**INSTALLATION & OPERATION MANUAL**

**MODELS FM-150 & FM-150X**

**USE OF FOAM MARKER**
The foam marker is used to mark the working area with balls of foam. It eliminates the risk of overlapping and space gaps during the spraying process. The FM-150 / FM-150X is designed to be very easy to install, operate and maintain. The foam marker operates independently from the PTO or other sprayer components.

**COMPONENTS**
The foam marker has the following major components:
1. 1.15 gal. tank
2. 12 Vdc diaphragm air compressor
3. Right and left (on-off-on) switch box
4. Foam nozzle assembly
5. Power supply & compressor cable
6. Air-liquid tubing

**OPTIONAL KITS**
The Foam marker has two optional kits (not included in package):
- Extension drop
  - 15 ft. extension compressor cable

**Note:** Please call your distributor to order the optional kits.

**www.cds-johnblue.com 1-800-253-2583**

**INSTALLATION PROCEDURES**

- **IMPORTANT:** Read all instructions before installing and operating the foam marker.

**DIMENSION & WEIGHT**
The weight of the FM-150 & FM-150X is 50 lbs. empty. Below you will find the overall dimensions.

**INSTALLATION OF SWITCH BOX AND POWER SUPPLY**

- Determine the best location for the selector switch box in the tractor cab.
- Determine the best routing for the power cable. Make sure it is away from operator’s movement area, away from moving parts and away from sharp objects.
- Using 3 bolts 1/4” (not included) and the provided slots, mount the switch box at the desired location.
- Mount the power supply disconnect within 6 feet, from selector switch box. First crimp one supplied pin contact to one red and one black 10 gauge wire (not included) and connect them to the proper socket. Next mount the power supply disconnect, by using the template supplied in the bag with the power supply socket, to drill a 1” hole in the center and two 1/4” bolt holes in the sides. Feed the two wires through the 1” drilled hole. Use 10-24 screws to bolt the disconnect. Finally, connect the other end of the red wire to the “+” side and the other end of the black wire to the “-” side of the 12 Volt battery.

**GENERAL INSTALLATION INSTRUCTIONS**
The Foam Marker can be easily installed horizontally on the sprayer. However as a general rule it is important to choose a location for the compressor that shields it from exposure to chemicals during spraying operations.

The two foam drop nozzles must be fixed at the ends of the boom so that foam can fall at the edge of the end spray nozzle signaling the sprayed area.

Hoses for the air-liquid circuit must be clamped to the boom structure out of way of moving parts. Also, ensure hoses will not kink if and when booms are folded.
INSTALLATION OF COMPRESSOR AND TANK
Mount the foam marker on a sturdy part of the sprayer structure. 4 bolts hole (3/8”) are drilled on the tank brackets for fixture. Brackets are factory mounted on the tank. Please note bolts are not included.

AIR-LIQUID CONNECTION OF CAP
Air-liquid connection to the cap of the tank is factory mounted. However if they are not, connect the clear tube (air outlet) from the compressor to the white wing nut. Connect the blue tube (liquid outlet) from the compressor to the blue wing nut of the cap.

INSTALLATION OF FOAM NOZZLE ASSEMBLY
Drill 3 holes of 1/4” at the end of the left and right boom sections (use foam nozzle support for distances). Mount the foam nozzle assembly by using 3 bolts of 1/4”. Bolts are not included.

INSTALLATION OF AIR-LIQUID TUBING
Before installing the air-liquid tubing on the boom, make sure to take the proper measurements by unrolling the tubing side by side the boom. DO NOT FORGET TO CONSIDER THE DISTANCE FROM THE COMPRESSOR TO THE BOOM.

CONNECTION OF POWER CABLE AND COMPRESSOR CABLE
With the compressor cable connect one end to the switch box and the other end to the compressor. The compressor cable is 23 ft. long. With the power cable connect one end to the switch box and the other end to the disconnect socket. The power cable is 6.5 ft. long.

CONNECTION OF THE EXTENSION DROP NOZZLE
Remove the bell from the foam nozzle assembly and insert the “L” shape connector with rubber tube.

OPERATION SWITCH BOX
The switch box is used to start the compressor and to select the side the foam will be made. To operate simply select “ON” left or “ON” right to direct the foam to the left or right side of the boom. Selecting “OFF” will not drop foam at all.

MIXING SOAP IN TANK & CONTROLLING THE FLOW

CAUTION: CONTENTS IN TANK MAY BE UNDER PRESSURE. WHEN REMOVING CAP FROM TANK, UNSCREW CAP SLOWLY TO RELIEVE PRESSURE OR USE THE INSTALLED RELEASE VALVE.

Remove cap from tank. Fill the tank with the desired amount of water first, and then add soap to avoid making foam in the tank. Replace cap on the tank and tighten hand tight. When preparing soap mixture, one must first desire life span of the foam ball. Temperature, sun light, relative humidity, hardness of water, soap concentration and wind condition are some of the variables which effect the foam ball life span.

On the cap, there is a flow regulator to control the output of the foam liquid. By turning the knob clockwise, the foam ball output will be less frequent. By turning the knob counter clockwise, the foam ball output will be more frequent.

Flow regulator with knob

MAINTENANCE INSTRUCTIONS
CAUTION: BEFORE PERFORMING ANY MAINTENANCE, MAKE SURE THAT THE LIQUID SUPPLY LINE FROM THE TANK HAS HAD THE PRESSURE BLEED FROM THE SYSTEM. TO DO THIS, UNSCREWTANK CAP ONE TURN OR UNTIL AIR IS HEARD LEAKING OUT AROUND CAP OR USE THE PRESSURE RELEASE VALVE.

PRECAUTIONARY STEPS
Flush the system with clean water after each use, especially when hard water has been used. Do not apply lubricating oils, grease or other petroleum products to the compressor motor assembly.

WINTERIZING
Follow the steps written below for proper winterizing:

Step 1: Relieve pressure from tank.
Step 2: Disconnect air and liquid tubing from tank.

Troubleshooting

The following table summarizes different troublesome conditions.

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>POSSIBLE CAUSES</th>
<th>SOLUTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Compressor will not turn on</td>
<td>A. Corroded connections</td>
<td>A. Inspect and clean</td>
</tr>
<tr>
<td></td>
<td>B. Disconnected</td>
<td>B. Check wiring</td>
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<tr>
<td></td>
<td>C. Improperly wired</td>
<td>C. Check wiring diagram</td>
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<tr>
<td></td>
<td>D. Blown fuse</td>
<td>D. Replace fuse</td>
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<tr>
<td>2. Foam does not come out from nozzle</td>
<td>A. No concentrate in tank</td>
<td>A. Add concentrate in tank</td>
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<tr>
<td></td>
<td>B. Tank cap loose</td>
<td>B. Tighten cap</td>
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<tr>
<td></td>
<td>C. Compressor filter clogged</td>
<td>C. Clean or replace filter</td>
</tr>
<tr>
<td></td>
<td>D. Strainer in tank clogged</td>
<td>D. Clean or replace strainer</td>
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<td>3. Foam ball does not form completely</td>
<td>A. Soap concentrate too low</td>
<td>A. Dump and remix higher</td>
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<td></td>
<td>B. Restrictor not in place</td>
<td>B. See foam nozzle assembly in parts break down</td>
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<tr>
<td></td>
<td>C. Water to hard</td>
<td>C. Use water softener with concentrate</td>
</tr>
<tr>
<td>4. Compressor does not start when switching side</td>
<td>A. Check valve broken on tank cap</td>
<td>A. Try clearing cap check valve by blowing air. If problem persists change cap</td>
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<tr>
<td></td>
<td>B. Switch broken</td>
<td>B. Change switch</td>
</tr>
<tr>
<td>5. Foam marker is off but air or liquid are still coming out</td>
<td>A. Valves are dirty</td>
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<td>B. Valves are broken</td>
<td>B. Replace broken valves</td>
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TROUBLESHOOTING
The following table summarizes different troublesome conditions.

CONDITION | POSSIBLE CAUSES | SOLUTIONS |
-----------|----------------|-----------|
1. Compressor will not turn on | A. Corroded connections | A. Inspect and clean |
|           | B. Disconnected   | B. Check wiring |
|           | C. Improperly wired | C. Check wiring diagram |
|           | D. Blown fuse     | D. Replace fuse |
2. Foam does not come out from nozzle | A. No concentrate in tank | A. Add concentrate in tank |
|           | B. Tank cap loose | B. Tighten cap |
|           | C. Compressor filter clogged | C. Clean or replace filter |
|           | D. Strainer in tank clogged | D. Clean or replace strainer |
3. Foam ball does not form completely | A. Soap concentrate too low | A. Dump and remix higher |
|           | B. Restrictor not in place | B. See foam nozzle assembly in parts break down |
|           | C. Water to hard | C. Use water softener with concentrate |
4. Compressor does not start when switching side | A. Check valve broken on tank cap | A. Try clearing cap check valve by blowing air. If problem persists change cap |
|           | B. Switch broken | B. Change switch |
5. Foam marker is off but air or liquid are still coming out | A. Valves are dirty | A. Blow air in the valves |
|           | B. Valves are broken | B. Replace broken valves |