TECHNICAL MANUAL

OPERATION, MAINTENANCE, OVERHAUL, AND ILLUSTRATED PARTS LIST

3468 MANUAL ROOF TURRET

Akron Brass Company
1450 Spruce Street
Wooster, OH 44691

MARCH 1996

OPERATION, MAINTENANCE, OVERHAUL, AND ILLUSTRATED PARTS BREAKDOWN

3468 MANUAL ROOF TURRET

AKRON BRASS COMPANY
1450 Spruce Street
Wooster, OH 33691

RECORD OF CHANGES

CHANGE NO.	CHANGE DATE	DESCRIPTION OF CHANGE	INCORPORATED BY

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF TABLES

INTRODUCTION

PURPOSE. This manual provides operation and maintenance instructions for the Akron Brass 3468 Manual Roof Turret Assembly.

SCOPE. This manual includes descriptions, operating instructions, troubleshooting information, and maintenance information for the roof turret. No attempt is made to instruct personnel on fire fighting technique.

HOW TO USE THIS MANUAL.

a. Arrangement. This manual is arranged in three sections: Operation and Operator Maintenance, Maintenance and Overhaul, and Illustrated Parts Breakdown.

b. Table of Contents. The Table of Contents lists all section headings and primary paragraph headings in the manual. Headings are listed by section, paragraph, and page number.

c. Illustrations and Tables. Illustrations and tables are included to help make the text of this manual clear. See the List of Illustrations and List of Tables following the Table of Contents.

ABBREVIATIONS. The abbreviations used in this manual conform to MIL-STD-12 and its amendments.

SAFETY SUMMARY

READ THIS INFORMATION CAREFULLY BEFORE OPERATING OR PERFORMING MAINTENANCE ON THE ROOF TURRET

Use care when loading, lifting, or transporting parts or other items. When lifting, keep your back straight, bend at the knees, and lift with the legs. DO NOT attempt to lift objects that are too heavy or awkward to handle easily; get help instead.

Protective clothing such as gloves, aprons, coveralls, face shields, etc., must be worn if the conditions and circumstances of your job require it while operating the roof turret or performing maintenance on it.

Be familiar with the roof turret BEFORE using it in a real life situation.

Inspect the roof turret before and after each use and at regular intervals for damage components and operating condition.

Pay attention to the warnings and cautions placed within the manual. The warnings and cautions are placed before the steps to which they apply.

CHAPTER 1. Operation and Operator Maintenance Instructions

SECTION I
DESCRIPTION

1-1. PURPOSE. This chapter provides operation and operator maintenance instructions for the roof turret mounted on a typical Fire Rescue truck. Refer to Figure 1-1. Included is a description, operating instructions, operator troubleshooting information, and operator inspection information for the roof turret.

1-2. OVERALL DESCRIPTION. The roof turret is a nonaspirating, constant flow, variable stream nozzle located on the roof of the cab. The turret has dual discharge rates of 375 GPM and 750 GPM at 190 PSI turret inlet pressure. The discharge pattern is variable from a 200 foot straight stream to a fully-dispersed foot by 35 foot (min.) pattern at 750 GPM. Roof turret may be elevated to reach stated distances. Refer to Figure 1-2 for roof turret travel limits and discharge patterns. The turret is operated manually. An azimuth and elevation indicator, pattern controls, and a manual shutoff valve are also connected to the turret through the cab roof.

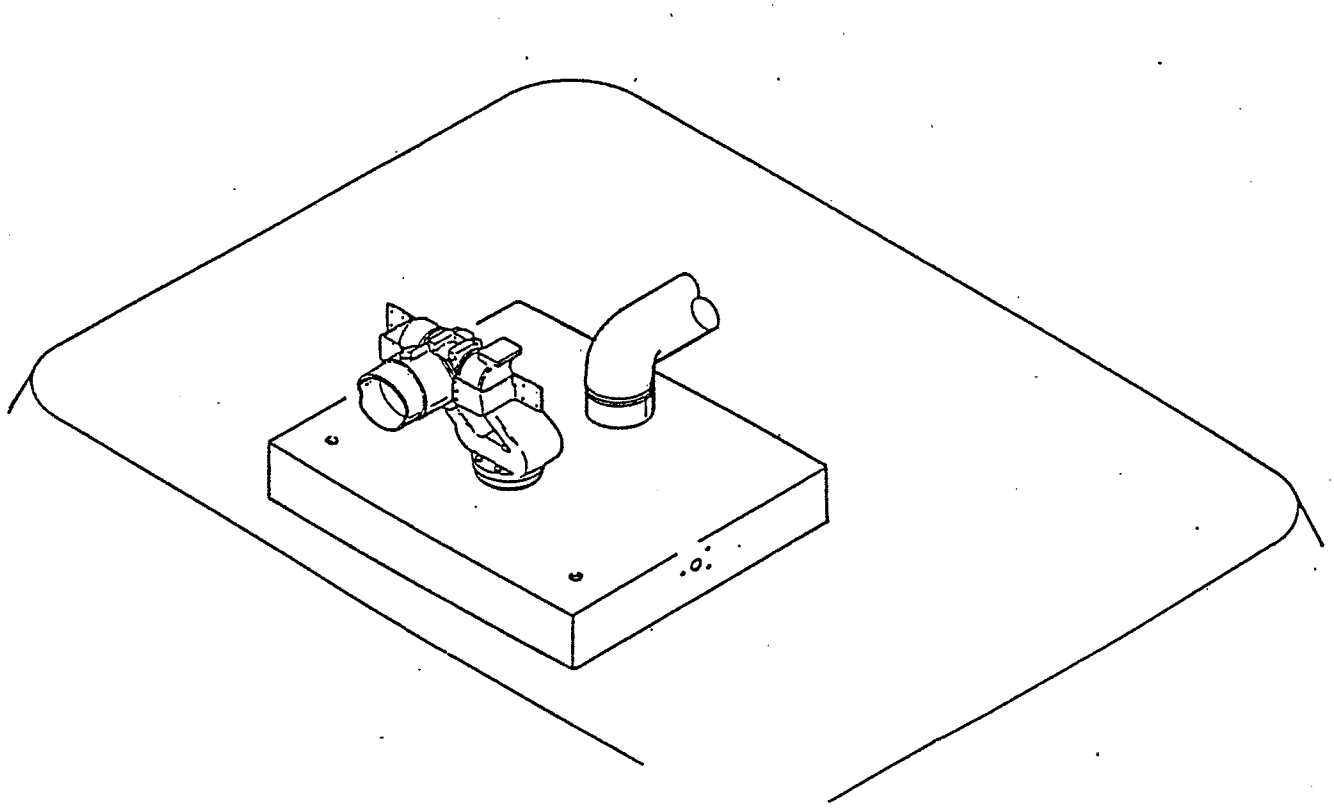


Figure 1-1. Roof Turret.

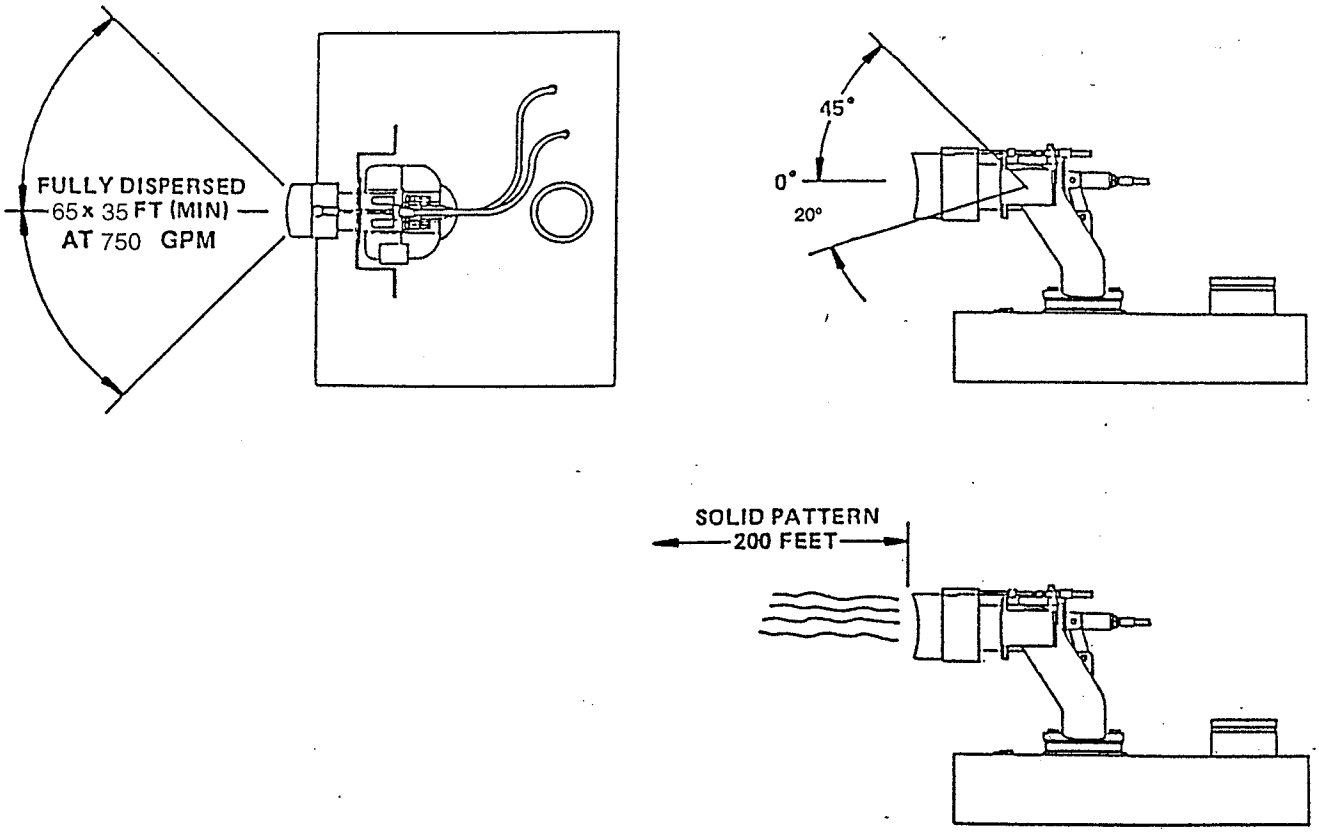


Figure 1-2. Roof Turret Travel Limits and Discharge Pattern.

SECTION II
OPERATION

1-3. GENERAL. This section provides instructions for operating the roof turret. Firefighting personnel must be thoroughly familiar with the contents of this section before attempting to operate the turret. The location of the roof turret control panel is identified in Figure 1-3.

1-4. ROOF TURRET INSTRUMENTATION. Roof Turret control and indicator layout and description are shown in Figure 1-4.

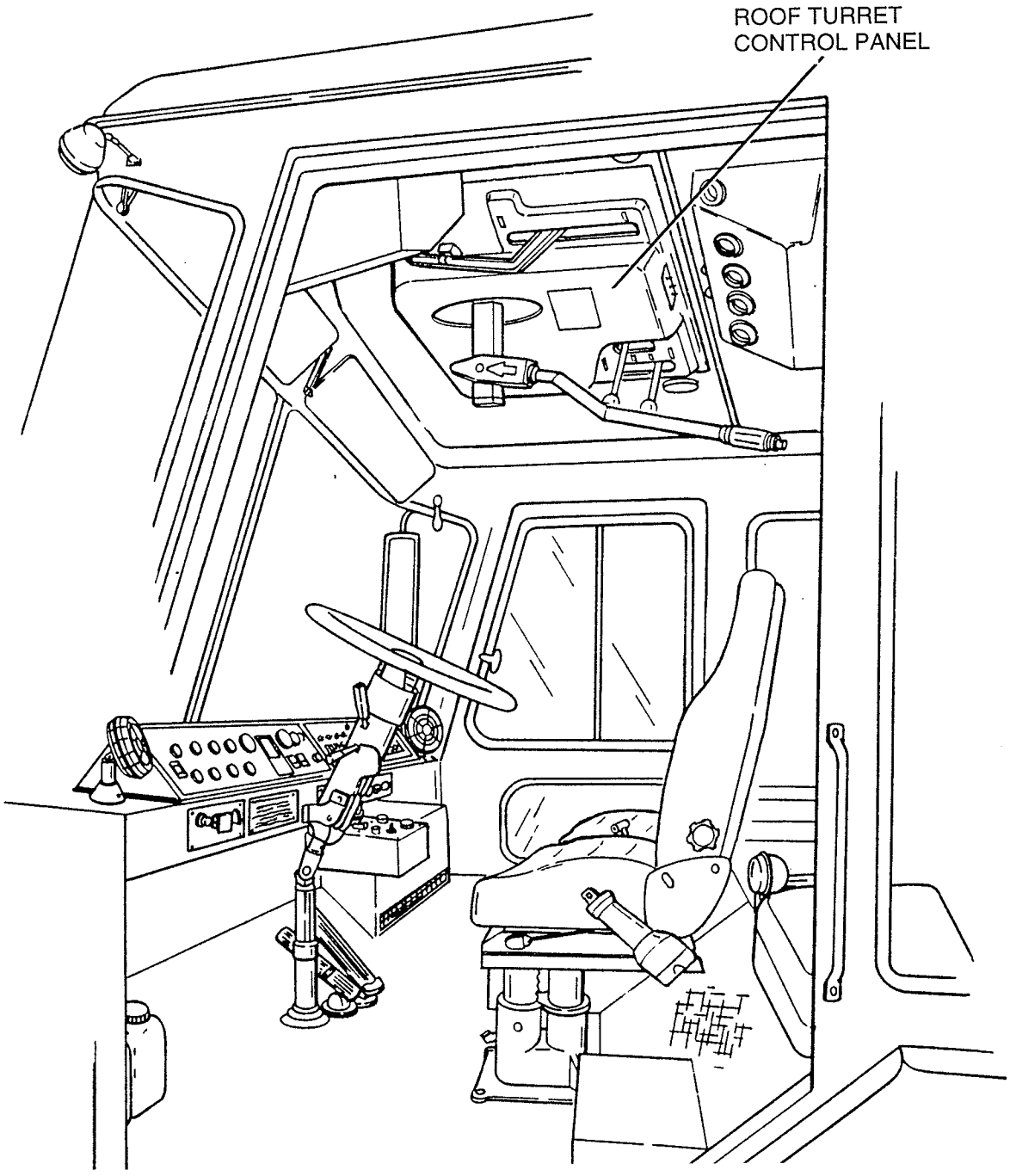
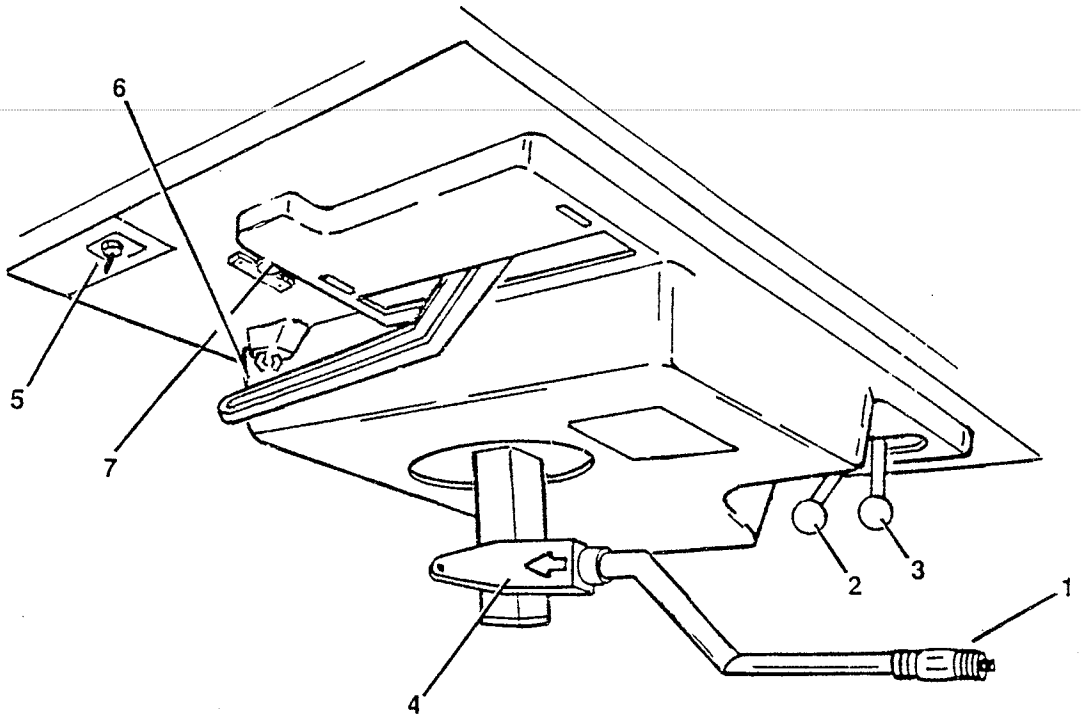


Figure 1-3. Typical Roof Turret Control Panel.



1. **DISCHARGE VALVE Switch and Turret Control Handle.** The DISCHARGE VALVE switch, located on the end of the turret control handle, opens the discharge valve when the turret is in the AIR mode. The turret control handle is used to direct the discharge stream left, right, up, down.

2. **Pattern Control.** Lever used to manually adjust pattern of discharge stream between SOLID STREAM and DISPERSED.

3. **Rate Control.** Lever used to manually select HIGH FLOW or LOW FLOW nozzle discharge rate.

4. **Indicator.** Incorporates azimuth indicator to indicate direction the turret is aimed.

5. **VALVE OVERRIDE Switch.** Toggle switch used to select either AIR or MANUAL mode for controlling agent discharge. AIR is the normal selection.

6. **Manual Discharge Valve Handle.** Handle used to manually OPEN and CLOSE the agent discharge valve.

7. **Valve Open Amber Indicator.** Lights when the discharge valve is open and agent is discharging.

Figure 1-4. Roof Turret Controls and Indicators.

NOTE

Maintain maximum engine RPM as practicable by modulating throttle and brake pedals for maximum flows.

1-5. OPERATION. Controls for operating the roof turret are located on the cab ceiling. Operation is described separately below.

During operation, the roof turret is aimed manually and the agent discharge is usually controlled with the discharge valve switch. Refer to Figure 1-4.

a. Place Valve Override switch (7, Figure 1-4) in the AIR or MANUAL position. In the AIR position, agent is discharged by pressing the switch on the end of the handle grip. (AIR is the normal operating mode for the turret.) In the MANUAL position, agent is discharged when you pull the manual discharge valve handle down to open the valve.

b. Move the pattern control lever to select either SOLID STREAM or DISPERSED pattern. An intermediate pattern can be selected by placing the pattern control lever to any position between the two extremes.

c. Move the rate control lever to the LOW FLOW position. Use the rate control lever to select the high or low nozzle discharge rate.

d. Place FOAM/DRY CHEMICAL switch on the fire truck control panel in the correct position.

WARNING

Keep a firm grip on the turret control handle when the turret is discharging water.

e. Keep a firm grip on the turret control handle, and activate agent discharge. If you selected AIR in step a., press the button on the end of the handle grip. If you selected MANUAL, slowly pull the manual discharge valve handle down to open the agent discharge valve. Direct the flow using the turret control handle.

f. When discharge is complete, secure the turret by moving the manual discharge valve handle to VALVE CLOSE position and point the turret straight ahead.

SECTION III
OPERATOR INSPECTION AND MAINTENANCE

1-6. OPERATOR INSPECTION. Operator inspections are to be performed daily at the beginning of each personnel change or after each use. The inspections enable operator/crew personnel to detect discrepancies before they lead to roof turret malfunctions. Any defect found must be reported to maintenance personnel. Personnel should look for the following defects.

1. Inspect roof turret for corrosion, damage, or other defects.

NOTE

- Check operation of roof turret during training fires and/or as required by the Fire Department.
- Check for proper gage and indicator readings while operating roof turret.

2. Check hose and cable for cuts, cracks, breaks, or damage. Check condition of the nozzle.

1-7. TROUBLESHOOTING PROCEDURES. When a trouble or malfunction occurs, follow these steps. This sequence will help isolate the fault and permit a quicker repair.

NOTE

Isolate the problem completely before starting any remedial action.

a. Duplicate the Problem. Repeat the steps that caused the trouble to occur unless further damage will be caused. See paragraph 1-5 to be sure the correct operating procedures have been followed.

b. Equipment Description. Read the descriptive paragraph 1-2. Learn how the equipment functions and how it is powered.

c. Troubleshooting. Refer to the troubleshooting chart (Table 1-1). Look under the specific trouble listed in the chart. If the trouble is not listed, refer the truck to maintenance.

d. Checkouts and Remedial Action. Perform the checkout procedures and remedial actions listed in the troubleshooting chart to isolate the problem. When the probable cause or remedial action is not obvious or if the trouble is not cured, refer the truck to maintenance.

Table 1-1. Operator Troubleshooting Chart

TROUBLE	PROBABLE CAUSE	CHECKOUTS PROCEDURE AND REMEDIAL ACTION
Turret does not discharge.	1. Turret Override Assembly switch is in MANUAL position.	1. Place turret in AIR mode. Refer to paragraph 1-5.
	2. Discharge switch on handle is not working properly.	2. Replace switch. Refer to paragraph 2-17.

CHAPTER 2. Maintenance and Overhaul

SECTION I
INTRODUCTION

2-1. PURPOSE AND SCOPE.

This chapter contains lubrication, troubleshooting, inspection, replacement, repair, and test procedures for the roof turret system.

2-2. ROOF TURRET.

Figure 2-1 shows the location of the roof turret mounted on a typical Fire Rescue truck.

2-3. SPECIFICATIONS.

Table 2-1 lists the specifications for the roof turret installed on the Fire Rescue Truck.

Table 2-1. Specifications

Make	Akron Brass
Type II	Nonaspirating
Control	Manual Control
Discharge Rate	375 gal./min (1420 L/min.) and 750 gal./min. (2839 L/min.) for Foam or Water
Water or Foam Stream Pattern	200 ft. (61 m)
Water or Foam dispersed Pattern (minimum)	65 x 35 ft. (19m x 10m)
Nozzle Elevation/Depressed	20° below Horizontal to 45° above Horizontal
Rotation	105° Each Side (210° Total Sweep)

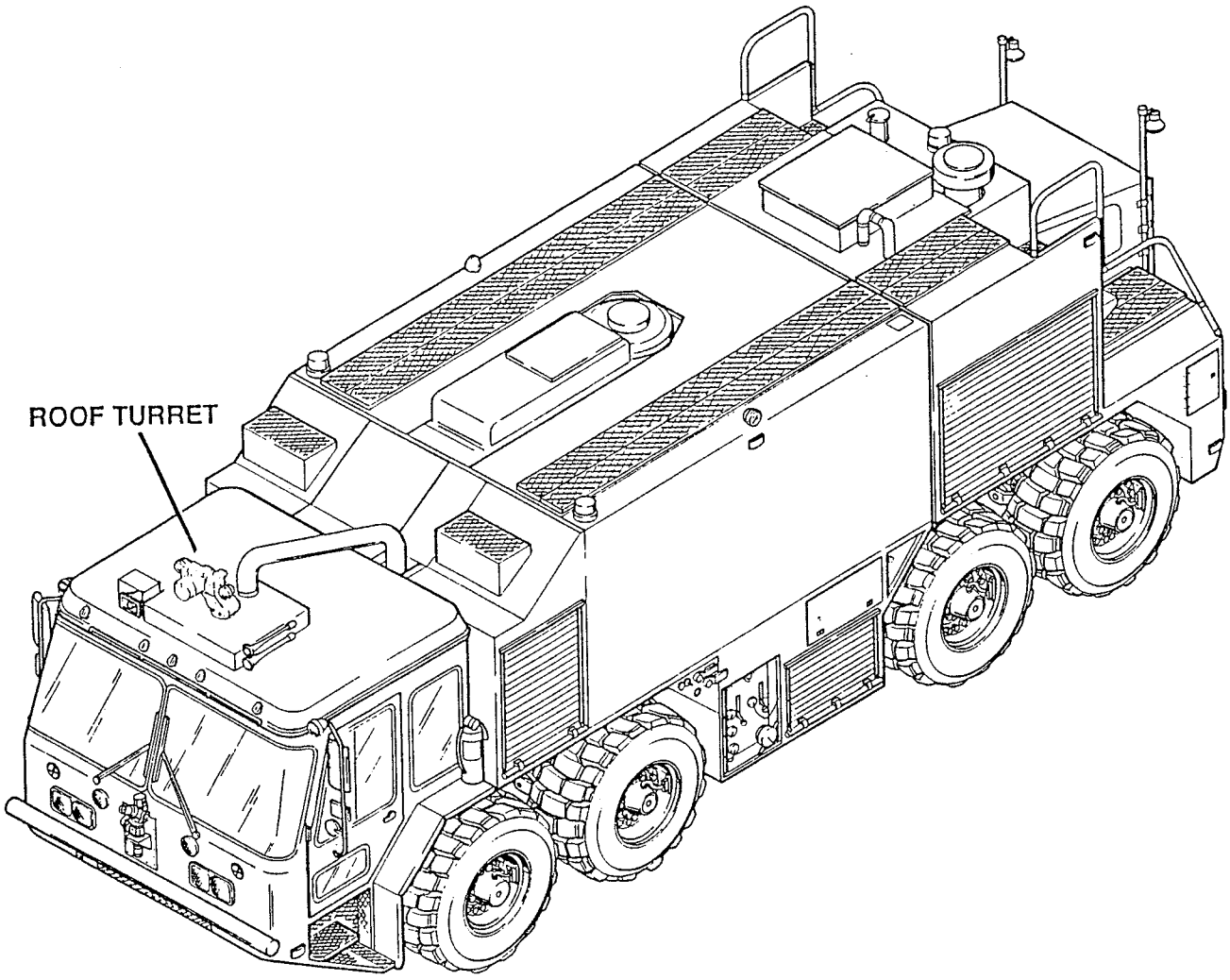


Figure 2-1. Typical Roof Turret Location.

SECTION II
GENERAL MAINTENANCE INSTRUCTIONS

2-4. INTRODUCTION.

This section provides instructions for preparing a new or reconditioned roof turret for operation. Also included are instructions for inspecting the turret after shipment.

2-5. INSPECTION PRIOR TO USE.

Each turret has received a thorough inspection and complete operational check prior to shipment from the manufacturer. Regardless of precautions taken, some damage may occur to turret during shipment. It is therefore necessary to make a complete visual inspection upon receipt of the turret.

CAUTION

Due to the critical nature of the service for which this turret is intended, no turret should be placed in service if there is any doubt or evidence of improper or inadequate function of any of the components.

(1) Inspect turret for shipping damage.

(2) Check turret for freedom of operation and proper installation.

(3) Check all external inlet connections to see that they are in place and secure.

(4) After making all other visual checks, check system for proper operation.

2-6. IN USE INSPECTION.

Table 2-2 lists all inspection intervals. Daily inspections are to be performed by the operator.

2-7 MAINTENANCE PROCEDURES.

During periodic vehicle servicing, check all mounting and flange bolts and nuts for tightness. Check all air and water connections for leakage.

NOTE

Refer to lubrication chart for further information.

2-8. LUBRICATION.

Lubricate turret every six months, 1000 miles, or 200 hours of vehicle operation (whichever comes first). Clean fittings before lubricating. Table 2-3 lists lubricants required.

Table 2-2. Inspection Intervals

INSPECTION	INSPECTION INTERVALS			
	DAILY	PERIODIC		SAFETY
	Or After Each Use	3 Months 100 Hours 250 Miles Whichever Comes First	6 Months 200 Hours 500 Miles Whichever Comes First	Annual 400 Hours 1000 Miles Whichever Comes First
Inspect all piping, fittings, and connections for leaks, damage, or corrosion.				X
Check mounting hardware for security and condition.			X	
Inspect roof turret for corrosion, damage, or wear. Replace as needed.	X			
Operate roof turret. Check all discharge patterns for water and foam.	X			

Table 2-3. Lubrication.

LUBRICANT KEY				
INTERVALS	TYPE OF LUBRICANT	TEMPERATURE RANGES AND LUBRICANT SPECIFICATIONS		
		32°F AND ABOVE	0°F TO 32°F	0°F TO -40°F
1000 Miles 200 Hours 6 Months	Grease, Automotive and Artillery	Lubriplate Low Temp	Lubriplate Low Temp	Lubriplate Low Temp

NOTE:

- Lubrication recommendations are based on an expected duty cycle of 2000 mi. or 400 hours of operation per year.
- Lubriplate is available from: Fiske Brothers Refining Co., Toledo, OH 43605;

2-9. TROUBLESHOOTING.

hen a problem occurs, the following sequence will help in identifying the fault.

a. Repeat the steps that caused the trouble to occur unless further damage will be caused. Refer to Chapter 1 to be sure the correct operating procedures have been followed.

b. Read the appropriate descriptive paragraphs to learn how the equipment functions and how it is powered.

c. Refer to the specific trouble listed in Table 2-4.

d. If the defective equipment is part of the electrical or air systems, refer to the schematic drawings, Appendix B in this manual to identify the appropriate circuit and its components.

e. Perform the checkout procedure and remedial actions listed in the troubleshooting charts to isolate the trouble. When the repair or replacement procedure is not obvious, refer to the table of contents in front of this manual to find the proper paragraph.

2-10. GENERAL REPAIR PROCEDURES.

This paragraph describes general procedures that apply to all parts of this manual. To avoid repetition, these procedures will not be described in specific maintenance paragraphs.

a. General Removal Instructions.

(1) Troubleshooting. Before removing any item, refer to the troubleshooting table to isolate problems to a particular component or part.

(2) Preparation. Before removing any part of electrical, pneumatic, or agent systems, make certain system is not energized or pressurized. Relieve all pressure from air system. Insure that all controls are in OFF position before starting any removal procedure.

(3) Removal. Make sure there is enough clearance to remove part. Disassemble roof turret or adjacent parts as necessary to provide working clearance.

Table 2-4. Troubleshooting

TROUBLE	PROBABLE CAUSE	CHECKOUT PROCEDURE AND REMEDIAL ACTION
Roof turret fails to discharge.	1. Insufficient air pressure.	1. Ensure inlet air pressure is at least 100 PSI and turret regulator is adjusted to 80 PSI.
	2. Defective discharge switch on handle or false ceiling control.	2. Replace defective switch.
	3. Defective solenoid valve.	3. Replace solenoid valve.
	4. Defective wiring.	4. Repair or replace wiring.
	5. Defective discharge valve.	5. Repair or replace valve.
Roof turret discharges intermittently or continuously.	1. Defective discharge switch.	1. Replace switch.
	2. Defective wiring.	2. Repair or replace wiring.
	3. Defective discharge valve.	3. Repair or replace valve.
	4. Defective solenoid valve.	4. Replace solenoid valve.
Roof turret leaking water.	1. Defective gasket between turret and roof.	1. Replace gasket.
	2. Worn seals or O-rings within turret.	2. Replace seals or o-rings.
No roof turret rate change.	Rate cable not properly connected or adjusted.	Connect/adjust rate cable.
No roof turret pattern control response.	1. Pattern sleeve O-rings require lubrication.	1. Lubricate pattern sleeve O-rings.
	2. Pattern cable not properly connected or adjusted.	2. Connect/adjust pattern cable.
No roof turret rotation.	1. Screw in handle hub is missing.	1. Replace screw.
	2. Broken elevation shaft.	2. Replace shaft.
No roof turret elevation or depression.	1. Missing or broken links.	1. Replace links.
	2. Broken elevation shaft.	2. Broken elevation shaft.

(4) Lifting. Use a chain hoist, jack, or other aid when lifting heavy parts. Lifting device should be positioned and attached to part to remove all strain from mounting hardware before part is removed.

(5) Identification. Identify all parts of similar shape with tags or other markings. This will make proper reassembly easier. Be sure to identify mating ends of electric and air lines as they are disconnected.

(6) Position of Valves. Before removing valve handles, mark or sketch their position when open and closed. This will help during assembly.

(7) Salvage Value. Assemblies that are removed, even though defective, should be treated as valuable items. Some parts can be rebuilt for future use.

b. General Disassembly Instructions.

(1) Cleanliness. The work area for disassembly of any item must be kept as clean as possible. This will avoid contamination of internal parts. This is especially true of control valves, cylinders, and other air system parts. To prevent contamination of system, wipe clean all water and air fittings before disconnecting lines.

(2) Expendable Parts. Whenever possible, all gaskets, packings and seals removed during repair should be discarded and replaced with new parts. These items are usually damaged during removal. In the same way, all lockwire, lockwashers, cotter pins, and like items should be replaced at time of assembly.

(3) Removing Seals. When removing gaskets, packings, or seals, do not use any metal tool that will scratch sealing surfaces next to these items.

(4) Disassembly. Before disassembling any item, study the illustration carefully. Carefully study the relationship of internal parts. Knowing the details of construction will speed up disassembly and assembly and help avoid mistakes.

(5) Identification. Apply identifying tags to mating ends of electric, air lines, etc., when they are disconnected. Identify parts of similar shape to insure correct assembly.

(6) Parts Protection. To prevent moisture and dirt from entering open housings, lines, and other openings, apply protective covers as soon as possible after disassembly. Wrap all parts in clean paper or dip parts in preservative lubricant (8, Appendix A).

(7) Work Required. Remove only those parts needing repair or replacement. Do not disassemble a component any further than necessary.

c. General Cleaning Instructions.

(1) Cleaning Solvents. Whenever dry cleaning solvent is recommended for cleaning, use (9, Appendix A). DO NOT USE GASOLINE TO CLEAN PARTS.

WARNING

Compressed air used for cleaning and drying purposes must be reduced to 30 psi and used only with adequate personnel protection and chip guarding.

(2) Removing Deposits. After soaking parts in solvent, wash away deposits by flushing or spraying. Where needed, brush with soft bristle brush moistened in solvent. Use compressed air to dry all parts.

(3) Tools. Do not use scrapers, wire brushes, abrasive wheels, or compounds in cleaning parts unless called for in detailed instructions. These procedures normally alter size of machined surfaces and may weaken a highly stressed part.

(4) Rubber Parts. Do not clean preformed packings or other rubber parts in dry cleaning solvent. These parts should be wiped with a clean, dry, lint-free cloth.

WARNING

Steam or vapor pressure cleaning creates hazardous noise levels and severe burn potentials. Eye, skin, and ear protection is required.

(5) Exterior Parts. Steam clean all exterior parts thoroughly before removing. This will make inspection and disassembly easier.

WARNING

1,1,1 Trichloroethane is toxic to skin, eyes, and respiratory tract. Skin and eye protection is required. Avoid repeated or prolonged contact. Good general ventilation is normally adequate.

CAUTION

To prevent corrosion, parts should be dipped in preservative lubricant (8, Appendix A) within two hours after degreasing.

(6) Degreasing Machine. A degreasing machine may be used to remove heavy grease and oil accumulations from metal parts. 1,1,1 Trichloroethane is used in this equipment as a degreasing agent.

(7) Electrical Parts. Electrical parts, such as coils, junction blocks, and switches, which use insulating materials, should not be soaked or sprayed with cleaning solutions. Clean these parts with a clean lint-free cloth moistened with dry cleaning solvent.

(8) Painted Surfaces. Wash painted surfaces with a solution made of 1/4 pound of soap chips to 1 gallon of water.

CAUTION

If compartments require cleaning do not use a high pressure hose or large amounts of water to clean. Damage to equipment or compartment could result.

d. General Inspection Instructions.

(1) Sealing Surfaces. Inspect all surfaces in contact with gaskets, packings or seals. Insure that no nicks, burrs, scratches, etc., exist. These might damage new seals during assembly. If any defect is found, correct it as outlined under General Repair Instructions before assembly.

(2) Bearings. Check bearings for rusted or pitted balls. Check balls for brinnelling, abrasion, and serious discoloration. The following are causes for bearing rejection:

(a) Cuts or grooves parallel to ball or roller rotation.

(b) Fatigue pits (not minor machine marks or scratches).

(c) Cracks found during magnetic particle inspection.

(3) Inspection. Inspection consists of checking for defects such as distortion, wear, cracks, and pitting. Parts under heavy load or pressure must be inspected more thoroughly. These may require surface temper, magnetic particle, or fluorescent penetrant inspection procedures. Clean all parts before inspection.

(4) Tubing and Hose. Check all hose surfaces for broken or frayed fabric, softness, or swelling. Check for breaks caused by sharp kinks or rubbing against other parts of truck. Inspect fitting threads for damage. Replace any part found defective. Following assembly and during initial turret operation, check for leaks.

(5) Electrical Parts. Inspect all wiring harnesses for chafed or burned insulation. Inspect all terminal connectors for loose connections and broken parts.

(6) Metal Parts. Visually inspect all castings and weldments for cracks. Parts that carry a great load should receive magnetic particle inspection. Critical nonferrous parts may be inspected with fluorescent penetrant. Refer to step (9) below.

(7) Magnetic Particle Inspection.

(a) A magnetic particle inspection may be performed on steel parts which are not easily replaced and only if inspection is deemed necessary. Such steel parts that have been reworked or reground, or parts containing areas where fatigue can be expected, may be tested. Shear sections and reground contact surfaces must show no defects. Any evidence of cracks is cause for rejection. Since some stainless steel materials cannot be magnetized, do not use this inspection on such parts. Once inspection is finished, pass parts through demagnetizing field. Then wash and airblow dry.

NOTE

Magnetizing amperage depends on parts being inspected. For solid section parts, amperage shall be 1000 amps per diameter-inch. For variable diameter thickness, amperage shall be adjusted for diameter inspected.

(b) Parts shall be rejected if there are indications of non-metallic inclusions (foreign body-gaseous, liquid, or solid) longer than one inch; or if indications are closer than 1/8 inch apart. Parts shall also be rejected if the following patterns appear:

1 Bursts. Scattered, short sharp bursts. Bursts are caused by working metals at temperatures that weaken and break the material. Such problems are usually internal. They seldom are detected by magnetic particle inspection until surface is cut to burst area.

2 Flakes. Separate short wavy lines, usually in same general direction. Flakes are caused by improper cooling. Such problems are usually internal. They seldom are detected by magnetic particle inspection until the part is cut open.

3 Grinding cracks. Fine sharp lines, tightly packed. On some surfaces, cracks may be shallow and hard to see. Grinding cracks are usually caused by a glazed wheel. Instead of cutting, the wheel rubs the surface and overheats parts. These are thermal cracks, similar to heat-treat and hardening cracks. Grinding cracks also may be caused by too much load or too much speed.

(8) Fluorescent Penetrant Inspection. Perform fluorescent penetrant inspection on nonsteel metallic parts if necessary. Since some stainless steel materials cannot be magnetized, they should receive fluorescent penetrant inspections. After penetrant has been applied and pattern has developed, any evidence of cracks is cause for rejection. The following procedure may be used for fluorescent penetrant inspection:

(a) Clean and warm parts before applying penetrant. A vapor degreaser may be used.

(b) Apply penetrant by dipping, painting, or spraying. All surfaces to be examined shall be completely covered. Penetration time for various materials are included as follows:

1 Aluminum Alloy—no less than 20 minutes.

2 Magnesium Alloy—no less than 20 minutes.

3 Brass or Bronze—no less than 30 minutes.

4 Ferrous Alloys—no less than 60 minutes.

(c) Clean penetrant from all surfaces using slightly warm water. Cool water may be used when necessary, but cleaning time will be longer. Water used to clean surfaces shall be no more than 120°F (49°C) maximum to prevent removal of penetrant from cracks. Pressurized water spray may be used to shorten washing cycle.

(d) Use one of the following methods to dry and develop parts:

1 Wet developer method. When using wet developer, parts must be completely covered with developer by spraying or dipping. Parts must then be dried and developed in a recirculating hot air drier for one-half the penetration time.

2 Dry developer method. When using dry developer, parts must be completely dried before application of the developer by dipping in (or dusting all surfaces with) developing powder. Develop parts for one-half the penetration time.

3 No developer method. When no developer is to be used, drying and developing time shall be at least equal to penetration time to allow for sufficient bleeding of penetrant from defects. When needed for additional clarity during inspection, dry developer may be applied to questionable areas by means of a hand powder bulb.

(e) Inspect for cracks under black light. Any evidence of cracks is cause for rejection.

(f) Clean parts thoroughly with cleaning solvent (9, Appendix A) and lubricate with preservative lubricant (8, Appendix A).

e. General Repair Instructions.

(1) Burrs. Remove burrs from gear teeth with a fine-cut file or hand grinder.

WARNING

Compressed air used for cleaning will be reduced to 35 psi and used only with adequate personnel protective equipment and chip guarding.

(2) Exterior Parts. Exterior painted parts may be resurfaced where paint is damaged, or where parts have been repaired, by using an abrasive disc driven through a flexible shaft.

NOTE

Take care to guard other parts of vehicle from abrasive dust. Do not grind near exposed working parts. All openings which would allow dust to reach working parts should be masked.

(3) Surface Preparation. Before resurfacing, scrape off loose and blistered paint from damaged areas. Clean area to be painted by sanding or buffing. Remove remaining cleaning material with all purpose cleaner (10, Appendix A) and dry thoroughly.

(4) Protecting Parts. During repair operations, protect bare steel surfaces from rusting when not actually undergoing repair work. Dip parts in, or spray them with, preservative lubricant (8, Appendix A). The same protective coating may be applied to other metals, if necessary, to prevent rust. Aluminum parts may require protection in atmospheres having high salt content. Steel parts must always be protected.

NOTE

The above procedure is used with polished and machined steel parts not protected by cadmium, tin, copper, or other plating or surface treatment. Bare metal surfaces must be free of moisture when applied. Acid present in sweat and skin oils may attack steel surfaces if fingerprints, are not removed. Wipe off fingerprints, then dip parts in preservative lubricant after handling.

(5) Welding. Welding and brazing may be used to repair cracks in external steel parts, such as brackets, panels, and light framework. Such repairs may, however, be more trouble than they are worth. They should be made only when replacement parts are not available. Do not weld or braze castings, running parts, or parts under great stress, except in emergencies.

(6) Electrical Parts. Replace all broken, worn, or burned electrical wiring. Wires with several broken strands must be replaced. Broken strands will increase the resistance of wire and lower the efficiency of electrical components.

(7) Hoses. Replace all broken, frayed, crimped, or soft flexible lines and hoses. Replace stripped or damaged fittings.

(8) Fasteners. Replace any bolt, screw, nut or fitting with damaged threads. Inspect tapped holes for thread damage. If cross-threading or spalling is evident, retap hole for next oversize screw or stud. When retapping will weaken part, or when cost of the part makes retapping impractical, replace damaged part. Chasing the threads with proper size tap or die may often be enough. Unless otherwise indicated, use Loctite (2, Appendix A) on all threaded fasteners not using locknuts. Use Lubriplate (4, Appendix A) when using locknuts.

(9) Mounting Holes. Reshape oval mounting holes to round. Drill to receive bushing with required inner diameter. Stake bushing in place with center punch.

f. General Assembly Instructions.

(1) Preparation. Remove grease from new parts before installation as required.

(2) Packing Installation. To install preformed packing, first dovetail groove, then stretch packing and place into position. Rotate part on flat surface. Apply downward pressure to uniformly press packing into position.

(3) Gaskets. To provide added sealing for gaskets, coat both sides with Silicone sealant (11, Appendix A). Remove all traces of previous gasket and sealant before installing new gasket.

(4) Packing Lubrication. Lubricate all preformed packings with a thin coating of grease (1, Appendix A) before installation.

(5) Installation. Refer to tags and sketches made at removal.

(6) Testing. Test operation after installation. Inspect for leaks, vibration, noise, misalinement, or other problems. Recheck after a few days operation.

g. Workmanship and Storage.

(1) Workmanship. Maintenance practices to be used when following the procedures within this manual shall be of the highest standard. Proper tools for each task should be gathered before beginning work. Work area should be kept clean. New parts should not be laid out where they will be exposed to dirt or dust before installation. Where specific instructions for repair of an item are given, workmanship over and above the level described is encouraged.

(2) Storage. Parts which are to be stored for some time prior to installation should be properly preserved. Bare steel parts should be sprayed or coated with preservative lubricant (8, Appendix A). All parts should be wrapped in plastic sheeting or moisture-proof paper, with all exposed ports plugged or taped to prevent contamination.

SECTION III
REPAIR AND REPLACEMENT PROCEDURES

2-11. GENERAL INFORMATION.

The roof turret is an manually operated unit capable of directing a solid or fan discharge at 375 or 750 gpm. The flow may be directed through 240 degree rotation, 45 degree elevation, and 20 degree depression. The discharge valve is operated by a double acting air cylinder and controlled by a 4-way solenoid valve and an independent electrical switch. The roof turret will discharge as long as the momentary switch on the handle is depressed. The stream pattern is controlled by a cable attached to a manually operated lever. The air supply to the cylinder is controlled through two 3-way solenoid valves. The button on the handle activates the solenoid valves. The discharge direction is changed by moving the handle to the right or left and up or down. The discharge rate is changed by adjusting the rate control lever, which moves the baffle in and out.

2-12. SPECIAL TOOLS.

Special tool (Certi-Crimp, part no. 90123-2) is used to crimp contacts on wire when assembling plug assemblies. This tool may be procured from:

AMP, Inc.
Harrisburg, PA 17105

2-13. ROOF TURRET ASSEMBLY REMOVAL/INSTALLATION.

NOTE

Individual roof turret components can be replaced without removing the complete turret assembly. However, if repairs are significant enough to require benchwork, or if the assembly is to be replaced, follow the procedure described below for roof turret removal and installation.

a. Removal. Refer to Figure 2-2 unless otherwise indicated.

(1) Perform the following steps inside cab.

(a) Remove false ceiling (5) and handle (6). Refer to paragraph 2-17 for handle removal.

(b) Drain fire truck air system and disconnect air lines from override valve assembly (62, Figure 2-3).

(c) Disconnect truck drain hose from drain valve assembly (97, Figure 2-3).

(d) Disconnect wiring harness (75, Figure 2-3) and remove cables from roof turret mounting plate (paragraph 2-28).

(2) Perform the following steps in the area above the truck cab.

(a) Disconnect siren.

(b) Remove four clamps attaching windshield coolant manifold to cab.

(c) Remove roof turret supply line and seal at victaulic inlet (103, Figure 2-3).

(d) Swing roof turret supply line aside to provide clearance for turret removal.

(e) Remove 22 screws (2), nuts (3) and washers (4) attaching turret to cab roof. Discard gasket (10).

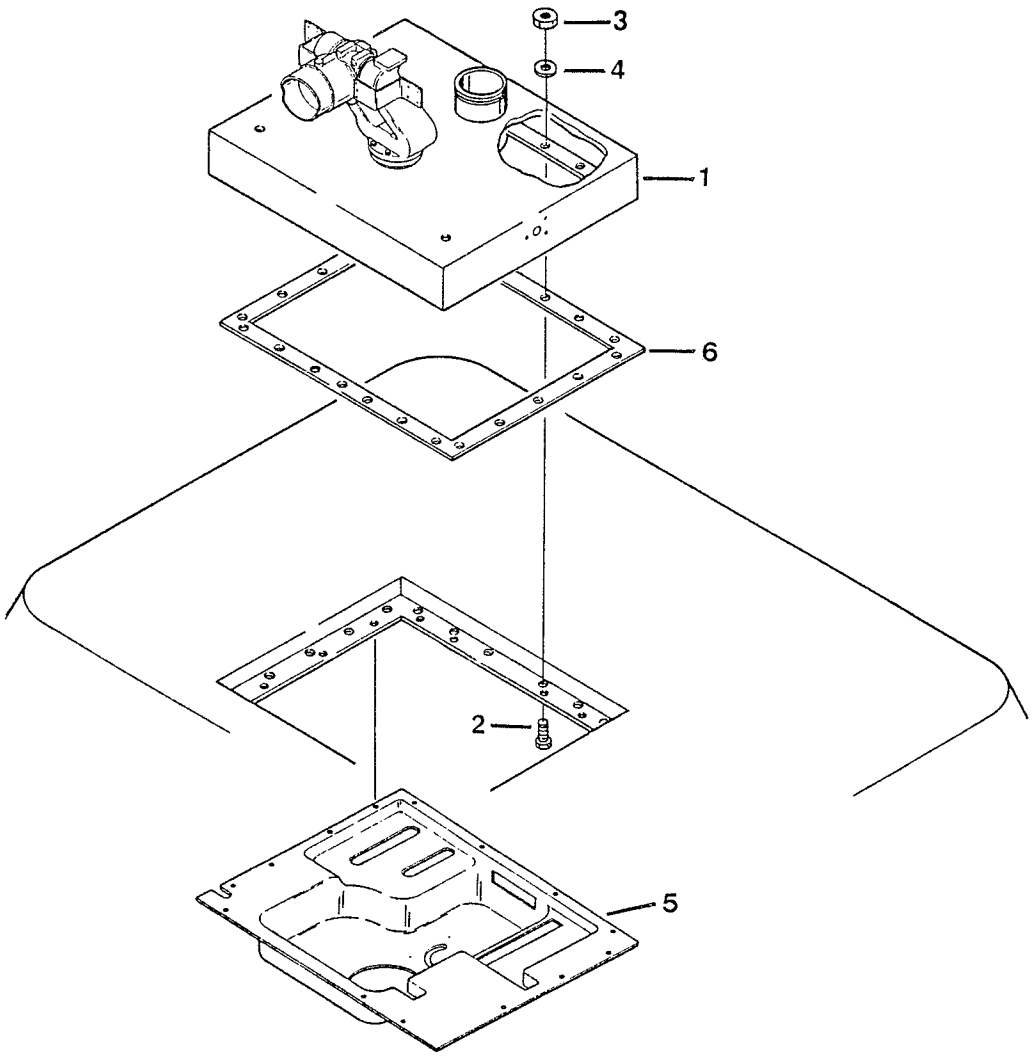
(f) Install four eyebolts in tapped holes at each corner of roof turret (1).

(g) Attach hoist to eyebolts and lift turret from cab.

WARNING

To avoid injury, keep personnel clear of area below turret during removal.

(3) Remove two spot lights and air horn assemblies and set aside.



1. ROOF TURRET ASSEMBLY
2. SCREW
3. NUT
4. WASHER
5. FALSE CEILING
6. GASKET

Figure 2-2. Roof Turret Installation.

b. Cleaning and Inspection. Clean and inspect in accordance with paragraph 2-10.

c. Installation. Refer to Figure 2-2 unless otherwise indicated.

(1) Install eyebolts at corners of turret (1).

(2) Install new gasket (10) and hoist turret (1) onto cab.

(3) Attach turret (1) to cab roof with 22 screws (2), washers (4) and nuts (3). Tighten bolts to 10 lb.ft. (13.6 N•m).

(4) Attach roof turret agent supply line to turret (1) using seal and coupling.

(5) Connect air lines to override valve (62, Figure 2-3).

(6) Connect truck drain hose to drain valve assembly (97, Figure 2-3).

(7) Carefully maneuver the false ceiling (5, Figure 2-2) over turret controls and align with attaching holes. Secure in place with fourteen 1/4 turn studs.

(8) Restore system air pressure and check operation of roof turret.

2-14. ROOF TURRET REPAIR

Refer to Figure 2-3. The location of the roof turret major subassemblies and parts are illustrated along with their associated attaching hardware. The subassemblies are further broken down and illustrated in the figures following Figure 2-3.

WARNING

Mechanisms in this turret can cause injury to personnel. Keep fingers, hands and tools clear of any moving parts when working on the turret. When working inside the turret, turn off any and all power (air and electric) supplies.

CAUTION

Before restoring power to the turret, be sure that no wire ends or connectors are touching the cylinders, panel, or other sources of a possible short. Damage to the turret could result.

2-15. ROOF TURRET NOZZLE ASSEMBLY REPAIR.

a. Removal. Refer to Figure 2-3 unless otherwise indicated.

(1) Remove screw (2) from baffle head (1) and remove baffle head. Save the shim that was used between the baffle head (1) and baffle stem (17).

(2) Remove two screws (4) from cable clamp (3) and remove cable clamp.

(3) Remove pattern cable (30) from outlet tee (12).

(4) Remove stop screw (6) from pattern sleeve (5) and slide pattern sleeve off outlet tee. Unscrew pattern sleeve from pattern cable (30).

(5) Remove spring pin (7) connecting elevation clevis (8) to elevation shaft (43).

(6) Remove two spring pins (10) and pins (11) connecting elevation clevis (8) to upper elevation links (9) and remove elevation clevis.

(7) Remove bolt (13) and O-ring (14) attaching outlet tee (12) to the siamese (45).

(8) Remove four screws (16) attaching cable bracket (15) to the back of the outlet tee and pull assembled parts out of outlet tee.

(9) Screw the baffle stem (17) off the rate cable (31).

(10) Remove two spring pins (10) and pins (11) connecting elevation links (9) to cable bracket (15) and remove two elevation links.

(11) Remove the baffle stem bushing (19) from baffle stem (17).

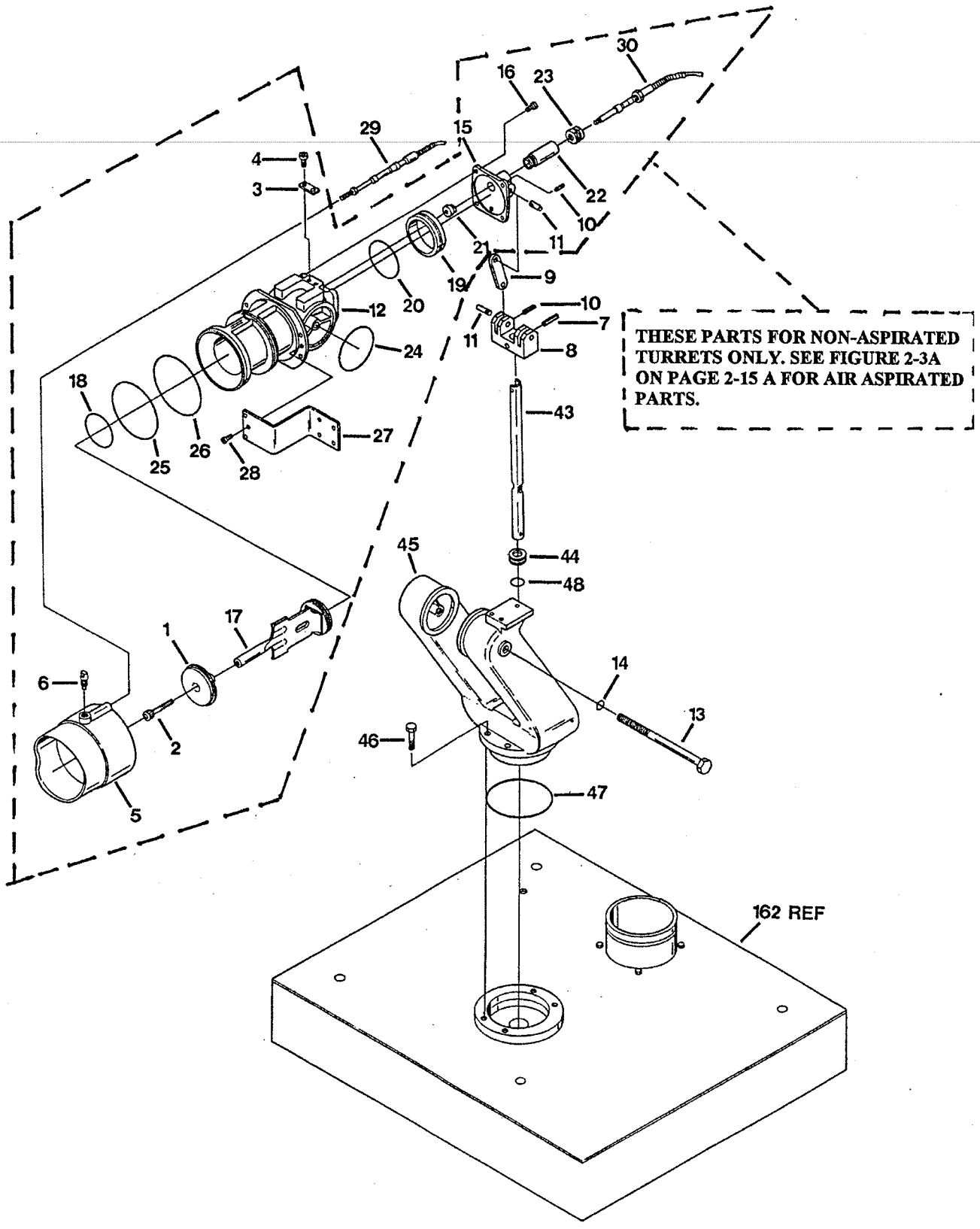


Figure 2-3. Roof Turret Assembly (Sheet 1).

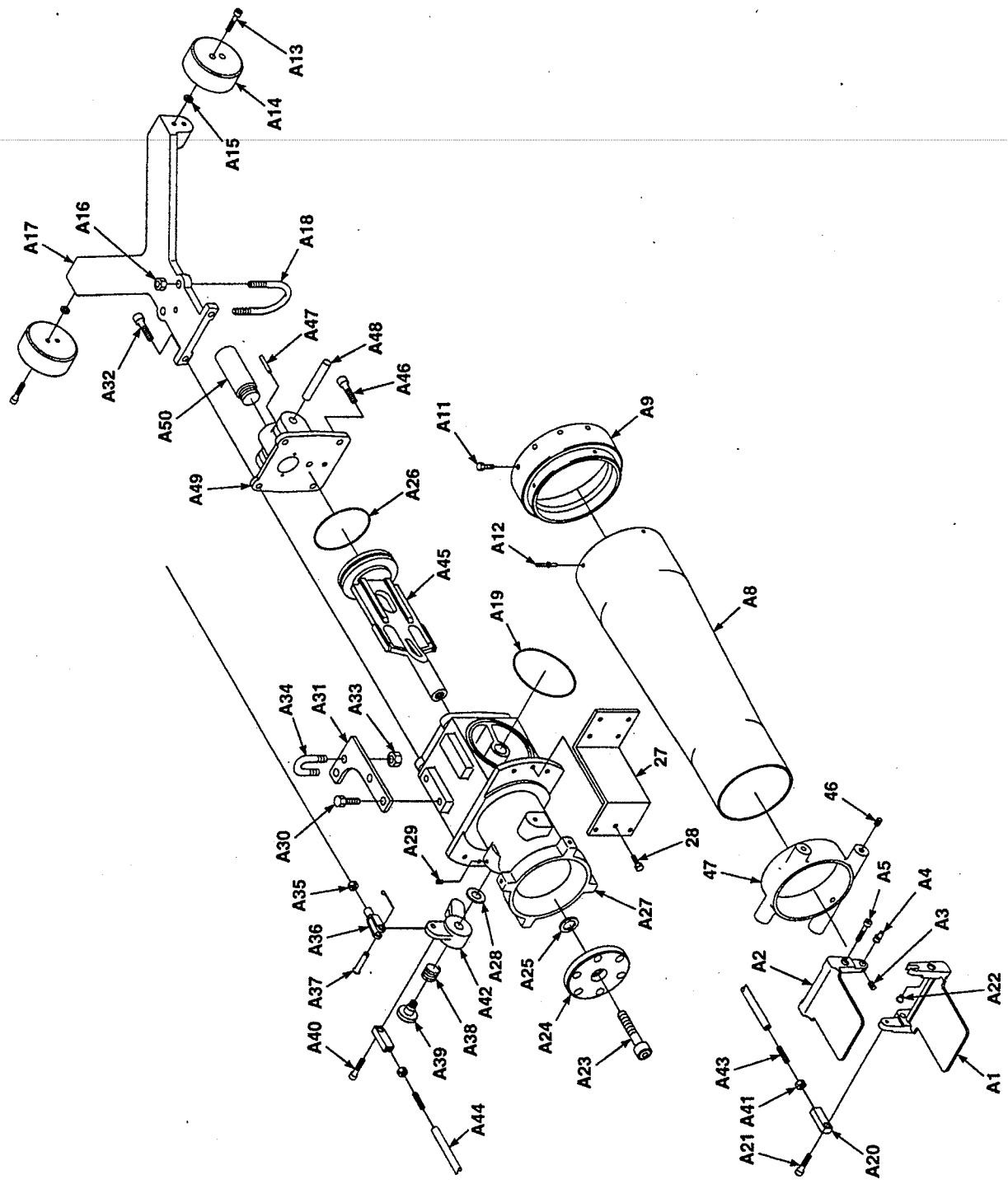


Figure 2-3A. Air Aspirated Nozzle Parts.

NOTE: Please use paragraph 2-15 starting on

This page for repair of air aspirated nozzles.

All reference numbers are prefixed by A

Air Aspirated Nozzles Only

2-15. ROOF TURRET NOZZLE ASSEMBLY REPAIR.

a. Removal. Refer to Figures 3-3 and 3-3A unless otherwise indicated.

(1) Remove the cotter pin (A?) from the clevis pin (A37) and remove the clevis pin from the clevis (A36).

(2) Remove the clevis (A36) and nut (A35) from the pattern control cable (30).

(3) Remove the two nuts (A33) from the cable clamp (A34).

(4) Remove the two screws (A30) from the cable bracket (A31) and remove the cable bracket (A31).

5) Remove the four screws (A13) and remove the two counterbalance weights (A14). Retain the four plastic washers (A15).

(6) Remove the two nuts (A16) from the U-bolt (A18) and remove the U-bolt (A18).

(7) Remove the two screws (A32) and remove the counterbalance bracket (A17).

(8) Remove the shoulder screw (A21) from the rod end (A20).

(9) Remove the rod end (A20) and nut (A41) from the insert (A43).

(10) If required, remove the thread insert (A43) from the rod (A44). Use heat to break loose the adhesive.

(11) On the opposite end of the rod, remove the shoulder screw (A40) from the rod end (A20).

(12) If required, disassemble the rod end (A20), insert (A43) and rod (A44) using heat.

(13) Remove the set screw (A29) from the outlet tee (A27).

(14) Remove the shoulder screw (A39), belleville springs (A38), bellcrank (A42) and washer (A28) from the outlet tee (A27).

(15) Remove two shoulder screws (A5) from the upper jaw (A2). Remove upper jaw (A2) from the collar (A7).

(16) Remove the set screw (A3) from the upper jaw(A2).

(17) Remove the cam (A4) from the upper jaw (A2).

(18) Remove the two bushings (A22) from the upper jaw (A2).

(19) Remove the two shoulder screws (A5) from the lower jaw (A1).

(20) Remove the lower jaw (A1) from the collar (A7).

(21) Remove the two bushings (A22) from the lower jaw (A1).

(22) If collar(A7) removal is required, remove two set screws (A6) from the collar. Remove the collar from the tube (A8) by using heat.

(23) Remove the four rivets (A12). Remove the tube (A8) from the adapter (A9).

(24) Remove the adapter (A9) by removing four screws (A11).

(25) Remove screw (A23) from baffle head (A24) and remove baffle head. Save any shims (A25) that may have been used between the baffle head and the baffle stem (A?).

(26) Remove spring pin (7) connecting elevation clevis (8) to elevation shaft (43).

(27) Remove two spring pins (10) and pins (11) connecting elevation clevis (8) to upper elevation links (9) and remove elevation clevis.

(28) Remove bolt (13) and O-ring (14) attaching outlet tee (12) to the siamese (45).

(29) Remove the plug (A*) from the cable bracket (A*). If required, remove the spring pin (A*) from the plug.

(30) Remove the cable bracket (A*) by removing two screws (A*).

(31) Remove two spring pins (10) and pins (11) connecting the elevation links (9) to cable bracket (A*) and remove two elevations links.

(32) Remove the baffle stem (A?) from the outlet tee (A27).

(33) Remove the outlet tee (A27) from the siamese (45).

b. Disassembly. Refer to Figures 3-3 and 3-3A.

(1) Remove O-rings (24,A26) from the outlet tee(A27) and baffle stem(A*).

(2) If required, remove screws (28) mounting spotlight brackets (27) to outlet tee (12).

c. Cleaning and Inspection. Clean and inspect all

parts in accordance with paragraph 2-10.

d. Assembly. Refer to Figure 3-3 and 3-3A unless otherwise indicated.

(1) Apply lubicant (1, Appendix A) to Gorings (24 and A26). Install O-ring A26 on the baffle stem (A?), and O-ring (24) on outlet tee (A27).

(2) Attach the upper elevation links (9) to cable bracket (A*) with pins (11) and spring pins (10).

(3) If required, install the spring pin (A*) to the plug (A*).

(4) Apply Loctite (2, Appendix A) to threads of plug (A*). Screw plug into the cable bracket (A*)

e. Installation. Refer to Figures 3-3 and 3-3a.

(1) Apply lubricant (1, Appendix A) to the bore of the outlet tee (A27)

(2) Insert baffle stem (A?) into the outlet tee.

(3) Install the two elevation links (9)into the cable bracket (A*). Insert two pins (11) and secure with two spring pins (10).

(4) Install the cable bracket to the back of the outlet tee with two screws (A*).

(5) Lubricate (I, Appendix A) the O-ring surfaces on the Siamese and slide the outlet tee into the Siamese being careful no to pinch O-rings.

(6) Install O-ring (14) onto bolt (13). After O-ring is postioned against the bolt head, apply lubricant (I Appendix A) to O-ring. Apply Loctite (3, Appendix A) to threads of bolt head. Insert the bolt through the Siamese and through the outlet tee. While tightening the bolt, oscillate the outlet tee vertically through an approximate 45 degree arc. Continue to tighten the bolt slowly until an increase in drag is felt on the outlet tee. Back the screw out slightly until the increased drag disappears.

(7) Attach elevation Levis (8) to upper elevation links (9) with pins (11) and spring pins (10).

(8) Attach elevation Levis (8) to elevation shaft (43) with spring pin (7).

(9) Attach the tube (A8) to the adapter (A9) using four rivets (A12).

(10) If required, attach the collar (A7) to the tube using Loctite (3, Appendix A) and set screws (A6). Thoroughly clean areas to be bonded so that they are free of grease, oil, residue and foreign materials. Insure that the collar tapped holes are parallel with the bracket screw holes. This is required so that the pattern jaws will be horizontal when the assembly is complete.

(11) Install baffle head (A24) onto baffle stem (A?) with screw (A23) and any shims removed during disassembly.

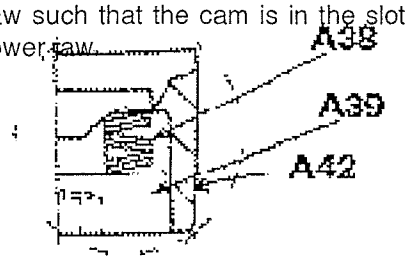
(12) Install the adapter (A9) and foam tube assembly onto the outlet tee (A27). Orient the foam tube assembly such that the wider portion of the collar is on the bottom.

(13) Install the bushings (A22) into the upper (A2) and lower (Al) jaws.

(14) Attach the lower jaw to the collar using two shoulder screws (A5).

(15) Install the cam (A4) and set screw (A3) into the upper jaw.

(16) Attach the upper jaw to the collar using two shoulder screws (A5). Position the upper jaw such that the cam is in the slot of the lower jaw.



(17) Install the belleville springs (A38) onto the shoulder screw (A39). Stack the springs as shown above.

(18) Lubricate (4,Appendix A) the outside diameter of the head of the shoulder screw.

Attach bellcrank (A42) and washer (A28) to outlet tee using shoulder screw and set-screw (A29).

(19) If required, Assemble the rod end (A20), insert (A43), and rod (A44) using Loctite (3, Appendix A).

(20) On the opposite end of the rod, install the insert (A43) using Loctite (3, Appendix A).

(21) Install the nut (A41) and rod end (A20) onto the insert.

(22) Install the rod assembly to the lower jaw and bellcrank using two shoulder screws (A21).

(23) Install the counterbalance bracket (A17) using two screws (A32), U-bolt (A18), and nuts (A 16). Use Loctite (2, Appendix A) on the U-bolt threads.

(24) Apply Loctite (2, Appendix A) to the four screws (A13). Install the two counterbalance weights (A14) and four plastic washers to the counterbalance bracket.

(25) Apply Loctite (2, Appendix A) to the two screws (A30). Install the cable bracket (A31).

(26) Install the clevis (A36) and nut (A35) to the pattern control cable (30).

(27) Apply Loctite (2, Appendix A) to the cable clamp (A34). Install the pattern control cable using two nuts (A33).

(28) Attach the clevis to the bellcrank using clevis pin (A37) and cotter pin (A?). Adjust the clevis on the pattern control cable so that when the cable is fully extended the rod end (A20) is centered over top of the shoulder screw (A39). Tighten the nut (A35).

f. Cable Adjustment. Refer to paragraph 2-17 to verify and adjust alignment of the pattern and rate cables.

2-16. FALSE CEILING REPLACEMENT.

a. Removal. Refer to Figure 2-5 unless otherwise indicated.

(1) Locate turret indicator at straight ahead and fully elevated position.

(2) Remove manual turret control handle (6, Figure 2-2) if installed.

(3) Place operating mode switch in MANUAL position.

(4) Place manual rate and pattern control levers in LOW RATE and SOLID STREAM positions.

(5) Rotate fourteen studs (2) 1/4 turn counterclockwise. Remove false ceiling (1) by working it around the lever controls of turret.

(6) If replacing spring clip (5), remove screw (6), nut (7), and washer (8) attaching clip to false ceiling (1).

(7) If replacing stud retainer (3), remove from false ceiling (1).

(8) Replace any nameplates that are not legible. Nameplate (9) is secured with rivets (10) and washers (11). Nameplates (12 through 17) are secured with rivets (18) and washers (19).

b. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

c. Installation. Refer to Figure 2-5.

(1) Install nameplates (12 through 17) if removed, using rivets (18) and washers (19).

(2) Install nameplate (9) if removed, using rivets (10) and washers (11).

(3) Install stud retainer (3) over mounting holes. Install clip (5) if removed, with screw (6), nut (7) and washer (8).

(4) Carefully maneuver the false ceiling (1) over turret controls and aline with attaching holes.

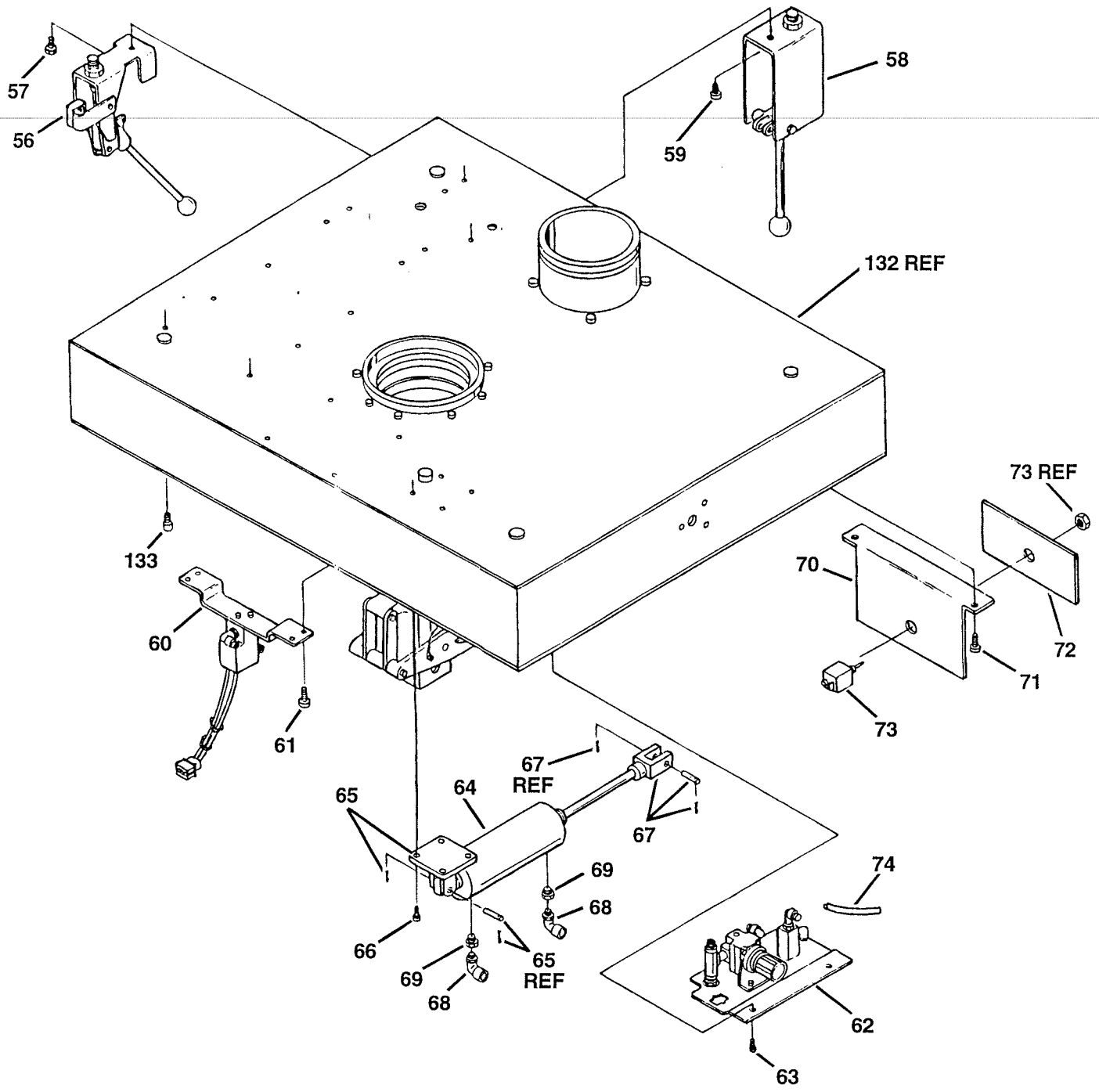


Figure 2-3. Roof Turret Assembly (Sheet 2).

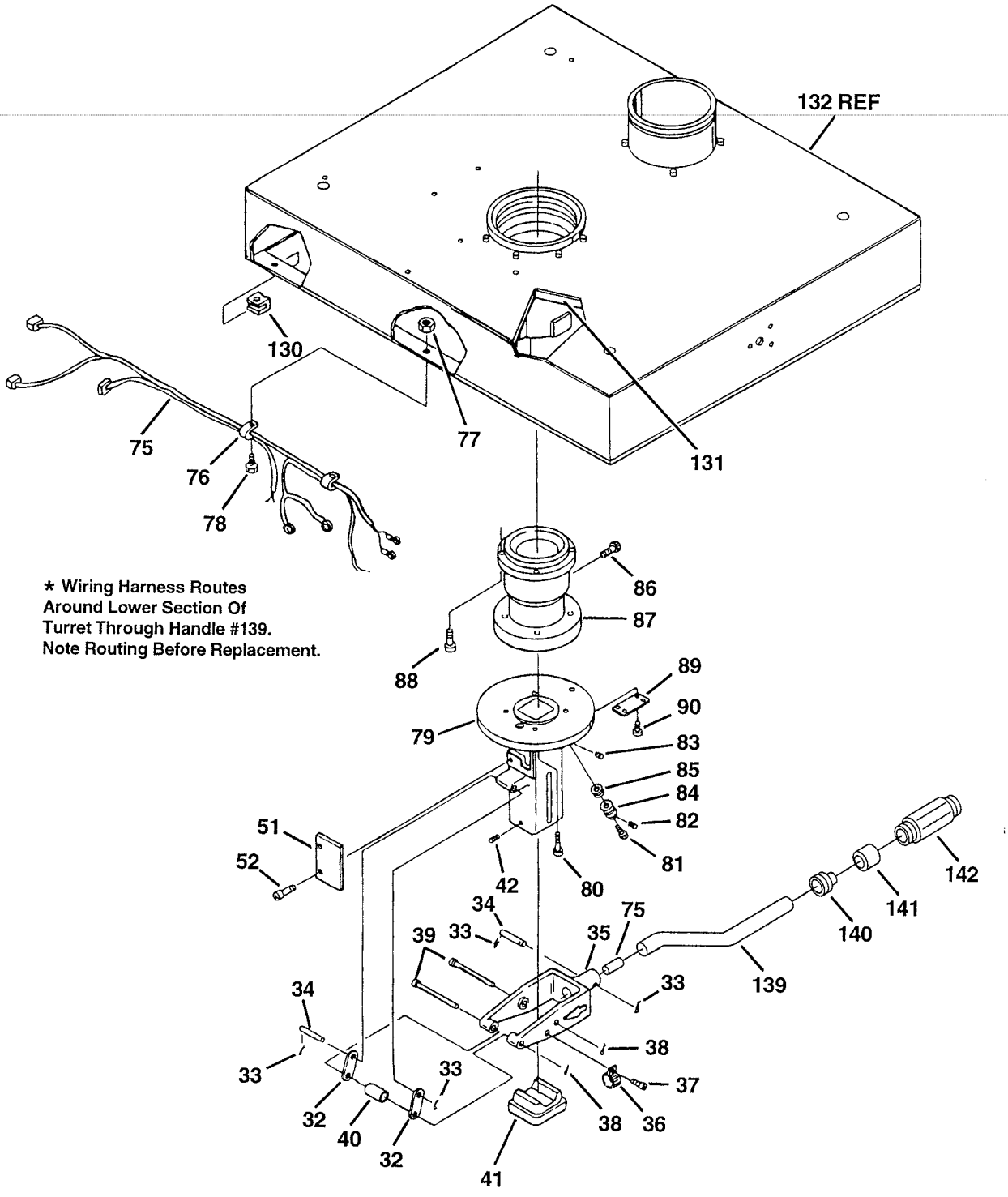


Figure 2-3. Roof Turret Assembly (Sheet 3).

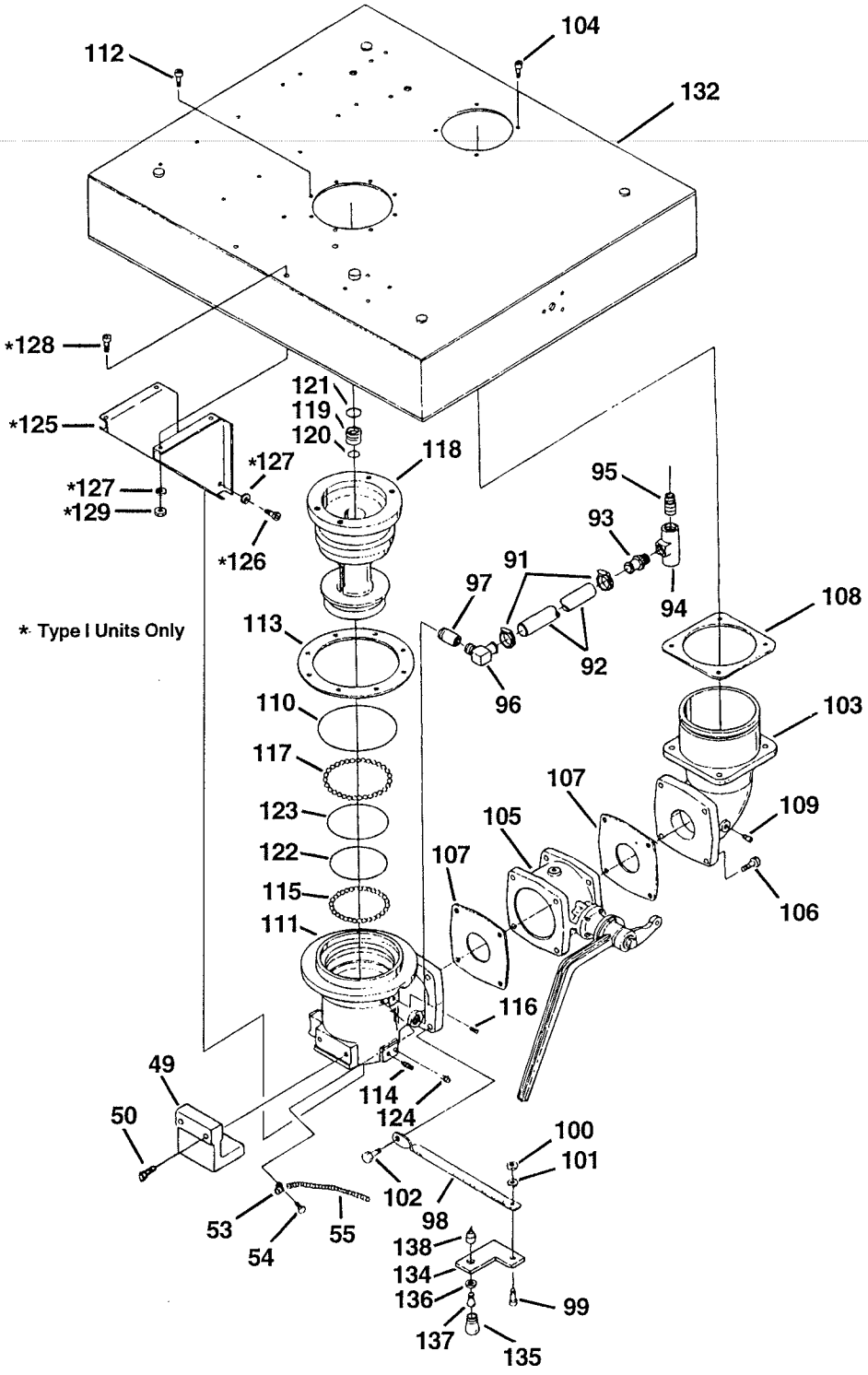


Figure 2-3. Roof Turret Assembly (Sheet 4).

1. BAFFLE HEAD
2. SCREW
3. CABLE CLAMP
4. SCREW
5. PATTERN SLEEVE
6. STOP SCREW
7. SPRING PIN
8. ELEVATION CLEVIS
9. UPPER ELEVATION LINK
10. SPRING PIN
11. PIN
12. OUTLET TEE
13. BOLT
14. O-RING
15. CABLE BRACKET
16. SCREW
17. BAFFLE STEM
18. O-RING
19. BAFFLE STEM BUSHING
20. O-RING
21. CABLE NUT
22. BUSHING
23. CABLE END TUBE
24. ADAPTER NUT
25. O-RING
26. O-RING
27. O-RING
28. SPOTLIGHT BRACKET (IF REQUIRED)
29. SCREW (IF REQUIRED)
30. PATTERN CABLE
31. RATE CABLE
32. ELEVATION LINK
33. COTTER PIN
34. HANDLE PIN
35. BRACKET
36. CLAMP
37. SCREW
38. COTTER PIN
39. BRACKET PIN
40. SPACER
41. BUMPER
42. SPRING PIN
43. ELEVATION SHAFT
44. SPRING WASHER
45. SIAMESE
46. SCREW
47. O-RING
48. O-RING
49. BRACKET
50. SCREW
51. FEEDBACK COVER
52. SCREW
53. CLAMP
54. SCREW
55. WRAP
56. RATE CONTROL ASSEMBLY
57. SCREW
58. PATTERN CONTROL ASSEMBLY
59. SCREW
60. SOLENOID VALVE ASSEMBLY
61. SCREW
62. OVERRIDE VALVE ASSEMBLY
63. SCREW
64. AIR CYLINDER
65. SWIVEL BRACKET
66. SCREW
67. CLEVIS
68. ELBOW FITTING
69. ADAPTER FITTING
70. SWITCH BRACKET
71. SCREW
72. SWITCH LABEL
73. TOGGLE SWITCH
74. AIR LINE
75. WIRING HARNESS
76. CABLE CLAMP
77. NUT
78. SCREW
79. HANDLE YOKE
80. SCREW
81. SCREW
82. SCREW
83. SCREW
84. NUT
85. WASHER
86. SCREW
87. HANDLE HUB
88. SCREW
89. ID PLATE
90. NAIL
91. HOSE CLAMP
92. HOSE
93. FITTING
94. UNION
95. PLUG
96. ELBOW FITTING
97. DRAIN VALVE ASSEMBLY
98. SUPPORT STRAP
99. SCREW
100. NUT
101. WASHER
102. SCREW
103. VICTAULIC INLET
104. SCREW
105. THREE INCH VALVE ASSEMBLY
106. SCREW
107. GASKET
108. GASKET
109. PIPE PLUG
110. O-RING
111. INLET ELBOW
112. SCREW
113. GASKET
114. PLUG
115. BALL BEARING
116. PLUG
117. BALL BEARING
118. SIAMESE BASE
119. O-RING BUSHING
120. O-RING
121. O-RING
122. O-RING
123. O-RING
124. GREASE FITTING
125. BRACKET (TYPE I ONLY)
126. SCREW (TYPE I ONLY)
127. WASHER (TYPE I ONLY)
128. SCREW (TYPE I ONLY)
129. NUT (TYPE I ONLY)
130. STUD CLIP
131. INSULATION
132. TURRET MOUNTING PLATE
133. SCREW
134. INDICATOR LAMP BRACKET
135. LENS
136. SPACER
137. LIGHT
138. LAMP BODY
139. HANDLE
140. DISCHARGE SWITCH
141. BUSHING
142. HANDLE GRIP

Figure 2-3. Roof Turret Assembly (Sheet 5).

b. Disassembly. Refer to Figure 2-3.

(1) Remove O-rings (25, 26, and 27) from outlet tee (12), O-ring (18) from baffle stem (17), and O-ring (20) from baffle stem bushing (19).

(2) If required, remove the cable nut (21), bushing (22), cable bracket (15), cable end tube (23), and adapter nut (24) from the end of the rate cable (31).

(3) If required, remove screws (29) mounting spotlight brackets (28) to outlet tee (12).

c. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

d. Assembly. Refer to Figure 2-3 unless otherwise indicated.

(1) Apply lubricant (1, Appendix A) to O-rings (18, 20, 25, 26 and 27). Install O-ring (18) on baffle stem (17), O-ring (20) on baffle stem bushing (19), and O-rings (25, 26 and 27) on outlet tee (12).

(2) Attach the upper elevation links (9) to cable bracket (15) with pins (11) and spring pins (10).

(3) Apply Loctite (2, Appendix A) to threads of cable tube (23). Screw cable tube onto the adapter nut (24).

(4) Position nut at end of rate cable (31) 3/8" from end of thread as shown in Figure 2-4.

(5) Screw adapter nut (24) onto end of rate cable (31) until it contacts nut attached to rate cable.

(6) Screw cable nut (21) onto end of rate cable until 3/8" of rate cable projects from nut as shown in Figure 2-4.

e. Installation. Refer to Figure 2-3.

(1) Apply lubricant (1, Appendix A) to the bore of baffle stem bushing (19) and place onto baffle stem (17).

(2) Screw the baffle stem (17) onto 3/8" projecting rate cable (31) and tighten cable nut (21).

(3) Insert the baffle stem into the outlet tee (12).

(4) Insert bushing (22) into cable bracket (15). Attach the cable bracket to the back of the outlet tee (12) with screws (16) and tighten.

(5) Lubricate (1, Appendix A) the O-ring surfaces on the siamese and slide the outlet tee into the siamese being careful not to pinch O-rings.

(6) Install O-ring (14) onto bolt (13). After O-ring is positioned against the bolt head, apply lubricant (1, Appendix A) to O-ring. Apply Loctite (3, Appendix A) to threads of bolt head. Insert the bolt through the siamese and through the outlet tee. While tightening the bolt, oscillate the outlet tee vertically through an approximate 45° arc. Continue to tighten the bolt slowly until an increase in drag is felt on the outlet tee. Back the screw out slightly until the increased drag disappears.

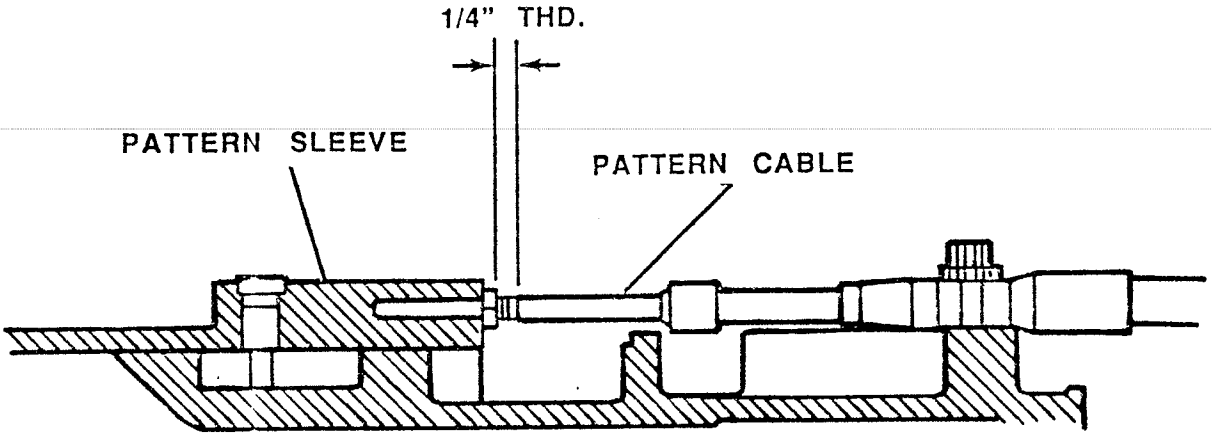
(7) Attach elevation clevis (8) to upper elevation links (9) with pins (11) and spring pins (10).

(8) Attach elevation clevis (8) to elevation shaft (43) with spring pin (7).

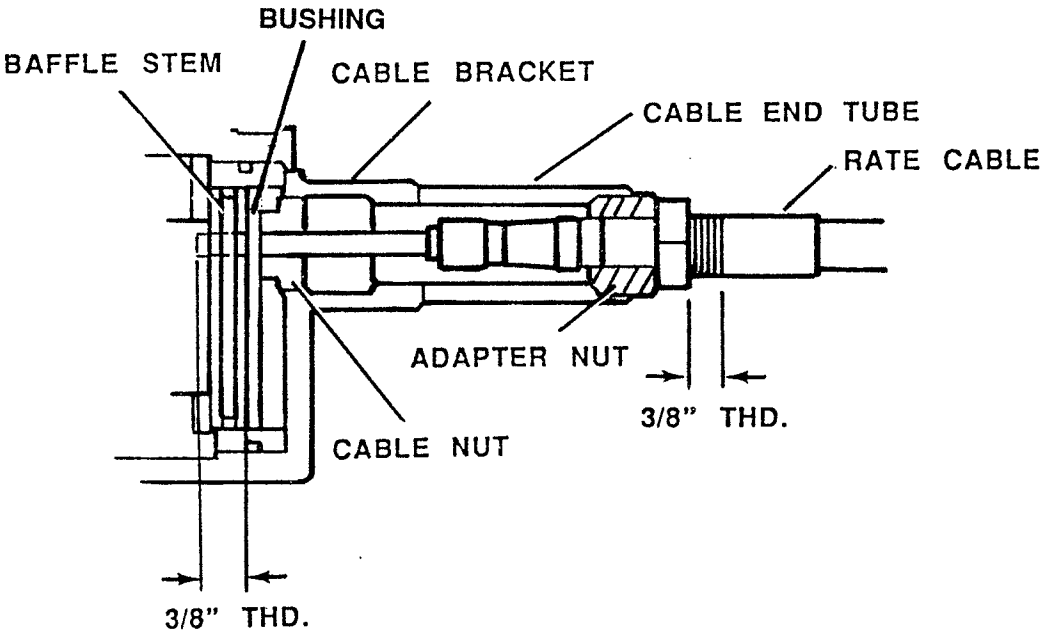
(9) On pattern cable (30), position nut 1/4" from end of thread as shown in Figure 2-4. Screw pattern sleeve (5) onto pattern cable. Slide pattern sleeve (5) onto the outlet tee (12). Apply Loctite (2, Appendix A) to threads of stop screw (6). Attach pattern sleeve to outlet tee with screw and tighten.

(10) Apply Loctite (2, Appendix A) to threads of screws (4). Secure pattern control cable in place using cable clamp (3) and screws (4). Tighten screws until pattern control cable is securely held in place, but cable clamp is not deformed.

(11) Install baffle head (1) into outlet tee with screw (2) and the shim removed during disassembly. If shim is lost, measure length of the baffle head (1). Total length of baffle head should be 1.565 inches. If baffle head measures less than 1.565 inches, add shims to achieve ideal length.



PATTERN CABLE ADJUSTMENT



RATE CABLE ADJUSTMENT

Figure 2-4. Pattern and Rate Cable Adjustments.

(12) Attach spotlight brackets (28) to outlet tee with screws (29).

f. Cable Adjustment. Refer to paragraph 2-18 to verify and adjust alignment of the pattern and rate cables.

2-16. FALSE CEILING REPLACEMENT.

a. Removal. Refer to Figure 2-5 unless otherwise indicated.

(1) Position turret indicator at the straight ahead and fully elevated position.

(2) Place operating mode switch in MANUAL position.

(3) Place rate and pattern control levers in LOW RATE and SOLID STREAM positions.

(4) Rotate fourteen studs (2) 1/4 turn counterclockwise. Remove false ceiling (1) by working it around the lever controls of turret.

(5) If replacing spring clip (5), remove screw (6), nut (7), and washer (8) attaching clip to false ceiling (1).

(6) If replacing stud retainer (3), remove from false ceiling (1).

(7) Replace any labels that are not legible. Cover (9) is secured with rivets (10) and washers (11). Labels (12 through 17) are secured with rivets (18) and washers (19).

b. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

c. Installation. Refer to Figure 2-5.

(1) Install labels (12 through 17) if removed, using rivets (18) and washers (19).

(2) Install cover (9) if removed, using rivets (10) and washers (11).

(3) Install stud retainer (3) over mounting holes. Install clip (5) if removed with screw (6), nut (7) and washer (8).

(4) Carefully maneuver the false ceiling (1) over turret controls and aline with attaching holes.

(5) Secure false ceiling (1) with fourteen 1/4 turn studs (2).

2-17. HANDLE AND SWITCH REPAIR.

a. Removal. Refer to Figure 2-3 unless otherwise indicated.

(1) Remove false ceiling (paragraph 2-16).

(2) Disconnect wiring harness (75) from truck connection.

(3) Remove screw (37) and clamp (36) attaching wiring harness to handle bracket (35).

(4) Pull handle grip (142) and bushing (141) carefully from the handle.

(5) Carefully remove discharge switch (140) from handle (139) and disconnect wires from switch. Tag wires with connection information.

(6) Remove cotter pin (33) and pivot pin (34) attaching handle (139) to handle bracket (35).

b. Cleaning and Inspection. Clean and inspect parts in accordance with paragraph 2-10.

c. Installation. Refer to Figure 2-3 unless otherwise indicated.

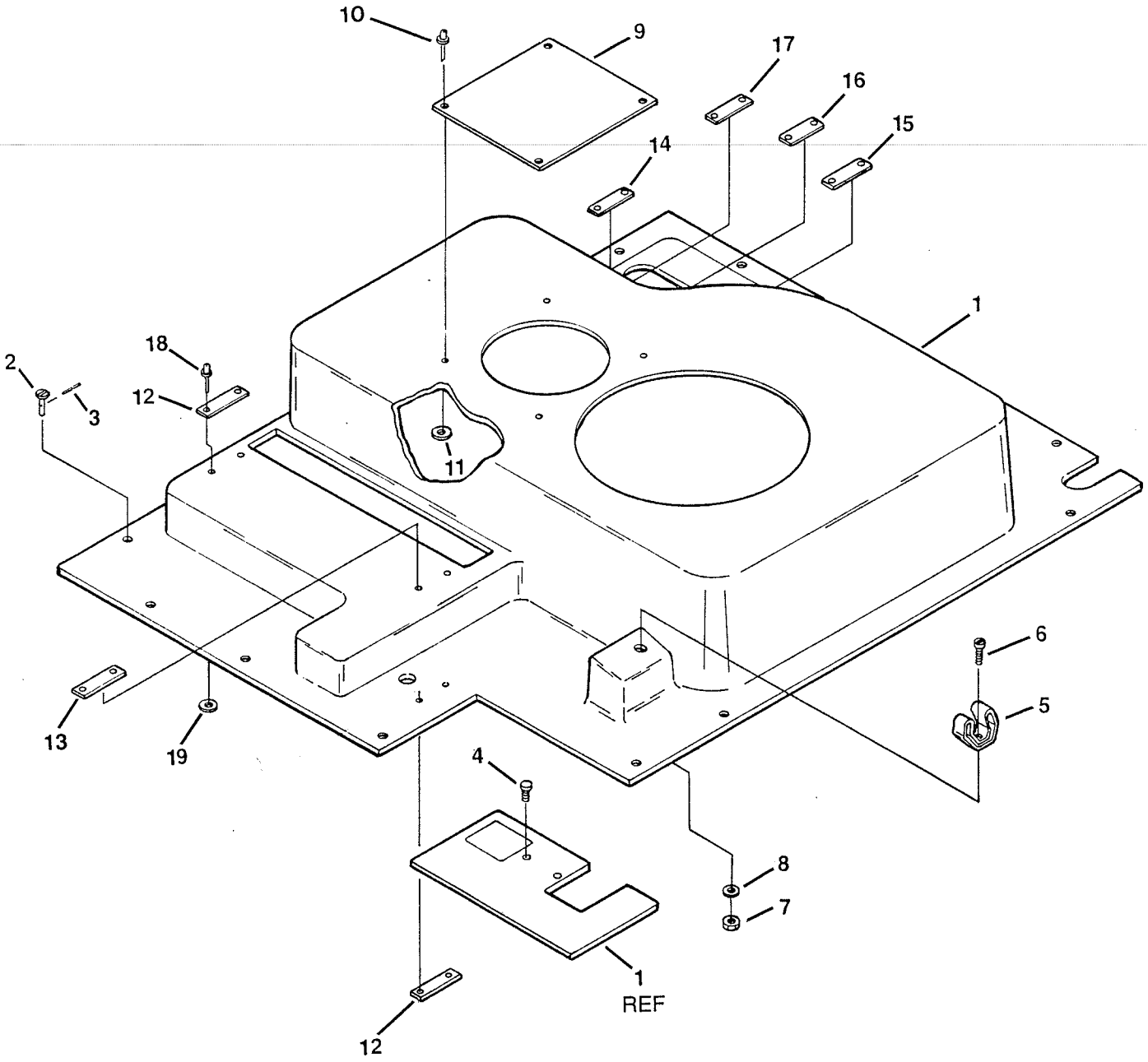
(1) Insert wiring harness (75) power cable through handle (139). Insert handle (139) into handle bracket (35) and install cotter pin (33) and pivot pin (34) attaching handle to bracket.

(2) Connect harness wires (75) to switch (140) according to tagged connection information.

(3) Carefully place the discharge switch (140) in the end of the handle (139) and slide the bushing (141) over the switch.

(4) Slide the handle grip (142) over the switch and bushing and onto the handle. Press it firmly but carefully into place.

(5) Reconnect wiring harness (75) to truck connections.



1. FALSE CEILING
2. STUD
3. STUD RETAINER
4. SCREW
5. SPRING CLIP
6. SCREW
7. NUT
8. WASHER
9. COVER
10. RIVET
11. WASHER
12. VALVE OPEN LABEL
13. VALVE CLOSED LABEL
14. LOW FLOW LABEL
15. HIGH FLOW LABEL
16. DISPERSED LABEL
17. SOLID STREAM LABEL
18. RIVET
19. WASHER

Figure 2-5. False Ceiling Replacement.

(6) Test switch operation.

(7) If switch operates properly, clamp wiring harness (75) to the handle bracket (35) with clamp (36) and screw (37).

(8) Install false ceiling (paragraph 2-16).

2-18. PATTERN AND RATE CABLE REPLACEMENT.

a. Removal. Refer to Figure 2-3 unless otherwise indicated.

NOTE

Steps (1) through (4) are common to both the pattern and rate cables.

(1) Remove false ceiling (see paragraph 2-16).

(2) If replacing rate cable (31, Figure 2-3), push rate control to the HIGH FLOW position.

(3) If replacing pattern cable (30, Figure 2-3), push pattern control to DISPERSED pattern position.

(4) Complete pattern cable removal as follows. Refer to Figure 2-7 unless otherwise indicated.

(a) Remove cotter pin (7) and pin (6) attaching cable fitting (8) to handle hub (3).

(b) Remove cable fitting (8) from pattern cable.

(c) Remove pattern cable mounting nut on inside of roof turret mounting plate. Grasp pattern cable from outside of roof turret housing and pull cable out of housing.

(d) Remove screws (4, Figure 2-3) and cable clamp (3) from top of nozzle.

(e) Remove stop screw (6) and pattern sleeve (5). Unscrew tip of pattern cable from back of pattern sleeve.

(5) Complete rate cable removal as follows. Refer to Figure 2-6 unless otherwise indicated.

(a) Remove nozzle assembly following procedures in paragraph 2-15.

(b) Remove cotter pin (2) and pin (3) attaching spring housing (1) to handle hub (10).

(c) Unscrew spring housing (1) from rate cable.

(d) Remove rate cable mounting nut on inside of roof turret mounting plate. Grasp rate cable from outside of roof turret housing and pull cable out of housing.

b. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

c. Installation. Refer to Figure 2-3 unless otherwise indicated.

NOTE

If both the pattern and rate cables have been removed, reinstall the rate cable first.

(1) Rate Cable. Refer to Figure 2-3 unless otherwise indicated.

(a) Perform rate cable installation at roof turret nozzle following procedures in paragraph 2-15.d and 2-15.e.

(b) Remove one mounting nut and lock washer from rate cable (31). Feed the cable through the turret mounting plate. Replace the lock washer and mounting nut on the loose end of the rate cable from the inside of the turret mounting plate.

(c) Screw spring housing (1, Figure 2-6) onto rate cable until threaded portion of rate cable is flush with tip of spring nut (5).

(d) Attach spring housing (1) to handle hub (10) with pin (3). Do not install cotter pin (2) until after alignment on rate cable is complete.

(2) Pattern Cable. Refer to Figure 2-3 unless otherwise indicated.

(a) At nozzle end of pattern cable (30), position nut 1/4" from end of thread as shown in Figure 2-4.

(b) Screw tip of pattern control cable into back of pattern sleeve (5). Install pattern sleeve onto outlet tee (12) with stop screw (6).

(c) Apply Loctite (2, Appendix A) to threads of screws (4). Secure pattern control cable in place using cable clamp (3) and screws (4). Tighten screws until pattern control cable is securely held in place, but cable clamp is not deformed.

(d) Remove one mounting nut and lock washer from pattern cable. Feed the cable through the turret mounting plate. Replace the lock washer and mounting nut on the loose end of the pattern cable from the inside of the turret mounting plate.

(e) Attach cable fitting (8, Figure 2-7) to loose end of pattern cable.

(f) Attach cable fitting to handle hub (3) with pin (6). Do not install cotter pin (7) until after alignment of pattern cable is complete.

d. Adjustment.

(1) Rate Cable. Refer to Figure 2-6 unless otherwise indicated.

(a) Point roof turret nozzle straight ahead.

(b) Using spring scale on end of rate control handle, measure force required to move handle over center to low rate position.

(c) Adjust rate cable as follows:

1 If tension is less than 6.2 lbs., tighten spring housing (rotate clockwise) onto cable in one turn increments until tension is in the 6.6 lb to 7.2 lb range.

2 If tension is 6.2 to 6.4 lbs., tighten spring housing (rotate clockwise) onto cable in 1/2 turn increments until tension is in the 6.6 lb to 7.2 lb range.

3 If tension is 7.2 lbs or greater, loosen spring housing (rotate counterclockwise) on cable in 1/2 turn increments until tension is in the 6.6 to 7.2 lb. range.

(d) Rotate turret handle 90° clockwise (as viewed from bottom) and check for over-center condition. If the rate control handle does not lock firmly into the low rate position, tighten the spring housing (rotate clockwise) in 1/2 turn increments until the rate control handle locks.

(e) After proper alignment of the rate cable is complete, install cotter pin (2) in pin (3).

(f) Loosen rate control cable nut on outside surface of roof turret mounting plate. Apply a bead of polyurethane sealer (6, Appendix A). Tighten nut and wipe off excess sealer.

(g) Install false ceiling (paragraph 2-16).

(2) Pattern Cable. Refer to Figure 2-3 unless otherwise indicated.

(a) On top of roof turret, manually move pattern sleeve (5) back and forth. If properly adjusted, an audible click should be heard at each end of the pattern sleeve operating range as stop screw (6) hits each end of the stops. If the stop screw (6) is not hitting the back stop, adjust the cable fitting (8, Figure 2-7) clockwise. If the screw is not hitting the forward stop, adjust the cable fitting counterclockwise.

(b) Adjust the pattern cable by removing pin (6, Figure 2-7), if installed, and rotating cable fitting in one turn increments and replacing pin. Adjust cable fitting until alignment is achieved.

(c) After proper alignment of the pattern cable is complete, install cotter pin (7) in pin (6).

(d) Loosen pattern control cable nut on outside surface of roof turret mounting plate. Apply a bead of polyurethane sealer (6, Appendix A). Tighten nut and wipe off excess sealer.

2-19. ELEVATION SHAFT AND HANDLE REPAIR.

a. Removal. Refer to Figure 2-3.

(1) Remove false ceiling (paragraph 2-16).

(2) Remove discharge switch and handle (paragraph 2-17).

(3) Remove cotter pin (33) and pivot pin (34) attaching elevation links (32) to handle yoke (79).

(4) Remove two spring pins (42) attaching bumper (41) to handle yoke (79).

(5) Remove cotter pins (38) and bracket pins (39) from handle bracket (35). Remove handle bracket, elevation links and spacer (40) from handle yoke.

(6) Remove screw (86) from handle hub (87).

(7) On top of roof turret, remove spring pin (7) connecting elevation shaft (43) to elevation clevis (8).

(8) Remove bolt (13) and O-ring (14) attaching nozzle assembly to siamese (45). Carefully lift nozzle assembly off siamese base using care not to stress cables.

(9) Lift elevation shaft from roof turret. Remove three spring washers (44) from elevation shaft.

b. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

c. Installation. Refer to Figure 2-3.

(1) Slide three spring washers (44) over elevation shaft (43).

(2) Insert the elevation shaft through the hole in the center of the siamese. The elevation shaft must be inserted so the end with two holes will be inside the truck cab. The flat surface on the second hole must face the drivers side of the cab.

(3) Lubricate (1, Appendix A) the O-ring surfaces on the siamese and slide the outlet tee into the siamese being careful not to pinch O-rings.

(4) Install O-ring (14) onto bolt (13). After O-ring is positioned against bolt, apply lubricant (1, Appendix A) to O-ring. Apply Loctite (3, Appendix A) to threads of bolt. Insert the bolt through the siamese and through the outlet tee. Tighten the bolt until there is a smooth drag of the outlet tee on the siamese.

(5) Attach elevation clevis (8) to elevation shaft (43) with spring pin (7).

(6) Install screw (86) in handle hub (87).

(7) Place handle bracket (35) on elevation shaft. Install handle bracket with spacer (40), elevation links (32) bracket pins (39) and cotter pins (38).

(8) Attach elevation links (32) to handle yoke (79) with pivot pin (34) and cotter pin (33).

(9) Place bumper (41) onto bottom of handle yoke. If required, match drill two 1/8" holes through handle yoke into bumper. Install spring pins (42) into holes.

(10) Install false ceiling (paragraph 2-16).

(11) Install discharge switch and handle (paragraph 2-17).

2-20. SIAMESE REPAIR.

a. Removal. Refer to Figure 2-3.

(1) Remove elevation shaft (paragraph 2-19).

(2) Remove four screws (46) attaching siamese (45) to the siamese base (118). Lift the siamese from the siamese base.

b. Disassembly.

(1) Remove O-ring (47) from inside siamese.

(2) Remove O-ring (48) from base of siamese.

c. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

d. Assembly.

Lubricate (1, Appendix A) O-rings (47 and 48). Install O-ring (48) inside siamese (45). Install O-ring (47) onto base of siamese.

e. Installation. Refer to Figure 2-3.

(1) Lubricate (1, Appendix A) inside diameter of siamese base (118).

(2) Place siamese (45) onto siamese base so that the siamese tilts towards the front of the roof turret. Attach siamese to siamese base with four screws (46).

(3) Install elevation shaft (paragraph 2-19).

2-21. RATE CONTROL ASSEMBLY REPAIR.

a. Removal. Refer to Figure 2-3.

(1) Place Valve Override switch to MANUAL.

(2) Remove false ceiling (paragraph 2-16).

(3) Disconnect rate cable (31) at rate control assembly (56) end only (paragraph 2-18).

(4) Remove two screws (57) attaching rate control assembly (56) to roof turret mounting plate. Remove rate control assembly from inside roof turret mounting plate.

b. Disassembly. Refer to Figure 2-6 unless otherwise indicated.

(1) Remove cotter pin (2) and pin (3).

(2) Compress spring (6). Remove snap ring (4) and spring nut (5) from spring housing (1). Gently release compression on spring and remove spring (6) and shim (7) from spring housing.

(3) Remove two screws (8) and long collars (9) attaching handle hub (10) to bracket.

(4) Remove ball (11) from handle rod (12).

(5) Apply sufficient heat to handle hub (10) to loosen Loctite. Remove handle rod from handle hub.

(6) Remove two screws (14) and two washers (15) attaching switch bracket (13) to bracket (18).

(7) Remove two screws (17) attaching switch (16) to switch bracket.

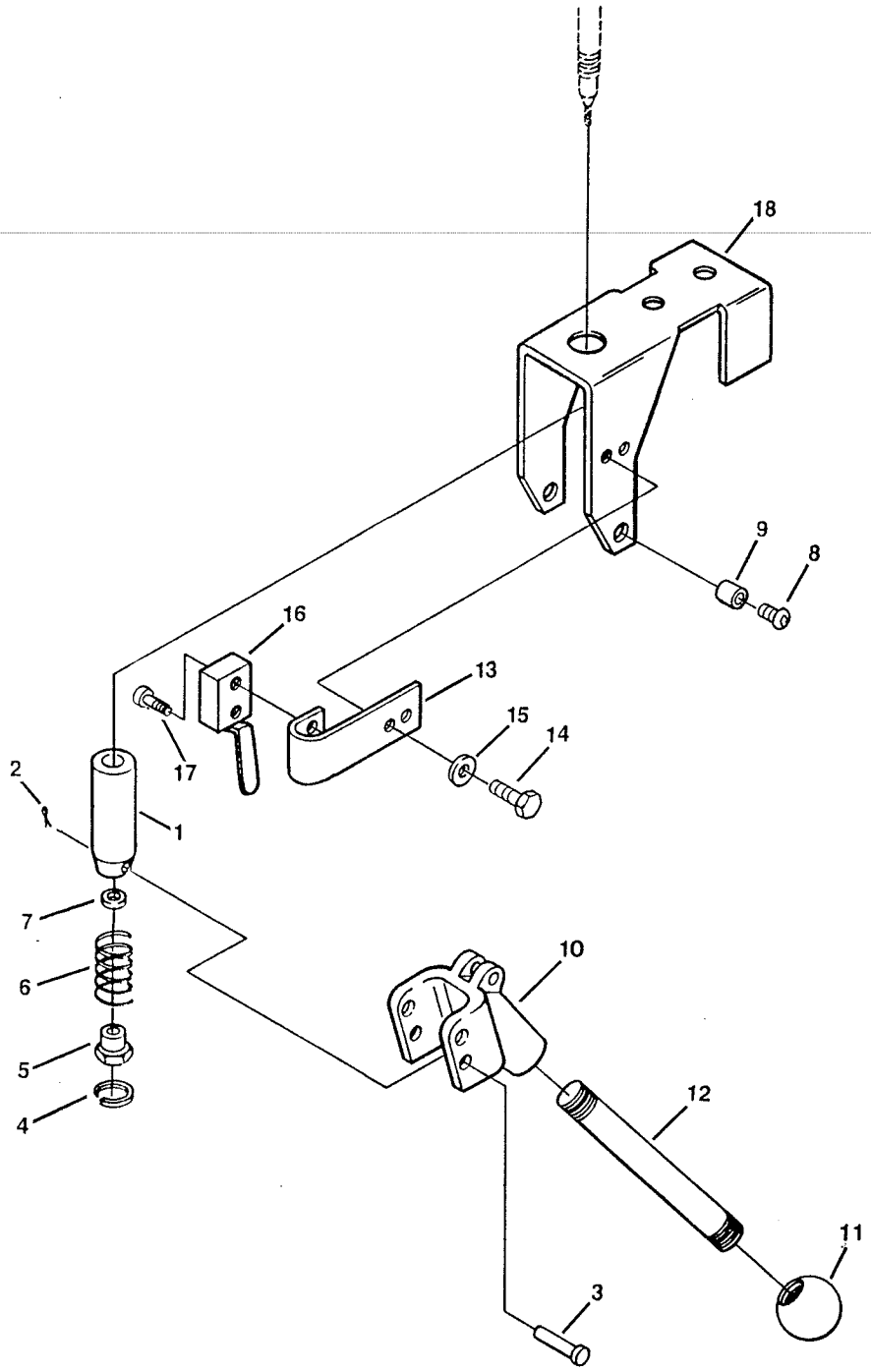
c. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

d. Assembly. Refer to Figure 2-6.

(1) Apply Loctite (2, Appendix A) to screws (17).

CAUTION

Apply sealant to air fittings sparingly. Excessive amounts of sealant may clog air lines.



1. SPRING HOUSING
2. COTTER PIN
3. PIN
4. SNAP RING
5. SPRING NUT
6. SPRING
7. SHIM
8. SCREW
9. LONG COLLAR
10. HANDLE HUB
11. BALL
12. HANDLE ROD
13. SWITCH BRACKET
14. SCREW
15. WASHER
16. SWITCH
17. SCREW
18. BRACKET

Figure 2-6. Rate Control Assembly.

(2) Attach switch (16) to switch bracket (18) with screws (17).

(3) Attach switch bracket (13) to bracket (18) with screws (14) and washers (15).

(4) Apply Loctite (2, Appendix A) to inside threads of ball (11). Thread ball onto handle rod (12) and tighten.

(5) Apply Loctite (2, Appendix A) to threads on end of handle rod opposite ball. Thread handle rod into handle hub (10) and tighten.

(6) Apply Loctite (2, Appendix A) to threads in mounting hole of handle hub (10). Place handle hub between bracket (18). Attach handle hub (10) to bracket (18) with long collars (9) and screws (8).

(7) Place shim (7) and spring (6) inside spring housing (1). Place spring nut (5) on top of spring. Compress spring and place snap ring (4), with square edge away from spring, into groove in spring housing. Gently release spring.

e. Installation. Refer to Figure 2-6 unless otherwise indicated.

(1) Thread spring housing (1) onto end of rate cable (31, Figure 2-3).

(2) Apply Loctite (2, Appendix A) to screws (57, Figure 2-3). Install rate control assembly (56) into roof turret mounting plate with screws.

(3) Attach spring housing (1, Figure 2-6) to handle hub (10) with pin (3). Do not install cotter pin (2) at this time.

f. Adjustment. Refer to Figure 2-6.

(1) Push rate control handle into the HIGH FLOW position. Listen for an audible click as the switch (16) engages. If required, loosen screws (14) on switch bracket (13) and position bracket for correct switch alignment. Tighten screws.

(2) Adjust rate cable (paragraph 2-18.d).

(3) Install false ceiling (paragraph 2-16).

2-22. PATTERN CONTROL ASSEMBLY REPAIR.

a. Removal. Refer to Figure 2-3.

(1) Remove false ceiling (paragraph 2-16).

(2) Remove pattern cable (30) at pattern control assembly (58) only (paragraph 2-18).

(3) Remove screw (59) attaching pattern control assembly to roof turret mounting plate. Remove pattern control assembly from roof turret.

b. Disassembly. Refer to Figure 2-7.

(1) Remove ball (1) from handle rod (2).

(2) Apply sufficient heat to handle hub (3) to loosen Loctite. Remove handle rod from handle hub.

(3) Remove cotter pin (5) and clevis pin (4) attaching handle hub to pattern bracket (9).

(4) Remove cotter pins (7) and pins (6) attaching handle hub to cable fitting (8).

c. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

d. Assembly. Refer to Figure 2-7.

(1) Attach handle hub (3) to pattern bracket with clevis pin (4) and cotter pin (5).

(2) Apply Loctite (2, Appendix A) to ball (1). Install ball onto handle rod (2).

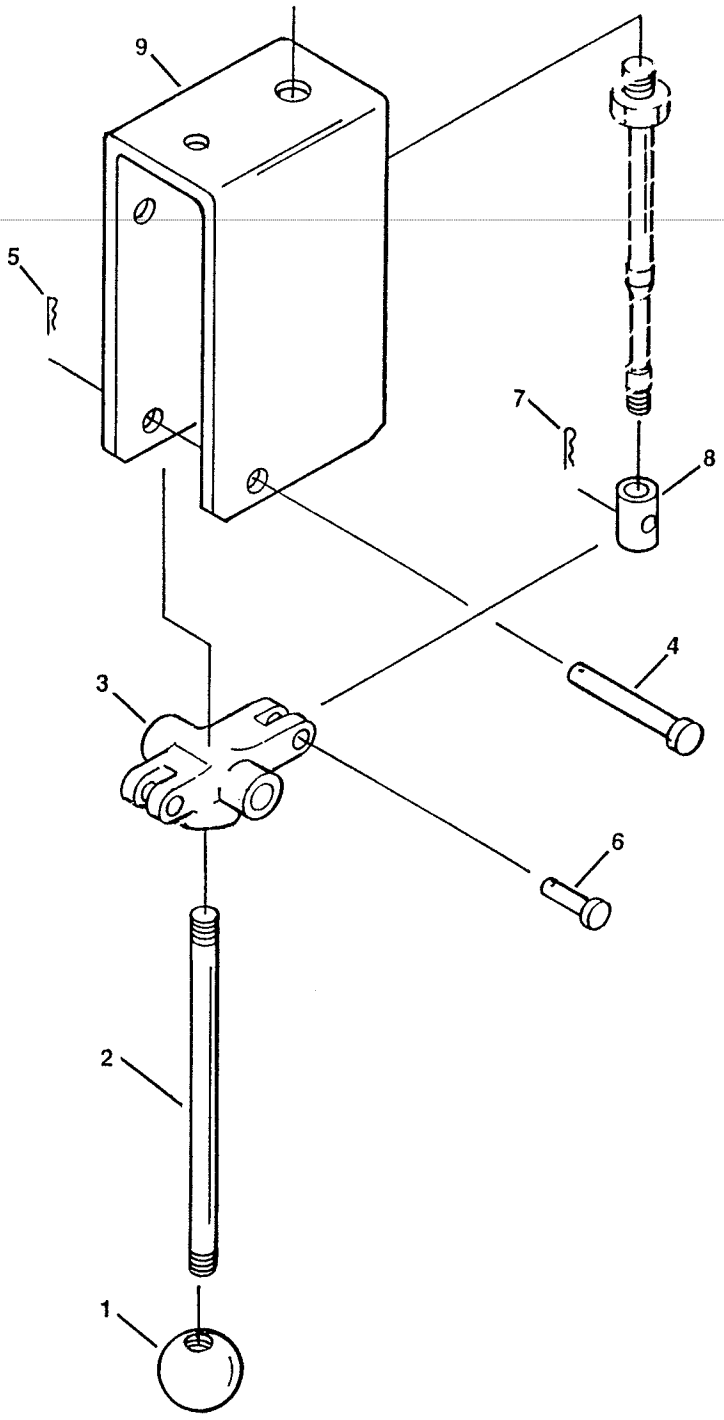
(3) Apply Loctite (2, Appendix A) to end of handle rod. Install handle rod into handle hub.

e. Installation. Refer to Figure 2-3.

(1) Apply Loctite (2, Appendix A) to screw (59). Install pattern control assembly into roof turret mounting plate with screw.

(2) Install and adjust pattern control cable to pattern control assembly (paragraph 2-18).

(3) Install false ceiling (paragraph 2-16).



1. BALL
2. HANDLE ROD
3. HANDLE HUB
4. CLEVIS PIN
5. COTTER PIN
6. PIN
7. COTTER PIN
8. CABLE FITTING
9. PATTERN BRACKET

Figure 2-7. Pattern Control Assembly.

2-23. SOLENOID VALVE ASSEMBLY REPAIR.

a. Removal. Refer to Figure 2-3.

(1) Place Valve Override switch to MANUAL.

(2) Remove false ceiling (paragraph 2-16).

(3) Disconnect solenoid valve assembly (60) plug from wiring harness (75).

(4) Label air lines connected to solenoid valve assembly. Disconnect air lines.

(5) Remove four screws (61) attaching solenoid valve assembly to roof turret mounting plate. Remove solenoid valve assembly.

b. Disassembly. Refer to Figure 2-8.

(1) If required, remove tie wraps (1) from wires. Remove pin connectors (2) from connector housing (3).

(2) Remove screw (5) attaching solenoid valve (4) to bracket (8).

(3) Remove elbow fittings (6) from exhaust ports on discharge solenoid valve.

(4) Remove elbow fitting (7) from IN port on discharge solenoid valve.

c. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

d. Assembly. Refer to Figure 2-8.

(1) Attach elbow fitting (7) to IN port on discharge solenoid valve (4).

(2) Attach elbow fittings (6) to both exhaust ports on solenoid valve.

(3) Apply Loctite (2, Appendix A) to screws (5). Attach discharge solenoid valve to bracket (8) with screws.

CAUTION

Apply sealant to air fittings sparingly. Excessive amounts of sealant may clog air lines.

(4) Bundle wires from solenoid valve together. Cut wires to length so that the shortest wire in the bundle is not less than 6" in length.

(5) Strip end of each wire and attach a pin connector (2) to the end of each wire.

(6) Insert the connector pins into the connector housing (3). Refer to Figure B-1 for correct wiring detail.

(7) Bundle wires using tie wraps (1).

e. Installation. Refer to Figure 2-3.

(1) Apply Loctite (2, Appendix A) to screws (61). Attach solenoid valve assembly to roof turret mounting plate with screws.

(2) Attach air lines to solenoid valve assembly (60).

(3) Connect plug on solenoid valve assembly (60) to wiring harness (75).

f. Alignment. Refer to Figure 2-8.

(1) Adjust needle valve on solenoid valve (4) to obtain smooth, slow motion of discharge valve handle.

(2) Install false ceiling (paragraph 2-16).

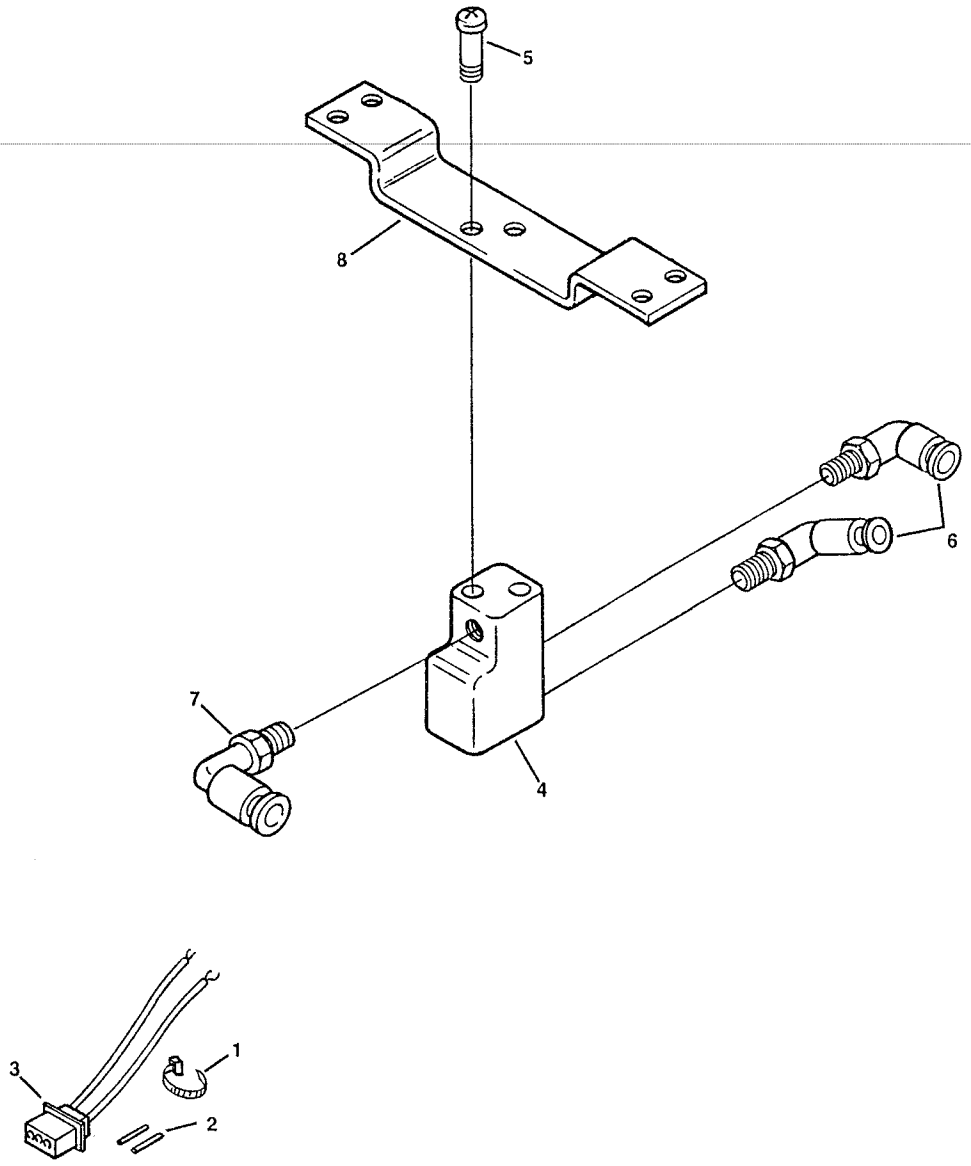
2-24. OVERRIDE VALVE ASSEMBLY REPAIR.

a. Removal. Refer to Figure 2-3 unless otherwise directed.

(1) Remove false ceiling (paragraph 2-16).

(2) Drain air system. Label and disconnect air lines (14,15 and 16, Figure 2-9) connecting override valve assembly (62) to air accessory tank, air horn, and solenoid valve assembly (60, Figure 2-3).

(3) Remove two screws (63) connecting override valve assembly (62) to roof turret mounting plate.



1. TIE WRAP
2. PIN CONNECTOR
3. CONNECTOR HOUSING
4. SOLENOID VALVE
5. SCREW
6. ELBOW FITTING
7. ELBOW FITTING
8. BRACKET

Figure 2-8. Solenoid Valve Assembly.

b. Disassembly. Refer to Figure 2-9.

(1) Remove nut and washer attaching toggle valve (1) to bracket (13). Remove toggle valve.

(2) Remove two elbow fittings (2) from toggle valve.

(3) Remove elbow fitting (3) from tee fitting (10).

(4) Remove two nuts (5), washers (6) and screws (7) attaching air regulator bracket (4) to mounting bracket.

(5) Remove retaining nut attaching air regulator (11) to air regulator bracket (4).

(6) Remove elbow fitting (8) from adapter fitting (9).

(7) Remove adapter fitting (9) from outlet port of air regulator (11).

(8) Remove tee fitting (10) from inlet side of air regulator (11).

(9) If required, remove label (12) from mounting bracket (13).

c. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

d. Assembly. Refer to Figure 2-9.

CAUTION

Apply sealant to air fittings sparingly. Excessive amounts of sealant may clog air lines.

(1) Apply sealant (7, Appendix A) to male threads of tee fitting (10). Install tee fitting to inlet port of air regulator (11).

(2) Apply sealant (7, Appendix A) to male threads of adapter fitting (9). Install adapter fitting to outlet port of air regulator.

(3) Attach elbow fitting (8) to adapter fitting.

(4) Apply Loctite (2, Appendix A) to screws (7). Attach regulator bracket (4) to mounting bracket (13) with two screws (7), washers (6) and nuts (5). Do not tighten screws at this time.

(5) Using supplied retaining nut, attach air regulator (11) to air regulator bracket. Align one end of tee fitting (10) in center of hole in mounting bracket (13). Tighten screws (7).

(6) Attach elbow fitting (3) to tee fitting.

(7) Attach elbow fittings (2) on IN and OUT ports of toggle valve (1).

(8) Clean label mounting area of mounting bracket with alcohol. Attach label (12) to mounting bracket.

(9) Attach toggle valve (1) to mounting bracket (13) using nut and washer provided with toggle valve.

e. Installation. Refer to Figure 2-3.

(1) Apply Loctite (2, Appendix A) on screws (63). Install override valve assembly into roof turret mounting plate with screws.

(2) Connect air lines (14, 15 and 16, Figure 2-9) to override valve assembly.

(3) Install false ceiling (paragraph 2-16).

2-25. AIR CYLINDER ASSEMBLY REPAIR.

a. Removal. Refer to Figure 2-3.

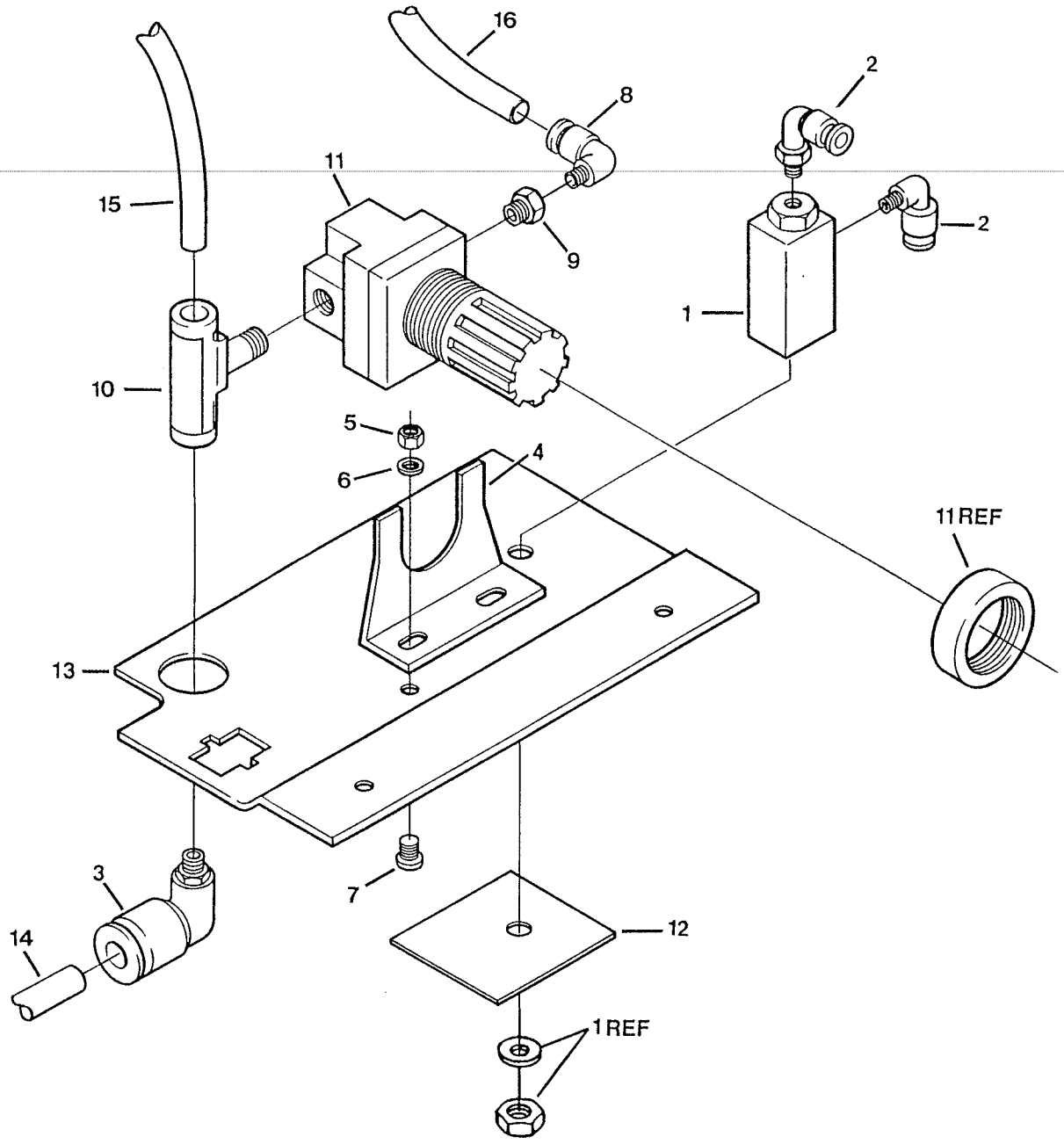
(1) Place Valve Override switch to MANUAL.

(2) Remove false ceiling (paragraph 2-16).

(3) Tag air lines with connection information. Disconnect air lines from air cylinder assembly.

(4) Remove cotter pin and pin attaching clevis (67) on air cylinder assembly to three inch valve assembly (105).

(5) If necessary, remove the limit switch (7, Figure 2-12) according to paragraph 2-29 or disconnect the limit switch from the wiring harness (75) to prevent strain on the wires. If limit switch is disconnected from harness, disconnect harness from truck connections. Cut tie wraps as needed.



1. TOGGLE VALVE
2. ELBOW FITTING
3. ELBOW FITTING
4. AIR REGULATOR BRACKET
5. NUT
6. WASHER
7. SCREW
8. ELBOW FITTING
9. ADAPTER FITTING
10. TEE FITTING
11. AIR REGULATOR
12. LABEL
13. MOUNTING BRACKET
14. AIR SUPPLY LINE FROM ACCESSORY TANK
15. AIR SUPPLY LINE TO AIR HORN
16. AIR SUPPLY LINE TO SOLENOID VALVE ASSEMBLY

Figure 2-9 Override Valve Assembly.

(6) Remove four screws (66) attaching air cylinder assembly to roof turret mounting plate. Remove air cylinder assembly from roof turret mounting plate.

b. Disassembly. Refer to Figure 2-3.

(1) Remove cotter pin and pin attaching swivel bracket (65) to air cylinder (64).

(2) Remove clevis (67) and jam nut from air cylinder.

(3) Remove elbow fittings (68) and adapter fittings (69) from air cylinder.

c. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

d. Assembly. Refer to Figure 2-3.

(1) Attach swivel bracket (65) to air cylinder (64) with pin and cotter pin supplied with swivel bracket.

(2) If limit switch was removed install it according to paragraph 2-29. If limit switch was disconnected from wiring harness (75), attach the wires and connect harness to truck connections. Tiewrap wires as necessary.

CAUTION

Apply sealant to air fittings sparingly. Excessive amounts of sealant may clog air lines.

(3) Apply sealant (7, Appendix A) onto adapter fittings (69). Thread adapter fittings onto air cylinder and tighten.

(4) Thread elbow fittings (68) onto adapter fittings and tighten. Position elbow fittings so that air lines will not be stressed when air cylinder assembly is installed in roof turret mounting plate.

(5) Thread jam nut and clevis (67) onto air cylinder.

e. Installation. Refer to Figure 2-3.

(1) Apply Loctite (2, Appendix A) onto screws (66). Install air cylinder assembly in roof turret mounting plate with screws.

(2) Attach clevis (67) to handle of three inch valve assembly (105) with pin supplied with clevis. Do not install cotter pin at this time.

(3) Connect air lines, as tagged, to elbow fittings (68).

f. Alignment.

(1) Operate discharge handle over entire range of operation. Verify that the handle makes contact with the stops at each end of the range.

(2) Remove pin attaching clevis (67) to discharge handle. Adjust the length of the air cylinder shaft as required. Align mounting holes of clevis and discharge handle. Insert pin through mounting holes.

(3) Recheck the range of the discharge handle. If the setting is not right, repeat step (2) above. When adjustment is correct, install cotter pin into clevis pin.

(4) Install false ceiling (paragraph 2-16).

2-26. TOGGLE SWITCH AND BRACKET REPAIR.

a. Removal. Refer to Figure 2-3.

(1) Place Valve Override switch to MANUAL.

(2) Remove false ceiling (paragraph 2-16).

(3) Tag wiring harness with connection information. Disconnect wiring harness (75) from toggle switch (73).

(4) Remove screws (71) attaching switch bracket (70) to roof turret mounting plate.

(5) Remove nuts attaching toggle switch (73) to switch bracket. Remove toggle switch from switch bracket.

(6) Do not remove switch label (72) unless required.

b. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

c. Installation. Refer to Figure 2-3.

(1) Clean switch bracket (70) with alcohol. Install switch label (72) on switch bracket.

(2) Attach toggle switch (73) to switch bracket (70) with nuts supplied with toggle switch.

(3) Apply Loctite (2, Appendix A) to screws (71). Attach switch bracket to roof turret mounting plate with screws.

(4) Connect wiring harness (75), as tagged, to toggle switches (73) with screws supplied with toggle switches.

(5) Install false ceiling (paragraph 2-16).

2-27. AIR LINE REPLACEMENT.

a. Removal. Refer to Figure 2-3.

(1) Remove false ceiling (paragraph 2-16).

(2) Drain air system.

(3) Remove cable ties bundling air lines.

(4) Depress red collar on adapter fittings to release air line (74). Carefully remove air line from roof turret mounting plate.

b. Installation. Refer to Figure 2-3 unless otherwise indicated.

(1) Cut air line (74) to desired length.

(2) Route air line inside roof turret mounting plate as indicated in Figure 2-10.

(3) Connect air line to adapter fittings by depressing red collar on adapter fittings and inserting air line into adapter fitting. Release red collar.

(4) Bundle air lines with cable ties as required.

(5) Install false ceiling (paragraph 2-16).

2-28. WIRING HARNESS REPLACEMENT.

a. Removal. Refer to Figure 2-3.

(1) Remove false ceiling (paragraph 2-16).

(2) Disconnect wiring harness (75) from truck connections.

(3) Remove nuts (77) and screws (78) connecting cable clamps (76) to roof turret mounting plate. Cut any tie wraps as needed.

(4) Tag wiring harness (75) with connection information. If necessary, remove nut (100), washer (101) and screw (99) securing support strap (98) to driver's side of roof turret mounting plate. Remove screw (102) attaching other end of support strap to three inch valve assembly (105). Remove support strap from roof turret mounting plate.

(5) Disconnect wiring harness (75) at toggle switch (73), rate control assembly (56), solenoid valve assembly (60), indicator lamp body (138), and limit switch (7, Figure 2-12). Remove wiring harness from roof turret mounting plate.

b. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

c. Installation. Refer to Figure 2-3.

(1) Install wiring harness (75) in roof turret mounting plate using nuts (77), screws (78), and cable clamps (76). Tiewrap as needed.

(2) Connect wiring harness using the connection information identified during removal. Connect the harness (75) to the toggle switch (73), rate control assembly (56), solenoid valve assembly (60), indicator lamp body (138), and limit switch (7, Figure 2-12).

(3) Secure support strap (98) to three inch valve assembly (105) with screw (102). Attach other end of support strap to roof turret mounting plate with screw (99), washer (101) and nut (100).

(4) Connect wiring harness (75) to truck connections.

(5) Install false ceiling (paragraph 2-16).

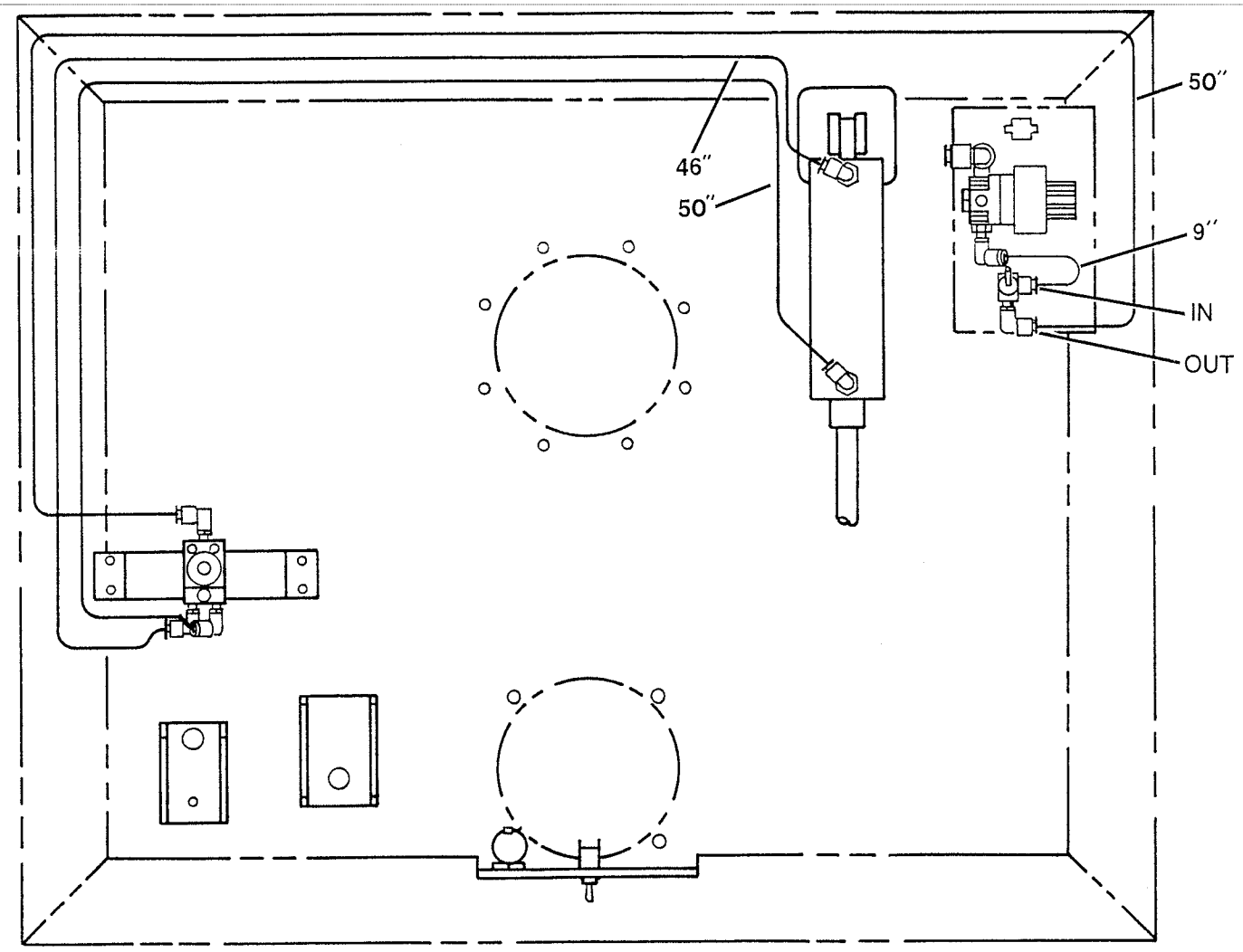


Figure 2-10. Air Lines.

2-29. LIMIT SWITCH REPLACEMENT

a. Removal. Refer to Figure 2-12 unless otherwise indicated.

(1) Remove false ceiling (paragraph 2-16).

(2) Disconnect wiring harness (75, Figure 2-3) from truck connections.

(3) Cut tie wrap securing wires to arm (2).

(4) Remove pin attaching clevis (67, Figure 2-3) to three inch valve assembly (105).

(5) Tag wiring harness (75, Figure 2-3) with connection information and disconnect wires from limit switch (7).

(6) Remove the screw (3) securing components to the trunnion (15), and remove only the washer (4) and arm (2) from the trunnion (15).

(7) Remove the limit switch (7) by removing the screws (5) and hex nuts (6) attaching it to the arm (2).

b. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

c. Installation. Refer to Figure 2-12 unless otherwise indicated.

(1) Attach the limit switch (7) to the arm (2) arm of the three inch valve assembly with screws (5) and hex nuts (6).

(2) Place the arm (2) and washer (4) on the trunnion (15) of the three inch valve. Secure them with the screw (3).

(3) Connect wiring to the limit switch according to the tagged information. Tie wrap wire to arm (7).

(4) Install pin to attach clevis (67, Figure 2-3) to three inch valve assembly (105, Figure 2-3).

(5) Connect wiring harness (75, Figure 2-3) to truck connections

(6) Install false ceiling (paragraph 2-16).

2-30. INDICATOR LAMP REPLACEMENT

a. Removal. Refer to Figure 2-3.

(1) Remove false ceiling (paragraph 2-16).

(2) Disconnect wiring harness (75) from truck connections.

(3) Cut tie wraps securing wires to support strap (98).

(4) Remove screw (102) from support strap (98) connected to three inch valve assembly (105) on driver's side of truck.

(5) Remove nut (100), washer (101), and screw (99) from turret mounting plate (132). Remove support strap (98) and indicator lamp bracket (134) from turret mounting plate (132).

(6) Tag wiring harness with connection information and disconnect wire from lamp body (138).

b. Disassembly. Refer to Figure 2-3.

Remove lens (135), spacer (136), light (137), and lamp body (138) from indicator lamp bracket (134).

c. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

d. Assembly. Refer to Figure 2-3.

Install lens (135), spacer (136), light (137), and lamp body (138) on indicator lamp bracket (134).

e. Installation. Refer to Figure 2-3.

(1) Connect wiring to lamp body (138) according to tagged information.

(2) Locate the holes on the indicator lamp bracket (134) and strap (98) with the correct hole on the turret mounting plate. Secure with nut (100), washer (101), and screw (99).

(3) Secure other end of support strap (98) to three inch valve assembly (105) with screw (102).

(4) Tie wrap wires to support strap (98) in appropriate locations.

(5) Connect wiring harness (75) to truck connections.

(6) Install false ceiling (paragraph 2-16).

2-31. DRAIN VALVE ASSEMBLY REPAIR.

a. Removal. Refer to Figure 2-3.

(1) Remove false ceiling (paragraph 2-16).

(2) Disconnect truck drain hose from union (94).

(3) Loosen hose clamps (91), and pull hose (92) from elbow fitting (96). Pull union (94), plug (95), and fitting (93) from hose.

(4) Remove plug (95) and unscrew fitting (93) from union (94).

(5) Cut tie wraps securing wiring harness (75) to support strap (98).

(6) Remove nut (100), washer (101) and screw (99) securing support strap (98) to driver's side of roof turret mounting plate. (Indicator lamp bracket (134) will also be removed.) Remove screw (102) attaching other end of support strap to three inch valve assembly (105). Remove support strap from roof turret mounting plate.

(7) Remove elbow fitting (96) from drain valve assembly.

(8) Remove drain valve assembly (97) from inlet elbow (111).

b. Disassembly. Refer to Figure 2-11.

(1) Remove retaining ring (1) from drain valve body (4).

(2) Remove poppet (2) and spring (3) from drain valve body.

c. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

d. Assembly. Refer to Figure 2-11 unless otherwise indicated.

(1) Insert spring (3) into drain valve body (4).

(2) Insert poppet (2) into center of spring.

(3) Compress spring (3) and poppet (2) into drain valve body and install retaining ring (1).

(4) Install plug (95, Figure 2-3) in union (94), and screw fitting (93) into union (94).

(5) Slide hose (92, figure 2-3) over fitting (93) and secure with a clamp (91).

e. Installation. Refer to Figure 2-3.

(1) Apply sealant (7, Appendix A) to threads of drain valve assembly. Thread drain valve assembly (97) into inlet elbow (111) and tighten.

(2) Apply sealant (7, Appendix A) to threads of elbow fitting (96). Thread elbow fitting into drain valve assembly and tighten.

(3) Secure support strap (98) to three inch valve assembly (105) with screw (102). Attach other end of support strap and indicator lamp bracket (134) to roof turret mounting plate with screw (99), washer (101) and nut (100). Tiewrap wiring harness to support strap (98) in appropriate locations.

(4) Install union assembly in roof turret mounting plate, and secure the end of the hose (92) to the elbow fitting (96) with the remaining hose clamp (91).

(5) Connect truck drain hose and adapter to elbow fitting (96).

(6) Replace false ceiling (paragraph 2-16).

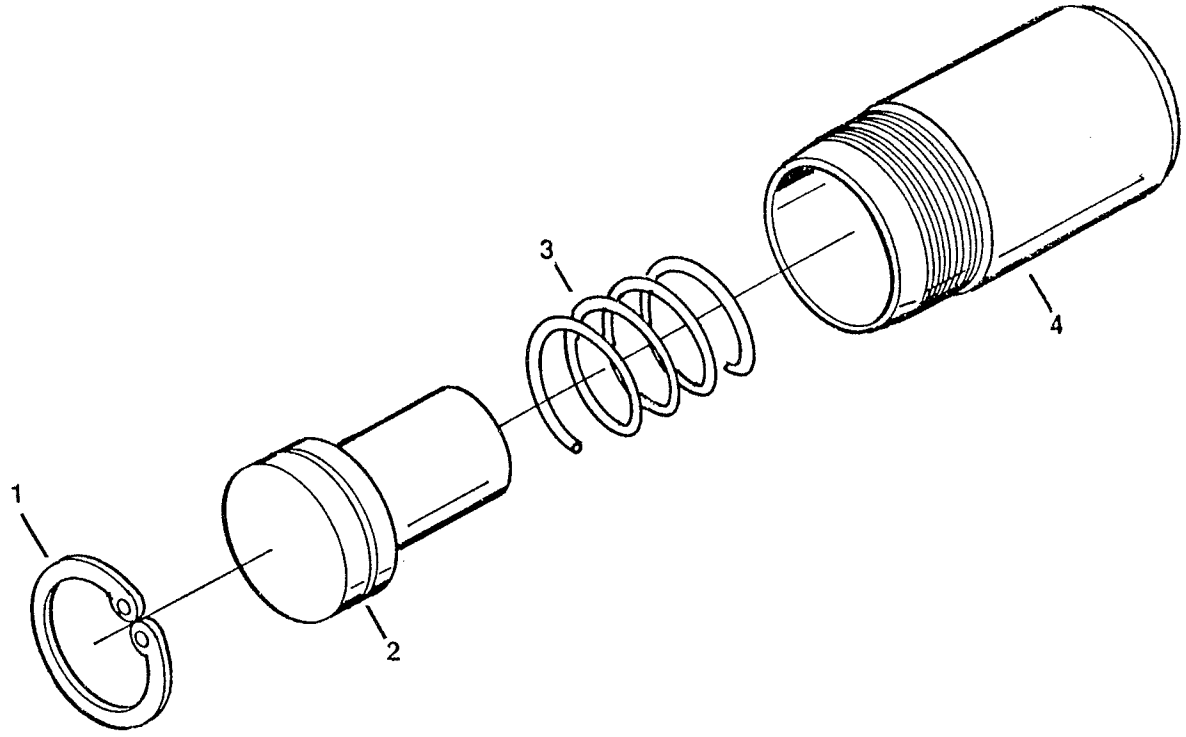
2-32. THREE INCH VALVE AND VICTAULIC INLET REPAIR.

a. Removal. Refer to Figure 2-3.

(1) Remove false ceiling (paragraph 2-16).

(2) Remove pin attaching clevis (67) to three inch valve assembly (105).

(3) Tag wiring with connection information and disconnect wiring from limit switch (7, Figure 2-12). Cut tie wraps securing wiring harness (75) to support strap on driver's side of truck.



1. **RETAINING RING**
2. **POPPET**
3. **SPRING**
4. **DRAIN VALVE BODY**

Figure 2-11. Drain Valve Assembly.

(4) Remove screws (99), nuts (100), and washers (101) attaching support straps (98) and indicator lamp bracket (134) to roof turret mounting plate.

(5) Remove screws (102) attaching support straps (98) to inlet elbow side of three inch valve assembly (105).

(6) Remove screws (104) attaching victaulic inlet (103) to roof turret mounting plate.

(7) Remove mounting screws (106) attaching three inch valve assembly (105) to inlet elbow (111) and victaulic inlet (103). Remove three inch valve assembly, victaulic inlet, gasket (107), and gasket (108) from roof turret mounting plate.

b. Disassembly. Refer to Figure 2-12 unless otherwise indicated.

(1) With three inch valve assembly in the closed position, remove two valve seats (1) from valve body (22).

(2) Remove screw (3) and washer (4) attaching cylinder arm (2) to trunnion (15). If necessary, remove the screws (5) and hex nuts (6) securing the limit switch (7) to the cylinder arm (2).

(3) Remove valve handle (8), spring (9) and stop plate (10) from trunnion.

(4) Remove screws (12) attaching retaining plate (11) to trunnion housing (13).

(5) Remove screws (14) attaching trunnion housing (13) to valve body. Remove trunnion housing.

(6) Remove trunnion (15) from valve body (22).

(7) Remove retaining ring (16) and O-ring (17) from trunnion (15).

(8) Remove threaded trunnion (18) from valve body (22).

(9) Remove O-ring (19) from threaded trunnion (18).

(10) Remove ball (20) from valve body (22).

(11) Remove pipe plugs (21) from valve body (22).

(12) Remove pipe plug (109, Figure 2-3) from victaulic inlet (103).

c. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

d. Assembly. Refer to Figure 2-12 unless otherwise indicated.

(1) Apply sealant (7, Appendix A) to threads of pipe plugs (21). Thread pipe plugs into valve body (22) and tighten.

(2) Apply grease (1, Appendix A) to O-ring (19). Place O-ring onto threaded trunnion (18). Screw threaded trunnion into valve body (22). Do not tighten at this time.

(3) Position ball (20) into valve body (22) and align mounting hole with threaded trunnion (18). Tighten threaded trunnion.

(4) Apply grease (1, Appendix A) to O-ring (17). Place O-ring onto trunnion (15). Attach retaining ring (16) onto trunnion. Insert trunnion into valve body (22) and into mounting hole in ball (20).

(5) Slide trunnion housing (13) over trunnion. Attach trunnion housing to valve body (22) with screws (14).

(6) Slide retaining plate (11) over trunnion. Attach retaining plate to trunnion housing (13) with screws (12).

(7) Slide stop plate (10) over trunnion (15).

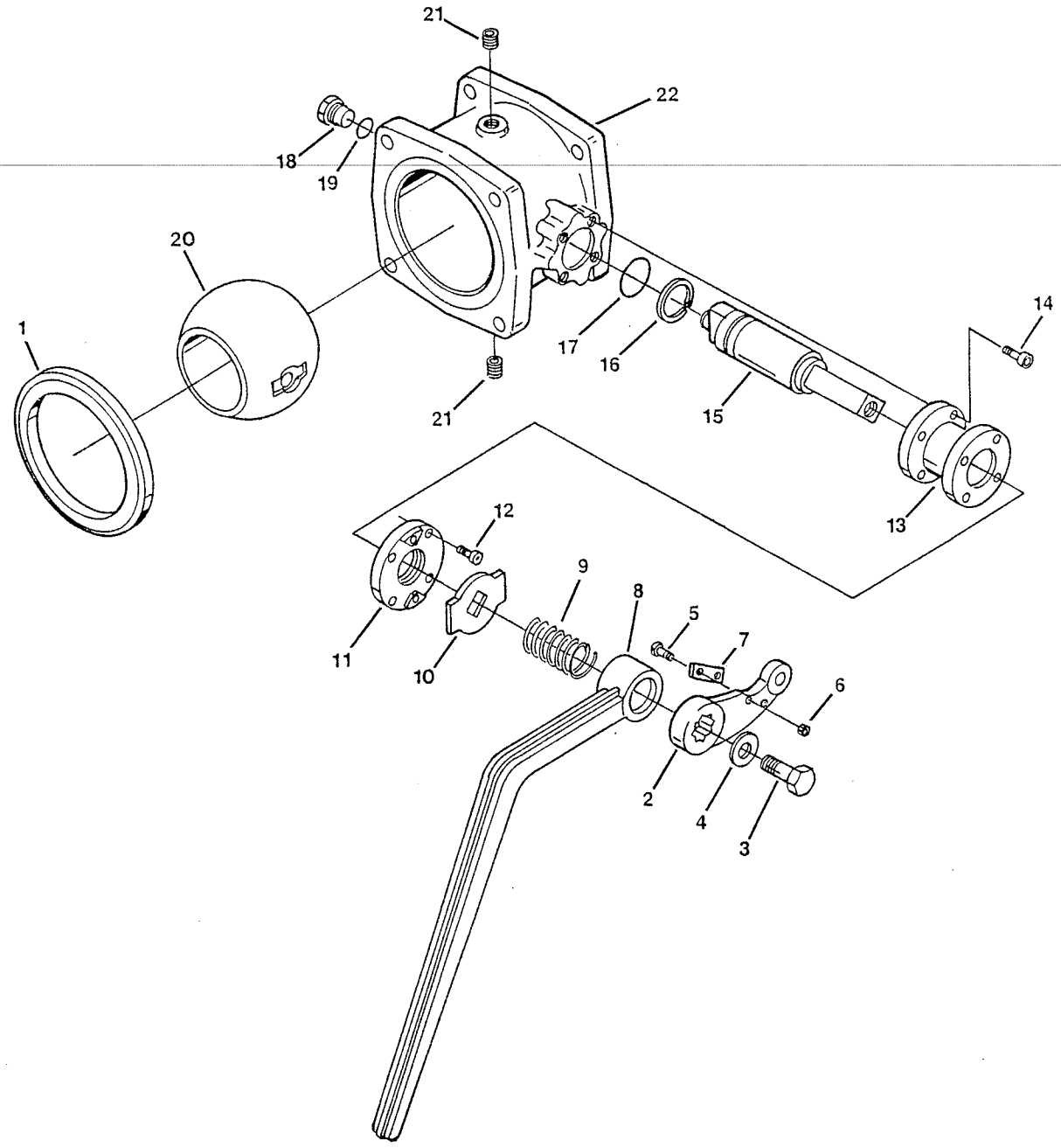
(8) Slide spring (9) over trunnion (15).

(9) Position valve handle (8) onto trunnion (15).

(10) If removed, attach limit switch (7) to cylinder arm (2) with screws (5) and hex nuts (6). Position cylinder arm (2) onto trunnion (15).

(11) Place washer (4) and screw (3) over trunnion (15) and tighten.

(12) With the ball (20) in the closed position, press valve seats (1) into valve housing (22).



1. VALVE SEAT
2. CYLINDER ARM
3. SCREW
4. WASHER
5. SCREW
6. HEX NUT
7. LIMIT SWITCH
8. VALVE HANDLE
9. SPRING
10. STOP PLATE
11. RETAINING PLATE
12. SCREW
13. TRUNNION HOUSING
14. SCREW
15. TRUNNION
16. RETAINING RING
17. O-RING
18. THREADED TRUNNION
19. O-RING
20. BALL
21. PIPE PLUG
22. VALVE BODY

Figure 2-12. Three Inch Valve and Limit Switch.

(13) Apply sealant (7, Appendix A) to threads of pipe plug (109, Figure 2-3). Thread pipe plug into victaulic inlet (103) and tighten.

e. Installation. Refer to Figure 2-3.

(1) Place gasket (107) between three inch valve assembly (105) and victaulic inlet (103) and align mounting holes. Thread two screws (106) into upper mounting holes and tighten.

(2) Place gasket (108) over victaulic inlet (103). Insert victaulic inlet through hole in roof turret mounting plate. Thread screws (105) through mounting holes in roof turret mounting plate into victaulic inlet. Do not tighten at this time.

(3) Place gasket (107) between three inch valve assembly (105) and inlet elbow (111). Attach three inch valve assembly to inlet elbow with two screws (106) in upper mounting holes and tighten. Tighten victaulic inlet mounting screws (104).

(4) Attach support straps (98) to three inch valve assembly (105) with screws (102) and tighten. Tie wrap wiring harness (75) to support strap on driver's side of truck in appropriate locations.

(5) Attach support straps (98) and indicator lamp bracket (134) to roof turret mounting plate with screws (99), washers (101) and nuts (100) and tighten.

(6) Attach clevis (67) to three inch valve assembly (105) with pin supplied with clevis.

(7) Connect wires to limit switch (7, Figure 2-12) according to tagged information. Tiewrap wires to support straps in appropriate locations.

(8) Install false ceiling (paragraph 2-16).

2-33. INLET WATERWAY REPAIR.

a. Removal. Refer to Figure 2-3.

(1) Remove false ceiling (paragraph 2-16).

(2) Remove siamese (paragraph 2-20).

(3) Remove drain valve assembly (paragraph 2-31).

(4) Remove three inch valve (paragraph 2-32).

(5) Remove O-ring (110) from groove formed by siamese base (118) and inlet elbow (111).

(6) Remove screws (112) attaching inlet elbow (111) to roof turret mounting plate. Remove inlet elbow with attached parts from roof turret mounting plate.

(7) Remove gasket (113) from inlet elbow.

b. Disassembly. Refer to Figure 2-3.

(1) Remove plug (114) from inlet elbow (111). Remove ball bearings (115) from lower groove in inlet elbow.

(2) Remove plug (116) from inlet elbow (111). Remove ball bearings (117) from upper groove in inlet elbow.

(3) If necessary, remove screws (50) securing bracket (49) to inlet elbow (111). Remove screw (126) and washer (127) from bracket (125), and remove bracket (49).

(4) Remove screws (88) securing handle hub (87) to siamese base (118).

(5) Remove siamese base (118) from inlet elbow (111).

(6) Apply sufficient heat to siamese base to loosen Loctite. Remove O-ring bushing (119) by pushing it through top of siamese base.

(7) Remove O-ring (120) from outside diameter of O-ring bushing (119). Remove O-ring (121) from inside of O-ring bushing.

(8) Remove O-ring (122) from bottom of siamese base (118).

(9) Remove O-ring (123) from upper groove on siamese base (118).

(10) If required, remove grease fittings (124) from inlet elbow (111).

c. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

d. Assembly. Refer to Figure 2-3.

(1) If removed, press grease fittings (124) into inlet elbow (111).

(2) Apply grease (1, Appendix A) on O-ring (123). Install O-ring into upper groove on siamese base (118).

(3) Apply grease (1, Appendix A) on O-ring (122). Install O-ring in lower groove on siamese base (118).

(4) Place O-ring (120) onto outside diameter of O-ring bushing (119). Do not grease O-ring.

(5) Apply grease (1, Appendix A) on O-ring (121). Install O-ring in inside groove on O-ring bushing (119).

(6) Apply Loctite (12, Appendix A) to outside diameter of O-ring bushing (119). Insert O-ring bushing into top of siamese base (118).

(7) Apply grease (1, Appendix A) to O-ring surfaces on the inside of the inlet elbow (111). Insert siamese base (118) into inlet elbow.

(8) Insert 41 ball bearings (117) into the upper groove on the inlet elbow. Thread plug (116) into inlet elbow (111) and tighten.

(9) Insert 36 ball bearings (115) into lower groove on the inlet elbow. Thread plug (116) into inlet elbow (111) and tighten.

e. Installation. Refer to Figure 2-3.

(1) Place gasket (113) onto top of inlet elbow (111).

(2) Apply Loctite (2, Appendix A) to threads of screws (112). Insert the inlet elbow (111) up through the hole in the roof turret mounting plate. Attach inlet elbow to roof turret mounting plate with screws and tighten.

(3) Place O-ring (110) into the groove formed by the siamese base (118) and the turret inlet elbow (111).

(4) Install three inch valve (paragraph 2-32).

(5) Install drain valve assembly (paragraph 2-31).

(6) Secure the siamese base (118) to the handle hub (87) with screws (88).

(7) Install bracket (49) to inlet elbow (111) with screws (50).

(8) Install screw (126) and washer (127) into brackets (125, 49)

(9) Install siamese (paragraph 2-20).

(10) Apply lubricant (4, Appendix A) to grease fittings (124).

(11) Install false ceiling (paragraph 2-16).

2-34. MOUNTING PLATE REPAIR.

a. Disassembly. Refer to Figure 2-3.

(1) Remove false ceiling (paragraph 2-16).

(2) Remove screws (128), nuts (129) and washers (127) attaching brackets (125) to turret mounting plate (132) and remove brackets.

(3) Remove stud clips (130) from roof turret mounting plate mounting holes.

(4) If required, remove insulation (131) from roof turret mounting plate.

b. Cleaning and Inspection. Clean and inspect all parts in accordance with paragraph 2-10.

c. Assembly. Refer to Figure 2-3.

(1) Apply adhesive (13, Appendix A) to backside of insulation pieces (131). Install insulation into turret mounting plate (132).

(2) Attach stud clips (130) around each mounting hole in roof turret mounting plate.

(3) Attach brackets (125) to roof turret mounting plate with screws (128), washers (127) and nuts (129). Before tightening screws, apply bead of polyurethane sealant (6, Appendix A) around screws.

(4) Install false ceiling (paragraph 2-16).

CHAPTER 3. Illustrated Parts Breakdown

SECTION I
INTRODUCTION

3-1. PURPOSE.

This Illustrated Parts Breakdown lists and describes the parts of the Akron Brass 3468 Manual Roof Turret for a typical Fire Rescue Truck. The roof turret is manufactured by Akron Brass Company, Wooster, OH 44691

3-2. MAINTENANCE PARTS LIST (MPL).

The MPL contains a breakdown of all groups, installations, assemblies, and parts of the roof turret. The MPL has an illustration which is keyed to the parts list. The MPL is arranged in seven columns, which are explained in the following paragraphs.

a. Figure and Index Number Column. The figure number identifies the illustration. This figure number appears at the beginning of each page or listing. The index number identifies each part shown on the illustration and listed on the parts list. The index numbers are arranged in sequence and generally reflect the order of disassembly. When it is necessary to use two or more pages to illustrate a particular installation or assembly, each page of the illustration is numbered (example: Sheet 1 , Sheet 2, etc.).

b. Part Number Column. The part number column contains the manufacturer's part number. In instances where no part number exists for a specific part, installation, or group of related parts, the words "NO NUMBER" are inserted in the part number column. Where applicable, reference is made in the description column to the figure that illustrates and lists the parts.

c. Commercial and Government Entity (CAGE) Column. The CAGE column contains the five-digit code for the manufacturer. Refer to paragraph 3-3 for the CAGE Code used in this manual, with name and address of the manufacturer.

d. Description Column. The description column gives the full nomenclature used to identify the installation, assembly, or part. For government standard parts, only the noun is listed. When installations or assemblies are listed, reference is given to the figure on which the detailed parts are listed. When the installation or assembly detailed parts are listed, they are indented to show relationship to the installation or assembly. Each assembly is followed immediately by its component parts. An assembly beginning in column "1" has its detail parts beginning in column "2". If a detail part is in turn an assembly, its detail parts begin in column "3", etc. Attaching parts are identified by the letters "(AP)" and are listed immediately following the assembly or part they attach.

e. Units Per Assembly Column. The units per assembly column lists the quantity of each part required for the next higher assembly. The letters "AR" indicate the part is to be used as required. "REF" (reference) is used when the part has been previously listed and illustrated, with proper quantity, and is listed again for reference purposes only.

f. Usable On Code Column. The usable on code column indicates the difference in assemblies when two or more assemblies are listed on the same parts list. The letters A, B, etc. are used in the code column to indicate the difference. When component parts for each assembly listed on a parts list are the same, this column is left blank.

g. Source Maintenance and Recoverability (SMR) Code Column. The SMR code column contains the Joint Military Services Uniform Codes only. Definitions of SMR Codes are contained in TO 00-25-125.

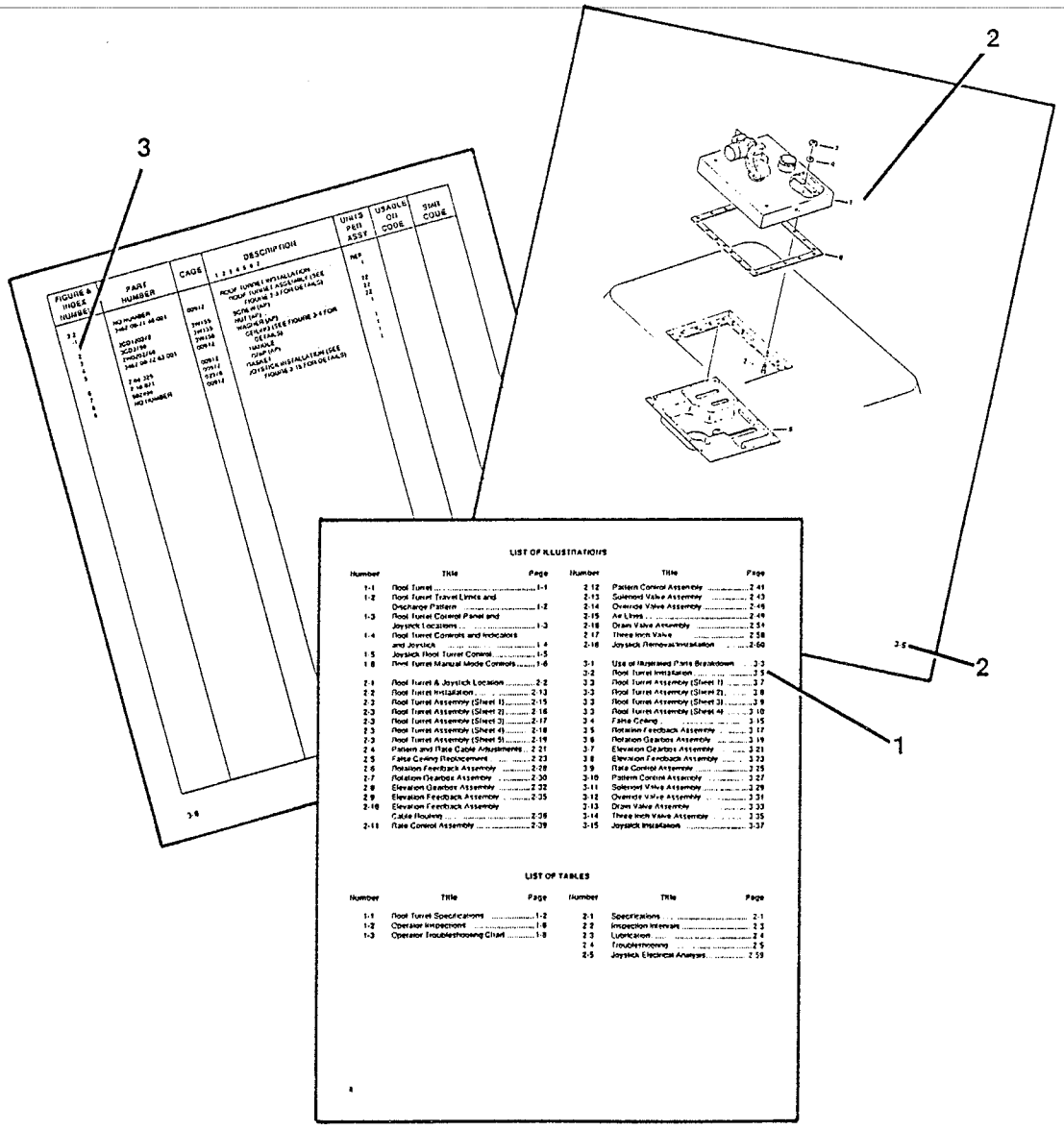
3-3. COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODES AND ADDRESSES.

The following list is a compilation of the vendor codes with the name and addresses of suppliers for purchased and vendor parts listed in this publication. The list is arranged in alphanumeric order.

CODE	NAME AND ADDRESS
00912	Akron Brass Co. 1450 Spruce Street Wooster, OH 44691

3-4. HOW TO USE THE ILLUSTRATED PARTS BREAKDOWN.

An explanation of how to use the illustrated parts breakdown is provided below.



1. Determine the function and application of the part required. Turn to the List of Illustrations and select the most appropriate figure. Note the page number.

2. Turn to the page indicated and locate the desired part or assembly on the illustration.

3. From the illustration, obtain the index number assigned to the part desired. Refer to the accompanying description for specific information regarding the part.

Figure 3-1. Use of Illustrated Parts Breakdown.

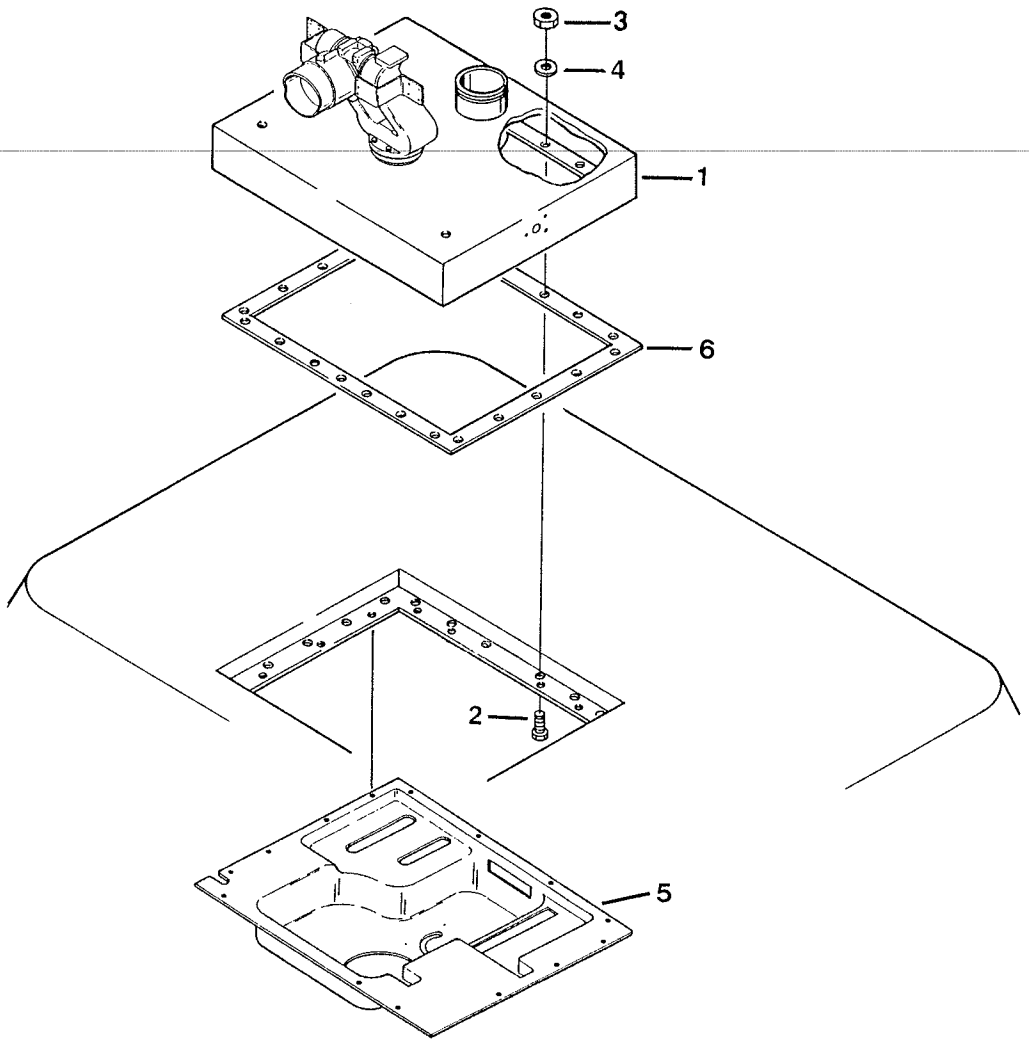


Figure 3-2. Roof Turret Installation.

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-2			ROOF TURRET INSTALLATION	REF		
-1		00912	. ROOF TURRET ASSEMBLY (SEE .... FIGURE 3-3 FOR DETAILS)	1		
-2			. SCREW (AP)	22		
-3			. NUT (AP)	22		
-4			. WASHER (AP)	22		
-5		00912	. CEILING (SEE FIGURE 3-4 FOR ..... DETAILS)	1		
-6			. GASKET	1		

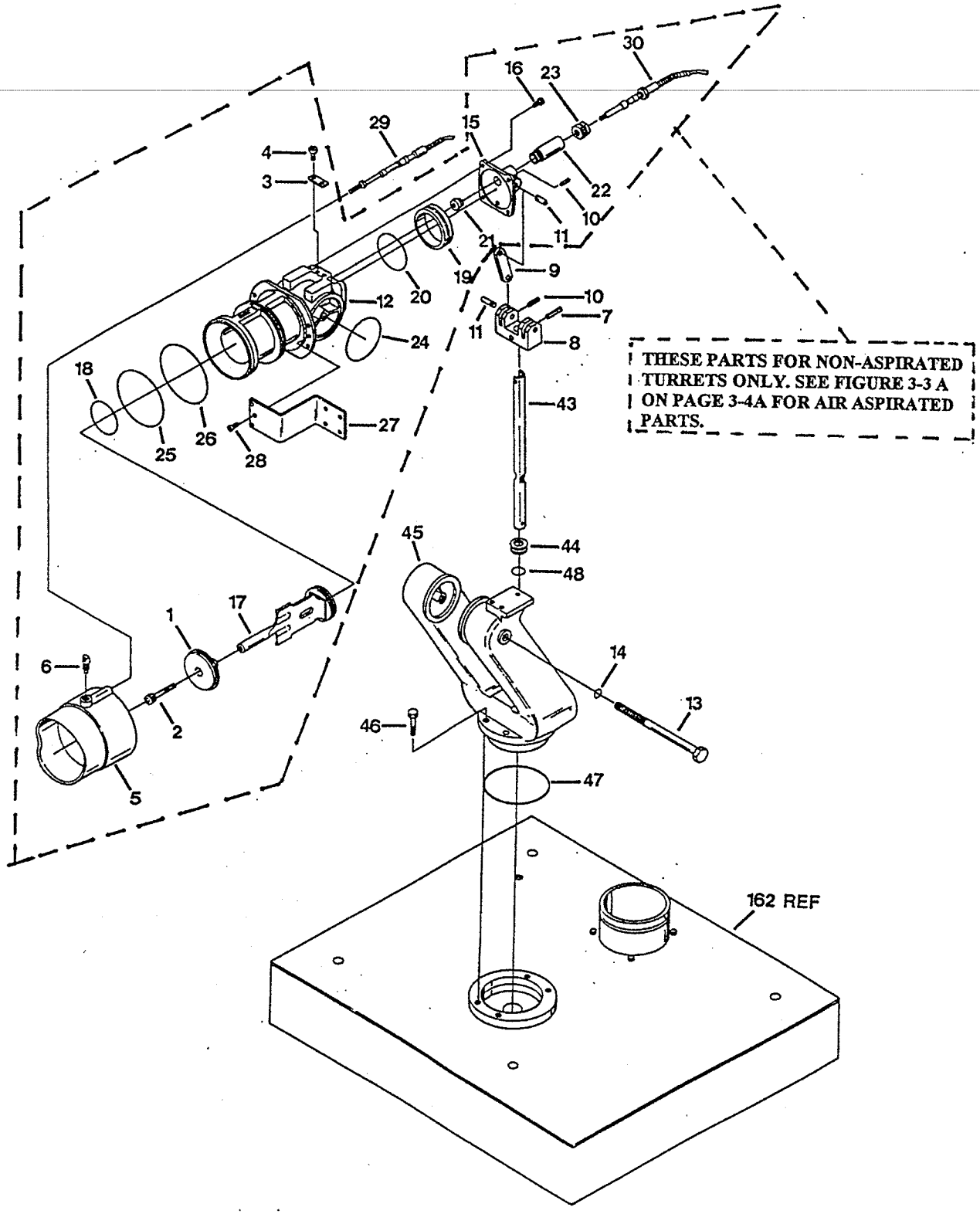


Figure 3-3. Roof Turret Assembly (Sheet 1).

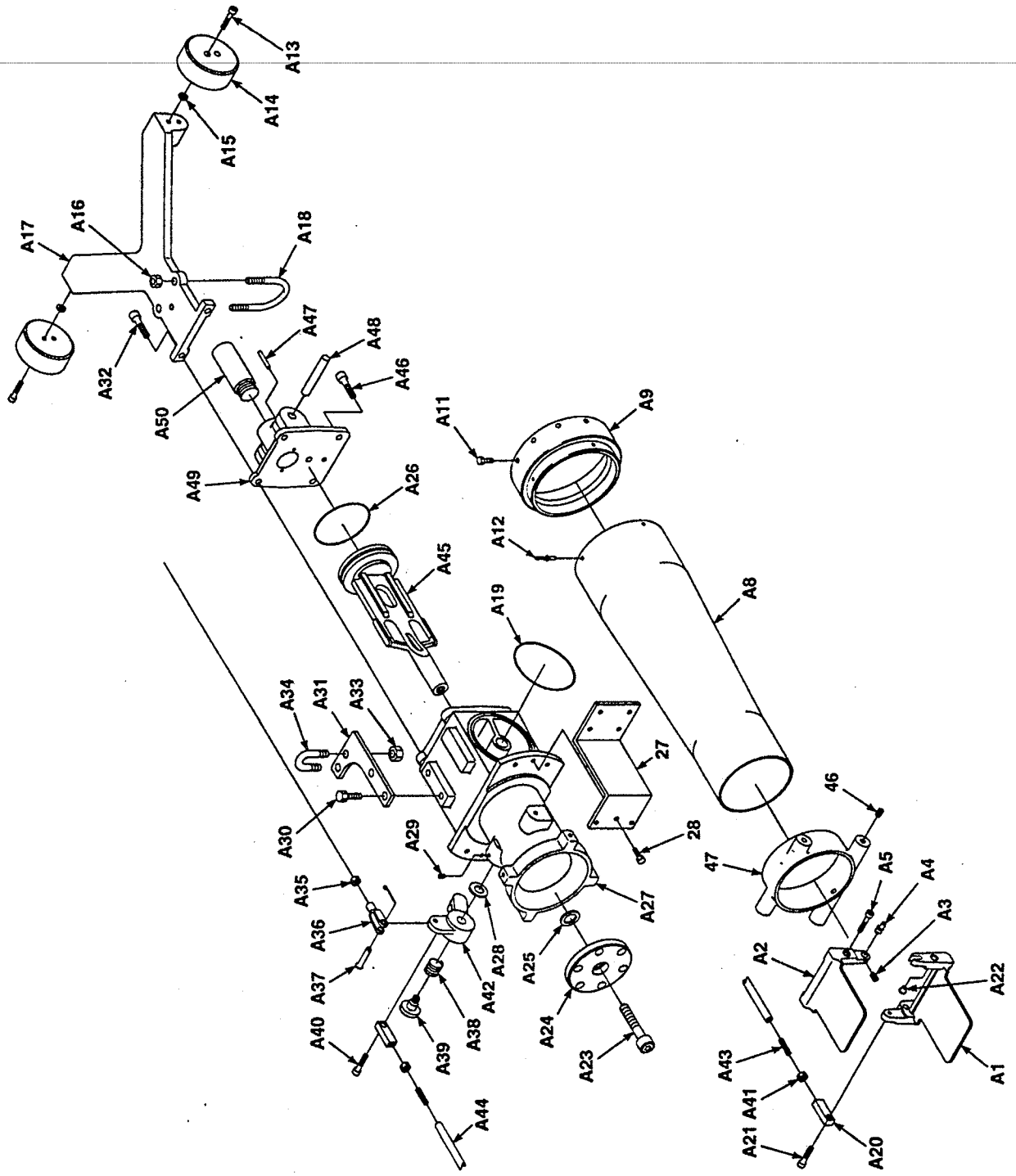


Figure 3-3A Air Aspirated Nozzle Parts

ITEM NUMBER	DESCRIPTION	PART NUMBER	QUANTITY
A1	Lower Blade	3367-00-70-14-002 104323	1
A2	Upper Blade	3367-00-70-14-001 104322	1
A3	Set Screw	7-65-002	1
A4	Cam	7-07-337	1
A5	Cap Screw	7-65-181	6
A6	Set Screw	7-65-071	2
A7	Collar	3367-00-70-22-001 104326	1
A8	Tube	3367-00-70-87-001 104331	1
A9	Adapter	3367-00-70-01-001 104321	1
A10	(Not Used)	—	
A11	Cap Screw	7-61-050	4
A12	Rivet	7-54-053	4
A13	Cap Screw	7-67-116	4
A14	Counter Balance	3367-00-10-95-001 104320	2
A15	Shim	7-68-190	4
A16	Nut (for U Bolt)	—	2
A17	Bracket	70007919	1
A18	U Bolt	7-03-472	1
A19	O-Ring	7-57-035	2
A20	Threaded Rod End	3367-00-70-72-002 104330	2
A21	Cap Screw	7-65-181	5
A22	Set Screw	7-65-002	1
A23	Cap Screw	7-65-137	1
A24	Baffle	3467-00-70-14-115 104516	1
A25	Gallonage Shim	Specify Color	As Req.
A26	O-Ring	7-57-110	1
A27	Outlet Tee	3367-00-70-88-001 104332	1
A28	Nylon Washer	7-84-118	1
A29	Set Screw	7-65-022	1
A30	Cap Screw	7-65-094	2
A31	Bracket	7-04-467	1
A32	Cap Screw	7-67-003	2
A33	Nut for U Bolt	—	2
A34	U Bolt	7-03-472	1
A35	Nut	7-34-097	1
A36	Yoke	7-10-102	1
A37	Clevis Pin	7-44-353	1
A38	Springs	7-69-538	6
A39	Bolt	7-03-471	1
A40	Cap Screw	7-65-181	1
A41	Nut	7-34-096	1
A42	Bell Crank	3367-00-70-26-001 104327	1
A43	Insert	7-53-047	2
A44	Rod	3367-00-70-72-001 104329	1
A45	Baffle Stem	3467-00-70-79-110 104543	1
A46	Flat Screw	7-60-040	2
A47	Roll Pin	7-44-080	1
A48	Pin	7-45-088	1
A49	Bracket	3467-00-70-14-103 104514	1
A50	Plug	3467-00-70-64-002 104539	1

Figure 3-3A Parts List
Use with Figure 3-3A

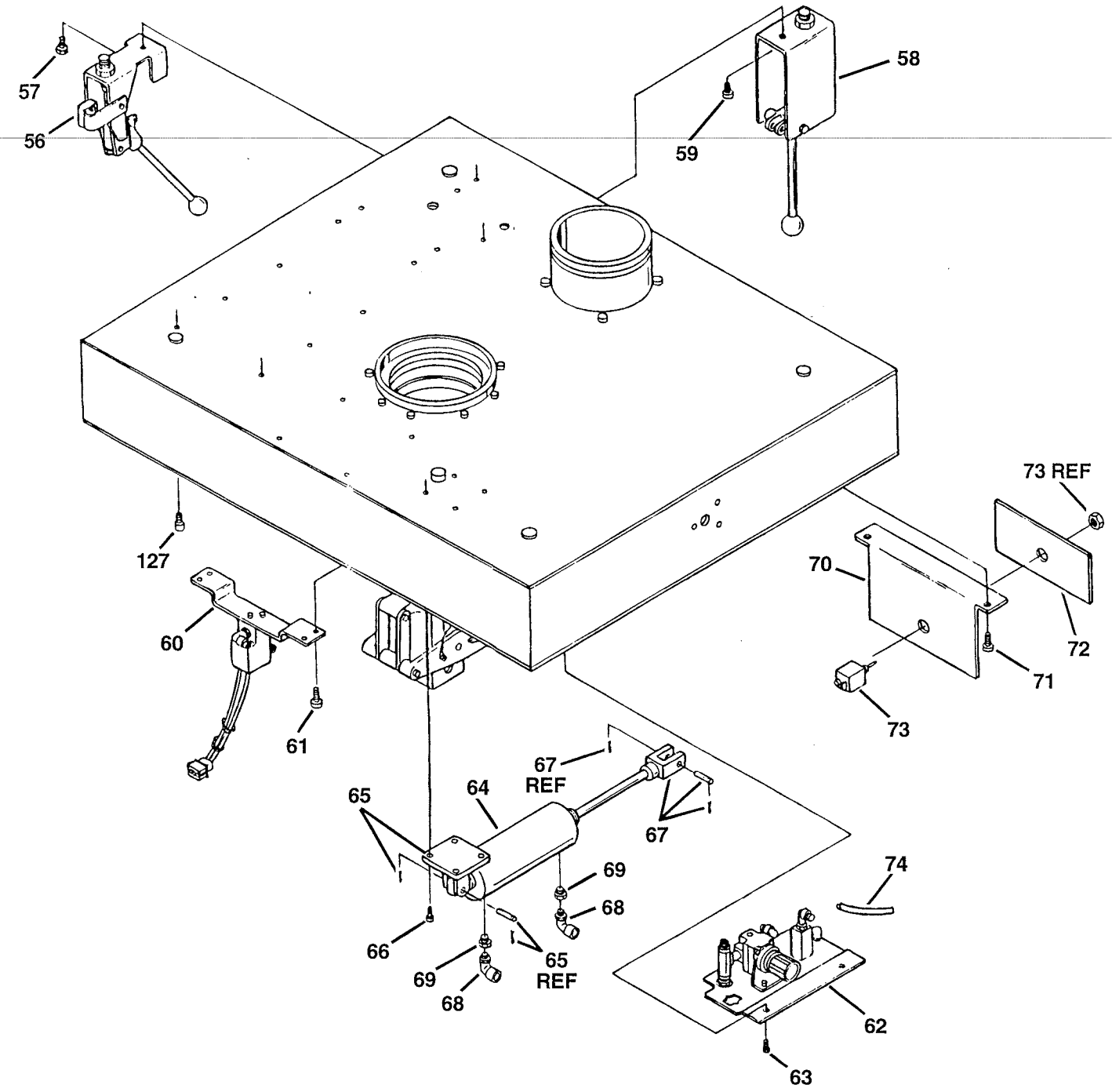


Figure 3-3. Roof Turret Assembly (Sheet 2).

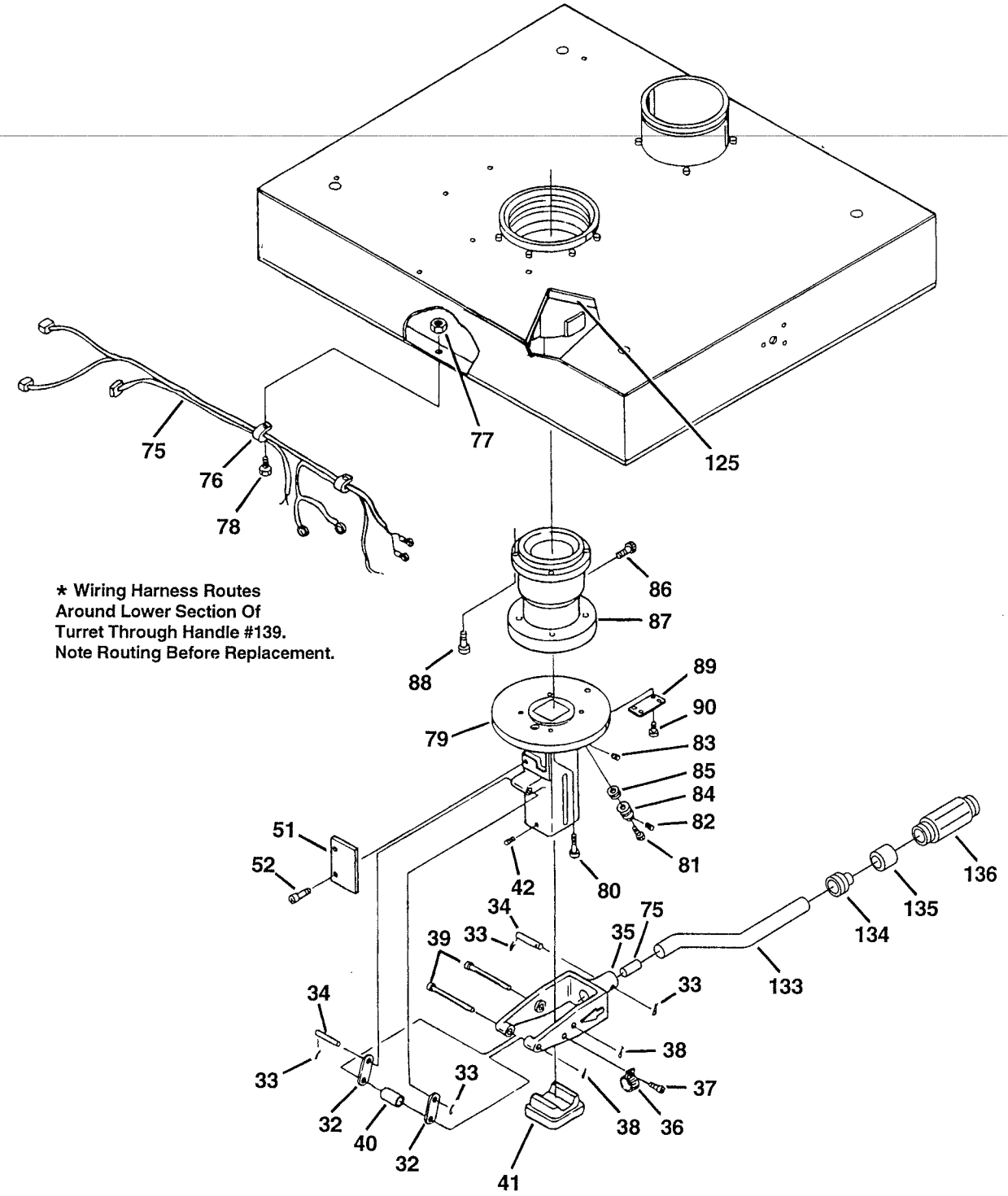


Figure 3-3. Roof Turret Assembly (Sheet 3).

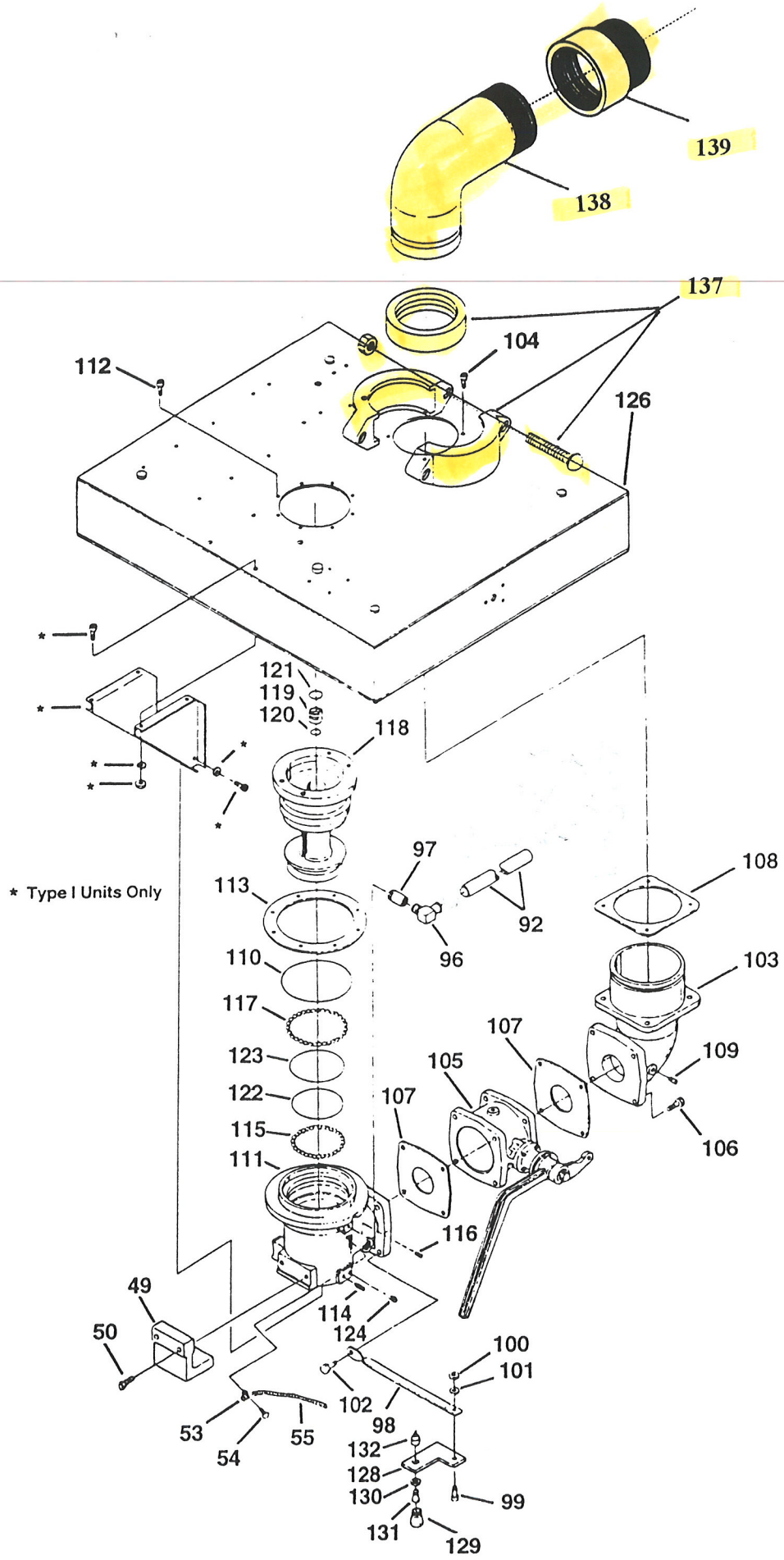


Figure 3-3. Roof Turret Assembly (Sheet 4).

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3		00912	ROOF TURRET ASSEMBLY	REF		
			(SEE FIGURE 3-2 FOR NHA)			
-1		00912	. BAFFLE HEAD	1		
	7-65-096	00912	. SCREWS (OPTIONAL)	8		
-2	7-67-117	00912	. SCREW (AP)	1		
	7-68-095	00912	. SHIM	AR		
-3	7-07-284	00912	. CLAMP	1		
-4	7-66-036	00912	. SCREW (AP)	2		
-5	3467-00-70-77-110	00912	. SLEEVE, PATTERN	1		
-6	7-69-440	00912	. SCREW (AP)	1		
-7	7-44-320	00912	. PIN	1		
-8	7-07-290	00912	. CLEVIS	1		
-9	7-29-144	00912	. UPPER LINK	2		
-10	7-44-080	00912	. PIN (AP)	4		
-11	7-45-088	00912	. PIN (AP)	4		
-12	3467-00-70-88-110	00912	. TEE	1		
-13	7-04-340	00912	. BOLT (AP)	1		
-14	7-57-055	00912.	. O-RING	1		
-15	3467-00-70-14-103	00912	. BRACKET	1		
-16	7-60-040	00912	. SCREW (AP)	4		
-17	3467-00-70-79-110	00912	. BAFFLE STEM	1		
-18	7-57-126	00912	. O-RING	1		
-19	N/A	00912.	. BUSHING	1		
-20	7-57-221	00912	. O-RING	1		
-21	3467-00-70-54-004	00912	. NUT	1		
-22	N/A	00912	. BUSHING	1		
-23	3467-00-70-87-001	00912	. TUBE	1		
-24	3467-00-70-54-003	00912	. NUT	1		
-25	7-57-035	00912	. O-RING	2		
-26	7-57-225	00912	. O-RING	1		
-27	7-57-251	00912	. O-RING	1		
-28	N/A	00912	. BRACKET	2		
-29	N/A	00912	. SCREW (AP)	6		
-30	7-07-276	00912	. CABLE, PATTERN	1		
-31	7-07-275	00912	. CABLE, RATE	1		
-32	7-29-143	00912	. LINK	2		
-33	7-44-168	00912	. PIN (AP)	4		
-34	7-45-085	00912	. PIN (AP)	2		
-35	3467-00-70-14-004	00912	. BRACKET	1		
-36	7-07-189	00912	. CLAMP	1		
-37	7-65-104	00912	. SCREW (AP)	1		
-38	7-44-323	00912	. PIN (AP)	2		
-39	7-45-097	00912	. PIN (AP)	2		
-40	3467-00-70-83-002	00912	. SPACER	1		
-41	7-04-333	00912	. BUMPER	1		
-42	7-44-049	00912	. PIN (AP)	2		
-43	7-69-451	00912	. SHAFT	1		
-44	7-69-438	00912	. SPRING	3		
-45	3467-00-70-84-001	00912	. SIAMESE	1		
-46	7-61-085	00912	. SCREW (AP)	4		
-47	7-57-225	00912	. O-RING	1		
-48	7-57-293	00912	. O-RING	1		
-49	3468-00-70-14-001	00912	. BRACKET	1		
-50	7-65-120	00912	. SCREW (AP)	2		
-51	7-07-314	00912	. FEEDBACK COVER	1		
-52	7-66-043	00912	. SCREW (AP)	2		
-53	7-07-189	00912	. CLAMP	1		
-54	7-65-104	00912	. SCREW (AP)	1		
-55	7-85-020	00912	. WRAP, 38 IN	1		

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3						
-56	3468-00-72-03-002	00912	. RATE CONTROL ASSEMBLY ..... (SEE FIGURE 3-5 FOR DETAILS)	1		
-57	7-66-043	00912	. SCREW (AP)	2		
-58	3468-00-72-03-001	00912	. PATTERN CONTROL ASSEMBLY .... (SEE FIGURE 3-6 FOR DETAILS)	1		
-59	7-66-043	00912	. SCREW (AP)	1		
-60	3468-00-72-91-002	00912	. SOLENOID VALVE ASSEMBLY ..... (SEE FIGURE 3-7 FOR DETAILS)	1		
-61	7-66-043	00912	. SCREW (AP)	4		
-62	3467-00-72-91-003	00912	. OVERRIDE VALVE ASSEMBLY ..... (SEE FIGURE 3-8 FOR DETAILS)	1		
-63	7-63-037	00912	. SCREW (AP)	2		
-64	7-07-273	00912	. AIR CYLINDER	1		
-65	7-69-435	00912	. BRACKET ASSEMBLY	1		
-66	7-65-029	00912	. SCREW (AP)	4		
-67	7-07-279	00912	. CLEVIS, WITH NUT AND PIN	1		
-68	7-10-091	00912	. ELBOW FITTING	2		
-69	7-13-091	00912	. ADAPTER	2		
-70	7-04-329	00912	. SWITCH BRACKET	1		
-71	7-63-037	00912	. SCREW (AP)	2		
-72	7-29-149	00912	. LABEL	1		
-73	7-69-314	00912	. SWITCH	1		
-74	7-21-261	00912	. AIR LINE (322 IN)	1		
-75	7-21-288	00912	. WIRING HARNESS	1		
	7-31-060	00912	. CABLE MOUNT	5		
	7-72-143	00912	. PLASTIC TIEWRAP	6		
-76	7-07-189	00912	. CLAMP	3		
-77	7-35-011	00912	. NUT (AP)	2		
-78	7-63-037	00912	. SCREW (AP)	3		
-79	3467-00-70-97-001	00912	. YOKE	1		
-80	7-66-036	00912	. SCREW (AP)	4		
-81	7-67-047	00912	. SCREW	1		
-82	7-65-042	00912	. SCREW	1		
-83	7-65-025	00912	. SCREW	1		
-84	7-34-086	00912	. NUT	1		
-85	7-69-276	00912	. SPRING	4		
-86	7-65-160	00912	. SCREW (AP)	2		
-87	3468-00-70-45-001	00912	. HANDLE HUB	1		
-88	7-66-036	00912	. SCREW (AP)	4		
-89	7-44-324	00912	. ID PLATE	1		
-90	7-36-045	00912	. NAIL (AP)	4		
-91	7-06-017	00912	. CLAMP	2		
-92	7-21-043	00912	. HOSE	1		
-93	7-13-097	00912	. FITTING	1		
-94	7-13-098	00912	. UNION	1		
-95	7-44-322	00912	. PLUG	1		
-96	7-13-096	00912	. ELBOW FITTING	1		
-97	3467-00-02-28-001	00912	. DRAIN VALVE ASSEMBLY (SEE ..... FIGURE 3-9 FOR DETAILS)	1		
-98	7-69-439	00912	. STRAP	2		
-99	7-67-130	00912	. SCREW (AP)	2		
-100	7-34-082	00912	. NUT (AP)	2		
-101	7-84-090	00912	. WASHER (AP)	2		

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3						
-102	7-61-086 104531	00912	. SCREW (AP)	4		
-103	~~3467-00-70-40-001~~	00912	. INLET	1		
-104	7-67-047	00912	. SCREW (AP)	4		
-105	3467~~-00-72-01-001~~ 0068	00912	. THREE INCH VALVE ASSEMBLY (SEE FIGURE 3-10 FOR DETAILS)	1		
-106	7-61-058	00912	. SCREW (AP)	4		
-107	7-16-044	00912	. GASKET	2		
-108	7-16-043	00912	. GASKET	1		
-109	7-44-011	00912	. PLUG	1		
-110	7-57-294 104518	00912	. O-RING	1		
-111	~~3467-00-70-29-001~~	00912	. ELBOW	1		
-112	7-66-036	00912	. SCREW (AP)	8		
-113	7-16-045	00912	. GASKET	1		
-114	7-42-024	00912	. PLUG	1		
-115	7-04-020	00912	. BALL BEARING	36		
-116	7-42-024	00912	. PLUG	1		
-117	7-04-020 104503	00912	. BALL BEARING	41		
-118	~~3467-00-70-08-001~~	00912	. BASE, SIAMESE	1		
-119	~~3467-00-70-13-002~~	00912	. BUSHING	1		
-120	7-57-054 104505	00912	. O-RING	1		
-121	7-57-293	00912	. O-RING	1		
-122	7-57-068	00912	. O-RING	1		
-123	7-57-078	00912	. O-RING	1		
-124	7-13-191	00912	. FITTING	2		
-125	7-23-017	00912	. INSULATION (SET)	1	1	
-126	7-45-102	00912	. PLATE	1	1	
-127	7-65-025	00912	. SCREW	6	1	
-128	7-04-361	00912	. BRACKET	1	1	
-129	7-29-167	00912	. LENS	1	1	
-130	7-69-475	00912	. SPACER	1		
-131	7-29-168	00912	. LIGHT	1		
-132	7-29-166	00912	. LAMP BODY	1		
-133	~~7-04-325~~ 704615	00912	. HANDLE	1		
-134	~~7-69-473~~ 769606	00912	. DISCHARGE SWITCH	1		
-135	7-04-360	00912	. BUSHING	1		
-136	7-18-071	00912	. HANDLE GRIP	1		
137	7-07-405		• VICTAULIC CPLG. ASSEM.	1		
138	7-10-111		• 90° VICTAULIC ELBOW	1		
139	03300039		• ADAPTER	1		

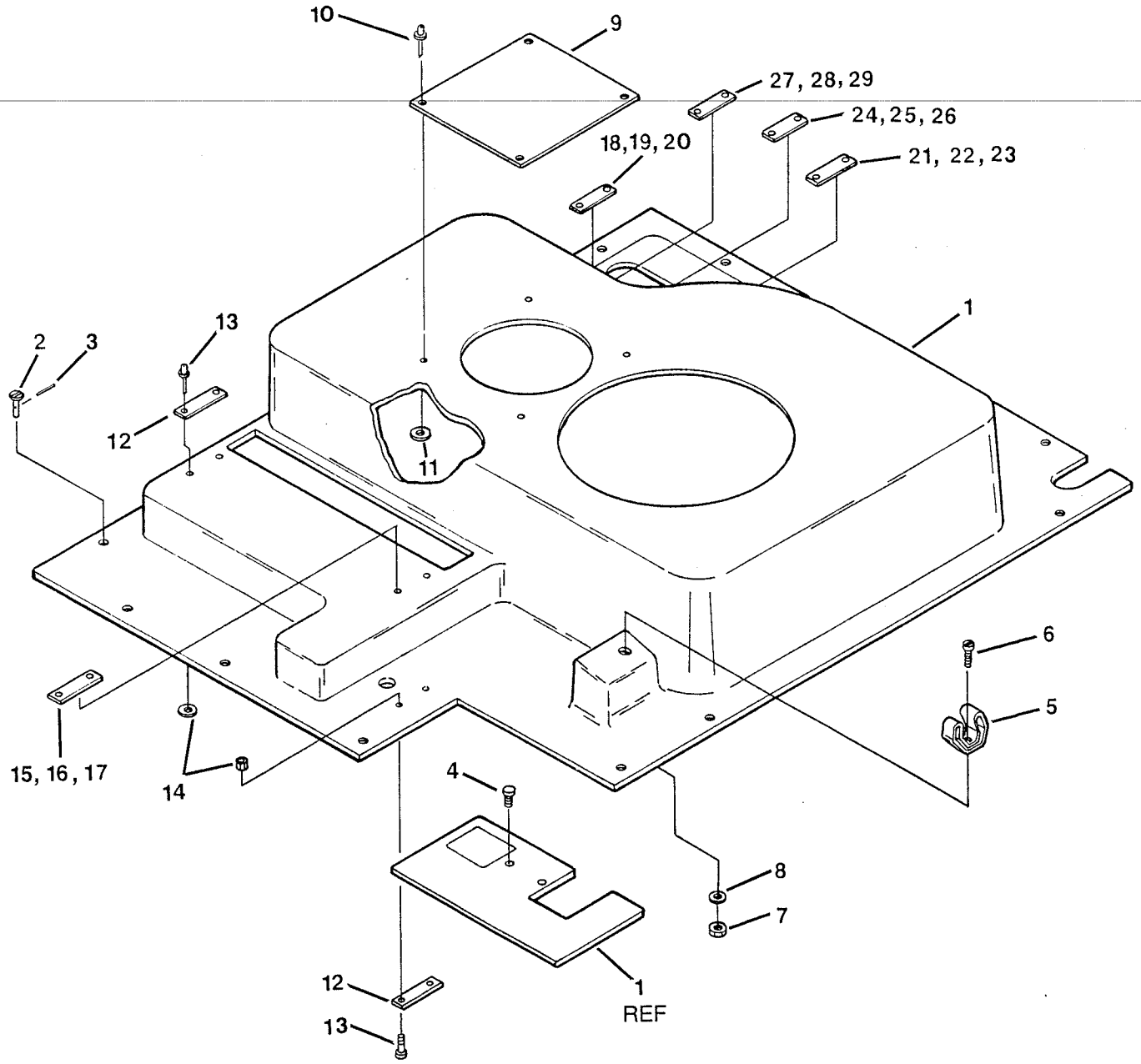


Figure 3-4. False Ceiling.

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-4	3468-00-72-63-001	00912	FALSE CEILING (SEE FIGURE 3-2 FOR NHA)	REF		
-1	70006956	00912	. CEILING	1		
-2	7-69-431	00912	. STUD (AP)	14		
-3	7-69-432	00912	. RETAINER (AP)	14		
-4	7-63-056	00912	. SCREW (AP)	2		
-5	7-07-282	00912	. CLIP	1		
-6	7-63-022	00912	. SCREW (AP)	1		
-7	7-35-017	00912	. NUT (AP)	1		
-8	7-84-098	00912	. WASHER (AP)	2		
-9	7-44-325	00912	. COVER	1		
-10	7-54-054	00912	. RIVET (AP)	4		
-11	7-84-101	00912	. WASHER (AP)	4		
-12	7-29-145	00912	. LABEL, VALVE OPEN	2		
-13	7-54-054	00912	. RIVET (AP)	4		
-14	7-84-101	00912	. WASHER (AP)	4		
-15	7-29-146	00912	. LABEL, VALVE CLOSED	1		
-16	7-54-054	00912	. RIVET (AP)	2		
-17	7-84-101	00912	. WASHER (AP)	2		
-18	7-29-148	00912	. LABEL, LOW FLOW	1		
-19	7-54-054	00912	. RIVET (AP)	2		
-20	7-84-101	00912	. WASHER (AP)	2		
-21	7-29-149	00912	. LABEL, HIGH FLOW	1		
-22	7-54-054	00912	. RIVET (AP)	2		
-23	7-84-101	00912	. WASHER (AP)	2		
-24	7-29-150	00912	. LABEL, DISPERSED	1		
-25	7-54-054	00912	. RIVET (AP)	2		
-26	7-84-101	00912	. WASHER (AP)	2		
-27	7-29-151	00912	. LABEL, SOLID STREAM	1		
-28	7-54-054	00912	. RIVET (AP)	2		
-29	7-84-101	00912	. WASHER (AP)	2		

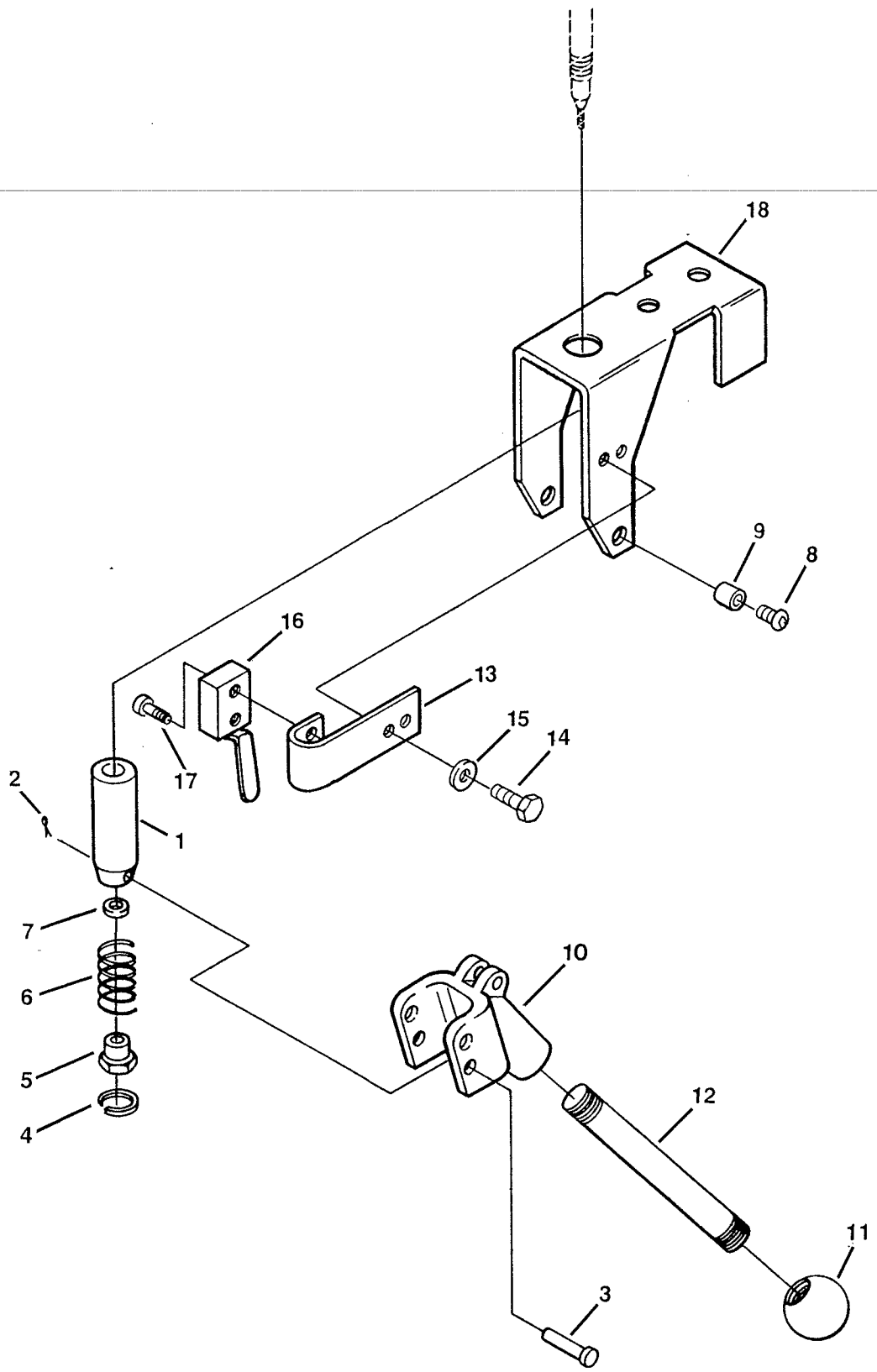


Figure 3-5. Rate Control Assembly.

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-5	3468-00-72-03-002	00912	RATE CONTROL ASSEMBLY (SEE FIGURE 3-3 FOR NHA)	REF		
-1	3467-00-70-45-001	00912	. HOUSING	1		
-2	7-44-317	00912	. PIN (AP)	1		
-3	7-44-316	00912	. PIN (AP)	1		
-4	7-58-128	00912	. SNAP RING	1		
-5	3467-00-70-54-001	00912	. NUT	1		
-6	7-69-436	00912	. SPRING	1		
-7	7-69-483	00912	. SHIM	1		
	7-69-484	00912	. SHIM	1		
-8	7-63-056	00912	. SCREW	2		
-9	7-07-285	00912	. COLLAR	2		
-10	3467-00-70-45-006	00912	. HUB	1		
-11	7-03-080	00912	. BALL	1		
-12	70005786	00912	. ROD	1		
-13	7-04-323	00912	. BRACKET	1		
-14	7-65-027	00912	. SCREW (AP)	2		
-15	7-84-102	00912	. WASHER (AP)	2		
-16	7-69-430	00912	. SWITCH	1		
-17	7-67-094	00912	. SCREW (AP)	2		
-18	7-04-326	00912	. BRACKET	1		

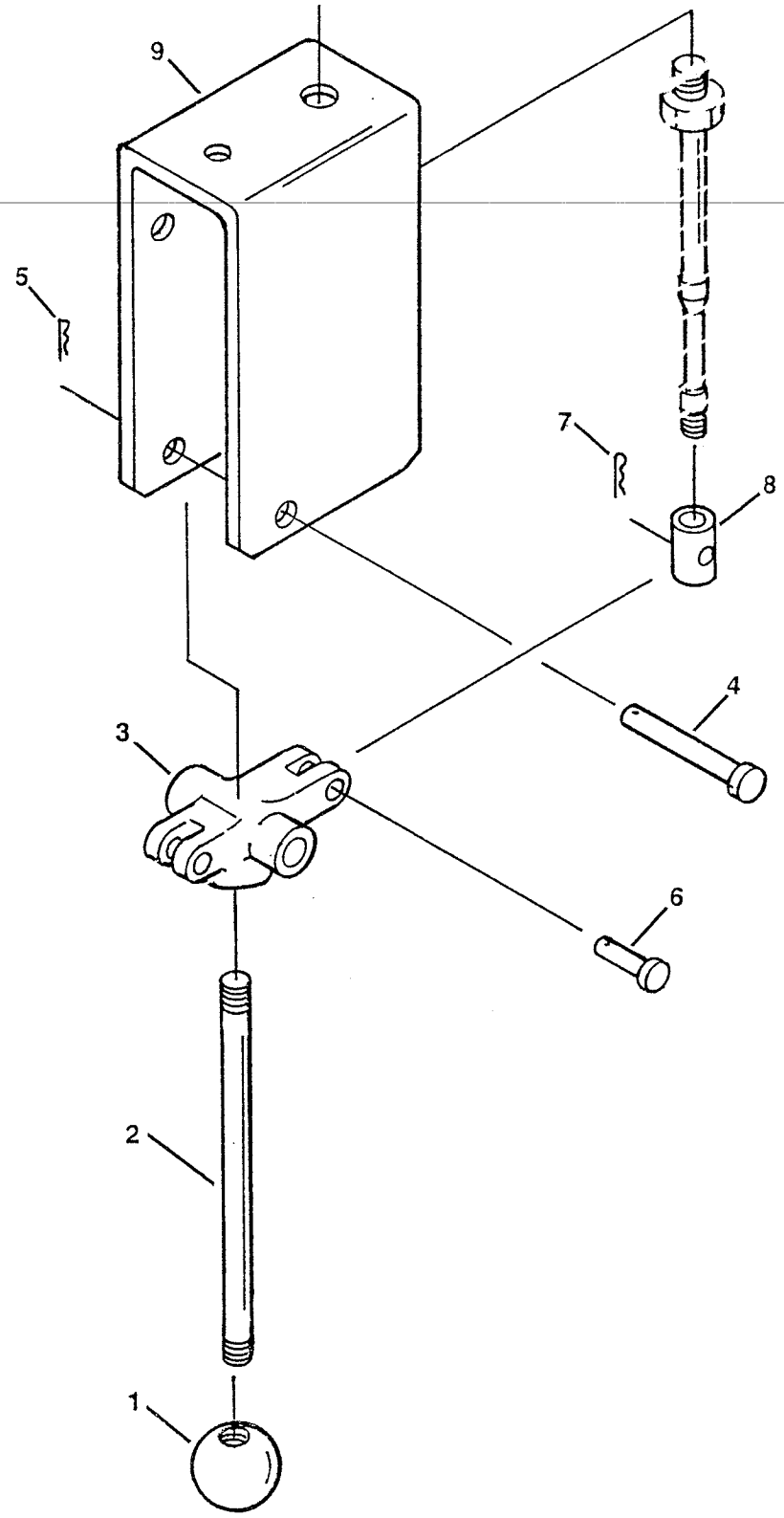


Figure 3-6. Pattern Control Assembly.

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-6	3468-00-72-03-001	00912	PATTERN CONTROL ASSEMBLY ..... (SEE FIGURE 3-3 FOR NHA)	REF		
-1	7-03-080	00912	. BALL	1		
-2	70005786	00912	. ROD	1		
-3	3467-00-70-45-003	00912	. HUB	1		
-4	7-44-319	00912	. PIN (AP)	1		
-5	7-44-323	00912	. PIN (AP)	1		
-6	7-44-318	00912	. PIN (AP)	1		
-7	7-44-317	00912	. PIN(AP)	1		
-8	3467-00-70-34-001	00912	. FITTING	1		
-9	7-04-327	00912	. BRACKET	1		

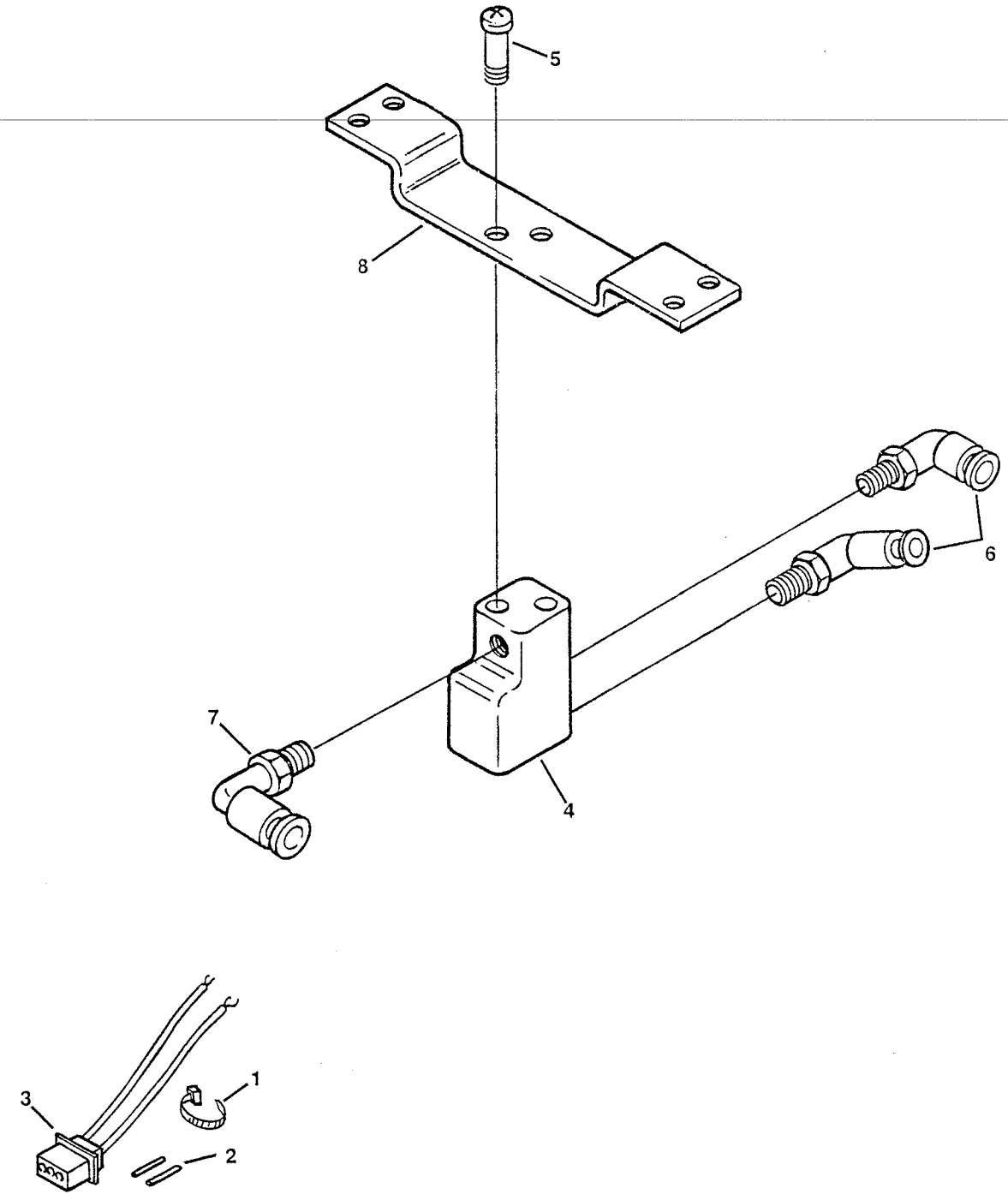


Figure 3-7. Solenoid Valve Assembly.

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-7	3468-00-72-91-002	00912	SOLENOID VALVE ASSEMBLY ..... (SEE FIGURE 3-3 FOR NHA)	REF		
-1	7-72-143	00912	. TIE WRAP	2		
-2	7-07-296	00912	. PIN	2		
-3	7-07-294	00912	. HOUSING	1		
-5	7-79-062	00912	. VALVE	1		
-6	7-65-152	00912	. SCREW (AP)	2		
-7	7-10-091	00912	. ELBOW FITTING	2		
-8	7-10-091	00912	. ELBOW FITTING	1		
-9	7-04-322	00912	. BRACKET	1		

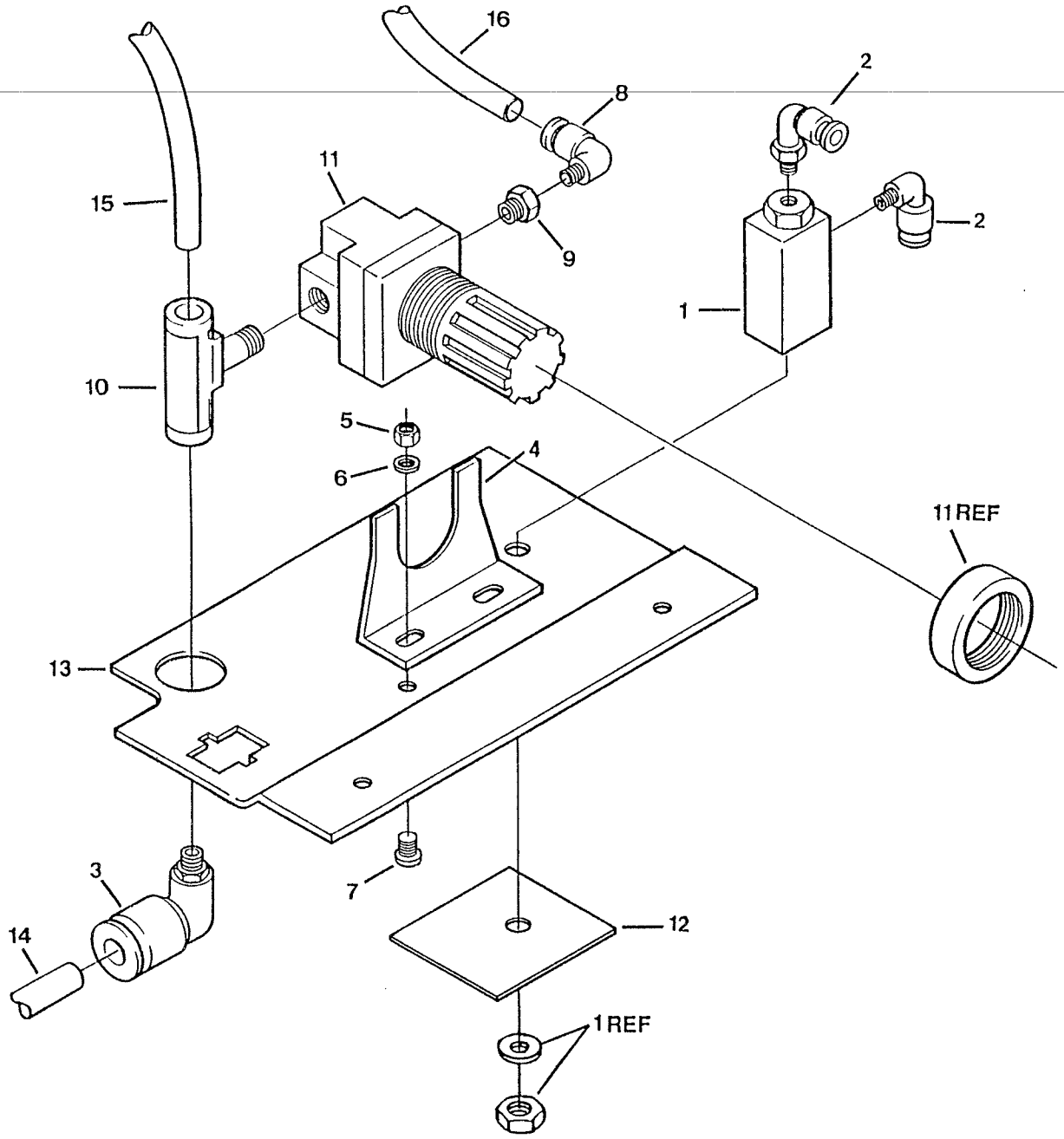


Figure 3-8. Override Valve Assembly.

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-8	3467-00-72-91-003	00912	OVERRIDE VALVE ASSEMBLY	REF		
			(SEE FIGURE 3-3 FOR NHA)			
-1	7-79-063	00912	. VALVE	1		
-2	7-10-091	00912	. ELBOW FITTING	2		
-3	7-13-092	00912	. ELBOW FITTING	1		
-4	7-04-306	00912	. BRACKET	1		
-5	7-35-011	00912	. NUT (AP)	2		
-6	7-84-072	00912	. WASHER (AP)	2		
-7	7-63-037	00912	. SCREW (AP)	2		
-8	7-10-091	00912	. ELBOW FITTING	1		
-9	7-13-091	00912	. ADAPTER FITTING	1		
-10	7-13-094	00912	. TEE FITTING	1		
-11	7-58-195	00912	. REGULATOR	1		
-12	7-29-147	00912	. LABEL	1		
-13	7-04-330	00912	. BRACKET	1		

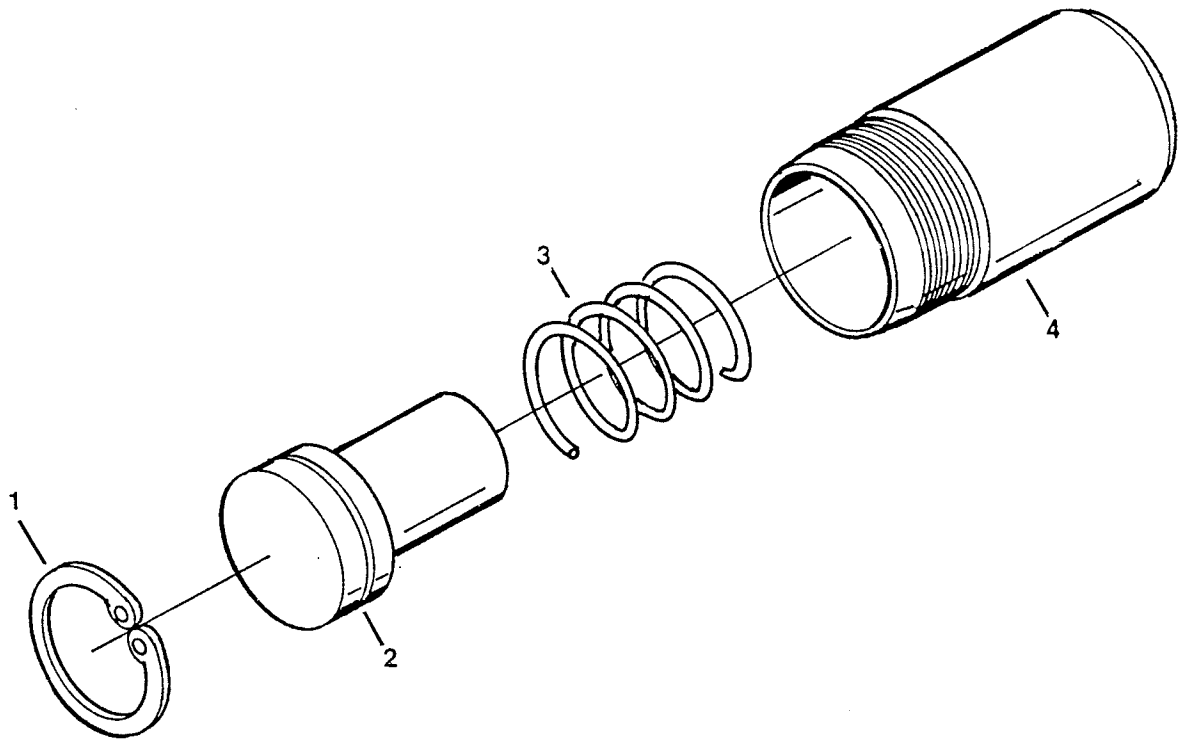


Figure 3-9. Drain Valve Assembly.

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-9	3467-00-02-28-001	00912	DRAIN VALVE ASSEMBLY (SEE FIGURE 3-3 FOR NHA)	REF		
-1	7-58-127	00912	. RING	1		
-2	7-45-087	00912	. POPPET	1		
-3	7-69-437	00912	. SPRING	1		
-4	7-04-319	00912	. BODY	1		

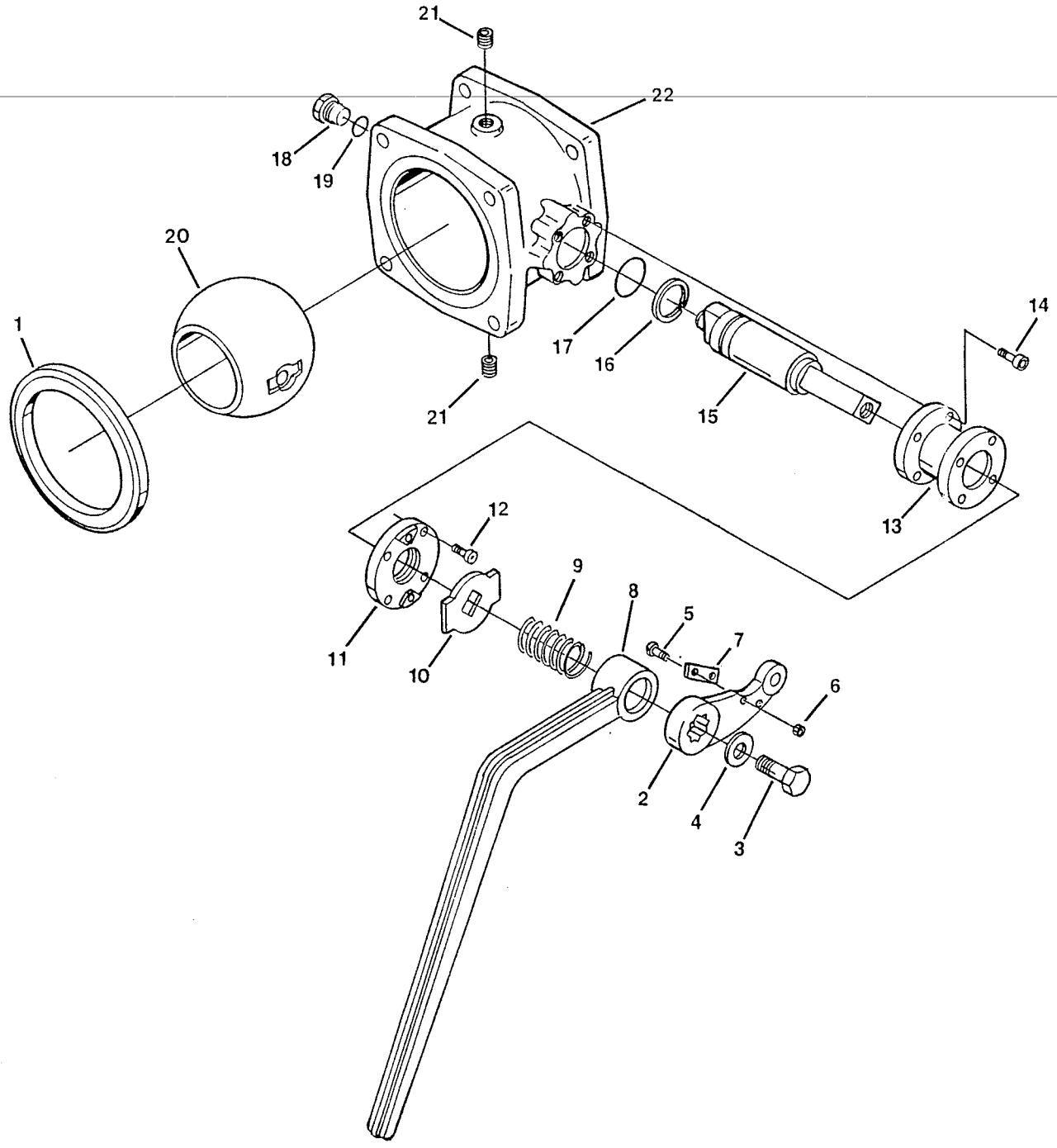


Figure 3-10. Three Inch Valve Assembly.

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-10	3467-00-72-91-001	00912	THREE INCH VALVE ASSEMBLY ..... (SEE FIGURE 3-3 FOR NHA)	REF		
-1	7-69-181	00912	. SEAT	2		
-2	3467-00-70-03-003	00912	. CYLINDER ARM	1		
-3	7-61-065	00912	. SCREW (AP)	1		
-4	7-84-034	00912	. WASHER (AP)	1		
-5	7-67-128	00912	. SCREW (AP)	2		
-6	7-34-090	00912	. HEX NUT	2		
-7	7-69-474	00912	. SWITCH	1		
-8	3467-00-70-41-001	00912	. VALVE HANDLE	1		
-9	7-68-235	00912	. SPRING	1		
-10	7-42-092	00912	. PLATE	1		
-11	7-42-089	00912	. PLATE	1		
-12	7-65-028	00912	. SCREW (AP)	4		
-13	7-21-275	00912	. TRUNNION HOUSING	1		
-14	7-67-086	00912	. SCREW (AP)	4		
-15	7-72-145	00912	. TRUNNION	1		
-16	7-58-154	00912	. RETAINING RING (AP)	1		
-17	7-57-010	00912	. O-RING	1		
-18	7-73-095	00912	. THREADED TRUNNION	1		
-19	7-57-217	00912	. O-RING	1		
-20	7830-00-80-04-001	00912	. BALL	1		
-21	7-44-011	00912	. PIPE PLUG	3		
-22	40008773	00912	. VALVE BODY	1		

Appendix A
EXPENDABLE SUPPLIES AND MATERIALS LIST

A-1. Scope. This appendix lists expendable supplies and materials needed to maintain and repair the roof turret.

A-2. Explanation of Columns.

Column 1 - Item Number. This number is assigned to each entry in the list and is referenced in the narrative instructions.

Column 2 - Description. Indicates the federal item name and, if required, a description to help identify the item. Commercial names or descriptions are used if no federal item name is available.

Table A-1. Expendable Supplies and Materials List

ITEM NUMBER	DESCRIPTION
1	Grease, Silicone
2	Loctite 222
3	Loctite 277 MIL-S-46163
4	Lubriplate, 130AA
5	Oil, Lubricating, Gear MIL-L-2105 GO-85/140 1-Qt. Can 5-Gal. Container 55-Gal. Drum Oil, Lubricating, Gear MIL-L-2105 GO-75 1-Qt. Can 5-Gal. Container 55-Gal. Drum
6	Polyeurethane Sealant Sikaflex-1A, Fed-Spec TT-S-00230C Type II Class A, Sika Corporation
7	Sealant, PermaLok, LH050
8	Lubricant, Rust Preventive
9	Solvent, Dry Cleaning, SD2, Fed. Spec. P-D-680 Type II 1-Qt. Can 1-Gal. Can 5-Gal. Container 55-Gal. Drum
10	Cleaner, Sikkens M600
11	Sealant, Silicone RTV MIL-A46106, Type I (Black), 5-Oz. Tube
12	Loctite, 680
13	Adhesive, Latex, For Insulation MACCO Adhesives, The Glidden Co., Cleveland, OH 44115 Product No. 0600413

Appendix B
ELECTRICAL SCHEMATICS

B-1. General. Appendix B contains schematic drawings which identify the electrical components and wiring circuit on the roof turret. Refer to these drawings when trouble-shooting the electrical system.

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3						
-53	3467-00-72-39-001	00912	. ELEVATION GEARBOX ASSEMBLY .. (SEE FIGURE 3-7 FOR DETAILS)	1		
-54	7-65-120	00912	. SCREW (AP)	2		
-55	3467-00-71-63-001	00912	. ELEVATION FEEDBACK ASSEMBLY . (SEE FIGURE 3-8 FOR DETAILS)	1		
-56	7-66-043	00912	. SCREW (AP)	2		
-57	7-07-189	00912	. CLAMP	1		
-58	7-65-104	00912	. SCREW (AP)	1		
-59	7-85-020	00912	. WRAP, 20 IN	1		
-60	7-07-288	00912	. CLAMP	1		
-61	7-63-038	00912	. SCREW (AP)	2		
-62	7-04-158	00912	. PIN	1		
-63	7-06-254	00912	. CHAIN	1		
-64	7-07-286	00912	. COVER	1		
-65	3467-00-72-03-102	00912	. RATE CONTROL ASSEMBLY ..... (SEE FIGURE 3-9 FOR DETAILS)	1		
-66	7-66-043	00912	. SCREW (AP)	2		
-67	3467-00-72-03-001	00912	. PATTERN CONTROL ASSEMBLY .... (SEE FIGURE 3-10 FOR DETAILS)	1		
-68	7-66-043	00912	. SCREW (AP)	1		
-69	3467-00-72-91-002	00912	. SOLENOID VALVE ASSEMBLY ..... (SEE FIGURE 3-11 FOR DETAILS)	1		
-70	7-66-043	00912	. SCREW (AP)	4		
-71	3467-00-72-91-003	00912	. OVERRIDE VALVE ASSEMBLY ..... (SEE FIGURE 3-12 FOR DETAILS)	1		
-72	7-63-037	00912	. SCREW (AP)	2		
-73	7-07-273	00912	. AIR CYLINDER	1		
-74	7-69-435	00912	. BRACKET WITH PIN AND COTTER .. PIN	1		
-75	7-65-029	00912	. SCREW (AP)	4		
-76	7-07-279	00912	. CLEVIS, WITH NUT AND PIN	1		
-77	7-10-091	00912	. ELBOW	2		
-78	7-13-091	00912	. ADAPTER	2		
-79	7-04-329	00912	. SWITCH BRACKET	1		
-80	7-63-037	00912	. SCREW (AP)	2		
-81	7-29-152	00912	. LABEL	1		
-82	7-69-314	00912	. SWITCH	2		
-83	7-79-064	00912	. VALVE	1		
-84	7-10-091	00912	. ELBOW	3		
-85	7-21-261	00912	. HOSE (322 IN)	1		
-86	7-04-346	00912	. CIRCUIT BOARD	1		
-87	7-61-041	00912	. SCREW (AP)	6		
-88	7-69-444	00912	. STANDOFF (AP)	6		
-89	7-65-076	00912	. SCREW (AP)	6		
-90	7-58-141	00912	. . RELAY	5		
-91	7000-0131	00912	. OSCILLATION LIMIT CONTROL ..... ASSEMBLY	1		
-92	7-66-049	00912	. SCREW (AP)	4		
-93	7-84-072	00912	. WASHER (AP)	3		
-94	7-07-189	00912	. CLAMP (AP)	1		
-95	7-21-277	00912	. WIRING HARNESS	1		
-96	7-07-292	00912	. POWER CABLE	1		

WITH OUT DC

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3						
-53	3467-00-72-39-001	00912	. ELEVATION GEARBOX ASSEMBLY .. (SEE FIGURE 3-7 FOR DETAILS)	1		
-54	7-65-120	00912	. SCREW (AP)	2		
-55	3467-00-71-63-001	00912	. ELEVATION FEEDBACK ASSEMBLY . (SEE FIGURE 3-8 FOR DETAILS)	1		
-56	7-66-043	00912	. SCREW (AP)	2		
-57	7-07-189	00912	. CLAMP	1		
-58	7-65-104	00912	. SCREW (AP)	1		
-59	7-85-020	00912	. WRAP, 20 IN	1		
-60	7-07-288	00912	. CLAMP	1		
-61	7-63-038	00912	. SCREW (AP)	2		
-62	7-04-158	00912	. PIN	1		
-63	7-06-254	00912	. CHAIN	1		
-64	7-07-286	00912	. COVER	1		
-65	3467-00-72-03-102	00912	. RATE CONTROL ASSEMBLY ..... (SEE FIGURE 3-9 FOR DETAILS)	1		
-66	7-66-043	00912	. SCREW (AP)	2		
-67	3467-00-72-03-001	00912	. PATTERN CONTROL ASSEMBLY .... (SEE FIGURE 3-10 FOR DETAILS)	1		
-68	7-66-043	00912	. SCREW (AP)	1		
-69	3467-00-72-91-002	00912	. SOLENOID VALVE ASSEMBLY ..... (SEE FIGURE 3-11 FOR DETAILS)	1		
-70	7-66-043	00912	. SCREW (AP)	4		
-71	3467-00-72-91-003	00912	. OVERRIDE VALVE ASSEMBLY ..... (SEE FIGURE 3-12 FOR DETAILS)	1		
-72	7-63-037	00912	. SCREW (AP)	2		
-73	7-07-273	00912	. AIR CYLINDER	1		
-74	7-69-435	00912	. BRACKET WITH PIN AND COTTER .. PIN	1		
-75	7-65-029	00912	. SCREW (AP)	4		
-76	7-07-279	00912	. CLEVIS, WITH NUT AND PIN	1		
-77	7-10-091	00912	. ELBOW	2		
-78	7-13-091	00912	. ADAPTER	2		
-79	7-04-342	00912	. SWITCH BRACKET	1		
-80	7-63-037	00912	. SCREW (AP)	2		
-81	7-29-159	00912	. LABEL	1		
-82	7-69-314	00912	. SWITCH	2		
-83	7-79-064	00912	. VALVE	1		
-84	7-10-091	00912	. ELBOW	3		
-85	7-21-261	00912	. HOSE (322 IN)	1		
-86	7-04-346	00912	. CIRCUIT BOARD	1		
-87	7-61-041	00912	. SCREW (AP)	6		
-88	7-69-444	00912	. STANDOFF (AP)	6		
-89	7-65-076	00912	. SCREW (AP)	6		
-90	7-58-141	00912	. . RELAY	5		
-91	70006131	00912	. OSCILLATION LIMIT CONTROL ..... ASSEMBLY	1		
-92	7-66-049	00912	. SCREW (AP)	4		
-93	7-84-072	00912	. WASHER (AP)	3		
-94	7-07-189	00912	. CLAMP (AP)	1		
-95	7-21-284	00912	. WIRING HARNESS	1		
-96	7-07-292	00912	. POWER CABLE	1		

WITH DC

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3						
-152	7-13-191	00912	. FITTING	2		
-153	7-06-017	00912	. CLAMP	2		
-154	7-21-043	00912	. HOSE	1		
-155	7-13-097	00912	. FITTING	1		
-156	7-13-098	00912	. UNION	1		
-157	7-44-322	00912	. PLUG	1		
-161	7-23-018	00912	. INSULATION (SET)	1		
-162	7000573 1	00912	. PLATE	1		
-163	7-69462		. SWITCH	1		

WITH D.C

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3						
-97	7-07-189	00912	. CLAMP	3		
-98	7-35-011	00912	. NUT (AP)	3		
-99	7-63-037	00912	. SCREW (AP)	3		
-100	7-21-273	00912	. WIRING HARNESS	1		
-101	3467-00-70-97-001	00912	. YOKE	1		
-102	7-66-036	00912	. SCREW (AP)	4		
-103	70005399	00912	. GEAR	1		
-104	7-65-029	00912	. SCREW (AP)	2		
-105	7-69-443	00912	. STOP	2		
-106	3467-00-70-01-003	00912	. ADAPTER	1		
-107	7-44-086	00912	. PIN (AP)	1		
-108	7-65-157	00912	. SCREW (AP)	2		
-109	7-67-047	00912	. SCREW	1		
-110	7-65-042	00912	. SCREW	1		
-111	7-65-025	00912	. SCREW	1		
-112	7-34-086	00912	. NUT	1		
-113	7-69-276	00912	. SPRING	4		
-114	7-69-452	00912	. SCREW, ELEVATION	1		
-115	3467-00-70-01-001	00912	. BASE, SIAMESE	1		
-116	7-66-036	00912	. SCREW (AP)	4		
-117	7-42-096	00912	. PLATE	1		
-118	7-65-028	00912	. SCREW (AP)	4		
-119	7-04-018	00912	. BALL BEARING	78		
-120	70005322	00912	. NUT , GEAR	1		
-121	7-44-321	00912	. ID PLATE	1		
-122	7-36-045	00912	. NAIL (AP)	4		
-123	7-10-093	00912	. ELBOW	1		
-124	3467-00-02-28-001	00912	. DRAIN VALVE ASSEMBLY (SEE FIGURE 3-13 FOR DETAILS)	1		
-125	7-69-439	00912	. STRAP	2		
-126	7-67-130	00912	. SCREW (AP)	2		
-127	7-34-082	00912	. NUT (AP)	2		
-128	7-84-090	00912	. WASHER (AP)	2		
-129	7-04-320	00912	. BRACKET	2		
-130	7-61-086	00912	. SCREW (AP)	4		
-131	3467-00-70-46-001	00912	. INLET	1		
-132	7-67-047	00912	. SCREW (AP)	4		
-133	3467-00-72-91-001	00912	. THREE INCH VALVE ASSEMBLY (SEE FIGURE 3-14 FOR DETAILS)	1		
-134	7-61-058	00912	. SCREW (AP)	4		
-135	7-16-044	00912	. GASKET	2		
-136	7-16-043	00912	. GASKET	1		
-137	7-44-011	00912	. PLUG	1		
-138	7-57-294	00912	. O-RING	1		
-139	3467-00-70-29-001	00912	. ELBOW	1		
-140	7-66-036	00912	. SCREW (AP)	8		
-141	7-16-045	00912	. GASKET	1		
-142	7-42-024	00912	. PLUG	1		
-143	7-04-020	00912	. BALL BEARING	36		
-144	7-42-024	00912	. PLUG	1		
-145	7-04-020	00912	. BALL BEARING	41		
-146	3467-00-70-09-001	00912	. BASE, SIAMESE	1		
-147	3467-00-70-13-002	00912	. BUSHING	1		
-148	7-57-054	00912	. O-RING	1		
-149	7-57-293	00912	. O-RING	1		
-150	7-57-068	00912	. O-RING	1		
-151	7-57-078	00912	. O-RING	1		

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3						
-152	7-13-191	00912	. FITTING	2		
-153	7-06-017	00912	. CLAMP	2		
-154	7-21-043	00912	. HOSE	1		
-155	7-13-097	00912	. FITTING	1		
-156	7-13-098	00912	. UNION	1		
-157	7-44-322	00912	. PLUG	1		
-161	7-23-018	00912	. INSULATION (SET)	1		
-162	70005731	00912	. PLATE	1		

W/O DC

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3	3467-00-71-88-10[illegible]	00912	ROOF TURRET ASSEMBLY ..... (SEE FIGURE 3-2 FOR NHA)	REF		
-1	3467-00-70-14-102	00912	. BAFFLE HEAD	1		
-2	7-67-117	00912	. SCREW (AP)	1		
	7-68-097	00912	. SHIM	AR		
-3	7-07-284	00912	. CLAMP	1		
-4	7-66-036	00912	. SCREW (AP)	2		
-5	3467-00-70-77-001	00912	. SLEEVE, PATTERN	1		
-6	7-69-440	00912	. SCREW (AP)	1		
-7	7-44-320	00912	. PIN	1		
-8	7-07-304	00912	. CLEVIS	1		
-9	7-29-144	00912	. UPPER LINK	2		
-10	7-44-080	00912	. PIN (AP)	4		
-11	7-45-088	00912	. PIN (AP)	4		
-12	3467-00-70-88-1[illegible]					
-13	7-04-340					
-14	7-57-055					
-15	3467-00-70-14-1[illegible]					
-16	7-60-040					
-17	3467-00-70-79-00					
-18	7-57-126					
-19	3467-00-70-13-10					
-20	7-57-221					
-21	3467-00-70-54-00					
-22	3467-00-70-87-00					
-23	3467-00-70-54-00					
-24	7-57-035					
-25	7-57-225					
-26	7-57-076					
-29	7-07-276					
-30	7-07-275					
-31	7-04-158					
-32	7-61-041					
-33	7-06-254					
-34	7-29-143		. LINK	2		
-35	7-44-168	00912	. PIN (AP)	2		
-36	7-45-085	00912	. PIN (AP)	1		
-37	3467-00-70-14-004	00912	. BRACKET	1		
-38	7-44-323	00912	. PIN (AP)	2		
-39	7-45-097	00912	. PIN (AP)	2		
-40	3467-00-70-83-002	00912	. SPACER	1		
-41	7-04-333	00912	. BUMPER	1		
-42	7-44-049	00912	. PIN (AP)	2		
-43	7-69-451	00912	. SHAFT	1		
-44	7-69-438	00912	. SPRING	3		
-45	3467-00-70-84-001	00912	. SIAMESE	1		
-46	7-61-085	00912	. SCREW (AP)	4		
-47	7-57-225	00912	. O-RING	1		
-48	7-57-293	00912	. O-RING	1		
-49	3467-00-71-63-002	00912	. ROTATION FEEDBACK ASSEMBLY .. (SEE FIGURE 3-5 FOR DETAILS)	1		
-50	7-66-043	00912	. SCREW (AP)	2		
-51	3467-00-72-39-002	00912	. ROTATION GEARBOX ASSEMBLY ... (SEE FIGURE 3-6 FOR DETAILS)	1		
-52	7-67-047	00912	. SCREW (AP)	2		

New copy, but master stays the same

1 copy for Dick M.
Roof Turret
Tech. 3467

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3	3467-00-71-88-101	00912	ROOF TURRET ASSEMBLY ..... (SEE FIGURE 3-2 FOR NHA)	REF		
-1	3467-00-70-14-102	00912	. BAFFLE HEAD	1		
-2	7-67-117	00912	. SCREW (AP)	1		
	7-68-097	00912	. SHIM	AR		
-3	7-07-284	00912	. CLAMP	1		
-4	7-66-036	00912	. SCREW (AP)	2		
-5	3467-00-70-77-001	00912	. SLEEVE, PATTERN	1		
-6	7-69-440	00912	. SCREW (AP)	1		
-7	7-44-320	00912	. PIN	1		
-8	7-07-304	00912	. CLEVIS	1		
-9	7-29-144	00912	. UPPER LINK	2		
-10	7-44-080	00912	. PIN (AP)	4		
-11	7-45-088	00912	. PIN (AP)	4		
-12	3467-00-70-88-102	00912	. TEE	1		
-13	7-04-340	00912	. BOLT (AP)	1		
-14	7-57-055	00912.	. O-RING	1		
-15	3467-00-70-14-103	00912	. BRACKET	1		
-16	7-60-040	00912	. SCREW (AP)	4		
-17	3467-00-70-79-001	00912	. BAFFLE STEM	1		
-18	7-57-126	00912	. O-RING	1		
-19	3467-00-70-13-103	00912.	. BUSHING	1		
-20	7-57-221	00912	. O-RING	1		
-21	3467-00-70-54-004	00912	. NUT	1		
-22	3467-00-70-87-001	00912	. TUBE	1		
-23	3467-00-70-54-003	00912	. NUT	1		
-24	7-57-035	00912	. O-RING	2		
-25	7-57-225	00912	. O-RING	1		
-26	7-57-076	00912	. O-RING	1		
-29	7-07-276	00912	. CABLE, PATTERN	1		
-30	7-07-275	00912	. CABLE, RATE	1		
-31	7-04-158	00912	. PIN	1		
-32	7-61-041	00912	. SCREW (AP)	1		
-33	7-06-254	00912	. CHAIN (AP)	1		
-34	7-29-143	00912	. LINK	2		
-35	7-44-168	00912	. PIN (AP)	2		
-36	7-45-085	00912	. PIN (AP)	1		
-37	3467-00-70-14-004	00912	. BRACKET	1		
-38	7-44-323	00912	. PIN (AP)	2		
-39	7-45-097	00912	. PIN (AP)	2		
-40	3467-00-70-83-002	00912	. SPACER	1		
-41	7-04-333	00912	. BUMPER	1		
-42	7-44-049	00912	. PIN (AP)	2		
-43	7-69-451	00912	. SHAFT	1		
-44	7-69-438	00912	. SPRING	3		
-45	3467-00-70-84-001	00912	. SIAMESE	1		
-46	7-61-085	00912	. SCREW (AP)	4		
-47	7-57-225	00912	. O-RING	1		
-48	7-57-293	00912	. O-RING	1		
-49	3467-00-71-63-002	00912	. ROTATION FEEDBACK ASSEMBLY .. (SEE FIGURE 3-5 FOR DETAILS)	1		
-50	7-66-043	00912	. SCREW (AP)	2		
-51	3467-00-72-39-002	00912	. ROTATION GEARBOX ASSEMBLY ... (SEE FIGURE 3-6 FOR DETAILS)	1		
-52	7-67-047	00912	. SCREW (AP)	2		

375-750

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3	3467-00-71-88-110	00912	ROOF TURRET ASSEMBLY ..... (SEE FIGURE 3-2 FOR NHA)	REF		
-1	3467-00-70-14-110	00912	. BAFFLE HEAD	1		
-2	7-67-117	00912	. SCREW (AP)	1		
	7-68-097	00912	. SHIM	AR		
-3	7-07-284	00912	. CLAMP	1		
-4	7-66-036	00912	. SCREW (AP)	2		
-5	3467-00-70-77-110	00912	. SLEEVE, PATTERN	1		
-6	7-69-440	00912	. SCREW (AP)	1		
-7	7-44-320	00912	. PIN	1		
-8	7-07-304	00912	. CLEVIS	1		
-9	7-29-144	00912	. UPPER LINK	2		
-10	7-44-080	00912	. PIN (AP)	4		
-11	7-45-088	00912	. PIN (AP)	4		
-12	3467-00-70-88-110	00912	. TEE	1		
-13	7-04-340	00912	. BOLT (AP)	1		
-14	7-57-055	00912.	. O-RING	1		
-15	3467-00-70-14-103	00912	. BRACKET	1		
-16	7-60-040	00912	. SCREW (AP)	4		
-17	3467-00-70-79-110	00912	. BAFFLE STEM	1		
-18	7-57-110	00912	. O-RING	1		
		00912.	. .....			
-20	7-57-221	00912	. O-RING	1		
-21	3467-00-70-54-004	00912	. NUT	1		
-22	3467-00-70-87-001	00912	. TUBE	1		
-23	3467-00-70-54-003	00912	. NUT	1		
-24	7-57-035	00912	. O-RING	2		
-25	7-57-251	00912	. O-RING	1		
-26	7-57-251	00912	. O-RING	1		
			. .....			
			. .....			
-29	7-07-276	00912	. CABLE, PATTERN	1		
-30	7-07-275	00912	. CABLE, RATE	1		
-31	7-04-158	00912	. PIN	1		
-32	7-61-041	00912	. SCREW (AP)	1		
-33	7-06-254	00912	. CHAIN (AP)	1		
-34	7-29-143	00912	. LINK	2		
-35	7-44-168	00912	. PIN (AP)	2		
-36	7-45-085	00912	. PIN (AP)	1		
-37	3467-00-70-14-004	00912	. BRACKET	1		
-38	7-44-323	00912	. PIN (AP)	2		
-39	7-45-097	00912	. PIN (AP)	2		
-40	3467-00-70-83-002	00912	. SPACER	1		
-41	7-04-333	00912	. BUMPER	1		
-42	7-44-049	00912	. PIN (AP)	2		
-43	7-69-451	00912	. SHAFT	1		
-44	7-69-438	00912	. SPRING	3		
-45	3467-00-70-84-001	00912	. SIAMESE	1		
-46	7-61-085	00912	. SCREW (AP)	4		
-47	7-57-225	00912	. O-RING	1		
-48	7-57-293	00912	. O-RING	1		
-49	3467-00-71-63-002	00912	. ROTATION FEEDBACK ASSEMBLY .. (SEE FIGURE 3-5 FOR DETAILS)	1		
-50	7-66-043	00912	. SCREW (AP)	2		
-51	3467-00-72-39-002	00912	. ROTATION GEARBOX ASSEMBLY ... (SEE FIGURE 3-6 FOR DETAILS)	1		
-52	7-67-047	00912	. SCREW (AP)	2		

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3						
-152	7-13-191	00912	. FITTING	2		
-153	7-06-017	00912	. CLAMP	2		
-154	7-21-043	00912	. HOSE	1		
-155	7-13-097	00912	. FITTING	1		
-156	7-13-098	00912	. UNION	1		
-157	7-44-322	00912	. PLUG	1		
-161	7-23-018	00912	. INSULATION (SET)	1		
-162	70005731	00912	. PLATE	1		

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-4	3467-00-72-63-100	00912	FALSE CEILING (SEE FIGURE 3-2 FOR NHA)	REF		
-1	7-07-278	00912	. CEILING	1		
-2	7-69-431	00912	. STUD (AP)	14		
-3	7-69-432	00912	. RETAINER (AP)	14		
-4	7-63-056	00912	. SCREW (AP)	2		
-5	7-07-282	00912	. CLIP	1		
-6	7-63-022	00912	. SCREW (AP)	1		
-7	7-35-017	00912	. NUT (AP)	1		
-8	7-84-098	00912	. WASHER (AP)	2		
-9	7-42-097	00912	. COVER	1		
-10	7-54-055	00912	. RIVET (AP)	8		
-11	7-84-101	00912	. WASHER (AP)	8		
-12	7-29-145	00912	. LABEL, VALVE OPEN	1		
-13	7-54-054	00912	. RIVET (AP)	2		
-14	7-84-101	00912	. WASHER (AP)	2		
-15	7-29-146	00912	. LABEL, VALVE CLOSED	1		
-16	7-54-054	00912	. RIVET (AP)	2		
-17	7-84-101	00912	. WASHER (AP)	2		
-18	7-29-148	00912	. LABEL, LOW FLOW	1		
-19	7-54-054	00912	. RIVET (AP)	2		
-20	7-84-101	00912	. WASHER (AP)	2		
-21	7-29-149	00912	. LABEL, HIGH FLOW	1		
-22	7-54-054	00912	. RIVET (AP)	2		
-23	7-84-101	00912	. WASHER (AP)	2		
-24	7-29-150	00912	. LABEL, DISPERSED	1		
-25	7-54-054	00912	. RIVET (AP)	2		
-26	7-84-101	00912	. WASHER (AP)	2		
-27	7-29-151	00912	. LABEL, SOLID STREAM	1		
-28	7-54-054	00912	. RIVET (AP)	2		
-29	7-84-101	00912	. WASHER (AP)	2		
-30	7-73-236		. TAG, OVERRIDE	1		

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-10	3467-00-72-03-001	00912	PATTERN CONTROL ASSEMBLY ..... (SEE FIGURE 3-3 FOR NHA)	REF		
-1	7-03-080	00912	. BALL	1		
-2	70005786	00912	. ROD	1		
-3	3467-00-70-45-003	00912	. HUB	1		
-4	7-44-319	00912	. PIN (AP)	1		
-5	7-44-317	00912	. PIN (AP)	1		
-6	7-44-318	00912	. PIN (AP)	2		
-7	7-44-317	00912	. PIN (AP)	2		
-8	3467-00-70-34-001	00912	. FITTING	1		
-9	7-61-050	00912	. SCREW	2		
-10	7-07-285	00912	. COLLAR	2		
-11	3467-00-70-14-001	00912	. BLOCK	1		
-12	7-65-144	00912	. SCREW (AP)	2		
-13	7-07-277	00912	. CYLINDER	1		
* -14	7-13-082	00912	. FITTING (AP)	2		
-15	7-45-091	00912	. ROD (AP)	1		
-16	7-04-327	00912	. BRACKET	1		

* ALTERNATE TO PG. 14

7-10-091 ELBOW

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-15	3467-00-71-48-100	00912	JOYSTICK ASSEMBLY (SEE FIGURE 3-2 FOR NHA)	REF		
		00912	. JOYSTICK	1		
-1	70005548		. LABEL	1		
-2	7-29-156		. LABEL	1		
-3	7-29-157		. PLATE	1		
-4	7-42-100		. SCREW	4		
-5	7-53-056		. HOUSING	1		
-6	70005844		. COVER	1		
-7	70005833		. SCREW	1		
-8	7-63-061					

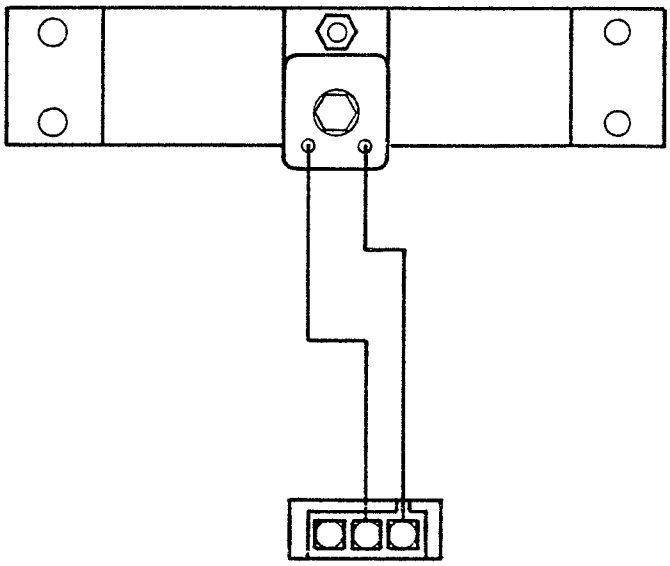


Figure B-1. Solenoid Valve Assembly Schematic.

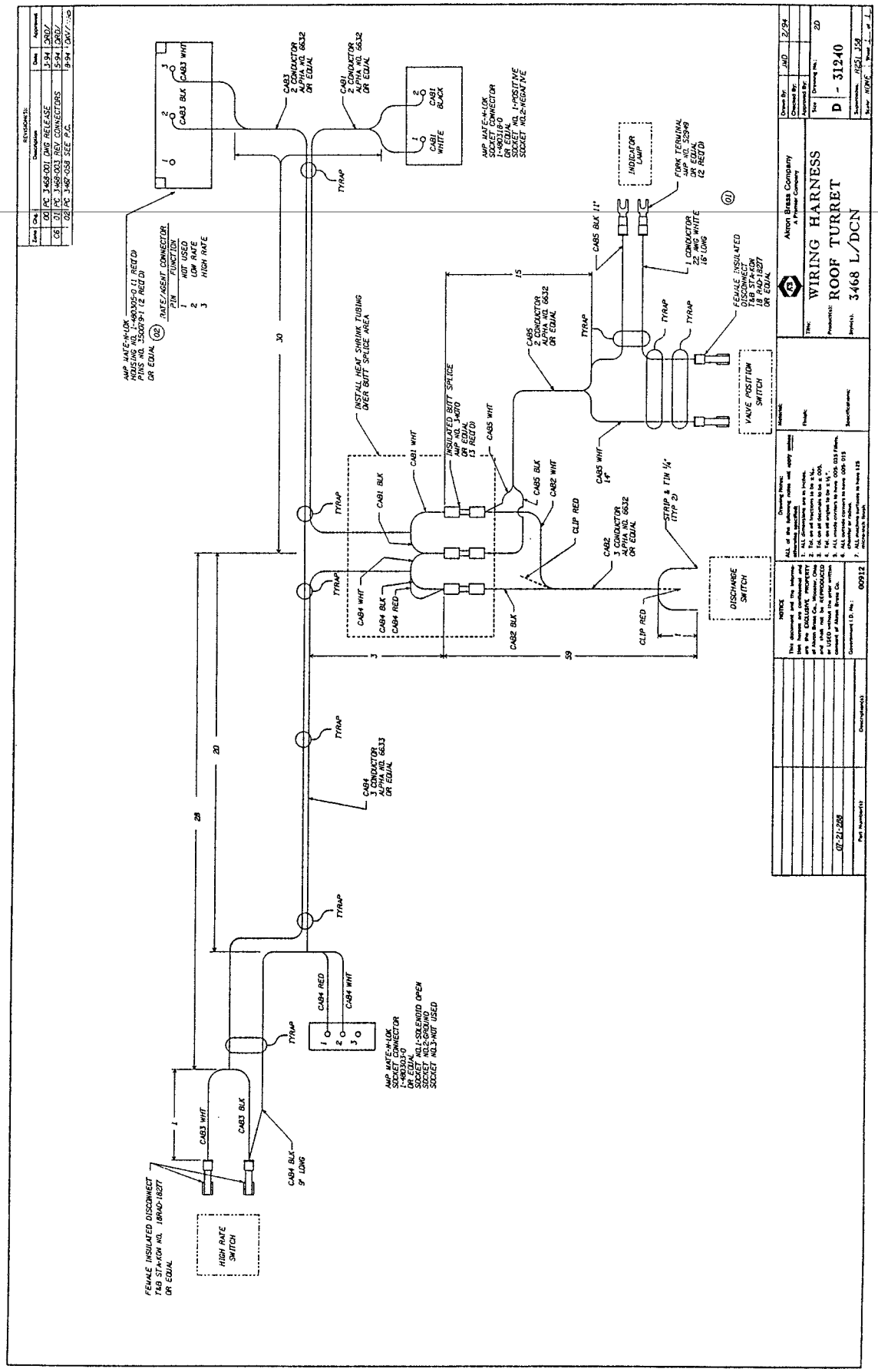


Figure B-2. Roof Turret Wiring Harness Schematic.

CHAPTER 2. Maintenance and Overhaul

SECTION I
INTRODUCTION

2-1. PURPOSE AND SCOPE.

This chapter contains lubrication, troubleshooting, inspection, replacement, repair, and test procedures for the roof turret system.

2-2. ROOF TURRET.

Figure 2-1 shows the location of the roof turret mounted on a typical Fire Rescue truck.

2-3. SPECIFICATIONS.

Table 2-1 lists the specifications for the roof turret installed on the Fire Rescue Truck.

Table 2-1. Specifications

Make	Akron Brass
Type II	Nonaspirating
Control	Manual Control
Discharge Rate	400 gal./min (1525 L/min.) and 800 gal./min. (3030 L/min.) for Foam or Water
Water or Foam Stream Pattern	200 ft. (61 m)
Water or Foam dispersed Pattern (minimum)	65 x 35 ft. (19m x 10m)
Nozzle Elevation/Depressed	20° below Horizontal to 45° above Horizontal
Rotation	105° Each Side (210° Total Sweep)

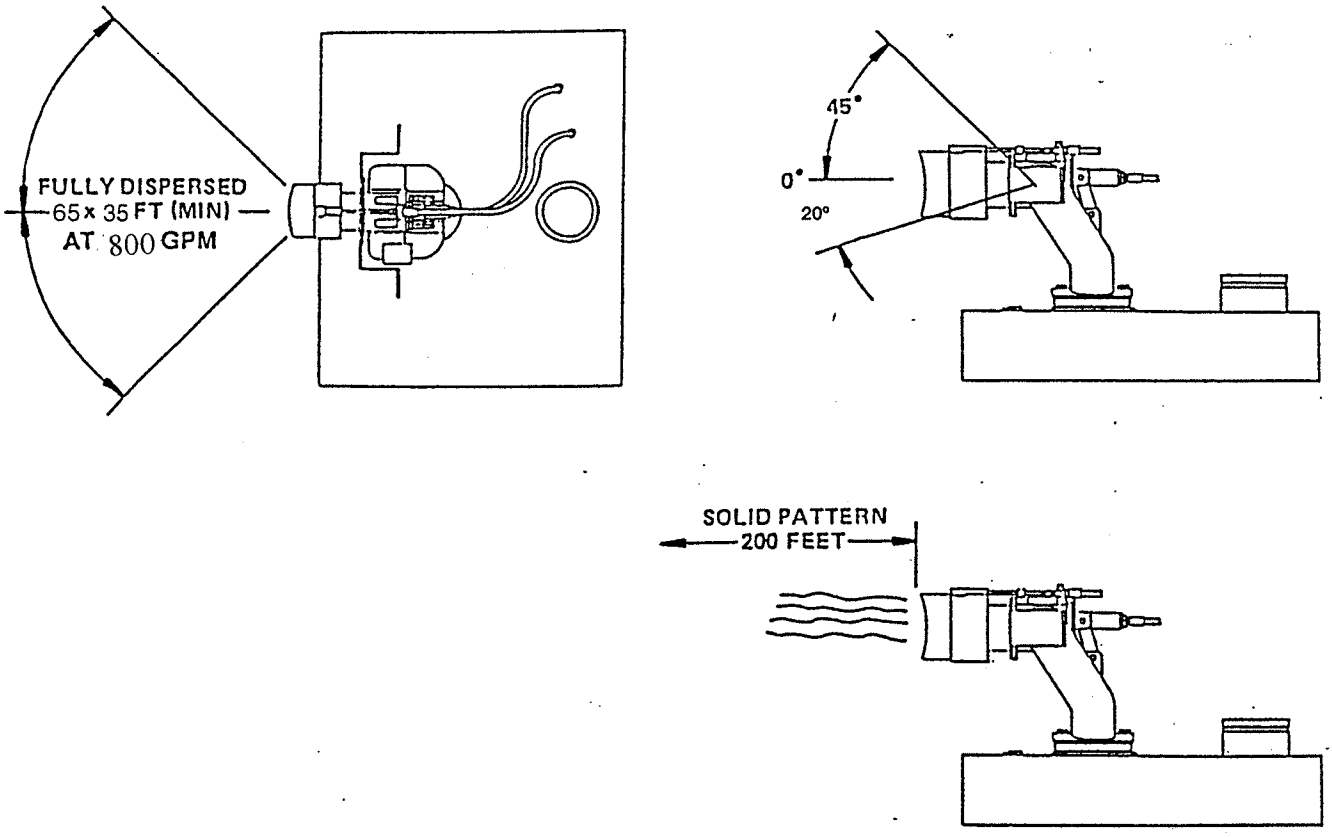


Figure 1-2. Roof Turret Travel Limits and Discharge Pattern.

CHAPTER 1. Operation and Operator Maintenance Instructions

SECTION I
DESCRIPTION

1-1. PURPOSE. This chapter provides operation and operator maintenance instructions for the roof turret mounted on a typical Fire Rescue truck. Refer to Figure 1-1. Included is a description, operating instructions, operator troubleshooting information, and operator inspection information for the roof turret.

1-2. OVERALL DESCRIPTION. The roof turret is a nonaspirating, constant flow, variable stream nozzle located on the roof of the cab. The turret has dual discharge rates of 400 GPM and 800 GPM at 190 PSI turret inlet pressure. The discharge pattern is variable from a 200 foot straight stream to a fully-dispersed foot by 35 foot (min.) pattern at 800 GPM. Roof turret may be elevated to reach stated distances. Refer to Figure 1-2 for roof turret travel limits and discharge patterns. The turret is operated manually. An azimuth and elevation indicator, pattern controls, and a manual shutoff valve are also connected to the turret through the cab roof.

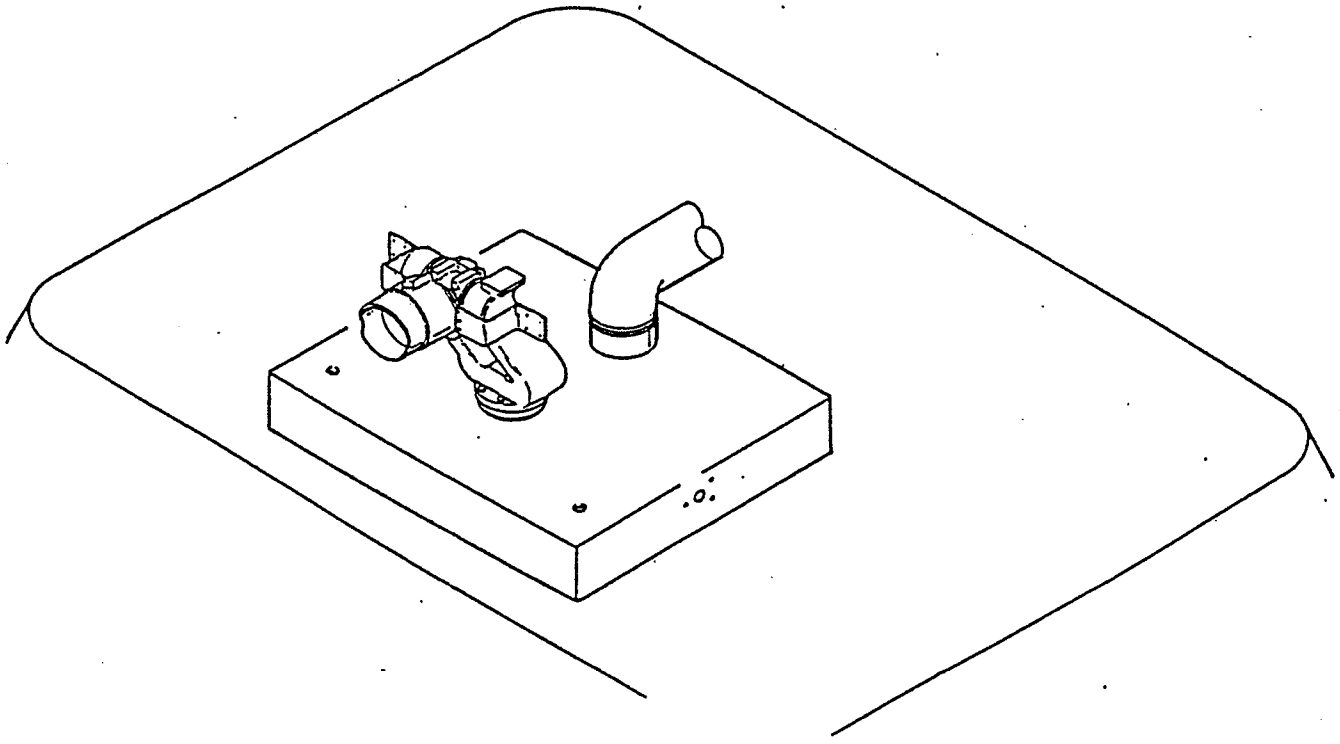


Figure 1-1. Roof Turret.

SECTION III
REPAIR AND REPLACEMENT PROCEDURES

2-11. GENERAL INFORMATION.

The roof turret is an manually operated unit capable of directing a solid or fan discharge at 400 or 800 gpm. The flow may be directed through 240 degree rotation, 45 degree elevation, and 20 degree depression. The discharge valve is operated by a double acting air cylinder and controlled by a 4-way solenoid valve and an independent electrical switch. The roof turret will discharge as long as the momentary switch on the handle is depressed. The stream pattern is controlled by a cable attached to a manually operated lever. The air supply to the cylinder is controlled through two 3-way solenoid valves. The button on the handle activates the solenoid valves. The discharge direction is changed by moving the handle to the right or left and up or down. The discharge rate is changed by adjusting the rate control lever, which moves the baffle in and out.

2-12. SPECIAL TOOLS.

Special tool (Certi-Crimp, part no. 90123-2) is used to crimp contacts on wire when assembling plug assemblies. This tool may be procured from:

AMP, Inc.
Harrisburg, PA 17105

2-13. ROOF TURRET ASSEMBLY REMOVAL/INSTALLATION.

NOTE

Individual roof turret components can be replaced without removing the complete turret assembly. However, if repairs are significant enough to require benchwork, or if the assembly is to be replaced, follow the procedure described below for roof turret removal and installation.

a. Removal. Refer to Figure 2-2 unless otherwise indicated.

(1) Perform the following steps inside cab.

(a) Remove false ceiling (5) and handle (6). Refer to paragraph 2-17 for handle removal.

(b) Drain fire truck air system and disconnect air lines from override valve assembly (62, Figure 2-3).

(c) Disconnect truck drain hose from drain valve assembly (97, Figure 2-3).

(d) Disconnect wiring harness (75, Figure 2-3) and remove cables from roof turret mounting plate (paragraph 2-28).

(2) Perform the following steps in the area above the truck cab.

(a) Disconnect siren.

(b) Remove four clamps attaching windshield coolant manifold to cab.

(c) Remove roof turret supply line and seal at victaulic inlet (103, Figure 2-3).

(d) Swing roof turret supply line aside to provide clearance for turret removal.

(e) Remove 22 screws (2), nuts (3) and washers (4) attaching turret to cab roof. Discard gasket (10).

(f) Install four eyebolts in tapped holes at each corner of roof turret (1).

(g) Attach hoist to eyebolts and lift turret from cab.

WARNING

To avoid injury, keep personnel clear of area below turret during removal.

(3) Remove two spot lights and air horn assemblies and set aside.

CHAPTER 1. Operation and Operator Maintenance Instructions

SECTION I
DESCRIPTION

1-1. PURPOSE. This chapter provides operation and operator maintenance instructions for the roof turret mounted on a typical Fire Rescue truck. Refer to Figure 1-1. Included is a description, operating instructions, operator troubleshooting information, and operator inspection information for the roof turret.

1-2. OVERALL DESCRIPTION. The roof turret is a nonaspirating, constant flow, variable stream nozzle located on the roof of the cab. The turret has dual discharge rates of 250 GPM and 500 GPM at 190 PSI turret inlet pressure. The discharge pattern is variable from a 200 foot straight stream to a fully-dispersed foot by 35 foot (min.) pattern at 750 GPM. Roof turret may be elevated to reach stated distances. Refer to Figure 1-2 for roof turret travel limits and discharge patterns. The turret is operated manually. An azimuth and elevation indicator, pattern controls, and a manual shutoff valve are also connected to the turret through the cab roof.

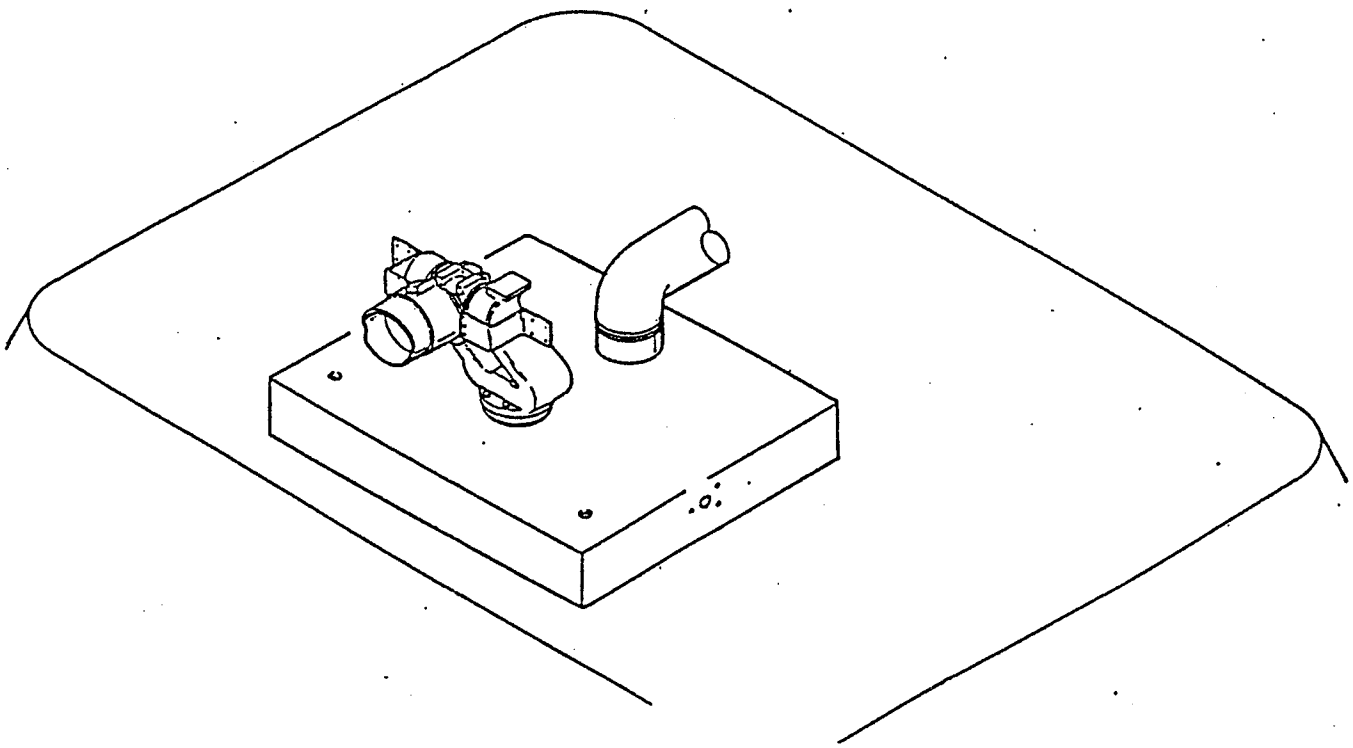


Figure 1-1. Roof Turret.

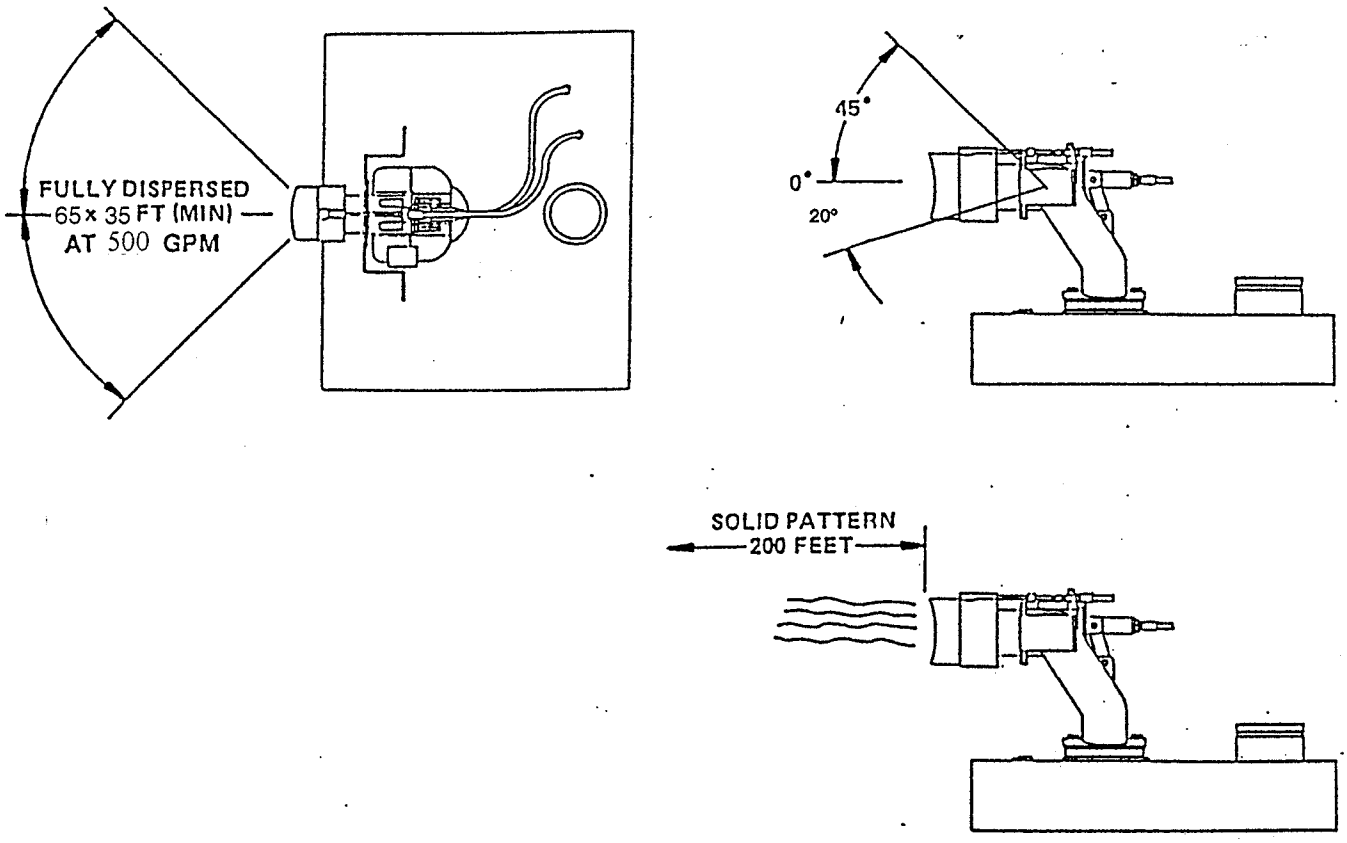


Figure 1-2. Roof Turret Travel Limits and Discharge Pattern.

CHAPTER 2. Maintenance and Overhaul

SECTION I
INTRODUCTION

2-1. PURPOSE AND SCOPE.

This chapter contains lubrication, troubleshooting, inspection, replacement, repair, and test procedures for the roof turret system.

2-2. ROOF TURRET.

Figure 2-1 shows the location of the roof turret mounted on a typical Fire Rescue truck.

2-3. SPECIFICATIONS.

Table 2-1 lists the specifications for the roof turret installed on the Fire Rescue Truck.

Table 2-1. Specifications

Make	Akron Brass
Type II	Nonaspirating
Control	Manual Control
Discharge Rate	250 gal./min (950 L/min.) and 500 gal./min. (1900 L/min.) for Foam or Water
Water or Foam Stream Pattern	200 ft. (61 m)
Water or Foam dispersed Pattern (minimum)	65 x 35 ft. (19m x 10m)
Nozzle Elevation/Depressed	20° below Horizontal to 45° above Horizontal
Rotation	105° Each Side (210° Total Sweep)

SECTION III
REPAIR AND REPLACEMENT PROCEDURES

2-11. GENERAL INFORMATION.

The roof turret is an manually operated unit capable of directing a solid or fan discharge at 250 or 500 gpm. The flow may be directed through 240 degree rotation, 45 degree elevation, and 20 degree depression. The discharge valve is operated by a double acting air cylinder and controlled by a 4-way solenoid valve and an independent electrical switch. The roof turret will discharge as long as the momentary switch on the handle is depressed. The stream pattern is controlled by a cable attached to a manually operated lever. The air supply to the cylinder is controlled through two 3-way solenoid valves. The button on the handle activates the solenoid valves. The discharge direction is changed by moving the handle to the right or left and up or down. The discharge rate is changed by adjusting the rate control lever, which moves the baffle in and out.

2-12. SPECIAL TOOLS.

Special tool (Certi-Crimp, part no. 90123-2) is used to crimp contacts on wire when assembling plug assemblies. This tool may be procured from:

AMP, Inc.
Harrisburg, PA 17105

2-13. ROOF TURRET ASSEMBLY REMOVAL/INSTALLATION.

NOTE

Individual roof turret components can be replaced without removing the complete turret assembly. However, if repairs are significant enough to require benchwork, or if the assembly is to be replaced, follow the procedure described below for roof turret removal and installation.

a. Removal. Refer to Figure 2-2 unless otherwise indicated.

(1) Perform the following steps inside cab.

(a) Remove false ceiling (5) and handle (6). Refer to paragraph 2-17 for handle removal.

(b) Drain fire truck air system and disconnect air lines from override valve assembly (62, Figure 2-3).

(c) Disconnect truck drain hose from drain valve assembly (97, Figure 2-3).

(d) Disconnect wiring harness (75, Figure 2-3) and remove cables from roof turret mounting plate (paragraph 2-28).

(2) Perform the following steps in the area above the truck cab.

(a) Disconnect siren.

(b) Remove four clamps attaching windshield coolant manifold to cab.

(c) Remove roof turret supply line and seal at victaulic inlet (103, Figure 2-3).

(d) Swing roof turret supply line aside to provide clearance for turret removal.

(e) Remove 22 screws (2), nuts (3) and washers (4) attaching turret to cab roof. Discard gasket (10).

(f) Install four eyebolts in tapped holes at each corner of roof turret (1).

(g) Attach hoist to eyebolts and lift turret from cab.

WARNING

To avoid injury, keep personnel clear of area below turret during removal.

(3) Remove two spot lights and air horn assemblies and set aside.

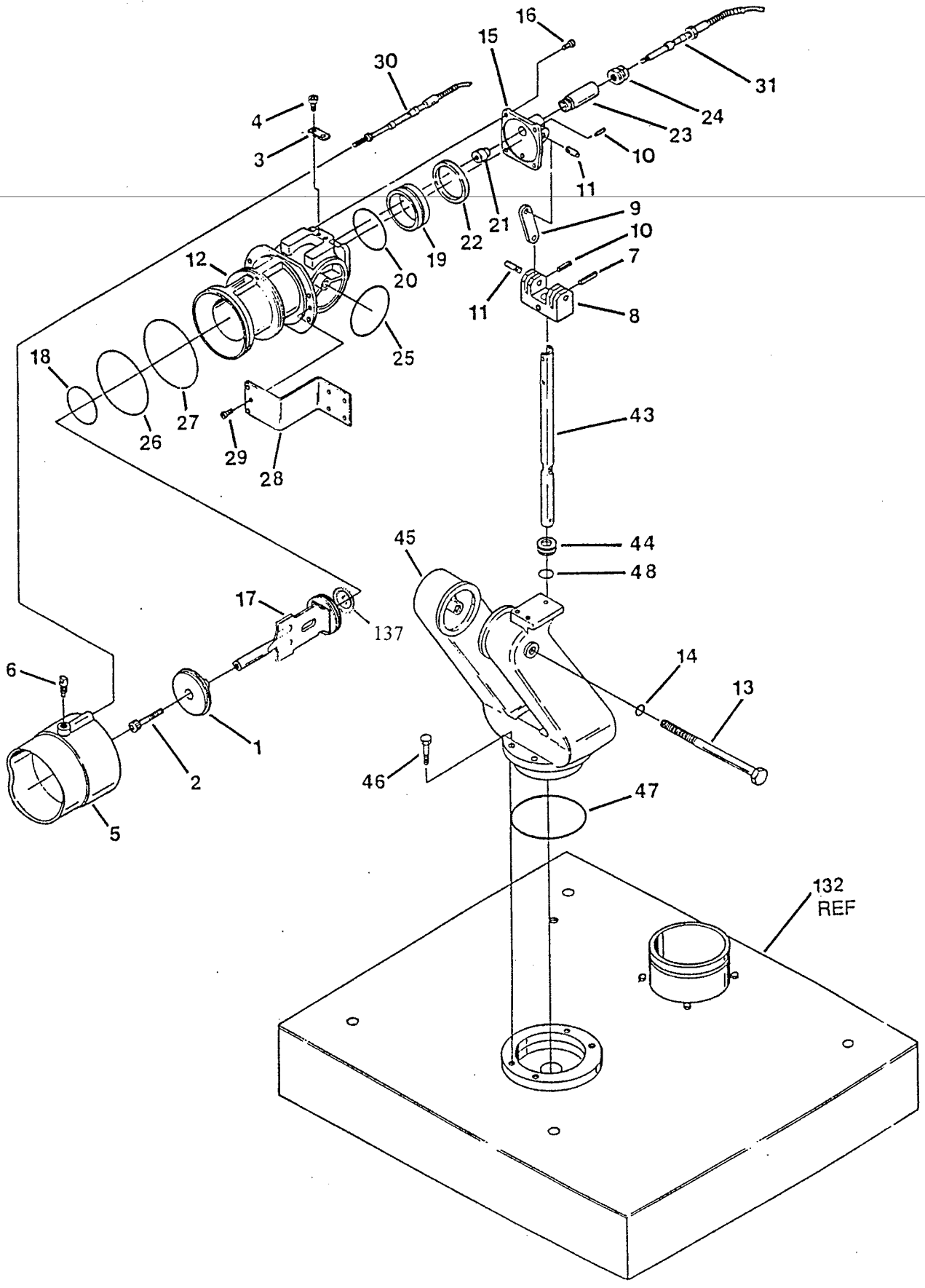


Figure 2-3. Roof Turret Assembly (Sheet 1).

1. BAFFLE HEAD
2. SCREW
3. CABLE CLAMP
4. SCREW
5. PATTERN SLEEVE
6. STOP SCREW
7. SPRING PIN
8. ELEVATION CLEVIS
9. UPPER ELEVATION LINK
10. SPRING PIN
11. PIN
12. OUTLET TEE
13. BOLT
14. O-RING
15. CABLE BRACKET
16. SCREW
17. BAFFLE STEM
18. O-RING
19. BAFFLE STEM BUSHING
20. O-RING
21. CABLE NUT
22. BUSHING
23. CABLE END TUBE
24. ADAPTER NUT
25. O-RING
26. O-RING
27. O-RING
28. SPOTLIGHT BRACKET (IF REQUIRED)
29. SCREW (IF REQUIRED)
30. PATTERN CABLE
31. RATE CABLE
32. ELEVATION LINK
33. COTTER PIN
34. HANDLE PIN
35. BRACKET
36. CLAMP
37. SCREW
38. COTTER PIN
39. BRACKET PIN
40. SPACER
41. BUMPER
42. SPRING PIN
43. ELEVATION SHAFT
44. SPRING WASHER
45. SIAMESE
46. SCREW
47. O-RING
48. O-RING
49. BRACKET
50. SCREW
51. FEEDBACK COVER
52. SCREW
53. CLAMP
54. SCREW
55. WRAP
56. RATE CONTROL ASSEMBLY
57. SCREW
58. PATTERN CONTROL ASSEMBLY
59. SCREW
60. SOLENOID VALVE ASSEMBLY
61. SCREW
62. OVERRIDE VALVE ASSEMBLY
63. SCREW
64. AIR CYLINDER
65. SWIVEL BRACKET
66. SCREW
67. CLEVIS
68. ELBOW FITTING
69. ADAPTER FITTING
70. SWITCH BRACKET
71. SCREW
72. SWITCH LABEL
73. TOGGLE SWITCH
74. AIR LINE
75. WIRING HARNESS
76. CABLE CLAMP
77. NUT
78. SCREW
79. HANDLE YOKE
80. SCREW
81. SCREW
82. SCREW
83. SCREW
84. NUT
85. WASHER
86. SCREW
87. HANDLE HUB
88. SCREW
89. ID PLATE
90. NAIL
91. HOSE CLAMP
92. HOSE
93. FITTING
94. UNION
95. PLUG
96. ELBOW FITTING
97. DRAIN VALVE ASSEMBLY
98. SUPPORT STRAP
99. SCREW
100. NUT
101. WASHER
102. SCREW
103. VICTAULIC INLET
104. SCREW
105. THREE INCH VALVE ASSEMBLY
106. SCREW
107. GASKET
108. GASKET
109. PIPE PLUG
110. O-RING
111. INLET ELBOW
112. SCREW
113. GASKET
114. PLUG
115. BALL BEARING
116. PLUG
117. BALL BEARING
118. SIAMESE BASE
119. O-RING BUSHING
120. O-RING
121. O-RING
122. O-RING
123. O-RING
124. GREASE FITTING
125. BRACKET (TYPE I ONLY)
126. SCREW (TYPE I ONLY)
127. WASHER (TYPE I ONLY)
128. SCREW (TYPE I ONLY)
129. NUT (TYPE I ONLY)
130. STUD CLIP
131. INSULATION
132. TURRET MOUNTING PLATE
133. SCREW
134. INDICATOR LAMP BRACKET
135. LENS
136. SPACER
137. SPACER

Figure 2-3. Roof Turret Assembly (Sheet 5).

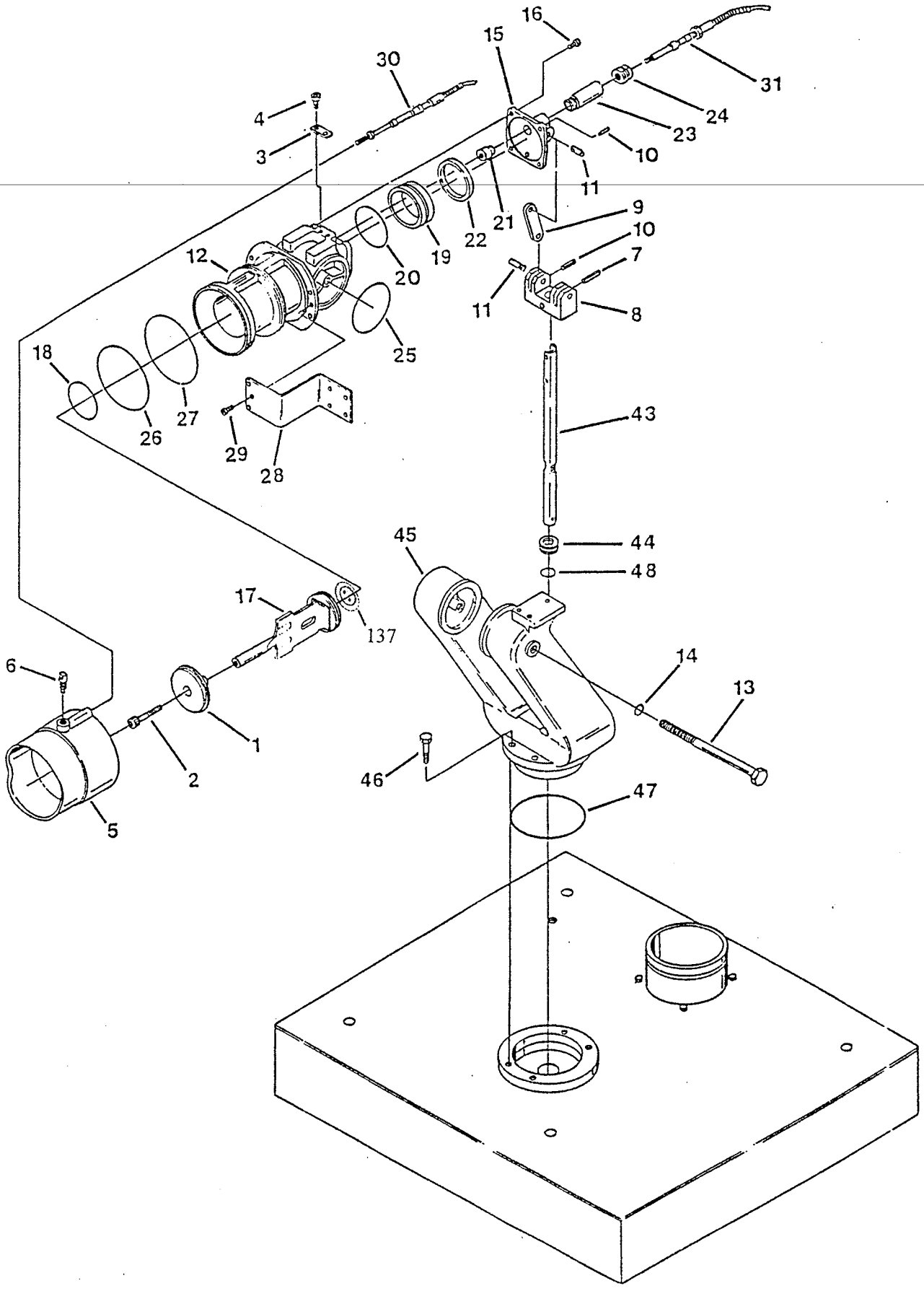


Figure 3-3. Roof Turret Assembly (Sheet 1).

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3		00912	ROOF TURRET ASSEMBLY	REF		
			(SEE FIGURE 3-2 FOR NHA)			
-1		00912	. BAFFLE HEAD	1		
	70009415	00912	. SCREWS (OPTIONAL)	8		
-2	7-67-117	00912	. SCREW (AP)	1		
	7-68-095	00912	. SHIM	AR		
-3	7-07-284	00912	. CLAMP	1		
-4	7-66-036	00912	. SCREW (AP)	2		
-5	3467-00-70-77-110	00912	. SLEEVE, PATTERN	1		
-6	7-69-440	00912	. SCREW (AP)	1		
-7	7-44-320	00912	. PIN	1		
-8	7-07-290	00912	. CLEVIS	1		
-9	7-29-144	00912	. UPPER LINK	2		
-10	7-44-080	00912	. PIN (AP)	4		
-11	7-45-088	00912	. PIN (AP)	4		
-12	3467-00-70-88-110	00912	. TEE	1		
-13	7-04-340	00912	. BOLT (AP)	1		
-14	7-57-055	00912.	. O-RING	1		
-15	3467-00-70-14-103	00912	. BRACKET	1		
-16	7-60-040	00912	. SCREW (AP)	4		
-17	3467-00-70-79-110	00912	. BAFFLE STEM	1		
-18	7-57-126	00912	. O-RING	1		
-19	N/A	00912.	. BUSHING	1		
-20	7-57-221	00912	. O-RING	1		
-21	3467-00-70-54-004	00912	. NUT	1		
-22	N/A	00912	. BUSHING	1		
-23	3467-00-70-87-001	00912	. TUBE	1		
-24	3467-00-70-54-003	00912	. NUT	1		
-25	7-57-035	00912	. O-RING	2		
-26	7-57-225	00912	. O-RING	1		
-27	7-57-251	00912	. O-RING	1		
-28	N/A	00912	. BRACKET	2		
-29	N/A	00912	. SCREW (AP)	6		
-30	7-07-276	00912	. CABLE, PATTERN	1		
-31	7-07-275	00912	. CABLE, RATE	1		
-32	7-29-143	00912	. LINK	2		
-33	7-44-168	00912	. PIN (AP)	4		
-34	7-45-085	00912	. PIN (AP)	2		
-35	3467-00-70-14-004	00912	. BRACKET	1		
-36	7-07-189	00912	. CLAMP	1		
-37	7-65-104	00912	. SCREW (AP)	1		
-38	7-44-323	00912	. PIN (AP)	2		
-39	7-45-097	00912	. PIN (AP)	2		
-40	3467-00-70-83-002	00912	. SPACER	1		
-41	7-04-333	00912	. BUMPER	1		
-42	7-44-049	00912	. PIN (AP)	2		
-43	7-69-451	00912	. SHAFT	1		
-44	7-69-438	00912	. SPRING	3		
-45	3467-00-70-84-001	00912	. SIAMESE	1		
-46	7-61-085	00912	. SCREW (AP)	4		
-47	7-57-225	00912	. O-RING	1		
-48	7-57-293	00912	. O-RING	1		
-49	3468-00-70-14-001	00912	. BRACKET	1		
-50	7-65-120	00912	. SCREW (AP)	2		
-51	7-07-314	00912	. FEEDBACK COVER	1		
-52	7-66-043	00912	. SCREW (AP)	2		
-53	7-07-189	00912	. CLAMP	1		
-54	7-65-104	00912	. SCREW (AP)	1		
55	7-85-020	00912	. WRAP, 38 IN	1		

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
3-3						
-102	7-61-086	00912	. SCREW (AP)	4		
-103	3467-00-70-46-001	00912	. INLET	1		
-104	7-67-047	00912	. SCREW (AP)	4		
-105	3467-00-72-91-001	00912	. THREE INCH VALVE ASSEMBLY (SEE FIGURE 3-10 FOR DETAILS)	1		
-106	7-61-058	00912	. SCREW (AP)	4		
-107	7-16-044	00912	. GASKET	2		
-108	7-16-043	00912	. GASKET	1		
-109	7-44-011	00912	. PLUG	1		
-110	7-57-294	00912	. O-RING	1		
-111	3467-00-70-29-001	00912	. ELBOW	1		
-112	7-66-036	00912	. SCREW (AP)	8		
-113	7-16-045	00912	. GASKET	1		
-114	7-42-024	00912	. PLUG	1		
-115	7-04-020	00912	. BALL BEARING	36		
-116	7-42-024	00912	. PLUG	1		
-117	7-04-020	00912	. BALL BEARING	41		
-118	3467-00-70-09-001	00912	. BASE, SIAMESE	1		
-119	3467-00-70-13-002	00912	. BUSHING	1		
-120	7-57-054	00912	. O-RING	1		
-121	7-57-293	00912	. O-RING	1		
-122	7-57-068	00912	. O-RING	1		
-123	7-57-078	00912	. O-RING	1		
-124	7-13-191	00912	. FITTING	2		
-125	7-23-017	00912	. INSULATION (SET)	1	1	
-126	7-45-102	00912	. PLATE	1	1	
-127	7-65-025	00912	. SCREW	6	1	
-128	7-04-361	00912	. BRACKET	1	1	
-129	7-29-167	00912	. LENS	1	1	
-130	7-69-475	00912	. SPACER	1		
-131	7-29-168	00912	. LIGHT	1		
-132	7-29-166	00912	. LAMP BODY	1		
-133	7-04-325	00912	. HANDLE	1		
-134	7-69-473	00912	. DISCHARGE SWITCH	1		
-135	7-04-360	00912	. BUSHING	1		
-136	7-18-071	00912	. HANDLE GRIP	1		
137	704339		. SPACER	1		