FORM NO.99-0809

TORO®

MODEL NO. 40793

OPERATORS, SET-UP AND PARTS CATALOG

300T TRAILER SPRAYER
FOR USE ON A TOW VEHICLE

To assure maximum safety, optimum performance, and to gain knowledge of the product, it is essential that you or any other operator of this Vehicle read and understand the contents of this manual before the pump is ever started. Pay particular attention to the SAFETY INSTRUCTIONS highlighted by the triangular safety alert symbol.

The safety alert symbol means CAUTION, WARNING or DANGER - personal safety instruction. Failure to comply with the instruction may result in personal injury.

SAFETY INSTRUCTIONS

Keep this Manual in the plastic tube located on the frame. It is very important that all persons operating this equipment have easy access to these instructions at all times! Carefully read and follow the "Safety And Set-Up" Instructions that are provided with this equipment.

RECOGNIZE SAFETY INFORMATION

This safety-alert symbol is used to call attention to a **dangerous** situation, which could result in serious injury or death to the operator or a bystander.

Safety, mechanical and some general information in this manual are emphasized. **DANGER, WARNING** and **CAUTION** identify safety messages. Whenever the triangular safety symbol appears, it is followed by a safety message that must be read and understood. For more details concerning safety, read the Safety Instructions on this page and pages 3-5. **IMPORTANT** identifies special mechanical information and **NOTE** identifies general information worthy of special attention.

These instructions are provided as a guide for the safe operation and maintenance of this equipment. However, the operator's personal safety, as well as those persons in the work area, will depend on the careful actions and good judgement of the operator. **To reduce the potential for injury or death, comply with the following safety instructions.**

BEFORE OPERATING:

1. Operate this machine only after reading and understanding the contents of this manual. This equipment should not be modified without The Toro Company's authorization. A replacement manual is available by sending complete model and serial number to: Hahn Equipment Co., 1625 N. Garvin, Evansville, IN 47711.

2. Learn how to operate the Sprayer and how to use the controls properly. DO NOT let anyone operate this equipment without first receiving thorough instructions.

3. Keep all shields, safety devices and decals in place. If a shield, safety device or decal is malfunctioning, illegible or damaged, repair or replace it before operating the machine.

4. Chemicals can injure persons, animals, plants, soils or other property. To eliminate environmental damage and personal injury:

A. Obtain proper training before using or handling chemicals.

B. Select the proper chemical for the job.

C. Follow manufacturer's instructions on chemical container labels. Apply and handle chemicals as recommended.

D. Handle and apply chemicals with care. Wear goggles and other necessary protective equipment. Handle chemicals in well ventilated areas. Never smoke while handling chemicals.

E. Properly dispose of chemical container and unused chemicals.

5. To be sure of optimum performance and safety, always purchase genuine Toro replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous. Altering this equipment in any manner may affect the machine's operation, performance, durability or its use may result in injury or death. Such use could void the product warranty of The Toro Company.

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SAFETY INSTRUCTIONS

⚠ WARNING

CHEMICALS ARE HAZARDOUS AND CAN CAUSE PERSONAL INJURY!

- **Carefully read the directions printed on the chemical manufacturer's labels before handling chemicals. Instructions on chemical manufacturer's container labels, regarding mixing proportions, should be read and strictly followed.**
- **Keep spray material from skin. If spray material comes in contact with body, wash it off immediately with clean water and detergent.**
- **Always wear goggles and other protective equipment as recommended by the Chemical Manufacturer.**

PERSONAL PROTECTION

When working with plant protection chemicals, one must show the greatest caution. Proper personal protective equipment must be used at all times when handing chemicals. Always refer to the safety label on any chemical for required protective equipment.

This equipment should be worn so that the minimum skin area is exposed to chemical contact.

Protective clothing equipment should be used when preparing the sprayer liquid, during the spray work or when cleaning the sprayer, depending on chemicals used. Please follow the instructions on the chemical container.

It is always advisable to have clean water available especially when filling the sprayer with the chemical.

Do not eat, drink or smoke during the work with plant protection chemicals.

Always wash hands etc. after handling chemicals.

SUPERVISOR'S RESPONSIBILITIES

1. Make sure operators are thoroughly trained and familiar with the towing Tractor's Operator's Manual, the Trailer Sprayer Operator's Manual and all labels on the Tractor and Trailer Sprayer.

2. Be sure to establish your own special procedures and work rules for unusual operating conditions (e.g. slopes too steep for vehicle operation).

BEFORE OPERATING

1. Never operate the Sprayer when under the influence of drugs or alcohol.

2. Become familiar with the controls and know how to stop the spray system quickly.

3. Keep all shields, safety devices and decals in place. If a shield, safety device, or decal is damaged, malfunctioning, or illegible, repair or replace it before operating the machine.

4. Do not wear loose fitting clothing or jewelry which could get caught in moving parts and cause personal injury.

5. Wearing safety glasses, safety shoes, long pants and a helmet is advisable and required by some local safety and insurance regulations.

6. Keep everyone, especially children and pets away from the areas of operation.

7. Before operating the Sprayer, always check all parts of the machine. If something is wrong, stop using the machine **immediately**. Make sure the problem is corrected before the Sprayer is operated again.

SAFETY INSTRUCTIONS

TOW TRACTOR REQUIREMENTS:

Tractor with a draw bar and rear 540 RPM PTO, having enough horsepower and braking to safely control 4,040lbs. (1,834kgs.). **NOTE: Tongue weight for the trailer sprayer fully loaded is 640lbs. (290kgs.).**

WHILE OPERATING:

1. Drive the Tractor safely. Maximum Tow speed is 15 MPH.

⚠ WARNING

- **Attaching the trailer sprayer to a Tractor changes the weight and handling of the Tractor, and could cause loss of control resulting in serious injury or death.**
- **Refer to the vehicle's operator's manual for tow bar and braking capacities and do not exceed those recommendations.**
- **Consider the terrain that the trailer sprayer will be used on when evaluating the capacities of the Tractor. Hills and slopes will require more braking power and stopping distance than flat areas.**
- **Do not use the fully loaded sprayer in areas where stopping and Tractor handling is questionable.**

2. DO NOT make sudden or sharp turns. DO NOT suddenly change direction of travel on an incline, ramp, grade, slope or similar surface.

3. Make certain everyone is clear of the machine before starting the engine to move the Tractor or to engage the PTO drive.

4. If equipment begins to vibrate abnormally, **stop immediately.** Shut off the Tractor engine and disengage all power. Repair all damage before commencing operation.

5. Towing the Sprayer demands attention. Failure to operate the towing Tractor safely may result in an accident, tip over of vehicle and serious injury or death. Drive carefully to prevent tipping or loss of control:

A. Use extreme caution, reduce speed and maintain a safe distance around sand traps, ditches, creeks, ramps and any unfamiliar areas or other hazards.

B. Watch for holes or other hidden hazards.

C. Avoid sudden stops and starts. Do not go from reverse to forward or forward to reverse without first coming to a complete stop.

D. Do not attempt sharp turns or abrupt maneuvers or other unsafe driving actions that may cause a loss of tractor control.

E. Before backing up, look to the rear and assure no one is behind.

F. Watch out for traffic when near or crossing roads. Always yield the right of way to pedestrians and other vehicles. Always signal your turns or stop early enough so other persons know what you plan to do. Obey all traffic rules and regulations.

G. If ever unsure about safe operation, STOP WORK and ask your supervisor.

6. Never operate this machine in areas near people or animals.

7. Never reach around the front of the pump or remove the PTO shield while the PTO Shaft is turning.

8. Before getting off the Tractor seat:

A. Stop movement of the Tractor.

B. Shut engine off and wait for all movement to stop.

C. Set parking brake.

D. Remove key from ignition.

9. Chock wheels if machine is to be left unattended.

SAFETY INSTRUCTIONS

MAINTENANCE:

1. Before servicing or making any adjustments to the Trailer Sprayer:

A. Stop the Tractor on level surface and set the parking brake.

B. Disengage all power and wait until all moving parts have stopped.

C. Shut off the Tractor's engine. Remove key from ignition to prevent someone else from starting the engine.

D. Keep hands, feet and clothing away from all power driven parts.

2. If the Tractor engine must be running to perform a maintenance adjustment, keep hands, feet, clothing, and any parts of the body away from the engine and any moving parts. Keep everyone away.

3. Keep all nuts, bolts and other fasteners tightened securely. Replace any shields removed during servicing or adjustments.

⚠ WARNING

Fluids under high pressure can penetrate the human skin and can cause severe injury, possibly resulting in amputation or death.

- **Hot liquids and chemicals can also cause burns or injury.**
- **DO NOT at any time place hand or any other part of the body in front of spray stream.**
- **If any part of the body comes in contact with the spray stream, immediately consult a physician.**

4. Visually check hoses for leaks or worn condition before each use. Make sure that all connections are tight and secure.

5. Make sure there are no restrictions in the suction or pressure hoses from the Diaphragm Pump. Liquids under high pressure are dangerous!

6. Before servicing or making any adjustments to the Diaphragm Pump:

A. Shut off the engine and release all pressure within the system by turning the Pressure Control Valve fully counterclockwise.

B. Drain all liquids from the system.

C. To be sure of optimum performance and safety, always purchase genuine Toro replacement parts and accessories. Replacement parts and accessories made by other manufacturers could be dangerous. Altering this equipment in any manner may affect the machine's operation, performance, durability or its use may result in injury or death. Such use could void the product warranty of the Toro Company.

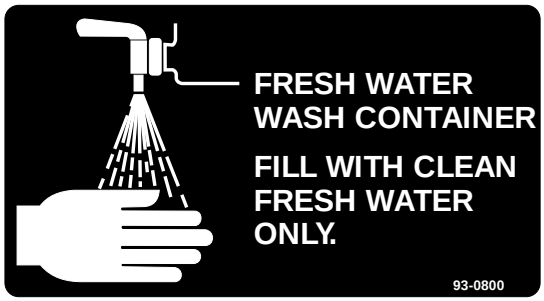
7. If major repairs are ever needed or assistance is required, contact an Authorized Toro Distributor.

SAFETY AND INSTRUCTION DECALS

The following safety and instruction decals are installed on the Trailer Sprayer. If any become damaged or illegible, replace them. Decals and part numbers are listed below and in the parts catalog. Order replacements from your Authorized Toro Distributor.

Part No. 93-0688: (2) Located on Spray Tank Lid on top of Tank.

Part No. 67-7920: (2) Located on Side of Tank.



Part No. 93-0800: Located on Side of Clean Water Wash Tank.

Part No. 75-5190: Located on front left of Tank.

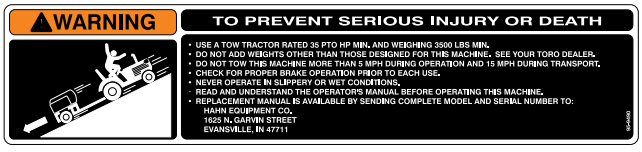
Part No. 98-8763: Located on front left of Tank.

Part No. 87-5990: Located on PTO Shield.

Part No. 92-1370: (2) Located on Hitch.

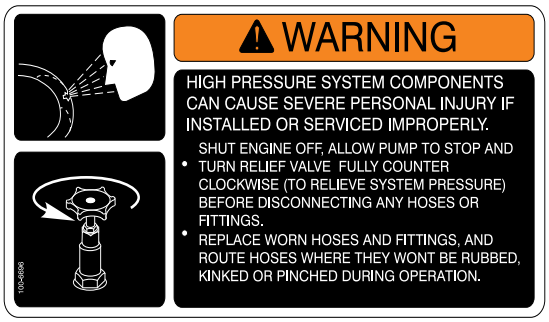
Part No. 87-0570: Located on back of Tank.

Part No. 92-3993: Located on front left of Tank.

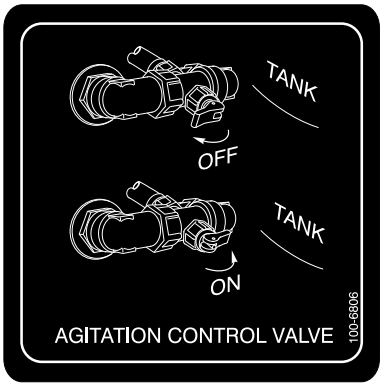


Part No. 95-9490: Located on front right of Tank.

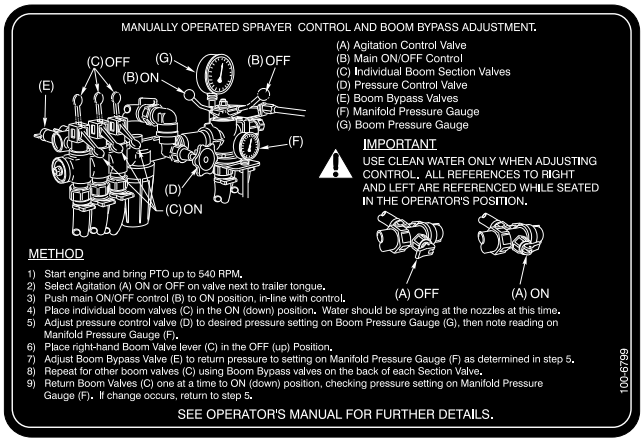
SAFETY AND INSTRUCTION DECALS



Part No. 100-6696: Located on side of Clean Water Wash Tank.

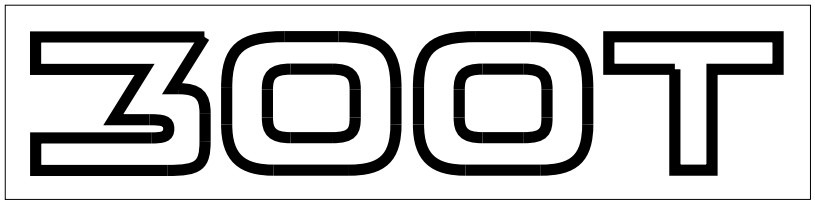


Part No. 100-6806: Located on Tongue in front of Manifold.

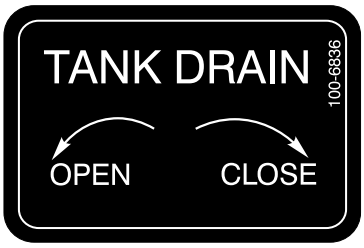


Part No. 100-6799: Located on Control Post

Part No. 100-6798: Located on Tongue.



Part No. 100-6801: Located on rear of Frame.



Part No. 100-6836: Located on Tank by Tank Drain Handle.

PRODUCT IDENTIFICATION

Trailer Sprayer
Model No. 40793
Serial No. _____

Record the serial numbers on your equipment in the space above as soon as possible, as it is necessary to include this information when ordering service parts or requesting information. Please fill out the Product Registration Card and return it to:

The TORO Company
8111 Lyndale Ave. South
Minneapolis, MN 55420

Date Purchased _____

All information, illustrations and specifications in this manual are based on the latest product information available at the time of publication. The right is reserved to make changes at any time without notice.

INSTALLATION INSTRUCTIONS

NOTE: "Right", "Left", "Front" and "Rear" are referenced while seated in the Operator's position.

ELECTRIC BRAKE CONTROLLER:

⚠ WARNING

Operation of this machine without the Electric Brake Controller installed and working properly may result in loss of control of the pulling Tractor and possibly serious personal injury. The tractor's brakes may not be sufficient to stop the Sprayer.

Do not tow the Sprayer without the Electric Brake Controller.

IMPORTANT! The Electric Brake Controller is not weatherproof. It must be disconnected and removed from the tractor then stored in safe, dry place.

1. Select a convenient, flat surface on your Tractor's right hand fender to mount the brake controller. See FIG. 1. If the Tractor has plastic fenders, use the Mounting Plate provided to establish a magnetic surface.

NOTE: When mounting the plate on Tractors with "round" fenders, it may be necessary to place shims between the plate and the fender to create a level surface.

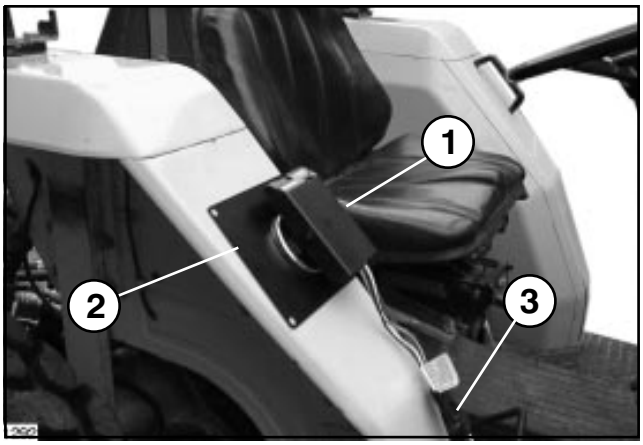


FIG. 1

1. Electric Brake Controller 2. Mounting Plate
3. Four Pin Connector

2. Use the Mounting Plate as a template and drill four (4) 9/32 inch diameter holes in the fender.

3. Secure the mounting plate to the fender with four (4) 1/4" x 3/4" screws, lockwashers, flat washers and hex nuts. See Fig. 1.

4. Place the Electric Brake Controller on the Mounting Plate using the attached magnet to secure the controller in place.

WIRE HARNESS:

1. Route the Sprayer's Tractor Wire harness to the Tractor's Battery or Starter Solenoid. Assure the harness is routed so that it does not come in contact with any moving parts.

2. Connect the **red** wire from the Wire Harness to the **positive** (+) post on the Tractor's Battery or to the **positive** (+) post on the Tractor's Starter Solenoid. See FIG. 2.

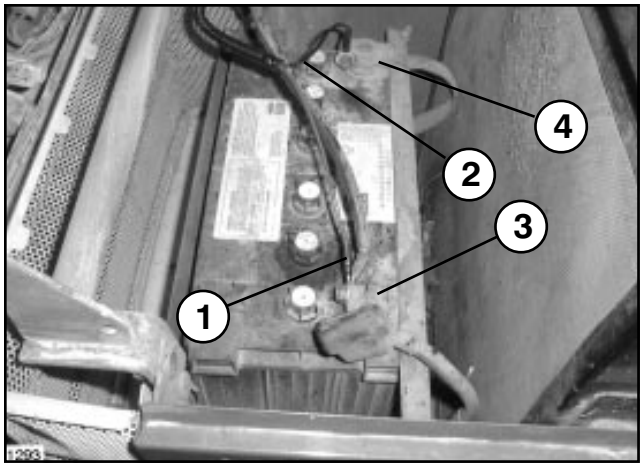


FIG. 2

1. Red Wire (Harness)
2. Black Wire (Harness)
3. Tractor Battery (+) Post
4. Tractor Battery (-) Post

3. Connect the **black** wire from the Wire Harness to the **negative** (-) post on the Tractor's Battery or to the Tractor's frame if the tractor frame is grounded. See FIG. 2.

IMPORTANT! Reversing the polarity of these connections will cause serious damage to the Electronic Brake Controller and the Wire Harness! Be especially careful when routing the Wire Harness to prevent the wires from coming in contact with any sharp edges or pinch points.

4. Route the Multi-Stud Terminal from the Auto-Reset circuit breaker to the Tractor's key switch. Connect the red wire to a terminal that is controlled by the key "on/off" switch. Use the Multi-Stud Terminal or the splice connector provided. If the splice connector is used, remove the Multi-Stud Terminal and provide adequate protection for exposed wires.

INSTALLATION INSTRUCTIONS

5. Route the "3-pin" connector back to the Tractor's drawbar. Ensure that there will be ample amount of slack at the hitch for turning and secure the harness to the tractor frame.

6. Route the "4-pin" connector from the Wire Harness up the right hand Tractor fender, to the Electric Brake Controller. Plug the two mating connectors together, ensuring the external lock catches.

7. Secure the Wire Harness to the Tractor frame and fender with plastic ties provided. The wire harness extending from the Electric Brake Controller should not be secured to the fender. The Electric Brake Controller must be removable for storage.

BRAKE PEDAL SWITCH:

The Brake Switch is to be installed so that when the towing Tractor's brakes are **disengaged**, the button on the Switch is **depressed** approximately 1/8 inch. When the Tractor's brake pedal is **engaged**, the Switch button must be **released** for its full length.

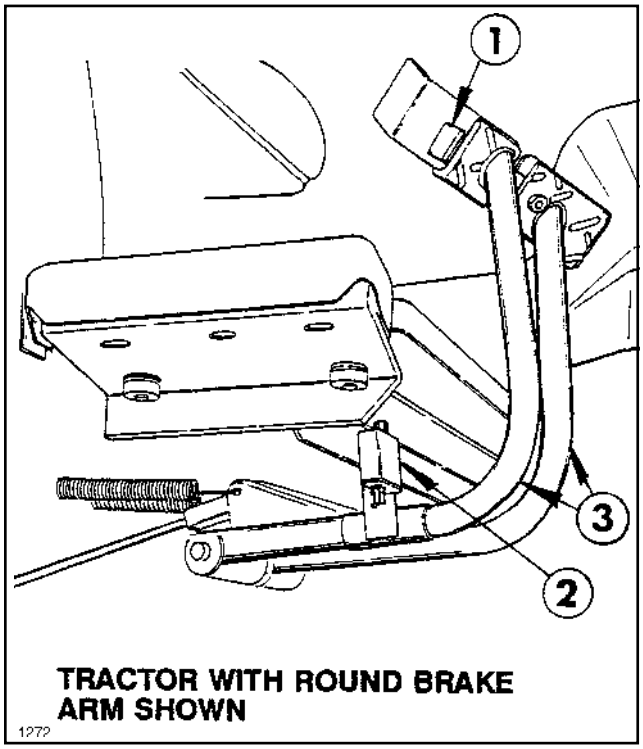


FIG. 3

1. Brake Lock
2. Brake Switch
3. Brake Arms (round)

1. Use the Brake Pedal Lock to lock the towing Tractor's Brake Pedals together. See FIG. 3.

2. Determine the location under the Tractor's floor plate that provides the best surface to activate the Brake Switch.

NOTE: The installation of the Brake Switch will depend on the shape of the towing Tractor's Brake Pedal Arm. If the Arm is round, use the Mounting Bracket Assembly. If the Arm is rectangular, use the two Mounting Straps as instructed in Step 5.

3. Estimate the length of the Mounting Strap required and cut it to that length.

4. Experiment to determine the best location mounting the Brake Switch to achieve the correct activation.

A. When the Tractor brakes are **disengaged**, the Brake Switch is **depressed**.

B. When the Tractor brakes are **engaged**, the Brake Switch is **released**.

5. Secure the Brake Switch to the Mounting Strap with two (2) #10 screws, lock washers and hex nuts.

6. If the Tractor's Brake Arm is round, secure the Mounting Bracket Assembly to the Brake Arm with two (2) hose clamps provided. (See FIG. 4)

If the Tractor's Brake Arm is rectangular, place a Mounting Strap on each side of the Brake Arm. Secure the Mounting Straps to the Brake Arm with two (2) 1/4" x 1-1/4" screws, lock washers, hex nuts and four (4) flat washers. (See FIG. 4)

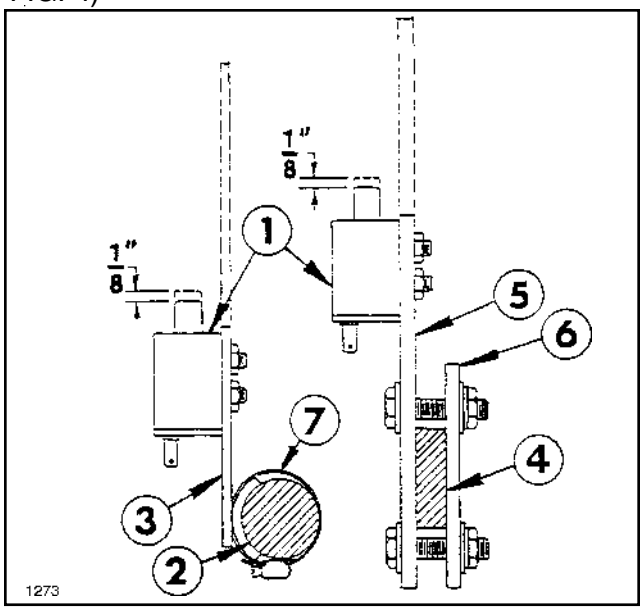


FIG. 4

1. Brake Switch
2. Brake Arms (round)
3. Mounting Bracket Assembly
4. Brake Arms (rect.)
5. Mntg Strap (long)
6. Mntg Strap(short)
7. Hose Clamp

INSTALLATION INSTRUCTIONS

NOTE: The slots in the Mounting Straps allow them to be adjusted so that the Brake Switch button is perpendicular to the Tractor's floor plate.

7. Route the "2-blade" Brake Switch connector from the Wire Harness through the hole in the floor plate, along the Brake Arm and connect it to the Brake Switch. See FIG. 5.

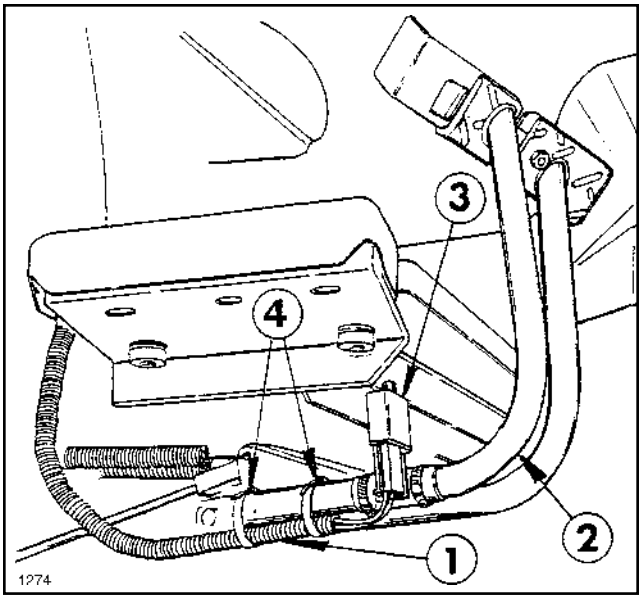


FIG. 5

1. **Wire Harness**
2. **Brake Arm**
3. **Brake Switch**
4. **Plastic Tie**

IMPORTANT! Be especially careful when routing the Wiring Harness to prevent the Wiring Harness from coming in contact with any sharp edges or pinch points.

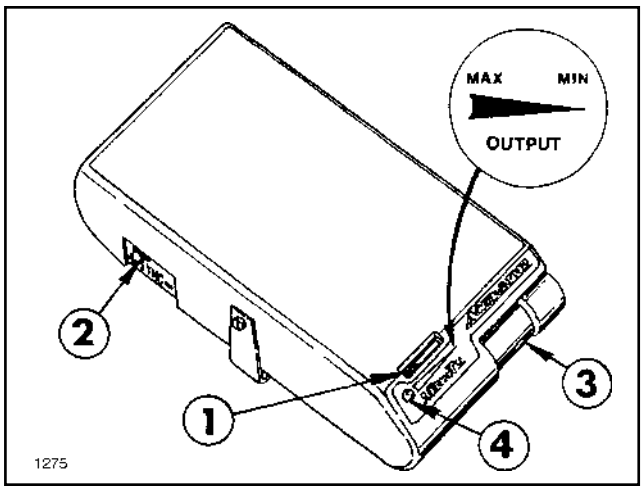


FIG. 6

1. **"Output" Setting**
2. **"Sync" Setting**
3. **Manual Brake Control**
4. **Indicator Light**

8. Secure the Wiring Harness to the Brake Arm with plastic ties provided.

CHECK BRAKE SWITCH INSTALLATION:

1. Depress the towing Tractor's Brake Pedal.

2. Check to make sure the red indicator light on the Electric Brake Controller glows.

NOTES:

SETUP INSTRUCTIONS

⚠ CAUTION

Chemicals are hazardous and can cause personal injury!

- **Securely tighten all sprayer hose clamp connections during intial set-up to prevent leaks and hose blow-offs while spraying system is in operation.**

SPRAY BOOM:

Note: In the following instructions, "sealer" refers to the Teflon Thread Tape.

1. Attach the two (2) "Z"-shaped Boom Mounting Brackets to the rear of the trailer frame using four (4) 1/2" x 1-1/4" cap screws and lock nuts.

2. Attach the two (2) Boom hold-in assemblies to the Boom Mounting Brackets as shown in FIG. 1. Use 2 (2) 1/2" x 1-1/4" cap screws and lock nuts in the upper holes. Do not tighten bolts until hold-in assemblies have been adjusted for height with folded boom.

3. Position a Spacer Tube between the lugs on each side of the Main Frame tube. Insert a 1/2" x 2-3/4" Grade 8 cap screw through the lugs and spacers. Secure the Main Frame to the Boom Mounting Brackets with flange nuts,(See FIG. 1).

4. From the end closest to the hole cut off 1" from one of the clear hoses. Install the cut piece on the left-hand Hold-in and install the uncut hose on the right-hand side. Install Clear Hoses, J-Hooks, Springs and Knobs in Boom Hold-ins as shown in FIG. 1.

5. Postion the two (2) Center Boom angles on the Main Frame and secure them to the Main Frame Tube with two (2) square U-bolts, four (4) flat washers and hex nuts. (See FIG. 2)

6. Center and attach the Center Boom Pipe to the two (2) Center Boom Angle with two (2) clamps, two (2) 3/8" x 1" cap screws, flat washers and lock nuts. Once mounted the Center Boom Pipe should be approximately 20" from ground. Alternate mounting height for the Boom are provided in the Boom Mounting Brackets. These can be used as required.

7. Loosely attach the Double Barb Turret Body with the Turret Body Clamp in the approximate center of the Center Boom Pipe. For the most uniform spray coverage, position all Nozzles level as shown in FIG. 2.

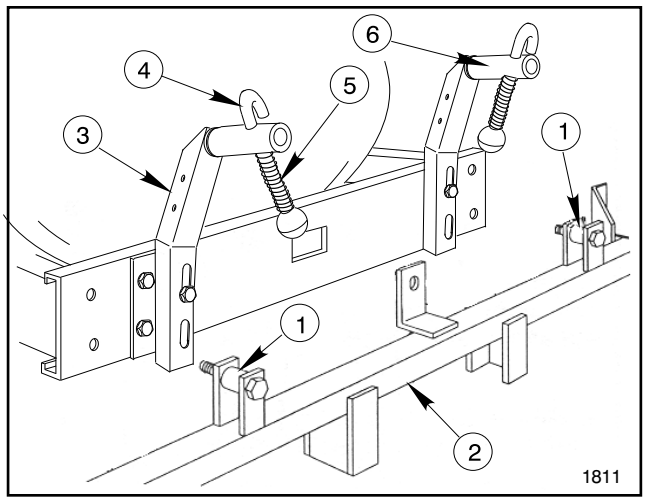


FIG. 1

1. Spacer Tube
2. Main Frame Tube
3. Mounting Brkt.
4. J-Hook
5. Spring
6. Clear Hose

8. Loosely attach a Single Barb Turret Body with the Turret Body Clamp to LH end of the Center Boom Pipe. Loosely attach a threaded Turret Body with the Turret Body Clamp to RH end of the Center Boom Pipe.

9. Place two (2) Hose Clamps on two (2) 3/4" x 19" Jumper Hoses and connect the two (2) "end" Turret Bodies to the Double Barb Turret Body. Space nozzles 20" apart and tighten fasteners securely. Apply thread sealer and install 90° 3/4" Hose Barb on the Threaded Turret Body. (See FIG. 2)

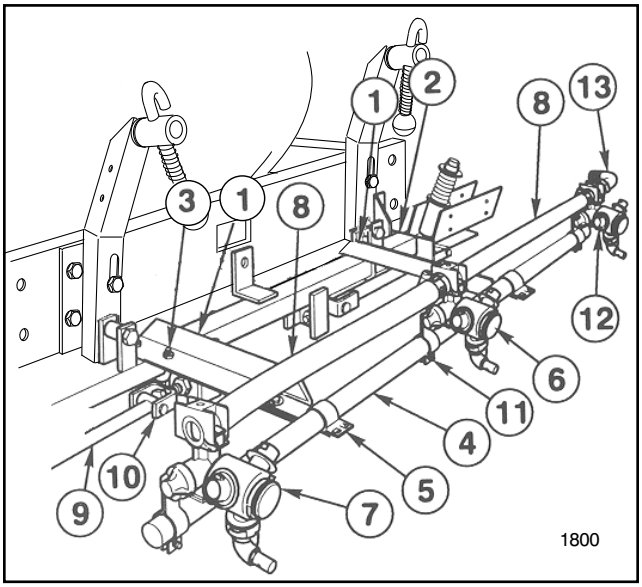


FIG. 2

1. Center Boom Angle
2. Main Frame
3. U-Bolt
4. Center Boom Pipe
5. Boom Clamp
6. Double Barb Turret
7. Single Barb Turret
8. Jumper Hose
9. Strut ASM
10. Adjustable Clevis
11. Turret Body Clamp
12. Threaded Barb Turret
13. 90° Hose Barb

SETUP INSTRUCTIONS

10. Attach the two (2) Strut Assemblies to the two (2) adjustable clevis's found on each side of the Main Frame tube with 2 (2) 1/2" x 2" clevis pins and two (2) 1/8" x 1" cotter pins. (See FIG. 2)

NOTE: If the optional "Foam Marker Kit" is to be installed, refer to the instructions furnished with that kit before proceeding to Step 11.

IMPORTANT! DO NOT over-tighten the nuts in Steps 11 and 13. The clamping action could crush the Boom Pipe.

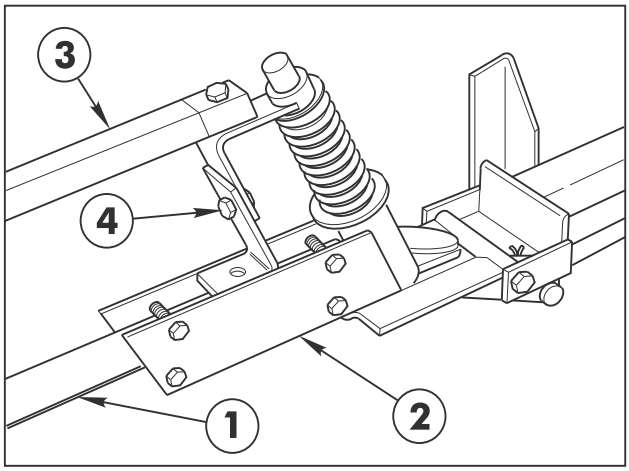


FIG. 3

1. **Extension Boom Pipe**
2. **Pivot ASM**
3. **Boom Support ASM**
4. **Height Adjustment**

11. Insert the plugged end of an Extension Boom Pipe into the Pivot Assembly and secure with four (4) 1/4" x 1-1/4" cap screws and lock nuts (See FIG. 3). Repeat on the opposite side to assemble the other Extension Boom.

12. Attach the LH Boom Support Assembly to the Pivot Assembly, using a 5/16" x 1-1/2" cap screw and lock nut. (See FIG. 3 & 4)

13. Secure the two (2) plates of the Boom Support Assembly to the Extension Boom Pipe, using two (2) 1/4" U-bolts, four (4) lock nuts and flat washers. (See FIG. 3)

14. Assemble the RH Boom Support Assembly to the other Extension Boom Pipe.

15. Adjust the Booms to a level position by adjusting the jam nuts on the adustable clevis assemblies (See FIG. 2) to the desired position. Then tighten the nuts against the Main Frame plate.

16. Attach three (3) Double Barb Turret Bodies and one (1) Single Barb Turret Body with Clamp Assemblies on each Extension Boom Pipe as shown in FIG. 4.

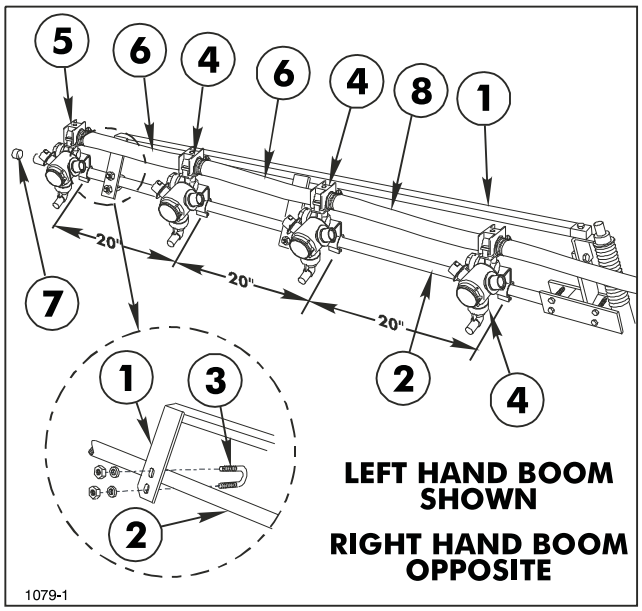


FIG. 4

1. **Boom Support ASM**
2. **Extension Boom Pipe**
3. **U-bolt**
4. **Double Barb Turret**
5. **Single Barb Turret**
6. **Jumper Hose 3/4" x 19"**
7. **Boom Cap**
8. **Jumper Hose 3/4" x 21"**

17. Level Nozzles and space 20" apart. Connect the Turret Body Assemblies with 3/4" x 19" Jumper Hoses and a 3/4" x 21" Jumper Hose. Secure with hose clamps. (See FIG. 4)

18. Place a hose clamp on the center Boom Feeder Hose and attach it to the 90° Hose Barb at the RH end of Center Boom Pipe.

19. Place a hose clamp on the right and left Boom Feeder Hose and attach them to the Double Barb Nozzles on the right and left Boom Pipes.

20. Cut the right-hand Jumper Hose on the Center Boom Section and install the Boom Pressure Gauge Tee using Hose Clamps. The Tee is Located at the rear of the machine on the end of the 1/4" Pressure Hose.

NOTE: If installing the optional "Foam Marker Kit", refer to the instructions furnished with that kit for remaining set-up procedures.

ANTI-SIPHON KIT:

Install the “Anti-Siphon Kit” beside the Filler Lid in the top of the Chemical Tank. The kit is located inside the Chemical Tank of your Sprayer. Follow the Setup Instructions provided in that kit.

CONTROLS

ELECTRIC BRAKE CONTROLLER: Operates in conjunction with the towing Tractor's brakes to control the Trailer Sprayer's brakes.

With the Brake Switch installed on the towing Tractor as described in the "Installation Instructions" section, the Sprayer's brakes are applied as soon as the towing Tractor's brake pedal(s) are depressed - or, the Controller's Manual Control is activated.

The red Indicator Light is illuminated only when the Sprayer's brakes are applied. **If the Indicator Light does not glow red when the brakes are applied, stop the tractor and correct the problem before resuming operation!**

⚠ WARNING

Non-functioning Sprayer brakes can cause loss of control and result in serious injury or death.

- **Test for proper brake functions before operation as described in the "Operating Instructions" section on page 16.**
- **Correct any problems before operation begins.**

There are two (2) brake adjustments on the Controller. See FIG. 1.

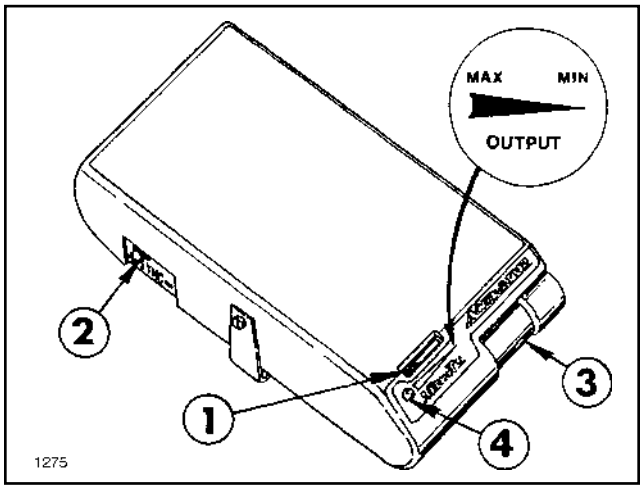


FIG. 1

1. "Output" Setting
2. "Sync" Setting
3. Manual Brake Control
4. Indicator Light

1. "OUTPUT": The sliding selector controls the amount of **force** exerted by the brakes.

2. "SYNC": The sliding selector controls the **timing** of brake application, i.e. **(-)** "soft" or **(+)** "aggressive".

3. MANUAL BRAKE CONTROL: Applies the **Sprayer's** brakes only and is used to stop the Sprayer in an emergency situation, or can be used to straighten a Jackknifed Sprayer. Squeezing the outer half of the Control to the left begins to apply the Sprayer's brakes. The further to the left it is squeezed, the harder the brakes are applied, until the maximum output, set by the "OUTPUT" control, is reached.

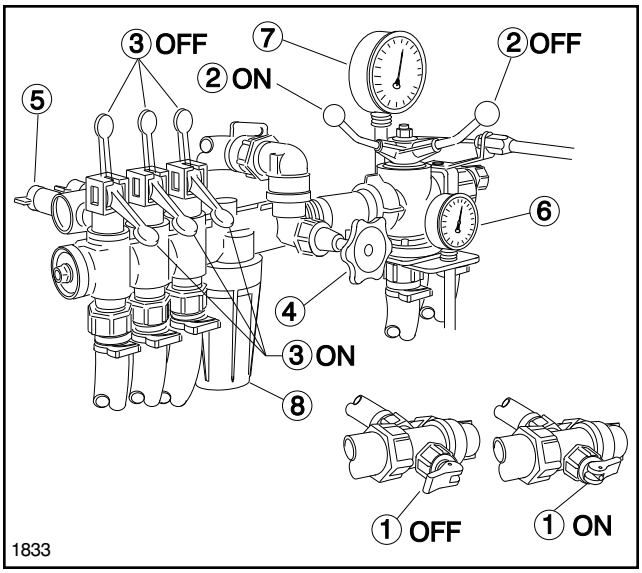


FIG. 2

1. Agitation Control Valve
2. Main ON/OFF Control
3. Individual Boom Valves
4. Pressure Control Valve
5. Boom Bypass Valve
6. Man. Press. Gauge
7. Boom Press. Gauge
8. Pressure Filter

The Manually Operated Control Sytem features a mechanical constant rate controller. This ensures a constant application rate of the spray liquid at varying speeds within the same gear. The control also features a remote ON/OFF valve handle and Individual Boom Valves with an adjustable Bypass Valve.

4. INDIVIDUAL BOOM VALVES: Allows individual selection of Boom sections and controls the flow of spray solution to left, center, and right booms. (See FIG. 2)

CONTROLS

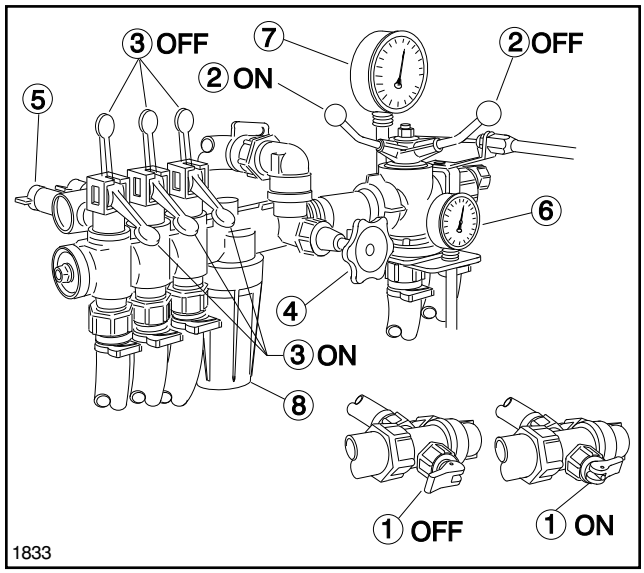


FIG. 3

1. Agitation Control Valve
2. Main ON/OFF Control
3. Individual Boom Valves
4. Pressure Control Valve
5. Boom Bypass Valve
6. Man. Press. Gauge
7. Boom Press. Gauge
8. Pressure Filter

See FIG. 3 for 5-11.

5. PRESSURE CONTROL VALVE: Turn to INCREASE or DECREASE spraying pressure and application rate to the desired level.

6. MAIN ON/OFF CONTROL: Directs pump flow to Boom Valves or return to tank.

7. BOOM BYPASS VALVES: Manual adjustment to equalize restriction of the particular Boom Section when a section is turned "OFF."

8. MANIFOLD PRESSURE GAUGE: Indicates the pressure at which the Spray System is operating.

9. BOOM PRESSURE GAUGE: Indicates the pressure at which the Spray Boom is operating.

10. PRESSURE FILTER: Additional filter to prevent clogs in the system.

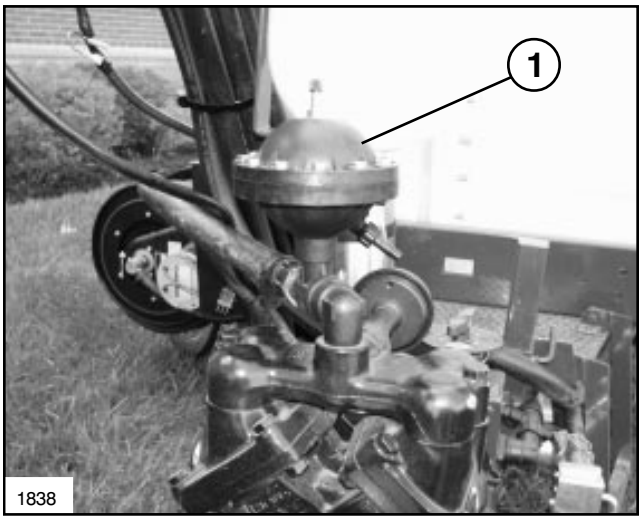


FIG. 4

1. Pressure Dampener

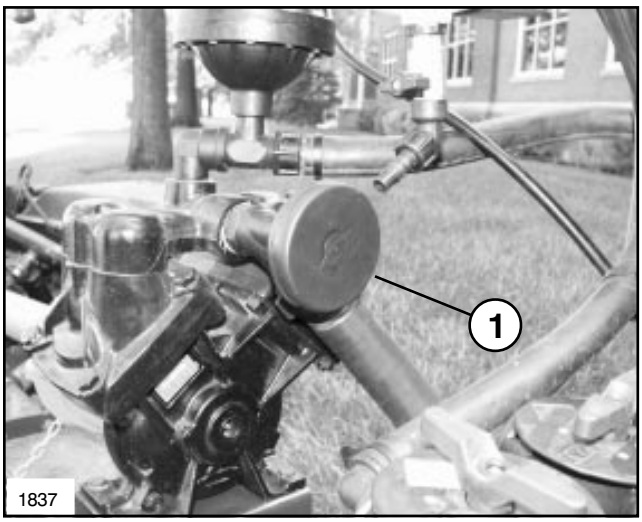


FIG. 5

1. Suction Dampener

11. AGITATION CONTROL: Switches agitation nozzles "ON" or "OFF."

12. PRESSURE DAMPENER: Smooths pressure pulsation in spray system. (See FIG. 4)

13. SUCTION DAMPENER: Prevents Pump cavitation. (See FIG. 5)

CONTROLS

14. SUCTION STRAINER: Filters solid particles from spray solution preventing clogs in the system. (See FIG. 6)

15. DRAIN VALVE: Turn to open or close drain valve in the bottom of the tank. (See FIG. 7)

16 REMOTE CONTROL: Allows Remote Control location of main On/Off valve. The Remote can be mounted on the Towing Tractor. (See FIG. 8)

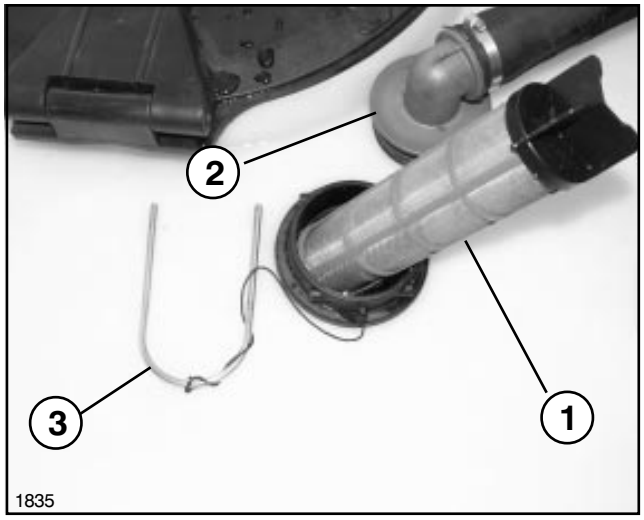


FIG. 6

1. Suction Strainer
2. Red Hosebarb
3. Fork

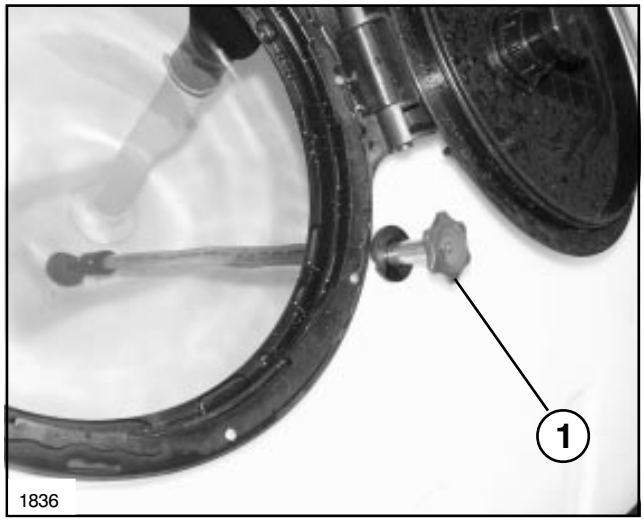


FIG. 7

1. Drain Valve

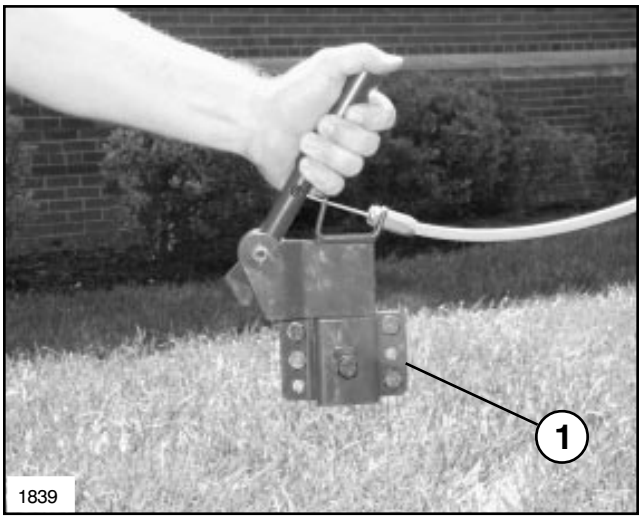


FIG. 8

1. Remote Control

17. RELIEF VALVE: Limits system pressure to 220 psi (15 BAR). A smalle hole in the poppet of the valve keeps fluid moving through the supply hose to the valve.

INITIAL MACHINE SETUP

TOWING TRACTOR CONNECTION:

NOTE: To achieve a level sprayer, the tongue of the sprayer is adjustable in height. Use the following procedure to make the adjustments.

⚠ CAUTION

Accidential movement of the Sprayer can cause personal injury.

When the Sprayer is not connected to the Tractor, Chocks must be used to prevent any accidental movement.

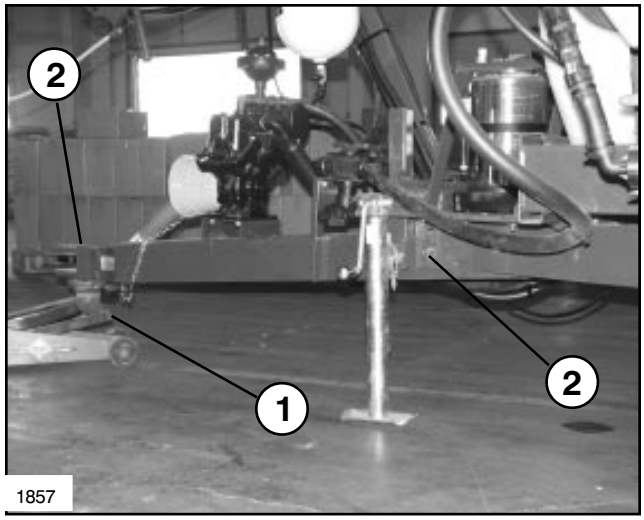


FIG. 1

1. Jack **2. Sprayer's Hitch**
3. Bolts (Tongue to Frame)

1. Place the Sprayer on a level surface with wheel chocks in front and at the back of the wheels.

2. Slowly back the towing Tractor, positioning its draw bar close enough to the Sprayer's Hitch yoke to make a visual alignment of the connection.

3. Place a Jack under the hitch clevis as shown in Figure 1. Remove the bolts securing the Tongue to the Frame. Reposition the Tongue to the required height and align the holes in the Tongue and Frame. Install the bolts in the new position and tighten securely.

4. When alignment is complete, insert the Hitch Pin through the clevis and the Tractor's draw bar. Secure with the cotter pin.

ELECTRICAL:

The Wire Harness provides power to the electric brakes and controls. Never operate without Wire Harness connected.

⚠ WARNING

Non-functioning brakes can cause loss of control and result in serious injury or death.

- **Check the towing Tractor's brakes before operation. Have the brake pedals locked together.**
- **Test for proper Sprayer brake operation, as described in "Brake Instructions" section on page 17.**
- **Correct any problems before operation begins.**
- **Never operate without brakes.**

1. Match the "3-pin" connector from the Sprayer to the Wire Harness installed on the Tractor. Plug the two connectors together, ensuring the external lock catches.

2. Make adjustmens to the control mounting posts as needed for the operator to comfortably reach them.

3. Select a position on the Tractor to mount the remote control for the main On/Off valve. Attach the base of the remote lever securely to the Tractor. The handle can then be slipped into the base and secured.

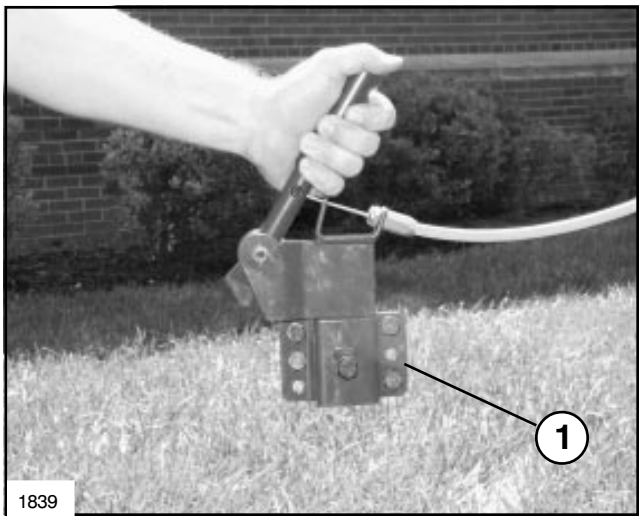


FIG. 2

1. Remote Control

INITIAL MACHINE SETUP/BEFORE OPERATING

INITIAL MACHINE SETUP CONT'D:

4. Connect the PTO Shaft From the Pump to the Tractor PTO by twisting the Collar and sliding the Yoke onto the Tractor PTO until the Yoke locks into position.

5. Attach the Chains from the Guards to the Trailer to prevent the Guard from rotating. Leave slack in the Chain to allow for turns.

6. Use the Magnetic Base on the Boom Pressure Gauge to mount the Gauge in a convenient viewing location.

BEFORE OPERATING

PRE-STARTING CHECKS:

Safe operation begins before taking the Sprayer out for a day's work. Refer to and follow the instructions in your Tractor's Operator's Manual for all pre-starting checks and safety precautions regarding the safe towing of implements. Check these items each time you begin work with the Sprayer:

1. Lock Tractor's Brake Pedals together. See FIG. 1.

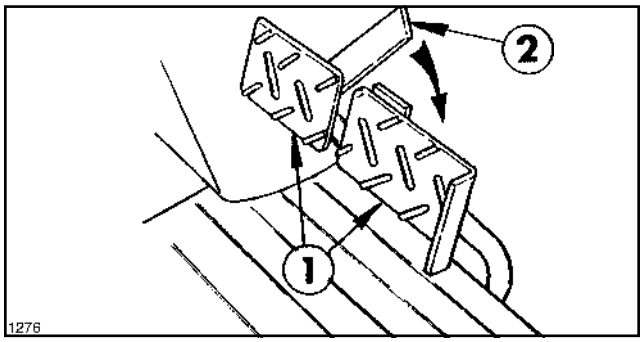


FIG. 1

1. Brake Pedal 2. Brake Lock

2. Check the Sprayer's brake operation. See "Brake Test" section on this page.

3. Perform a Calibration check before spraying.

4. Check for spray system leaks, loose parts and any other noticeable malfunctions.

If any of the above items are not correct, notify your mechanic or check with your supervisor before taking the Trailer Sprayer out for the day. Your supervisor may want you to check other items on a daily basis, so ask what your responsibilities are.

BRAKE OPERATION:

WARNING! The brakes require a break-in period of approximately 100 stops for the brakes to "burnish" and generate maximum brake force. The brakes are self-adjusting and will adjust as required in reverse brake applications. See "Maintenance" section.

The brakes are electrically controlled by the Brake Controller to act in unison with the towing Tractor's brake pedals. Make sure the towing Tractor's brakes are locked together (FIG. 1).

⚠ WARNING

Non-functioning brakes can cause loss of control resulting in serious injury or death.

• Test brake functions before operation begins.

• Correct any brake problem before operation begins.

Test brake function as follows:

1. Have the Spray Tank empty and the Controller's **"OUTPUT"** setting at maximum (full left). See FIG. 1, **Page 13**.

2. Sit on the Tractor operator's seat and start the engine. Drive the Tractor for a short distance.

3. Squeeze the Manual Brake Control, full left.

The Wheels should **lock** to indicate the Brakes are functioning correctly. If not, see the "Trouble-Shooting" section.

The **"OUTPUT"** should always be set at it's **maximum** setting when tank is **full**.

The **"OUTPUT"** can be adjusted to a lower setting to prevent "scuffing" the turf, when tank is **empty.**

4. The recommended "SYNC" Setting is full (+). Test drive the machine making several stops. Adjust the"SYNC" control until stops are smooth and firm.

⚠ WARNING

Operating faster than 5 mph on a slope with a loaded Sprayer can cause loss of Operator control, resulting in serious injury or death.

BEFORE SPRAYING

TRACTOR SPEED CALCULATION:

Due to the mechanical link between Pump speed and Tractor speed, the Tractor speed (in the desired gear range) and approximate engine speed must be determined in miles per hour or kilometers per hour to effectively calibrate the Spray System.

NOTE: After the sprayer is calibrated, selecting a different gear range while maintaining the same ground speed will change the sprayers application rate. Therefore, a new calibration setting must be established.

Perform the following procedure to determine the Tractor's ground speed during operation.

1. Mark off a straight distance of 88 feet (US & TU units) or 50 meters (SI units) on level terrain.

2. Select the gear and range on the Tractor which will be used during operation and set the engine RPM to provide 540 RPM at the PTO Shaft.

3. Record the Time in seconds that it takes the Tractor to travel the 88 feet or 50 meters.

4. Use the applicable formula below to calculate the ground speed.

US & TU (Turf) FORMULA:

$$\text{MPH} = \frac{60}{\text{Time (sec.)}} \text{ to travel 88 feet}$$

SI (METRIC) FORMULA:

$$\text{km/h} = \frac{180}{\text{Time (sec.)}} \text{ to travel 50 m}$$

SPRAY SYSTEM CALIBRATION:

Refer to the Chemical Manufacturer's instructions on the chemical container label to determine the application rate of the chemical to be sprayed.

NOZZLE SELECTION:

See the nozzle charts on page 19-24 to be sure that your spray nozzles have the capacity necessary to achieve the application rate selected.

To select the proper nozzle, you need to know:

1. Recommended chemical application rate in gallons per acre, gallons per 1000 sq. ft. or liters per hectare.

2. Average Vehicle speed in Miles per hour or kilometers per hour.

3. Nozzle spacing (20 inches or 50 centimeters.)

With this information you can calculate the volume per minute per nozzle, using the formulas below.

US FORMULA:

$$\text{G.P.M. (Per Nozzle)} = \frac{\text{G.P.A. x M.P.H. X 20 ins.}}{5940}$$

TU (Turf) FORMULA:

$$\text{G.P.M. (Per Nozzle)} = \frac{\text{G.P.K. x M.P.H. x 20 ins.}}{137}$$

SI (METRIC) FORMULA:

$$\text{lit/min (Per Nozzle)} = \frac{\text{lit/ha x km/h x 50 cm}}{60{,}000}$$

Use G.P.M. (lit/min) and Pressure to select appropriate nozzle from chart on page 8 & 9.

EXAMPLE (US FORMULA):

Application Rate = 12 Gallons/Acre
Vehicle Speed = 5 M.P.H.
Nozzle Spacing = 20 inches

$$\frac{\text{12 G.P.A. x 5 M.P.H. x 20}}{5940} = \text{0.2 G.P.M. (per nozzle)}$$

With 0.2 G.P.M. and a pressure of 40 P.S.I. you would select Nozzle 95-9221.

EXAMPLE (TU FORMULA):

Application Rate = 0.34 Gal./1000 sq. ft.
Vehicle Speed = 4 M.P.H.
Nozzle Spacing = 20 inches

$$\frac{\text{0.34 G.P.K. x 4 M.P.H. x 20}}{137} = \text{0.2 G.P.M. (per nozzle)}$$

With 0.2 G.P.M. and a pressure of 40 P.S.I. you would select Nozzle 95-9221.

EXAMPLE (SI FORMULA):

Application Rate = 300 lit/hectare
Vehicle Speed = 8 km/h
Nozzle Spacing = 50 cm

$$\frac{\text{300 lit/ha x 8 km/h x 50}}{60{,}000} = \text{2.00 lit/min. (per nozzle)}$$

With 2.00 lit/min. and a pressure at 480 kPa you would select nozzle 95-2222.

BEFORE SPRAYING

SYMBOL DEFINITIONS:

GPM	- Gallons per minute
lit/min	- Liters per minute
dl/min	- Deciliter per minute
PSI	- Pounds per square inch
kPa	- Kilopascal
GPA	- Gallons per acre
lit/ha	- Liter per hectare
ml/ha	- Milliliter per hectare
GPK	- Gallons per 1,000 sq. ft.
mm	- Millimeters
cm	- Centimeters
dm	- Decimeters
m	- Meter
MPH	- Miles per hour
km	- Kilometers
km/h	- Kilometers per hour
US	- Volume per ACRE
SI	- Volume per HECTARE
TU	- Volume per 1,000 sq. ft.

LIQUID CONVERSIONS

U.S. Gallons x 128 = Fluid Ounces
U.S. Gallons x 3.785 = Liters
U.S. Gallons x 0.83267 = Imperial Gallons
U.S. Gallons x 8.34 = Pounds (Water)

LENGTH CONVERSIONS

1 millimeter (mm) = 0.039 inch
1 centimeter (cm) = 0.393 inch
1 meter (m) = 3.281 feet
1 kilometer (km) = 0.621 mile
1 inch = 25.4 millimeters; 2.54 centimeters
1 mile = 1.609 kilometers

PRESSURE CONVERSIONS

1 psi = 6.89 kPa
1 bar = 100 kPa

AREA CONVERSIONS

1 square meter = 10.764 sq. feet
1 hectare (ha) = 2.471 acres; 10,000 sq.meters
1 acre = 0.405 hectare; 43,560 sq. ft.
1 sq. mile = 640 acres; 258.9 hectares

Formulas:

$$\text{Speed (mph)} = \frac{\text{Distance (ft.) x 60}}{\text{Time (seconds) x 88}}$$

$$\text{GPM per nozzle} = \frac{\text{GPA x mph x w*}}{5{,}940}$$

$$\text{GPM per nozzle} = \frac{\text{Gal/1000ft x mph x w*}}{136}$$

$$\text{GPA} = \frac{\text{5,940 x GPM (per nozzle)}}{\text{mph x w*}}$$

$$\text{Gal/1000ft.} = \frac{\text{136 x GPM (per nozzle)}}{\text{mph x w*}}$$

* w= Nozzle spacing in inches.

BEFORE SPRAYING
NOZZLE SELECTION CHART
GPA AND GAL/1000 FT²

Gallons Per Acre Application Rates

Toro Part No.	Nozzle Number / Color Code	Pressure (PSI)	Capacity 1 Nozzle (GPM)	Gallons per Acre at 20" Spacings							
				2.5 MPH	3 MPH	3.5 MPH	4 MPH	4.5 MPH	5 MPH	5.5 MPH	6 MPH
95-9221	1/4TTJ02-VS Yellow	20	0.14	16.6	13.9	11.9	10.4	9.2	8.3	7.6	6.9
		30	0.17	20.2	16.8	14.4	12.6	11.2	10.1	9.2	8.4
		40	0.20	23.8	19.8	17.0	14.9	13.2	11.9	10.8	9.9
		50	0.22	26.1	21.8	18.7	16.3	14.5	13.1	11.9	10.9
		60	0.24	28.8	24.0	20.6	18.0	16.0	14.4	13.1	12.0
		70	0.26	31.1	25.9	22.2	19.4	17.3	15.6	14.1	13.0
		80	0.28	33.3	27.7	23.8	20.8	18.5	16.6	15.1	13.9
		90	0.30	35.3	29.4	25.2	22.1	19.6	17.6	16.0	14.7
		100	0.31	37.2	31.0	26.6	23.2	20.7	18.6	16.9	15.5
		110	0.33	39.0	32.5	27.9	24.4	21.7	19.5	17.7	16.3
		120	0.34	40.7	33.9	29.1	25.5	22.6	20.4	18.5	17.0
		130	0.36	42.4	35.3	30.3	26.5	23.6	21.2	19.3	17.7
		140	0.37	44.0	36.7	31.4	27.5	24.4	22.0	20.0	18.3
		150	0.38	45.5	38.0	32.5	28.5	25.3	22.8	20.7	19.0
95-9222	1/4TTJ04-VS Red	20	0.28	33.3	27.7	23.8	20.8	18.5	16.6	15.1	13.9
		30	0.35	41.6	34.7	29.7	26.0	23.1	20.8	18.9	17.3
		40	0.40	47.5	39.6	33.9	29.7	26.4	23.8	21.6	19.8
		50	0.45	53.5	44.6	38.2	33.4	29.7	26.7	24.3	22.3
		60	0.48	57.6	48.0	41.2	36.0	32.0	28.8	26.2	24.0
		70	0.52	62.2	51.9	44.5	38.9	34.6	31.1	28.3	25.9
		80	0.56	66.5	55.4	47.5	41.6	37.0	33.3	30.2	27.7
		90	0.59	70.6	58.8	50.4	44.1	39.2	35.3	32.1	29.4
		100	0.63	74.4	62.0	53.1	46.5	41.3	37.2	33.8	31.0
		110	0.66	78.0	65.0	55.7	48.8	43.3	39.0	35.5	32.5
		120	0.69	81.5	67.9	58.2	50.9	45.3	40.7	37.0	33.9
		130	0.71	84.8	70.7	60.6	53.0	47.1	42.4	38.5	35.3
		140	0.74	88.0	73.3	62.9	55.0	48.9	44.0	40.0	36.7
		150	0.77	91.1	75.9	65.1	56.9	50.6	45.5	41.4	38.0
95-9223	1/4TTJ05-VS Brown	20	0.35	41.6	34.7	29.7	26.0	23.1	20.8	18.9	17.3
		30	0.43	51.1	42.6	36.5	31.9	28.4	25.5	23.2	21.3
		40	0.50	59.4	49.5	42.4	37.1	33.0	29.7	27.0	24.8
		50	0.56	66.5	55.4	47.5	41.6	37.0	33.3	30.2	27.7
		60	0.61	72.0	60.0	51.4	45.0	40.0	36.0	32.7	30.0
		70	0.65	77.8	64.8	55.6	48.6	43.2	38.9	35.4	32.4
		80	0.70	83.2	69.3	59.4	52.0	46.2	41.6	37.8	34.7
		90	0.74	88.2	73.5	63.0	55.1	49.0	44.1	40.1	36.8
		100	0.78	93.0	77.5	66.4	58.1	51.7	46.5	42.3	38.7
		110	0.82	97.5	81.3	69.7	60.9	54.2	48.8	44.3	40.6
		120	0.86	101.8	84.9	72.7	63.7	56.6	50.9	46.3	42.4
		130	0.89	106.0	88.3	75.7	66.3	58.9	53.0	48.2	44.2
		140	0.93	110.0	91.7	78.6	68.8	61.1	55.0	50.0	45.8
		150	0.96	113.9	94.9	81.3	71.2	63.3	56.9	51.8	47.4
95-9224	1/4TTJ06-VS Gray	20	0.42	49.9	41.6	35.6	31.2	27.7	24.9	22.7	20.8
		30	0.52	61.8	51.5	44.1	38.6	34.3	30.9	28.1	25.7
		40	0.60	71.3	59.4	50.9	44.6	39.6	35.6	32.4	29.7
		50	0.67	79.6	66.3	56.9	49.7	44.2	39.8	36.2	33.2
		60	0.73	86.4	72.0	61.7	54.0	48.0	43.2	39.3	36.0
		70	0.79	93.3	77.8	66.7	58.3	51.9	46.7	42.4	38.9
		80	0.84	99.8	83.2	71.3	62.4	55.4	49.9	45.4	41.6
		90	0.89	105.8	88.2	75.6	66.2	58.8	52.9	48.1	44.1
		100	0.94	111.6	93.0	79.7	69.7	62.0	55.8	50.7	46.5
		110	0.98	117.0	97.5	83.6	73.1	65.0	58.5	53.2	48.8
		120	1.03	122.2	101.8	87.3	76.4	67.9	61.1	55.6	50.9
		130	1.07	127.2	106.0	90.9	79.5	70.7	63.6	57.8	53.0
		140	1.11	132.0	110.0	94.3	82.5	73.3	66.0	60.0	55.0
		150	1.15	136.6	113.9	97.6	85.4	75.9	68.3	----	56.9

BEFORE SPRAYING
NOZZLE SELECTION CHART
GPA AND GAL/1000 FT²

Gallons Per Acre Application Rates											
Toro Part No.	Nozzle Number Color Code	Pressure (PSI)	Capacity 1 Nozzle (GPM)	Gallons per Acre at 20" Spacings							
				2.5 MPH	3 MPH	3.5 MPH	4 MPH	4.5 MPH	5 MPH	5.5 MPH	6 MPH
95-9225	1/4TTJ08-VS White	20	0.57	67.7	56.4	48.4	42.3	37.6	33.9	30.8	28.2
		30	0.69	82.0	68.3	58.6	51.2	45.5	41.0	37.3	34.2
		40	0.80	95.0	79.2	67.9	59.4	52.8	47.5	43.2	39.6
		50	0.89	105.7	88.1	75.5	66.1	58.7	52.9	48.1	44.1
		60	0.99	117.3	97.7	83.8	73.3	65.2	58.6	53.3	48.9
		70	1.07	126.7	105.6	90.5	79.2	70.4	63.3	57.6	52.8
		80	1.14	135.4	112.9	96.7	84.6	75.2	67.7	----	56.4
		90	1.21	143.6	119.7	102.6	89.8	79.8	71.8	----	59.9
		100	1.27	151.4	126.2	108.2	94.6	84.1	75.7	----	----
		110	1.34	158.8	132.3	113.4	99.3	88.2	79.4	----	----
		120	1.40	165.9	138.2	----	103.7	92.1	82.9	----	----
		130	1.45	172.6	143.9	----	107.9	95.9	86.3	----	----
		140	1.51	179.2	149.3	----	112.0	99.5	89.6	----	----
		150	1.56	185.4	154.5	----	115.9	103.0	92.7	----	----
95-9188	1/4TTJ10-VS Light Blue	20	0.71	84.3	70.3	60.2	52.7	46.9	42.2	38.3	35.1
		30	0.87	103.4	86.1	73.8	64.6	57.4	51.7	47.0	43.1
		40	1.00	118.8	99.0	84.9	74.3	66.0	59.4	54.0	49.5
		50	1.12	133.1	110.9	95.0	83.2	73.9	66.5	60.5	55.4
		60	1.23	146.1	121.7	104.4	91.3	81.2	73.0	----	60.9
		70	1.33	157.8	131.5	112.7	98.6	87.7	78.9	----	----
		80	1.42	168.7	140.6	----	105.4	93.7	84.3	----	----
		90	1.51	178.9	149.1	----	111.8	99.4	89.5	----	----
		100	1.59	----	157.2	----	----	104.8	94.3	----	----
		110	1.67	----	164.8	----	----	109.9	98.9	----	----
		120	1.74	----	172.2	----	----	114.8	103.3	----	----
		130	1.81	----	179.2	----	----	----	107.5	----	----
		140	1.88	----	186.0	----	----	----	111.6	----	----
		150	1.94	----	----	----	----	----	115.5	----	----
95-9226	1/4TTJ15-VS Light Green	20	1.06	125.9	104.9	89.9	78.7	70.0	63.0	57.2	52.5
		30	1.30	154.4	128.7	110.3	96.5	85.8	77.2	----	----
		40	1.50	178.2	148.5	----	111.4	99.0	89.1	----	----
		50	1.68	199.6	166.3	----	----	110.9	99.8	----	----
		60	1.84	----	181.8	----	----	----	109.1	----	----
		70	1.98	----	196.3	----	----	----	117.8	----	----
		80	2.12	----	----	----	----	----	----	----	----
		90	2.25	----	----	----	----	----	----	----	----
		100	2.37	----	----	----	----	----	----	----	----
		110	2.49	----	----	----	----	----	----	----	----
		120	2.60	----	----	----	----	----	----	----	----
		130	2.70	----	----	----	----	----	----	----	----
		140	2.80	----	----	----	----	----	----	----	----
		150	2.90	----	----	----	----	----	----	----	----

BEFORE SPRAYING
NOZZLE SELECTION CHART
GPA AND GAL/1000 FT²

Gallons Per 1000 Sq. Ft. Application Rates											
Toro Part No.	Nozzle Number Color Code	Pressure (PSI)	Capacity 1 Nozzle (GPM)	Gallons per 1000 Sq. Ft. at 20" Spacings							
				2.5 MPH	3 MPH	3.5 MPH	4 MPH	4.5 MPH	5 MPH	5.5 MPH	6 MPH
95-9221	1/4TTJ02-VS Yellow	20	0.14	0.38	0.32	0.27	0.24	0.21	0.19	0.17	0.16
		30	0.17	0.46	0.39	0.33	0.29	0.26	0.23	0.21	0.19
		40	0.20	0.54	0.45	0.39	0.34	0.30	0.27	0.25	0.23
		50	0.22	0.60	0.50	0.43	0.37	0.33	0.30	0.27	0.25
		60	0.24	0.66	0.55	0.47	0.41	0.37	0.33	0.30	0.27
		70	0.26	0.71	0.59	0.51	0.45	0.40	0.36	0.32	0.30
		80	0.28	0.76	0.63	0.54	0.48	0.42	0.38	0.35	0.32
		90	0.30	0.81	0.67	0.58	0.50	0.45	0.40	0.37	0.34
		100	0.31	0.85	0.71	0.61	0.53	0.47	0.43	0.39	0.35
		110	0.33	0.89	0.74	0.64	0.56	0.50	0.45	0.41	0.37
		120	0.34	0.93	0.78	0.67	0.58	0.52	0.47	0.42	0.39
		130	0.36	0.97	0.81	0.69	0.61	0.54	0.49	0.44	0.40
		140	0.37	1.01	0.84	0.72	0.63	0.56	0.50	0.46	0.42
		150	0.38	1.04	0.87	0.74	0.65	0.58	0.52	0.47	0.43
95-9222	1/4TTJ04-VS Red	20	0.28	0.76	0.63	0.54	0.48	0.42	0.38	0.35	0.32
		30	0.35	0.95	0.79	0.68	0.60	0.53	0.48	0.43	0.40
		40	0.40	1.09	0.91	0.78	0.68	0.60	0.54	0.49	0.45
		50	0.45	1.22	1.02	0.87	0.77	0.68	0.61	0.56	0.51
		60	0.48	1.32	1.10	0.94	0.82	0.73	0.66	0.60	0.55
		70	0.52	1.42	1.19	1.02	0.89	0.79	0.71	0.65	0.59
		80	0.56	1.52	1.27	1.09	0.95	0.85	0.76	0.69	0.63
		90	0.59	1.62	1.35	1.15	1.01	0.90	0.81	0.73	0.67
		100	0.63	1.70	1.42	1.22	1.06	0.95	0.85	0.77	0.71
		110	0.66	1.79	1.49	1.28	1.12	0.99	0.89	0.81	0.74
		120	0.69	1.87	1.55	1.33	1.17	1.04	0.93	0.85	0.78
		130	0.71	1.94	1.62	1.39	1.21	1.08	0.97	0.88	0.81
		140	0.74	2.02	1.68	1.44	1.26	1.12	1.01	0.92	0.84
		150	0.77	2.09	1.74	1.49	1.30	1.16	1.04	0.95	0.87
95-9223	1/4TTJ05-VS Brown	20	0.35	0.95	0.79	0.68	0.60	0.53	0.48	0.43	0.40
		30	0.43	1.17	0.97	0.84	0.73	0.65	0.58	0.53	0.49
		40	0.50	1.36	1.13	0.97	0.85	0.76	0.68	0.62	0.57
		50	0.56	1.52	1.27	1.09	0.95	0.85	0.76	0.69	0.63
		60	0.61	1.65	1.37	1.18	1.03	0.92	0.82	0.75	0.69
		70	0.65	1.78	1.48	1.27	1.11	0.99	0.89	0.81	0.74
		80	0.70	1.90	1.59	1.36	1.19	1.06	0.95	0.87	0.79
		90	0.74	2.02	1.68	1.44	1.26	1.12	1.01	0.92	0.84
		100	0.78	2.13	1.77	1.52	1.33	1.18	1.06	0.97	0.89
		110	0.82	2.23	1.86	1.59	1.40	1.24	1.12	1.01	0.93
		120	0.86	2.33	1.94	1.67	1.46	1.30	1.17	1.06	0.97
		130	0.89	2.43	2.02	1.73	1.52	1.35	1.21	1.10	1.01
		140	0.93	2.52	2.10	1.80	1.57	1.40	1.26	1.14	1.05
		150	0.96	2.61	2.17	1.86	1.63	1.45	1.30	1.19	1.09
95-9224	1/4TTJ06-VS Gray	20	0.42	1.14	0.95	0.82	0.71	0.63	0.57	0.52	0.48
		30	0.52	1.41	1.18	1.01	0.88	0.79	0.71	0.64	0.59
		40	0.60	1.63	1.36	1.17	1.02	0.91	0.82	0.74	0.68
		50	0.67	1.82	1.52	1.30	1.14	1.01	0.91	0.83	0.76
		60	0.73	1.98	1.65	1.41	1.24	1.10	0.99	0.90	0.82
		70	0.79	2.14	1.78	1.53	1.34	1.19	1.07	0.97	0.89
		80	0.84	2.28	1.90	1.63	1.43	1.27	1.14	1.04	0.95
		90	0.89	2.42	2.02	1.73	1.51	1.35	1.21	1.10	1.01
		100	0.94	2.55	2.13	1.82	1.60	1.42	1.28	1.16	1.06
		110	0.98	2.68	2.23	1.91	1.67	1.49	1.34	1.22	1.12
		120	1.03	2.80	2.33	2.00	1.75	1.55	1.40	1.27	1.17
		130	1.07	2.91	2.43	2.08	1.82	1.62	1.46	1.32	1.21
		140	1.11	3.02	2.52	2.16	1.89	1.68	1.51	1.37	1.26
		150	1.15	3.13	2.61	2.23	1.96	1.74	1.56	----	1.30

BEFORE SPRAYING
NOZZLE SELECTION CHART
GPA AND GAL/1000 FT²

Gallons Per 1000 Sq. Ft. Application Rates

Toro Part No.	Nozzle Number / Color Code	Pressure (PSI)	Capacity 1 Nozzle (GPM)	Gallons per 1000 Sq. Ft. at 20" Spacings							
				2.5 MPH	3 MPH	3.5 MPH	4 MPH	4.5 MPH	5 MPH	5.5 MPH	6 MPH
		20	0.57	1.55	1.29	1.11	0.97	0.86	0.78	0.70	0.65
		30	0.69	1.88	1.56	1.34	1.17	1.04	0.94	0.85	0.78
		40	0.80	2.18	1.81	1.55	1.36	1.21	1.09	0.99	0.91
		50	0.89	2.42	2.02	1.73	1.51	1.34	1.21	1.10	1.01
		60	0.99	2.69	2.24	1.92	1.68	1.49	1.34	1.22	1.12
		70	1.07	2.90	2.42	2.07	1.81	1.61	1.45	1.32	1.21
95-9225	1/4TTJ08-VS	80	1.14	3.10	2.58	2.21	1.94	1.72	1.55	----	1.29
	White	90	1.21	3.29	2.74	2.35	2.06	1.83	1.64	----	1.37
		100	1.27	3.47	2.89	2.48	2.17	1.93	1.73	----	----
		110	1.34	3.64	3.03	2.60	2.27	2.02	1.82	----	----
		120	1.40	3.80	3.16	----	2.37	2.11	1.90	----	----
		130	1.45	3.95	3.29	----	2.47	2.20	1.98	----	----
		140	1.51	4.10	3.42	----	2.56	2.28	2.05	----	----
		150	1.56	4.25	3.54	----	2.65	2.36	2.12	----	----
		20	0.71	1.93	1.61	1.38	1.21	1.07	0.97	0.88	0.80
		30	0.87	2.37	1.97	1.69	1.48	1.31	1.18	1.08	0.99
		40	1.00	2.72	2.27	1.94	1.70	1.51	1.36	1.24	1.13
		50	1.12	3.05	2.54	2.18	1.90	1.69	1.52	1.38	1.27
		60	1.23	3.34	2.79	2.39	2.09	1.86	1.67	----	1.39
		70	1.33	3.61	3.01	2.58	2.26	2.01	1.81	----	----
95-9188	1/4TTJ10-VS	80	1.42	3.86	3.22	----	2.41	2.15	1.93	----	----
	Light Blue	90	1.51	4.10	3.41	----	2.56	2.28	2.05	----	----
		100	1.59	----	3.60	----	----	2.40	2.16	----	----
		110	1.67	----	3.77	----	----	2.52	2.26	----	----
		120	1.74	----	3.94	----	----	2.63	2.37	----	----
		130	1.81	----	4.10	----	----	----	2.46	----	----
		140	1.88	----	4.26	----	----	----	2.55	----	----
		150	1.94	----	----	----	----	----	2.64	----	----
		20	1.06	2.88	2.40	2.06	1.80	1.60	1.44	1.31	1.20
		30	1.30	3.54	2.95	2.53	2.21	1.96	1.77	----	----
		40	1.50	4.08	3.40	----	2.55	2.27	2.04	----	----
		50	1.68	4.57	3.81	----	----	2.54	2.28	----	----
		60	1.84	----	4.16	----	----	----	2.50	----	----
		70	1.98	----	4.49	----	----	----	2.70	----	----
95-9226	1/4TTJ15-VS	80	2.12	----	----	----	----	----	----	----	----
	Light Green	90	2.25	----	----	----	----	----	----	----	----
		100	2.37	----	----	----	----	----	----	----	----
		110	2.49	----	----	----	----	----	----	----	----
		120	2.60	----	----	----	----	----	----	----	----
		130	2.70	----	----	----	----	----	----	----	----
		140	2.80	----	----	----	----	----	----	----	----
		150	2.90	----	----	----	----	----	----	----	----

BEFORE SPRAYING
NOZZLE SELECTION CHART
L/HA FORMULA

Liters Per Hectare Application Rates

TORO Part No.	Nozzle Number / Color Code	Pressure (kPa)	Capacity 1 Nozzle (L/min)	Liters per Hectare at 50 cm Spacings							
				4 km/h	5 km/h	6 km/h	7 km/h	8 km/h	9 km/h	10 km/h	11 km/h
95-9221	1/4TTJ02-VS Yellow	150	0.56	168	135	112	96	84	75	67	61
		200	0.65	194	156	130	111	97	86	78	71
		275	0.76	228	182	152	130	114	101	91	83
		350	0.86	257	206	171	147	129	114	103	94
		415	0.93	280	224	187	160	140	124	112	102
		480	1.00	301	241	201	172	151	134	120	110
		555	1.08	324	259	216	185	162	144	130	118
		630	1.15	345	276	230	197	173	153	138	125
		705	1.22	365	292	243	209	183	162	146	133
		780	1.28	384	307	256	219	192	171	154	140
		855	1.34	402	322	268	230	201	179	161	146
		930	1.40	419	335	280	240	210	186	168	152
		1005	1.45	436	349	291	249	218	194	174	158
		1080	1.51	452	361	301	258	226	201	181	164
95-2222	1/4TTJ04-VS Red	150	1.12	335	268	223	191	167	149	134	122
		200	1.29	386	309	258	221	193	172	155	140
		275	1.51	453	362	302	259	227	201	181	165
		350	1.70	511	409	341	292	256	227	204	186
		415	1.85	556	445	371	318	278	247	223	202
		480	1.99	598	479	399	342	299	266	239	218
		555	2.15	644	515	429	368	322	286	257	234
		630	2.29	686	549	457	392	343	305	274	249
		705	2.42	725	580	484	414	363	322	290	264
		780	2.54	763	610	509	436	381	339	305	277
		855	2.66	799	639	533	456	399	355	320	290
		930	2.78	833	666	555	476	417	370	333	303
		1005	2.89	866	693	577	495	433	385	346	315
		1080	2.99	898	718	598	513	449	399	359	326
95-2223	1/4TTJ05-VS Brown	150	1.12	335	268	223	191	167	149	134	122
		200	1.29	386	309	258	221	193	172	155	140
		275	1.87	561	449	374	321	281	249	224	204
		350	2.11	633	506	422	362	316	281	253	230
		415	2.30	689	551	459	394	345	306	276	251
		480	2.47	741	593	494	424	371	329	296	270
		555	2.66	797	638	531	455	398	354	319	290
		630	2.83	849	679	566	485	425	377	340	309
		705	2.99	898	719	599	513	449	399	359	327
		780	3.15	945	756	630	540	472	420	378	344
		855	3.30	989	791	659	565	495	440	396	360
		930	3.44	1032	825	688	590	516	459	413	375
		1005	3.57	1072	858	715	613	536	477	429	390
		1080	3.71	1112	889	741	635	556	494	445	404
95-2224	1/4TTJ06-VS Gray	150	1.68	503	402	335	287	251	224	201	183
		200	1.94	581	465	387	332	290	258	232	211
		275	2.27	681	545	454	389	341	303	272	248
		350	2.56	768	615	512	439	384	341	307	279
		415	2.79	837	669	558	478	418	372	335	304
		480	3.00	900	720	600	514	450	400	360	327
		555	3.22	967	774	645	553	484	430	387	352
		630	3.44	1031	825	687	589	515	458	412	375
		705	3.63	1090	872	727	623	545	485	436	396
		780	3.82	1147	918	765	655	573	510	459	417
		855	4.00	1201	961	801	686	600	534	480	437
		930	4.17	1252	1002	835	716	626	557	501	455
		1005	4.34	1302	1041	868	744	651	579	521	473
		1080	4.50	1350	1080	900	771	675	600	----	491

BEFORE SPRAYING
NOZZLE SELECTION CHART
L/HA FORMULA

Liters Per Hectare Application Rates											
TORO Part No.	Nozzle Number Color Code	Pressure (kPa)	Capacity 1 Nozzle (L/min)	Liters per Hectare at 50 cm Spacings							
				4 km/h	5 km/h	6 km/h	7 km/h	8 km/h	9 km/h	10 km/h	11 km/h
		150	2.23	669	535	446	382	335	297	268	243
		200	2.58	773	618	515	442	386	343	309	281
		275	3.02	906	725	604	518	453	403	362	329
		350	3.41	1022	818	681	584	511	454	409	372
		415	3.71	1113	890	742	636	556	495	445	405
		480	3.99	1197	958	798	684	598	----	479	435
95-2225	1/4TTJ08-VS	555	4.29	1287	1030	858	735	644	----	515	468
	White	630	4.57	1371	1097	914	784	686	----	----	499
		705	4.84	1451	1161	967	829	725	----	----	----
		780	5.09	1526	1221	1017	872	763	----	----	----
		855	5.33	1598	1278	----	913	799	----	----	----
		930	5.55	1666	1333	----	952	833	----	----	----
		1005	5.77	1732	1386	----	990	866	----	----	----
		1080	5.98	----	1436	----	1026	898	----	----	----
		150	2.79	838	670	558	479	419	372	335	305
		200	3.22	967	774	645	553	484	430	387	352
		275	3.78	1134	907	756	648	567	504	454	412
		350	4.26	1279	1023	853	731	640	----	512	465
		415	4.64	1393	1114	929	796	697	----	----	507
		480	4.99	1498	1199	999	856	749	----	----	----
95-9188	1/4TTJ10-VS	555	5.37	1611	1289	----	921	805	----	----	----
	Light Blue	630	5.72	1716	1373	----	981	858	----	----	----
		705	6.05	----	1453	----	----	908	----	----	----
		780	6.37	----	1528	----	----	955	----	----	----
		855	6.67	----	1600	----	----	1000	----	----	----
		930	6.95	----	1668	----	----	----	----	----	----
		1005	7.23	----	1734	----	----	----	----	----	----
		1080	7.49	----	----	----	----	----	----	----	----
		150	4.19	1256	1005	838	718	628	----	503	457
		200	4.84	1451	1160	967	829	725	----	----	----
		275	5.67	1701	1361	----	972	851	----	----	----
		350	6.40	----	1535	----	----	959	----	----	----
		415	6.97	----	1672	----	----	1045	----	----	----
		480	7.49	----	----	----	----	----	----	----	----
95-9226	1/4TTJ15-VS	555	8.05	----	----	----	----	----	----	----	----
	Light Green	630	8.58	----	----	----	----	----	----	----	----
		705	9.08	----	----	----	----	----	----	----	----
		780	9.55	----	----	----	----	----	----	----	----
		855	10.00	----	----	----	----	----	----	----	----
		930	10.43	----	----	----	----	----	----	----	----
		1005	10.84	----	----	----	----	----	----	----	----
		1080	11.24	----	----	----	----	----	----	----	----

TRAILER SPRAYER CALIBRATION

Refer to illustrated Parts List for details of parts used in assembling the 300T Trailer Sprayer.

NOTE: "Right", "Left", "Front", and "Rear" are referenced while seated in the operator's position.

BEFORE SPRAYING:

1. Fill the Tank with clean, clear water. DO NOT add chemical to the Tank until just before beginning to spray.

2. Ensure that the Pressure Control Valve handle is turned counter clockwise to its end point and the main ON/OFF control in the OFF position. Individual boom valves should be in the closed position. (See FIG. 6)

3. Park tractor and trailer on a level surface and set the parking brake. Manually fold booms out into spraying position.

4. Engage tractor PTO and set engine speed to provide 540 RPM at the PTO shaft.

5. Select the desired position for the agitation control valve, ON or OFF.

6. Push main ON/OFF control to ON position, in-line with control. Place individual boom valves in the ON down position.

7. Adjust pressure control valve to desired pressure setting on boom pressure gauge. Take note of pressure reading on manifold pressure gauge. All further adjustments should be to the pressure shown at this time on the manifold pressure gauge. **Maximum system pressure is 220 psi (15 BAR).** Differences of 10-30 psi between Manifold and Boom Pressure are due to the restrictor located at the inlet to the main ON/OFF control.

8. Place the right hand boom lever in the OFF (vertical) position.

9. Adjust the boom bypass valve for that section to obtain the pressure on the manifold pressure gauge noted previously.

10. Repeat steps 8 & 9 for the other two boom sections.

NOTE: If you wish to change to a different nozzle in order to obtain a different rate, you may select from the nozzle charts in this manual. For more information see pages 18-25.

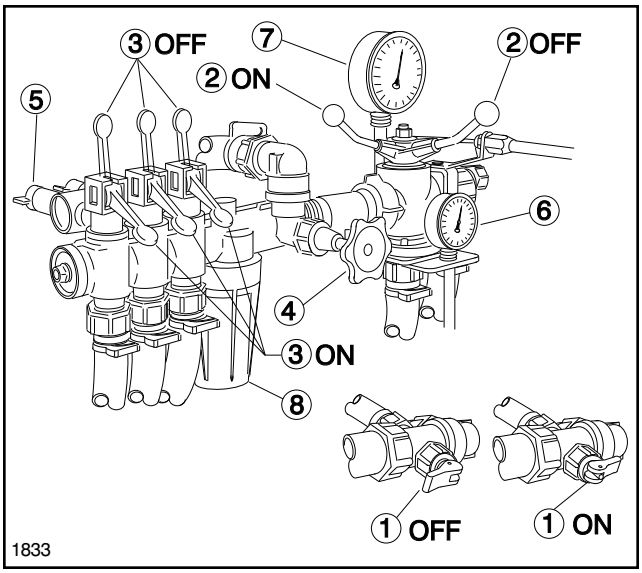


FIG. 6

1. Agitation Control Valve
2. Main ON/OFF Control
3. Individual Boom Valves
4. Pressure Control Valve
5. Boom Bypass Valve
6. Man. Press. Gauge
7. Boom Press. Gauge
8. Pressure Filter

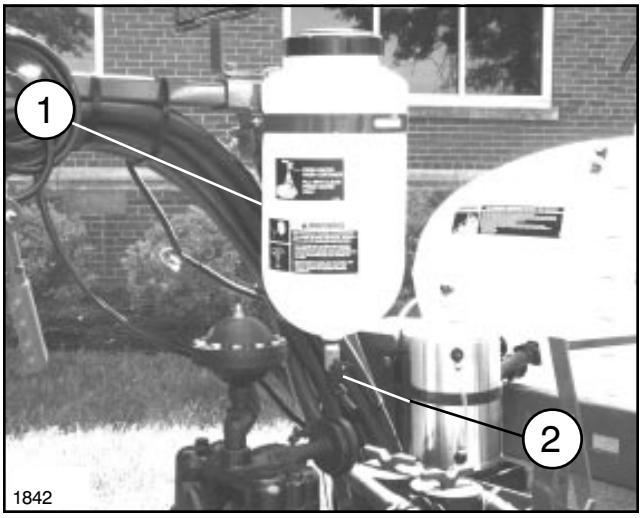


FIG. 7

1. Fresh Water Wash Tank **2. Tank Spigot**

FILL THE FRESH WATER WASH TANK

NOTE: Fill Fresh Water Wash Tank with clean water only. Check to assure tank is full before each operation.

In case of chemical contact with skin or eyes, a fresh water wash tank has been installed.

1. Turn Tank Spigot to on position. (See FIG. 7)

2. Hold contaminated area directly under water stream.

TRAILER SPRAYER OPERATION

FILLING THE SOLUTION TANK:

WARNING

CHEMICALS ARE HAZARDOUS AND CAN CAUSE PERSONAL INJURY!

- **Carefully read the directions printed on the chemical manufacturer's labels before handling chemicals. Instructions on chemical manufacturer's container labels, regarding mixing proportions, should be read and strictly followed.**
- **Keep spray material from skin. If spray material comes in contact with body, wash it off immediately with clean water and detergent.**
- **Always wear goggles and other protective equipment as recommended by the Chemical Manufacturer.**

WHILE OPERATING:

1. Use the main ON/OFF control or remote control to turn off solution flow to the boom.

2. Use the individual boom valves to control the spray width of the boom.

3. Selecting a different gear or range on the tractor will change the application rate. Recalibrate the sprayer if a different gear or range is desired.

4. Changing the agitation control valve setting will affect the application rate. Adjust the pressure control valve to obtain the original pressure on the manifold pressure gauge established during calibration.

5. Refer to safety instructions section for proper operation of vehicle.

6. DO NOT overlap areas that have been sprayed previously.

7. Watch for plugged nozzles. Replace all worn nozzles or those producing streaks or uneven patterns.

8. Stop the spray flow before stopping the vehicle.

9. The Agitation Nozzles in the Tank can be rotated to provide the desired agitation flow in the Tank.

IMPORTANT: Do not add chemical to Tank until just before use. The concentrate should not be poured into an empty Tank. Fill Tank at least one-half full with clean, clear water, add chemical concentrate and finish filling Tank with water. Follow the chemical manufacturer's instructions for mixing spray solution to obtain desired application rate.

NOTES:

AFTER SPRAYING

It is extremely important to carefully wash and clean the Tank after **every** use. Not only the Tank but the Pump, Hoses, Nozzles, Screens, Filters, Boom and the exterior of the Sprayer also should be cleaned.

THE TANK

Chemical residue must not be left in the tank for a long period of time. It will reduce the life of the tank. Make sure that no chemical residue is left from previous use.

FLUSH PUMP AFTER USE

One of the most common causes for faulty pump performance is “gumming” or corrosion inside the pump. Flush the pump and entire system with a solution that will chemically neutralize the liquid pumped. Mix according to the chemical manufacturer’s directions. This will dissolve most residue remaining in the pump, leaving the inside of the pump clean for the next use. Flush until air is coming out of nozzles. The Pump can be operated without Fluid.

A **minimum** of three 50 gallon rinses are usually required for all components of the Sprayer. The addition of a detergent cleaner may be advisable in the initial washing. Directions for such an addition, if required, are included on the chemical container.

Cleaning of the Sprayer should be accomplished in an area where there is no potential for the chemicals to be washed off in surface water or to enter subsurface drainage systems.

When Sprayer is not to be used for an extended period, refer to the “STORAGE“ section of this Manual for the detailed instructions to prevent damage to the components.

⚠ DANGER

UNCLEANED SPRAYERS CAN BE A DANGER TO PEOPLE, ANIMALS AND WILD LIFE.

Therefore, never leave a sprayer containing chemicals where it could be a danger to the above.

FILTERS

Remember that cleaning also entails the cleaning of all filters. Clean the filters thoroughly on both suction and pressure side. Check Sealing Washers and O-rings. Replace where necessary.

TROUBLESHOOTING

In case of breakdown, the following items may help in solving minor issues.

1. Even a minor leak on the suction side of the pump will reduce the capacity of the pump or stop suction. The reason may often be found in the joints, worn hoses or deteriorated gaskets. Therefore check all joints on the suction side.

2. A clogged suction filter will prevent suction so that the pump does not operate satisfactorily. It is therefore important to keep all filters clean.

3. Foreign bodies (impurities) stuck in the pump valves will not allow the valves to close tightly against the valve seat. This will cause the pump to work unsatisfactorily.

4. Valves installed the wrong way will keep the pump from operating. If all valves are installed so that the spring is into the pump, the diaphragm cover will rupture. If all valves are turned so that the spring is away from the diaphragm cover, no rupture will occur, nor will any pumping.

5. An insufficiently closed diaphragm cover will allow the pump to suck air resulting in reduced or no capacity. Therefore take care always to tighten diaphragm covers and valve compartments when these have been dismantled.

6. Worn diaphragms will reduce the pumps capacity but it is only necessary to change the diaphragms when they are cracked. When this happens, the fluid will run out through the drain hole in the bottom of the pump.

7. When the pump cannot draw liquid, it cannot supply liquid on the pressure side. The reason for reduced pressure or capacity on the pressure side may, therefore, just as often be found on the suction side of the pump.

8. Reduced or lack of pressure may be caused by insufficient spring tension or worn valve cone on the pressure side of the control unit.

MAINTENANCE

⚠ WARNING

Fluids under high pressure can penetrate the human skin and can cause severe injury, possibly resulting in amputation or death.

- **Hot liquids and chemicals can also cause burns or injury.**
- **DO NOT at any time place hand or any other part of the body in front of spray stream.**
- **If any part of the body comes in contact with the spray stream, immediately consult a physician.**

CHANGING OF VALVES AND DIAPHRAGMS

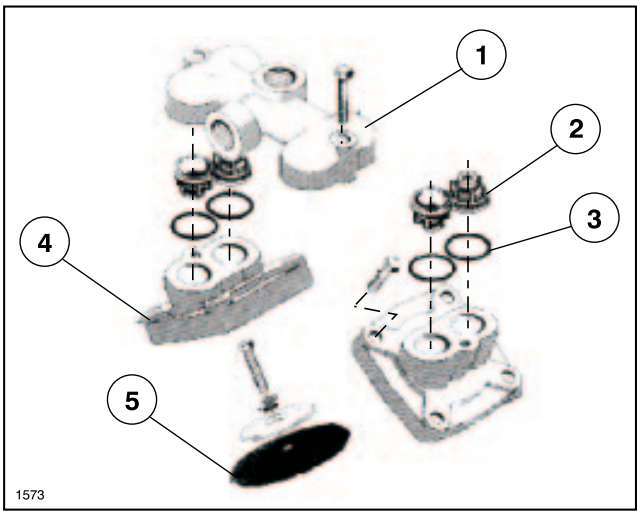


FIG. 8

1. **Valve Cover**
2. **Valve**
3. **Gasket**
4. **Diaphragm Cover**
5. **Diaphragm**

VALVES

Dismantle valve compartment. (See FIG. 8) Before removing the valves, note the orientation of the valves so that they may replaced correctly. (See FIG. 8) It is recommended to use new gaskets when changing or checking valves.

DIAPHRAGM

Remove the Diaphragm cover after having dismantled the valve compartment as indicated in FIG. 8. The diaphragm may then be changed. (See FIG. 8) If fluids have reached the crankcase it is strongly recommended to lubricate the entire pump with plenty of grease.

CHANGE ON/OFF VALVE SEAT:

1. Unscrew nut and hosebarb (see FIG. 9), from ON/OFF Valve. Remove ball seat and ball from valve, note orientation of seat and install new seat and ball.

2. Replace Hosebarb and nut.

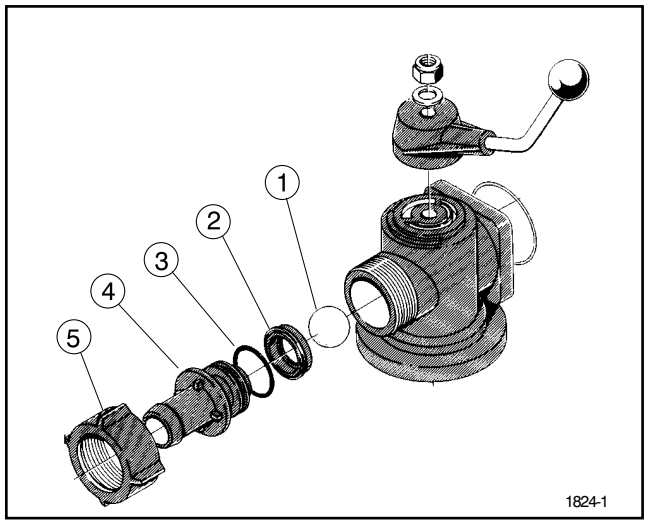


FIG. 9

1. **Ball**
2. **Seat**
3. **O-ring**
4. **Hosebarb**
5. **Nut**

BRAKE ADJUSTMENT:

The brakes on the 300T are self-adjusting. A reverse brake application will cause the adjuster pawl to engage the next tooth of the adjuster star wheel. This is usually sufficient for brakes that require adjustment due to normal wear.

For brakes requiring further adjustment, proceed as follows:

1. Use a stand with the capacity to lift the trailer sprayer's tire clear of the ground.

2. Using a brake tool, rotate the star wheel to the point where the shoes are lightly dragging the drum as the wheel is rotated.

PUMP LUBRICATION

Lubricate Pump every 50 hours, it is recommended to use a high quality multi-purpose lithium based grease. Use approximately 2-3 pumps from a grease gun to properly lubricate the pump. (See FIG. 10, **Page 30)**

MAINTENANCE

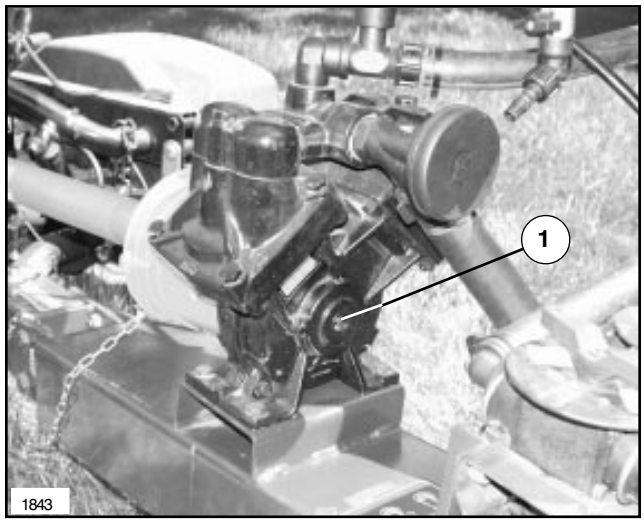


FIG. 10
1. Lubrication point on pump

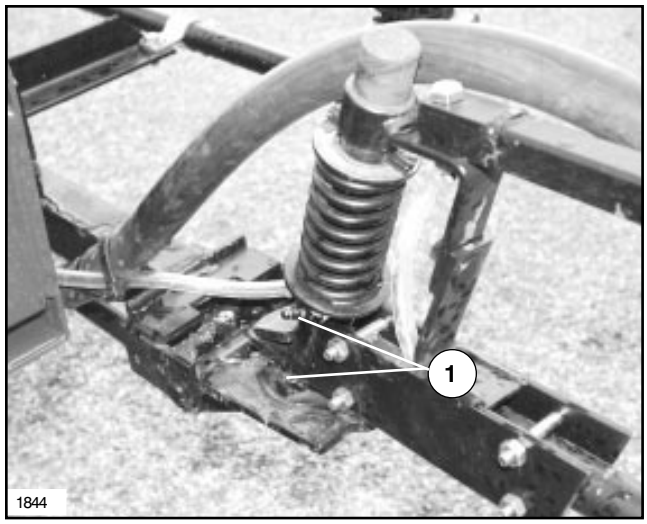


FIG. 11
1. Lubrication points on Boom

BOOM LUBRICATION

Every 1000 hours lubricate the boom hinges through the fittings provided and at the top and bottom of the break-away with a high quality multipurpose lithium based grease. (See FIG. 11)

PRESSURE CONTROL UNIT LUBRICATION

Regularly lubricate all moving parts on the control unit with oil. (See FIG. 3, page 14 for Control Valve illustration)

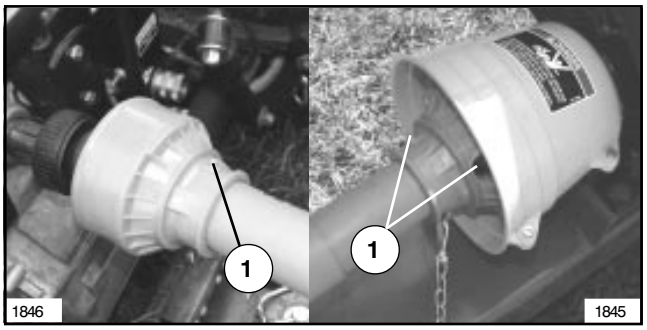


FIG. 12
1. Lubrication points on PTO

PTO LUBRICATION

Every 50 hours lubricate the PTO Shaft through the fittings provided, (see FIG. 12) with a high quality multipurpose lithium based grease.

PRESSURE DAMPENER

The pressure dampener smooths the pressure pulses that come from the pump. This creates a more consistent flow.

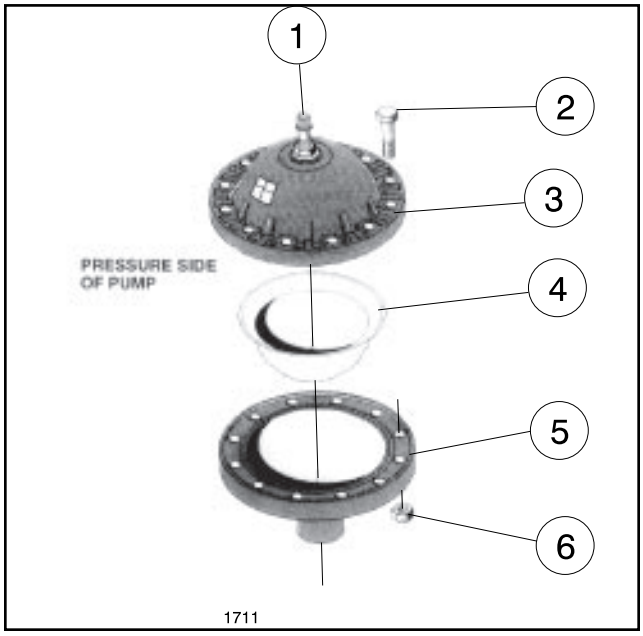


FIG. 13

1. Valve for Air - Pressure Damper
2. Bolt M8 x 30
3. Pressure Damper Upper Half
4. Diaphragm for Pressure Damper
5. Pressure Damper Lower Half
6. Nut M8

MAINTENANCE/STORAGE

CHANGING DIAPHRAGM

1. The pressure dampener has one diaphragm in the pressure damper compartment. Dismantle the compartment by removing the twelve (12) bolts. Remove the diaphragm and replace it with the new diaphragm (See FIG. 13).

2. Bolt the compartment together by using the twelve (12) previously removed bolts.

NOTE: If fluid comes out of the air valve, then the diaphragm has ruptured and must be replaced.

The suction dampener also helps create a more consistent pump flow. It is normal for the face of the dampener to pulse as the pump is operating. If the dampener becomes cracked or damaged, remove and replace it.

AIR PRESSURE

1. The pressure dampener comes with 30 psi of pre-charged pressure. The regulating pressure should be approximately 1/3 of the operating pressure.

Example:

operating pressure = 45 psi

$$\frac{45 \text{ psi}}{3} = 15 \text{ psi regulating pressure}$$

2. A tire gauge may be used to check pressure, however, there will be some pressure lost each time it is checked. Attaching a pressure regulator to the air source is recommended for obtaining desired pressure.

TO PREVENT CORROSION:

After cleaning the pump as directed on page 27, flush it with a permanent type automobile antifreeze (Prestone, Zerex, etc.) containing a rust inhibitor. Use a 50% solution - that is, half antifreeze and half water. If the sprayer is not stored in a frost-proof place, put 10 liters of 33 per cent anti-freeze mixture in the tank and let the pump run a few minutes so that the entire system is filled.

STORAGE AND DISPOSAL OF CHEMICALS:

Follow chemical manufacturer's recommendations for storage and disposal of chemicals.

IMPORTANT: FREEZING TEMPERATURES MAY DAMAGE THE PUMP & CONTROL VALVE IF THE WATER IS NOT DRAINED COMPLETELY!

HOSE:

Check that none of the hoses are caught, cracked, or have sharp bends. Change hoses if there is any doubt about the durability.

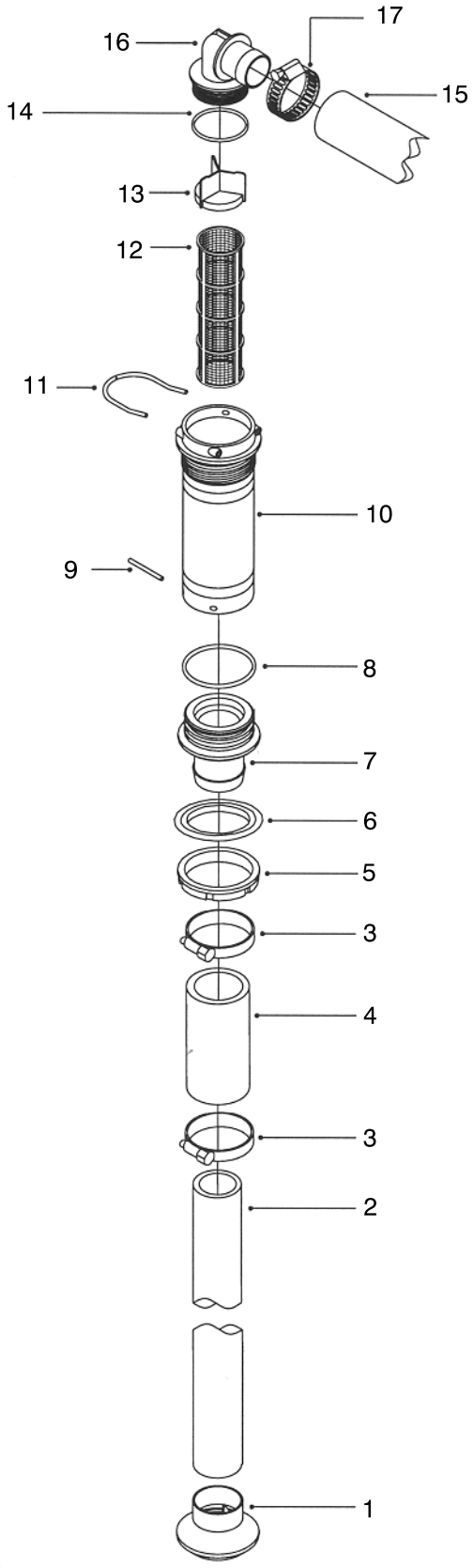
SERVICING AFTER STORAGE:

Flush the entire spraying system with clean, clear water and detergent.

Flush the entire spraying system again with clean, clear water to rinse.

Drain entire spraying system.

SUCTION FILTER ASM



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SUCTION FILTER ASM

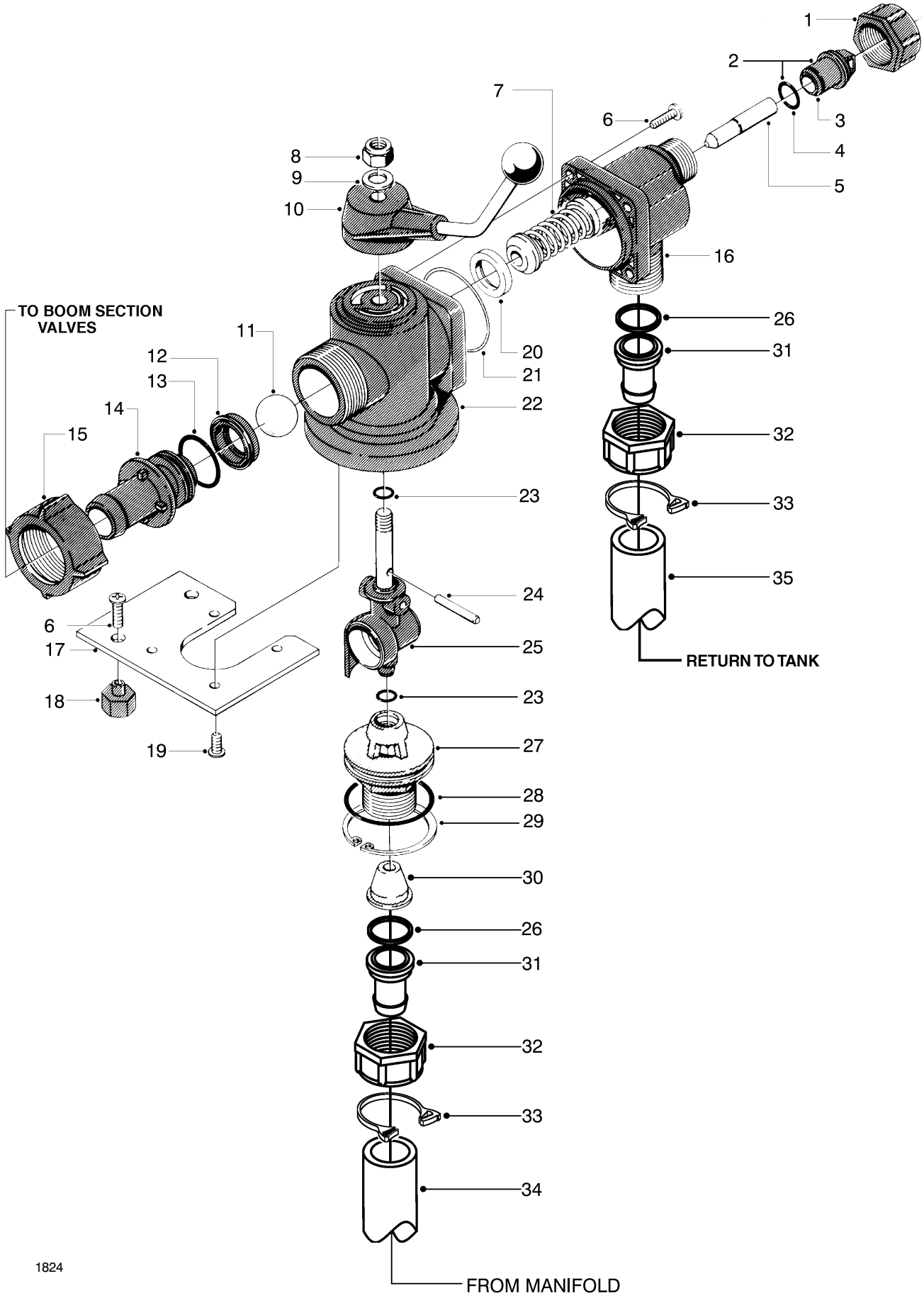
#	Part No.	Description	Qty
1	100-6714	Suction Tube Foot	1
2	100-6990	Suction Tube	1
3	46392	Hose Clamp	2
4	100-8649	Suction Hose, 2”Lgth=4.75”	1
5	100-8647	Bulkhead Nut	1
6	100-8646	Bulkhead Gasket	1
7	100-8645	Hosebarb	1
8	100-8640	O-Ring	1
9	100-8644	Pin	2

#	Part No.	Description	Qty
10	100-8643	Filter, Housing	1
11	100-8636	Fork	1
12	100-6992	Filter, 80 Mesh, Red	AR
*	100-8642	Filter, 50 Mesh, Blue	1
*	100-6991	Filter, 30 Mesh, Green	AR
13	100-8641	Vane	1
14	100-6989	O-Ring, Viton	1
15	100-6977	Suction Hose,1 1/2" Lgth=116"	1
16	100-8639	Hosebarb, Red	1
17	41327	Hoseclamp	1

* Not Illustrated

NOTES:

MASTER VALVE



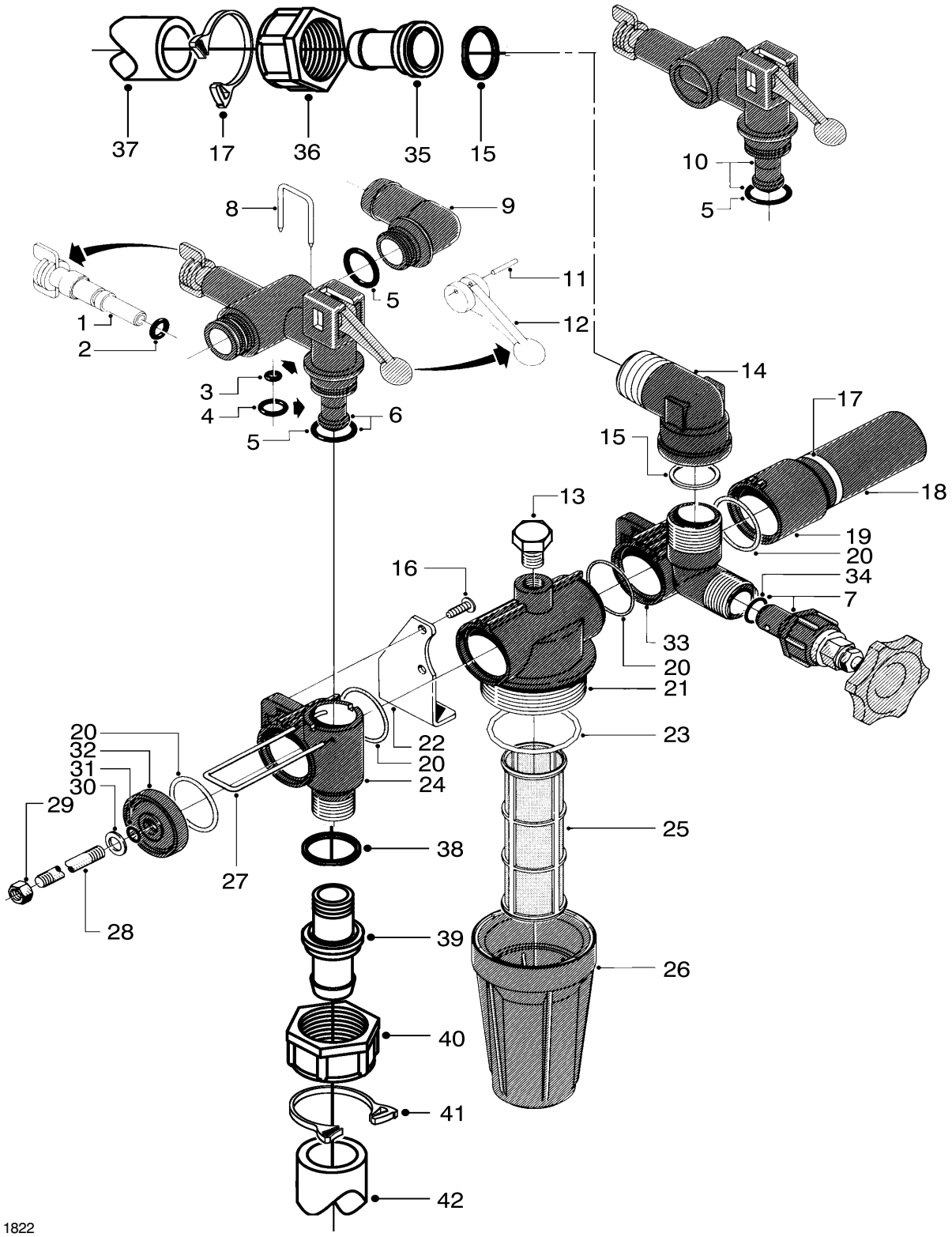
MASTER VALVE

#	Part No.	Description	Qty
1	99-0850	Nut	1
2	99-0844	Plug ASM	1
3	100-6941	Fitting	1
4	100-6645	O-Ring	1
5	100-6942	Pin	1
6	100-6918	Plastic Screw	6
7	100-7003	Valve ASM	1
8	48-9520	Hex Nut, Metric	1
9	99-0863	Washer	1
10	100-6843	Handle	1
11	100-7000	Ball	1
12	100-6999	Seat	1
13	100-6646	O-Ring	1
14	100-6998	Hosebarb	1
15	100-8678	Nut	1
16	100-6943	Pressure Valve Housing	1
17	100-6997	Plate	1
18	100-6996	Hex Nut	2

#	Part No.	Description	Qty
19	100-6916	Plastic Screw	4
20	100-6945	Seat	1
21	100-6947	O-Ring	1
22	100-6949	Housing	1
23	100-6641	O-Ring	2
24	100-8656	Roll Pin	1
25	100-6950	Stem	1
26	100-6655	Seal	2
27	100-6951	Adapter	1
28	100-6993	O-Ring	1
29	100-6994	Snap Ring	1
30	100-6995	Restrictor, Red	1
31	99-0781	Hosebarb	2
32	99-0769	Nut	2
33	99-0782	Hose Clamp	2
34	100-7043	Hose, 1" Length = 73"	1
35	100-6976	Hose, 1" Length = 86"	1

NOTES:

DISTRIBUTION VALVE



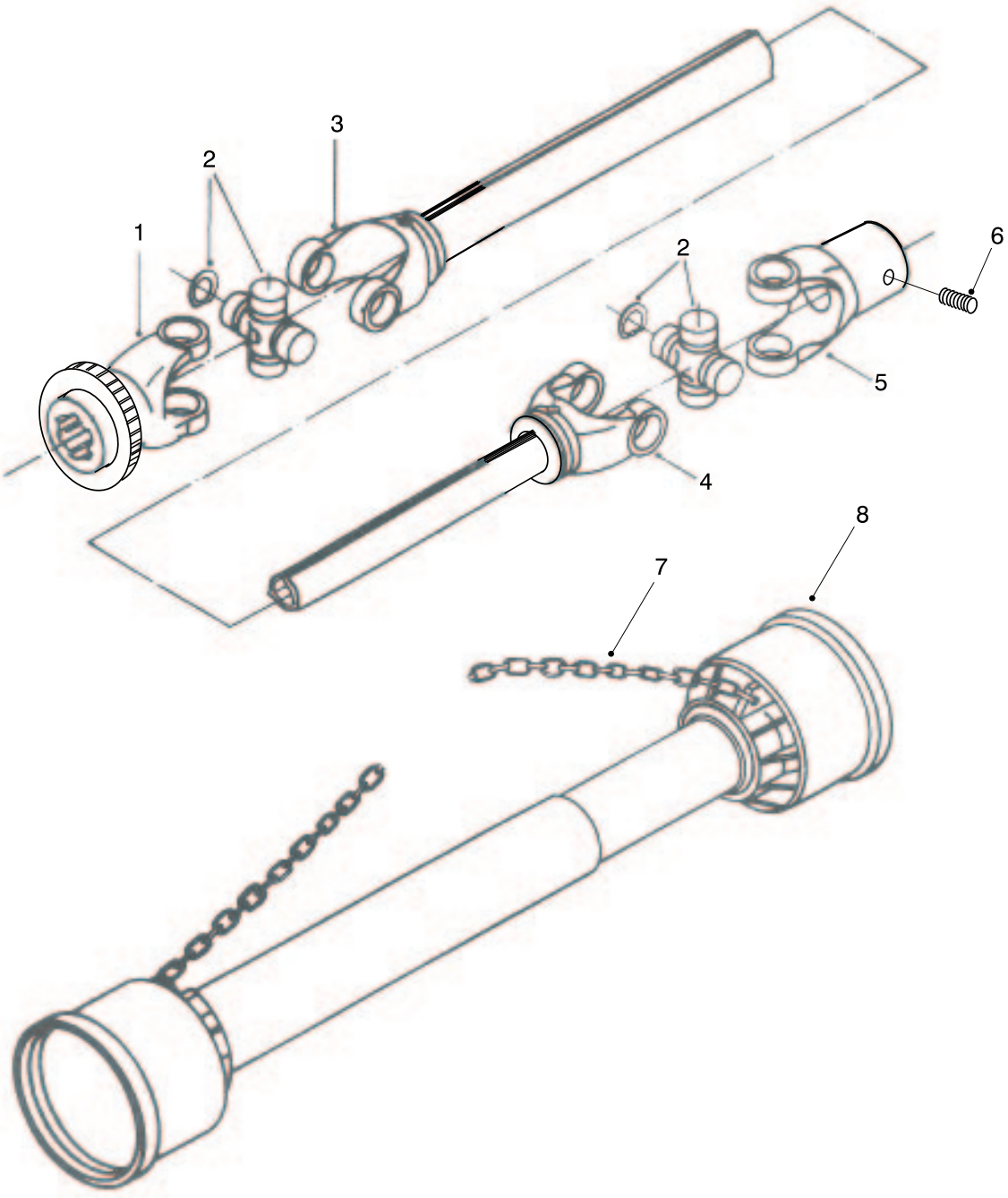
DISTRIBUTION VALVE

#	Part No.	Description	Qty
1	100-6769	Screw, Adjusting	3
2	100-6641	O-Ring	3
3	100-6878	O-Ring	3
4	100-6770	O-Ring	3
5	100-6882	O-Ring	6
6	100-6767	Housing	2
7	100-6762	Pressure Regulator	1
8	100-6885	U-Clamp	3
9	100-6893	Elbow	1
10	100-6765	Housing	1
11	100-6766	Pin	3
12	100-6835	Distribution Handle	3
13	100-7045	Plug	1
14	100-8698	Elbow	1
15	100-6655	Seal	2
16	100-6916	Plastic Screw	2
17	99-0782	Hose Clamp	3
18	100-6979	Hose, 1" Length = 3.5"	1
19	100-6763	End Cap	1
20	100-6892	O-Ring	6
21	100-6761	Housing	1
22	100-6760	Bracket	2

#	Part No.	Description	Qty
23	100-6993	O-Ring	1
24	100-6759	Housing	3
25	100-6756	Filter, Blue	1
26	100-6772	Cap, Filter	1
27	100-6758	Fork	1
28	100-6757	Stud	1
29	100-6894	Hex Nut	2
30	100-6634	Washer	1
31	100-6887	O-Ring	1
32	100-6913	Cover	1
33	100-6764	Housing	1
34	100-6644	O-Ring	1
35	99-0781	Hosebarb	1
36	99-0769	Nut	1
37	100-7044	Hose,1" Length = 83"	1
38	100-6645	Seal	3
39	100-6986	Hosebarb	3
40	99-0850	Nut	3
41	99-0755	Hose Clamp	3
42	100-7039	Hose, RH 3/4 Length = 192"	1
*	100-7040	Hose, LH & Cntr, 3/4 Lgth=240"	2

NOTES:

PTO SHAFT



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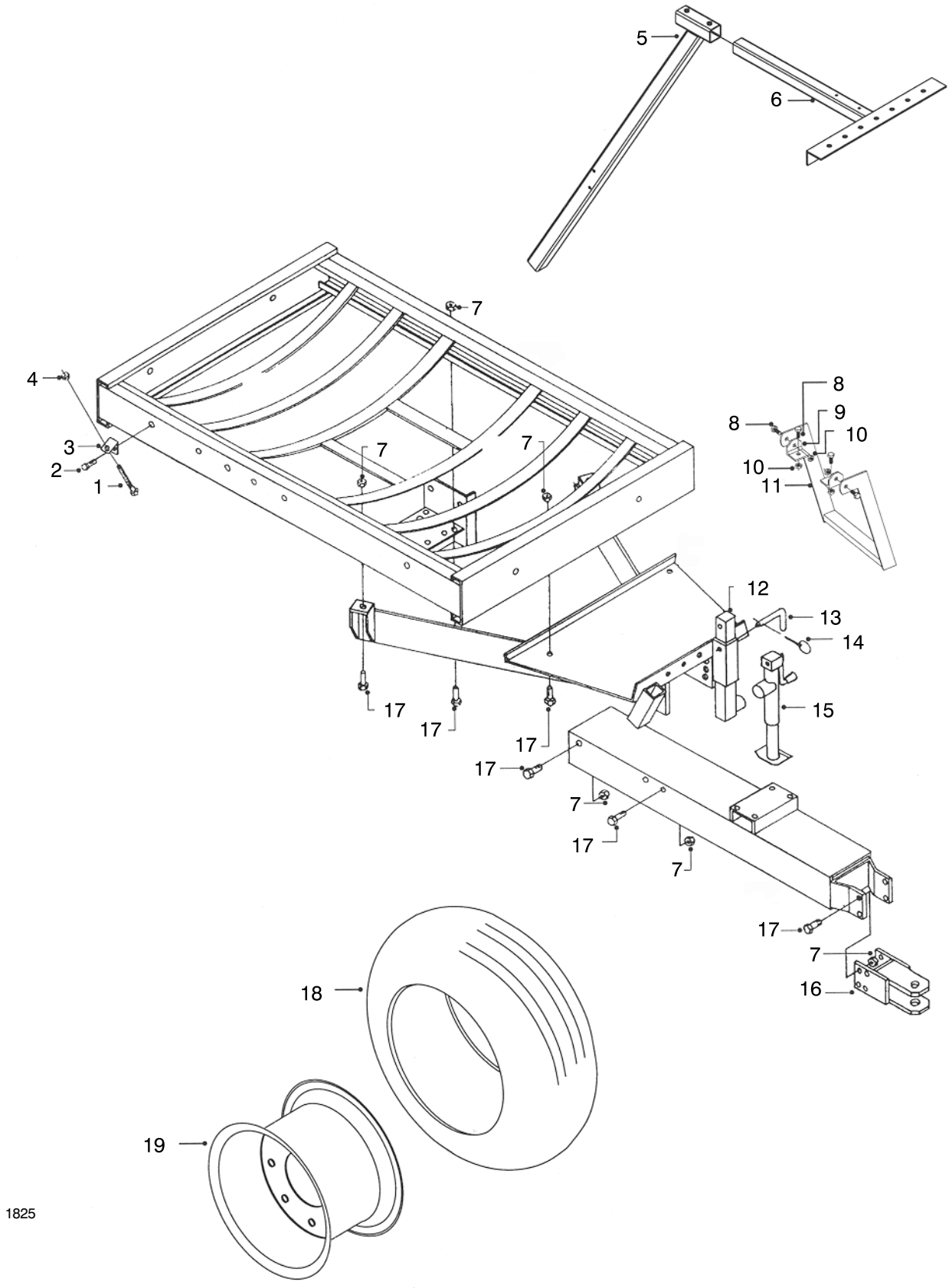
PTO SHAFT - 300T

#	Part No.	Description	Qty
1	100-6970	Yoke- Tractor	1
2	100-6973	Joint- Universal	2
3	100-6988	Shaft- Half, Tractor	1
4	100-6987	Shaft- Half, Pump	1

#	Part No.	Description	Qty
5	100-6969	Yoke- Pump, Tapered	1
6	100-6985	Setscrew, Metric	1
7	100-6975	Chain- Safety	2
8	100-6982	Shield ASM	1

NOTES:

FRAME

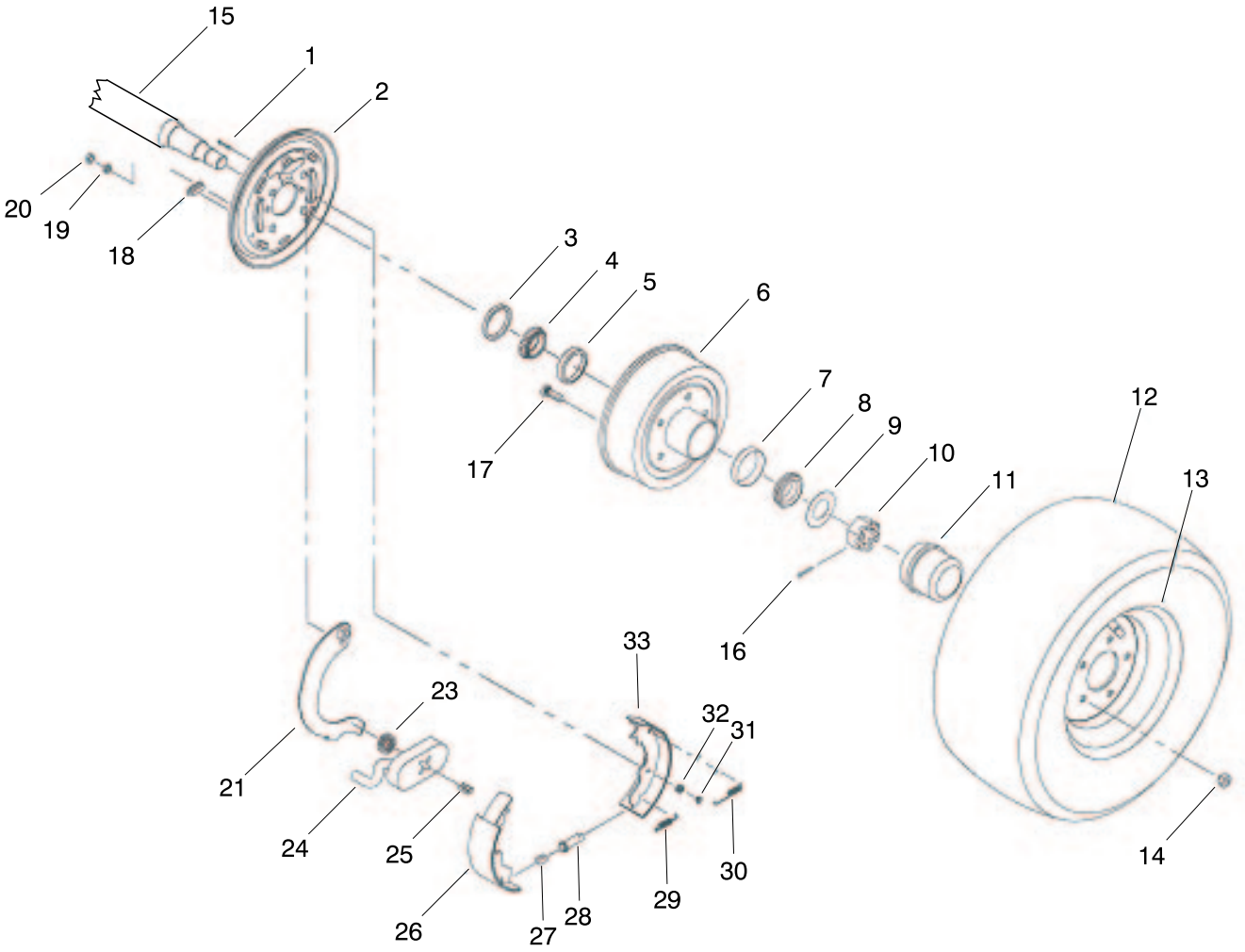


FRAME

#	Part No.	Description	Qty
1	100-6957	Hex Bolt, Metric	4
2	100-6955	Hex Bolt, Metric	4
3	100-6953	Angle Bracket	4
4	48-9540	Hex Nut, Metric	8
5	100-6960	Control Post	1
6	100-6959	Bracket	1
7	33028-00	Hex Nut, Metric	14
8	48-7780	Hex Bolt, Metric	4
9	100-6954	Bracket	2
10	48-9520	Hex Nut, Metric	4

#	Part No.	Description	Qty
11	100-6966	Platform Step	1
12	100-6961	Jack Stand Attachment	1
13	100-6952	Pin	1
14	100-6958	Snap Pin	1
15	100-6834	Jack	1
16	100-6963	Clevis Tongue	1
17	100-6956	Hex Bolt, Metric	14
18	100-6700	Tire	2
19	100-6968	Rim, Wheel	2

NOTES:



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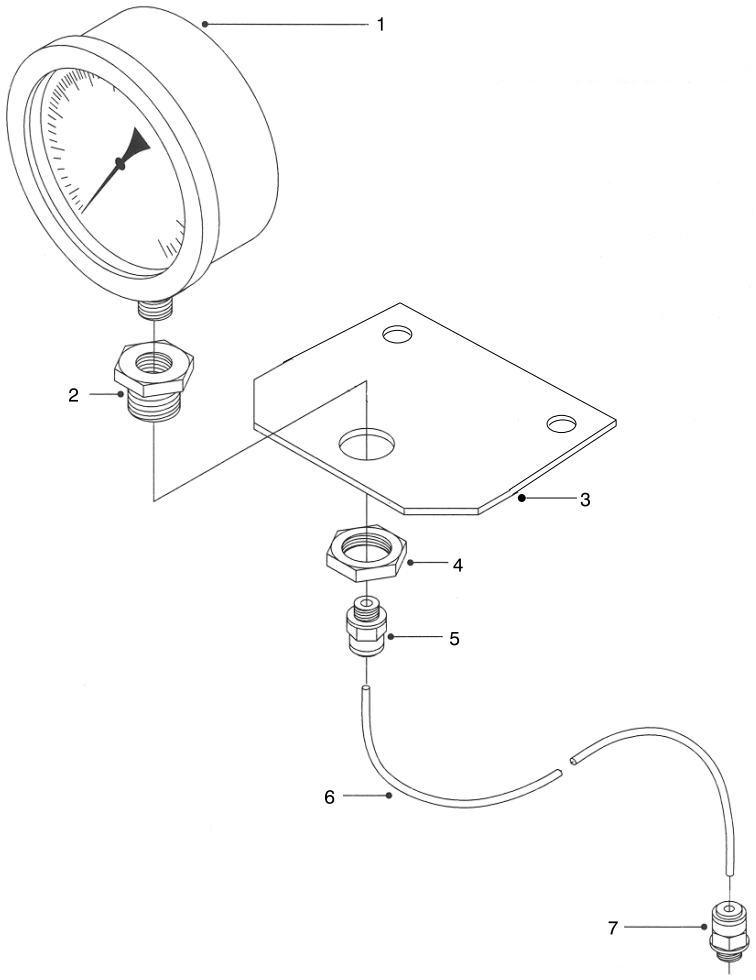
WHEEL & BRAKE ASM (LEFT HAND SHOWN)

#	Part No.	Description	Qty
1	99-0583	Pin-Hold Down	4
2	†	Backing Plate ASM	2
3	99-0585	Seal-Grease	2
4	99-0609	Bearing-Inner	2
5	99-0608	Cup-Inner	2
6	100-7032	Drum (Incl. Ref. #5,7 & 17)	2
7	99-0587	Cup-Outer	2
8	99-0586	Bearing-Outer	2
9	99-0589	Washer-Spindle	2
10	99-0590	Nut-Spindle	2
11	99-0591	Cap-Grease	2
12	100-6700	Tire	2
13	100-6968	Rim-Wheel	2
14	100-7033	Nut-Lug 90°	10
15	100-6849	Axle	1
16	99-0596	Pin-Cotter	2
17	99-0598	Stud-Wheel	10
18	99-0599	Plug-Adjusting Slot	2
19	3253-6	Washer-Lock	8

#	Part No.	Description	Qty
20	3219-4	Nut-Hex	8
21	99-0600	Arm-Magnet Lever, LH	1
* 22	99-0601	Arm-Magnet Lever, RH	1
23	99-0603	Spring Magnet	2
24	99-0604	Magnet ASM	2
25	99-0605	Clip-Magnet	2
26	99-0606	Shoe-Primary	2
27	99-0612	Adjusting Socket	2
28	99-0597	Adjusting Screw ASM	2
29	99-0592	Spring-Adjusting Screw	2
30	99-0593	Spring-Shoe Retract	2
31	99-0594	Cups-Hold Down (Incl. Ref.#32)	4
32	†	Spring	4
*	99-0731	Brake Cluster, LH (Incl. Ref. #1,2,18,21-33)	1
*	99-0732	Brake Cluster, RH (Incl. Ref. #1,2,18,21-33)	1
33	99-0607	Shoe-Secondary	1

† Not Serviced Separately.
* Not Illustrated



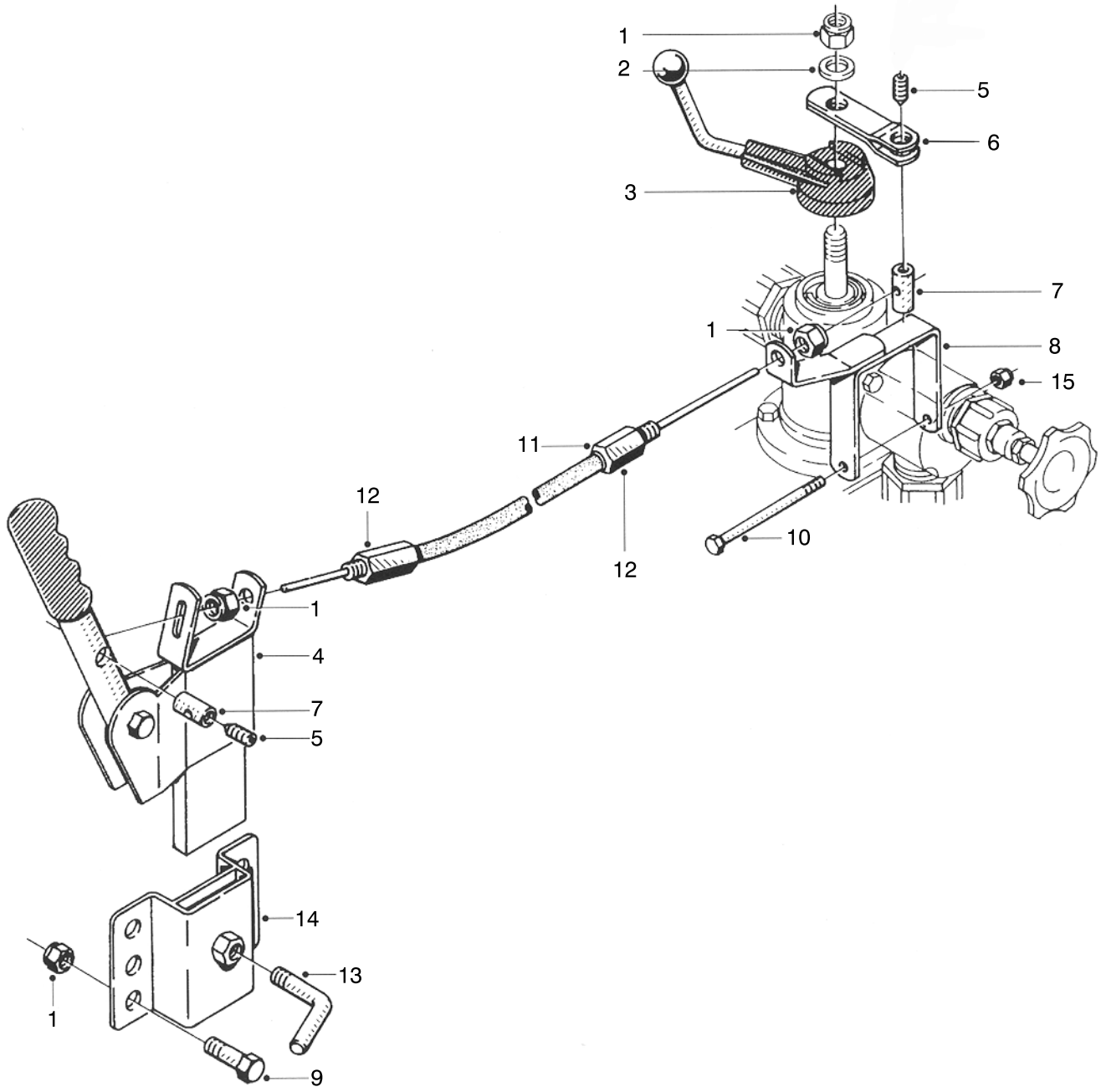
1869

MANIFOLD PRESSURE GAUGE

#	Part No.	Description	Qty
1	99-0790	Pressure Gauge	1
2	100-8665	Reducer	1
3	100-6978	Plate	1
4	100-8666	Nut	1

#	Part No.	Description	Qty
5	100-8667	Coupler	1
6	100-6980	Tube, Pressure	1
7	100-8674	Coupler	1

REMOTE CABLE



1847

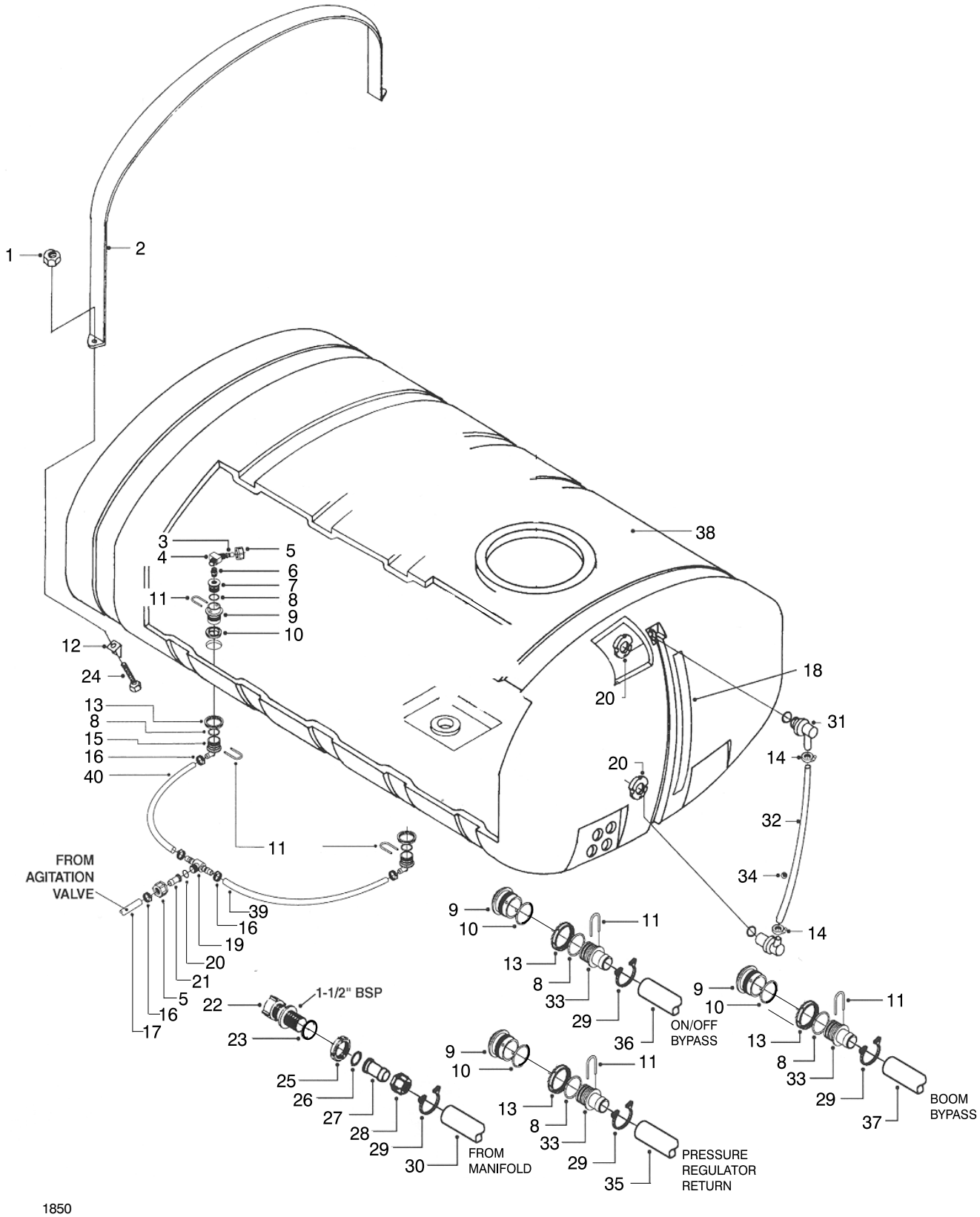
REMOTE CABLE

#	Part No.	Description	Qty
1	48-9520	Hex Nut, Metric	7
2	99-0863	Washer	1
3	100-6843	Handle	1
4	100-6845	Mounting Plate	1
5	100-6840	Screw-Allen, Metric	2
6	100-6846	Arm-Remote	1
7	100-6838	Wire Holder	2
8	100-6841	Bracket	1

#	Part No.	Description	Qty
9	48-7780	Hex Bolt, Metric	1
10	33113-080	Hex Bolt, Metric	1
11	100-6844	Remote Control Cable	1
12	100-6839	Nipple	2
13	100-6837	Locking Handle	1
14	100-6842	Bracket ASM	1
15	48-7900	Hex Nut, Metric	1

NOTES:

TANK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VALVE
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1-1/2" BSP
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FROM
MANIFOLD
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ON/OFF
BYPASS
35
PRESSURE
REGULATOR
RETURN
37
BOOM
BYPASS
1850

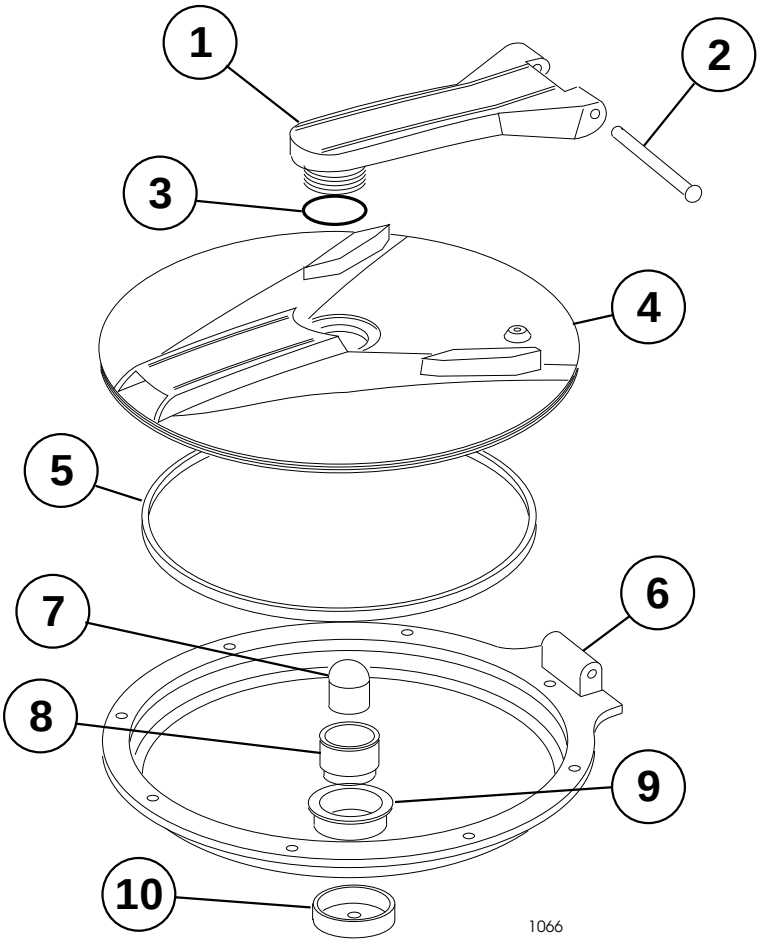
TANK

#	Part No.	Description	Qty
1	48-9540	Hex Nut	4
2	100-6808	Tank Strap	2
3	100-6705	Nozzle, Agitation	4
4	100-6723	Fitting 3-Way	2
5	99-0766	Nut	5
6	100-6722	Nipple	2
7	100-6721	Adapter	2
8	100-6712	O-Ring	7
9	100-6709	Bulkhead	5
10	100-6710	Bulkhead Gasket	5
11	100-6708	Fork	7
12	100-6953	Tankstrap Bracket	4
13	100-6713	Nut	5
14	92-0045	Hose Clamp	2
15	100-6817	Elbow	2
16	99-0772	Hose Clamp	5
17	100-7038	Hose, 1/2" Length = 71"	1
18	100-6822	Decal, Sight Gauge	1
19	99-0848	Tee	1
20	100-6653	Seal	1

#	Part No.	Description	Qty
21	99-0849	Hosebarb	1
22	100-6820	Valve	1
23	100-6652	O-Ring	1
24	100-6957	Hex Bolt	4
25	99-0761	Nut	1
26	100-6646	O-Ring	1
27	100-6998	Hosebar	1
28	100-8768	Nut	1
29	99-0782	Hose Clamp	4
30	100-7042	Hose, 1" Length = 33.5"	1
31	99-0771	Elbow	2
32	100-6821	Hose-Sight, Clear	1
33	100-6816	Hosebarb	3
34	100-6815	Ball	1
35	100-7044	Hose, 1" Length = 83"	1
36	100-6976	Hose, 1" Length = 86"	1
37	100-7044	Hose, 1" Length = 83"	1
38	100-6819	Tank w/Decals	1
39	100-6848	Hose, 1/2" Length = 31.5"	1
40	100-7037	Hose, 1/2" Length = 43"	1

* Not Illustrated

NOTES:

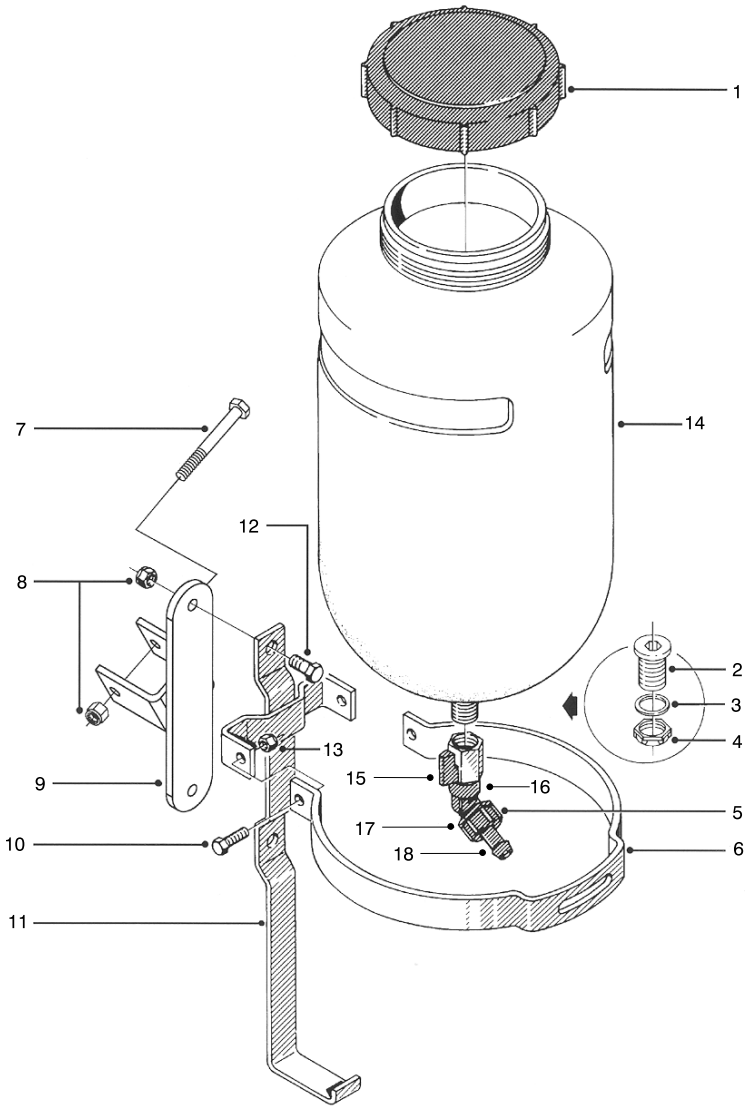


TANK LID ASM 94-7088

#	Part No.	Description	Qty
1	94-7205	Swivel Arm	1
2	94-7213	Pivot Arm	1
3	94-7206	O-Ring EPDM	1
4	94-7207	Spray Tank Lid	1
5	94-7208	Gasket EPDM	1

#	Part No.	Description	Qty
6	94-7211	Tank Lid Ring	1
*	93-0833	Aluminum Pop Rivet	8
7	94-7209	Breather Plunger	1
8	94-7210	Breather Body	1
9	94-7212	Breather Nut	1
10	94-7214	Breather Cap	1

* Not Illustrated



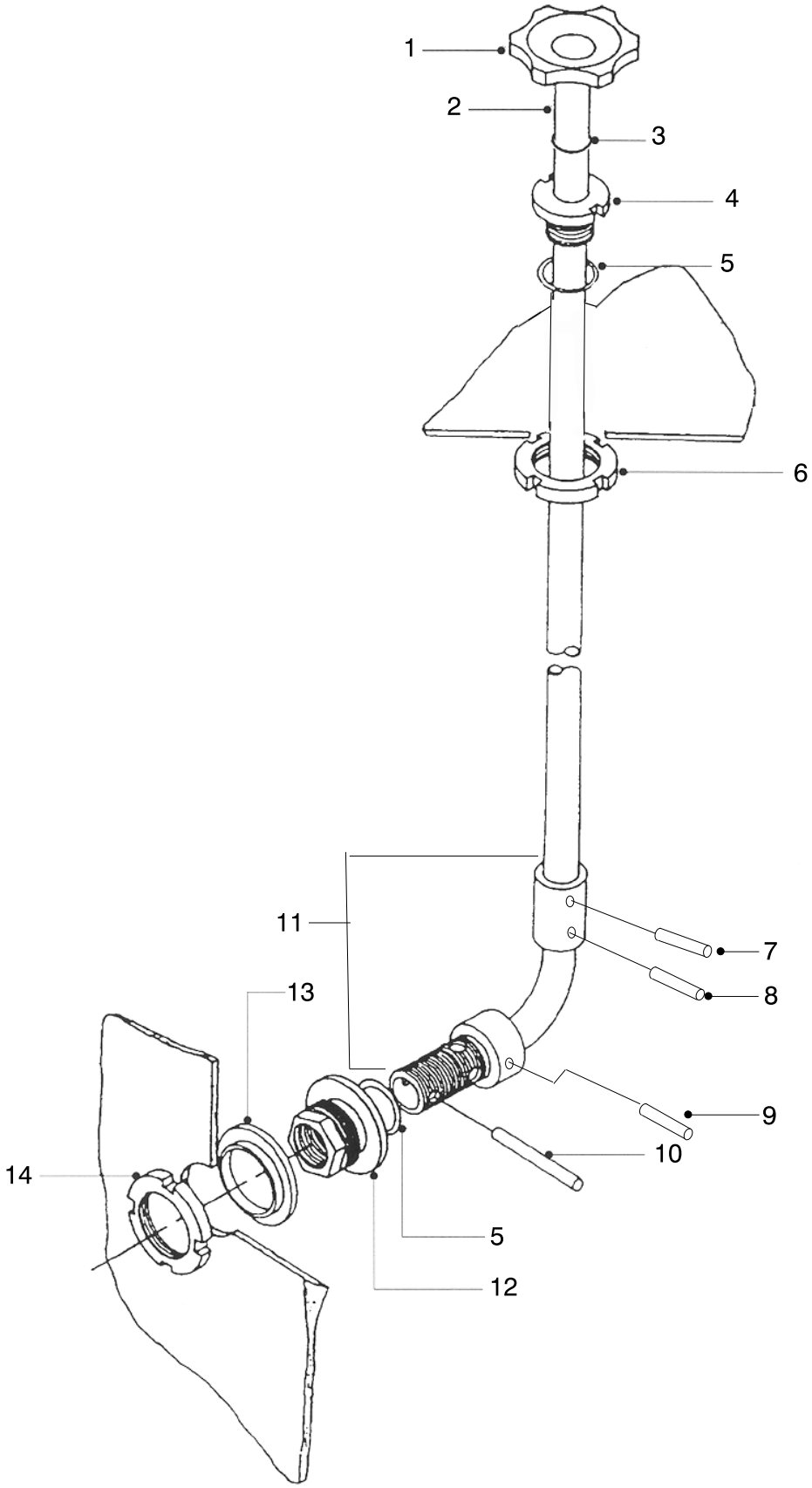
1853

FRESH WATER TANK

#	Part No.	Description	Qty
1	100-6832	Lid	1
2	100-6824	Bulkhead	1
3	100-6826	O-Ring	1
4	100-6825	Nut	1
5	99-0766	Nut	1
6	100-6823	Bracket	1
7	54-3260	Hex Bolt	1
8	48-9520	Hex Nut	1
9	100-6828	Bracket	1

#	Part No.	Description	Qty
10	48-9460	Hex Bolt	2
11	100-6830	Bracket	1
12	48-7770	Hex Bolt	2
13	48-7930	Hex Nut	2
14	100-6847	Tank w/Decals	1
15	100-6831	Valve	1
16	99-0768	Elbow	1
17	100-6653	O-Ring	1
18	99-0849	Hosebarb	1

DRAIN VALVE ASM



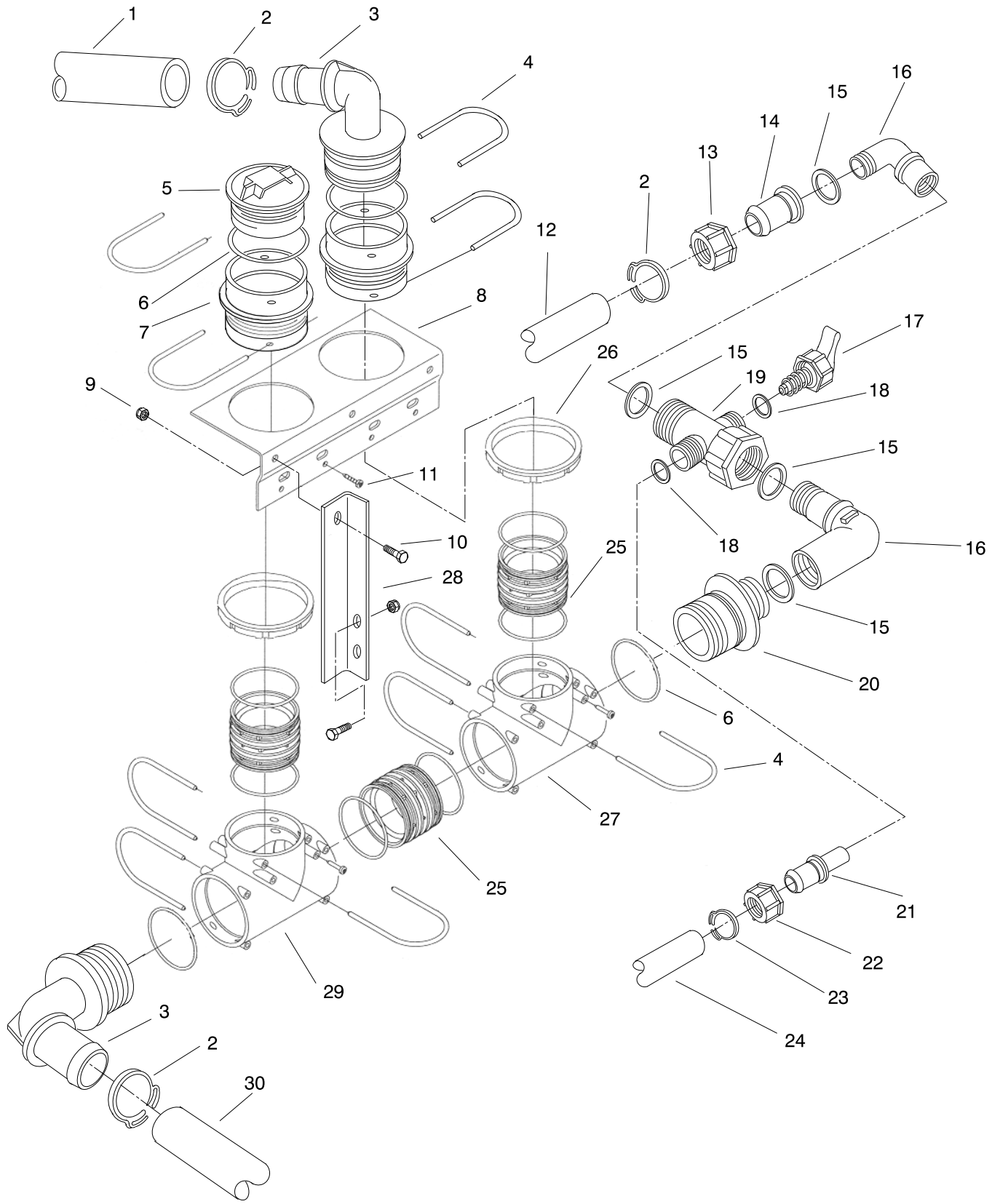
DRAIN VALVE ASM

#	Part No.	Description	Qty
1	100-8652	Drain Handgrip	1
2	100-8655	Tube Drain	1
3	100-8653	O-Ring	1
4	100-8654	Bulkhead	1
5	100-6658	O-Ring	2
6	99-0758	Ring Nut	1
7	100-8656	Pin	1

#	Part No.	Description	Qty
8	100-8660	Pin	1
9	100-8661	Pin	1
10	100-8663	Pin	1
11	100-6833	Extension-Drain Valve	1
12	100-8664	Bulkhead	1
13	100-8659	Seal	1
14	99-0761	Ring Nut	1

NOTES:

MANIFOLD



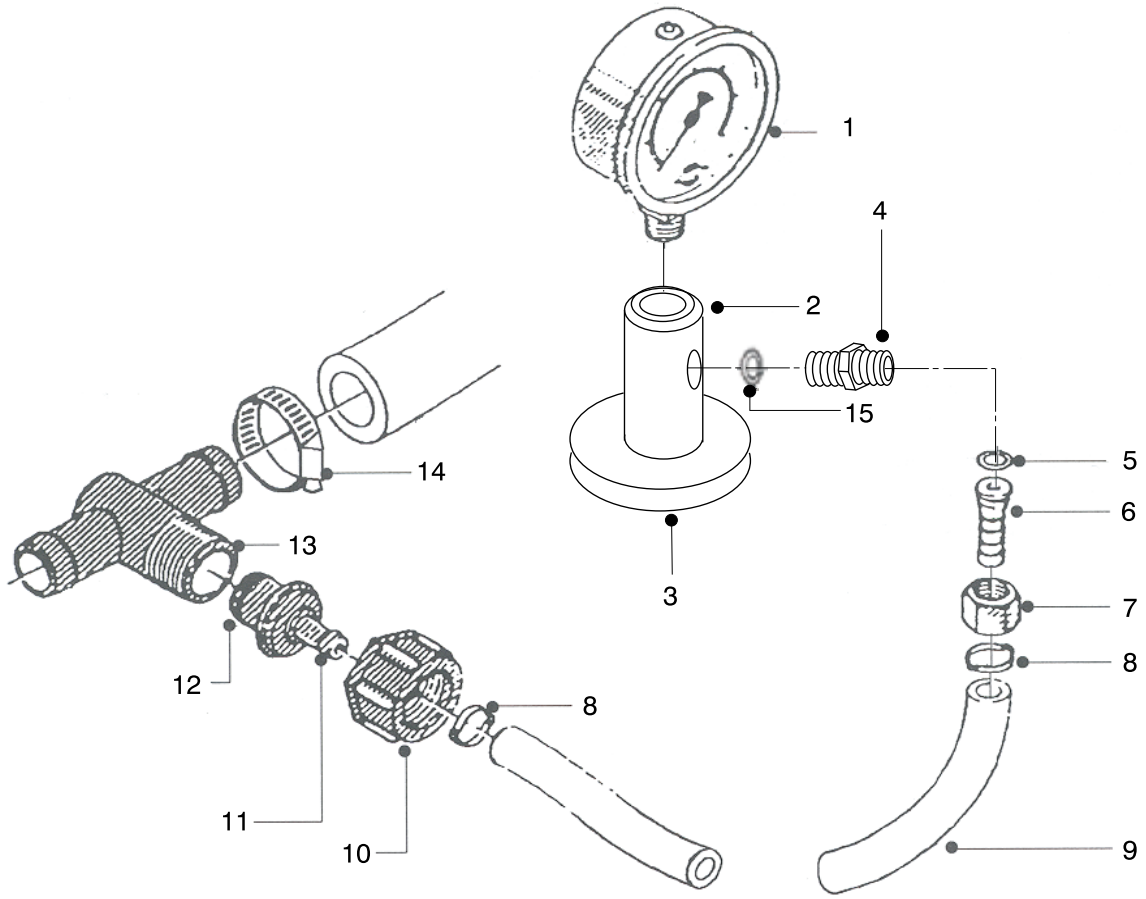
1866

MANIFOLD

#	Part No.	Description	Qty
1	100-7043	Hose, 1" Length = 73"	1
2	99-0782	Clamp	3
3	100-8672	Elbow	2
4	100-8635	Fork	10
5	100-7049	Plug	1
6	100-8637	O-Ring	10
7	100-7050	Bulkhead	2
8	100-7046	Bracket	1
9	48-9520	Nut, Metric	6
10	48-7780	Bolt, Metric	6
11	100-6917	Screw	4
12	100-7042	Hose, 1" Length = 33.5"	1
13	99-0769	Nut	1
14	99-0781	Hosebarb	1
15	100-6655	Seal	4

#	Part No.	Description	Qty
16	100-8698	Elbow	2
17	99-0796	Valve	1
18	100-6654	O-Ring	2
19	100-7052	Valve, Housing	1
20	100-7048	Adapter	1
21	99-0798	Hosebarb w/Seat	1
22	99-0766	Nut	2
23	99-0772	Hose Clamp	1
24	100-7038	Hose, 1/2" Length = 71"	1
25	100-6703	Union	3
26	100-7051	Nut	2
27	100-8675	Tee, Drilled	1
28	100-7047	Angle	2
29	100-6704	Tee	1
30	100-7041	Hose, 1" Length = 21"	1

NOTES:

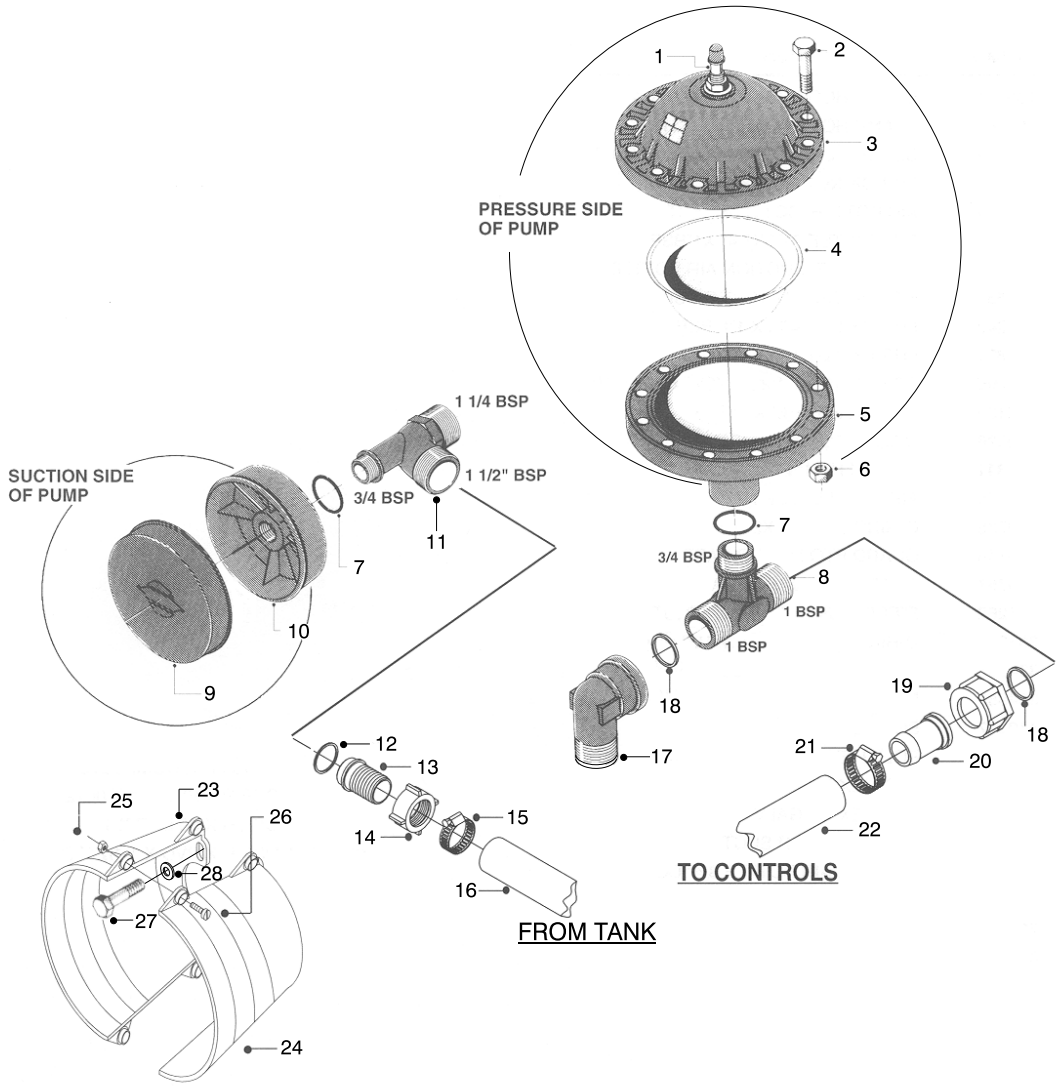


1868

BOOM PRESSURE GAUGE

#	Part No.	Description	Qty
1	100-7053	Pressure Gauge	1
2	100-6981	Adapter	1
3	92-0256	Magnet	1
4	100-7055	Nipple	1
5	100-6650	O-Ring	1
6	100-7057	Hosebarb	1
7	100-7054	Nut	1
8	97406	Hose Clamp	2

#	Part No.	Description	Qty
9	100-6807	Hose, 1/4" Length = 240"	1
10	99-0850	Nut	1
11	100-6983	Hosebarb ASM	1
12	100-6645	O-Ring	1
13	100-6984	Tee	1
14	92-0045	Hose Clamp	2
15	100-7056	O-Ring	1



1867

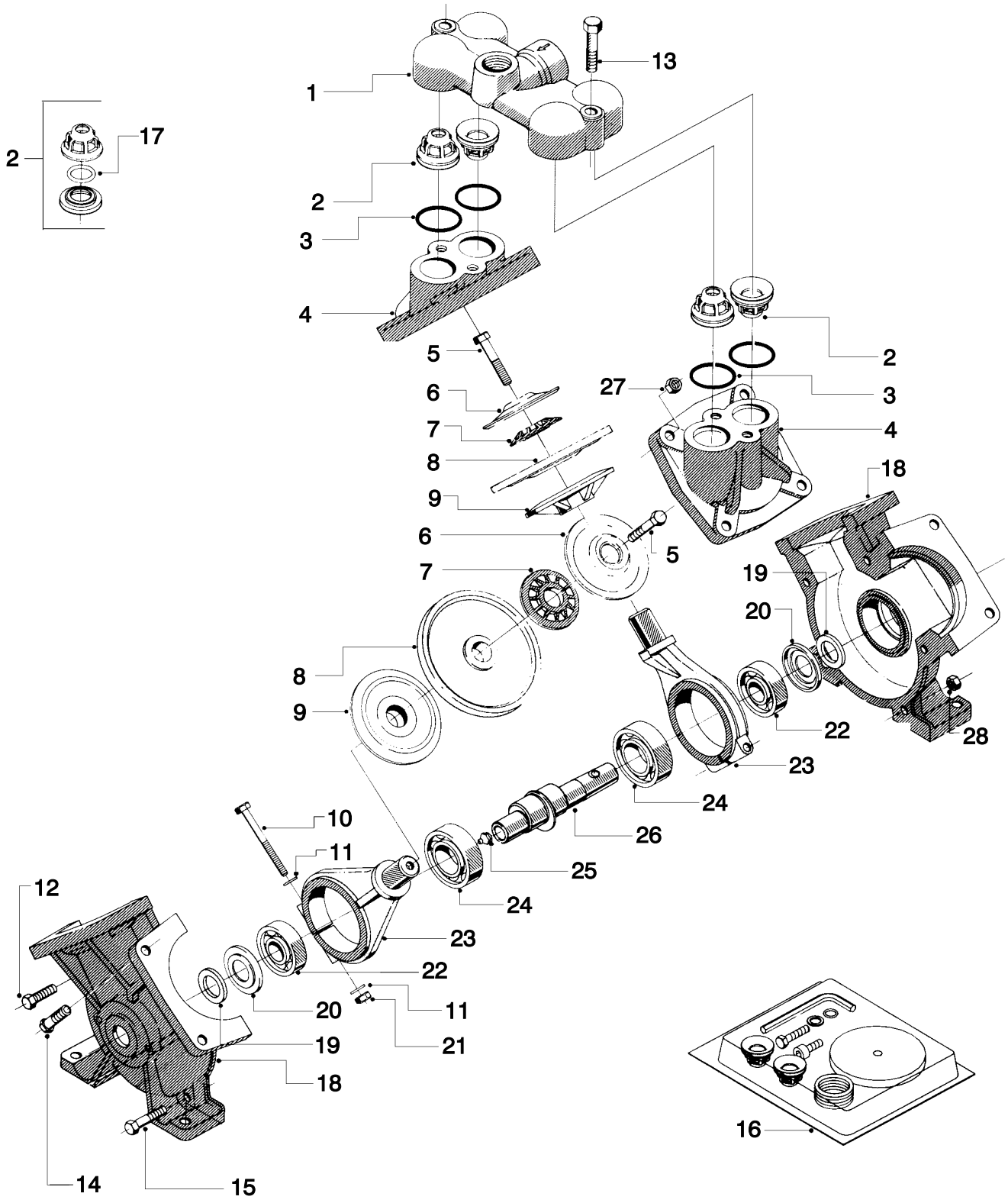
PUMP FITTINGS

#	Part No.	Description	Qty
1	99-0895	Valve for Air-Pressure Damper	1
2	48-7730	Bolt M8 x 30	12
3	99-0896	Pressure Damper Upper Half	1
4	99-0897	Diaphragm for Pressure Damper	1
5	99-0898	Pressure Damper Lower Half	1
*	100-6662	Pressure Damper Assembly	AR
6	48-7930	Nut M8	12
7	100-6656	O-Ring for Damper	2
8	100-8699	Tee	1
9	99-0899	Suction Damper Diaphragm	1
10	100-6600	Suction Damper Housing	1
*	100-6660	Suction Damper Assembly	AR
11	100-8631	Tee	1
12	100-8680	Gasket	1
13	100-8679	Hosebarb	1
14	100-8678	Nut	1

#	Part No.	Description	Qty
15	41327	Clamp	1
16	100-6977	Hose, 1 1/2" Suction x 116"	1
17	100-8698	Elbow	1
18	100-6655	Seal	2
19	99-0769	Nut	1
20	99-0781	Hosebarb	1
21	99-0782	Clamp	1
22	100-7041	Hose, 1" Length = 21"	1
23	100-6603	Shield, Bottom	1
24	100-6602	Shield, Top	1
25	48-7890	Nut, Metric	4
26	33123-020	Screw, Metric	4
27	100-6665	Bolt, Whitworth	2
28	99-0863	Washer	2

* Not Illustrated

PUMP 100-8295



1673

PUMP 100-8295

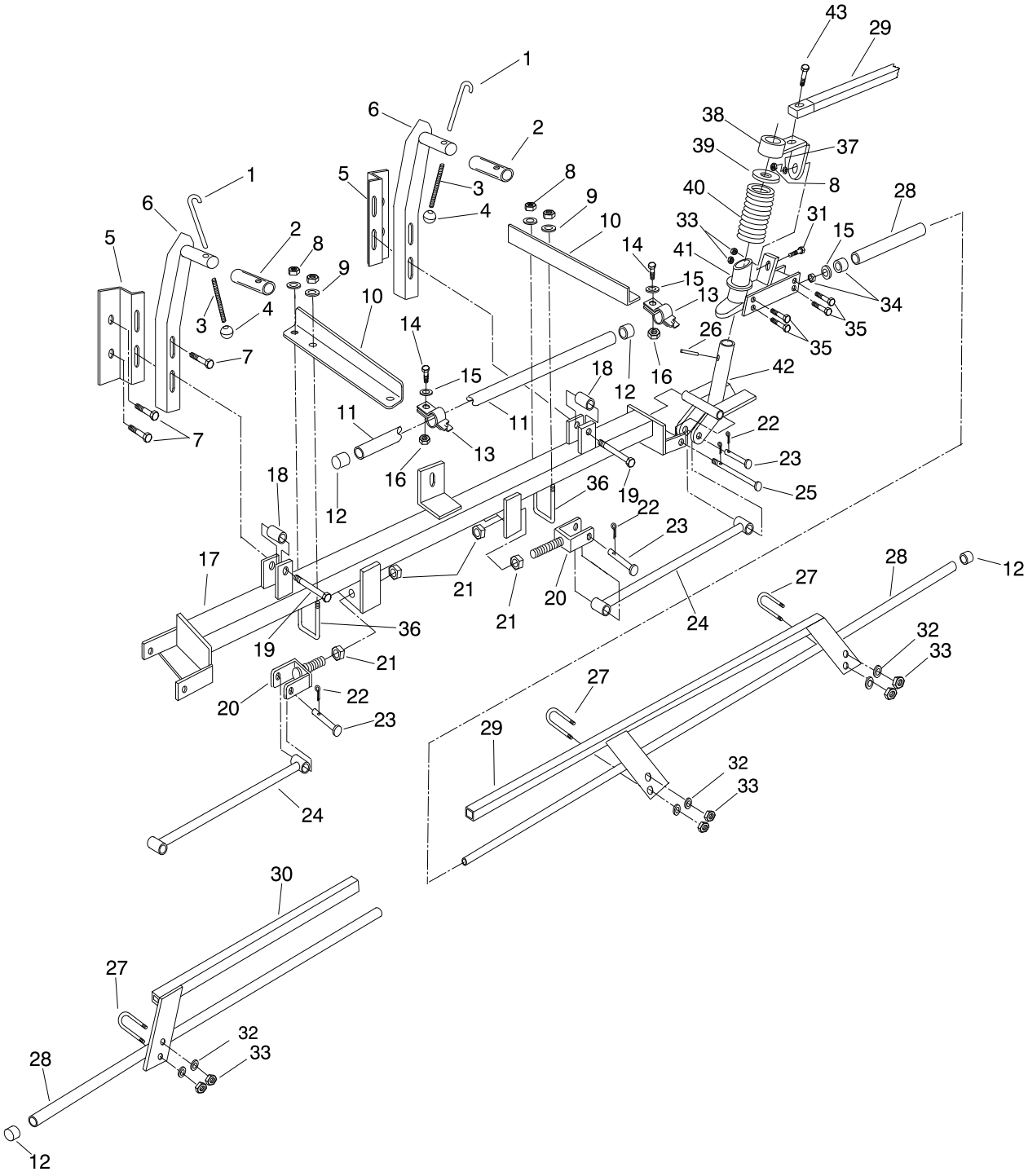
	#	Part No.	Description	Qty
	1	100-8306	Valve Chamber	1
**	2	100-8307	Valve	4
**	3	100-6652	O-Ring	4
	4	100-8309	Diaphragm cover	2
**	5	100-8310	Bolt Hex 7/16" X 2-1/4"	2
**	6	100-8311	Washer	2
**	7	100-8312	Nylon Washer	2
**	8	100-8313	Diaphragm	2
	9	100-8314	Diaphragm Back Disc	2
	10	100-8315	Bolt Hex M8 X 85	2
	11	100-8316	Washer Lock	4
	12	100-8317	Bolt Hex 3/8" X 30MM, Whit.	3
	13	100-8335	Bolt Hex 1/2" X 55MM, Whit.	2
	14	100-8319	Bolt Hex M12X50	8
	15	100-8320	Bolt Hex 3/8" X 55MM, Whit.	2

#	Part No.	Description	Qty
16	100-8337	Pump Kit (Parts included shown with **)	1
17	100-8336	O-Ring Poly	4
18	100-8323	Pump Casing	2
19	99-0868	Seal Felt	2
20	100-8325	Dust Plate	2
21	100-8326	Nut Hex M8 Black	2
22	100-8327	Bearing Ball	2
23	100-8328	Conn. Rod.	2
24	100-8329	Bearing Ball	2
25	99-0873	Grease Nipple 1/8" H TR	1
26	100-8331	Crank Shaft	1
27	100-8334	Nut Hex M12 Black	8
28	100-8333	Nut Hex 3/8" ,Whitworth Thr.	5

Whit. = Whitworth Threads
** Parts included in Pump Kit 100-8337

NOTES:

SPRAY BOOM



1856

SPRAY BOOM

#	Part No.	Description	Qty
1	92-8562	Hold-In Hook	2
2	92-8561	Hold-In Hose	2
3	92-8563	Hold-In Spring	2
4	92-8564	Hold-In Knob	2
5	100-6791	Bracket-Boom Mounting	2
6	100-6793	Boom Hold-In ASM	2
7	325-5	Hex Head Cap Screw	6
8	3217-6	Hex Nut	14
9	3256-3	Flat Washer	6
10	42234	Center Boom Angle	2
11	40493	Center Boom Pipe	1
12	92-8420	Boom Cap	4
13	40494	Clamp ASM	2
14	323-6	Hex Head Cap Screw	2
15	3256-4	Flat Washer	4
16	32153-2	Lock Nut	2
17	42227	Main Frame Tube	1
18	42257	Spacer Tube 1"	2
19	325-34	Hex Head Cap Screw	2
20	42237	Adjustable Clevis ASM	2
21	3217-11	Hex Nut	4
22	3272-11	Cotter Pin	6

#	Part No.	Description	Qty
23	42195	Clevis	2
24	42240	Strut ASM	2
25	42194	Clevis	2
26	32121-78	Spring Pin	2
27	92-0010	U-Bolt	4
28	42282	Extension Boom Pipe ASM	2
29	42710	Boom Support ASM, RH	1
30	42711	Boom Support ASM, LH	1
31	3230-1	Carriage Bolt	2
32	3256-2	Flat Washer	8
33	32146-17	Lock Nut	10
34	92-3749	Freeze Plug	2
35	321-10	Hex Head Cap Screw	8
36	301950	U-Bolt	2
37	3256-23	Flat Washer	6
38	42707	Support Bracket ASM	2
39	3256-62	Flat Washer	2
40	42196	Compression Spring	2
41	42706	Breakaway Pivot ASM	2
42	42243	Hinge ASM	2
43	322-7	Hex Head Cap Screw	2

NOTES:

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