



Doing Our Best to Provide You the Best

AA20007, Rev 6
07/17

FOAM MARKER



OPERATOR MANUAL

INTRODUCTION

Thank you for purchasing a Demco foam marker. We feel you have made a wise choice and hope you are completely satisfied with your new piece of equipment. If you have any questions regarding applications of certain solutions or chemicals, contact your chemical supplier and follow chemical manufacturer recommendations as well as all licensing and use restrictions or regulations.

WARRANTY POLICY, OPERATOR MANUALS & REGISTRATION

Go online to www.demco-products.com to review Demco warranty policies, operator manuals and register your Demco product.



WARNING: TO AVOID PERSONAL INJURY OR DEATH, OBSERVE FOLLOWING INSTRUCTIONS:

- Chemicals are dangerous. Know exactly what you’re going to do and what is going to happen before attempting to work with these products. Improper selection or use can injure people, animals, plants and soil.
- Always wear protective clothing such as coveralls, googles and gloves when working with chemicals or sprayer.
- Be sure to dispose of all unused checmicals or solutions in a proper and ecologically sound manner.

GENERAL INFORMATION

- 1. Unless otherwise specified, high-strength (grade5) (3 radial-line head markings) hex head bolts are used throughout assembly of this sprayer.
- 2. Whenever terms “LEFT” and “RIGHT” are used in this manual it means from a position behind the sprayer and facing forward.
- 3. When placing a parts order, refer to this manual for proper part numbers and place order by PART NO. and DESCRIPTION.

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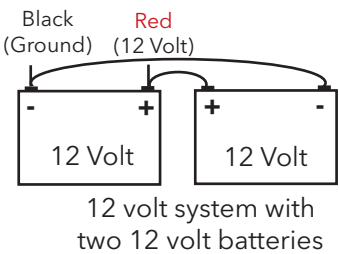
FOAM MARKER BATTERY CONNECTIONS

ALL CONNECTIONS MUST BE DIRECTLY TO BATTERY POSTS

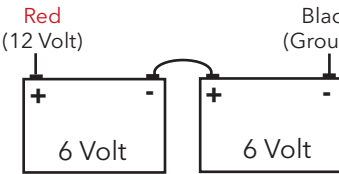
Attach the **RED WIRE** to the (positive) + post and the Black WIRE to the (negative) - post.

Make sure good clean connections are made.

The electrical system must be 12 volt.

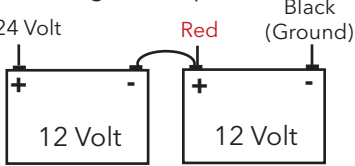


12 volt system with two 12 volt batteries



12 volt system with two 6 volt batteries, MUST be wired directly to batteries.

Attach the **RED WIRE** to the (positive) + post and the **BLACK WIRE** to the (negative) - post.



24 volt system with two 12 volt batteries

On 24 volt systems connect to the battery that has the ground connection.

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH!



THIS SYMBOL MEANS
ATTENTION
BECOME ALERT
YOUR SAFETY IS INVOLVED!

SIGNAL WORDS:

This manual uses the following signal words--DANGER, WARNING, and CAUTION-- with safety messages. The appropriate signal word has been selected using the following guidelines.

DANGER:

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING:

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION:

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have questions not answered in this manual, require additional copies, or if your manual is damaged, please contact your dealer or Demco, 4010 320th Street, Boyden, IA 51234
ph: (712) 725-2311 or Toll Free: 1-800-543-3626 Fax: (712) 725-2380
<http://www.demco-products.com>



SAFETY...YOU CAN LIVE WITH IT



EQUIPMENT SAFETY GUIDELINES

Every year many accidents occur which could be avoided by a few seconds of thought and more careful approach to handling equipment. You, the operator, can avoid accidents by observing precautions in this section. To avoid personal injury, study precautions and insist those working with you, or you yourself, follow them.

Keep all shields in place. If shield removal becomes necessary for repairs, replace shield prior to use.

Replace any caution, warning, danger or instruction safety decal that is not readable or is missing.

Do not attempt to operate this sprayer under the influence of alcohol or drugs.

Review safety instructions with all users.

Operator should be a responsible adult. **DO NOT ALLOW PERSONS TO OPERATE OR ASSEMBLE THIS SPRAYER UNTIL THEY HAVE DEVELOPED A THOROUGH UNDERSTANDING OF SAFETY PRECAUTIONS AND HOW IT WORKS.**

To prevent injury or death, use a tractor equipped with a roll over protective system (ROPS). Do not paint over, remove, or deface any safety signs or warning decals on your sprayer. Observe all safety signs and practice instructions on them.

Never exceed limits of sprayer. If its ability to do a job, or to do so safely is in question **DON'T TRY IT.**



LIGHTING AND MARKING

It is the responsibility of operator to know lighting and marking requirements of local highway authorities and to install and maintain equipment to provide compliance with regulations. Add extra lights when transporting at night or during periods of limited visibility.

Lighting kits are available from your dealer or manufacturer.



REMEMBER

Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or manufacturer.



BEFORE OPERATION

- Carefully study and understand this manual and the Owner's Manual.
- Do not wear loose-fitting clothing which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- It is recommended that suitable hearing and eye protection be worn.
- Operator may come in contact with certain materials which may require specific safety equipment relative to handling of such materials. (Examples: extremely dusty, molds, fungus, bulk fertilizers, etc.)
- Give sprayer a visual inspection for any loose bolts, worn parts, or cracked welds, and make necessary repairs. Follow maintenance safety instructions included in this manual.
- Be sure there are no tools lying on or in equipment.
- Do not use sprayer until you are sure that area is clear, especially around children and animals.
- Don't hurry learning process or take sprayer for granted. Ease into it and become familiar with your new equipment.
- Practice operation of your sprayer and its attachments. Completely familiarize yourself and other operators with its operation before using.
- Use a tractor equipped with Roll Over Protection System (ROPS) and fasten your seat belt prior to starting engine.
- Manufacturer does not recommend usage of tractor with ROPS removed.
- Move tractor wheels to widest recommended settings to increase stability.
- Do not allow anyone to stand between tongue or hitch and towing unit when backing up to equipment.



DURING OPERATION

- Beware of bystanders, **PARTICULARLY CHILDREN!** Always look around to make sure it is safe to start engine of towing unit or move sprayer. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.
- **NO PASSENGERS ALLOWED** - Do not carry passengers anywhere on or in the tractor or sprayer.
- Keep hands and clothing clear of moving parts.
- Do not clean, lubricate, or adjust your sprayer while it is moving.
- When halting operation, even periodically, set tractor or towing unit brakes, disengage PTO, shut off engine, and **remove ignition key**.
- Be especially observant of operating area and terrain- watch for holes, rocks, or other hidden hazards. Always inspect area prior to operation.
 - DO NOT operate near edge of drop-offs or banks.
 - DO NOT operate on steep slopes as overturn may result.
 - Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.

- Pick the most level possible route when transporting across fields. Avoid edges of ditches, gullies, and steep hillsides.
- Be extra careful when working on inclines.
- Periodically clear equipment of brush, twigs, or other materials to prevent buildup of dry combustible materials.
- Maneuver tractor or towing unit at safe speeds.
- Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
- Avoid loose gravel, rocks, and holes; they can be dangerous for equipment operation or movement.
- Allow for sprayer length when making turns.
- Do not walk or work under raised components or attachments unless securely positioned and blocked.
- Keep all bystanders, pets, and livestock clear of work area.
- Operate towing unit from operators seat only.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside of unit.
- Never leave running equipment attachments unattended.
- As a precaution, always recheck hardware on equipment following every 100 hours of operation. Correct all problems. Follow maintenance safety procedures.



FOLLOWING OPERATION

- Following operation, or when unhitching, stop tractor or towing unit, set brakes, disengage PTO and all power drives, shut off engine and **remove ignition key**.
- Store sprayer in an area away from human activity.
- Do not park sprayer where it will be exposed to livestock for long periods of time. Damage and livestock injury could result.
- Do not permit children to play on or around the stored sprayer.
- Make sure all parked machines are on a hard, level surface and engage all safety devices.
- Wheel chocks may be needed to prevent unit from rolling.



HIGHWAY AND TRANSPORT OPERATIONS

- **SAFETY CHAINS:** If equipment is going to be transported on a public highway, always follow state and local regulations regarding safety chains and auxiliary lighting. Be sure to check with local law enforcement agencies for your own particular regulations. If required safety chains should be obtained and installed. Only safety chains (not elastic or nylon/plastic tow straps) should be used to retain connection between towing and towed machines in event of separation of primary attaching system. Use a high strength, appropriately sized hitch pin with a mechanical retainer and attach safety chains. Criss cross chains under tongue and secure to draw bar cage, mounting loops, or bumper frame.
- Adopt safe driving practices:
 - Keep brake pedals latched together at all times. **NEVER USE INDEPENDENT BRAKING WITH SPRAYER IN TOW. LOSS OF CONTROL OR UPSET MAY RESULT.**
 - Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop. Keep speed to a minimum.
 - Reduce speed prior to turns to avoid risk of overturning.
 - Always keep tractor or towing unit in gear to provide engine braking when going downhill. Do not coast.
 - Do not drink and drive!
- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Use approved accessory lighting flags and necessary warning devices to protect operators of other vehicles on highway during transport. Various safety lights and devices are available from your dealer.
- Use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
- When driving tractor and sprayer under 20 m.p.h. (40 kph) day or night, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.
- Plan your route to avoid heavy traffic.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
- Be observant of bridge load ratings. Do not cross bridges rated lower than gross weight of unit you are operating.
- Watch for obstructions overhead and side to side while transporting.
- Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of sprayer when making turns, or stopping.



PERFORMING MAINTENANCE

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Make sure there is plenty of ventilation. Never operate engine of towing vehicle in a closed building. Exhaust fumes may cause asphyxiation.
- Before working on this machine, stop towing vehicle, set brakes, disengage PTO and all power drives, shut off engine and **remove ignition key**.
- Be certain all moving parts and attachments have come to a complete stop before attempting to perform maintenance.
- Always use a safety support and block wheels. Never use a jack to support machine.
- Always use proper tools or equipment for job at hand.
- Use extreme caution when making adjustments.
- Follow torque chart in owners manual when tightening bolts and nuts.
- Never use your hands to locate a hydraulic leak on attachments. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate skin.
- Openings in skin and minor cuts are susceptible to infection from hydraulic fluid.
Without immediate medical treatment, serious infection and reactions can occur.
- When disconnecting hydraulic lines, shut off hydraulic supply and relieve all hydraulic pressure.
- Replace **all shields** and **guards** after servicing and before moving.
- After servicing, be sure all tools, parts and service equipment are removed.
- Do not allow grease or oil to build up on any steps or platform.
- When replacing bolts refer to owners manual.
- Refer to bolt torque chart in owners manual for head identification marking.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. Manufacturer will not claim responsibility for use of unapproved parts or accessories and other damages as a result of their use.
- If equipment has been altered in any way from original design, manufacturer does not accept any liability for injury or warranty.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.



TORQUE SPECIFICATION

Torque figures indicated are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* GRADE or CLASS value for bolts and capscrews are identified by their head markings.

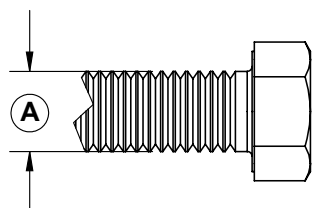
BOLT TORQUE DATA FOR STANDARD NUTS, BOLTS, AND CAPSCREWS

Tighten all bolts to torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt chart as guide. Replace hardware with same grade bolt.

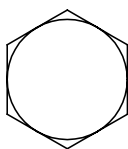
NOTE: Unless otherwise specified, high-strength Grade 5 hex bolts are used throughout assembly of equipment.

Bolt Torque for Standard bolts *						
"A"	GRADE 2		GRADE 5		GRADE 8	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
1/4"	6	(8)	9	(12)	12	(16)
5/16"	10	(13)	18	(25)	25	(35)
3/8"	20	(27)	30	(40)	45	(60)
7/16"	30	(40)	50	(70)	80	(110)
1/2"	45	(60)	75	(100)	115	(155)
9/16"	70	(95)	115	(155)	165	(220)
5/8"	95	(130)	150	(200)	225	(300)
3/4"	165	(225)	290	(390)	400	(540)
7/8"	170	(230)	420	(570)	650	(880)
1"	225	(300)	630	(850)	970	(1310)

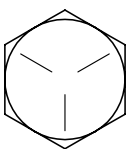
Bolt Torque for Metric bolts *						
"A"	CLASS 8.8		CLASS 9.8		CLASS 10.9	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
6	9	(13)	10	(14)	13	(17)
7	15	(21)	18	(24)	21	(29)
8	23	(31)	25	(34)	31	(42)
10	45	(61)	50	(68)	61	(83)
12	78	(106)	88	(118)	106	(144)
14	125	(169)	140	(189)	170	(230)
16	194	(263)	216	(293)	263	(357)
18	268	(363)	--	--	364	(493)
20	378	(513)	--	--	515	(689)
22	516	(699)	--	--	702	(952)
24	654	(886)	--	--	890	(1206)



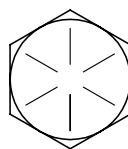
GRADE-2



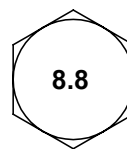
GRADE-5



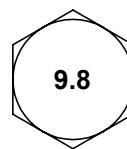
GRADE-8



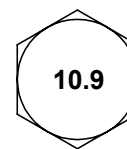
CLASS 8.8



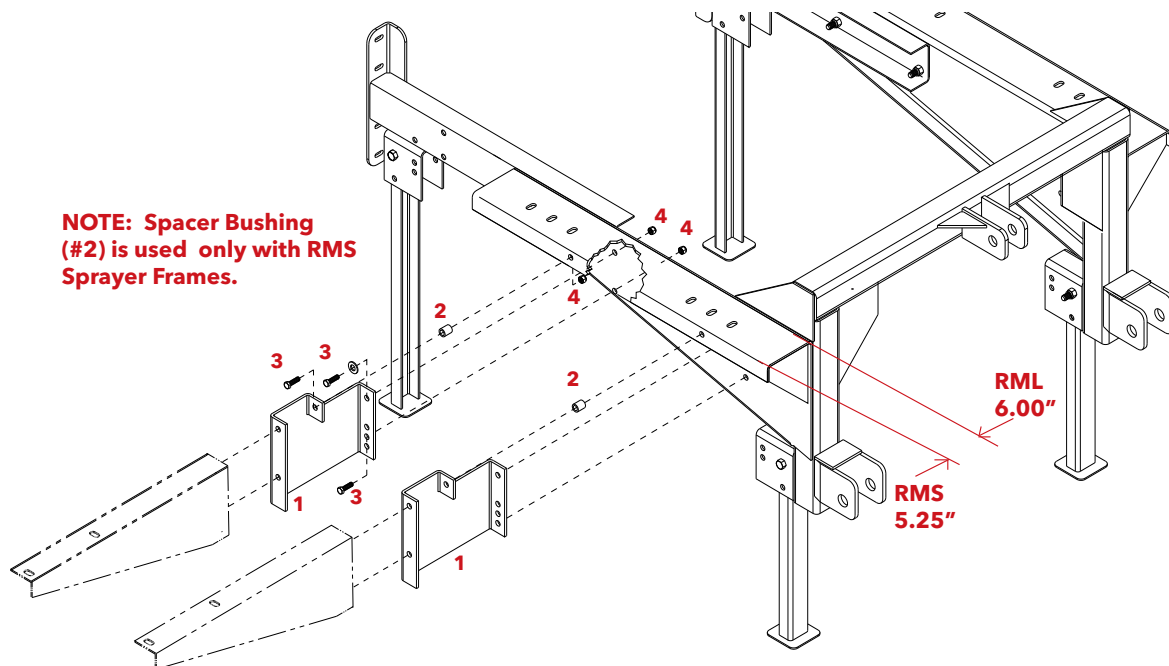
CLASS 9.8



CLASS 10.9



REAR MOUNT EXTENSION BRACKET FOR FOAM MARKER (DFM 60)



NOTE: Spacer Bushing (#2) is used only with RMS Sprayer Frames.

ASSEMBLY

1. Begin by bolting on the Extension Bracket (#1) using six 1/2" x 1-1/4" hex head bolts (#3) and nylon insert locknuts (#4). **NOTE: Spacer bushing (#2) is used only with the RMS Sprayer frames.**

2. Continue assembly with step of DFM60 Foam Marker owners manual.

PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	03746-10	2	Extension Bracket
2.	02875-95	2	Spacer Bushing (1/2" I.D x 3/4" O.D x 7/8" lg.)
3.	00967	6	1/2" x 1-1/4" Hex Head Bolts (Gr.5)
4.	02178	6	1/2" Nylon Insert Locknut

Please order replacement parts by **PART NO.** and **DESCRIPTION.**

ROUTINE SERVICING

The following items should be checked and cleaned or replaced once a year or more as required.

- 1) Housing inlet filters
- 2) Solution suction line screen
- 3) Compressor inlet filter assembly

CAUTION: To Avoid Personal Injury, thoroughly clean the unit at the beginning and end of the season, or any time chemicals are spilled on it. Even dried chemical residue can be harmful if you come in contact with it.

END OF SEASON AND STORAGE PROCEDURE

- 1) Empty the tank of all solution. Disconnect the suction line strainer fitting, remove the strainer, and drain the tank. Clean inside of tank and replace the strainer, and reconnect the fitting.
- 2) Put 1/2 gallon of RV antifreeze solution in the tank. Do not use a permanent type of antifreeze in the foam marker.
- 3) Start the unit and let it run until all the lines have been filled.
- 4) If possible remove the Generator/Tank unit from the sprayer and store in a place where it will not freeze.

HARD WATER DEPOSITS

If the pump fails to prime or loses its prime during operation, it may be caused by hard water deposits forming under the pump valves. Also deposits may form in the 3-Way valve and other components of the foam marker. Two methods may be used to remove deposits from the foam marker components; disassemble the components and manually clean them or use vinegar to dissolve the hard water deposits.

1) INSTALL MOUNTS ON SPRAYER FRAME.

Demco sprayers have mounting holes for the foam marker on the right side towards the front of the frame. See table below for mounting position for the sprayer concerned. Locate the mounts (#14 & #15) and secure with 1/2"-13 UNC x 1-1/4" bolts (#18), washers (#17) and nylon locknuts (#16) provided.

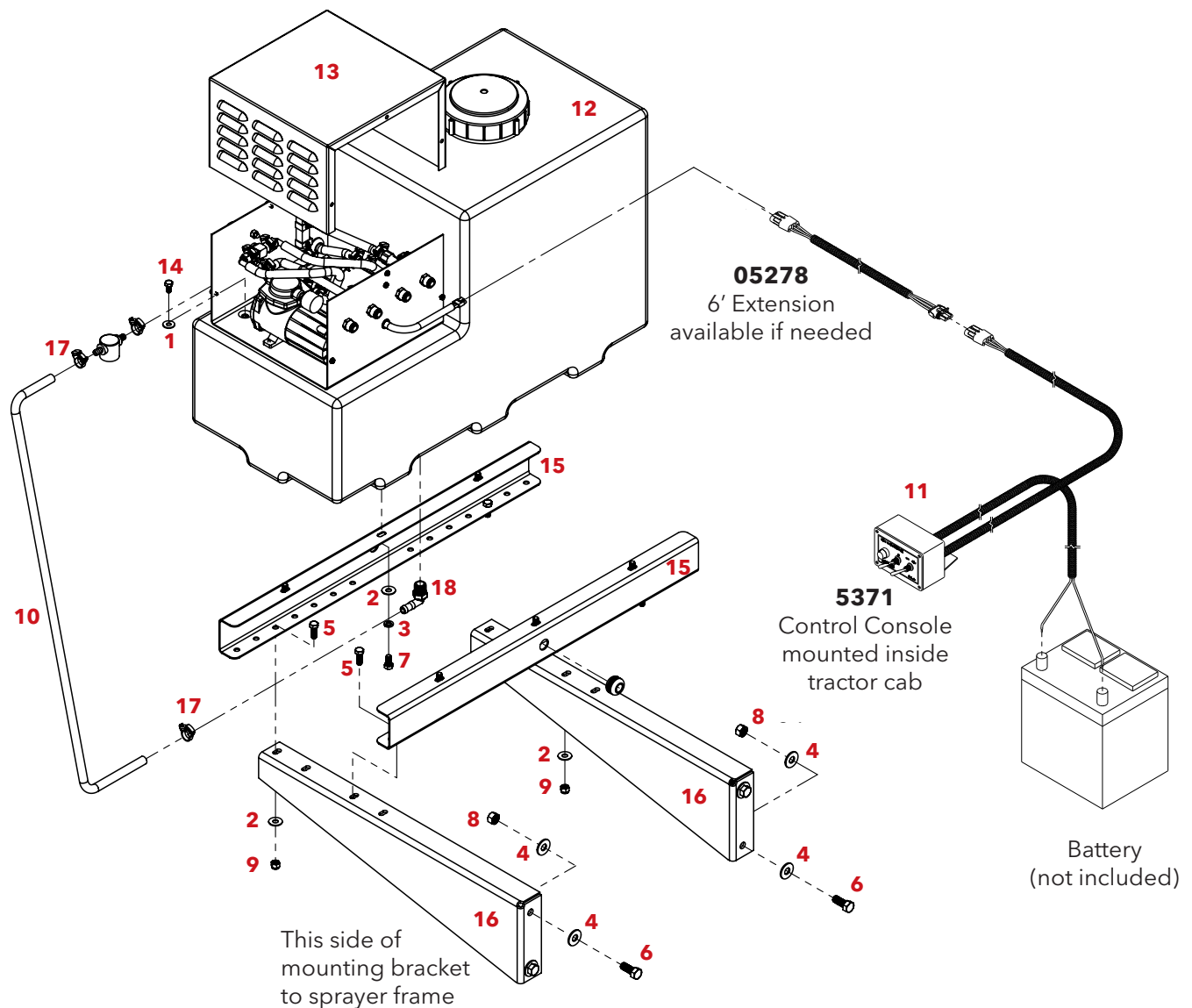
If you are mounting the foam marker on other than a Demco sprayer, you must first locate and drill four 17/32" diameter holes where required.

2) SECURE GENERATOR/TANK ASSEMBLY TO MOUNTS.

Set the Generator/Tank Assembly on the mounts, and position unit in desired location. Secure with 3/8"-16 UNC x 1" bolts (#12), washers (#9) and nuts (#13) provided

3) ROUTE AND CONNECT GENERATOR CONTROL HARNESS

Route the control harness from the generator unit to the front of the sprayer, with the sprayer hitched to the tractor.



GENERATOR/TANK ASSEMBLY PARTS LIST

- 4) MOUNT CONTROL CONSOLE IN TRACTOR.** Mount control console to tractor by drilling two 9/32" holes and secure the control console with the two 1/4"-20UNC x 3/4" bolts and 1/4" nuts provided.
- 5) CONNECT THE CONTROL CONSOLE TO THE TRACTOR ELECTRICAL SYSTEM (12VDC)** Before making any electrical connections, make sure the **CONSOLE POWER SWITCH IS OFF** and the **DIRECTION SWITCH IS TO THE LEFT POSITION**. Connect the "Black" wire of the power cable to the **Negative (-)** post of the battery and connect the "Red" wire to the **Positive (+)** post of the battery.

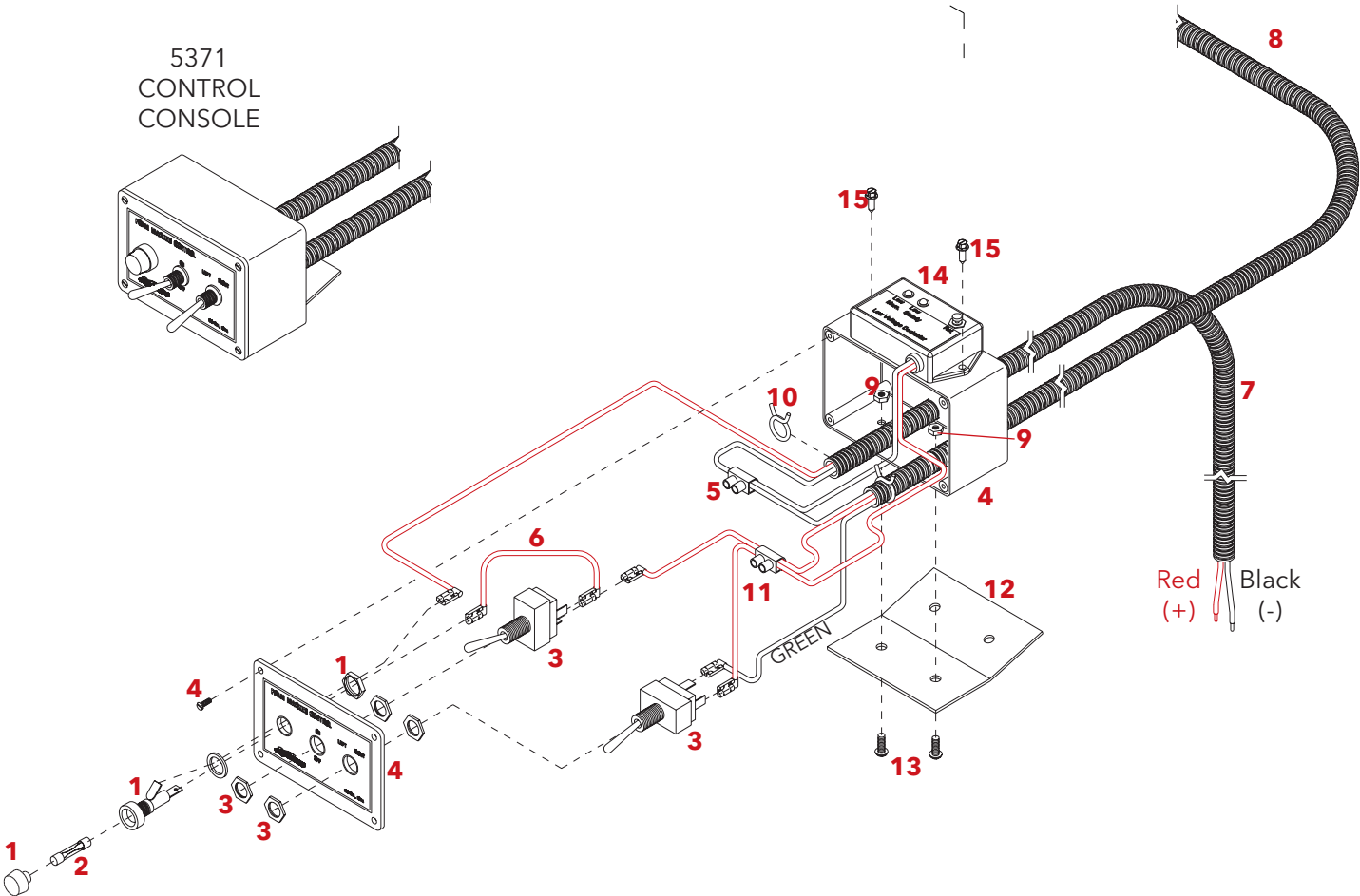
IMPORTANT: It is recommended that the power cable be connected to the battery direct. If the cable is not connected to the battery, it is very possible that the performance of the foam marker will be reduced. On 24V systems, connect to the battery that has the ground connection.

The foam marker must have 12V DC.

REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	00004	4	5/16" Flatwasher
2.	00059	10	3/8" Flatwasher
3.	00060	6	3/8" Lockwasher
4.	00085	8	1/2" Flatwasher
5.	00907	4	3/8"-16 UNC x 1" Hex Head Bolt
6.	00967	4	1/2"-13 UNC x 1-1/4" Hex Head Bolt
7.	01899	6	3/8"-16 UNC x 3/4" Hex Head Bolt
8.	02178	4	1/2"-13 UNC Nylon Insert Locknut
9.	02592	4	3/8"-16 UNC Nylon Insert Locknut
10.	380	-	3/8" I.D. Vinyl Hose
11.	5371	1	Control Console w/ Harnesses
-	05278	-	6' Extension Wire (Optional)
-	11865	-	Low Voltage Detector
12.	5514	1	30 gallon Tank Assembly
13.	5898	1	Foam Marker Generator
14.	05961	4	5/16"-18 UNC x 1" Hex Head Bolt
15.	09358-72	2	Tank Main Frame
16.	12911-72	2	Foam Marker Mounting Bracket
17.	B6PH	1	3/8" Hose Clamp, size F
18.	EL1238	1	1/2" MPT x 3/8" Hose Barb Elbow

Please order replacement parts by **PART NO.** and **DESCRIPTION.**

CONTROL CONSOLE ASSEMBLY PARTS BREAKDOWN

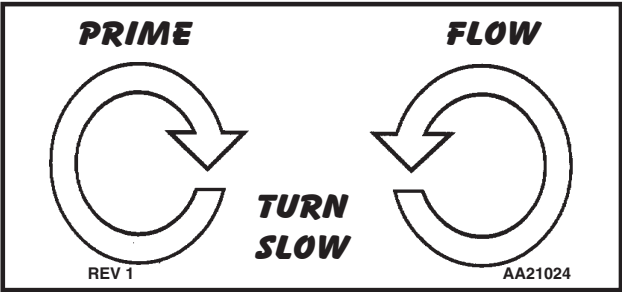


CONTROL CONSOLE PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION
	5371	1	Control Box Assembly
1.	01019	1	Fuse Holder with Locknut
2.	05480	1	15 Amp Fuse (1-1/4" long)
3.	01013	2	Switch with Locknuts
4.	05466	1	Control Box with Front Face Screws
5.	03274	1	Terminal Block
6.	35548	-	Diode Assembly
7.	03273	-	Power Harness
8.	05486	-	Control Harness
9.	02205	2	#10-24UNC Nylon Locknut
10.	R7SS	2	Clamp (Loom)
11.	03271	1	Wire Assembly
12.	05492-95	1	Mounting Bracket, Control Box
13.	02214	2	#10-24UNC x 1/2" lg. Truss Head Screw
*	01076	2	1/4"-20UNC x 3/4" lg. Hex Hd. Bolt GR5
*	02772	2	1/4"-20UNC Nylon Insert Lock Nut
14.	11865	1	Low Voltage Detector and Screws
15.	07605	2	#8 x 1/2" Sheet Screw

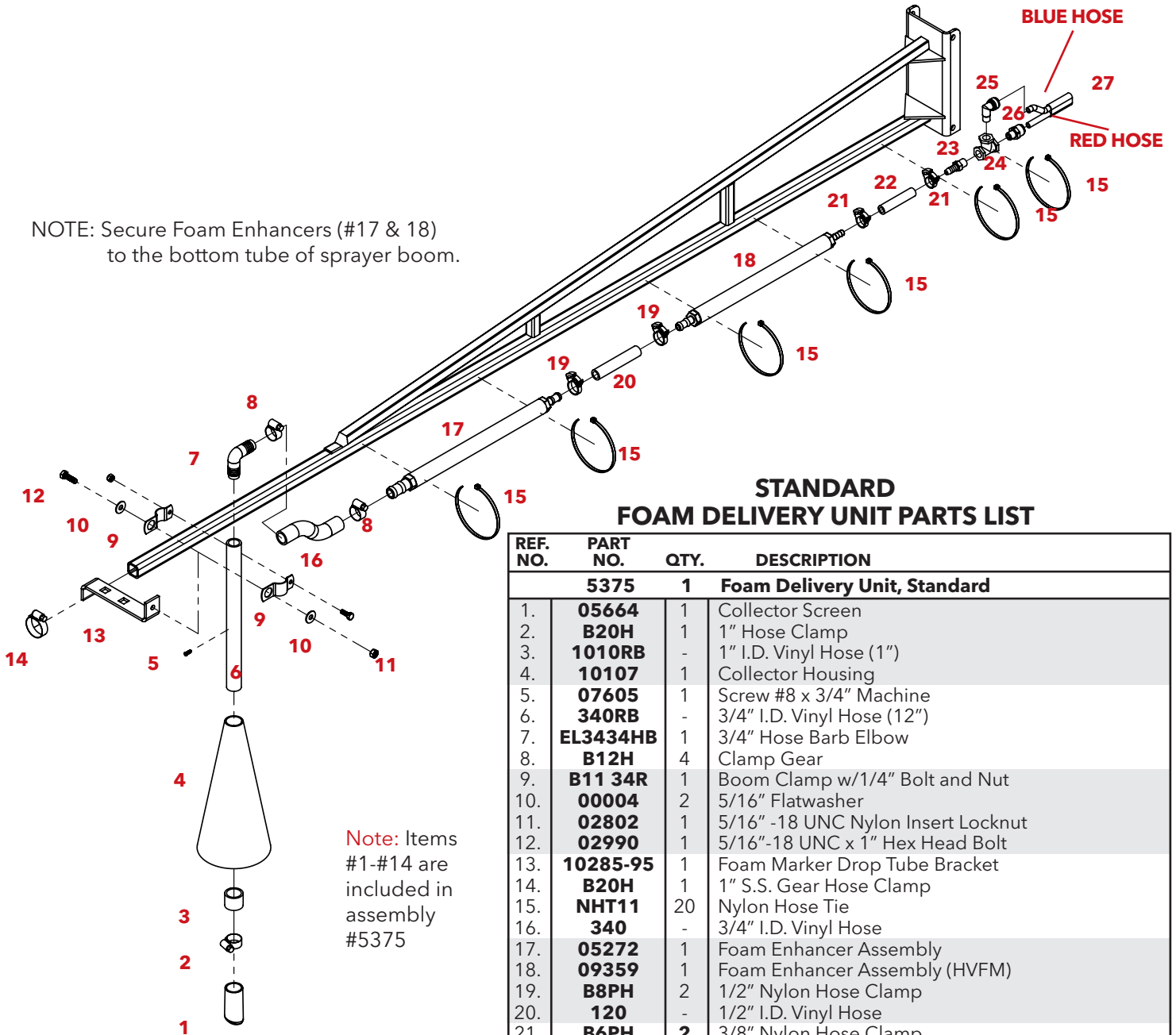
Please order replacement parts by **PART NO.** and **DESCRIPTION.**

* These fasteners are used to secure the control console to the tractor.



FOAM MARKER INSTRUCTIONS

- 1) Purchase a good quality foam concentrate.
- 2) Mix according to concentrate instructions.
- 3) Prime pump according to instructions on foam marker.
- 4) Upon completion of priming the pump, adjust flow until proper amount of foam is dispensed from foam collector. The best quality foam is achieved between 6-10 GPH.



STANDARD FOAM DELIVERY UNIT PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION
	5375	1	Foam Delivery Unit, Standard
1.	05664	1	Collector Screen
2.	B20H	1	1" Hose Clamp
3.	1010RB	-	1" I.D. Vinyl Hose (1")
4.	10107	1	Collector Housing
5.	07605	1	Screw #8 x 3/4" Machine
6.	340RB	-	3/4" I.D. Vinyl Hose (12")
7.	EL3434HB	1	3/4" Hose Barb Elbow
8.	B12H	4	Clamp Gear
9.	B11 34R	1	Boom Clamp w/1/4" Bolt and Nut
10.	00004	2	5/16" Flatwasher
11.	02802	1	5/16" -18 UNC Nylon Insert Locknut
12.	02990	1	5/16"-18 UNC x 1" Hex Head Bolt
13.	10285-95	1	Foam Marker Drop Tube Bracket
14.	B20H	1	1" S.S. Gear Hose Clamp
15.	NHT11	20	Nylon Hose Tie
16.	340	-	3/4" I.D. Vinyl Hose
17.	05272	1	Foam Enhancer Assembly
18.	09359	1	Foam Enhancer Assembly (HVFM)
19.	B8PH	2	1/2" Nylon Hose Clamp
20.	120	-	1/2" I.D. Vinyl Hose
21.	B6PH	2	3/8" Nylon Hose Clamp
22.	380	-	3/8" I.D. Vinyl Hose
23.	A1438	1	1/4" MPT x 3/8" Hose Barb Fitting
24.	TT14	1	1/4" MPT Tee
25.	35280	1	1/4" MPT x 1/4" Compression FTG w/ Orifice (Water)
26.	13150	1	1/4" MPT x 1/4" Compression FTG (Air)
27.	09235	-	1/4" I.D. Double PVC Capillary Tube

Please order replacement parts by **PART NO.** and **DESCRIPTION.**

NOTE: Quantities shown refer to **ONE SIDE OF BOOM**, double quantity if parts are needed for both sides.

INSTALLATION OF THE STANDARD DELIVERY UNIT

1) MOUNT THE FOAM DELIVERY UNITS ON THE BOOM

The mounting brackets will mount on 1" to 1-1/2" square tubes and 3/4" or 1" pipe size. Locate the foam delivery units on the end of the boom. Mount the foam enhancer unit to bottom tube of sprayer boom with two hose clamps (#17) provided.

2) ROUTE AND SECURE FOAM SUPPLY LINES Cut the 1/2" delivery hose in half. Attach and clamp the hose to the left delivery unit. Run the hose along the boom securing every 3

ft. with the plastic ties. Route the hose around boom hinges so that the hose will not be stretched or pinched when the boom pivots at these points. Run the hose up to the left outlet of the generator unit, trim hose and secure with hose clamp. Repeat the procedure on the right boom. **Trim the excess hose, the same amount for each side.** If one side still has too much hose, coil it and secure to a convenient place. The delivery hose length should be very close to equal length for the generator to work properly when delivering foam to each side.

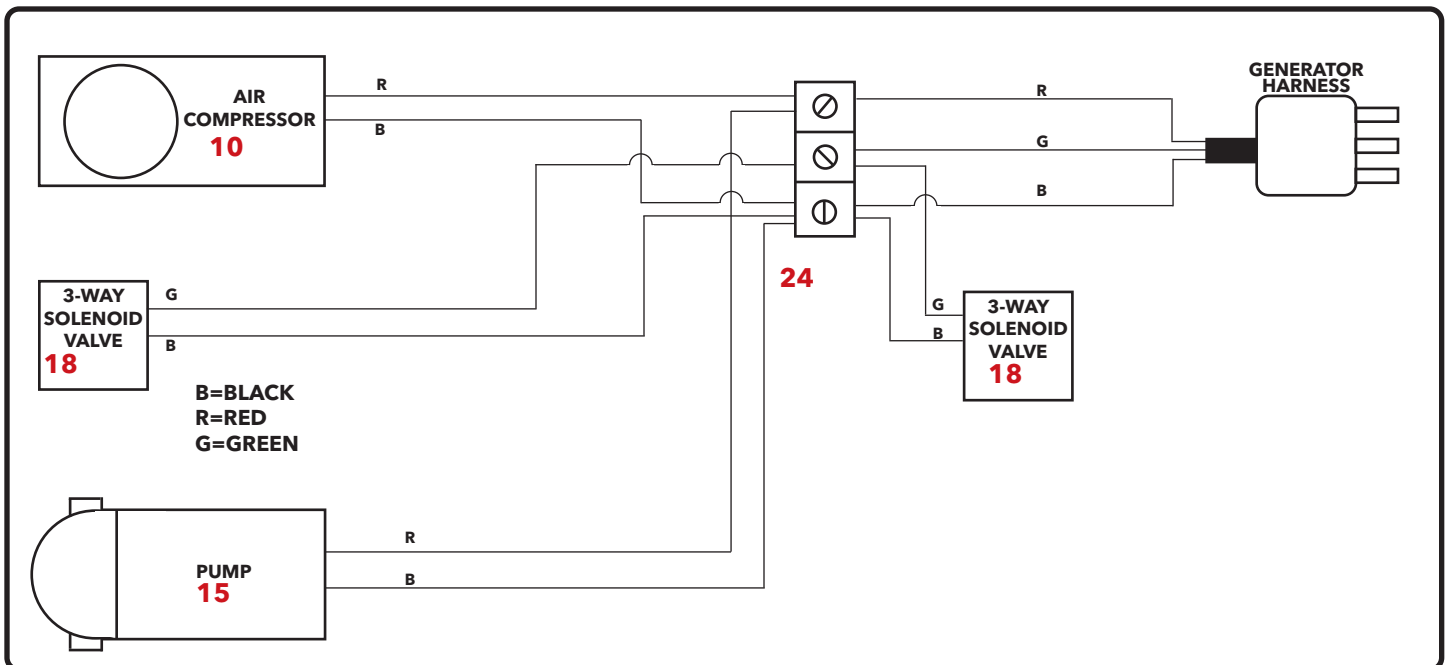
5898 FOAM MARKER GENERATOR UNIT PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	00007	4	5/16"-18 UNC Hex Nut
2.	00263	1	5/16"-18 UNC x 2-1/2" Round U-bolt
3.	380	5	3/8" I.D. x 1/8" wall Vinyl Hose
4.	00562	3	#8-32UNC x 1/2" Ig. Machine Screw
5.	02205	4	#10-24UNC Nylon Insert Locknut
6.	02378	7	#10 - 24 UNC x 1/2" Self-Tapping
7.	03268	1	Foam Marker Generator Harness
8.	09243	1	BSHG Snap
9.	05266	1	Flow Meter w/ Screws & Mtg. U-clamps
10.	05472	1	Air Compressor
11.	05477	1	Grommet (large)
12.	05483	4	#10-24UNC x 1-1/4" Ig. Machine Screw
13.	05487	2	Filter Element, Housing
14.	07490	4	.190 ID x 1/2" OD Zinc Plated Washer
15.	8000 543 150	1	Pump
16.	8027	1	5/8" Nut Fitting
17.	09344	1	Needle Valve
18.	12491	2	3-way Solenoid Valve

REF. NO.	PART NO.	QTY.	DESCRIPTION
19.	13140-76	1	Housing Bottom
20.	13141-76	1	Housing Top
21.	13150	4	1/4" MPT x 3/8" Compression FTG
22.	13155	1	1/4" NPT 2lb Check Valve
23.	380RB	1	3/8" I.D. Rubber Hose
24.	54917	1	Terminal Strip
25.	A1438	1	1/4" MPT x 3/8" Hose Barb Fitting
26.	A1838	1	1/8" MPT x 3/8" Hose Barb Fitting
27.	B6PH	14	3/8" Hose Clamp, size F
28.	EL1438	2	1/4" MPT x 3/8" Hose Barb Elbow
29.	EL1838	2	1/8" MPT x 3/8" Hose Barb Elbow
30.	K8400 3/8	1	3/8" Hose Barb Fitting
31.	RVB38 80	1	Strainer Assembly
-	RVB38C	1	3/8" Cap-Body
-	RVB80	1	80 Mesh Screen
-	RVB38GE	1	EPDM Gasket
-	RVB38B	1	Strainer Bowl
32.	T38T	2	3/8" MPT x 3/8" Hose Barb Tee

Please order replacement parts by
PART NO. and DESCRIPTION.

5898 GENERATOR UNIT WIRING DIAGRAM

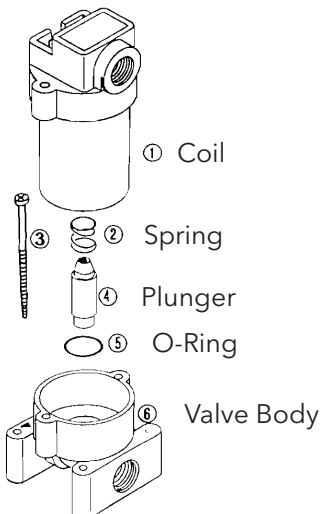


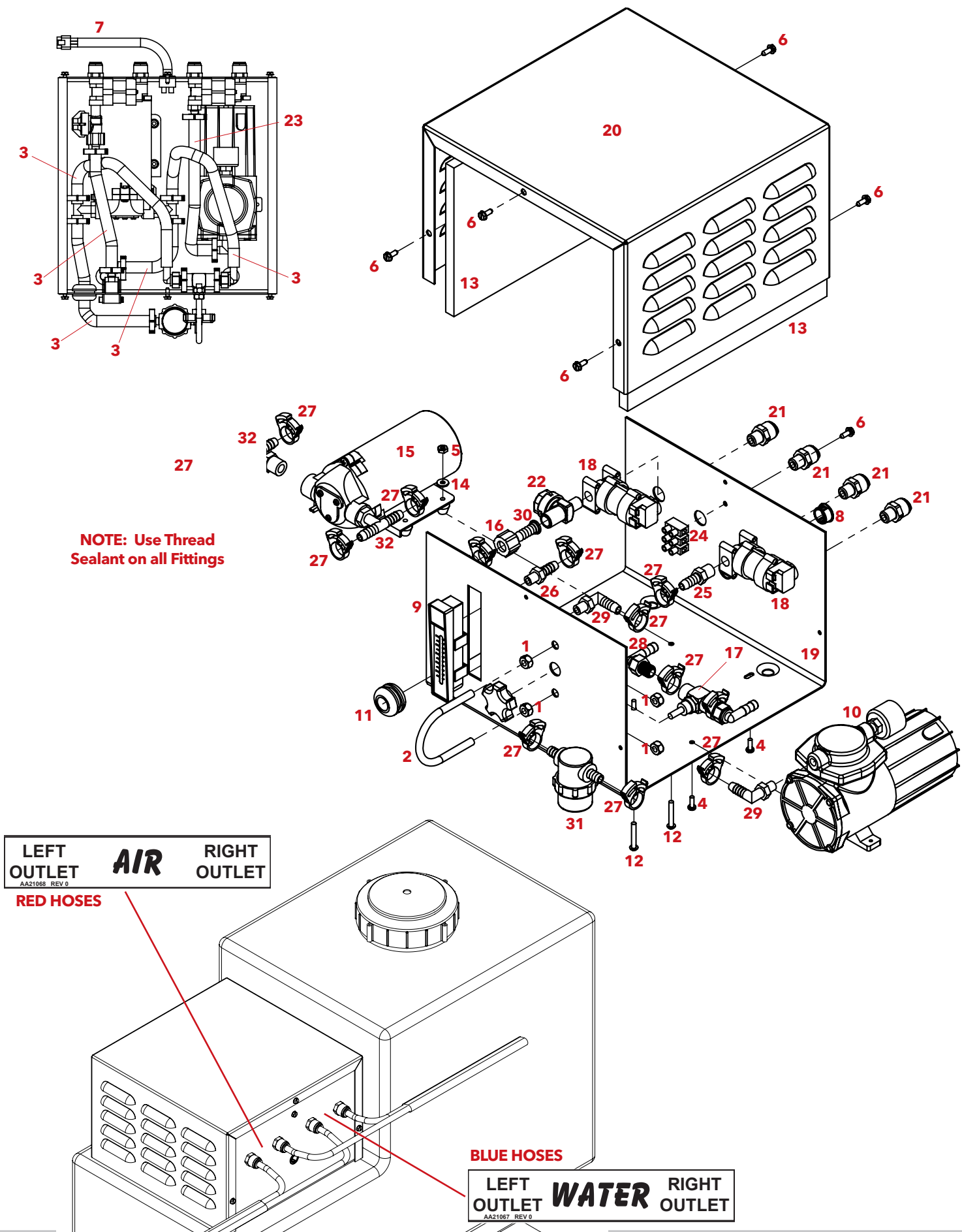
3-WAY SOLENOID VALVE

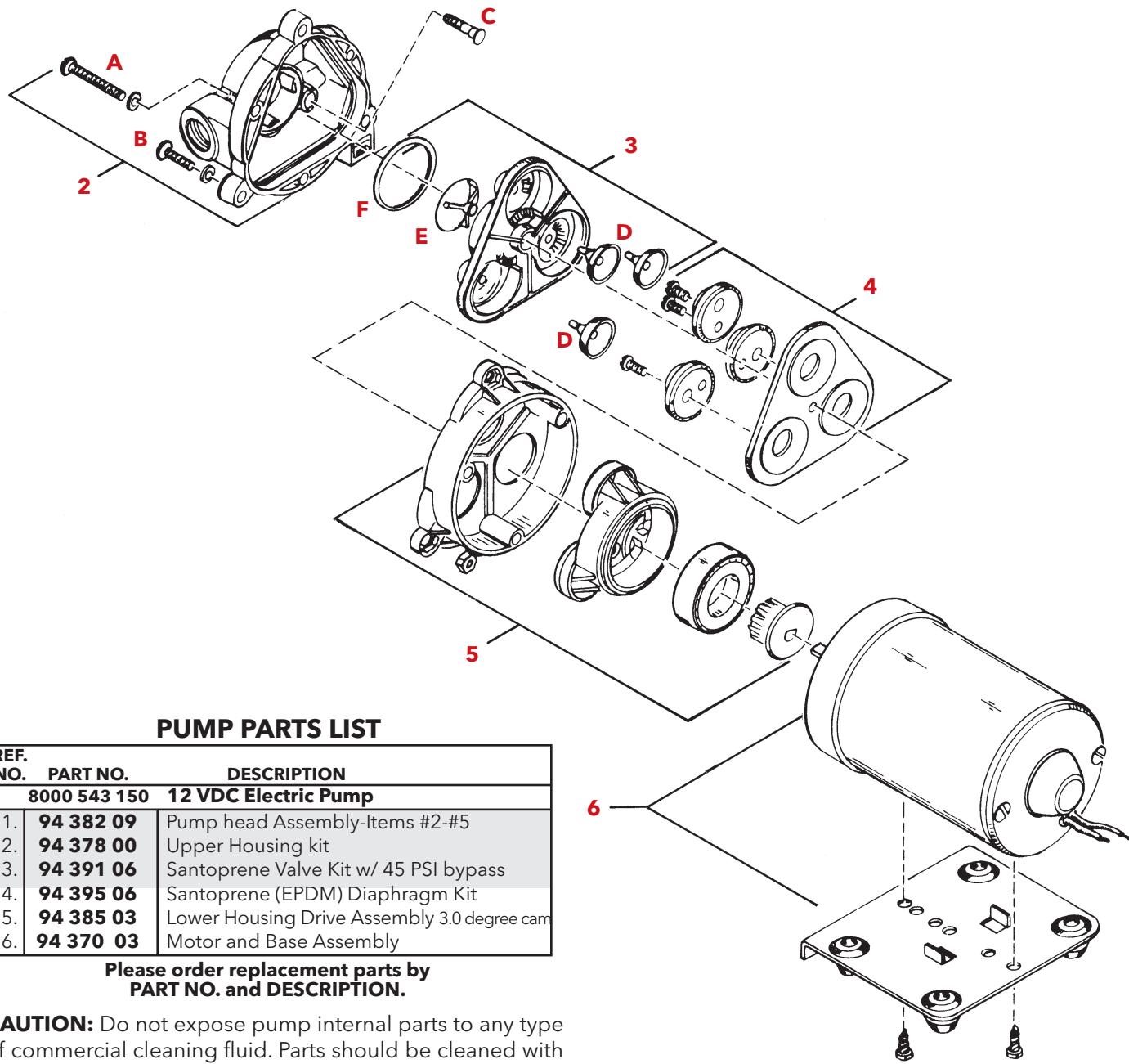
SOLENOID VALVE

PART NO.	QTY.	DESCRIPTION
12491	1	3-way Solenoid Valve

Individual Parts Not Sold Separately







PUMP PARTS LIST

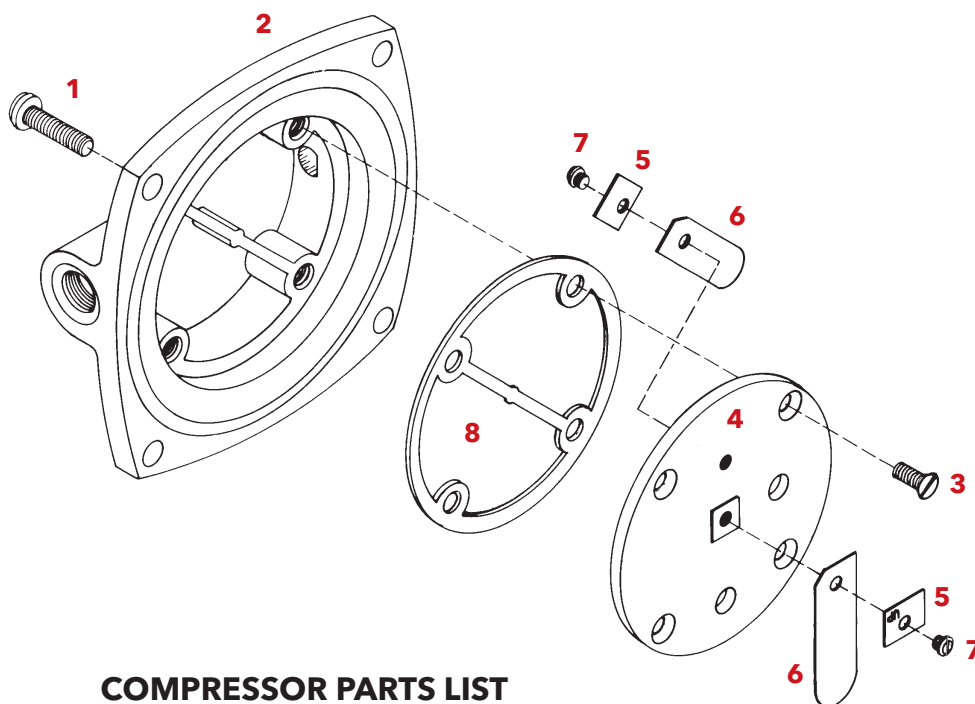
REF. NO.	PART NO.	DESCRIPTION
	8000 543 150	12 VDC Electric Pump
1.	94 382 09	Pump head Assembly-Items #2-#5
2.	94 378 00	Upper Housing kit
3.	94 391 06	Santoprene Valve Kit w/ 45 PSI bypass
4.	94 395 06	Santoprene (EPDM) Diaphragm Kit
5.	94 385 03	Lower Housing Drive Assembly 3.0 degree cam
6.	94 370 03	Motor and Base Assembly

Please order replacement parts by
PART NO. and DESCRIPTION.

CAUTION: Do not expose pump internal parts to any type of commercial cleaning fluid. Parts should be cleaned with a mild soap and water solution.

PUMP HEAD MAINTENANCE INSTRUCTIONS

- 1) Remove power from the foam marker, preferably by removing the fuse in the control box.
- 2) Disconnect all plumbing connections to the pump.
- 3) Remove the long pump head retaining screws(A). These screws hold the pump head assembly to the motor; these are the three inner screws as viewed from the end.
- 4) Remove the pump head assembly (#1) from the motor.
- 5) Remove the upper housing screws (B), making sure the pump head is held together so it will not prematurely come apart.
- 6) Hold the pump head in your hand with the upper housing (black plastic part) down. Remove the lower housing drive assembly (#5) and set aside.
- 7) Remove the poppet valves and springs (C) from the upper housing and set them aside. Blow out the upper housing (#2) and visually inspect for any damage. Replace if required.
- 8) Remove the valve plate assembly (#3) from the lower housing drive assembly.
- 9) Clean the valves (D) by blowing compressed air thru the valve passages under each valve. This will blow out any contamination under the valves. Also lift the center valve (E) and blow out any contaminates under the separation protrusions of the center valve. Be careful not to loosen the O-ring (F) around the center valve, compressed air can dislodge it.
- 10) To reassemble, reverse Steps 1-9.



COMPRESSOR PARTS LIST

REF. NO.	THOMAS PART NO.	QTY.	DESCRIPTION
	05472	1	Compressor
1.	03512	4	Screw-Head
2.	10740	1	Head
3.	10744	4	Valve Plate Screws
4.	10743	1	Valve Plate
5.	03516	2	Valve Keeper
6.	03517	2	Valve Flapper
7.	03518	2	Flapper Screws
8.	03519	1	Gasket-Valve Plate
-	03755	1	Diaphragm (Not Shown)

Please order replacement parts by
PART NO. and DESCRIPTION.

MAINTENANCE INSTRUCTIONS

Service of the compressor section does not require removal of the unit from the foam marker.

- 1) Remove the 4 head screws (1)
- 2) Mark the head (2) and housing at the outlet port with a marker so that the head can be reinstalled correctly. Tap all around the head with a soft surface hammer to loosen the head and remove gently, taking care not to mar any of the sealing surfaces. It may be necessary to pry the head off, take care not to cut the rubber diaphragm.
- 3) Remove the 4 valve plate screws (3) securing the valve plate (4) to the head (2). Apply a quick blast of compressed air in the outlet port to remove the valve plate from the head. The valve plate can also be removed by firmly rapping the head on a piece of wood (2 x 4).
- 4) Check the flappers (6) that they are operating properly. Be very careful as they can easily be bent and rendered inoperable. If the flappers are good, clean the valve plate (4) in warm soapy water, rinse and dry.

- 5) Check the valve plate gasket (9). If damaged, remove and clean surface of valve plate of any remaining gasket material.
- 6) If the valve plate is good go to step 8.
- 7) Remove the valve flappers (6), valve keepers (5), and flapper screws (7 & 8). Replace with new parts making sure the flappers are centered over their respective ports. The flappers must be orientated so the corner notch is on the left when viewed with the screw head. The keepers are orientated so the stamped "up" is located on top of the notch in the flapper. Tighten the flapper screws, taking care not to over tighten and stripping out the threads.

COMPRESSOR HEAD ASSEMBLY INSTRUCTIONS

- 8) If required, replace the valve plate gasket (9), using a small amount of sealant to hold the gasket in place on the valve plate (4).
- 9) Place the valve plate (4) in the head (2), making sure the outlet port of the valve plate (the port where the hole in the plate is visible) is next to the outlet port of the head. Secure the valve plate to the head with the 4 valve plate screws (3).
- 10) Install the head (2) on the housing with the marks aligned, and secure with the 4 head screws (1).

PROBLEMS	SOLUTIONS
FOAM GENERATION PROBLEMS	<p>A) Foam wet.</p> <ol style="list-style-type: none"> 1) Solution flow rate too high. 2) Clean air compressor valve plate. 3) Check if unit is directly hooked to battery. <p>B) Not enough foam generated.</p> <ol style="list-style-type: none"> 1) Solution flow rate too low. 2) Check for air leak on suction side of pump. 3) Old solution in tank. 4) Need new (94-391-06) Valve Kit
LITTLE OR NO SOLUTION FLOW	<ol style="list-style-type: none"> 1) Check the suction in-line strainer for plugging. Clean or replace as required. 2) Make sure the control knob is turned up. At low settings the control may not supply enough power to turn the pump. 3) Remove the foam mixer from the flow meter outlet line and clean. 4) Install pump head repair kit. (94-391-06) 5) Check if orifice is plugged in the mixer tee fitting. (Refer to #37, pg. 16)
LITTLE OR NO AIR FLOW	<ol style="list-style-type: none"> 1) Check the inlet filter on the compressor for plugging. 2) Switch foam delivery from right to left and back. If there is no air flow in either position the foam mixer is plugged and needs servicing. 3) If the motor has been operating under a heavy load, it is possible it has overheated. Wait a couple of minutes before restarting. 4) If by switching foam delivery air flow is obtained, the line with no flow is plugged or pinched. 5) Clean air compressor valve plate. 6) Check if unit is directly hooked to battery.
CANNOT SWITCH FOAM DELIVERY TO RIGHT SIDE OF BOOM.	<ol style="list-style-type: none"> 1) Check voltage to coil. 2) Clean coil-replace if worn or damaged. 3) Check if unit is directly hooked to battery.
LIQUID PUMP WILL NOT RUN	<ol style="list-style-type: none"> 1) Check for broken wires to the pump or bad connection of the motor leads. 2) Check the connection between the pump and electronic control. 3) Take head off pump. Should be able to turn shaft by hand. If shaft is too tight, pump is defective.
COMPRESSOR WILL NOT RUN	<ol style="list-style-type: none"> 1) Check for broken wire to the compressor or poor connection at terminal block. 2) Check voltage between motor leads. If voltage is adequate, the motor is defective. 3) If the motor has been operating under a heavy load, it is possible it has overheated. Wait a couple of minutes before restarting. 4) Check if unit is directly hooked to battery.
FOAM MARKER WILL NOT RUN	<ol style="list-style-type: none"> 1) Check the fuse in the control console. 2) Check that all connections are secure. 3) Check wires from the console to the generator unit. 4) Check that battery connections are Red (+) and Black (-) 5) Check all wires for cuts and breaks.
BLOWING FUSE	<ol style="list-style-type: none"> 1) Check that all connections are secure. 2) Check that battery connections are Red (+) and Black (-)



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