TM 5-4610-210-14

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, DIRECT AND GENERAL SUPPORT MAINTENANCE MANUAL, INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

HYPOCHLORINATION UNIT, WATER PURIFICATION, FRAME MOUNTED, WATER DRIVEN, 100 GPM (WALLACE AND TIERNAN MODEL A-506111) FSN 4610-880-0154

HEADQUARTERS, DEPARTMENT OF THE ARMY

JUNE 1971

TECHNICAL MANUAL
NO. 5-4610-210-14

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 12 *June 1971*

OPERATOR, ORGANIZATIONAL, DIRECT AND GENERAL SUPPORT MAINTENANCE MANUAL, INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST

HYPOCHLORINATION UNIT, WATER PURIFICATION, FRAME MOUNTED, WATER DRIVEN, 100 GPM (WALLACE AND TIERNAN MODEL A-506111) FSN 4610-880-0154

Current as of *3* May *1971*

***This manual supersedes TM 5-4610-210-14, 24 November 1969, including all changes.**

LIST OF ILLUSTRATIONS

CHAPTER 1

INTRODUCTION

Section 1. GENERAL

1-1. Scope

a. These instructions are published for the information and guidance of personnel to whom the Portable Hypochlorination Unit is issued. Inform at ion is provided on the operation, preventive maintenance checks and services, and organizational, direct and general support maintenance of the equipment, accessories, components and attachments.

b. Number in parentheses on illustrations indicate quanity. Numbers preceding nomenclature callouts on illustration indicate the preferred maintenance sequence.

1-2. Forms and Records

a. DA Forms and Records used for equipment maintenance will be only those prescribed in TM 38-750,

b. Report of errors, omissions, and recoin. mendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028, Recommended Changes to Publications, and forwarded direct to Commanding General, U. S. Army Mobility Equipment Command, ATTN: AMSME-MPP, 4300 Goodfellow Boulevard, St. Louis, Mo, 63120.

1-3. Administrative Storage

Refer to TM 740-90-1 for information on the administrative storage of this equipment.

1-4. Destruction of Army Materiel to Prevent Enemy Use

Refer to TM 750-244-3 for information on the destruction of this equipment to prevent enemy use.

Section Il. DESCRIPTION AND DATA

1-5. Description

a. The portable automatic hypochlorination unit (fig. 1-1 and 1-2), is designed to accomplish automatic chlorination. Where the rate of flow of water being treated is likely to vary, automatic chlorination is essential if a constant chlorine residual is to be maintained. In this process, the chlorinator rate of feed is automatically changed to suit the flow of water under treatment. If the water flow increases, the chlorine application increases proportionately. Conversely, if the water flow decreases, the chlorine application decreases proportionately. In this way, each gallon of treated water receives the same amount of chlorine and, if the character of the water remains constant, a constant chlorine residual results.

b. The unit is capable of treating water flow rates from 2 to 100 gallons per minute (gpm), and will automatically proportion the chlorine feed accurately over a range of 10 to 1 for any one setting of the range adjusting valve. If for instance, the apparatus is adjusted to treat a maximum flow of 100 gpm, it will proportion accurately down to 10 gpm. If the maximum setting is made for a flow of 20 gpm, accurate results will be obtained down to 2 gpm.

c. The main components of the hypochlorination unit are a hydraulically operated hypochlorinator, a water meter, a pressure regulating valve, and a manual range adjusting valve (globe valve). The hypochlorinator pumps hypochlorite solution into the water under treatment at a rate which is governed by the speed of the water meter. Since the speed of the water meter is always directly proportional to the water flow being treated, the chlorine application is also proportional to the water flow.

d. The water flow meter is operated by a small flow of water which is diverted from the main line by means of the manual range adjusting valve. When water flows through the valve (fig. 2-2), the pressure on the discharge side of the valve is lower than that on the inlet side by the amount of friction loss created by the valve. For any given setting of the valve, the pressure difference will increase as the main flow increases and vice versa. Since the pressure difference is applied to the water meter, the flow through the meter varies in direct proportion to the flow through the main. The water pressure regulating valve maintains a water pressure of at least 10 pounds per square inch (psi) in the system so that the hypochlorinator can be operated satisfactorily.

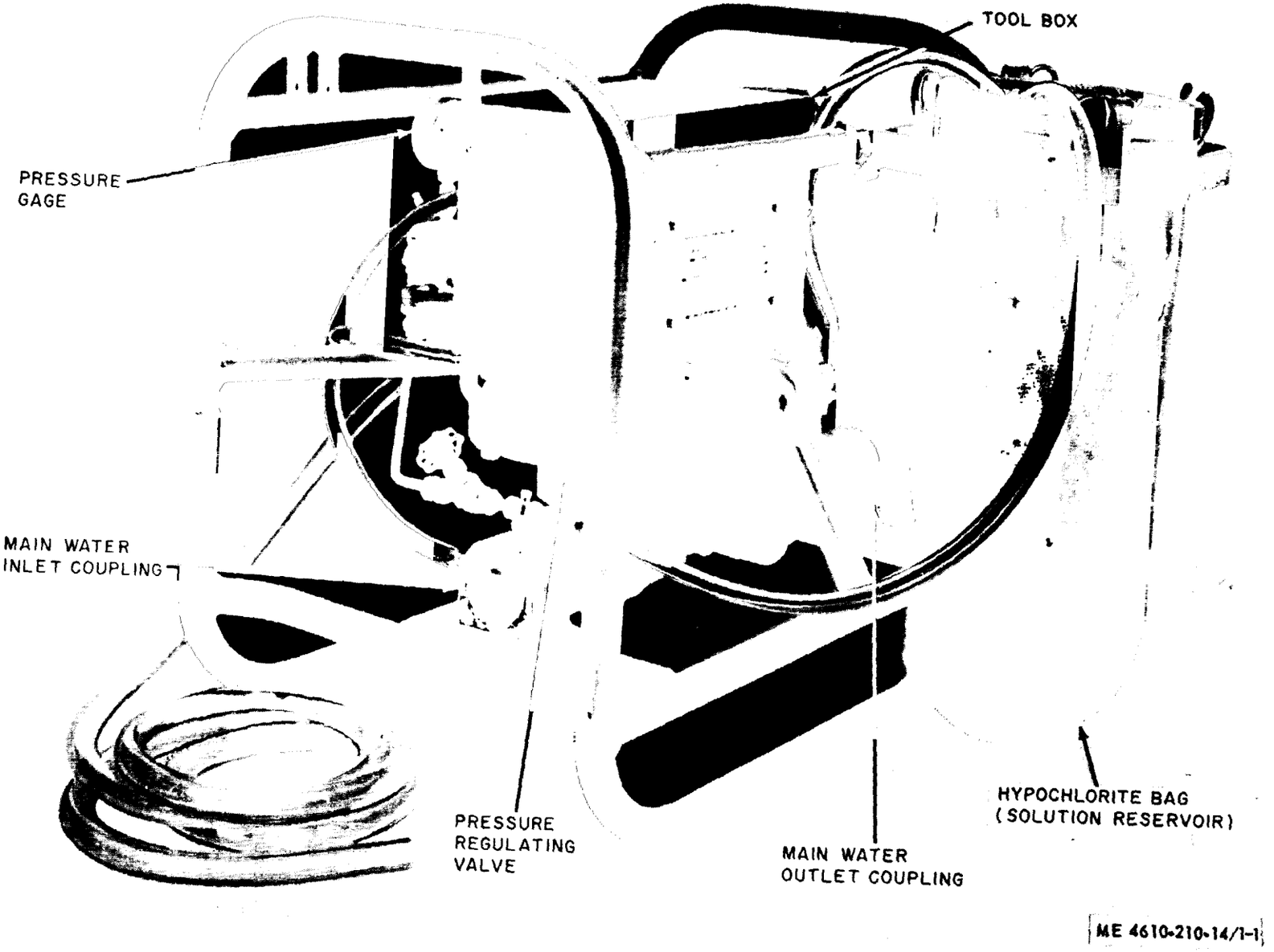

Figure 1-1. Portable automatic hypochlorination unit, right-front view.

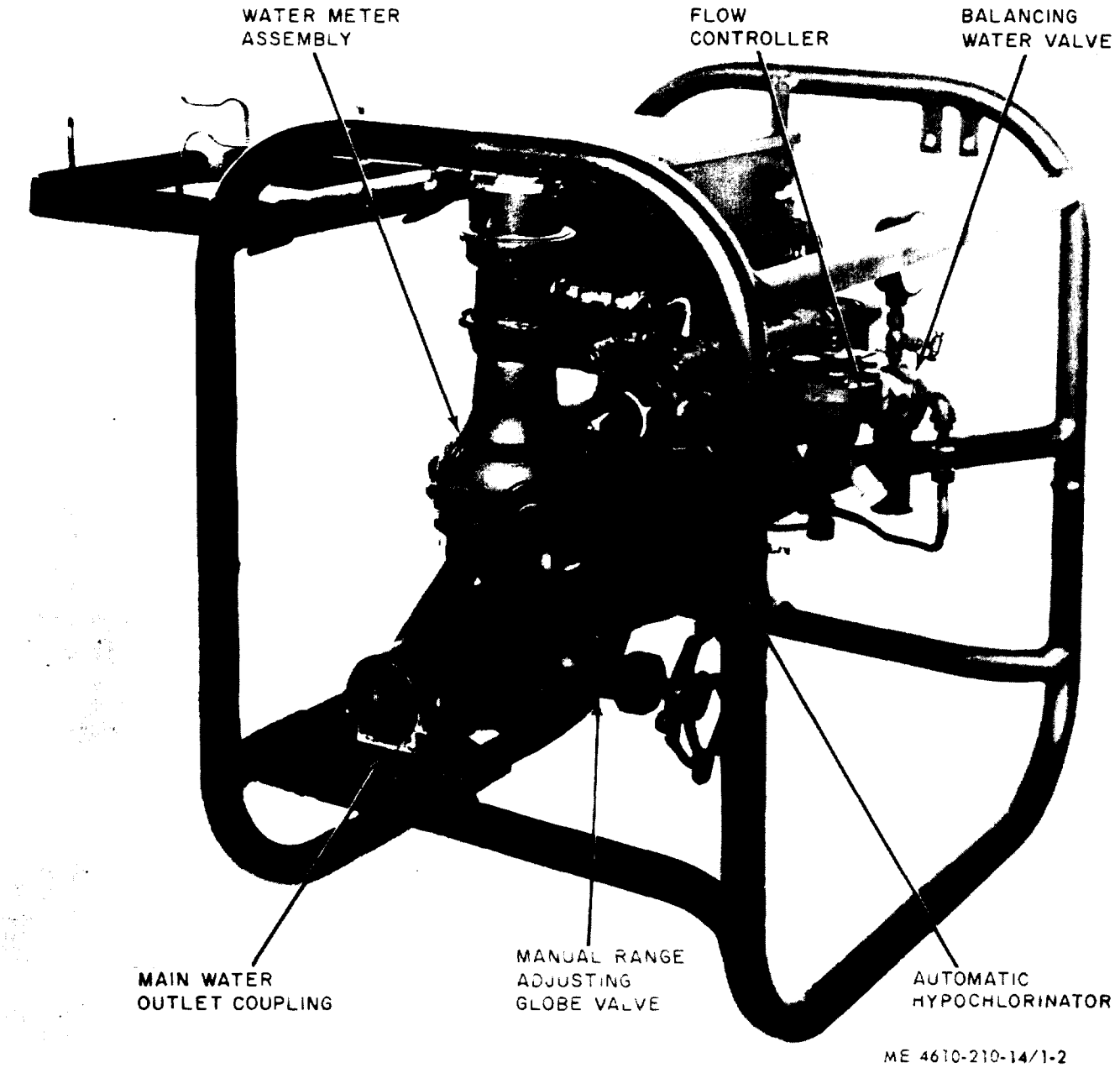

Figure 1-2. Portable automatic hypochlorination unit, left-rear view.

1-6. Identification and Tabulated Data

a. Identification. The portable automatic hypochlorination unit has only one identification plate. The information contained on the plate includes the model number, capacities, weight, height, width, length, and manufacturer's name. The plate is fastened to the tool box.

b. Tabulated Data.

(1) Hypochlorinator.

Manufacturer. ..... Wallace and Tiernan, Inc.
Model A-416121

(2) *Balancing water value.*

Manufacturer. . . . . .Wallace and Tiernan. Inc.
Model. UXA-5262

(3) *Flow controller.*

Manufacturer. . . . . .Wallace and Tiernan. Inc.
Model. UXA-15948

(4) *Meter extension* case.

Manufacturer. . . . . .Wallace and Tiernan. Inc.
Model. U-13896