

TECHNICAL MANUAL
ORGANIZATIONAL MAINTENANCE MANUAL

CONCRETE-MOBILE® MIXER BODY
M919, MODEL 8CM-24/F
NSN 3895-01-028-4391

**This copy is a reprint which includes current
pages from Change 1.**

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TECHNICAL MANUAL

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DEPARTMENT OF THE ARMY
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Washington, DC, 15 August 1980**ORGANIZATIONAL MAINTENANCE MANUAL****M919 CONCRETE-MOBILE® MIXER BODY
MODEL 8CM-24/F
NSN 3895-01-0284391****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 direct to: Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished to you.

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HOW TO USE THIS MANUAL.

This manual contains the following information to help you understand how the Concrete-Mobile mixer body works, how to service it, and how to make authorized repairs.

WHAT THIS MANUAL CONTAINS.

This manual is divided into chapters which provide the following information:

CHAPTER 1 INTRODUCTION.

This chapter contains general information about the Concrete-Mobile mixer body. It also tells you where to find maintenance forms.

CHAPTER 2 PRINCIPLES OF OPERATION.

This chapter contains information on how the vehicle works. It is divided into sections by function: Power train, water system, etc. (see Table of Contents for complete listing).

CHAPTER 3 INTEGRATED MAINTENANCE.

This chapter includes information that applies to all the maintenance chapters that follow (chapters 4 thru 14). It tells:

- a. When to inspect, test, and service the vehicle. Preventive Maintenance Checks and Services)
- b. Where to find the troubleshooting procedures for a specific problem. (Troubleshooting Symptom Index.)

CHAPTER 4 THRU 14 INDIVIDUAL MAINTENANCE CHAPTERS.

These chapters give you the following information:

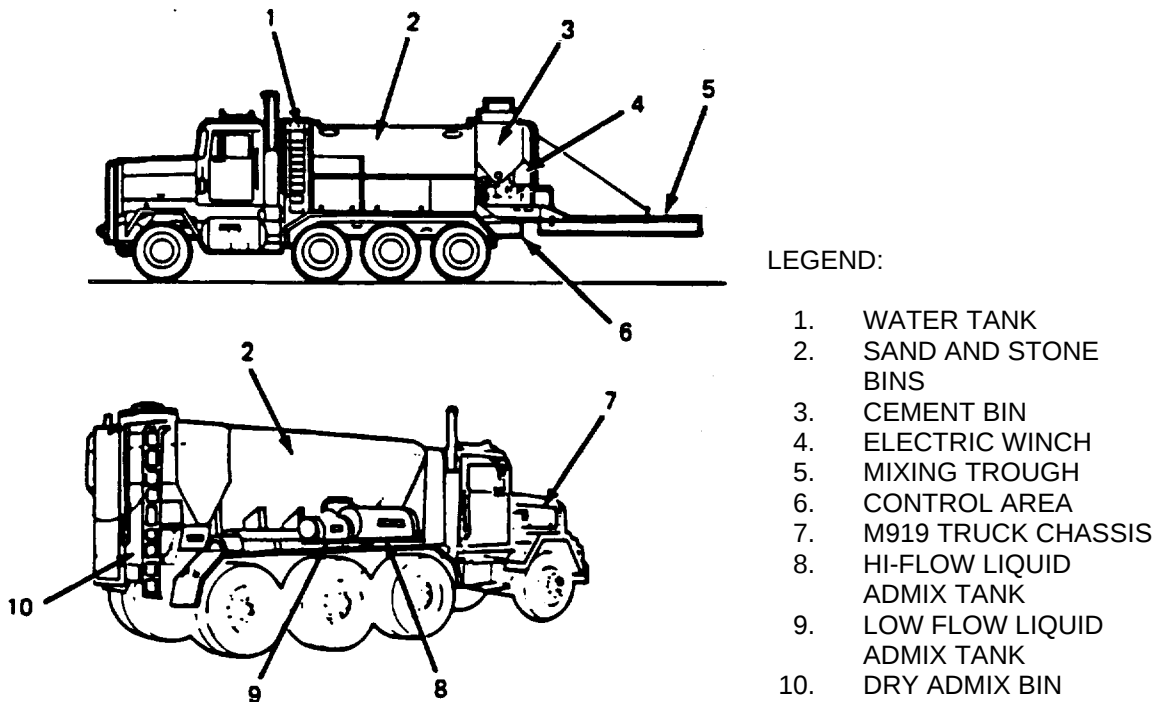
- a. How to find out what's causing a problem (Troubleshooting Procedures).
- b. A list of authorized maintenance procedures (Maintenance Task Summaries).
- c. Detailed procedures for replacing and servicing component parts (Task Procedures). Procedures include a list of special tools that you'll need (if any), materials required and references to other manuals, if needed.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S).

If your mixer 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. Tell us why a procedure is hard to perform. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at: Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-MP, Warren, MI 48397-5000. We'll send you a reply.

EQUIPMENT IMPROVEMENT REPORT AND MAINTENANCE DIGEST (EIR MD) AND EQUIPMENT IMPROVEMENT REPORT AND MAINTENANCE SUMMARY (EIR MS).

Maintenance Digest, TB 43-0001-39 series, contains valuable field information on the equipment covered in this manual. The information in the TB 43-0001-39 series is compiled from some of the Equipment Improvement Reports that you prepared on the vehicles covered in this manual. Many of these articles result from comments, suggestions, and improvement recommendations that you submitted to the EIR program. The TB 43-0001-39 series contains information on equipment improvements, minor alterations, proposed Modification Work Orders (MWO's), warranties (if applicable), actions taken on some of your DA Form 2028's (Recommended Changes to Publications), and advance information on proposed changes that may affect this manual. In addition, the more maintenance significant articles, including minor alterations, field-fixes, etc., that have a more permanent and continuing need in the field are republished in the Equipment Improvement Report and Maintenance Summary (EIR MS) for TARCOM Equipment (TM 43-0143). Refer to both of these publications (TB 43-0001-39 series and TM 43-0143) periodically, especially the TB 43-0001-39 series, for the most current and authoritative information on your equipment. The information will help you in doing your job better and will help in keeping you advised of the latest changes to this manual. Also refer to DA Pam 25-30, Consolidated Index of Army Publications and Blank Forms, and Appendix A. 'References', of this manual.



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Major Components of the Concrete-Mobile® Mixer Body.

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CHAPTER 1

INTRODUCTION

1-1. OVERVIEW.

This chapter provides you with the following information:

- a. Forms and record data required for maintenance.
- b. Features and specifications of Concrete-Mobile® mixer body.

Section I GENERAL INFORMATION

1-2 SCOPE.

Type of Manual: Organizational Maintenance.

Model Number and Equipment Name: M919 - Concrete-Mobile Mixer Body.

Purpose of Equipment: Mixes and delivers concrete at a maximum rate of 40 cu ft per minute.

1-3. MAINTENANCE FORMS, RECORDS, AND REPORTS.

Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by DA Pam 738750.

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

Requirements and procedures for destruction of army materiel to prevent enemy use are given in TM 750-244-6.

1-5 ADMINISTRATIVE STORAGE.

Storage information is given in TM 740-901, Administrative Storage.

Section II EQUIPMENT DESCRIPTION AND DATA

1-6. PURPOSE, CAPABILITIES, AND FEATURES .

The Concrete-Mobile® mixer body carries water, admixtures, dry aggregates, and cement. It mixes these to make concrete fresh at the jobsite.

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1-6. PURPOSE, CAPABILITIES, AND FEATURES (Continued).

Features important for maintenance are:

- a.* Cement stays dry until it enters the mixing trough. There should be no wet concrete inside the mixer body.
- b.* Moving parts are guarded by metal shields. These shields can be removed for maintenance.
- c.* Draincocks are provided for venting air pressure and draining water from Concrete Mobile systems.
- d.* Plastic caps on lube points keep cement dust out of fittings.
- e.* Concrete-Mobile'mixer body is calibrated at the factory. You can easily check calibration if there is doubt about yields (refer to TM 53895372-10).

CHAPTER 2

PRINCIPLES OF OPERATION

2-1. OVERVIEW.

This chapter explains the functioning of mixer body components you will be maintaining at the Organizational level, and shows how they relate to each other. The explanation is broken down into the following sections:

- a.* Concrete-Mobile Mixer Body (paras 2-2 and 2-3).
- b.* Power Train (paras 2-4 and 2-5).
- c.* Water System (paras 2-6 and 2-7).
- d.* Admix Systems (paras 2-8, 2-9 and 2-10).
- e.* Aggregate Supply System (paras 2-11 and 2-12).
- f.* Cement System (paras 2-13 and 2-14).
- g.* Mixer-Auger System (paras 2-15 and 2-16).
- h.* Hydraulic System (paras 2-17 and 2-18).
- i.* Air System (paras 2-19 and 2-20).
- l.* Electric Winch (paras 2-21 and 2-22).
- k.* Lamps (paras 2-23 and 2-24).

You can find other basic information about the Concrete-Mobile Mixer Body in:

- a.* Appendix D (Schematic Diagrams).
- b.* TM 5-3895-372-10 (Operator's Manual for the M919 Concrete-Mobile® Mixer Body).

Section I CONCRETE-MOBILE MIXER BODY

2-2. INTRODUCTION.

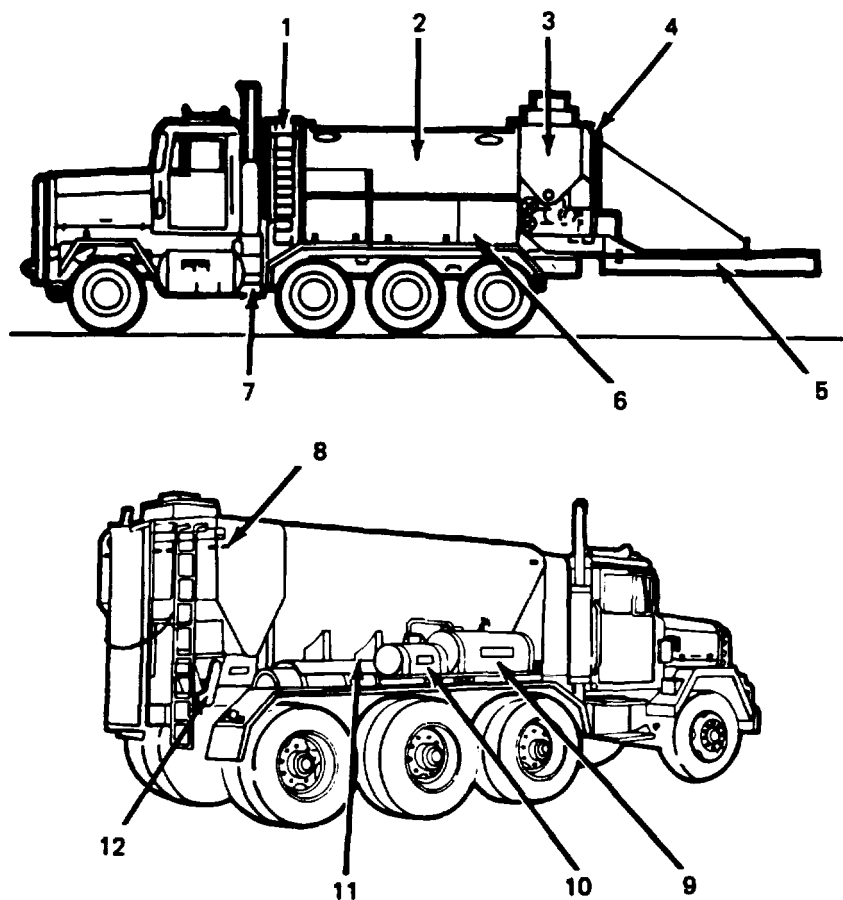
This section identifies the major systems of the Concrete-Mobile Mixer Body (hereafter referred to as the mixer body). It explains the function of each system and how the systems relate to each other.

For a description of the components of each system, see sections II thru XI.

2-3. DESCRIPTION.

1. WATER SYSTEM. (Section III) supplies water for mixing concrete and for washing the
2. AGGREGATE SUPPLY SYSTEM. (Section V) includes bins for carrying sand and stone, controls and gates for proportioning the aggregates, and a conveyor to carry dry materials to
3. CEMENT SYSTEM. (Section VI) stores dry cement, meters it out for concrete production, and registers the amount of cement used.
4. ELECTRIC WINCH. (Section X) raises mixer trough for storage, lowers it for concrete
5. MIXER-AUGER SYSTEM. (Section VII) mixes aggregates, cement, and water to form concrete. During mixing, concrete is carried from conveyor belts to delivery chute at end of
6. HYDRAULIC SYSTEM. (Section VIII) hydraulic pump, driven by belts from power train, turns mixer-auger motor.
7. POWER TRAIN. (Section II) driven by truck engine, through PTO. Provides direct mechanical drive for sand and stone conveyor, cement bin auger and meter, and dry admix auger and meter. Belts from main drive turn water and hydraulic pumps.
8. LAMPS. (Section XI) clearance lamps mark top and sides of mixer body.
9. HI-FLOW LIQUID ADMIX SYSTEM. (Section IV) used for adding relatively large amounts of chemical admixtures to concrete. Air pressure forces admixture from 42 gal (160 l) tank
10. LOW-FLOW LIQUID ADMIX SYSTEM. (Section IV) same as the hi-flow, except tank has smaller capacity (12 gal, 45 l).
11. AIR SYSTEM. (Section IX) pressurized air from chassis air system. Powers vibrators to shake dry materials from bins, and air pads to loosen settled cement. Also supplies pressure to liquid admix systems. Air hose attachment can be used to blow water system dry in cold
12. DRY ADMIX SYSTEM. (Section IV) injects powdered admixtures and colorings into concrete.

2-3. DESCRIPTION (Continued).



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Section II POWER TRAIN

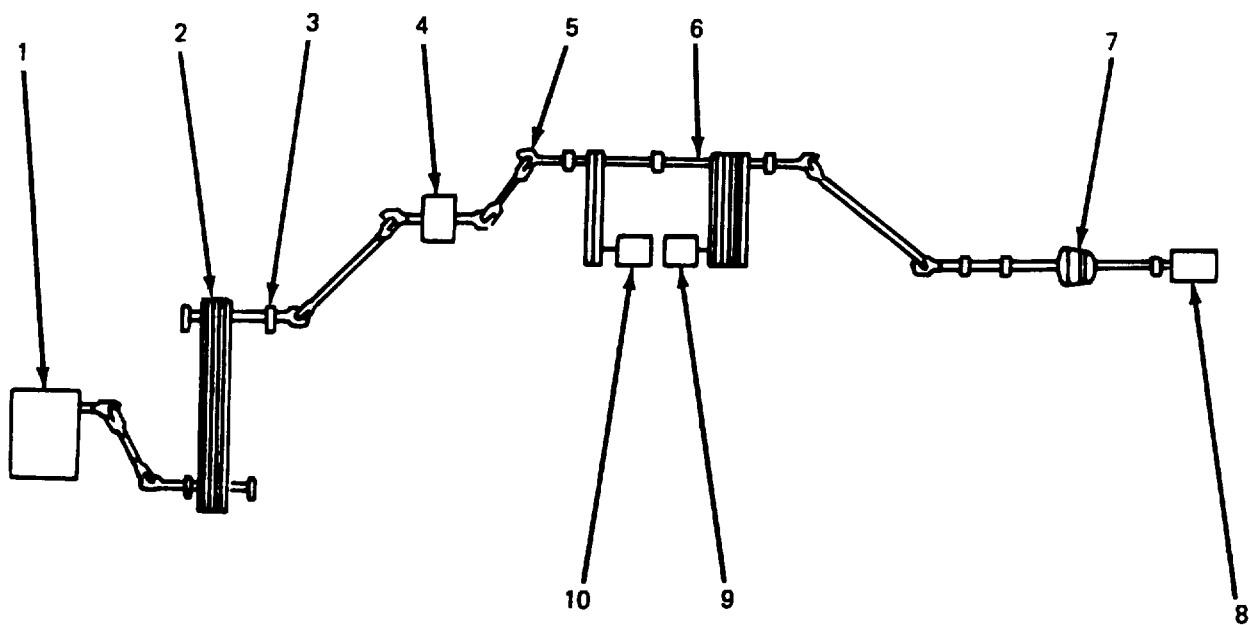
2-4. INTRODUCTION.

The mixer body is mechanically driven by the truck engine. The power train is located on the left side of the unit. It provides power for all mixer body systems except the lamps and the electric winch.

2-5. DESCRIPTION.

1. POWER TAKEOFF (PTO). Supplies engine power to mixer body. When engaged, meshes with transmission gears to turn PTO shaft. (See TM 9-2320273-20).
2. PTO V-BELTS (5). Driven by PTO jackshaft. Turn main drive.
3. BEARINGS BLOCKS (10). Hold PTO jackshaft and main drive in place. Bearings allow shafts to turn freely.
4. REVERSING GEAR BOX. Reverses direction of shaft rotation.
5. UNIVERSAL JOINTS (8). Transmit rotation between two shafts mounted at an angle.
6. MAIN DRIVE. Driven by PTO V-belts. Rotating shaft powers water pump, hydraulic pump, and angle drive gear box.
7. MAIN CLUTCH. When engaged, connects main drive to angle drive gear box. Manually
8. ANGLE DRIVE GEAR BOX. Powered by main drive when main clutch is engaged. Turns sand and stone conveyor belt, cement meter-feeder, and dry admix feeder. Output shaft mounted at right angle to main drive.
9. HYDRAULIC PUMP. Driven by six V-belts from main drive. Powers mixer-auger.
10. WATER PUMP. Driven by two V-belts from main drive. Pumps water for concrete mixing and cleanup.

2-3. DESCRIPTION (Continued).



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Section III WATER SYSTEM

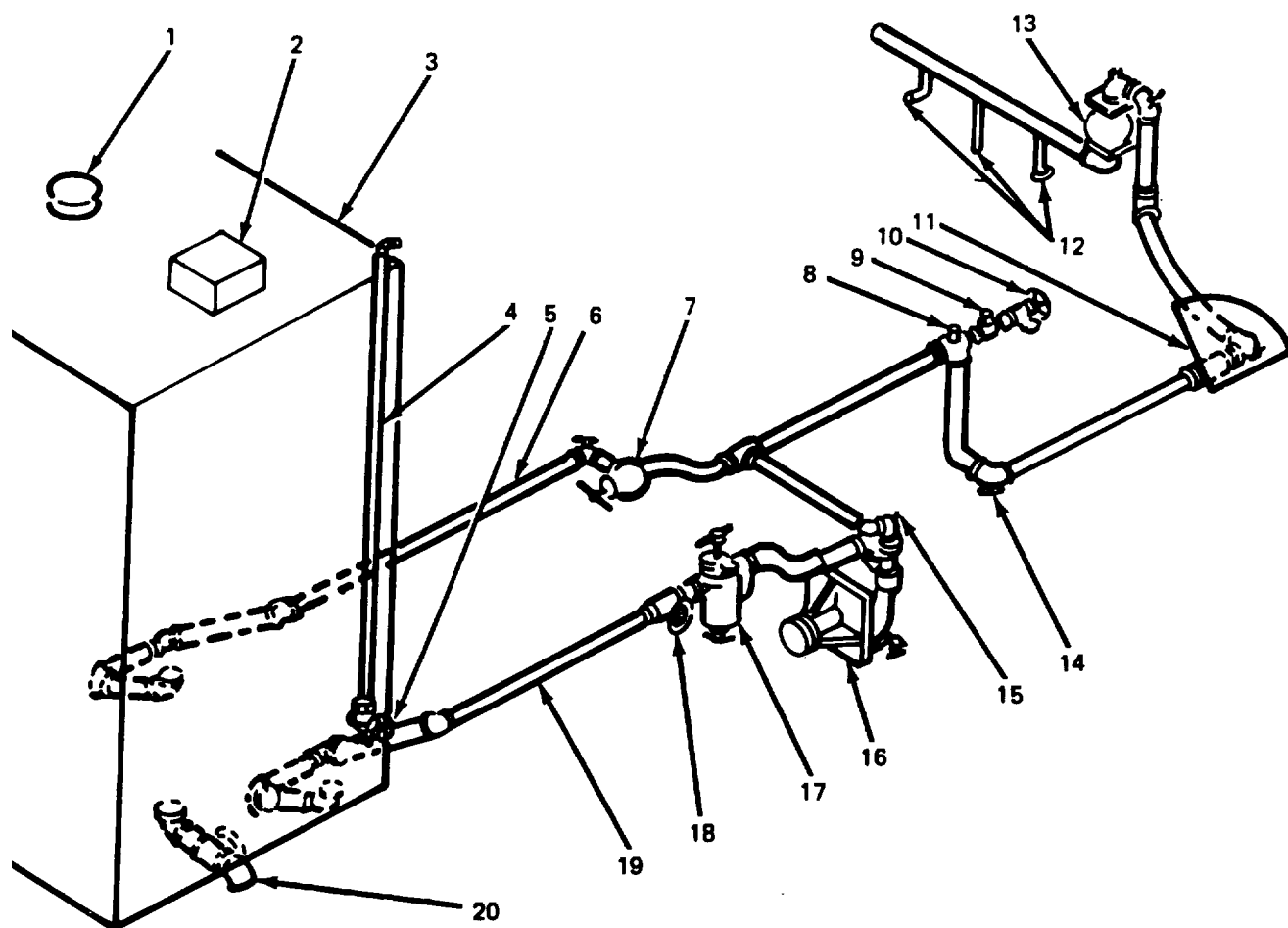
2-6. INTRODUCTION.

The mixer body carries enough water to mix a full load of concrete and clean up afterwards. Pressure should be maintained at 60 psi (414 kPa). The wet admix systems (paras 2-8 and 2-9) are separate from the main system.

2-7. DESCRIPTION.

1. FILLER CAPS. Used when potable water is available.
2. INLET WATER STRAINER. Filters out leaves, stones, and other large particles as water enters tank. Used when water supply is impure.
3. WATER TANK. Holds 400 gal (1514 liters). Carries water for concrete mixing and cleanup. Coated inside with water-repellent paint to prevent leaks and rust.
4. SIGHT GAGE. Allows operator to check tank water level.
5. GAGE VALVE. Used to shut off water supply to gage if gage is broken or being removed.
6. WATER RETURN LINE. Allows water to return from pump through relief valve to tank.
7. PRESSURE RELIEF VALVE. Adjustable valve controls water pressure by regulating flow in return line. Normal pressure is 60 psi (414 kPa).
8. AIR FITTING. Used to blow water out of system to prevent freeze-up.
9. VENT. Used in draining system in cold weather.
10. HOSE VALVE. Controls water flow to washout hose.
11. WATER CONTROL. Controls water flow into mixer trough. Pointer attached to valve handle indicates water flow.
12. SPRAY NOZZLES (3). Spray water into cement and aggregate mixture as it enters mixer trough. Outside nozzles spray at an angle for better mixing action. Admixture solutions are injected into center nozzle.
13. QUICK-OPENING VALVE. Mechanical link to main clutch control automatically opens valve when main clutch is engaged. Allows water from flow control valve to enter spray
14. DRAINCOCKS (8). Located at low points of system. Allow water drainage to prevent freeze-up. Must be opened before compressed air is blown into system.
15. AIR FITTING. Used to blow water out of system to prevent freeze-up.
16. WATER PUMP. Supplies pressure to water system. Belt-driven from main drive.
17. SCREEN STRAINER. Filters water flowing into pump.
18. SHUTOFF VALVE. Controls water flow from tank to pump.
19. WATER SUPPLY LINE. Carries water from tank through shutoff valve to pump.
20. DRAIN VALVE. Opens to allow drainage of water from tank.

2-7. DESCRIPTION (Continued).



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