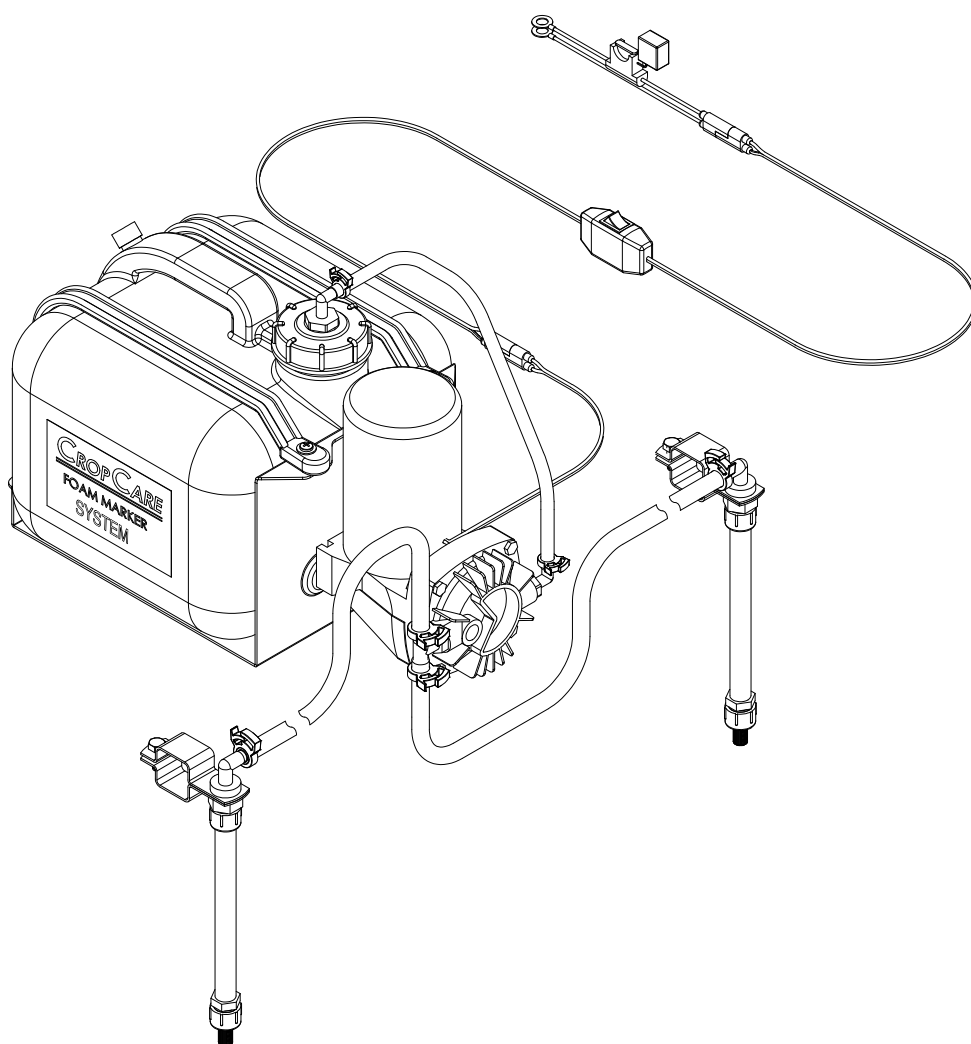




Owner's Manual

2.5 Gallon Turf Foam Marker Model: F2500



Manufactured by PBZ LLC
A Paul B Zimmerman Inc. Company
www.CropCareEquipment.com

Form: F2500OM
Rev. B Date: 3/22

CropCare® would like to thank you for choosing to purchase our model F2500 turf 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 turf foam marker without disruption. For parts and service, please contact an authorized CropCare® dealer.

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Identification of Machine

- Model #'s: F2500
- The model number and revision identification decal is located on foam marker frame beside compressor.

Specifications

2.5 gallon Turf Foam Marker

Tank Capacity.....	2.5 gallons	Wiring Harness	16' length
Power usage.....	7 amp draw / 15 amp start load	Shipping weight	17 lbs
Min power supply	12 volt / 15 amp		
Max continuous run time	90 min		
Max boom length.....	30'		

Before You Begin



Please read and understand this manual and its instructions and warnings completely before operating the turf 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 turf 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



General Guidelines

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 listed in this section.

- The operator should be a responsible adult. Do not allow persons to operate the turf foam marker until they have displayed a thorough understanding of turf foam marker safety precautions and operational use.
- Never attempt to operate the turf foam marker while under the influence of alcohol or drugs.
- Always use an approved foam solution. Do not, for any reason, use dish soap, hand soap, or any other cleaning product. The use of an unapproved foaming solution could result in lowered performance or machine damage.
- Do Not eliminate the fuse on the battery wiring harness under any circumstances. Elimination of the fuse could result in damage to the machine or personal injury.
- Always disconnect the power before performing maintenance or repairs on the turf foam marker. Failure to adhere to this warning could result in personal injury.
- When performing maintenance on the turf 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.



Figure 1: Owner's Manual Decal (DE39)

- Be aware of the location of the owner's manual warning decal on the turf foam marker's frame. Always replace any warning decals that are not 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 an authorized CropCare® dealer.

Mounting the Turf Foam Marker

It is important to follow these mounting instructions to ensure that your CropCare® turf foam marker system operates at its fullest potential. Please note that these 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 turf foam marker, contact an authorized CropCare® dealer for service.

Mounting the Turf Foam Marker

Turf Foam Marker Unit

1. If mounting the turf foam marker on a CropCare[®] sprayer, place it on the center of the boom frame (Figure 2). Attach the turf foam marker by using the included 3/8" carriage bolts to clamp the turf foam marker frame around the main boom tube. The unit may be mounted in either direction on the boom.
2. If mounting the turf foam marker on any other application, begin by choosing a convenient location that is easily accessible for mounting and filling the solution tank. The turf 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.
3. The mounting location must be able to support the weight of the turf foam marker unit with a full solution tank.
4. Secure the turf foam marker unit by attaching the turf foam marker frame to your equipment. Use the included 3/8" carriage bolts and flange nuts. Insert the carriage bolts through the four square holes, which are located on the bottom of the turf foam marker frame, and secure them with the flange nuts.

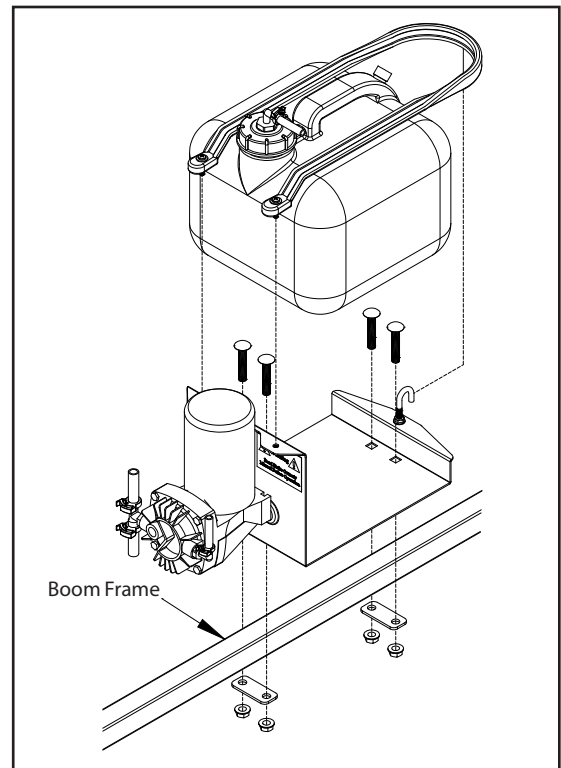


Figure 2: Turf Foam Marker Unit Mounting

Wiring Harness

1. The compressor wiring harness (a) has a 2-pronged plug. This wiring harness needs to be connected to the switch wiring harness (b) which includes the control switch. Make sure the colors match (Figure 3).
2. The switch wiring harness (b) needs to be connected to the battery wire harness (c) which includes the 15 amp fuse (d). Make sure the colors match (Figure 3).
3. The battery wire harness 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 turf 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 or become entangled and cause damage.

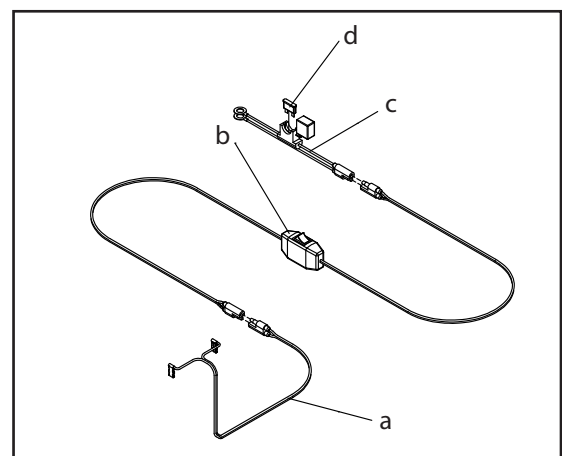


Figure 3: Wiring Harness

Mounting the Turf Foam Marker

Discharge Tubes

1. The discharge tubes (a) dispense the foam and should be mounted in the desired foaming position. Generally, they are mounted at the end of a sprayer boom (b) (Figure 4).
2. If you are mounting the tubes on a sprayer, a nozzle body clamp (c) can be used. Simply mount the clamp on the sprayer's boom and insert the threaded barb elbow (d) through the hole where the nozzle body would normally go.
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.

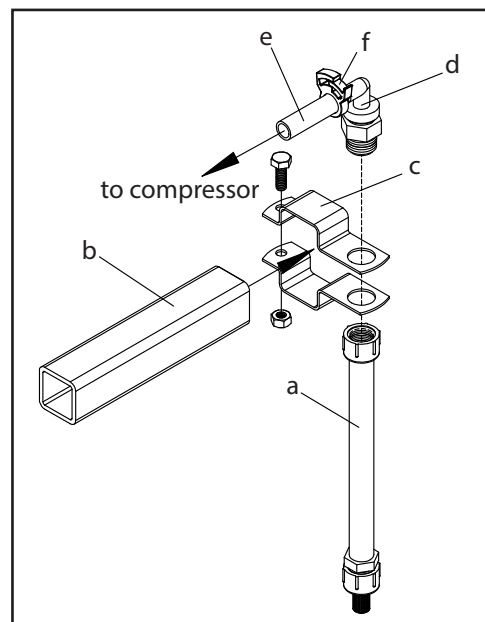


Figure 4: Discharge Tube Mounting

Discharge Hose

1. One 33' length of 3/8" discharge hose is included with the turf foam marker and may be cut as needed.
2. Begin by attaching the discharge (e) hose to the hose barbs on the compressor on the foam marker unit.
3. It is important that both hoses are the same length. This will ensure uniform foaming from both discharge tubes. Clamp the hose onto the hose barbs with the included hose clamps (f).
4. Route the discharge hoses (e) to the discharge tubes and attach the hose to the threaded barb elbow (d) (Figure 4).
5. 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.
6. With the discharge hoses in the correct position, fasten them with the included cable ties.

Operating Instructions

Before operating the turf foam marker, it is important that you read this entire manual and know all safety precautions. It is also recommended that you do a thorough inspection of the turf foam marker before operation. 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.
2. Do Not use dish soap, hand soap, or any other unapproved solution in the turf foam marker.
3. Flip the control switch to turn on the turf foam marker unit.
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. Please note: the 2.5 gallon capacity tank has an average foaming time of 90 minutes.
6. To turn off the turf foam marker, simply flip the control switch.

IMPORTANT: If you are operating the turf 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.

WARNING: Do NOT use engine antifreeze. Engine antifreeze can be harmful to humans, animals, crops, and the environment.

Maintenance Instructions

It is very important to perform maintenance on your turf 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 turf foam marker before and after each use. Regular maintenance practices should include:

- A thorough inspection for any damage or wear.
- Ensure that all hoses are attached and undamaged.
- Ensure that the wiring harnesses are properly connected to each other and to an adequate power source.

The following are important components of the turf foam marker and their respective maintenance requirements.

1. Liquid Strainer (a): 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 (Figure 5).
2. Orifice Disk (b): 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 (Figure 5).
3. Drop Tube Pads (c): Located inside the upper portion of the drop tube assembly. It should be rinsed after each use or on a daily basis (Figure 6).
4. Drop Tube Liquid Strainer (d): Located at the bottom of the drop tube assembly. It should be rinsed after each use or on a daily basis (Figure 6).
5. Compressor Motor Bearings: The motor bearings are permanently lubricated ball bearings and do not require additional oil.

WARNING: Do not operate the turf foam marker without the orifice disk. Operating the turf foam marker without the proper orifice disk will result in damage to the compressor and will void the warranty.

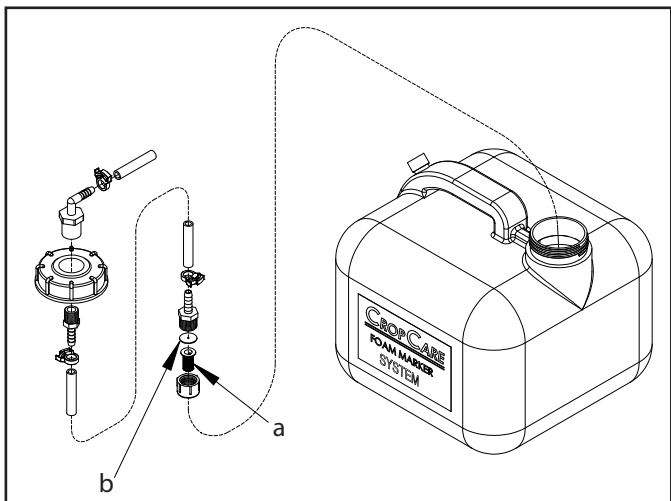


Figure 5: Foamer Tank Assembly

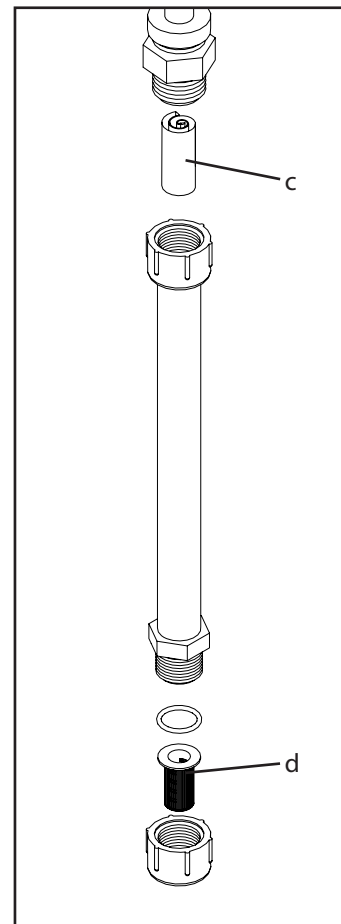


Figure 6: Drop Tube Assembly

Maintenance Instructions

Winterizing

It is essential that you winterize your turf 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 turf foam marker will void the manufacturer's warranty.

1. Verify that the foam solution tank is completely empty and rinsed out.
2. Add 1/4 gallon of RV Nontoxic Antifreeze to the empty solution tank. **WARNING:** It is not recommended to use engine antifreeze. Engine antifreeze can be harmful to humans, animals, crops, and the environment.

WARNING: Do NOT use engine antifreeze. Engine antifreeze can be harmful to humans, animals, crops, and the environment.

3. Operate the turf foam marker until both the left and right side of the system are flushed.
4. Store the turf foam marker or the equipment that it is mounted on in a dry location away from the elements.

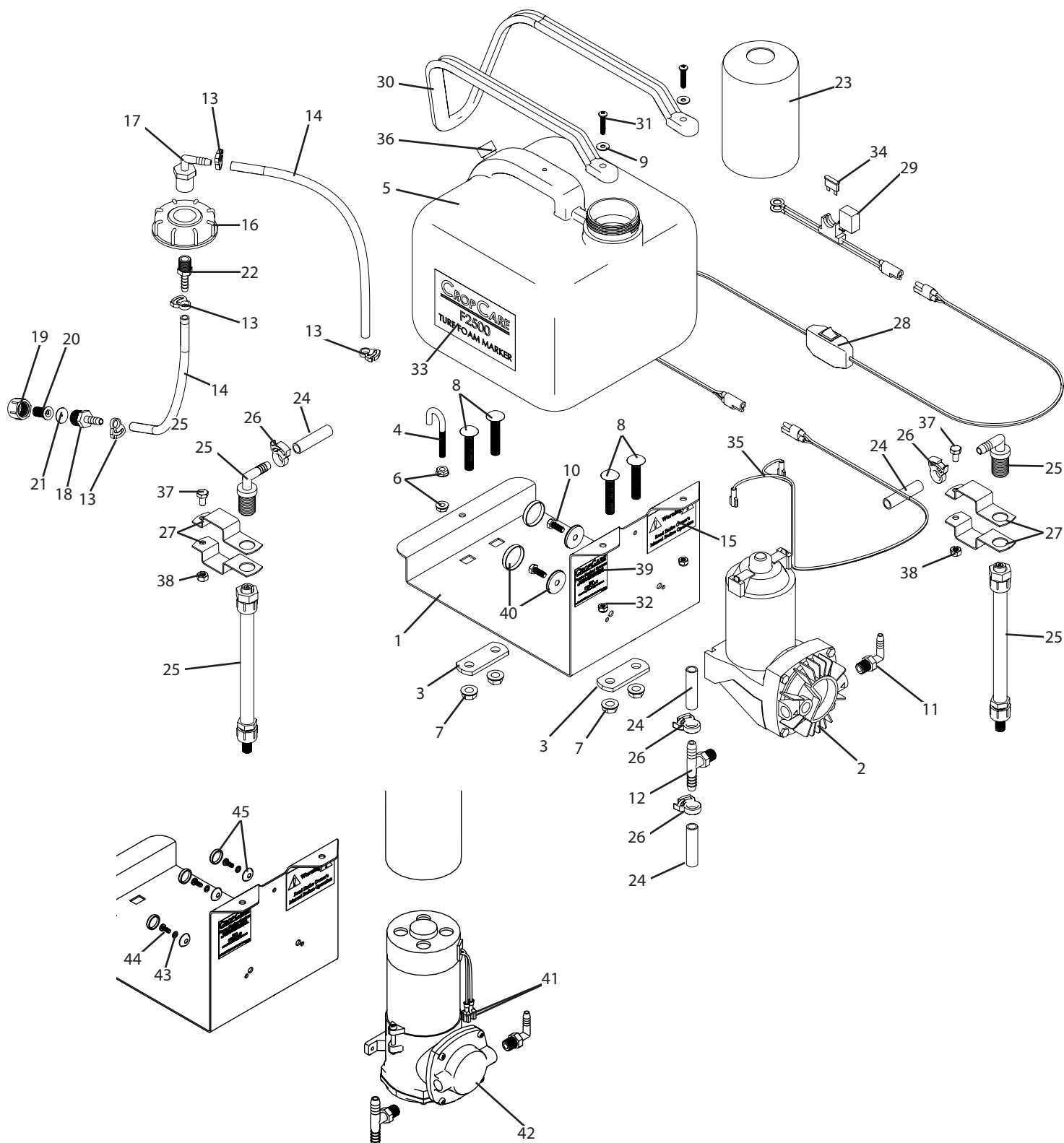
Troubleshooting

During your many years of using the turf foam marker, it is possible that you may 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 do encounter problems, please attempt to use this troubleshooting section to solve the problem. If you are unable to fix the problem contact an authorized CropCare® dealer for technical advice.

Problems/Symptoms	Possible Causes	Solutions
Motor Will Not Run	Loose wire connections	Inspect wires and connections
	Blown fuse	Replace fuse on wiring harness (ref# 35)
	Malfunctioning switch	Replace harness (ref# 29)
	Low voltage	Connect directly to 12 volt 15amp power supply
No Foam Output	Broken or bent leaf valve inside the compressor	Replace leaf valve. See compressor breakdown
	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 strainer (Figure 5)
Uneven Foaming	Pinched hose	Fix or replace hose
	Unequal output foam hose length	Make both output foam hoses the same length
	One discharge tube is missing the mixing filter	Replace the discharge tube (ref# 26)
Low Foam Rate	Partially plugged orifice disk or strainer on the end of suction hose	Rinse the orifice disk and strainer (Figure 5) or replace them if needed
	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
	Low voltage (11 volts or less) to compressor	Connect to 12 volt, 15 amp power supply
	Broken or bent leaf valve inside the compressor	Replace leaf valve. See compressor breakdown

Breakdowns & Parts Lists

F2500 Breakdown



Breakdowns & Parts Lists

F2500 Parts List

Ref #	Qty.	Part Number	Description
1	1	F2501	Turf foam marker frame, 2.5 gallon
2	1	CM40	Air compressor, 12 volt
3	2	BF1210	Boom mounting clip
4	1	N232884	J-bolt, 1/4" x 2 5/16"
5	1	F2503A	2.5 gallon white foam marker tank (Includes lid (item 16).)
6	2	FN14	Flange nut, 1/4"
7	4	FN38	Flange nut, 3/8"
8	4	CB38*214G5	Bolt, Carriage 3/8-16 x 2-1/4" Gr 5
9	2	FW10	Flat washer, #10
10	2	H6*16M	Metric bolt, 6 x 16mm 1.0 pitch
11	1	3EL1414	1/4" MP x 1/4" barb poly elbow hose adapter
12	1	3T1438T	1/4" MPT x 3/8" barb tee
13	4	HC041	Snap grip clamp, .41" - .36" size BB
14	21"	1954	Vinyl tube, 1/4" x 3/8", 55 psi
15	1	DE39	Read owner's manual warning decal
16	1	F1505	Foamer tank lid
17	1	3EL14F	1/4" FP x 1/4" barb poly elbow hose adapter
18	1	A3814BR	Brass adapter, 3/8" MPT x 1/4" barb
19	1	38027	Poly nozzle cap
20	1	8079PP100	Tip strainer poly 100 mesh SS green
21	1	CP491640	Orifice plate, stainless steel
22	1	F2506	Adapter w/ breather hole, 1/4" x 1/4"
23	1	F2502	Motor cap, 3" ID x 2 1/2" long
24	33'	1958	Vinyl tubing, 3/8" x 1/2"
25	2	F2504	Foam discharge tube
26	4	HC054	Snap grip clamp, .67" - .59", size F
27	2	BC114	1 1/4" square nozzle boom clamp
28	1	SPT-SWH-9615A16G	8' wire harness with switch
29	1	SPT-BCG-1215A-16G	Battery connector with fuse (Includes item # 34)
30	1	TS31	31" tarp strap
31	2	MR1024*1	Machine bolt, 10-24 x 1"
32	2	NNC1024	Nylon lock nut, 10-24
33	1	DE51	Decal, CropCare Foam Marker
34	1	ATC-15	ATC fuse, 15amp
35	1	F2507	8' wire extension harness
36	1	6010-000-070	Breather cap part # before drilled out
37	2	H5C14*34	Hex bolt
38	2	NC14	Hex nut
39	1	DE54B	Decal, F2500 Specs
40	2	91620A970	Cap, Snap Screw Head 1/4" Screw
41	2	DC834005	Terminal, 16-14 Gauge Male (Fully Insulated)
42	1	GZ35-12	Compressor, Diaphragm, 12V, 1/4 FPT ports
43	3	LW4M	Lock Washer, 4mm
44	3	MR4X10M	Machine Screw, Phillips, Pan Head, 4M x 10M 7P Zinc
45	3	SC10S	Cap, Snap Screw Head #10 Screw

* Individual Part is included in a complete assembly

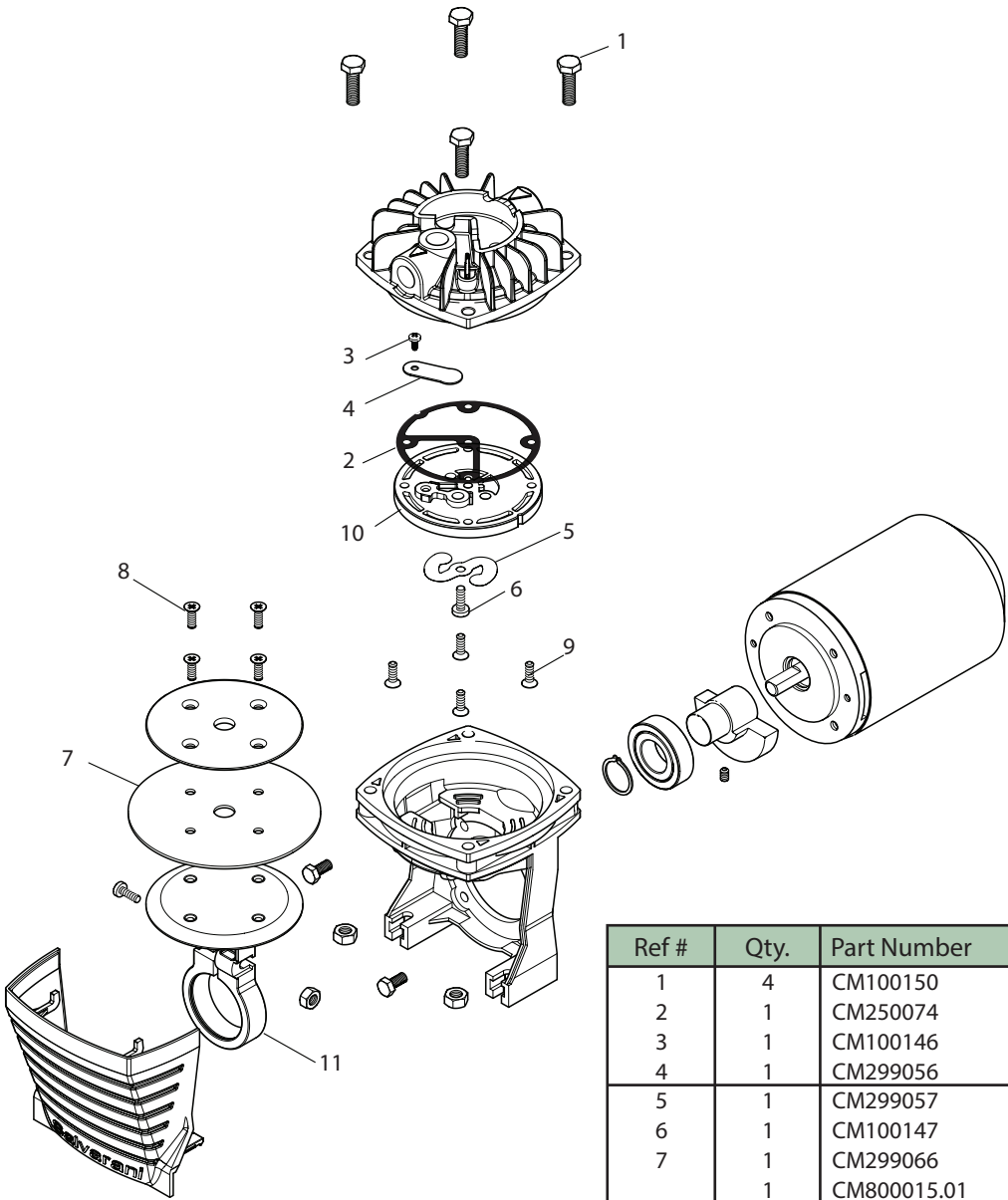
** Compressor Breakdown is listed on page 11.

+ Compressor Breakdown is listed on page 12.

++ Use Part# F2508 with GZ35-12 compressor.

Breakdowns & Parts Lists

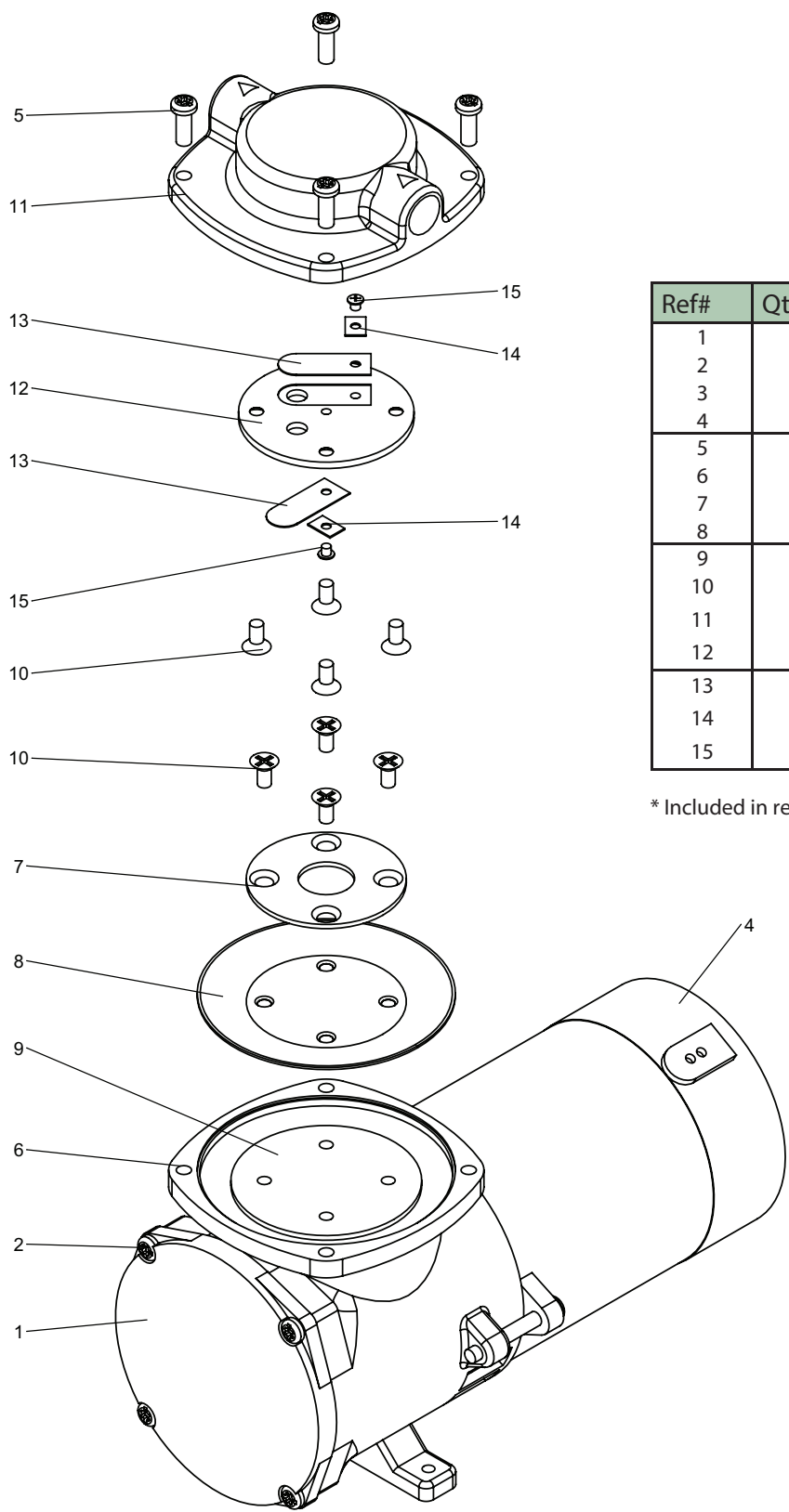
CM40 Compressor Breakdown



Ref #	Qty.	Part Number	Description
1	4	CM100150	Screw
2	1	CM250074	Head gasket
3	1	CM100146	* Screw
4	1	CM299056	* Leaf valve
5	1	CM299057	* Leaf valve
6	1	CM100147	* Screw
7	1	CM299066	* Rubber diaphragm
	1	CM800015.01	Diaphragm kit (Includes ref #'s 3-7)
8	4	CM100149	Screw
9	4	CM100148	Screw
10	1	CM299061	Valve plate
11	1	CM299067	Connecting rod

* Included in a complete kit

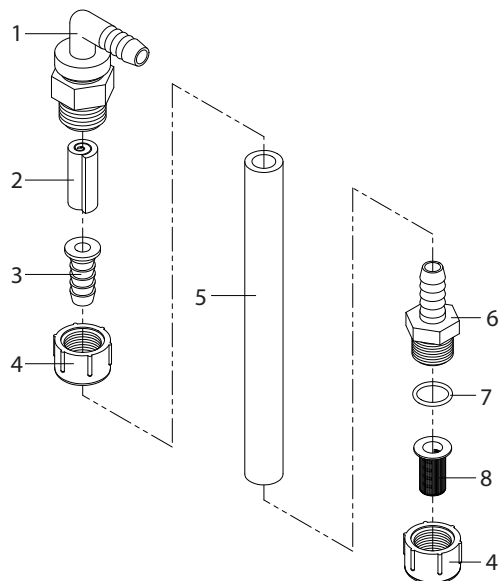
GZ35-12 Compressor Breakdown



Ref#	Qty.	Part Number
1	1	Housing End Cap
2	4	Housing End Screws
3	2	Motor Housing Screws
4	1	Motor
5	4	Head Screws
6	1	Housing
7	1	Diaphragm Plate
8	1	Diaphragm *
9	1	Piston
10	8	Head Screws
11	1	Head
12	1	Valve Plate
13	2	Leaf Valve *
14	2	Leaf Valve Washer
15	2	Leaf Screws

* Included in repair kit (GZ35-15-RK)

F2504 Discharge Tube Breakdown



Ref #	Qty.	Part Number	Description
1	1	3NTL38	3/8" barb poly nozzle ell body
2	1	45600	#2 before getting cut to size
3	1	3K8438	3/8" poly nozzle barb
4	2	38027	Poly nozzle cap
5	1	8006	Hose 3/8" x 6"
6	1	3A3838	3/8" MP x 3/8" barb poly hose adapter
7	1	OR14	O Ring 1/2" x 5/8" R64
8	1	8079PP24	Tip Strainer, Poly, White, 24 Mesh SS

CropCare® Limited Warranty

Foam Markers: F2500

Warranty Coverage

CropCare® hereby provides a Limited One (1) Year Warranty on Turf Foam Markers, manufactured by CropCare®. Turf Foam Markers manufactured by CropCare® are warranted against any manufacturer's defects in any of the turf foam marker's components in the 12 months following the original date of purchase.

Defective components will be repaired or replaced at the discretion of the manufacturer. It is the responsibility of the purchaser to return warranted components to the manufacturer. This warranty is limited to the repair or replacement of turf foam marker components only. CropCare® is not to be held liable for incidental or consequential damages of any kind. This warranty covers the purchaser of this turf foam marker and any other owners who own it during the one year warranty period.

To retain the warranty, the turf 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 turf foam marker has been subjected to, in the opinion of CropCare®, negligent handling, misuse, an accident, or if instructions in the owner's manual were not followed.
2. The turf 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 turf 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 turf foam marker was powered by a power source other than a 12 volt, 15 amp DC power source.

Getting Service

All turf foam marker warranty claims must be made through an authorized CropCare® 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 an authorized CropCare® dealer.

Ordering Parts

Please contact your authorized CropCare® dealer to order replacement parts for your product.

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