

CROPCARE

Equipment Built For You

2.5 GAL. FOAM MARKER SYSTEM

Model F2500

Owner's Manual



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A Paul B Zimmerman Inc. Company

PaulB LLC thanks you for choosing to purchase our model F2500 CropCare™ foam marker system. We appreciate your business and want to personally fill all of your equipment and sprayer needs. We also desire to provide you with the technical support and needed parts that will allow you to continue using your foam marker without disruption. See the Contact Us section on page 13.

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Before You Begin

- ◆ **Please read and understand this manual and its instructions and warnings completely before operating the foam marker.**
- ◆ **Be aware of all safety guidelines, warnings, and cautions including those of the sprayer, no-till planter, or any other piece of equipment that the foam marker may be mounted on.**
- ◆ **Read and understand the warnings and instructions of the foam concentrate that you are using. Always use an approved foam concentrate.**
- ◆ **Ensure that you have a power source that meets the requirements of 12 volt DC and 15 amps.**

! Safety Precautions !

Every year many unnecessary accidents occur due to improper equipment handling and a disregard for safety precautions. You, the operator, can avoid accidents by observing the precautions in this section.

- ◆ The operator should be a responsible adult. **Do not allow persons to operate this foam marker until they have displayed a thorough understanding of foam marker safety precautions and operational use!**
- ◆ Never attempt to operate this foam marker when under the influence of alcohol or drugs.
- ◆ **Always use an approved foam concentrate.** Do not use, on any occasion dish, soap, hand soap, or any other cleaning product. Use of unapproved foaming solutions could result in lowered performance or machine damage. **To order an approved foam concentrate, see the Accessories page on page 12.**
- ◆ **Do Not** eliminate the fuse on the wiring harness under any circumstances. Removal of the fuse could result in damage to the machine or personal injury.
- ◆ **Always disconnect the power before performing maintenance or repairs** on the foam marker. Failure to adhere to this warning could result in injury.
- ◆ When performing maintenance on the foam marker, pay close attention to any moving parts. Be especially aware of the metal fan blade on the compressor.
- ◆ **Do Not** touch the surface of the compressor since it may cause burns during and after operation. See the warning label on the compressor.
- ◆ Be aware of the location of the owner's manual warning decal on the foam marker's frame. Always replace any warning decals that aren't legible or are missing. (See Figure 1)
- ◆ **Do Not** attempt to adjust the foam discharge rate. This rate is preset and should never need to be adjusted. Any such adjustment will void the manufacturer's warranty.
- ◆ If there is any portion of this manual that you do not fully understand, please contact PaulB LLC (see the Contact Us section on page 13).



Figure 1: Owner's Manual Decal(# DE39)

Mounting the Foam Marker

It is important to follow these mounting instructions to insure that your CropCare™ foam marker system operates at its fullest potential. Please note that these instructions are only general instructions for proper mounting and may not be relevant to all applications. In certain applications, you may need be creative in order to achieve the best mounting technique. If you are having trouble mounting your foam marker, do not hesitate to call one of our trained sprayer technicians (see the Contact Us section on page 13).

Foam Marker Unit

1. **If mounting the foam marker on a CropCare™ sprayer**, place on the center of the boom frame. (See Figure 2) Attach the foam marker by using the included 3/8" carriage bolts to clamp the foam marker frame around the main boom tube. The unit may be mounted in either direction on the boom.
2. **If mounting the foam marker on other applications**, begin by choosing a convenient location that is easily accessible for mounting and filling the solution tank. The foam marker should be mounted in the center of the machine so both discharge hoses are the same length, and where it will receive a minimal amount of dust or dirt. The mounting location must be able to support the weight of the foam marker unit with a full solution tank. Secure the foam marker unit by attaching the foam marker frame

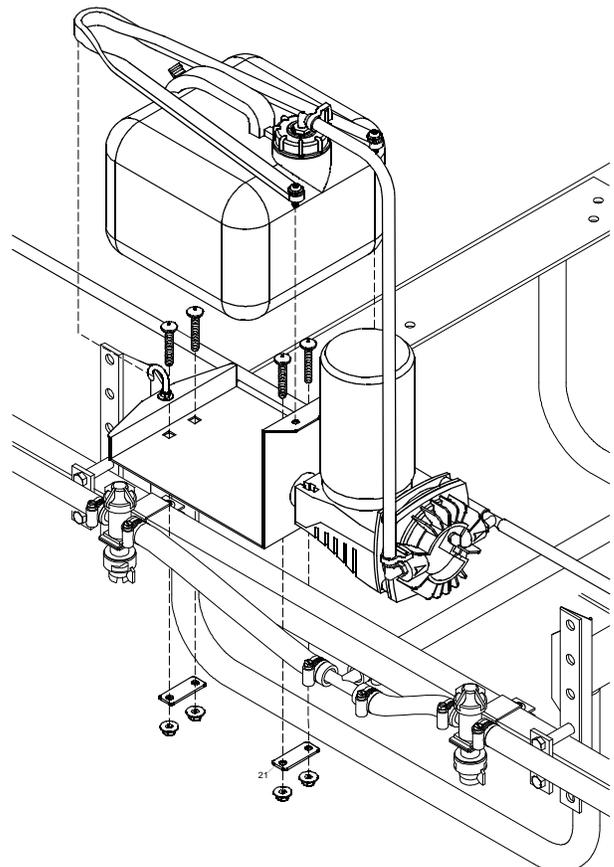


Figure 2: Foam Marker Unit Mounting

to your equipment with the included 3/8" carriage bolts. There are four pre-drilled holes, which are located on the bottom of the foam marker frame.

Wiring Harness

1. The wiring harness (red & black) coming from the compressor unit has a 2-pronged plug. This wiring harness needs to be plugged into the second wiring harness which includes the control switch. Make sure the colors match.

2. The switch wiring harness (red & black) needs to be connected to the battery wire harness which includes the fuse. Make sure the colors match.
3. The battery wire harness (red & black) needs to be connected to a 12 volt DC power source. Connect the red wire to a positive power source either at the tractor's battery terminal or at a power access point with at least 15 amp capability. The black wire needs to be connected to a good ground source or to the negative terminal of the battery.
4. Ensure that the power source is adequate, since an inadequate power source could cause numerous problems with the foam marker unit. If you are using a power access point, ensure that it has at least 15 amp capability.
5. You now need to place the switch in a location where it is easily accessible for operation. Secure it so that it cannot fall and cause damage.

Discharge Tubes

1. The discharge tubes dispense the foam and should be mounted in the desired foaming position. Generally, they are mounted at the end of a sprayer boom.
2. **If you are mounting the tubes on a sprayer**, a nozzle body clamp can be used. Simply mount the clamp on the sprayer's boom and insert the threaded barb elbow through the hole where the nozzle body would normally go. (See Figure 2) See the Accessories section on page 12 for ordering boom clamps.
3. Ensure that the discharge tube does not interfere with the operation of the equipment it is mounted on. For example, make sure that the discharge tubes do not interfere with the spray pattern if you are mounting the foam marker on a sprayer.

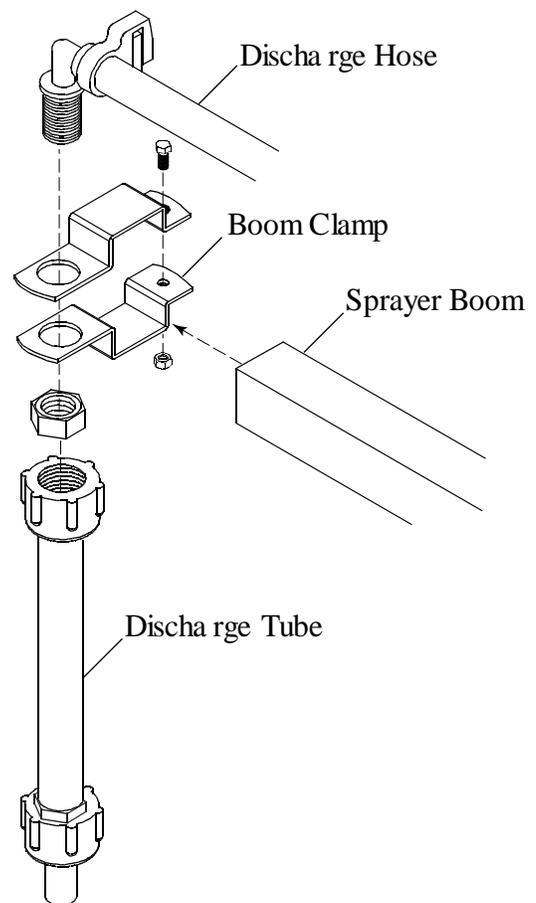


Figure 2: Discharge Tube Mounting

Discharge Hose

1. One 33 foot length of 3/8" discharge hose is included and may be cut as needed. Begin by attaching the discharge hose to the hose barbs on the compressor on the foam marker unit. It is important that both hoses are the same length. This will insure uniform foaming from both discharge tubes. Clamp the hose onto the hose barbs with the included hose clamps.

2. Route the discharge hoses to the discharge tubes. If you are attaching the discharge tube to a sprayer boom, pay close attention to the positioning of the discharge hose. The hose should be positioned in a manner such that it won't be kinked or pinched when the boom is in the folded or unfolded position. Remember to also account for boom height adjustment or other movements that the hose will be subject to.
3. With the discharge hoses in the correct position, fasten them with the included cable ties.

Operating Instructions

Before operating the foam marker, it is important that you read this entire manual and know all safety precautions. Before operation, it is also recommended that you do a thorough inspection of the foam marker. Prior to use, ensure that all hoses are attached and undamaged and that the wiring harnesses are properly plugged together and connected to an adequate power source.

1. Fill the foam solution tank with the proper mixture of water and an approved foam concentrate, according to the foam concentrate's manufacturer. **For optimal performance use CropCare™ Premium Foam Concentrate. See the Accessories section on page 12 for more information on this premium Foam Concentrate.**
2. Do not use dish soap, hand soap, or any other unapproved cleaning solution. Please note: The 2.5 gallon capacity tank has an average foaming time of 90 minutes.
3. Flip the control switch to turn on the foam marking unit.

Note: If you are operating the foam marker in temperatures below 32 degrees, it is recommended that you add 20% RV non-toxic antifreeze to the foaming solution. This will guard against freezing and breakdowns.

4. Allow approximately 30 seconds for the foam to reach the discharge tube. Do not attempt to adjust the foam discharge rate. This rate is preset and should never need to be adjusted.
5. To turn off the foam marker, simply flip the control switch.

Maintenance Instructions

It is very important to perform maintenance on your foam marker before and after each use and at the end of each season of use. Proper maintenance practices will help to guard against any breakdowns and allow for maximum performance.

Routine Maintenance

It is highly recommended that you perform routine maintenance on your foam marker before and after each use. Regular maintenance practices should include a thorough inspection. Ensure that all hoses are attached and undamaged and that the wiring harnesses are properly plugged together and connected to an adequate power source. The following are important components of the foam marker and their respective maintenance requirements.

- 1. Liquid Strainer (ref# 12):** The liquid strainer is located in the foam solution tank on the end of the suction hose. It should be rinsed after each use or on a daily basis.
- 2. Orifice Disk (ref# 13):** The orifice disk is located behind the strainer on the end of the suction hose. Inspect the orifice disk occasionally to ensure that there are no debris or dirt plugging the disk's circular hole. **WARNING: DO NOT operate the foam marker without this orifice disk. Such incomplete operation will result in damage to the compressor and will void the warranty.**
- 3. Compressor Motor Bearings:** The motor bearings are permanently lubricated ball bearings and do not require additional oil.

Winterizing your Foam Marker

It is essential that you winterize your foam marker to avoid damage and to allow for optimal performance. The winterization process should be undertaken before freezing conditions and/or after each season of use. Failure to winterize your foam marker will void the manufacturer's warranty.

1. Verify that the solution tank is empty and rinsed out. Add 1/4 gallon of RV Nontoxic Antifreeze to the empty solution tank. **It is not recommended to use standard Antifreeze. Standard Antifreeze can be harmful to humans, animals, crops, and the environment.**
2. Engage the foam marker until both the left and right side of the system are flushed.
3. Store the foam marker or the equipment that it is mounted on in a dry location away from the elements.

Trouble Shooting

During your many years of using the foam marker, it is possible that you will encounter minor problems that can be easily fixed. The following problems and respective causes and solutions should cover most of the potential problems that you may face. If you encounter problems, please attempt to use this troubleshooting section to solve the problem. If you are unable to fix the problem, please contact our trained sprayer technicians for technical advice or to have one of our technicians repair your foam marker. See the Contact Us section on page 13 for ordering parts and contact information.

Common Troubleshooting

<i>Problems/Symptoms</i>	<i>Possible Causes</i>	<i>Solutions</i>
Motor Won't Run	Loose wire connections	Inspect wires and connections.
	Blown fuse	Replace fuse on wiring harness (ref# 10).
	Malfunctioning switch	Replace Harness (ref# 8)
No Foam Output	Broken or bent leaf valve inside the compressor	Replace leaf valve. See compressor breakdown on page 11.
	Discharge hose is pinched or kinked	Locate problem area and fix or replace the hose.
	Plugged orifice disk or strainer on the end of the suction hose	Clean or replace the orifice disk or stainer (ref# 12, 13).
Foam On Only One Side or More Foam on One Side	Pinched hose	Fix or replace hose
	Unequal hose length	Make both hoses the same length
	One discharge tube is missing the mixing filter	Replace the discharge tube (ref# 6)
Low Foam Rate	Partially plugged orifice disk or strainer on the end of suction hose	Rinse the orifice disk and strainer or replace them (ref# 12, 13).
	Incorrect mixture of foam concentrate.	Use an approved foam concentrate and follow manufacturer's mixing instructions.
	Water being used is hard	Use softened or rain water.

PaulB LLC Limited Warranty

Foam Marker: Model F2500

Warranty Coverage

PaulB LLC hereby provides a **Limited One (1) Year Warranty** on the foam marker system, model F2500, manufactured by PaulB LLC from the date of original purchase. Foam markers built by PaulB LLC are warranted against any manufacturer's defects that may occur to any of the foam marker's components in the 12 months following the original date of purchase. This warranty covers the purchaser of this foam marker and any other owners who own it during the one year warranty period. To retain the warranty, the foam marker must be operated and maintained as ascribed by its owner's manual. For warranty service, please have a copy of the purchase invoice available.

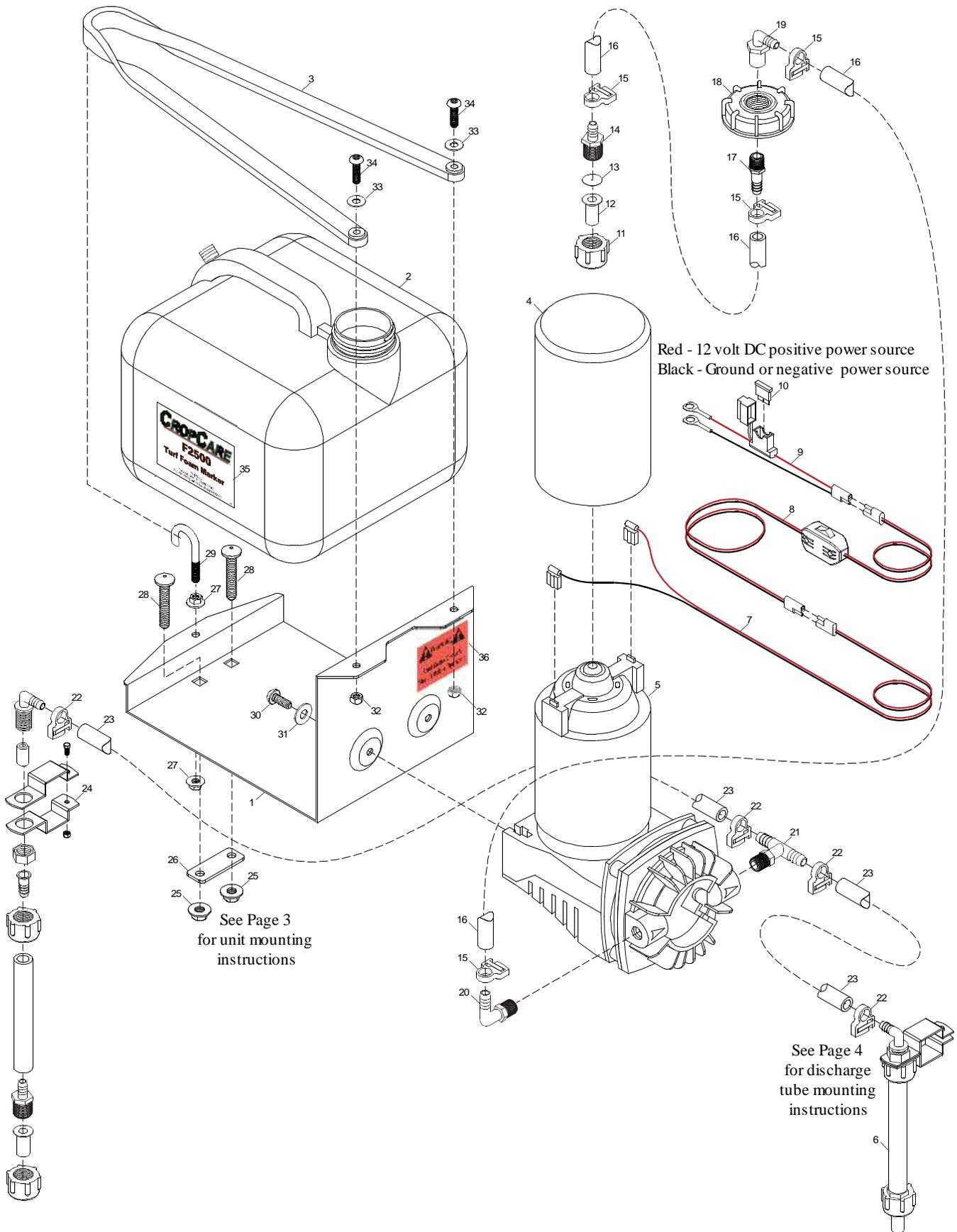
Warranty is void if:

1. The foam marker has been subjected to, in the opinion of PaulB LLC, negligent handling, misuse, an accident or if instructions in the owner's manual were not followed.
2. The foam marker's components have been altered in any manner or repairs have taken place with unapproved parts. Alterations include adjusting the foam rate by any means.
3. The foam marker and its components were subject to freezing or were allowed to get wet repeatedly.
4. A non-approved foam concentrate was used such as dish soap, hand soap, or any other unapproved cleaning solution.
5. The foam marker was powered by a power source other than a 12 volt, 15 amp DC power source.

Getting Service

All foam marker warranty claims must be made through PaulB LLC or an authorized dealer. All warranty claims must be submitted with an invoice or a proof of purchase that denotes the purchase date and place of purchase. If you have any questions or comments concerning this warranty, please contact PaulB LLC or an authorized dealer.

Foam Marker Breakdown



Foam Marker Parts List

<i>Ref #</i>	<i>Qty.</i>	<i>Part Number</i>	<i>Description</i>
1	1	F2501	Foam marker frame 2.5 gal.
2	1	F2503	2.5 gallon white foam marker tank (Includes #18)
3	1	TS31	31" tarp strap
4	1	F2502	Motor cap 3" ID x 2 1/2" long
5	1	CM40**	Air compressor, 12 volt
6	2	F2504	2.5 gallon foamer discharge tube
7	1	SPT-WHE-96-16G	8' wire extension harness
8	1	SPT-SWH-9615A-16G	8' wire harness w/ switch
9	1	SPT-BCG-1215A-16G	Battery connector w/ fuse (Includes #10)
10	1	ATC-15*	Buss fuse, 15 amp
11	1	38027	Poly nozzle cap
12	1	8079PP100	Tip strainer, poly 100 mesh SS green
13	1	CP491640	Orifice plate, stainless steel
14	1	A3814BR	3/8" MP x 1/4" brass adapter
15	4	HC041	Snap grip clamp, .41"-.36" size BB
16	20"	1954	Vinyl tubing 1/4" x 3/8"
17	1	F2506	1/4" x 1/4" adapter w/ breather hole
18	1	F1505*	Foamer tank lid, 63mm
19	1	3EL14F	1/4" FP x 1/4" barb poly elbow hose adapter
20	1	3EL1414	1/4" MP x 1/4" barb poly elbow hose adapter
21	1	3T1438T	1/4" MPT x 3/8" barb tee
22	4	HC054	Snap grip clamp, .54"-.47" size D
23	33'	1958	Vinyl tubing 3/8" x 1/2"
24	2	BC114	1 1/4" square nozzle boom clamp
25	4	FN38	3/8" flange nut
26	2	F2505	Frame bolt clip
27	2	FN14	1/4" flange nut
28	4	CB38*2	3/8" x 2" carriage bolt
29	1	N232884	J-bolt 1/4" x 1 5/16"
30	2	H6*16M	6mm x 16mm metric bolt
31	2	FW14	1/4" flat washer
32	2	NNC1024	10-24 nylon lock nut
33	2	FW10	#10 flat washer
34	2	MR1024*1	10-24 x 1" machine bolt

* Part is included in a complete assembly.

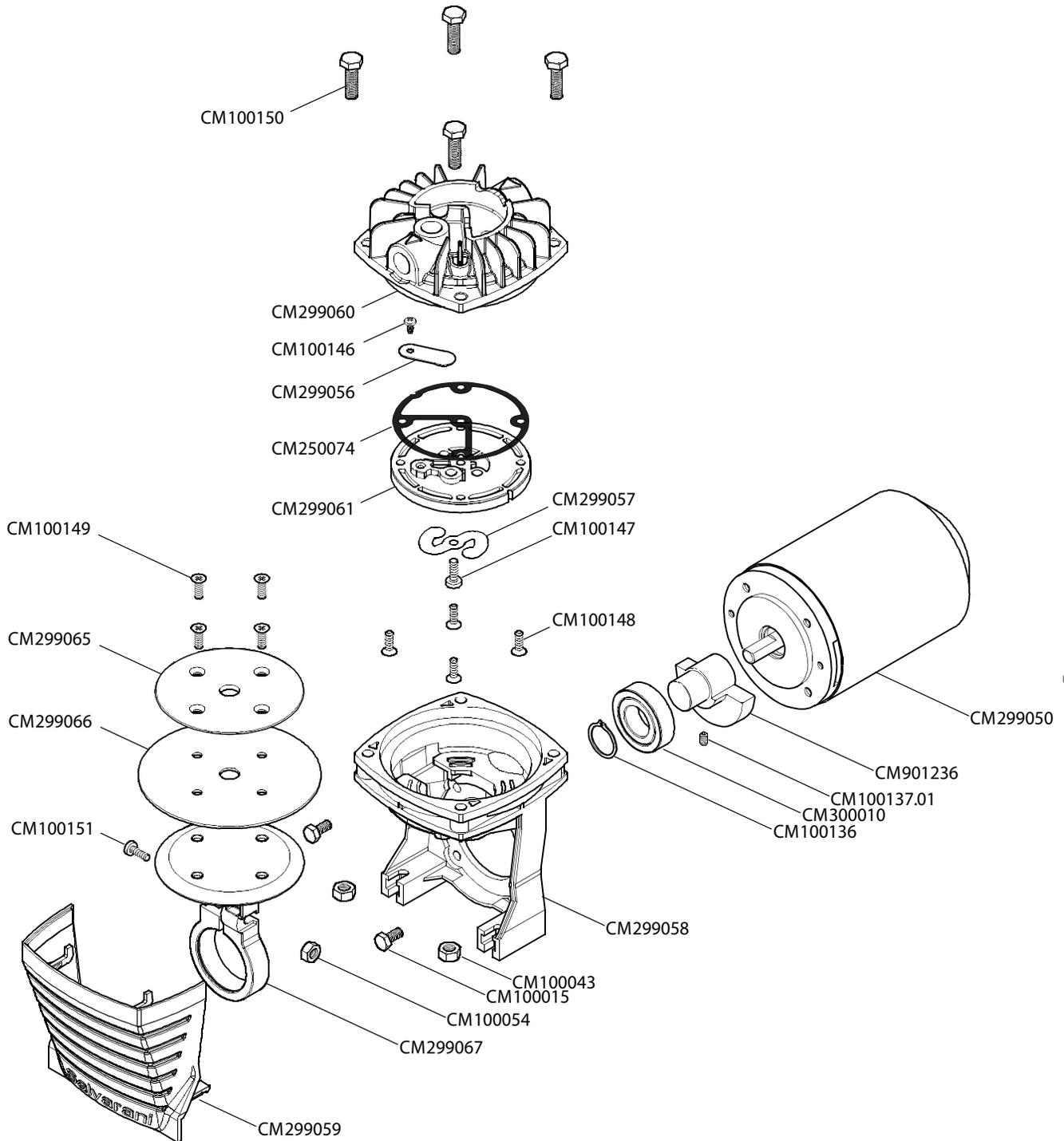
** Compressor breakdown is listed on page 11.

Foam Marker Decals

35	1	DE49	F2500 foam marker decal, 3" x 5"
36	1	DE39	Read owner's manual warning decal

Compressor Breakdown

Part # CM40



Accessories

There are many beneficial accessories that can complement your foam marker system and help you to optimize your operation. If you need parts or accessories that aren't listed in this owner's manual, please contact us and we will attempt to fill all of your needs. See the Contact Us section on page 13 for information on ordering and shipping.

CropCare™ Premium Foam Concentrate (1 Gallon)

Part Number: F1515



For optimal performance with your foam marker use CropCare™ Premium Foam Concentrate. This foam concentrate is long lasting and works well in all weather conditions.

CropCare™ Premium Foam Concentrate (8 oz.)

Part Number: F1516



A sample size container of our CropCare Premium Foam Concentrate. This foam concentrate is long lasting and works well in all weather conditions.

3/8" x 1/2" Vinyl Tubing

Part Number: 1958



Keep additional vinyl tubing on hand for those untimely leaks in your tubing. This clear discharge hose is long lasting and can be cut to length.

Red Foam Dye (1 Pint)

Part Number: F1514



Increase the visibility of your foam with highly concentrated red foam dye. This foam dye works well in many weather and field conditions.

Round Boom Clamps

Part Number: AA111-size



Are you mounting your foam drop tubes on a round sprayer boom or tubing? Try our durable boom clamps which are available in various sizes.

Square Boom Clamps

Part Number: AA111SQ-size



Our boom clamps make mounting your foam drop tubes an easy activity. These square boom clamps are durable and are available in various sizes.

Contact Us

We desire to give you continuing service in the best manner possible. This includes listening to your comments, suggestions, and problems. We will do our best to answer all questions thoroughly and in a timely manner. We have trained sprayer technicians who are more than willing to listen to any questions or problems and help you to find a feasible solution.

Ordering Parts

We have a fully-stocked parts department that will be able to meet all of your parts needs. Our trained salespersons will ensure that all purchases are processed smoothly and shipped in a timely manner. Our hardware store also has a plumbing, electrical, automotive, paint, lawn & garden, and a power tool department. We are set up to ship our products via UPS and would be glad to work with you on the best shipping solution. If you desperately need a part, we are able ship UPS Next Day Air for many locations.

Note: When ordering parts, please provide our sales staff with the correct part number and description listed on the parts list. **To directly reach our parts department, please call (717) 738-7355 ext 2000.**

CROPCARE

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