DS WATER TRUCK

PART NUMBER 37605

OPERATION, MAINTENANCE AND PARTS MANUAL

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TABLE OF CONTENTS

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TABLE OF CONTENTS

PUBLISHED 4/11/97

ROSCO

SECTION 1

INTRODUCTION

ROSCO

INTRODUCTION

This manual has been compiled to assist the owner and/or operator with the correct operation and routine preventive maintenance procedures for the Model DS Water Truck as manufactured by ROSCO MANUFACTURING COMPANY (ROSCO) of Madison, South Dakota, U.S.A. A parts catalog is also included in this manual to allow for the accurate ordering of repair parts from authorized ROSCO Dealers/ Distributors.

THIS MANUAL HAS BEEN ORGANIZED INTO SIX (6) MAJOR SECTIONS:

1. Introduction
2. Safety
3. Operation
4. Maintenance
5. TroubleShooting
6. Parts Catalog

A general contents page is located at the beginning of this manual as a quick reference to these sections and their major sub-sections. In order to receive the performance and efficiency that has been designed into the Model DS Water Truck, it is very important to:

A. Read this manual thoroughly before operating or servicing the Model DS.
B. Keep this manual in a convenient place for ready reference.
C. **DO NOT** attempt to make repairs or adjustments you do not understand. If you require additional information or service, contact your authorized ROSCO Dealer/Distributor.

Throughout this manual references are made to the **LEFT** and **RIGHT SIDES** of the water truck. These terms are used as seen from the driver's seat facing froward.

SERIAL NUMBER - It is important to know the serial number of this equipment. The serial number plate is located on the front lower corner of the tank frame of the Model DS Water Truck, directly behind the drivers side fo the truck cab, and a space has been provided below to record it. Use the serial number in all correspondence referring to the Model DS Water Truck and when ordering parts.

Model _____

Serial Number _____

Production Year _____

Design Specifications -ROSCO MANUFACTURING COMPANY reserves the right to make design or specification changes without prior notification or to make any other improvements without incurring obligations to add them to any machine in existence.

Technical Information - ROSCO MANUFACTURING COMPANY is continuously improving its products. The technical information found in this manual was correct at the time it was approved for publication. However, there may be differences between your Model DS Water Truck and the information contained in this manual. Please contact your local Authorized ROSCO Dealer/Distributor if you require further assistance.

WARRANTY

ROSCO MANUFACTURING COMPANY warrants all new equipment of ROSCO Manufacturing to be free from defects in material and workmanship (when subjected to normal and proper usage) for a period of twelve (12) months from the "In Service Date" established by the "New Machine Delivery Report" completed, signed and filed with ROSCO when the equipment is initially placed in service. Failure to transmit to ROSCO the completed and signed "New Machine Delivery Report" within ten (10) days of placing the equipment in service will disqualify this warranty on the equipment.

Notice must be given to the servicing ROSCO Dealer/Distributor upon discovery of defects in material and workmanship, and parts returned to ROSCO for inspection. Parts found defective by ROSCO inspection will be repaired or replaced without cost, F.O.B. point of manufacture. The foregoing shall be the limit of ROSCO's liability for such defects. No warranty is extended on components and accessories not manufactured by ROSCO as these items are subject to warranties of their respective manufacturers.

In no event shall ROSCO be liable for special, indirect or consequential damages, nor for any delay in performance of the warranty.

You may also have some implied warranties. For example, you may have:

* an implied warranty of merchantability (a warranty that your Model DS Water Truck is reasonably fit for the general purpose for which it was sold to you)

or

* an implied warranty of fitness for a particular purpose (a warranty that the Model DS Water Truck is suitable for your special purpose).

These implied warranties are limited, to the extent allowed by law, to the time period covered by the written warranties.

Some states do not allow ROSCO to limit how long an implied warranty lasts, or to exclude or limit incidental or consequential damages, so the limitations and exclusions described above may not apply to you.

SPECIFICATIONS

STANDARD EQUIPMENT

TANK:
Steel, Modified Elliptical Heads, Tank Shell and Surge Plates 7 ga ASTM A569

TOP OPENING ..... 22 " Diameter

WATER PUMP ..... 1750 RPM ..... 400 gpm @ 40 psi

PUMP DRIVE ..... Direct PTO Drive from Truck Transmission

NOZZLES:
There are 2 Sprinkler Nozzles mounted vertically at the front of the unit and 2 Sprinkler Nozzles mounted vertically at the rear of the unit. The front and rear pairs of Sprinkler Nozzles are controlled from truck cab with a single switch for each pair.
Controls utilize a Solenoid operated Water Pilot Control Valves.

PIPING:
Standard schedule carbon piping and flexible hose for nozzle and spray bar piping.

LOAD LINE ..... 2-1/2 inch Air Gap Fill line located at rear of tank.

FINISH:
Exterior of tank, primed and enamel painted in white. Interior coated with corrosion retarding epoxy paint.

MISCELLANEOUS:
I.C.C. Clearance Lights and Reflectors, full width Fenders with Mud Flaps, Hose Hooks, Rear Bumper, Back-up Alarm, Factory Mounting.

OPTIONAL EQUIPMENT:
Includes: Suction Filling Attachment, Individual Nozzle Control, Hose Reel (Manual or Electric), Eight (8) foot Spraybar, Spray Nozzles on either left or right side midship, Loading Hose, Fire Fighting Valve, Lettering, Special Paint, Field Mounting.

THE MULIT-PURPOSE WATER TRUCK

The Rosco Model DS Water Truck is a efficient, easy to operate machine which will compliment your road construction or general maintenance operation. It is designed to provide a way to supply water to remote locations or job sites. It can be used for dust control, soil compaction, street flushing, land fill spraying and landscape watering by means of sprinkler nozzles and optional equipment such as spray nozzles, spray bars and hose reels.

The Rosco Model DS Water Trucks ***are not*** designed to spray or transport caustic or salt solutions. Such solutions will damage the pumps, valves and interior coating. If such products are used, the warranty will be void.

The Rosco Model DS consists of three major component areas. The first is the tank, which is a coated tank that can be loaded either through the top opening cover or through the fill systems.

The Rosco Model DS uses a direct PTO drive to power the water pump. The system is powered by the truck transmission. The water pump provides the pressure to spray the water.

The Rosco DS Water Truck is equipped with an in cab control panel. The control panel is used to operate the various spraying options with a separate control for the engagement of the PTO. Spraying options include spray nozzles, which are mounted at either the front, midship or rear of the unit and an optional 8 foot, one piece spray bar.

It is important that the Model DS Water Truck owners and operators fully realize the overall operating procedures of the equipment furnished. Complete understanding of the procedures contained in this manual will insure safe operation and maximum efficiency of the unit.

All DS Water Truck operators **must** be properly trained in the use of the equipment and meet all government requirements. Such requirements may include but are not limited to a Commercial Drivers License (CDL) and other training.

SECTION 2

SAFETY

SAFETY

SAFETY ALERT SYMBOLS

This Safety Alert symbol means
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!

The Safety Alert symbol identifies important safety messages on the ROSCO Model DS Water Truck and in its manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons: ***Accidents Disable and Kill**
***Accidents Cost**
***Accidents Can be Avoided**

Signal Words

Note the use of the signal words **DANGER**, **WARNING** and **CAUTION** with the safety message. The appropriate signal word for each message has been selected using the following guidelines:

DANGER An immediate and specific hazard which WILL result in severe personal injury or death if the proper precautions are not taken.

WARNING A specific hazard or unsafe practice which COULD result in severe personal injury or death if proper precautions are not taken.

CAUTION Unsafe practices which COULD result in personal injury if proper practices are not taken, or as a reminder of good safety practices.

Equipment Safety Symbol

Throughout this manual, whenever you see this "Broken Bolt" symbol, it means:

CAUTION Equipment on the machine could be damaged through improper performance of an operation, maintenance or repair procedure.

SAFETY

You are responsible for the safe operation and maintenance of your Rosco DS Water Truck. You must ensure that you and anyone else who is going to operate, maintain or work around the machine be familiar with the operating and maintenance procedures. Special attention should be given to learning and understanding the safety information contained in this manual.

In accordance with OSHA regulations 1928.51 and 1928.52, operating instructions must be provided initially to operators or employees before allowing them to operate the DS Water Truck, and at least annually thereafter.

The most important safety device on this equipment is a well trained and safe operator. It is his/her responsibility to read and understand all safety and operating instructions in this manual. A person who has not read and understood all operating and safety instructions is not qualified to operate the DS Water Truck. An untrained operator exposes himself/herself and bystanders to possible serious injury or death. All accidents can be avoided!

Do not modify the unit in any way. Unauthorized modification may impair function and/or safety and affect the working life of the equipment and may void warranty.

ROSCO Manufacturing Company assumes **NO LIABILITY** for accident or injury incurred through the improper use of this equipment.

SAFETY PRECAUTIONS

GENERAL

1. Always read and fully understand the Operator's manual and the safety decals on the machine before trying to operate or service this equipment.

2. It is wise to have a first aid kit available and be familiar with it's contents.

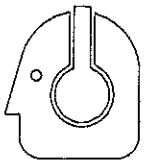
3. Keep a "charged" extinguisher within reach whenever you work in an area where fire may occur. Also be sure you have the correct type of extinguisher for your situation:
   Type A: Wood, paper. textile and rubbish.
   Type B: Flammable Liquid
   Type C: Electrical Equipment

4. Be sure to wear safe work clothing. It should be well fitted and in good repair. Do not wear rings,wrist watches or loose fitting clothing when working on machinery, they could catch on moving parts causing serious injury. Wear sturdy, rough-soled work shoes, safety glasses and any other protective gear that is warranted by the work environment.

5. Keep work area organized and clean. Wipe up oil spills of any kind. Keep tools and parts off floor. Eliminate the possibility of a fall which could result in injury.

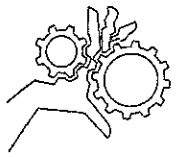
SAFETY

6. Wear appropriate ear protection for prolonged exposure to excessive noise.



7. DO NOT get into a big rush! Use recommended hand holds and steps with at least three points of support when getting on and off the DS WaterTruck. Keep steps, floor,hand holds and controls clean and free from grease. Face the machine when climbing up and down and never jump off or dismount while the machine is in motion.

7. Keep hands , feet, hair and clothing away from moving parts.



8. DO NOT go into the tank. Entry into a confined space requires special equipment and training. You can be seriously injured or killed due to the presence of poisonous gasses or lack of oxygen. Keep others out.

9. Keep all hydraulic lines, fittings and couplers tight and free of leaks before using.

10. DO NOT go under the vehicle when the engine is running.

OPERATING

1. DO NOT allow riders on the DS Water Truck when transporting.

2. Clean reflectors and lights before transporting.

3. Clear the area of people before starting or operating the unit.

4. Place all controls in neutral, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing or unplugging.

5. Be sure to reinstall safety devices, guards or shields after adjusting and/or servicing the machine.

6. After servicing, be sure that all tools, parts or servicing equipment are removed from the vehicle or engine.

PTO DRIVELINE

1. Stay away from rotating drive line. Hands, feet, hair and clothing can get caught on rotating parts and cause serious injury or death.

2. DO NOT go under vehicle when the engine is running.

3. DO NOT work on the PTO driveline when the engine is running.

4. DO NOT engage or disengage PTO by hand from under the vehicle when the engine is running.

5. Shut off engine and remove ignition key before working on or near the system.

SAFETY

MAINTENANCE

1. Follow ALL operating, maintenance and safety information in the manual.

2. Support the machine with blocks or safety stands when changing tires or working beneath it.

3. Place all controls in neutral, stop engine, remove ignition key and wait for all moving parts to stop before servicing, adjusting or repairing.

4. Follow good shop practices:
   Keep service area clean and dry.
   Be sure electrical outlets and tools are properly grounded.
   Use adequate light for the job at hand.

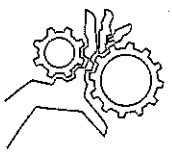
5. Make sure all guards are in place and properly secured when maintenance work is completed.

6. Never wear ill-fitting, baggy or frayed clothing when working around or on any of the drive system components.

7. Before applying pressure to a hydraulic system, make sure all lines, fittings and couplers are tight and in good condition.

8. DO NOT go into the tank. Entry into a confined space requires special equipment and training. Serious injury or death can result from entry into a tank due to poisonous gasses or lack of oxygen. Keep others out.

9. Keep hands , feet, hair and clothing away from moving parts.



10. Clear the area of bystanders when carrying out any maintenance and repairs or making any adjustments.

SAFETY

TRANSPORT

1. Make sure you are in compliance with all local regulations regarding transporting equipment on public roads and highways.

2. Make sure the lights and reflectors that are required by local highway and transport authorities are in place, are clean, are in good repair and can be seen clearly by all overtaking and oncoming traffic.

4. DO NOT exceed 55 m.p.h. (90 km/h) when transporting the machine. Reduce speed on rough roads and surfaces and when making turns.

5. DO NOT drink and drive. Use seat belts.

STORAGE

1. Store the DS Water Truck in an area away from human activity.

2. DO NOT permit children to play on or around the stored machine.

3. Make sure the unit is stored in an area that is firm, level and free of debris.

TIRES

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.

2. DO NOT attempt to mount a tire unless you have the proper equipment and experience to do the job.

3. Have a qualified tire dealer or repair service perform required tire maintenance.

4. Support the machine with blocks or safety stands when changing tires or working beneath it.

5. DO NOT inflate tires beyond the maximum recommended inflation pressure. NEVER run a vehicle on one tire of a dual assembly. The carrying capacity of the single tire and rim is dangerously exceeded and operating a vehicle in this manner can result in damage to the rim and tire.

REFUELING

1. Handle fuel with care. It is highly flammable. DO NOT over fill fuel tank as over fill creates a fire hazard.

2. Clean up spilled fuel before restarting engine.

3. DO NOT refuel the machine while smoking or when near open flame or sparks. DO NOT refuel with engine running.

4. Fill fuel tank outdoors. Keep the hose nozzle or the funnel and container in contact with the metal of the fuel tank to avoid the possibility of an electrical spark igniting the fuel.

5. Prevent fires by keeping machine clean of accumulated trash, grease and debris.

BATTERY

1. Keep all sparks and flames away from batteries, as gas given off by electrolyte is explosive.

2. Wear safety glasses when working near batteries. If you come in contact with battery electrolyte solution wash off immediately.

3. DO NOT tip batteries more than 45 degrees to avoid electrolyte loss.

4. To avoid injury from spark or short circuit, disconnect battery ground cable before servicing any part of the electrical system.

5. Use jumper cables ONLY in recommended manner. Improper use can result in battery explosion or unexpected unit motion.

SAFETY DECALS

1. Keep safety decals and signs clean and legible at all times.

2. Become familiar with the content and the position of each safety decal. Important information is written on decals. (See safety decal section for position and part number.)

3. Replace safety decals and signs that are missing or have become illegible.

4. When replacing parts, be sure to check that any safety decals that were on the original part are also on the new part.

5. Obtain safety decals or signs from your Authorized ROSCO Dealer/Distributor.

SAFETY

ROSCO Manufacturing Company follows the general Safety Standard specified by the Society of Automotive Engineers (SAE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or servicing the DS Water Truck must read and clearly understand all safety, operating and maintenance information presented in this manual. DO NOT operate or allow anyone to operate this equipment until such information has been reviewed. Annually review this information before the season start-up. Make these periodic reviews of Safety and Operation a standard practice for all your equipment. An untrained employee is unqualified to operate this machine.

This sign-off form is provided for your record keeping to show that all personnel who will be working with the equipment have read and understand the information in the Operator's Manual and have been instructed in the operation of this equipment.

DATE	EMPLOYEES SIGNATURE	EMPLOYERS SIGNATURE

SAFETY DECAL LOCATIONS

The types of safety decals and their location on the DS Water Truck are shown or described below and on the following pages. Good safety requires that you familiarize yourself with the various safety decals, the type of warning, and the area or particular function related to that area, which requires your safety awareness.

Think Safety! Work Safely!

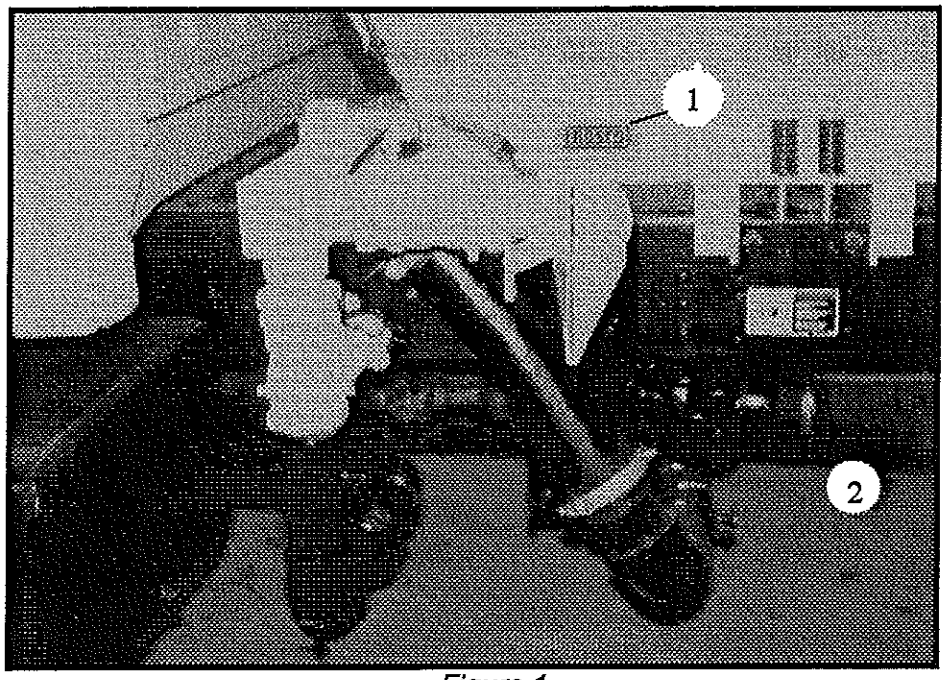
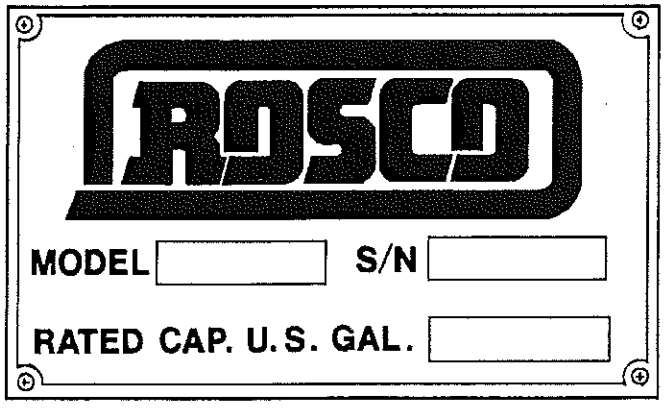
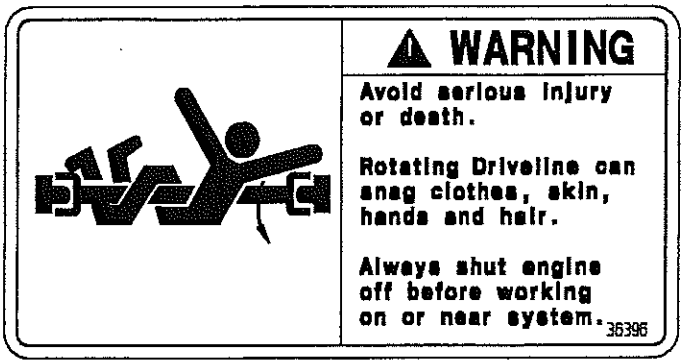


Figure 1
Driver side of truck frame.



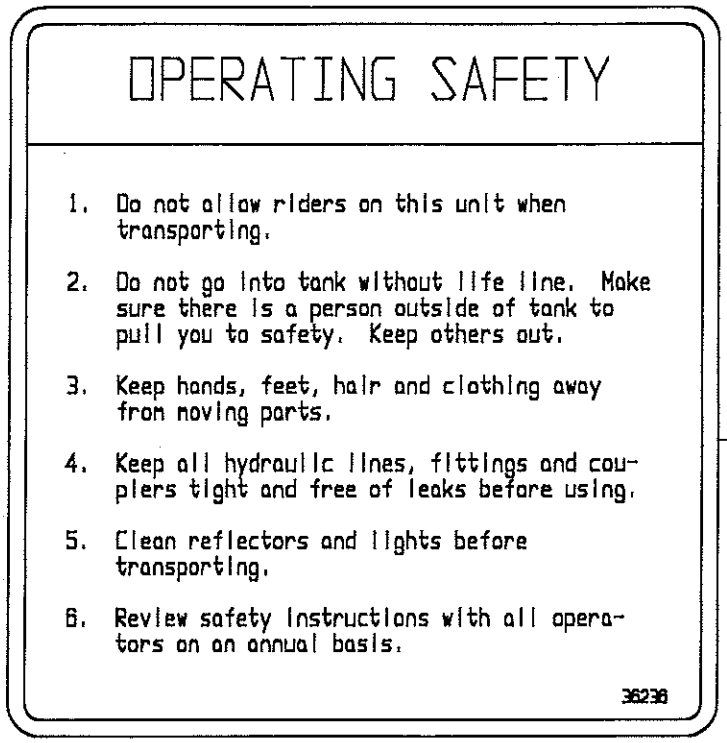
Item 1
Part # 35355



Item 2
Part # 36396

SAFETY DECAL LOCATION

The decals on the following pages are located at various points in the truck cab and on the tank. Check each one for location.

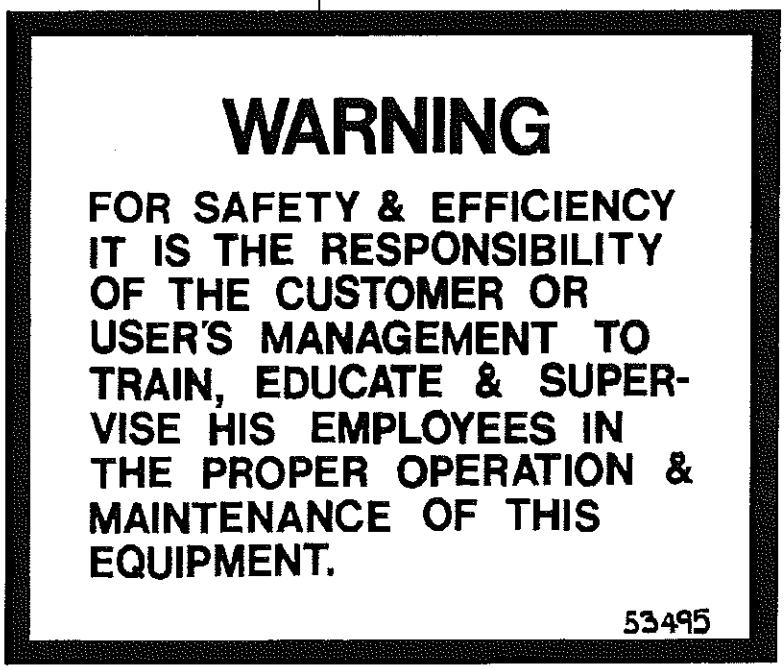


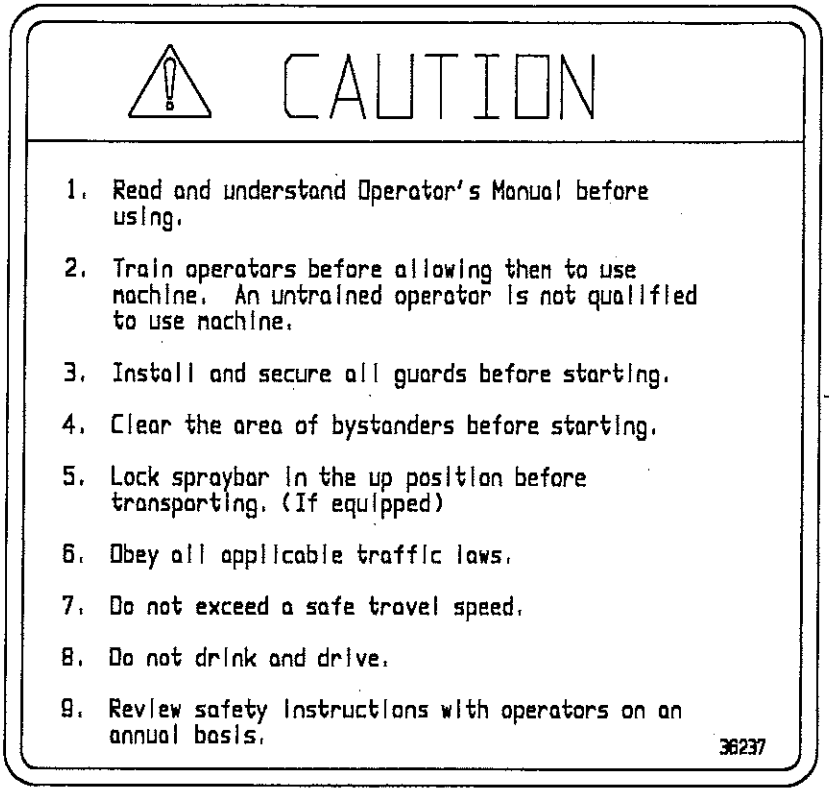
4

Item 4
Part # 36236
Located on rear window

3

Item 3
Part # 53495
Located on visor





5

Item 5
Part # 36237
Located on rear window

6

ITEM 6
PART NUMBER 37000
LOCATED AT TOP OF LADDER

DECAL INSTALLATION

1. Be sure that the installation area is clean and dry. Use hot soapy water and dry area thoroughly before installing decals.

2. Decide on the exact position by taking measurements and test fitting before you remove any of the backing paper.

3. For decals with no top protection paper, decide on the location for the decal and remove the smallest adhesive backing of the split backing paper.

4. Align the decal over the specified area and carefully press the small portion with the exposed adhesive backing in place.

5. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.

6. Small air pockets can be pierced with a pin and smoothed out using a piece of decal backing paper.

7. If the decal has a protective top paper, use hot soapy water on the surface to which the decal is being applied. Leave wet. After deciding on the location, remove the backing paper and soak the decal in clean soapy water before application. This will help to alleviate air bubbles in the finished decal.

8. Smooth the decal into place with a squeegee, and check for air bubbles. Small air pockets may be pierced with a pin and smoothed out. When the decal is completely smoothed out, carefully remove the top paper.

SECTION 3

OPERATION

ROSCO

OPERATION

It is very important that the DS Water Truck owner and operators fully comprehend and practice all operating and maintenance procedures for their equipment. Complete understanding of the enclosed procedures will insure safe operation and maximum efficiency.

The Rosco Model DS Water Truck is designed to transport and apply water to roads and other surfaces.

The DS Water Truck consists of a modified elliptical steel tank which holds water to apply to road surfaces or for other uses. It can be loaded through the top opening or the fill system. A water pump provides the pressure to spray the water. This pump is powered by the truck PTO drive line.

A control panel for operating the spraying components and the PTO engagement control are located in the truck cab.

GENERAL DESCRIPTION

MACHINE COMPONENTS

1. **Tank**: A steel tank for holding water.
2. **Top Opening**: Provides an opening to fill the tank from overhead storage. It is located on the top of the tank.
3. **Ladder**: Provides a method for the operator to get to the top opening cover.
4. **Control Panel**: Mounted in a convenient location for the operator in the truck cab.
5. **Spray Nozzle**: (optional) The spray nozzle may be located midship, on the left or right side of the unit.
6. **Spray Bar**: (optional)The rear mounted spray bar has nozzles for spraying water on a road surface.
7. **Sprinkler Nozzles**: There are two sets of sprinkler nozzles. One set is located at the front of the unit, one set in the rear. The sprinkler nozzles provide a pattern spray that is good for dust control and landscape watering.
8. **Drain Valves**: The drain valves are located at the lowest points of the piping system to allow for complete drainage of the water piping system.
9. **Hose Reel**: (optional) The electric or manual rewind hose reel is used to unload the tank for watering. It is located at the rear of the unit.
10. **Tank Valve**: (optional) The manually controlled valve is located between the water pump and the tank. This valve must be closed to allow filling with the suction fill option.
11. **Recirculating Valve**: (optional) The manually controlled valve is located after the pump, and allows the flow of water through the pump into the tank. This valve must be opened to allow filling with the suction fill option.
12. **Water Pump**: The water pump is located at the lower front of the tank assembly behind the truck cab.
13. **Water Valves**: Units are equipped with either 2 or 2½ inch (5 to 6.4 cm) valves. See "Aquamatic Diaphragm Valves" description for details.

OPERATION

MACHINE BREAK-IN

Although there are no operational restrictions on the machine when used for the first time, it is recommended that the following mechanical items be checked:

A. *Before Starting*:

1. Read this manual and all safety decals on the machine before operating for the first time.
2. Read the truck manual and engine manual before starting.
3. Tighten the tank tie-down hardware.
4. Review and follow truck and engine break-in instructions.

B. *After operating for 2 hours:*

1. Tighten all wheel bolts to their specified torque.
2. Tighten all fasteners and tank tie-down hardware to their specified torque or specified clearance (Minimum spring length of 2.75" or 6.985 cm).
3. Lubricate pump bearing with multi-purpose grease.
4. Check all fluid levels.
5. Preform truck break-in checks.

C. *After 8 to 16 hours*:

1. Repeat all checks described in part "B" for two hours.
2. Then go to regular maintenance schedule as defined in the maintenance section of this manual and the truck and engine manuals.

PRE-OPERATION CHECKLIST

Efficient and safe operation of the Rosco DS Water Truck requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operating checklist is provided for the operator. It is important for both the personal safety and maintaining the good mechanical condition of the machine that this checklist is provided.
The areas to be checked are explained in the following paragraphs with a simple check sheet at the end of the maintenance section of this manual.

A. *Visual Inspection*:

1. Check the tightness of the tank tie-down hardware. Tighten as required.
2. Check for loose fasteners and hardware on the machine, nozzles and spraybar. Tighten as required to specified torque.
3. Check for any loose components. Tighten, secure or adjust as required.

B. *Service and Maintenance:*

1. Preform all truck and engine service checks specified in the truck manual.
2. Lubricate the water pump bearings using multi-purpose grease.
3. Check all fluid levels: engine oil, battery, coolant level and gearbox. Fill or add as required.
4. Check for leaks. Repair all leaks before operating.

C. *Spraybar and Nozzle Inspection*:

1. Check for loose or missing hardware or fasteners. Tighten or replace as required.

OPERATION

2. Check the water and air lines and connections. Be sure there are no leaks or damaged components. Tighten fittings or replace components as required.

3. Check the angle of each spraybar section or nozzle. Be sure they are all set to preform as desired.

D. *Functional Check*:
It is recommended that a functional check be done on each system and major component to insure that it functions properly before starting to work. Use two men to preform this check; one in the truck cab to run the engine and controls and the other at the appropriate check points. Insuring that the machine works properly before starting work will save unnecessary down time.

1. Start the truck engine.

2. **Be sure** the nozzles, sprinklers and spraybar switches are in the "OFF" position.

4. Engage the PTO.
Manual Transmission: Depress the clutch pedal, place the transmission in neutral, engage the PTO and slowly release the clutch pedal. The water pump should now be functioning.

Automatic Transmission: Apply the vehicle brakes, place the transmission in "DRIVE", engage the PTO, place the transmission in "PARK" and slowly release the brake.
NOTE: It may be necessary to let the truck creep forward slightly to allow the PTO to engage. Make sure everyone is clear of the vehicle.

5. Apply the parking brake.

6. The water pump should now be functioning.

CONTROLS
It is recommended that all operators review this section of the manual to familiarize themselves with the location and function of all controls before operating the Water Truck.

A. *Control Panel*: (See Figure 1)

1. LH MID Switch(Optional): Toggle "ON" to activate the left hand, midship spray nozzle.

2. Front and Rear Switches: Toggle the front switch "ON" to activate the sprinkler nozzles at the front and the rear switch to activate the sprinkler nozzles at the rear of the machine.

3. Additional Switches: Your unit may have additional switches to control other nozzles or the spraybar if your unit is equipped with these features. The switches will operate the same as explained above.

B. *PTO Control:*

1. A push/pull cable is used to engage or disengage the PTO. The control assembly is normally mounted at the bottom of the dash in the cab.

C. *Hose Reel(Optional):*

1. Manual or electric types are used.

A. *Manual version*: Remove the crank handle from storage, install on shaft and turn hose reel to rewind.

B. *Electric version*: Push button on right hand side of reel to rewind hose.

OPERATION

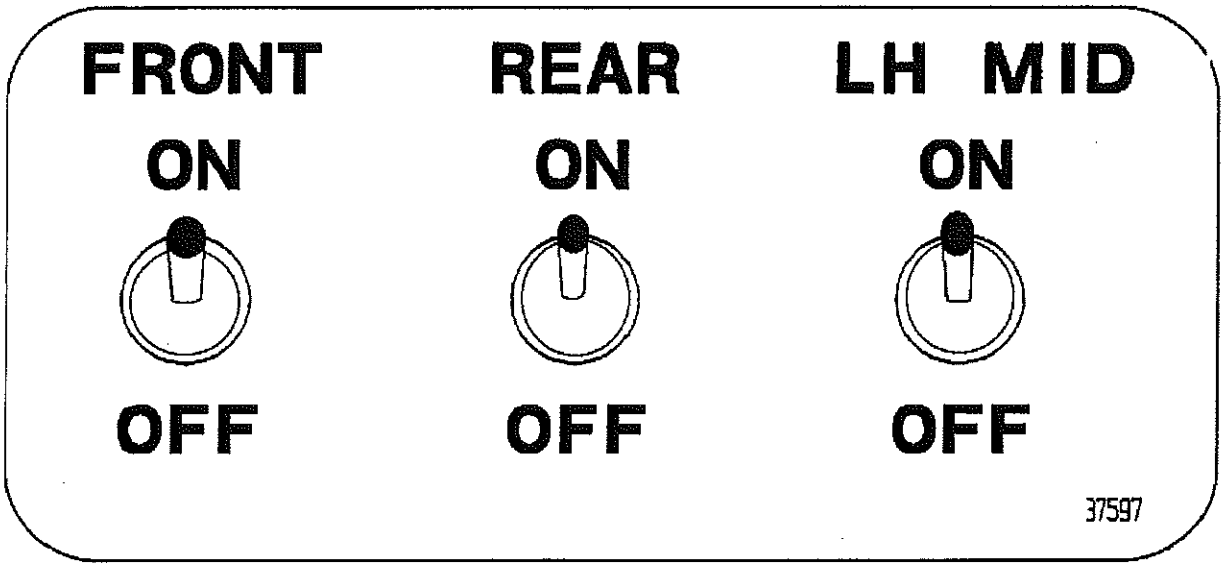


Figure 1 - Example of Control Panel Switches

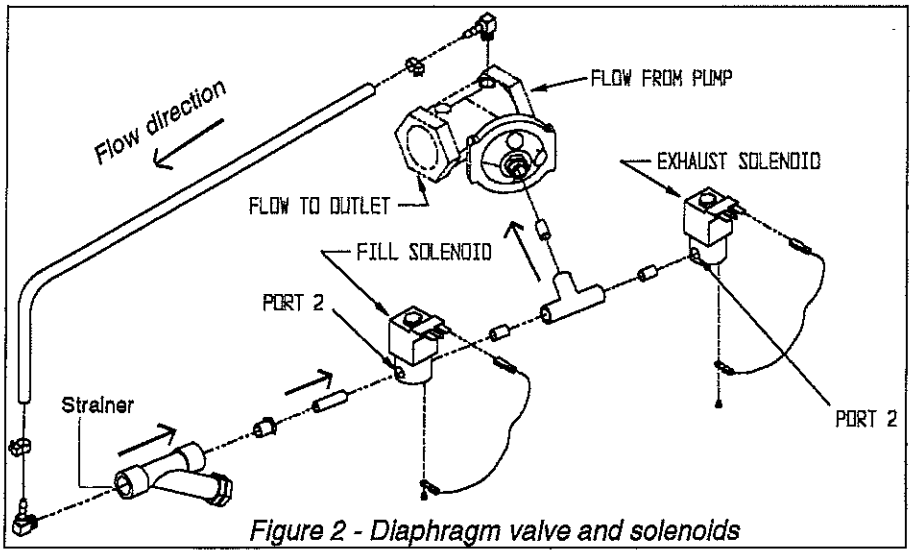


Figure 2 - Diaphragm valve and solenoids

D. *Aquamatic Diaphragm Valves*:
The water valves used on the DS Water Truck have spring assist close. Water pressure from the pump is used to either overcome the valve spring and open the valve or to feed pressure behind the diaphragm and close the valve. The spring on the valve keeps the valve closed when the pump is disengaged.

For water controlled valves:
Two 12 VDC electric actuated normally closed solenoids are used to control the water flow into and out of the valves. The switches on the control panel activate the solenoids. When the truck ignition is off there is no power to either solenoid and both are closed.

1. The Fill Solenoid is used to close the valve. (See Figure 2). When the control panel switch is in the "OFF" position, the fill solenoid is opened and water is allowed to flow into the valve chamber, closing the valve. The valve remains closed as long as the solenoid is open.

2. The Exhaust Solenoid is used to open the valve. (See Figure 2). When the control

panel switch is in the "ON" position, this solenoid opens allowing the water in the valve diaphragm chamber to drain which opens the valve. The water valve will remain open as long as there is pressure from the pump. If the pump is shut off, the spring in the valve will close the valve.

3. The solenoids can be used to help regulate the water flow. To increase the flow of water from the valve to the nozzles, momentarily toggle the control panel switch to the "ON" position and then to the center position. Doing this will only allow the valve diaphragm chamber to partially drain thereby not allowing the valve to open fully. Repeat this step to increase the water output until the desired flow level is reached.

4. If the water flow needs to be decreased, momentarily toggle the switch to the "OFF" position and then back to the center position. Doing this will partially close the valve by allowing the valve chamber to partially fill with water.

5. To hold the water flow to the new found flow rate, leave the control panel switch in the center position while spraying. The solenoids are both closed while the switch is in this position which maintains a constant water level in the valve. If the pump is shut off while the switches are in this position, the spring in the valve will close the valve.

6. *Strainer*: The water controlled valves have a strainer located on the side of the valve. The strainer has an end plug that will remove the strainer for cleaning or to drain the valve if there is danger of freezing. (See Figure 2)

7. *Optional air control on water valve.* If your unit is equipped with this valve control system, the water flow cannot be adjusted with the toggle switches. This feature has "ON/OFF" control only.

OPERATION

OPERATING (ACTUAL)

The Rosco DS Water Truck is designed to be simple and easy to operate. It will preform all required loading, circulating, spraying and unloading functions without the need for auxiliary equipment. It is recommended that the operator review these instructions annually and before the start of the work season.

Caution: *Be sure all operators and service personal have read and understand this manual before operating the machine.*

LOADING

This section explains the proper method for loading the tank. Following these instructions will allow the operator to safely load the machine and maintain a safe working environment. **Be sure to review** all safety instructions and follow the pre-start checklist before starting this or any operation.

The tank can be loaded through the top opening or the tank load line. **Before loading,** be sure that all drain valves, dump valves and petcocks are closed.

1. *Hydrant Loading Through Air Gap Fill Line*:

   a. Connect hose from the hydrant or other water pressure source to the load line coupling.

   b. Open the hydrant and fill the tank.

   g. When the tank is full, shut off the hydrant.

2. *Top Opening Loading*:

   a. Move the unit to the hydrant, storage tank or transfer vehicle.

   b. Carry the load hose to the top of the tank and open the top opening cover.

   c. Lay the end of the hose in the tank, open hydrant or start the pump on the storage tank or transfer vehicle to load the tank.

   d. Be sure the hose stays in the top opening. It may be necessary to tie the hose in place.

   e. Shut off the hydrant or pump when the tank is full.

   f. Remove the hose from the top opening.

   g. Remove the hose from the source and store as appropriate.

   h. When loading from an overhead storage tank, pull the truck top opening under the load spout and load tank.

3. *Suction Filling: (with optional attachment)*

   a. Check that the tank valve and load and recirculate valve are closed.

   b. Remove plug at load line coupling and attach suction hose to load line at pump inlet. Check that all joints are air tight.

   c. Place screen at hose end and place hose in water source. **Do not exceed 15 feet** of suction lift on hose.

   d. Open valve between the primer and water pump if unit is equipped with a primer. If unit is not equipped with a primer pump, there must be enough water in the system to fill the pump and lines.

   e. Use the primer handle to hand pump enough water to fill the water pump case.

   f. Start unit and run water pump and open the recirculate valve.

   g. Once the water pump is loading, close small valve between primer and water pump and fill the tank.

OPERATION

h. Stop water pump and close the recirculate valve.

j. Disconnect suction hose and store in appropriate holder.

k. Replace load line coupling plug and open tank valve.

SPRAYING

The following steps explain how to spray the loaded water in the most efficient manner and the safest for the operator and other workers. Review the job specifications to determine the best application rate and nozzle selection for the job.

1. Be sure all toggle switches are in the "OFF" position.

2. Be sure all nozzles are in the proper position for the job.

3. Clear the area of bystanders.

4. Align the truck with the area to be sprayed. Allow sufficient space for the truck to come to the required speed (4 to 8 mph or 6.5 to 13 kph) before it gets to the starting point.

5. Place the truck in the desired gear and/or axle ratio. Engage the PTO (see Functional Check for engagement procedure).

6. Increase the truck engine speed to 1000 to 1500 RPM to ensure adequate power. The faster the engine RPM, the higher the water pressure for spraying will be.

7. Proceed toward the area to be sprayed.

8. At the desired start point, toggle the switches for the desired nozzles "ON".

9. When spraying is finished or the tank is empty, turn off the spraying switches, lower the engine RPM speed to idle and disengage the PTO. **DO not allow** the pump to run dry when the tank is empty.

UNLOADING

Follow the steps below to ensure complete drainage of the water system and to unload excess water after the completion of a job.

1. Move the truck to the unloading site or over a sewer hole opening where remaining water can be dropped.

2. Open all petcocks or drain plugs and drain valves.

3. Remove plug from load line coupling if equipped.

4. Open tank valve and recirculating valve, if equipped, to allow water to drain from the tank.

5. Make sure all water is drained from the system to avoid freezing of components during cold weather.

6. Replace load line coupling plug, if equipped, and close all petcocks and replace drain plugs.

TRANSPORTING

The Rosco DS Water Truck is designed to be easily moved from storage area to work site. Each operator should be in compliance with state requirements and be trained in and follow defensive driving procedures.

1. *Vehicle*

   a. Review and follow the operating instructions in the truck operator's manual.

OPERATION

Caution: *Make sure you are in compliance with local regulations regarding transporting equipment on public roads. Check with local transportation authorities to be sure.*

b. Maintain the truck in good operating condition.

c. Make sure that the vehicle can clearly be seen by oncoming and overtaking traffic.

CAUTION: *Make sure that all lights, reflectors and other warnings required by the local transport authorities are in place. Be sure that they are clean, in working order and can be seen by all traffic.*

d. Do not drink and drive.

CAUTION: *Allow extra stopping space between the truck and the vehicle in front of you. A loaded truck will require more stopping distance that an unloaded vehicle.*

e. Do not exceed the speed limit and always reduce speed on rough roads and when making turns.

2. *Water Truck*

a. Check the tank tie-down hardware prior to transporting. Tighten as required.

b. Raise the spraybar wings (if equipped) before transporting and secure in the up position with their anchor chains.

c. Do not allow riders on the machine.

d. Do not operate the pump system until the spraying location is reached.

e. If equipped with flusher nozzles, remove the nozzles before transporting long distances. This prevents damage from the gravel and rocks impacting the nozzle spraying surface.

f. Plug open piping with plugs to prevent contamination and damage to threads.

STORAGE

At the end of the season, the DS Water Truck should be thoroughly inspected and prepared for storage. Repair and/or replace any worn components to prevent any unnecessary down time at the beginning of the next season.

A stored machine requires as much periodic maintenance as a machine at work. Units not in use, must receive periodic scheduled maintenance. Many instances of customer downtime and dissatisfaction can be traced to parts defects caused by inattention to stored machines. Many of these complaints can be prevented by proper maintenance.

CAUTION: *Store the Water Truck in an area away from human activity. Do not allow children to play around a stored machine.*

Many people store their stock machines outdoors where they are subjected to damage by weather and dirt. Listed below are procedures for properly maintaining stored machines.

1. Thoroughly wash the machine.

2. If the machine is heavily caked with dirt, it may be necessary to use a high-pressure washer to clean it.

OPERATION

3. Drain all water from the tank and lines by opening valves under the tank and on the lines throughout the system. The standard drains are petcocks located on the lowest points of the piping.

4. Remove drain plugs from the bottom of the pump housing. Drain water from the water pump. Reinstall and tighten the plugs.

5. Lubricate all grease points. Make sure that all grease cavities have been filled with grease.

6. Top off all fluid levels to minimize condensation during storage time.

7. Inspect all water hoses and fittings. Replace any hoses that are badly cut, nicked, abraded or separating from a fitting.

8. Inspect the inside of the tank for rust through the top opening.

WARNING: ***Do not*** *enter the tank. Entry into a confined space requires special equipment and training.*

9. Check the condition of all safety decals. If any are missing, damaged or illegible, order replacements immediately. Install replacement parts during the off-season.

10. All units should be stored so they have maximum protection against adverse weather conditions. Likewise, all replacement parts whether complete assemblies, component repair parts, service kits etc., should be stored in a dry, sheltered place.

Store the machine in an area that is level, dry and clean with a firm base.

11. If a unit will not be used for more than two (2) months, start the truck every month during storage and run until it is warm. After the unit is warm, grease all piviot points, following standard Operation Manual procedures.

REMOVING FROM STORAGE

When removing the Water Truck from storage and preparing for the season, use the following procedure:

1. Use the truck manual as a guide for servicing the truck before starting.

2. Be sure to check the following items:
   - ☞ Tank hold-down hardware.
   - ☞ All hardware and fasteners. Tighten as required.
   - ☞ Tire pressure.
   - ☞ All lines and fittings. Repair, replace or tighten as needed.

3. Lubricate all grease fittings.

4. Check that all drain plugs are tight on the water pump.

5. Inspect the inside of the tank for rust through the top opening. **Do not** enter the tank. Entry into a confined space requires special equipment and training.

6. Repair or replace any worn, broken or defective parts before starting.

7. Review and follow the pre-start checklist before starting.

OPERATION

SPRAY NOZZLES - (IF EQUIPPED)

Standard spray nozzle settings vary. These settings vary according to the particular situation found on each job site. Conditions that can affect spray nozzle settings include street construction, crown profile widths, type of sewage systems and water availability.

1. Set spray nozzle to obtain desired coverage.
2. Ensure stream barely overlaps at the point of pavement contact.
3. Ensure water strikes pavement 8 to 12 feet (2.5 to 3.7 m) in front of spray nozzle to provide the maximum coverage and pressure.
4. Set the spray to strike the pavement 4 to 6 feet from spray nozzle if heavy dirt or refuse is to be cleaned from the street.
5. Loosen the horizontal locking nut to move nozzle to the right or left. Loosen the vertical locking nut to raise or lower the nozzle.

OPERATING HINTS

The following hints may help the operator obtain better performance from the DS Water Truck:

1. Adjust the flusher shoes (if equipped) or nozzles to obtain the maximum coverage for the job.
2. Operate the truck at 4 to 8 mph (6.5 to 13 kph) to obtain the best operating conditions. Keep the speed down to maintain a safe working environment.
3. Set the park brake whenever it is necessary to leave the cab. Prevent the truck from moving or creeping away when working at the rear of the machine.
4. Clear everyone from the working area before moving the vehicle.
5. Maintain the machine in good condition at all times. Damage or worn components can fail during operation and create hazardous conditions. Good maintenance will prevent injury to personnel and expensive down time.
6. Drain water tank when the Rosco DS Water Truck will not be used for more than several days. Open all valves to ensure water is drained out from the pump, hoses and lines.

NOTE: *Water remaining in piping can freeze and damage the unit.*

SECTION 4

MAINTENANCE

MAINTENANCE

The suggestions and recommendations contained in this manual for maintenance should be followed to obtain long life and best performance from your Rosco DS Water Truck. **REMEMBER:** Do not attempt to service or repair major components unless authorized to do so by your Rosco Dealer/Distributor. Any Unauthorized Repair Will Void The Warranty.

PROPERLY MAINTAINED EQUIPMENT IS SAFE EQUIPMENT. The operator of the DS Water Truck should inspect the machine daily.The operator is responsible for seeing that worn or damaged parts are replaced or repaired to prevent damage to other areas of the machine. Daily inspections should include observation for loose bolts, fluid leaks, worn or damaged hoses, debris or dirt accumulations which could cause a potential service or safety problem.

A PREVENTIVE MAINTENANCE CHART is included at the end of this section to guide the operator in setting up a Preventative Maintenance schedule for the DS Water Truck.

A CLEAN MACHINE. The first and most important requirement for satisfactory DS Water Truck performance is a clean machine. Many failures in the field are due to equipment that has an accumulation of excess dirt to the point that even ordinary adjustments and lubrication are neglected.

DO NOT MODIFY THE WATER TRUCK. Any unauthorized modification may impair the function and/or safety and affect the working life of the equipment. Any unauthorized modification may void the warranty.

General Maintenance

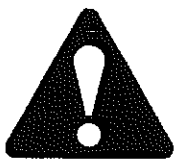
TRUCK

Perform all service functions on the vehicle as defined in the truck Operator's Manual. This will include but is not limited to the following:

1. Check fuel level. Add as required.
2. Check engine oil level. Add as required.
3. Check coolant level. Add as required.
4. Check transmission fluid and brake fluid levels. Add as required.
5. Check all belts and hoses. Replace as needed.
6. Check the tire inflation pressure.
7. Clean all lights and lenses.

TANK

1. If tank requires internal maintenance, hire trained professionals to preform the operation required.



DANGER: *DO NOT go into the tank. Entry into a confined space requires specials equipment and training. You can be seriously injured or killed due to poisonous gasses or lack of oxygen.*

DRAINING

1. When the DS Water Truck will not be used for several days or at the end of the season, be sure to drain the tank. Follow the "Unloading" procedure in the OPERATION section of this manual to completely empty the tank.

2. If there is a danger of freezing, be sure to drain the valve strainer, if water controlled, and/or the valve to ensure that there is no water in the valve and solenoids that could freeze and damage the components.
   To drain the valve, remove the plug on the lower end of the valve under the solenoid.
   To drain the strainer, remove the plastic end plug on the strainer.
   Remove this plug with care as the inside of the strainer will remove with the plug.
   After draining, replace plugs.

MAINTENANCE

TANK COMPONENTS

The tank is attached to the truck frame with clamps. The tightness of these clamps should be checked daily. Wooden blocks are mounted between the tank and the truck frame to absorb shock loads and to act as wear surfaces. During use, the blocks wear and the mounting hardware will need to be tightened. To tighten the mounting hardware, follow this procedure:

1. Stop the truck engine, place all controls in neutral, set the park brake, and remove the ignition key.

2. The best time to check the hardware is at the start of a working day.

3. Tighten the anchor bolts. Measure spring length and maintain at 2.75 inches (7 cm). The spring coils should have a visible gap between them.

4. If the anchor bolts can no longer be adjusted to proper spring compression, the wooden blocks must be replaced.

5. Keep the hardware tight at all times to prevent the tank from shifting on the frame.

GENERAL CLEANING

It is particularly important to clean the outside of the machine at the end of each working day, or more frequently if required. Clean the platform, steps, railings and ladder to prevent slipping or tripping during operation.

Clean the instruction plates, decals, gauges and other information plaques so they can be seen and read by the operator at all times.

Remove the strainer on water controlled valve units periodically to keep water flow unobstructed.

HOSES

Each day before starting work, check all piping, hoses, fittings and couplers and any connections. Be sure they are tight and free from damage. Any damaged or worn parts should be replaced before the machine is used.

SOLENOIDS

Each day inspect the solenoids to be sure they are free of dirt and debris.

FUSES

Each day check all fuses. Make sure they are making proper contact. Replace any fuses that are damaged or blown

WATER PUMP

Every three months, lubricate the water pump (2 locations) using multi-purpose grease until grease escapes from bearing retainers.

SPRAYBAR (IF EQUIPPED)

Every 20 hours or once a week, perform the following maintenance procedure on the spraybar located on the back of the DS Water Truck.

1. Keep the inside of the spraybar clean to prevent clogging of any other components. Remove the nozzles from each end of the spray bar and pump water through the spraybar to flush out any accumulated debris.

2. After cleaning, check all hoses, fittings and clamps for leaks or loose components. Do not operate the unit with leaking or damaged parts. Leaks can create a hazardous condition. Leaks can also affect the performance and function of the machine by causing uneven application and wasted water.

3. Check that all fasteners are tight. Do not operate with loose components. Review the bolt specification chart at the end of this section and maintain bolts at their specified torque.

MAINTENANCE

SPRAY NOZZLES (IF EQUIPPED)
There is little or no maintenance required for the spray nozzle. Replace spray nozzles when broken and :

1. Check that the two piece assembly of the spray nozzle is secured together.
2. Check the locking nuts or piping to ensure that they are tightened properly.
3. Loosen the horizontal locking nut to move the nozzle to the left or right.
4. Loosen the vertical locking nut to raise or lower the nozzle.

PAINT
At the end of each season, repaint any surfaces that show signs of wear by water action of rock chipping. Open the top opening and look inside to check for rust or tank coating deteration.

DANGER: *Do not go into the tank. Entry into a confined space requires special equipment and training. Serious injury or death can result from entry into a tank due to lack of oxygen. Keep others out.*

FLUIDS AND LUBRICANTS

1. *Grease* (non-truck components)
   Use a SAE multi-purpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multi-purpose lithium based grease.
2. *Truck Systems*
   Follow the recommendations in the truck Operator's Manual for fuel, lubricating oils, coolants and lubricating greases. Consult with the truck manual for system capacities and servicing intervals.

GREASING

1. Use only a hand-held grease gun for all greasing.
2. Wipe grease fittings with a clean cloth before greasing to avoid injecting dirt and grit into the component.
3. Replace broken fittings immediately.
4. If a fitting will not take grease, remove and clean the fitting thoroughly. Be sure to cover fitting opening while the fitting is removed to avoid contamination. Before replacing the fitting, clean the lubricant passageway. Replace the fitting if necessary.

Use the Preventive Maintenance Chart provided to keep a record of all scheduled maintenance.

MAINTENANCE

PREVENTIVE MAINTENANCE CHART

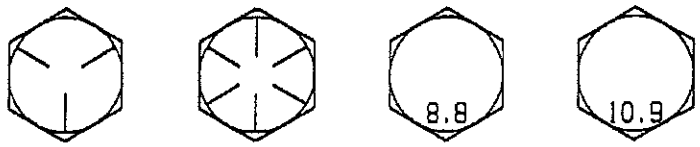
Identifying Codes: I = Inspect, A = Adjust, R = Replace, L = Lubricate, CL = Clean, C = Check

ITEM	Daily	20 hrs/ Weekly	90 Hrs	Annually	CAPACITY	PART NUMBER	TYPE
Engine Belts	C				See truck Operator's Manual for information.		
Engine Oil	C				See truck Operator's Manual for information.		
Engine Coolant	C				See truck Operator's Manual for information.		
Brakes	C				See truck Operator's Manual for information.		
Fuel	C				See truck Operator's Manual for information.		
Transmission	C				See truck Operator's Manual for information.		
Tires	C						
Lights and Lenses	CL						
Tie-down Hardware	C						
Outside of Machine	CL			CL			
Hoses	I						
Solenoids	I/CL						
Fuses	I						
Water Pump			L				SAE multi-purpose high-temp EP grease
Spraybar		CL					

BOLT TORQUE

The table below gives the correct torque values for various **NON-LUBRICATED** bolts. **DO NOT** lubricate bolts unless otherwise specified in this manual. Check tightness of bolts periodcally, using this table as a guide. **ALWAYS** replace hardware with an equal strength fastener. When using locking fasteners, increase torque values by 5%.

BOLT IDENTIFICATION BY HEAD MARKINGS:



BOLT SIZE	ENGLISH				METRIC			
	GRADE 5		GRADE 8		CLASS 8.8		CLASS 10.9	
	FT-LB	N-M	FT-LB	N-M	FT-LB	N-M	FT-LB	N-M
M6					7	10	11	15
1/4	9	12	12	17				
5/16	19	25	27	36				
M8					18	25	26	35
3/8	33	45	45	63				
M10					37	50	52	70
7/16	53	72	75	100				
M12					66	90	92	125
1/2	80	110	115	155				
M14					103	140	148	200
9/16	115	155	165	220				
5/8	160	215	220	305				
M16					166	225	229	310
3/4	290	390	400	540				
M20					321	435	450	610
7/8	420	570	650	880				
M24					553	750	774	1050
1	630	850	970	1320				
M30					1103	1495	1550	2100

HYDRAULIC FITTING TORQUE

TIGHTENING FLARE TYPE TUBE FITTINGS

1. Check the flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Lubricate connection and hand tighten swivel nut until snug.
4. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.

NOTE: The torque values shown are based on lubricated connections as in assembly.

Tube Size OD	Nut Size Across Flats	Torque Value (see note)		Recommended Turns to Tighten (After Finger Tightening)	
(in)	(in)	(N.m)	(lb-ft)	(Flats)	(Turns)
3/16	7/16	8	6	1	1/6
1/4	9/16	12	9	1	1/6
5/16	5/8	16	12	1	1/6
3/8	11/16	24	18	1	1/6
1/2	7/8	46	34	1	1/6
5/8	1	62	46	1	1/6
3/4	1-1/4	102	75	3/4	1/8
7/8	1-3/8	122	90	3/4	1/8

TIGHTENING O-RING FITTINGS

1. Inspect O-ring and seat for dirt or obvious defects.
2. On angle fittings, back the lock nut off until the washer bottoms out at top of groove.
3. Hand tighten fitting until back-up washer or washer face (if straight fitting) bottoms on face and O-ring is seated.
4. Position angle fittings by unscrewing no more than one turn.
5. Tighten straight fitting to torque shown.
6. Tighten while holding body of fitting with a wrench.

NOTE: The torque values shown are based on lubricated connections as in reassembly.

Tube Size OD	Nut Size Across Flats	Torque Value (see note)		Recommended Turns to Tighten (After Finger Tightening)	
(in.)	(in.)	(N.m)	(lb-ft)	(Flats)	(Turns)
3/8	1/2	8	6	2	1/3
7/16	9/16	12	9	2	1/3
1/2	5/8	16	12	2	1/3
9/16	11/16	24	18	2	1/3
3/4	7/8	46	34	2	1/3
7/8	1	62	46	1-1/2	1/4
1-1/16	1-1/4	102	75	1	1/6
1-3/16	1-3/8	122	90	1	1/6
1-5/16	1-1/2	142	105	3/4	1/8
1-5/8	1-7/8	190	140	3/4	1/8
1-7/8	2-1/8	217	160	1/2	1/12

SECTION 5

TROUBLESHOOTING

PROBLEM INDEX (Alphabetical order):

See an Authorized ROSCO Dealer/Distributor for diagnosis and repair of problems not listed in this section. When problems occur, do not overlook the simple solution. For example, if the water pump is not turning, the PTO may not be engaged. After any mechanical problem has been corrected, be sure to locate and correct the cause of the problem.

TROUBLESHOOTING

The Rosco DS Water Truck is a large tank that transports and sprays water for use in a variety of road construction and general maintenance opertions. It is a reliable system that requires regular maintenance. In the following section, we have listed many of the problems, causes and solutions that an operator may encounter while using the unit.
If you encounter a difficult problem and cannot solve it with the information in this section, please call your local dealer. When you call, be sure to have this Operator's Manual and the information contained on the Serial Number Plate. This would include the model, serial number and the production year.

PROBLEM	CAUSE	SOLUTION
Entire machine vibrates	PTO driveshaft U-joints worn.	Replace U-joints.
	PTO driveshaft out of balance.	Have driveshaft balanced by qualified repair shop.
	Driveshaft not phased correctly.	Have driveshaft phased with both yoke ends parallel to each other - even one spline off creates vibration.
	Input and output angles of driveshaft not equal or at angles greater than 8 degrees.	Check for worn/loose pump mounts, realign pump with input to be equal angle with PTO output.
	Engine or driveline problems with truck.	Have truck inspected and repaired by qualified dealer mechanic.
Water pump turns but won't pick up water.	Air leak on suction side of Water Pump.	Check gasket on quick coupling cap of load inlet. No "air suction" type sound should be heard. Replace gasket if any sound is heard.
	Pump not primed.	See priming procedures. Check for hole in piping on the suction side of the water pump.
If equipped with suction fill and primer option	Tank valve closed.	Check operation of the tank valve. Open valve if closed.
	Valve on external water source closed. Applicable when using pump to fill tank.	Open valve.
	Water tank empty.	Stop and refill tank.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Water pump won't turn fast enough.	Truck speed too slow.	Increase truck engine RPM.
Water pump does not turn.	PTO is not engaged.	Engage PTO - See "Preparation For Use" in Operation Section.
	Pump is worn or damaged.	Repair or replace as necessary.
Water application is too light.	Ground speed is too fast.	Slow truck down.
	Engine RPM is not sufficient to keep water pump speed up.	Gear transmission down and/or idle engine speed up.
	Plugged or restricted inlet from water pump.	Clean out water lines and flush tank if necessary.
	Plugged or restricted outlet from water pump.	Check lines, valves and nozzles. Clean or replace as needed
Individual nozzle spraying light.	Nozzle clogged or damaged.	Clean or replace as needed.
Spray bar or nozzles will not shut off or turn on. (Solenoid controls)	Blown fuse.	Replace fuse.
	Plugged screen on the water solenoid circuit.	Clean and replace screen.
	Faulty Switch.	Replace switch.
	Faulty solenoid.	Replace solenoid.
Spraybar or nozzles shut off while spraying. (Air controls only)	Blown fuse or circuit breaker.	Replace fuse or reset circuit breaker.
	Faulty solenoid valve wires or loose wiring plug on back of control panel.	Check wiring continuity - reconnect plugs on panel.
	Faulty switch.	Replace switch.
	Faulty solenoid valve.	Replace solenoid valve on water valve.

ROSCO

A LeeBoy Company

DS WATER TRUCK
PARTS CATALOG

PART NO. 37605

EFFECTIVE SERIAL NUMBER 34648
PUBLISHED 4/11/97

REVISED 6/15/98

NOTE: It is the responsibility of the customer or user's management to train, educate and supervise the employee in the proper operation and manintenance of this equipment.

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Denver, North Carolina
www.LeeBoy.com
Phone: 704-966-3300

SECTION 6
PARTS CATALOG
TABLE OF CONTENTS
PUBLISHED 6/15/98

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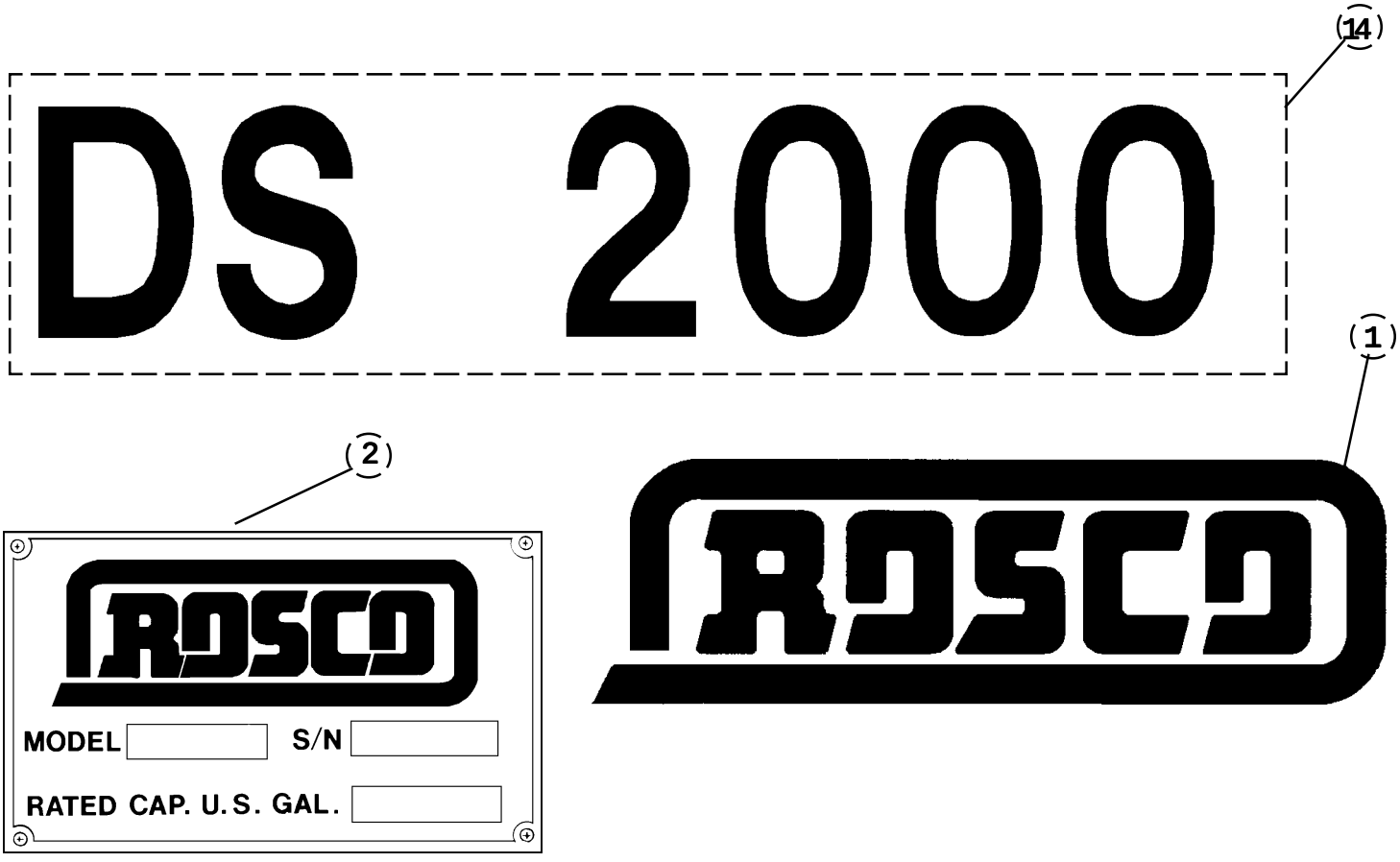
ITEM	PART NO.	QTY.	DESCRIPTION
1	33908	1.00	DECAL, ROSCO LOGO, LARGE BLACK
2	35355	1.00	PLATE, SERIAL NUMBER ROSCO
NS	35663	1.00	LIGHT BAR, RED, KD502
4	36236	1.00	DECAL, OPERATING SAFETY
5	36237	1.00	DECAL, OPERATING CAUTION
6	36396	1.00	DECAL, WARNING, PTO & SHAFT
7	37000	1.00	DECAL. TANK LADDER
NS	5036	4.00	REFLECTOR, RED
NS	5037	2.00	REFLECTOR, AMBER
NS	5096	2.00	LIGHT, CLEARANCE, RED W/ REFLECTOR
NS	5097	2.00	LIGHT, CLEARANCE, AMBER W/ REFLECTOR
NS	33271-1	42.00	WIRE,16GA BLACK
NS	33594-01	40.00	CLAMP, LOOP, .50 OD, REM CUSHION
NS	34941	24.00	TUBING, WIRE, .375 ID, POLTHN
NS	71060	10.00	LOOM, SPLIT, CONVOLUTED, .250
NS	71864	0.50	LOOM, SPLIT, CONVOLUTED, .375
NS	80036	40.00	NUT, HEX, .250-20
NS	80160	40.00	WASHER, SPLIT LOCK, .250
12	53495	1.00	DECAL, GENERAL INSTRUCTION
13	D48	2.00	DECAL, ROSCO LOGO, SMALL BLACK
14	37593	REF	DECAL, DS 2000, BLACK
14A	37594	REF	DECAL, DS 4000, BLACK
14B	37660	REF	DECAL, DS 3000, BLACK




OPERATING SAFETY
1. Do not allow riders on this unit when transporting.
2. Do not go into tank without life line. Make sure there is a person outside of tank to pull you to safety. Keep others out.
3. Keep hands, feet, hair and clothing away from moving parts.
4. Keep all hydraulic lines, fittings and couplers tight and free of leaks before using.
5. Clean reflectors and lights before transporting.
6. Review safety instructions with all operators on an annual basis.
36236
(4)
(6)
WARNING
Avoid serious injury or death.
Rotating Driveline can snag clothes, skin, hands and hair.
Always shut engine off before working on or near system.
36396
(5)
CAUTION
1. Read and understand Operator's Manual before using.
2. Train operators before allowing them to use machine. An untrained operator is not qualified to use machine.
3. Install and secure all guards before starting.
4. Clear the area of bystanders before starting.
5. Lock spraybar in the up position before transporting. (If equipped)
6. Obey all applicable traffic laws.
7. Do not exceed a safe travel speed.
8. Do not drink and drive.
9. Review safety instructions with operators on an annual basis.
36237
NO
STEP
57000
(7)
(12)
WARNING
FOR SAFETY & EFFICIENCY IT IS THE RESPONSIBILITY OF THE CUSTOMER OR USER'S MANAGEMENT TO TRAIN, EDUCATE & SUPERVISE HIS EMPLOYEES IN THE PROPER OPERATION & MAINTENANCE OF THIS EQUIPMENT.
53495
ROSCO
(13)

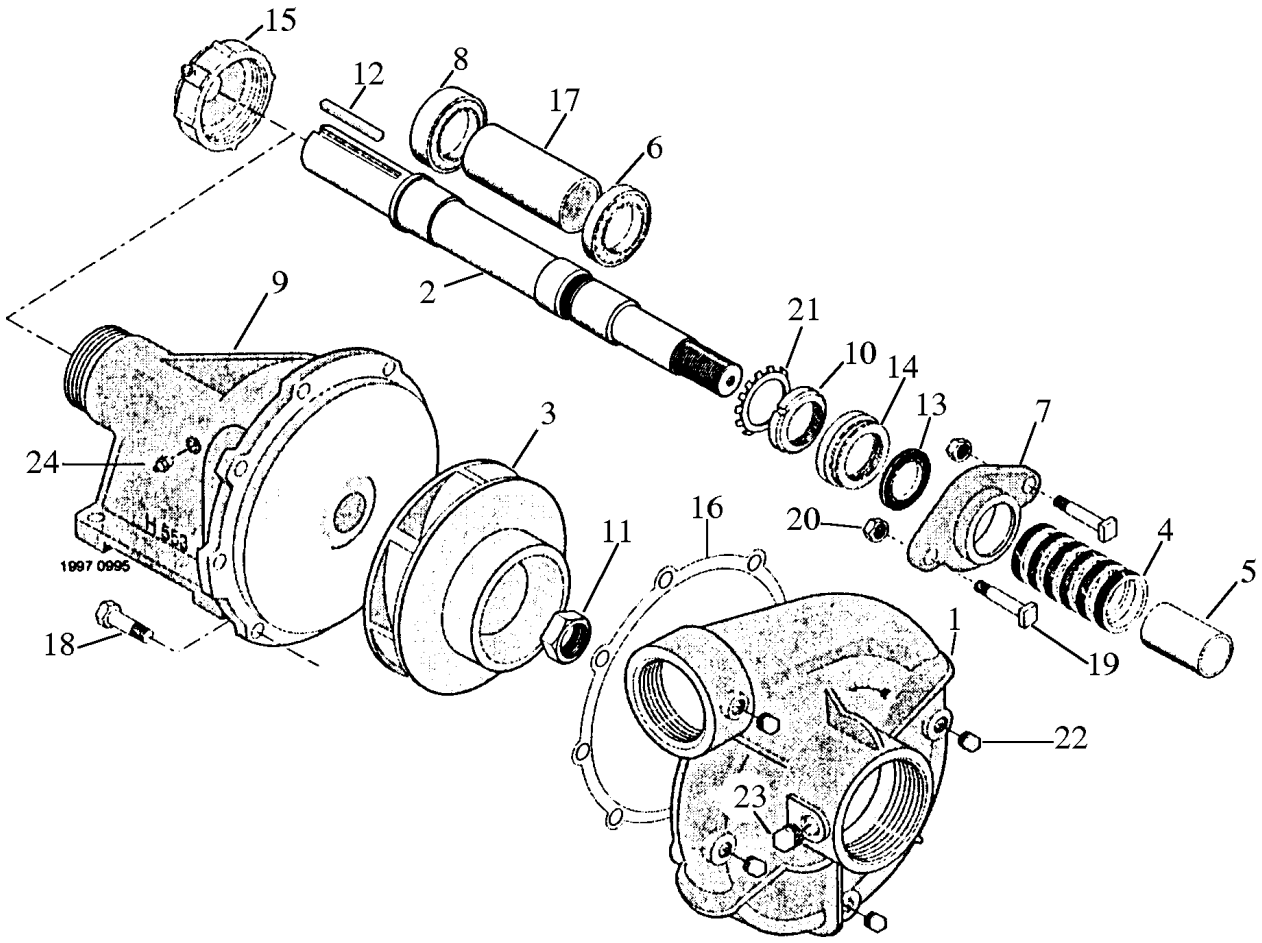
ITEM	PART NO.	QTY.	DESCRIPTION
1	37548-01	1.00	VOLUTE CASE (For counter clockwise rotation)
2	37548-02	1.00	SHAFT (For counter clockwise rotation)
3	37548-03	1.00	IMPELLER (For counter clockwise rotation)
4	37548-04	1.00	RING,PACKING(SET OF 6)
5	37548-05	1.00	SLEEVE,SHAFT
6	37548-06	1.00	BEARING,BALL
7	37548-07	1.00	GLAND,PACKING
8	37548-08	1.00	BEARING,BALL
9	37548-09	1.00	FRAME
10	37548-10	1.00	LOCKNUT
11	37548-12	1.00	LOCKNUT,IMPELLER(CCW)
12	37548-13	1.00	KEY,1/4X2-1/8"
13	37548-14	1.00	SLINGER,WATER
14	37548-15	1.00	INNER BEARING CAP
15	37548-16	1.00	OUTER BEARING CAP ASSEMBLY (Includes grease fitting and set screw)
16	37548-17	1.00	GASKET,VOLUTE
17	37548-18	1.00	SPACER,SLEEVE
18	37548-19	1.00	CAPSCREW,HEX 3/8-16X1"
19	37548-20	1.00	BOLT,SQ.HEAD 3/8-16X2-1/2"
20	80038	2.00	NUT, HEX, .375 -16
21	37548-24	1.00	WASHER,BEARING LOCK
22	99535	4.00	PIPE, PLUG, 04MP, SQ HD, MI
23	99537	1.00	PIPE, PLUG, 08MP, SQ HD, MI
24	72660	1.00	FITT, LUBE, STR, 02FP
NS	37548-25	1.00	BRONZE PACKING GLAND (SPLIT)
NS	37548-26	1.00	SHAFT REPLACEMENT KIT (CCW ONLY)

FOR A CLOCKWISE ROTATION PUMP ALL PARTS ARE THE SAME EXCEPT THE FOLLOWING.

37548-1 PUMP, WATER, 3 DISCH X 4 SUCT, CW

1	37548-21	1.00	VOLUTE CASE
2	37548-22	1.00	SHAFT
3	37548-23	1.00	IMPELLER
11	37548-11	1.00	LOCKNUT,IMPELLER(CW)

Note: Be sure to have your units serial number when ordering parts. It is needed to determine your units pump rotation.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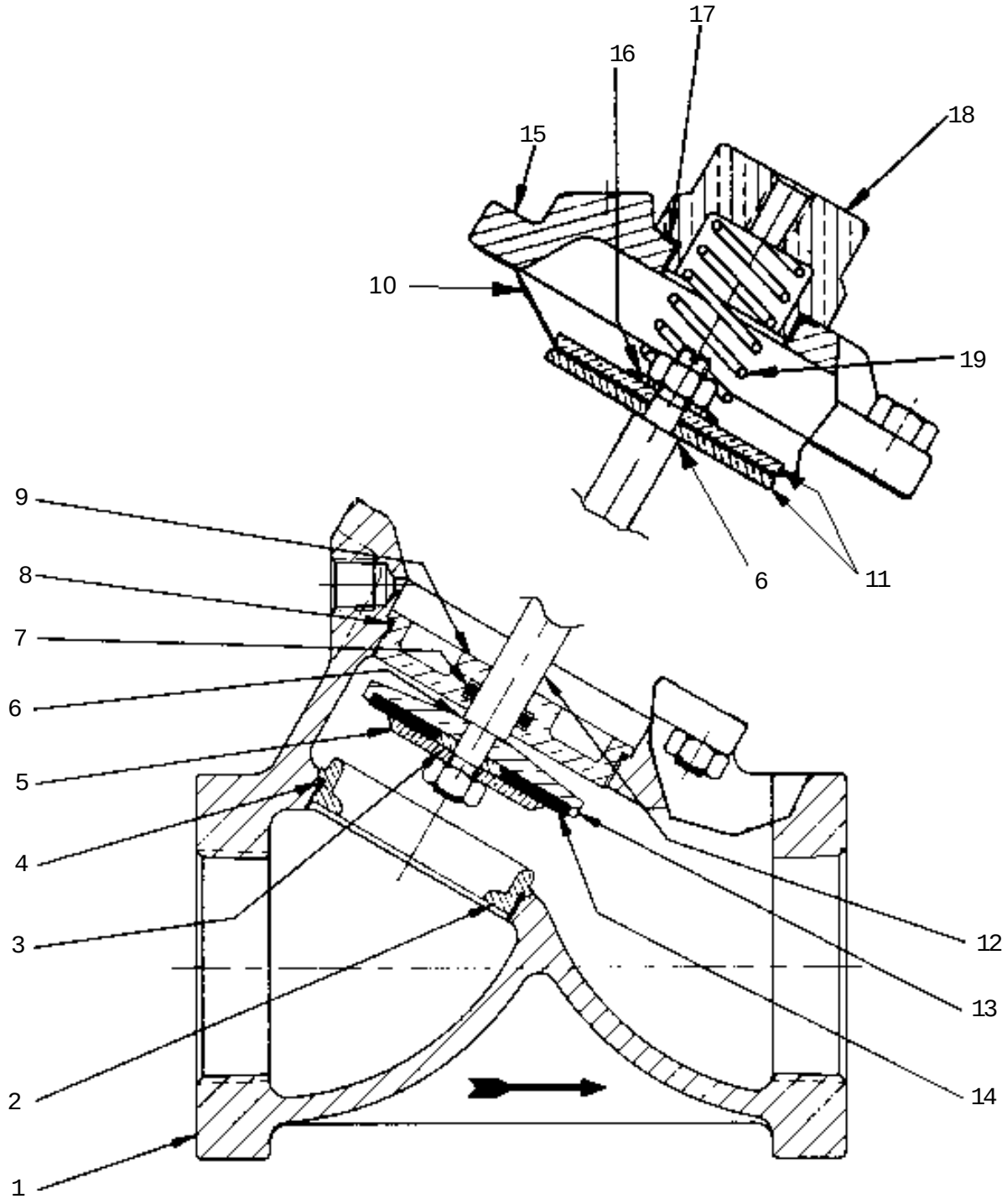
ITEM	PART NO.	QTY.	DESCRIPTION
1	36426-01	1.00	VALVE BODY
2	36426-02	1.00	VALVE SEAT
3	36426-03	1.00	DISC SPACER
4	36426-04	1.00	O-RING
5	36426-05	1.00	DISC PLATE
6	36426-06	2.00	GASKET
7	36426-07	1.00	O-RING
8	36426-08	1.00	O-RING
9	36426-09	1.00	O-RING RETAINER
10	36426-10	1.00	DIAPHRAGM
11	36426-11	2.00	DIAPHRAGM PLATE
12	36426-12	1.00	SHAFT
13	36426-13	1.00	DISC HOLDER
14	36426-14	1.00	DISC
15	36426-15	1.00	CAP
16	36426-16	1.00	CENTERING WASHER
17	36426-17	1.00	GASKET
18	36426-18	1.00	RETAINER NUT
19	36426-19	1.00	SPRING
NS	36426-20	1.00	INTERNAL PARTS KIT (INCLUDES ITEMS 3THRU 13)
NS	36426-21	1.00	SEAT ADJUSTMENT TOOL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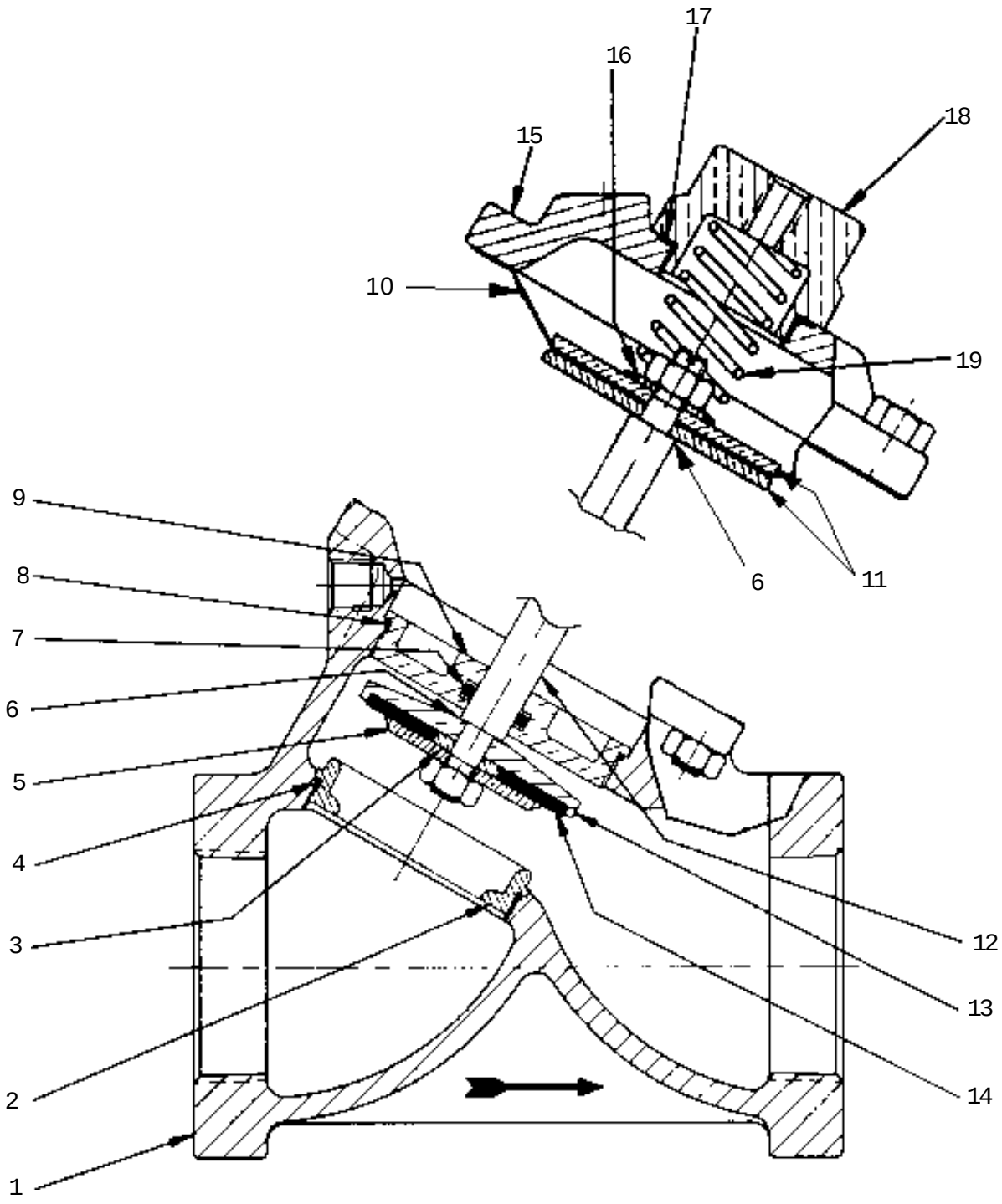
ITEM	PART NO.	QTY.	DESCRIPTION
1	36456-01	1.00	BODY
2	36456-02	1.00	SEAT
3	36426-03	1.00	DISC SPACER
4	36456-03	1.00	O-RING (BUNA N)
5	36456-04	1.00	DISC PLATE
6	36426-06	2.00	GASKET
7	36456-05	1.00	O-RING (BUNA N)
8	36456-06	1.00	O-RING (BUNA N)
9	36456-07	1.00	O-RING RETAINER
10	36456-08	1.00	DIAPHRAGM /(BUNA N/NYLON)
11	36456-09	2.00	DIAPHRAGM PLATE
12	36456-10	1.00	SHAFT
13	36456-11	1.00	DISC HOLDER
14	36456-12	1.00	DISC (BUNA N)
15	36456-13	1.00	CAP
16	36426-16	1.00	CENTERING WASHER
17	36426-17	1.00	GASKET
18	36426-18	1.00	RETAINER NUT
19	36426-19	1.00	SPRING
NS	36456-20	1.00	INTERNAL PARTS KIT (INCLUDES ITEMS 3-14)
NS	36426	1.00	TOOL, SEAT ADJUSTMENT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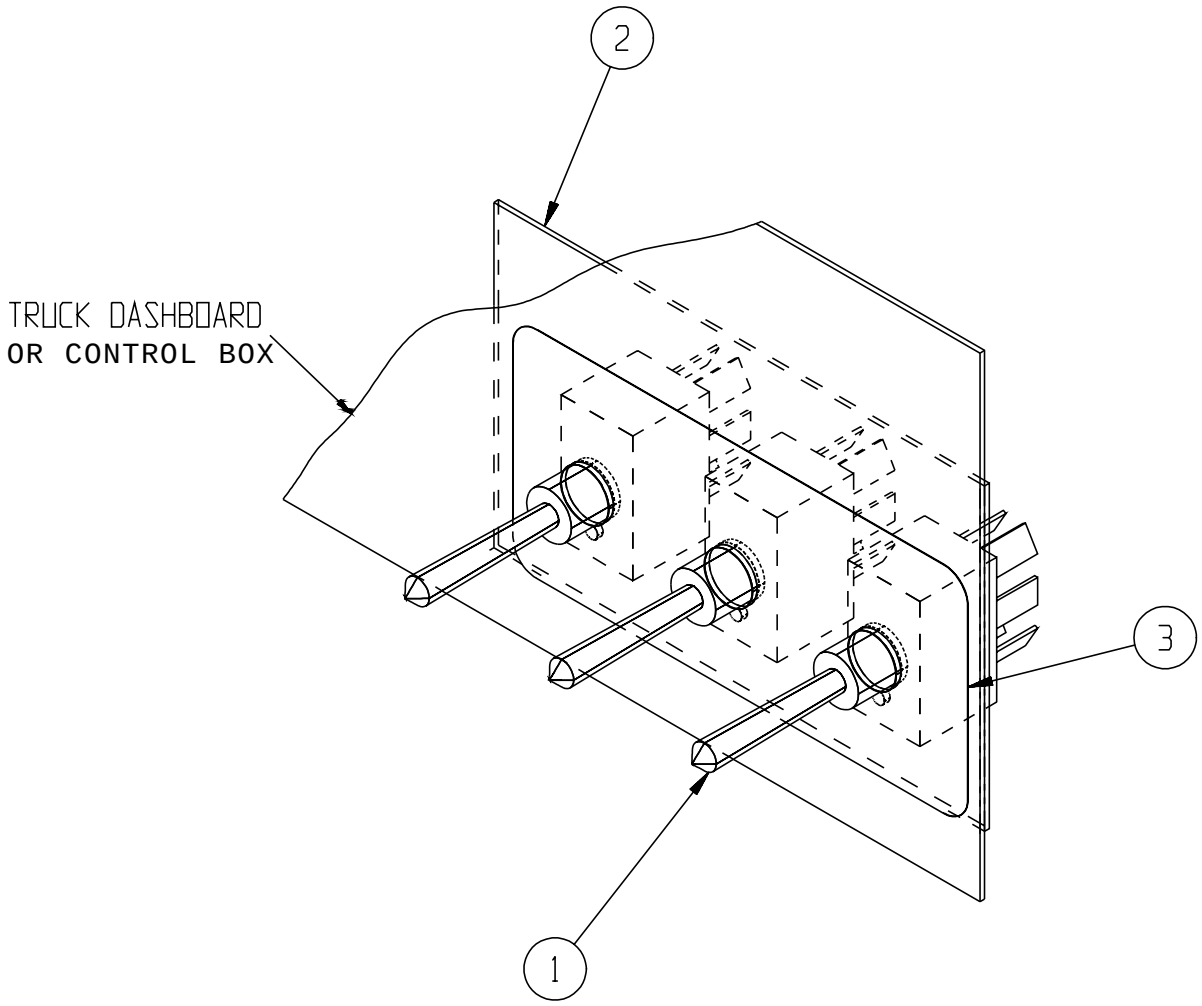
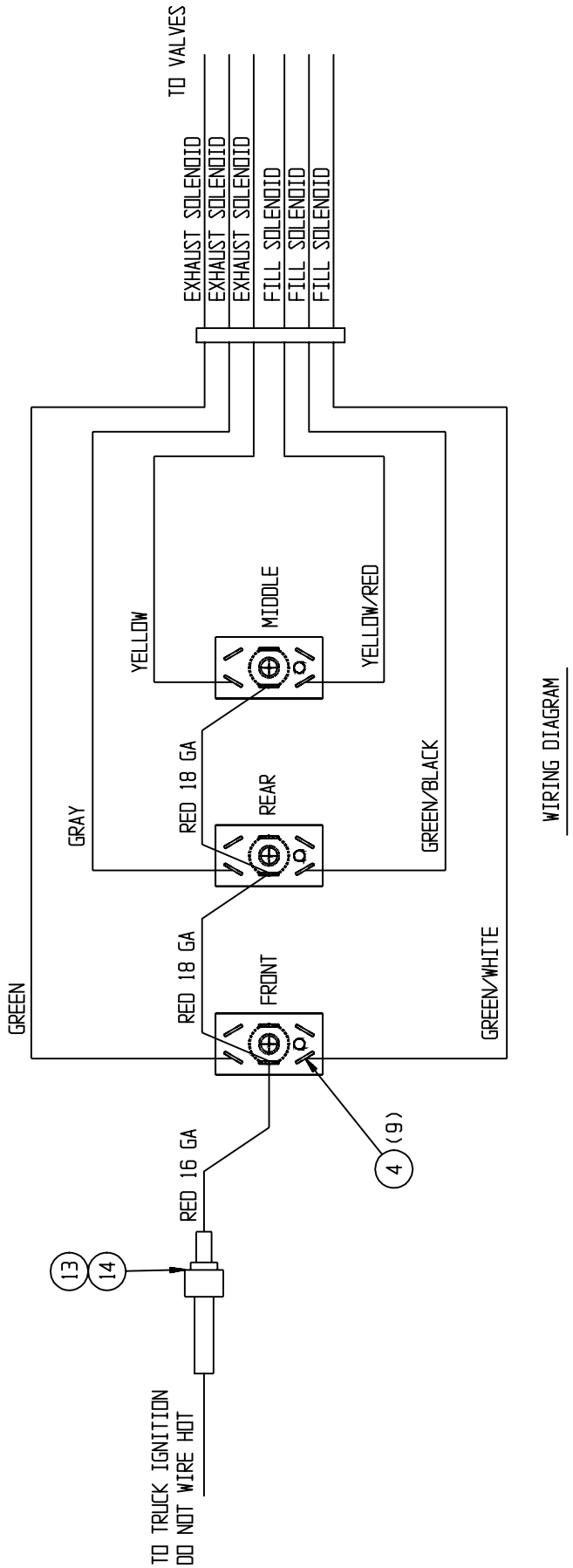
ITEM	PART NO.	QTY.	DESCRIPTION
1	36768	3.00	SWITCH,TOGGLE,DPDT,3-POS,LONG
2	24049	1.00	SWITCH PLATE
3	37597	1.00	DECAL,SPRAY CONTROL
4	36349	9.00	TERM,PUSH-ON,.25,FEM,18-14,SLV
5	33271-7	3.00	WIRE,16 GA,RED
6	35150-1	0.70	WIRE,18 GA,RED
7	33271-4	10.00	WIRE,16 GA,GREEN
8	33271-10	10.00	WIRE,16 GA,GREEN/WHITE STRIPE
9	33271-0	20.00	WIRE,16 GA,GRAY
10	33271-20	20.00	WIRE,16 GA,GRAY/BLACK STRIPE
11	33271-2	10.00	WIRE,16 GA,YELLOW
12	33271-14	10.00	WIRE,16 GA,YELLOW/RED STRIPE
13	35429	1.00	FUSE,AUTO,10 AMP
14	33320	1.00	HOLDER,FUSE,12 V,20 AMP




TO VALVES
EXHAUST SOLENOID
EXHAUST SOLENOID
EXHAUST SOLENOID
FILL SOLENOID
FILL SOLENOID
FILL SOLENOID
YELLOW
MIDDLE
YELLOW/RED
GRAY
RED 18 GA
REAR
GREEN/BLACK
GREEN
RED 18 GA
FRONT
GREEN/WHITE
RED 16 GA
4 (9)
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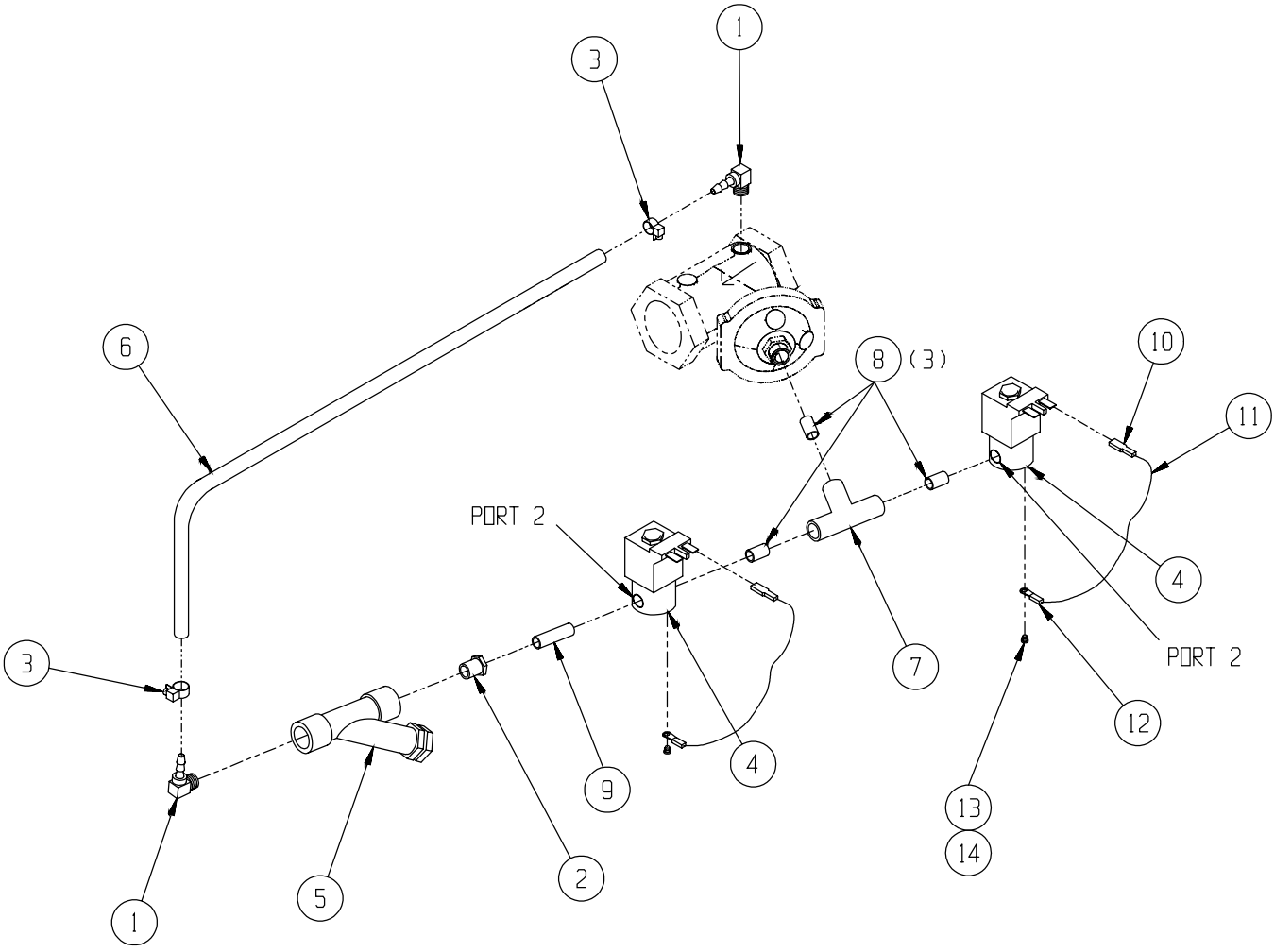
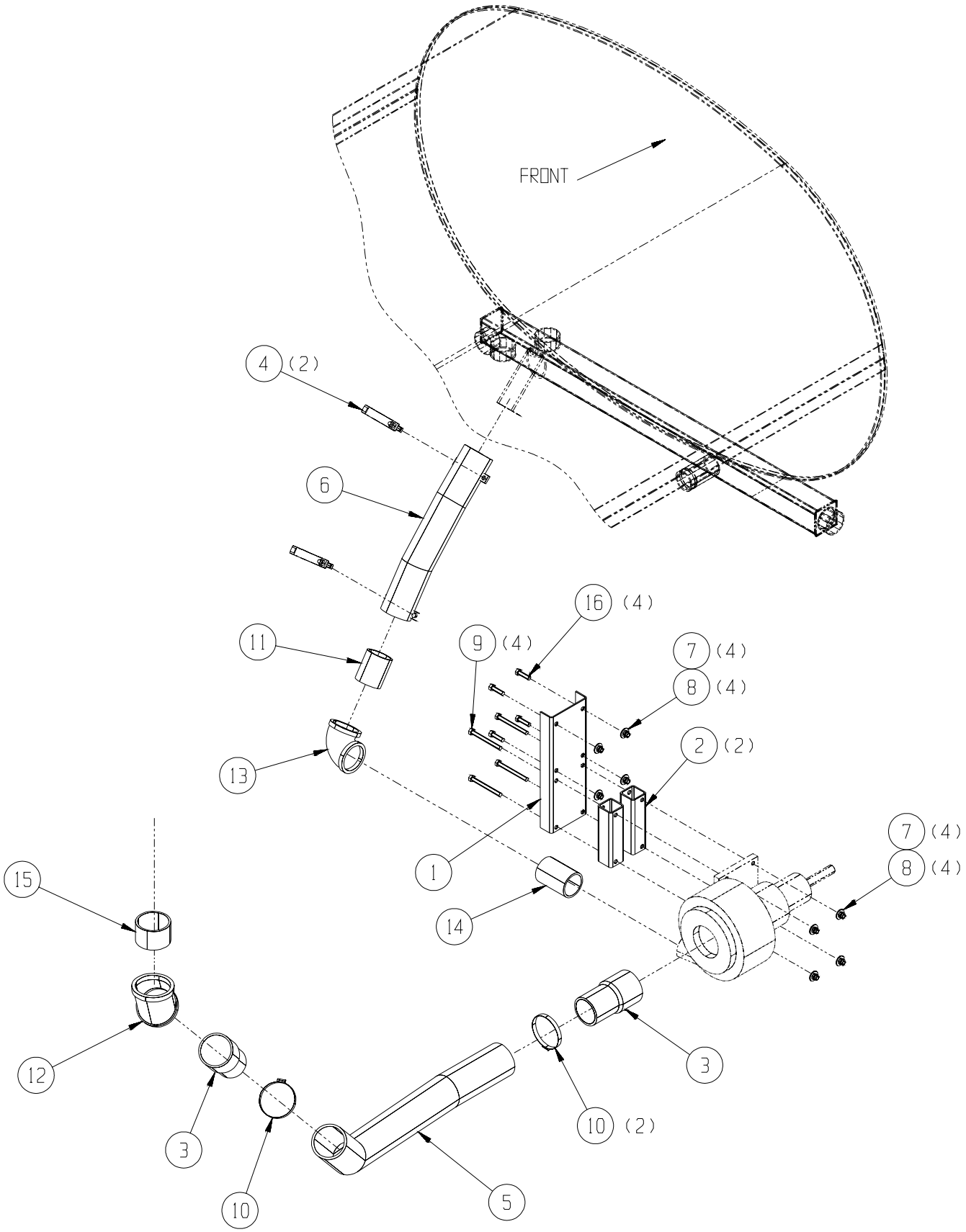
14
TO TRUCK IGNITION
DO NOT WIRE HOT
WIRING DIAGRAM

ITEM	PART NO.	QTY.	DESCRIPTION
1	31971	2.00	FITT,90 04MP-04HB,CRIMPED
2	32638	1.00	PIPE,BUSH,04MP-02FP,STL
3	33277	2.00	CLAMP,HOSE,.22-.62,WORM,#04
4	37554	2.00	VLV,SOLENOID,2-WAY,.062 ORIF
5	37557	1.00	STRAINER,Y,DELR.250PT,100 MESH
6	5347	1.00	HOSE,04,PUSH-ON,LOW PRESS
7	99566	1.00	PIPE,TEE,02FP,MI
8	99610	3.00	PIPE,NIPPLE,02XCLOSE
9	99611	1.00	PIPE,NIPPLE,02X1.50
10	36349	2.00	TERM,PUSH-ON,.25,FEM,18-14,SLV
11	33271-1	0.60	WIRE,16 GA,BLACK
12	72143	2.00	TERM,RING,22-16 GA,#8 STUD
13	80792	2.00	WASHER,SPLIT LOCK,#8
14	81177	2.00	MACH SCR,PH,#8-32X.25

AQUAMATIC CONTROL VALVE /W 2 SOLENOID



ITEM	PART NO.	QTY.	DESCRIPTION
1	23904	1.00	PUMP MOUNT, CHANNEL
2	23905	2.00	SPACER,PUMP MOUNT
3	33046	2.00	PIPE,NIPPLE,KING,4.00NPT
4	34161	2.00	CLAMP,HOSE,#42 KNOX
5	35290	5.50	HOSE,4.00ID,SUCTION
6	36436	1.70	HOSE,3.50ID,MARINE,200
7	80144	8.00	WASHER,TYPE A PLAIN,.500
8	80354	8.00	NUT,FLEXLOC,.500-13,FULL,LT
9	80403	4.00	CSHH,.500-13X5.00,GR5
10	871111536	2.00	CLAMP,HOSE,4.12-5.00,WORM,#72
11	90590-5	1.00	PIPE,TOE,3.00X4.00
12	99269	1.00	PIPE,45,4.00FP,MI
13	99273	1.00	PIPE,90,3.00FP,MI
14	99798	1.00	PIPE,NIPPLE,3.00X5.00
15	99813	1.00	PIPE,NIPPLE,4.00XCLOSE
16	80255	4.00	CSHH,.500-13X2.00,GR5
NS	99267	1.00	PIPE,45,3.00FP,MI
NS	99808	1.00	PIPE,NIPPLE,3.00X10.00


FRONT
4 (2)
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10 (2)
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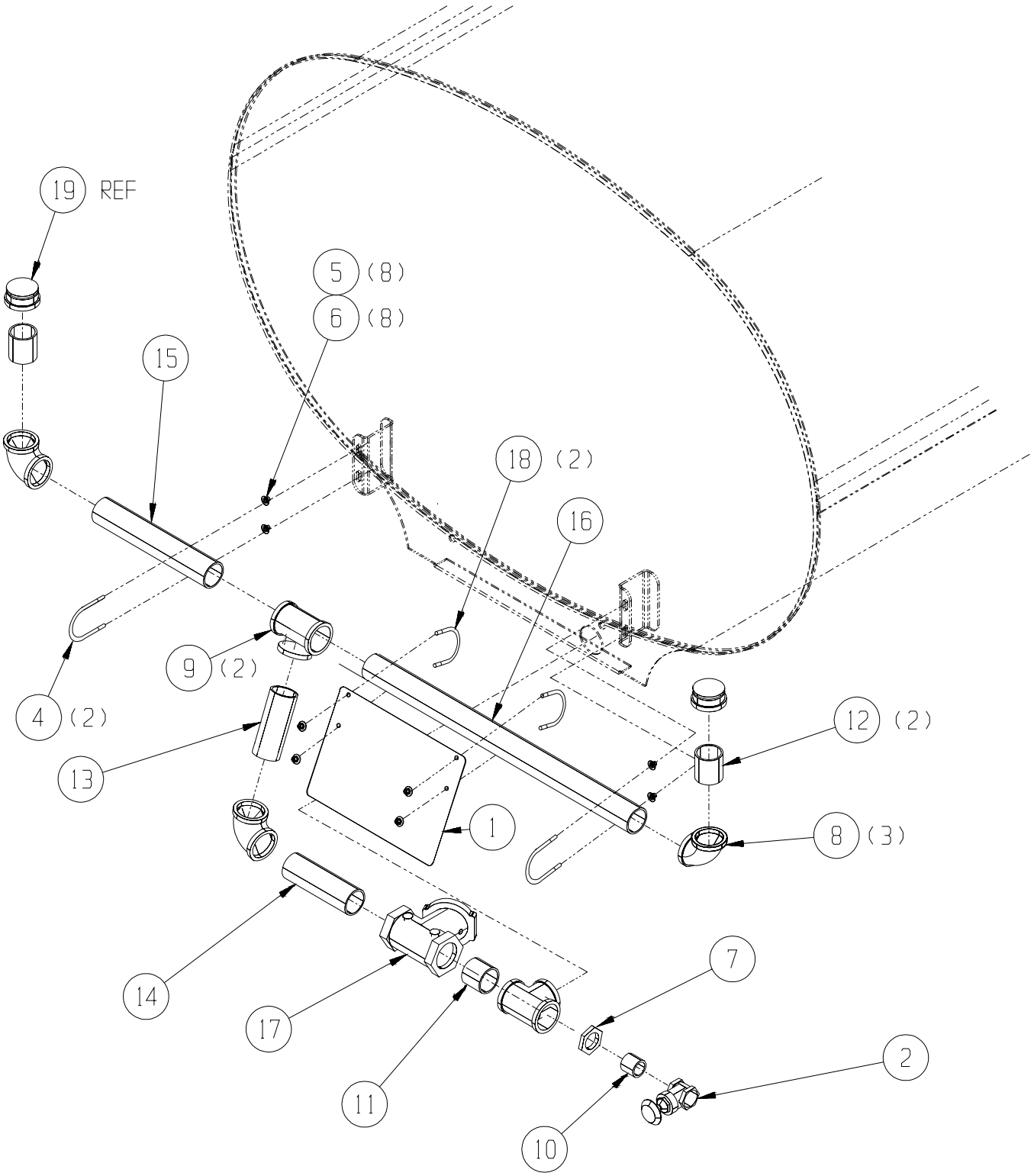
ITEM	PART NO.	QTY.	DESCRIPTION
1	24023	1.00	GUARD PLATE
2	32897	1.00	VLV,GATE,1.50
4	37589	2.00	U-BOLT,.357-16,3.00IW,4.00IL
5	80142	8.00	WASHER,TYPE A PLAIN,.375
6	80352	8.00	NUT,FLEXLOC,.375-16,FULL,LT
7	99250	1.00	PIPE,BUSH,2.50MP-1.50FP,MI
8	99272	3.00	PIPE,90,2.50FP,MI
9	99334	2.00	PIPE,TEE,2.500FP,MI
10	99441	1.00	PIPE,NIPPLE,1.50XCLOSE
11	99773	1.00	PIPE,NIPPLE,2.50XCLOSE
12	99774	2.00	PIPE,NIPPLE,2.50X3.00
13	99782	1.00	PIPE,NIPPLE,2.50X7.00
14	99786	1.00	PIPE,NIPPLE,2.50X9.00
15	99858	1.00	PIPE,TBE,2.50X16.00
16	99860	1.00	PIPE,TBE,2.50X38.00
17	36456	1.00	VLV,DIAPHRAGM,2.50,THD
18	33068	2.00	U-BOLT,.375-16,3.00IW,3.62IL

The following part will vary depending on the spray option on your unit.

19	23913	2.00	SPRAY HEAD, 2.50 PIPE CAP
19	2155	2.00	SPRINKLER HEAD, 2.50, NOT BRASS


19 REF
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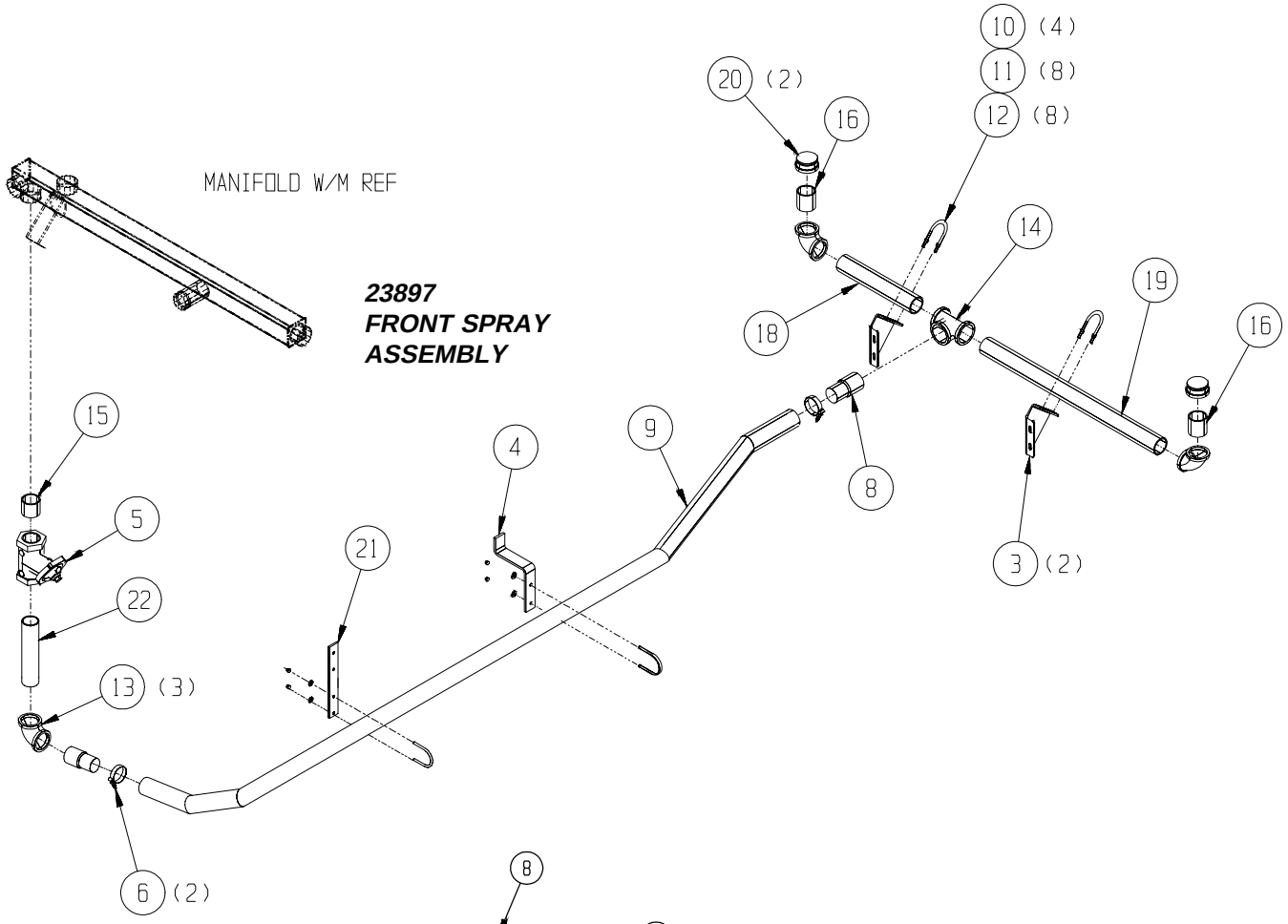
ITEM	PART NO.	QTY.	DESCRIPTION
	23897		**FRONT SPRAY ASSEMBLY**
3	23899	2.00	BRACKET,FRT SPRAY ASSY,97 WT
4	23917	1.00	BRACKET
5	36456	1.00	VLV,DIAPHRAGM,2.50,THD
6	36600	2.00	CLAMP,T-BOLT,2.75 ID HOSE
8	5922	2.00	PIPE,NIPPLE,KING,2.50NPT
9	6122	10.00	HOSE,2.50ID,SUCT/DISCH,PETRO
10	37589	4.00	U-BOLT,.357-16,3.00IW,4.00IL
11	80142	8.00	WASHER,TYPE A PLAIN,.375
12	80352	8.00	NUT,FLEXLOC,.375-16,FULL,LT
13	99272	3.00	PIPE,90,2.50FP,MI
14	99334	1.00	PIPE,TEE,2.500FP,MI
15	99773	1.00	PIPE,NIPPLE,2.50XCLOSE
16	99774	2.00	PIPE,NIPPLE,2.50X3.00
18	99858	1.00	PIPE,TBE,2.50X16.00
19	99860	1.00	PIPE,TBE,2.50X38.00
21	24245	1.00	BRACKET, SUPPORT
22	99786	1.00	PIPE,NIPPLE,2.50X9.00
	The following part will vary depending on the spray option on your unit.		
20	23913	2.00	SPRAY HEAD, 2.50 PIPE CAP
20	2155	2.00	SPRINKLER HEAD, 2.50 NPT, BRASS

	23918		**MANIFOLD ASSEMBLY,FRONT**
1	23919	1.00	MANIFOLD W/M,WATER,97 WT (LH PUMP)
2	23924	2.00	MANIFOLD TIE DOWN BAR
3	37584	1.00	FAUCET,.75NPT MALE INLET
4	5832	1.00	PIPE,CPLG,VICTAULIC,2.50
5	80354	4.00	NUT,FLEXLOC,.500-13,FULL,LT
6	71667	4.00	CSHH,.500-13X6.00,GR5
7	80695	4.00	WASHER,SAE PLAIN,.500
8	99294	2.00	PIPE,PLUG,2.50MP,SQ HD,MI
9	99471	1.00	PIPE,BUSH,2.50MP-12FP,MI

For a right hand pump, Item 1 is 24275 with mainfold inlet on RH side.


MANIFOLD W/M REF
23897
FRONT SPRAY
ASSEMBLY
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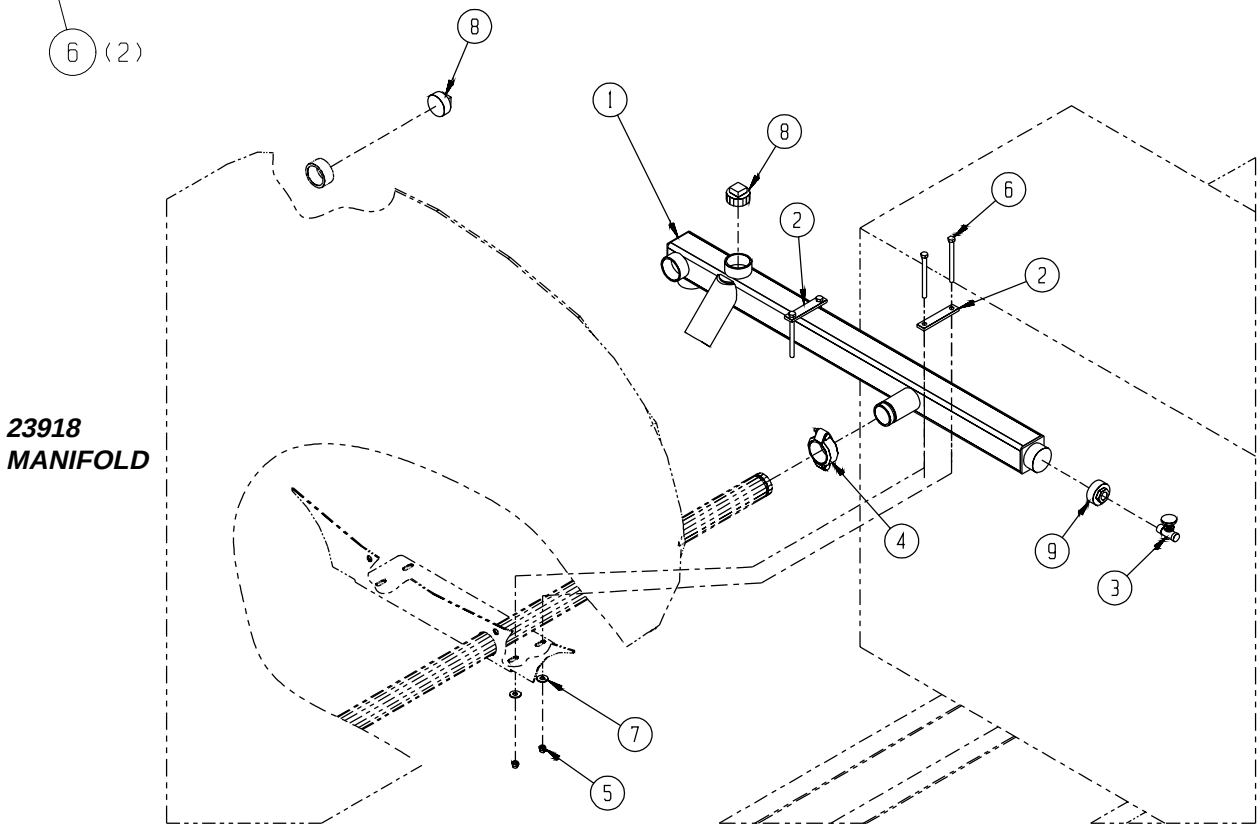
23918
MANIFOLD
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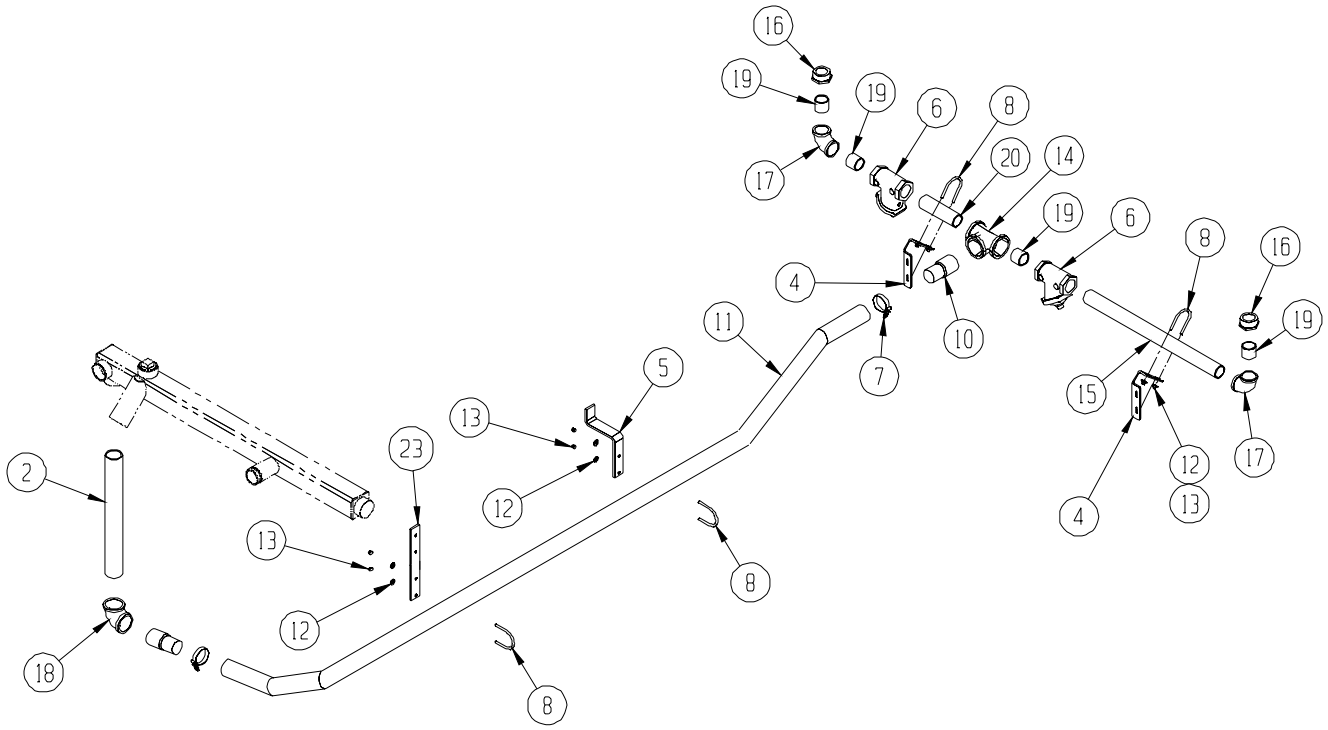
ITEM	PART NO.	QTY.	DESCRIPTION
2	99858	1.00	PIPE,TBE,2.50X16.00
4	23899	2.00	BRACKET,FRT SPRAY ASSY,97 WT
5	23917	1.00	BRACKET
6	36426	2.00	VLV,DIAPH,2.00 THD
7	36600	2.00	CLAMP,T-BOLT,2.75 ID HOSE
8	37589	4.00	U-BOLT,.357-16,3.00IW,4.00IL
10	5922	2.00	PIPE,NIPPLE,KING,2.50NPT
11	6122	10.00	HOSE,2.50ID,SUCT/DISCH,PETRO
12	80142	8.00	WASHER,TYPE A PLAIN,.375
13	80352	8.00	NUT,FLEXLOC,.375-16,FULL,LT
14	91182	1.00	PIPE,TEE,2.0FP-2.0FP-2.5FP,MI
15	91368	1.00	PIPE,TBE,2.00X31.00
16	99249	2.00	PIPE,BUSH,2.50MP-2.00FP,MI
17	99271	2.00	PIPE,90,2.00FP,MI
18	99272	1.00	PIPE,90,2.50FP,MI
19	99434	4.00	PIPE,NIPPLE,2.00XCLOSE
20	99765	1.00	PIPE,NIPPLE,2.00X8.00
23	24245	1.00	BRACKET, SUPPORT

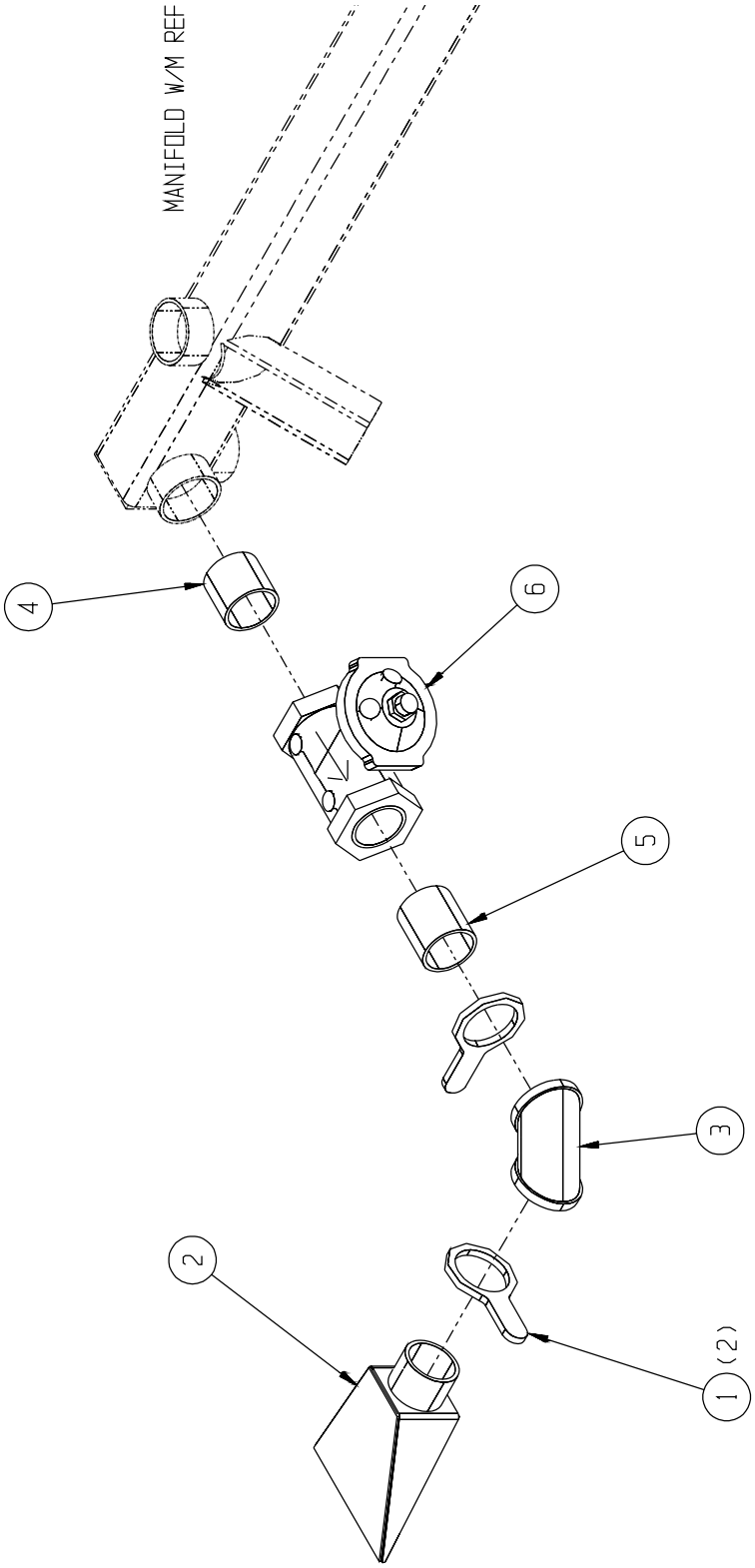
The following part will vary depending on the spray option on your unit.

NS	23913	2.00	SPRAY HEAD, 2.50 PIPE CAP
NS	2155	2.00	SPRINKLER HEAD, 2.50, NPT, BRASS

FRONT SPRAY ASSEMBLY WITH DUAL CONTROLS (optional)



ITEM	PART NO.	QTY.	DESCRIPTION
1	10013-1	2.00	NUT,LK,FL SHOE,2.500-8 NPT,STL
2	23914	1.00	NOZZLE W/M
3	99272	1.00	PIPE,90,2.50FP,MI
4	99773	1.00	PIPE,NIPPLE,2.50XCLOSE
5	99774	1.00	PIPE,NIPPLE,2.50X3.00
6	36456	1.00	VLV,DIAPHRAGM,2.50,THD


MANIFOLD W/M REF
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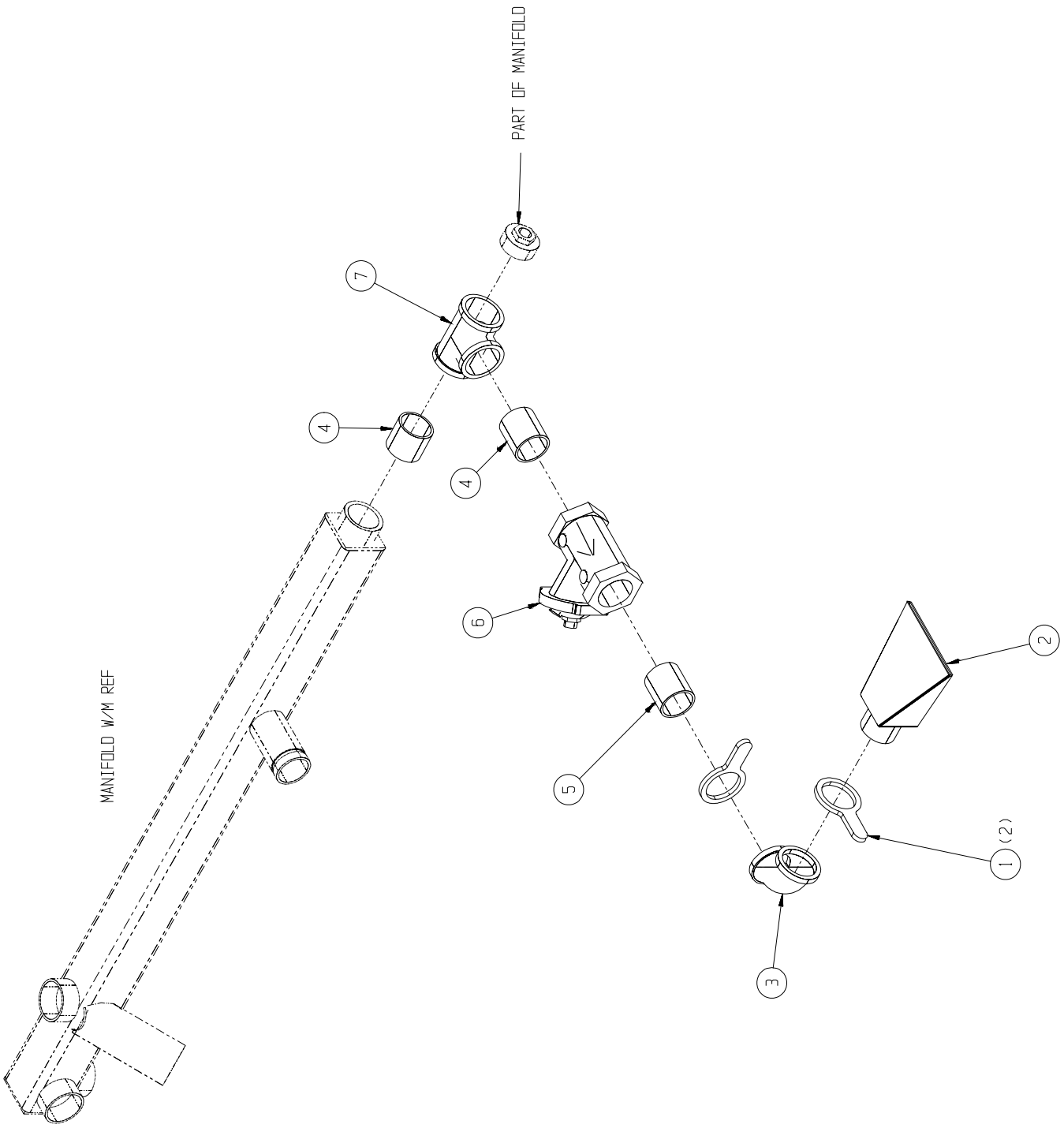
ITEM	PART NO.	QTY.	DESCRIPTION
1	10013-1	2.00	NUT,LK,FL SHOE,2.500-8 NPT,STL
2	23914	1.00	NOZZLE W/M
3	99272	1.00	PIPE,90,2.50FP,MI
4	99773	2.00	PIPE,NIPPLE,2.50XCLOSE
5	99774	1.00	PIPE,NIPPLE,2.50X3.00
6	36456	1.00	VLV,DIAPHRAGM,2.50,THD
7	99334	1.00	PIPE,TEE,2.500FP,MI


PART OF MANIFOLD
7
4
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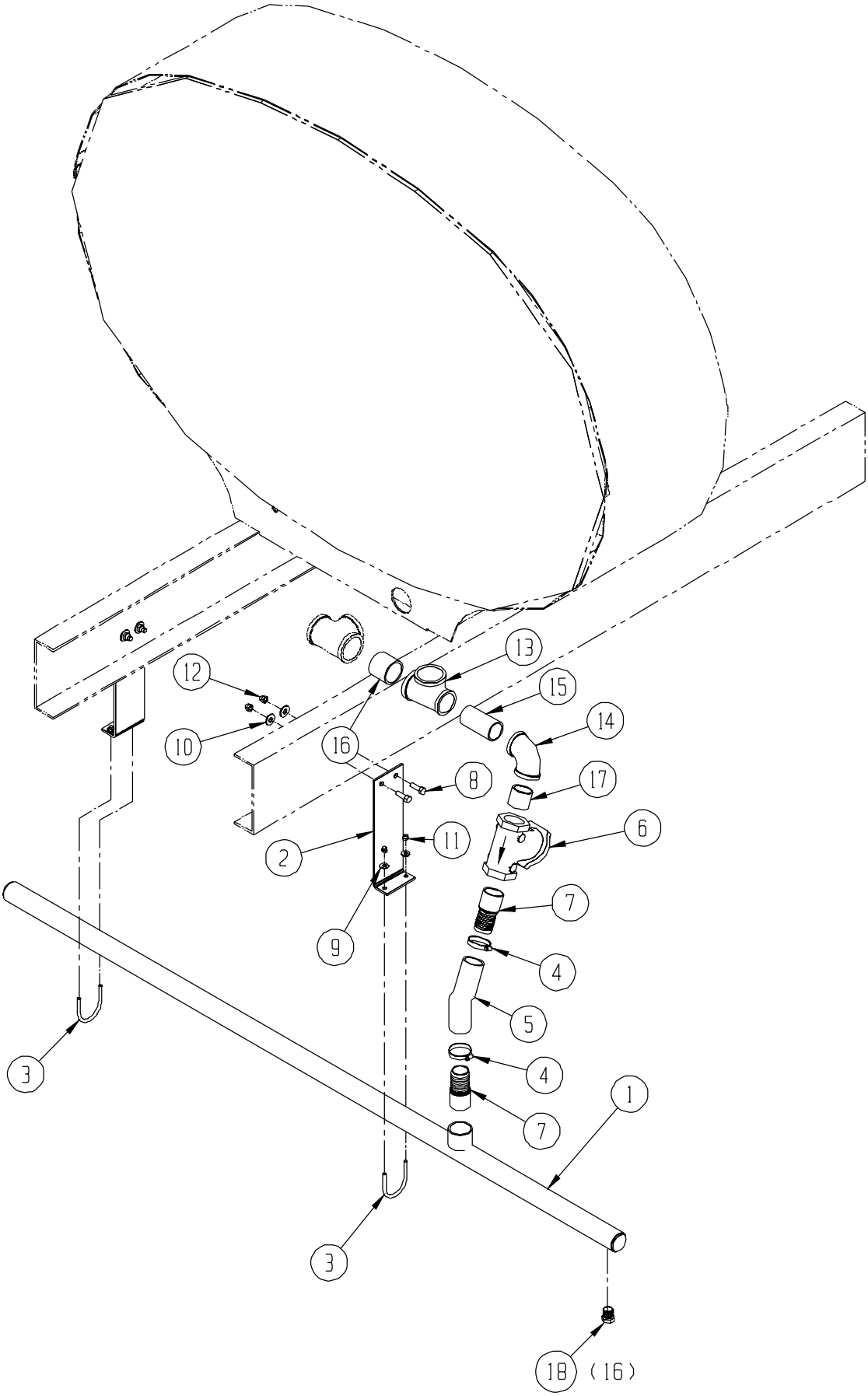
1 (2)
3
MANIFOLD W/M REF

ITEM	PART NO.	QTY.	DESCRIPTION
1	10029	1.00	SPRAYBAR,WATER
2	24105	2.00	SPRAYBAR MOUNT,DS
3	33068	2.00	U-BOLT,.375-16,3.00IW,3.62IL
4	33171	2.00	CLAMP,HOSE,1.81-2.75,WORM,#36
5	36353	1.00	HOSE,WATER,SUCT/DISCH,2.00 ID
6	36426	1.00	VLV,DIAPH,2.00 THD
7	6063	2.00	PIPE,NIPPLE,KING,2.00NPT
8	71627	4.00	CSHH,.500-13X1.50,GR5
9	80142	4.00	WASHER,TYPE A PLAIN,.375
10	80144	4.00	WASHER,TYPE A PLAIN,.500
11	80352	4.00	NUT,FLEXLOC,.375-16,FULL,LT
12	80354	4.00	NUT,FLEXLOC,.500-13,FULL,LT
13	90113	1.00	PIPE,TEE,2.5FP-2.0FP-2.5FP,MI
14	99271	1.00	PIPE,90,2.00FP,MI
15	99760	1.00	PIPE,NIPPLE,2.00X4.50
16	99773	1.00	PIPE,NIPPLE,2.50XCLOSE
17	99434	1.00	PIPE,NIPPLE,2.00XCLOSE
18	32922	16.00	NOZZLE,#5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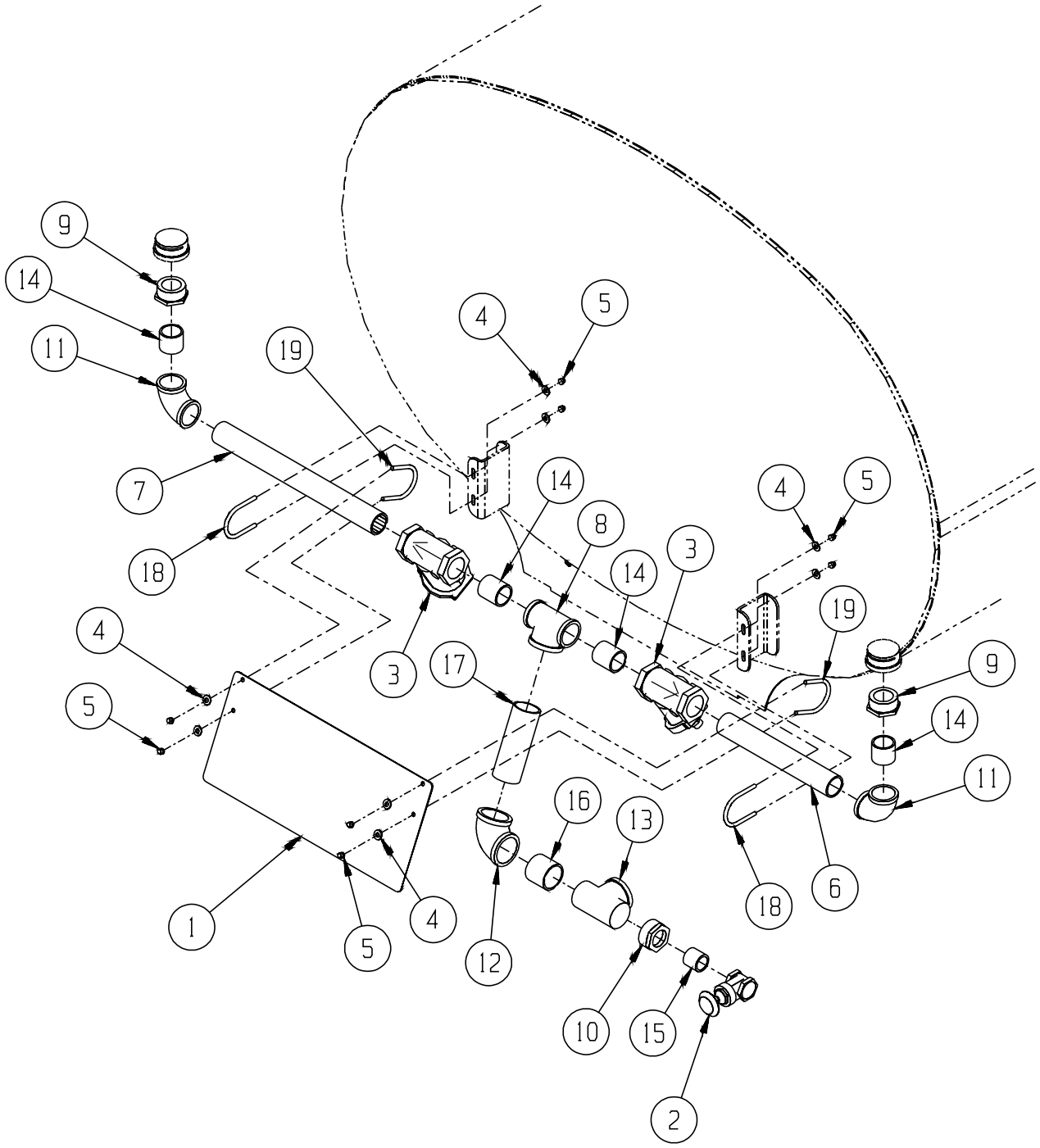
(16)

ITEM	PART NO.	QTY.	DESCRIPTION
1	24062	1.00	GUARD PLATE
2	32897	1.00	VLV,GATE,1.50
3	36426	2.00	VLV,DIAPH,2.00 THD
4	80142	8.00	WASHER,TYPE A PLAIN,.375
5	80352	8.00	NUT,FLEXLOC,.375-16,FULL,LT
6	90027	1.00	PIPE,TBE,2.00X16.00
7	90705	1.00	PIPE,TBE,2.00X22.00
8	91182	1.00	PIPE,TEE,2.0FP-2.0FP-2.5FP,MI
9	99249	2.00	PIPE,BUSH,2.50MP-2.00FP,MI
10	99250	1.00	PIPE,BUSH,2.50MP-1.50FP,MI
11	99271	2.00	PIPE,90,2.00FP,MI
12	99272	1.00	PIPE,90,2.50FP,MI
13	99334	1.00	PIPE,TEE,2.500FP,MI
14	99434	4.00	PIPE,NIPPLE,2.00XCLOSE
15	99441	1.00	PIPE,NIPPLE,1.50XCLOSE
16	99773	1.00	PIPE,NIPPLE,2.50XCLOSE
17	99783	1.00	PIPE,NIPPLE,2.50X7.50
18	37589	2.00	U-BOLT,.357-16,3.00IW,4.00IL
19	33068	2.00	U-BOLT,.375-16,3.00IW,3.62IL

REAR SPRAY ASSEMBLY WITH DUAL CONTROLS (optional)



ITEM	PART NO.	QTY.	DESCRIPTION
1	33169	2.00	CLAMP,HOSE,1.31-2.25,WORM #28
2	34501	2.50	HOSE,24,HYD SUCTION
3	953181125	2.00	PIPE,NIPPLE,KING,1.50NPT
4	99282	1.00	PIPE,90,1.500MP-1.500FP,MI

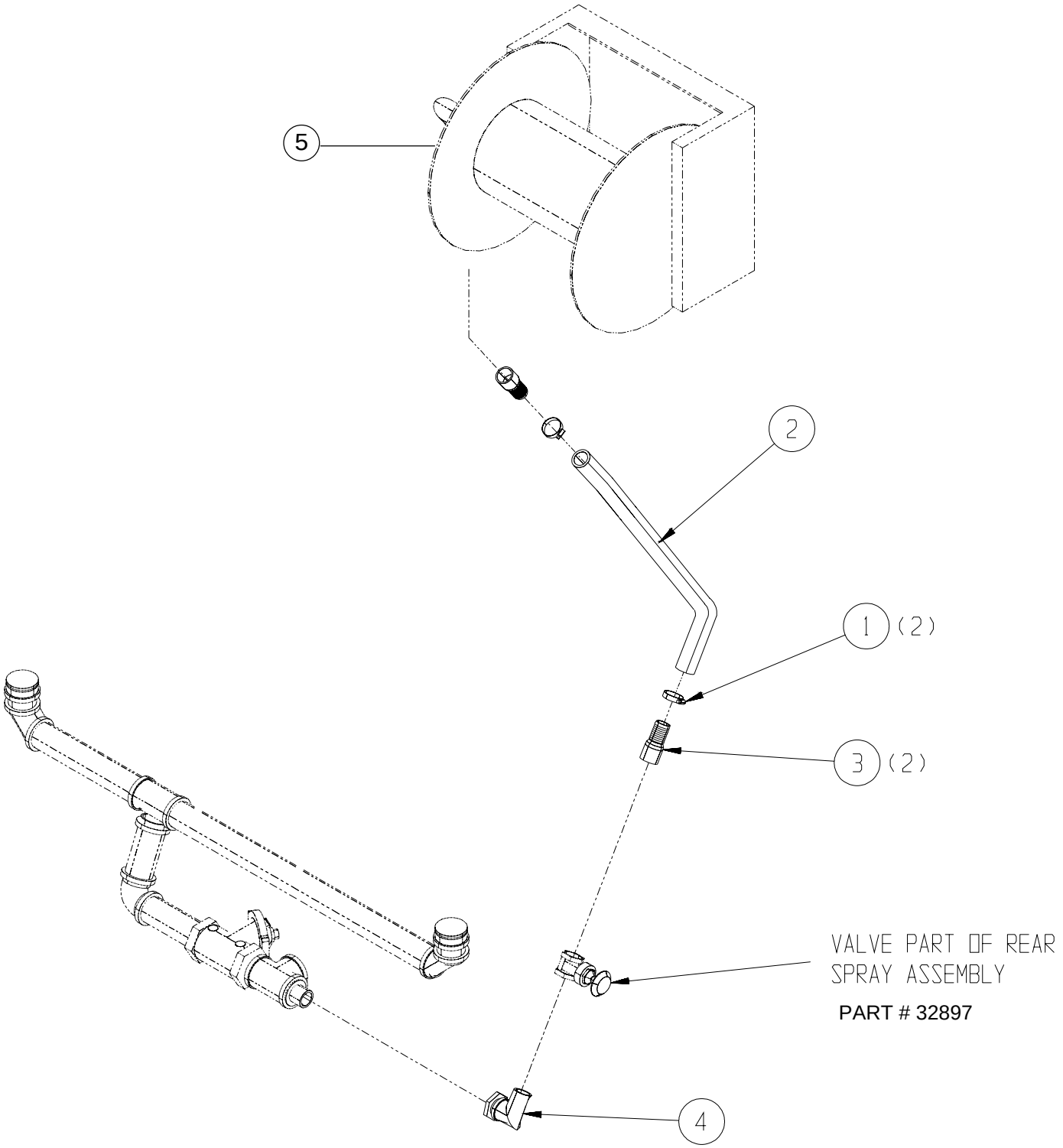
The following part number will depend on your unit option:

5	37577	1.00	HOSE REEL, ELEC, 1.50 X 100, RH CRK
	37578	1.00	HOSE REEL, MAN, 1.50 X 100, RH CRK
NS	36049	1.00	HOSE, ASSY, 1.5 X 70 FT, NST, M/F (STANDARD)
NS	71914	1.00	HOSE, ASSY, 1.5 X 100 FT, NST, M/F (OPTION)

19987 **WIRING GROUP,ELEC HOSE REEL**

NS	34853	1.00	CIRCUIT BREAKER, 40 AMP
NS	36219	2.00	TERM,RING,6GA,#10 STUD
NS	71839	30.00	WIRE,6GA,BLACK.

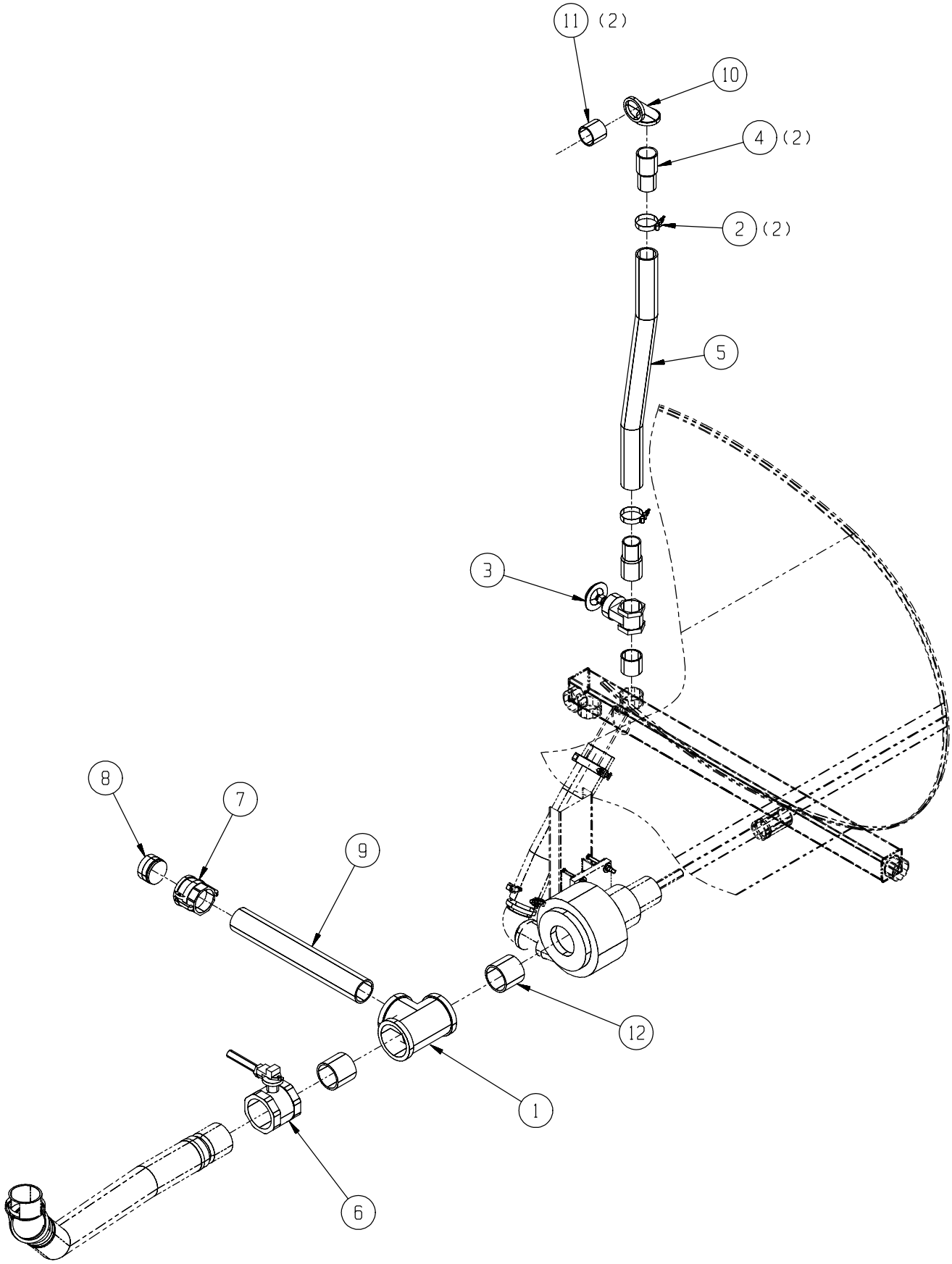
HOSE REEL MOUNT ASSEMBLY
optional



ITEM	PART NO.	QTY.	DESCRIPTION
1	90119	1.00	PIPE,TEE,4.0FP-4.0FP-3.0FP,MI
2	36600	2.00	CLAMP,T-BOLT,2.75 ID HOSE
3	5410	1.00	VLV,GATE,2.50,BRASS
4	5922	2.00	PIPE,NIPPLE,KING,2.50NPT
5	6122	4.00	HOSE,2.50ID,SUCT/DISCH,PETRO
6	6147	1.00	VLV,BUTTERFLY,4.00
7	6289	1.00	FITT,QD 3.00F-3.00FP,BRASS
8	6290	1.00	FITT,QD 3.00 PLUG
9	90095	1.00	PIPE,TBE,3.00X15.00
10	99272	1.00	PIPE,90,2.50FP,MI
11	99773	2.00	PIPE,NIPPLE,2.50XCLOSE
12	99813	2.00	PIPE,NIPPLE,4.00XCLOSE

NS	**20341**	**1.00**	**HOSE ASSY,LOAD,3.0X10FT,W/COUPLER**
NS	34069	4.00	BUCKLE,BAND-IT,.625,SS
NS	34070	4.00	BAND,BAND-IT,.625,SS
NS	34554	9.00	HOSE,3.00ID,SUCTION,125
NS	34708	1.00	FITT,STR 3.00MP
NS	5700	1.00	PIPE,NIPPLE,KING,3.00NPT
NS	6288	1.00	FITT,QD 3.00M -3.00FP,BRASS

NS	**21826**	**1.00**	**HOSE ASSY,LOAD,3.0X10FT,W/SWVL**
NS	34069	4.00	BUCKLE,BAND-IT,.625,SS
NS	34070	4.00	BAND,BAND-IT,.625,SS
NS	34554	9.00	HOSE,3.00ID,SUCTION,125
NS	34708	1.00	FITT,STR 3.00MP
NS	34709	1.00	FITT,STR 3.00FP,W/GASKET


11 (2)
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4 (2)
2 (2)
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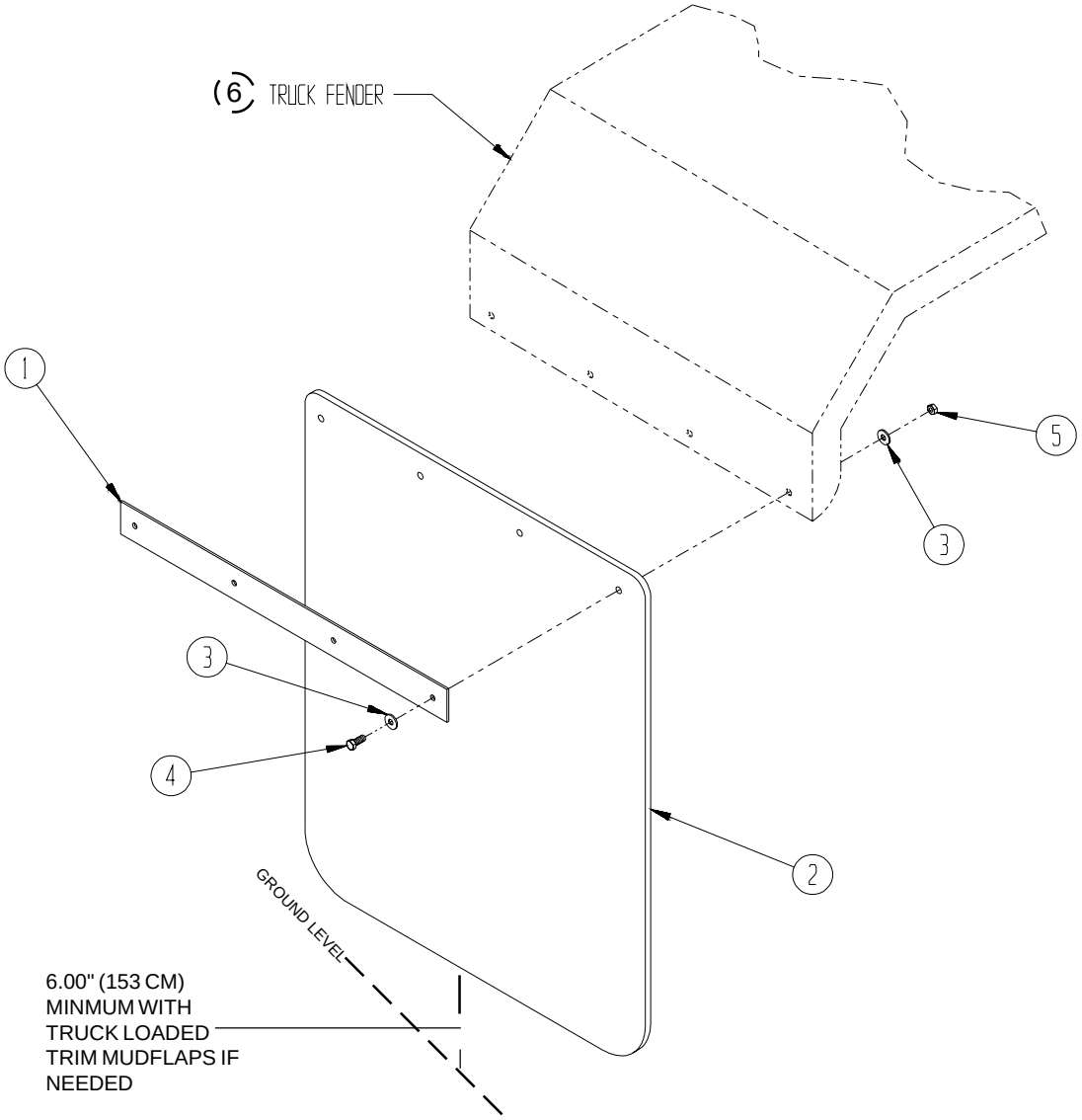
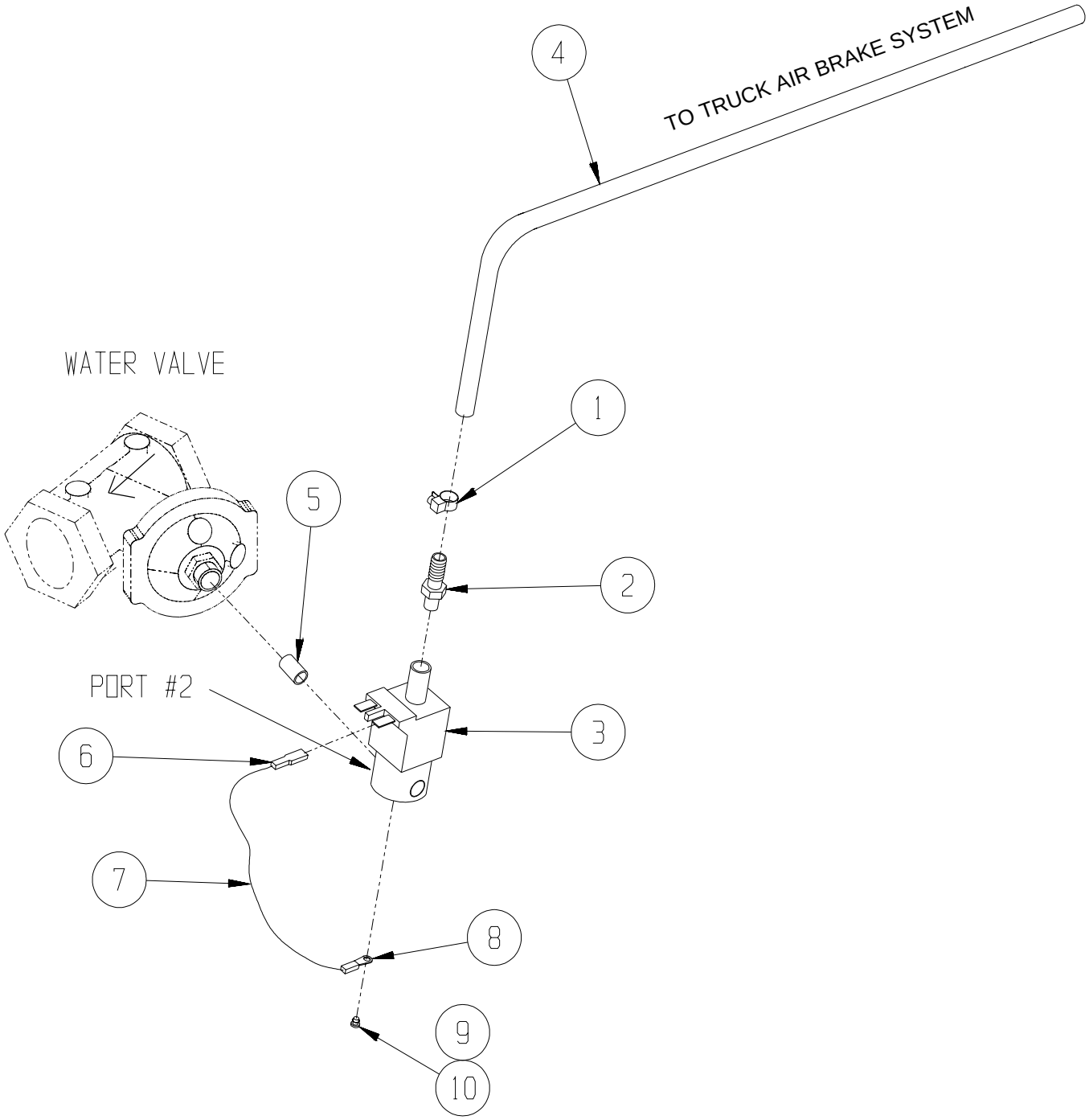
6

ITEM	PART NO.	QTY.	DESCRIPTION
	14402		**MUDFLAP & FENDER**
1	13960	2.00	MOUNT BAR, MUD FLAP
2	71513	2.00	MUD FLAP, 24" WIDE X 30", PLAIN BLACK
3	80141	16.00	WASHER, TYPE A PLAIN, .312
4	80208	8.00	BOLT, .313-18 UNC X 1, GR5
5	80351	8.00	NUT, FLEXLOC, .312 - 18 UNC, THIN, LT
6	22181	2.00	FENDER, SINGLE AXLE, STL
NS	**23910**		**LADDER W/M, 56X8TANK,DS**
NS	**24349**		**LADDER W/M, 66X90TANK,SIDE,DS**
NS	**23851**		**TANK W/M, 56X84X120,DS**
NS	**24048**		**TANK W/M, 66X90X192,DS**
NS	**24304**		**TANK W/M, 66X90X144,DS**
NS	**12873-12**		**HEADER BAR SIDE PIPE,124**
NS	**12873-18**		**HEADER BAR SIDE PIPE,148**
NS	**12873-19**		**HEADER BAR SIDE PIPE,196**
NS	**22181**		**FENDER,SINGLE AXLE,STL**
NS	**22771**		**FENDER,TANDEM AXLE,STL**
NS	**16244-2**		**TRUCK MOUNTING HARDWARE, TANDEM**
NS	14253	6.00	TANK MOUNT,TRUCK ANGLE
NS	35209	24.00	SPR, 1.62 DIAX3.5,1005 PSI
NS	80146	36.00	WASHER,TYPE A PLAIN,.625
NS	80284	12.00	CSHH,.625-11X2.25,GR5
NS	80356	24.00	NUT,FLEXLOC,.625-11,FULL,LT
NS	80446	12.00	CSHH,.625-11X11.00,GR5
NS	90383	24.00	WOOD,OAK,1.50X3.00X16FT
NS	**17564**		**TRUCK MOUNTING HARDWARE, SINGLE**
NS	14253	4.00	TANK MOUNT,TRUCK ANGLE
NS	35209	8.00	SPR, 1.62 DIAX3.5,1005 PSI
NS	71684	8.00	CSHH,.625-11X7.00,GR5
NS	80146	16.00	WASHER,TYPE A PLAIN,.625
NS	80283	8.00	CSHH,.625-11X2.00,GR5
NS	80356	16.00	NUT,FLEXLOC,.625-11,FULL,LT
NS	90383	24.00	WOOD,OAK,1.50X3.00X16FT


6 TRUCK FENDER
1
5
3
3
4
2
GROUND LEVEL
6.00" (153 CM)
MINMUM WITH
TRUCK LOADED
TRIM MUDFLAPS IF
NEEDED

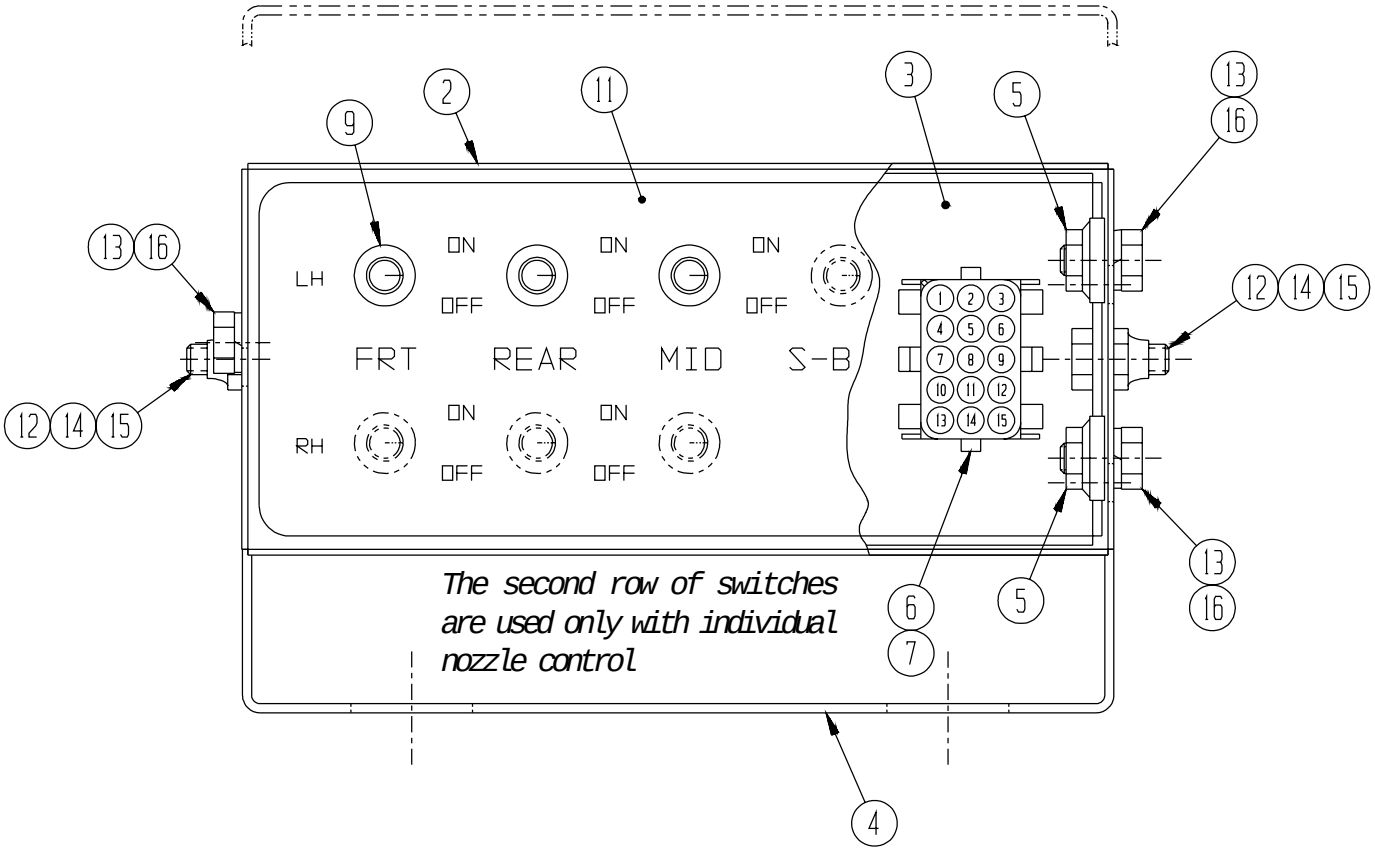
ITEM	PART NO.	QTY.	DESCRIPTION
1	33277	1.00	CLAMP,HOSE,.22-.62,WORM,#04
2	33926	1.00	FITT,STR 02MP-04HB,CRIMPED
3	37586	1.00	VLV,SOLENOID,3-WAY,NOR OPEN
4	5347	4.00	HOSE,04,PUSH-ON,LOW PRESS
5	99610	1.00	PIPE,NIPPLE,02XCLOSE
6	36349	1.00	TERM,PUSH-ON,.25,FEM,18-14,SLV
7	33271-1	0.30	WIRE,16 GA,BLACK
8	72143	1.00	TERM,RING,22-16 GA,#8 STUD
9	80792	1.00	WASHER,SPLIT LOCK,#8
10	81177	1.00	MACH SCR,PH,#8-32X.25

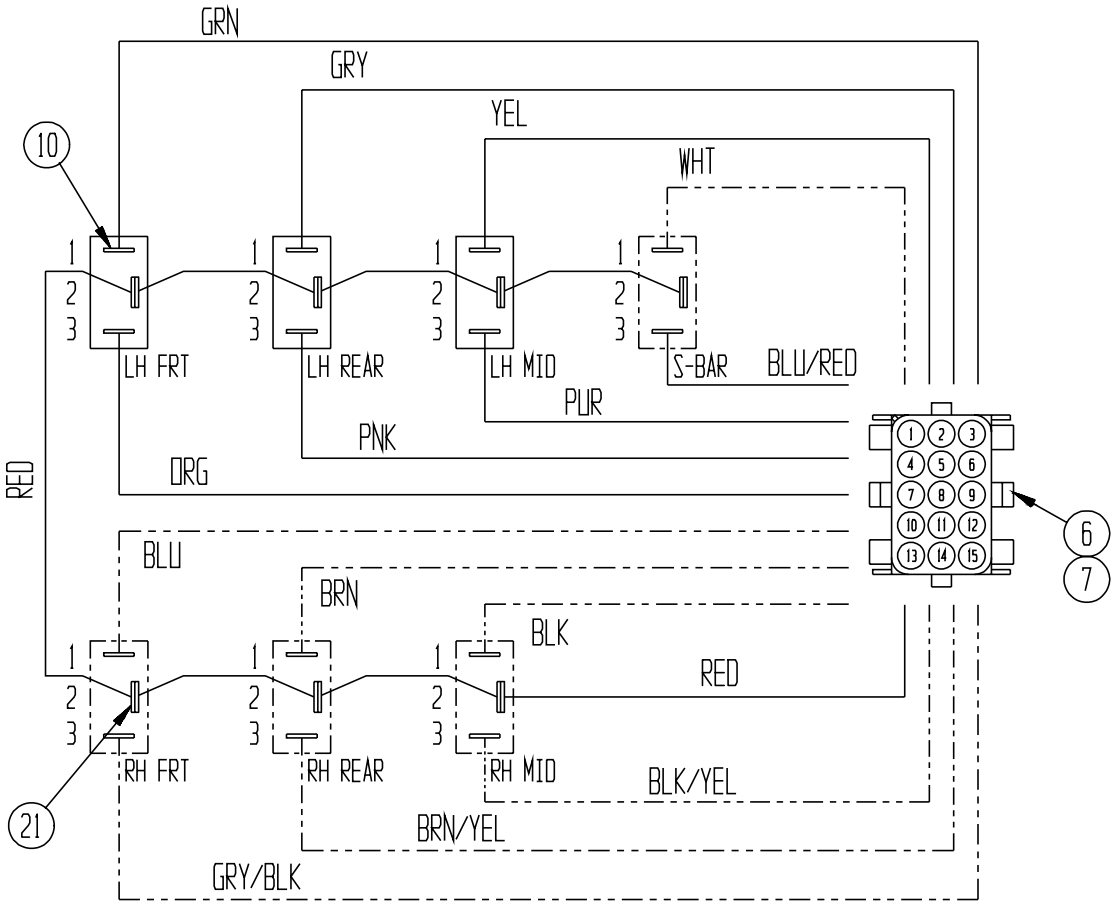
AQUAMATIC CONTROL VALVE /3-WAY AIR optional



ITEM	PART NO.	QTY.	DESCRIPTION
2	24138	1.00	COVER,DS CONTROL BOX
3	24391	1.00	CONTROL BOX BACK
4	24392	1.00	BRACKET,CONTROL BOX MOUNT
5	33981	3.00	NUT,U-TYPE,.250-20,W/NUT
6	72594	1.00	CONN HOUSING,CAP,15 CIRCUIT
7	34471	7.00	CONTACT,SOCKET,20-14 GA
8	33271-7	1.00	WIRE,16 GA,RED
9	37671	3.00	SWITCH,TOGGLE,SPDT,3-POS
10	33600	6.00	TERM,PUSH-ON,.25,FEM,16-14 GA
11	37676	1.00	DECAL, CONTROL BOX
12	80140	2.00	WASHER,TYPE A PLAIN,.250
13	80160	3.00	WASHER,SPLIT LOCK,.250
14	80192	2.00	CSHH,.250-20X.75,GR5
15	80350	2.00	NUT,FLEXLOC,.250-20,FULL,LT
16	80423	3.00	CSHH,.250-20X.50,GR5
17	35150-8	1.00	WIRE,18 GA,GRAY
18	35150-7	0.00	WIRE,18 GA,BROWN
19	35150-6	1.00	WIRE,18 GA,YELLOW
20	35150-5	0.00	WIRE,18 GA,BLACK
21	35926	3.00	TERM,PUSH-ON,.25,FEM,22-18 GA
22	35150-19	0.00	WIRE,18 GA,GRAY/BLACK STRIPE
23	35150-20	0.00	WIRE,18 GA,BROWN/YELLOW STRIPE
24	35150-16	0.00	WIRE,18 GA,BLACK/YELLOW STRIPE
25	35150-17	0.00	WIRE,18 GA,BLUE/RED STRIPE
26	35150-9	1.00	WIRE,18 GA,PURPLE
27	35150-11	1.00	WIRE,18 GA,PINK
28	35150-10	1.00	WIRE,18 GA,ORANGE
29	35150-4	1.00	WIRE,18 GA,GREEN
30	35150-2	0.00	WIRE,18 GA,WHITE
31	35150-3	0.00	WIRE,18 GA,BLUE

Pin	Wire Color
1	RED
2	WHITE
3	ORANGE
4	BLUE
5	GREEN
6	PINK
7	BLACK
8	YELLOW
9	PURPLE
10	BROWN
11	GRAY
12	GRY/BLK
13	BRN/YEL
14	BLK/YEL
15	BLU/RED

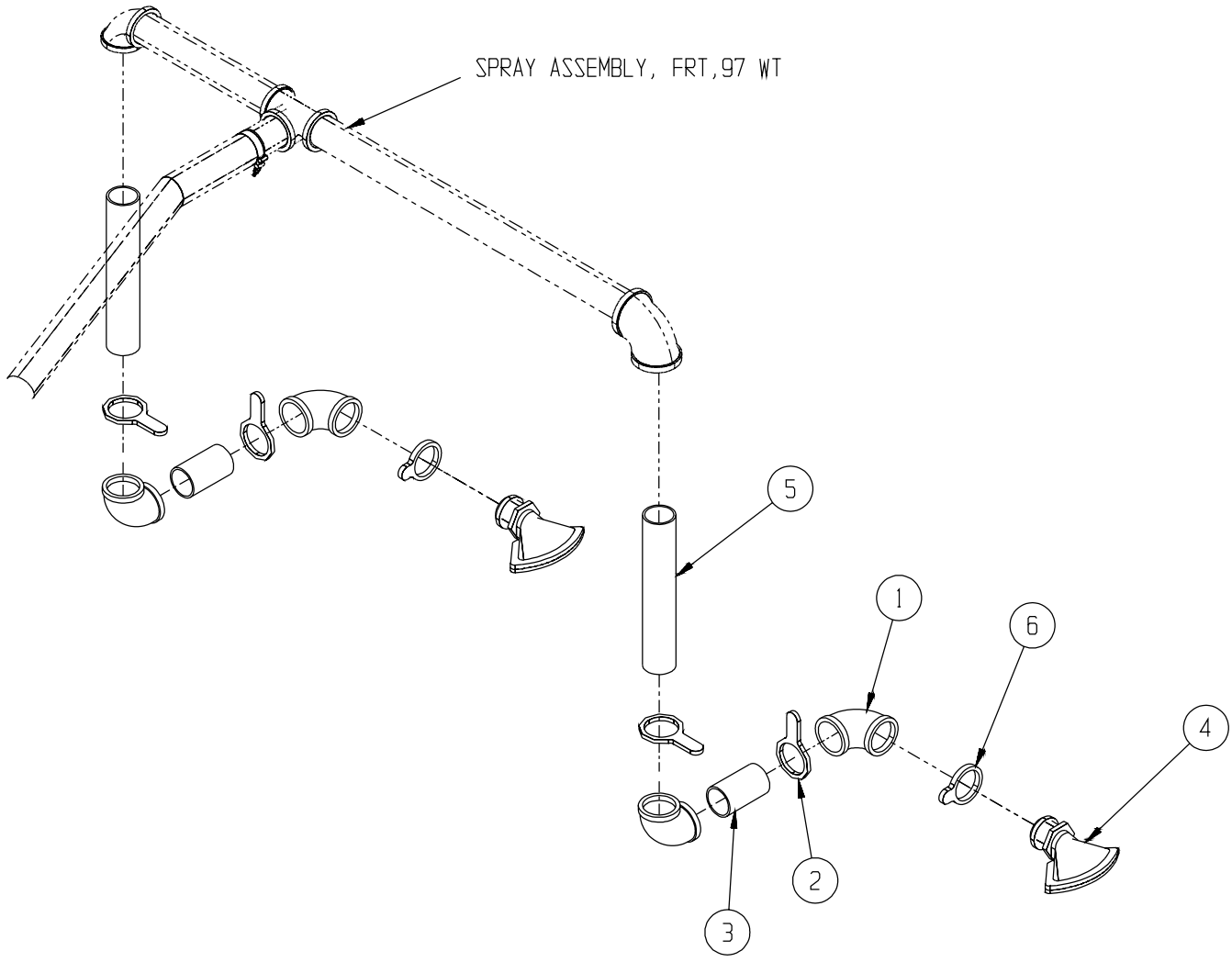

LH
RH
ON
OFF
FRT
REAR
MID
S-B
The second row of switches are used only with individual nozzle control


GRN
GRY
YEL
WHT
LH FRT
LH REAR
LH MID
S-BAR
BLU/RED
PUR
PNK
ORG
RED
BLU
BRN
BLK
RED
RH FRT
RH REAR
RH MID
BLK/YEL
BRN/YEL
GRY/BLK

ITEM	PART NO.	QTY.	DESCRIPTION
1	99271	4.00	PIPE,90,2.00FP,MI
2	10013	4.00	LOCKNUT,FLUSHER SHOE,2.00,STL
3	99435	2.00	PIPE,NIPPLE,2.00X4.00
4	7064-2B	2.00	NOZZLE,FLUSHER,2.00,BRASS
5	90438	2.00	PIPE,NIPPLE,2.00X10.00
6	3890-B	2.00	LOCKNUT,NOZZLE,2.00,BRASS

FRONT SPRAY ASSEMBLY W/ TWO FLUSHER SHOES

optional



MIDSHIP FLUSHER SHOE ASSEMBLY
optional

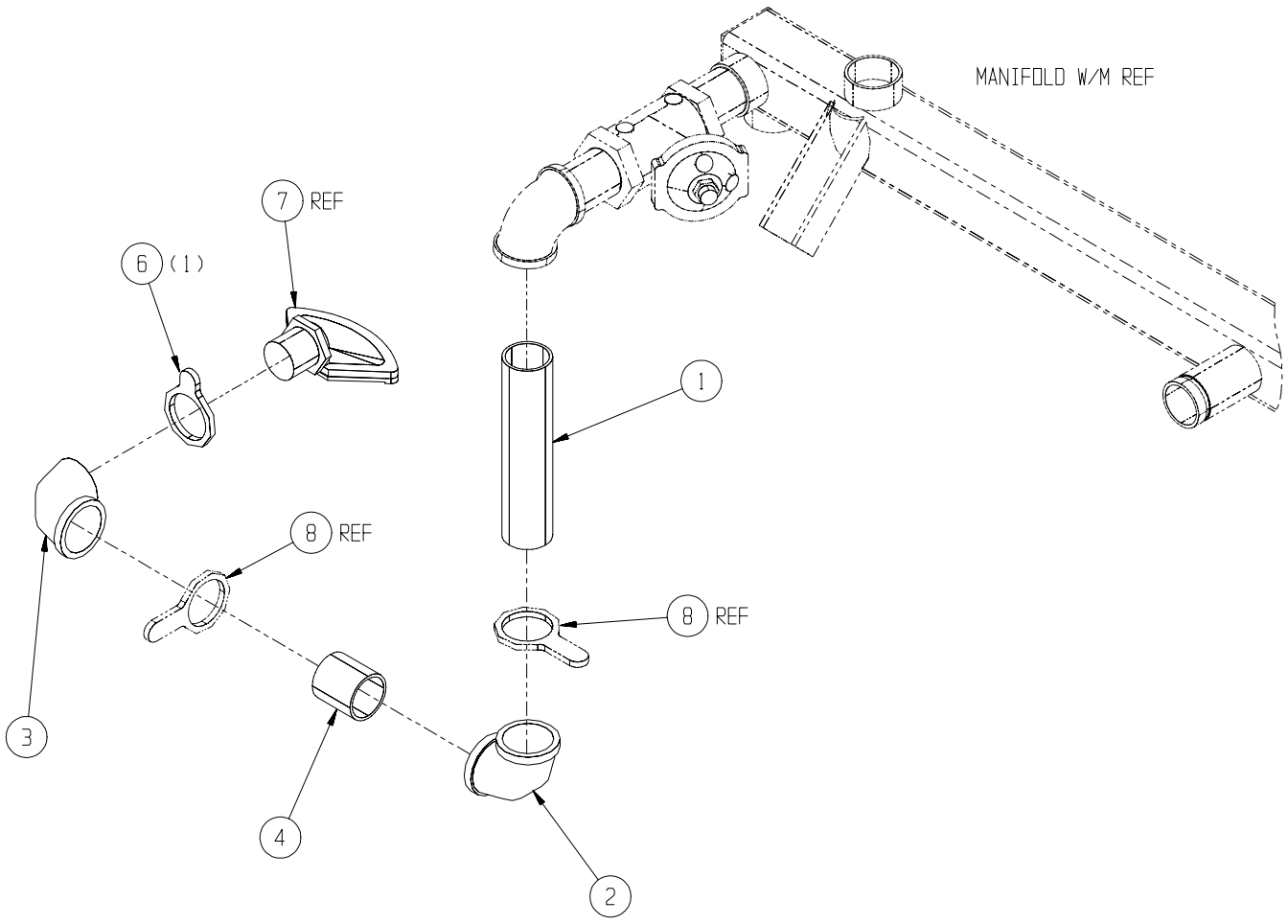
24166
Ø

1	91196	1.00	PIPE,TBE,2.50X20.00
2	99272	2.00	PIPE,90,2.50FP,MI
3	99855	1.00	PIPE,90,2.50FP-2.OOFP,MI
4	99776	1.00	PIPE,NIPPLE,2.50X4.00
6	3890-B	1.00	LOCKNUT,NOZZLE,2.00,BRASS
7	7064-2B	1.00	NOZZLE,FLUSHER,2.00,BRASS
8	10013-1	A/N	NUT,LK,FL SHOE,2.500-8 NPT,STL

MIDSHIP FLUSHER SHOE ASSEMBLY

24166
Ø

optional



AIR GAP FILL ASSEMBLY
optional

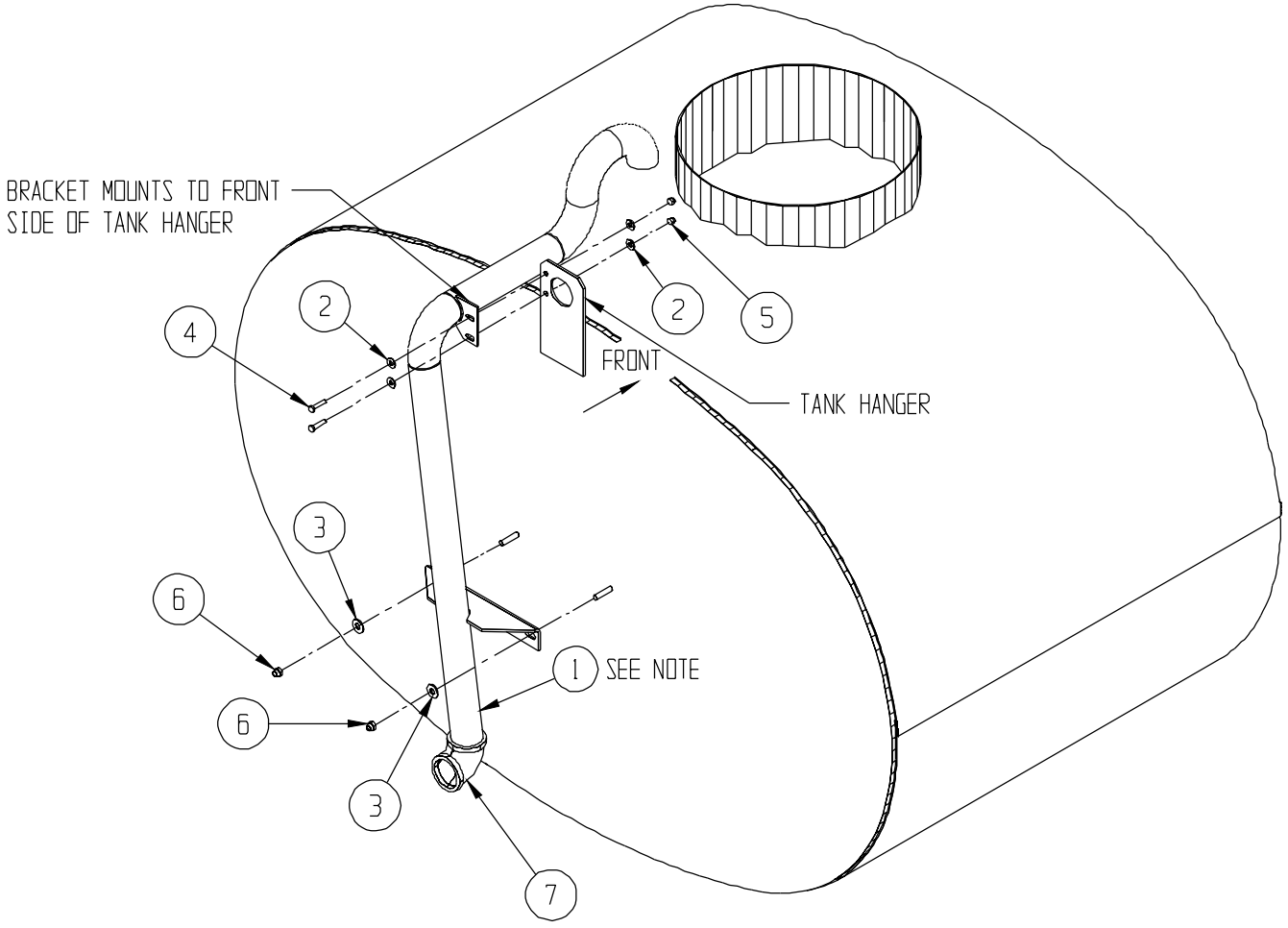
23906
B

1	23907	1.00	AIR GAP TUBE W/M,56X84X120
2	80142	4.00	WASHER,TYPE A PLAIN,.375
3	80144	2.00	WASHER,TYPE A PLAIN,.500
4	80226	2.00	CSHH,.375-16X1.50,GR5
5	80352	2.00	NUT,FLEXLOC,.375-16,FULL,LT
6	80354	2.00	NUT,FLEXLOC,.500-13,FULL,LT
7	99284	1.00	PIPE,90,2.50MP-2.50FP,MI

NOTE: For 23906-1 Air Gap Fill, 66x90, use 24361 tube w/m.

AIR GAP FILL ASSEMBLY
optional

23906
B



MISCELLANEOUS COMPONENTS

SEE LIST

34850	**1.00**	**PTO,DRIVE,GENERIC**
37356	**1.00**	**PTO,DRIVE,GENERIC,HOT SHIFT**

NOTE: MUST IDENTIFY EXACT PTO MODEL WHEN ORDERING PTO DRIVES.

34920-4	**1.00**	**DRIVESHAFT,36.5**
33963	**1.00**	**ALARM,BACKUP**
34555	**1.00**	**NOZZLE,1.50 ADJUSTABLE, PLASTIC**
37671	**A/N**	**SWITCH,TOGGLE SPDT,3-POS**
5466-1	**1.00**	**HOSE,2.50 ID,COTTON,DBL JCT,15'**
5466-2	**1.00**	**HOSE,2.50 ID,COTTON,DBL JCT,20'**
5466-3	**1.00**	**HOSE,2.50 ID,COTTON,DBL JCT,25'**
71133	**1.00**	**VLV,FOOT,3.00**
15167	**REV. A**	**FIRE FIGHTING VALVE GROUP**
34617	1.00	VLV,BALL,2.50,BRONZE
99272	1.00	PIPE,90,2.50 FP,MI
99273	2.00	PIPE,NIPPLE,2.50XCLOSE
13893	**REV. A**	**GAUGE ASSEMBLY,SIGHT,WATER LEVEL**
13894	1.00	GAUGE,SIGHT,WATER LEVEL
33163	2.00	CLAMP,HOSE,.50-.91,WORM,#8
34623	1.00	BALL,.31,DIA,LEXAN PLASTIC
35146	2.00	FLANGE,WELD FLANGE,.375 NPT
99525	2.00	PIPE,90,06MP-06FP,MI
X141	2.00	FITT,STR 06MP-06HB,CRIMPED
23556	**REV. Ø**	**BUMPER, REAR, ASSEMBLY**
23554	2.00	BRACKET, BUMPER
23555	1.00	BUMPER, REAR
80144	8.00	WASHER,TYPE A PLAIN,.500
80186	8.00	CSHH,.500-13X1.75,GR5
80354	8.00	NUT,FLEXLOC,.500-13,FULL,LT
24220	**REV. A**	**BUMPER/TOOLBOX W/M**

ITEM	PART NO.	QTY.	DESCRIPTION
	23977	**REV. Ø**	**TOOLBOX ASSEMBLY**
.....	15956	1.00	DOOR,TOOLBOX
.....	15963	1.00	HINGE,DOOR
.....	23974	1.00	TOOLBOX,WLDMT, W/CONTROLBOX
.....	33220	4.00	RIVET,BLIND,STL,.125,.188-.250
.....	34865	1.00	LOCK,RECESSED PADDLE
.....	80964	18.00	RIVET,BLIND,STL,.188,.126-.250
	20704	**REV. Ø**	**PUMP PRIMER GROUP**
.....	20705	1.00	BRACKET,PUMP PRIMER
.....	32873	3.00	FITT,STR 04MP-08HB,CRIMPED
.....	32874	1.00	VLV,BALL,08 BRASS
.....	33163	4.00	CLAMP,HOSE,.50-.91,WORM#8
.....	34034	1.00	HAND PRIMER VACUUM PUMP
.....	5118	1.00	VLV,GLOBE,04 NPT,BRASS
.....	5802	1.00	FLANGE,WELD,.250 PT
.....	6352	3.00	HOSE,08,PUSH-ON,250
.....	71627	2.00	CSHH,.500-13X1.50,GR5
.....	80144	2.00	WASHER,TYPE A PLAIN,.500
.....	80354	2.00	NUT,FLEXLOC,.500-13,FULL,LT
.....	99591	1.00	PIPE,NIPPLE,04XCLOSE
.....	99596	1.00	PIPE,NIPPLE,08XCLOSE
.....	X427	1.00	FITT,STR 08MP-08HB,CRIMPED

DS ALPHABETICAL PARTS INDEX

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DS ALPHABETICAL PARTS INDEX

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CONT.

DS ALPHABETICAL PARTS INDEX

**** Main headings appear in bold print ****

CONT.

DS ALPHABETICAL PARTS INDEX

**** Main headings appear in bold print ****