

396-001730



Floating Ball Flow Indicators- Full Flow Column (mostly 3/8" HB)

The full flow column is typically used with rates over 10 GPA on 30" rows. For rates less than 10 GPA SureFire recommends the low flow columns with 1/4" push to connect outlet fittings.

The full flow columns are most often assembled with 3/8" hose barb outlets. See the low flow info below for the difference between full and low flow columns.

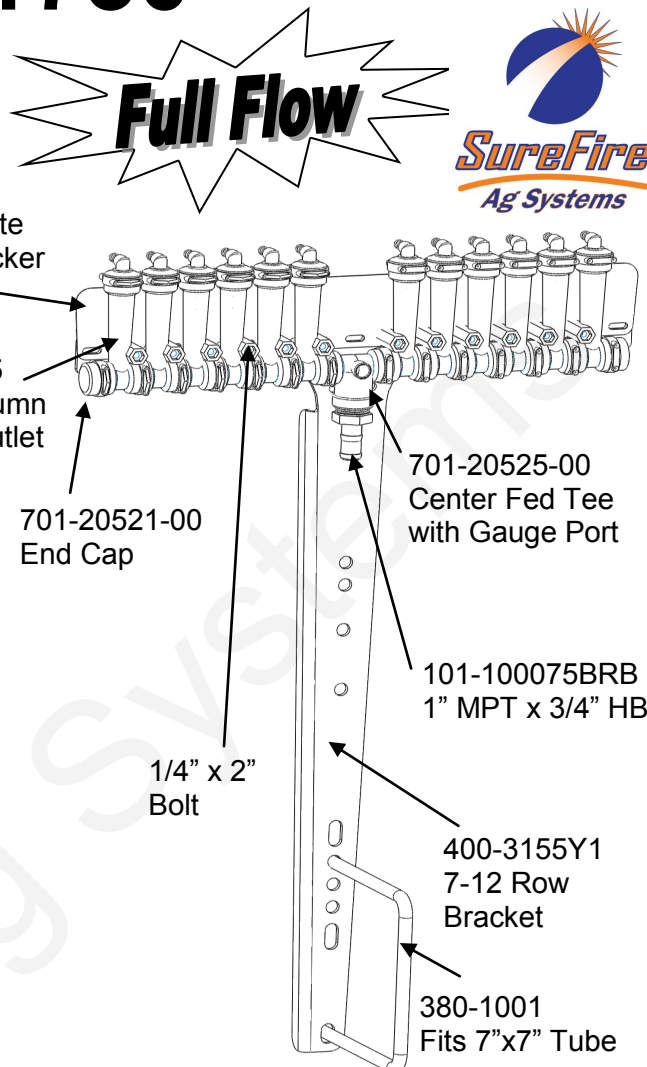
Full Flow Indicators w/ 3/8" Hose Barb Outlet

Column Flow (GPM):	.05-2.70 GPM
Equivalent Application Rate On 30" Rows at 6 MPH:	2-70 GPA

Ball Selection for 30" Rows

GPM	GPA	Ball
.05-.18	2-6	Green Plastic*
.09-.30	3-10	Red Plastic*
.31-.72	10-20	Maroon Glass
.40-2.1	13-70	Stainless Steel (1/2")

*Plastic balls may float on heavier fertilizers, such as 10-34-0. SureFire recommends using the low flow column for these flow rates.



Low Flow Column (mostly 1/4" QC)

The low flow column has a smaller internal diameter. This means a heavier ball can be used to monitor a smaller flow.

SureFire uses the low flow columns with 1/4" push to connect outlet fittings. The flow capability of 1/4" tubing and the low flow column are a great pair for rates on 30" rows under 10 GPA.

Externally, the low flow column can only be identified by "Low Flow" molded into one side of the column. All the same fittings work with low flow and full flow columns.

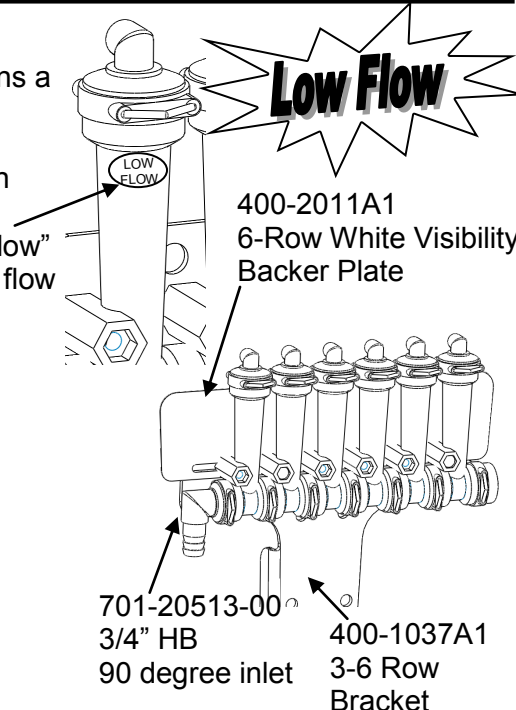
Low Flow Indicators w/ 1/4" Push to Connect Outlet

Column Flow (GPM):	.03-.30 GPM
*** Low Flow Column with 3/8" hose barb	.03 - .70 GPM
Equivalent Application Rate On 30" Rows at 6 MPH (1/4" QC):	1-10 GPA

Ball Selection for 30" Rows

GPM	GPA	Ball
.03-.09	1-3	Green Plastic*
.05-.14	2-4	Red Plastic*
.10-.18	3-6	Maroon Glass
.15-.70	5-10	Stainless Steel (1/2")

*These balls may float on heavier fertilizers, such as 10-34-0. Use Maroon Glass in this case.



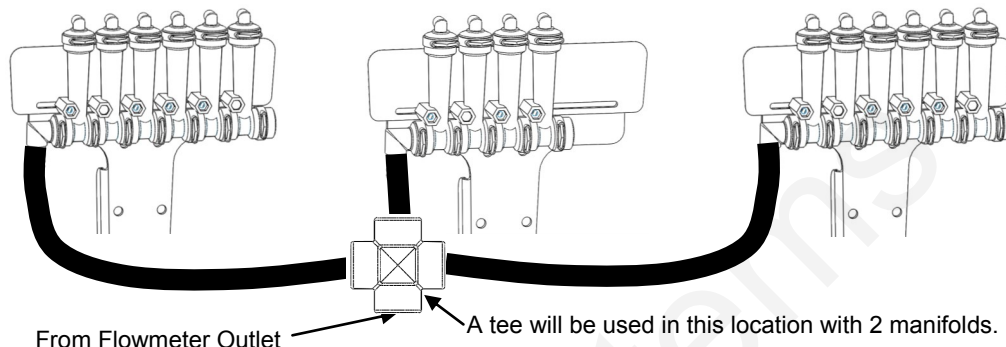
Floating Ball Flow Indicators

Flow Indicators are extremely flexible and can be mounted in hundreds of different configurations on various types of liquid application equipment. This page is to give you some ideas and let you customize the installation for what works best on your equipment.



16-Row Split 6 - 4 - 6

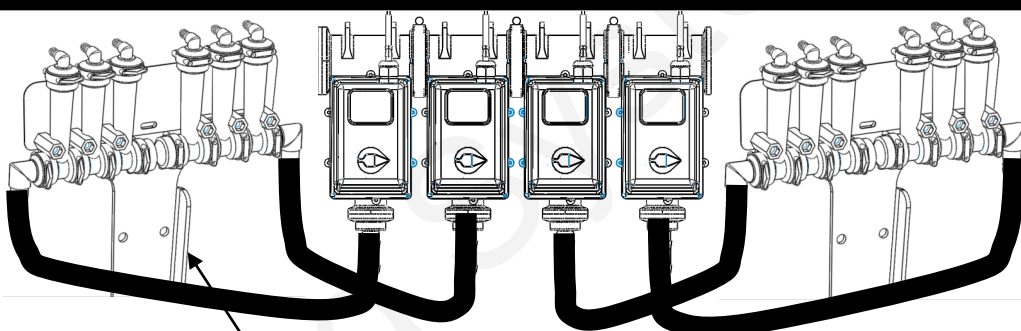
This configuration works well on a 16-row front fold planter. Each flow indicator manifold is shown fed by a cross in a single section installation. Each manifold could be fed by a section valve if desired.



12-Row Split 3 - 3 - 3 - 3

Shown here is a 12-row with four 3-row sections controlled by four section valves. Note each 6-row T-Bracket can hold two separate 3-row manifolds.

A 4-section 24-row could be similar with four 6-row manifolds on two large T-Brackets.

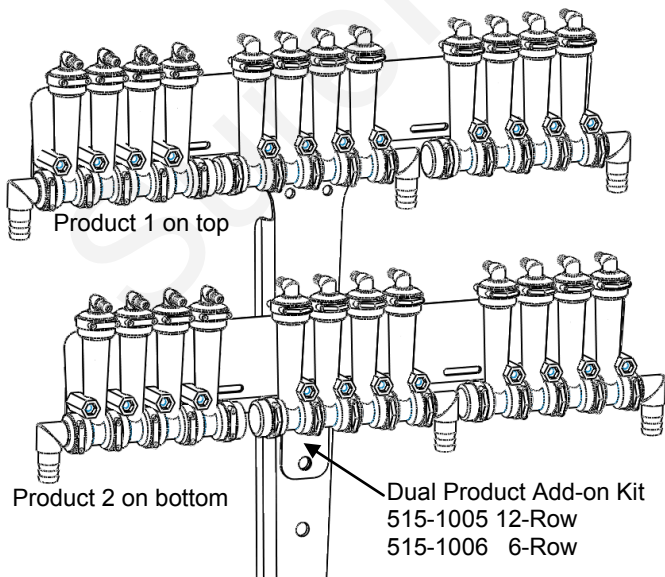


NOTE: Another option is the flange can face forward so the T-Bracket could be mounted on the front side of a bar.

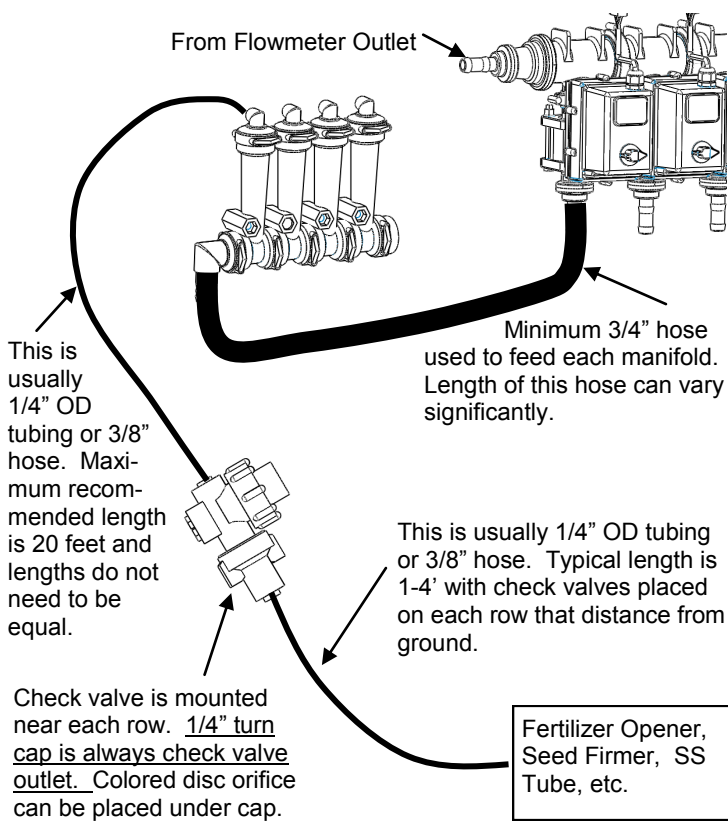
12-Row Dual Product

Product 1 Split 4 - 4 - 4 / Product 2 Split 4 - 4 - 4

In this case each manifold would be fed by a section valve. There would be 6 total section valves (3 sections X 2 products). Most often one set (top) of flow indicators would be Full Flow for high rate fertilizer and 2nd set (bottom) would be Low Flow for starter.



General Plumbing Guidelines



Colored Disc Orifice Chart



SureFire
Ag Systems

30" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min 28-0-0	MPH						
			4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	1.62	1.44	1.30	1.18	1.08	1.00	0.93
	20	0.046	2.28	2.02	1.82	1.66	1.52	1.40	1.30
	30	0.057	2.80	2.49	2.24	2.04	1.87	1.73	1.60
	40	0.065	3.24	2.88	2.59	2.36	2.16	1.99	1.85
	50	0.073	3.64	3.23	2.91	2.64	2.42	2.24	2.08
	60	0.081	3.99	3.54	3.19	2.90	2.66	2.45	2.28
Gray (30)	10	0.050	2.50	2.22	2.00	1.82	1.66	1.54	1.43
	20	0.072	3.55	3.15	2.84	2.58	2.37	2.18	2.03
	30	0.088	4.34	3.85	3.47	3.15	2.89	2.67	2.48
	40	0.101	4.99	4.44	4.00	3.63	3.33	3.07	2.85
	50	0.112	5.56	4.95	4.45	4.05	3.71	3.42	3.18
	60	0.124	6.13	5.45	4.91	4.46	4.09	3.77	3.50
Black (35)	10	0.070	3.46	3.08	2.77	2.52	2.31	2.13	1.98
	20	0.098	4.86	4.32	3.89	3.54	3.24	2.99	2.78
	30	0.120	5.96	5.30	4.77	4.33	3.97	3.67	3.40
	40	0.139	6.88	6.11	5.50	5.00	4.58	4.23	3.93
	50	0.156	7.71	6.85	6.17	5.61	5.14	4.74	4.41
	60	0.170	8.41	7.48	6.73	6.12	5.61	5.18	4.81
Brown (41)	10	0.094	4.64	4.13	3.71	3.38	3.10	2.86	2.65
	20	0.132	6.53	5.80	5.22	4.75	4.35	4.02	3.73
	30	0.162	8.02	7.13	6.41	5.83	5.34	4.93	4.58
	40	0.187	9.24	8.22	7.39	6.72	6.16	5.69	5.28
	50	0.209	10.34	9.19	8.27	7.52	6.89	6.36	5.91
	60	0.228	11.30	10.05	9.04	8.22	7.53	6.95	6.46
Orange (46)	10	0.119	5.91	5.26	4.73	4.30	3.94	3.64	3.38
	20	0.169	8.37	7.44	6.69	6.08	5.58	5.15	4.78
	30	0.207	10.25	9.11	8.20	7.45	6.83	6.31	5.86
	40	0.239	11.83	10.51	9.46	8.60	7.88	7.28	6.76
	50	0.267	13.23	11.76	10.58	9.62	8.82	8.14	7.56
	60	0.293	14.50	12.89	11.60	10.55	9.67	8.92	8.29
Maroon (52)	10	0.149	7.36	6.54	5.89	5.35	4.91	4.53	4.21
	20	0.210	10.38	9.23	8.31	7.55	6.92	6.39	5.93
	30	0.257	12.70	11.29	10.16	9.24	8.47	7.82	7.26
	40	0.296	14.67	13.04	11.74	10.67	9.78	9.03	8.39
	50	0.332	16.43	14.60	13.14	11.95	10.95	10.11	9.39
	60	0.363	17.96	15.96	14.37	13.06	11.97	11.05	10.26
Red (63)	10	0.218	10.78	9.58	8.62	7.84	7.18	6.63	6.16
	20	0.307	15.20	13.51	12.16	11.05	10.13	9.35	8.69
	30	0.376	18.62	16.55	14.89	13.54	12.41	11.46	10.64
	40	0.435	21.51	19.12	17.21	15.64	14.34	13.24	12.29
	50	0.486	24.05	21.38	19.24	17.49	16.03	14.80	13.74
	60	0.532	26.33	23.40	21.06	19.15	17.55	16.20	15.04
Blue (80)	10	0.351	17.39	15.46	13.91	12.65	11.59	10.70	9.94
	20	0.496	24.57	21.84	19.66	17.87	16.38	15.12	14.04
	30	0.608	30.09	26.75	24.08	21.89	20.06	18.52	17.20
	40	0.702	34.74	30.88	27.79	25.26	23.16	21.38	19.85
	50	0.785	38.86	34.54	31.08	28.26	25.90	23.91	22.20
	60	0.859	42.53	37.81	34.03	30.93	28.36	26.18	24.31
Yellow (95)	10	0.506	25.06	22.27	20.05	18.22	16.70	15.42	14.32
	20	0.715	35.39	31.46	28.32	25.74	23.60	21.78	20.23
	30	0.876	43.37	38.55	34.69	31.54	28.91	26.69	24.78
	40	1.009	49.94	44.39	39.95	36.32	33.29	30.73	28.54
	50	1.133	56.07	49.84	44.86	40.78	37.38	34.51	32.04
	60	1.239	61.33	54.51	49.06	44.60	40.88	37.74	35.04
Green (110)	10	0.686	33.95	30.18	27.16	24.69	22.63	20.89	19.40
	20	0.973	48.19	42.83	38.55	35.04	32.12	29.65	27.53
	30	1.186	58.70	52.18	46.96	42.69	39.13	36.12	33.54
	40	1.372	67.90	60.35	54.32	49.38	45.27	41.78	38.80
	50	1.531	75.78	67.36	60.63	55.12	50.52	46.64	43.30
	60	1.681	83.23	73.98	66.58	60.53	55.49	51.22	47.56

PumpRight Pressure Recommendations (with 10 lb check valves):

- Minimum 20 PSI
- Maximum 80 PSI

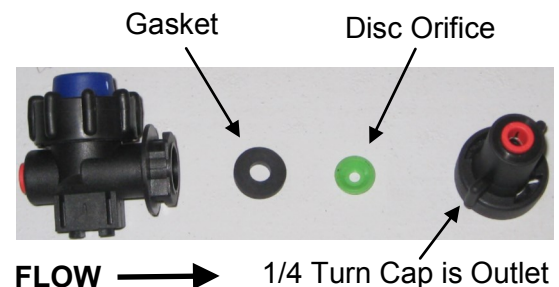
Tower Electric Pump Pressure Recommendations (with 4 lb check valves):

- Minimum 10 PSI
- Maximum 30 PSI

Chart is for 28-0-0 Fertilizer @ 70°

- Heavier fertilizers (like 10-34-0) will have 5-15% less flow than chart indicates for a certain pressure
- Cold fertilizers will cause system pressure to increase at a given application rate.
- Tower Electric Pump Systems will have reduced flow and increased electrical current draw due to cold fertilizer increasing operating pressure. **Use the largest orifice possible for cold weather operation.**

Colored Disc Orifice assembles under the check valve cap in most cases. (Drop the orifice with the hole down into the cap, then put the gasket on top of it.) Can also be installed in a manifold (common on grain drills).



Colored Disc Orifice Chart

Common Grain Drill Row Spacings



7.5" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min 28-0-0	MPH						
			4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	6.5	5.8	5.2	4.7	4.3	4.0	3.7
	20	0.046	9.1	8.1	7.3	6.6	6.1	5.6	5.2
	30	0.057	11.2	10.0	9.0	8.2	7.5	6.9	6.4
	40	0.065	13.0	11.5	10.4	9.4	8.6	8.0	7.4
	50	0.073	14.5	12.9	11.6	10.6	9.7	8.9	8.3
	60	0.081	15.9	14.2	12.8	11.6	10.6	9.8	9.1
Gray (30)	10	0.050	10.0	8.9	8.0	7.3	6.7	6.1	5.7
	20	0.072	14.2	12.6	11.4	10.3	9.5	8.7	8.1
	30	0.088	17.3	15.4	13.9	12.6	11.6	10.7	9.9
	40	0.101	20.0	17.8	16.0	14.5	13.3	12.3	11.4
	50	0.112	22.3	19.8	17.8	16.2	14.8	13.7	12.7
	60	0.124	24.5	21.8	19.6	17.8	16.4	15.1	14.0
Black (35)	10	0.070	13.8	12.3	11.1	10.1	9.2	8.5	7.9
	20	0.098	19.4	17.3	15.6	14.1	13.0	12.0	11.1
	30	0.120	23.8	21.2	19.1	17.3	15.9	14.7	13.6
	40	0.139	27.5	24.5	22.0	20.0	18.3	16.9	15.7
	50	0.156	30.8	27.4	24.7	22.4	20.6	19.0	17.6
	60	0.170	33.6	29.9	26.9	24.5	22.4	20.7	19.2
Brown (41)	10	0.094	19	17	15	14	12	11	11
	20	0.132	26	23	21	19	17	16	15
	30	0.162	32	29	26	23	21	20	18
	40	0.187	37	33	30	27	25	23	21
	50	0.209	41	37	33	30	28	25	24
	60	0.228	45	40	36	33	30	28	26
Orange (46)	10	0.119	24	21	19	17	16	15	14
	20	0.169	33	30	27	24	22	21	19
	30	0.207	41	36	33	30	27	25	23
	40	0.239	47	42	38	34	32	29	27
	50	0.267	53	47	42	38	35	33	30
	60	0.293	58	52	46	42	39	36	33
Maroon (52)	10	0.149	29	26	24	21	20	18	17
	20	0.210	42	37	33	30	28	26	24
	30	0.257	51	45	41	37	34	31	29
	40	0.296	59	52	47	43	39	36	34
	50	0.332	66	58	53	48	44	40	38
	60	0.363	72	64	57	52	48	44	41
Red (63)	10	0.218	43	38	34	31	29	27	25
	20	0.307	61	54	49	44	41	37	35
	30	0.376	74	66	60	54	50	46	43
	40	0.435	86	76	69	63	57	53	49
	50	0.486	96	86	77	70	64	59	55
	60	0.532	105	94	84	77	70	65	60
Blue (80)	10	0.351	70	62	56	51	46	43	40
	20	0.496	98	87	79	71	66	60	56
	30	0.608	120	107	96	88	80	74	69
	40	0.702	139	124	111	101	93	86	79
	50	0.785	155	138	124	113	104	96	89
	60	0.859	170	151	136	124	113	105	97
Yellow (95)	10	0.506	100	89	80	73	67	62	57
	20	0.715	142	126	113	103	94	87	81
	30	0.876	173	154	139	126	116	107	99
	40	1.009	200	178	160	145	133	123	114
	50	1.133	224	199	179	163	150	138	128
	60	1.239	245	218	196	178	164	151	140

10" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min 28-0-0	MPH						
			4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	4.9	4.3	3.9	3.5	3.2	3.0	2.8
	20	0.046	6.8	6.1	5.5	5.0	4.6	4.2	3.9
	30	0.057	8.4	7.5	6.7	6.1	5.6	5.2	4.8
	40	0.065	9.7	8.6	7.8	7.1	6.5	6.0	5.6
	50	0.073	10.9	9.7	8.7	7.9	7.3	6.7	6.2
	60	0.081	12.0	10.6	9.6	8.7	8.0	7.4	6.8
Gray (30)	10	0.050	7.5	6.7	6.0	5.4	5.0	4.6	4.3
	20	0.072	10.6	9.5	8.5	7.7	7.1	6.6	6.1
	30	0.088	13.0	11.6	10.4	9.5	8.7	8.0	7.4
	40	0.101	15.0	13.3	12.0	10.9	10.0	9.2	8.6
	50	0.112	16.7	14.8	13.4	12.1	11.1	10.3	9.5
	60	0.124	18.4	16.4	14.7	13.4	12.3	11.3	10.5
Black (35)	10	0.070	10.4	9.2	8.3	7.6	6.9	6.4	5.9
	20	0.098	14.6	13.0	11.7	10.6	9.7	9.0	8.3
	30	0.120	17.9	15.9	14.3	13.0	11.9	11.0	10.2
	40	0.139	20.6	18.3	16.5	15.0	13.8	12.7	11.8
	50	0.156	23.1	20.6	18.5	16.8	15.4	14.2	13.2
	60	0.170	25.2	22.4	20.2	18.4	16.8	15.5	14.4
Brown (41)	10	0.094	14	12	11	10	9	9	8
	20	0.132	20	17	16	14	13	12	11
	30	0.162	24	21	19	17	16	15	14
	40	0.187	28	25	22	20	18	17	16
	50	0.209	31	28	25	23	21	19	18
	60	0.228	34	30	27	25	23	21	19
Orange (46)	10	0.119	18	16	14	13	12	11	10
	20	0.169	25	22	20	18	17	15	14
	30	0.207	31	27	25	22	21	19	18
	40	0.239	35	32	28	26	24	22	20
	50	0.267	40	35	32	29	26	24	23
	60	0.293	43	39	35	32	29	27	25
Maroon (52)	10	0.149	22	20	18	16	15	14	13
	20	0.210	31	28	25	23	21	19	18
	30	0.257	38	34	30	28	25	23	22
	40	0.296	44	39	35	32	29	27	25
	50	0.332	49	44	39	36	33	30	28
	60	0.363	54	48	43	39	36	33	31
Red (63)	10	0.218	32	29	26	24	22	20	18
	20	0.307	46	41	36	33	30	28	26
	30	0.376	56	50	45	41	37	34	32
	40	0.435	65	57	52	47	43	40	37
	50	0.486	72	64	58	52	48	44	41
	60	0.532	79	70	63	57	53	49	45
Blue (80)	10	0.351	52	46	42	38	35	32	30
	20	0.496	74	66	59	54	49	45	42
	30	0.608	90	80	72	66	60	56	52
	40	0.702	104	93	83	76	69	64	60
	50	0.785	117	104	93	85	78	72	67
	60	0.859	128	113	102	93	85	79	73
Yellow (95)	10	0.506	75	67	60	55	50	46	43
	20	0.715	106	94	85	77	71	65	61
	30	0.876	130	116	104	95	87	80	74
	40	1.009	150	133	120	109	100	92	86
	50	1.133	168	150	135	122	112	104	96
	60	1.239	184	164	147	134	123	113	105

All application rates (gallons/acres) are estimates based on 0-28-0 (10.65 lbs/gallon) at 70 degrees F

All application rates (gallons/acres) are estimates based on 0-28-0 (10.65 lbs/gallon) at 70 degrees F



Colored Disc Orifice Chart



15" Spacing

15" Spacing

15" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min		MPH						
		28-0-0	4.0	4.5	5.0	5.5	6.0	6.5	7.0	
Pink (24)	10	0.033	3.2	2.9	2.6	2.4	2.2	2.0	1.9	
	20	0.046	4.6	4.0	3.6	3.3	3.0	2.8	2.6	
	30	0.057	5.6	5.0	4.5	4.1	3.7	3.5	3.2	
	40	0.065	6.5	5.8	5.2	4.7	4.3	4.0	3.7	
	50	0.073	7.3	6.5	5.8	5.3	4.8	4.5	4.2	
60	0.081	8.0	7.1	6.4	5.8	5.3	4.9	4.6		
Gray (30)	10	0.050	5.0	4.4	4.0	3.6	3.3	3.1	2.9	
	20	0.072	7.1	6.3	5.7	5.2	4.7	4.4	4.1	
	30	0.088	8.7	7.7	6.9	6.3	5.8	5.3	5.0	
	40	0.101	10.0	8.9	8.0	7.3	6.7	6.1	5.7	
	50	0.112	11.1	9.9	8.9	8.1	7.4	6.8	6.4	
60	0.124	12.3	10.9	9.8	8.9	8.2	7.5	7.0		
Black (35)	10	0.070	6.9	6.2	5.5	5.0	4.6	4.3	4.0	
	20	0.098	9.7	8.6	7.8	7.1	6.5	6.0	5.6	
	30	0.120	11.9	10.6	9.5	8.7	7.9	7.3	6.8	
	40	0.139	13.8	12.2	11.0	10.0	9.2	8.5	7.9	
	50	0.156	15.4	13.7	12.3	11.2	10.3	9.5	8.8	
60	0.170	16.8	15.0	13.5	12.2	11.2	10.4	9.6		
Brown (41)	10	0.094	9.3	8.3	7.4	6.8	6.2	5.7	5.3	
	20	0.132	13.1	11.6	10.4	9.5	8.7	8.0	7.5	
	30	0.162	16.0	14.3	12.8	11.7	10.7	9.9	9.2	
	40	0.187	18.5	16.4	14.8	13.4	12.3	11.4	10.6	
	50	0.209	20.7	18.4	16.5	15.0	13.8	12.7	11.8	
60	0.228	22.6	20.1	18.1	16.4	15.1	13.9	12.9		
Orange (46)	10	0.119	11.8	10.5	9.5	8.6	7.9	7.3	6.8	
	20	0.169	16.7	14.9	13.4	12.2	11.2	10.3	9.6	
	30	0.207	20.5	18.2	16.4	14.9	13.7	12.6	11.7	
	40	0.239	23.7	21.0	18.9	17.2	15.8	14.6	13.5	
	50	0.267	26.5	23.5	21.2	19.2	17.6	16.3	15.1	
60	0.293	29.0	25.8	23.2	21.1	19.3	17.8	16.6		
Maroon (52)	10	0.149	15	13	12	11	10	9	8	
	20	0.210	21	18	17	15	14	13	12	
	30	0.257	25	23	20	18	17	16	15	
	40	0.296	29	26	23	21	20	18	17	
	50	0.332	33	29	26	24	22	20	19	
60	0.363	36	32	29	26	24	22	21		
Red (63)	10	0.218	22	19	17	16	14	13	12	
	20	0.307	30	27	24	22	20	19	17	
	30	0.376	37	33	30	27	25	23	21	
	40	0.435	43	38	34	31	29	26	25	
	50	0.486	48	43	38	35	32	30	27	
60	0.532	53	47	42	38	35	32	30		
Blue (80)	10	0.351	35	31	28	25	23	21	20	
	20	0.496	49	44	39	36	33	30	28	
	30	0.608	60	54	48	44	40	37	34	
	40	0.702	69	62	56	51	46	43	40	
	50	0.785	78	69	62	57	52	48	44	
60	0.859	85	76	68	62	57	52	49		
Yellow (95)	10	0.506	50	45	40	36	33	31	29	
	20	0.715	71	63	57	51	47	44	40	
	30	0.876	87	77	69	63	58	53	50	
	40	1.009	100	89	80	73	67	61	57	
	50	1.133	112	100	90	82	75	69	64	
60	1.239	123	109	98	89	82	75	70		
Green (110)	10	0.686	68	60	54	49	45	42	39	
	20	0.973	96	86	77	70	64	59	55	
	30	1.186	117	104	94	85	78	72	67	
	40	1.372	136	121	109	99	91	84	78	
	50	1.531	152	135	121	110	101	93	87	
60	1.681	166	148	133	121	111	102	95		
White (125)	10	0.867	86	76	69	62	57	53	49	
	20	1.230	122	108	97	89	81	75	70	
	30	1.504	149	132	119	108	99	92	85	
	40	1.735	172	153	137	125	114	106	98	
	50	1.938	192	171	153	140	128	118	110	
60	2.124	210	187	168	153	140	129	120		
Lime Green (156)	10	1.372	136	121	109	99	91	84	78	
	20	1.947	193	171	154	140	128	119	110	
	30	2.381	236	209	189	171	157	145	135	
	40	2.752	272	242	218	198	182	168	156	
	50	3.071	304	270	243	221	203	187	174	
60	3.363	333	296	266	242	222	205	190		

All application rates (gallons/acres) are estimates based on 0-28-0 (10.65 lbs/gallon) at 70 degrees F.

20" Spacing

20" Spacing

20" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min		MPH						
		28-0-0	4.0	4.5	5.0	5.5	6.0	6.5	7.0	
Pink (24)	10	0.033	2.4	2.2	1.9	1.8	1.6	1.5	1.4	
	20	0.046	3.4	3.0	2.7	2.5	2.3	2.1	2.0	
	30	0.057	4.2	3.7	3.4	3.1	2.8	2.6	2.4	
	40	0.065	4.9	4.3	3.9	3.5	3.2	3.0	2.8	
	50	0.073	5.5	4.8	4.4	4.0	3.6	3.4	3.1	
60	0.081	6.0	5.3	4.8	4.3	4.0	3.7	3.4		
Gray (30)	10	0.050	3.7	3.3	3.0	2.7	2.5	2.3	2.1	
	20	0.072	5.3	4.7	4.3	3.9	3.5	3.3	3.0	
	30	0.088	6.5	5.8	5.2	4.7	4.3	4.0	3.7	
	40	0.101	7.5	6.7	6.0	5.4	5.0	4.6	4.3	
	50	0.112	8.3	7.4	6.7	6.1	5.6	5.1	4.8	
60	0.124	9.2	8.2	7.4	6.7	6.1	5.7	5.3		
Black (35)	10	0.070	5.2	4.6	4.2	3.8	3.5	3.2	3.0	
	20	0.098	7.3	6.5	5.8	5.3	4.9	4.5	4.2	
	30	0.120	8.9	7.9	7.1	6.5	6.0	5.5	5.1	
	40	0.139	10.3	9.2	8.3	7.5	6.9	6.3	5.9	
	50	0.156	11.6	10.3	9.3	8.4	7.7	7.1	6.6	
60	0.170	12.6	11.2	10.1	9.2	8.4	7.8	7.2		
Brown (41)	10	0.094	7.0	6.2	5.6	5.1	4.6	4.3	4.0	
	20	0.132	9.8	8.7	7.8	7.1	6.5	6.0	5.6	
	30	0.162	12.0	10.7	9.6	8.7	8.0	7.4	6.9	
	40	0.187	13.9	12.3	11.1	10.1	9.2	8.5	7.9	
	50	0.209	15.5	13.8	12.4	11.3	10.3	9.5	8.9	
60	0.228	17.0	15.1	13.6	12.3	11.3	10.4	9.7		
Orange (46)	10	0.119	8.9	7.9	7.1	6.5	5.9	5.5	5.1	
	20	0.169	12.6	11.2	10.0	9.1	8.4	7.7	7.2	
	30	0.207	15.4	13.7	12.3	11.2	10.3	9.5	8.8	
	40	0.239	17.7	15.8	14.2	12.9	11.8	10.9	10.1	
	50	0.267	19.8	17.6	15.9	14.4	13.2	12.2	11.3	
60	0.293	21.7	19.3	17.4	15.8	14.5	13.4	12.4		
Maroon (52)	10	0.149	11	10	9	8	7	7	6	
	20	0.210	16	14	12	11	10	10	9	
	30	0.257	19	17	15	14	13	12	11	
	40	0.296	22	20	18	16	15	14	13	
	50	0.332	25	22	20	18	16	15	14	
60	0.363	27	24	22	20	18	17	15		
Red (63)	10	0.218	16	14	13	12	11	10	9	
	20	0.307	23	20	18	17	15	14	13	
	30	0.376	28	25	22	20	19	17	16	
	40	0.435	32	29	26	23	22	20	18	
	50	0.486	36	32	29	26	24	22	21	
60	0.532	39	35	32	29	26	24	23		
Blue (80)	10	0.351	26	23	21	19	17	16	15	
	20	0.496	37	33	29	27	25	23	21	
	30	0.608	45	40	36	33	30	28	26	
	40	0.702	52	46	42	38	35	32	30	
	50	0.785	58	52	47	42	39	36	33	
60	0.859	64	57	51	46	43	39	36		
Yellow (95)	10	0.506	38	33	30	27	25	23	21	
	20	0.715	53	47	42	39	35	33	30	
	30	0.876	65	58	52	47	43	40	37	
	40	1.009	75	67	60	54	50	46	43	
	50	1.133	84	75	67	61	56	52	48	
60	1.239	92	82	74	67	61	57	53		
Green (110)	10	0.686	51	45	41	37	34	31	29	
	20	0.973	72	64	58	53	48	44	41	
	30	1.186	88	78	70	64	59	54	50	
	40	1.372	102	91	81	74	68	63	58	
	50	1.531	114	101	91	83	76	70	65	
60	1.681	125	111	100	91	83	77	71		
White (125)	10	0.867	64	57	52	47	43	40	37	
	20	1.230	91	81	73	66	61	56	52	
	30	1.504	112	99	89	81	74	69	64	
	40	1.735	129	114	103	94	86	79	74	
	50	1.938	144	128	115	105	96	89	82	
60	2.124	158	140	126	115	105	97	90		
Lime Green (156)	10	1.372	102	91	81	74	68	63	58	
	20	1.947	145	128	116	105	96	89	83	
	30	2.381	177	157	141	129	118	109	101	
	40	2.752	204	182	163	149	136	126	117	
	50	3.071	228	203	182	166	152	140	130	
60	3.363	250	222	200	182	166	154	143		

All application rates (gallons/acres) are estimates based on 0-28-0 (10.65 lbs/gallon) at 70 degrees F.



Colored Disc Orifice Chart



22" Spacing

22" Spacing

22" Spacing

Orifice Color (Approx Size)	PSI	Gal/Min 28-0-0	MPH						
			4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	2.2	2.0	1.8	1.6	1.5	1.4	1.3
	20	0.046	3.1	2.8	2.5	2.3	2.1	1.9	1.8
	30	0.057	3.8	3.4	3.1	2.8	2.5	2.4	2.2
	40	0.065	4.4	3.9	3.5	3.2	2.9	2.7	2.5
	50	0.073	5.0	4.4	4.0	3.6	3.3	3.1	2.8
	60	0.081	5.4	4.8	4.3	4.0	3.6	3.3	3.1
Gray (30)	10	0.050	3.4	3.0	2.7	2.5	2.3	2.1	1.9
	20	0.072	4.8	4.3	3.9	3.5	3.2	3.0	2.8
	30	0.088	5.9	5.3	4.7	4.3	3.9	3.6	3.4
	40	0.101	6.8	6.1	5.4	5.0	4.5	4.2	3.9
	50	0.112	7.6	6.7	6.1	5.5	5.1	4.7	4.3
	60	0.124	8.4	7.4	6.7	6.1	5.6	5.1	4.8
Black (35)	10	0.070	4.7	4.2	3.8	3.4	3.1	2.9	2.7
	20	0.098	6.6	5.9	5.3	4.8	4.4	4.1	3.8
	30	0.120	8.1	7.2	6.5	5.9	5.4	5.0	4.6
	40	0.139	9.4	8.3	7.5	6.8	6.3	5.8	5.4
	50	0.156	10.5	9.3	8.4	7.6	7.0	6.5	6.0
	60	0.170	11.5	10.2	9.2	8.3	7.6	7.1	6.6
Brown (41)	10	0.094	6.3	5.6	5.1	4.6	4.2	3.9	3.6
	20	0.132	8.9	7.9	7.1	6.5	5.9	5.5	5.1
	30	0.162	10.9	9.7	8.7	8.0	7.3	6.7	6.2
	40	0.187	12.6	11.2	10.1	9.2	8.4	7.8	7.2
	50	0.209	14.1	12.5	11.3	10.3	9.4	8.7	8.1
	60	0.228	15.4	13.7	12.3	11.2	10.3	9.5	8.8
Orange (46)	10	0.119	8.1	7.2	6.5	5.9	5.4	5.0	4.6
	20	0.169	11.4	10.1	9.1	8.3	7.6	7.0	6.5
	30	0.207	14.0	12.4	11.2	10.2	9.3	8.6	8.0
	40	0.239	16.1	14.3	12.9	11.7	10.8	9.9	9.2
	50	0.267	18.0	16.0	14.4	13.1	12.0	11.1	10.3
	60	0.293	19.8	17.6	15.8	14.4	13.2	12.2	11.3
Maroon (52)	10	0.149	10	9	8	7	7	6	6
	20	0.210	14	13	11	10	9	9	8
	30	0.257	17	15	14	13	12	11	10
	40	0.296	20	18	16	15	13	12	11
	50	0.332	22	20	18	16	15	14	13
	60	0.363	24	22	20	18	16	15	14
Red (63)	10	0.218	15	13	12	11	10	9	8
	20	0.307	21	18	17	15	14	13	12
	30	0.376	25	23	20	18	17	16	15
	40	0.435	29	26	23	21	20	18	17
	50	0.486	33	29	26	24	22	20	19
	60	0.532	36	32	29	26	24	22	21
Blue (80)	10	0.351	24	21	19	17	16	15	14
	20	0.496	34	30	27	24	22	21	19
	30	0.608	41	36	33	30	27	25	23
	40	0.702	47	42	38	34	32	29	27
	50	0.785	53	47	42	39	35	33	30
	60	0.859	58	52	46	42	39	36	33
Yellow (95)	10	0.506	34	30	27	25	23	21	20
	20	0.715	48	43	39	35	32	30	28
	30	0.876	59	53	47	43	39	36	34
	40	1.009	68	61	54	50	45	42	39
	50	1.133	76	68	61	56	51	47	44
	60	1.239	84	74	67	61	56	51	48
Green (110)	10	0.686	46	41	37	34	31	28	26
	20	0.973	66	58	53	48	44	40	38
	30	1.186	80	71	64	58	53	49	46
	40	1.372	93	82	74	67	62	57	53
	50	1.531	103	92	83	75	69	64	59
	60	1.681	113	101	91	83	76	70	65
White (125)	10	0.867	59	52	47	43	39	36	33
	20	1.230	83	74	66	60	55	51	47
	30	1.504	102	90	81	74	68	62	58
	40	1.735	117	104	94	85	78	72	67
	50	1.938	131	116	105	95	87	81	75
	60	2.124	143	127	115	104	96	88	82
Lime Green (156)	10	1.372	93	82	74	67	62	57	53
	20	1.947	131	117	105	96	88	81	75
	30	2.381	161	143	129	117	107	99	92
	40	2.752	186	165	149	135	124	114	106
	50	3.071	207	184	166	151	138	128	118
	60	3.363	227	202	182	165	151	140	130

All application rates (gallons/acre) are estimates based on 0-28-0 (10.65 lbs/gallon) at 70 degrees F.

36" Spacing

36" Spacing

36" Spacing

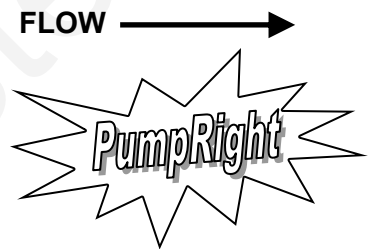
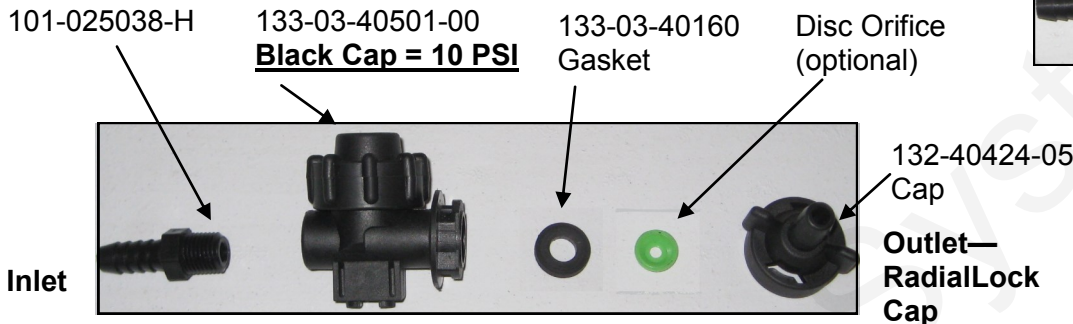
Orifice Color (Approx Size)	PSI	Gal/Min 28-0-0	MPH						
			4.0	4.5	5.0	5.5	6.0	6.5	7.0
Pink (24)	10	0.033	1.4	1.2	1.1	1.0	0.9	0.8	0.8
	20	0.046	1.9	1.7	1.5	1.4	1.3	1.2	1.1
	30	0.057	2.3	2.1	1.9	1.7	1.6	1.4	1.3
	40	0.065	2.7	2.4	2.2	2.0	1.8	1.7	1.5
	50	0.073	3.0	2.7	2.4	2.2	2.0	1.9	1.7
	60	0.081	3.3	3.0	2.7	2.4	2.2	2.0	1.9
Gray (30)	10	0.050	2.1	1.8	1.7	1.5	1.4	1.3	1.2
	20	0.072	3.0	2.6	2.4	2.2	2.0	1.8	1.7
	30	0.088	3.6	3.2	2.9	2.6	2.4	2.2	2.1
	40	0.101	4.2	3.7	3.3	3.0	2.8	2.6	2.4
	50	0.112	4.6	4.1	3.7	3.4	3.1	2.9	2.6
	60	0.124	5.1	4.5	4.1	3.7	3.4	3.1	2.9
Black (35)	10	0.070	2.9	2.6	2.3	2.1	1.9	1.8	1.6
	20	0.098	4.1	3.6	3.2	2.9	2.7	2.5	2.3
	30	0.120	5.0	4.4	4.0	3.6	3.3	3.1	2.8
	40	0.139	5.7	5.1	4.6	4.2	3.8	3.5	3.3
	50	0.156	6.4	5.7	5.1	4.7	4.3	4.0	3.7
	60	0.170	7.0	6.2	5.6	5.1	4.7	4.3	4.0
Brown (41)	10	0.094	3.9	3.4	3.1	2.8	2.6	2.4	2.2
	20	0.132	5.4	4.8	4.4	4.0	3.6	3.3	3.1
	30	0.162	6.7	5.9	5.3	4.9	4.5	4.1	3.8
	40	0.187	7.7	6.8	6.2	5.6	5.1	4.7	4.4
	50	0.209	8.6	7.7	6.9	6.3	5.7	5.3	4.9
	60	0.228	9.4	8.4	7.5	6.8	6.3	5.8	5.4
Orange (46)	10	0.119	4.9	4.4	3.9	3.6	3.3	3.0	2.8
	20	0.169	7.0	6.2	5.6	5.1	4.6	4.3	4.0
	30	0.207	8.5	7.6	6.8	6.2	5.7	5.3	4.9
	40	0.239	9.9	8.8	7.9	7.2	6.6	6.1	5.6
	50	0.267	11.0	9.8	8.8	8.0	7.3	6.8	6.3
	60	0.293	12.1	10.7	9.7	8.8	8.1	7.4	6.9
Maroon (52)	10	0.149	6	5	5	4	4	4	4
	20	0.210	9	8	7	6	6	5	5
	30	0.257	11	9	8	8	7	7	6
	40	0.296	12	11	10	9	8	8	7
	50	0.332	14	12	11	10	9	8	8
	60	0.363	15	13	12	11	10	9	9
Red (63)	10	0.218	9	8	7	7	6	6	5
	20	0.307	13	11	10	9	8	8	7
	30	0.376	16	14	12	11	10	10	9
	40	0.435	18	16	14	13	12	11	10
	50	0.486	20	18	16	15	13	12	11
	60	0.532	22	20	18	16	15	14	13
Blue (80)	10	0.351	14	13	12	11	10	9	8
	20	0.496	20	18	16	15	14	13	12
	30	0.608	25	22	20	18	17	15	14
	40	0.702	29	26	23	21	19	18	17
	50	0.785	32	29	26	24	22	20	19
	60	0.859	35	32	28	26	24	22	20
Yellow (95)	10	0.506	21	19	17	15	14	13	12
	20	0.715	29	26	24	21	20	18	17
	30	0.876	36	32	29	26	24	22	21
	40	1.009	42	37	33	30	28	26	24
	50	1.133	47	42	37	34	31	29	27
	60	1.239	51	45	41	37	34	31	29
Green (110)	10	0.686	28	25	23	21	19	17	16
	20	0.973	40	36	32	29	27	25	23
	30	1.186	49	43	39	36	33	30	28
	40	1.372	57	50	45	41	38	35	32
	50	1.531	63	56	51	46	42	39	36

Inline Diaphragm Check Valve Basic Instructions



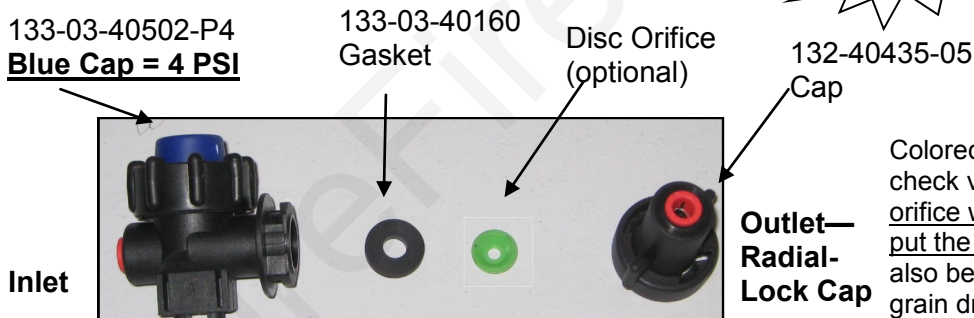
10 lb check valve with 3/8" hose barbs

The recommended check valve for most **PumpRight** installations is the 10 lb check with 3/8" hose barbs. This works with 3/8" rubber hose which SureFire recommends for most applications over 10 GPA on 30" rows. The recommended minimum system operating pressure for this check is 20 psi, to ensure all checks open fully.



4 lb check valve with 1/4" quick connect fittings

4 lb check valves are typically used with **electric pump systems**. SureFire recommends this valve for use with 1/4" tubing applying up to 10 GPA on 30" rows. The recommended minimum system operating pressure for this check is 10 psi, to ensure all checks open fully.



Colored Disc Orifice assembles under the check valve cap in most cases. (Drop the orifice with the hole down into the cap, then put the gasket on top of it.) The orifice can also be installed in a manifold (common on grain drills).

Special Purpose Check Valve Assemblies

Assembly Part Number	Description	Suggested Uses (30" rows)
136-10-04QC04QC	1/4" QC x 1/4" QC 10 lb	< 10 GPA with PumpRight & 1/4" Tubing
136-10-06QC06QC	3/8" QC x 3/8" QC 10 lb	With 3/8" tubing plumbing
136-04-06HB06HB	3/8" HB x 3/8" HB 4 lb	> 10 GPA with Electric Pumps
136-04-08HB08HB	1/2" HB x 1/2" HB 4 lb	> 50 GPA with PumpRight
136-10-08HB08HB	1/2" HB x 1/2" HB 10 lb	> 50 GPA with PumpRight

SureFire Ag Systems

