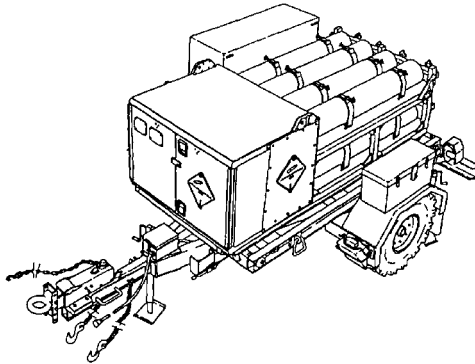


TECHNICAL MANUAL

**OPERATOR'S, UNIT, DIRECT SUPPORT AND
GENERAL SUPPORT MAINTENANCE MANUAL
FOR
SERVICING UNIT, COMPRESSED
GAS, MOBILE
(NSN: 4220-01-369-7915)**



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**HEADQUARTERS, DEPARTMENT OF THE ARMY
31 AUGUST 1994**

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DEPARTMENT OF THE ARMY
WASHINGTON, D.C, 31 August 1994

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FOR
SERVICING UNIT, COMPRESSED GAS, MOBILE
(NSN: 4220-01-369-7915)

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 these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual directly to Commander, US Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished directly to you.

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HOW TO USE THIS MANUAL

In this manual, primary chapters and sections appear in upper case/capital letters; paragraphs are presented in numeric sequence with the chapter number listed first, e.g., 4-19., and the title is all upper case/capital letters; subordinate paragraphs are presented in alpha sequence, e.g., a., the next subordinate paragraphs are presented in numeric sequence with the number in parenthesis, e.g., (1); the next paragraphs are presented in alpha sequence with the alpha presented in parenthesis, e.g., (a). The location of additional material that must be referenced is clearly marked. Figures supporting maintenance procedures/text are located as close as possible to their references.

CHAPTER 1 - INTRODUCTION. Chapter 1 contains general information, equipment description and technical principles of operation.

CHAPTER 2 - OPERATING INSTRUCTIONS. Chapter 2 contains a description of the end item and each control and indicator is described. Operating procedures include Preventive Maintenance Checks and Services (PMCS), and operation under usual and unusual conditions.

CHAPTER 3 - OPERATORS MAINTENANCE. Chapter 3 lists lubrication instructions, troubleshooting procedures used to recognize malfunctions/symptom, probable cause and corrective action, and maintenance procedures authorized at operator level.

CHAPTER 4 - UNIT MAINTENANCE. Chapter 4 lists lubrication instructions, troubleshooting procedures used to recognize malfunctions/symptom, probable cause and corrective action, and maintenance procedures authorized at unit level.

CHAPTER 5 - DIRECT SUPPORT MAINTENANCE INSTRUCTIONS. Chapter 5 contains information for direct support maintenance on the Mobile Compressed Gas Servicing Unit.

CHAPTER 6 -GENERAL SUPPORT MAINTENANCE INSTRUCTIONS. Chapter 6 contains information for general support maintenance on the Mobile Compressed Gas Servicing Unit.

APPENDIX A- REFERENCES. This appendix lists all the publications referenced in this manual.

APPENDIX B - MAINTENANCE ALLOCATION CHART (MAC). This appendix provides a general explanation of all maintenance and repair functions authorized at various maintenance levels under the standard Army Maintenance System concept.

APPENDIX C - COMPONENTS OF END ITEM (COEI) AND BASIC ISSUE ITEM (BII) LIST. This appendix lists components of the end item and basic issue items to help you inventory the items for safe and efficient operation of the equipment.

APPENDIX D - EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST. This appendix lists expendable/durable supplies and materials that you will need to operate and maintain the end item. This listing is for information only and is not authority to requisition the listed items.

APPENDIX E - ILLUSTRATED LIST OF MANUFACTURED ITEMS. This appendix includes complete instructions for making items authorized to be manufactured or fabricated at organizational, direct support, and general support maintenance.

APPENDIX F - TORQUE LIMITS. This appendix lists applicable torque values expressed in standard and metric values.

ALPHABETICAL INDEX. The index contains key technical manual subjects arranged in alphabetical order. If you require information on a certain subject (i.e. cleaning), but you are not sure where to look, use the index to locate the specific page.

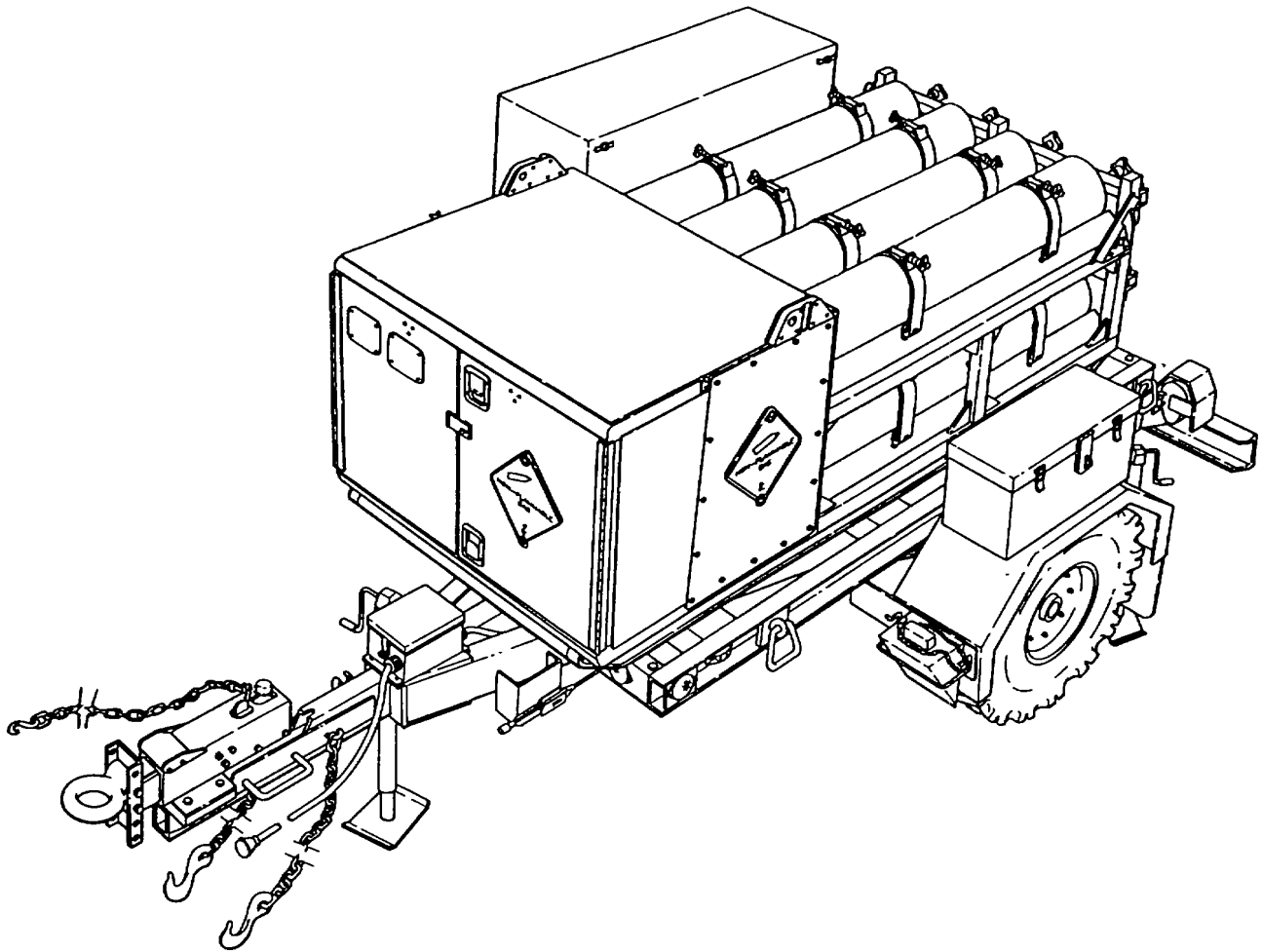


Figure 1-0. Mobile Compressed Gas Servicing Unit.

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Section I. GENERAL INFORMATION

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1-1. SCOPE.

This manual describes the operation and Unit, Direct Support (DS), and General Support (GS) Maintenance, for the Servicing Unit, Compressed Gas, Mobile and includes operation and maintenance procedures for both the trailer and body assemblies. The National Stock Number (NSN) for the complete system is 4220-01-3697915. The Mobile Compressed Gas Servicing Unit is used to fill Self-Contained Underwater Breathing Apparatus (SCUBA) cylinders with breathing air.

1-2. MAINTENANCE FORMS AND PROCEDURES.

"Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738750 as contained in the Maintenance Management Update."

1-3. CORROSION PREVENTION AND CONTROL (CPC).

- a. Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.
- b. While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials, such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.
- c. If a corrosion problem is identified, it can be reported using Standard Form SF 368, Product Quality Deficiency Report. Use of keywords such as "corrosion," "rust," "deterioration," or "cracking" will ensure that the information is identified as a CPC problem.
- d. The form should be submitted to the address specified in DA PAM 738-750.

1-4. DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE.

References to "destruction of Army materiel to prevent enemy use" are contained in TM 750-244-6.

1-5. PREPARATION FOR STORAGE OR SHIPMENT.

Reference to the preparation of the Mobile Compressed Gas Servicing Unit for storage or shipment is contained in Chapter 4, Section VI.

1-6. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRs).

"if your Mobile Compressed Gas Servicing Unit needs Improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to us at Commander, U S. Army Aviation and Troop Command (ATCOM), Attn: AMSAT-I-WTA, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798.

1-7. WARRANTY INFORMATION.

The Mobile Compressed Gas Servicing Unit does not contain warranty provisions.

1-8. OFFICIAL NOMENCLATURE AND NAME(S).

<u>Common Name</u>	<u>Official Nomenclature</u>
Servicing Unit	Servicing Unit, Compressed Gas, Mobile

1-9. ABBREVIATIONS.

ATCOM	U. S. Army Aviation and Troop Command
CAGE	Commercial and Government Entity
CBIL	Common and Bulk Items List
CGA	Compressed Gas Association
cm.	centimeter
CMRS	Calibration Measurement Requirements Summary
CPC	Corrosion Prevention and Control
DA	Department of the Army
EIR	Equipment Improvement Recommendation
F	Fahrenheit
in.	inches
Kg.	Kilogram
lbs.	pounds
MAC	Maintenance Allocation Chart
MSRA	Materiel Readiness Support Activity
MSI	Maintenance Significant Item
NSN	National Stock Number
psi	Pounds per square inch
RPSTL	Repair Parts and Special Tools List
SCF	Standard Cubic Feet
SCUBA	Self-Contained Underwater Breathing Apparatus
SMR	Source, Maintenance, and Recoverability [Code]
TM	Technical Manual
TMDE	Test, Measurement, and Diagnostics Equipment

Section II. EQUIPMENT DESCRIPTION

Paragraph		Page
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1-11	Location and Description of Major Components.....	1-5
1-12	Equipment and Transportability Data.....	1-10

1-10. EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES.

a. The Mobile Compressed Gas Servicing Unit consists of two major assemblies. The Body Assembly contains the Compressed Gas System and the Trailer Assembly which provides for unit mobility. The entire unit is in the 2-1/2 Ton weight class for cross country surface movement.

b. The Body assembly contains the Compressed Gas System and is used to simultaneously charge up to four twin 80 cubic foot SCUBA cylinders with breathing air at a maximum rate of 400 psi per minute. The Body Assembly is equipped with the following items:

(1) An aluminum frame weldment that provides the support for the storage cylinders, cylinder clamping system, control panel, front doors, side access panels and filling trough.

(2) Eight DOT3AA rated storage cylinders each capable of holding a maximum of 422 SCF @ 70° F (59.4° C) of breathing air at 5,000 psi (34,400 kpa). A shutoff valve is mounted at the neck of the cylinder. The shutoff valves have a CGA347 outlet connection and contain an internal safety plug that automatically vents if the pressure in the storage cylinder exceeds safe limits.

(3) A cylinder clamping system consisting of two 1-1/2 inch wide band clamps for each cylinder and a retaining bar at the rear of the cylinders that secures one row of four cylinders. The clamping allows the removal of any or all the cylinders without the use of hand tools.

(4) A control panel mounted at the front of the Body Assembly behind the front doors contains the gauges, valves, tubing, and hoses to recharge the storage cylinders, service up to four SCUBA cylinders. The inlet and outlet connections on the control panel are CGA347 high pressure air connections. Four, fifteen foot long fill hoses with yoke adapters are included to interface with "J" or "K" type connections on the SCUBA cylinders.

(5) Two hinged doors are mounted at the front of the Body Assembly to provide protection for the control panel. The roadside door contains a weather-proof toolbox dedicated for storage of tools and spare parts necessary to repair the Compressed Gas System components only.

(6) Side access panels with 1/4 turn fasteners are provided for easy access to the backside of the control panel and the storage cylinder shutoff valves.

(7) A filling trough is provided to prevent SCUBA cylinders from over-heating during the filling process. The trough is sized to allow filling of four sets of twin 80 SCUBA tanks simultaneously. When not in use, the trough is secured to a mounting base on the curb side of the frame.

c. The Trailer Assembly is designed to provide a firm foundation for the Body Assembly during both highway and off-road travel and operational site jacking. The Trailer Assembly consists of the following.

(1) A welded steel chassis that includes an A-frame type drawbar. The chassis provides the foundation to support the Body Assembly as well as the trailer axle, suspension, brake system, electrical system and accessory components. The chassis also contains the Servicing Unit's lifting/tiedown provisions

(2) A single beam type axle assembly rated at 5,000 lbs. The axle assembly provides the foundation for the two-wheel running gear and suspension.

(3) A suspension system rated at 5,000 lbs. consisting of a set of leaf springs and double-acting telescopic shock absorbers.

(4) A brake system that consists of surge actuated hydraulic service brakes with interface to an operator actuated mechanical parking brake. The service brakes also provide for automatic (emergency) brake application in the event that the trailer breaks away from the towing vehicle.