Weathermatic®

SERVING OUR FRIENDS AND CUSTOMERS FOR 57 YEARS

CATALOG OF **PRODUCTS**

2003 – 2004

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SERVING OUR FRIENDS AND CUSTOMERS FOR 57 YEARS

Because of you, Weathermatic is celebrating 57 years of providing quality landscape irrigation products exclusively to the professional.

We are on a mission to create a family of irrigation business professionals where members achieve success in life and in business. Thank you for your loyal support! We are convinced that the primary challenge in the 21st century will be to continue the process of delivering irrigation systems that will conserve precious water while still maintaining an aesthetically pleasing environment for our homes, businesses, and public green areas. Weathermatic is ready to assist you in achieving this goal with our Valcon Water Management System – Wetware, SL and VAC controllers, and communications equipment.

Our full line now features Nitro valves, color-coded MPR spray nozzles and stainless steel Turbo rotors, in addition to our proven LX sprinklers, famous Weathermatic valves and the Weathermate Plus controller package including the new Rain Sense and economical Weathermate remote control.

TABLE OF **CONTENTS**

Professional Spray Sprinklers for commercial and residential turf and groundcover applications

LX SERIES

FEATURES

- Five year warranty
- Pressure-activated wiper seal for reliability
- Easy grip threaded cover
- Stainless steel retract spring
- High-strength ribbed design

QUICK INSTALLATION

- T-Plug™ Flush Cap on every head
- Side and bottom inlets on LX6 and LX12*
- Ratchet nozzle alignment

*Side inlet installation on LX6 and LX12 is not recommended in freezing climates.

NOZZLES

- Completely compatible with all industry-standard female thread nozzles
- LX MPR nozzles
- LX Adjustable Arc nozzles
- B Series brass nozzles

(*Order nozzles separately)*

OPERATING DATA

- Pressure range: 15 to 70 psi (1,0 to 4,8 bars)
- Flow-by: Zero at 5 psi (0,3 bars) or greater
- Factory installed check valve: 9.5 ft/hd at 18 psi (2.9 m/hd at 1,2bar). Specify: LX4-CV, LX6-CV or LX12-CV

LXS SHRUB ADAPTER

- 1/2 inch female inlet threads
- Durable plastic construction
- Top threads accept LX MPR nozzles, LX Adjustable Arc nozzles, B Series brass nozzles and all industry standard female thread nozzles
- Accepts LX nozzle protective screen (shipped with nozzle)

LX MODEL SPECIFICATION

Model	Pop-up height	METRIC
LX3	3 in	7,6 cm
LX4	4 in	10 cm
LX6	6 in	15 cm
LX12	12 in	30 cm
LX4-CV	4 in	10 cm
LX6-CV	6 in	15 cm
LX12-CV	12 in	30 cm
LX-NP Snap on Cover		

DIMENSIONS

1/2 inch female threaded inlets

Model	Body Height	METRIC
LX3	5 1/4 in	(13,3 cm)
LX4	6 1/4 in	(15,9 cm)
LX6	8 1/2 in	(21,6 cm)
LX12	15 1/4 in	(38,7 cm)
Exposed Cover	2 1/4 in	(5,7 cm)

LX CHECK VALVE

LX-NP
NON-POTABLE COVER

LX3 *LX4* *LX6* *LX12*

LX MPR NOZZLES

FEATURES

- Color-coded nozzles for easy identification
- Reusable, dual-compartment ziploc bags for organizing nozzles and strainers
- Matched precipitation rates across sets and across patterns in each numbered series
- LX Series screens maintain precise radius adjustments (screen included with nozzle)
- Stainless steel radius adjustment screw

APPLICATIONS

- For use with all LX Series Sprayheads
- Fits all industry-standard sprayheads with male thread risers
- Fits LXS, No. 72 & No. 73 Shrub Adapters

OPERATING DATA

- Precipitation rate: 1.67 to 5.33 in/hr (37 to 144 mm/h)
- Spacing: 5 to 15 feet (1,5 to 4,6 m)
- Pressure: 15 to 30 psi (1,0 to 2,1 bars)
- MPR performance was determined with nozzles mounted on 4 inch (10,2 cm) pop-ups. ASAE standard of .01 in/hr was used to determine listed radius.

8 SERIES
5° SPRAY TRAJECTORY

Nozzle	Arc	Pressure psi	Radius ft	Flow gpm	Precip. in/hr ■	Precip. in/hr ▲
8 F	360	15	5	1.2	4.62	5.33
		20	6	1.3	3.48	4.01
		25	7	1.4	2.75	3.18
		30	8	1.6	2.41	2.78
8 H	180	15	5	0.6	4.62	5.33
		20	6	0.7	3.74	4.32
		25	7	0.7	2.75	3.18
		30	8	0.8	2.41	2.78
8 T	120	15	5	0.4	4.62	5.33
		20	6	0.4	3.21	3.70
		25	7	0.5	2.95	3.40
		30	8	0.5	2.26	2.60
8 Q	90	15	5	0.3	4.62	5.33
		20	6	0.3	3.21	3.70
		25	7	0.4	3.14	3.63
		30	8	0.4	2.41	2.78

8 SERIES METRIC
5° SPRAY TRAJECTORY

Nozzle	Arc	Pressure bar	Radius m	Flow m^3/h	Precip. mm/hr ■	Precip. mm/hr ▲
8 F	360	1,0	1,5	0,27	120	139
		1,4	1,8	0,30	93	107
		1,7	2,1	0,32	73	84
		2,1	2,4	0,36	63	72
8 H	180	1,0	1,5	0,14	124	144
		1,4	1,8	0,16	99	114
		1,7	2,1	0,16	73	84
		2,1	2,4	0,18	63	72
8 T	120	1,0	1,5	0,09	120	139
		1,4	1,8	0,09	83	96
		1,7	2,1	0,11	75	86
		2,1	2,4	0,11	57	66
8 Q	90	1,0	1,5	0,07	124	144
		1,4	1,8	0,07	86	100
		1,7	2,1	0,09	82	94
		2,1	2,4	0,09	63	72

■ *Spacing based on 50% of diameter*
▲ *Spacing based on 50% of diameter*
Max radius reduction with adjustment screw is 25%

10 SERIES
15° SPRAY TRAJECTORY

Nozzle	Arc	Pressure psi	Radius ft	Flow gpm	Precip. in/hr ■	Precip. in/hr ▲
10 F	360	15	7	1.2	2.36	2.72
		20	8	1.3	1.96	2.26
		25	9	1.4	1.66	1.92
		30	10	1.6	1.54	1.78
10 H	180	15	7	0.6	2.36	2.72
		20	8	0.7	2.11	2.43
		25	9	0.7	1.66	1.92
		30	10	0.8	1.54	1.78
10 T	120	15	7	0.4	2.36	2.72
		20	8	0.4	1.80	2.08
		25	9	0.5	1.78	2.06
		30	10	0.5	1.44	1.67
10 Q	90	15	7	0.3	2.36	2.72
		20	8	0.3	1.80	2.08
		25	9	0.4	1.90	2.20
		30	10	0.4	1.54	1.78

10 SERIES METRIC
15° SPRAY TRAJECTORY

Nozzle	Arc	Pressure bar	Radius m	Flow m^3/h	Precip. mm/hr ■	Precip. mm/hr ▲
10 F	360	1,0	2,1	0,27	61	71
		1,4	2,4	0,30	52	60
		1,7	2,7	0,32	44	51
		2,1	3,0	0,36	40	46
10 H	180	1,0	2,1	0,14	63	73
		1,4	2,4	0,16	56	64
		1,7	2,7	0,16	44	51
		2,1	3,0	0,18	40	46
10 T	120	1,0	2,1	0,09	61	71
		1,4	2,4	0,09	47	54
		1,7	2,7	0,11	45	52
		2,1	3,0	0,11	37	42
10 Q	90	1,0	2,1	0,07	63	73
		1,4	2,4	0,07	49	56
		1,7	2,7	0,09	49	57
		2,1	3,0	0,09	40	46

■ *Spacing based on 50% of diameter*
▲ *Spacing based on 50% of diameter*
Max radius reduction with adjustment screw is 25%

12 SERIES
30° SPRAY TRAJECTORY

Nozzle	Arc	Pressure psi	Radius ft	Flow gpm	Precip. in/hr ■	Precip. in/hr ▲
12 F	360	15	9	1.8	2.14	2.47
		20	10	2.1	2.02	2.33
		25	11	2.4	1.91	2.20
		30	12	2.6	1.74	2.01
12 H	180	15	9	0.9	2.14	2.47
		20	10	1.0	1.93	2.22
		25	11	1.2	1.91	2.20
		30	12	1.3	1.74	2.01
12 T	120	15	9	0.6	2.14	2.47
		20	10	0.7	2.02	2.33
		25	11	0.8	1.91	2.20
		30	12	0.9	1.80	2.08
12 Q	90	15	9	0.5	2.38	2.74
		20	10	0.5	1.93	2.22
		25	11	0.6	1.91	2.20
		30	12	0.7	1.87	2.16
12 TT	240	15	9	1.1	1.93	2.46
		20	10	1.3	1.85	2.00
		25	11	1.5	1.73	1.65
		30	12	1.6	1.59	1.39
12 TQ	270	15	9	1.3	2.07	2.46
		20	10	1.5	1.96	2.00
		25	11	1.7	1.83	1.65
		30	12	1.8	1.63	1.39

12 SERIES METRIC
30° SPRAY TRAJECTORY

Nozzle	Arc	Pressure bar	Radius m	Flow m³/h	Precip. mm/hr ■	Precip. mm/hr ▲
12 F	360	1,0	2,7	0,41	56	65
		1,4	3,0	0,48	53	62
		1,7	3,3	0,55	51	58
		2,1	3,7	0,59	43	50
12 H	180	1,0	2,7	0,20	55	63
		1,4	3,0	0,23	51	59
		1,7	3,3	0,27	50	57
		2,1	3,7	0,30	44	51
12 T	120	1,0	2,7	0,14	58	67
		1,4	3,0	0,16	53	62
		1,7	3,3	0,18	50	57
		2,1	3,7	0,20	44	51
12 Q	90	1,0	2,7	0,11	60	70
		1,4	3,0	0,11	49	56
		1,7	3,3	0,14	51	59
		2,1	3,7	0,16	47	54
12 TT	240	1.0	2,7	0,25	51	65
		1,4	3,0	0,29	48	53
		1,7	3,3	0,33	45	43
		2,1	3,7	0,37	41	35
12 TQ	270	1,0	2,7	0,30	55	65
		1,4	3.0	0,35	52	53
		1,7	3,3	0,40	49	43
		2,1	3,7	0,42	41	35

■ *Spacing based on 50% of diameter*
▲ *Spacing based on 50% of diameter*
Max radius reduction with adjustment screw is 25%

15 SERIES
30° SPRAY TRAJECTORY

Nozzle	Arc	Pressure psi	Radius ft	Flow gpm	Precip. in/hr ■	Precip. in/hr ▲
15 F	360	15	11	2.6	2.07	2.39
		20	12	3.0	2.01	2.32
		25	14	3.3	1.62	1.87
		30	15	3.7	1.58	1.83
15 H	180	15	11	1.3	2.07	2.39
		20	12	1.5	2.01	2.32
		25	14	1.7	1.67	1.93
		30	15	1.9	1.63	1.88
15 T	120	15	11	0.9	2.15	2.48
		20	12	1.0	2.01	2.32
		25	14	1.1	1.62	1.87
		30	15	1.2	1.54	1.78
15 Q	90	15	11	0.7	2.23	2.57
		20	12	0.8	2.14	2.47
		25	14	0.8	1.57	1.81
		30	15	0.9	1.54	1.78
15 TT	240	15	11	1.6	1.96	2.39
		20	12	1.9	1.90	2.00
		25	14	2.1	1.55	1.47
		30	15	2.3	1.47	1.28
15 TQ	270	15	11	2.1	2.24	2.39
		20	12	2.5	2.20	3.00
		25	14	2.8	1.82	1.47
		30	15	3.0	1.70	1.28

15 SERIES METRIC
30° SPRAY TRAJECTORY

Nozzle	Arc	Pressure bar	Radius m	Flow m³/h	Precip. mm/hr ■	Precip. mm/hr ▲
15 F	360	1,0	3,4	0,59	51	59
		1,4	3,7	0,68	50	57
		1,7	4,3	0,75	41	47
		2,1	4,6	0,84	40	46
15 H	180	1,0	3,4	0,30	52	60
		1,4	3,7	0,34	50	57
		1,7	4,3	0,39	42	49
		2,1	4,6	0,43	41	47
15 T	120	1,0	3,7	0,20	52	60
		1,4	3,7	0,23	50	58
		1,7	4,3	0,25	41	47
		2,1	4,6	0,27	38	44
15 Q	90	1,0	3,4	0,16	55	64
		1,4	3,7	0,18	53	61
		1,7	4,3	0,18	39	45
		2,1	4,6	0,20	38	44
15 TT	240	1,0	3,4	0,38	49	60
		1,4	3,7	0,44	48	58
		1,7	4,3	0,48	39	48
		2,1	4,6	0,53	38	46
15 TQ	270	1.0	3,4	0,49	57	60
		1,4	3,7	0,57	56	58
		1,7	4,3	0,64	46	48
		2,1	4,6	0,68	43	46

■ *Spacing based on 50% of diameter*
▲ *Spacing based on 50% of diameter*
Max radius reduction with adjustment screw is 25%

5 STREAM BUBBLER SERIES
0° SPRAY TRAJECTORY

METRIC

Nozzle Pattern	Pressure psi	Radius ft (1)	Flow gpm (2)	Pressure bar	Radius m (1)	Flow m³/h (2)
5 FB	15	5	1.5	1,0	1,5	0,34
	20	5	1.5	1,4	1,5	0,34
	25	5	1.5	1,7	1,5	0,34
	30	5	1.5	2,1	1,5	0,34
5 HB	15	5	1.0	1,0	1,5	0,23
	20	5	1.0	1,4	1,5	0,23
	25	5	1.0	1,7	1,5	0,23
	30	5	1.0	2,1	1,5	0,23
5 QB	15	5	0.5	1,0	1,5	0,11
	20	5	0.5	1,4	1,5	0,11
	25	5	0.5	1,7	1,5	0,11
	30	5	0.5	2,1	1,5	0,11
5 CST-B	15	5	0.5	1,0	1,5	0,11
	20	5	0.5	1,4	1,5	0,11
	25	5	0.5	1,7	1,5	0,11
	30	5	0.5	2,1	1,5	0,11

(1) *Adjusted radius at pressure shown*
(2) *Flow with radius adjusted to 5 ft (1.5m)*

15/9 STRIP SERIES
30° SPRAY TRAJECTORY

Nozzle Pattern	Pressure psi	Width x Length (ft)	Flow gpm	Precip.* in/hr
15EST	15	4 x 13	0.5	1.85
	20	4 x 14	0.5	1.72
	25	4 x 14	0.6	2.06
	30	4 x 15	0.6	1.93
15CST	15	4 x 26	0.9	1.67
	20	4 x 28	1.0	1.72
	25	4 x 28	1.1	1.89
	30	4 x 30	1.2	1.93
15SST	15	4 x 26	0.9	1.67
	20	4 x 28	1.0	1.72
	25	4 x 28	1.1	1.89
	30	4 x 30	1.2	1.93
9SST	15	9 x 15	1.3	1.85
	20	9 x 16	1.5	2.01
	25	9 x 18	1.6	1.90
	30	9 x 18	1.7	2.02

METRIC
30° SPRAY TRAJECTORY

Nozzle Pattern	Pressure psi	Width x Length (m)	Flow m³/h	Precip.* mm/hr
15 EST	1,0	1,2 x 4,0	0,11	46
	1,4	1,2 x 4,3	0,11	43
	1,7	1,2 x 4,3	0,14	54
	2,1	1,2 x 4,6	0,14	51
15 CST	1,0	1,2 x 7,9	0,20	42
	1,4	1,2 x 8,5	0,23	45
	1,7	1,2 x 8,5	0,25	49
	2,1	1,2 x 9,1	0,27	50
15 SST	1,0	1,2 x 7,9	0,20	42
	1,4	1,2 x 8,5	0,23	45
	1,7	1,2 x 8,5	0,25	49
	2,1	1,2 x 9,1	0,27	50
9 SST	1,0	2,7 x 4,6	0,30	48
	1,4	2,7 x 4,9	0,34	51
	1,7	2,7 x 5,5	0,36	49
	2,1	2,7 x 5,5	0,39	53

* *Precipitation based on in-line, head-to-head spacing.*

LX ADJUSTABLE ARC NOZZLES (AAN)

Adjustable arc, female thread nozzles for Weathermatic's LX Series pop-up sprayheads and most other manufacturer's male threaded spray sprinkler products. Adjustable arc nozzles create a multitude of arc patterns, eliminating the need to stock dozens of odd-pattern versions. One LX Adjustable Arc nozzle does it all.

FEATURES

- Easy arc adjustment from 25° to 360°
- Color coded for easy identification
- Screen included with nozzle
- Radius adjustment screw

OPERATING DATA

- Precipitation Rate: 1.30 to 2.28 in/hr (33 to 57 mm/hr)
- Pressure: 20 to 40 psi (1,4 to 2,8 bars)
- Angle of trajectory: 10° on Model 10A; 28° on 12A, 15A and 17A

LX ADJUSTABLE ARC NOZZLE SPECIFICATION

Model	Radius
10A	10 — 12 ft
12A	12 — 15 ft
15A	14 — 17 ft
17A	16 — 19 ft

METRIC

Model	Radius
10A	3,0 — 3,7 m
12A	3,7 — 4,6 m
15A	4,3 — 5,2 m
17A	4,9 — 5,8 m

LX ADJUSTABLE ARC NOZZLES (METRIC ON NEXT PAGE)

		NOZZLE 10A Trajectory: 10° Color Code: RED				NOZZLE 12A Trajectory: 28° Color Code: GREEN				NOZZLE 15A Trajectory: 28° Color Code: BLACK				NOZZLE 17A Trajectory: 28° Color Code: GREY			
Arc	Pressure psi	Radius ft	Flow gpm	Precip. in/h ■	Precip. in/h ▲	Radius ft	Flow gpm	Precip. in/h ■	Precip. in/h ▲	Radius ft	Flow gpm	Precip. in/h ■	Precip. in/h ▲	Radius ft	Flow gpm	Precip. in/h ■	Precip. in/h ▲
360°	20	10	1.36	1.31	1.51	12	2.13	1.42	1.64	14	3.08	1.51	1.75	16	3.87	1.46	1.68
	25	10	1.56	1.50	1.73	12	2.24	1.50	1.73	15	3.50	1.50	1.73	17	4.50	1.50	1.73
	30	11	1.95	1.55	1.79	13	2.85	1.62	1.87	16	3.71	1.39	1.61	18	4.82	1.43	1.65
	35	11	2.04	1.62	1.87	14	3.05	1.50	1.73	16	4.12	1.55	1.79	18	5.01	1.49	1.72
	40	12	2.92	1.95	2.25	15	3.35	1.43	1.65	17	4.54	1.51	1.75	19	5.51	1.47	1.70
270°	20	10	1.02	1.31	1.51	12	1.60	1.43	1.65	14	2.31	1.51	1.75	16	2.90	1.45	1.68
	25	10	1.17	1.50	1.73	12	1.68	1.50	1.73	15	2.63	1.50	1.73	17	3.38	1.50	1.73
	30	11	1.46	1.55	1.79	13	2.14	1.63	1.88	16	2.79	1.59	1.84	18	3.61	1.43	1.65
	35	11	1.53	1.62	1.87	14	2.29	1.50	1.73	16	3.09	1.55	1.79	18	3.76	1.49	1.72
	40	12	2.19	1.95	2.25	15	2.51	1.43	1.65	17	3.40	1.51	1.74	19	4.13	1.47	1.70
240°	20	10	0.91	1.31	1.52	12	1.42	1.42	1.64	14	2.06	1.52	1.75	16	2.58	1.46	1.68
	25	10	1.04	1.50	1.73	12	1.50	1.50	1.74	15	2.34	1.50	1.73	17	3.00	1.50	1.73
	30	11	1.30	1.55	1.79	13	1.90	1.62	1.87	16	2.48	1.40	1.62	18	3.21	1.43	1.65
	35	11	1.36	1.62	1.87	14	2.03	1.50	1.73	16	2.75	1.55	1.79	18	3.34	1.49	1.72
	40	12	1.95	1.96	2.26	15	2.24	1.44	1.66	17	3.02	1.51	1.74	19	3.67	1.47	1.69
180°	20	10	0.68	1.31	1.51	12	1.07	1.43	1.65	14	1.54	1.51	1.75	16	1.94	1.46	1.68
	25	10	0.78	1.50	1.73	12	1.12	1.50	1.73	15	1.75	1.50	1.73	17	2.25	1.50	1.73
	30	11	0.97	1.54	1.78	13	1.42	1.62	1.87	16	1.86	1.40	1.62	18	2.41	1.43	1.65
	35	11	1.02	1.62	1.87	14	1.52	1.49	1.72	16	2.06	1.55	1.79	18	2.50	1.49	1.72
	40	12	1.46	1.95	2.25	15	1.68	1.44	1.66	17	2.27	1.51	1.75	19	2.75	1.47	1.69
120°	20	10	0.45	1.30	1.50	12	0.71	1.42	1.64	14	1.03	1.52	1.75	16	1.29	1.46	1.68
	25	10	0.52	1.50	1.73	12	0.75	1.50	1.74	15	1.17	1.50	1.73	17	1.50	1.50	1.73
	30	11	0.65	1.55	1.79	13	0.95	1.62	1.87	16	1.24	1.40	1.62	18	1.61	1.43	1.66
	35	11	0.68	1.62	1.87	14	1.02	1.50	1.74	16	1.37	1.55	1.78	18	1.67	1.49	1.72
	40	12	0.97	1.95	2.25	15	1.12	1.44	1.66	17	1.51	1.51	1.74	19	1.84	1.47	1.70
90°	20	10	0.34	1.31	1.51	12	0.53	1.42	1.64	14	0.77	1.51	1.75	16	0.97	1.46	1.68
	25	10	0.39	1.50	1.73	12	0.56	1.50	1.73	15	0.88	1.51	1.74	17	1.13	1.51	1.74
	30	11	0.49	1.56	1.80	13	0.71	1.62	1.87	16	0.93	1.40	1.62	18	1.20	1.43	1.65
	35	11	0.51	1.62	1.87	14	0.76	1.49	1.72	16	1.03	1.55	1.79	18	1.25	1.49	1.72
	40	12	0.73	1.95	2.25	15	0.84	1.44	1.66	17	1.13	1.51	1.74	19	1.38	1.47	1.70
45°	20	10	0.17	1.31	1.51	12	0.27	1.44	1.67	14	0.39	1.53	1.77	16	0.48	1.44	1.67
	25	10	0.19	1.46	1.69	12	0.28	1.50	1.73	15	0.44	1.51	1.74	17	0.56	1.49	1.72
	30	11	0.24	1.53	1.76	13	0.36	1.64	1.89	16	0.46	1.38	1.60	18	0.60	1.43	1.65
	35	11	0.26	1.65	1.91	14	0.38	1.49	1.72	16	0.52	1.56	1.81	18	0.63	1.50	1.73
	40	12	0.37	1.98	2.28	15	0.42	1.44	1.66	17	0.57	1.52	1.75	19	0.69	1.47	1.70

■ *Spacing based on 50% of diameter* ▲ *Spacing based on 50% of diameter*

LX ADJUSTABLE ARC NOZZLES METRIC




		NOZZLE 10A Trajectory: 10° Color Code: RED				NOZZLE 12A Trajectory: 28° Color Code: GREEN				NOZZLE 15A Trajectory: 28° Color Code: BLACK				NOZZLE 17A Trajectory: 28° Color Code: GREY			
Arc	Pressure	Radius	Flow	Precip. mm/h		Radius	Flow	Precip. mm/h		Radius	Flow	Precip. mm/h		Radius	Flow	Precip. mm/h	
	bar	m	m³/h	■	▲	m	m³/h	■	▲	m	m³/h	■	▲	m	m³/h	■	▲
360°	1,4	3,0	0,31	34	40	3,7	0,48	35	40	4,3	0,70	38	44	4,9	0,88	37	42
	1,7	3,0	0,35	39	45	3,7	0,51	37	43	4,6	0,79	37	43	5,2	1,02	38	44
	2,1	3,4	0,44	38	44	4,0	0,65	41	47	4,9	0,84	35	40	5,5	1,09	36	42
	2,4	3,4	0,46	40	46	4,3	0,69	37	43	4,9	0,94	39	45	5,5	1,14	38	44
	2,8	3,7	0,66	48	56	4,6	0,76	36	41	5,2	1,03	38	44	5,8	1,25	37	43
270°	1,4	3,0	0,23	34	39	3,7	0,36	35	40	4,3	0,52	38	43	4,9	0,66	37	42
	1,7	3,0	0,27	40	46	3,7	0,38	37	43	4,6	0,60	38	44	5,2	0,77	38	44
	2,1	3,4	0,33	38	44	4,0	0,49	41	47	4,9	0,63	35	40	5,5	0,82	36	42
	2,4	3,4	0,35	40	47	4,3	0,52	38	43	4,9	0,70	39	45	5,5	0,85	37	43
	2,8	3,7	0,50	49	56	4,6	0,57	36	41	5,2	0,77	38	44	5,8	0,94	37	43
240°	1,4	3,0	0,21	35	40	3,7	0,32	35	40	4,3	0,47	38	44	4,9	0,59	37	43
	1,7	3,0	0,24	40	46	3,7	0,34	37	43	4,6	0,53	38	43	5,2	0,68	38	44
	2,1	3,4	0,30	39	45	4,0	0,43	40	47	4,9	0,56	35	40	5,5	0,73	36	42
	2,4	3,4	0,31	40	46	4,3	0,46	37	43	4,9	0,62	39	45	5,5	0,76	38	44
	2,8	3,7	0,44	48	56	4,6	0,51	36	42	5,2	0,69	38	44	5,8	0,83	37	43
180°	1,4	3,0	0,15	33	38	3,7	0,24	35	40	4,3	0,35	38	44	4,9	0,44	37	42
	1,7	3,0	0,18	40	46	3,7	0,25	37	42	4,6	0,40	38	44	5,2	0,51	38	44
	2,1	3,4	0,22	38	44	4,0	0,32	40	46	4,9	0,42	35	40	5,5	0,55	36	42
	2,4	3,4	0,23	40	46	4,3	0,35	38	44	4,9	0,47	39	45	5,5	0,57	38	44
	2,8	3,7	0,33	48	56	4,6	0,38	36	41	5,2	0,52	38	44	5,8	0,62	37	43
120°	1,4	3,0	0,10	33	38	3,7	0,16	35	40	4,3	0,23	37	43	4,9	0,29	36	42
	1,7	3,0	0,12	40	46	3,7	0,17	37	43	4,6	0,27	38	44	5,2	0,34	38	44
	2,1	3,4	0,15	39	45	4,0	0,22	41	48	4,9	0,28	35	40	5,5	0,37	37	42
	2,4	3,4	0,15	39	45	4,3	0,23	37	43	4,9	0,31	39	45	5,5	0,38	38	44
	2,8	3,7	0,22	48	56	4,6	0,25	35	41	5,2	0,34	38	44	5,8	0,42	37	43
90°	1,4	3,0	0,08	36	41	3,7	0,12	35	40	4,3	0,17	37	42	4,9	0,22	37	42
	1,7	3,0	0,09	40	46	3,7	0,13	38	44	4,6	0,20	38	44	5,2	0,26	38	44
	2,1	3,4	0,11	38	44	4,0	0,16	40	46	4,9	0,21	35	40	5,5	0,27	36	41
	2,4	3,4	0,12	42	48	4,3	0,17	37	42	4,9	0,23	38	44	5,5	0,28	37	43
	2,8	3,7	0,17	50	57	4,6	0,19	36	41	5,2	0,26	38	44	5,8	0,31	37	43
45°	1,4	3,0	0,04	36	41	3,7	0,06	35	40	4,3	0,09	39	45	4,9	0,11	37	42
	1,7	3,0	0,04	36	41	3,7	0,06	35	40	4,6	0,10	38	44	5,2	0,13	38	44
	2,1	3,4	0,05	35	40	4,0	0,08	40	46	4,9	0,10	33	38	5,5	0,14	37	43
	2,4	3,4	0,06	42	48	4,3	0,09	39	45	4,9	0,12	40	46	5,5	0,14	37	43
	2,8	3,7	0,08	47	54	4,6	0,10	38	44	5,2	0,13	38	44	5,8	0,16	38	44

■*Spacing based on 50% of diameter* ▲*Spacing based on 50% of diameter*

B SERIES BRASS NOZZLES (FORMERLY 5500 SERIES)

FEATURES

Milled brass design provides best available uniform precipitation for water, material and labor savings in a professional design. Arcs and angles for any landscape requirement. Reinforced border spraying combines with an extremely flat slope of distribution to eliminate the requirement for "head-to-head" coverage. B Series nozzles provide a minimum of .25 in/hr precipitation at one foot from listed radius. Arc accuracy factory-tested every hour.

- B Series nozzles fit LX sprayheads, LXS, 72 and 73 shrub bodies as well as all industry standard male thread risers
- Low minimum operating pressure of 20 psi (1,4 bar)
- B3 nozzles are compatible with most micro-irrigation application rates

FULL CIRCLE

PART CIRCLE

NOZZLE WITH SCREEN

B SERIES UNIFORMITY

TYPICAL PLASTIC NOZZLE UNIFORMITY

LOW ANGLE NOZZLES

The B3 and B10 nozzles are available only in low angle. Models B12 through B20 in H, Q and 145° are available either in standard or low angle. The B24 is in standard angle only. For low angle selection, add an **–LA** suffix to the part number. For low angle models B12 through B20, derate maximum spacing by 15%.

STANDARD 30° AND LOW ANGLE 15° TRAJECTORY/ TRIANGULAR SPACING/MATCHED PRECIPITATION

Max Spacing:			B3 3 - 5 Feet		B10 10 Feet		B12 12 Feet		B15 15 Feet		B18 18 Feet		B20 20 Feet		B24 24 Feet	
Arc	Model	psi	gpm	radius	gpm	radius	gpm	radius	gpm	radius	gpm	radius	gpm	radius	gpm	radius
360°		20					1.7	9	2.4	11	3.4	12	4.2	13	6.2	16
	F	25					1.9	9	2.7	12	3.8	13	4.8	14	6.8	17
		30					2.1	11	3.0	12	4.2	13	5.3	15	7.5	18
180°		20	0.3	5	0.6	8	1.0	9	1.4	11	2.0	12	2.4	13	3.3	16
	H	25	0.3	6	0.7	8	1.1	9	1.6	12	2.3	13	2.7	14	3.5	17
		30	0.3	7	0.7	9	1.2	11	1.8	12	2.5	13	2.9	15	4.0	18
90°		20	0.3	5	0.3	8	0.5	9	0.7	11	1.0	12	1.2	13	1.8	16
	Q	25	0.3	6	0.4	8	0.6	9	0.8	12	1.1	13	1.4	14	1.9	17
		30	0.3	7	0.4	9	0.7	11	0.9	12	1.2	13	1.5	15	2.1	18
120°		20	0.3	5	0.4	8	0.7	9	1.0	11	1.3	12	1.6	13	2.2	16
	T	25	0.3	6	0.5	8	0.7	9	1.1	12	1.4	13	1.8	14	2.4	17
		30	0.3	7	0.6	9	0.8	11	1.2	12	1.6	13	2.0	15	2.7	18
240°		20			0.8	8	1.3	9	2.2	11	2.7	12	3.3	13	4.6	16
	TT	25			0.9	8	1.5	9	2.4	12	3.2	13	3.7	14	5.2	17
		30			1.0	9	1.7	11	2.6	12	3.5	13	4.1	15	5.7	18
270°		20	0.3	5	0.9	8	1.4	9	2.4	11	3.1	12	3.8	13	5.2	16
	TQ	25	0.3	6	1.0	8	1.6	9	2.6	12	3.5	13	4.3	14	5.5	17
		30	0.3	7	1.1	9	1.8	11	2.9	12	3.8	13	4.7	15	6.1	18
105°		20							0.8	11	1.1	12	1.4	13		
	105	25							1.0	12	1.3	13	1.6	14		
		30							1.1	12	1.5	13	1.8	15		
135°		20	0.3	5	0.5	8	0.7	9	1.0	11	1.5	12	1.8	13	2.5	16
	135	25	0.3	6	0.6	8	0.8	9	1.2	12	1.7	13	2.1	14	2.9	17
		30	0.3	7	0.6	9	0.9	11	1.4	12	1.9	13	2.3	15	3.2	18
165°		20							1.3	11	1.8	12	2.3	13		
	165	25							1.5	12	1.9	13	2.6	14		
		30							1.7	12	2.3	13	2.9	15		
195°		20					1.0	9	1.5	11	2.2	12	2.8	13	3.9	16
	195	25					1.1	9	1.7	12	2.5	13	3.2	14	4.4	17
		30					1.3	11	1.9	12	2.8	13	3.5	15	4.9	18
225°		20			0.7	8	1.3	9	2.0	11	2.5	12	3.0	13	4.3	16
	225	25			0.9	8	1.4	9	2.3	12	2.9	13	3.4	14	4.9	17
		30			0.9	9	1.6	11	2.6	12	3.2	13	3.8	15	5.4	18

STRIP NOZZLES

B SERIES STRIP NOZZLES

Arc	PSI	B10 gpm	B10 W+L (ft)	B15 gpm	B15 W+L (ft)
	20	.3	4 x 8	.6	4 x 11
EST	25	.4	4 X 9	.7	4 X 12
	30	.5	4 x 10	.8	4 x 13
	20	.7	4 x 16	1.4	4 x 22
CST	25	.8	4 x 18	1.6	4 x 24
	30	.9	4 x 20	1.8	4 x 26
	20	.7	4 x 16	1.4	4 x 22
SST	25	.8	4 x 18	1.6	4 x 24
	30	.9	4 x 20	1.8	4 x 26

METRIC

Arc	Bar	B10 m^3/h	B10 W+L (m)	B15 m^3/h	B15 W+L (m)
	1.4	0,07	1,2 x 2,4	0,14	1,2 x 3,4
EST	1.7	0,09	1,2 x 2,7	0,16	1,2 x 3,7
	2.1	0.11	1,2 x 3,0	0,18	1,2 x 4,0
	1.4	0,16	1,2 x 4,8	0,32	1,2 x 6,7
CST	1.7	0,18	1,2 x 5,5	0,36	1,2 x 6,9
	2.1	0,20	1,2 x 6,1	0,41	1,2 x 7,9
	1.4	0,16	1,2 x 4,8	0,32	1,2 x 6,7
SST	1.7	0,18	1,2 x 5,5	0,36	1,2 x 6,9
	2.1	0,20	1,2 x 6,1	0,41	1,2 x 7,9

METRIC STANDARD 30° AND LOW ANGLE 15° TRAJECTORY/ TRIANGULAR SPACING/MATCHED PRECIPITATION

Max Spacing:			B3 0,9 - 1,5 m		B10 3,0 m		B12 3,6 m		B15 4,4 m		B18 5,4 m		B20 6,0 m		B24 7,2 m	
Arc	Model	Bar	m3h	radius	m3h	radius	m3h	radius	m3h	radius	m3h	radius	m3h	radius	m3h	radius
360°		1,4					0,39	0,55	0,55	3,3	0,77	3,6	0,95	3,9	1,34	4,8
	F	1,7					0,43	0,61	0,61	3,6	0,86	3,9	1,09	4,2	1,41	5,1
		2,1					0,48	0,68	0,68	3,6	0,95	3,9	1,20	4,5	1,59	5,4
180°		1,4	0,07	1,5	0,14	2,4	0,23	0,32	0,32	3,3	0,45	3,6	0,55	3,9	0,75	4,8
	H	1,7	0,07	1,8	0,16	2,4	0,25	0,36	0,36	3,6	0,52	3,9	0,61	4,2	0,79	5,1
		2,1	0,07	2,1	0,16	2,7	0,27	0,41	0,41	3,6	0,57	3,9	0,66	4,5	0,91	5,4
90°		1,4	0,07	1,5	0,07	2,4	0,11	0,16	0,16	3,3	0,23	3,6	0,27	3,9	0,41	4,8
	Q	1,7	0,07	1,8	0,09	2,4	0,14	0,18	0,18	3,6	0,25	3,9	0,32	4,2	0,43	5,1
		2,1	0,07	2,1	0,09	2,7	0,16	0,20	0,20	3,6	0,27	3,9	0,34	4,5	0,48	5,4
120°		1,4	0,07	1,5	0,09	2,4	0,16	2,7	0,23	3,3	0,30	3,6	0,36	3,9	0,50	4,8
	T	1,7	0,07	1,8	0,11	2,4	0,16	2,7	0,25	3,6	0,32	3,9	0,41	4,2	0,55	5,1
		2,1	0,07	2,1	0,14	2,7	0,18	3,3	0,27	3,6	0,36	3,9	0,45	4,5	0,61	5,4
240°		1,4			0,18	2,4	0,30	2,7	0,50	3,3	0,61	3,6	0,75	3,9	1,04	4,8
	TT	1,7			0,20	2,4	0,34	2,7	0,55	3,6	0,73	3,9	0,84	4,2	1,18	5,1
		2,1			0,23	2,7	0,39	3,3	0,59	3,6	0,79	3,9	0,93	4,5	1,29	5,4
270°		1,4			0,20	2,4	0,32	2,7	0,55	3,3	0,70	3,6	0,86	3,9	1,18	4,8
	TQ	1,7			0,23	2,4	0,36	2,7	0,59	3,6	0,79	3,9	0,98	4,2	1,25	5,1
		2,1			0,25	2,7	0,41	3,3	0,66	3,6	0,86	3,9	1,07	4,5	1,39	5,4
105°		1,4							0,18	3,3	0,25	3,6	0,32	3,9		
	105	1,7							0,23	3,6	0,30	3,9	0,36	4,2		
		2,1							0,25	3,6	0,34	3,9	0,41	4,5		
135°		1,4	0,07	1,5	0,11	2,4	0,16	2,7	0,25	3,3	0,34	3,6	0,41	3,9	0,57	4,8
	135	1,7	0,07	1,8	0,14	2,4	0,18	2,7	0,27	3,6	0,39	3,9	0,48	4,2	0,66	5,1
		2,1	0,07	2,1	0,14	2,7	0,20	3,3	0,32	3,6	0,43	3,9	0,52	4,5	0,73	5,4
165°		1,4							0,30	3,3	0,41	3,6	0,52	3,9		
	165	1,7							0,34	3,6	0,43	3,9	0,59	4,2		
		2,1							0,39	3,6	0,52	3,9	0,66	4,5		
195°		1,4					0,23	2,7	0,34	3,3	0,50	3,6	0,64	3,9	0,89	4,8
	195	1,7					0,25	2,7	0,39	3,6	0,57	3,9	0,73	4,2	1,00	5,1
		2,1					0,30	3,3	0,43	3,6	0,64	3,9	0,79	4,5	1,11	5,4
225°		1,4			0,16	2,4	0,30	2,7	0,45	3,3	0,57	3,6	0,68	3,9	0,98	4,8
	225	1,7			0,20	2,4	0,32	2,7	0,52	3,6	0,66	3,9	0,77	4,2	1,11	5,1
		2,1			0,20	2,7	0,36	3,3	0,59	3,6	0,73	3,9	0,86	4,5	1,23	5,4

BRASS NOZZLE ADAPTERS

Convert B Series & LX MPR nozzles to shrub heads

NO. 72
1/2 COPPER

NO. 73
1/2 IPS

B SERIES DESIGN NOTES

- *Many designers derate recommended spacing for climate and wind. Listed radius is determined by ASAE industry standard measurement of .01 in/hr.*
- *Precipitation: 1.2 in/hr (25 mm/hr) for full circle / 20 psi (1,4 bar) at maximum triangular spacing*
- ***B Series is identical to former 5500 Series. This is a name change for easier identification. Example: B15H = 5515-18***

100 SERIES SHRUB NOZZLES

100 Series shrub nozzle performance is identical to B Series brass nozzles.

"Effective Radius" (see footnote 3) is provided to illustrate the excellent distribution profile of the nozzle series. Minor difference between "ER" and radius demonstrates the slope of distribution at the outer limits of coverage. This eliminates the requirement of "head-to-head" spacing.

Fits 92 or 93 shrub body or the 96 adapter.

NO. 92 SHRUB BODY

Solder connection adapts all 100 Series part circle shrub nozzles to 1/2 inch copper tube risers.

NO. 93 SHRUB BODY

Adapts all 100 Series part circle shrub nozzles to 1/2 IPS risers.

NO. 901 SHRUB RISER EXTENSION

3 inches (7,6 cm) length.
Fits 100 Series Nozzles and No. 92 or 93 adapters.

10° LOW ANGLE SPRAY TRAJECTORY/TRIANGULAR SPACING/ MATCHED PRECIPITATION

Nozzle		3 ft—5 ft Spacing (varies with application)				10 ft Max Spacing (1)				12 ft Max Spacing (1)				15 ft Max Spacing (1)				18 ft Max Spacing (1)				20 ft Max Spacing (1)				24 ft Max Spacing (1)			
Arc	psi	No.	gpm	radius (2)	ER (3)	No.	gpm	radius (2)	ER (3)	No.	gpm	radius (2)	ER (3)	No.	gpm	radius (2)	ER (3)	No.	gpm	radius (2)	ER (3)	No.	gpm	radius (2)	ER (3)	No.	gpm	radius (2)	ER (3)
180°	20	100H	.3	5	4	110H	.6	8	7	112H	1.0	9	8	115H	1.4	11	10	118H	2.0	12	11	120H	2.4	13	12	124H	3.3	16	15
	25		.3	6	5		.7	8	7		1.1	9	8		1.6	12	10		2.3	13	12		2.7	14	13		3.5	17	16
	30		.3	7	5		.7	9	8		1.2	11	9		1.8	12	11		2.5	13	12		2.9	15	14		4.0	18	16
90°	20	100Q	.3	5	4	110Q	.3	8	7	112Q	.5	9	8	115Q	.7	11	10	118Q	1.0	12	11	120Q	1.2	13	12	124Q	1.8	16	15
	25		.3	6	5		.4	8	7		.6	9	8		.8	12	10		1.1	13	12		1.4	14	13		1.9	17	16
	30		.3	7	5		.4	9	8		.7	11	9		.9	12	11		1.2	13	12		1.5	15	14		2.1	18	16
120°	20	100A	.3	5	4	110A	.4	8	7	112A	.7	9	8	115A	1.0	11	10	118A	1.3	12	11	120A	1.6	13	12	124A	2.2	16	15
	25		.3	6	5		.5	8	7		.7	9	8		1.1	12	10		1.4	13	12		1.8	14	13		2.4	17	16
	30		.3	7	5		.6	9	8		.8	11	9		1.2	12	11		1.6	13	12		2.0	15	14		2.7	18	16
270°	20	100E	.3	5	4	110E	.9	8	7	112E	1.4	9	8	115E	2.4	11	10	118E	3.1	12	11	120E	3.8	13	12	124E	5.2	16	15
	25		.3	6	5		1.0	8	7		1.6	9	8		2.6	12	10		3.5	13	12		4.3	14	13		5.5	17	16
	30		.3	7	5		1.1	9	8		1.8	11	9		2.9	12	11		3.8	13	12		4.7	15	14		6.1	18	16

METRIC

Nozzle		0,9 — 1,5m Spacing (varies with application)				3,0m Max Spacing (1)				3,6m Max Spacing (1)				4,4m Max Spacing (1)				5,4m Max Spacing (1)				6,0m Max Spacing (1)				7,2m Max Spacing (1)			
Arc	bar	No.	m^3/h	radius (2)	ER (3)	No.	m^3/h	radius (2)	ER (3)	No.	m^3/h	radius (2)	ER (3)	No.	m^3/h	radius (2)	ER (3)	No.	m^3/h	radius (2)	ER (3)	No.	m^3/h	radius (2)	ER (3)	No.	m^3/h	radius (2)	ER (3)
180°	1,4	100H	0,07	1,5	1,2	110H	0,14	2,4	2,1	112H	0,23	2,7	2,4	115H	0,32	3,3	3,0	118H	0,45	3,6	3,3	120H	0,55	3,9	3,6	124H	0,75	4,8	4,5
	1,7		0,07	1,8	1,5		0,16	2,4	2,1		0,25	2,7	2,4		0,36	3,6	3,0		0,52	3,9	3,6		0,61	4,2	3,9		0,79	5,1	4,8
	2,1		0,07	2,1	1,5		0,16	2,7	2,4		0,27	3,3	2,7		0,41	3,6	3,3		0,57	3,9	3,6		0,66	4,5	4,2		0,91	5,4	4,8
90°	1,4	100Q	0,07	1,5	1,2	110Q	0,07	2,4	2,1	112Q	0,11	2,7	2,4	115Q	0,16	3,3	3,0	118Q	0,23	3,6	3,3	120Q	0,27	3,9	3,6	124Q	0,41	4,8	4,5
	1,7		0,07	1,8	1,5		0,09	2,4	2,1		0,14	2,7	2,4		0,18	3,6	3,0		0,25	3,9	3,6		0,32	4,2	3,9		0,43	5,1	4,8
	2,1		0,07	2,1	1,5		0,09	2,7	2,4		0,16	3,3	2,7		0,20	3,6	3,3		0,27	3,9	3,6		0,34	4,5	4,2		0,48	5,4	4,8
120°	1,4	100A	0,07	1,5	1,2	110A	0,09	2,4	2,1	112A	0,16	2,7	2,4	115A	0,23	3,3	3,0	118A	0,30	3,6	3,3	120A	0,36	3,9	3,6	124A	0,50	4,8	4,5
	1,7		0,07	1,8	1,5		0,11	2,4	2,1		0,16	2,7	2,4		0,25	3,6	3,0		0,32	3,9	3,6		0,41	4,2	3,9		0,55	5,1	4,8
	2,1		0,07	2,1	1,5		0,14	2,7	2,4		0,18	3,3	2,7		0,27	3,6	3,3		0,36	3,9	3,6		0,45	4,5	4,2		0,61	5,4	4,8
270°	1,4	100E	0,07	1,5	1,2	110E	0,20	2,4	2,1	112E	0,32	2,7	2,4	115E	0,55	3,3	3,0	118E	0,70	3,6	3,3	120E	0,86	3,9	3,6	124E	1,18	4,8	4,5
	1,7		0,07	1,8	1,5		0,23	2,4	2,1		0,36	2,7	2,4		0,59	3,6	3,0		0,79	3,9	3,6		0,98	4,2	3,9		1,25	5,1	4,8
	2,1		0,07	2,1	1,5		0,25	2,7	2,4		0,41	3,3	2,7		0,66	3,6	3,3		0,86	3,9	3,6		1,07	4,5	4,2		1,39	5,4	4,8

(1) Maximum triangular spacing. Climate, wind and nozzle performance should be considered for design spacing. Example: Many designers derate spacing by using 90% of maximum for average site conditions.

(2) Listed radius determined by ASAE industry standard measurement of .01 in/hr (0,3 mm/hr metric). Nozzle mounted on 12 in. (30 cm) riser.

(3) ER Effective Radius indicates the most distant point at which .25 in/hr (6 mm) precipitation will occur within the area of coverage.

- *For full circle shrub heads, specify B Series nozzles.*
- *Precipitation: 1.4 in/hr (35 mm/hr) for half circle / 20psi (1,4 bar) / maximum spacing.*

NO. 106 PRESSURE COMPENSATING BUBBLER

NO. 106 SERIES

The No. 106 provides a soft, bubbling action for deep soaking. Ideal for planter boxes, tree wells or similar areas when proper drainage is available.

FEATURES

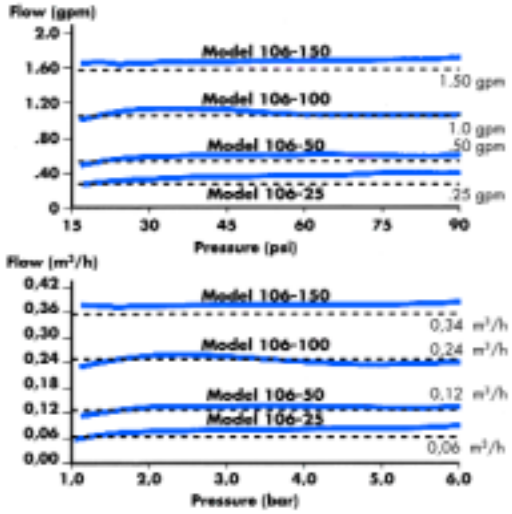
- *Pressure Compensating* – Provides a constant flow rate over a wide operating range
- *Trickle Down Watering* – Water trickles down the sides of the riser
- *Design Versatility* – Choice of four flow rates

CONSTRUCTION

Durable ABS plastic housing. Pressure compensating device is made of long-life Buna-N rubber (1/2 IPS connection)

OPERATING RANGE

• **Flow:**	.25 – 1.5 gpm	0,06 – 0,34 m3/h
• **Spacing:**	1 – 3 ft.	0,3 – 0,9 m
• **Pressure:**	15 – 90 psi	1,0 – 6,0 bar



NO. 102 ADJUSTABLE BUBBLER

NO. 102 SERIES

The No. 102 provides a soft, bubbling action for deep soaking. A perfect choice for all applications where economy and/or higher flows are required. Ideal for planter boxes, tree wells or similar areas when proper drainage is available.

FEATURES

- *Adjustable* – Fully regulate flow
- *Trickle Down Watering* – Water trickles down the sides of the riser at all pressure settings
- *Design Versatility* – Operates over a wide range of pressures

CONSTRUCTION

Durable ABS plastic housing with stainless steel adjustment screw (1/2 IPS connection)

OPERATING RANGE

• **Flow:**	1.1 – 2.3 gpm	0,25 – 0,52 m3/h
• **Spacing:**	1 – 3 ft.	0,3 – 0,9 m
• **Pressure:**	10 – 60 psi	0,7 – 4,2 bar

OPERATING DATA

		METRIC	
psi	gpm	bar	m3/h
10	1.1	0,7	0,25
20	1.3	1,5	0,30
30	1.6	2,1	0,36
40	1.9	2,8	0,43
50	2.1	3,5	0,48
60	2.3	4,2	0,52

Flow listed with full open performance.

NO. 105 BED SPRAY NOZZLE

- The No. 105 provides a fixed, horizontal (flat) spray
- Full circle only
- This head is ideally suited for smaller, special treatment areas
- Fits No. 92 or 93 bodies
- Note: Diameter of coverage is based on head mounted 6 inches (15 cm) above grade.

Nozzle	Type	psi	dia. (ft.)	gpm
	Full	10	11	0.9
	Full	15	13	1.1
	Full	18	14	1.2

METRIC

Nozzle	Type	bar	dia. (m.)	m³/h
	Full	0,70	3,3	0,20
	Full	1,00	3,9	0,25
	Full	1,25	4,2	0,27

Closed-case, gear drive rotor for small to medium size turf areas

"POINT AND SHOOT" ARC ADJUSTMENT WITHOUT TOOLS

Take the Turbo Target Practice Challenge

SEE PAGE 36

T3 – TURBO ROTARY SPRINKLER

FEATURES (LISTED TOP TO BOTTOM OF ROTOR)

- 5 year warranty and 100% water tested
- Thick, vandal resistant rubber cover is standard; visible arrows indicate + or – arc adjustment
- Radius adjustment screw decreases radius up to 25%
- "Punch-thru" cover to protect nozzle retaining screw from debris
- Easy grip threaded cover
- 14 field changeable nozzles including low angles and flow + all on one rack
- Safety clutch for vandal protection; ratchets like a sprayhead
- Part circle models adjust from 40° to 360°; ***no tools required***
- Expanded "arc dwell" on part circle models provides full coverage along borders
- Pressure activated wiper seal and strong stainless steel spring on pop-up models to ensure positive retraction
- High-tech micro filter protects reversing mechanism
- Streamlined large flow tube to minimize pressure loss through sprinkler
- Impeller flow regulator automatically matches flow to nozzle selection
- Smooth impeller gear drive for highly uniform watering
- Large area, basket type, removable strainer for debris protection
- Standard "Ready Check™ Valve" on T3 and T3-36 models is easily reversed in the field to a "check" position. Valve holds back 12 feet (3,7 m/hd) of elevated water

CONSTRUCTION

- High strength non-corrosive plastics and metals used throughout sprinkler
- Sealed, lubricant packed drive housing provides long life performance

OPTIONS (FACTORY INSTALLED)

- Non-potable cover (add "N" suffix)
- Vandal cover lock (add "XV" prefix)

ACCESSORIES

- T3ST Nozzle install collar

T3 DIMENSIONS

Height (closed): 7 5/8 in. (19,4 cm)
Pop-up Height: 4 in. (10,2 cm)
Inlet: 3/4 IPS

T3S SHRUB DIMENSIONS

Height: 8 3/16 in. (20,8 cm)
Inlet: 3/4 IPS

T3

T3S

T3SS

MODEL SPECIFICATION

T3	Pop-up adjustable arc
T3-36	Pop-up full circle
T3S	Adjustable arc shrub model
T3SS	Stainless steel pop-up adjustable arc
T3SS-36	Stainless steel pop-up full circle

OPERATING RANGE

		METRIC
Precipitation Rate	Approx. 0.4 to 0.6 in/hr at 50 psi	10 to 15 mm/hr at 3,5 bar
Radius	23 to 61 ft	7,0 to 18,6 m
Pressure	20 to 70 psi	1,4 to 4,8 bar
Flow	0.5 to 14.9 gpm	0,11 to 3,39 m3/h

T3, T3-36, T3S PERFORMANCE

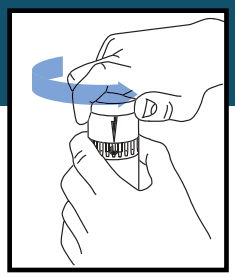
Nozzle	Pressure psi	Radius* ft.	Flow gpm	METRIC Pressure bar	Radius* M	Flow m3/hr
STANDARD ANGLE 26°						
1	20	23	0.5	1,4	7,0	0,11
	30	28	0.7	2,0	8,5	0,16
	40	32	0.8	2,8	9,8	0,18
	50	33	0.9	3,5	10,1	0,20
	60	33	1.0	4,1	10,1	0,23
1.5	20	24	0.8	1,4	7,3	0,18
	30	31	1.0	2,0	9,4	0,23
	40	35	1.2	2,8	10,7	0,32
	50	36	1.6	3,5	11,0	0,36
	60	36	1.8	4,1	11,0	0,40
2	20	21	0.9	1,4	6,4	0,20
	30	28	1.2	2,0	8,5	0,27
	40	35	1.4	2,8	10,7	0,42
	50	35	1.9	3,5	10,7	0,43
	60	35	2.3	4,1	10,7	0,52
3	20	21	0.9	1,4	6,4	0,2
	30	30	1.7	2,0	9,1	0,39
	40	38	2.0	2,8	11,6	0,51
	50	39	2.4	3,5	11,9	0,54
	60	41	2.8	4,1	12,5	0,64
3.5	40	41	3.5	2,8	12,5	0,78
	50	42	3.7	3,5	12,8	0,84
	60	43	4.3	4,1	13,1	0,99
4	40	44	4.0	2,8	13,4	0,9
	50	45	4.3	3,5	13,7	0,98
	60	46	5.0	4,1	14,0	1,13
6	40	45	5.5	2,8	13,7	1,24
	50	46	6.3	3,5	14,0	1,43
	60	47	6.9	4,1	14,3	1,58
8	40	45	6.3	2,8	13,7	1,43
	50	47	7.5	3,5	14,3	1,7
	60	51	8.1	4,1	15,6	1,85
LOW ANGLE 13°						
2.0LA	30	29	1.6	2,1	8,8	0,36
	40	33	1.9	2,8	10,1	0,44
	50	34	2.1	3,5	10,4	0,47
2.5LA	30	31	2.1	2,1	9,5	0,49
	40	35	2.6	2,8	10,7	0,58
	50	36	2.9	3,5	11,0	0,65
3.5LA	30	31	2.7	2,1	9,5	0,61
	40	35	3.2	2,8	10,7	0,73
	50	37	3.5	3,5	11,3	0,79
4.5LA	30	33	3.0	2,1	10,1	0,70
	40	37	3.4	2,8	11,3	0,82
	50	37	4.1	3,5	11,3	0,92
FLOW + NOZZLES 26°						
9	50	50	9.5	3,5	15,3	2,15
	60	54	10.8	4,1	16,5	2,44
	70	55	11.7	4,8	16,8	2,66
13	50	57	12.4	3,5	17,4	2,81
	60	59	13.8	4,1	18,0	3,13
	70	61	14.9	4,8	18,6	3,39

* *Radius of coverage shown is for still air with no diffusion. Maximum radius reduction with diffuser screw is 25%.*

* *Note: See Sprinkler Design (pg.34) for spacing and precipitation rate formulas.*

CT70 – COMMERCIAL TURBO ROTARY SPRINKLER

Closed-case, gear drive rotor for athletic fields, parks, and large turf areas



"POINT AND SHOOT" ARC ADJUSTMENT WITHOUT TOOLS

Take the Turbo Target Practice Challenge

SEE PAGE 36

CT70 ROTARY SPRINKLER

FEATURES (LISTED TOP TO BOTTOM OF ROTOR)

- 5 year warranty and 100% water tested
- Thick, vandal resistant rubber cover is standard; visible arrows indicate + or – arc adjustment
- Radius adjustment screw decreases radius up to 25%
- "Punch-thru" cover to protect nozzle retaining screw from debris
- Easy grip threaded cover
- 5 field changeable nozzles
- Safety clutch for vandal protection; ratchets like a sprayhead
- Part circle models adjust from 40° to 360°; ***no tools required***
- Expanded "arc dwell" on part circle models provides full coverage along borders
- Pressure activated wiper seal and strong stainless steel spring on pop-up models to ensure positive retraction
- High-tech micro filter protects reversing mechanism
- Streamlined large flow tube to minimize pressure loss through sprinkler
- Impeller flow regulator automatically matches flow to nozzle selection
- Smooth impeller gear drive for highly uniform watering
- Large area, basket type, removable strainer for debris protection
- Standard "Ready Check™ Valve" on T3 and T3-36 models is easily reversed in the field to a "check" position. Valve holds back 15 feet (4,6 m/hd) of elevated water

CONSTRUCTION

- High strength non-corrosive plastics and metals used throughout sprinkler
- Sealed, lubricant packed drive housing provides long life performance

OPTIONS (FACTORY INSTALLED)

- Non-potable cover (add "N" suffix)
- Vandal cover lock (add "XV" prefix)

ACCESSORIES

- T3ST Nozzle install collar

DIMENSIONS

Height (closed):	8 13/16 in. (22,4 cm)
Pop-up Height:	4 in. (10,2 cm)
Inlet:	1 in. IPS *(specify ISO for international)*
Exposed Top Diameter:	1 3/4 in. (4,4 cm)

CT70

CT70SS

MODEL SPECIFICATION

CT70	Adjustable arc
CT70-36	Full circle
CT70SS	Stainless steel adjustable arc
CT70SS-36	Stainless steel full circle

International Threads: Add ISO suffix

CT70/CT70-36 PERFORMANCE

Nozzle	Pressure psi	Radius* ft.	Flow gpm	METRIC Pressure bar	Radius* M	Flow m3/hr
71	40	49	8.1	2,8	14,9	1,84
	50	51	9.1	3,4	15,5	2,07
	60	53	10.0	4,2	16,2	2,27
	70	55	11.0	4,8	16,8	2,50
	80	56	11.8	5,5	17,0	2,68
72	50	54	10.7	3,4	16,5	2,43
	60	55	11.8	4,2	16,8	2,68
	70	57	12.6	4,8	17,4	2,86
	80	58	13.8	5,5	17,7	3,13
73	50	57	14.0	3,4	17,4	3,18
	60	58	15.3	4,2	17,7	3,48
	70	60	16.8	4,8	18,3	3,82
	80	61	17.8	5,5	18,6	4,04
74	60	59	16.6	4,2	18,0	3,77
	70	62	18.1	4,8	18,9	4,11
	80	63	19.2	5,5	19,2	4,36
	90	65	20.4	6,2	19,8	4,63
75	60	66	22.5	4,2	20,1	5,11
	70	67	24.7	4,8	20,4	5,61
	80	72	26.5	5,5	21,9	6,02
	90	74	28.0	6,2	22,6	6,36

Nozzle trajectory: 26°

* *Radius of coverage shown is for still air with no diffusion. Maximum radius reduction with diffuser screw is 25%.*

Note: Performance data derived from tests that conform to ASAE Standard S398.1. Uniform precipitation data developed with Hyperspace™ Software is available upon request.

Note: See Sprinkler Design (pg.34) for spacing and precipitation rate formulas.

OPERATING RANGE

		METRIC
Precipitation Rate	Approx. 0.6 to 1.0 in/hr at 60 psi	15,8 to 27 mm/hr at 4,2 bar
Radius	49 to 74 ft	14,9 to 22,6 m
Pressure	40 to 90 psi	2,8 to 6,2 bar
Flow	8.1 to 28.0 gpm	1,84 to 6,36 m3/h

QUICK COUPLING VALVES

- Weathermatic quick coupling valves provide convenient manual connection for swivel hose ells and above ground impact sprinklers.
- All quick coupling valves have a thermo-plastic locking cover. Choice of easy to locate yellow cover or purple non-potable water identification cover. Industrial grade red brass valve body.
- Keys for locking cover are ordered separately
- 3/4" Quick Coupler Valves feature two-piece bodies. 1" and 1 1/2" Quick Coupler Valves have one-piece bodies.

COUPLERS

- Stainless steel handle is included with each coupler
- Coupler has industrial grade red brass body
- 3/4" and 1" are single lug; 1 1/2" is double lug

QUICK COUPLER MODELS

Specify	Inlet Size	Cover Color	Fits Coupler	Coupler Outlet Size
QV75L	3/4"	Yellow w Lock	**CH75**	3/4" MIPS x 1/2" FIPS
QV75L-NP		Purple NP w Lock	**CH75**	3/4" MIPS x 1/2" FIPS
QV100L	1"	Yellow w Lock	**CH100**	1" MIPS x 3/4" FIPS
QV100L-NP		Purple NP w Lock	**CH100**	1" MIPS x 3/4" FIPS
QV151L	1 1/2"	Yellow w Lock	**CH151**	1 1/2" MIPS x 1 1/4" FIPS
QV151L-NP		Purple NP w Lock	**CH151**	1 1/2" MIPS x 1 1/4" FIPS

- *International threads available on 1" and 1 1/2" valves. Add -ISO suffix to part number.*
- *3/4" valve thread is the same as ISO.*
- *Couplers are available with NPT threads only.*
- *Non-potable and 1 1/2 models are special order items.*

PRESSURE LOSS PSI / PRESSURE LOSS BAR

gpm	QV75 3/4 inch	QV100 1 inch	QV151 1 1/2 inch	m3/h	QV75 3/4 inch	QV100 1 inch	QV151 1 1/2 inch
10	1.5			**2,27**	0,11		
15	3.1			**3,41**	0,22		
20	5.3	1.1		**4,54**	0,37	0,08	
25	8.5	2.2		**5,68**	0,60	0,16	
30		3.6		**6,81**		0,25	
35		5.7		**7,95**		0,40	
40		8.0	1.0	**9,09**		0,56	0,07
50			1.7	**11,36**			0,12
60			2.6	**13,63**			0,18
70			3.6	**15,90**			0,25
85			5.6	**19,31**			0,39
100			8.8	**22,71**			0,62

RLK-2
KEY FOR QCV COVER

Fits all QV series valves.

SWIVEL HOSE ELLS

Ideal companion to Weathermatic CH Series Couplers.

Specify Model	Fits Coupler	Hose Thread Size
10SHL	CH75 Series	3/4 Male Hose Thread
11SHL	CH100 Series	3/4 Male Hose Thread
12SHL	CH100 Series	1 Male Hose Thread

N-100 SERIES – NITRO REMOTE CONTROL VALVE

FEATURES

- 100% water tested
- 150 psi (10,3 bar) rating
- Unique "reverse flow" porting design permits equal pressure distribution on both sides of the diaphragm, regardless of line pressure providing zero stress to prevent "stretching," a common cause of valve failure
- Normally closed valve for water conservation
- Diaphragm's self cleaning ports constantly flex, inhibiting sand and silt from blocking valve action
- Molded shock cone for smooth operation and reduction of water hammer
- Easy-to-use internal manual bleed lever; bleeds valve downstream; has stops for open and closed positions
- High efficiency M24E solenoid with stainless steel actuator
- Engineering grade PVC body and cover with combination hex, slot and Phillips retaining screws
- Non-rising flow control stem throttles valve from full open to closed position on flow control models

ELECTRICAL

- Wiring requires a single lead from the controller to each solenoid, plus a common neutral to all solenoids; type UF wire, U.L. listed, is recommended for all hookups

24VAC/60 Hz	24VAC/50 Hz
Inrush: 9.77 VA Holding: 6.2 VA	Inrush: 10.5 VA Holding: 6.88 VA

- Do not use nominal voltage ratings listed above for sizing of valve wire (see wire sizing, pg. 32)

MODELS

N-100 (1 in. FIP)*
N-100F (1 in. FIP with flow control)*
N-100S (1 in. SLIPxSLIP)
N-100SF (1 in. SLIPxSLIP with flow control)
N-100MB (1 in. Male x Barb)
N-100MBF (1 in. Male x Barb with flow control)

* *International: Specify ISO*

PRESSURE LOSS

		METRIC	
Flow gpm	Loss psi	Flow m3/h	Loss bar
0-4	1.2 Max.	0-1,0	0,09 Max.
4	1.2	1,0	0,09
6	1.7	1,5	0,14
8	2.5	2,0	0,19
10	3.0	2,5	0,22
12	3.4	3,0	0,25
14	3.8	3,5	0,28
16	4.1	4,0	0,30
18	4.4	4,5	0,32
20	4.6	5,0	0,33
22	4.8	5,5	0,35
24	5.1	6,0	0,38
26	5.4	6,5	0,41
28	5.8	7,0	0,45
30	6.3	7,5	0,47
32	6.6	8,0	0,50
35	7.3	8,5	0,51


N-100


N-100F


N-100S


N-100SF


N-100MB


N-100MBF

12000 SERIES – SILVER BULLET REMOTE CONTROL VALVE

FEATURES

- 100% water tested
- 150 psi (10,3 bar) rating
- Unique "reverse flow" porting design permits equal pressure distribution on both sides of the diaphragm, regardless of line pressure providing zero stress to prevent "stretching," a common cause of valve failure
- Normally closed valve for water conservation
- Diaphragm's self cleaning ports constantly flex, inhibiting sand and silt from blocking valve action
- Molded shock cone for smooth operation and reduction of water hammer
- Easy-to-use internal manual bleed lever; bleeds valve downstream; has stops for open and closed positions
- High efficiency M24E solenoid with stainless steel actuator
- High-strength glass-filled body and cover with 1/4 in. stainless steel cover bolts and mating brass body inserts
- Non-rising flow control stem throttles valve from full open to closed position on flow control models

ELECTRICAL

- Wiring requires a single lead from the controller to each solenoid, plus a common neutral to all solenoids; type UF wire, U.L. listed, is recommended for all hookups

24VAC/60 Hz	24VAC/50 Hz
Inrush: 9.77 VA Holding: 6.2 VA	Inrush: 10.5 VA Holding: 6.88 VA

- Do not use nominal voltage ratings listed above for sizing of valve wire (see wire sizing, pg. 32)

MODELS

12024E-10 (1in. FIP)*

12024EF-10 (1in. FIP with flow control)*

* *International: Specify ISO*

12000 SERIES VALVE PRESSURE LOSS

		METRIC	
Flow gpm	Loss psi	Flow m3/h	Loss bar
0-4	1.2 Max.	0-1,0	0,09 Max.
4	1.2	1,0	0,09
6	1.7	1,5	0,14
8	2.5	2,0	0,19
10	3.0	2,5	0,22
12	3.4	3,0	0,25
14	3.8	3,5	0,28
16	4.1	4,0	0,30
18	4.4	4,5	0,32
20	4.6	5,0	0,33
22	4.8	5,5	0,35
24	5.1	6,0	0,38
26	5.4	6,5	0,41
28	5.8	7,0	0,45
30	6.3	7,5	0,47
32	6.6	8,0	0,50
35	7.3	8,5	0,51

12024E-10

12024EF-10

21000CR SERIES – BLACK BULLET REMOTE CONTROL VALVE

FEATURES

- 5 year warranty and 100% water tested
- 150 psi (10,3 bar) rating
- Unique "reverse flow" porting design permits equal pressure distribution on both sides of the diaphragm, regardless of line pressure providing zero stress to prevent "stretching," a common cause of valve failure
- Normally closed valve for water conservation
- Diaphragm's self cleaning ports constantly flex, inhibiting sand and silt from blocking valve action
- Brass shock cone for smooth operation and reduction of water hammer
- Easy-to-use internal manual bleed lever; bleeds valve downstream; has stops for open and closed positions
- High-efficiency M24E solenoid with stainless steel actuator
- High-strength glass-filled body and cover with 1/4 in. stainless steel cover bolts and mating brass body inserts
- Brass non-rising flow control stem throttles valve from full open to closed position
- Excellent for micro-irrigation
- Contamination resistant (CR)
- Chloramine resistant Albino Rhino™ diaphragm

OPTIONS (FACTORY INSTALLED)

- XPR Pressure Regulator–the Weathermatic XPR pressure regulating module senses inlet pressure and maintains constant outlet pressure (see **PRK-24** in valve accessory section for specifications)
- Non-potable Alert Solenoid; may be substituted for standard model (specify **XS24NP**)

ELECTRICAL

- Wiring requires a single lead from the controller to each solenoid, plus a common neutral to all solenoids; type UF wire, U.L. listed, is recommended for all hookups

24VAC/60 Hz	24VAC/50 Hz
Inrush: 9.77 VA	Inrush: 10.5 VA
Holding: 6.2 VA	Holding: 6.88 VA

- Do not use nominal voltage ratings listed above for sizing of valve wire (see wire sizing, pg. 32)

INSTALLATION

- Teflon tape is recommended
- 1 inch FIP can be bushed to 3/4 in.
- 1 1/2 inch FIP can be bushed to 1 1/4 in.
- International threads (specify ISO)

21000CR SERIES VALVE PRESSURE LOSS PSI				METRIC PRESSURE LOSS BAR			
Flow gpm	21024E-10 1 in	21024E-15 1 1/2 in	21024E-20 2 in	Flow m3/h	21024E-10 1 in	21024E-15 1 1/2 in	21024E-20 2 in
0-4	1.2 maximum			0-0,9	0,08 maximum		
6	1.4			1,0	0,10		
8	1.6			2,0	0,12		
10	1.7*			2,5	0,13*		
15	2.0			3,0	0,14		
20	2.3	1.3*		5,0	0,18	0,10*	
25	3.0	1.6		6,0	0,24	0,12	
30	4.3	1.9		7,0	0,32	0,14	
35	6.0	2.4		8,0	0,43	0,17	
40	7.7	3.0	2.3*	9,0	0,54	0,21	0,16*
45	9.5	3.8	2.4	10,0	0,64	0,26	0,17
50	11.5	4.6	2.6	11,0	0,77	0,31	0,17
55		5.6	2.7	12,0		0,37	0,18
60		6.7	2.9	14,0		0,51	0,20
70		9.5	3.3	16,0		0,68	0,23
80		13.0	3.4	18,0		0,90	0,23
90			4.2	20,0			0,29
100			5.2	22,0			0,34
110			6.7	24,0			0,42
120			7.7	26,0			0,50
130			8.8	30,0			0,62

** Minimum recommended flow for valves with XPR option or PRK-24 accessory.*

21000CR WITH XPR OPTION

21000CR

11000CR SERIES – BLACK MAX REMOTE CONTROL VALVE

FEATURES

- 10 year warranty and 100% water tested
- 200 psi (13,8 bar) rating
- S24B high-efficiency solenoid for positive opening at high pressures. Stainless steel actuator and brass threads
- Unique "reverse flow" porting design permits equal pressure distribution on both sides of the diaphragm, regardless of line pressure providing zero stress to prevent "stretching," a common cause of valve failure
- Normally closed valve for water conservation
- Diaphragm's self cleaning ports constantly flex, inhibiting sand and silt from blocking valve action
- Brass shock cone for smooth operation and reduction of water hammer
- Easy-to-use internal manual bleed lever; bleeds valve downstream; has stops for open and closed positions
- High-strength glass-filled body and cover with 1/4 in. stainless steel cover bolts and mating brass body inserts
- Brass non-rising flow control stem throttles valve from full open to closed position
- Excellent for micro-irrigation
- Contamination resistant (CR)
- Chloramine resistant Albino Rhino™ diaphragm

OPTIONS (FACTORY INSTALLED)

- XPR Pressure Regulator–the Weathermatic XPR pressure regulating module senses inlet pressure and maintains constant outlet pressure (see **PRK-24** in valve accessory section for specifications)
- Non-potable Alert Solenoid; may be substituted for standard model (specify **XS24NP**)

ELECTRICAL

- Wiring requires a single lead from the controller to each solenoid, plus a common neutral to all solenoids; type UF wire, U.L. listed, is recommended for all hookups

24VAC/60 Hz	24VAC/50 Hz
Inrush: 9.86 VA Holding: 5.69 VA	Inrush: 10.7 VA Holding: 7.5 VA

- Do not use nominal voltage ratings listed above for sizing of valve wires (see wire sizing, pg. 32)

INSTALLATION

- Teflon tape is recommended
- 1 in. FIP can be bushed to 3/4 in.
- 1 1/2 in. FIP can be bushed to 1 1/4 in.
- International threads (specify ISO)

11000CR SERIES VALVE
PRESSURE LOSS PSI

Flow gpm	11024FCR-10 1 in	11024FCR-15 1 1/2 in	11024FCR-20 2 in
0-4	1.2 max		
6	1.4		
8	1.6		
10	1.7*		
15	2.0		
20	2.3	1.3*	
25	3.0	1.6	
30	4.3	1.9	
35	6.0	2.4	
40	7.7	3.0	2.3*
45	9.5	3.8	2.4
50	11.5	4.6	2.6
55		5.6	2.7
60		6.7	2.9
70		9.5	3.3
80		13.0	3.4
90			4.2
100			5.2
110			6.7
120			7.7
130			8.8

METRIC
PRESSURE LOSS BAR

Flow m3/h	11024FCR-10 1 in	11024FCR-15 1 1/2 in	11024FCR-20 2 in
0-0,9	0,08 max		
1,0	0,10		
2,0	0,12		
2,5	0,13*		
3,0	0,14		
5,0	0,18	0,10*	
6,0	0,24	0,12	
7,0	0,32	0,14	
8,0	0,43	0,17	
9,0	0,54	0,21	0,16*
10,0	0,64	0,26	0,17
11,0	0,77	0,31	0,17
12,0		0,37	0,18
14,0		0,51	0,20
16,0		0,68	0,23
18,0		0,90	0,23
20,0			0,29
22,0			0,34
24,0			0,42
26,0			0,50
30,0			0,62

** Minimum recommended flow for valves with XPR option or PRK-24 accessory.*

11000CR WITH XPR OPTION

11000CR

8200CR SERIES – BRASS BULLET REMOTE CONTROL VALVE

8200CR WITH XPR OPTION

FEATURES

- 10 year warranty and 100% water tested
- 200 psi (13,8 bar) rating
- S24B high-efficiency solenoid for positive opening at high pressures. Stainless steel actuator and brass threads
- Bronze body and cover with stainless steel cover bolts
- Unique "reverse flow" porting design permits equal pressure distribution on both sides of the diaphragm, regardless of line pressure providing zero stress to prevent "stretching," a common cause of valve failure
- Normally closed valve for water conservation
- Diaphragm's self cleaning ports constantly flex, inhibiting sand and silt from blocking valve action
- Brass shock cone for smooth operation and reduction of water hammer
- Easy-to-use internal manual bleed lever; bleeds valve downstream; has stops for open and closed positions
- Brass non-rising flow control stem (stainless steel stem on 2 1/2 and 3 in. models) throttles valve from full open to closed position
- Excellent for micro-irrigation
- Contamination resistant (CR)
- Chloramine resistant Albino Rhino™ diaphragm

OPTIONS (FACTORY INSTALLED)

- XPR Pressure Regulator–the Weathermatic XPR pressure regulating module senses inlet pressure and maintains constant outlet pressure (see **PRK-24** in valve accessory section for specifications)
- Non-potable Alert Solenoid; may be substituted for standard model (specify **XS24NP**)

ELECTRICAL

- Wiring requires a single lead from the controller to each solenoid, plus a common neutral to all solenoids; type UF wire, U.L. listed, is recommended for all hookups

24VAC/60 Hz	24VAC/50 Hz
Inrush: 9.86 VA Holding: 5.69 VA	Inrush: 10.7 VA Holding: 7.5 VA

- Do not use nominal voltage ratings listed above for sizing of valve wire (see wire sizing, pg. 32)

INSTALLATION

- Teflon tape is recommended
- International threads (specify ISO)

PRESSURE LOSS PSI

Flow gpm	8200CR-10 1 inch	8200CR-12 1 1/4 inch	8200CR-15 1 1/2 inch	8200CR-20 2 inch	8200CR-25 2 1/2 inch	8200CR-30 3 inch
0-10	1.5 max					
12	1.8*					
16	2.4	1.9*				
20	3.1	2.3	1.4*			
25	4.0	3.0	1.7			
30	4.9	3.5	2.1			
35	5.9	4.1	2.5			
40	7.2	4.7	2.9	1.1*		
45		5.5	3.3	1.3		
50		6.3	3.7	1.5		
55			4.2	1.8		
60			4.8	2.0	1.0*	0.5*
70			6.2	2.6	1.4	0.7
80			7.9	3.4	1.8	0.9
90			10.1	4.3	2.1	1.1
100				5.3	2.6	1.3
120				8.0	3.6	1.8
140				12.0	4.8	2.4
160				18.2	6.1	3.1
180					7.5	3.8
200					9.1	4.6
250					14.0	7.1
300					19.6	10.1
350						13.8
400						19.3

METRIC
PRESSURE LOSS BAR

Flow m^3/h	8200CR-10 1 inch	8200CR-12 1 1/4 inch	8200CR-15 1 1/2 inch	8200CR-20 2 inch	8200CR-25 2 1/2 inch	8200CR-30 3 inch
0-2,3	0,10 max					
3,0	0,14*					
4,0	0,19	0,15*				
5,0	0,25	0,19	0,11*			
6,0	0,30	0,22	0,13			
7,0	0,35	0,26	0,15			
8,0	0,42	0,30	0,17			
9,0	0,50	0,33	0,20	0,08*		
10,0		0,37	0,23	0,08		
11,0		0,43	0,25	0,10		
12,0			0,28	0,12		
14,0			0,35	0,15	0,08*	0,04*
16,0			0,43	0,19	0,10	0,05
18,0			0,54	0,24	0,12	0,06
20,0			0,68	0,29	0,15	0,08
24,0				0,42	0,20	0,10
28,0				0,61	0,27	0,13
32,0				0,84	0,34	0,17
36,0				1,23	0,42	0,21
40,0					0,51	0,27
50,0					0,77	0,40
60,0					1,09	0,56
70,0					1,45	0,76
80,0						1,00
90,0						1,34

** Minimum recommended flow for valves with XPR option or PRK-24 accessory.*

PRK-24 (XPR) PRESSURE REGULATOR

The PRK-24 (XPR*) may be used with any of the following valves:

8200CR Series

11000CR Series

21000CR Series

** XPR indicates factory installed*

- The Weathermatic PRK-24 (XPR) pressure regulating module senses inlet pressure and maintains constant outlet pressure regardless of inlet pressure variation
- Maximum inlet pressure: 150 psi (10,3 bar)
- Minimum flow (see valve tables)
- Maximum flow (see valve tables)
- Minimum pressure differential between inlet and outlet: 10 psi (0,7 bar)
- Regulated pressure range at outlet: 15-110 psi (1,0 - 7,6 bar) (±5 psi, ± 0,35 bar)
- Manual flow and bleed control
- Regulates pressure when valve is operated electrically or manually
- Downstream connection for accurate pressure sensing
- Schrader valve for connecting pressure gauge

PRG-24 PRESSURE HOSE GAUGE ASSEMBLY

- Monitors valve outlet pressure
- Quick connect hose fitting for Schrader valve on Weathermatic PRK-24 (XPR) regulators
- Gauge provides accurate reading of outlet pressure on 0-160 psi scale or secondary 0-1100 KPA unit scale; 36 in. (91 cm) long high-pressure hose permits easy reading of gauge

NO. 910 AUTOMATIC DRAIN VALVE

- Small, compact, spring-loaded valve designed especially to drain sprinkler systems
- Fine screen on intake and drain ends prevents clogging from either direction
- Has a 5 oz. Phosphor bronze spring that opens valve against a 6 foot head (1,8 m/hd) of water, insuring drainage in all sections of the system
- Drain will close tight on three pounds line pressure
- Not recommended for pipe lines under continuous pressure. 1/2 in. male IPS connection

DS-400 PRE-FILLED DRI-SPLICE CONNECTOR WITH CRIMP SLEEVE

ASSEMBLED

- Eliminates sealant mess
- Quick, easy and waterproof
- Accommodates 10, 12 or 14 gauge wire sizes.

NO. 906 / NO. 906L VALVE CAP

- Provides access to manual valves
- Brass hinged cover
- Molded high-impact plastic body allows welding to 2-inch PVC pipe
- 906L has locking cover. Order Key RLK-1 separate.

NO. 907/ NO. 907B VALVE KEY

- Valve Key conveniently operates manual type valve or automatic valves with “cross-handle” flow adjustment
- No. 907 is 33 in. (83,9 cm). 907B is 60 in. (152 cm).

WEATHERMATE PLUS™

REMOTE CONTROL OPTION

6, 9 & 12 STATION MODELS

WM6-O (Outdoor)
WM6-N (Indoor)

WM9-O (Outdoor)
WM9-N (Indoor)

WM12-O (Outdoor)
WM12-N (Indoor)

EXPORT MODELS

E-WM6-O
E-WM9-O
E-WM12-O

DIMENSIONS

9-1/2" W x 10" H x 4-1/8" D
(24.1 cm W x 25.4 cm H x 10.5 cm D)

FEATURES

- 100% factory tested with industry-leading lightning warranty
- Strong, attractively styled housing is available in both indoor and UV resistant outdoor models
- Large, easy to read liquid crystal display
- Optional remote control offers a wireless link to the controller. Range is 600ft (183m) line of sight
- Simple, dial based programming
- Non-volatile memory retains programs in the event of a power outage
- Three fully independent programs for flexibility
- Flexible station water times (1 min. to 9.9 hours)
- Three stackable start times simplify the programming of overlapping schedules
- Weekly, interval (up to 30 days), odd, and even day scheduling
- Black out day option during odd or even day watering accommodates weekly grounds maintenance and strict water rationing requirements
- Percent scaling provides easy seasonal adjustments to station watering time (10–200%)
- Adjustable test cycle from 1–10 minutes
- Input surge protection against power spikes and superior low-voltage operation
- Short detection system protects controller from field wiring problems and indicates stations requiring service
- External sensor input with manual override on face panel
- Sensor light changes from green to red when activated for easy troubleshooting
- Keyhole port ensures easy controller mounting
- Terminal block test post offers easy identification for field wiring designation
- Master valve/pump circuit
- Simultaneously operates up to two Weathermatic valves or one Weathermatic valve and one master valve (Maximum draw up to 1 AMP).
- Reset button provides quick clearance of existing programs
- Nine volt alkaline battery and drywall mounting anchors included

OPTIONS

OPTIONS	SPECIFY
Remote control kit	**WM-RC**
Receiver only	**WM-RR**
Transmitter only	**WM-RT**
Welcome to Weathermate Video	**AD202**
Rain Sense rain sensor	**955**
Conduit junction box	**951-05**
Pump circuit accessory package	**952**
Weathermatic screwdriver	**AD410**

ELECTRICAL SPECIFICATIONS

Input: 120 VAC, 60HZ
Output: 24 Volt VAC, 25VA
Fuse: 1 Amp slow blow
Conduit Size: Line wiring 1/2" and valve wiring 3/4"
Battery: Nine volt alkaline (included)

EXPORT

Input: 230 VAC, 50HZ
Output: 24 Volt VAC, 30VA
Fuse: 1 Amp slow blow
Conduit Size: Line wiring 1/2" and valve wiring 3/4"
Battery: Nine volt alkaline (included)

CE Approved
UL Approved

LMC SERIES

14, 19, 24, & 30 STATION MODELS

LMC14
LMC19
LMC24
LMC30

EXPORT MODELS

E-LMC–XX

DIMENSIONS

10 1/2 in. W x 9 1/2 in. H x 5 in. D
(26,7 cm x 24,1 cm x 12,7 cm)

FEATURES

- Industrial grade thermoplastic housing; stainless steel padlock latch and neoprene gasket
- Easy Installation panel; hinged, removable and quick-disconnect cable
- Large visible MODE and STATION dials
- 24-Hour Clock – 50 cycle power supply converts display to 24-hour clock
- Valve Power Switch and Sensor Override
- Microprocessor timing and accuracy
- Semi-Automatic Watering
- Short Sensor – Controller program omits shorted stations and continues watering on other stations; feature includes LCD display of up to 3 shorted stations
- Manual Operation
- Three Independent Programs – Stations may be assigned to one or all programs; timing is 0 to 99 minutes per station in one-minute increments; "long timing" option on program 3
- Water Budgeting – Allows budgeted adjustment of 0 - 200% in 1% increments by program
- Multiple Start Times – Three start times daily for each program
- Stack Timing
- Weekly/Interval Calendar – allows watering on specific days of the week or specific intervals of one to 30 days; true odd/even day watering omits the 31st day, making unit perfect for water rationing
- Test Program – Two-minute test of all stations with run time
- Rain OFF – Omits valve operation for one to seven days; select any current week start day
- Non-Volatile Memory – Retains user program during power outage; alkaline battery maintains real time clock; user option to prevent watering after power outage until real time clock verified
- Master valve/pump circuit
- Reset Switch
- Input Surge Protection
- Test Post

OPTIONS

OPTIONS	SPECIFY
Pedestal	**LMSP**
Rain Sense rain sensor	**955**
Pump Relay	**952**
NiCd Quick-Charge (replaces alkaline battery back-up)	**954**

ELECTRICAL SPECIFICATIONS

Input: 120VAC, 60Hz, 0.28A for 3 Weathermatic valves

Output: 24 Volt VAC, 1.5A (36VA)

Fuse: 2 Amp slow blow

Battery: Nine volt alkaline or NiCd Quick-Charge (see options above)

EXPORT

Input: 230 VAC, 50Hz, 0.18A for 3 Weathermatic valves

Output: 24 Volt VAC, 1.5A (36VA)

Fuse: 2 Amp slow blow

Battery: Nine volt alkaline or NiCd Quick-Charge (see options above)

CE Approved
UL Approved

NO. 955
RAIN SENSE

No automatic system is complete without the Rain Sense.

The Weathermatic Rain Sense acts as a switch to break the circuit to the solenoids during rainfall. The controller program continues to advance but the valves do not open. Maintenance-free unit features hygroscopic disks which absorb water and then dry at a rate similar to the landscape.

- Five year warranty
- Select 1/8, 1/4, 1/2, 3/4 or 1 inch rainfall for automatic system shutdown
- Vent ring adjustment to determine reset time
- Includes mounting kit with screw bracket and thumbscrew for gutter mount, and 25 feet of connection wire
- 24 V a.c.

NO. 952
PUMP CIRCUIT ACCESSORY PACKAGE

- Remote pump start relay for use with controllers which do not have internal pump circuits
- U.L. listed rain-proof, gray PVC housing with gasket seal
- Two 1/2 in. conduit openings; plug-in type relay
- Housing dimensions: 4 in. x 4 in. x 2 in. (10,2 cm x 10,2 cm x 5 cm)

ELECTRICAL

Input from controller	24V a.c., 50/60 Hz/.050A;
Pump circuits contacts	250V a.c., 50/60 Hz/300VA

NO. 954
NI-CAD ADAPTER KIT

For use with LMC Controllers (all models). Replaces standard alkaline battery back-up. Fully charges NiCad battery in 4 hours and fully-charged battery will back-up LMC for 24 hours minimum (battery not included).

LMSP PEDESTAL

- For LMC Series
- Heavy gauge stainless steel
- Low profile. Dimensions: 10 5/8 in. W x 32 1/4 in. H x 2 3/4 in. D (27 cm x 82 cm x 7 cm)
- Front access panel is 7 1/2 in. wide (19 cm wide)
- Pedestal fastens to 4 bolts (not included)
- Housing attachments included
- Order pedestal separately
- Specify **LMSP**

VACP PEDESTAL

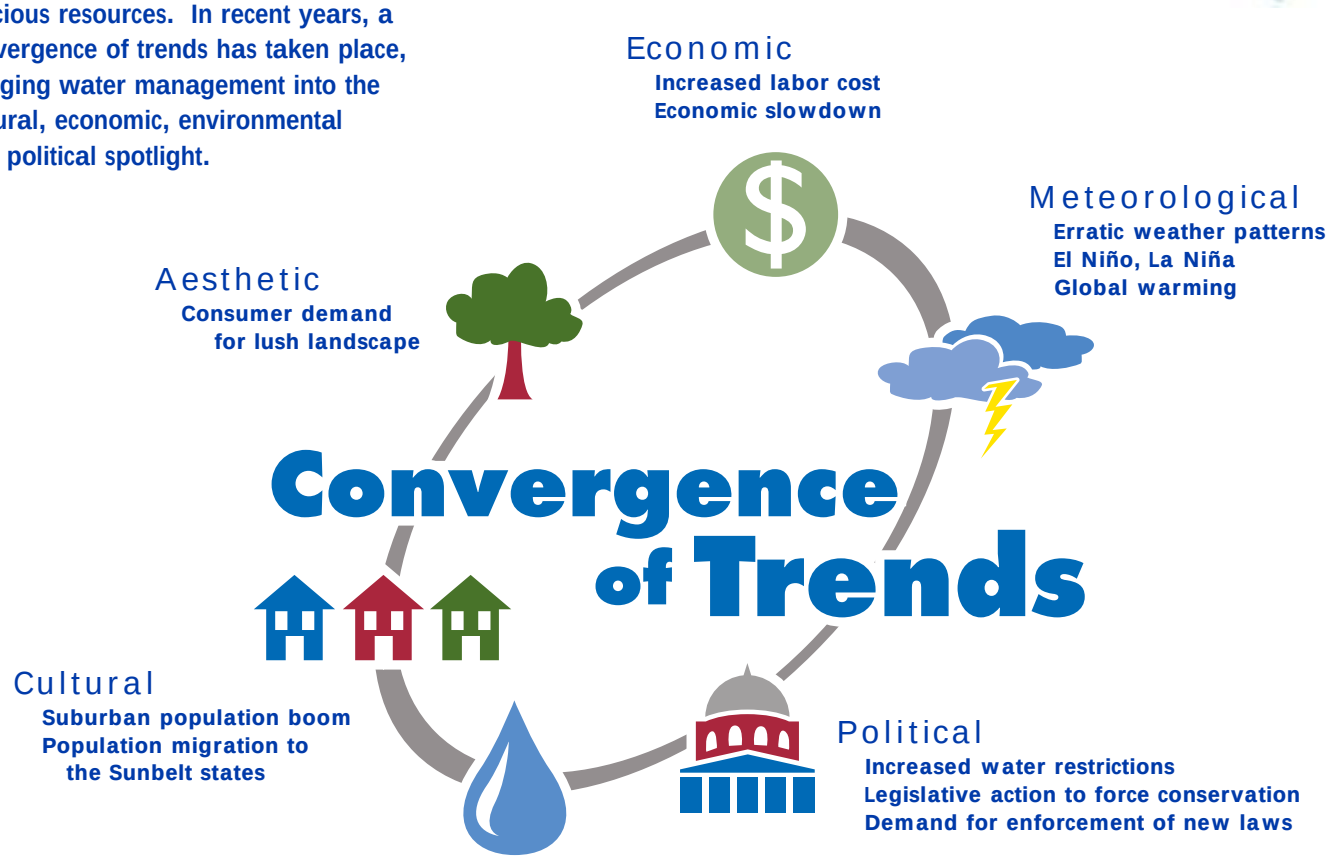
- For VAC Controllers
- Heavy gauge steel with corrosion resistant polyester coating; large access door for wiring
- Hardware included
- Dimensions: 16 in. W x 20 in. H x 6 in. D (40,6 cm x 50,8 cm x 15,2 cm)
- Specify **VACP**

MRMP PEDESTAL

- For SL Series
- Construction: heavy gauge welded steel
- Finish: corrosion resistant polyester coating
- Functional design: low-profile height blends with landscape aesthetics, permits installation or maintenance technician to work sitting down; functional design makes wiring easy in a space 10 in. wide, 24 in. high, and 7 in. deep (25 cm x 61 cm x 18 cm)
- Vandal-resistant 7 in. (17,8 cm) wide front access panel is locked in place by the controller housing door
- Pedestal fastens to four bolts (not included); housing attachments are included
- Order pedestal separately
- Specify **MRMP**

Trends and Technology
for the 21st century

Water has become one of the world's most precious resources. In recent years, a convergence of trends has taken place, bringing water management into the cultural, economic, environmental and political spotlight.



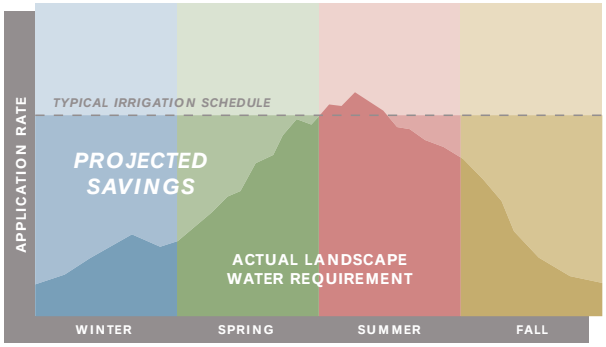
VALCON WATER MANAGEMENT SYSTEM

Conservation of water relies on a triangle of irrigation efficiency. For many years, water has been applied by increasingly efficient designs and implimentation methods; however, proactive management tools have been limited to elite, large-scale users. With the Valcon Water Management System, proactive irrigation management becomes practical and affordable for the broader market.

1 EFFICIENTLY DESIGNED
- Proper application of products
- Efficient equipment selection to match water requirements
- Close attention to hydraulics

2 PROPERLY IMPLEMENTED
- Installed with quality workmanship
- Understanding of irrigation requirements and limitations
- Correct programming for the application and location

3 ACTIVELY MANAGED
- Active monitoring for head and line breaks
- Proactive adjustment for seasonal changes
- Understanding of growth cycles and root zones



Benefits of Water Management

The Valcon system is in use at hundreds of sites throughout the world, providing water and labor management for all types of applications. Valcon is ideal for landscape and irrigation maintenance firms, municipalities, parks, educational institutions, corporate campuses, shopping centers, resorts, amusement parks, homeowners' associations, residential estates and golf courses.

The Valcon system combines three products to provide simple, cost-effective command and control over remote sites:

Wetware™

Wetware™ is the software package that provides quick and easy access to any and all information from the field controllers. Scheduling adjustments, system overrides, fault information and archive data are only a mouse click away.

SL & VAC Controllers

The SL and VAC irrigation controllers are the heart and soul of the system. Stored within each unit are irrigation schedules, run times, flow parameters and fault conditions, providing for complete stand-alone functionality, without the need for Wetware™. When coupled with Wetware™, the controllers and software combine to offer full-featured benefits, either on-site or in the office.

Communications Equipment

A wide range of communications equipment is available to address almost any application. These devices are used to transmit and receive information between the controllers and Wetware™.

Combining this equipment in multi-mode configurations allows drastic cost reduction and flexibility. The Valcon system has been designed to easily adapt to new communications equipment when it becomes available.

Wetware™ FOR WINDOWS

...Simply Powerful Software for the Professional Irrigation Manager

Keeping it simple is the design cornerstone of Wetware™. Based on a graphical user interface, Wetware™ is logically designed to be user-friendly and easy to learn. Water managers can immediately be effective, without the need to attend costly training classes or software engineering school.

VWET-W: *Wetware™ for Windows.*

SPECIFY VWET-W
Wetware™ for Windows.

FEATURES

- Graphical maps and icons lay it all before you for visualizing and understanding remote operations
- Uniquely provides choices for command and control of both the VAC and SL model controls
- Remote diagnostics to identify and isolate electrical hydraulic and programming problems for immediate feedback about conditions in the field
- Global or selective commands for complete override control of selected controllers, sites or systems
- Scheduled updates and commands for unattended management allow maximum time efficiency
- Commands can be sent directly from a map to the selected control for precise, rapid response
- Distress calls automatically notify Wetware™ of problems encountered in the field
- Flexible communication choices include radio, telephone modem, hardwire and more
- Multi-mode communications allow for mixing communications options to bring costs down
- Flow monitoring provides complete hydraulic control and immediate shutdown for problems
- Copy and Paste features provide the quickest way to get your program changes to the field
- Itemized reports provide the ability to archive data and schedule work orders for your crew
- Software designed to be compatible with all Windows-based operating systems, including 95, 98, 2000, NT and ME.

CENTRAL COMMUNICATION OPTIONS	SPECIFY
Digital wireless radio modem	**VRFS-D-B**
Trunked radio modem for third-party repeater systems	**VRFS-K-B**
Analog telephone modem for PC	**VTEL-B**
Two wire communications path	**VHDW**
16 Channel Twisted Pair Converter Hub	**VHUB**
Base station antenna	**155-305**

AVAILABLE EXCLUSIVELY THROUGH VALCON AUTHORIZED DISTRIBUTORS

SL CONTROLLER – SYSTEM LINK

12 TO 42 STATION MODELS
120V A.C., 60 HZ

SL12
SL18
SL24
SL30
SL36
SL42

EXPORT MODEL
220/240V A.C., 50/60 HZ

E SL-XX

DIMENSIONS
11 in. W x 17 in. H x 8.5 in. D
(28 cm x 43,2 cm x 21,6 cm)

FEATURES

- Four program master controller or independent station programming with flow sensing capability for complete water management
- Operates as a stand-alone controller or links to a personal computer utilizing Weathermatic's Wetware™ for Windows
- Flow monitroing provides regulation and shutdown for out-of-tolerance flows
- Heavy duty input and output surge protection
- Four start times and four soak cycles per program
- Selectable stacking or concurrent operation for each program
- Pump Start or Master Valve assignable per station
- Versatile watering schedules
- Daily, select days (14-day calendar), odd or even days, specified dates for injection of fertilizer, or interval 1 to 365 days
- One minute to 24 hour station timing
- Seasonal timing adjustment by program 5-300%
- Global delay between station starts, adjustable from one minute to one hour
- Safety delay for master valve/pump shutdown
- Sensor to detect "short" or "open" circuits
- Rain sensor switch input
- Daily "no water" window
- Special Events to omit watering by calendar date
- Manual program or station start
- Test program, one to ten minutes
- Security code, two levels
- Self diagnostics
- Automatic daylight savings time and leap year adjustment
- Non-volatile memory and real-time clock retain all programming and keeps date and time during power loss
- Easy-to-read backlit LCD for clear viewing

INTERNATIONAL FEATURES

- Software switch for 12 or 24-hour clock and American or International dates
- Flow display in gallons or m^3/hr

HOUSING

- Urethane-coated heavy gauge steel with keylock
- Wall or pedestal mount with rainproof seal
- Heavy-duty terminal strips and large work area

OPTIONS

- Pedestal: Specify **MRMP**
- Field communication package may be hardwire, simplex radio, trunking radio, or telelphone modem

ELECTRICAL REQUIREMENTS

Output: 26V a.c., 2.0A inrush and 1.25A holding; operates up to five Weathermatic valves simultaneously (see valve wire sizing table notes, pg. 32, for minimum and maximum input voltage)

UL & CSA Approved

VAC – VALCON ADVANCED CONTROLLER

12 TO 48 STATION MODELS
120V A.C., 60 HZ

VAC-12-WM
VAC-18-WM
VAC-24-WM
VAC-30-WM
VAC-36-WM
VAC-48-WM

EXPORT MODEL
220/240V A.C., 50/60 HZ

E-VAC-XX-WM

DIMENSIONS
17 in. W x 21 in. H x 7 in. D
(43.2 cm x 53.3 cm x 17.8 cm)

FEATURES
- Stand-alone or satellite control without modification or replacement of the panel
- Flow, rain, wind and moisture sensor capabilities
- Compatible with all industry flow sensors
- Modular expansion up to 48 zones without modification or replacement of the panel
- 10 independent programs and 10 Soak Cycle starts per program
- Flexible station timing from 1 min. to 18 hrs.
- Flexible schedules for every day, odd or even days, select days, or skip days
- Water budgeting from 1–300%
- Walk-through program for all stations, select stations or by program
- Rain Days to inhibit operation 1 to 90 days
- Automatically learns normal flows by station
- Station shuts down if flows exceed normal; system shuts down if two consecutive stations exceed limits for stuck valves or broken mains
- Accumulates total flows to date
- Access Code protection
- Special Events inhibits valve operation in advance; up to 10 events a year in advance
- Non-volatile memory and real time clock keep correct time and programs during power loss
- Electrical diagnostics monitors circuit breaker and records shorted stations
- Automatic Daylight Savings Time change
- Normally open relays for all station outputs can be used to control irrigation, pumps, lighting, fountains, gates, etc.

HOUSING
Heavy duty gauge steel with corrosion resistant coating and removable access panel

ELECTRICAL SPECIFICATIONS
Input: 120V/60 Hz @ 1.0 A for 5 valves

Input Voltage: 100V minimum; 140V maximum

Output: 28V a.c., 2.5 A (60/70 VA)

(see valve wire sizing table notes, pg. 32, for minimum and maximum input voltage)

CONTROL OPTIONS	SPECIFY
Pump Relay Output Module	**VPSM**
Flow Sensing Relay Output Module	**VPSM-F**
12 Station Upgrade Kit	**VOPM**
Interface for Rain, Wind, Moisture inputs	**VSIM**
20 in. coated steel locking pedestal	**VACP**

AVAILABLE EXCLUSIVELY THROUGH VALCON AUTHORIZED DISTRIBUTORS

STE-DS PROFESSIONAL WEATHER STATION

The STE-DS is specifically designed to operate with Wetware™. The system provides graphical data for wind, temperature, humidity and ET to enable the irrigation manager to make intelligent water management decisions.

FEATURES

- Alarm output module
- Short-range modem pair
- Wetware software link
- Sensor mounting arm
- Rain collector shelf
- System shelter
- Solar radiation sensor
- Temperature/humidity sensor
- ET link and data logger
- Industrial-grade anemometer
- Grounding kit

FS220B FLOW SENSOR

- Bronze housing
- Insertion type spinning impeller
- Maximum line pressure: 400 psi (27,6 bar)
- Operates in a flow range of 1 fps (0.3 mps) to 30 fps (9.1 mps)
- Includes 2" NPT adapter for use with weld-on fitting or pipe saddle on pipes 3" and above

VRFS SIMPLEX RADIOS

Digital wireless radio modem for point-to-point communication within a 2.5 mile radius. 450-470 MHz frequency range.

	SPECIFY
For base station	**VRFS-D-B**
For VAC Controller	**VRFS-D**
For SL Controller	**VRFS-D-SL**

VRFS TRUNKING RADIOS

Trunked radio modem for third party repeater systems. Distance is dependent on infrastructure. 450-470 MHz frequency range.

	SPECIFY
For base station	**VRFS-K-B**
For VAC Controller	**VRFS-K**
For SL Controller	**VRFS-K-SL**

VTEL PHONE MODEMS

Analog telephone modem for data communications. Dedicated phone line required.

	SPECIFY
For base station	**VTEL-B**
For VAC Controller	**VTEL-C**
For SL Controller	**VTEL-C-SL**

VRAS ANTENNA

Vandal-resistant antenna mounts on VAC or SL controller housing. Hardware included. Use with simplex or trunking radios.

VHDW HARDWIRE SIGNAL CONVERTER

Two wire communication path to connect up to 32 controllers to the PC or another communication device (phone modem or radio).

VHUB HUB SIGNAL CONVERTER

16 channel twisted pair hub. Connects over 500 controllers to the PC or another communication device (phone modem or radio).

VRSP-S SURGE ARRESTOR

Provides surge protection for VRAS antennas.
Use with SL or VAC.

VTOW-50 RADIO TOWER

50' guyed radio tower assembly including base, guy wire, and antenna mount for use with your PC base station. Use with simplex or trunking radio.

155-305 BASE ANTENNA

Simplex base antenna for use with VRFS-D-B radio.
3dB fiberglass for use with 450-470 MHz frequency range.

VALVE WIRE SIZING TABLES

Lengths provided in Table A (AWG or Metric) are the maximum allowable lengths for the size noted, station and common wires. Lengths for other sizes can be determined by using multipliers in Table B. Read all notes and review the sizing example before using the tables.

Maximum wire length for each of two wires (station & common) = Base Length from Table A X Size Factor from Table B

Minimum Size Factor (See Table B) = Distance from Controller to Valve / Base Length from Table A

- *Quantity of valves per station refers to Weathermatic valves of current manufacture.*
- *Master valve must be included in quantity of valves per station when master valve circuit is utilized.*
- *Normal table use: If minimum job voltage is not listed, use next lower listed voltage; if maximum job static water pressure is not listed use next higher listed pressure.*
- *Do not operate more valves than those for which factors are listed. More may be operated only with certain conditions; consult factory before attempting.*
- *Input to controllers must not exceed 125V, either operating or not operating, otherwise controller may malfunction or be damaged. Recommendation: Provide voltage of between 110V and 120V to controllers. (Input voltage is measured at terminals L1 and L2 in the controller.)*
- *E Models: Input to controllers must not exceed 240 volts on 220 V nominal connection or 260 volts on 240 V nominal connection, either operating or not operating, or be less than 200 volts on 220 V nominal connection or 220 volts on 240 V nominal connection when operating; otherwise controller may malfunction or be damaged. Input voltage is measured across terminal L1 and L2 in the controller.*
- *Use of Weathermatic pump start accessory package No. 952 does not affect valve wiring data shown on chart. CAUTION: Chart calculations may not apply if relay other than Weathermatic No. 952 used.*

TABLE A-BASE LENGTH (FT) AWG – SIZE 14

Min. Input V: 60 Hz

Static Water Pressure Not Exceeding:	75 psi					100psi					125 psi					150 psi				
Qty of Valves per Station:	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
LMC Series Controllers																				
110	3452	1283	559			2038	574	88			854					83				
115	4146	1643	811			2669	904	318			1438	289				637				
120	4894	2000	1033			3342	1226	519			2055	581	88			1221	164			
125	5641	2371	1280			4022	1563	743			2678	890	293			1811	456			
VAC & SL Series Controllers																				
110	5403	2425	1448	970	655	3834	1646	934	573	342	2526	998	505	239	90	1682	579	227	0	0
115	6201	2793	1684	1179	836	4554	1977	1160	778	502	3181	1298	723	428	242	2299	860	441	204	73
120	7091	3260	2013	1388	1016	5365	2409	1445	962	677	3927	1700	972	609	397	3008	1246	669	383	218
125	7919	3702	2319	1602	1165	6128	2814	1723	1149	800	4635	2074	1219	770	502	3683	1602	899	528	323
Weathermate Series Controllers																				
110	3250	1160				1880	480				710									
115	4060	1550				2610	850				1390	210				410				
120	4900	1990				3420	1250				2140	550				1070				
125	5760	2410				4220	1640				2880	880				1710	350			

NOMINAL 220 & 240V/50HZ CONTROLLERS
TABLE A-BASE LENGTH (METERS) WIRE SIZE: 2.5

Min. Input V: 50 Hz

Static Water Pressure Not Exceeding:	5 bar					7 bar					9 bar					10 bar				
Qty of Valves per Station:	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
E Models: LMC Series Controllers																				
200 220	1542	571	246			899	248	31			582	89				406				
210 230	1774	705	338			1105	367	114			779	203				594	110			
220 240	2026	822	420			1327	472	186			987	302	73			791	204	8		
230 250	2244	942	508			1522	581	267			1173	406	151			969	304	82		
240 260	2433	1041	578			1688	669	330			1330	491	211			1118	385	140		
VAC & SL Series Controllers																				
200 220	2039	905	541	362	242	1347	568	318	188	108	1012	404	209	103	44	819	310	148	53	0
210 230	2346	1055	629	427	303	1625	696	395	251	161	1278	522	282	165	92	1073	421	217	115	51
220 240	2617	1209	734	498	358	1867	839	484	311	210	1507	658	364	222	139	1292	549	293	169	96
230 250	2909	1352	845	576	415	2125	965	587	371	266	1751	780	460	279	193	1523	668	379	226	148
240 260	3177	1494	947	663	476	2363	1093	679	446	313	1977	902	552	345	235	1739	785	471	285	189
E Models: Weathermate Series Controllers																				
200 220	1530	570				900	280				500	80				290				
210 230	1770	705				1150	410				730	200				520	90			
220 240	2020	870				1500	540				940	310				720	210			
230 250	2290	1000				1600	650				1150	430				920	310			
240 260	2500	1110				1800	760				1340	520				1100	410			

VALVE WIRING

Typical valve wiring consists of a single "station" wire from the controller to each solenoid and a common wire to all the solenolds.

Wire type and method of installation should be in accordance with local codes for NEC Class II circuits of 30VAC or less. Type UF is recommended for valve circuit wiring because its heavier insulation offers longer trouble-free service.

All wire splices should be joined by positive mechanical connectors, properly insulated, and waterproofed. Waterproof connectors are recommended (see valve accessories, pg. 22).

An expansion curl should be provided within 3 feet (1m) of each wire connection to a solenoid and at least every 100 ft (30m). It is easily formed by wrapping 5 or more turns of wire around a rod or pipe, 1 inch or greater in diameter, then withdrawing the rod.

TABLE B: SIZE FACTORS

FOR STATION AND COMMON WIRE SIZE COMBINATION

Station Wire Size AWG (1)	Common Wire Size: AWG (1) 18	16	14	12	10	8	6	4
18	.394	.484	.565	.631	.682	.718	.742	.759
16		.626	.770	.898	1.004	1.084	1.141	1.180
14			1.000	1.226	1.432	1.600	1.728	1.820
12				1.584	1.946	2.272	2.538	2.741
10					2.523	3.097	3.615	4.040
8						4.012	4.925	5.749
6							6.376	7.829
4								10.140

(1) American Wire Gauge: annealed copper

TABLE B: SIZE FACTORS METRIC

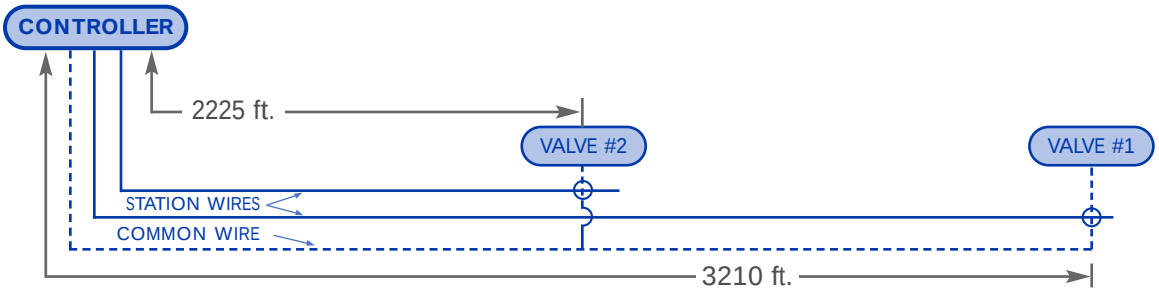
FOR STATION AND COMMON WIRE SIZE COMBINATION

Station Wire Size mm² (1)	Common Wire Size: mm2 (1) 1.0	1.5	2.5	4.0	6.0	10.0	16.0	25.0
1.0	.400	.480	.571	.640	.686	.727	.753	.769
1.5		.600	.750	.872	.960	1.043	1.097	1.132
2.5			1.000	1.231	1.411	1.600	1.729	1.818
4.0				1.600	1.920	2.297	2.561	2.760
6.0					2.400	3.000	3.491	3.872
10.0						4.000	4.925	5.716
16.0							6.400	7.805
25.0								10.000

(1) Cross-sectional area of annealed copper conductor.

EXAMPLE

An SL Controller will be used to operate one valve per station in the detail drawing shown below; electrical input will be 115 volts minimum; water pressure will be 85 psi maximum.



VALVE #1

Table A indicates a base length of 4554 for the SL/115V/100 psi.

Referring to Table B, size combination selected must have a listed factor of 0.705, or larger. A No. 14 common and a No. 16 station wire are selected for valve #1 with a size factor of 0.770

$$\frac{\text{Distance (ft) to Valve \#1}}{\text{Base Length from Table A}} = \frac{3210}{4554} = 0.705$$ Minimum Size Factor

VALVE # 2

No. 14 may also be used for the station wire size to valve #2 or it may be desirable to use a smaller size, if allowed. Common wire must remain No.14 size for valve #1.

With a No. 14 common, station wire size can be No. 18 to valve #2 with a size factor of 0.565 (see Table B).

$$\frac{\text{Distance (ft) to Valve \#2}}{\text{Base Length from Table A}} = \frac{2225}{4554} = 0.49$$ Minimum Size Factor

SPACING

- Equilateral triangular spacing is recommended for most uniform distribution; square spacing may be necessary where borders are prevalent and must be protected from over-throw
- Wind effect on sprinkler distribution must be compensated for by the proper spacing of sprinkler heads; maximum rotary sprinkler spacings are commonly based on diameter of coverage and wind velocity (see deration table below)

WIND DERATION FOR ROTARY SPRINKLERS

- Diameters of coverage shown in tables are for still air

Head Spacing = Diameter of coverage (selected from Perf. Table)
x Deration factor (listed below)

- Spacing with wind deration as follows:

Wind		Multiply Diameter in Table by:	
mph	km/h	■	▲
5	8	.55	.50
10	16	.50	.45

INSTALLATION

- Pop-up rotary sprinklers should be installed with flexible risers to minimize pipe damage; swing-joint risers are recommended for projects where heavy grounds maintenance equipment is required

OPERATING PRESSURE

- Operating pressures listed are measured at base of sprinklers; sprinklers will not operate properly or give best distribution pattern at pressures less than minimum listed in tables

CAUTION:

- Water supply must be reasonably free of sand and debris to avoid malfunction and excessive wear
- When necessary, valve full and part circle sprinklers separately to avoid extreme variation in rates of precipitation

PRECIPITATION RATES

CALCULATING PRECIPITATION RATES

Depending upon the construction of the irrigation system, the precipitation rate may be calculated by either a "sprinkler spacing" or a "total area" method.

SPRINKLER SPACING METHOD

The precipitation rate should be calculated for each individual zone. If all sprinkler heads on the same zone have the same spacing, flow rate, and arc of coverage, use one of the following formulas:

Any Arc and Any Spacing:

$$\text{P.R. (in/hr)} = \frac{\text{GPM (for any Arc)} \times 34{,}650}{\text{Degrees of Arc} \times \text{Head Spacing (ft)} \times \text{Row Spacing (ft)}}$$

$$\text{P.R. (mm/hr)} = \frac{\text{m}^3\text{/hr (for any Arc)} \times 360{,}000}{\text{Degrees of Arc} \times \text{Head Spacing (m)} \times \text{Row Spacing (m)}}$$

Equilateral Triangular Spacing:

$$\text{P.R. (in/hr)} = \frac{\text{GPM of 360 Arc} \times 96.25}{(\text{Head Spacing})^2 \times .866}$$

$$\text{P.R. (mm/hr)} = \frac{\text{m}^3\text{/hr of 360 Arc} \times 1{,}000}{(\text{Head Spacing})^2 \times .866}$$

TOTAL AREA METHOD

The precipitation rate for a "system" is the average precipitation rate of all sprinklers in an area, regardless of the spacing, flow rate, or arc for each head. The Total Area Method calculates all the flows of all of the heads in any given area.

$$\text{P.R. (in/hr)} = \frac{\text{Total GPM} \times 96.25}{\text{Total Area}}$$

$$\text{P.R. (mm/hr)} = \frac{\text{m}^3\text{/hr} \times 1{,}000}{\text{Total Area}}$$

Metric Note:
To convert from Bars to kPa, use 1 Bar = 100 kPa
To convert m^3/hr to l/s use 1 m^3/hr = 16.67 l/s

THE COLLEGE OF IRRIGATION KNOWLEDGE

The College of Irrigation Knowledge™ is our renowned irrigation design school for contractors, designers and distributors, their employees, and professionals in related fields. Since the first class entered the Weathermatic College of Irrigation Knowledge in October 1966, more than 200 classes have been awarded certificates of training.

To ensure that each student receives the maximum individualized instruction, enrollment in each class is strictly limited. The 4-day course includes lectures, demonstrations and practical exercises, both in the classroom and as homework assignments. It covers in detail all subjects required to design and install landscape and turf irrigation systems, including basic and advanced hydraulics, sprinkler application and layout, and piping system design. Also, covered are such business-related topics as advertising and promotion.

THE IRRIGATION ASSOCIATION

THE IRRIGATION ASSOCIATION

The I.A. is your trade association, representing the turf/landscape irrigation industry at the national and international levels. Membership enables all concerned individuals and companies to unite in solving problems of a broad scope. This exchange of ideas benefits both individuals and the industry as a whole. Through hard work, communication and cooperation, the I.A. is shaping the future of irrigation.

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The 5th Edition by Richard B. Choate is the result of intensive research covering all of the latest technology and design trends. This book is the ideal study guide for state licensing and industry certification exams. Also, it is a leading text for colleges and universities teaching irrigation design.

The *Turf Irrigation Manual* presents a step-by-step approach to the design process, including: basic hydraulics, sprinkler performance, plot plans, head layout, pipe sizing, zoning and design criteria for water conservation.

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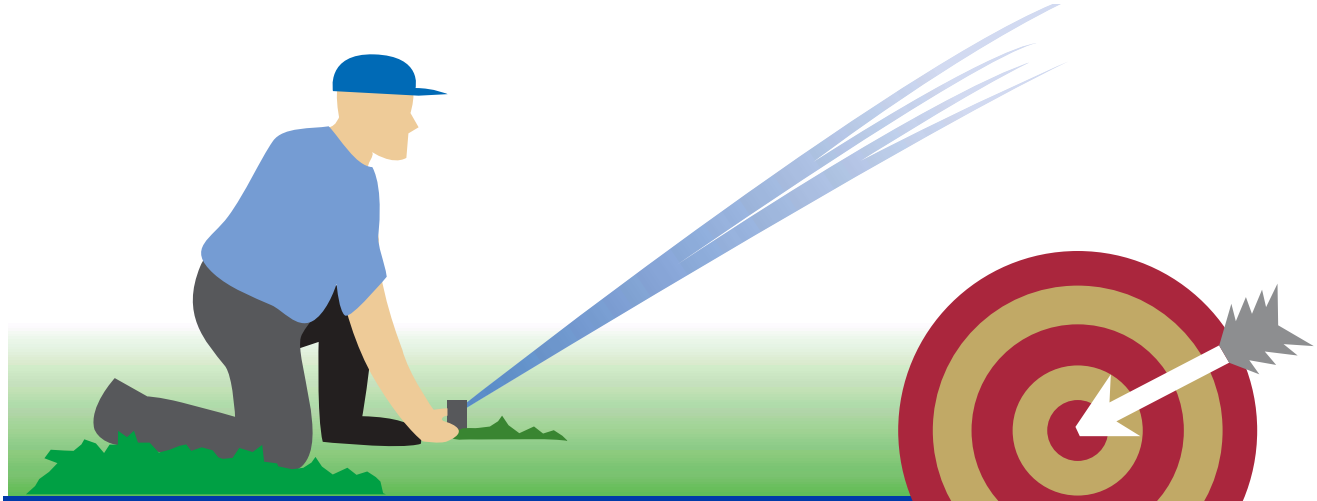
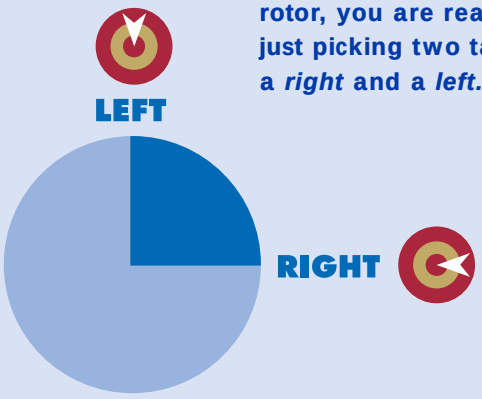
Need help turning your contracting business into a financial and marketing powerhouse? You'll want to check out our set of guidebooks on financial planning, estimating and bidding, and marketing for the irrigation contractor: *21 Secrets for Irrigation Contractors* and *Pathway to Profits*.

Available from your Weathermatic distributor.



Take the Turbo Target Practice Challenge

Adjust a Turbo and you'll never top adjust with a key again!



When you adjust a rotor, you are really just picking two targets, a *right* and a *left*.

The difference between rotors is how hard or easy it is to set the stream to stop at the left and right targets. Forget about 1/4 turn, 1/2 turn, fiddling with your key, clockwise, counterclockwise, turning the whole head in the ground!

To begin, locate the turret top and the arc adjustment ring on the Turbo

TURBO TARGET PRACTICE
WET ADJUSTMENT

1. TURN NOZZLE **TOP** TO THE **RIGHT** UNTIL YOU HIT YOUR **RIGHT TARGET**
2. TURN NOZZLE **TOP** TO THE **LEFT** ALL THE WAY TO THE PRESET LEFT STOP

IF THE LEFT STOP IS NOT WHERE YOU WANT IT...

3. HOLD THE **RING** AND TURN THE **TOP** TO YOUR **LEFT TARGET**
4. RELEASE THE **RING** AND HIT YOUR **RIGHT TARGET**

Congratulations! You have won the Turbo Target Practice Challenge!

TRADE WARRANTY

The Irrigation Professional's Protection Package from Weathermatic:

2 YEARS No hassles. No questions. Over-the-counter exchange.

For two years from original date of sale, Weathermatic will replace all N-100, 12000 Series valves, Weathermate and LMC controllers with defects in materials or workmanship.

5 YEARS No hassles. No questions. Over-the-counter exchange.

For five years from original date of sale, Weathermatic will replace rotors (T3, T3S, CT70), sprays, nozzles (LX Series), 21000CR Series valves and M24 solenoids, and 955 Rain Sense with defects in materials or workmanship.

10 YEARS For ten years from original date of sale, Weathermatic will repair or replace all 11000CR, 8200CR Series valves and S24B solenoids found to be defective in materials or workmanship.

A three year trade warranty applies to all Weathermatic products not covered by warranties noted above. All products in this category found to have defects in materials or workmanship will be repaired or replaced at Weathermatic's option. Quick coupling valves and accessories are covered by a one year warranty from the original manufacturer.

A complete copy of the warranty policy may be requested from Weathermatic.

RETURN PROCEDURES

To receive warranty benefits, customer should return defective parts to the nearest Weathermatic Distributor.

PRODUCT CHANGES

Weathermatic reserves the right to alter, modify or redesign its products, pricing and warranty at all times without creating any liability for the obsolescence of customer inventory of such parts or products.

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