

A BETTER CHOICE

xcadusa.com

XCAD USA[®]

Irrigation Innovation Through
Design, Engineering and Experience™



**2019
2020**



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 a superior product that is crafted with integrity and excellence. Our mission is to bring innovation to the irrigation industry through design, engineering and experience. Our engineering team is second to none.

Over the last twenty years, **XCAD USA®** has been devoted to building lasting relationships with our customers. Those relationships have allowed our business to grow 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 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 proud 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 the 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 the main text, the words "Torque-Driven" are written in a smaller, blue, sans-serif font, followed by a trademark symbol (™).



A BETTER CHOICE

Irrigation Innovation Through Design, Engineering and Experience™

AQUA BURST®

Torque Driven™



Multi-Composite™

Advanced Flow Nozzles™

Raven-Smart™
Technology of Modern Design™

Precision Channel Spoon™

X SERIES BRASS™ - MADE TO LAST™

AXIS™
End of Pivot Sprinkler

X100 End Gun™
Thunderbolt™

Creopluology™
The Science of Making Rain™

All **XCAD USA®** Products Are Designed and Engineered in the USA

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 removed 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™

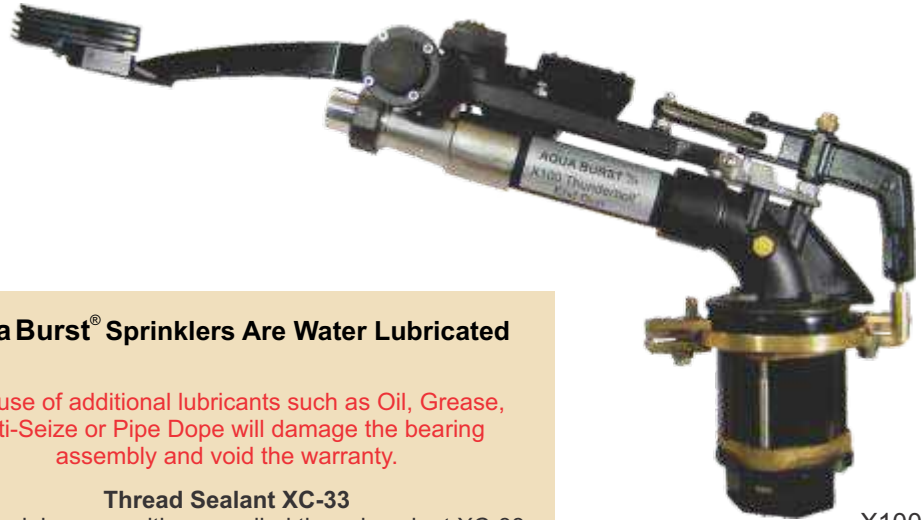


AXIS-I



AXIS-II

Torque Driven™



X10018

Aqua Burst® 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.

Thread Sealant XC-33

Most models come with preapplied thread sealant XC-33. XC-33 forms an elastic gasket for easy assembly, removal and reuse.

Teflon® tape is the only other recommended thread sealant.

Design and Engineering



X35ED



HF30

Quality Materials



AL30

Workmanship

Guaranteed



X65ED-S

Designed and Engineered in the USA

END GUNS

4-Year Limited Warranty

Designed and Built
In Rupert, Idaho, USA

X100 End Gun™ Thunderbolt™

Raven-Smart™
Technology

Built in the USA
The Original End Gun™

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



X10018

X10018 End Gun™ Thunderbolt™
sold individually

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°

Advantages

- Comes standard with both high and low force drive vanes for superior performance of small to large nozzles
- Powder-coated aluminum drive arm
- Stainless-steel arm bearing
- 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	18° End Gun
X10024	24° End Gun
X10043	43° End Gun
X10018SS	18° Stainless Steel End Gun
X10024SS	24° Stainless Steel End Gun
X100V18	18° End Gun with Valve
X100V24	24° End Gun with Valve
X100V43	43° End Gun with Valve

2" Seal Matic™ Valve Combo

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

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.

END GUNS



X100-51H

AQUA BURST® Preliminary Performance Charts

Single Straight Bore Nozzle

Radius - GPM



X100-51L

X10018

	High Force Large Drive Vane X100-51H						Factory Installed Low Force Small 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

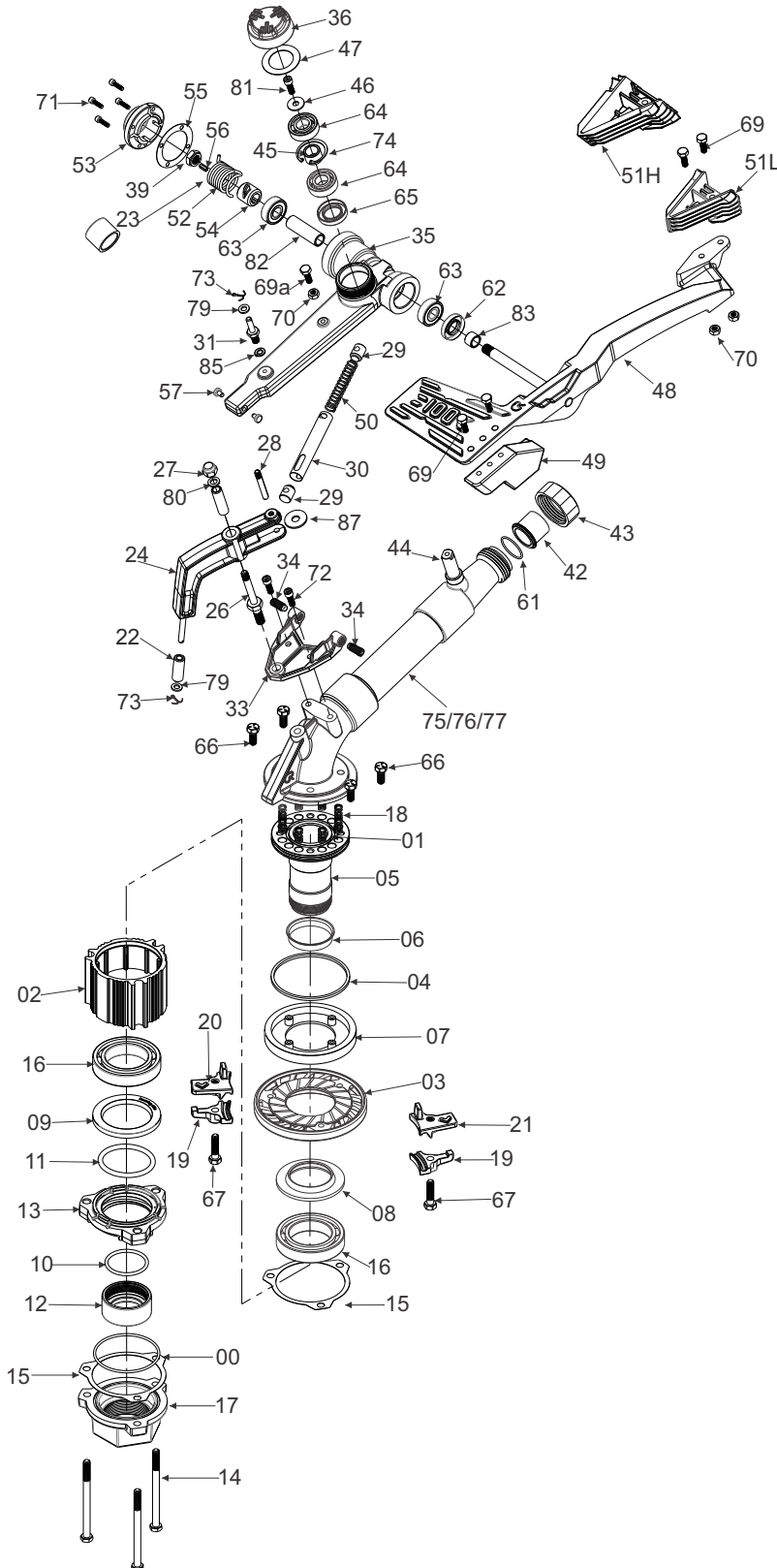
	High Force Large Drive Vane X100-51H						Factory Installed Low Force Small Drive Vane X100-51L						
PSI	.4" Nozzle	.45" Nozzle	.5" Nozzle	.55" Nozzle	.6" Nozzle	.65" Nozzle	.70" Nozzle	.75" Nozzle	.80" Nozzle	.85" Nozzle	.90" Nozzle	.95" Nozzle	1." Nozzle
40	79 - 28	85 - 37	91 - 45	96 - 55	101 - 65	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

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 GUN REPLACEMENT PARTS

X100 End Gun™ Parts



X100-00	Base Nut O-Ring -150
X100-01	O-Ring -226
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
X100-09	Lower Bearing Seal
X100-10	O-Ring -224
X100-11	O-Ring -331
X100-12	Chromed Stem Nut
X100-13	Bearing Base Carrier
X100-14	Bearing Hex Bolt
X100-15	Housing Gasket
X100-16	Ball Bearing 6010
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
X100-51L	Low Force Drive Vane
X100-51H	High Force Drive Vane
X100-52	Arm Spring, SS
X100-53	Arm Spring Cover
X100-54	Spring Pawl, SS
X100-55	Spring Cover Gasket
X100-56	Pawl Key, Brass
X100-57	Impact Button, Brass
X100-61	Nozzle O-ring -025
X100-62	Arm Seal
X100-63	Arm Bearing 6201, SS
X100-64	Shift Arm Bearing 6202, SS
X100-65	Shift Arm Seal
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

END GUN PARTS



X100BA

X-100 Complete Replacement Bearing

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

X100BA

Complete Bearing Assembly

X100BASS

Heavy-Duty Stainless Steel Bearing Assembly



X100BASS

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

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

2019/2020

AXIS END OF PIVOT SPRINKLER

AQUA BURST Viscous™ Technology

Features

- First 'In the Turbine' viscous bearing sprinkler
- Double pin nozzle
- 15 to 50 psi working pressure
- Use in conjunction with X100 End Gun sprinkler for added acreage and improved coverage
- Large range of nozzle sizes from 18 gpm to 84 gpm
- 1 1/4" npt base
- Use in conjunction with Seal-Matic® 1 1/4" valve

Built in the USA



AXIS-I-G
Upright Style

AXIS-I

End of Pivot Sprinkler
includes nozzle

AXIS-I-P
AXIS-I-R
AXIS-I-Y
AXIS-I-G
AXIS-I-B

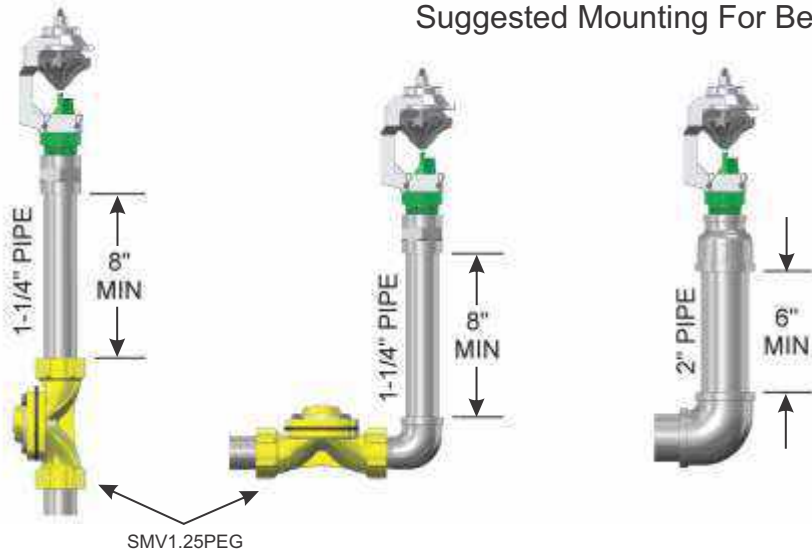
Axis-I Sprinkler W/Purple Nozzle
Axis-I Sprinkler W/Red Nozzle
Axis-I Sprinkler W/Yellow Nozzle
Axis-I Sprinkler W/Green Nozzle
Axis-I Sprinkler W/Blue Nozzle

AXIS-I Replacement Nozzle

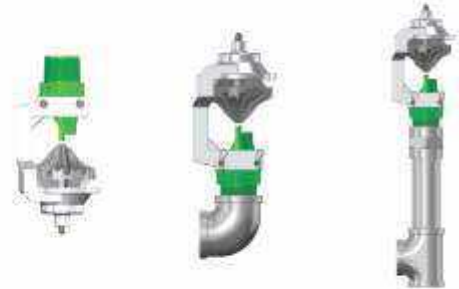
NOZAX-P
NOZAX-R
NOZAX-Y
NOZAX-G
NOZAX-B

Purple Nozzle Only
Red Nozzle Only
Yellow Nozzle Only
Green Nozzle Only
Blue Nozzle Only

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	P	R	Y	G	B
	Purple	Red	Yellow	Green	Blue
15	40 - 18.3	41 - 27.7	42 - 36.6	42 - 45.2	44 - 52.0
20	42 - 20.8	44 - 31.8	45 - 41.8	45 - 51.7	48 - 59.7
25	45 - 23.4	48 - 35.5	48 - 46.7	49 - 57.7	52 - 66.7
30	46 - 25.8	49 - 38.9	50 - 51.1	50 - 63.1	53 - 73.2
35	47 - 27.9	50 - 42.1	51 - 55.1	53 - 68.2	54 - 79.0
40	47 - 30.0	50 - 44.9	51 - 58.8	54 - 72.7	55 - 84.3

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.

AXIS END OF PIVOT SPRINKLER



AXIS-II

Inverted Style

AQUA BURST Viscous™ Technology

Features

- ◆ New 'V-Torque' motor
- ◆ 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 conjunction with Seal-Matic® 1 1/4" valve

AXIS-II

End of Pivot Sprinkler

includes nozzle set

AXIS-II

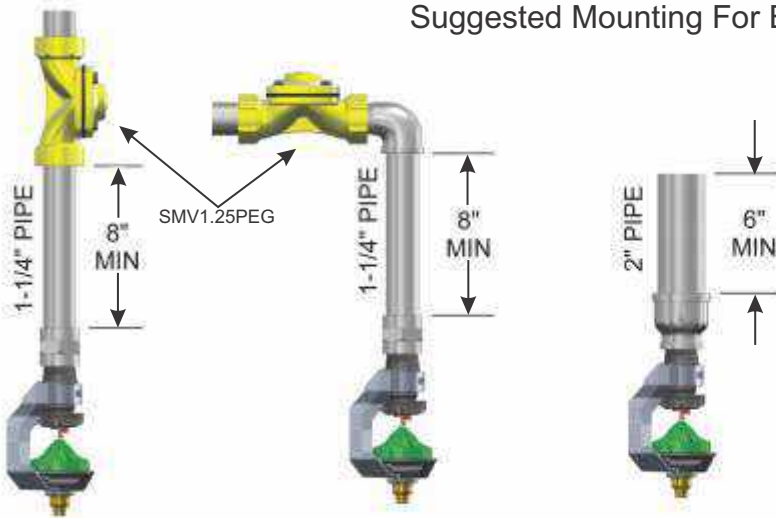
Axis-II Sprinkler with Nozzle Set

AXIS-II-NOZ

Axis-II 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	15	18	21
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.

MULTI-COMPOSITE™ 1/2" BASE IMPACT SPRINKLER

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

Raven-Smart™ Technology



THREE-YEAR
LIMITED BEARING
WARRANTY

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
- ◆ Wide range of brass nozzles
- ◆ 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)

3/4" MULTI-COMPOSITE™ IMPACT SPRINKLER

Raven-Smart™

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

Raven-Smart™ Technology



THREE-YEAR
LIMITED BEARING
WARRANTY

AL30

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

Features

- ◆ Full-circle impact – 26° trajectory
- ◆ 3/4" male NPT base
- ◆ Single (AL30) or dual nozzle (AL30D)

Advantages

- ◆ Anodized diecast 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**

Sprinkler Head Does Not Include Nozzle

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.

1/2" BRASS IMPACT SPRINKLER

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



THREE-YEAR
LIMITED BEARING
WARRANTY

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**

HF20-18 100 /case 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 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 IMPACT SPRINKLER

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



Features

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

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
- ♦ **Preamsembled with XC-33 thread sealant**

Sprinkler Head Does Not Include Nozzle

HF30

60/case

HF30 (single)
HF30-C (single w/chrome bearing)
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™



Features

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

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**

Sprinkler Head Does Not Include Nozzle

HF30AL

60/case

HF30AL (single)

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.

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

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

Raven-Smart™
Technology



**TWO-YEAR
WARRANTY**

60/case
X25ED-S

Standard Spoon 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

- ◆ 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

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



**TWO-YEAR
WARRANTY**

60/case
X25ED

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

- ◆ 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

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

X SERIES BRASS - MADE TO LAST™

3/4" Adjustable Brass Impact Sprinkler



Features

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

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**

Sprinkler Head Does Not Include Nozzle

**TWO-YEAR
WARRANTY**

X35ED

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

X SERIES BRASS - MADE TO LAST™

1" Adjustable Brass Impact Sprinkler



**TWO-YEAR
WARRANTY**

X65ED-S

Features

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

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**

Sprinkler Head Does Not Include Nozzle

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.

2019/2020

1 1/4" BRASS IMPACT SPRINKLERS

X SERIES BRASS - MADE TO LAST™



X85ED18

Features

- ◆ Full or part-circle impact
- ◆ 18° or 24° trajectory
- ◆ 1 1/4" male NPT base
- ◆ Dual nozzle - NOZ125 Series

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 spoon 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
- ◆ **Preamsembled with XC-33 thread sealant**

Sprinkler Head Does Not Include Nozzle

**TWO-YEAR
WARRANTY**

sold individually

X85ED18

X85ED24

X85F24 (full circle)



X85ED24

X85ED24 Dual Nozzle

AQUA BURST® Performance Chart

Normal Stream Height At 14' Above Nozzle at Normal Pressure

Single Straight Bore Nozzle w/Spreaders

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 19

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.

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.

IMPACT SPRINKLER NOZZLES

Better Water Distribution Without Clogging

- ◆ Use where high performance and distribution is needed
- ◆ Color-coded for easy identification
- ◆ Built-in no-clog vane straightener for maximum reach
- ◆ Made with high-quality wear-resistant plastic
- ◆ Hand-tight fit for easy in and out installation
- ◆ Fits 3/4" Aqua Burst®, Rain Bird™, and Nelson™ (hand tighten)

Advanced Flow Nozzles™ w/Built-In No-Clog Vane Straightener

1/4" NPT Straight-Bore Nozzle

NOZPL75-18	Purple	1/8"
NOZPL75-964	Grey	9/64"
NOZPL75-532	Blue	5/32"
NOZPL75-1164	Yellow	11/64"
NOZPL75-316	Red	3/16"



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"
NOZ1-14	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"
NOZ125-38	3/8"
NOZ125-1332	13/32"
NOZ125-716	7/16"
NOZ125-1532	15/32"

NOZ125-12	1/2"
NOZ125-1732	17/32"
NOZ125-916	9/16"
NOZ125-58	5/8"
NOZ125-1116	11/16"

1-866-438-9223
1-208-438-9223
Email: xcad@pmt.org
xcadusa.com

AQUA BURST

2019/2020

IMPACT SPRINKLER NOZZLES/REPLACEMENT PARTS

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

Brass Spreader Nozzle

1/8" NPT thread fits Aqua Burst®,
Weathertec™ and Storm™



NOZ-BKSPRD18

1/8" NPT

NOZ-BKSPRD332

3/32" NPT

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

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

SELF LEVELING ELBOW/WATERMASTER BEARING

**Built To A
Higher Standard**



LEV75

**More Weight
For Your Dollar**

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		

Standard



HYB1

Heavy-Duty



HYB1-CH

AQUA BURST 

Water Master Hydro Bearing

Replacement Bearing for Water Master

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

IMPACT SPRINKLER ACCESSORIES

AQUA BURST® YARD ART



SQUIRTLE.75

Squirtle Yard Sprinkler

SQUIRTLE.75

3/4" Hose Thread
 Can be strung in series



ST75H



ST50B

Sprinkler Stand

ST50B	1/2" Butterfly
ST50H	1/2" Heart
ST75B	3/4" Butterfly
ST75H	3/4" Heart



X-CART.5
 X25ED included

3/4" Hose Thread

X-Cart Sprinkler Cart

Features

- ◆ **3/4" Heavy-duty hose connector**
- ◆ Includes multi-composite X25ED full/part-circle sprinkler
- ◆ Epoxy powder coated construction
- ◆ E-Z fold-up design for convenient storage

Fits 1/2" base impact sprinkler

X-CART.5

1/2" Base

Key-Lock Coupler and Key



KLC1-C



KLC1-K



KLC75-C



KLC75-K

KLC75-C
 KLC75-K
 KLC1-C
 KLC1-K

3/4" NPT Threads
 3/4" NPT Threads
 1" NPT Threads
 1" NPT Threads



Innovation Through Design, Engineering and Experience™

A BETTER CHOICE

xcadusa.com



X-Max Valve™

Black Max™
Torque-tough Coupler



Pressure Guard™

Pressure Lock™ (Patent Pending)

SEAL  **MATIC®**

X-GATE™ Canal Gates

X-Spandable™
Expandable Drive Line

Raven Smart™
Your Future In Irrigation

All **XCAD USA®** Products Are Designed and Engineered in the USA

PIVOT ACCESSORIES

Torque-Tough™

BLACK MAX™ BX™ COUPLER

Raven Smart™
Technology of Modern Design

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

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

PDLTTBM

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

PDLTTBM-SL

Replacement Shaft Lock

PDLDISC-BM

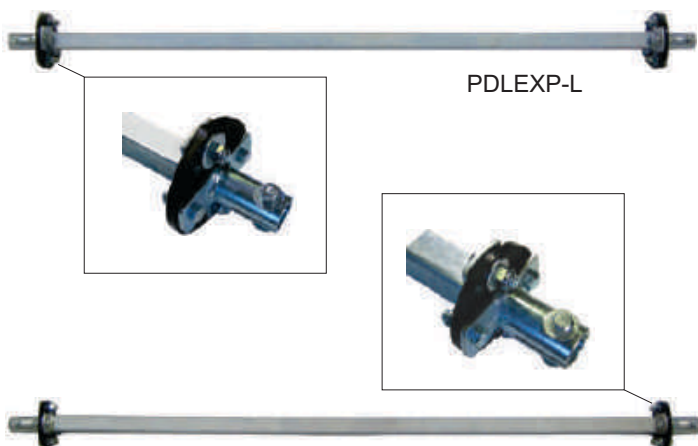
Replacement In-Flex™ Disc

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

2019/2020

PIVOT ACCESSORIES



PDLEXP-L

PDLEXP-S

Small Disc Fits Under Most Drive Line Shields



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



PDLDISC-L

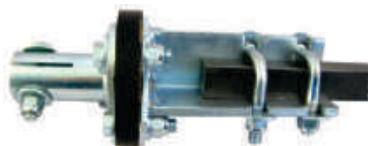


PDLDISC-S

Replacement Super Flex Disc

'Leave the Rubber on the Road'

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



PDLVBLT

Heavy-Duty V-Bolt Universal U-Joint

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

PDLVBLT	Universal 7/8" or 3/4" 12/Box
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PVTRNG

Weld-In Pivot Rim Repair Ring

PVTRNG	Universal Style 8/Box
--------	--------------------------

PIVOT ACCESSORIES -- PIVOT BOOSTER PUMPS

Highest Specifications In The Industry

Standard Stainless-Steel Impeller



BP2HP-L

Motor Made in USA



BP2HP-B

Built in the USA

2-HP Pivot Booster Pump

2 1/2" suction x 2" discharge

BP2HP-L	Leeson 2-HP, 130 GPM w/Stainless Impeller - Domestic
BP2HP-LI	Leeson 2-HP, 130 GPM w/Stainless Impeller - Import
BP2HPLWOVC	Leeson Domestic 2-HP, 130 GPM, Stainless Impeller, Less Volute Case
BP2HPLIWOVC	Leeson Import 2-HP, 130 GPM, Stainless Impeller, Less Volute Case
BP2HP-B	Bluffton 2-HP, 130 GPM w/Stainless Impeller
BP2HPBWOC	Bluffton 2-HP, 130 GPM, Stainless Impeller, Less Volute Case

(See Pump Curve, Page 28)

Pivot Booster Pump Components

BPVC	Volute Case
BPMBKT	Motor Bracket
BPIMP-SS	Stainless-Steel Impeller
BPMGSKT	Mylar Motor Gasket
BPCGSKT	Paper Motor Case Gasket
BPIMPSPC2	Impeller Spacer (Leeson)
BPIMPSPC3	Impeller Spacer (Bluffton)
BPSEAL	Shaft Seal

All Parts Are Interchangeable With
Berkley Model #C2MPS Booster Pumps



BPM2HP-L



BPM2HP-B

Specifications

Leeson Model	#112991
Bluffton Model	#1313007404
Leeson Frame	56CZ
Bluffton Frame	56J
Phase	Three
Insul. Class	F4
Serv. Factor	1.5
Hertz	60
RPM	3450
Volts	460
Bearings	6203/6205

Irrigation Booster Pump Motors

2-HP (TEFC)

Thermally Protected

BPM2HP-L	Leeson Domestic 2-HP, 130 GPM Motor Only
BPM2HP-LI	Leeson Import 2-HP, 130 GPM Motor Only
BPM2HP-50L	Leeson Domestic 2-HP 50hz, 130 GPM Motor Only
BPM2HP-B	Bluffton Domestic 2-HP, 130 GPM Motor Only

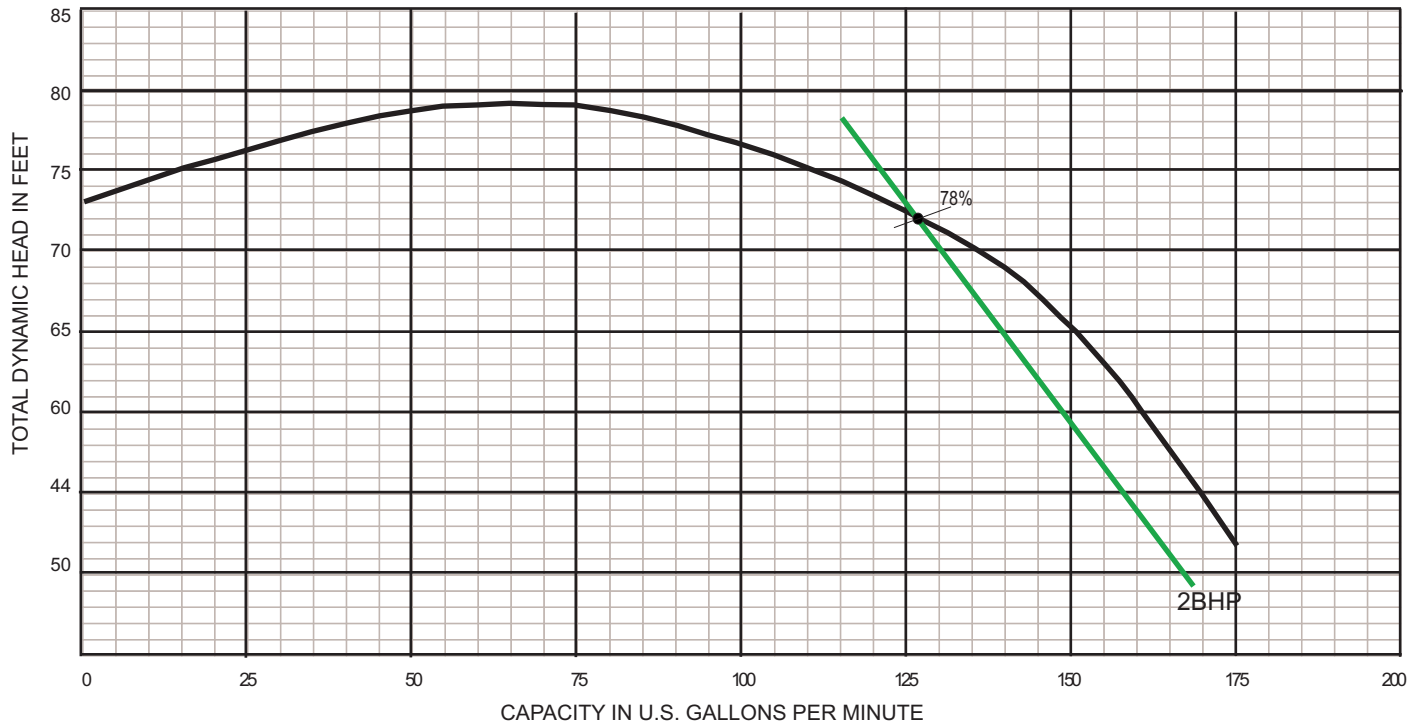
Motor Fits Berkley Model #C2MPS Booster Pump
and Paco Model #2050-1 Booster Pump

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



XCAD USA® Pivot Booster Pumps
are engineered and built in Idaho
using only the highest quality
stainless steel impellers.
We take pride in our workmanship.



**Built
in the
USA**

RISER VALVE PRODUCTS



VOE4X3



VOE4X4



VOEST4X3



VOEST4X4



VOEST4X3X3



VOEST4X4x4

Valve Opening Elbows

VOE4X3	4" x 3" Aluminum VOE 3 per box
VOEST4X3	4" x 3" Galvanized Steel VOE 3 per box
VOE4X4	4" x 4" Aluminum VOE 2 per box
VOEST4X4	4" x 4" Galvanized Steel VOE 2 per box
VOEST4X3X3	4" x 3" x 3" Galvanized Steel VOE 3 per box
VOEST4X4X4	4" x 4" x 4" Galvanized Steel VOE 3 per box

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
- ◆ 1/2" Stainless steel shafts

Clamps



6RLC



WHLC

4RLC	4" Ring Lock Clamp	16 per box
6RLC	6" Ring Lock Clamp Fits Wade Round Wheel Line Coupler and Most 6" Ring Lock Couplers	10 per box
WHLC	5" Wheel Line Clamp Heavy Duty Western Style	10 per box
8RLC	8" Ring Lock Clamp	10 per box



VALVE OPENING ELBOW REPLACEMENT PARTS

VOE Replacement Components

Features

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



4RLVOE



VOEHDL34



VOEHDLST34

4RLVOE

4" VOE Clamp
16 per box

VOEHDL34

3/4" Aluminum Handle
50 per box

VOEHDLST34

3/4" Steel Handle
50 per box

VOESHFT34

3/4"x10" Zinc-Plated Shaft
40 per box

VOECLT34

3/4" Brass Connection Clutch
60 per box

VOESEAL34

3/4" Chevron Seal

VOESEAL58

5/8" Chevron Seal

VOEHDL58

5/8" Aluminum Handle
50 per box

VOEHDLST58

5/8" Steel Handle
50 per box

VOESHFT58

5/8"x10" Zinc-Plated Shaft
50 per box

VOESHFTSS58

5/8"x8" **Stainless-Steel** Shaft

VOECLT58

5/8" Brass Connection Clutch
100 per box

VOECLTGR34

3/4" Receiver Gheen-style
100 per box

VOECLTGR58

5/8" Receiver Gheen-style
40 per box

VOECLTGS34

3/4" Stem Gheen-style
100 per box

VOECLTGS58

5/8" Stem Gheen-style
40 per box



VOESHFT34



VOECLT34



VOESEAL34



VOESEAL58



VOEHDL58



VOEHDLST58



VOESHFT58



VOESHFTSS58



VOECLT58



VOECLTGR34



VOECLTGR58



VOECLTGS34



VOECLTGS58

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

Threaded Aluminum
Riser Valve Stubs



ALVSC43



ALVSC44



ALVBRSP



ALVBRSP-L



ALVBRSP-R



ALVBRSP-H

ALVSC43SS	4" X 3" Stainless-Steel Stem
ALVSC44SS	4" X 4" Stainless-Steel Stem
ALVSC43	4" x 3" Plated Stem
ALVSC44	4" x 4" Plated Stem
ALVBRSP	Replacement Brass Spider (Wade-Style)
ALVBRSP-H	Weld-in Replacement Spider-Heavy
ALVBRSP-L	Weld-in Replacement Spider-Standard
ALVBRSP-R	Weld-in Removable Spider

Features

- ◆ Heavy-duty cast aluminum body
- ◆ Cast-in-place, threaded brass insert on ALVSC43 and ALVSC44
- ◆ Available with either plated zinc or stainless-steel stems
- ◆ Universal rubber cap

Riser Valve Stems

SUPERIOR THREAD QUALITY
HEAVY-DUTY PLATING



UNVSPS
Plated



UNVSTS
Stainless Steel



UNVRRBS
Brass



UNVPS8TPI
Plated

UNVSPS	6 3/4" x 5/8" 7TPI Plated 70/Box
UNVSTS	6 3/4" x 5/8" 7TPI Stainless 70/Box
UNVRRBS	5" x 5/8" 8 TPI Brass (Redi Rain)
UNVPS8TPI	6 3/4" X 5/8" 8 TPI Plated (Shur Rain/Felco) 70/Box

Rubber Valve Stem Caps



UNVSRC

UNVSRC

4" Universal Cap
50/Box

RISER VALVE PRODUCTS

3" Hand Line Fittings



EPS3



EPS4



EP3



HOOK3



HOOK-S



BL3-ASSY



HLLP3



HLPE3



HLWO3

EPS3	3" Universal Steel Hook & Latch End Plug (Pierce-type) 12 per box
EPS4	4" Universal Steel Hook & Latch End Plug 12 per box
EP3	3" Universal Aluminum Hook & Latch End Plug 18 per box
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 12 per box
BL3-ASSY	3" Universal Band & Latch Assembly
HLLP3	3" Universal Hook & Latch 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)

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



GASKETS/PRESS SLEEVES/HOSE

Rubber Coupler Gaskets

RCG-3RFR	3" Lake/Rain For Rent Style	RCG-3WD	3" Wade Style
RCG-4RFR	4" Lake/Rain For Rent Style	RCG-4.5WD	4.5" Wade Style
		RCG-5WD	5" Wade Style
RCG-3RB	3" Round Back Pierce Style		
RCG-4RB	4" Round Back Pierce Style	RCG-4.5WST	4.5" Western Style

EZ-Press™
Galvanized Steel Press Sleeves



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

150 PSI Lay Flat Hose



HR150-1.5	1 1/2" Lay Flat Hose
HR150-2	2" Lay Flat Hose
HR150-3	3" Lay Flat Hose
HR150-4	4" Lay Flat Hose

WHEEL LINE COUPLERS

Heat-Treated Aluminum Wheel Line Torque Couplers



RWTCB5



RWTC5



SWTCB5



SWTC5



SWC5

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



WSTCB5



WSTC5

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



RWTC5-S

Wheel Line Torque Coupler Sets

RWTC4-S	Includes RWTC4, RWTCB4, Gasket, WSSD and 6RLC
RWTC5-S	Includes RWTC5, RWTCB5, Gasket, WSSD and 6RLC
SWTC4-S	Includes SWTC4, SWTCB4, Gasket, WSSD and SWC4
SWTC5-S	Includes SWTC5, SWTCB5, Gasket, WSSD and SWC5
WSTC4-S	Includes WSTC4, WSTCB4, Gasket, FDC78 and WHLC
WSTC5-S	Includes, WSTC5, WSTCB5, Gasket, FDC78 and WHLC

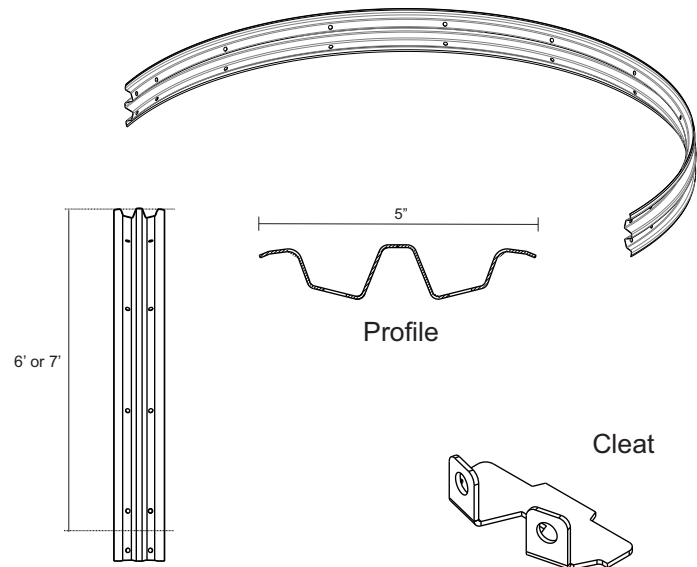
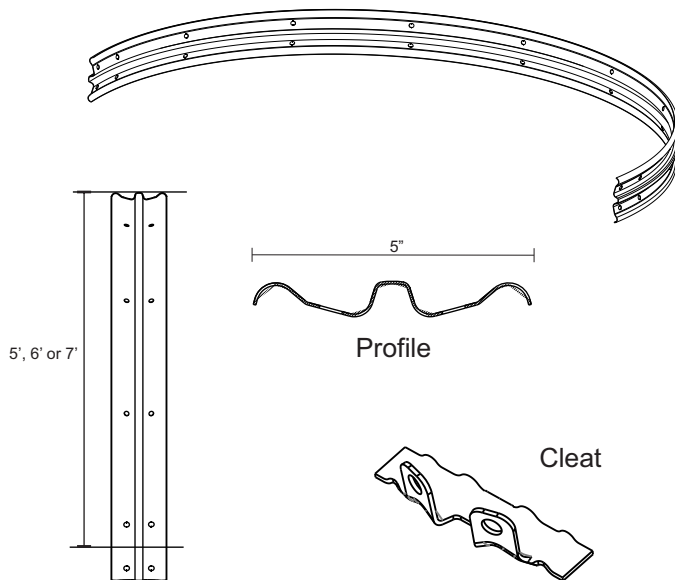
2019/2020

WHEEL LINE WHEELS

Built in the USA

WESTERN, AM, GHEEN STYLE

WADE STYLE



Wheel Half Rim

2 ea required per wheel

WLWR-WST-5	5' Western, AM, Gheen Style
WLWR-WST-6	6' Western, AM, Gheen Style
WLWR-WST-7	7' Western, AM, Gheen Style

Wheel Half Rim

2 ea required per wheel

WLWR-W-5	5' Wade Style
WLWR-W-6	6' Wade Style
WLWR-W-7	7' Wade Style

Wheel Spoke

	Wheel Size	Hub Size	Spoke Length	Spokes per wheel
WLWS-26	5'	4"	27 1/4"	16
WLWS-27	5'	5"	26 7/8"	16
WLWS-30	6'	4", 5"	30 1/2"	16
WLWS-37	7'	4", 5"	37"	20

Wheel Spoke

	Wheel Size	Hub Size	Spoke Length	Spokes per wheel
WLWS-30	6'	4", 5"	30 1/2"	16
WLWS-37	7'	4", 5"	37"	20

Wheel Hub

WLWH-4	4"
WLWH-5	5"

Wheel Hub

WLWH-4	4"
WLWH-5	5"

Cleat

WLC-WST	Western, AM, Gheen Style
---------	--------------------------

Cleat

WLC-W	Wade Style
-------	------------

AUTOMATIC DRAINS

Universal 3-piece Design Eliminates Need for Jam Nut



FDC78



FDI78



FDR78



FDSN78

Drain-Fast™ Flapper Drain

High-Quality Zinc Construction

FDC78
FDI78
FDR78
FDSN78

Complete Flapper Drain
Threaded Insert
Rubber Flapper
Splash Nut

Heavy-Duty Star Drain



SDMBC-1



SDMB-1



SDMC-1



SDRS-1

Star Drain™

High-Quality Zinc Construction
(1" Male NPT)

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

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

Spring Drain™

High-Quality Zinc Construction

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

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

V-Drain™

1" NPT Replacement Drain
for Valley Pivot Systems

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

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

Converts Mushroom-Type to Star-Drain Type

Easy External Installation



ZDCOMP



ZDGROM

ZDBASE



SDRS-1

SDMC-1



ZDCOMP
ZDBASE
ZDGROM
ZDBGS
SDMC-1
SDRS-1

Z-Drain™

7/8" Hole Replacement Drain
For Lindsay Pivot Systems

Complete Drain Assembly
Base
Rubber Grommet
Base & Grommet Set
Metal Cap
Neoprene Rubber Star Gasket

MULTI-FUNCTION AIR VENT

Air Vacuum and Air Relief

AIR-O-MAX™

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

Features

- ◆ 1", 1.25" and 2" NPT
- ◆ Built entirely with corrosion resistant materials
- ◆ Glass-filled nylon body and base
- ◆ Polypropylene float
- ◆ Aerodynamic design resists blowing closed
- ◆ Working pressure up 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

X-SERIES™

Air Vent/Vacuum Relief Valves

AVP75	3/4" Plastic Air Vent
AVP1	1" Plastic Air Vent
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**

Continuous Acting Air Vents



AVCA3

AVCA2	2" Aluminum
AVCA3	3" Aluminum
AVCA4	4" Aluminum

Features

- ◆ Continuous Acting Air Vent/Vacuum Relief
- ◆ Cast iron base
- ◆ Exhausts large volumes of trapped air from pipelines
- ◆ Provides continuous air release during system operation
- ◆ Aluminum body with plastic float
- ◆ 120 psi max

Built in the USA



PIPELINE SAFETY PRODUCTS

Superior Industry Quality
Pressure Lock™



PRV2YBA



PRV4YBA

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"
- ◆ Brass linear bearing to ensure smooth function
- ◆ Laminated Teflon seat gasket prevents seat sticking even after long periods of inactivity
- ◆ Cast iron base, stainless stem, painted spring
- ◆ Available in four spring configurations to meet varied pressure and surge requirements
- ◆ Available as either field or factory set
- ◆ **Pressure Guard™** pressure relief valves are designed for years of dependable, reliable service
- ◆ NRCS cost share approved

Size	Pressure Range	Spring Color	For Factory Preset (Add 'A' to Part#, ie. PRV2GA)
2" Threaded NPT	0-25	Gray	PRV2G
	10-65	Yellow	PRV2Y
	45-85	Black	PRV2B
	85-150	Yellow/Blue*	PRV2YB
2.5" Threaded NPT	0-25	Gray	PRV2.5G
	10-65	Yellow	PRV2.5Y
	45-85	Black	PRV2.5B
	85-150	Yellow/Blue*	PRV2.5YB
3" Threaded NPT	0-25	Gray	PRV3G
	10-65	Yellow	PRV3Y
	45-85	Black	PRV3B
	85-150	Yellow/Blue*	PRV3YB
4" Threaded NPT	0-25	Gray	PRV4G
	10-65	Yellow	PRV4Y
	45-85	Black	PRV4B
	85-150	Yellow/Blue*	PRV4YB

XCAD USA® recommends that *85 -150 PSI set takes two springs, yellow and blue
For Individual PRV Parts, Contact XCAD

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

PIPELINE SAFETY PRODUCTS

Pressure Guard™



ISPRV3

3" Internal Spring Pressure Relief Valve

(Internal Spring Surge Plug)
5 per box

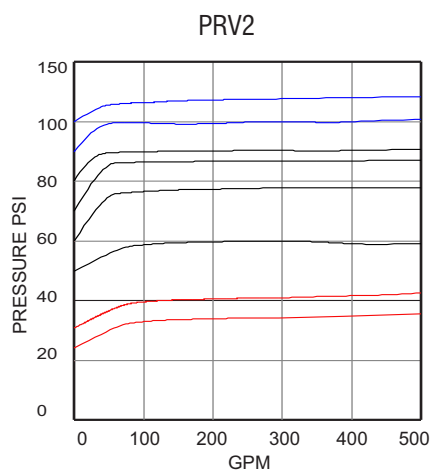
ISPRV3

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 100 psi
- ◆ Replaceable rubber seat
- ◆ Stainless-steel stem and brass bushings for long life
- ◆ Splash guard for ease of adjustment

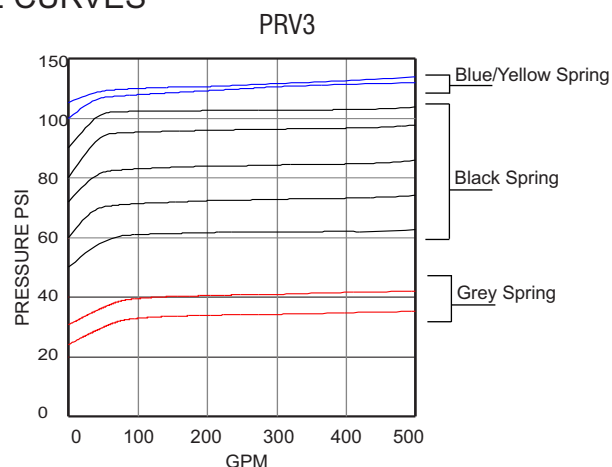
2" AND 3" PRV DISCHARGE CURVES



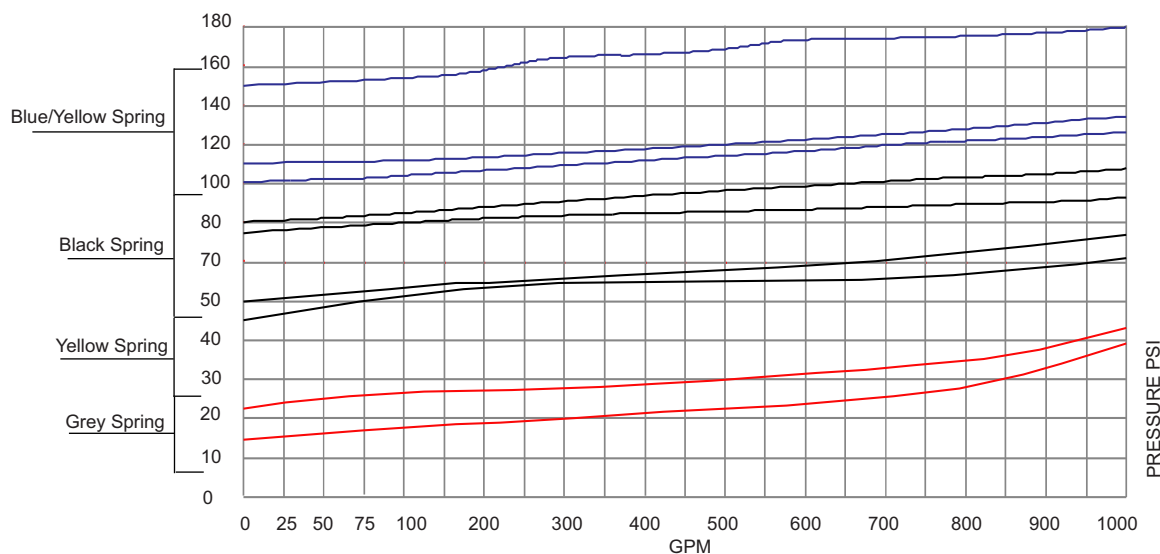
Blue/Yellow Spring
Black Spring
Grey Spring

Blue/Yellow Spring
Black Spring
Grey Spring

Note:
Results represent
actual test results from
Center For Irrigation
Technology (3/24/05)



4" PRV DISCHARGE CURVES



Note:
Results represent typical
discharge volumes at
designated pressures

2019/2020

BRASS BALL VALVES

Brass Ball Valves

Full Port

BBVFP-1/4	1/4" Full Port, 18/box, 180/case
BBVFP-1/2	1/2" Full Port, 10/box, 100/case
BBVFP-3/4	3/4" Full Port, 10/box, 60/case
BBVFP-1	1" Full Port, 4/box, 36/case
BBVFP-1.25	1.25" Full Port, 4/box, 24/case
BBVFP-1.5	1.5" Full Port, 2/box, 20/case
BBVFP-2	2" Full Port, 2/box, 12/case

Standard Port

BBVSP-1/4	1/4" Standard Port, 18/box, 180/case
BBVSP-1/2	1/2" Standard Port, 12/box, 120/case
BBVSP-3/4	3/4" Standard Port, 10/box, 100/case
BBVSP-1	1" Standard Port, 10/box, 60/case
BBVSP-1.25	1.25" Standard Port, 4/box, 36/case
BBVSP-1.5	1.5" Standard Port, 4/box, 24/case
BBVSP-2	2" Standard Port, 2/box, 20/case



BBVFP-1



BBVSP-1



BBVFP-2



BBVSP-2



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



BVLO8



BVG08

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

GX-Series 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
BVLO12	12" Lever Op, Stainless-Steel Disc
BVLO14	14" Lever Op, Stainless-Steel Disc
BVLO16	16" Lever Op, Stainless-Steel Disc

Gear-Op Stainless-Steel

BVG02	2" Gear Op, Stainless-Steel Disc
BVG02.5	2.5" Gear Op, Stainless-Steel Disc
BVG03	3" Gear Op, Stainless-Steel Disc
BVG04	4" Gear Op, Stainless-Steel Disc
BVG05	5" Gear Op, Stainless-Steel Disc
BVG06	6" Gear Op, Stainless-Steel Disc
BVG08	8" Gear Op, Stainless-Steel Disc
BVG010	10" Gear Op, Stainless-Steel Disc
BVG012	12" Gear Op, Stainless-Steel Disc
BVG014	14" Gear Op, Stainless-Steel Disc
BVG016	16" Gear Op, Stainless-Steel Disc



BVLO8-DI



BVG08-DI

GX-Series 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
BVLO12-DI	12" Lever Op, Ductile Iron Disc
BVLO14-DI	14" Lever Op, Ductile Iron Disc
BVLO16-DI	16" Lever Op, Ductile Iron Disc

Gear-Op Ductile Iron

BVG02-DI	2" Gear Op Ductile Iron Disc
BVG02.5-DI	2.5" Gear Op, Ductile Iron Disc
BVG03-DI	3" Gear Op, Ductile Iron Disc
BVG04-DI	4" Gear Op, Ductile Iron Disc
BVG05-DI	5" Gear Op, Ductile Iron Disc
BVG06-DI	6" Gear Op, Ductile Iron Disc
BVG08-DI	8" Gear Op, Ductile Iron Disc
BVG010-DI	10" Gear Op, Ductile Iron Disc
BVG012-DI	12" Gear Op, Ductile Iron Disc
BVLO14-DI	14" Gear Op, Ductile Iron Disc
BVLO16-DI	16" Gear Op, Ductile Iron Disc

SEAL-MATIC® DR-SERIES BUTTERFLY VALVES/FLANGE GASKETS

DR-Series is Where Value and Performance Meet Epoxy Powder Coated Body



DRBVG06

Features

- ◆ Available in both gear and lever operators
- ◆ Two-piece stainless-steel stem design
- ◆ Floating disc ensures positive sealing
- ◆ Fits between 125/150 class ANSI flanges
- ◆ Stainless-steel disc
- ◆ Long life cycle design

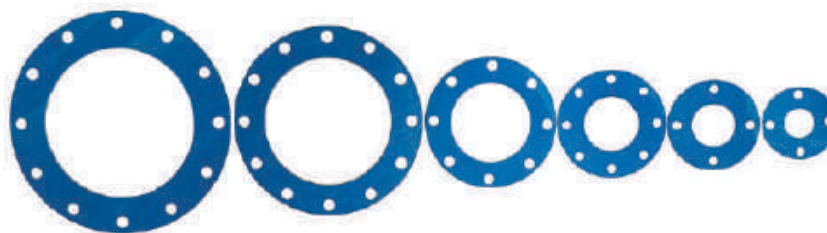
DR-Series Butterfly Valves Lever-Op Stainless-Steel

DRBVLO3	3" Lever Op, Stainless-Steel Disc
DRBVLO4	4" Lever Op, Stainless-Steel Disc
DRBVLO5	5" Lever Op, Stainless-Steel Disc
DRBVLO6	6" Lever Op, Stainless-Steel Disc
DRBVLO8	8" Lever Op, Stainless-Steel Disc
DRBVLO10	10" Lever Op, Stainless-Steel Disc
DRBVLO12	12" Lever Op, Stainless-Steel Disc

Gear-Op Stainless-Steel

DRBVG03	3" Gear Op, Stainless-Steel Disc
DRBVG04	4" Gear Op, Stainless-Steel Disc
DRBVG05	5" Gear Op, Stainless-Steel Disc
DRBVG06	6" Gear Op, Stainless-Steel Disc
DRBVG08	8" Gear Op, Stainless-Steel Disc
DRBVG10	10" Gear Op, Stainless-Steel Disc
DRBVG12	12" Gear Op, Stainless-Steel Disc

Flange Gaskets



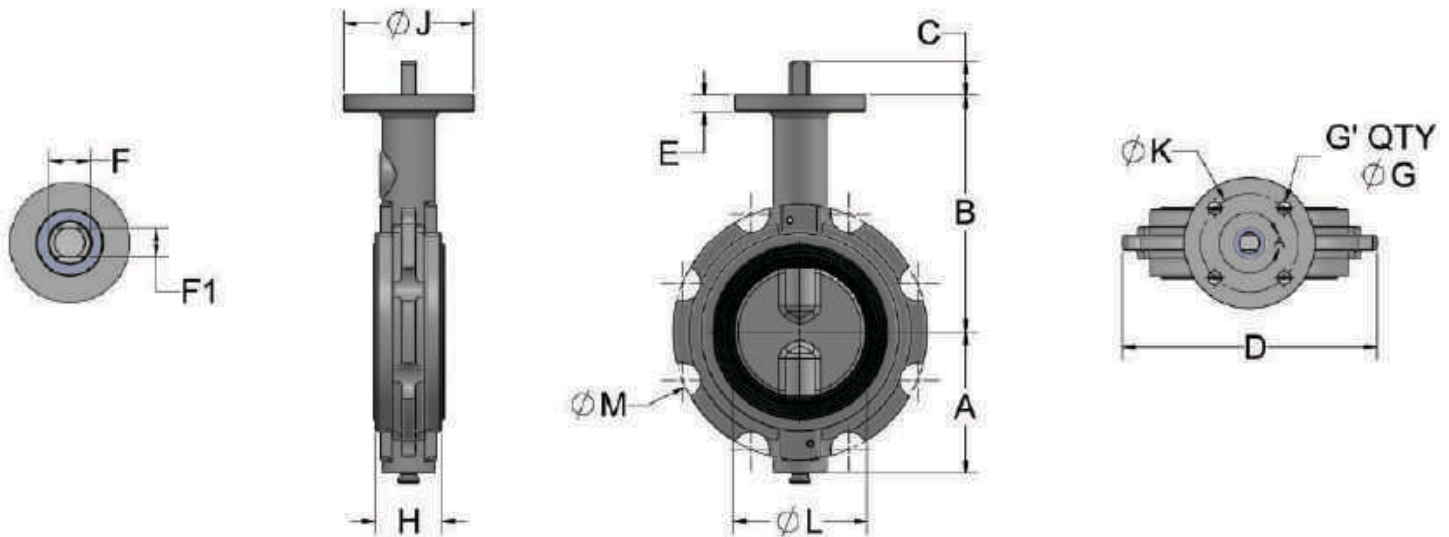
1/8" Fiber-Filled Full-Face Gaskets

FFG2-1/8
FFG2.5-1/8
FFG3-1/8
FFG4-1/8
FFG5-1/8
FFG6-1/8
FFG8-1/8
FFG10-1/8
FFG12-1/8
FFG14-1/8
FFG16-1/8

1/16" Fiber-Filled Full-Face Gaskets

FFG2-1/16
FFG2.5-1/16
FFG3-1/16
FFG4-1/16
FFG5-1/16
FFG6-1/16
FFG8-1/16
FFG10-1/16
FFG12-1/16
FFG14-1/16
FFG16-1/16

GX SERIES BUTTERFLY VALVE DIMENSIONS

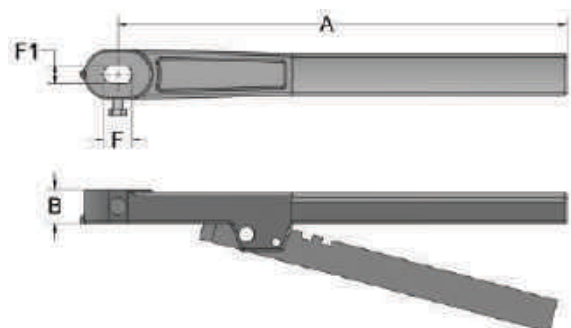


VALVE SIZE	A	B	C	D	E	F	F1	G'	G	H	J	K	L	M
2"	2.78	5.80	1.08	5.09	.54	.56	.44	4	.41	1.69	4	3	2.21	4.75
2.5"	3.03	6.30	1.06	5.73	.54	.56	.44	4	.41	1.81	4	3	2.67	5.50
3"	3.34	6.50	1.06	6.20	.54	.56	.44	4	.41	1.80	4	3	3.17	6.00
4"	4.32	7.25	1.16	7.78	.54	.64	.44	4	.41	2.06	4	3	4.18	7.50
5"	5.40	7.58	1.10	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

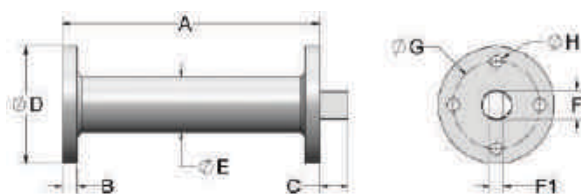
Material Specifications GX Series

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

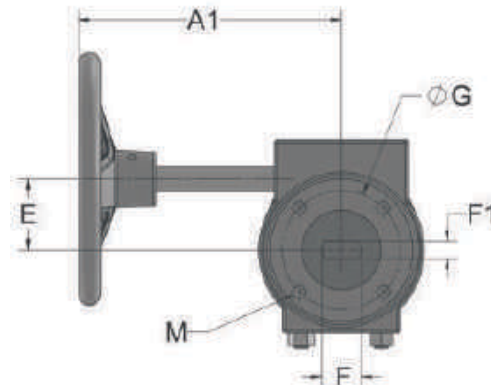
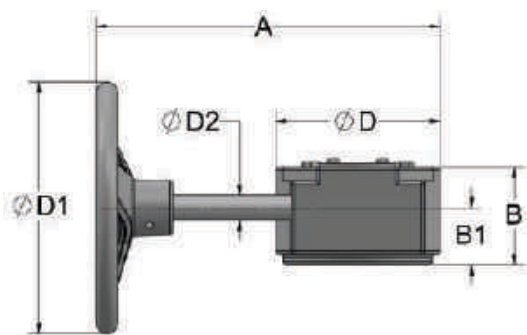
GX SERIES BUTTERFLY VALVE DIMENSIONS



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

BUTTERFLY VALVE PARTS

Fits Both DR and GX Series Valves

Lever Handle



BVHDL8



BVL8

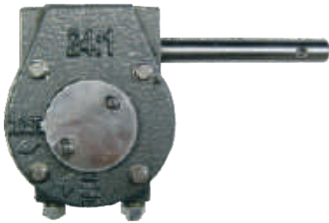
BVHDL2-3
BVHDL4
BVHDL5
BVHDL6
BVHDL8-12
BVHDL14-16

Handle for 2", 2.5" and 3"
Handle for 4"
Handle for 5"
Handle for 6"
Handle for 8", 10" and 12"
Handle for 14" and 16"

Lever Lock Plate

BVLP2-6
BVLP8-12
BVLP14-16

Lever lock plate for 2", 2.5", 3", 4", 5" and 6"
Lever lock plate for 8", 10" and 12"
Lever lock plate for 14" and 16"



BVBOX8



BVHW8

BVBOX2-6
BVBOX8-12
BVBOX14-16

Gear Box

Gear box for 2", 2.5", 3", 4", 5" and 6"
Gear box for 8", 10" and 12"
Gear box for 14" and 16"

Hand Wheel

BVHW2-3
BVHW4-6
BVHW8-12
BVHW14-16
BVRP2-6
BVRP8-12
BVRP14-16

Hand wheel for 2", 2.5" and 3"
Hand wheel for 4", 5" and 6"
Hand wheel for 8", 10" and 12"
Hand wheel for 14" and 16"
Roll pin for 2-6" hand wheel
Roll pin for 8-12" hand wheel
Roll pin for 14-16" hand wheel



BVEXT36-8

BVEXT24.2-6
BVEXT24.8-12
BVEXT24.14-16
BVEXT36.2-6
BVEXT36.8-12
BVEXT36.14-16
BVEXT48.2-6
BVEXT48.8-12
BVEXT48.14-16
BVEXT60.2-6
BVEXT60.8-12
BVEXT60.14-16
BVEXT72.2-6
BVEXT72.8-12
BVEXT72.14-16

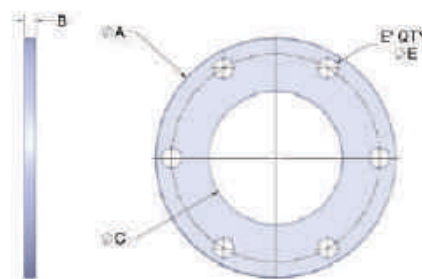
Extensions

24" extension for 2" to 6" valves
24" extension for 8" to 12" valves
24" extension for 14" to 16" valves
36" extension for 2" to 6" valves
36" extension for 8" to 12" valves
36" extension for 14" to 16" valves
48" extension for 2" to 6" valves
48" extension for 8" to 12" valves
48" extension for 14" to 16" valves
60" extension for 2" to 6" valves
60" extension for 8" to 12" valves
60" extension for 14" to 16" valves
72" extension for 2" to 6" valves
72" extension for 8" to 12" valves
72" extension for 14" to 16" valves

STEEL FLANGES

STEEL RING FLANGES

Flat Faced 150# Drilling



Class D IPS Pipe Size

Part #	Pipe Size	Outside Dia	Thickness	Bore	Weight	Bolt Qty	Bolt Hole Dia
		A	B	C		E'	E
SFIPS-8-5/8	8"	13.5"	5/8"	8.72"	13.96	8	7/8"
SFIPS-10-5/8	10"	16"	5/8"	10.88"	17.51	12	1"
SFIPS-12-3/4	12"	19"	3/4"	12.88"	30.62	12	1"

Class D OD Pipe Size

Part #	Pipe Size	Outside Dia	Thickness	Bore	Weight	Bolt Qty	Bolt Hole Dia
		A	B	C		E'	E
SFOD-8-5/8	8"	13.5"	5/8"	8.06"	15.50	8	7/8"
SFOD-10-5/8	10"	16"	5/8"	10.06"	19.89	12	1"
SFOD-12-3/4	12"	19"	3/4"	12.06"	34.04	12	1"
SFOD-12-13/16	12"	19"	13/16"	12.06"	36.86	12	1"
SFOD-14-5/8	14"	21"	5/8"	14.13"	37.83	12	1 1/8"
SFOD-14-7/8	14"	21"	7/8"	14.13"	49.08	12	1 1/8"
SFOD-16-5/8	16"	23.5"	5/8"	16.13"	45.45	16	1 1/8"
SFOD-16-1	16"	23.5"	1"	16.13"	60.61	16	1 1/8"
SFOD-18-1 1/16	18"	25"	1 1/16"	18.13"	64.24	16	1 1/4"
SFOD-20-1 1/8	20"	27.5"	1 1/8"	20.13"	80.16	20	1 1/4"
SFOD-24-1 1/4	24"	32"	1 1/4"	24.13"	112.44	20	1 3/8"

1/2" IPS Pipe Size

Part #	Pipe Size	Outside Dia	Thickness	Bore	Weight	Bolt Qty	Bolt Hole Dia
		A	B	C		E'	E
SFIPS-2-1/2	2"	6"	1/2"	2.44"	3.11	4	3/4"
SFIPS-2.5-1/2	2.5"	7"	1/2"	2.94"	4.26	4	3/4"
SFIPS-3-1/2	3"	7.5"	1/2"	3.57"	4.61	4	3/4"
SFIPS-4-12	4"	9"	1/2"	4.57"	6.20	8	3/4"
SFIPS-5-1/2	5"	10"	1/2"	5.66"	6.90	8	7/8"
SFIPS-6-1/2	6"	11"	1/2"	6.72"	7.78	8	7/8"
SFIPS-8-1/2	8"	13.5"	1/2"	8.72"	11.18	8	7/8"
SFIPS-10-1/2	10"	16"	1/2"	10.88"	13.98	12	1"
SFIPS-12-1/2	12"	19"	1/2"	12.88"	20.48	12	1"

1/2" OD Pipe Size

Part #	Pipe Size	Outside Dia	Thickness	Bore	Weight	Bolt Qty	Bolt Hole Dia
		A	B	C		E'	E
SFOD-2-1/2	2	6"	1/2"	2.06"	3.26	4	3/4"
SFOD-2.5-1/2	2.5"	7"	1/2"	2.56"	4.48	4	3/4"
SFOD-3-1/2	3"	7.5"	1/2"	3.06"	4.98	4	3/4"
SFOD-4-1/2	4"	9"	1/2"	4.06"	6.70	8	3/4"
SFOD-5-1/2	5"	10"	1/2"	5.06"	7.61	8	7/8"
SFOD-6-1/2	6"	11"	1/2"	6.06"	8.71	8	7/8"
SFOD-8-1/2	8"	13.5"	1/2"	8.06"	12.39	8	7/8"
SFOD-10-1/2	10"	16"	1/2"	10.06"	15.92	12	1"
SFOD-12-1/2	12"	19"	1/2"	12.06"	22.69	12	1"

CONTROL VALVES

**Built 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**

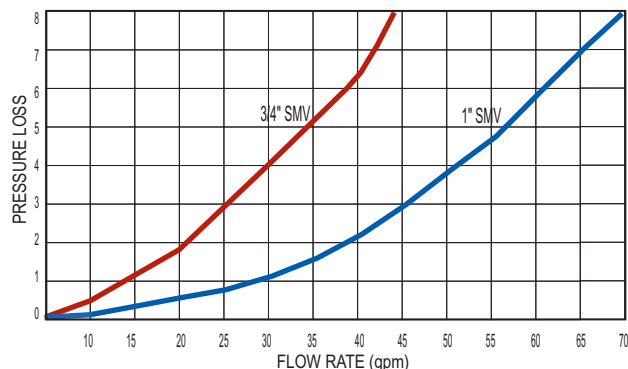
Features

- ◆ Ductile iron body and bonnet
- ◆ Brass auto-drain included with PEG model
- ◆ One diaphragm for all working pressures
- ◆ Diaphragm is **made in USA**
- ◆ 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



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

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

CONTROL VALVES

**Built in
the USA**

from domestic and foreign parts

SEAL MATIC[®]

Seal Matic[®] 2" Pivot End Gun Valve

Raven Smart[™] Diaphragm Technology

**3-Year
Diaphragm
Guarantee**

Features

- ◆ Ductile iron body and bonnet with 1/4" porting
- ◆ 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 is interchangeable with Aqua Burst[®] X-100 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

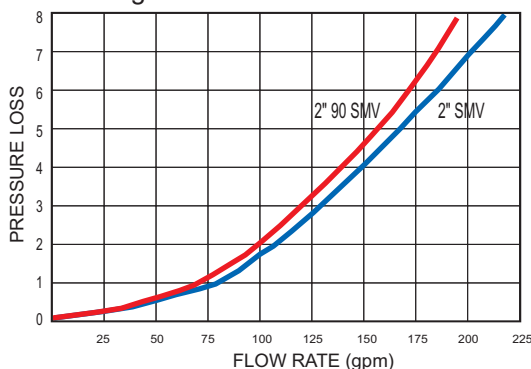
SMV2EPR	2" w/P-6000 Pilot/Solenoid
SMV902EPR	2" 90° w/P-6000 Pilot/Solenoid

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



$C_v = 2" 90^\circ = 110$
 $C_v = 2" Str = 90$

(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

CONTROL VALVES

**Built in
the USA**

from domestic and foreign parts

SEAL MATIC[®]

Raven Smart[™] Diaphragm Technology

**3-Year
Diaphragm
Guarantee**

Features

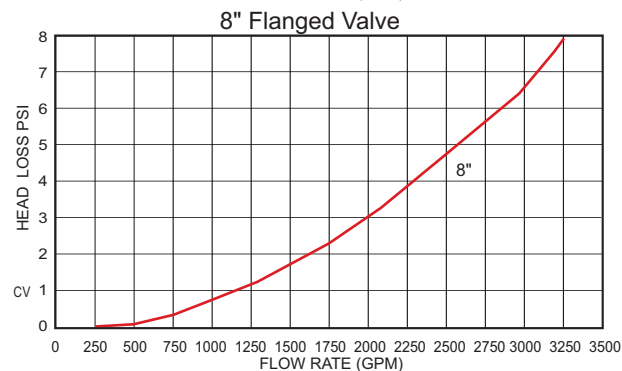
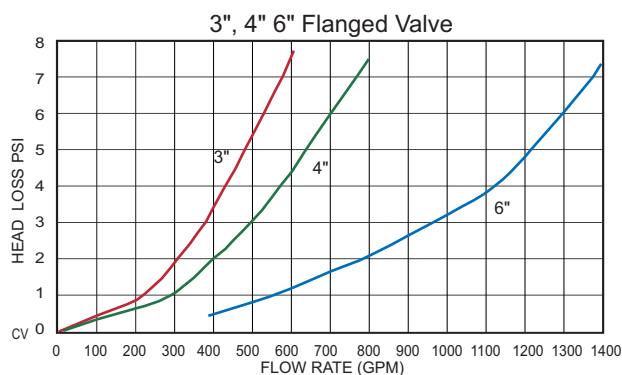
- ◆ One diaphragm for all pressures
- ◆ Easy in-place maintenance
- ◆ Fully open at 5 psi
- ◆ CIT tested flow rates
- ◆ Pilot Control Options: Pressure reducing, pressure sustaining, pressure relief
- ◆ 6" and 8" Dual-X[™] double-diaphragm valve available with P-6000 pilot only
- ◆ Solenoid available in 12v DC, 24v AC, 24v DC or 120v AC



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

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

CONTROL VALVES

**Built in
the USA**

from domestic and foreign parts

X-Max Valve™

Where Function and Efficiency Meet

**New
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 Skinner solenoid and manual three-way controller
- ◆ Solenoid available in 12v DC, 24v AC, 24v DC or 120v AC
- ◆ Available with P-6000 brass pilot
- ◆ **Bolt Kit Included**

X-MAX Electric On/Off Valve

XMAX4WS	4" w/Solenoid
XMAX6WS	6" w/Solenoid
XMAX8WS	8" w/Solenoid

X-MAX Basic Valve

XMAX4B	4" Basic w/Plugs
XMAX6B	6" Basic w/Plugs
XMAX8B	8" Basic w/Plugs

X-MAX Manual Pressure Reducing Valve

XMAX4MPR	4" w/P-6000 Pilot
XMAX6MPR	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
XMAX6EPR	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
XMAX6MPS	6" w/P-6000 Pilot
XMAX8MPS	8" w/P-6000 Pilot

[See Performance Charts \(Pg. 53\)](#)

[See Installation and Storage Guide
for Bolt Torque Specification \(Pg. 65\)](#)

Designed and engineered to out-flow and out-control all other hydraulic control valves.

X-MAX6 = 1150 gpm @ 1.0 cv



XMAX4WS



XMAX6WS



XMAX8WS

CONTROL VALVES

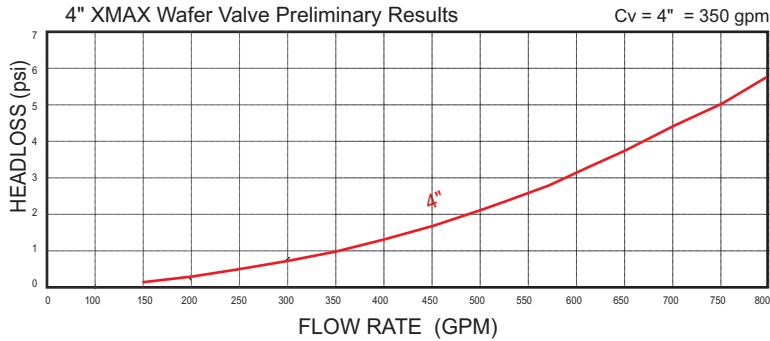
**Built in
the USA**

from domestic and foreign parts

X-Max Valve™

Where Function and Efficiency Meet

**New
High-Flow
Design**



XCON/XMAX Bolt Kits

XMAX4-BK

8 - 5/8" x 10 1/2" bolts,
16 - 5/8" nuts

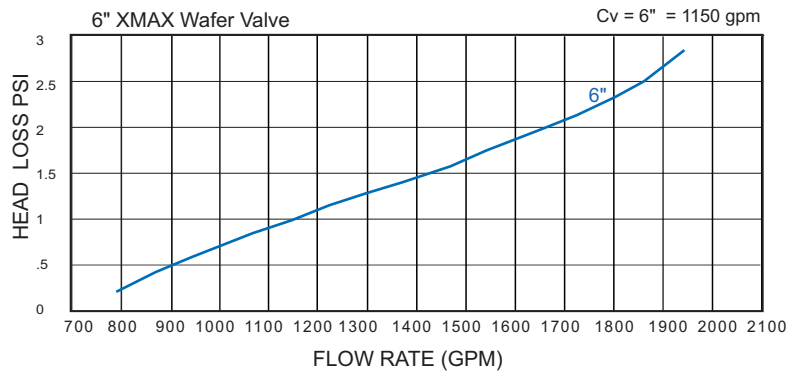
XMAX6-BK

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

SMV75-1DIA

For 3/4"/1" SMV Valve

SMV2DIA

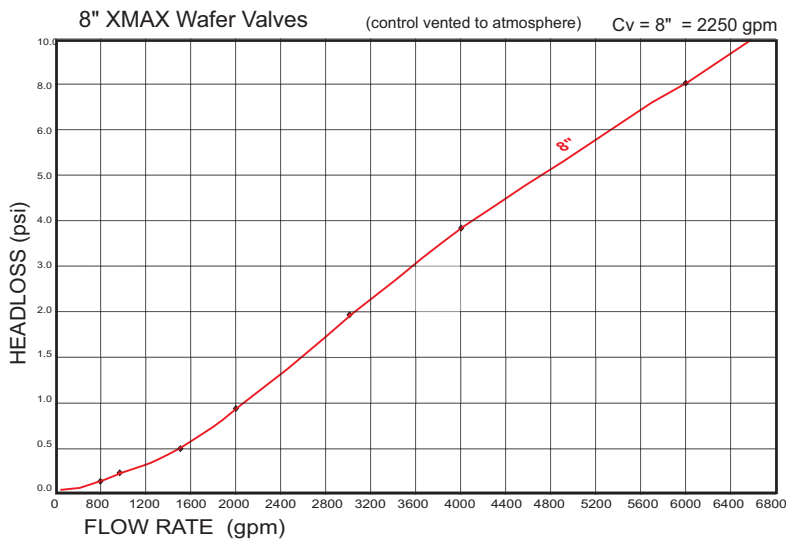
For 2" SMV Valve

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

VALVE ACCESSORIES -- PILOT



P-6000

**Built in
the USA**

XCAD Pressure Control Pilot P-6000 Series

P-6000-H
P-6000-M
P-6000-L

Pressure Control Pilot
High: 30-120 psi/Medium: 30-60 psi/
Low: 10-40 psi
Includes vent and fittings

P6MPR-H
P6MPR-M
P6MPR-L

Manual Pressure Reduction Kit
High: 30-120 psi/Medium: 30-60 psi/
Low: 10-40 psi
Includes pilot and fittings

P6EPR-H
P6MPR-M
P6EPR-L

Electric On-Off Pressure Reduction Kit
High: 30-120 psi/Medium: 30-60 psi/
Low: 10-40 psi
Includes pilot, solenoid, 3-way selector
and fittings

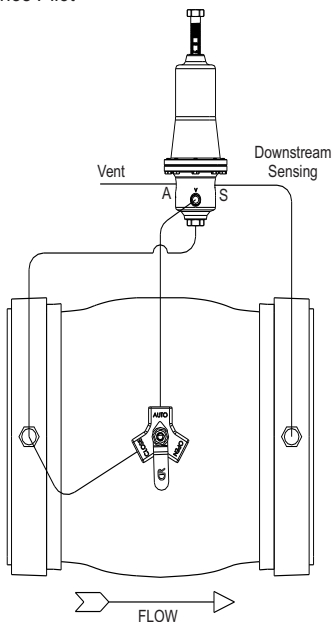
P6MPS-H
P6MPS-M
P6MPS-L

Manual Pressure Sustaining/Relief Kit
High: 30-120 psi/Medium: 30-60 psi/
Low: 10-40 psi
Includes pilot and fittings

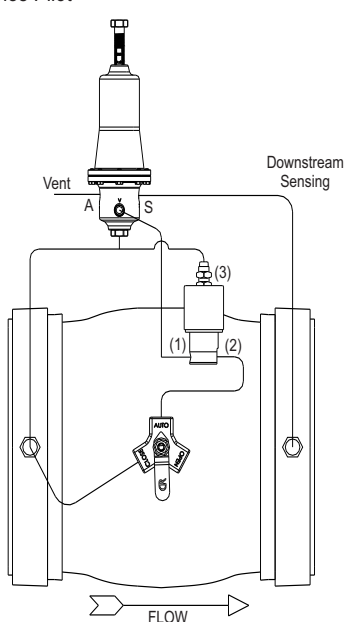
Features

- ◆ **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

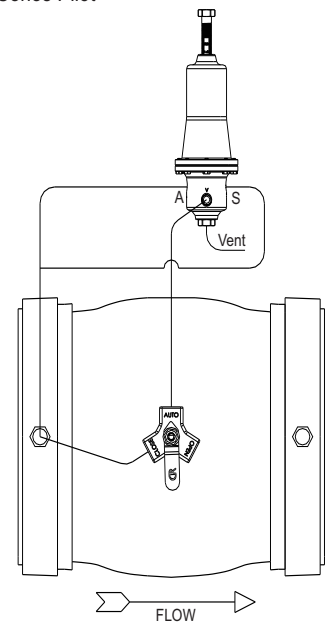
Pressure Reducing (Manual)
6000 Series Pilot



Pressure Reducing & Electric On/Off
6000 Series Pilot



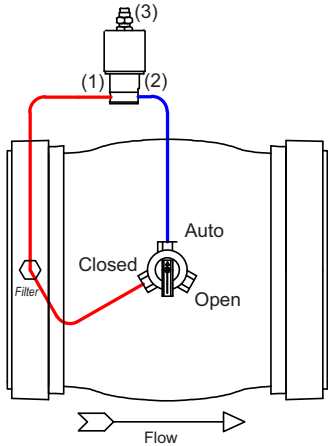
Pressure Sustaining (Manual)
6000 Series Pilot



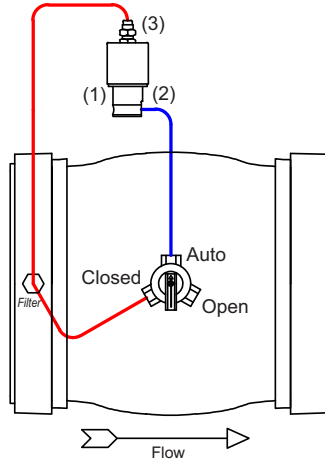
Upstream and downstream sensing should be placed 24 inches away from valve.

PILOT PLUMBING CHARTS

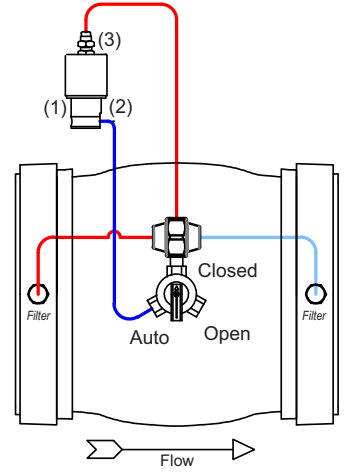
Normally Open ENERGIZED = CLOSED
 NOT ENERGIZED = OPEN
 OVER 80 PSI REQUIRES SPECIAL SOLENOID



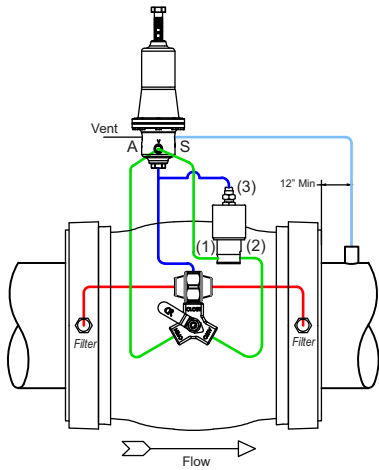
Normally Closed ENERGIZED = OPEN
 NOT ENERGIZED = CLOSED



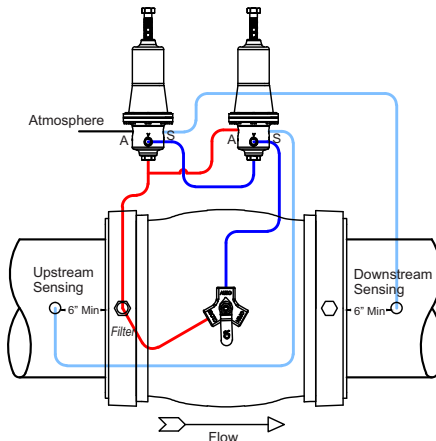
Check Valve ENERGIZED = OPEN
 NOT ENERGIZED = CHECK



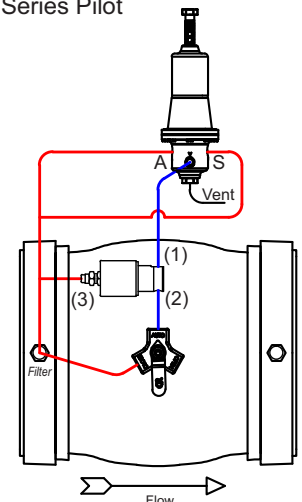
Pressure Reducing & Electric On/Off
 6000 Series Pilot and Check Valve



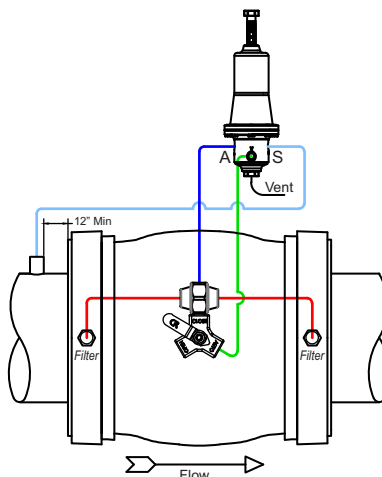
Pressure Sustaining/Reducing
 6000 Series Pilot



Pressure Sustaining/Electric On/Off
 6000 Series Pilot



Pressure Sustaining
 6000 Series Pilot and Check Valve



VALVE ACCESSORIES



PKSOL-LO120



PKSOL-120AC



PKHD-120AC



PKPOT-120AC



PKCOIL-12DC

3-Way Solenoids

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
PKHD-120AC	120v AC Heavy Duty Solenoid

Solenoid Coils

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

Made in USA



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



EXTFP



TFDVBDL

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
TFDVBDL	1/4" Internal Brass Drain

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
				SHH4-4	1/8" Hose x 1/8" Hose Swivel Straight Connector
				SSN4-2	1/4" x 1/8" NPT Swivel Straight Nipple
				SSN4-4	1/4" x 1/4" NPT Swivel Straight Nipple
				SSN38-4	3/8" x 1/4" NPT Swivel Straight Nipple
				SSN12-4	1/2" x 1/4" NPT Swivel Straight Nipple
				SE4-2	1/4" x 1/8" NPT Swivel Elbow
				SE4-4	1/4" x 1/4" NPT Swivel Elbow
				SE38-4	3/8" x 1/4" NPT Swivel Elbow
				SE12-4	1/2" x 1/4" NPT Swivel Elbow
				SBT4-2	1/4" x 1/8" NPT Swivel Branch Tee
				SBT4-4	1/4" x 1/4" NPT Swivel Branch Tee
				SBT38-4	3/8" x 1/4" NPT Swivel Branch Tee
				SBT12-4	1/2" x 1/4" NPT Swivel Branch Tee
				SRT4-2	1/4" x 1/8" NPT Swivel Run Tee
				SRT4-4	1/4" x 1/4" NPT Swivel Run Tee
				SRT38-4	3/8" x 1/4" NPT Swivel Run Tee
				SRT12-4	1/2" x 1/4" NPT Swivel Run Tee (not shown)
				SYC4-2	1/4" x 1/8" NPT Swivel Divider Tee
				SYC4-4	1/4" 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" Swivel Hose Tee
				SC-38	3/8" x 3/8" x 3/8" Swivel Hose Tee
				SUT2-2	1/8" x 1/8" x 1/8" (Female) NPT Brass Union Tee
				SUT4-4	1/4" x 1/4" x 1/4" (Female) NPT Brass Union Tee
				SSC4-2	1/4" x 1/8" NPT Swivel Speed Control
				SSC4-4	1/4" x 1/4" NPT Swivel Speed Control
				SST4-2	1/4" x 1/8" NPT Swivel Splitter Tee
				SST4-4	1/4" x 1/4" NPT Swivel Splitter Tee

CONTROL VALVE PARTS



NE4-4



NHH4-4



NSC-38



NSC-4



NSBT38-4



NSBT4-2



NSBT4-4



NSE38-4



NSE4-2



NSE4-4



NHHE4-4



NSRT38-4



NSRT4-2



NSRT4-4



NSSN4-2



NSSN4-4



NSSN12-4



NSSN38-4



NSYC-4



NSYC4-2



NSYC4-4



NSSC4-2



NSSC4-4



BVT14

Nylon Valve Fittings

Nylon and Plated Brass

NE4-4

1/4" 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

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

NSBT4-2

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

NSBT4-4

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

NSE38-4

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

NSE4-2

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

NSE4-4

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

NHHE4-4

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

NSRT12-4

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

NSRT38-4

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

NSRT4-2

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

NSRT4-4

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

NSSN4-2

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

NSSN4-4

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

NSSN12-4

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

NSSN38-4

3/8" 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" x 1/8" NPT Swivel Divider Tee

NSYC4-4

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

NSSC4-2

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

NSSC4-4

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

BVT14

Heavy Duty Nylon 1/4" Valve Tubing, per foot

BVT38

Heavy Duty Nylon 3/8" Valve Tubing, per foot

BVT12

Heavy Duty Nylon 1/2" Valve Tubing, per foot

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
- ◆ Three stainless steel stem configurations:
X-type, left and right-hand thread
Fresno-type, left-hand thread
- ◆ **Stainless-steel stems standard**
- ◆ Bronze lift nuts standard
- ◆ Standard Sizes 8", 10", 12", 15", 18", 24" 30", and 36"
See chart for maximum frame lengths
- ◆ Extension stem adapters for all sizes

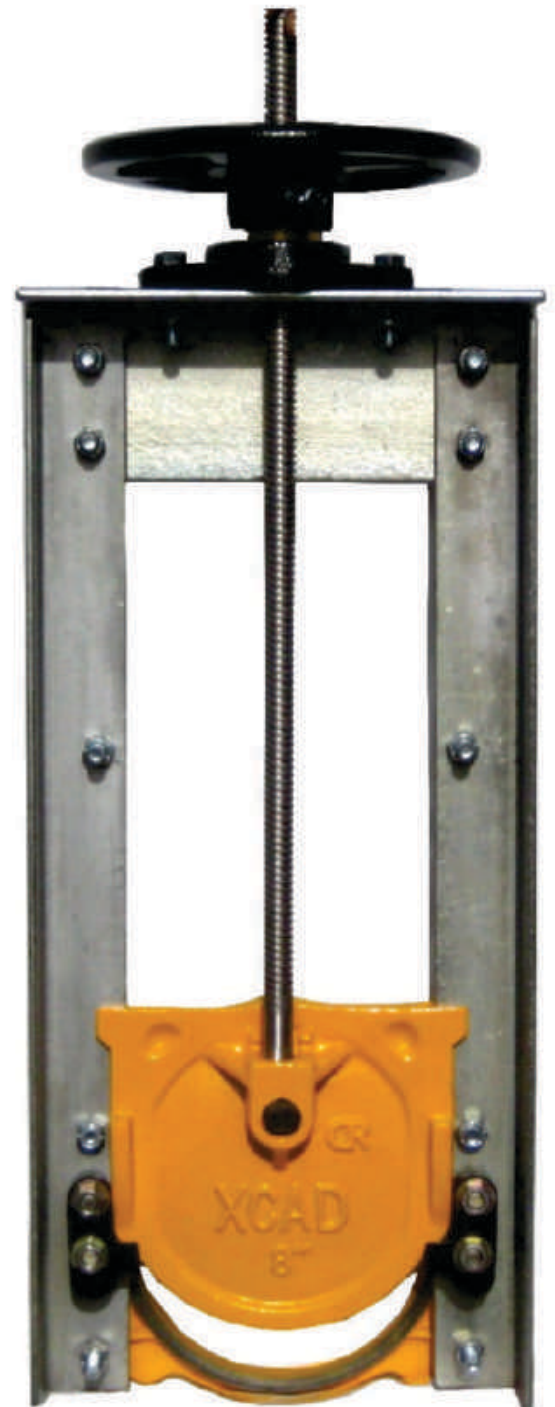
All X-GATE™ Canal Gates are available in three stem configurations

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

X-Type, Left Hand Thread
X-Type, Right Hand Thread
Fresno-Type, Left 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**





2019/2020

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"

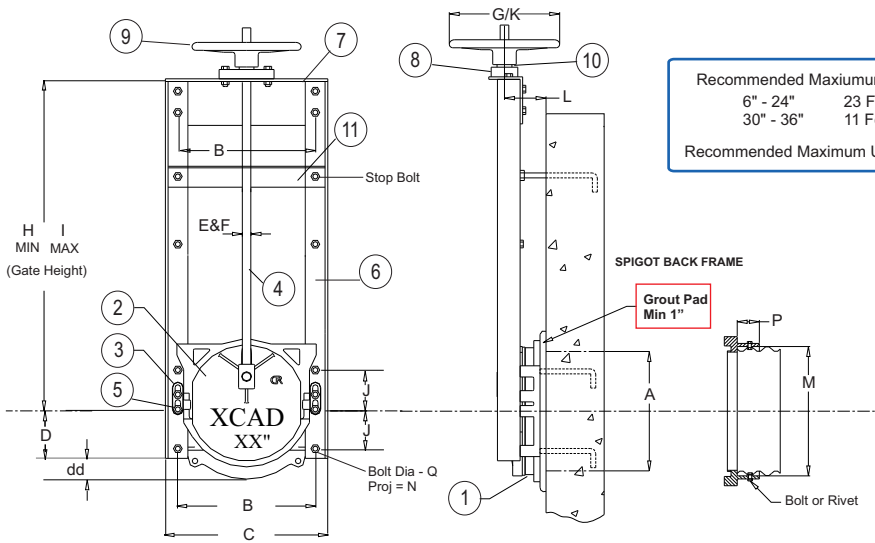
SPIGOT BACK FRAME

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

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	Stainless Steel
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: Ductile Iron ASTM 65-45-120
Frame: Cast Iron ASTM A 126 class B
Nut: Bronze ASTM B-584
Stem: Stainless Steel
Fasteners/Hardware:
Railing: Hot 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"	24"	120"	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"	24"	120"	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"	24"	120"	4"	10"	3"	13 1/8" (13.125)	4"	2.25"	1/2" x 12"
15"	17"	18 7/8" (19.875)	6"	2 1/2"	7/8" (.875)	7/8" (.875)	10"	36"	120"	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"	36"	120"	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"	48"	120"	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"	60"	120"	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"	72"	120"	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"								

2019/2020

X-GATE™ LOW HEAD CANAL GATE PARTS

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

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
F15-36WEDGE 15"-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

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

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 STEMS

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"



XL78BNUT



FL118BNUT



F-RING



X8-15RING



CGEC8-15



X8-15WEDGE



X8-15WEDGE

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 61

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 allowing 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.

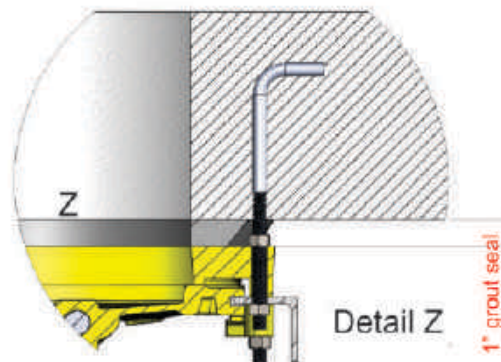
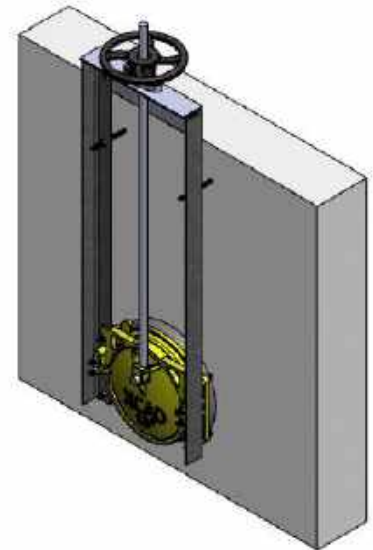
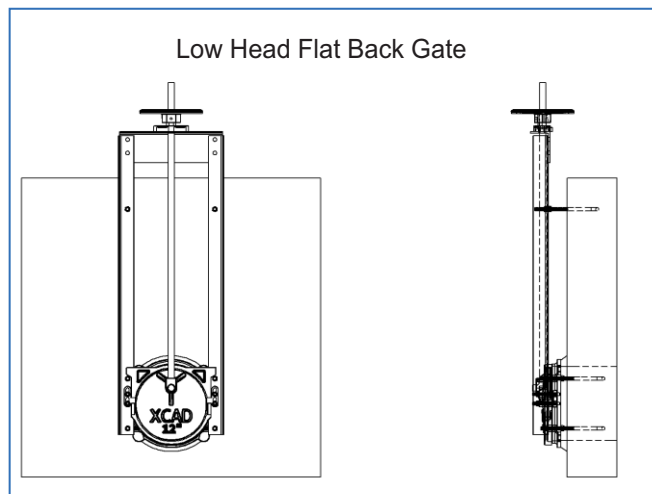
At this point of the installation, check all clearances between seating surfaces with a .004" feeler gauge. If there is proper seating at this point the gauge will not admit. In the event that the gate is not seated properly, check to see if the gate has been warped. If so, readjust nuts on anchor bolts 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.



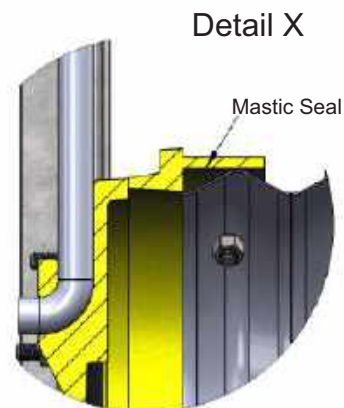
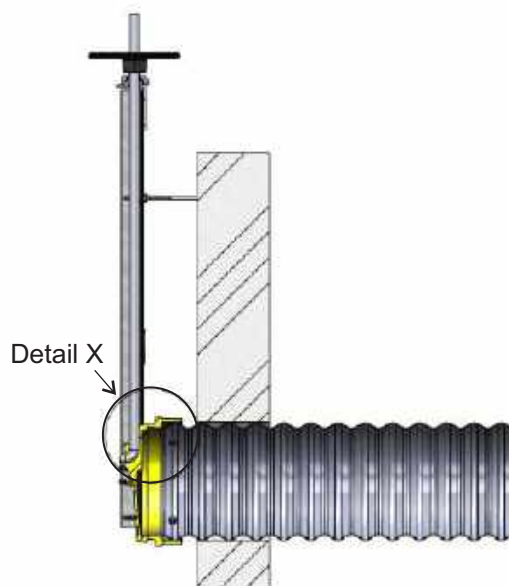
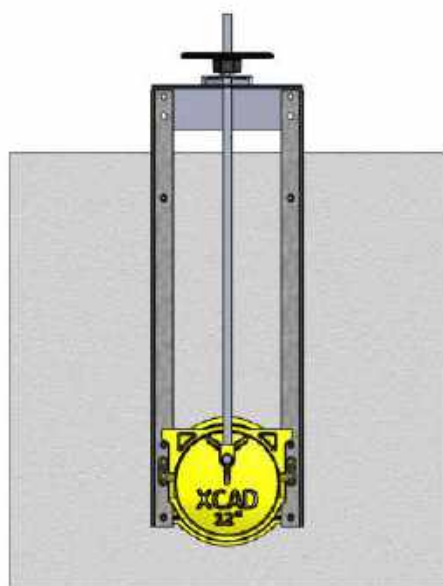
X-GATE™ LOW HEAD CANAL GATES

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.



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

★★DO NOT OVER-TIGHTEN BOLTS★★

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.

Over-tightening of valve may cause damage to the diaphragm and void warranty

- ◆ 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" - 8 1/8"
 6" - 10 1/4"
 8" - 12 1/4"

Max Pressure: 140 psi

Water Temp Range: 33°F to 130°F

For Reactive/Piloted Control Valves see page 67



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 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 (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"



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		





2019/2020 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.



2019/2020 Policy and Conditions of Sale

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. "Company" 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

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 "Company" 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 "Company" 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 Three-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 "Company" reserves the right to define this warranty or any other warranty as the "Company" sees fit.

Address all warranty claims to:

XCAD USA
P.O. BOX 578
PAUL, ID 83347
xcad@pmt.org

2018 TARIFFS

Due to the changes in trade brought forth from the Trump Administration, all products, sold or manufactured by **XCAD USA**®, that incur a tariff could receive a surcharge equal to the duty percentage incurred by **XCAD USA**®. Only those products taxed by the US Government will be issued a surcharge and the surcharge will be equal to the percentage rate paid by **XCAD USA**® (i.e. a 25% tariff charged to **XCAD USA**® will be a 25% surcharge on the individual product cost to the distributor.



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End of Pivot Sprinkler

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End of Pivot Sprinkler



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