

### The Redball® Spray Monitor

The Redball® Spray Monitor is an effective flow indicator for an operator applying liquid chemicals and fertilizer. Once the monitor is set up, the operator observes the location of the balls. If there is no change in the ball location, then the flow rate has not changed. The amount of change needed for a ball to change can be found in the flow chart. See Figure #2.

### Installation Instructions

Mounting: Assemble and mount the monitor on your equipment in a position easily visible to the operator.

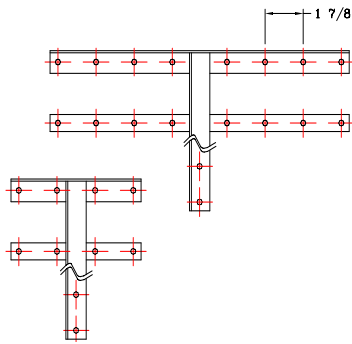


FIGURE #1

1. Fabricate a mounting bracket similar to the one in Figure #1. An example of typical material would be 3/4" x 1/8" steel strips and a 1" x 1" angle iron. Drill holes as shown and as needed to mount the bracket to the implement.
2. Check the Flow Tables (Figure #2) for your desired flow rate. For best results, select a ball that operates at Monitor Flow Level 3 or 4.
3. To change to a different set of balls, remove the u-pin, the hose barb/float stop, o-ring and balls and install the proper balls. See Figure #4.
4. Assemble monitors into a manifold as shown in Figures 3 and 4. Flow (GPM) to each monitor manifold determines how many monitors to connect together. Make certain the total input flow (GPM) to each monitor manifold does not exceed 3.40 GPM.
5. Bolt the monitor manifold to the bracket with 1/4" diameter bolts.

	FLOW TABLE FOR WATER					FLOW TABLE FOR LIQUID FERTILIZER			
	Green Plastic	Black Plastic	Red Plastic	Red Glass	Steel	Red Plastic	Red Glass	Steel	
	Balls	Balls	Balls	Balls	Balls	Balls	Balls	Balls	
	GPM	GPM	GPM	GPM	GPM	GPM	GPM	GPM	
Level 7	0.34	0.47	0.51	0.91	3.33	Level 7	0.19	0.84	2.17
Level 6	0.24	0.35	0.39	0.71	2.48	Level 6	0.14	0.61	1.70
Level 5	0.18	0.27	0.28	0.56	1.68	Level 5	0.12	0.45	1.26
Level 4	0.13	0.20	0.21	0.39	1.09	Level 4	0.07	0.32	0.82
Level 3	0.08	0.13	0.14	0.27	0.60	Level 3	0.04	0.19	0.58
Level 2	0.04	0.08	0.08	0.19	0.45	Level 2	0.02	0.11	0.32
Level 1	0.02	0.03	0.03	0.11	0.30	Level 1	0.00	0.05	0.25

FIGURE #2

6. Connect the hoses (not included) as shown in Figure #3. Tighten hose connections.
7. Connect multiple monitor manifolds together in parallel by directing solution into each manifold fluid input. DO NOT direct fluid into a manifold from another manifold.

### Operating Instructions

1. Turn on liquid to the desired pressure, all the balls should be at the same level. If so, proceed to step #5.
2. If all the balls are not at equal levels, check for leaks and obstructions in the lines.
3. If one of the balls remains at a different level, clean the nozzle and screen on the line that has the improper output.
4. If all of the balls cannot be made to come up to the same level, check the flow in the lines to see if the flow is equal in all lines. The Redball® Spray Tip Tester may be purchased separately to evaluate this problem. This spray tip tester will also indicate if the tips are operating correctly.

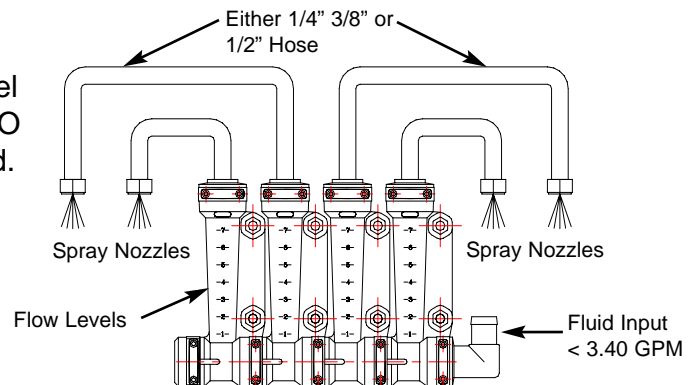


FIGURE #3

# REDBALL™

## SPRAY MONITOR

5. When the balls are at the same level, then all the lines are putting out approximately equal amounts of liquid.
6. To calibrate your sprayer, first check the nozzle on the sprayer and the nozzle manufacturer's information sheet. Establish the correct pressure, flow, and speed to make sure that the desired gallons per acre to be applied.



**IMPORTANT:**

When using different balls in fertilizer and water, it is important to use the correct ball, so as not to let it rotate at the very top of the monitor. The ball could restrict flow in that position. See Figure 2.



**IMPORTANT:**

Use red glass or stainless steel balls with acid fertilizer.

**NOTES:**

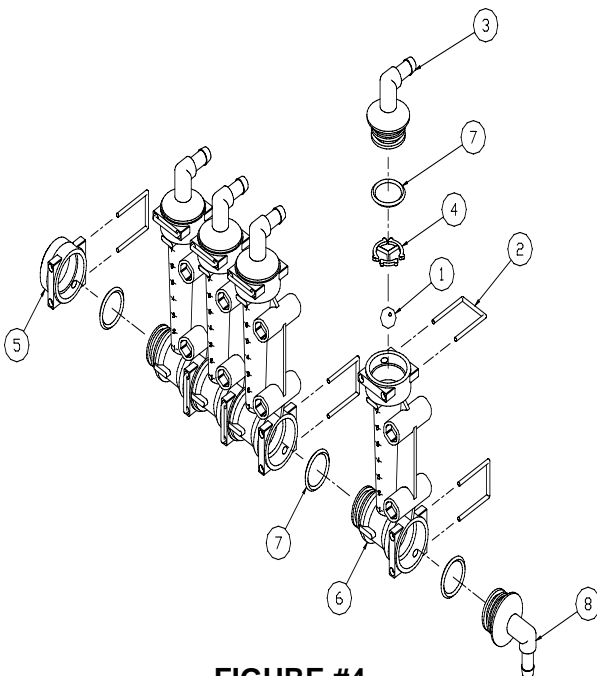
- Conversion of the US Gallons per Minute (GPM) to Liters per Minute (LPM) is:  $GPM \times 3.785 = LPM$
- Each fluid used will vary in flow rate due to the different density and viscosity of each chemical and fertilizer used. This necessitates that the user checks for an accurate flow rate.
- The system should operate at a minimum of 10 PSI for equal distribution.
- Redball® Spray Monitors are flow indicators, not flow regulators.

**Cleaning**

It is important that spraying equipment is cleaned and flushed before discontinuing use for an extended period of time. To facilitate cleaning, remove the u-pin and cap plug and allow the liquid to drain out. Always collect and dispose of chemical solutions properly. Flush with clean water.

**Storage**

To lengthen the service life of the monitor, store the monitor out of direct sunlight or cover with a sun protective material.



**FIGURE #4**

REF- 3999-0010-1

Item No.	QTY	Part No.	Description
1	4	8165101	Green Plastic Ball
	4	8165100	Red Plastic Ball
	4	8165102	Black Plastic Ball
	4	8165105	Red Glass Ball
	4	SS316-200	Stainless Steel Ball
2	9	002037	Pin, U-Shaped
3+	4	002133	Monitor Hose Barb, 1/4"
	4	002134	Monitor Hose Barb, 3/8"
	4	002135	Monitor Hose Barb, 1/2"
4	4	002137	Float Stop
5	1	002138	Cap, Plug
6	4	002139	Single Column Monitor
7	9	002140	O-Ring
8	1	002136	Monitor Hose Barb, 3/4"

+ = Hose barbs included in different size complete assembly kits.

P/N 3999-0001 - 1/4" Complete 4-Column Assembly

P/N 3999-0002 - 3/8" Complete 4-Column Assembly

P/N 3999-0008 - 1/2" Complete 4-Column Assembly

**Call your REDBALL, LLC representative toll free at 1-877-332-2551 for more information.**

**Webpage: [www.redballproducts.com](http://www.redballproducts.com)**