

TECHNICAL MANUAL

OPERATOR'S MANUAL

WATER PURIFICATION UNIT,
REVERSE OSMOSIS,
600 GPH TRAILER MOUNTED
FLATBED CARGO,
5 TON 4 WHEEL TANDEM
MODEL 0996109001
(4610-01-234-2196)

AND

600 GPH SKID MOUNTED
MODEL 0996108001
(4610-01-234-2190)

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*This manual, together with TM 10-4610-215-10/TM 08580A-10/1 and
TM 10-4610-240-10/ TO 40W4- 13-21, supersedes
TM 5-4610-215-10/TM08580A-10/1, 15 May 1987. Including all changes.

HEADQUARTERS, DEPARTMENT OF THE ARMY
AND HEAD QUARTERS, U.S. MARINE CORPS
5 MARCH 1991

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WASHINGTON, D.C., 5 MARCH 1991

Operator's Manual

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600 GPH TRAILER MOUNTED, FLATBED CARGO,
5 TON 4 WHEEL TANDEM ROWPU MODEL 0996109001 (4610-01-234-2196)
AND 600 GPH SKID MOUNTED ROWPU MODEL 0996108001 (4610-01-234-2190)

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 this manual directly to:

Commander, U.S. Army Aviation and Troop Command, ATTN: AMSAT-I-MP, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798. A reply will be furnished directly to you.

Marine Corps users submit NAVMC 10772 Form to Commanding General, Marine Corps Logistics Base (Code 850) Albany, Georgia 31704-5000.

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This manual, together with TM 10-4610-215-10/TM 08580A-10/1 and TM 1 04610-240-1 /TM 08580C-1 0/1/TO 40W4-13-21, supersedes TM 5-4610-215-1 0/TM08580A-10/1, 15 May 1987, including all changes.

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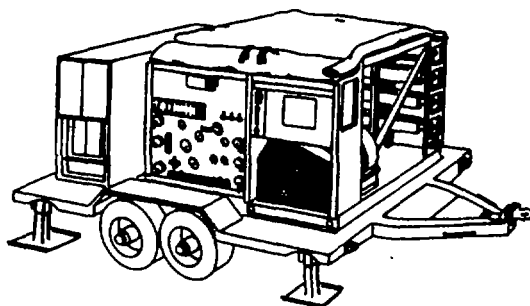


Figure 1-1. Reverse Osmosis Water Purification Unit (ROWPU) (Army)

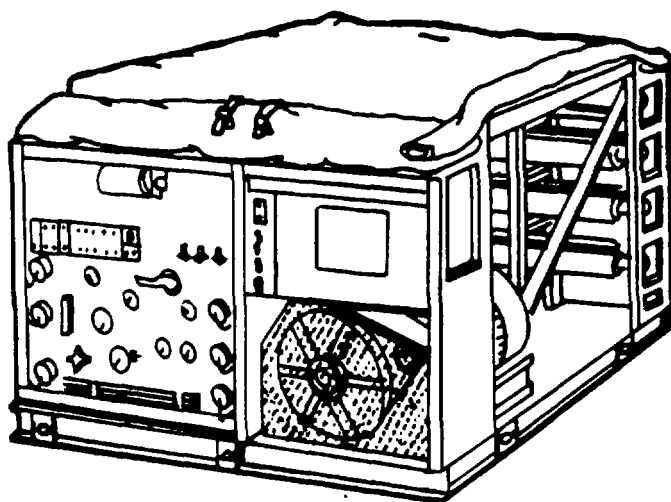


Figure 1-2. Reverse Osmosis Water Purification Unit (ROWPU) (MC)

CHAPTER 1

INTRODUCTION

SECTION I. GENERAL INFORMATION

1-1. SCOPE. This operator's manual describes the Operating and Operator's Maintenance Procedures for the 600 Gallon Per Hour (GPH) Reverse Osmosis Water Purification Unit (ROWPU). It should be noted that although a complete 600 GPH Reverse Osmosis Water Purification Equipment Set is described herein, certain components are not issued under the National Stock Number NSN 4610-01 -234-2196, but are authorized (Army) under their own TOE Line Item Numbers and are listed in the Department of the Army Supply Catalog SC 4610-97-CL-E16 which describes the entire 600 GPH ROWPU Set. NSN 4610-01-234-2190 is the Marine Corps ROWPU designation.

NOTE

Paragraphs not designated Army or MC are applicable to both configurations.

1-2. MAINTENANCE FORMS AND RECORDS. Good maintenance records must be kept. Department of Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS). Marine Corps personnel refer to TM 4700-15/1 for forms and records procedures.

1-3. HAND RECEIPT. (Army) A companion hand receipt technical manual has been issued with the ROWPU to aid in accounting for all of the end-item related equipment. The hand receipt manual is numbered with TM number of this manual (TM 10-4610-239-10) followed by '-HR'. Hand Receipt Manual TM 10-4610-239-10-HR contains pre-printed hand receipts for Components of End Item (COEI), Basic Issue Items (BII), and Additional Authorization List (AAL) items. Additional -HR manuals may be obtained from the U.S. Army Adjutant General Publications Center, ATTN: AGDL-OD, 2800 Eastern Blvd., Baltimore, MD 21220, in accordance with the procedures in Chapter 3, AR 310-2.

1-4. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (ER's). If your ROWPU needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design. Tell us why a procedure is hard to perform. Put it on an SF-368 (Quality Deficiency Report). Mail it to us at:

Commander
US Army Aviation and Troop Command
ATTN: AMSAT-I-MDO
4300 Goodfellow Blvd.
St. Louis, MO 63120-1798

Marine Corps personnel submit EIR's in accordance with MCO 1650.17.

SECTION II. EQUIPMENT DESCRIPTION

1-5. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

a. Characteristics. The ROWPU is a mobile water purifying unit needing a 30 kW power source, that supplies drinking water for troops in the field. (See fig. 1-1 (Army) and fig. 1-2 (MC)).

b. Capabilities and Features.

(1) Flow systems within the ROWPU process raw water to make it drinkable. Special pumps, controlled by a built-in control panel, move the water through the ROWPU to produce as much as 10 gallons (37.8 liters) of drinking water per minute. This water is stored in a collapsible tank that can hold up to a total of 1,500 gallons (5,670 liters) or 3,000 gallons (11,340 liters). The ROWPU can be transported by rail, road, or air.

(2) (Army) The flatbed cargo trailer and frame is designed to provide a mobile platform for the ROWPU. The trailer, when being transported by road, is towed by a towing vehicle through a lunette/pintle hookup. The trailer has four leveling jacks (square Model No. 0996109001) with swivels, one on each corner, and is equipped with a spare wheel and tire carrier. The trailer incorporates service brakes which are air-actuated and operated from the towing vehicle through an integral set of hoses. The trailer brake system also includes emergency and automatic parking brake functions that are activated when the air hoses are disconnected from the towing vehicle. An air tank is installed for the purpose of reserving air for this system when the trailer is disconnected from the towing vehicle. A 24-volt electrical system, consisting of one composite blackout-stoplight assembly, and two stoplight-tail light assemblies, is installed on the trailer. Power is supplied through a cable connected to the electrical system of the towing vehicle. The trailer suspension consists of two axles in tandem, supported on leaf springs attached to a trunnion axle. The frame houses the ROWPU and is capable of being separated from the trailer and transported or air lifted as an independent unit.

(3) The Army and Marine Corps units are essentially the same except that the Marine Corps' ROWPU is mounted on a skid and does not incorporate a generator.

1-6. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS. The Army ROWPU is 18 feet (5.5 meters) long, 8 feet (2.4 meters) high, and 8 feet (2.4 meters) wide. It weighs about 8 ½ tons (7.71 metric tons), including the generator set. Figure 1-3 shows the ROWPU from the top with its canvas cover removed. Take a close look at how all the necessary operating equipment is stored on the trailer for transport and shipment.

The Marine Corps ROWPU is 9.5 feet (2.9 meters) long, 5.6 feet (1.7 meters) high and 6.9 feet (2.1 meters) wide. It weighs about 3.65 tons (3 metric tons). Figure 1-4 shows this ROWPU from the top with the canvas cover removed.

a. To provide room for all operating components, material is stored in layers (fig. 1-3 and 1-4). The top layer consists of rolled-up (suction) hoses on top of two folded water tanks. Stored between the tanks is a sledge hammer and a collapsed telescopic aluminum paddle. Next to the tanks is a stack of five plastic pails with chemical names on their sides. On the same side of the ROWPU you will find two storage boxes fastened with a strap under the tanks. The boxes contain various chemicals, tools, and installation items. Nine sections of suction hose are stored on the side of the frame.

b. In the second layer you will find two raw water pumps and a backwash pump (fig. 1-5 and 1-6). The pumps are covered with canvas and strapped down. A distribution pump is located at the rear of the unit, next to the generator (Army ROWPU only), not shown here. Army ROWPU includes a portable step strapped down with distribution pump. On the right side are 1 ½ inch and 2-inch diameter discharge (canvas) hoses, rolled-up. A raw water float is in the center of the ROWPU next to two nuclear, biological, chemical (NBC) cylinders. Figs. 1-7 and 1-8 show ROWPU with operating equipment removed.

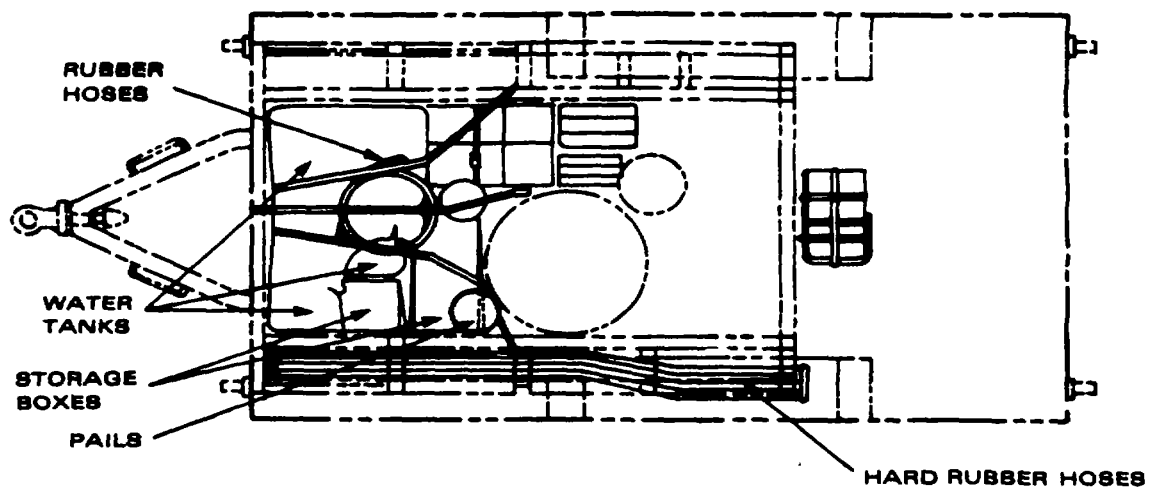


Figure 1-3. Top View Of ROWPU With Operating Equipment Stored (Army)

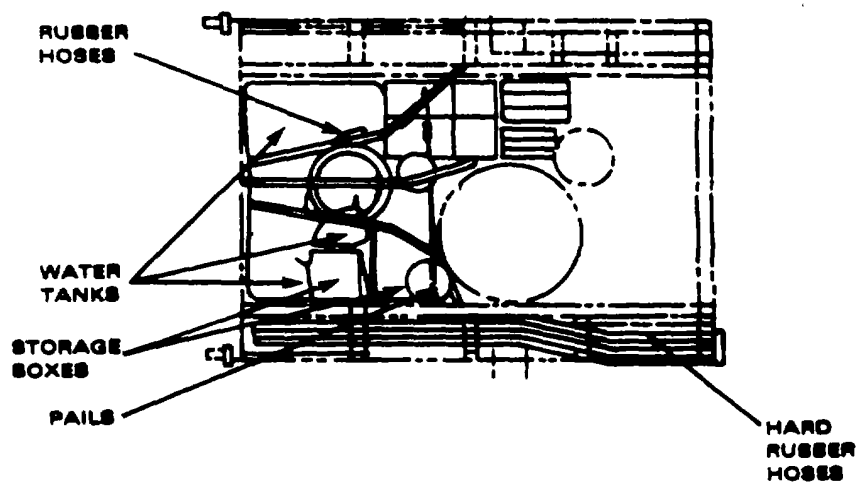


Figure 1-4. Top View Of ROWPU With Operating Equipment Stored (MC)

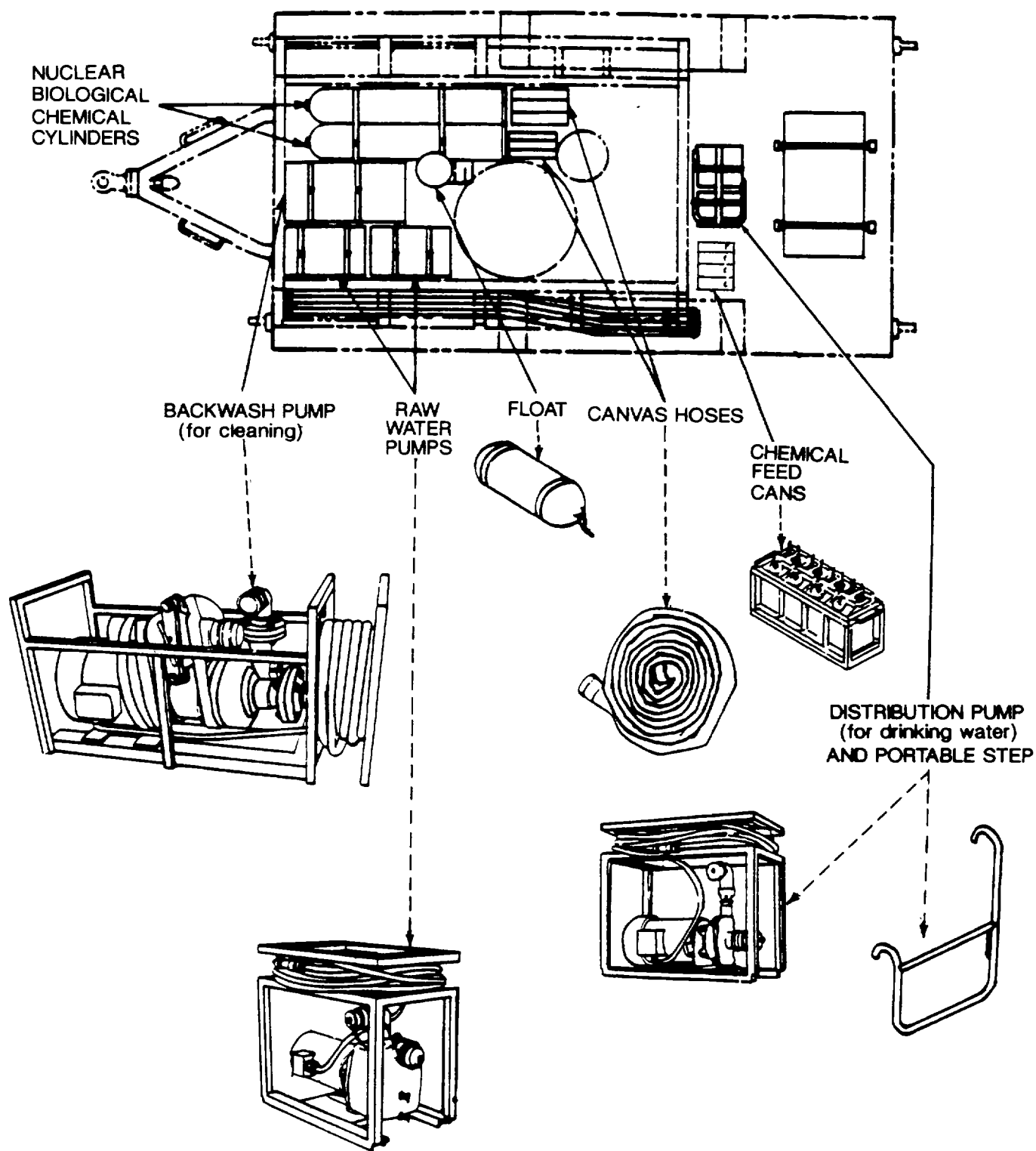


Figure 1-5. Top View of ROWPU With Pumps (Army)