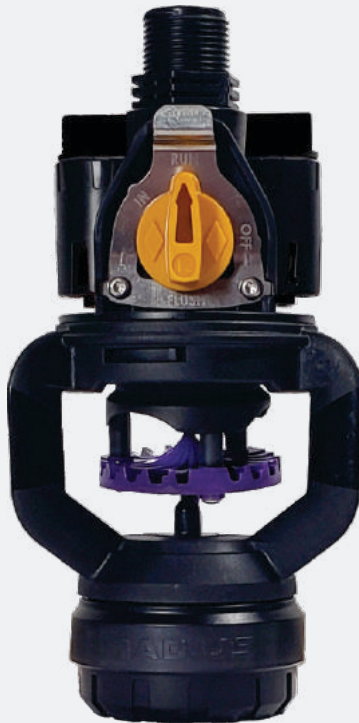


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XCAD
USA[®]

Irrigation Innovation Through
Design, Engineering and Experience™

Radius™
Radius is King™



2023/2024



A BETTER CHOICE

**An Irrigation Products
Design and Distribution Company**

Irrigation Innovation Through Design, Engineering and Experience™

XCAD USA® is a committed leader in the irrigation industry. We proudly supply our customers with superior irrigation products that are crafted with excellence. Our mission is to be the best value and to bring innovation to the irrigation industry through design, engineering and experience.

Over the last twenty-plus years, **XCAD USA®** has been devoted to building lasting relationships with our customers. Those relationships have allowed our business to thrive and have provided us with the privilege to utilize and conserve one of the world's greatest resources: water (H₂O).

At **XCAD USA®** we are invested in our people, our state, our country and the world. Not only do we provide world class irrigation products for agricultural and industrial applications, we support communities and help grow farm economies.

All **XCAD USA®** irrigation products are designed by our engineering team in Rupert, Idaho. We are proud to invest in the people that build our products and the communities that they live in. Our company reflects the exemplary values of our customers, our employees, and our great state. We are honored to be recognized as a leader in our industry. **XCAD USA®** will continue to serve local communities throughout the USA, and the world, with our innovative products and our commitment to excellence. We are a great value and a better choice.

AQUA BURST  [®]
Torque-Driven™

The Aqua Burst logo features the words 'AQUA BURST' in a large, bold, blue, sans-serif font. To the right of the text is a blue icon of an umbrella with a curved handle. Below 'AQUA BURST' is a registered trademark symbol (®). Underneath the entire logo is the tagline 'Torque-Driven™' in a smaller, blue, sans-serif font.



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Irrigation Innovation Through Design, Engineering and Experience™

AQUA BURST

Torque Driven™



Multi-Composite™

Raven-Smart™
Technology of Modern Design™

Precision Channel Spoon™

X SERIES BRASS™ - MADE TO LAST™

X75 Black Bird™

Radius™
Radius is King™

Creopluology™
The Science of Making Rain™

AXIS-SKY™
End of Pivot Sprinkler

X100 End Gun™
Thunderbolt™

X-CART™

AXIS-FIELD™
End of Pivot Sprinkler

Tuff-Tee™

All XCAD USA® Products Are Designed and Engineered in the USA
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All prices are subject to change without notice

INSTALLATION, MAINTENANCE & USER GUIDE

Installation, Maintenance and User Guide for Aqua Burst® Full Circle Impact Sprinklers

Operation of the Spoon-Driven Sprinkler

- Pressurized water passes through the bearing and sprinkler body, exiting through the nozzle onto the sloping vane. The water is then directed through the arm window into the curve of the spoon, creating a reactionary force.
- The reactionary force of the pressurized water leaving the spoon forces the arm out of the stream and away from the nozzle.
- The tension of the arm spring then pulls the arm back into its original position. During this process the impact is increased by the angle of the leading edge of the sloping vane causing the sprinkler to move a small degree of travel so that the rotation of the sprinkler is relatively slow and uniform (one-half to three minutes per revolution, depending on the model, pressure and nozzle size).

Common Causes of Impact Sprinkler Failure

1 - Foreign objects in water causing nozzle to become plugged

Remove and clean nozzle, then reinstall. Brass nozzles plugged with soft materials may be unplugged by inserting a wire to dislodge plug as long as care is used not to scratch the internal bore of the nozzle.

2 - Oils or Pipe Dope

Most Aqua Burst® sprinklers come with **pre-applied XC-33 thread sealant** and require no other sealant during installation. All Aqua Burst® impact sprinklers are water-lubricated. Never use additional lubricants such as oil, grease, anti-seize or pipe dope on bearing assembly or arm. Doing so will damage sprinkler and will *void warranty*. **Teflon tape, properly installed, is the only other recommended thread sealant.**

3 - Improper Pressure

Always operate sprinkler within its recommended normal pressure range. Operation of sprinkler outside of its intended performance range may cause premature wear or crop damage and will *void warranty*. (See Aqua Burst® nozzle performance charts for working pressure ranges).

4 - Worn and Improper Nozzle Sizes

Aqua Burst® Impact Sprinklers are only guaranteed to function optimally with recommended nozzle sizes and types for each individual model. Only use recommended nozzle sizes and types for each model. Using improper size and type may cause excessive wear or sprinkler failure; inaccurate water distribution and/or crop damage and will *void warranty*. (See Aqua Burst® nozzle performance charts for proper nozzle selection).

5 - Crushed Bearing Sleeve

Avoid over-tightening sprinkler into riser or fitting during installation. Most Aqua Burst® sprinklers come with **pre-applied XC-33 thread sealant**. Over-tightening can cause the outer bearing sleeve to crush into the inner bearing spindle causing the bearing to bind and fail to rotate. In addition, over-tightening makes removal and replacement difficult and may require professional assistance.

6 - Avoid Incompatible Fittings

Avoid fittings that can come into contact with sprinkler bearing spindle. Some fittings have a shoulder that can interfere with the bearing spindle and cause the sprinkler to seize and fail.

7 - Over-tightening

Avoid over-tightening nozzle and sprinkler bearing nut during installation. An over-tightened nozzle will be very difficult to remove and replace. Never use a wrench or sprinkler wrench that can crush the bearing while installing or removing the sprinkler. Most Aqua Burst® sprinklers come with **pre-applied XC-33 thread sealant** and do not require sprinkler to be over-tightened during installation.

Irrigation Through Innovation

Raven-Smart™



RADIUS



AXIS-SKY



HF30



Torque Driven™

X10018



AXIS-FIELD



X75-18

**Aqua Burst® Impact Sprinklers
Are Water Lubricated**

The use of additional lubricants such as Oil, Grease,
Anti-Seize or Pipe Dope will damage the bearing
assembly and void the warranty.

*Teflon® tape is the only other
recommended thread sealant.*

Design and Engineering

Quality Materials

Workmanship

Guaranteed

Designed and Engineered in the USA

All prices are subject to change without notice

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2023 / 2024

PIVOT SPRINKLERS AND ACCESSORIES

AQUA BURST 

Radius™

Radius is King™



RADIUS-P

Jet Pack Sold Separately

Limited in supply.
Sold only in box quantities.
(15 per box)

Features

- ◆ Quick click rotary nozzle with Run, Off, and Flush modes
 - ◆ **Jet Pack™** nozzle carrier for 2 extra onboard nozzles
 - ◆ Available in 3 pad configurations:
Black, Blue, Purple
 - ◆ Working pressure 6 - 20 psi
- ◆ The Radius Pivot Sprinkler requires a minimum of 2'- (0.6m) of reinforced flexible hose in the mounting assembly.
 - ◆ Radius Sprinkler comes preassembled with weights. Do not use any other conventional weight system instead of/or in addition to the Radius Sprinkler.
 - ◆ Always make sure that all components of the mounting assembly of the Radius Sprinkler are securely tightened.
- ◆ **Black Plate**
Multi-size droplets with maximum radius to help prevent runoff
 - ◆ **Blue Plate**
Large droplets at a low trajectory for high wind applications
 - ◆ **Purple Plate**
Small droplets for tight soils to help prevent soil sealing

RADIUS-BK	Black Plate
RADIUS-BL	Blue Plate
RADIUS-P	Purple Plate

Jet Pack

Nozzle(s) Not Included



RSJPACK

Nozzle(s) Not Included

RSJPACK	Radius Jet Pack
---------	-----------------

- ◆ The Radius Jet Pack Nozzle Storage System allows for two extra nozzles for when water availability or water application needs increased or decreased as crop matures.
- ◆ Jet Pack Nozzle Holder allows you to match crop water requirements throughout the growing season.

PIVOT SPRINKLER REGULATOR

AQUA BURST

XPR Regulator

Patent Pending



XPR-20

Limited in supply.
Sold only in box quantities.

Features

- ◆ Allow at least 5 PSI (.35 BAR) extra pressure in order for the Aquaburst XPR Regulator to function properly.
- ◆ Aquaburst XPR Pressure Regulator has a flow of 5 to 15 gpm.
- ◆ 3/4 FNPT connections

XPR-6	6 PSI pressure regulator
XPR-10	10 PSI pressure regulator
XPR-15	15 PSI pressure regulator
XPR-20	20 PSI pressure regulator

- ◆ Aqua Burst™ XPR Regulators are designed for accuracy, durability, and efficiency for today's advanced pivot or linear systems
- ◆ XPR Regulators maintain desired sprinkler pressure and increase performance by regulating a constant outlet pressure, improving distribution patterns and application rates

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2023 / 2024

PIVOT SPRINKLER NOZZLES

Radius Nozzle Chart



← Odd numbers have diamonds.

EVEN NOZZLE

ODD NOZZLE

NOZZLE #	#9	#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	
COLOR	Light Blue	Beige	Beige	Gold	Gold	Lime	Lime	Lavender	Lavender	Gray	Gray	
DIAMOND	♦		♦		♦		♦		♦		♦	
PSI BAR	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	
6	0.4	0.34 1.28	0.42 1.59	0.50 1.89	0.61 2.30	0.71 2.68	0.82 3.10	0.95 3.59	1.08 4.08	1.22 4.61	1.36 5.14	1.53 5.79
10	0.7	0.44 1.66	0.54 2.04	0.65 2.46	0.79 2.99	10.92 3.48	1.06 4.01	1.23 4.65	1.40 5.29	1.58 5.98	1.75 6.62	1.97 7.45
15	1.0	0.53 2.00	0.66 2.50	0.79 2.99	0.96 3.63	1.13 4.27	1.29 4.88	1.51 5.71	1.71 6.47	1.93 7.30	2.14 8.09	2.41 9.12
20	1.4	0.62 2.34	0.76 2.87	0.92 3.48	1.11 4.20	1.30 4.92	1.49 5.63	1.74 6.58	1.98 7.49	2.23 8.44	2.48 9.38	2.79 10.56
25	1.7	0.69 2.61	0.85 3.22	1.02 3.86	1.24 4.69	1.46 5.52	1.67 6.32	1.95 7.38	2.21 8.36	2.50 9.46	2.77 10.48	3.12 11.81
30	2.1	0.76 2.87	0.93 3.52	1.12 4.23	1.36 5.14	1.59 6.01	1.83 6.92	2.14 8.09	2.42 9.15	2.74 10.37	3.03 11.46	3.41 12.90
40	2.8	0.87 3.29	1.07 4.05	1.29 4.88	1.57 5.94	1.84 6.96	2.11 7.98	2.47 9.34	2.80 10.59	3.16 11.96	3.50 13.24	3.94 14.91
50	3.4	0.97 3.67	1.20 4.54	1.45 5.48	1.76 6.66	2.06 7.79	2.36 8.93	2.76 10.44	3.13 11.84	3.53 13.32	3.91 14.79	4.41 16.69

NOZZLE #	#20	#21	#22	#23	#24	#25	#26	#27	#28	#29	#30	
COLOR	Turquoise	Turquoise	Yellow	Yellow	Red	Red	White	White	Blue	Blue	Dark Brown	
DIAMOND		♦		♦		♦		♦		♦		
PSI BAR	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	
6	0.4	1.70 6.43	1.84 6.96	2.04 7.72	2.22 8.40	2.44 9.23	2.64 9.99	2.87 10.86	3.07 11.61	3.35 12.68	3.58 13.55	3.83 14.49
10	0.7	2.19 8.28	2.38 9.00	2.64 9.99	2.86 10.82	3.16 11.96	3.41 12.90	3.70 14.00	3.97 15.00	4.32 16.35	4.62 17.48	4.94 18.69
15	1.0	2.69 10.18	2.91 11.01	3.23 12.22	3.50 13.24	3.86 14.61	4.17 15.78	4.53 17.14	4.86 18.39	5.29 20.02	5.66 21.42	6.06 22.93
20	1.4	3.10 11.73	3.36 12.71	3.73 14.11	4.05 15.32	4.46 16.88	4.82 18.24	5.23 19.79	5.61 21.23	6.11 23.12	6.53 24.71	6.99 26.45
25	1.7	3.47 13.13	3.76 14.23	4.17 15.78	4.52 17.10	4.99 18.88	5.38 20.36	5.85 22.14	6.27 23.73	6.83 25.85	7.30 27.63	7.82 29.59
30	2.1	3.80 14.38	4.12 15.59	4.56 17.25	4.96 18.77	5.47 20.70	5.90 22.33	6.41 24.26	6.87 26.00	7.48 28.31	8.00 30.28	8.56 32.39
40	2.8	4.39 16.16	4.76 18.01	5.27 19.94	5.72 21.65	6.31 23.88	6.81 25.77	7.40 28.00	7.94 30.65	8.64 32.70	9.24 34.97	9.89 37.43
50	3.4	4.90 18.54	5.32 20.13	5.89 22.29	6.40 24.22	7.06 26.72	7.61 28.80	8.28 31.33	8.87 33.57	9.66 36.56	10.33 39.13	11.06 41.86

NOZZLE #	#31	#32	#33	#34	#35	#36	#37	#38	#39	#40	#41	
COLOR	Dark Brown	Orange	Orange	Dark Green	Dark Green	Purple	Purple	Black	Black	Dark Turquoise	Dark Turquoise	
DIAMOND	♦		♦		♦		♦		♦		♦	
PSI BAR	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	
6	0.4	4.06 15.36	4.36 16.50	4.65 17.60	4.94 18.69	5.20 19.68	5.47 20.07	5.84 22.10	6.18 23.39	6.52 24.68	6.85 25.92	7.26 27.48
10	0.7	5.24 19.83	5.63 21.50	6.00 22.71	6.37 24.11	6.72 25.43	7.06 26.72	7.54 28.54	7.97 30.16	8.42 31.87	8.85 33.49	9.37 35.47
15	1.0	6.41 24.26	6.89 26.07	7.35 29.71	7.81 29.56	8.23 31.15	8.65 32.74	9.24 34.97	9.77 36.98	10.31 39.02	10.84 41.02	11.48 43.45
20	1.4	7.40 28.00	7.96 30.12	8.49 32.13	9.01 34.10	9.50 35.95	9.98 37.77	10.67 40.38	11.28 42.69	11.91 45.08	12.51 47.35	13.26 49.19
25	1.7	8.28 31.34	8.90 33.68	9.49 35.91	10.08 38.15	10.62 40.19	11.16 42.24	11.92 45.11	12.61 47.72	13.31 50.38	13.99 52.95	14.82 56.09
30	2.1	9.07 34.32	9.75 36.90	10.39 39.32	11.04 41.78	11.64 44.05	12.23 46.29	13.06 49.43	13.81 52.27	14.58 55.19	15.33 58.02	16.23 61.43
40	2.8	10.47 36.62	11.26 42.62	12.00 45.42	12.75 48.25	13.44 50.87	14.12 53.44	15.08 57.07	15.95 60.37	16.84 63.74	17.70 66.99	18.75 70.97
50	3.4	11.71 44.32	12.59 47.65	13.42 50.79	14.25 53.93	15.02 56.85	15.79 59.76	16.86 63.81	17.83 67.48	18.81 71.20	19.79 74.90	20.96 79.33

NOZZLE #	#42	#43	#44	#45	#46	#47	#48	#49	#50	
COLOR	Mustard	Mustard	Maroon	Maroon	Cream	Cream	Dark Blue	Dark Blue	Copper	
DIAMOND		♦		♦		♦		♦		
PSI BAR	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	GPM LPM	
6	0.4	7.60 28.76	7.96 30.13	8.33 31.52	8.73 33.04	9.12 34.51	9.58 36.26	9.96 37.69	10.31 39.02	10.77 40.76
10	0.7	9.81 37.13	10.28 38.91	10.75 40.68	11.27 42.66	11.77 44.54	12.36 46.78	12.86 48.67	13.31 50.38	13.91 52.64
15	1.0	12.01 45.45	12.59 47.65	13.17 19.84	13.80 52.23	14.41 54.54	15.14 57.30	15.75 59.61	16.30 61.70	17.03 64.45
20	1.4	13.87 52.49	14.54 55.03	15.20 57.53	15.93 60.30	16.64 62.98	17.49 66.20	18.19 68.84	18.82 71.23	19.67 74.45
25	1.7	15.51 58.70	16.25 61.51	17.00 64.34	17.81 67.41	18.61 70.43	19.55 74.00	20.33 79.94	21.05 79.67	21.99 83.23
30	2.1	16.99 64.30	17.80 67.37	18.62 70.47	19.51 73.85	20.38 77.13	21.42 81.07	22.28 84.32	23.05 87.24	24.09 91.18
40	2.8	19.61 74.22	20.56 77.82	21.50 81.37	22.53 85.28	23.54 89.09	24.73 93.60	25.72 97.35	26.62 100.76	27.82 105.29
50	3.4	21.93 83.00	22.98 86.98	24.04 90.99	25.19 95.34	26.31 99.58	27.65 104.66	28.76 108.85	29.76 112.64	31.10 117.71

PIVOT SPRINKLER NOZZLES

Radius Nozzles



RVN-9	Rotary Valve Nozzle	#9 LT BLUE	◆
RVN-10	Rotary Valve Nozzle	#10 BEIGE	
RVN-11	Rotary Valve Nozzle	#11 BEIGE	◆
RVN-12	Rotary Valve Nozzle	#12 GOLD	
RVN-13	Rotary Valve Nozzle	#13 GOLD	◆
RVN-14	Rotary Valve Nozzle	#14 LIME	
RVN-15	Rotary Valve Nozzle	#15 LIME	◆
RVN-16	Rotary Valve Nozzle	#16 LAVENDER	
RVN-17	Rotary Valve Nozzle	#17 LAVENDER	◆
RVN-18	Rotary Valve Nozzle	#18 GRAY	
RVN-19	Rotary Valve Nozzle	#19 GRAY	◆
RVN-20	Rotary Valve Nozzle	#20 TURQUOISE	
RVN-21	Rotary Valve Nozzle	#21 TURQUOISE	◆
RVN-22	Rotary Valve Nozzle	#22 YELLOW	
RVN-23	Rotary Valve Nozzle	#23 YELLOW	◆
RVN-24	Rotary Valve Nozzle	#24 RED	
RVN-25	Rotary Valve Nozzle	#25 RED	◆
RVN-26	Rotary Valve Nozzle	#26 WHITE	
RVN-27	Rotary Valve Nozzle	#27 WHITE	◆
RVN-28	Rotary Valve Nozzle	#28 BLUE	
RVN-29	Rotary Valve Nozzle	#29 BLUE	◆

RVN-30	Rotary Valve Nozzle	#30 DK BROWN	
RVN-31	Rotary Valve Nozzle	#31 DK BROWN	◆
RVN-32	Rotary Valve Nozzle	#32 ORANGE	
RVN-33	Rotary Valve Nozzle	#33 ORANGE	◆
RVN-34	Rotary Valve Nozzle	#34 DK GREEN	
RVN-35	Rotary Valve Nozzle	#35 DK GREEN	◆
RVN-36	Rotary Valve Nozzle	#36 PURPLE	
RVN-37	Rotary Valve Nozzle	#37 PURPLE	◆
RVN-38	Rotary Valve Nozzle	#38 BLACK	
RVN-39	Rotary Valve Nozzle	#39 BLACK	◆
RVN-40	Rotary Valve Nozzle	#40 DK TURQUOISE	
RVN-41	Rotary Valve Nozzle	#41 DK TURQUOISE	◆
RVN-42	Rotary Valve Nozzle	#42 MUSTARD	
RVN-43	Rotary Valve Nozzle	#43 MUSTARD	◆
RVN-44	Rotary Valve Nozzle	#44 MAROON	
RVN-45	Rotary Valve Nozzle	#45 MAROON	◆
RVN-46	Rotary Valve Nozzle	#46 CREAM	
RVN-47	Rotary Valve Nozzle	#47 CREAM	◆
RVN-48	Rotary Valve Nozzle	#48 DK BLUE	
RVN-49	Rotary Valve Nozzle	#49 DK BLUE	◆
RVN-50	Rotary Valve Nozzle	#50 COPPER	

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AXIS END OF PIVOT SPRINKLER

AQUA BURST Viscous™ Technology

Features

- ◆ New ‘V-Torque’ brass dampener
- ◆ Easy nozzle assembly and replacement
- ◆ 15 to 50 psi working pressure
- ◆ Use in conjunction with X100 End Gun sprinkler for added acreage and improved coverage
- ◆ Comes with a full set of nozzles: 12, 15, 18 & 21
- ◆ 1 1/4" NPT base
- ◆ Use in combination with Seal-Matic® 1 1/4" valve



AXIS-F
Field Turbine

AXIS-FIELD™

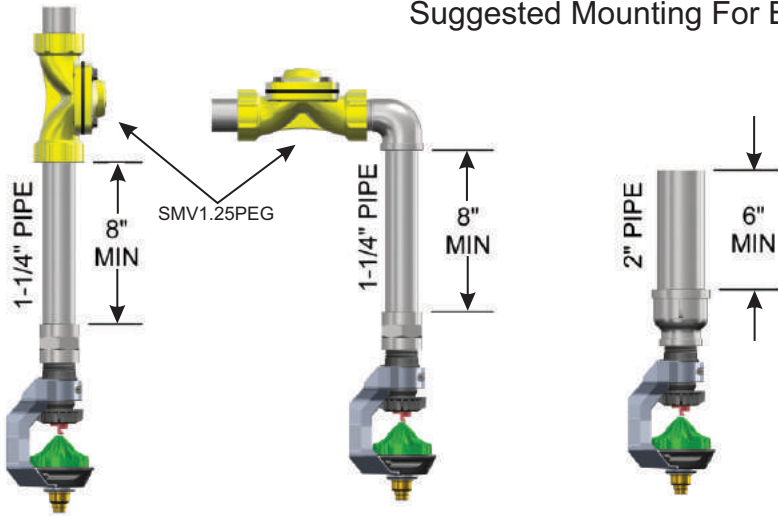
End of Pivot Sprinkler

includes nozzle set

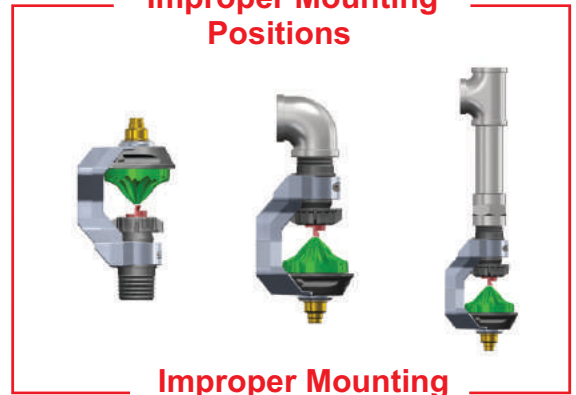
- AXIS-F Axis-F Sprinkler with Nozzle Set
- AXIS-NOZ Axis Replacement Nozzle Set

Built in the USA

Suggested Mounting For Best Performance



Improper Mounting Positions



Improper Mounting Reduces Performance

Preliminary Performance (US Units)

Radius - GPM

Operating Pressure Must be 15 psi (min) to 50 (max) psi

PSI	#12 nozzle	#15 nozzle	#18 nozzle	#21 nozzle
15	31 - 12.0	32 - 19.0	38 - 29.0	38 - 35.5
20	33 - 13.5	35 - 21.8	41 - 32.8	41 - 41.5
25	35 - 15.3	38 - 24.3	44 - 36.5	44 - 48.0
30	37 - 16.5	41 - 26.5	47 - 39.8	47 - 52.0
35	38 - 17.8	43 - 28.8	49 - 43.0	49 - 55.5
40	39 - 19.0	45 - 30.8	51 - 46.5	51 - 59.5
45	40 - 20.0	46 - 32.3	52 - 49.5	51 - 62.5
50	41 - 21.0	47 - 33.8	53 - 51.0	51 - 65.5

This performance chart does not represent droplet, conditions, uniformity, application rate or suitability of the applications made herein.

Poor hydraulic entrance conditions reduce performance.

Aqua Burst® sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

AQUA BURST

AXIS END OF PIVOT SPRINKLER



AXIS-S
 Sky Turbine

AQUA BURST Viscous™ Technology

Features

- ◆ New 'V-Torque' brass dampener
- ◆ Easy nozzle assembly and replacement
- ◆ 15 to 50 psi working pressure
- ◆ Use in conjunction with X100 End Gun sprinkler for added acreage and improved coverage
- ◆ Comes with a full set of nozzles: 12, 15, 18 & 21
- ◆ 1 1/4" NPT base
- ◆ Use in combination with Seal-Matic® 1 1/4" valve

AXIS-SKY™

End of Pivot Sprinkler

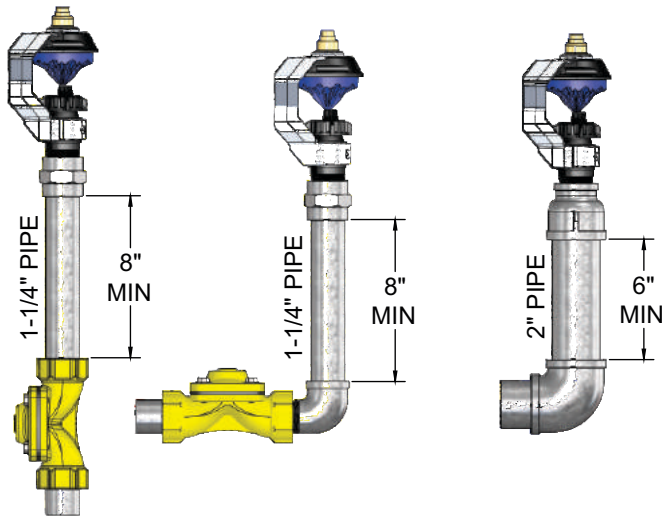
includes nozzle set

AXIS-S Axis-S Sprinkler with Nozzle Set

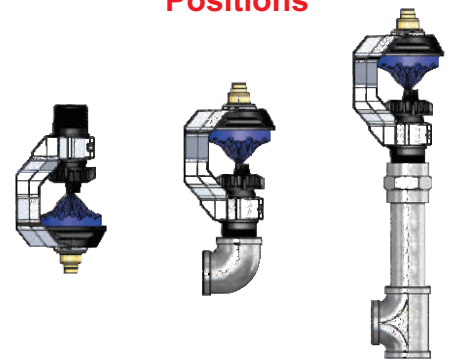
AXIS-NOZ Axis Replacement Nozzle Set

Built in the USA

Suggested Mounting For Best Performance



Improper Mounting Positions



Improper Mounting Reduces Performance

Preliminary Performance (US Units)

Radius - GPM

Operating Pressure Must be 15 psi (min) to 50 (max) psi

PSI	#12 nozzle	#15 nozzle	#18 nozzle	#21 nozzle
15	36 - 12.0	37 - 19.0	42 - 29.0	43 - 35.5
20	38 - 13.5	40 - 21.8	42 - 32.8	45 - 41.5
25	41 - 15.3	42 - 24.3	42 - 36.5	47 - 48.0
30	43 - 16.5	44 - 26.5	43 - 39.8	48 - 52.0
35	44 - 17.8	45 - 28.8	45 - 43.0	50 - 55.5
40	44 - 19.0	46 - 30.8	46 - 46.5	50 - 59.5
45	45 - 20.0	46 - 32.3	46 - 49.5	46 - 62.5
50	45 - 21.0	47 - 33.8	47 - 51.0	46 - 65.5

This performance chart does not represent droplet, conditions, uniformity, application rate or suitability of the applications made herein.

Poor hydraulic entrance conditions reduce performance.

Aqua Burst® sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

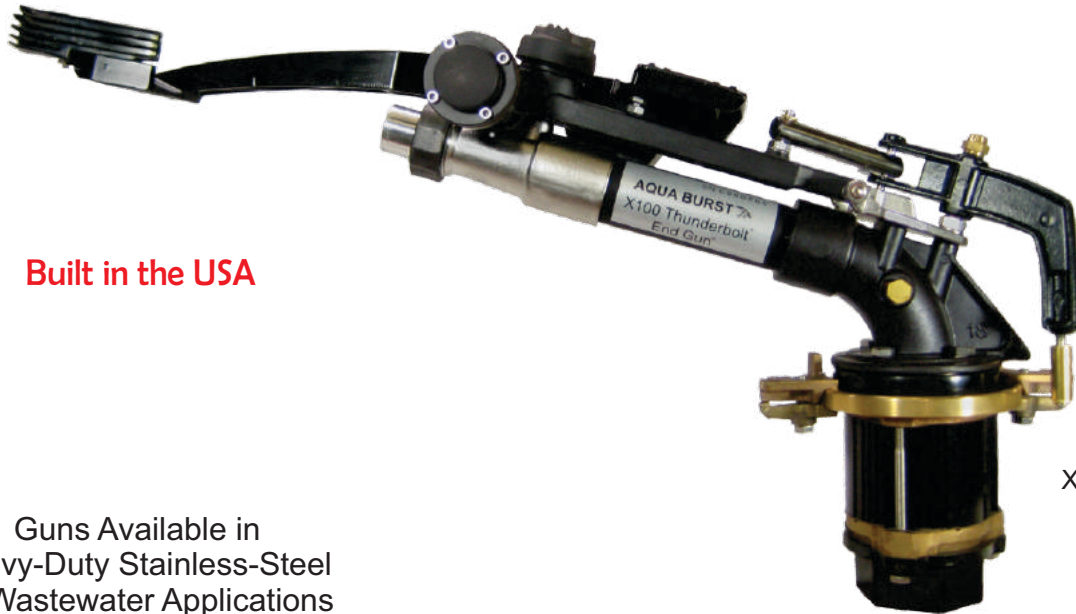
END GUNS

3-Year Limited Warranty

Designed and Built
In Rupert, Idaho, USA

X100 End Gun™ Thunderbolt™

Raven-Smart™
Technology



Built in the USA

X10018

Guns Available in
Heavy-Duty Stainless-Steel
for Wastewater Applications

Features

- ◆ 37 - 290 gpm, 35 - 100 psi
- ◆ 18° trajectory - Pivot end gun
- ◆ 24° trajectory - Movable and solid set
- ◆ 43° trajectory - Dust control and mining
- ◆ Continuous forward and reverse speeds
- ◆ Adjustable control from 30° to 330°
- ◆ 2" NPT

Advantages

- ◆ Comes standard with both high and low force drive vanes for superior performance of small to large nozzles
- ◆ Powder-coated aluminum drive arm
- ◆ All stainless steel ball bearings
- ◆ Stainless-steel nozzle mount and stud
- ◆ Fully adjustable shift box
- ◆ Solid brass reversing stops
- ◆ Taper ring nozzles
- ◆ All aluminum parts are epoxy coated or fully anodized
- ◆ **100% Rebuildable in our factory or your shop!**

End Gun Does Not Include Nozzle

X10018 End Gun™ Thunderbolt™
sold individually

X10018	18° End Gun
X10024	24° End Gun
X10043	43° End Gun
X10018SS	18° Stainless Steel End Gun
X10024SS	24° Stainless Steel End Gun

Warranty and Disclaimer

XCAD USA /Aqua Burst™ X-100 End Gun™ sprinklers are warranted for one year from date of manufacture to be free of defective materials and workmanship when used within the working specifications for which the product was designed and intended and under normal use and service. This warranty includes an additional three (3) year service plan (from date of purchase) for repair of any non-functioning X-100 End Gun™ due to defective materials and workmanship or excessive wear when used in normal working conditions. The manufacturer's liability under this warranty is limited solely to repair of defective parts and labor and the manufacturer will not be liable for any freight, crop loss or other consequential damages resulting from defects, excessive wear or breach of warranty. This warranty is expressly in lieu of all other warranties, express or implied, including the warranties of merchantability and or liabilities of the manufacturer. No agent, employee or representative of the manufacturer has the authority to waive, alter or add to the provisions of this warranty, nor make any representations or warranty not contained herein. XCAD USA /Aqua Burst™ reserves the right to define this warranty or any other warranty as XCAD USA /Aqua Burst™ sees fit.

AQUA BURST

AQUA BURST® X100 Thunderbolt Performance Charts



X100-51H
(GRAY)

Single Straight Bore Nozzle

X100-51L
(BLACK)



X10018

Radius - GPM

Refer to gray shaded area on chart.

Large Gray Drive Vane X100-51H					Factory Installed Small Black Drive Vane X100-51L									
PSI	.4" Nozzle	.45" Nozzle	.5" Nozzle	.55" Nozzle	.6" Nozzle	.65" Nozzle	.70" Nozzle	.75" Nozzle	.80" Nozzle	.85" Nozzle	.90" Nozzle	.95" Nozzle	.1" Nozzle	
40	74 - 26	79 - 35	85 - 42	90 - 52	95 - 61	99 - 71	102 - 84	107 - 95	111 - 108	119 - 123	122 - 139	128 - 154	-	
45	77 - 28	83 - 37	88 - 44	93 - 55	98 - 64	102 - 76	106 - 87	110 - 101	115 - 114	124 - 131	126 - 146	132 - 162	136 - 180	
50	80 - 29	86 - 39	92 - 46	96 - 58	101 - 68	105 - 80	110 - 92	114 - 105	118 - 119	127 - 138	131 - 151	135 - 169	140 - 187	
55	82 - 31	89 - 40	95 - 49	99 - 61	104 - 72	109 - 84	113 - 97	117 - 111	122 - 125	131 - 145	134 - 160	139 - 178	144 - 196	
60	84 - 32	92 - 41	97 - 51	102 - 63	108 - 78	112 - 88	117 - 101	119 - 116	125 - 132	134 - 150	138 - 167	143 - 186	148 - 205	
65	86 - 34	94 - 43	100 - 54	105 - 65	110 - 80	116 - 93	121 - 105	123 - 120	129 - 137	139 - 157	141 - 175	147 - 195	153 - 214	
70	87 - 36	96 - 44	102 - 55	108 - 68	111 - 81	119 - 98	125 - 110	126 - 125	133 - 142	141 - 163	145 - 181	152 - 202	158 - 223	
75	89 - 37	100 - 46	105 - 57	110 - 70	115 - 84	122 - 100	127 - 114	130 - 130	136 - 148	141 - 163	149 - 187	156 - 209	162 - 230	
80	91 - 39	103 - 48	108 - 59	111 - 72	118 - 86	125 - 102	130 - 118	134 - 133	138 - 152	144 - 168	152 - 193	159 - 215	165 - 237	
85	93 - 40	106 - 50	110 - 61	113 - 75	121 - 89	129 - 104	134 - 120	138 - 137	141 - 157	147 - 174	154 - 199	161 - 222	167 - 244	
90	94 - 42	109 - 52	112 - 63	116 - 77	124 - 93	133 - 107	137 - 124	143 - 142	145 - 162	150 - 180	157 - 206	163 - 228	169 - 251	
95	97 - 43	112 - 54	115 - 65	118 - 80	128 - 96	137 - 111	141 - 129	147 - 146	149 - 167	152 - 185	159 - 212	165 - 235	172 - 259	
100	99 - 45	115 - 56	118 - 67	121 - 83	131 - 99	141 - 115	146 - 133	151 - 150	152 - 172	155 - 191	161 - 217	168 - 242	174 - 265	

X10024

Radius - GPM

Large Gray Drive Vane X100-51H					Factory Installed Small Black Drive Vane X100-51L									
PSI	.4" Nozzle	.45" Nozzle	.5" Nozzle	.55" Nozzle	.6" Nozzle	.65" Nozzle	.70" Nozzle	.75" Nozzle	.80" Nozzle	.85" Nozzle	.90" Nozzle	.95" Nozzle	.1" Nozzle	
40	79 - 28	85 - 37	91 - 45	96 - 55	101 - 65	105 - 76	109 - 89	114 - 101	118 - 115	127 - 131	130 - 148	136 - 164	-	
45	82 - 30	89 - 39	94 - 47	99 - 58	104 - 68	109 - 81	113 - 93	118 - 107	122 - 127	132 - 139	135 - 155	140 - 172	145 - 191	
50	85 - 31	92 - 41	98 - 49	103 - 62	107 - 72	112 - 85	117 - 98	122 - 112	126 - 127	136 - 147	139 - 161	144 - 180	149 - 199	
55	88 - 33	95 - 43	101 - 52	106 - 65	111 - 77	116 - 89	121 - 103	125 - 118	130 - 133	139 - 154	143 - 170	148 - 189	153 - 209	
60	90 - 34	98 - 44	104 - 54	109 - 67	115 - 83	120 - 94	125 - 107	127 - 123	134 - 140	143 - 160	147 - 178	152 - 198	157 - 218	
65	91 - 36	100 - 46	107 - 57	112 - 69	117 - 85	123 - 99	129 - 112	131 - 128	138 - 146	148 - 167	150 - 186	157 - 207	163 - 228	
70	93 - 38	103 - 47	109 - 59	115 - 72	118 - 86	127 - 104	133 - 117	135 - 133	142 - 151	150 - 173	154 - 193	162 - 215	169 - 237	
75	95 - 39	107 - 49	112 - 61	117 - 74	122 - 89	130 - 106	136 - 121	139 - 138	145 - 157	154 - 179	158 - 199	166 - 222	173 - 245	
80	97 - 41	110 - 51	115 - 63	118 - 77	126 - 92	133 - 108	138 - 125	143 - 142	147 - 162	156 - 185	162 - 205	169 - 229	176 - 252	
85	99 - 43	113 - 53	117 - 65	121 - 80	129 - 95	137 - 111	143 - 128	147 - 146	151 - 167	160 - 191	164 - 212	171 - 236	178 - 260	
90	101 - 45	116 - 55	119 - 67	123 - 82	132 - 99	142 - 114	146 - 132	152 - 151	154 - 172	162 - 197	167 - 219	174 - 243	180 - 267	
95	103 - 46	119 - 57	123 - 69	126 - 85	136 - 102	146 - 118	151 - 137	156 - 155	158 - 178	165 - 203	169 - 225	176 - 250	183 - 275	
100	105 - 48	122 - 60	126 - 71	129 - 88	139 - 105	150 - 122	155 - 141	161 - 160	162 - 183	167 - 208	172 - 231	179 - 257	185 - 282	

Gray drive vane is intended for use **ONLY** at low pressures and/or small nozzle sizes as indicated by the gray shaded area on the X100 End Gun performance chart. **Use in any other manner will void warranty.**

Operate ONLY between 40 psi (min) and 100 psi (max)

Aqua Burst™ impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

END GUNS

X100 End Gun™ Thunderbolt™

X100 with Valve

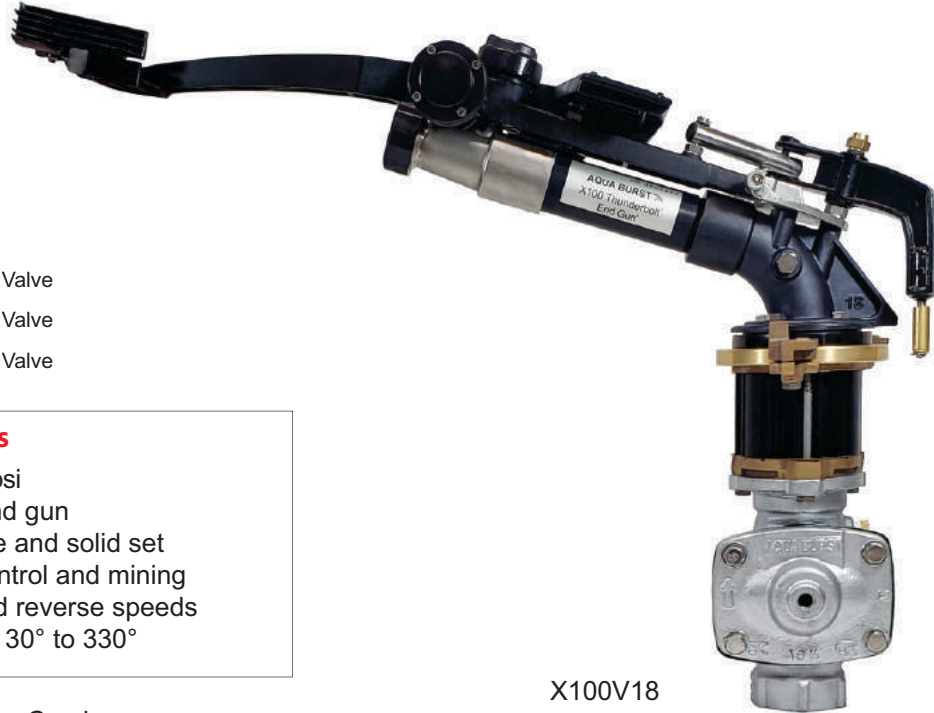
X100V18	18° End Gun with Valve
X100V24	24° End Gun with Valve
X100V43	43° End Gun with Valve

Features

- ◆ 37 - 290 gpm, 35 - 100 psi
- ◆ 18° trajectory - Pivot end gun
- ◆ 24° trajectory - Movable and solid set
- ◆ 43° trajectory - Dust control and mining
- ◆ Continuous forward and reverse speeds
- ◆ Adjustable control from 30° to 330°

2" Seal Matic™ Valve Combo

No electric solenoid required for End Guri™ control when used with booster pump



X100V18



X100BA



X100BASS

X100 Complete Replacement Bearing

Also Fits Nelson™ SR100 and SR75
(Does not include stops)

X100BA	Complete Bearing Assembly with SS Ball Bearing
X100BASS	Heavy-Duty Stainless Steel Bearing Assembly

Features

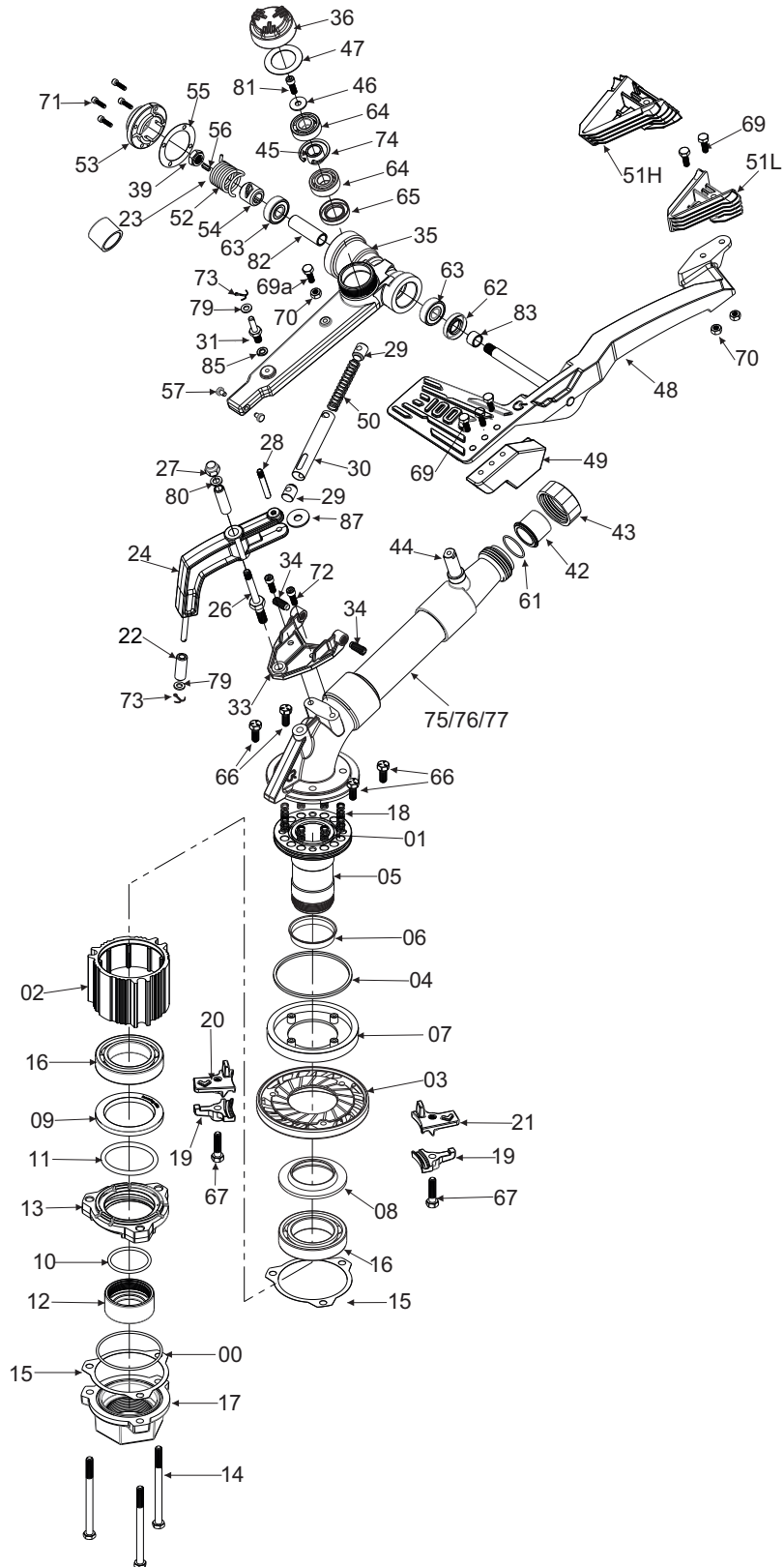
- ◆ Anodized aluminum body and bearing stem
- ◆ One-piece brass bearing base carrier with Aqua Burst® exclusive UltraSlip impregnated o-ring
- ◆ Heavy-duty wastewater bearing assembly includes stainless-steel ball bearings, bearing stem, bearing nut, bearing carrier and base flange

Built in the USA

AQUA BURST

END GUN REPLACEMENT PARTS

X100 End Gun™ Parts



- X100-00 Base Nut O-Ring -150 (orange)
- X100-01 O-Ring -226 (light pink)
- X100-02 Bearing Housing
- X100-03 Upper Bearing Carrier
- X100-04 Brake Seal
- X100-05 Bearing Stem
- X100-06 Seal Sleeve
- X100-07 Brake Disc
- X100-08 Upper Bearing Seal (med. blue)
- X100-09 Lower Bearing Seal (purple)
- X100-10 O-Ring -224 (dark blue)
- X100-11 O-Ring -331 (med. green)
- X100-12 Chromed Stem Nut
- X100-13 Bearing Base Carrier
- X100-14 Bearing Hex Bolt
- X100-15 Housing Gasket
- X100-16SS Ball Bearing 6010, SS
- X100-17 Base Nut Flange
- X100-18 Friction Spring
- X100-19 Reverse Stop, Bottom
- X100-20 Reverse Stop, Left
- X100-21 Reverse Stop, Right
- X100-22 Swing Arm Pin Bushing
- X100-23 Nylon Arm Spring Sleeve
- X100-24 Reverse Swing Arm Assembly
- X100-26 Reverse Arm Stud
- X100-27 Brass Stud Nut
- X100-28 Threaded Swing Arm Top Pin
- X100-29 Trip Spring Follower
- X100-30 Spring Guide Pipe
- X100-31 Shift Arm Stud
- X100-33 Shift Box, SS
- X100-34 Shift Box Set Screw
- X100-35 Shift Arm
- X100-36 Bearing Boss Cover
- X100-39 Arm Nut, SS
- X100-42 Straight Bore Nozzle
- X100-43 Nozzle Retainer Nut
- X100-44 Arm Mount Stud, SS
- X100-45 Shift Arm Spacer
- X100-46 Bearing Washer, SS
- X100-47 Arm Bearing Cap Gasket
- X100-48 X-100 Single Strut Arm
- X100-49 Arm Weight
- X100-50 Trip Spring, SS
- X100-51H High Force Drive Vane
- X100-51L Low Force Drive Vane
- X100-52 Arm Spring, SS
- X100-53 Arm Spring Cover
- X100-54 Spring Pawl
- X100-55 Spring Cover Gasket
- X100-56 Pawl Key, Brass
- X100-57 Impact Button, Brass
- X100-61 Nozzle O-ring -025 (yellow)
- X100-62 Arm Seal (red)
- X100-63 Arm Bearing 6201, SS
- X100-64 Shift Arm Bearing 6202, SS
- X100-65 Shift Arm Seal (orange)
- X100-66 Bolt 5/16-18 x 5/8, SS
- X100-67 Bolt 5/16-18 x 1 1/4, SS
- X100-69 Bolt 1/4" x 3/4", SS
- x100-69a Bolt 1/4" x 1", SS
- X100-70 Nut 1/4, SS
- X100-71 Cap Screw #8 x 5/8, SS
- X100-72 Cap Screw 1/4 x 1/2, SS
- X100-73 Cotter Pin
- X100-74 Snap Ring 1 3/8", SS
- X100-75 X100 18° Elbow Body
- X100-76 X100 24° Elbow Body
- X100-77 X100 43° Elbow Body
- X100-79 Brass Washer
- X100-80 Rubber Washer
- X100-81 1/4 x 1/2" Buttonhead Screw, SS
- X100-82 Long Shaft Sleeve
- X100-83 Short Shaft Sleeve
- X100-85 Split Lock Washer, 5/16", SS
- X100-87 Fender Washer, 1/4" x 1 1/2", SS
- X100-88 M6x18mm washer, 1.6mm

END GUNS

Raven-Smart™
Technology

X75 End Gun™ Black Bird™



**X75-18
Pivot Gun**

**X75-24
Field Gun**

Features

- ◆ Comes standard with 8 nozzles
3, 3.5, 4, 4.5, 5, 5.5, 6 and 6.5
- ◆ Powder-coated nozzle mount, drive arm and body
- ◆ 18° trajectory pivot end gun
- ◆ 27° trajectory movable solid set
- ◆ 18 - 100 gpm, 40 - 90 psi
- ◆ Full and part circle
- ◆ Replaceable spoon
- ◆ 2" NPT male thread, 1 1/2" NPT female thread
- ◆ High-quality composite bearings

X75-18 End Gun™ Black Bird™ sold individually

X75-18	18° End Gun
X75-24	24/27° End Gun

Warranty and Disclaimer

XCAD USA /Aqua Burst™ X-75 End Gun™ sprinklers are warranted for one year from date of manufacture to be free of defective materials and workmanship when used within the working specifications for which the product was designed and intended and under normal use and service. The manufacturer's liability under this warranty is limited solely to repair of defective parts and labor and the manufacturer will not be liable for any freight, crop loss or other consequential damages resulting from defects, excessive wear or breach of warranty. This warranty is expressly in lieu of all other warranties, express or implied, including the warranties of merchantability and or liabilities of the manufacturer. No agent, employee or representative of the manufacturer has the authority to waive, alter or add to the provisions of this warranty, nor make any representations or warranty not contained herein. XCAD USA /Aqua Burst™ reserves the right to define this warranty or any other warranty as XCAD USA /Aqua Burst™ sees fit.

AQUA BURST

AQUA BURST® X75 Black Bird Performance Charts

18°

X75-18

Radius - GPM

Pivot Gun

PSI	.3" Nozzle	.35" Nozzle	.4" Nozzle	.45" Nozzle	.5" Nozzle	.55" Nozzle	.6" Nozzle	.65" Nozzle
20	-	-	-	-	55 - 33	66 - 40	70 - 47	75 - 55
25	-	-	-	-	65 - 37	70 - 44	78 - 53	80 - 62
30	-	-	60 - 26	68 - 33	75 - 40	81 - 48	82 - 57	84 - 68
35	-	-	66 - 28	74 - 35	80 - 43	86 - 52	89 - 62	90 - 73
40	63 - 17	65 - 23	71 - 30	80 - 38	83 - 46	90 - 56	93 - 66	95 - 78
45	65 - 18	70 - 24	78 - 32	84 - 40	87 - 49	91 - 59	96 - 70	99 - 83
50	70 - 19	74 - 26	81 - 33	86 - 42	90 - 52	93 - 62	100 - 74	102 - 87
55	72 - 20	78 - 27	82 - 35	88 - 44	94 - 54	95 - 65	102 - 78	105 - 91
60	73 - 21	80 - 28	84 - 36	92 - 46	97 - 56	100 - 68	105 - 81	108 - 96
65	75 - 21	81 - 29	85 - 38	95 - 48	102 - 59	104 - 71	110 - 85	116 - 99
70	81 - 22	82 - 30	86 - 39	100 - 49	106 - 61	108 - 74	112 - 88	120 - 103
75	83 - 23	84 - 31	87 - 41	108 - 51	112 - 63	113 - 76	115 - 91	122 - 107
80	85 - 24	86 - 32	88 - 42	111 - 53	114 - 65	115 - 79	119 - 94	124 - 110

24/27°

X75-24

Radius - GPM

Field Gun

PSI	.3" Nozzle	.35" Nozzle	.4" Nozzle	.45" Nozzle	.5" Nozzle	.55" Nozzle	.6" Nozzle	.65" Nozzle
20	-	-	-	-	69 - 33	70 - 40	72 - 47	75 - 55
25	-	-	-	-	71 - 37	75 - 44	77 - 53	80 - 62
30	-	-	74 - 26	75 - 33	77 - 40	79 - 48	84 - 57	87 - 67
35	-	-	78 - 28	80 - 35	82 - 43	84 - 52	86 - 62	95 - 73
40	68 - 17	78 - 23	81 - 30	83 - 38	86 - 46	88 - 56	89 - 66	99 - 78
45	69 - 18	80 - 24	83 - 32	86 - 40	93 - 49	95 - 59	100 - 70	102 - 82
50	70 - 19	85 - 26	90 - 33	91 - 42	95 - 52	100 - 62	104 - 74	107 - 87
55	71 - 20	90 - 27	92 - 35	95 - 44	100 - 54	104 - 65	106 - 78	110 - 91
60	76 - 21	92 - 28	95 - 36	100 - 46	103 - 56	109 - 68	111 - 81	113 - 95
65	80 - 21	96 - 29	98 - 38	103 - 48	109 - 59	115 - 71	116 - 84	117 - 99
70	82 - 22	100 - 30	101 - 39	105 - 49	111 - 61	119 - 74	120 - 88	121 - 103
75	83 - 23	103 - 31	104 - 41	110 - 51	114 - 63	124 - 76	125 - 91	127 - 106
80	85 - 24	107 - 32	108 - 42	115 - 53	117 - 65	125 - 79	127 - 94	130 - 110

Operate ONLY between 20 psi (min) and 80 psi (max)

Aqua Burst™ impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

AQUA BURST

1-208-438-9223
 Email: xcad@pmt.org
 xcadusa.com

2023 / 2024

MULTI-COMPOSITE™ 1/2" BASE IMPACT SPRINKLER

1/2" Full-Circle, Dual-Angle
 Multi-Composite™ Impact

Raven-Smart™ Technology



AL1023

Features

- ◆ Full-circle, dual angle, 2-in-1 impact sprinkler
- ◆ **10° or 23° trajectory**
- ◆ Included plug allows use of nozzle in either side
- ◆ 1/2" male NPT base
- ◆ Fits NOZ5R-Style nozzle
- ◆ 3/8-24 UNF nozzle threads

Sprinkler Head Does Not Include Nozzle

Advantages

- ◆ Anodized aluminum drive arm
- ◆ Composite body is super-strong and impact resistant
- ◆ All-brass bearing
- ◆ Stainless-steel fulcrum pin, arm spring, and bearing spring
- ◆ Suitable for most solid set and portable applications
- ◆ Ideal for low precipitation rates
- ◆ Built-in vane straightener for improved performance
- ◆ Highly efficient water distribution
- ◆ Made from domestic and foreign parts

100/case
 AL1023

AQUA BURST® Performance Chart

Normal Stream Height At 2.5' Above Nozzle at Normal Pressure

Radius - GPM

PSI	3/32" nozzle	7/64" nozzle	1/8" nozzle	9/64" nozzle
35	36 - 1.51	38 - 2.06	39 - 2.69	40 - 3.40
40	36 - 1.62	39 - 2.21	39 - 2.88	40 - 3.63
45	37 - 1.71	39 - 2.32	39 - 3.04	40 - 3.86
50	37 - 1.82	39 - 2.47	40 - 3.21	41 - 4.07
55	38 - 1.90	40 - 2.58	40 - 3.37	41 - 4.25
60	38 - 1.99	40 - 2.70	40 - 3.52	41 - 4.45

Operate ONLY between 35 psi (min) and 60 psi (max)

Aqua Burst® impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

MULTI-COMPOSITE™ 3/4" IMPACT SPRINKLER

3/4" Full-Circle Multi-Composite™ Impact
 Precision Channel™ Aluminum Arm
Raven-Smart™ Technology

- Features**
- ◆ Full-circle impact – 26° trajectory
 - ◆ 3/4" male NPT base
 - ◆ Single (AL30) or dual nozzle (AL30D)
- Sprinkler Head Does Not Include Nozzle



AL30

Aqua-Burst® AL30 Multi-Composite™ Sprinklers are designed to outlast and outperform all other 3/4" impact sprinkler brands

Advantages

- ◆ Anodized die-cast aluminum drive arm with *Precision Channel Spoon™* for smooth Torque-Driven™ operation and reduced splash-down
- ◆ Composite body is super-strong and impact resistant
- ◆ Highly efficient water distribution at both high and low operating pressures
- ◆ All-brass Seal-Lock bearing creates a debris resistant captive seal for long bearing wear
- ◆ Bearing spindle with debris journal to slow bearing wear
- ◆ Stainless-steel fulcrum pin, arm spring and bearing spring for long wearing reliability
- ◆ Ideal for wheel line, solid set and frost control
- ◆ Works well with either straight bore nozzle or flow-control nozzle with 1/4" NPT threads
- ◆ Made with domestic and foreign parts
- ◆ **Preassembled with XC-33 thread sealant**

60/case

AL30

AL30-C (w/chrome bearing)

AL30-SP (w/plastic spindle)

AQUA BURST® Performance Chart

Normal Stream Height At 9' Above Nozzle at Normal Pressure

Single Nozzle
Radius - GPM

PSI	1/8" nozzle	9/64" nozzle	5/32" nozzle	11/64" nozzle	3/16" nozzle
30	39 - 2.1	41 - 3.2	42 - 3.9	44 - 4.7	46 - 5.6
35	40 - 2.4	41 - 3.5	44 - 4.3	46 - 5.3	47 - 6.0
40	40 - 2.5	42 - 3.7	44 - 4.6	46 - 5.5	48 - 6.4
45	41 - 2.8	42 - 3.7	45 - 5.1	47 - 5.8	49 - 6.8
50	41 - 3.1	43 - 3.9	46 - 5.1	48 - 6.2	50 - 7.3
55	42 - 3.2	43 - 4.3	46 - 5.4	48 - 6.4	50 - 7.6
60	42 - 3.4	44 - 4.5	47 - 5.6	49 - 6.6	51 - 7.9
65	43 - 3.6	44 - 4.7	47 - 5.8	49 - 6.9	51 - 8.2
70	44 - 3.9	45 - 4.9	48 - 6.0	50 - 7.9	52 - 8.6

Dual Nozzle
Radius - GPM

PSI	1/8" x 3/32" nozzles	9/64"x3/32" nozzles	5/32"x3/32" nozzles	11/64"x3/32" nozzles	3/16"x1/8" nozzles
30	39 - 3.2	41 - 4.6	43 - 5.4	44 - 6.2	45 - 8.1
35	39 - 3.3	41 - 5.0	43 - 5.8	45 - 6.7	46 - 8.8
40	40 - 3.4	42 - 5.3	44 - 6.2	46 - 7.2	48 - 9.5
45	40 - 3.8	42 - 5.7	45 - 6.5	47 - 7.7	49 - 10.1
50	41 - 4.2	43 - 5.9	45 - 6.9	47 - 8.1	50 - 10.6
55	42 - 4.5	43 - 6.2	46 - 7.3	48 - 8.4	50 - 11.0
60	43 - 4.6	44 - 6.5	46 - 7.6	48 - 8.7	51 - 11.6
65	43 - 4.9	44 - 6.8	47 - 7.9	49 - 9.0	52 - 12.2
70	44 - 5.2	45 - 7.0	47 - 8.2	50 - 9.2	52 - 12.6

Operate ONLY between 30 psi (min) and 70 psi (max)

Aqua Burst® impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

AQUA BURST

1-208-438-9223
 Email: xcad@pmt.org
 xcadusa.com

2023 / 2024

1/2" BRASS IMPACT SPRINKLER

1/2" Full-Circle Brass Impact Torque Driven™ Spoon Technology



HF20

Features

- ◆ Full-circle impact - 23° trajectory
- ◆ 1/2" male NPT base
- ◆ Single nozzle
- ◆ 3/8-24 UNF nozzle threads
- ◆ **Factory installed 1/8" or 7/64" nozzle**

Advantages

- ◆ Cast brass drive arm with I-Beam construction and Torque-Driven™ spoon technology with improved balance, rotation speed, and durability
- ◆ Advanced arm balance with consistent rotation speed and increased durability
- ◆ Suitable for a wide range of nozzles - 3/32", 7/64", 1/8", 9/64"
- ◆ Stainless-steel fulcrum pin, arm spring, and bearing spring
- ◆ Cast brass body with large impact bridges and cored water passage
- ◆ Coined body and arm ensures proper arm position and smooth operation
- ◆ Suitable for solid set and portable applications
- ◆ Made with domestic and foreign parts
- ◆ **Preassembled with XC-33 thread sealant**

100 /case

HF20-18

HF20-764

AQUA BURST® Performance Chart

Normal Stream Height At 9' Above Nozzle at Normal Pressure

Radius - GPM

PSI	3/32" nozzle	7/64" nozzle	1/8" nozzle	9/64" nozzle
35	36 - 1.50	38 - 2.05	39 - 2.69	39 - 3.39
40	36 - 1.61	38 - 2.19	39 - 2.88	40 - 3.62
45	37 - 1.71	39 - 2.32	39 - 3.04	40 - 3.84
50	37 - 1.80	39 - 2.45	40 - 3.21	41 - 4.05
55	38 - 1.89	40 - 2.57	40 - 3.37	41 - 4.24
60	38 - 1.97	40 - 2.68	41 - 3.52	41 - 4.43

Operate ONLY between 30 psi (min) and 60 psi (max)

Aqua Burst® impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

1/2" BRASS FULL-CIRCLE WEDGE IMPACT SPRINKLER

1/2" BRASS FULL-CIRCLE WEDGE IMPACT Torque Driven™ Spoon Technology



HF20W

100 /case
 HF20W

- Features
- ◆ Full-circle impact - 23° trajectory
 - ◆ 1/2" male NPT base
 - ◆ Single nozzle
 - ◆ 3/8-24 UNF nozzle threads
 - ◆ Fits NOZ5R-Style nozzle

- Advantages
- ◆ Cast brass drive arm with I-Beam construction and Torque-Driven™ spoon technology with improved balance, rotation speed, and durability
 - ◆ Advanced arm balance with consistent rotation speed and increased durability
 - ◆ Suitable for a wide range of nozzles - 3/32", 7/64", 1/8", 9/64"
 - ◆ Stainless-steel fulcrum pin, arm spring, and bearing spring
 - ◆ Cast brass body with large impact bridges and cored water passage
 - ◆ Coined body and arm ensures proper arm position and smooth operation
 - ◆ Suitable for solid set and portable applications
 - ◆ Made with domestic and foreign parts
 - ◆ **Preassembled with XC-33 thread sealant**

AQUA BURST® Performance Chart

Normal Stream Height At 9' Above Nozzle at Normal Pressure

Radius - GPM

PSI	1/16" nozzle	5/64" nozzle	3/32" nozzle	7/64" nozzle
20	-	30 - 0.81	33 - 1.14	34 - 1.55
25	29 - 0.58	31 - 0.90	33 - 1.27	35 - 1.73
30	29 - 0.64	31 - 0.99	34 - 1.39	35 - 1.90
25	30 - 0.68	32 - 1.07	34 - 1.50	36 - 2.05
40	30 - 0.74	32 - 1.14	35 - 1.61	37 - 2.19
45	31 - 0.77	33 - 1.21	35 - 1.71	37 - 2.32
50	31 - 0.82	34 - 1.27	36 - 1.80	38 - 2.45
55	32 - 0.86	34 - 1.33	36 - 1.89	38 - 2.57
60	32 - 0.90	34 - 1.39	37 - 1.97	38 - 2.68

Operate ONLY between 20 psi (min) and 60 psi (max)

Aqua Burst® impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

3/4" BRASS IMPACT SPRINKLER

3/4" Full-Circle Brass Impact Torque Driven™



HF30

Features

- ◆ Full-circle impact – 26° trajectory
- ◆ 3/4" male NPT base
- ◆ Single (HF30) or dual nozzle (HF30D)
- ◆ Fits 3/4" size nozzle (NOZ75 series)

Sprinkler Head Does Not Include Nozzle

Advantages

- ◆ Cast brass drive arm with I-Beam construction and Torque-Driven™ spoon technology with improved balance, rotation speed, and durability
- ◆ Cast brass body with triple bridge construction and cored water passage
- ◆ Seal-Lock bearing creates a captive seal
- ◆ Spindle with debris journal to slow bearing wear
- ◆ Stainless-steel fulcrum pin, arm spring, and bearing spring for long wearing reliability
- ◆ Ideal for hand line, wheel line, solid set, and a wide-range of other applications
- ◆ Made with domestic and foreign parts
- ◆ **Preassembled with XC-33 thread sealant**

60/case

HF30 (single)

HF30D (dual)

AQUA BURST® Performance Chart

Normal Stream Height At 9' Above Nozzle at Normal Pressure

Single Nozzle
Radius - GPM

PSI	1/8" nozzle	9/64" nozzle	5/32" nozzle	11/64" nozzle	3/16" nozzle
35	40 - 2.4	41 - 3.3	43 - 4.1	45 - 5.1	46 - 5.9
40	40 - 2.6	42 - 3.5	44 - 4.5	46 - 5.3	47 - 6.4
45	41 - 2.9	42 - 3.7	44 - 4.7	46 - 5.7	48 - 6.7
50	42 - 3.1	43 - 4.0	45 - 4.9	47 - 6.1	48 - 7.2
55	42 - 3.3	43 - 4.3	45 - 5.1	48 - 6.4	49 - 7.5
60	43 - 3.5	44 - 4.5	46 - 5.4	49 - 6.7	49 - 7.8
65	43 - 3.7	44 - 4.7	46 - 5.7	49 - 7.0	50 - 8.1
70	44 - 3.9	45 - 4.8	47 - 5.9	50 - 7.2	51 - 8.4

Dual Nozzle
Radius - GPM

PSI	1/8"x3/32" nozzles	9/64"x3/32" nozzles	5/32"x3/32" nozzles	11/64"x3/32" nozzles	3/16"x3/32" nozzles
35	40 - 4.1	41 - 4.8	44 - 4.7	45 - 6.4	46 - 7.4
40	41 - 4.4	42 - 5.2	44 - 6.1	45 - 7.0	47 - 8.0
45	41 - 4.6	42 - 5.5	45 - 6.5	46 - 7.5	48 - 8.6
50	42 - 4.9	43 - 5.8	45 - 6.8	47 - 7.9	49 - 9.1
55	42 - 5.2	43 - 6.1	46 - 7.1	48 - 8.3	50 - 9.5
60	43 - 5.4	44 - 6.3	46 - 7.4	48 - 8.7	51 - 9.8
65	43 - 5.7	44 - 6.6	47 - 7.8	48 - 9.0	51 - 10.3
70	43 - 5.9	45 - 6.9	47 - 8.1	49 - 9.4	52 - 10.6

Operate ONLY between 35 psi (min) and 70 psi (max)

Aqua Burst® impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

3/4" BRASS/ALUMINUM IMPACT SPRINKLER

Precision Channel™ Aluminum Arm Torque Driven™



HF30AL

60/case

HF30AL (single)

Features

- ◆ Full-circle impact – 26° trajectory
- ◆ 3/4" male NPT base
- ◆ Single nozzle
- ◆ Fits 3/4" size nozzle (NOZ75 series)

Sprinkler Head Does Not Include Nozzle

Advantages

- ◆ Anodized die-cast aluminum drive arm with *Precision Channel Spoon™* for smooth Torque-Driven™ operation and reduced splash-down
- ◆ Cast brass body with triple bridge construction and cored water passage
- ◆ Spindle with debris journal to slow bearing wear
- ◆ Seal-Lock bearing creates a captive seal
- ◆ Stainless-steel fulcrum pin, arm spring, and bearing spring for long wearing reliability
- ◆ Suitable for portable, solid-set and row-crop, frost protection and mechanical move systems
- ◆ Made with domestic and foreign parts
- ◆ **Preassembled with XC-33 thread sealant**

AQUA BURST® Performance Chart

Normal Stream Height At 9' Above Nozzle at Normal Pressure

Radius - GPM

PSI	1/8" nozzle	9/64" nozzle	5/32" nozzle	11/64" nozzle	3/16" nozzle
30	39 - 2.2	41 - 3.0	42 - 3.8	44 - 4.6	45 - 5.5
35	40 - 2.4	41 - 3.3	43 - 4.1	45 - 5.1	45 - 5.9
40	40 - 2.6	42 - 3.5	44 - 4.5	46 - 5.3	46 - 6.4
45	41 - 2.9	42 - 3.7	44 - 4.7	46 - 5.7	47 - 6.7
50	41 - 3.1	43 - 4.0	45 - 4.9	47 - 6.1	48 - 7.2
55	42 - 3.3	43 - 4.3	45 - 5.1	48 - 6.4	49 - 7.5
60	42 - 3.5	44 - 4.5	46 - 5.4	49 - 6.7	49 - 7.8
65	43 - 3.7	44 - 4.7	46 - 5.7	49 - 7.0	50 - 8.1
70	44 - 3.9	45 - 4.8	47 - 5.9	50 - 7.2	51 - 8.4

Operate ONLY between 30 psi (min) and 70 psi (max)

Aqua Burst® impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

AQUA BURST

1-208-438-9223
 Email: xcad@pmt.org
 xcadusa.com

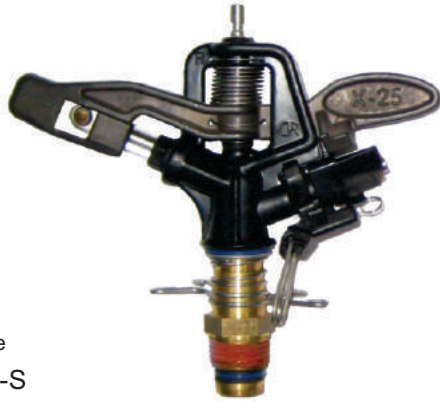
2023 / 2024

MULTI-COMPOSITE™ 1/2" BASE ADJUSTABLE IMPACT SPRINKLERS

1/2" Heavy-Duty Adjustable Multi-Composite™ Impact

Raven-Smart™
 Technology

1/2" Heavy-Duty Adjustable Multi-Composite™ Impact



60/case
 X25ED-S

60/case
 X25ED

Standard Spoon Arm

Anti-Backsplash Arm

- ◆ Full or part-circle, impact sprinkler
- ◆ 23° trajectory
- ◆ 1/2" male NPT base
- ◆ Wide range of brass nozzles
- ◆ **9/64" nozzle installed**
- ◆ 3/8-24 UNF nozzle threads

- ◆ Full or part-circle, impact sprinkler
- ◆ 23° trajectory
- ◆ 1/2" male NPT base
- ◆ Wide range of brass nozzles
- ◆ **9/64" nozzle installed**
- ◆ 3/8-24 UNF nozzle threads

- ◆ Anodized aluminum drive arm with brass bushings
- ◆ Composite body is super-strong and impact resistant
- ◆ All-brass bearing
- ◆ Stainless-steel fulcrum pin, arm spring, and bearing spring
- ◆ Operates well at both high and low pressures
- ◆ Easily adjustable from 20° to 340° or full-circle
- ◆ Built-in vane straightener for improved performance
- ◆ Adjustable diffuser pin
- ◆ Made with domestic and foreign parts

- ◆ Anodized aluminum drive arm with brass bushings
- ◆ Composite body is super-strong and impact resistant
- ◆ All-brass bearing
- ◆ Stainless-steel fulcrum pin, arm spring, and bearing spring
- ◆ Operates well at both high and low pressures
- ◆ Easily adjustable from 20° to 340° or full-circle
- ◆ Built-in vane straightener for improved performance
- ◆ Adjustable diffuser pin
- ◆ Made with domestic and foreign parts

AQUA BURST® Performance Chart

Normal Stream Height At 2.5' Above Nozzle at Normal Pressure

Radius - GPM

PSI	1/8" nozzle	9/64" nozzle	5/32" nozzle
35	36 - 2.46	36 - 3.41	39 - 4.30
40	37 - 2.68	37 - 3.69	40 - 4.58
45	38 - 2.71	37 - 3.97	43 - 4.89
50	39 - 2.96	39 - 4.09	45 - 5.16
55	39 - 3.18	40 - 4.17	46 - 5.31
60	39 - 3.29	41 - 4.25	47 - 5.60

AQUA BURST® Performance Chart

Normal Stream Height At 2.5' Above Nozzle at Normal Pressure

Radius - GPM

PSI	1/8" nozzle	9/64" nozzle	5/32" nozzle
35	36 - 2.46	36 - 3.41	39 - 4.30
40	37 - 2.68	37 - 3.69	40 - 4.58
45	38 - 2.71	37 - 3.97	43 - 4.89
50	39 - 2.96	39 - 4.09	45 - 5.16
55	39 - 3.18	40 - 4.17	46 - 5.31
60	39 - 3.29	41 - 4.25	47 - 5.60

Operate ONLY between 35 psi (min) and 60 psi (max)

Aqua Burst® impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

3/4" BRASS IMPACT SPRINKLERS

3/4" Adjustable Brass Impact Sprinkler



X35ED

Features

- ◆ Full or part-circle impact – 25° trajectory
- ◆ 3/4" male NPT base
- ◆ Single nozzle
- ◆ Fits 3/4" size nozzle - (NOZ75 series)

Sprinkler Head Does Not Include Nozzle

Advantages

- ◆ Cast brass drive arm with triple bridge construction
- ◆ Heavy-Duty all-brass trip assembly
- ◆ Cast brass body with cored water passage
- ◆ Stainless-steel fulcrum pin, arm spring and bearing spring for long-wearing reliability
- ◆ An all-purpose, single nozzle, full or part circle, intermediate to high pressure sprinkler
- ◆ Perfect companion for all intermediate sprinklers where arc of coverage must be adjustable
- ◆ Easy-to-use diffuser pin for precise application
- ◆ Works well with either straight bore or flow control nozzle
- ◆ Made with domestic and foreign parts
- ◆ **Preassembled with XC-33 thread sealant**

20/case

X35ED

AQUA BURST® Performance Chart

Normal Stream Height At 9' Above Nozzle at Normal Pressure

Radius - GPM

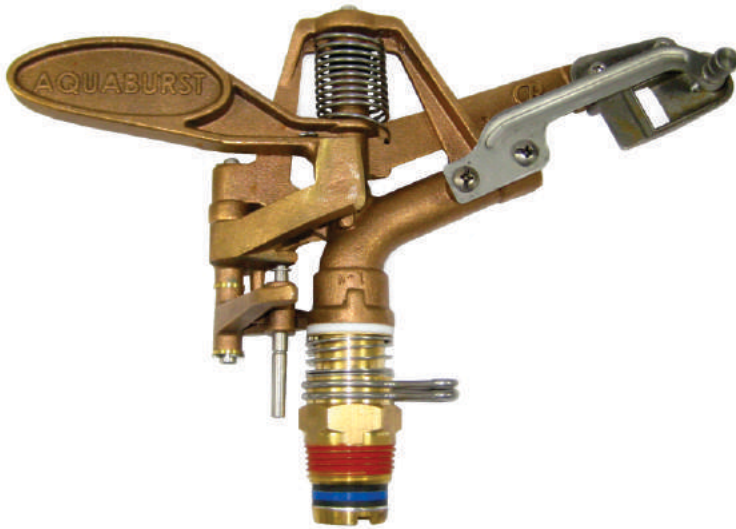
PSI	9/64" nozzle	5/32" nozzle	11/64" nozzle	3/16" nozzle
35	41 - 3.45	42 - 4.28	43 - 4.99	44 - 5.91
40	42 - 3.66	42 - 4.57	43 - 5.26	44 - 6.44
45	43 - 3.90	43 - 4.84	44 - 5.58	45 - 6.74
50	44 - 4.07	44 - 5.21	45 - 5.94	46 - 7.03
55	45 - 4.30	46 - 5.40	47 - 6.21	47 - 7.41
60	45 - 4.48	46 - 5.73	47 - 6.50	48 - 7.72
70	46 - 4.80	47 - 5.91	48 - 7.00	50 - 8.23

Operate ONLY between 35 psi (min) and 70 psi (max)

Aqua Burst® impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

1" BRASS IMPACT SPRINKLERS

1" Adjustable Brass Impact Sprinkler



X65ED-S

Features

- ◆ Full or part-circle impact – 24° trajectory
- ◆ 1" male NPT base
- ◆ Single nozzle
- ◆ Fits 1" size nozzle - (NOZ1 series)

Sprinkler Head Does Not Include Nozzle

Advantages

- ◆ Features replaceable stainless steel spoon
- ◆ Chrome bearing standard
- ◆ Adjustable arc from 20° to 340° or full-circle coverage
- ◆ Solid brass construction
- ◆ Stainless-steel fulcrum pin, arm spring, and bearing spring for long-wearing reliability
- ◆ Easy-to-use diffuser pin for precise application
- ◆ Ideal for pasture, turf, wastewater treatment, auxiliary pivot end gun, and other large-scale applications where adjustable coverage is necessary
- ◆ Made with domestic and foreign parts
- ◆ **Preassembled with XC-33 thread sealant**

sold individually

X65ED-S (Adjustable)

X65F-S

AQUA BURST® Performance Chart

Normal Stream Height At 9' Above Nozzle at Normal Pressure

Single Nozzle
Radius - GPM

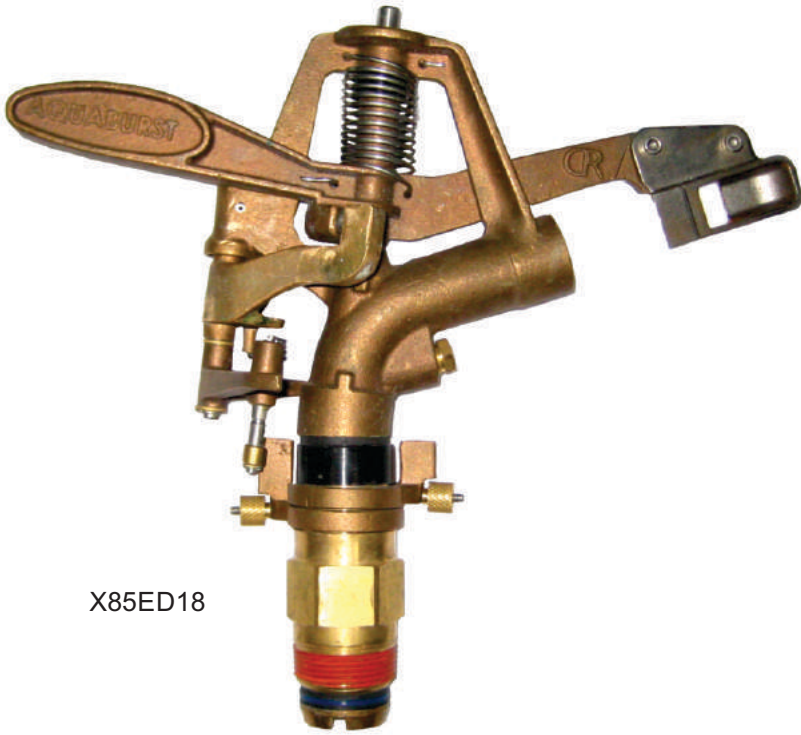
PSI	7/32" nozzle	1/4" nozzle	9/32" nozzle	5/16" nozzle	11/32" nozzle	3/8" nozzle	13/32" nozzle
35	52 - 8.1	54 - 10.8	58 - 13.5	59 - 16.5	62 - 19.5	64 - 22.7	67 - 26.2
40	54 - 8.7	56 - 11.5	61 - 14.5	62 - 17.8	65 - 21.3	68 - 24.5	70 - 28.2
45	56 - 9.2	58 - 12.2	63 - 15.2	64 - 18.8	67 - 22.2	71 - 25.9	73 - 30.1
50	59 - 9.9	61 - 12.9	64 - 16.0	67 - 19.9	69 - 23.4	72 - 27.2	75 - 32.0
55	61 - 10.2	63 - 13.4	66 - 16.9	69 - 20.8	72 - 24.5	74 - 28.4	77 - 34.1
60	62 - 10.7	65 - 14.2	67 - 17.6	71 - 21.9	73 - 25.6	76 - 29.5	79 - 36.0
65	64 - 11.2	66 - 14.8	69 - 18.4	73 - 22.8	75 - 26.5	79 - 30.8	82 - 38.2
70	65 - 11.8	67 - 15.4	70 - 19.2	74 - 23.7	77 - 27.7	81 - 32.1	85 - 40.3

Operate ONLY between 35 psi (min) and 70 psi (max)

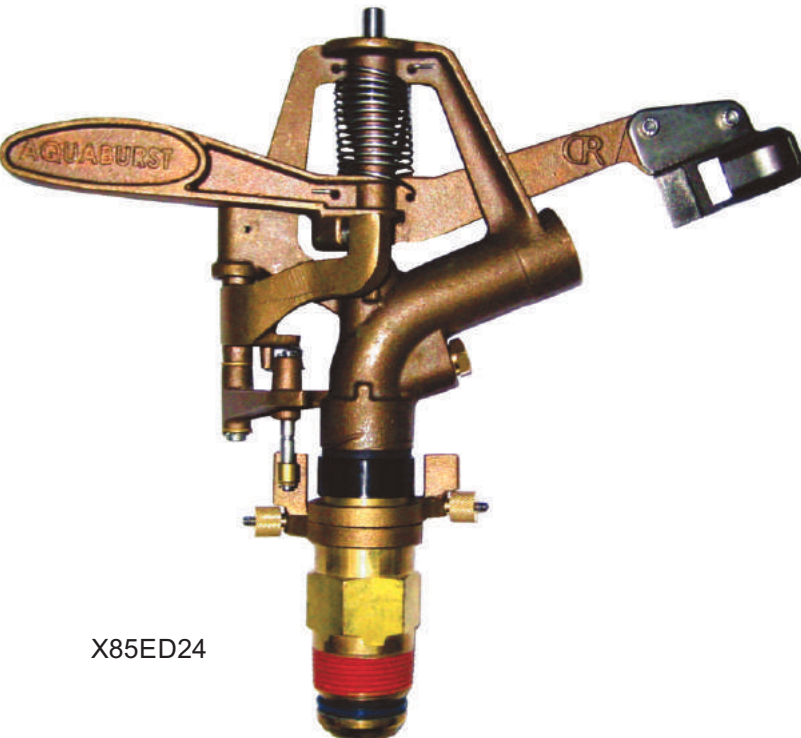
Aqua Burst® impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

AQUA BURST

1 1/4" BRASS IMPACT SPRINKLERS



X85ED18



X85ED24

- Features**
- ◆ Full or part-circle impact
 - ◆ 18° or 24° trajectory
 - ◆ 1 1/4" male NPT base
 - ◆ Dual nozzle - NOZ125 Series
- Sprinkler Head Does Not Include Nozzle

- Advantages**
- ◆ Chrome bearing standard
 - ◆ Heavy-duty stainless-steel and brass construction
 - ◆ Easy to use adjustable locking brass trip collars
 - ◆ Internal vane straightener standard
 - ◆ Removable stainless-steel spoons standard
 - ◆ Ideal for pasture, waste water treatment, pivot end gun, and other large scale applications where adjustable coverage is necessary
 - ◆ Made with domestic and foreign parts
 - ◆ **Preassembled with XC-33 thread sealant**

sold individually

X85ED18

X85ED24

X85F24 (full circle)

X85ED24 Dual Nozzle

AQUA BURST® Performance Chart

Normal Stream Height At 14' Above Nozzle at Normal Pressure
 Single Straight Bore Nozzle w/Spreader
 Radius - GPM

PSI	11/32" x 7/32"	3/8" x 7/32"	13/32" x 7/32"	7/16" x 7/32"	15/32" x 7/32"
35	66 - 20.1	67 - 30.7	70 - 34.6	72 - 38.5	75 - 42.5
40	68 - 20.8	69 - 32.0	73 - 37.0	76 - 41.3	78 - 45.7
45	70 - 22.1	72 - 34.9	76 - 39.4	78 - 43.9	81 - 48.6
50	72 - 23.3	73 - 37.2	78 - 41.6	80 - 46.2	83 - 51.4
55	74 - 24.2	76 - 38.5	80 - 42.8	82 - 48.6	85 - 54.1
60	76 - 25.0	78 - 40.8	82 - 46.1	85 - 51.0	87 - 56.6
65	77 - 26.2	80 - 42.7	84 - 48.0	87 - 53.3	88 - 59.3
70	80 - 27.2	82 - 44.5	85 - 49.9	89 - 55.2	90 - 61.5
75	81 - 27.9	84 - 46.0	87 - 51.7	90 - 57.3	92 - 63.7
80	83 - 29.1	85 - 47.8	88 - 53.9	91 - 59.4	94 - 66.1

Additional Performance Charts on pg 22

Operate ONLY between 35 psi (min) and 80 psi (max)

Aqua Burst® impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

AQUA BURST

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xcadusa.com

2023 / 2024

1" BRASS IMPACT SPRINKLERS

AQUA BURST® Performance Charts

Normal Stream Height At 14' Above Nozzle at Normal Pressure
Single Straight Bore Nozzle

Radius - GPM

X85ED18

PSI	11/32" nozzle	3/8" nozzle	13/32" nozzle	7/16" nozzle	15/32" nozzle	1/2" nozzle	17/32" nozzle	9/16" nozzle	5/8" nozzle	11/16" nozzle
35	59 - 19.8	61 - 23.5	64 - 26.5	66 - 30.9	69 - 34.1	69 - 39.3	72 - 43.3	72 - 49.3	72 - 59.8	73 - 72.2
40	61 - 21.1	63 - 24.9	66 - 28.3	69 - 33.2	71 - 37.3	73 - 41.1	75 - 46.4	77 - 52.8	77 - 64.0	78 - 77.8
45	63 - 22.6	66 - 26.6	69 - 30.4	71 - 34.6	73 - 39.7	75 - 43.7	78 - 49.3	79 - 56.6	83 - 69.9	83 - 83.0
50	66 - 23.8	68 - 27.5	71 - 32.6	73 - 36.9	76 - 42.2	78 - 47.0	80 - 51.5	82 - 59.7	85 - 71.8	86 - 87.3
55	68 - 24.9	70 - 29.3	73 - 33.8	75 - 38.8	78 - 44.4	80 - 49.1	82 - 54.1	85 - 62.6	89 - 76.1	91 - 91.9
60	70 - 25.6	72 - 30.1	75 - 34.9	77 - 41.0	80 - 46.8	82 - 51.9	85 - 57.4	87 - 65.3	91 - 79.0	94 - 96.4
65	72 - 26.7	74 - 31.3	77 - 36.2	79 - 42.8	81 - 48.3	84 - 54.0	87 - 60.2	89 - 67.8	93 - 83.2	96 - 100.9
70	73 - 27.6	76 - 32.5	78 - 37.6	81 - 44.6	83 - 50.5	86 - 56.2	89 - 62.3	91 - 71.3	95 - 86.4	98 - 104.8
75	74 - 28.8	77 - 33.6	80 - 38.9	83 - 45.9	85 - 52.2	87 - 58.4	90 - 64.5	93 - 73.9	97 - 88.8	100 - 108.1
80	76 - 29.7	79 - 34.6	81 - 41.2	84 - 47.6	87 - 54.8	89 - 60.2	92 - 66.9	95 - 76.8	98 - 93.0	101 - 112.2

AQUA BURST® Performance Charts

Normal Stream Height At 14' Above Nozzle at Normal Pressure
Single Straight Bore Nozzle

Radius - GPM

X85ED24

PSI	11/32" nozzle	3/8" nozzle	13/32" nozzle	7/16" nozzle	15/32" nozzle	1/2" nozzle	17/32" nozzle	9/16" nozzle	5/8" nozzle	11/16" nozzle
35	66 - 19.5	67 - 23.3	70 - 26.6	72 - 30.7	75 - 34.5	77 - 39.0	78 - 43.1	78 - 49.3	78 - 60.2	78 - 72.3
40	68 - 20.8	69 - 24.8	73 - 28.2	76 - 33.0	78 - 37.4	81 - 41.4	82 - 46.3	84 - 52.6	85 - 64.4	86 - 78.3
45	70 - 22.1	72 - 26.4	76 - 30.6	78 - 34.8	81 - 39.6	83 - 44.1	86 - 49.0	88 - 56.0	91 - 69.1	92 - 83.3
50	72 - 23.3	73 - 27.6	78 - 31.5	80 - 37.2	83 - 42.0	86 - 47.2	88 - 51.2	91 - 59.3	93 - 72.4	96 - 87.5
55	74 - 24.2	76 - 29.2	80 - 33.1	82 - 38.9	85 - 44.3	88 - 49.4	90 - 54.3	94 - 62.1	97 - 76.5	98 - 92.7
60	76 - 25.0	78 - 30.0	82 - 34.5	85 - 40.8	87 - 46.5	90 - 52.1	93 - 57.6	95 - 64.4	100 - 79.4	101 - 96.8
65	77 - 26.2	80 - 31.2	84 - 36.1	87 - 42.6	88 - 48.4	92 - 54.2	94 - 60.3	98 - 68.0	101 - 83.5	104 - 101.3
70	80 - 27.2	82 - 32.6	85 - 38.0	89 - 44.0	90 - 50.3	94 - 56.4	96 - 62.1	100 - 71.5	102 - 87.1	106 - 105.4
75	81 - 27.9	84 - 33.5	87 - 39.1	90 - 45.5	92 - 52.0	95 - 58.5	98 - 64.7	101 - 73.3	104 - 89.9	108 - 108.8
80	83 - 29.1	85 - 34.8	88 - 41.0	91 - 47.6	94 - 54.2	96 - 60.3	100 - 67.3	103 - 76.2	106 - 93.5	109 - 112.4

Operate ONLY between 35 psi (min) and 80 psi (max)

Aqua Burst® impact sprinklers are only guaranteed to function optimally with nozzle sizes and pressure from each individual model's performance chart.

SUPER-DUTY SPRINKLER CARTS

AQUA BURST

Garden Sprinkler Cart

X-CART™



X-CART.5



XCART-.5

X-CART.5

Garden Cart with X25ED-S 1/2" sprinkler

XCART-.5

Garden Cart for 1/2" sprinkler, 3/4" stainless steel riser

Available with or without X25ED-S sprinkler

Features

- ◆ 3/4" has stainless steel riser
- ◆ High-strength design for years of reliable service
- ◆ Solid construction tires. Never worry about flat tires!
- ◆ UHMW Wheel Bushings for smooth operation
- ◆ Ideal for Fire Suppression, Home and Ranch

AQUA BURST

Super-Duty Sprinkler Carts

- ◆ Assembles easily in just minutes
- ◆ Features stainless steel riser with solid construction tires

Two-year Warranty

SUPER-DUTY SPRINKLER CARTS

AQUA BURST

X-CART™

Super-Duty Sprinkler Carts

		List
XCART-1	Ranchette Cart for 3/4"-1" sprinkler, 1" frame, 4.1x3.5x4 tires	\$ 244.40*
XCART-1.5	Ranchers Cart for 1" to 1 1/4" sprinkler, 1 1/2" frame, 13x3.25"x8 tires	\$ 324.00*
XCART-2	Field Gun Cart for 1 1/4" to 2" end gun, 2" frame, 16" tires	\$ 544.40*



XCART-1



XCART-1.5



XCART-2

1-XCS-TIRE	4.10/3.50-4 PU Wheel, Black, 74MM Hub Length, 16MM Center Hub Hole
1.5-XCS-TIRE	13X3.25-8 PU Wheel, Black, 90MM Hub Length, 16MM Bushing
2-XCS-TIRE	16X6.5-8 PU Wheel, Black, 104MM Hub Length, 20MM Nylon Bushing

Features

- ◆ 100% Hot-Dip Galvanized, Inside and Out
- ◆ High-strength double truss design for years of reliable service
- ◆ Solid construction tires. Never worry about flat tires!
- ◆ UHMW Wheel Bushings for smooth operation
- ◆ Ideal for Fire Suppression, Home and Ranch
- ◆ **To avoid carts from tipping over:
Do Not Extend Sprinkler Height with Larger Nozzle Sizes**

AQUA BURST

Super-Duty Sprinkler Carts

- ◆ Assembles easily in just minutes
- ◆ Features hot-dip galvanized high-strength double truss design with solid construction tires and UHMW wheel bushings

100% Hot-Dip Galvanized,
Inside and Out
Two-year Warranty

SPRINKLER NOZZLES

Brass 1/8" 3/8-24 UNF Straight-Bore Nozzle

Fits 1/2" Impact Sprinkler

Second Nozzle on 3/4" Dual Impact Sprinkler
 Fits Rain Bird™ and Nelson™



NOZ5R-116	1/16"
NOZ5R-564	5/64"
NOZ5R-332	3/32"
NOZ5R-18	1/8"
NOZ5R-532	5/32"
NOZ5R-764	7/64"
NOZ5R-964	9/64"

Brass 1/8" NPT Straight-Bore Nozzle

Fits 1/2" Impact Sprinkler

Second Nozzle on 3/4" Dual Impact Sprinkler
 1/8" NPT thread fits Weathertec™ and Storm™



NOZ5W-116	1/16"
NOZ5W-564	5/64"
NOZ5W-18	1/8"
NOZ5W-532	5/32"
NOZ5W-964	9/64"

Brass 1/4" NPT Straight-Bore Nozzle

Fits 3/4" Impact Sprinkler

1/4" NPT thread fits most 3/4" base brass impact sprinklers



NOZ75-764	7/64"
NOZ75-18	1/8"
NOZ75-964	9/64"
NOZ75-532	5/32"
NOZ75-1164	11/64"
NOZ75-1364	13/64"
NOZ75-1564	15/64"
NOZ75-316	3/16"
NOZ75-732	7/32"
NOZ75-14	1/4"

Brass Straight-Bore Nozzle

Fits 1" Impact Sprinkler

Fits most 1" base brass impact sprinklers



NOZ1-732	7/32"
NOZ1-1564	15/64"
NOZ1-14	1/4"
NOZ1-932	9/32"
NOZ1-516	5/16"
NOZ1-1132	11/32"
NOZ1-38	3/8"

Brass Straight-Bore Nozzle

Fits 1 1/4" Impact Sprinkler

Fits AquaBurst®, Nelson™ and RainBird™



NOZ125-1132	11/32"	NOZ125-12	1/2"
NOZ125-38	3/8"	NOZ125-1732	17/32"
NOZ125-1332	13/32"	NOZ125-916	9/16"
NOZ125-716	7/16"	NOZ125-58	5/8"
NOZ125-1532	15/32"	NOZ125-1116	11/16"

Plug Nozzle



NOZ-PLG18	Brass 1/8" NPT
NOZ-PLG25	Brass 1/4" NPT
NOZ-PLPLG18	Plastic 1/8" NPT
NOZ-PLPLG25	Plastic 1/4" NPT

END GUN NOZZLES

X100 Nozzle

Also fits Nelson™ SR75 Big Gun®



X100-42-.5

X100-42-.4	26 - 45 gpm
X100-42-.45	35 - 46 gpm
X100-42-.5	42 - 67 gpm
X100-42-.55	52 - 83 gpm
X100-42-.6	61 - 99 gpm
X100-42-.65	71 - 115 gpm
X100-42-.7	84 - 133 gpm
X100-42-.75	95 - 150 gpm
X100-42-.8	108 - 172 gpm
X100-42-.85	123 - 191 gpm
X100-42-.9	139 - 217 gpm
X100-42-.95	154 - 242 gpm
X100-42-1	180 - 265 gpm

X75 Nozzle Set



X75-NOZSET



X75NOZ

X75-NOZSET	8 Piece Nozzle Set for X75
X75NOZ-.3	0.3 Nozzle
X75NOZ-.35	0.35 Nozzle
X75NOZ-.4	0.4 Nozzle
X75NOZ-.45	0.45 Nozzle
X75NOZ-.5	0.5 Nozzle
X75NOZ-.55	0.55 Nozzle
X75NOZ-.6	0.6 Nozzle
X75NOZ-.65	0.65 Nozzle

SR 100 Nozzles

Fits Nelson™ SR100 Big Gun®



SR-100

SR100NOZ-.5	0.5
SR100NOZ-.55	0.55
SR100NOZ-.6	0.6
SR100NOZ-.65	0.65
SR100NOZ-.7	0.7
SR100NOZ-.75	0.75
SR100NOZ-.8	0.8
SR100NOZ-.85	0.85
SR100NOZ-.9	0.9
SR100NOZ-.95	0.95
SR100NOZ-1	1.0

SPRINKLER TOOLS AND REPLACEMENT PARTS

AQUA BURST® Nozzle Multi-Tool

Belt Case Included



NOZTOOL.75



NOZTOOL.5

NOZTOOL.75	3/4"
NOZTOOL.5	1/2"

Features

- ◆ All-stainless-steel construction
- ◆ EZ grip handles
- ◆ 3/4" fits nozzles with 3/8", 7/16", 1/2" and 3/4" hex heads
- ◆ 3/4" fits 3/4" and 13/16" spark plugs
- ◆ 1/2" fits nozzles with 3/8" and 7/16" hex heads
- ◆ Stainless-steel nozzle plug wire



Sprinkler Bearing Assembly

Bearing assembly includes spindle, housing, spring and washers



HF30BRNG



HF20BRNG



AL30BRNG

AL30BRNG	Fits Aqua Burst® 3/4" AL30 Series Impact Sprinklers
HF30BRNG	Fits Aqua Burst®, Nelson™ and Rain Bird™ 3/4" Full-Circle Impact Sprinklers
HF20BRNG	Fits Aqua Burst®, Nelson™ and Rain Bird™ 1/2" Full-Circle Impact Sprinklers
X35BRNG	Fits Aqua Burst® X35ED Impact Sprinklers
X65BRNG (Chrome Plated Spindle)	Fits Aqua Burst® and Rain Bird™ 1" Full-Circle Impact Sprinklers
X85BRNG (Chrome Plated Spindle)	Fits Aqua Burst® and Rain Bird™ 1 1/4" Full-Circle Impact Sprinklers

For wear washers and other AquaBurst® sprinkler parts contact **XCAD USA**® for price and availability

Pitot Tube

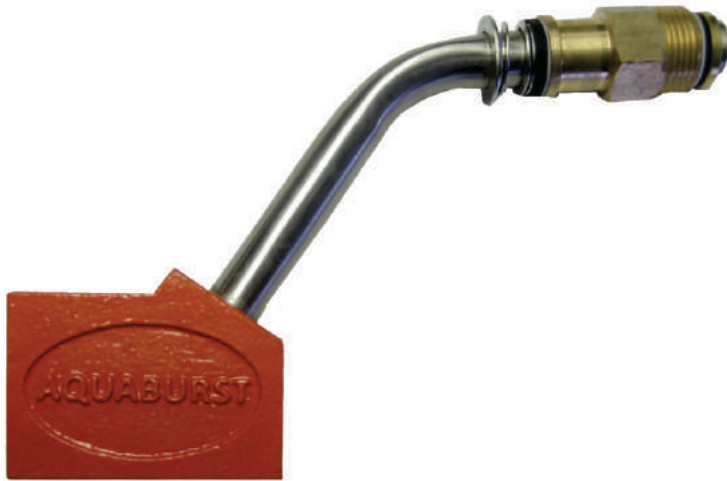


PITOT25

PITOT25	Brass 1/4" pitot tube
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SELF LEVELING ELBOW

**Built To A
Higher Standard**



LEV75

AQUA BURST 

3/4" Heavy-Duty Wheel Line Leveler

LEV75 For 3/4" Brass Impact
16/Box

Features

- ◆ High-quality bearing washers
- ◆ Stainless-steel drop tube
- ◆ Cast iron weight with smooth water passage
- ◆ Powder coated finish

Universal Leveler Repair Components

LEV01	Stainless-Steel Bearing Spring
LEV02	Neoprene Washer
LEV03	Teflon Washer
LEV04	Brass Spindle
LEV05	O-Ring
LEV06	Retaining Washer
LEV07	Snap Ring

Leveler Rebuild Kit

LEVRK **Rebuilds 20 levelers**

120 piece kit contains:

20 - Lev02	Neoprene Washers
40 - Lev03	Teflon Washers
20 - Lev05	O-rings
20 - Lev06	Retaining Washers
20 - Lev07	Snap Rings

SPRINKLER ACCESSORIES

AQUA BURST® YARD ART



Squirtle Yard Sprinkler

Can be strung in series

SQUIRTLE.75

3/4" Hose Thread

SQUIRTLE.75



ST50B



ST75H

Sprinkler Stand

ST50B

1/2" Butterfly

ST50H

1/2" Heart

ST75B

3/4" Butterfly

ST75H

3/4" Heart

Key-Lock Coupler and Key



KLC1-C



KLC1-K



KLC75-C



KLC75-K

KLC75-C

3/4" NPT Threads

KLC75-K

3/4" NPT Threads

KLC1-C

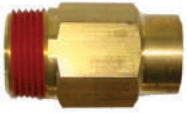
1" NPT Threads

KLC1-K

1" NPT Threads

REPLACEMENT PARTS

Standard



HYB1

Heavy-Duty



HYB1-C

AQUA BURST

Water Master Hydro Bearing

Replacement Bearing for Water Master

- HYB1 1" NPT Base - Brass
- HYB1-C 1" NPT Base - Chrome Plate

SOLID SET ACCESSORIES

Tuff-Tee™

Universal PVC Key Lock Coupler

Features

- ◆ Can be used with Impact Sprinkler
- ◆ Can be used with both PVC and metal risers
- ◆ Leak-proof operation
- ◆ Instantaneous pressurization at startup after initial filling
- ◆ Male and female riser attachments
- ◆ Easy-Pull spline key
- ◆ Made durable with corrosion resistant PVC
- ◆ Can be converted and used in connection with aluminum solid set pipe



TUFF-TEE3

TUFF-TEE3 3" PVC Tuff-Tee for Solid Set

Tuff-Tee Add Ons

- | | |
|------------|-----------------------------|
| TT-NPTRAD | Tuff-Tee Male Riser Adapter |
| TT-PULLKEY | Easy-Pull Key |
| TT-ORING | 3" Tuff Tee O-Ring (Green) |
| TT-RADOR | Riser Adaptor O-Ring |



TT-NPTRAD
Male Adaptor



TT-RADOR



Easy-Pull
TT-PULLKEY



TT-ORING

3" Aluminum Adapters

- | | |
|----------|----------------------------|
| TT-MPEND | Aluminum Male Press-On End |
| TT-MWEND | Aluminum Male Weld-On End |



TT-MPEND



TT-MWEND

PIVOT ACCESSORIES

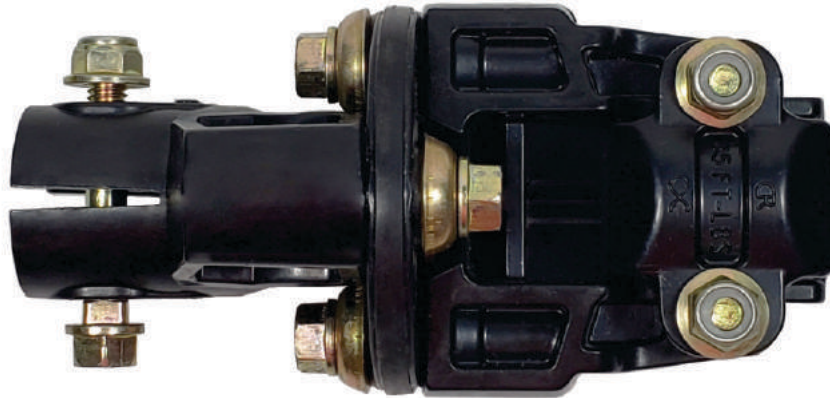
Torque-Tough™

BLACK MAX™

BX™ COUPLER

Universal Heavy-Duty Drive Line Coupler
With In-Flex™ Technology

Raven Smart™
Technology of Modern Design



PDLTTBM

Black Max™ driveline couplers are torque-tough for today's extreme field conditions.

Try one today and give it your own torque-tough test.

PDLTTBM

Fits 3/4", 7/8" and 1" square shaft

PDLTTBM-SL

Replacement Shaft Lock

PDLDISC-BM

Replacement In-Flex™ Disc

Features

- ◆ Our die-cast anodized aluminum body coupled with an In-Flex™ Disc adds the strength and flexibility that is ideal for today's mechanized irrigation systems with large tires, 4x4 corner machines and corner-steering gear boxes
 - ◆ In-Flex™ Thermoplastic Disc is 30% more flexible than the competitive brands
 - ◆ In-Flex™ technology keeps gear boxes and centerdrives running longer
 - ◆ Pre-Assembled for easy one-size wrench installation
 - ◆ Universal Design – Fits 3/4", 7/8" and 1" square shafts
 - ◆ Fits under most driveline covers for maximum safety

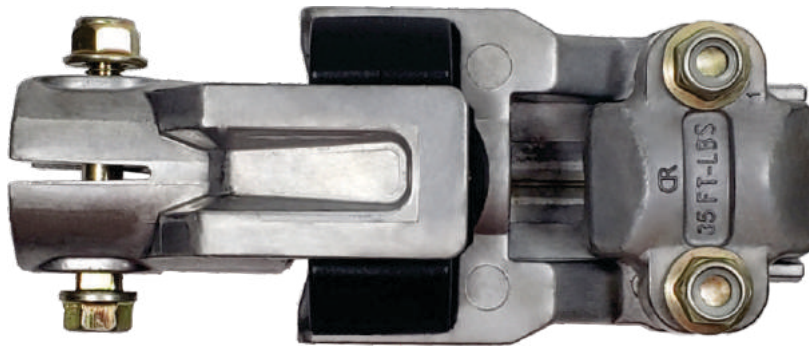
PIVOT ACCESSORIES

Torque-Tough™

SC3™ COUPLER

Universal Pivot Drive Line Coupler
Patent Pending

Raven-Smart™
Technology



PDLSC3

PDLSC3

Universal Pivot Drive Line Coupler

Features

- ◆ EZ Installation - Fits all brands of center pivots and laterals with 1" round and 3/4" and 7/8" square shafts
 - ◆ Shock reducing, UV-protected, thermoplastic polyurethane drive puck
 - ◆ Comes preassembled with high strength, square shaft saddle
 - ◆ EZ Installation with one wrench tightening 3 bolts for complete assembly
- ◆ High-quality degassed diecast aluminum design that fits under most drive line safety covers

PIVOT ACCESSORIES



PDLEXP-L



Small Disc Fits Under Most Drive Line Shields

PDLEXP-S



PDLEND-L



PDLEND-S



X-Spandable™ Expandable Drive Line

(With Super Flex Disc)

Leave the Rubber on the Road

PDLEXP-L	Universal w/Large (4 1/2") Disc
PDLEXP-S	Universal w/Small (3 5/8") Disc
PDLEND-L	Replacement Shaft End (Large disc)
PDLEND-S	Replacement Shaft End (Small disc)

Features

- ◆ X-Spandable™ drive line systems with Super Flex disc
- ◆ Strongest and most versatile in the industry
- ◆ Heavy-duty telescoping design
- ◆ Super Flex Discs outperform rubber
- ◆ Quickly attaches with just two bolts
- ◆ Replacement Super Flex Discs available for competitive brands
- ◆ Small disc fits under most pivot manufacturers' driveline covers
- ◆ Zinc-plated finish

Replacement Super Flex Disc



PDLDISC-L



PDLDISC-S

PDLDISC-L	Large Replacement Super Flex Disc (4 1/2")
PDLDISC-S	Small Replacement Super Flex Disc (3 5/8")

Heavy-Duty V-Bolt Universal U-Joint

Quickly Attaches to Both 3/4" and 7/8" Shafts
(With Super Flex Disc)

PDLVBLT

PDLVBLT	Universal 7/8" or 3/4" 8/Box
---------	---------------------------------



PVTRNG

Weld-In Pivot Rim Repair Ring

3/8" ID Thickness, 5/16" OD Thickness, 1" Step

PVTRNG	Universal Style
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PIVOT ACCESSORIES

Highest Specifications In The Industry

Standard Stainless-Steel Impeller



BP2HP-U



BP5HP-U

Assembled in the USA

2HP Parts Interchangeable With
 Berkley Model #C2MPS Booster Pumps

All Pumps are 50-60hz

(See Pump Curve, Page 40)

2-HP Pivot Booster Pump

2 1/2" suction x 2" discharge

BP2HP-X	XCAD Motor 2-HP, 130 GPM w/Stainless Impeller
BP2HP-X-FL	XCAD Motor 2-HP, 130 GPM Flanged Volute, w/Stainless Impeller
BP2HPXWOVC	XCAD Motor 2-HP, 130 GPM w/Stainless Impeller, Less Volute Case
BP2HP-U	UMC Motor 2-HP, 130 GPM w/Stainless Impeller
BP2HP-U-FL	UMC Motor 2-HP, 130 GPM Flanged Volute, w/Stainless Impeller
BP2HPUWOVC	UMC Motor 2-HP, 130 GPM Impeller, Less Volute Case

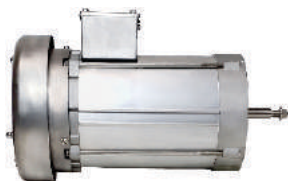
5-HP Pivot Booster Pump

2 1/2" suction x 2" discharge

BP5HP-U	UMC Motor 5-HP, 6 GPM
BP5HPUWOVC	UMC Motor 5-HP, 6 GPM Impeller, Less Volute Case

Pivot Booster Pump Components

BPVC	Volute Case
BPMBKT	Motor Bracket
BPIMP-SS	Stainless-Steel Impeller
BPMGSKT-P	Polyethelene Motor Gasket
BPCGSKT	Paper Motor Case Gasket
BPIMPSPC-UMC	Impeller Spacer (UMC)
BPIMPSPC3	Impeller Spacer (Bluffton)
BPSEAL	Shaft Seal
BP5VC	Volute Case
BP5MBKT	Motor Bracket
BP5IMP	Impeller
BP5GSKT	Motor Gasket
BP5STUD	Stud
BP5SEAL	Shaft Seal



BPM2HP-U

2 hp Specifications

UMC Model	#06168-181E
UMC Frame	56CZ
Phase	3
Insul. Class	F
Serv. Factor	1.5
Hertz	50
RPM	3520
Volts	460
Bearings	6307

Irrigation Booster Pump Motors

2-HP (TEFC)

Thermally Protected

BPM2HP-X	XCAD 2-HP, 3-phase
BPM2HP-U	UMC 2-HP, 3-phase
BPM5HP-U	UMC 5-HP, 3-phase



BPM5HP-U

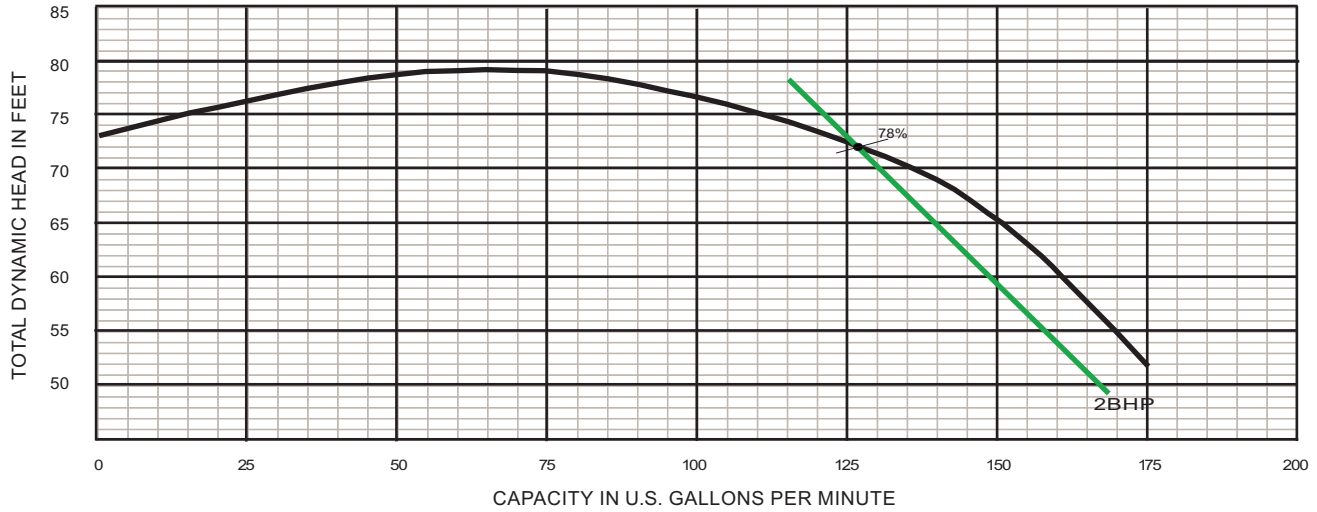
5 hp Specifications

UMC Model	#12034382
UMC Frame	182/4JM
Phase	3
Insul. Class	F
Serv. Factor	1.25
Hertz	60
RPM	3485
Volts	Dual
Bearings	6307

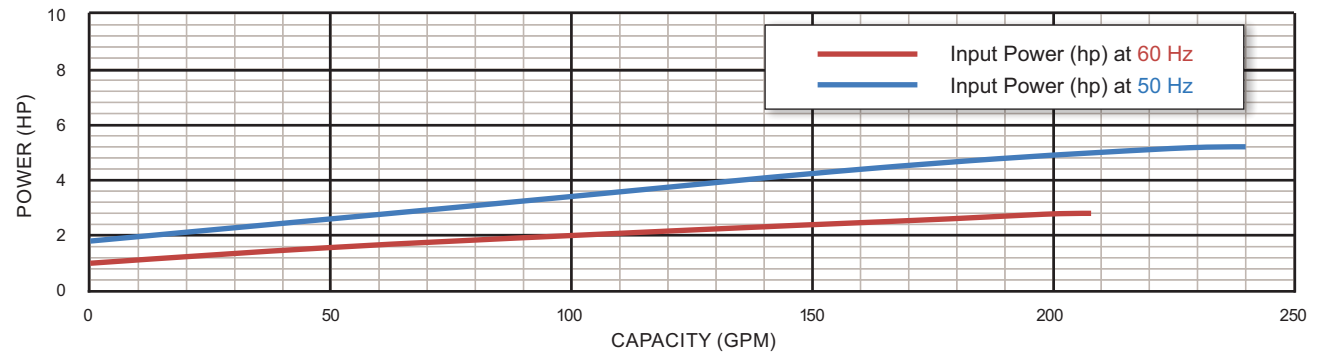
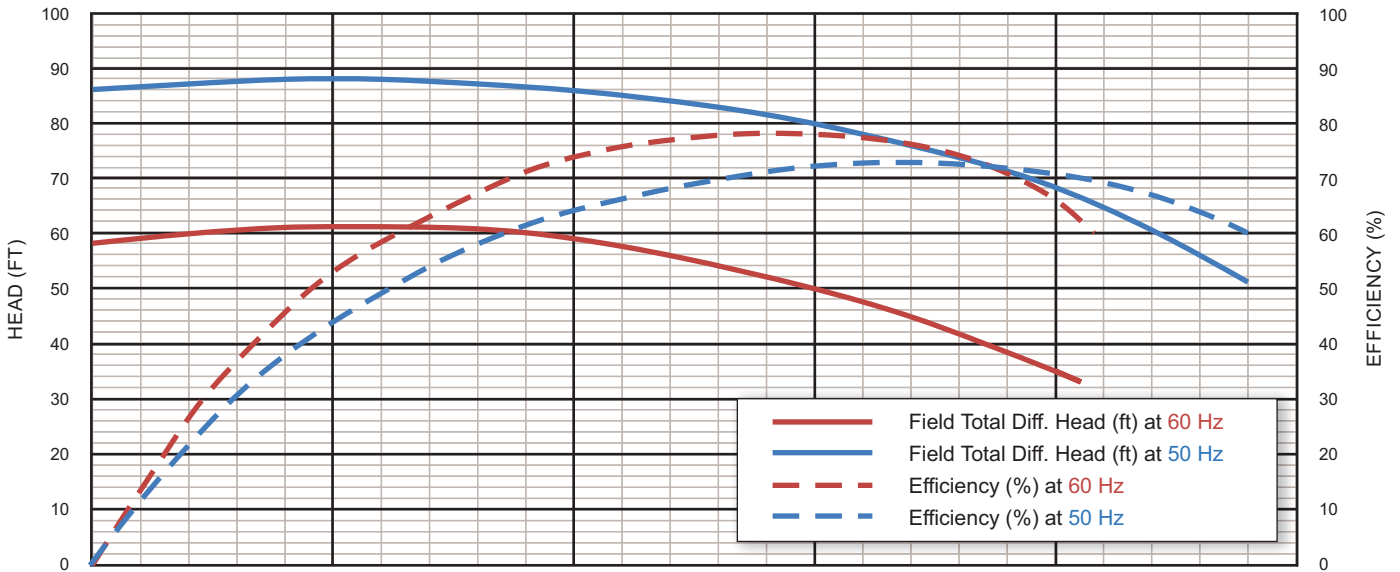
BOOSTER PUMP CURVES - PRESSURE LOSS DATA

2-HP Booster Pump - BPM2HP

Nominal RPM: 3600
 Based on Fresh Water @ 80°F
 Maximum Working Pressure: 100 psi



5-HP Booster Pump - BPM5HP



RISER VALVE PRODUCTS

Valve Opening Elbows



VOE4X3



VOE4X4

- VOE4X3 4" x 3" Aluminum VOE
- VOE4X3-W 4" x 3" Aluminum VOE w/ Wheel
- VOE4X4 4" x 4" Aluminum VOE
- VOE4X4-W 4" x 4" Aluminum VOE w/ Wheel



VOEST4X3



VOEST4X4

- VOE4X3X3 4" x 3" x 3" Aluminum VOE
- VOE4X3X3-W 4" x 3" x 3" Aluminum VOE w/ Wheel
- VOE4X4X4 4" x 4" x 4" Aluminum VOE
- VOE4X4X4-W 4" x 4" x 4" Aluminum VOE w/ Wheel

- VOEST4X3 4" x 3" Galvanized Steel VOE
- VOEST4X4 4" x 4" Galvanized Steel VOE
- VOEST4X3X3 4" x 3" x 3" Galvanized Steel VOE
- VOEST4X4X4 4" x 4" x 4" Galvanized Steel VOE



VOEST4X3X3



VOEST4X4x4

- Features
- ◆ 3/4" Auxiliary outlet on aluminum models
 - ◆ Large latch pad reduces blowouts
 - ◆ Easy serviceability with bolt-on handle
 - ◆ Large handle for easy opening & closing
 - ◆ Brass wear-bushing on aluminum models
 - ◆ Brass connection clutch

RISER VALVE PRODUCTS

High-Flow Valve Opening Elbows



VOEH4X3



VOEH4X4

VOEH4X3 4" x 3" High Flow Aluminum VOE

VOEH4X3-W 4" x 3" High Flow Aluminum VOE w/ Wheel

VOEH4X4 4" x 4" High Flow Aluminum VOE

VOEH4X4-W 4" x 4" High Flow Aluminum VOE w/ Wheel

VOEH4X3X3 4" x 3" x 3" High Flow Aluminum VOE

VOEH4X3X3-W 4" x 3" x 3" High Flow Aluminum VOE w/ Wheel

VOEH4X4X4 4" x 4" x 4" High Flow Aluminum VOE

VOEH4X4X4-W 4" x 4" x 4" High Flow Aluminum VOE w/ Wheel



VOEH4X3X3



VOEH4X4X4

Valve Opener Wheel

VOEWHL34 3/4" VOE Wheel Handle

VOEWHL58 5/8" VOE Wheel Handle



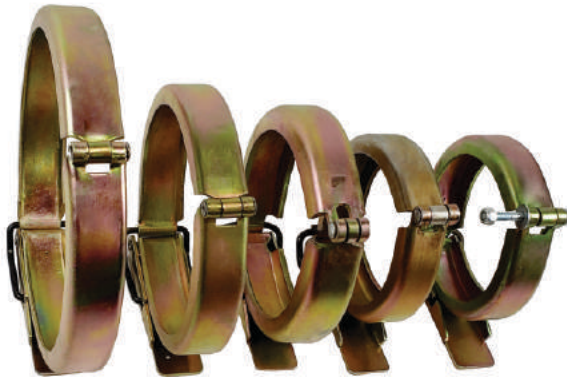
VOEWHL58

Features

- ◆ High Flow Design
- ◆ 3/4" Auxiliary outlet on aluminum models
- ◆ Large latch pad reduces blowouts
- ◆ Easy serviceability with bolt-on handle or wheel
- ◆ Brass wear-bushing with packing gland
- ◆ Brass connection clutch

RISER VALVE PRODUCTS

Clamps





















- | | |
|-------|--|
| 4RLC | 4" Ring Lock Clamp |
| WHLC | 5" Wheel Line Clamp
Heavy Duty Western Style |
| 6RLC | 6" Ring Lock Clamp
Fits Wade Round Wheel Line Coupler
and Most 6" Ring Lock Couplers |
| 8RLC | 8" Ring Lock Clamp |
| 10RLC | 10" Ring Lock Clamp
Not Pictured |
| 12RLC | 12" Ring Lock Clamp
Not Pictured |

VALVE OPENING ELBOW REPLACEMENT PARTS

VOE Replacement Components

- ♦ High-quality universal replacement parts
- ♦ Fit most brands
- ♦ Both 5/8" and 3/4" components

			4RLVOE	4" VOE Clamp
			VOEHL34	3/4" Aluminum Handle
			VOEHLST34	3/4" Steel Handle
			VOESHFT34	3/4"x10" Zinc-Plated Shaft
			VOERCLT34	3/4" Brass Connection Clutch
			VOERCLT58	5/8" Brass Connection Clutch
			VOESEAL58	3/4" Chevron Seal
			VOEHL58	5/8" Aluminum Handle
			VOEHLST58	5/8" Steel Handle
			VOESHFT58	5/8"x10" Zinc-Plated Shaft
			VOESHFTSS58	5/8"x8" Stainless-Steel Shaft
			VOECLT58	5/8" Brass Connection Clutch
			VOECLTGR34	3/4" Receiver Gheen-style
			VOECLTGR58	5/8" Receiver Gheen-style
			VOECLTGS34	3/4" Stem Gheen-style
			VOECLTGS58	5/8" Stem Gheen-style
			VOEWHL58	3/4" VOE Wheel Handle
			VOETTCLT	Weld-On Taco Style Clutch
			VOETTCLT34	3/4" Stem w/ Taco Style Clutch
			VOETTCLT58	5/8" Stem w/ Taco Style Clutch

RISER VALVE PRODUCTS

EZ-Latch™ Fittings



MHLHE3



FHLHE3

Hook & Latch Hose Ends
with Round-Back Gasket

FHLHE3 3" Female Hook & Latch Hose End

MHLHE3 3" Male Hook & Latch Hose End

FHLHE4 4" Female Hook & Latch Hose End

MHLHE4 4" Male Hook & Latch Hose End



MHLHE4



FHLHE4



SEA4-45



SRA3-ENDT

Hook & Latch Pipe Fittings
with Round-Back Gasket

SEA3-22 3" Steel 22° Elbow Assembly

SEA3-45 3" Steel 45° Elbow Assembly

SEA3-90 3" Steel 90° Elbow Assembly

SEA4-22 4" Steel 22° Elbow Assembly

SEA4-45 4" Steel 45° Elbow Assembly

SEA4-90 4" Steel 90° Elbow Assembly



SEA4-90



SRA4-RUNT

SRA3-ENDT 3" Steel End (Branch) Tee Receiver Assembly

SRA3-RUNT 3" Steel Run (Line) Tee Receiver Assembly

SRA4-ENDT 4" Steel End (Branch) Tee Receiver Assembly

SRA4-RUNT 4" Steel Run (Line) Tee Receiver Assembly

RISER VALVE PRODUCTS

EZ-Latch™ Fittings

**Aluminum
 Hook & Latch Pipe Fittings**

with Square-Style Gasket



ARA3-ENDT



AEA3-90



ARA3-RUNT

- AEA3-90 3" Aluminum 90° Elbow Assembly
- ARA3-ENDT 3" Aluminum End (Branch) Tee Receiver Assembly
- ARA3-RUNT 3" Aluminum Run (Line) Tee Receiver Assembly

3" Hand Line Fittings



BL3-ASSY



HLLP3



HLPE3



HLWO3

- BL3-ASSY 3" Universal Band & Latch Assembly
- HLLP3 3" Universal Hook & Latch Pad (Weld-On)
- HLPE3 3" Universal Hook & Latch Female Press End (Gasket Not Included)
- HLWO3 3" Universal Hook & Latch Weld-On End (Gasket Not Included)

Gaskets



RCG4



RWG4

- RCG3 3" Round Back Style
- RCG4 4" Round Back Style
- RWG3 3" XCAD Square Style
- RWG4 4" XCAD Square Style

RISER VALVE PRODUCTS



ALVSC43



ALVSC44



ALVSBRSR



ALVSBRSR-L



ALVSBRSR-R



ALVSBRSR-H

Threaded Aluminum Riser Valve Stubs

ALVX43	4" X 3" Stainless-Steel Stem
ALVX44	4" X 4" Stainless-Steel Stem
ALVSC43	4" x 3" Plated Stem
ALVSC44	4" x 4" Plated Stem
ALVSBRSR	Replacement Brass Spider (Wade-Style)
ALVSBRSR-H	Weld-in Replacement Spider-Heavy
ALVSBRSR-L	Weld-in Replacement Spider-Standard
ALVSBRSR-R	Weld-in Removable Spider

Features

- ◆ Heavy-duty cast aluminum body
- ◆ Cast-in-place, threaded brass insert
- ◆ Available with either plated zinc or stainless-steel stems
- ◆ Universal rubber cap



UNVSPS
Plated



UNVSTS
Stainless Steel



UNVSPS8
Plated



UNVPS8TPI
Plated



UNVSPS9
Plated



UNVRRBS
Brass

Riser Valve Stems

SUPERIOR THREAD QUALITY
HEAVY-DUTY PLATING

UNVSPS	6 3/4" x 5/8" 7TPI Plated
UNVSPS8	8" Plated Stem 7TPI
UNVSPS9	9" Plated Stem 7TPI
UNVSTS	6 3/4" x 5/8" 7TPI Stainless
UNVSTS8	8" Stainless Stem 7TPI
UNVSTS9	9" Stainless Stem 7TPI
UNVRRBS	5" x 5/8" 8 TPI Brass (Redi Rain)
UNVPS8TPI	6 3/4" X 5/8" 8 TPI Plated (Shur Rain/Felco)

Rubber Valve Stem Caps



UNVSR

UNVSR	4" Universal Cap
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RISER VALVE PRODUCTS

3" Hand Line Fittings



EPS3



EPS4



EP3-X

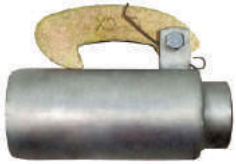
EPS3	3" Universal Steel Hook & Latch End Plug
EPS4	4" Universal Steel Hook & Latch End Plug
EP3-X	3" Universal Aluminum Hook & Latch End Plug
EP3OUT-.75	3" End Plug with 3/4" NPT Outlet and Long Hook
EP3OUT-1	3" End Plug with 1" NPT Outlet and Long Hook
EP3OUT-1.5	3" End Plug with 1 1/2" NPT Outlet and Long Hook
EP3OUT-2	3" Steel End Plug with 2" Outlet and Long Hook
HOOK3	Hook Only for 3" Lake Type B&L Assy
HKSPR3	Spring Only for 3" B&L Assy (Not shown)
HKBN3	Bolt and Nut Only for 3" B&L Assy (Not Shown)
EPFER	Ferrule for EPS3 Steel End Plug (Not Shown)
HOOK-S	Hook Only for Pierce Type H&L Assy



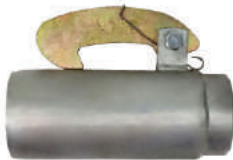
EP3OUT-.75



EP3OUT-1



EP3OUT-1.5



EP3OUT-2



HOOK3



HOOK-S

Center Riser Outlet



CRO3

CRO3	3" Center Riser Outlet Assembly (12 per box)
CRO3FT	Replacement Foot for CRO3
CRO3GSKT	Replacement Gasket for CRO3
CRO3TOP	Replacement Top for CRO3

PRESS SLEEVES AND PRESS BANDS

EZ-Press™

Galvanized Lon- Style Steel Press Sleeves



- PRSL3 3" Press Sleeve
- PRSL4 4" Press Sleeve
- PRSL5 5" Press Sleeve

EZ-Press™

Aluminum Press Bands



- APB3 3" Aluminum Press Band
- APB4 4" Aluminum Press Band
- APB5 5" Aluminum Press Band

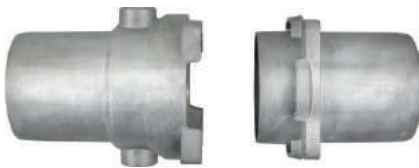
WHEEL LINE COUPLERS

Heat-Treated Aluminum Wheel Line Torque Couplers



RWTCB5

RWTC5



SWTCB5

SWTC5

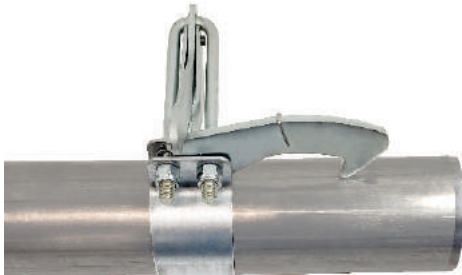


SWC5



WSTCB5

WSTC5



TSB3

RWTC4	4" Round Male
RWTCB4	4" Round Female
RWTC5	5" Round Male
RWTCB5	5" Round Female
SWTC4	4" Square Male
SWTCB4	4" Square Female
SWTC5	5" Square Male
SWTCB5	5" Square Female
SWC4	4" Square Clamp
SWC5	5" Square Clamp
WSTC4	4" Western Round Female
WSTCB4	4" Western Round Male
WSTC5	5" Western Round Female
WSTCB5	5" Western Round Male

Wheel Line Torque Couplers Do Not Include Gaskets or Drains

Features

- ◆ All XCAD USA® aluminum wheel line couplers are heat-treated for maximum strength
- ◆ RW and SW couplers are universal with Wade Rain™ and Poweroll™ couplers
- ◆ High performance casting and machining

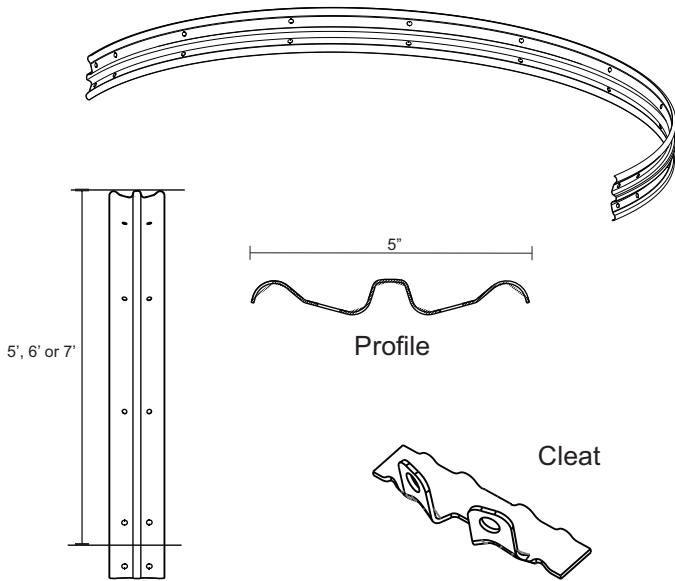
Telescoping Slide Band

TSB3	Slide Band (over center clamp)
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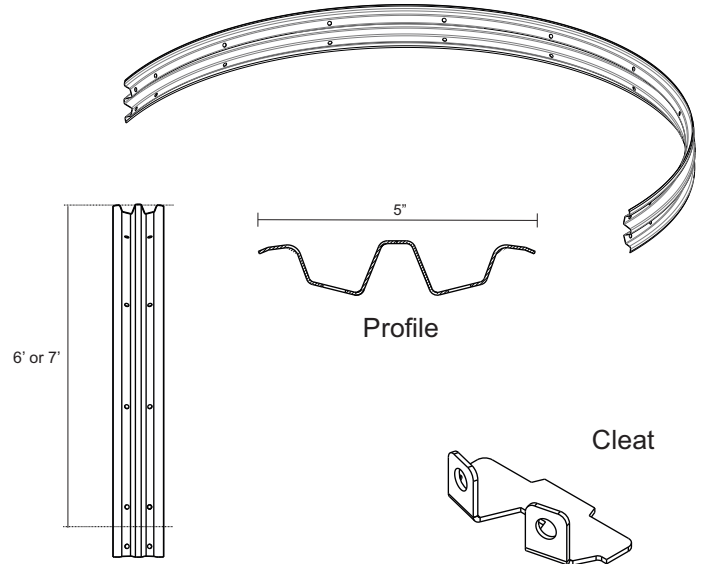
WHEEL LINE WHEELS

Rolled in the USA

WESTERN, AM, GHEEN STYLE



WADE STYLE



Wheel Half Rim

2 ea required per wheel

WLWR-WST58	58" (5') Western, AM, Gheen Style
WLWR-WST64	64" (6') Western, AM, Gheen Style
WLWR-WST76	76" (7') Western, AM, Gheen Style

Wheel Half Rim

2 ea required per wheel

WLWR-WD58	58" (5') Wade Style
WLWR-WD64	64" (6') Wade Style
WLWR-WD76	76" (7') Wade Style

Wheel Spoke

	Wheel Size	Hub Size	Spoke Length	Spokes per wheel
WLWS-26P	58"	5"	26 7/8"	16
WLWS-27P	58"	4"	27 1/4"	16
WLWS-30P	64"	4", 5"	30 1/2"	16
WLWS-37P	76"	4", 5"	37"	20

Wheel Spoke

	Wheel Size	Hub Size	Spoke Length	Spokes per wheel
WLWS-26P	58"	5"	26 7/8"	16
WLWS-27P	58"	4"	27 1/4"	16
WLWS-30P	64"	4", 5"	30 1/2"	16
WLWS-37P	76"	4", 5"	37"	20

1/2 Wheel Hub

4 per wheel

WLWH-WST-4	4"
WLWH-WST-5	5"

1/2 Wheel Hub

4 per wheel

WLWH-WD-4	4"
WLWH-WD-5	5"

Cleat

WLC-WST	Western, AM, Gheen Style
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Cleat

WLC-WD	Wade Style
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WHEEL LINE WHEELS

Complete Wheel Line Wheel: Less Nuts and Bolts

EXTRA Discount of 10% for complete wheel order over 300 pcs

Western Style

		Quantities per Wheel			
		1/2 Rim	Spokes	Hubs	Cleats
WLW-WST-58-4	58" (5')	2	16	4	8
WLW-WST-64-4	64" (6')	2	16	4	8
WLW-WST-76-4	76" (7')	2	20	4	10
WLW-WST-58-5	58" (5')	2	16	4	8
WLW-WST-64-5	64" (6')	2	16	4	8
WLW-WST-76-5	76" (7')	2	20	4	10

Wade Style

		Quantities per Wheel			
		1/2 Rim	Spokes	Hubs	Cleats
WLW-WD-58-4	58" (5')	2	16	4	8
WLW-WD-64-4	64" (6')	2	16	4	8
WLW-WD-76-4	76" (7')	2	20	4	10
WLW-WD-58-5	58" (5')	2	16	4	8
WLW-WD-64-5	64" (6')	2	16	4	8
WLW-WD-76-5	76" (7')	2	20	4	10

Wheel Does Not Come with Hardware

AUTOMATIC DRAINS

Universal 3-piece Design Eliminates Need for Jam Nut



FDC78



FDI78



FDR78



FDSN78

- FDC78
- FDI78
- FDR78
- FDSN78

Drain-Fast™ Flapper Drain

High-Quality Zinc Construction

- Complete Flapper Drain
- Threaded Insert
- Rubber Flapper
- Splash Nut

Heavy-Duty Star Drain



SDMBC-1



SDMB-1



SDMC-1



SDRS-1

- SDMBC-1
- SDMC-1
- SDRS-1
- SDMB-1

Star Drain™

High-Quality Zinc Construction
 (1" Male NPT)

- Complete Metal Base Drain
- Metal Cap
- Neoprene Rubber Star Gasket
- Metal Base

Heavy-Duty – Built To Outperform and Outlast Poweroll™



WSSD

- ◆ Thicker body design with tapered seat
- ◆ Strongest, and smoothest-operating spring drain in the industry
- ◆ Heavy-duty design with tapered seat
- ◆ Designed to last longer and outperform other brands

- WSSD
- WSSD-PL
- WSSD-SPR
- WSSD-RW
- WSSD-SPL

Spring Drain™

High-Quality Zinc Construction

- 1" Spring Drain - Complete
- Plunger
- Spring
- Rubber Washer
- Splash Plate

Pivot Star Drains

Heavy-Duty Replaceable Rubber Star



SDPBC-1



SDPB-1

SDMC-1



SDRS-1

- SDPBC-1
- SDMC-1
- SDRS-1
- SDPB-1

V-Drain™

1" NPT Replacement Drain
 for Valley Pivot Systems

- Complete w/Plastic Base
- Metal Cap
- Neoprene Rubber Star
- Plastic Base

Converts Mushroom-Type to Star-Drain Type

Easy External Installation



ZDCOMP

ZDBASE



ZDGROM

SDMC-1



SDRS-1

- ZDCOMP
- ZDBASE
- ZDGROM
- SDMC-1
- SDRS-1

Z-Drain™

7/8" Hole Replacement Drain
 For Lindsay Pivot Systems

- Complete Drain Assembly
- Base
- Rubber Grommet
- Metal Cap
- Neoprene Rubber Star Gasket

MULTI-FUNCTION AIR VENT

AIR-O-MAX™

Air Vacuum and Air Relief

Continuous Acting Air
Vacuum and Air Relief



AVAR1

AVAR1.25

AVAR2

CAVAR1

CAVAR1.25

CAVAR2

The **XCAD USA**® Air-O-Max™ family of automatic air vents are an outstanding choice for relieving air in irrigation systems. Choose from the AVAR Air Vacuum and Air Relief or the CAVAR for Continuous Acting Air Vacuum and Air Relief under pressure.

AIR-O-MAX™ SERIES

Patented Anti Blow-Shut Sleeve

Features

- ◆ 1", 1.25" and 2" NPT
- ◆ Built entirely of corrosion resistant materials
- ◆ Glass-filled nylon body and base
- ◆ Polypropylene float
- ◆ Aerodynamic design resists blowing closed
- ◆ Working pressure 10 to 125 psi
- ◆ Discharge elbow with male connection thread and internal protection screen

Applications

- ◆ Pump start up high-capacity air venting
- ◆ Pump shut down vacuum relief
- ◆ Filter back flush
- ◆ Venting at pipeline high points
- ◆ Continuous acting air venting during system operation (CAVAR)

AIR VENTS / VACUUM RELIEF VALVES



AVP75



AVP1



VRV1.5X



VRV2X



VRV3X



VRV4X



VRCV2X

X-SERIES™

Air Vent / Vacuum Relief Valves

AVP75	3/4" Plastic Air Vent
AVP1	1" Plastic Air Vent
VRCV2X	2" Vacuum Relief Check Valve X-Series
VRV1.5X	1 1/2" X-Series
VRV2X	2" X Series (15/box)
VRV3X	3" X Series (4/box)
VRV4X	4" X Series (4/box)

Features

X-SERIES™

- ◆ High-quality cast aluminum and plastic designs
- ◆ Unique ball-retention bridge
- ◆ Operates well at low and high pressures
- ◆ X-Series: 10 - 120 psi
- ◆ **NRCS Cost Share Approved**

PIPELINE SAFETY PRODUCTS

Superior Industry Quality

Pressure Lock™



PRV3B



PRV3YBA

Available Field or Factory Set

Pressure Guard™ Pressure Relief Valves are designed to provide maximum pressure surge protection for irrigation systems.

These high-quality spring-loaded valves can be either field set or factory preset to ensure accurate and dependable operation.

Built in the USA

Pressure Guard™

Pressure Relief Valve

(External Spring Surge Plug)

4 per box

Features

- ◆ Pressure Lock™ tamper resistant locking cap
- ◆ Sizes: 2", 2.5", 3" and 4"
- ◆ Corrosion resistant galvanized body, vulcanized rubber seat
- ◆ Cast iron base, stainless stem, painted spring
- ◆ Available in four spring configurations to meet varied pressure and surge requirements
- ◆ **Pressure Guard™** pressure relief valves are designed for years of dependable, reliable service
- ◆ NRCS cost share approved

Size	Pressure Range	Spring Color	Field Set (without Pressure Lock™)	Factory Preset (with Pressure Lock™)
2" Threaded NPT	0-25	Gray	PRV2G	PRV2GA
	10-65	Yellow	PRV2Y	PRV2YA
	50-80	Black	PRV2B	PRV2BA
	85-150	Yellow/Blue*	PRV2YB	PRV2YBA
2.5" Threaded NPT	0-25	Gray	PRV2.5G	PRV2.5GA
	10-65	Yellow	PRV2.5Y	PRV2.5YA
	50-80	Black	PRV2.5B	PRV2.5BA
	85-150	Yellow/Blue*	PRV2.5YB	PRV2.5YBA
3" Threaded NPT	0-25	Gray	PRV3G	PRV3GA
	10-65	Yellow	PRV3Y	PRV3YA
	50-80	Black	PRV3B	PRV3BA
	85-150	Yellow/Blue*	PRV3YB	PRV3YBA
4" Threaded NPT	0-25	Gray	PRV4G	PRV4GA
	10-65	Yellow	PRV4Y	PRV4YA
	50-80	Black	PRV4B	PRV4BA
	85-150	Yellow/Blue*	PRV4YB	PRV4YBA

XCAD USA® Pressure Relief Valves were performance tested at CIT. Performance of Individual Valves May Vary Slightly Due to Spring Variations

See PRV Curves, Page 57

PIPELINE SAFETY PRODUCTS

Pressure Guard™

3" Internal Spring Pressure Relief Valve

(Internal Spring Surge Plug)
 5 per box



ISPRV3

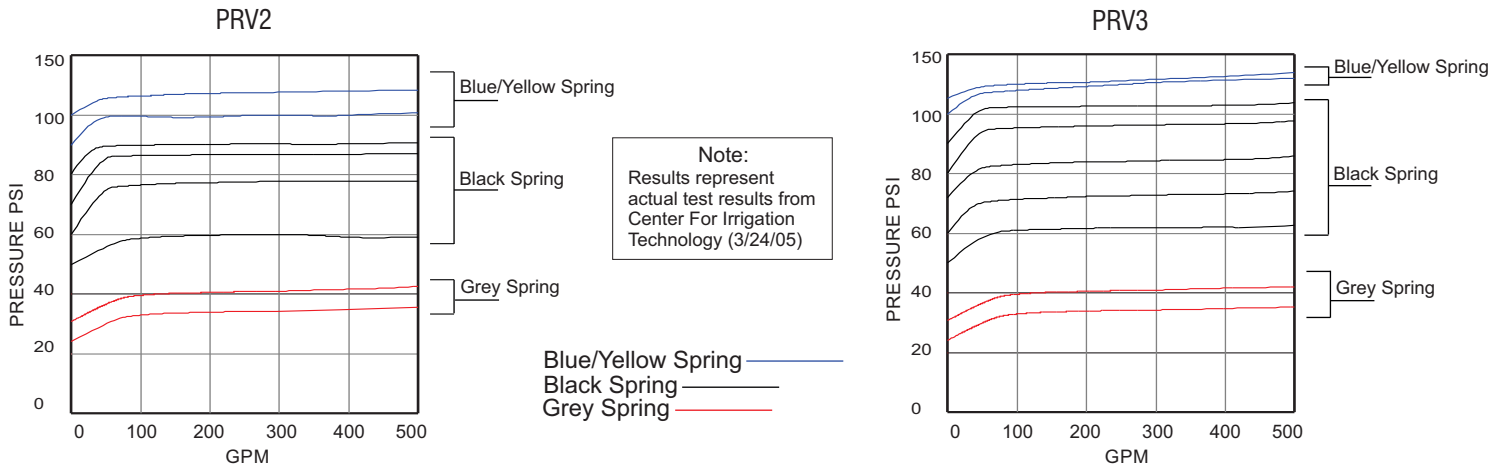
ISPRV3

3" NPT, 25 to 100 psi

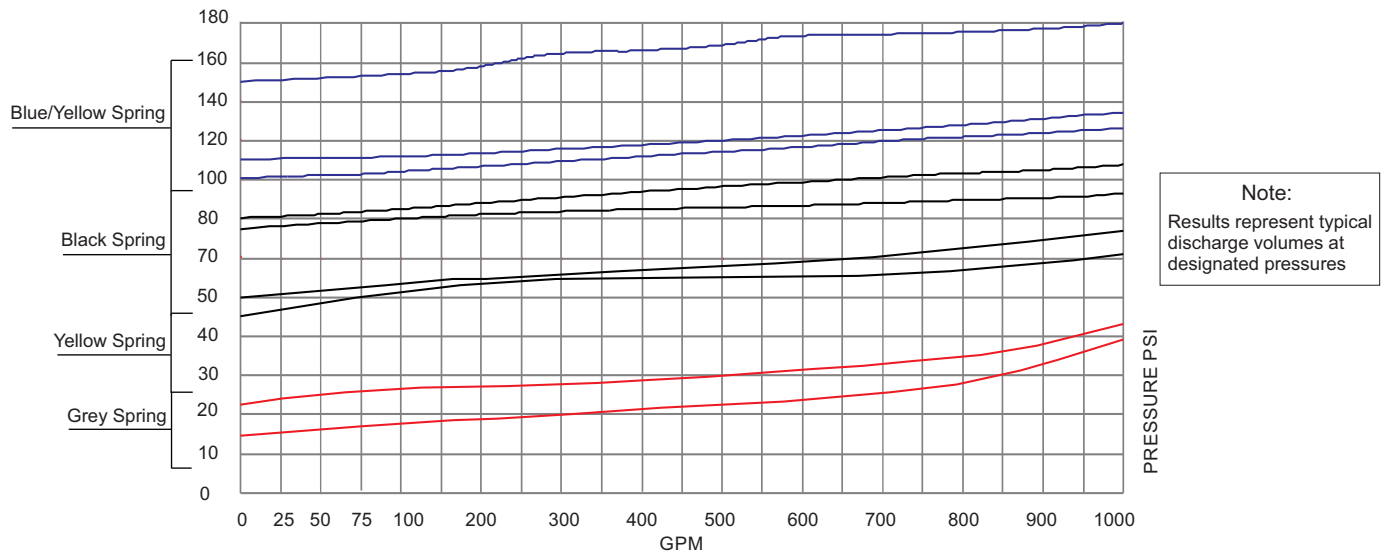
Features

- ◆ Only internal spring PRV that is field adjustable without removal
- ◆ 1" and 1/4" multiple porting for addition of air vent and/or psi gauge
- ◆ Cast iron body with 3" NPT male threading
- ◆ PSI range: 25 to 120 psi
- ◆ Replaceable rubber seat
- ◆ Stainless-steel stem and brass bushings for long life
- ◆ Splash guard for ease of adjustment

2" AND 3" PRV DISCHARGE CURVES



4" PRV DISCHARGE CURVES



BRASS BALL VALVES



BBVFP-1



BBVSP-1



BBVFP-2



BBVSP-2



Brass Ball Valves

Full Port

BBVFP-1/4	1/4" Full Port
BBVFP-1/2	1/2" Full Port
BBVFP-3/4	3/4" Full Port
BBVFP-1	1" Full Port
BBVFP-1.25	1.25" Full Port
BBVFP-1.5	1.5" Full Port
BBVFP-2	2" Full Port

Standard Port

BBVSP-1/4	1/4" Standard Port
BBVSP-1/2	1/2" Standard Port
BBVSP-3/4	3/4" Standard Port
BBVSP-1	1" Standard Port
BBVSP-1.25	1.25" Standard Port
BBVSP-1.5	1.5" Standard Port
BBVSP-2	2" Standard Port

Features

- ◆ Standard and full port models
- ◆ Forged brass body
- ◆ Teflon seat and stem packing
- ◆ Standard NPT threading

To winterize Seal-Matic ball valves and reduce chance of damaging valve from freezing:

Drain valve and leave 3/4 open, do not leave valve fully open or fully closed



SEAL-MATIC® GX-SERIES BUTTERFLY VALVES

GX-Series

Gear-Op Stainless-Steel

BVGO2	2" Gear Op, Stainless-Steel Disc
BVGO2.5	2.5" Gear Op, Stainless-Steel Disc
BVGO3	3" Gear Op, Stainless-Steel Disc
BVGO4	4" Gear Op, Stainless-Steel Disc
BVGO5	5" Gear Op, Stainless-Steel Disc
BVGO6	6" Gear Op, Stainless-Steel Disc
BVGO8	8" Gear Op, Stainless-Steel Disc
BVGO10	10" Gear Op, Stainless-Steel Disc
BVGO12	12" Gear Op, Stainless-Steel Disc

Lever-Op Stainless-Steel

BVLO2	2" Lever Op, Stainless-Steel Disc
BVLO2.5	2.5" Lever Op, Stainless-Steel Disc
BVLO3	3" Lever Op, Stainless-Steel Disc
BVLO4	4" Lever Op, Stainless-Steel Disc
BVLO5	5" Lever Op, Stainless-Steel Disc
BVLO6	6" Lever Op, Stainless-Steel Disc
BVLO8	8" Lever Op, Stainless-Steel Disc
BVLO10	10" Lever Op, Stainless-Steel Disc

GX-Series

Gear-Op Ductile Iron

BVGO2-DI	2" Gear Op Ductile Iron Disc
BVGO2.5-DI	2.5" Gear Op, Ductile Iron Disc
BVGO3-DI	3" Gear Op, Ductile Iron Disc
BVGO4-DI	4" Gear Op, Ductile Iron Disc
BVGO5-DI	5" Gear Op, Ductile Iron Disc
BVGO6-DI	6" Gear Op, Ductile Iron Disc
BVGO8-DI	8" Gear Op, Ductile Iron Disc
BVGO10-DI	10" Gear Op, Ductile Iron Disc
BVGO12-DI	12" Gear Op, Ductile Iron Disc

Lever-Op Ductile Iron

BVLO2-DI	2" Lever Op, Ductile Iron Disc
BVLO2.5-DI	2.5" Lever Op, Ductile Iron Disc
BVLO3-DI	3" Lever Op, Ductile Iron Disc
BVLO4-DI	4" Lever Op, Ductile Iron Disc
BVLO5-DI	5" Lever Op, Ductile Iron Disc
BVLO6-DI	6" Lever Op, Ductile Iron Disc
BVLO8-DI	8" Lever Op, Ductile Iron Disc
BVLO10-DI	10" Lever Op, Ductile Iron Disc



BVLO8



BVGO8

Features

- ◆ Double seal seat design eliminates need for flange gaskets
- ◆ Two-piece stainless-steel stem design with floating disc
- ◆ Drive stem flattened for easy fit actuation
- ◆ Streamlined disc for maximum flow
- ◆ Locating lugs for easy installation



BVLO8-DI



BVGO8-DI

SEAL-MATIC® MONARCH SERIES BUTTERFLY VALVES



MBVLO3-DI

Features

- ◆ Double seal seat design eliminates need for flange gaskets
- ◆ Two-piece stainless-steel stem design with floating disc
- ◆ Drive stem flattened for easy fit actuation
- ◆ Streamlined disc for maximum flow
- ◆ Locating lugs for easy installation
- ◆ Extension and Gear Head universal with XCAD GX Series



MBVGO3-S

Monarch-Series Butterfly Valves

Lever-Op Ductile Iron Disc

MBVLO3-DI	3" Lever Op, Ductile Iron Disc
MBVLO4-DI	4" Lever Op, Ductile Iron Disc
MBVLO6-DI	6" Lever Op, Ductile Iron Disc
MBVLO8-DI	8" Lever Op, Ductile Iron Disc
MBVLO10-DI	10" Lever Op, Ductile Iron Disc

Gear-Op Ductile Iron Disc

MBVGO3-DI	3" Gear Op, Ductile Iron Disc
MBVGO4-DI	4" Gear Op, Ductile Iron Disc
MBVGO6-DI	6" Gear Op, Ductile Iron Disc
MBVGO8-DI	8" Gear Op, Ductile Iron Disc
MBVGO10-DI	10" Gear Op, Ductile Iron Disc
MBVGO12-DI	12" Gear Op, Ductile Iron Disc

Monarch-Series Butterfly Valves

Lever-Op Stainless-Steel Disc

MBVLO3-S	3" Lever Op, Stainless Steel Disc
MBVLO4-S	4" Lever Op, Stainless Steel Disc
MBVLO6-S	6" Lever Op, Stainless Steel Disc
MBVLO8-S	8" Lever Op, Stainless Steel Disc
MBVLO10-S	10" Lever Op, Stainless Steel Disc

Gear-Op Stainless-Steel Disc

MBVGO3-S	3" Gear Op, Stainless Steel Disc
MBVGO4-S	4" Gear Op, Stainless Steel Disc
MBVGO6-S	6" Gear Op, Stainless Steel Disc
MBVGO8-S	8" Gear Op, Stainless Steel Disc
MBVGO10-S	10" Gear Op, Stainless Steel Disc
MBVGO12-S	12" Gear Op, Stainless Steel Disc

BUTTERFLY VALVE PARTS

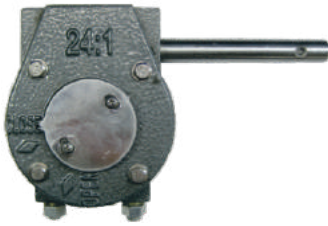
Fits Both GX and Monarch Series Valves



BVHDL8



BVLP8



BVBOX8



BVHW8



BVEXT36-8

Lever Handle

- BVHDL2-6-B Handle for 2"-6" Butterfly Valves (blue)
- BVHDL2-6-G Handle for 2"-6" Butterfly Valves (gray)
- BVHDL8-12-B Handle for 8"-12" Butterfly Valves (blue)
- BVHDL8-12-G Handle for 8"-12" Butterfly Valves (gray)

Lever Lock Plate

- BVLP2-6 Lever lock plate for 2", 2.5", 3", 4", 5" and 6"
- BVLP8-12 Lever lock plate for 8", 10" and 12"

Gear Box

- BVBOX2-6-B Gear Box for 2"-6" Butterfly Valves (blue)
- BVBOX2-6-G Gear Box for 2"-6" Butterfly Valves (gray)
- BVBOX8-12-B Gear Box for 8"-12" Butterfly Valves (blue)
- BVBOX8-12-G Gear Box for 8"-12" Butterfly Valves (gray)

Hand Wheel

- BVHW2-6-B Hand Wheel for 2"-6" Butterfly Valves (blue)
- BVHW2-6-G Hand Wheel for 2"-6" Butterfly Valves (gray)
- BVHW8-12-B Hand Wheel for 8"-12" Butterfly Valves (blue)
- BVHW8-12-G Hand Wheel for 8"-12" Butterfly Valves (gray)

Extensions

- BVEXT24.2-6 24" extension for 2" to 6" valves
- BVEXT24.8-12 24" extension for 8" to 12" valves
- BVEXT36.2-6 36" extension for 2" to 6" valves
- BVEXT36.8-12 36" extension for 8" to 12" valves
- BVEXT48.2-6 48" extension for 2" to 6" valves
- BVEXT48.8-12 48" extension for 8" to 12" valves
- BVEXT60.2-6 60" extension for 2" to 6" valves
- BVEXT60.8-12 60" extension for 8" to 12" valves
- BVEXT72.2-6 72" extension for 2" to 6" valves
- BVEXT72.8-12 72" extension for 8" to 12" valves

WELD ON REDUCER CONES

Heavy Duty Steel Weld Cones

5MM, 7 Gauge, OD

WCOD2X3-7	2" X 3" OD STEEL WELD ON REDUCER CONE
WCOD3X4-7	3" X 4" OD STEEL WELD ON REDUCER CONE
WCOD4X5-7	4" X 5" OD STEEL WELD ON REDUCER CONE
WCOD4X6-7	4" X 6" OD STEEL WELD ON REDUCER CONE
WCOD5X6-7	5" X 6" OD STEEL WELD ON REDUCER CONE
WCOD6X8-7	6" X 8" OD STEEL WELD ON REDUCER CONE
WCOD8X10-7	8" X 10" OD STEEL WELD ON REDUCER CONE
WCOD10X12-7	10" X 12" OD STEEL WELD ON REDUCER CONE
WCOD12X14-7	12" X 14" OD STEEL WELD ON REDUCER CONE
WCOD14X16-7	14" X 16" OD STEEL WELD ON REDUCER CONE
WCOD16X18-7	16" X 18" OD STEEL WELD ON REDUCER CONE



WCIPS8X10-7

5MM, 7 Gauge, IPS

WCIPS3X4-7	3" X 4" IPS STEEL WELD ON REDUCER CONE
WCIPS4X6-7	4" X 6" IPS STEEL WELD ON REDUCER CONE
WCIPS6X8-7	6" X 8" IPS STEEL WELD ON REDUCER CONE
WCIPS8X10-7	8" X 10" IPS STEEL WELD ON REDUCER CONE
WCIPS10X12-7	10" X 12" IPS STEEL WELD ON REDUCER CONE

3.5MM, 10 Gauge, OD

WCOD2X3-10	2" X 3" OD STEEL WELD ON REDUCER CONE
WCOD3X4-10	3" X 4" OD STEEL WELD ON REDUCER CONE
WCOD4X5-10	4" X 5" OD STEEL WELD ON REDUCER CONE
WCOD4X6-10	4" X 6" OD STEEL WELD ON REDUCER CONE
WCOD5X6-10	5" X 6" OD STEEL WELD ON REDUCER CONE
WCOD6X8-10	6" X 8" OD STEEL WELD ON REDUCER CONE
WCOD8X10-10	8" X 10" OD STEEL WELD ON REDUCER CONE
WCOD10X12-10	10" X 12" OD STEEL WELD ON REDUCER CONE

3.5MM, 10 Gauge, IPS

WCIPS3X4-10	3" X 4" IPS STEEL WELD ON REDUCER CONE
WCIPS4X6-10	4" X 6" IPS STEEL WELD ON REDUCER CONE
WCIPS6X8-10	6" X 8" IPS STEEL WELD ON REDUCER CONE
WCIPS8X10-10	8" X 10" IPS STEEL WELD ON REDUCER CONE
WCIPS10X12-10	10" X 12" IPS STEEL WELD ON REDUCER CONE

TOGGLE GATES

Toggle Gates

Bolts Included with CP Style



TG12-ODG

CP Style

Galvanized

Fits Concrete Pipe

TG4-CPG	4" TOGGLE GATE, CP STYLE, GALVANIZED
TG6-CPG	6" TOGGLE GATE, CP STYLE, GALVANIZED
TG8-CPG	8" TOGGLE GATE, CP STYLE, GALVANIZED
TG10-CPG	10" TOGGLE GATE, CP STYLE, GALVANIZED
TG12-CPG	12" TOGGLE GATE, CP STYLE, GALVANIZED

Stainless Steel

TG4-CPS	4" TOGGLE GATE, CP STYLE, STAINLESS STEEL
TG6-CPS	6" TOGGLE GATE, CP STYLE, STAINLESS STEEL
TG8-CPS	8" TOGGLE GATE, CP STYLE, STAINLESS STEEL
TG10-CPS	10" TOGGLE GATE, CP STYLE, STAINLESS STEEL
TG12-CPS	12" TOGGLE GATE, CP STYLE, STAINLESS STEEL

OD Style

Galvanized

TG4-ODG	4" TOGGLE GATE, OD STYLE, GALVANIZED
TG6-ODG	6" TOGGLE GATE, OD STYLE, GALVANIZED
TG8-ODG	8" TOGGLE GATE, OD STYLE, GALVANIZED
TG10-ODG	10" TOGGLE GATE, OD STYLE, GALVANIZED
TG12-ODG	12" TOGGLE GATE, OD STYLE, GALVANIZED

Stainless Steel

TG4-ODS	4" TOGGLE GATE, OD STYLE, STAINLESS STEEL
TG6-ODS	6" TOGGLE GATE, OD STYLE, STAINLESS STEEL
TG8-ODS	8" TOGGLE GATE, OD STYLE, STAINLESS STEEL
TG10-ODS	10" TOGGLE GATE, OD STYLE, STAINLESS STEEL
TG12-ODS	12" TOGGLE GATE, OD STYLE, STAINLESS STEEL

Features

- ◆ CP Style for concrete pipe
- ◆ OD Style for attachment to OD pipe
- ◆ All gates have full Stainless Steel slides
- ◆ Galvanized type are Hot Dipped with Stainless Steel slide

CONTROL VALVES

**Assembled
in the USA**

from domestic and foreign parts

SEAL MATIC®

Seal Matic® 3/4", 1", 1 1/4" and 1 1/2"
 Pivot Auxillary & Corner Control Valve
 Raven Smart™ Diaphragm Technology

**3-Year
Diaphragm
Guarantee**

Features

- ◆ **Fully galvanized**, ductile iron body and bonnet
- ◆ Brass auto-drain included with PEG model
- ◆ One diaphragm for all working pressures
- ◆ 200 psi max working pressure
- ◆ Highly efficient high-flow, low head loss design
- ◆ Easy in-place maintenance
- ◆ Pressure reducing and pressure sustaining valves come with P-6000 brass pilot

Seal Matic® Pivot End Gun Valve

SMV75PEG	3/4" w/Auto-Drain and Plug
SMV1PEG	1" w/Auto-Drain and Plug
SMV1.25PEG	1 1/4" w/Auto-Drain and Plug
SMV1.5PEG	1 1/2" w/Auto-Drain and Plug

Seal Matic® Basic Valve

SMV75B	3/4" w/Plugs
SMV1B	1" w/Plugs
SMV1.25B	1 1/4" w/Plugs
SMV1.5B	1 1/2" w/Plugs

Seal Matic® Electric On/Off Valve

SMV75WS	3/4" w/Solenoid
SMV1WS	1" w/Solenoid
SMV1.25WS	1 1/4" w/Solenoid
SMV1.5WS	1 1/2" w/Solenoid

Seal Matic® Manual Pressure Reducing Valve

SMV75MPR	3/4" w/P-6000 Pilot
SMV1MPR	1" w/P-6000 Pilot
SMV1.25MPR	1 1/4" w/P-6000 Pilot
SMV1.5MPR	1 1/2" w/P-6000 Pilot

Seal Matic® Electric Pressure Reducing Valve

SMV75EPR	3/4" w/P-6000 Pilot/Solenoid
SMV1EPR	1" w/P-6000 Pilot/Solenoid
SMV1.25EPR	1 1/4" w/P-6000 Pilot/Solenoid
SMV1.5EPR	1 1/2" w/P-6000 Pilot/Solenoid

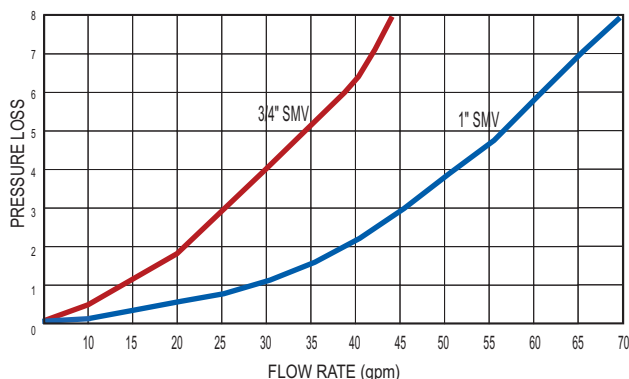
Seal Matic® Manual Pressure Sustaining Valve

SMV75MPS	3/4" w/P-6000 Pilot
SMV1MPS	1" w/P-6000 Pilot
SMV1.25MPS	1 1/4" w/P-6000 Pilot
SMV1.5MPS	1 1/2" w/P-6000 Pilot



SMV75PEG

3/4" and 1" SMV Valves



Seal Matic® valves are only guaranteed to perform optimally in accordance with the size and model of each valve's performance chart in standard irrigation use and practices.

Graphs Represent Results From CIT

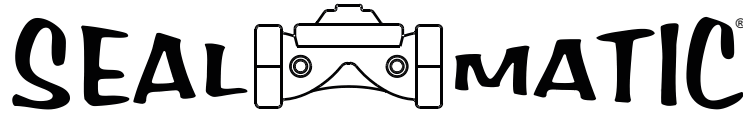
For SMV Installation Guide see page 86

For SMV Dimensions see page 89

CONTROL VALVES

**Assembled
in the USA**

from domestic and foreign parts



Seal Matic® 2" Pivot End Gun Valve

Raven Smart™ Diaphragm Technology

**3-Year
Diaphragm
Guarantee**

Features

- ◆ **Fully galvanized**, ductile iron body and bonnet
- ◆ Brass auto-drain included with PEG model
- ◆ One diaphragm for all working pressures
- ◆ 200 psi max working pressure
- ◆ Easy in-place maintenance
- ◆ Pressure sustaining and pressure reducing valves come with P-6000 pilot
- ◆ SMVX100PEG works with Aqua Burst® X100 and Nelson™ SR100 and SR75

Seal Matic® Pivot End Gun Valve

SMV2PEG	2" w/Auto-Drain and Plug
SMV902PEG	2" 90° w/Auto-Drain and Plug
SMVX100PEG	2" X-100 End Gun Valve

Seal Matic® Basic Valve

SMV2B	2" Basic w/Plugs
SMV902B	2" 90° Basic w/Plugs

Seal Matic® Electric On/Off Valve

SMV2WS	2" w/Solenoid
SMV902WS	2" 90° w/Solenoid
SMVX100WS	2" X-100 End Gun Valve w/Solenoid

Seal Matic® Manual Pressure Reducing Valve

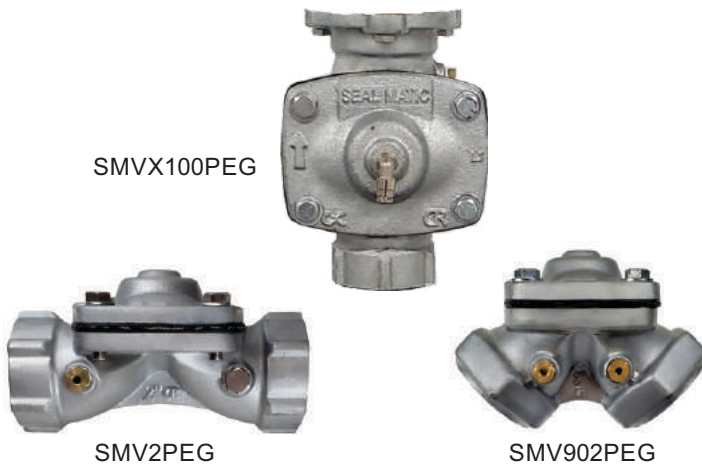
SMV2MPR	2" w/P-6000 Pilot
SMV902MPR	2" 90° w/P-6000 Pilot

Seal Matic® Electric Pressure Reducing Valve

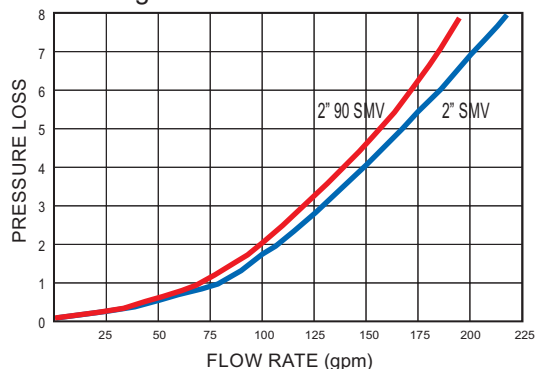
SMV2EPR	2" w/P-6000 Pilot/Solenoid
SMV902EPR	2" 90° w/P-6000 Pilot/Solenoid

Seal Matic® Manual Pressure Sustaining Valve

SMV2MPS	2" w/P-6000 Pilot
SMV902MPS	2" 90° w/P-6000 Pilot



2" Straight and 2" 90° Seal Matic® Valves



Cv = 2" 90° = 110
 Cv = 2" Str = 90
 (control vented to atmosphere)

Seal Matic® valves are only guaranteed to perform optimally in accordance with the size and model of each valve's performance chart in standard irrigation use and practices.

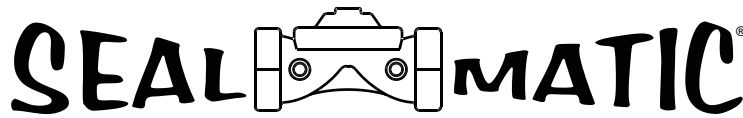
Graphs Represent Results From CIT

**For SMV Installation Guide see page 86
 For SMV Dimensions see page 89**

CONTROL VALVES

**Assembled
in the USA**

from domestic and foreign parts



Raven Smart™ Diaphragm Technology

**3-Year
Diaphragm
Guarantee**

Features

- ◆ New Super Flow design, available in 4", 6", 8"
- ◆ **Fully galvanized**, ductile iron body and bonnet
- ◆ One diaphragm for all pressures
- ◆ Easy in-place maintenance
- ◆ Fully open at 5 psi
- ◆ CIT tested flow rates
- ◆ Pilot Control Options: Pressure reducing, pressure sustaining, pressure relief
- ◆ Pressure reducing and pressure sustaining valves come with P-6000 brass pilot
- ◆ Solenoid available in 12v DC, 24v AC, 24v DC or 120v AC

Seal Matic® Electric On/Off Valve

SMV3WS	3" w/Solenoid
SMV4WS	4" w/Solenoid
SMV6WS	6" w/Solenoid
SMV8WS	8" w/Solenoid

Seal Matic® Basic Valve

SMV3B	3" Basic w/Plugs
SMV4B	4" Basic w/Plugs
SMV6B	6" Basic w/Plugs
SMV8B	8" Basic w/Plugs

Seal Matic® Manual Pressure Reducing Valve

SMV3MPR	3" w/P-6000 Pilot
SMV4MPR	4" w/P-6000 Pilot
SMV6MPR	6" w/P-6000 Pilot
SMV8MPR	8" w/P-6000 Pilot

Seal Matic® Electric Pressure Reducing Valve

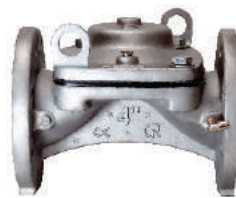
SMV3EPR	3" w/P-6000 Pilot/Solenoid
SMV4EPR	4" w/P-6000 Pilot/Solenoid
SMV6EPR	6" w/P-6000 Pilot/Solenoid
SMV8EPR	8" w/P-6000 Pilot/Solenoid

Seal Matic® Manual Pressure Sustaining Valve

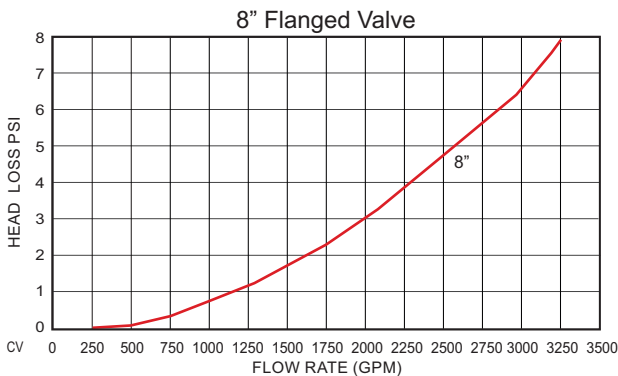
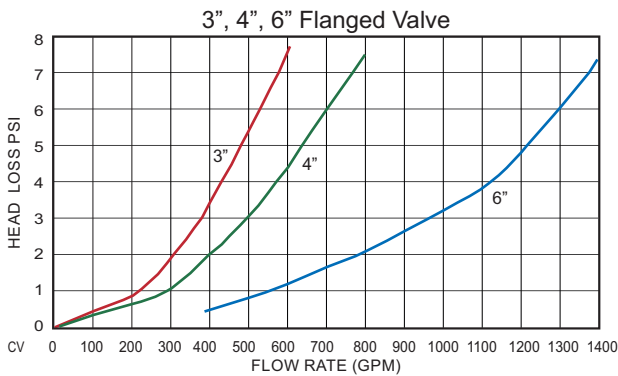
SMV3MPS	3" w/P-6000 Pilot
SMV4MPS	4" w/P-6000 Pilot
SMV6MPS	6" w/P-6000 Pilot
SMV8MPS	8" w/P-6000 Pilot



SMV6MPR
6" Dual-X™ Control Valve



SMV4WS



Seal Matic® valves are only guaranteed to perform optimally in accordance with the size and model of each valve's performance chart in standard irrigation use and practices.

Graphs Represent Results From CIT

For SMV Installation Guide see page 86

For SMV Dimensions see page 90

CONTROL VALVES

**Assembled
in the USA**

from domestic and foreign parts

X-Max Valve™

Where Function and Efficiency Meet

**High-Flow
Design**

Features

- ◆ **Five-Year Diaphragm Warranty**
- ◆ Hot dipped galvanized and oven baked powder coatings
- ◆ Pilot control options: pressure reducing, pressure sustaining and pressure relief
- ◆ Electric on/off with Parker solenoid and manual three-way controller
- ◆ Solenoid available in 12v DC, 24v DC, 24v AC or 120v AC
- ◆ Available with P-6000 brass pilot
- ◆ **Bolt Kit Included**

X-MAX Electric On/Off Valve

XMAX4WS	4" w/Solenoid
XMAX6II-WS	6" w/Solenoid
XMAX8-WS	8" w/Solenoid

X-MAX Basic Valve

XMAX4B	4" Basic w/Plugs
XMAX6II-B	6" Basic w/Plugs
XMAX8B	8" Basic w/Plugs

X-MAX Manual Pressure Reducing Valve

XMAX4MPR	4" w/P-6000 Pilot
XMAX6II-MPR	6" w/P-6000 Pilot
XMAX8MPR	8" w/P-6000 Pilot

X-MAX Electric On/Off Pressure Reducing Valve

XMAX4EPR	4" w/P-6000 Pilot/Solenoid
XMAX6II-EPR	6" w/P-6000 Pilot/Solenoid
XMAX8EPR	8" w/P-6000 Pilot/Solenoid

X-MAX Manual Pressure Sustaining Valve

XMAX4MPS	4" w/P-6000 Pilot
XMAX6II-MPS	6" w/P-6000 Pilot
XMAX8MPS	8" w/P-6000 Pilot

See Performance Charts (Pg. 68)

Designed and engineered to out-flow and out-control all other hydraulic control valves.
X-MAX6II = 1150 gpm @ 1.0 cv



XMAX4WS



XMAX6II-WS
SuperMax



XMAX8WS

For XMAX Installation Guide see page 87

For XMAX Dimensions see page 91



CONTROL VALVES

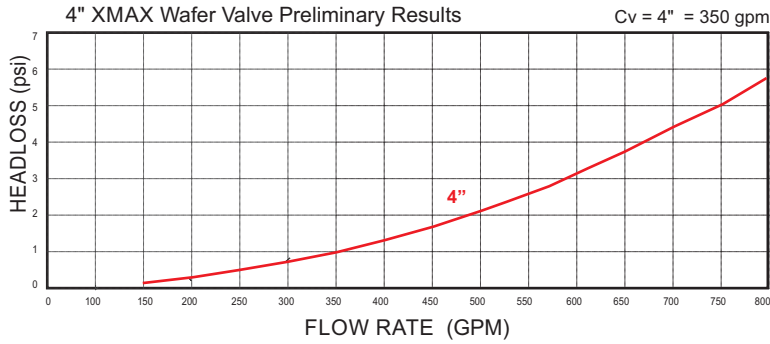
**Assembled
in the USA**

from domestic and foreign parts

X-Max Valve™

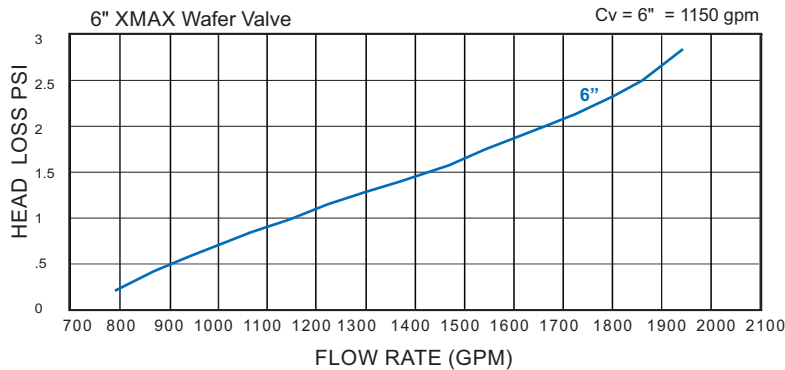
Where Function and Efficiency Meet

**High-Flow
Design**



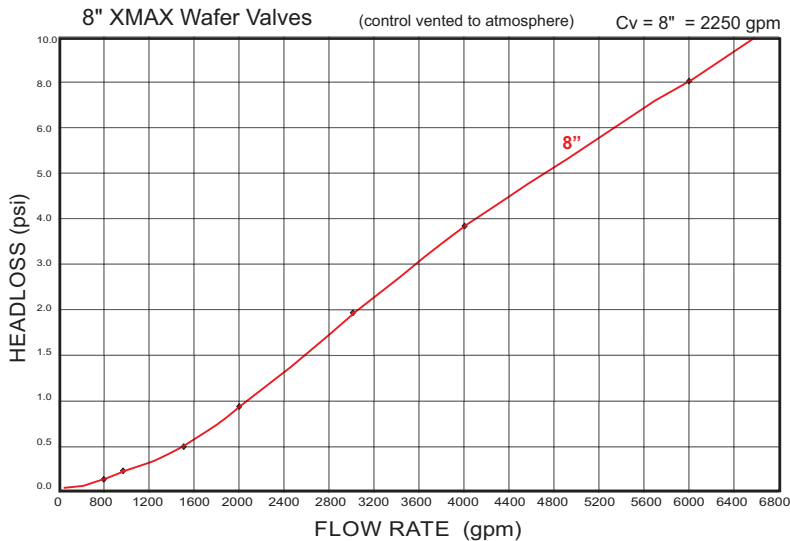
XCON/XMAX Bolt Kits

- XMAX4-BK 8 - 5/8" x 10 1/2" bolts,
 16 - 5/8" nuts
- XMAX6-BK 8 - 3/4" x 14" bolts,
 16 - 3/4" nuts
- XMAX8-BK 8 - 3/4" x 16" bolts,
 16 - 3/4" nuts



Replacement Valve Diaphragms

- XMAX4DIA For 4" XMAX Valve
- XMAX6DIA For 6" XMAX Valve
- XMAX8DIA For 8" XMAX Valve
- XCON4DIA For 4" XCON Valve
- XCON6DIA For 6" XCON Valve
- XCON8DIA For 8" XCON Valve
- SMV1.5DIA For 1.25"/1.5" SMV Valve
- SMV75-1DIA For .75"/1" SMV Valve
- SMV2DIA For 2" SMV Valve
- SMV346DIA For 3"/4"/6" SMV Valve
- SMV8DIA For 8" SMV Valve



Replacement End Cap O-rings

- XMAX4OR For 4" XMAX End Cap
- XMAX6OR For 6" XMAX End Cap
- XMAX8OR For 8" XMAX End Cap
- SMV3OR For 3" SMV End Cap
- SMV4OR For 4" SMV End Cap
- SMV6OR For 6" SMV End Cap
- SMV8OR For 8" SMV End Cap

Graphs Represent Results From CIT

VALVE ACCESSORIES

XCAD Pressure Control Pilot P-6000 Series



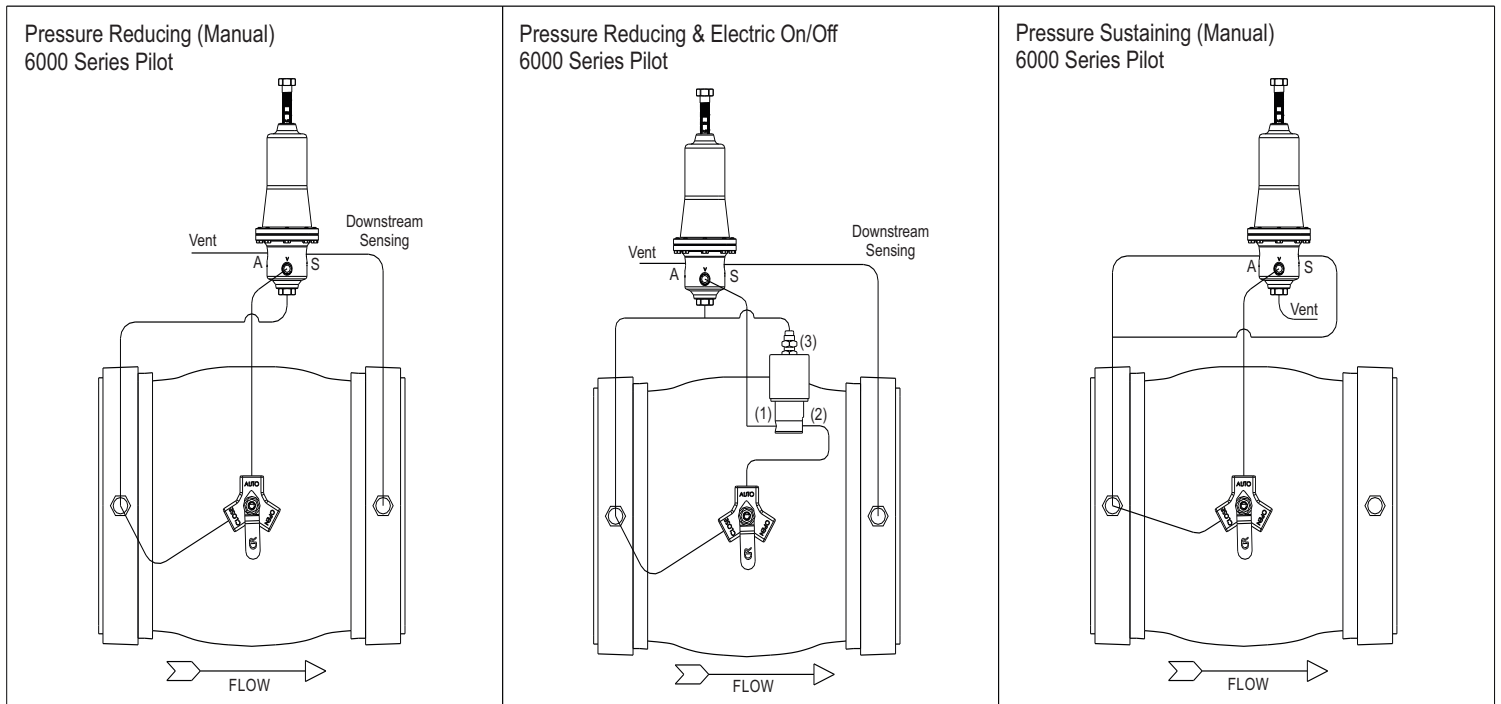
P-6000

**Assembled
 in the USA**

P-6000-H	Pressure Control Pilot
P-6000-M	High: 30-120 psi/Medium: 30-60 psi/
P-6000-L	Low: 10-40 psi Includes vent and fittings
P6MPR-H	Manual Pressure Reduction Kit
P6MPR-M	High: 30-120 psi/Medium: 30-60 psi/
P6MPR-L	Low: 10-40 psi Includes pilot and fittings
P6EPR-H	Electric On-Off Pressure Reduction Kit
P6MPS-H	High: 30-120 psi/Medium: 30-60 psi/
P6MPS-M	Low: 10-40 psi
P6MPS-L	Includes pilot and fittings

Features

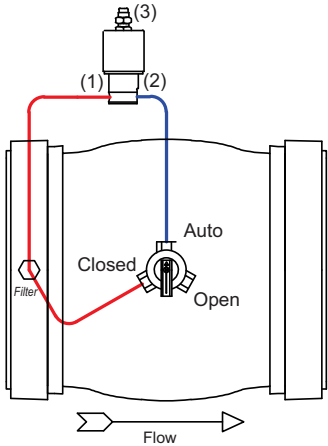
- ◆ **Maintenance free stainless-steel control springs (No greasing required)**
- ◆ Calibrated pressure control (low and high)
- ◆ Both sustaining/relief and reducing function
- ◆ No pressure drop required to regulate
- ◆ Easy valve mounting bracket
- ◆ Universal design works with most control valves



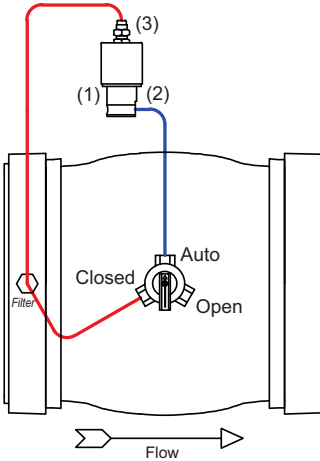
Upstream and downstream sensing should be placed 24 inches away from valve.

PILOT PLUMBING CHARTS

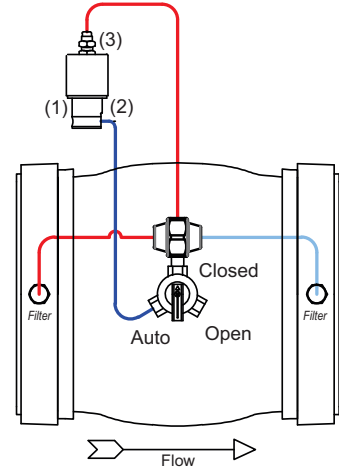
Normally Open ENERGIZED = CLOSED
 NOT ENERGIZED = OPEN
 OVER 80 PSI REQUIRES SPECIAL SOLENOID



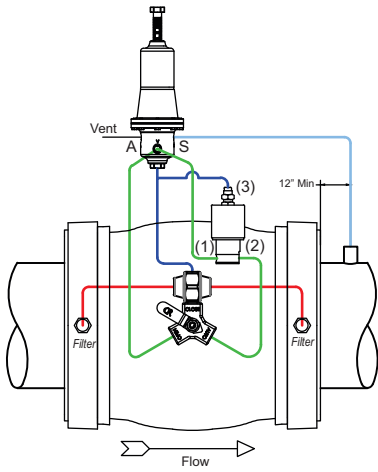
Normally Closed ENERGIZED = OPEN
 NOT ENERGIZED = CLOSED



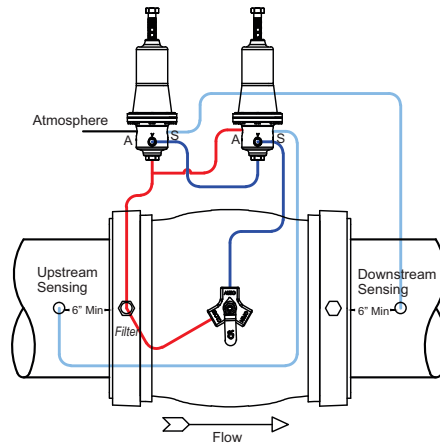
Check Valve ENERGIZED = OPEN
 NOT ENERGIZED = CHECK



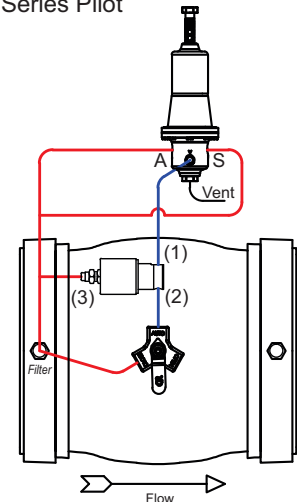
Pressure Reducing & Electric On/Off
 6000 Series Pilot and Check Valve



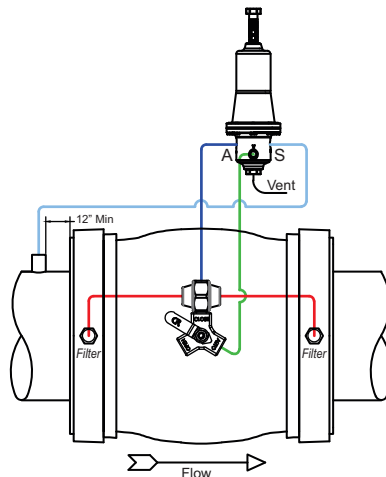
Pressure Sustaining/Reducing
 6000 Series Pilot



Pressure Sustaining/Electric On/Off
 6000 Series Pilot



Pressure Sustaining
 6000 Series Pilot and Check Valve



VALVE ACCESSORIES

3-Way Solenoids



PKSOL-LO120



PKSOL-120AC

PKSOL-120UN	120v AC Solenoid, Unpotted
PKSOL-120AC	120v AC Solenoid, Potted
PKSOL-24DC	24v DC Solenoid, Unpotted
PKSOL-24AC	24v AC Solenoid, Unpotted
PKSOL-12DC	12v DC Solenoid, Unpotted
PKSOL-12DCL	12v DC Latching Solenoid
PKSOL-LO120AC	120v AC 5/32" Orifice Solenoid
PKSOL-LO24AC	24v AC 5/32" Orifice Solenoid

Solenoid Coils



PKCOIL-12DC



PKPOT-120AC

PKHS	Coil Housing (pot)
PKCOIL-120AC	120v AC Coil Only
PKPOT-120AC	120v AC Potted Coil
PKCOIL-24DC	24v DC Coil Only
PKCOIL-24AC	24v AC Coil Only
PKCOIL-12DC	12v DC Coil Only



3WSEL



SVB-4



PLTVENT

Selector Valves

(Large Ports)

3WSEL	1/4"x1/8"x1/8"x1/8" 3-way Selector
SVB-4	1/4" Brass Shuttle Valve
PLTVENT	Pilot Restrictor Vent



LBF25



SBF25

Brass Filters and Drains

LBF25	1/4"x1/4" Internal Brass Filter, Long
SBF25	1/4"x1/4" Internal Brass Filter, Short
EXTFP	1/4"x1/4" External Plastic Filter
SMVBD-AV	1/4" Internal Brass Drain



EXTFP
































SMVBD-AV

CONTROL VALVE PARTS

Brass Valve Fittings

Plated Brass

				BHN2-2	1/8" NPT x 1/8" NPT Hex Nipple
				BHN4-2	1/4" NPT x 1/8" NPT Hex Nipple
				BHN4-4	1/4" NPT x 1/4" NPT Hex Nipple
				BFHN2-2	1/8" Female NPT x 1/8" Female NPT Brass Hex Nipple
				BFHN4-4	1/4" Female NPT x 1/4" Female NPT Brass Hex Nipple
				SHH4-4	1/4" Hose x 1/4" Hose Swivel Connector
				SHH516	5/16" Hose x 5/16" Hose Swivel Connector
				SSN4-2	1/4" Hose x 1/8" NPT Swivel Straight Nipple
				SSN4-4	1/4" Hose x 1/4" NPT Swivel Straight Nipple
				SSN516-2	5/16" Hose x 1/8" NPT Swivel Straight Nipple
				SSN516-4	5/16" Hose x 1/4" NPT Swivel Straight Nipple
				SSN38-4	3/8" Hose x 1/4" NPT Swivel Straight Nipple
				SSN12-4	1/2" Hose x 1/4" NPT Swivel Straight Nipple
				SE4-2	1/4" Hose x 1/8" NPT Swivel Elbow
				SE4-4	1/4" Hose x 1/4" NPT Swivel Elbow
				SE516-2	5/16" Hose x 1/8" NPT Swivel Elbow
				SE516-4	5/16" Hose x 1/4" NPT Swivel Elbow
				SE38-4	3/8" Hose x 1/4" NPT Swivel Elbow
				SE12-4	1/2" Hose x 1/4" NPT Swivel Elbow
				SBT4-2	1/4" Hose x 1/8" NPT Swivel Branch Tee
				SBT4-4	1/4" Hose x 1/4" NPT Swivel Branch Tee
				SBT516-2	5/16" Hose x 1/8" NPT Swivel Branch Tee
				SBT516-4	5/16" Hose x 1/4" NPT Swivel Branch Tee
				SBT38-4	3/8" Hose x 1/4" NPT Swivel Branch Tee
				SBT12-4	1/2" Hose x 1/4" NPT Swivel Branch Tee
				SRT4-2	1/4" Hose x 1/8" NPT Swivel Run Tee
				SRT4-4	1/4" Hose x 1/4" NPT Swivel Run Tee
				SRT516-2	5/16" Hose x 1/8" NPT Swivel Run Tee
				SRT516-4	5/16" Hose x 1/4" NPT Swivel Run Tee
				SRT38-4	3/8" Hose x 1/4" NPT Swivel Run Tee
				SRT12-4	1/2" Hose x 1/4" NPT Swivel Run Tee (not shown)

CONTROL VALVE PARTS

Brass Valve Fittings Plated Brass



SYC4-2



SYC4-4



SYC-4



SC-4



SC-38



SC-516



SUT2-2



SUT4-4



SSC4-2



SSC4-4



SST4-2



SST4-4



SST-516-2



RED4-2



UEF2-2



BVT14

- SYC4-2 1/4" Hose x 1/8" NPT Swivel Divider Tee
- SYC4-4 1/4" Hose x 1/4" NPT Swivel Divider Tee
- SYC-4 1/4" x 1/4" x 1/4" Hose Swivel Divider Tee
- SC-4 1/4" x 1/4" x 1/4" Hoes Swivel Tee
- SC-516 5/16" x 5/16" x 5/16" Hose Swivel Tee
- SC-38 3/8" x 3/8" x 3/8" Hose Swivel Tee
- SUT2-2 1/8" x 1/8" x 1/8" NPT (Female) Brass Union Tee
- SUT4-4 1/4" x 1/4" x 1/4" NPT (Female) Brass Union Tee
- SSC4-2 1/4" Hose x 1/8" NPT Swivel Speed Control
- SSC4-4 1/4" Hose x 1/4" NPT Swivel Speed Control
- SST4-2 1/4" Hose x 1/8" NPT Swivel Splitter Tee
- SST4-4 1/4" Hose x 1/4" NPT Swivel Splitter Tee
- SST516-2 5/16" Hose x 1/8" NPT Swivel Splitter Tee
- FRED4-2 1/4" Female NPT x 1/8" Female NPT Hex Reducer
- RED4-2 1/4" Male NPT x 1/8" Female NPT Hex Reducer
- UEF2-2 1/8" Female NPT x 1/8" Female NPT Union Elbow
- BVT14 Heavy Duty Nylon 1/4" Valve Tubing, per foot
- BVT516 Heavy Duty Nylon 5/16" Valve Tubing, per foot
- BVT38 Heavy Duty Nylon 3/8" Valve Tubing, per foot
- BVT12 Heavy Duty Nylon 1/2" Valve Tubing, per foot

CONTROL VALVE PARTS

Nylon Valve Fittings

Nylon and Plated Brass



NE4-4



NHH4-4



NSC-38



NSC-4

NE4-4

1/4" Hose x 1/4" NPT Elbow

NHH4-4

1/4" Hose x 1/4" Hose Swivel Straight Nipple

NSC-38

3/8" x 3/8" x 3/8" Hose Swivel Connector Tee

NSC-4

1/4" x 1/4" x 1/4" Hose Swivel Connector Tee



NSBT38-4



NSBT4-2



NSBT4-4

NSBT38-4

3/8" Hose x 1/4" NPT Swivel Branch Tee

NSBT4-2

1/4" Hose x 1/8" NPT Swivel Branch Tee

NSBT4-4

1/4" Hose x 1/4" NPT Swivel Branch Tee



NSE38-4



NSE4-2



NSE4-4



NHHE4-4

NSE38-4

3/8" Hose x 1/4" NPT Swivel Elbow

NSE4-2

1/4" Hose x 1/8" NPT Swivel Elbow

NSE4-4

1/4" Hose x 1/4" NPT Swivel Elbow

NHHE4-4

1/4" Hose x 1/4" Hose Swivel Elbow

NSRT12-4

1/2" Hose x 1/4" NPT Swivel Run Tee (not shown)

NSRT38-4

3/8" Hose x 1/4" NPT Swivel Run Tee

NSRT4-2

1/4" Hose x 1/8" NPT Swivel Run Tee

NSRT4-4

1/4" Hose x 1/4" NPT Swivel Run Tee

NSSN4-2

1/4" Hose x 1/8" NPT Swivel Straight Nipple

NSSN4-4

1/4" Hose x 1/4" NPT Swivel Straight Nipple

NSSN12-4

1/2" Hose x 1/4" NPT Swivel Straight Nipple

NSSN38-4

3/8" Hose x 1/4" NPT Swivel Straight Nipple

NSYC-4

1/4" x 1/4" x 1/4" Hose Swivel Divider Tee

NSYC4-2

1/4" Hose x 1/8" NPT Swivel Divider Tee

NSYC4-4

1/4" Hose x 1/4" NPT Swivel Divider Tee

NSSC4-2

1/4" Hose x 1/8" NPT Swivel Speed Control/Needle Valve

NSSC4-4

1/4" Hose x 1/4" NPT Swivel Speed Control/Needle Valve



NSRT38-4



NSRT4-2



NSRT4-4



NSSN4-2



NSSN4-4



NSSN12-4



NSSN38-4



NSYC-4



NSYC4-2



NSYC4-4



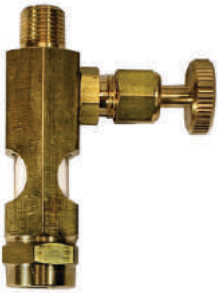
NSSC4-2



NSSC4-4

OIL DRIPPER

Turbine Oil Dropper



UNVOD

UNVOD Brass Universal Oil Dropper 1/8" NPT



UEF2-2 1/8" Female NPT x 1/8" Female NPT Union Elbow

UEF2-2

X-GATE™ LOW HEAD CANAL GATE PARTS

X-GATE™

Super Heavy-Duty

Features

- ◆ **Heavy-duty galvanized 3" x 5" head rails and 2 1/2" guide rails standard**
- ◆ Spigot back or flat back frame
- ◆ Two stainless steel stem configurations:
X-type, left and right-hand thread
- ◆ **Stainless-steel stems standard**
- ◆ Bronze lift nuts standard
- ◆ Standard Sizes 8", 10", 12", 15", 18", 21", 24", 30", and 36"
See chart for maximum frame lengths
- ◆ Extension stem adapters for all sizes

All X-GATE™ Canal Gates are available in two stem configurations

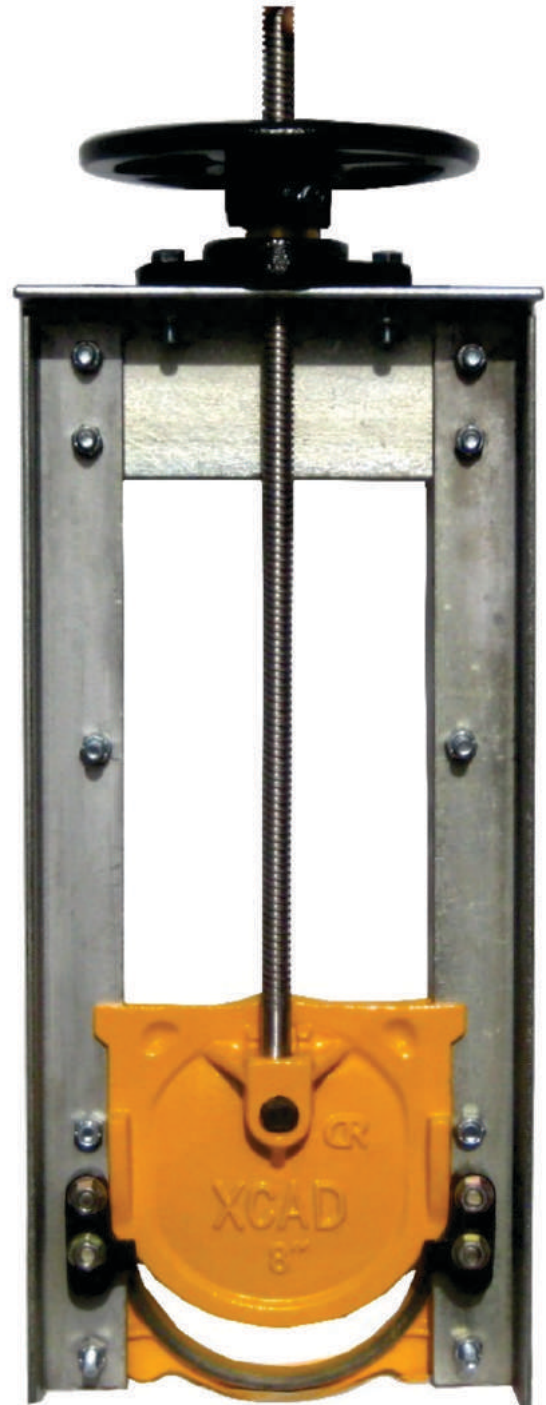
Please specify desired stem package when ordering gates (X-Type left-hand thread standard)

X-Type, Left Hand Thread

X-Type, Right Hand Thread

X-GATE™ Low Head Canal Gates are designed to XCAD's highest specifications. Frames, covers and wedges are not interchangeable with other brands.

**Additional Charge
For Non-Standard Gate Lengths
or Gates Over 120" in length**





X-GATE™ LOW HEAD CANAL GATE PARTS

FLAT BACK FRAME

Standard Sizes

SPIGOT BACK FRAME

CG8FB24	8" x 24"
CG8FB36	8" x 36"
CG8FB48	8" x 48"
CG8FB60	8" x 60"
CG8FB72	8" x 72"
CG8FB84	8" x 84"
CG8FB96	8" x 96"
CG8FB108	8" x 108"
CG8FB120	8" x 120"
CG10FB24	10" x 24"
CG10FB36	10" x 36"
CG10FB48	10" x 48"
CG10FB60	10" x 60"
CG10FB72	10" x 72"
CG10FB84	10" x 84"
CG10FB96	10" x 96"
CG10FB108	10" x 108"
CG10FB120	10" x 120"
CG12FB24	12" x 24"
CG12FB36	12" x 36"
CG12FB48	12" x 48"
CG12FB60	12" x 60"
CG12FB72	12" x 72"
CG12FB84	12" x 84"
CG12FB96	12" x 96"
CG12FB108	12" x 108"
CG12FB120	12" x 120"
CG15FB36	15" X 36"
CG15FB48	15" X 48"
CG15FB60	15" X 60"
CG15FB72	15" X 72"

CG15FB84	15" x 84"
CG15FB96	15" x 96"
CG15FB108	15" x 108"
CG15FB120	15" x 120"
CG18FB36	18" x 36"
CG18FB48	18" x 48"
CG18FB60	18" x 60"
CG18FB72	18" x 72"
CG18FB84	18" x 84"
CG18FB96	18" x 96"
CG18FB108	18" x 108"
CG18FB120	18" x 120"
CG24FB48	24" x 48"
CG24FB60	24" x 60"
CG24FB72	24" x 72"
CG24FB84	24" x 84"
CG24FB96	24" x 96"
CG24FB108	24" x 108"
CG24FB120	24" x 120"
CG30FB60	30" x 60"
CG30FB72	30" x 72"
CG30FB84	30" x 84"
CG30FB96	30" x 96"
CG30FB108	30" x 108"
CG30FB120	30" x 120"
CG36FB 72	36" x 72"
CG36FB84	36" x 84"
CG36FB96	36" x 96"
CG36FB108	36" x 108"
CG36FB120	36" x 120"

CG8SB24	8" x 24"
CG8SB36	8" x 36"
CG8SB48	8" x 48"
CG8SB60	8" x 60"
CG8SB72	8" x 72"
CG8SB84	8" x 84"
CG8SB96	8" x 96"
CG8SB108	8" x 108"
CG8SB120	8" x 120"
CG10SB24	10" x 24"
CG10SB36	10" x 36"
CG10SB48	10" x 48"
CG10SB60	10" x 60"
CG10SB72	10" x 72"
CG10SB84	10" x 84"
CG10SB96	10" x 96"
CG10SB108	10" x 108"
CG10SB120	10" x 120"
CG12SB24	12" x 24"
CG12SB36	12" x 36"
CG12SB48	12" x 48"
CG12SB60	12" x 60"
CG12SB72	12" x 72"
CG12SB84	12" x 84"
CG12SB96	12" x 96"
CG12SB108	12" x 108"
CG12SB120	12" x 120"
CG15SB36	15" X 36"
CG15SB48	15" X 48"
CG15SB60	15" X 60"
CG15SB72	15" X 72"

CG15SB84	15" x 84"
CG15SB96	15" x 96"
CG15SB108	15" x 108"
CG15SB120	15" x 120"
CG18SB36	18" x 36"
CG18SB48	18" x 48"
CG18SB60	18" x 60"
CG18SB72	18" x 72"
CG18SB84	18" x 84"
CG18SB96	18" x 96"
CG18SB108	18" x 108"
CG18SB120	18" x 120"
CG24SB48	24" x 48"
CG24SB60	24" x 60"
CG24SB72	24" x 72"
CG24SB84	24" x 84"
CG24SB96	24" x 96"
CG24SB108	24" x 108"
CG24SB120	24" x 120"
CG30SB60	30" x 60"
CG30SB72	30" x 72"
CG30SB84	30" x 84"
CG30SB96	30" x 96"
CG30SB108	30" x 108"
CG30SB120	30" x 120"
CG36SB72	36" x 72"
CG36SB84	36" x 84"
CG36SB96	36" x 96"
CG36SB108	36" x 108"
CG36SB120	36" x 120"

FLAT BACK FRAME

Standard Sizes

Gate Size	Gate Length
8", 10", 12"	24", 36", 48", 60", 72", 84", 96", 108", 120"
15", 18"	36", 48", 60", 72", 84", 96", 108", 120"
24"	48", 60", 72", 84", 96", 108", 120"
30"	60", 72", 84", 96", 108", 120"
36"	72", 84", 96", 108", 120"

SPIGOT BACK FRAME

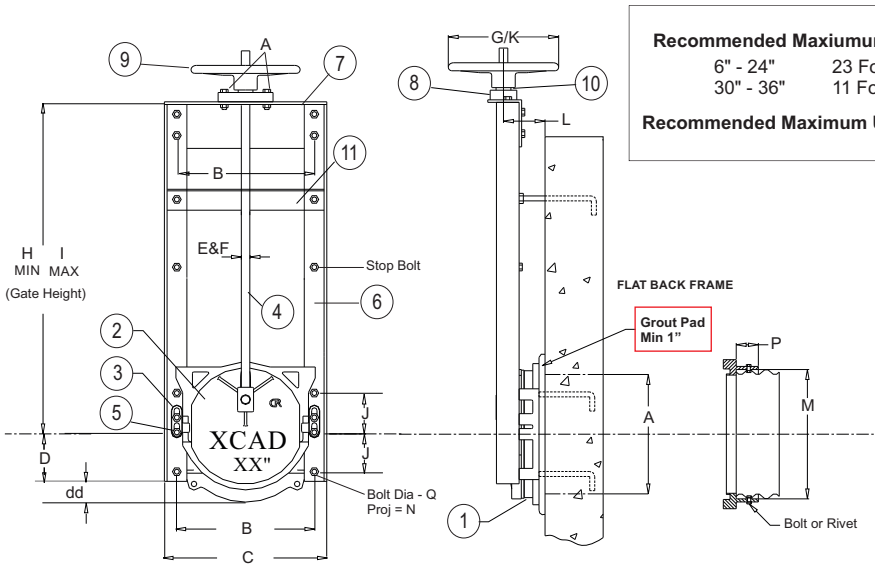
Standard Sizes

Gate Size	Gate Length
8", 10", 12"	24", 36", 48", 60", 72", 84", 96", 108", 120"
15", 18"	36", 48", 60", 72", 84", 96", 108", 120"
24"	48", 60", 72", 84", 96", 108", 120"
30"	60", 72", 84", 96", 108", 120"
36"	72", 84", 96", 108", 120"

Additional Charge For Non-Standard Gate Lengths or Gates Over 120" in length
 All prices are subject to change without notice



X-GATE™ LOW HEAD CANAL GATES



Recommended Maximum Seating Heads
 6" - 24" 23 Foot Head
 30" - 36" 11 Foot Head

Recommended Maximum Unseating Head - 0

Parts List & Standard Features			
No.	Description	Qty.	Material
1	Frame	1	Cast Iron
2	Cover	1	Ductile Iron
3	Wedge (Rt. & Lft)	1 ea	Cast Iron
4	Stem	1	Stainless Steel
5	Wedge Bolts	4	Zinc Plated
6	Guide Rail	2	Galv. Structural Steel
7	Head Rail	1	Galv. Structural Steel
8	Lift Collar	1	Cast Iron
9	Handwheel	1	Cast Iron
10	Lift Nut	1	Bronze
11	Stem Support	1-2	Galv. Structural Steel

Cover: Cast Iron ASTM A 126 class B
Frame: Ductile Iron ASTM 65-45-120
Nut: Bronze ASTM B-584
Stem: Stainless Steel
Fasteners/Hardware: Zinc Plated
Railing: Galvanized

Flat Back
for Headwall and Flange Mounting

Spigot Back
for Mounting to Corrugated Pipe

Dimensions For X-GATE™ Low-Head Canal Gates

(All Measurements in Inches)

A	B	C	D	dd	E XCAD	F Fresno	G XCAD	H Min	I Max	J	K Fresno	L	M	N	P	Q
8"	10"	13"	4"	7/8"	7/8" (.875)	7/8" (.875)	10"	25 1/2"	121 1/2"	3"	10"	2.5"	9 1/8" (9.125)	3.5"	2.25"	1/2" x 12"
10"	12"	14 7/8" (14.875)	4 1/2"	1 1/2"	7/8" (.875)	7/8" (.875)	10"	26 1/4"	122 1/4"	3.5"	10"	2.5"	11 1/4" (11.25)	3.5"	2.25"	1/2" x 12"
12"	14"	16 7/8" (16.875)	5"	2"	7/8" (.875)	7/8" (.875)	10"	26 3/4"	122 3/4"	4"	10"	3"	13 1/8" (13.125)	4"	2.25"	1/2" x 12"
15"	17"	18 7/8" (18.875)	6"	2 1/2"	7/8" (.875)	7/8" (.875)	10"	39 1/2"	123 1/2"	5"	10"	3.5"	16"	4"	2.25"	1/2" x 12"
18"	21"	22 7/8" (22.875)	7"	3 1/2"	1"	1 1/8" (1.125)	12"	40 1/4"	124 1/4"	6"	14"	4.25"	19 1/8" (19.125)	4.5"	2.25"	5/8" x 12"
24"	27 1/4" (27.25)	29 1/8" (29.125)	9"	4 3/4"	1"	1 1/8" (1.125)	12"	53 1/2"	125 1/2"	8"	14"	4.125"	25"	4.5"	2.25"	5/8" x 12"
30"	33 3/4" (33.75)	36 1/8" (36.125)	11"	6 3/4"	1 1/8" (1.125)	1 1/8" (1.125)	15"	67 1/2"	127 1/2"	10"	14"	4.5"	31 1/2" (31.5)	6"	2.25"	3/4" x 12"
36"	39 3/4" (39.75)	42 1/8" (42.125)	13"	7 1/2"	1 1/8" (1.125)	1 1/8" (1.125)	15"	80 1/4"	128 1/4"	12"	14"	5.375"	37"	6"	2.25"	3/4" x 12"

Gate Size	Gate Heights														
	Min.														Max.
8	24"	36"	48"	60"	72"	78"	84"	90"	96"	102"	108"	114"	120"		
10	24"	36"	48"	60"	72"	78"	84"	90"	96"	102"	108"	114"	120"		
12	24"	36"	48"	60"	72"	78"	84"	90"	96"	102"	108"	114"	120"		
15	36"	48"	60"	72"	78"	84"	90"	96"	102"	108"	114"	120"			
18	36"	48"	60"	72"	78"	84"	90"	96"	102"	108"	114"	120"			
24	48"	60"	72"	78"	84"	90"	96"	102"	108"	114"	120"				
30	60"	72"	78"	84"	90"	96"	102"	108"	114"	120"					
36	72"	78"	84"	90"	96"	102"	108"	114"	120"						

X-GATE™ Low Head Canal Gates are designed to XCAD USA's highest specifications. Frames, covers and wedges are not interchangeable with other brands.



X-GATE™ LOW HEAD CANAL GATE PARTS

WEDGE SET (2pcs)

- X-Type
 X8-15WEDGE 8"-15" gate
 X18-24WEDGE 18"-24" gate
 X30-36WEDGE 30"-36" gate

Fresno-Type

- F6-15WEDGE 6"-15" gate
 F18-36WEDGE 18"-36" gate

LIFT NUT

- X-Type Left-Hand Thread
 XL78BNUT Fits 7/8" Stem
 XL1BNUT Fits 1" Stem
 XL118BNUT Fits 1 1/8" Stem

X-Type Right-Hand Thread

- XR78BNUT Fits 7/8" Stem
 XR1BNUT Fits 1" Stem
 XR118BNUT Fits 1 1/8" Stem

Fresno-Type

- FL78NUT Fits 7/8" Stem
 FL118NUT Fits 1 1/8" Stem

PLASTIC RING GASKET

- CGGSKT8-15 Fits 7/8" Stem
 CGGSKT18-24 Fits 1" Stem
 CGGSKT30-36 Fits 1 1/8" Stem

WELD ON COUPLER

- XL78WOC Fits 7/8" Stem
 XL1WOC Fits 1" Stem
 XL118WOC Fits 1 1/8" Stem

Replacement Parts

Wedges, Lift Collars, Bronze Lift Nuts, Stainless Steel Stems and Hand Wheels
 Available for X-GATE™ and Fresno® Brand Gates

STEEL EXTENSION COUPLER

- CGEC8-15 7/8" for 8"-15" gate
 CGEC18-24 1" for 18"-24" gate
 CGEC30-36 1 1/8" for 30"-36" gate

HAND WHEELS

- X-Type
 X8-15WHL 8"-15" gate
 X18-24WHL 18"-24" gate
 X30-36WHL 30"-36" gate

- Fresno-Type
 F10WHL 6"-15" gate
 F14WHL 15"-36" gate

RING / LIFT COLLAR

- X-Type
 X8-15RING Fits 7/8" Stem
 X18-24RING Fits 1" Stem
 X30-36RING Fits 1 1/8" Stem

- Fresno-Type
 F-RING Fits 7/8" and 1 1/8" Stem

STAINLESS STEEL STEM

Stems Sold per Foot

- X-Type Left-Hand Thread Stem
 XL78ST 7/8"
 XL1ST 1"
 XL118ST 1 1/8"

X-Type Right-Hand Thread Stem

- XR78ST 7/8"
 XR1ST 1"
 XR118ST 1 1/8"

Fresno-Type Left-Hand Thread Stem

- FL78ST 7/8"
 FL118ST 1 1/8"



Contact **XCAD USA** for Additional Replacement Part Pricing and Availability

STANDARD RAILING AND STEM LENGTHS

All Stems Are Stainless Steel Unless Otherwise Specified

Gate Size

(Rail Color Code)		8" (Red)		10" (Blue)		12" (Green)		15" (Yellow)		18" (Black)		24" (Brown)		30" (White)		36" (Pink)	
H,I Gate Height (In)	H,I Gate Height (Ft)	H,I +D Total Rail Length (In)	Stem Length	H,I +D Total Rail Length (In)	Stem Length	H,I +D Total Rail Length (In)	Stem Length	H,I +D Total Rail Length (In)	Stem Length	H,I +D Total Rail Length (In)	Stem Length	H,I +D Total Rail Length (In)	Stem Length	H,I +D Total Rail Length (In)	Stem Length	H,I +D Total Rail Length (In)	Stem Length
	"d" =	(4")		(4 1/2")		(5")		(6")		(7")		(9")		(11")		(13")	
	"dd" =	(7/8")		(1 1/2")		(2")		(2 1/2")		(3 1/2")		(4 3/4")		(6 3/4")		(7 1/2")	
24"	2'	28 7/8"	30"	30"	30"	31"	30"										
36"	3'	40 7/8"	42"	42"	42"	43"	42"	44 1/2"	42"	46 1/2"	42"						
48"	4'	52 7/8"	54"	54"	54"	55"	54"	56 1/2"	54"	58 1/2"	54"	61 3/4"	54"				
60"	5'	64 7/8"	66"	66"	66"	67"	66"	68 1/2"	66"	70 1/2"	66"	73 3/4"	66"	77 3/4"	66"		
72"	6'	76 7/8"	78"	78"	78"	79"	78"	80 1/2"	78"	82 1/2"	78"	85 3/4"	78"	89 3/4"	78"	92 1/2"	78"
84"	7'	88 7/8"	90"	90"	90"	91"	90"	92 1/2"	90"	94 1/2"	90"	97 3/4"	90"	101 3/4"	90"	104 1/2"	90"
96"	8'	100 7/8"	102"	102"	102"	103"	102"	104 1/2"	102"	106 1/2"	102"	109 3/4"	102"	113 3/4"	102"	116 1/2"	102"
108"	9'	112 7/8"	114"	114"	114"	115"	114"	116 1/2"	114"	118 1/2"	114"	121 3/4"	114"	125 3/4"	114"	128 1/2"	114"
120"	10'	124 7/8"	126"	126"	126"	127"	126"	128 1/2"	126"	130 1/2"	126"	133 3/4"	126"	137 3/4"	126"	140 1/2"	126"

Refer to Drawing on Pg 70

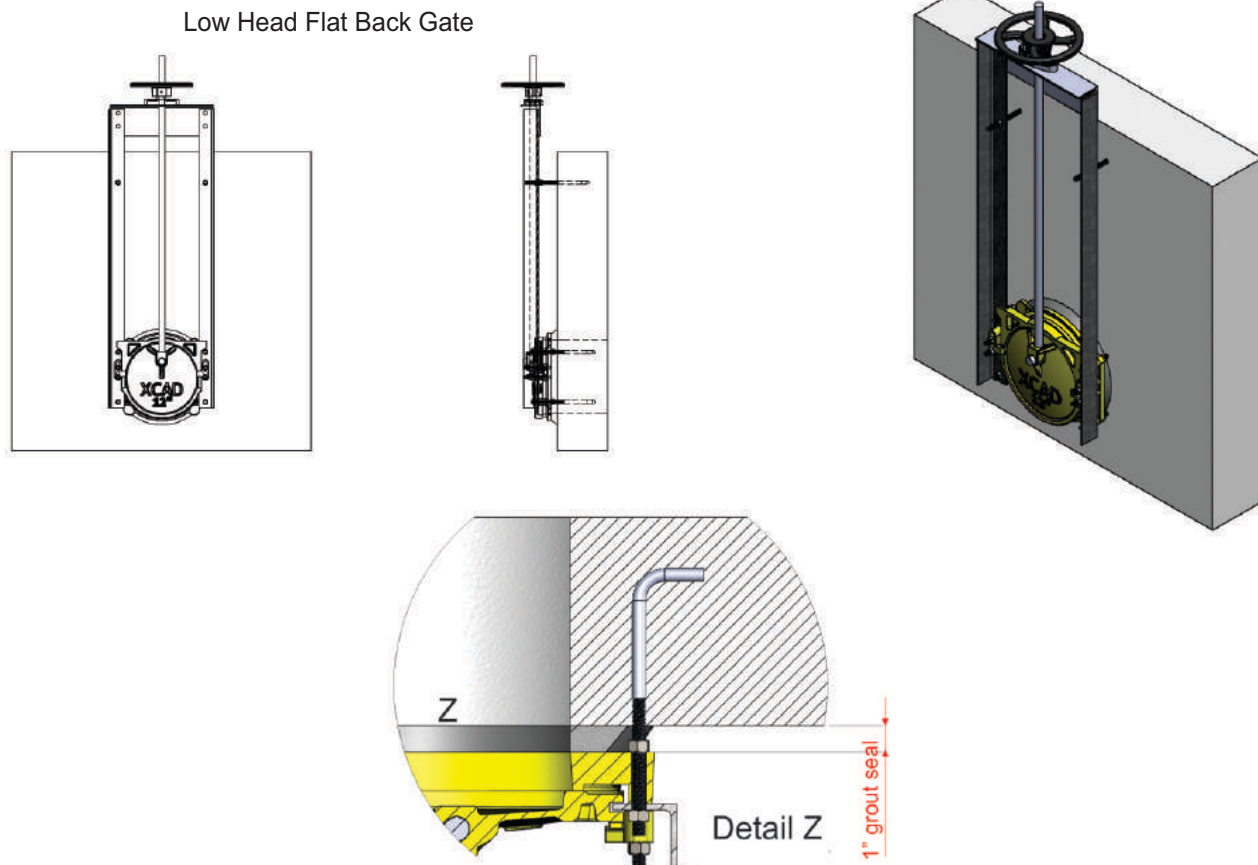
X-GATE™ LOW HEAD CANAL GATES

Low Head Flat Back Gate

Installation Guide for Attaching Flat Back Gate to Concrete Headwall

- 1 - Secure all specified anchor bolts in their proper position in concrete form, checking to see that anchor bolts, projections, perpendicular and horizontal alignments are all correct. Extra care is needed in this initial procedure to ensure that all bolts are properly set. Improperly set bolts will cause gate warpage and excess leakage between the seat surfaces. *Do Not Force Gate Onto Misaligned or Improperly Set Anchor Bolts.*
 - 2 - Each anchor bolt needs to be supplied with two nuts to properly mount gate to headwall. It is also recommended that you provide sufficient access to the back side of the gate to allow for easy adjustment of the back nuts. Sufficient grout space must be left for adjustment of back nuts and proper alignment of gate.
 - 3 - After the concrete has been poured and forms stripped, **place one nut on each anchor bolt and run them down so they are 1" from the headwall (See Detail Z).** Carefully place the closed gate onto the anchor bolts. *Do Not Force Gate onto Misaligned Anchor Bolts.* Place the second nut on each anchor bolt and bring front and back nuts into finger-tight contact with the gate frame, then align gate as necessary.
- At this point of the installation, check all clearances between seating surfaces with a .004" feeler gauge. If there is proper seating at this point the gauge will not admit. In the event that the gate is not seated properly, check to see if the gate has been warped. If so, readjust nuts on anchor bolts to flatten gate. Adjustment of the wedges may also be necessary.
- 4 - After the gate is seated properly, carefully dry pack or grout in the 1" gap between frame ring and concrete headwall using a non-shrink material. Check voids and fill as necessary.
 - 5 - Lightly tighten all exposed anchor bolt nuts uniformly so as not to warp gate to uneven surfaces.
 - 6 - Gate is now ready for operation.

NOTE: Gates and Pipe Are Heavy! Use Care and Good Working Practice in Assembly and Installation.
WARNING: Do Not Bolt Flat Back Gate Directly Against Head Wall. Leave 1" Space for Grouting.



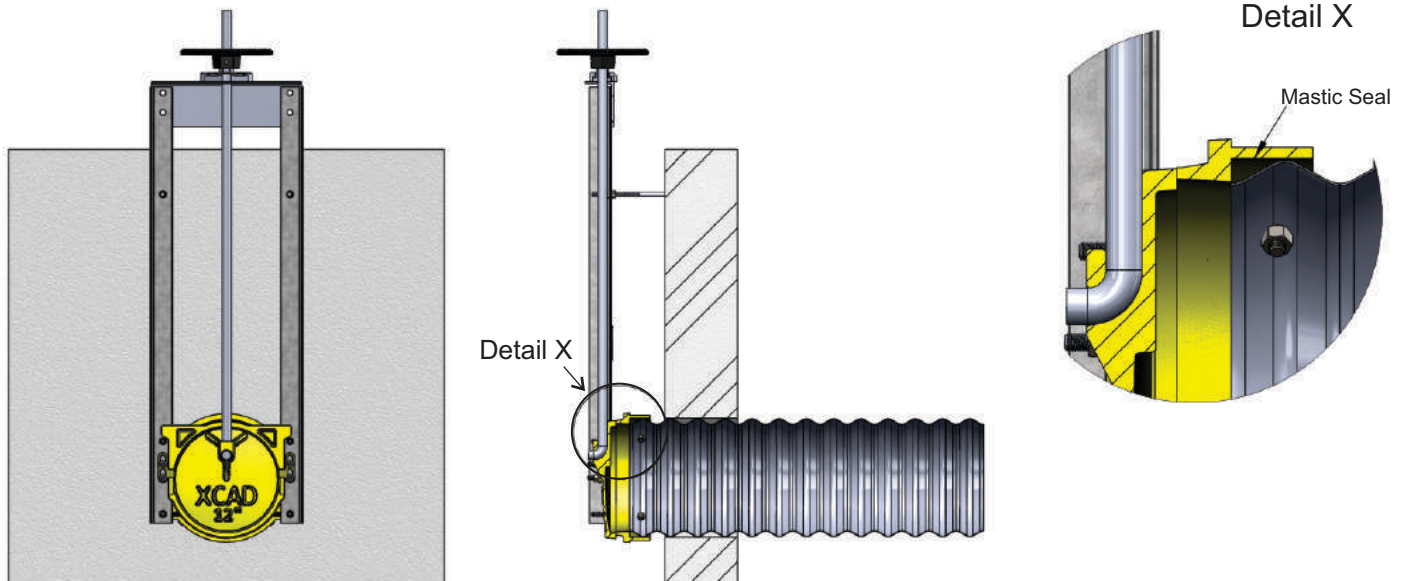
X-GATE™ LOW HEAD CANAL GATES

Low Head Spigot Back Gate

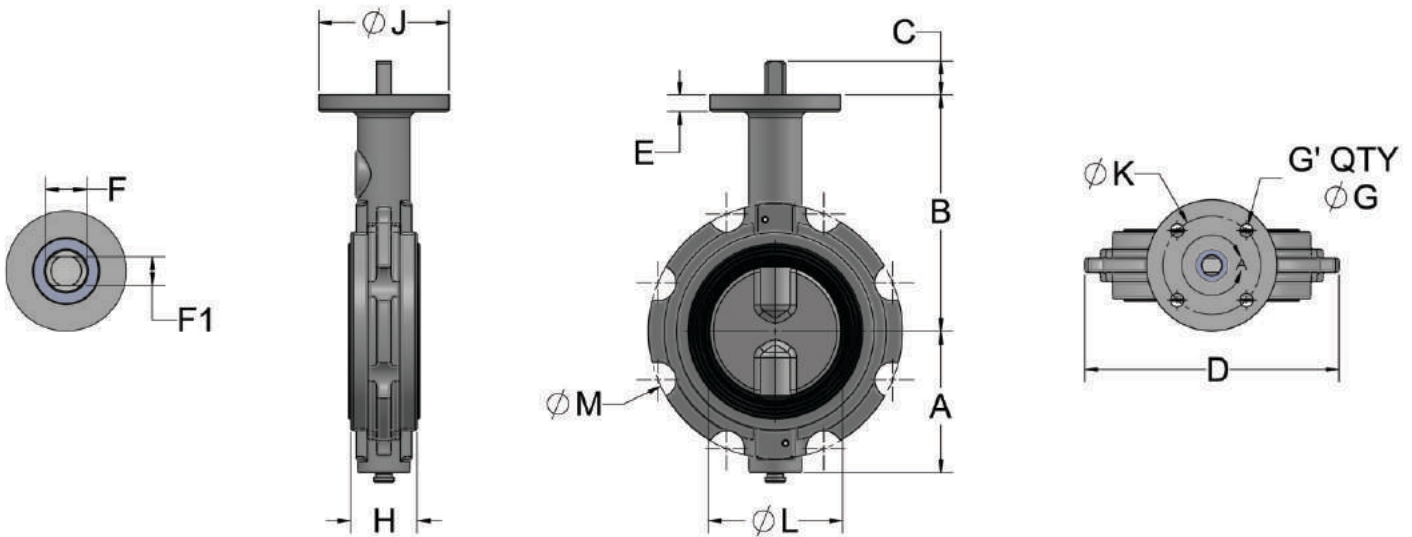
Installation Guide for Spigot Back Gate to Corrugated Pipe

- 1 - Place spigot back gate over corrugated pipe, making sure the pipe and gate are perpendicular.
- 2 - Drill holes through corrugated pipe using holes in spigot back gate as a template (13/32" or 7/16" drill bit).
- 3 - Secure the gate to corrugated pipe using either galvanized Grade 5 steel bolts or stainless 304 bolts and nuts. *Forcing Bolt May Cause Damage to Gate.*
- 4 - Apply a mastic sealant to joint in between corrugated pipe and gate (See Detail X).
- 5 - Brace both pipe and gate as necessary. Deflection and distortion of corrugated pipe may cause the gate to leak.
- 6 - Place braced coupled gate and corrugated pipe into ditch or trench, then back fill or pour as required ensuring that gate is vertical from the centerline opening.
- 7 - Remove bracing, check and clean gate seat to make sure proper full periphery seating is achieved. (Use .004 feeler gauge.)
- 8 - Check the gate for any type of damage or irregularities.
- 9 - Gate is now ready for operation.

NOTE: Gates and Pipe Are Heavy! Use Care and Good Working Practice in Assembly and Installation.



GX SERIES BUTTERFLY VALVE DIMENSIONS

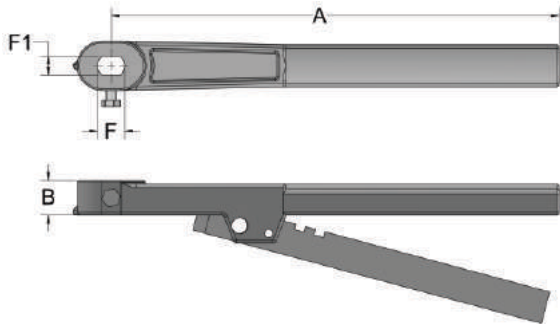


VALVE SIZE	A	B	C	D	E	F	F1	G'	G	H	J	K	L	M
2"	2.78	5.80	1.08	5.09	.54	.56	.44	4	.41	1.69	4	3	2.21	4.75
2.5"	3.03	6.30	1.06	5.73	.54	.56	.44	4	.41	1.81	4	3	2.67	5.50
3"	3.34	6.50	1.06	6.20	.54	.56	.44	4	.41	1.80	4	3	3.17	6.00
4"	4.32	7.25	1.16	7.78	.54	.64	.44	4	.41	2.06	4	3	4.18	7.50
5"	5.40	7.58	1.10	8.83	.54	.89	.44	4	.41	2.17	4	3	5.16	8.50
6"	5.60	8.38	1.06	9.38	.54	1.00	.44	4	.41	2.18	4	3	6.04	9.50
8"	7.65	9.63	1.63	11.90	.75	1.13	.75	4	.53	2.37	6	5	8.06	11.75
10"	9.03	11.05	1.63	14.69	.75	1.13	.75	4	.53	2.68	6	5	10.05	14.25
12"	10.30	12.50	1.63	17.19	.75	1.13	.75	4	.53	3.02	6	5	12.07	17.00

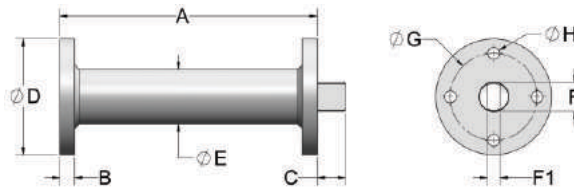
Material Specifications GX Series

Part	Material
Body	Cast Iron
Seat	Phenolic Back Cartridge w/Buna-N Seat
Disc 2"-24"	Stainless-Steel
Disc 2"-24"	Ductile Iron
Stem Top/Bottom	Stainless-Steel
Spring Pin	Stainless-Steel
Top/Bottom Bearing	Nylon
O-Rings	Buna-N

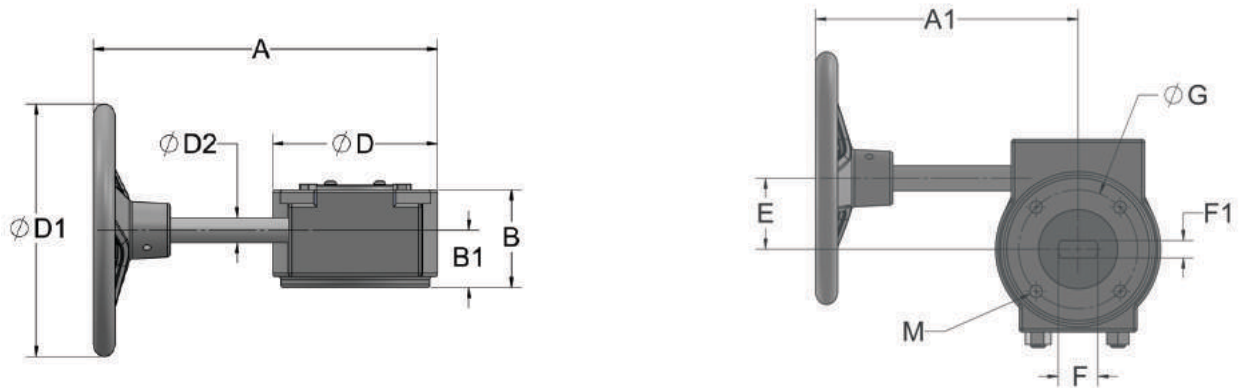
GX SERIES BUTTERFLY VALVE DIMENSIONS



Valve Size	A	B	F	F1
2"-3"	9	.86	.56	.44
4"	11	.86	.64	.44
5"	11	.86	.88	.44
6"	11	.86	1.00	.44
8"-11"	15	1.15	1.13	.75

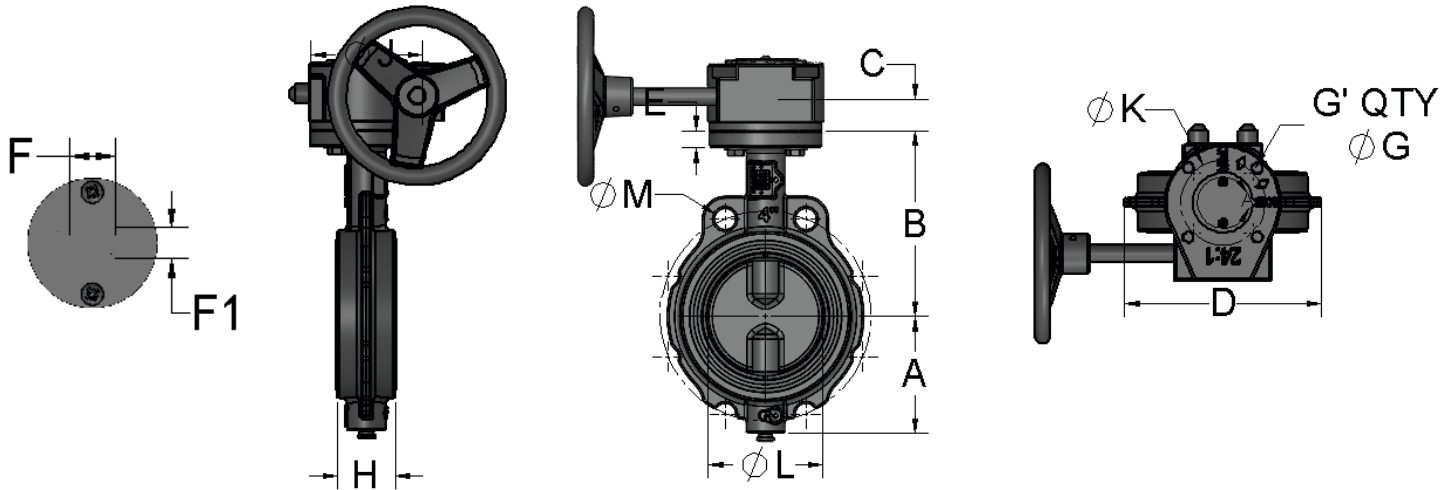


Valve Size	Extension Length A	B	C	D	E	F	F1	G	H
2" - 6"	24,36,48,60,72	.54	1.00	4	1.88	1.00	.44	3	.41
8" - 12"	24,36,48,60,72	.75	1.50	6	2.38	1.13	.75	5	.53



Valve Size	A	A1	B	B1	D	D1	D2	E	F	F1	G	M
2" - 3"	9.75	7.69	2.44	1.42	4.13	5.75	.63	1.88	1.00	.44	3	3/8"-16
4" - 6"	9.25	7.19	2.44	1.42	4.13	7.5	.63	1.88	1.00	.44	3	3/8"-16
8" - 12"	12.75	9.70	2.82	1.44	6.10	11.5	.75	2.63	1.13	.75	5	1/2"-13

MONARCH BUTTERFLY VALVE DIMENSIONS



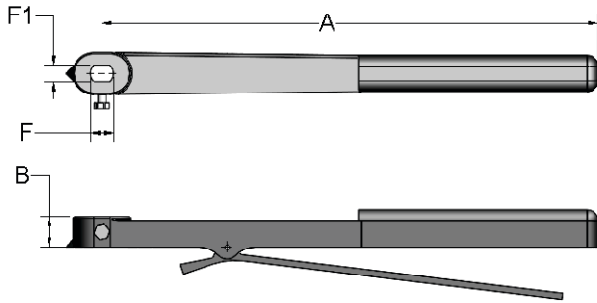
VALVE SIZE	A	B	C	D	E	F	F1	G'	G	H	J	K	L	M
3"	3.5	5.0	1.1	5.4	0.50	0.56	0.44	4	0.41	1.8	4	3	3.2	6.00
4"	4.1	6.6	1.1	6.9	0.50	0.64	0.44	4	0.41	2.1	4	3	4.2	7.50
6"	5.1	7.0	1.1	8.8	0.50	1.00	0.44	4	0.41	2.2	4	3	6.0	9.50
8"	6.4	9.6	1.6	10.9	0.68	1.13	0.75	4	0.53	2.4	6	5	8.1	11.75
10"	7.7	11.0	1.6	13.4	0.75	1.13	0.75	4	0.53	2.7	6	5	10.1	14.25
12"	9.3	12.0	1.6	16.2	0.75	1.13	0.75	4	0.53	3.0	6	5	12.1	17.00

Material Specifications Monarch Series

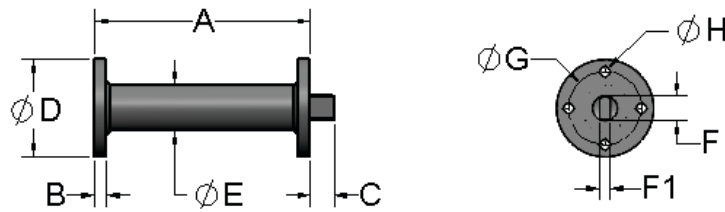
Part	Material
Body	Cast Iron
Seat	Phenolic Back Cartridge w/Buna-N Seat
Disc 2"-24"	Stainless-Steel
Disc 2"-24"	Ductile Iron
Stem Top/Bottom	Stainless-Steel
Spring Pin	Stainless-Steel
Top/Bottom Bearing	Nylon
O-Rings	Buna-N

For Monarch Series Butterfly Valves see page 60

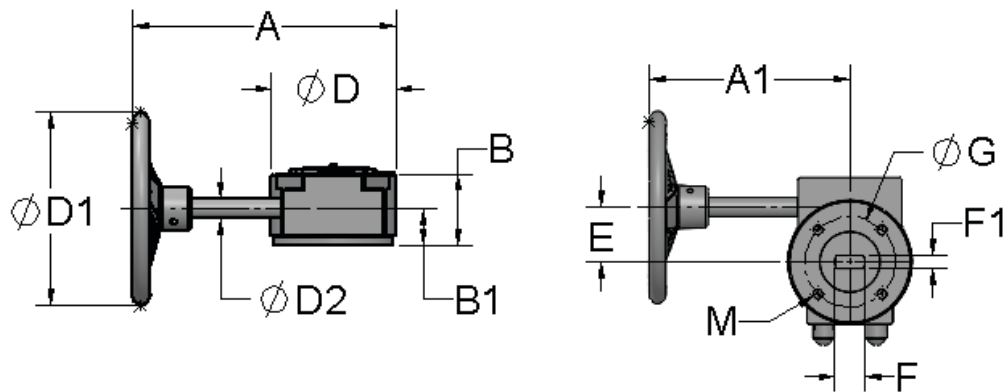
MONARCH BUTTERFLY VALVE DIMENSIONS



Valve Size	A	B	F	F1
3"-6"	11.75	1.00	0.87	0.44
8"-12"	13.75	1.15	1.13	0.75



Valve Size	Extension Length A	B	C	D	E	F	F1	G	H
2" - 6"	24,36,48,60,72	.54	1.00	4	1.88	1.00	.44	3	.41
8" - 12"	24,36,48,60,72	.75	1.50	6	2.38	1.13	.75	5	.53



Valve Size	A	A1	B	B1	D	D1	D2	E	F	F1	G	M
2"-6"	7.8	5.7	2.5	1.40	4.1	7.25	0.63	1.88	1.00	0.44	3	3/8"-16
8"-12"	11.2	8.1	3.0	1.65	6.1	11.25	0.75	3.00	1.13	0.75	5	1/2"-13

INSTALLATION AND STORAGE GUIDELINES

SEAL-MATIC® Control Valves

- ◆ Always flush pipelines before installation of the valve as debris may plug and/or damage valve.
- ◆ Arrow on valve housing **must** match actual flow direction. If there is no arrow on valve, make sure **line filter** is **upstream** in pipeline.
- ◆ Seal-Matic® valves can be mounted either vertically or horizontally, but they must be mounted to allow the control chamber to be drained in freezing conditions.

TIGHTEN FLANGE BOLTS TO 30 FT LBS TORQUE

Tighten bolts alternately 180° apart. Repeat 3 times in a star pattern.

- ◆ If the valve is to be installed and operated in ambient temperatures below freezing, consult with your nearest **XCAD USA** distributor.
- ◆ If valve is shut down during cold or freezing weather, the valve control space and control system **must be drained**.
- ◆ Connect solenoid control and pressure switch to control circuit according to local electrical codes.

Optimal Flow Rate for Electric On/Off Valves - GPM

3/4" Seal-Matic® – 5 to 40	2" 90° Seal-Matic® – 25 to 175
1" Seal-Matic® – 5 to 70	3" Seal-Matic® – 100 to 500
1 1/4" Seal-Matic® – 15 to 120	4" Seal-Matic® – 200 to 800
1 1/2" Seal-Matic® – 18 to 135	6" Seal-Matic® – 400 to 1400
2" Seal-Matic® – 25 to 175	8" Seal-Matic® – 1000 to 3500

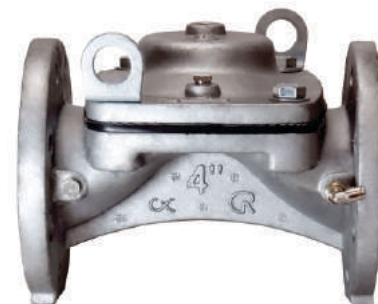
Specifications: Fixed Diaphragm Style.
Mounts between all standard flanges.

Max Pressure: 125 psi

Water Temp Range: 33°F to 130°F

Valve Length (End to End) – (Flange to Flange)

3/4" and 1" – 5 1/8"	3" – 11 7/8"
1 1/4" and 1 1/2" – 6 1/2"	4" – 12 1/4"
2" – 7 3/4"	6" – 12 3/8"
	8" – 14"



SMV4WS
Super Flow

For Reactive/Piloted Control Valves see page 64

INSTALLATION AND STORAGE GUIDELINES

X-MAX Inline Control Valves

- ◆ Always flush pipelines before installation of the valve as debris may plug and/or damage valve.
- ◆ Arrow on valve housing **must** match actual flow direction. If there is no arrow on valve, make sure **line filter** is **upstream** in pipeline.
- ◆ Tighten bolts to the recommended torque for specific size and model of valve.

4" X-MAX Inline Wafer Valve – 15 Ft. Lbs. Torque
6" X-MAX Inline Wafer Valve – 20 Ft. Lbs. Torque
8" X-MAX Inline Wafer Valve – 20 Ft. Lbs. Torque

Tighten bolts alternately 180° apart. Repeat 3 times in a star pattern.

- ◆ If the valve is to be installed and operated in ambient temperatures below freezing, consult with your nearest **XCAD USA** distributor.
- ◆ If valve is shut down during cold or freezing weather, the valve control space and control system **must be drained**.
- ◆ Connect solenoid control and pressure switch to control circuit according to local electrical codes.

Optimal Flow Rate for Electric On/Off Valves - GPM

4" XMAX Inline Wafer Valve -- 200 - 800
6" XMAX Inline Wafer Valve -- 500 - 2250
8" XMAX Inline Wafer Valve -- 1200 - 4000

Specifications:

Wafer Style.
Mounts between all standard flanges.
ANSI B16,1 125 and 250
Valve Length 4" - 7 5/8"
6" - 10 1/4"
8" - 12 1/4"



XMAX6WS
SuperMax

Max Pressure: 140 psi

Water Temp Range: 33°F to 130°F

For Reactive/Piloted Control Valves see page 67

CONTROL VALVE SIZING

Reactive Control Valve Sizing Pressure Reducing and Sustaining

Choosing the correct valve size is critical when designing a pressure reducing or sustaining reactive control valve system. Valves must be sized correctly for the reactive control function to work properly. Control valve system designers need to avoid the most common problems while designing and sizing a control valve system.

Problem #1 – “Over-Sizing The Valve”. An over-sized reactive pressure regulating control valve may lead to severe problems such as pressure cycling, cavitation and water hammering. Valves at the same diameter as the pipe may allow for simplified installation, however they often lead to severe throttling problems.

Problem #2 – Size Selection. When selecting the size of the reactive control valve from valve flow graph minimum and maximum rates, keep in mind that such graphs do not take into account pressure drop across the valve. Since both rate of flow and pressure drop determine the diaphragm/sleeve position, both must be taken into account for proper reactive valve sizing. In order to make the control valve react correctly, the diaphragm/sleeve position should be in the middle of the fully-open and fully-closed positions.

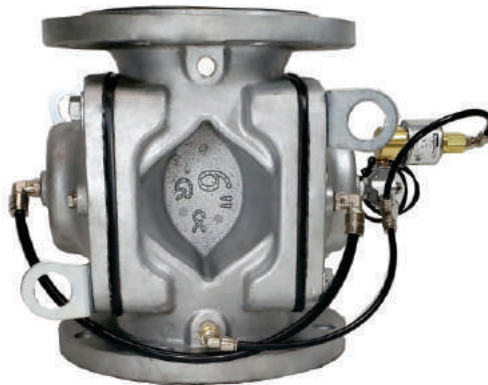
Installation Suggestions for Reactive Valve Control

To Improve Reactive Control Accuracy

- 1 - Avoid installing a pressure trap in a turbulent flow area
- 2 - Avoid air in system
- 3 - For pressure reducing control, installing the downstream pressure trap at the end of a 24” to 30” long straight pipe will help the accuracy of the reactive control
- 4 - To be the most effective, the upstream and downstream pipe length should be a minimum of five pipe diameters long

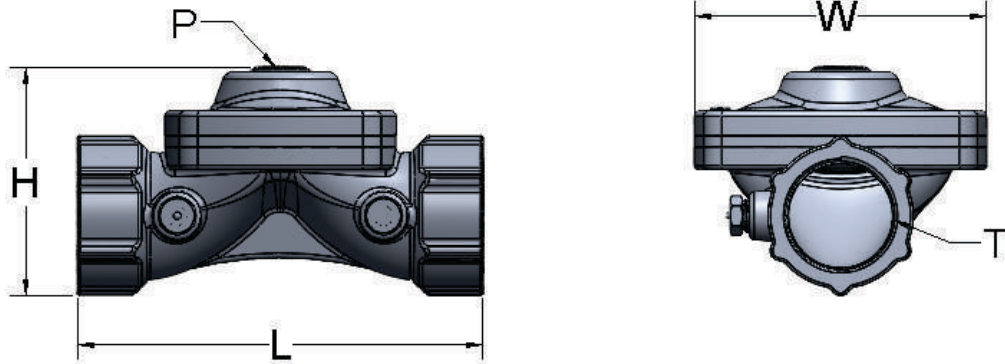
Minimum optimal flow for reactive/piloted control valve sizing (Pressure reducing/sustaining)

Seal-Matic				XMAX	
3/4”	25 gpm	2” 90°	125 gpm	4”	450 gpm
1”	28 gpm	3”	400 gpm	6”	800 gpm
1 1/4”	43 gpm	4”	500 gpm	8”	2250 gpm
1 1/2”	45 gpm	6”	800 gpm		
2”	125 gpm	8”	1500 gpm		

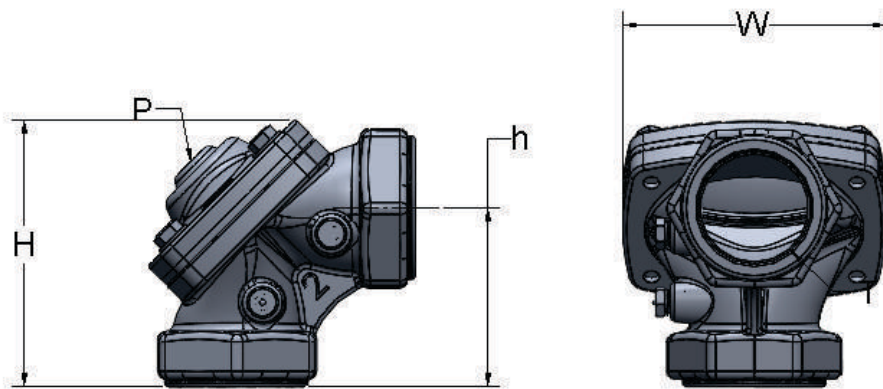


SMV6MPR
Super Flow

SMV DIMENSIONS

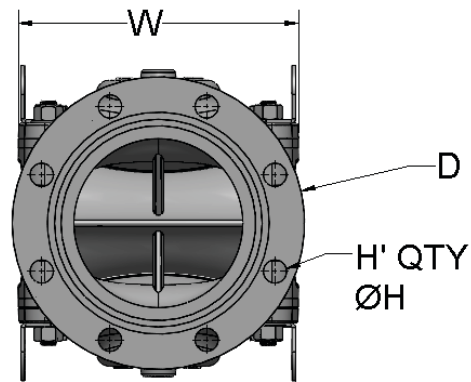
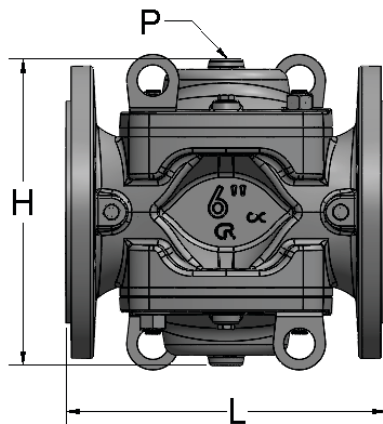
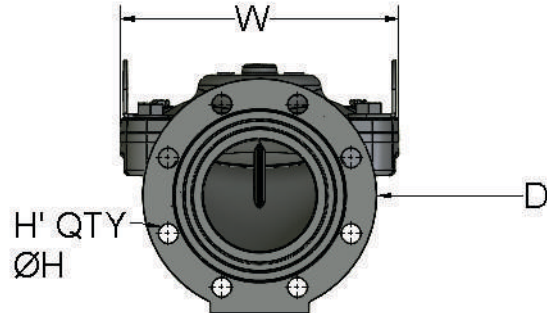
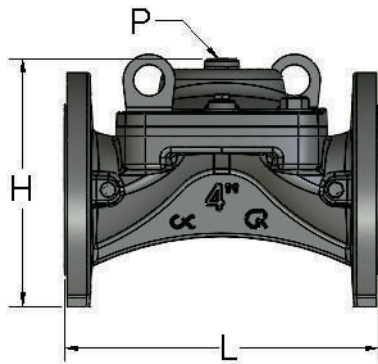


Part #	Length	Height	Bonnet Width	Thread Size	Port Size
	L	H	W	T	P
SMV75	5.1	2.7	4.0	3/4" NPT	1/4" NPT
SMV1	5.1	2.7	4.0	1" NPT	1/4" NPT
SMV1.25	6.5	3.7	4.7	1-1/4" NPT	1/4" NPT
SMV1.5	6.5	3.7	4.7	1-1/2" NPT	1/4" NPT
SMV2	7.3	4.2	5.4	2" NPT	1/4" NPT



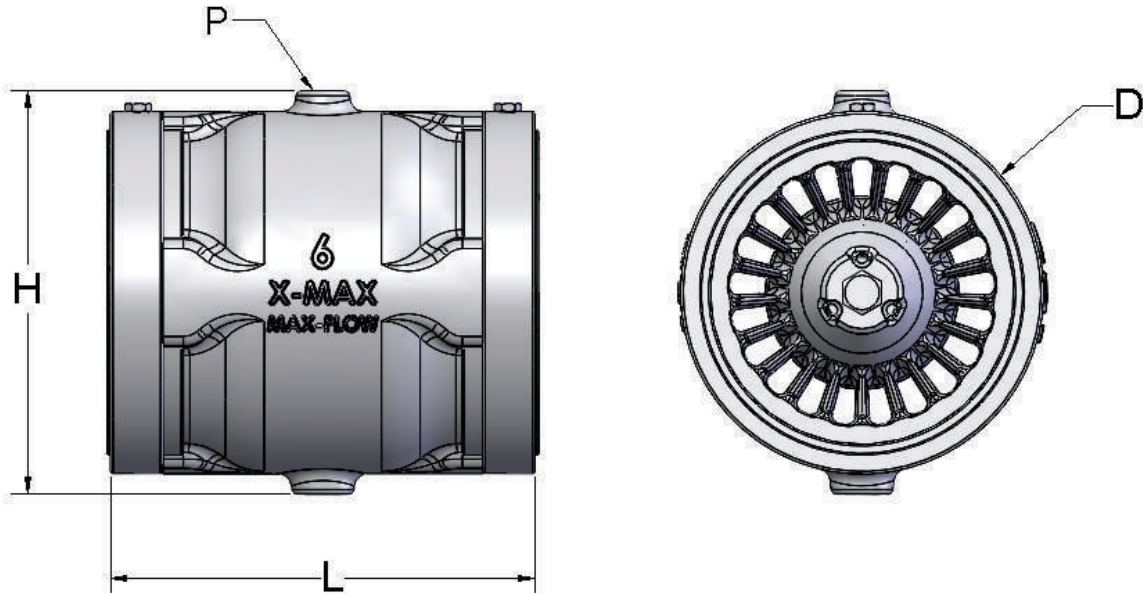
Part #	Overall Height	Center Height	Bonnet Width	Thread Size	Port Size
	H	h	W	T	P
SMV902	5.6	3.6	5.4	2" NPT	1/4" NPT

SMV DIMENSIONS



Part #	Length	Height	Bonnet Width	Flange Diameter	Bolt Qty	Bolt Hole Dia	Port Size
	L	H	W	D	H'	ØH	P
SMV3	11.7	8.4	10.6	7.8	4	3/4"	1/4" NPT
SMV4	11.9	9.4	10.6	9.0	8	3/4"	1/4" NPT
SMV6	12.1	11.8	10.6	11.0	8	7/8"	1/4" NPT
SMV8	14.0	15.7	12.0	13.5	8	7/8"	1/4" NPT

X-MAX DIMENSIONS



Part #	Length	Height	Diameter	Port Size
	L	H	D	P
XMAX4	7.8	7.2	6.5	1/4" NPT
XMAX6	10.1	9.6	8.6	1/4" NPT
XMAX8	12.1	11.9	10.9	1/4" NPT



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2024 POLICY AND CONDITIONS OF SALE

This statement of Policy and Conditions of Sales supersedes all previous Policy and Conditions as stated by **XCAD USA**, hereinafter collectively and individually referred to as the "Company". This will apply to all XCAD, Aqua Burst, Pressure Guard, X-Gate, Seal Matic and OEM made products sold by XCAD unless otherwise stated in writing.

Prices, Terms and Specifications

PRICING: Prices listed in our catalog are recommended list prices F.O.B. the "Company". Prices are subject to change without notice and shall be those in effect at time of shipment. All prices are in U.S. dollars.

DEALERS: Sales are made through authorized distributors, OEM's and/or dealers only. Possession of our catalog does not constitute an offer to sell our product. All orders are subject to acceptance by the "Company".

TAXES: The purchaser shall reimburse the seller for any sales, use, occupation, excise, or other taxes in connection with the sale, which will be charged by invoice. The purchaser will not be invoiced for tax on items that are exempt with an appropriate tax exemption certificate.

TERMS: All orders are subject to the approval and conditions of the "Company's" credit department. Payment terms are net 30 days unless otherwise specified in writing. Cash discounts, if applicable, will be stated on the invoice. Freight or other net priced items are not subject to further discount. Interest may be charged on all past due invoices at the current rate allowed by law. Any check returned for non-sufficient funds will be subject to a \$100.00 handling charge.

SPECIFICATIONS: The "Company" policy is one of continuous improvement. The "Company" reserves the right to make changes to designs or specifications without notice or incurring obligation.

CANCELLATION: Standard items may only be cancelled if request is made prior to shipment. Special or custom-made items may not be cancelled unless cancellation precedes the item being in the process of manufacture. Such cancellations will only be allowed after full costs expended in the process of manufacture have been fully reimbursed.

SECURITY INTEREST: Buyer acknowledges that the "Company" will retain a purchase money security interest in the goods sold until the purchase price has been paid in full and all other conditions of sale fully performed.

Freight, Returns and Delivery

DEALER FREIGHT ALLOWANCE: On orders equaling \$10,000 net or more, freight will be prepaid on domestic shipments (excluding X-Gate products and butterfly valves) to the first destination in the continental United States. The "Company" reserves the right to select the carrier and method of delivery. **Dealer only, does not apply to authorized distributors or OEM's.**

DAMAGE CLAIMS / SHORTAGES: Freight shortages and damage claims due to transportation shall be made directly to the transportation provider. Shipments should be carefully examined upon arrival, prior to delivery receipt being signed. If any loss or damage is evident, it should be noted on the delivery receipt. Have the driver initial such exceptions. The contents of all packages should be examined within 48 hours for concealed damage. Contact the carrier to arrange for the prompt inspection of any damaged goods. If replacement for damaged or lost items is needed, the purchaser will give the seller a new order marked "replacement for the same". The purchaser shall pay the invoices for such replacement and request a duplicate receipt to be filed with his claim against the carrier. All claims for shortages must be made within 10 days of receipt of shipment. Claims need to identify item, quantity, package list number, invoice number, and date of shipment.

RETURNS: The return of current catalog merchandise in saleable condition may be subject to a 25% restocking charge. All returns must be accompanied by a "Company" approved Return Authorization. Specials, non-current catalog items, custom fabricated or modified items will not be accepted for return. Items not listed in the current "Company" catalog or items purchased more than one year prior to the request date will not receive authorization. All returns must be shipped freight prepaid unless otherwise specified on the Return Authorization. Return parts may be subject to a rework charge. All returned merchandise will be credited to the purchaser's account unless otherwise specified on the Return Authorization.

DELIVERY: The "Company" accepts no liability for delay in delivery caused by circumstances arising beyond the control of the "Company". These circumstances include but are not limited to delays of carriers or suppliers.

Manufacturers Limited Warranty

All products sold and/or manufactured by the "Company" are warranted to be free of defects in material and workmanship for a period of one year from the date of delivery unless otherwise specified. Specific product line warranties may supercede this warranty. No warranty will extend beyond the description of goods sold on the "Company" invoice. Except as expressly provided herein, all warranties expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose or use, are hereby excluded and disclaimed. The buyer assumes all risk and liability resulting from use of products purchased. Any misuse, neglect, modifications or use for purposes not approved by the "Company" shall completely void any warranty claim. The "Company" at its sole discretion shall have the option to repair or replace, part or all of the defective product or provide full or partial refunds for same. Any warranty claim must be made in writing within the applicable warranty period and postmarked within 30 days after the discovery of the defect. Warranty does not include any installation, attorney fees or transportation costs, which must be borne by the purchaser. "Company" reserves the right to define this warranty or any other warranty of the "Company" as it sees fit.

2024 POLICY AND CONDITIONS OF SALE

XCAD USA® Standard Warranty & Disclaimer

XCAD USA® products are warranted for one year from date of original sale to be free of defective materials and workmanship when used within the working conditions and specifications for which the product was designed and under normal use and service. The XCAD USA® /company assumes no responsibility for installation, removal or unauthorized repair. The company liability under this warranty is limited only to replacement or repair of defective parts, product or part of product. The manufacturer will not be liable for any crop loss or other consequential damages resulting from any defects in design or breach of warranty. **This warranty is expressly in lieu of all other warranties, express or implied, including the warranties of merchantability and fitness for particular purposes and of all other obligations or liabilities of manufacturers.** No agent, employee or representative of the company has authority to waive, alter or add to the provisions of warranty, nor to make representations or warranty not contained herein. XCAD USA® /Company reserves the right to define this warranty or any other warranty of the "Company" as it sees fit.

XCAD USA® Extended Warranty & Disclaimer

Aqua Burst® Brass Impact 3-Year Bearing Warranty on Select Models AL30, HF-30, HF30AL

Select Aqua Burst® Brass Impact Sprinklers carry a three-year bearing limited warranty. This warranty applies to the Aqua-Burst™ brass impact sprinkler bearings and bearing components which are installed as specified and used for normal irrigation purposes. This warranty applies only to cataloged brass impact sprinkler bearings which have not been altered, converted, damaged, misused or misapplied. This warranty does not cover products adversely affected by the system into which the sprinkler bearings are incorporated; including system failure, improperly designed, installed, operated or maintained systems, or systems using water containing corrosive chemicals, electrolytes, sand, dirt, silt, rust, oil, petroleum or hard water deposits. This warranty does not cover component failures caused by use of additional lubricants such as oil, grease, anti-seize, pipe dope or any other petroleum or non-petroleum based lubricant. This warranty does not cover failure caused by lightning strikes, electrical surges, freezing or any 'Acts of God'. Bearings on, or intended for all other Aqua Burst™ brass, plastic and zinc sprinklers are not included in this extended warranty. The XCAD USA® reserves the right to define this warranty or any other warranty of the "Company" as it sees fit.

Aqua Burst™ X-Series Full/Part Circle Brass Impact 2-Year Warranty on Select Models X25ED, X25EDS, X35ED, X65ED, X65EDS, X85ED18, X85ED24, X75 Black Bird™

Select Aqua Burst™ X-Series Full/Part Circle Brass Impact Sprinklers carry a two-year extended limited warranty. This warranty applies only to X-Series Full/Part Circle sprinklers listed above which are installed as specified and are used for normal irrigation uses and purposes. This warranty does not cover products adversely affected by the system into which the sprinklers are incorporated including, system failure, improperly designed, installed, operated or maintained systems, or systems using water containing corrosive chemicals, electrolytes, sand, dirt, rust, oil, petroleum or hard water. This warranty does not cover component failures caused by use of additional lubricants such as but not limited to oil, grease, anti-seize, pipe dope or any other petroleum or non-petroleum lubricant. This warranty does not cover failure caused by lightning strikes, wind damage, electrical surge, pivot and wheel line crashes, industrial accidents, freezing or any "Acts of God". The XCAD USA® reserves the right to define this warranty or any other warranty of the "Company" as it sees fit.

Seal-Matic® Warranty and 3-Year Limited Warranty

All Seal Matic® valves and Seal Matic® OEM name plate valves are warranted to be free of defects in materials and workmanship for a period of one year or one season whichever is less from the date of delivery unless otherwise specified in writing. Specific OEM warranties may supersede this warranty. No warranty will extend beyond the description of goods sold on the "Company" invoice except as expressly provided herein. All warranties express or implied, including any implied warranty of mechanical ability or suitability for a particular purpose or use, are hereby excluded and disclaimed. The Buyer assumes all risk and liability resulting from use of "Company" products purchased. Any misuse, neglect, modifications or use for purposes not approved by standard practice of the "Company" shall be completely void of any warranty claims. The "Company" at its sole discretion shall have the option to determine whether to warranty, repair or replace, part or all of the defective product or provide full or partial refund for same. Any warranty claim must be made in writing within the applicable warranty period and postmarked within 30 days after the discovery of the defect. Warranty does not under any circumstances include any installation, attorney fees, or transportation costs which must be borne by the purchaser of "Company" product. Seal-Matic® valve diaphragms have a limited warranty for three years for replacement diaphragms only. The XCAD USA® reserves the right to define this warranty or any other warranty of the "Company" as it sees fit.

Aqua Burst® X100 End Gun™ One-Year limited Warranty with Two-Year Service Plan

XCAD USA®/Aqua Burst® X-100 End Gun™ sprinklers are warranted for one year from date of original sale to be free of defective materials and workmanship when used within the working specifications for which the product was designed and intended and under normal use and service. This warranty includes an additional three (3) year service plan from the date of purchase for repair of any non-functioning X-100 End Gun™ due to defective materials and workmanship or excessive wear when used in normal working conditions. Dated receipt with serial number required as proof of purchase. The manufacturer's liability under this warranty is limited solely to repair of defective parts and labor and the manufacturer will not be liable for any freight, crop loss or other consequential damages resulting from defects, excessive wear or breach of warranty. This warranty is expressly in lieu of all other warranties, express or implied, including the warranties of merchantability and or liabilities of the manufacturer. No agent, employee or representative of the manufacturer has the authority to waive, alter or add to the provisions of this warranty, nor make any representations or warranty not contained herein. The XCAD USA® reserves the right to define this warranty or any other warranty of the "Company" as it sees fit.

Address all warranty claims to:

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P.O. BOX 578
PAUL, ID 83347
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