

Foam Marker Instruction Manual

for models:

**81-FM3
81-FM3AF**

and

**4119053
4119058**



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“Quick Foam” Marker System

81- FM3

by

SDI
SPRAYING DEVICES, INC.

Model 81- FM3 “Quick Foam” Marker System. The 81- FM3 mounts on all SDI spray booms and generates foam drops within several seconds of “on” activation.



The compact air compressor and control valves are located behind the 4 quart liquid solution tank with solution metering valve.



Optional electric all function control box with L/R operation indicator lights, on/off toggle switch and 10 amp fuse holder.



Standard control with L/R on switch.

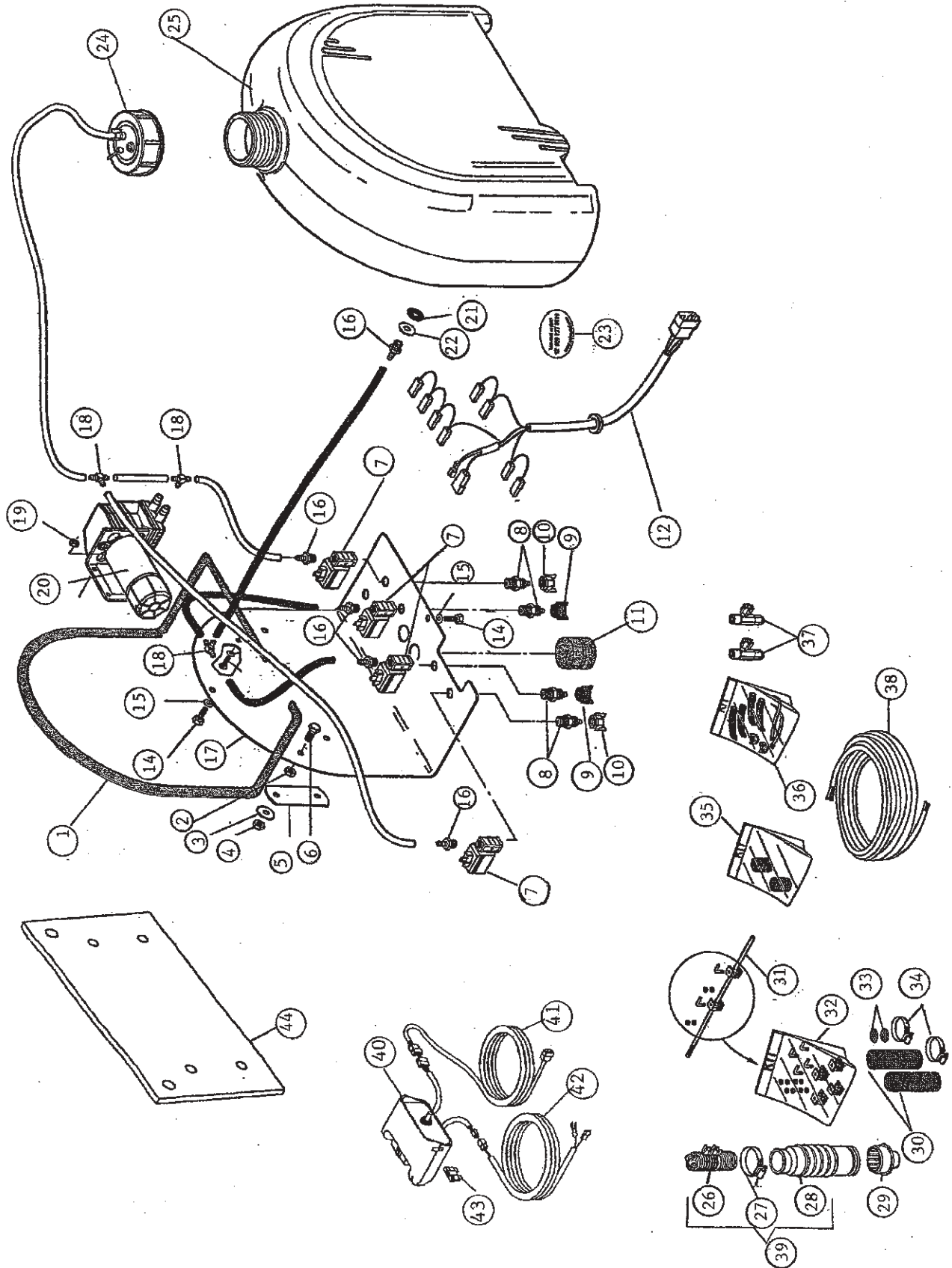


Foam generator and multi-position mounting rod.

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Parts Illustration

81-FM3*/81-FM3AF**/ 4119053**/ 4119058**



Parts List

81-FM3*/81-FM3AF**/ 4119053**/ 4119058**

<u>Item #</u>	<u>Part #</u>	<u>Description</u>	<u>Quantity</u>
1	61-600	Rubber Gasket	1
2	61-609	Nut	1
3	61-601	Washer	4
4	61-602	Nut M/6	4
5	61-603	Plate	2
6	61-612	Screw	4
7	61-606	Solenoid	4
8	61-127	Tubing Connector 1/8", 6.4	6
9	61-136	Blue Fly Nut	1
10	61-133	White Fly Nut	2
11	61-193	Sponge Filter	1
12	61-232	Wiring Harness	1
14	61-116	Bolt	2
15	61-115	Washer	2
16	61-660	Hose Barb	5
17	61-607	Backing Plate	1
18	61-661	Hose Barb	3
19	61-631	Lock Nut M5	2
20	61-630	Air Compressor 12 Volt	1
21	61-624	Rubber Washer	1
22	61-625	Washer	1
23	61-616	Decal	1
24	61-632	Tank Cap	1
25	61-633	One Gallon Tank	1
26	61-172	Foam Mixer	2
27	61-145	Hose Clamp 25-40	2
28	61-199	Drop Tube	2
29	61-226	Adapter/Reducer	2
30	61-187	Sponge	2
31	61-190	Support Post	1
32	61-207	Support Post Kit	1
	64-440	Vari Clamps (not illustrated) used with 61-207	4
33	61-223	Screen	2
34	61-148	Hose Clamp 32-50	2
35	61-636	Foam Kit	1
36	61-635	Accessory Kit	1
37	61-637	Flow Regulator	2
38	61-250	Air/Liquid Tubing - 50 Ft Roll (16 Meters)	1

Parts List cont.

81-FM3*/*81-FM3AF**/4119053**/4119058**

<u>Item #</u>	<u>Part #</u>	<u>Description</u>	<u>Quantity</u>
39	61-253	Foam Nozzle	2
40	61-259	Switch Box	1
40	61-260	On/Off/On Switch	1
41	61-235	Compressor Cable 15"	1
42	61-645	Power Cable	1
43	61-639	Fuse, 5 AMP	1
44	11-097-1	Mounting Plate	1

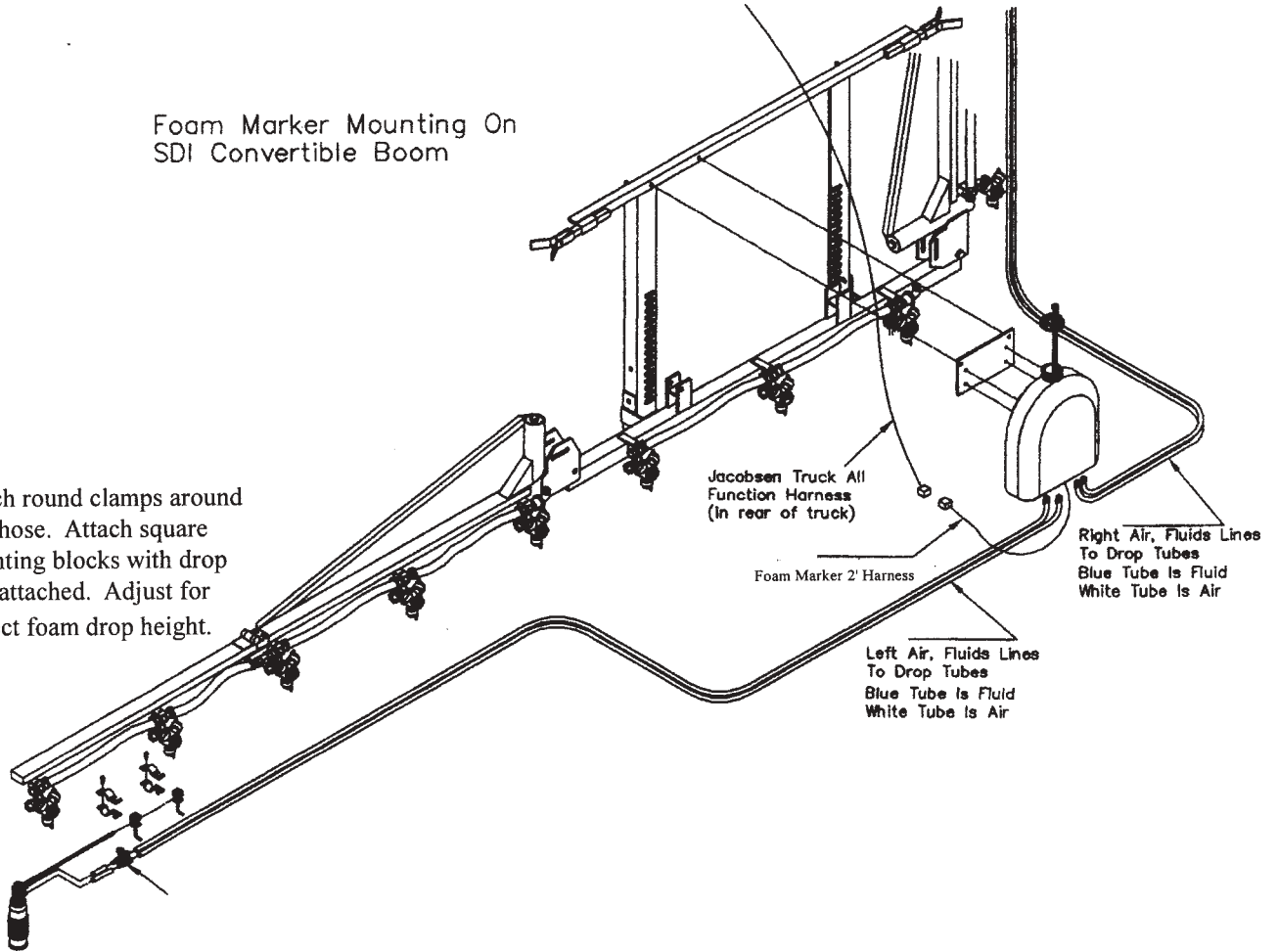
*Complete system as shown

**Complete system less items #40, 41, 42 and 43. *Use with All Function Control and Harness.*

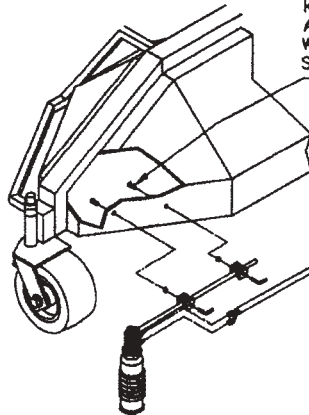
Basic Mounting Illustrations

Foam Marker Mounting On
SDI Convertible Boom

Attach round clamps around
3/4" hose. Attach square
mounting blocks with drop
tube attached. Adjust for
correct foam drop height.

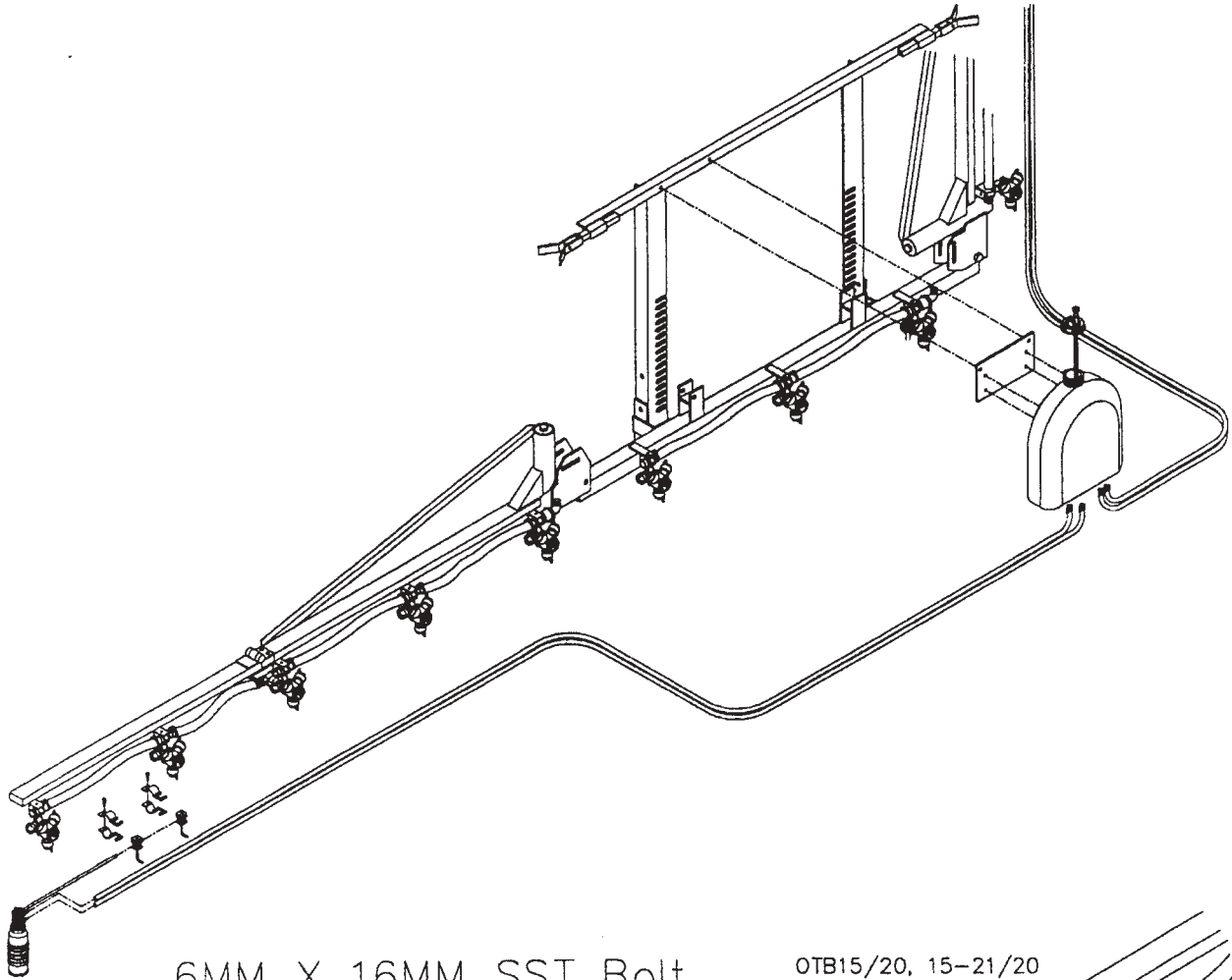


Hardware Included In Mounting
Kit, Adjust to Desired Location
And Height.
When Mounting To A
SDI Shielded Boom

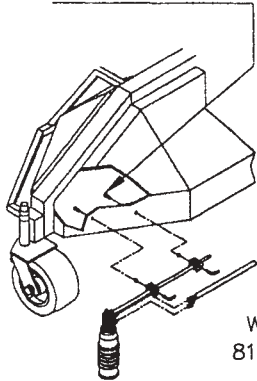


Shielded Boom Foam
Marker Illustrtion

Mounting Illustrations

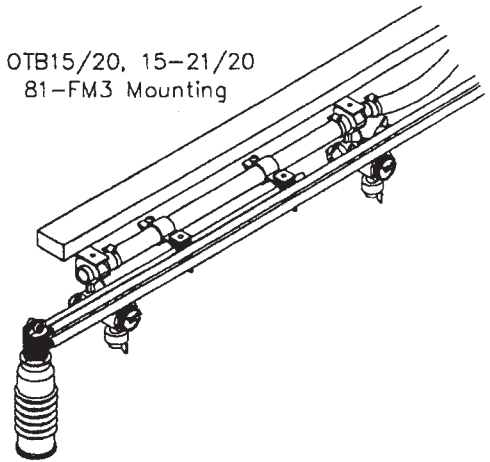


6MM X 16MM SST Bolt

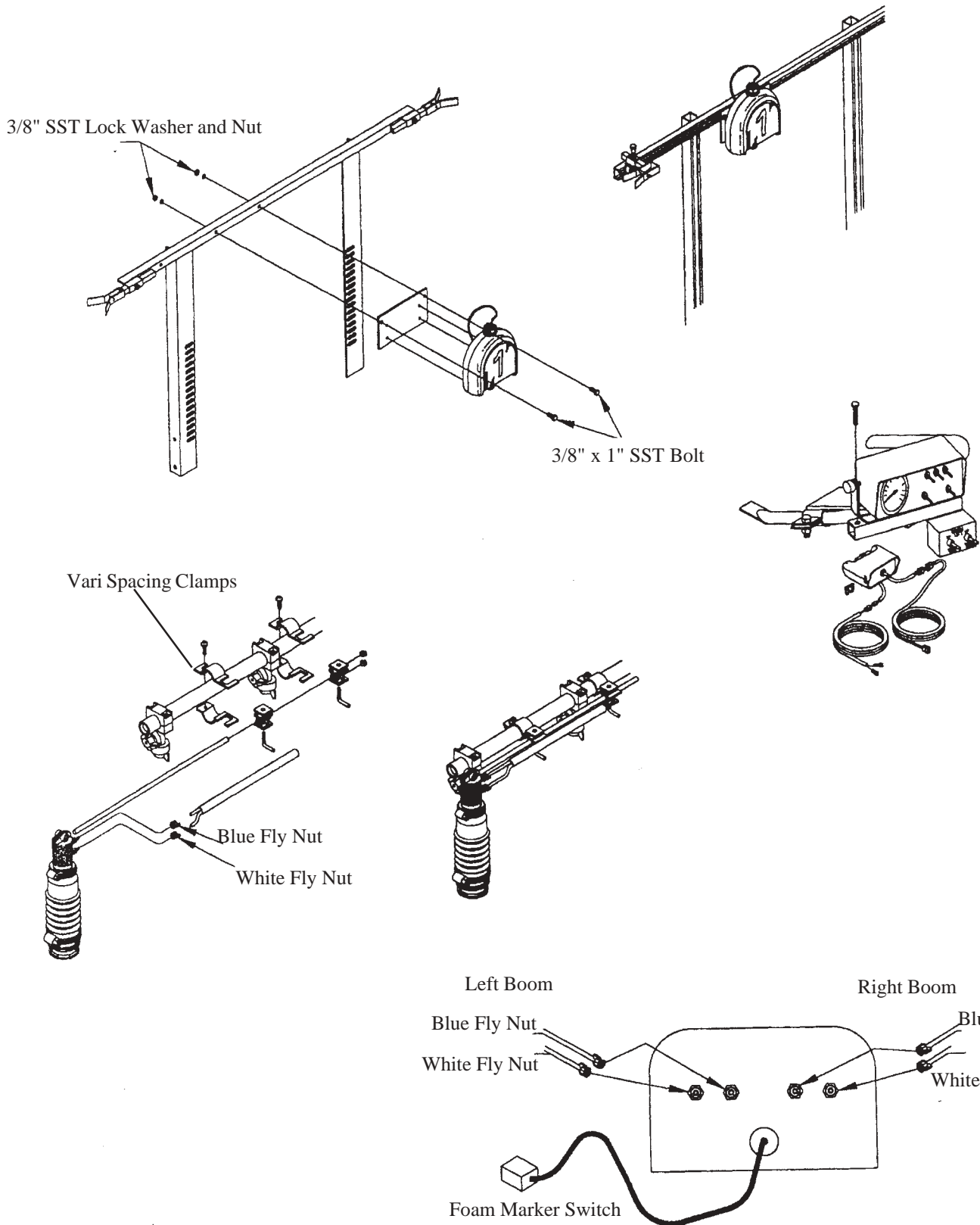


WB2-SB15/20
81-FM3 Mounting

OTB15/20, 15-21/20
81-FM3 Mounting



Mounting Illustrations



Set-up & Operation Instructions

“Quick Foam” Marker Foam Drop Spacing Chart & Instructions

Sprayer ground speed MPH	Distance traveled feet/sec.	Seconds between drops to achieve desired spacing intervals		
		10 ft.	20 ft.	30 ft.
1	1.46	6.84	13.69	20.54
2	2.93	3.41	6.82	10.23
3	4.39	2.27	4.55	6.83
4	5.86	1.70	3.41	5.11
5	7.33	1.36	2.72	4.09
6	8.79	1.13	2.27	3.41
7	10.26	0.97	1.94	2.92
8	11.73	0.85	1.70	2.55
9	13.19	0.75	1.51	2.27
10	14.66	0.68	1.36	2.04

How to use this chart: Find your estimated spray speed (see measuring travel speed). Determine the frequency of foam drop spacing required for your application. The numbers listed in the above chart correspond to the number of seconds needed between drops to arrive at the desired spacing. Since the actual numbers are not whole, you may round off to the nearest whole number for convenience.

Example: Desired spacing 20 ft., sprayer speed 4 MPH. Time between foam drops to obtain desired spacing would be 3.5 seconds (approximately 17 drops per minute). You may adjust the foam drop output by turning the output control valve clockwise to open. 1-1/8th turn counter-clockwise will give approximately 1 drop every 3 seconds or 20 drops per minute.

Note: Running time on the 4 quart solution tank is 50 minutes at a rate of 20 drops per minute (1000 drops).

Example:

- 20 ft. boom spray width
- 20 ft. foam drop spacing
- 4 quarts foam solution
- 9.1 acres covered and marked (4 quarts solution)

Results will vary according to your own conditions.

Set-up & Operation Instructions cont.

Measuring Travel Speed

To measure travel speed, lay out a known distance in the area to be sprayed or in an area with similar surface conditions. Suggested distances are 100 feet for speeds up to 5 MPH and 200 feet for speeds 5 to 10 MPH. At the engine throttle setting and gear that you plan to use during spraying, with a loaded spray, determine the travel time through the measured area in each direction. Average these times and use the following equation or table on this page to determine the ground speed.

$$\text{Speed (MPH)} = \frac{\text{Distance (feet)} \times 60}{\text{Time (seconds)} \times 88}$$

<u>Speed in MPH</u>	<u>Time required in seconds to travel a distance of:</u>		
	<u>100 ft.</u>	<u>200 ft.</u>	<u>300 ft.</u>
0.5	136	272	409
1.0	68	136	205
1.5	46	92	136
2.0	34	68	103
2.5	27	54	82
3.0	23	45	68
3.5	20	39	58
4.0	17	34	51
4.5	15	30	45
5.0	14	27	41
6.0	--	23	34
7.0	--	19	29
7.5	--	18	27
8.0	--	17	26
9.0	--	15	23

Testing & Calibration

1. Fill the storage tank 1/2 full with clear water and then add 0.4 oz of foam concentrate.
2. Close the fluid regulating valves on the tank. Re-open valve approximately 1/2 turn.
3. Turn foam marker ON. It will take a few minutes for the fluid to fill the lines and purge air.
4. Foam should appear in each marker. Adjust the fluid regulating valve to control the frequency of the foam drops.

Operation

Set-up & Operation Instructions cont.

The operator can use trial and error to determine the foam spacing and foam dissipation rates. Use the following guidelines.

1. The exact mix ratio of foam concentrate to water influences the density of the foam and how long it stays on the ground before dissipating. Start with a 160 to 1 ratio, about 0.8 oz per tank (128 oz) of water. A lighter mix, 0.75 oz per tank, will result in a “runny” foam which will dissipate sooner.
2. Once foam is mixed with water, it will lose its ability to foam after about 12 hours. Fill tank with water and add fresh foam concentrate.

Estimating Foam Spacing

Use the chart below to estimate the approximate spacing of foam drops at varying speeds:

<u>MPH</u>	<u>Seconds between drops</u>		
	<u>10 ft.</u>	<u>20 ft.</u>	<u>30 ft.</u>
2	3.4	6.8	10.5
3	2.2	4.5	6.8
4	1.7	3.4	5.1
5	1.3	2.7	4.0
6	1.0	2.2	4.0
7	1.0	2.0	3.5

“Quick Foam” Mixing Instructions

SDI’s “Quick Foam” has a recommended mix ratio of 160 to 1. This provides a good consistent foam ball that is highly visible on all turf areas. However, because of weather conditions or other factors, an alternate foam consistency may be required. If the mix is altered to include more water, the foam tends to be runny and dissipates very fast. The addition of more concentrate to the mix will cause the foam to be denser and last longer.

Try the recommended mix ratio prior to the alternative methods listed.

The best method for filling the storage tank is to put water in first and add the concentrate to the top. This prevents the formation of foam in the tank because of premature agitation of the contents.

Note: If the foamer is allowed to set idle for 12 hours or more, the remaining mix in the tank should be thought of as plain water. The foam concentrate loses its ability to produce foam after being in suspension and therefore is subject to normal molecular breakdown. For best results, top off storage tank with water and add 0.8 oz of concentrate to bring mix ratio in tank back to 160 to 1.



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