

TM 5-3895-371-24 & P

TECHNICAL MANUAL

**ORGANIZATIONAL,
DIRECT SUPPORT,
AND GENERAL SUPPORT
MAINTENANCE MANUAL
WITH REPAIR PARTS AND
SPECIAL TOOLS LIST**

BITUMINOUS DISTRIBUTOR BODY

M918, MODEL D-63

NSN 3895-01-028-4390

E.D. ETNYRE & CO.

(MANUAL PREPARED BY AM GENERAL C)

DAAE07-77-C-4211

HEADQUARTERS, DEPARTMENT OF THE ARMY

March 1981

Technical Manual

Headquarters
Department of the Army
Washington, D.C., 1 March 1981

**ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL WITH REPAIR PARTS AND SPECIAL TOOLS LIST**

**BITUMINOUS DISTRIBUTOR BODY
M918 (MODEL D-63)
NSN 3895-01-028-4390**

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 or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Commander, U.S. Army Tank-Automotive Command, ATTN: AMSTA-MB, Warren, MI 48397-5000. A reply will be furnished to you.

Current As Of 1 February 1989

TABLE OF CONTENTS

		Paragraph	Page
CHAPTER 1	INTRODUCTION		
Section I	General	1-1-1-7	1-1
II	Description and Data	1-8-1-9	1-3
CHAPTER 2	ORGANIZATIONAL MAINTENANCE INSTRUCTIONS		
Section I	Service Upon Receipt of Equipment.	2-1-2-2	2-1
II	Repair Parts, Special Tools and Equipment.	2-3-2-4	2-1
III	Lubrication Instructions.	2-5	2-1
IV	Preventive Maintenance Checks and Services (PMCS)	2-6	2-2
V	Troubleshooting	2-7-2-8	2-6
VI	Maintenance of Electrical System	2-9-2-10	2-14
VII	Maintenance of Stowage Box	2-11	2-23
VIII	Maintenance of Bell.	2-12	2-24
IX	Maintenance of Hand Spray Gun Tube Assembly	2-13	2-26
X	Maintenance of Hydraulic Pump Propeller Shaft.	2-14	2-28
XI	Maintenance of Hydraulic Pump Control and Front Override Control.	2-15	2-31
XII	Maintenance of Hydraulic Tank and Filter	2-16	2-33
XIII	Maintenance and Routing of Hydraulic Lines.	2-17	2-38
XIV	Maintenance of Hydraulic Control Box.	2-18	2-39
XV	Routing of Hydraulic Control Box to Air Control Box Harness	2-19	2-43
XVI	Maintenance of Air Control Box	2-20	2-45

TABLE OF CONTENTS (Continued)

		Paragraph	Page
Section XVI I	Maintenance and Routing of Air Lines	2-21	2-50
XVIII	Maintenance of Spray Bar Control Cylinders.	2-22	2-53
XIX	Maintenance of Bitumeter Wheel Assembly.	2-23	2-60
XX	Maintenance of Bitumeter Air Control Reservoir	2-24	2-66
XXI	Maintenance of Pump Tachometer and Recording Bitumeter.	2-25	2-67
XXII	Maintenance of Hydraulic Motor Universal Drive	2-26	2-69
XXIII	Maintenance of Burner Fuel Tank.	2-27	2-71
XXIV	Maintenance of External Smoke Stacks.	2-28	2-73
XXV	Maintenance of Quadrant	2-29	2-75
XXVI	Maintenance of Vacu-Flo, Intake and Control Valves	2-30	2-79
XXVI I	Maintenance of Filling Line.	2-31	2-82
XXVIII	Maintenance of Transfer Valves.	2-32	2-84
XXIX	Maintenance of Control Valve.	2-33	2-86
XXX	Maintenance of Manhole Cover.	2-34	2-88
XXXI	Maintenance of Blower Assembly	2-35	2-91
XXXII	Maintenance of Portable Burner	2-36	2-103
XXXIII	Maintenance of Spray Bar Distributing Lines	2-37	2-106
XXXIV	Maintenance of Spray Bar.	2-38	2-110
XXXV	Maintenance of Low Pressure Burner Assembly	2-39	2-120
CHAPTER 3	DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE INSTRUCTIONS		
Section I	Repair Parts, Special Tools and Equipment.	3-1,3-2	3-1
II	Troubleshooting	3-3	3-1
III	General Maintenance.	3-4	3-1
IV	Repair of Hydraulic Pump and Controls.	3-5	3-4
V	Repair of Hydraulic Motor	3-6	3-49
VI	Replace Asphalt Pump	3-7	3-82
VII	Repair of Combustion Chamber	3-8	3-86
VIII	Repair of Asphalt Tank and Hoses	3-9-3-10	3-88
CHAPTER 4	REPAIR OF PLATFORMS		
Section I	Repair of Rear Platform	4-1,4-2	4-1
II	Repair of Side Walkways.	4-3-4-10	4-13
CHAPTER 5	REPAIR OF SPRAY BAR SUBFRAME	5-1,5-2	5-1
CHAPTER 6	REPAIR OF HYDRAULIC TANK	6-1-6-3	6-1
CHAPTER 7	REPAIR OF SPRAY BAR AIR CYLINDERS.	7-1-7-4	7-1
CHAPTER 8	REPAIR OF BITUMETER AIR CYLINDERS	8-1,8-2	8-1
CHAPTER 9	REPAIR OF ASPHALT PUMP	9-1-9-3	9-1

TABLE OF CONTENTS (Continued)

		Paragraph	Page	
CHAPTER 10	REPAIR OF LOW PRESSURE BURNER ASSEMBLY.....	10-1,10-2	101	
CHAPTER 11	REPAIR OF BURNER FUEL TANK.,	11-1-11-4	11-1	
CHAPTER 12	REPAIR OF ASPHALT TANK GAGE	12-1-12-6	12-1	
APPENDIX A	REFERENCES	A-1-A-3	A-1	
APPENDIX B	MAINTENANCE ALLOCATION CHART			
Section I	Introduction	B-1-B-5	B-1	
II	Assignment of Maintenance Functions		B-4	
III	Tools and Test Equipment Requirements		B-10	
		Page		Illus Figure
APPENDIX C	REPAIR PARTS AND SPECIAL TOOLS LIST	C-1		
Section I	Introduction	C-1		
II	Repair Parts List.	C-7		
GROUP 06	ELECTRICALSYSTEM			
	0609 Lamps.....	C-8	1	
	0613 Asphalt Tank Wiring Loom.	C-11	2	
GROUP 15	FRAME AND ATTACHMENTS			
	1501 Loom Bumper.....	C-14	3	
	1501 Stowage Box	C-16	4	
	1501 Tuc-Bar Subframe	C-18	5	
GROUP 22	ACCESSORY ITEMS			
	2202 Miscellaneous Accessory Items	C-23	6	
	2202 Asphalt Hoses and Connectors	C-30	7	
	2202 Hand Spray Gun	C-32	8	
	2210 Data Plates	C-34	9	
GROUP 24	HYDRAULIC SYSTEM			
	2401 Hydraulic Pump	C-36	10	
	2401 Hydraulic Motor	C-43	11	
	2401 Hydraulic Pump Propeller Shaft	C-48	12	
	2403 Hydraulic Controls	C-50	13	
	2406 Hydraulic Lines and Fittings.	C-54	14	
	2406 Hydraulic Filter.....	C-62	15	
	2408 Hydraulic Tank	C-64	16	

TABLE OF CONTENTS (Continued)

	Page	Illus Figure
GROUP 42	ELECTRICAL EQUIPMENT	
4202	Cab Electrical Control Box	C-66 17
GROUP 43	AIR SYSTEM	
4301	Air Lines and Fittings.	C-68 18
4317	AirControl Box	C-76 19
4318	Spray Bar Shifting Air Cylinder.	C-78 20
4318	Spray Bar Turn Up and On-Off Cylinders	C-80 21
4318	Bitumeter Air Chamber.	C-82 22
4321	Air Reservoir	C-84 23
GROUP 47	GAGES AND MEASURING DEVICES	
4701	Pump and Drive Tachometers.	C-87 24
4701	Bitumeter	C-91 25
4701	Tank Gage.	C-96 26
4702	Non-Electrical Gages.	C-100 27
GROUP 55	PUMPS	
5509	Pump Housing	C-102 28
5500	Asphalt Pump	C-104 29
5507	Hydraulic Pump Universal Drive.	C-106 30
GROUP 60	BURNERS	
6004	Fuel Pump Burner	C-108 31
6005	Portable Burner	C-110 32
6006	Low Pressure Burners	C-112 33
6007	Fuel Tank and Lines	C-115 34
6010	Smoke Stacks	C-118 35
6011	Low Pressure Combustion Chamber	C-120 36
GROUP 73	ASPHALT EQUIPMENT	
7300	Bituminous Body	C-122 37
7317	Spray Bar	C-125 38
7317	Quadrant Assembly.	C-132 39
7318	Vacu-Flo and Control Intake Valves	C-136 40
7318	Transfer, Filling and Distributing Valves.	C-140 41
7318	Asphalt Tank.	C-144 42
7318	Manhole Assembly	C-146 43
7322	Blower Drive Motor.	C-148 44
7322	Blower Assembly.	C-150 45

TABLE OF CONTENTS (Continued)

		Page	Illus Figure
GROUP 95	9501 BULK MATERIAL	C-152	
Section III	Special Tools List	C-153	
IV	NSN,PartNo.Index..	C-154	
		Paragraph	Page
APPENDIX D	EXPENDABLE SUPPLIES AND MATERIALS		
Section I	Introduction	D-1, D-2	D-1
II	Expendable Supplies and Materials List.		D-2
APPENDIX E	ILLUSTRATED LIST OF MANUFACTURED ITEMS		
Section I	Introduction	E-1, E-2	E-1
II	Part Number Index		E-2
III	Illustrated Manufacturing Instructions		E-3
INDEX			Index-1

CHAPTER 1

INTRODUCTION

HOW TO USE THIS MANUAL.

This manual is designed to help you maintain and repair the M918 Bituminous Distributor Body. Listed below are special features which have been included to make it easier to locate and to use the information you need.

- a. A Table of Contents is provided, giving you a quick reference to chapters and sections that you will be using often.
- b. Warnings, subject headings, procedural steps, and certain other modules of information are highlighted in bold print as a visual aid for you.
- c. Upper case type is used to separate basic instructions from the more detailed procedural material.

FOLLOW THESE GUIDELINES WHEN YOU USE THIS MANUAL:

- a. Read all warnings and cautions.
- b. If you need a quick reference on a procedure, or if you need to refresh your memory, read the information which is printed in upper case type. This should help you get the information you need without having to read an entire passage of text.
- c. When you need more complete information on a subject, read all the material pertaining to that subject, including information printed in both upper and lower case type.
- d. Throughout this manual, illustration callout numbers are sequential, starting with Arabic numeral 1, in clockwise rotation wherever possible. In cases where the same part is used in more than one place in an illustration, it will generally have the same callout number. Where detail illustrations are needed to further identify parts of a larger exploded view illustration, like items will have the same callout number for ease of identification.

Section I. GENERAL

1-1. Scope.

- a. This technical manual is for your use in performing Organizational Direct Support and General Support maintenance of the Etnyre Bituminous Distributor mounted on the M918 truck chassis. The instructions in this manual are divided in accordance with the Maintenance Allocation Chart (MAC) (Appendix B) to define responsibilities for Organizational Maintenance personnel (Chapter 2) and Direct Support and General Support maintenance personnel (Chapter 3 thru 12).

NOTE

See TM 9-2320-27320 for maintenance support of the M918 truck chassis.

b. The user of this technical manual may find additional information by referring to the technical manuals, technical bulletins, and other publications listed in Appendix A.

c. Appendix C contains an illustrated list of all service parts and special tools with the estimated quantities of component parts and tools authorized for Organizational, Direct Support, and General Support Maintenance of the Etnyre Bituminous Distributor.

1-2. Maintenance Forms and Records. Equipment maintenance forms and procedures for their use are contained in DA PAM 738-750, The Army Maintenance Management System (TAMMS),

1-3. Destruction of Army Material to Prevent Enemy Use. Procedures outlined in TM 750-244-6 (*Procedures for Destruction of Tank-Automotive to Prevent Enemy Use*) are applicable to this equipment.

1-4. Administrative Storage. Storage information is given in TM 740-90-1) Administrative Storage.

1-5. Reporting Equipment Improvement Recommendations (EIRs). If your Bituminous Distributor 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 (*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.

1-6. Quality Assurance/Quality Control (QA/QC). No particular quality assurance or quality control pertains specifically to the Etnyre Bituminous Distributor.

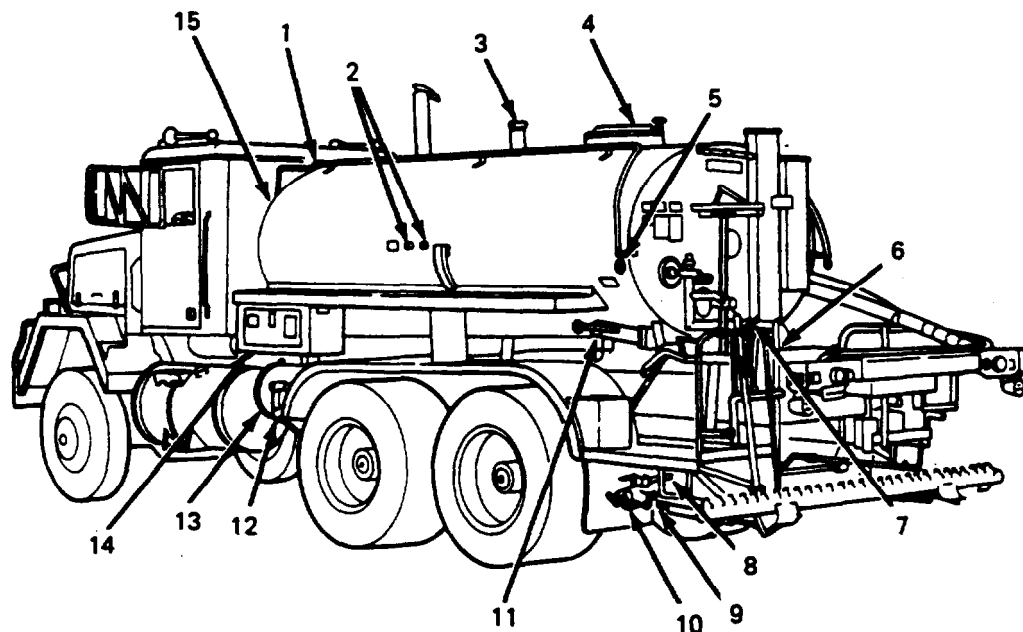
1-7. Calibration Procedures. There are no calibration procedures authorized at Organizational, Direct Support or general Support maintenance levels.

Section II. DESCRIPTION AND DATA

1-8. Description.

a. The Etnyre Bituminous Distributor consists of a storage tank with a low pressure heating system, a hydraulic-powered pumping unit, and an adjustable spray bar for distributing bituminous material (see fig. 1-1). The equipment is mounted on an M918 truck chassis. It is normally operated by a crew of two men; a driver in the cab, and an operator stationed on the rear platform.

b. The maintenance paragraphs of this manual contain descriptions of the Bituminous Distributor major components.

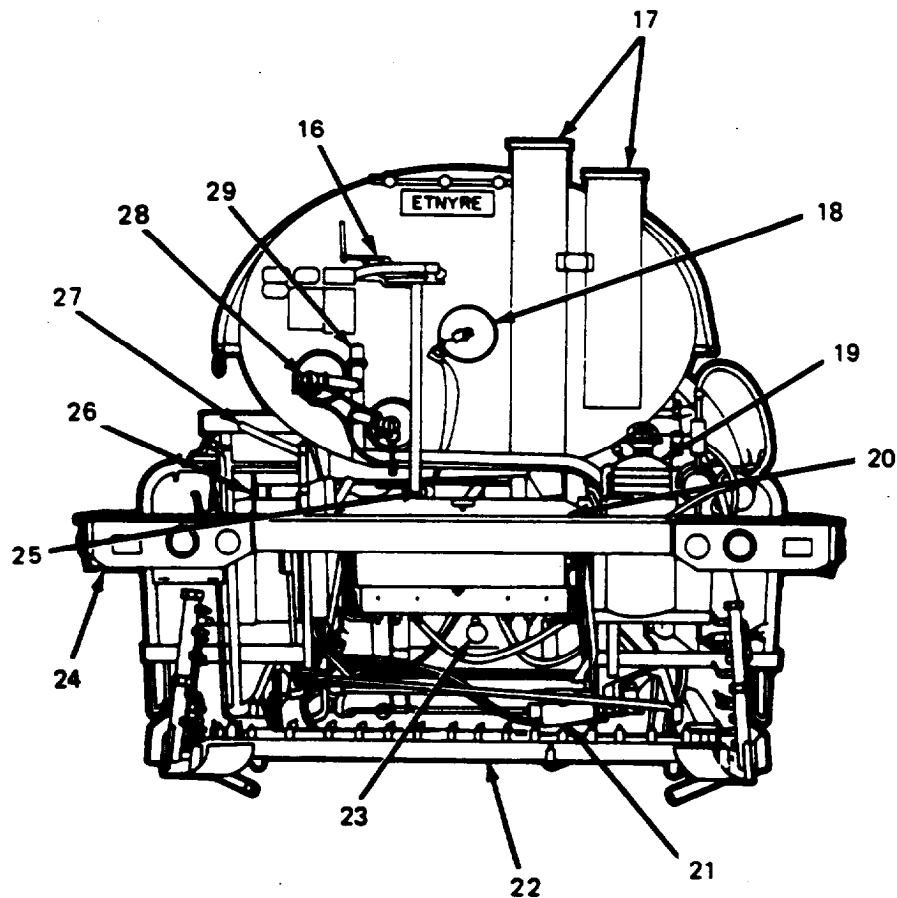


LEGEND:

- | | | |
|-------------------------------|--------------------------|---------------------------|
| 1. SIGNAL BELL | 6. AIR CONTROL BOX | 11. FILL LINE CAP |
| 2. THERMOMETER AND WELL (DRY) | 7. BAR TURN UP LEVER | 12. HYDRAULIC FILTER |
| 3. OVERFLOW AND VENT COVER | 8. TRANSFER VALVE LEVER | 13. HYDRAULIC RESERVOIR |
| 4. MANHOLE | 9. HAND SPRAY CONNECTION | 14. TOOL BOX |
| 5. SIGNAL BELL PULL RING | 10. TRANSFER VALVE COVER | 15. MATERIAL STORAGE TANK |

TA 075800

Figure 1-1. Major Components and Their Locations (Sheet 1 of 3).

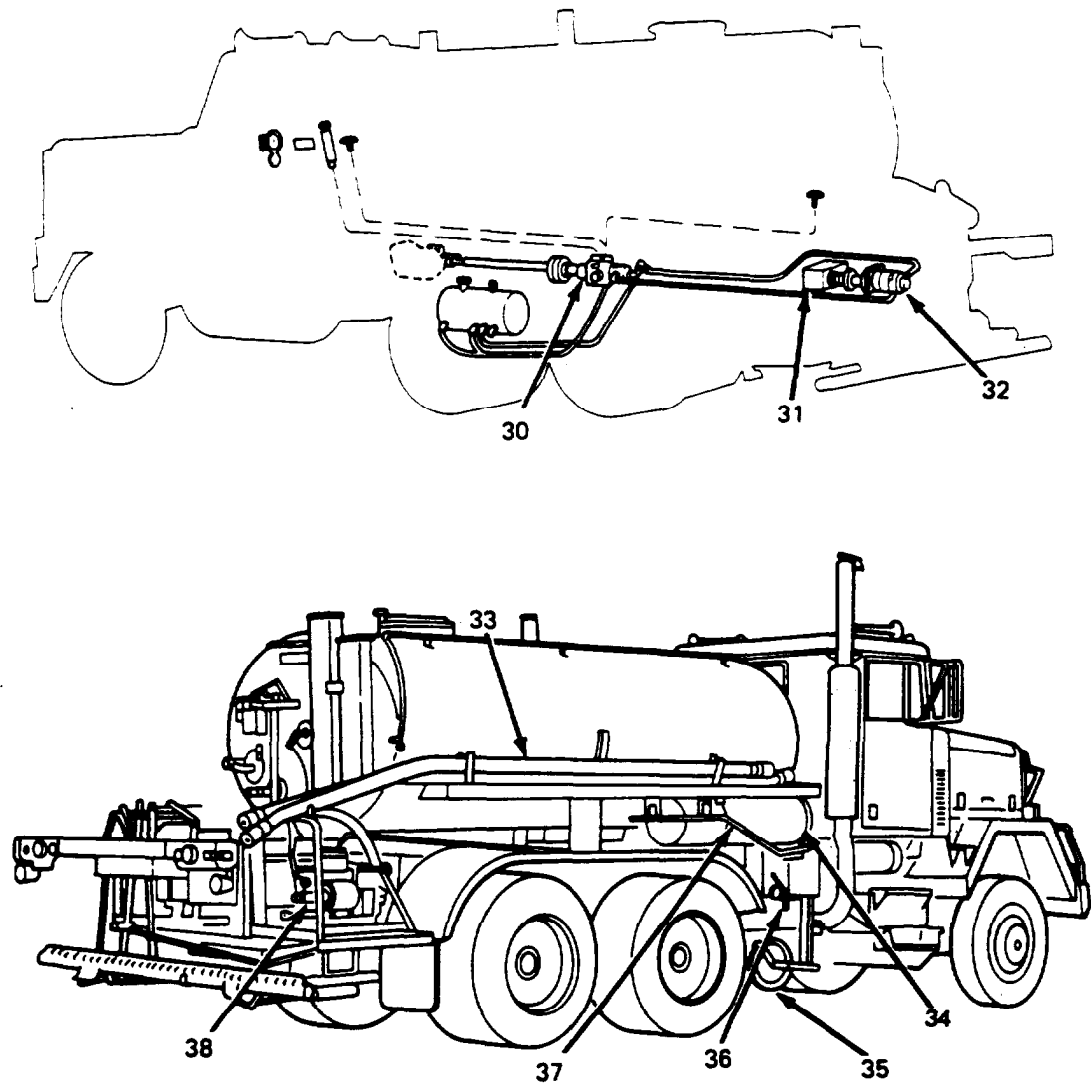


LEGEND:

- | | |
|-------------------------------|------------------------------------|
| 16. QUADRANT CONTROL LEVER | 23. DISCHARGE HEADER STRAINER |
| 17. EXHAUST STACKS | 24. LOOM BUMPER |
| 18. TANK GAGE | 25. VACU-FLO VALVE LEVER |
| 19. PORTABLE BURNER | 26. BUTTERFLY VALVE LEVER |
| 20. EXTENSION BAR STOWAGE BOX | 27. INTAKE VALVE LEVER |
| 21. AIR CYLINDER | 28. LOW PRESSURE ATOMIZING BURNERS |
| 22. SPRAY BAR | 29. AIR RELIEF VALVE |

TA 075801

Figure, 1-1. Major Components and Their Locations (Sheet 2 of 3).



LEGEND:

- | | |
|------------------------|-------------------------|
| 30. HYDRAULIC PUMP | 35. BITUMETER WHEEL |
| 31. BITUMEN PUMP | 36. AIR LINE LUBRICATOR |
| 32. HYDRAULIC MOTOR | 37. HAND SPRAY GUN |
| 33. AUXILIARY HOSE (2) | 38. BURNER FUEL PUMP |
| 34. BURNER FUEL TANK | |

TA 075802

Figure 1-1. Major Components and Their Locations (Sheet 3 of 3).