used to demonstrate the color changes caused by liquid G, H, and V agents on M8 chemical agent detector paper.

b. The vapor agent simulants are used to demonstrate the color changes caused by toxic chemical agent vapors on detector tickets, detector, tubes and the M256 sampler-detector.

Limitations:

Operation personnel should wear protective masks and gloves while operating the set.

Tabulated Data:

NSN:
- M72A1 6910-00-106-4800
- M72A2 6910-01-043-2090

Unit of issue . . . . . Set
Basis of issue . . . .CTA 50-970
Weight . . . . . 14 lb
Height . . . . . 16in.
Diameter . . . . . 12 in.

Performance:
- Operating temperature . . . .50 to 105°F
- Vapor agent tests:
  - Blister H 50
  - Blood. 50
  - Nerve NA 50
  - Lewiste L 50
- Liquid agent tests:
  - H 200
  - G 200
  - V 200

Shipping and Storage Data;
- Type pack . . . .6 gallon pail
- weight . . . . . 14 lb
- Cube . . . . . 1 cu ft
- DOT shipping class . . . . Class B poison
- DOT designation . . . .Chemical kit containing class B poison, corrosive liquuids and NCH hazardous articles
- Drawing number:
  - M72A2 5-77-2350
  - M72A1 5-77-2143

References:

TM 3-6665-205-10/1
TM 3-6665-205-10/2
TM 3-6665-254-12
TM 3-8665-307-10
TM 3-6910-226-10 (M72A1)
TM 3-6910-227-10 (M72A2)

APPENDIX A
DELETED ITEMS

The following items were deleted from TM 43-0001-26-1, 12 May 1982, due to obsolescence, lack of Army requirement, or logistics transfer (LOG TRF) to another commodity command.

Item	Action/Date	Status
Breathing Apparatus, Oxygen Generating: M20		OBS
Calibrator, Radiac: AN/UDM-6	LOG TRF 0782	*
Calibrator, Radiac: AN/UDM-7B	LOG TRF 0782	*
Decontaminating Kit, Skin: M258	DEVA 1180	**
Hood, Chemical-Biological Mask: M6	AMCTC 951272	OBS
Laboratory, Chemical Base: M2 and M2A1	MSR 05866019	OBS
Mask, Chemical-Biological: Headwound, ABC-M18	MSR 05856009	OBS
Mask, Gas: Acid and Organic Vapors, M10		OBS
Mask, All-Purpose, Ml1A1		OBS
Mask, Gas: Ammonia, M12		OBS
Protective Outfit, Toxicological: Microclimate Controlled (POTMC)		OBS
Radioactive Source Set: M3A1	LOG TRF 0782	*
Refill Kit, Training Aid, Decontaminating (for M258 training aid)	DEVA 1180	**
Resuscitation Tube, Chemical-Biological Mask: M1	MSR 3836001	OBS
Simulator, Detector Tickets, Chemical Agent: VG, M5	Ltr LEA 3 Aug84	OBS
Training Aid, Skin Decontaminating: M58	DEVA1180	**
Vesicant Agent Protective Ointment: M5	AMC APPVL89	OBS
Water Testing Kit, Chemical Agents: M2	DEVA 1083	**

*Reassigned to US Army Electronics Command by letter, DRSEL, 5 Jul 82.

**CTA 50-970 expendable items deleted by DEVA (Development Acceptance In-Process Review) as obsolescent. Items to be replaced when replacement items become available.

GLOSSARY

G-1. Type Classification and Logistics Control Codes (LCC). When applicable, items with the following type-classifications and logistics control codes are included in this manual:

a. Standard *(L-CC-A).* A combat acceptable item which will fill an operational requirement and is authorized for production to fill shortages.

b. *Standard (LCC-B).* A satisfactory item for filling an operational requirement but which is being or has been replaced by a newer generation or series of items.

c. *Contingency* (LCC-F). A mission essential contingency Item.

d. *Contingency* (LCC-S). A contingency-training item.

e. *Untied Procurement (LCC-T).* A limited procurement-test item.

f. *Limited Procurement (LCC-U).* A limited *procurement-urgent* item.

g. *Test, Measurement, and Diagnostic Equipment (LCC-N).*

G-2. Expendable Items. Expendable items, except ammunition and selected high density military type items, do not require type classification. All such items are listed in CTA 50-970 and can be obtained through normal supply channels for expendable.

G-3. Key to Abbreviations and Symbols.

a. Abbreviations. The abbreviations used in this manual are listed and explained below.

	Explanation
ABC	American-British-Canadian
AEC	Atomic Energy Commission, now Nuclear Regulatory Commission
AMCTC	Army Materiel Command Technical Committee
AN	Army-Navy
APC	Armored personnel carrier
CB	Chemical-biological
CBR	Chemical-biological-radiological (See NBC)
CCTC	Chemical Corps Technical Committee
CFM	Cubic feet per minute
CON	Contingency
CPE	Collective protection equipment
Cu FT	cubic feet
CWTC	Chemical Warfare Technical Committee
DECON	Decontamination
DEVA	Development acceptance
DODAC	Department of Defense ammunition code
DOP	di-octyl-pthalate
DOT	Department of Transportation
LCC	Logistics control code
LOG TRF	Logis transfer
LP	Limited procurement
MSR	Materiel status record
NBC	Nuclear-biological-chemical
NOIBN	Not otherwise indicated by name
NOS	Not otherwise specified
NRC	Nuclear Regulatory Commission (formerly Atomic Energy Commission)
NSN	National stock number
OBS	Obsolete
POTMC	Protective outfit toxicological microclimate controlled
STB	Supertropical bleach
STD	Standard
TAP	Toxicological agent protective
TMDE	Test, measurement, and diagnostic equipment

b. *Chemical Agent Symbols.* The chemical agent symbols used in this manual are listed and identified below. Chemical agents are usually classified by their main physiological action, i.e., type agent. For additional information on the properties of chemical agents, refer FM 3-9, Military Chemistry and Chemi-Cal compounds.

Symbol	Type Agent	Name
AC	Blood agent	Hydrogen cyanide
BZ	Incapacitating agent	3-Quinnclidinyl benzilate
CG	Choking agent	Phosgene
CK	Blood agent	Cyanogen chloride
CX	Blister agent	Phosgene oxime
DA	Vomiting agent	Diphenylchlorarsine
DC	Vomiting agent	Diphenykyanoarsine
DM	Vomiting agent	Adamsite
DP	Choking agent	Diphosgene
ED	Blister agent	Ethyldichloroarsine
GA	Nerve agent	Tabun
GB	Nerve agent	Sarin
GD	Nerve agent	Soman
HD	Blister agent	Mustard
HL	Blister agent (a mixture of HD and L)	Mustard and Lewisite
HN	Blister agent	Nitrogen mustard
HT	Blister agent	Mustard technical mixture
L	Blister agent	Lewisite
MD	Blister agent	Methyldkhloroardne
PD	Blister agent	Phenytdiclorarsine
SA	Blood agent	Arsine
V-G	V or G-type nerve agent	
VGH	V or G-type nerve agent or H-type blister agent	
VX	Nerve agent	Very toxic, persistent unnamed nerve agent

c. Electronic Equipment. Indicator letters for items coded in accordance with the Joint Electronic Type Designator System are listed and identified below.

Code	1st Letter (Designated Installation Classes)	2dLetter(Type of Equipment)	3d Letter (Purpose)
GSG	General ground use	Special type	Fire control directing
PDR	Portable	Radiac	Passive detecting
TSQ	Ground transportable	Special type	Combination
UDM	General utility	Radial	Maintenance and test assembly

INDEX

By Order of the Secretary of the Army

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General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Brigadier General, United States Army
The AdjuTant General

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PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.
1-3; 1-4			

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

THE AUTOMATIC CHEMICAL AGENT ALARM HAS BEEN RECONFIGURED.

DELETE DATA FOR M10 THROUGH M18 ALARMS.
REASON: MSR02816012 DELETES M10 THROUGH M18 ALARM CONFIGURATIONS.

NOTE TO THE READER:

Your comments will go directly to the writer responsible for this manual, who will prepare the reply that is returned to you. To help the evaluation of your recommendations, please explain the reason for each of your recommendations, unless the reason is obvious.

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THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

. Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

'VEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

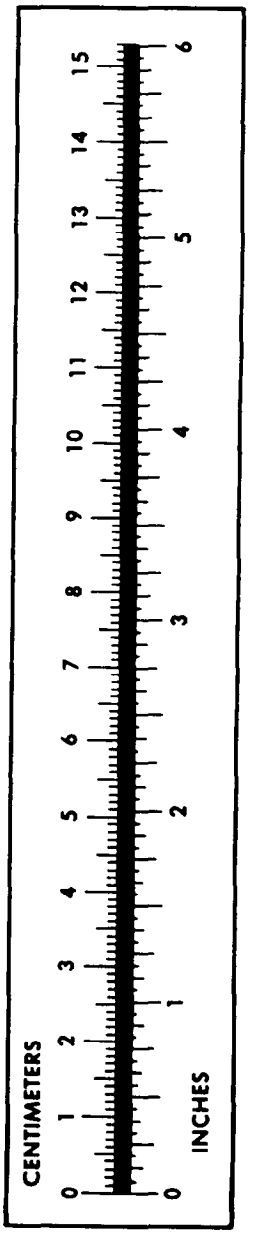
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
ıts	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



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