



KZVALVE.COM

# '23

PRODUCT CATALOG #32

WATERPROOF MOTORIZED VALVES  
MANUAL VALVES | MANIFOLDS  
ACCESSORIES | CONTROLLERS

**CUSTOMIZED  
FLUID  
MANAGEMENT  
SOLUTIONS**



2023 CATALOG

WATERPROOF MOTORIZED VALVES

**CUSTOMIZED FLUID MANAGEMENT SOLUTIONS**  
TO MEET YOUR UNIQUE CHALLENGES

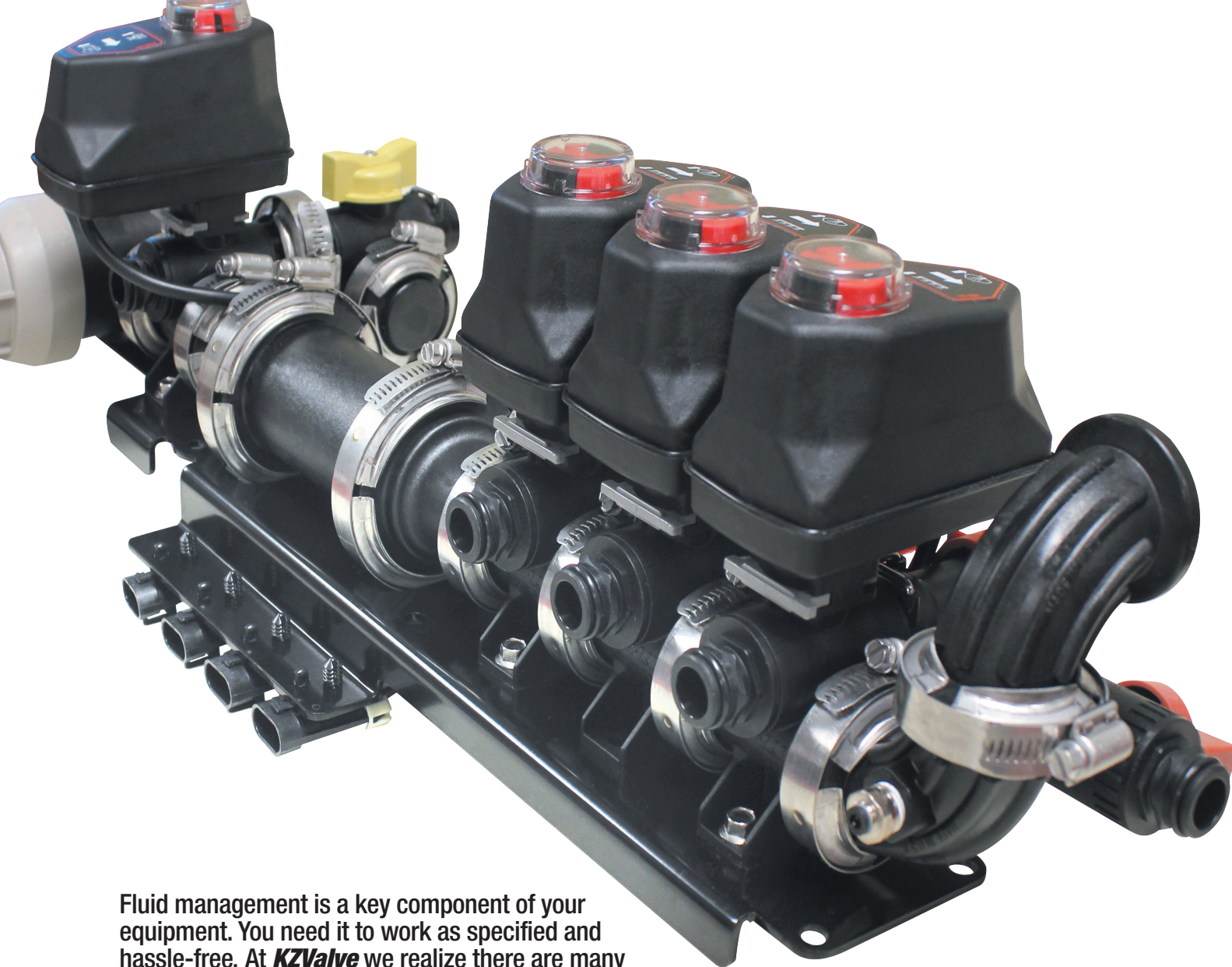


[www.kzvalve.com](http://www.kzvalve.com)

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1-23/300/IP

A Unit of IDEX Corporation



Fluid management is a key component of your equipment. You need it to work as specified and hassle-free. At **KZValve** we realize there are many other pieces to your system which require your attention. Leave the fluid management design, manufacturing and multi-component assembly to us so you can focus on the many projects on your desk.

#### Custom Manufacturing

At **KZValve** we take time to understand your needs for your specific project. You won't find our full offering in a catalog. We design most products for our OEM customers specifically to suit their exact needs.

#### Engineering Design Services

When you work with **KZValve** you are assigned a lead Engineer and have access to a full team of design, mechanical and electrical engineers to provide your solution.

#### Professional Account Management

Each major OEM is assigned an experienced account manager to handle every detail of your project and your account.

#### Test & Validation

Each component of every system manufactured at **KZValve** is tested and validated before it is shipped ready to install. This information is documented and archived electronically.

#### Shipping & Packaging

Paying attention to small details doesn't stop after your order is placed. We take shipping and packaging very seriously. Packaging in efficient quantities and quick fulfillment of your order to meet the demands of your schedule is exactly what you will get.

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# DESIGN SERVICES

**Built, tested, validated, packaged and shipped to meet the demands of the largest OEMs.**

- KZValve has designed and manufactured quality motorized valves for over 40 years
- Our engineering and development team has designed numerous custom products for use



in a wide range of applications and industries:

- Our experienced procurement department will source and inventory parts for your custom assembly
- Production teams are skilled in assembling custom OEM equipment
- We provide custom packaging solutions for unique assemblies
- Every assembly is leak and function tested and validated

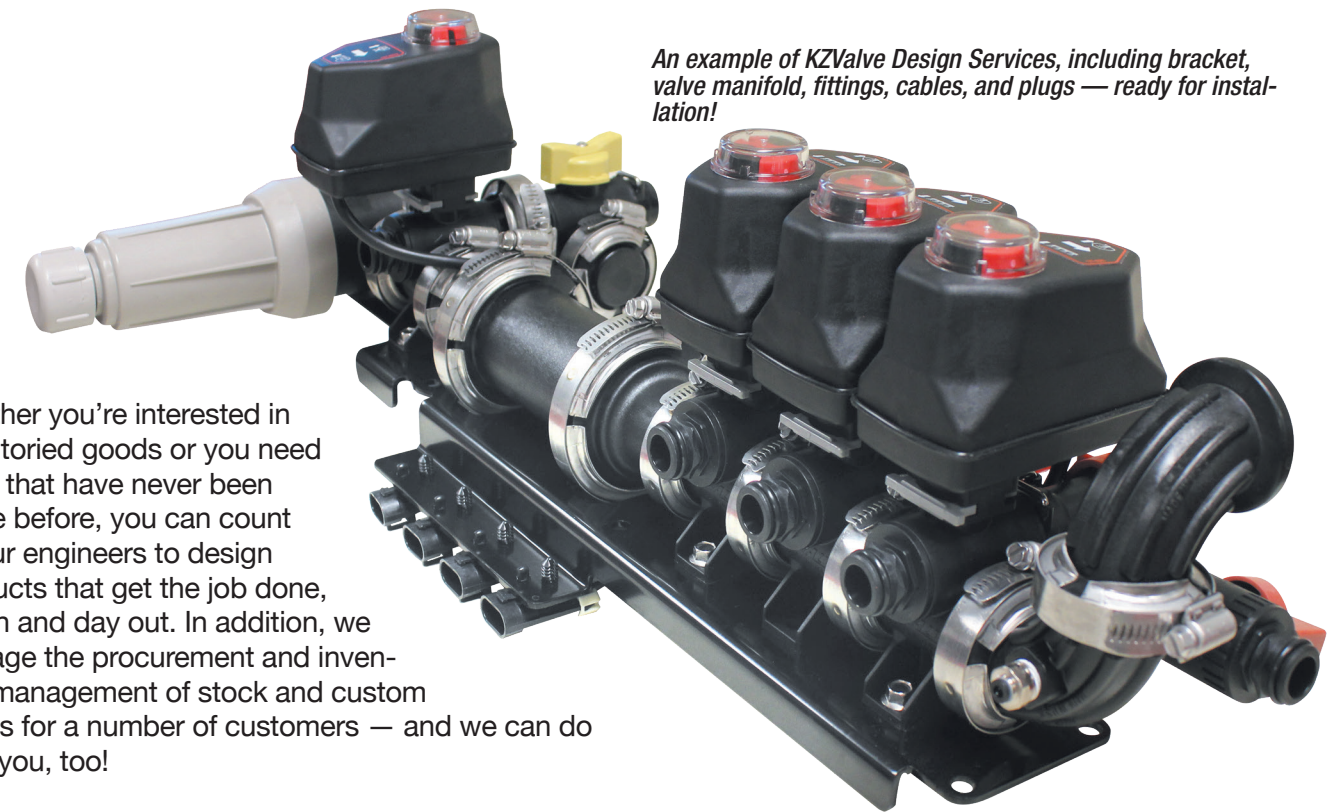
## KEY CAPABILITIES

- Engineering design and development
- Professional account management
- Sourcing
- Assembly
- Custom packaging
- Testing and validation



<https://www.kzvalve.com>  
800-288-1112 | 402-944-2767

# Engineering and Consulting



*An example of KZValve Design Services, including bracket, valve manifold, fittings, cables, and plugs — ready for installation!*

Whether you're interested in inventoried goods or you need parts that have never been made before, you can count on our engineers to design products that get the job done, day in and day out. In addition, we manage the procurement and inventory management of stock and custom goods for a number of customers — and we can do it for you, too!

Our engineering and design services have been used in numerous applications from controlling the flow of chemicals on self-propelled agriculture sprayers to managing the proper air, water, and foam solution mixture on a fire truck to protecting households from water damage. Our engineers stay up-to-date on the newest valve designs and electronics using the most powerful design tools available.

As leaders in our field, we can help you integrate one of our existing actuated valves or design a solution specific to your unique needs.

### Recent projects completed for our clients include:

- Custom chemical injection assemblies for the fracking and concrete industries
- Engineering a wireless leak detection system with active controls
- Developing a Smart Control system that can function in harsh environments and is feature-rich, yet affordable
- Designing a Quality Management System to meet the world's largest agriculture company's standards

- Bringing a line of NSF61 low-lead and Uniform Plumbing Code-approved valves to market
- Designing and manufacturing water flow control valves used on oil rigs in the North Sea

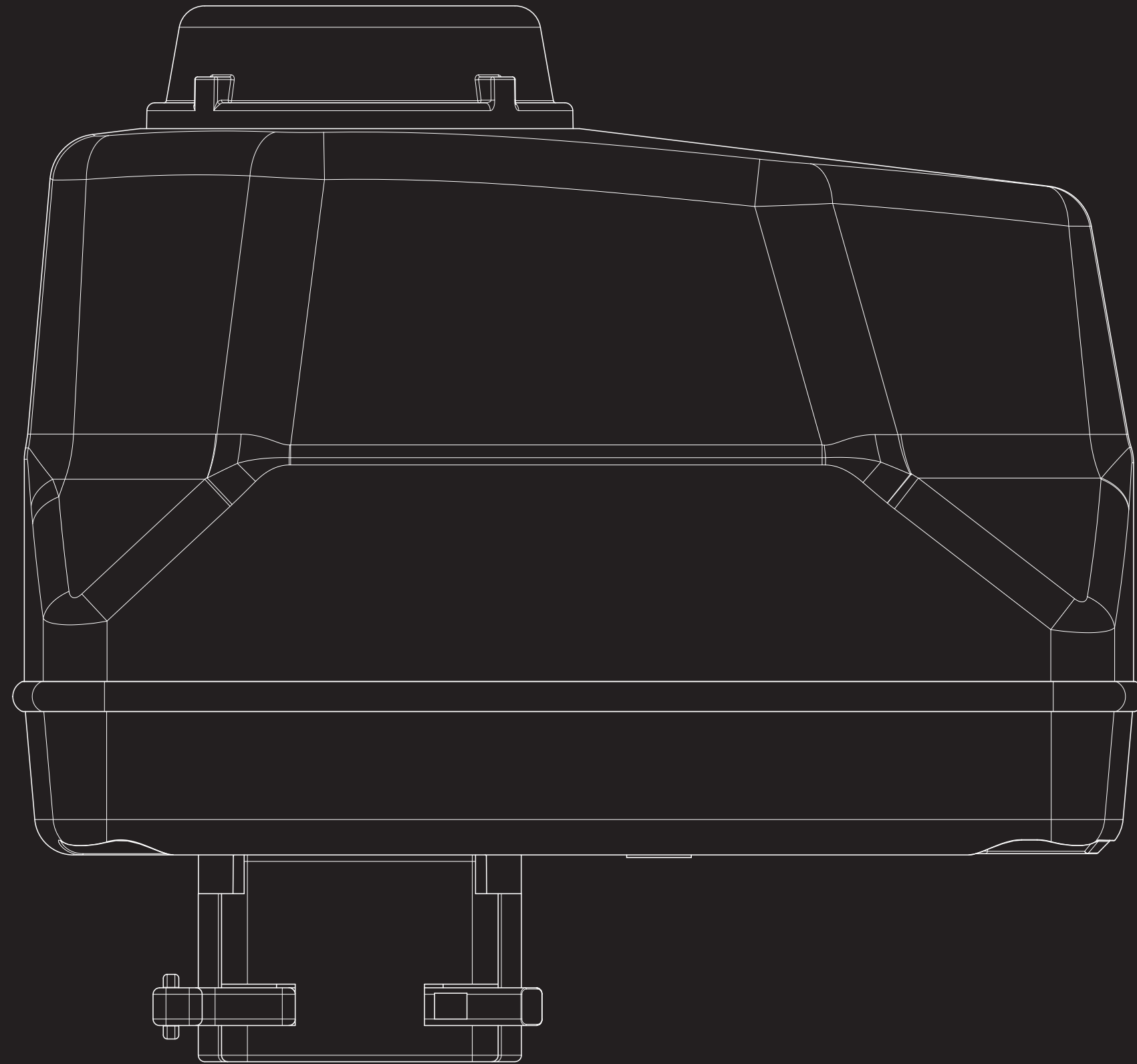
At KZValve, we provide turnkey production for more and more of North America's largest companies who benefit from our invention attitude: actuator, valve kits, manifold sections, flange fittings, hose barbs, and custom wiring harnesses — we do it all.

**Contact us today and see what we can do for you!**

**KZValve actuator housings are waterproof (rated NEMA 6P and meet the IP68 rating of the ISO 20653 Standard) and ignition-proof (rated NEMA 7D and meet USCG Electrical System Standards).**

# ACTUATORS

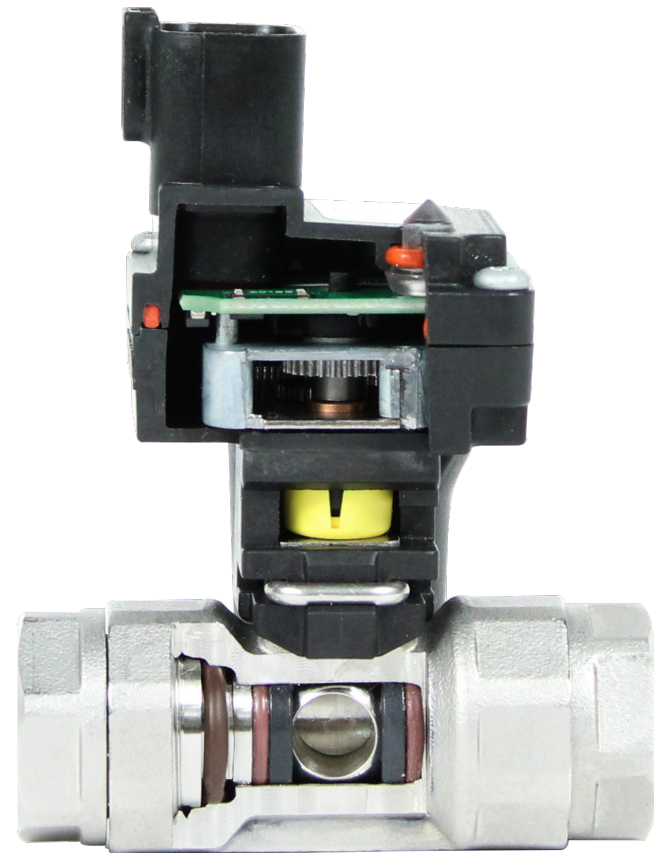
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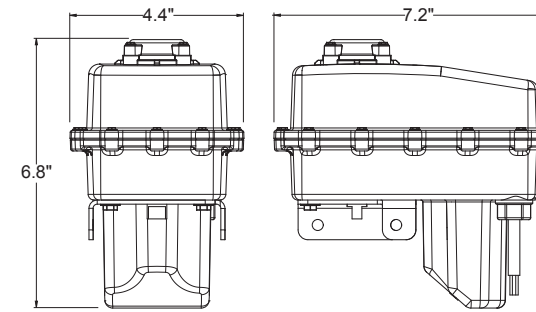
# WHY CHOOSE *KZValve* Electric Motorized Valves?

*KZValve* actuated valves are field tested not just to prove they are waterproof and durable, but to ensure maintenance free performance and long operating life. Actuator housings, electrical components, and valve components are all designed with your needs in mind—which is why leading original equipment manufacturers specify *KZValve* actuated valves for their products.

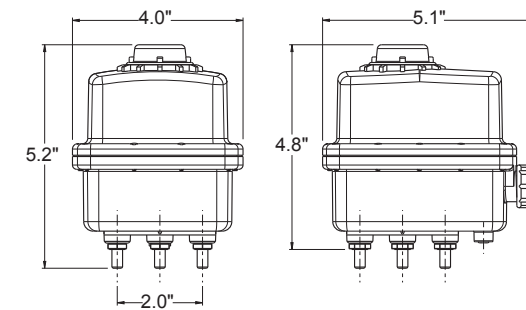
- **Waterproof actuator housings** rated NEMA 6P or NEMA 7D to protect internal components from corrosion and extends actuator life
- **One-year Limited Warranty** We believe a solid warranty package allows you to purchase *KZValve* products with confidence, and it confirms the quality, reliability and long operating life our products are built to deliver.
- **Constructed with solid state components** for increased durability and maintenance-free performance
- **Valves engineered for actuation** Internal components are selected to provide long operating life and superior performance for the valve and actuator
- **CAN/ISO BUS control** of individual electric valves giving you flexible and reliable valve control
- **Custom products** *KZValve* will help you to integrate one of our existing valves into your system, or design and build almost any actuated valve to your specifications. If you can't find it anywhere else, we'll make it to meet your requirements.



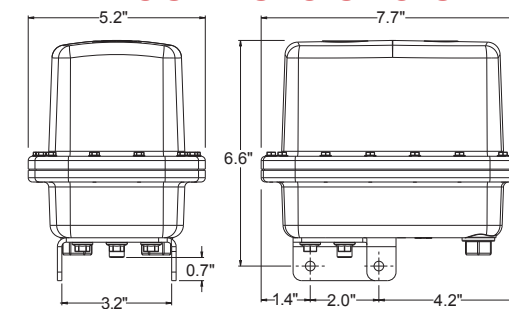
## EH2 SERIES ACTUATORS



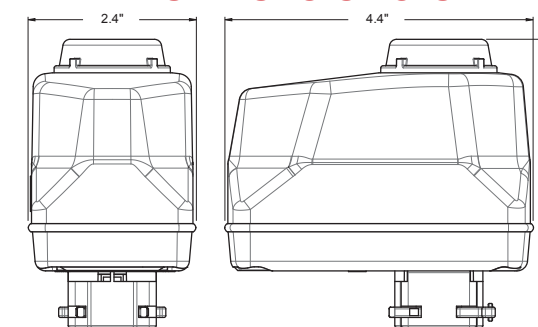
## EH3 SERIES ACTUATORS



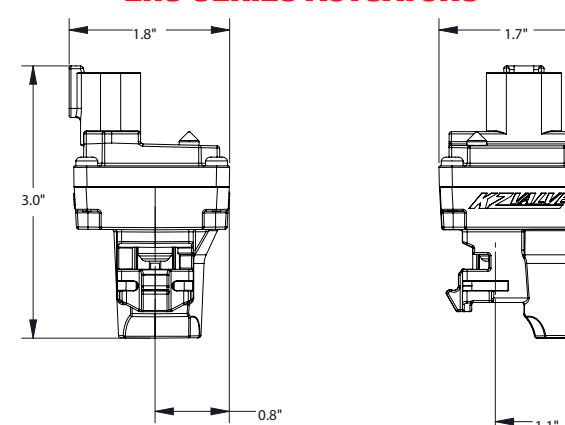
## EH5 SERIES ACTUATORS



## EH7 SERIES ACTUATORS



## EH8 SERIES ACTUATORS



## 90° Cycle Time in Seconds (no load)

- **EH2 Series Actuators**
  - 1.5 seconds
  - 8.0 seconds
  - 3.0 seconds
- **EH3 Series Actuators**
  - 0.8 seconds
  - 7.0 seconds
  - 2.5 seconds
- **EH5 Series Actuator**
  - 3.0 seconds
- **EH7 Series Actuators**
  - 0.5 seconds
  - 7.0 seconds
- **EH8 Series Actuator**
  - 0.2 seconds

## Waterproof Connectors

- Deutsch
- WeatherPak
- Amp Seal 16
- Metri-Pak
- M12

## Actuator Case Options

- Indicator flag
- Indicator LED

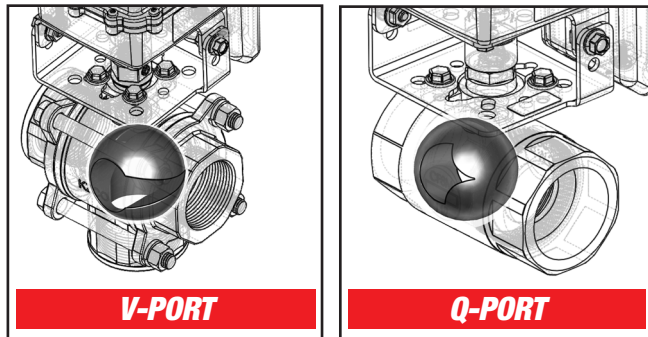
## Other Options

- 180° operation
- 225°/255° operation (regulating v-ball application)
- Valve normally closed (standard)
- Valve normally open

See actuator technical data for more options or information on pg. 75-84.

# CAN/ISO BUS ACTUATORS

- Designed to mount directly to a **KZValve** ball or butterfly valve
- Allows more precise control of the actuator to help pinpoint any system problems quickly and simplify your entire application
- Compatible with CAN, J1939 and ISO 11783 networks
- Available in the **KZValve** EH2, EH3, EH5, EH7, and EH8 series actuators
- Multiple operating modes to fit your needs:
  - Control of precision increments of 1% or 1°
  - Basic open/close commands
- Customize speed in application
- Advanced diagnostics capability allows for quick Voltage and Diagnostic trouble codes that alert issues in real time
- Able to control multiple actuators with one controller and simplified wiring
- Waterproof nylon actuator case is IP68, NEMA 6P, and NEMA 7D rated for long life and lower cost of service



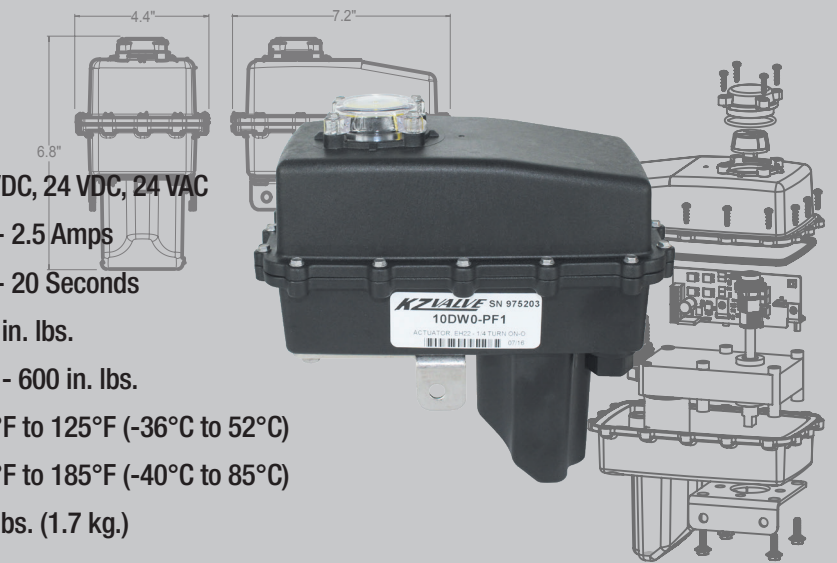
Combine with Q-Port or V-Ball for precision flow management.



# EH2 SERIES

## Specifications

Operating Voltage	12 VDC, 24 VDC, 24 VAC
Operating Amperage	0.3 - 2.5 Amps
Speed	0.5 - 20 Seconds
Operating Torque	100 in. lbs.
Stall Torque	500 - 600 in. lbs.
Operating Temperature	-32°F to 125°F (-36°C to 52°C)
Storage Temperature	-40°F to 185°F (-40°C to 85°C)
Weight	3.8 lbs. (1.7 kg.)



## Features and Benefits

- Corrosion Resistant Enclosure
- Mechanical Indicator for Position and Fault Indication
- 50% Duty Cycle
- Maintenance Free
- Able to Be Installed in Any Orientation
- Available with a Wide Variety of Electrical Connections
- Rated NEMA 6P per NEMA 250
- Rated NEMA 7D per NEMA 250
- Rated IP68 per ISO 20653 and IEC 60529

## Control Types Available

- Positive Signal to Operate
  - ON/OFF, ON/ON, ON/OFF/ON
- Positionable/ Regulating
- Proportional
  - 4-20 mA
- CAN/ISO BUS

## Position Feedback

- Positive Signal @ Open/ Closed Limits
- CAN/ISO BUS

5KΩ Potentiometer Feedback

## Diagnostic Feedback Available

Device Position

## Mounts On



1" - 1½"  
S-Series Valves

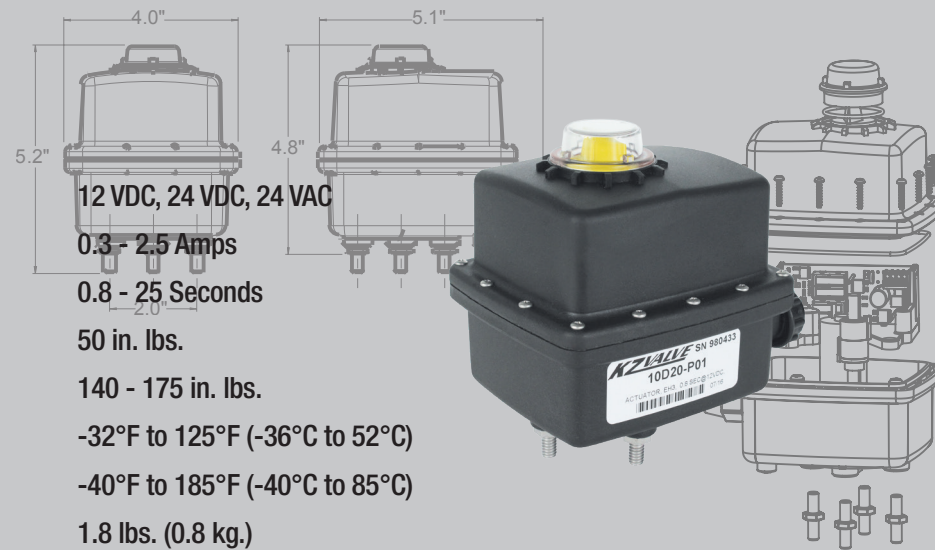
1½" - 3"  
Tru-Torq Series Valves

\*See Actuator Technical Data Section for additional details.

## EH3 SERIES

### Specifications

Operating Voltage	12 VDC, 24 VDC, 24 VAC
Operating Amperage	0.3 - 2.5 Amps
Speed	0.8 - 25 Seconds
Operating Torque	50 in. lbs.
Stall Torque	140 - 175 in. lbs.
Operating Temperature	-32°F to 125°F (-36°C to 52°C)
Storage Temperature	-40°F to 185°F (-40°C to 85°C)
Weight	1.8 lbs. (0.8 kg.)



### Features and Benefits

- Corrosion Resistant Enclosure
- Mechanical Indicator for Position and Fault Indication
- 50% Duty Cycle
- Maintenance Free
- Able to Be Installed in Any Orientation
- Available with a Wide Variety of Electrical Connections
- Rated NEMA 6P per NEMA 250
- Rated NEMA 7D per NEMA 250
- Rated IP68 per ISO 20653 and IEC 60529

### Control Types Available

- Positive Signal to Operate
- ON/OFF, ON/ON, ON/OFF/ON

### Positionable/ Regulating

#### Proportional

4-20 mA

#### CAN/ISO BUS

#### Reverse Polarity (2-Wire)

### Position Feedback

#### Positive Signal @ Open/ Closed Limits

#### CAN/ISO BUS

#### 5KΩ Potentiometer Feedback

### Diagnostic Feedback Available

#### Device Position

### Mounts On



1" QX Series Valves



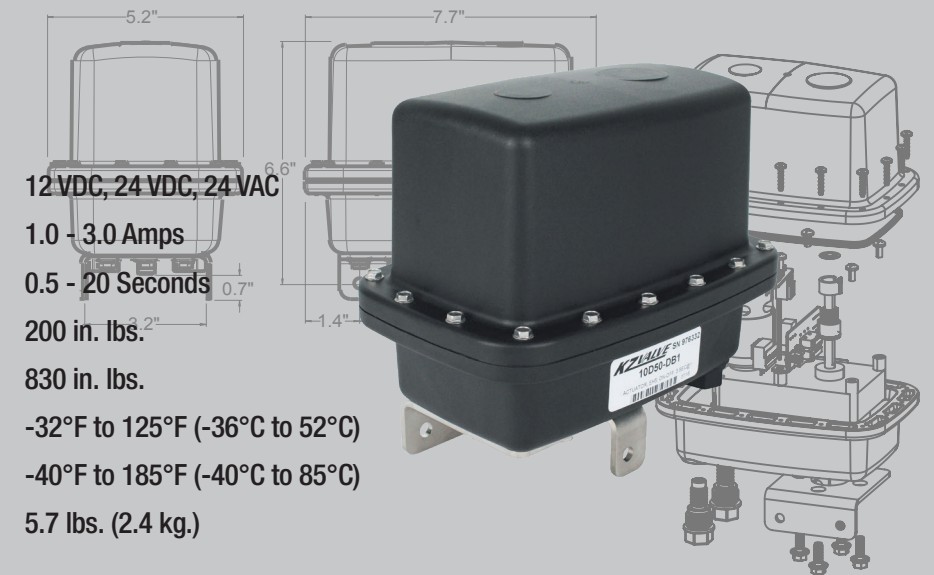
1" S-Series Valves

\*See Actuator Technical Data Section for additional details.

## EH5 SERIES

### Specifications

Operating Voltage	12 VDC, 24 VDC, 24 VAC
Operating Amperage	1.0 - 3.0 Amps
Speed	0.5 - 20 Seconds
Operating Torque	200 in. lbs.
Stall Torque	830 in. lbs.
Operating Temperature	-32°F to 125°F (-36°C to 52°C)
Storage Temperature	-40°F to 185°F (-40°C to 85°C)
Weight	5.7 lbs. (2.4 kg.)



### Features and Benefits

- Corrosion Resistant Enclosure
- Mechanical Indicator for Position and Fault Indication
- 50% Duty Cycle
- Maintenance Free
- Able to Be Installed in Any Orientation
- Available with a Wide Variety of Electrical Connections
- Rated NEMA 6P per NEMA 250
- Rated NEMA 7D per NEMA 250
- Rated IP68 per ISO 20653 and IEC 60529

### Control Types Available

- Positive Signal to Operate
- ON/OFF, ON/ON, ON/OFF/ON

### Positionable/ Regulating

#### Proportional

4-20 mA

#### CAN/ISO BUS

#### Reverse Polarity (2-Wire)

### Position Feedback

#### Positive Signal @ Open/ Closed Limits

#### CAN/ISO BUS

#### 5KΩ Potentiometer Feedback

### Diagnostic Feedback Available

#### Device Position

### Mounts On



3" - 5"  
50 Series Valves



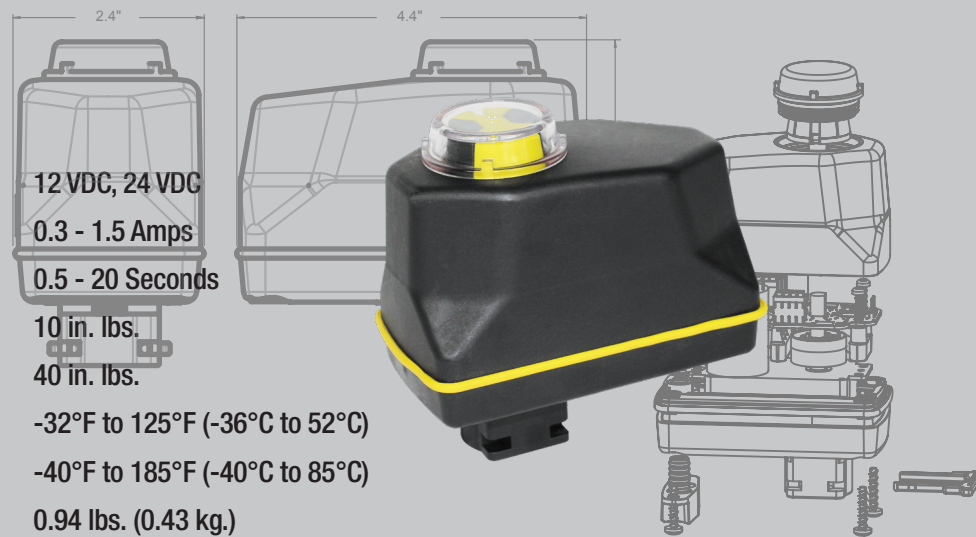
2" - 3"  
89 Series Valves

\*See Actuator Technical Data Section for additional details.

## EH7 SERIES

### Specifications

Operating Voltage	12 VDC, 24 VDC
Operating Amperage	0.3 - 1.5 Amps
Speed	0.5 - 20 Seconds
Operating Torque	10 in. lbs.
Stall Torque	40 in. lbs.
Operating Temperature	-32°F to 125°F (-36°C to 52°C)
Storage Temperature	-40°F to 185°F (-40°C to 85°C)
Weight	0.94 lbs. (0.43 kg.)



### Features and Benefits

- Corrosion Resistant Enclosure
- LED Position and Fault Indication
- 50% Duty Cycle
- Maintenance Free
- Able to Be Installed in Any Orientation
- Available with a Wide Variety of Electrical Connections
- Rated NEMA 6P per NEMA 250
- Rated IP68 per ISO 20653 and IEC 60529

### Control Types Available

- Positive Signal to Operate
  - ON/OFF, ON/ON, ON/OFF/ON
- Positionable/ Regulating
- CAN/ISO BUS

### Position Feedback

- Positive Signal @ Open/ Closed Limits
- CAN/ISO BUS

### Diagnostic Feedback Available

- Device Voltage
- Device Position
- Command Timeout
- Stall Conditions
- Signal Input Error

### Mounts On



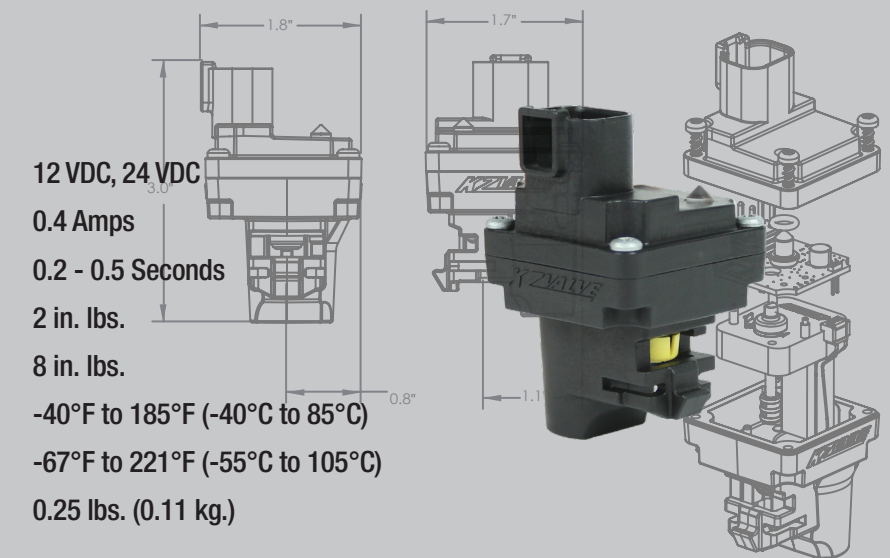
TX2 Series Valves

\*See Actuator Technical Data Section for additional details.

## EH8 SERIES

### Specifications

Operating Voltage	12 VDC, 24 VDC
Operating Amperage	0.4 Amps
Speed	0.2 - 0.5 Seconds
Operating Torque	2 in. lbs.
Stall Torque	8 in. lbs.
Operating Temperature	-40°F to 185°F (-40°C to 85°C)
Storage Temperature	-67°F to 221°F (-55°C to 105°C)
Weight	0.25 lbs. (0.11 kg.)



### Features and Benefits

- Corrosion Resistant Enclosure
- LED Position and Fault Indication
- 50% Duty Cycle
- Maintenance Free
- Able to Be Installed in Any Orientation
- Available with a Wide Variety of Electrical Connections
- Rated NEMA 6P per NEMA 250
- Rated NEMA 7D per NEMA 250
- Rated IP68 per ISO 20653 and IEC 60529

### Control Types Available

- Positive Signal to Operate
  - ON/OFF, ON/ON
- CAN/ISO BUS

### Position Feedback

- Positive Signal @ Open/ Closed Limits
- CAN/ISO BUS

### Diagnostic Feedback Available

- Device Voltage
- Device Position
- Command Timeout
- Stall Conditions
- Signal Input Error

### Mounts On



1/4" - 3/8"  
ZIPValve

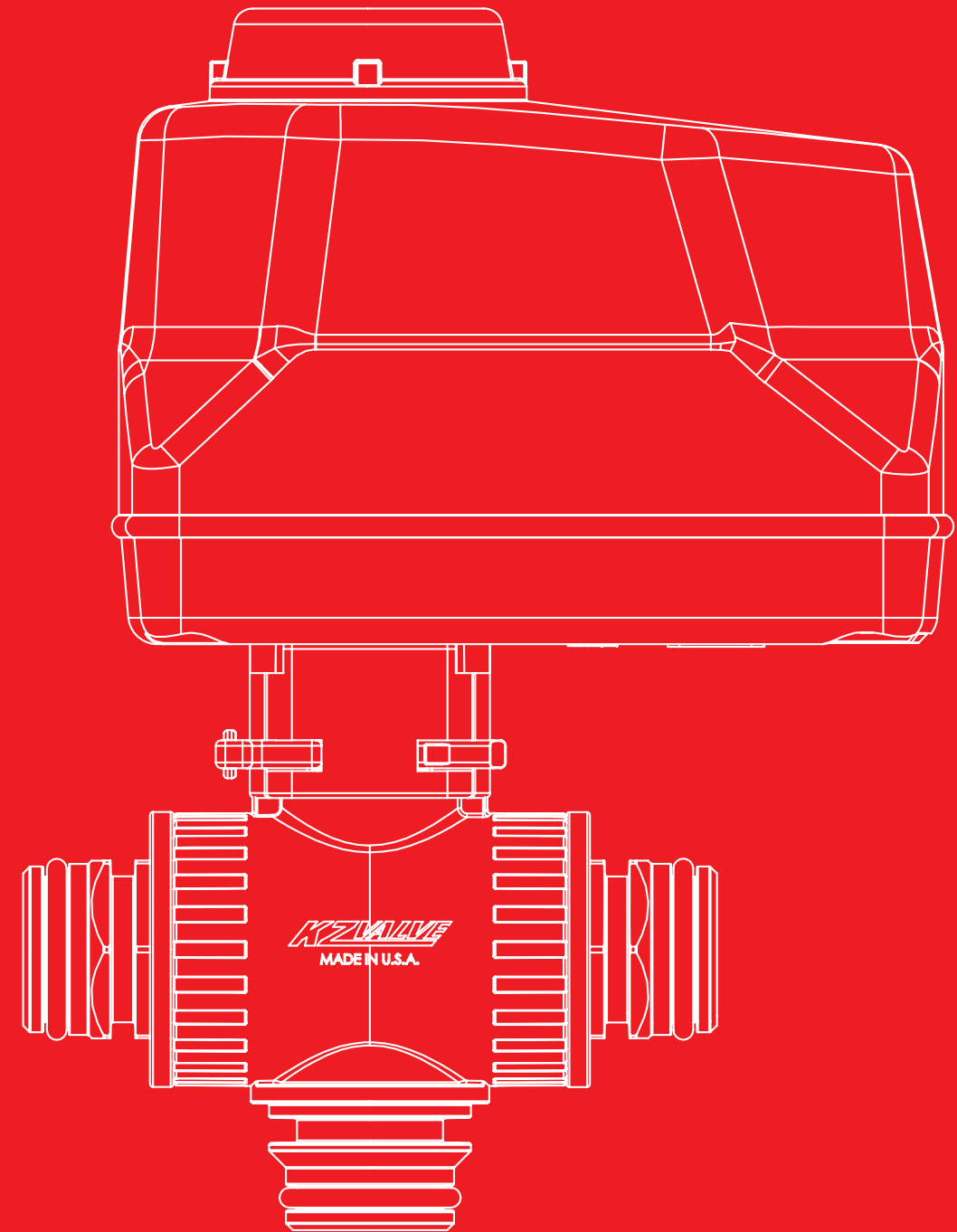
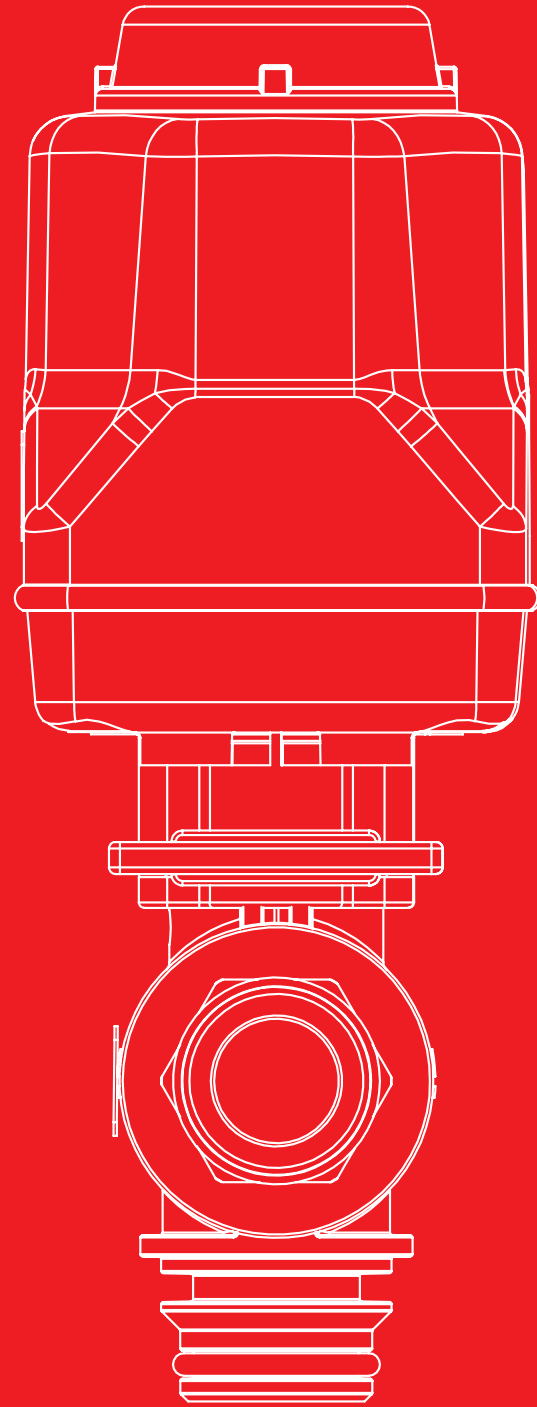
1/4" - 3/8"  
S-Series Valves

\*See Actuator Technical Data Section for additional details.



# VALVES

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# ZIPValve

## 2 & 3-Way Ball Valve

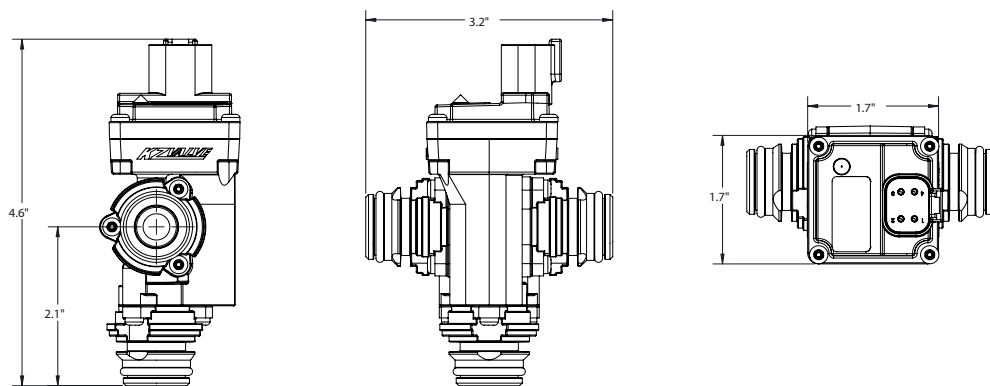
- Fast acting On/Off control with a standard port ball valve for unparalleled reliability and peace of mind
- Valve seat: Carbon graphite filled PTFE with Viton™ back-up O-rings
- Stem seal: Viton™
- Compact design weighing only 4-6 ounces, which allows for more options when mounting
- Robust, quarter-turn electric ball valves are highly reliable in the most demanding fluid control applications

### 3-way Motorized Ball Valves

¼" and ⅜" valve standard port, stainless steel ball, nylon valve body, stainless steel valve stem

- Max PSI: 150 psi at 70°F (push-to-connect & QD), 300 psi at 70°F (MNPT fittings)
- Flow: ¼" = 0.4 - 0.8 GPM at 1 PSI drop, water ⅜" = 1.0 - 3.1 GPM at 1 PSI drop, water
- Cycle Time: 0.4 second cycle time at 180°
- Voltage: 12 VDC or 24 VDC
- 0.4 Amp current draw

1/4" Part #	M12 Lid Receptacle (12 VDC or 24 VDC)
NM4B28-1CEBS-ROV	¼" Male NPT fittings, M12 lid connectors, 12/24 VDC, EH8, On/On
NN4B28-1CEBS-ROV	¼" push-to-connect fittings, M12 lid connectors, 12/24 VDC, EH8, On/On
NP4B28-1CEBS-ROV	⅜" push-to-connect fittings, M12 lid connectors, 12/24 VDC, EH8, On/On
Deutsch DT Series (12 VDC or 24 VDC)	
NM4B28-1CEBS-DOV	¼" Male NPT fittings, Deutsch lid receptacle, 12/24 VDC, EH8, On/On
NN4B28-1CEBS-DOV	¼" push-to-connect fittings, Deutsch lid receptacle, 12/24 VDC, EH8, On/On
NP4B28-1CEBS-DOV	⅜" push-to-connect fittings, Deutsch lid receptacle, 12/24 VDC, EH8, On/On
3/8" Part #	
Deutsch DT Series (12 VDC or 24 VDC)	
NA4C28-1CEBS-DOV	QD fork connection fittings*, Deutsch lid receptacle, 24 VDC, EH8, On/On
NP4C28-1CEBS-DOV	⅜" push-to-connect, Deutsch lid receptacle, 12/24 VDC, EH8, On/On
NQ4C28-1CEBS-DOV	½" push-to-connect fittings, Deutsch lid receptacle, 12/24 VDC, EH8, On/On
M12 Lid Receptacle (12 VDC or 24 VDC)	
NA4C28-1CEBS-ROV	QD fork connection fittings*, M12 Lid connectors, 12/24 VDC, EH8, On/On
NP4C28-1CEBS-ROV	⅜" push-to-connect, M12 Lid connectors, 12/24 VDC, EH8, On/On
NQ4C28-1CEBS-ROV	½" push-to-connect, M12 Lid, 12/24 VDC connectors, EH8, On/On



## ZIPVALVE

### 2-way Motorized Ball Valves

¼" and ⅜" valve standard port, stainless steel ball, nylon valve body, stainless steel valve stem

- Max PSI: 150 psi at 70°F (push-to-connect & QD), 300 psi at 70°F (MNPT fittings)
- Flow: ¼" = 1.4 GPM at 1 PSI drop, water ⅜" = 1.4 - 5.0 GPM at 1 PSI drop, water
- Cycle Time: 0.2 second cycle time at 90°
- Voltage: 12/24 VDC
- 0.4 Amp current draw

1/4" Part #	M12 Lid Receptacle (12 VDC or 24 VDC)
NMZB28-1CEBS-R01	¼" Male NPT fittings, M12 lid connectors, 12/24 VDC, EH8, On/Off
NNZB28-1CEBS-R01	¼" push-to-connect fittings, M12 lid connectors, 12/24 VDC, EH8, On/Off
NPZB28-1CEBS-R01	⅜" push-to-connect fittings, M12 lid connectors, 12/24 VDC, EH8, On/Off
Deutsch DT Series (12 VDC or 24 VDC)	
NMZB28-1CEBS-D01	¼" Male NPT fittings, Deutsch lid receptacle, 12/24 VDC, EH8, On/Off
NNZB28-1CEBS-D01	¼" push-to-connect fittings, Deutsch lid receptacle, 12/24 VDC, EH8, On/Off
NPZB28-1CEBS-D01	⅜" push-to-connect fittings, Deutsch lid receptacle, 12/24 VDC, EH8, On/Off

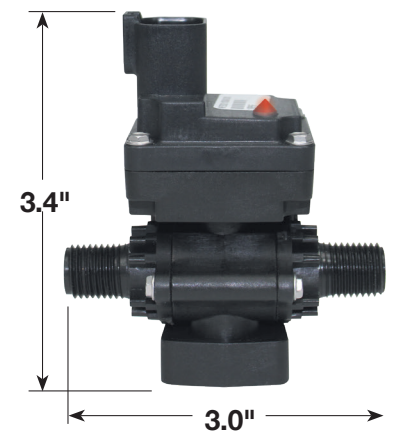
3/8" Part #	Deutsch DT Series (12 VDC or 24 VDC)
NAZC28-1CEBS-D01	QD fork connection fittings*, Deutsch lid receptacle, 12/24 VDC, EH8, On/Off
NPZC28-1CEBS-D01	⅜" push-to-connect fittings, Deutsch lid receptacle, 12/24 VDC, EH8, On/Off
NQZC28-1CEBS-D01	½" push-to-connect fittings, Deutsch lid receptacle, 12/24 VDC, EH8, On/Off

M12 Lid Receptacle (12 VDC or 24 VDC)	
NAZC28-1CEBS-R01	QD fork connection fittings*, M12 Lid connectors, 12/24 VDC, EH8, On/Off
NPZC28-1CEBS-R01	⅜" push-to-connect, M12 Lid, 12/24 VDC, EH8, On/off
NQZC28-1CEBS-R01	½" push-to-connect, M12 Lid, 12/24 VDC connectors, EH8, On/off

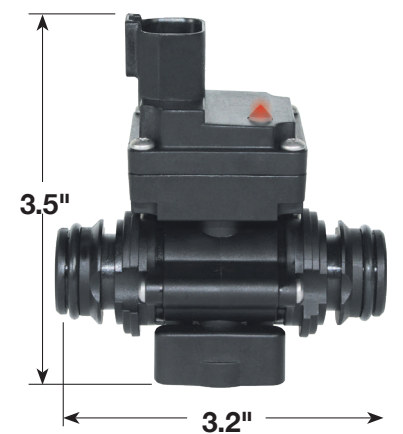
Please consult your Distributor/Key Account Manager for additional options.

\*QD & QF Fittings on pages 65-68

¼" MAXIMUM DIMENSIONS



⅜" MAXIMUM DIMENSIONS



### Optional Mounting Brackets for ZIPValve



#### BASE BRACKET

(OPTIONS AVAILABLE FOR ¼" AND ⅜")  
KIT PART # 511-0154  
INCLUDES BRACKETS AND HARDWARE

- 16-gauge stainless steel
- Accepts size ¼" – #20 bolt
- Recommend #6 hi-low fastener for plastics to attach bracket to the valve
- Valve body mounting hole is ⅜" deep
- Do not use a fastener that is longer than the mounting surface thickness plus ⅜"



#### END-CAP BRACKET

(OPTIONS AVAILABLE FOR ¼" AND ⅜")  
KIT PART # 511-0155 (¼" valves)  
511-0159 (⅜" valves QD)  
511-0160 (⅜" valves PTC)  
INCLUDES TWO BRACKETS

- 18-gauge stainless steel
- Accepts size #10 bolt
- Multiple mounting positions



#### NYLON BRACKET

(FITS ⅜" ONLY)  
Kit Part # 511-0156  
INCLUDES BRACKETS AND HARDWARE

- Nylon bracket with M6 stainless steel threaded inserts
- Connects to the ⅜" 2-way ball valve with three stainless steel screws
- Threaded inserts accept M6 x 1.0 bolt
- M6 stainless steel insert has 0.5" (12.7 mm) usable threads

# TX2 SERIES

## 2-Way Motorized Ball Valve

- ½" full port 2-Way motorized valve
- Valve body: Polypropylene, glass-filled
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Valve seat: Carbon graphite filled PTFE with EPDM back-up O-rings
- Stem seal: Viton™
- Compact design weighing only 19 ounces, which allows for more options when mounting
- 90° and straight hose barbs, FNPT hairpin fittings and flanged connections provide a vast number of plumbing solutions
- Valves are made for actuation with a *KZ Valve Waterproof EH7 Actuator* providing longer valve and actuator life
- EH7 Electric Actuator housing is rated NEMA 6P (waterproof) to protect internal components from corrosion and extends actuator life
- EH7 Electric Actuator housing meets the IP68 rating of IEC 60529 & ISO 20653 standard degree of protection provided by enclosures against water intrusion
- Available in various cycle times to meet specific needs of multiple applications



Also available as ½" 2-Way full port manual valves. Single valve weighs only 4 ounces.

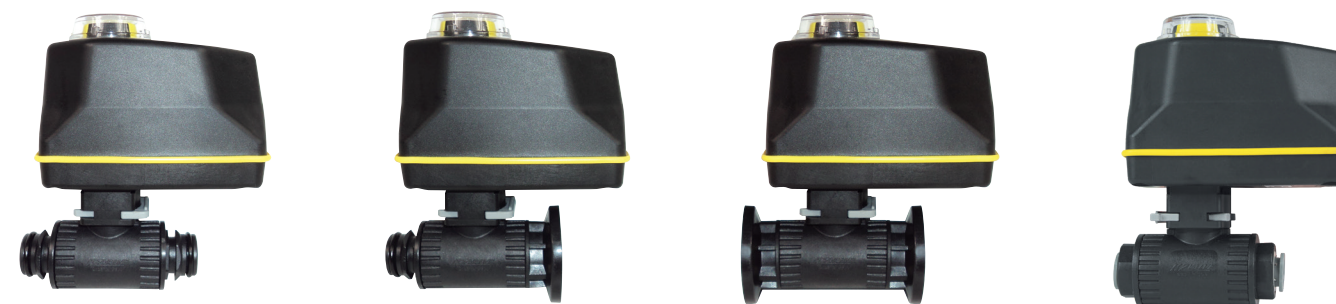
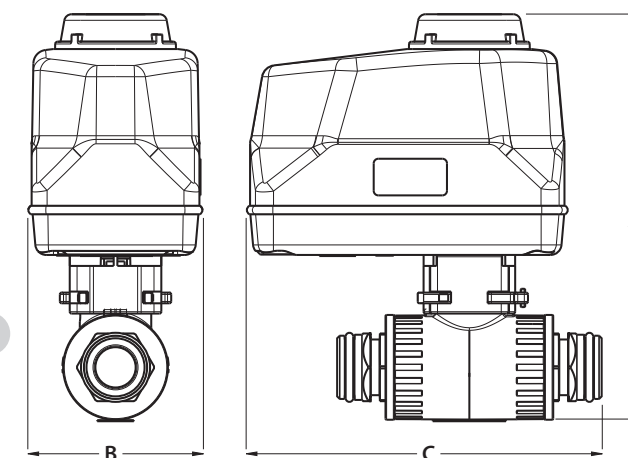


### 2-Way Motorized Ball Valve

Full port, stainless steel ball, polypropylene valve body, stainless steel valve stem, 12 VDC actuator

½" Valve Maximum PSI: 150 psi at 70° F (polypropylene)

Part #	Size	Valve Control	A	B	C
H2D37-10DK0-P01	½"	On/Off	5.5"	2.4"	4.8"



**\*QD x QD Valve** Part #H2D37-10DK0-P01    **\*QD x M100 Flange** Part #G2D37-10DK0-P01    **M100 Flange x M100 Flange** Part #C2D37-10DK0-P01    **PTC x PTC Valve** Part #Q2D37-10DK0-P01

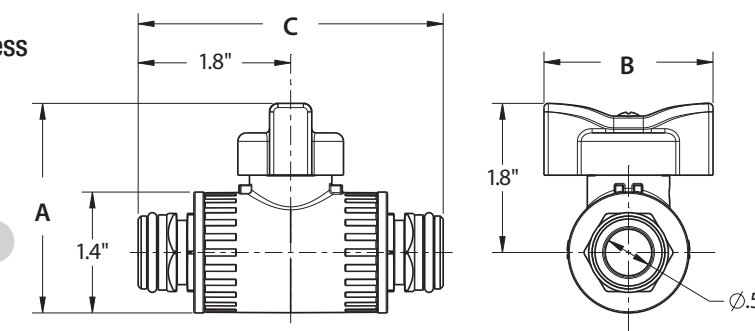
\*QD Fittings on pages 65-66

### 2-Way Manual Ball Valve

Full port, stainless steel ball, polypropylene valve body, stainless steel valve stem

½" Valve Maximum PSI: 150 psi at 70° F (polypropylene)

Part #	Size	Valve Control	A	B	C
H2DM0	½"	On/Off	2.5"	2.0"	3.6"



**QD x QD Valve**    **QD x M100 Flange**    **M100 Flange x M100 Flange**    **PTC x PTC Valve**    **Optional Mounting Bracket** Kit # 511-0006

Please consult your Distributor/Key Account Manager for additional options.

# TX2 SERIES

## 3-Way Motorized Ball Valve

- 1/2" full port 3-Way motorized valve
- Valve body: Polypropylene, glass-filled
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Valve seat: Carbon graphite filled PTFE with EPDM back-up O-rings
- Stem seal: Viton™
- Compact design weighing only 19 ounces, which allows for more options when mounting
- 90° and straight hose barbs, FNPT hairpin fittings and flanged connections provide a vast number of plumbing solutions
- Valves are made for actuation with a *KZ Valve Waterproof EH7 Actuator* providing longer valve and actuator life
- EH7 Electric Actuator housing is rated NEMA 6P (waterproof) to protect internal components from corrosion and extends actuator life
- EH7 Electric Actuator housing meets the IP68 rating of IEO 60529 & ISO 20653 standard degree of protection provided by enclosures against water intrusion
- Available in various cycle times to meet specific needs of multiple applications



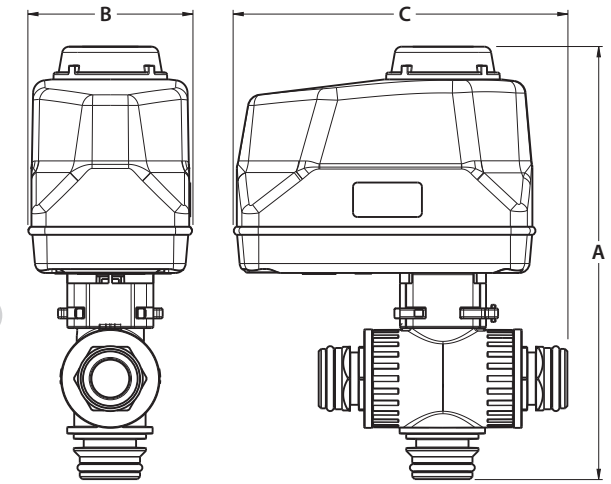
Also available as 1/2" 3-Way full port manual valves. Single valve weighs only 4 ounces.



### 3-Way Motorized Ball Valve

Full port, stainless steel ball, polypropylene valve body, stainless steel valve stem, 12 VDC actuator  
 1/2" Valve Maximum PSI: 150 psi at 70° F (polypropylene)

Part #	Size	Valve Control	A	B	C
H7D37-10DK0-P31	1/2"	On/On	6.4"	2.4"	4.8"

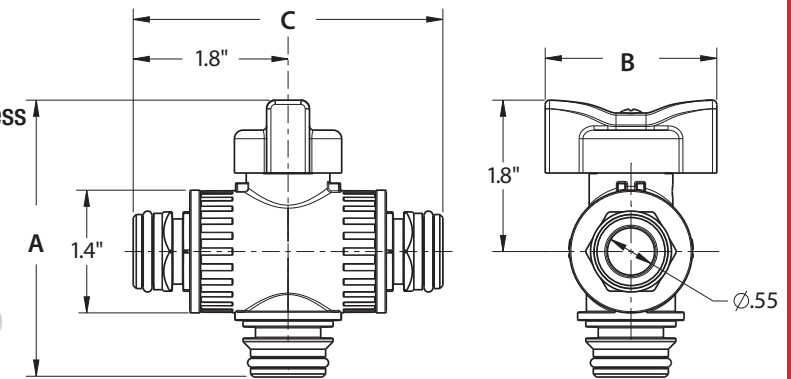


\*QD x QD Valve Part #H7D37-10DK0-P31  
 \*QD x M100 Flange Part #G7D37-10DK0-P31  
 M100 Flange x M100 Flange Part #C7D37-10DK0-P31  
 Optional Mounting Bracket Kit # 511-0006  
 \*QD Fittings on pages 65-66

### 3-Way Manual Ball Valve

Full port, stainless steel ball, polypropylene valve body, stainless steel valve stem  
 1/2" Valve Maximum PSI: 150 psi at 70° F (polypropylene)

Part #	Size	Valve Control	A	B	C
H7DM0	1/2"	On/On	3.2"	2.0"	3.6"



QD x QD Valve QD x M100 Flange M100 Flange x M100 Flange

Please consult your Distributor/Key Account Manager for additional options.

# TX2 MANIFOLD SERIES

## Motorized 2-Way • 3-Way • Metered Bypass

- 1/2" full port 3-Way valve manifold
- Valve body: Polypropylene, glass-filled
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Valve seat: Carbon graphite filled PTFE with EPDM back-up O-rings
- Stem seal: Viton™
- Valve and Electric Actuator weigh 20 ounces, resulting in increased overall performance
- Waterproof nylon actuator case is IP68 and NEMA 6P rated for long life and lower cost of service
- 90° and straight hose barbs, FNPT hairpin fittings and flanged connections provide a vast number of plumbing solutions
- Mounting bosses are molded under the manifold, providing consistent valve performance time after time



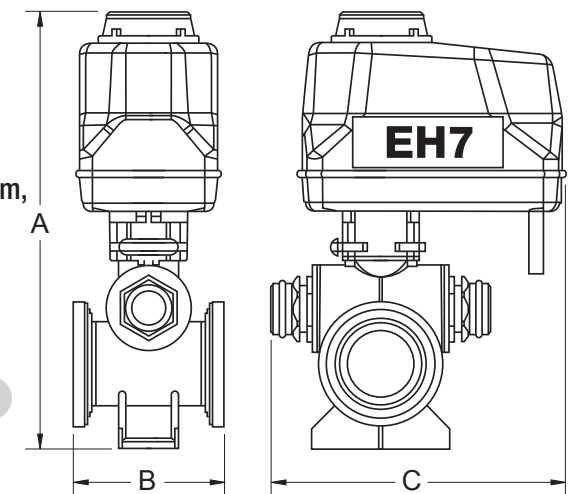
Also available as 1/2" 2-Way, 3-Way and metered bypass full port manual valves. Single valve weighs only 6 ounces.



### 1/2" Polypropylene 2-Way, 3-Way and Metered Bypass Ball Valves Single Valves, Manifolds

Full port, stainless steel ball, polypropylene valve body, stainless steel valve stem, 12 VDC actuator.

1/2" Valve Maximum PSI: 150 psi at 70° F (polypropylene)



Part #	Size	Valve Control	Cycle Time	A	B	C
21CA7-10DK0-P31	1/2"	On/On	0.5 sec.	7.3"	2.5"	4.8"



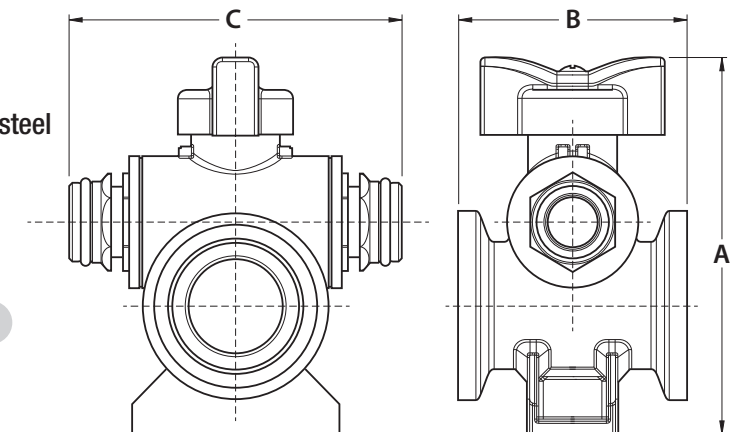
21CA7-10DK0-P31      2-Way Valve      3-Way Valve      Metered Bypass Valve

\*QD Fittings on pages 65-66

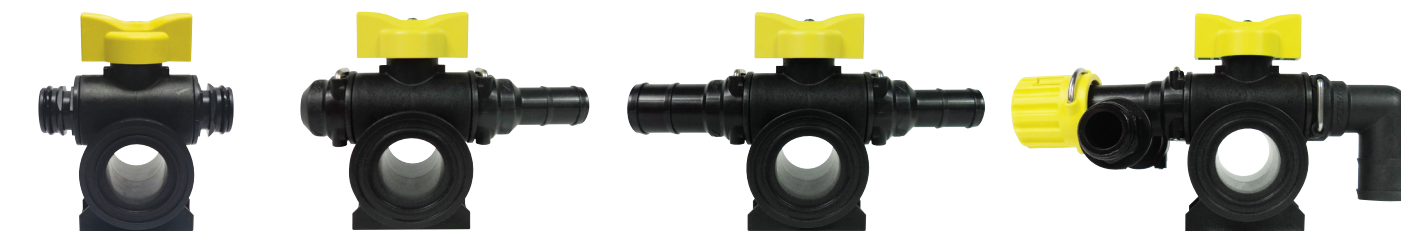
### Manual 2-Way, 3-Way, and Metered Bypass Configurations

Full port, stainless steel ball, polypropylene valve body, stainless steel valve stem

1/2" Valve Maximum PSI: 150 psi at 70° F (polypropylene)



Part #	Size	Valve Control	A	B	C
21CA7M	1/2"	On/On	4.1"	2.5"	3.6"
21CA6M	1/2"	V-ball Regulating	4.1"	2.5"	3.6"



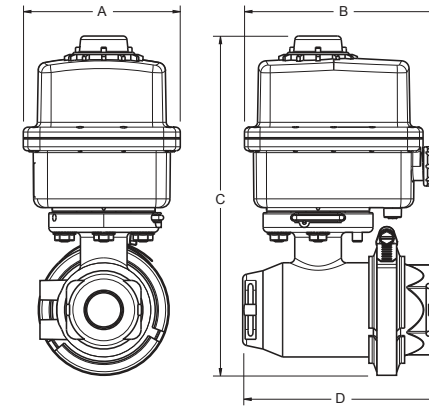
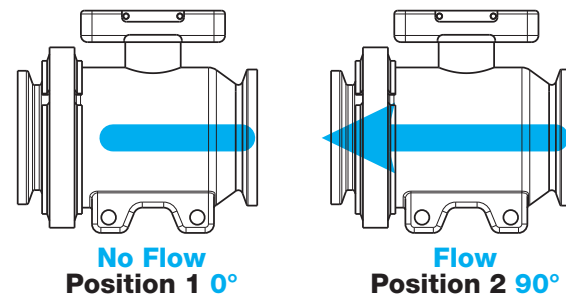
QD Connect      2-Way Valve      3-Way Valve      Metered Bypass Valve

Please consult your Distributor/Key Account Manager for additional options.

# QX SERIES

## 2-Way Motorized Ball Valves

- 3/4" to 1 1/2" full port 2-Way ball valves
- Valve body: Polypropylene or nylon
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Valve seat: Virgin PTFE with EPDM back-up O-rings
- Stem Seal: Dual Viton™ O-ring
- Body seals: EPDM
- Available with FNPT
- Quick hairpin outlet and flanged outlets also available
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection
- EH3 Electric Actuator housing meets the IP68 rating of IEC 60529 & ISO 20653 standard degree of protection provided by enclosures against water intrusion

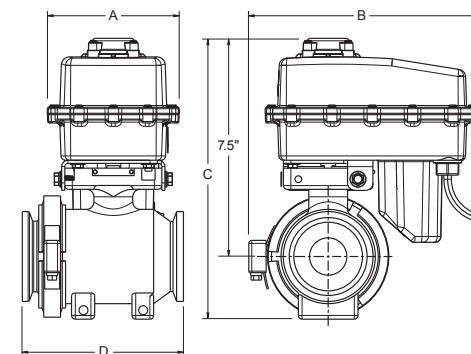


### 3/4" and 1" Polypropylene and Nylon 2-Way Ball Valves

Full port, stainless steel ball, FNPT, 12 VDC actuator.  
Maximum PSI: 150 psi at 70° F (polypropylene), 300 psi at 70° (nylon)

KZ Valve Standard Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
F2E33-10D20-P01	3/4"	On/Off	0.8 sec.	51	4.0"	5.1"	8.6"	5.0"
F2E33-20DP0-P01	3/4"	Positionable	2.5 sec.	51	4.0"	5.1"	8.6"	5.0"
F2E33-20DQ0-P01	3/4"	Positionable	7.0 sec.	51	4.0"	5.1"	8.6"	5.0"
F2F33-10D20-P01	1"	On/Off	0.8 sec.	68	4.0"	5.1"	8.6"	5.0"
F2F33-20DP0-P01	1"	Positionable	2.5 sec.	68	4.0"	5.1"	8.6"	5.0"
F2F33-20DQ0-P01	1"	Positionable	7.0 sec.	68	4.0"	5.1"	8.6"	5.0"

\* GPM at 1 PSI drop, water



### 1/4" and 1/2" Polypropylene and Nylon 2-Way Ball Valves

Full port, stainless steel ball, FNPT, 12 VDC actuator.  
Maximum PSI: 125 psi at 70° F (polypropylene), 200 psi at 70° (nylon)

KZ Valve Standard Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
F2G22-10DY0-PF1	1/4"	On/Off	1.5 sec.	120	4.4"	7.7"	9.4"	5.4"
F2G22-20DW0-PF1	1/4"	Positionable	3.0 sec.	120	4.4"	7.7"	9.4"	5.4"
F2G22-20DU0-PF1	1/4"	Positionable	8.0 sec.	120	4.4"	7.7"	9.4"	5.4"
F2H22-10DY0-PF1	1/2"	On/Off	1.5 sec.	170	4.4"	7.7"	9.4"	5.4"
F2H22-20DW0-PF1	1/2"	Positionable	3.0 sec.	170	4.4"	7.7"	9.4"	5.4"
F2H22-20DU0-PF1	1/2"	Positionable	8.0 sec.	170	4.4"	7.7"	9.4"	5.4"

NYLON AND FLANGED OPTIONS OF VALVES ABOVE MAY BE AVAILABLE UPON REQUEST.

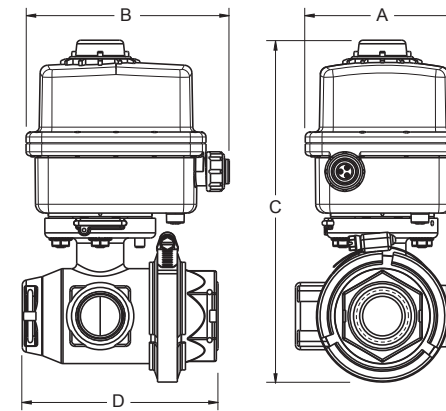
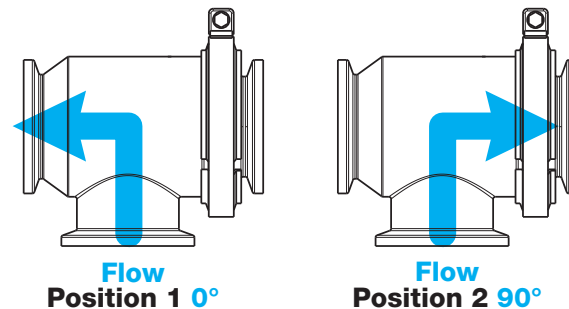
\* GPM at 1 PSI drop, water

Please consult your Distributor/Key Account Manager for additional options.

# QX SERIES

## 3-Way, Side Load Diverter Ball Valves

- ¾", 1", and 1½" full port valves
- Valve body: Polypropylene or nylon
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Valve seat: Virgin PTFE with EPDM back-up O-rings
- Stem Seal: Dual Viton™ O-ring
- Body seals: EPDM
- Available with FNPT
- Quick hairpin outlet available on 1" valve
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection
- EH3 Electric Actuator housing meets the IP68 rating of IEC 60529 & ISO 20653 standard degree of protection provided by enclosures against water intrusion

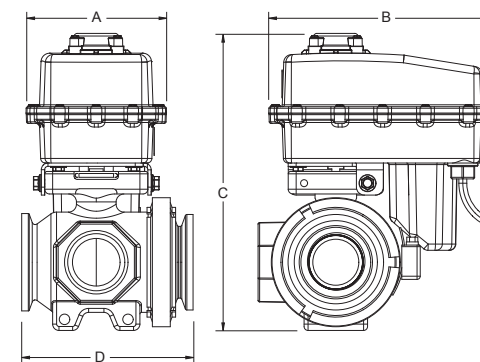


### ¾" and 1" Polypropylene and Nylon 3-Way Side Load, Diverter Ball Valves

Full port, stainless steel ball, FNPT, on-on diverter ball valve, 12 VDC actuator.  
Maximum PSI: 150 psi at 70° F (polypropylene), 300 psi at 70° (nylon)

KZ Valve Standard Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
F3E23-10D20-P31	¾"	On/Off	0.8 sec.	15	4.0"	5.1"	8.6"	5.0"
F3F23-10D20-P31	1"	On/Off	0.8 sec.	25	4.0"	5.1"	8.6"	5.0"

\* GPM at 1 PSI drop, water



### 1½" Polypropylene and Nylon 3-Way Side Load, Diverter Ball Valves

Full port, stainless steel ball, FNPT, on-on diverter ball valve, 12 VDC actuator.  
Maximum PSI: 125 psi at 70° F (polypropylene), 200 psi at 70° (nylon)

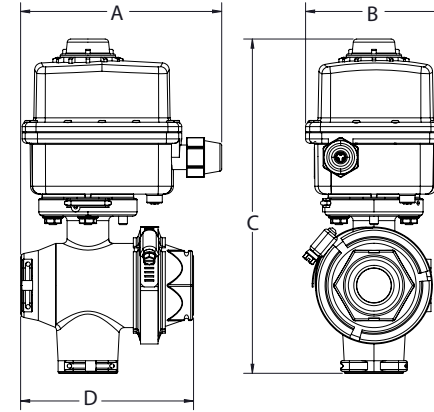
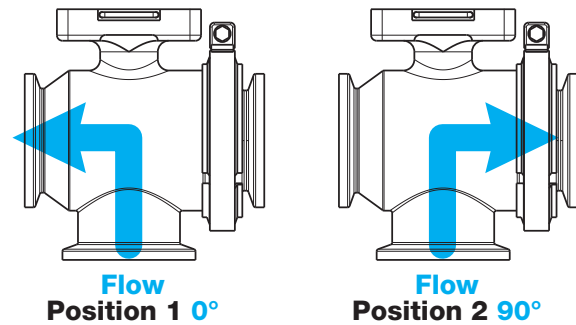
KZ Valve Standard Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
F3H22-10DY0-P31	1½"	On/Off	1.5 sec.	47	4.3"	7.1"	9.2"	5.4"

NYLON OPTIONS OF VALVES ABOVE MAY BE AVAILABLE UPON REQUEST.  
\* GPM at 1 PSI drop, water  
Please consult your Distributor/Key Account Manager for additional options.

# QX SERIES

## 3-Way, Bottom Load Diverter Ball Valves

- 1" and 1½" full port valves
- Valve body: Polypropylene or nylon
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Valve seat: Virgin PTFE with EPDM back-up O-rings
- Stem Seal: Dual Viton™ O-ring
- Body seals: EPDM
- Available with FNPT outlet
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection



### 1" and 1½" Polypropylene and Nylon 3-Way Bottom Load, Diverter Ball Valves

Full port, stainless steel ball, FNPT, on-on diverter ball valve, 12 VDC actuator.  
Maximum PSI: 125 psi at 70° F (polypropylene), 200 psi at 70° (nylon)

KZValve Standard Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
F7F33-10D20-P31	1"	On/Off	0.8 sec.	25	5.7"	4.0"	9.5"	4.9"
F7H22-10DY0-P31	1½"	On/Off	1.5 sec.	47	4.3"	7.1"	9.8"	5.4"

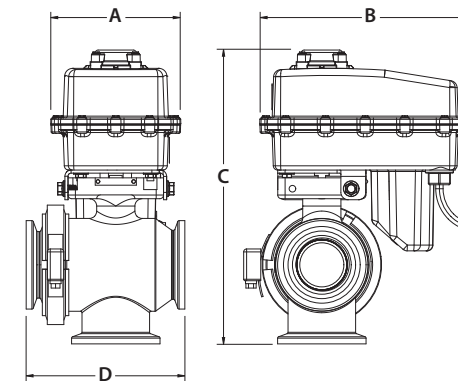
\* GPM at 1 PSI drop, water

### 1" and 1½" Polypropylene and Nylon 3-Way Bottom Load, Selector Ball Valves

Full port, stainless steel ball, FNPT, on-on selector ball valve, 12 volt DC actuator.  
Maximum PSI: 100 psi at 70° F (polypropylene), 150 psi at 70° (nylon)

KZValve Standard Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
F4F33-10D20-POV	1"	On/Off	0.8 sec.	25	5.7"	4.0"	9.5"	4.9"
F4H22-10DY0-P31	1½"	On/Off	1.5 sec.	47	4.3"	7.1"	12.6"	6.3"

\* GPM at 1 PSI drop, water



### 1" and 1½" Polypropylene and Nylon 3-Way Bottom Load, V-Ball Valves

Full port, stainless steel ball, FNPT, on-on V-ball valve, 12 volt DC actuator.  
Maximum PSI: 100 psi at 70° F (polypropylene), 150 psi at 70° (nylon)

KZValve Standard Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
F6F33-20D20-P0L	1"	Positionable	2.0 sec.	25	5.7"	4.0"	9.5"	4.9"
F6H22-20DY0-PFL	1½"	Positionable	3.8 sec.	47	4.3"	7.1"	12.6"	6.3"

NYLON AND FLANGED OPTIONS OF VALVES ABOVE MAY BE AVAILABLE UPON REQUEST.

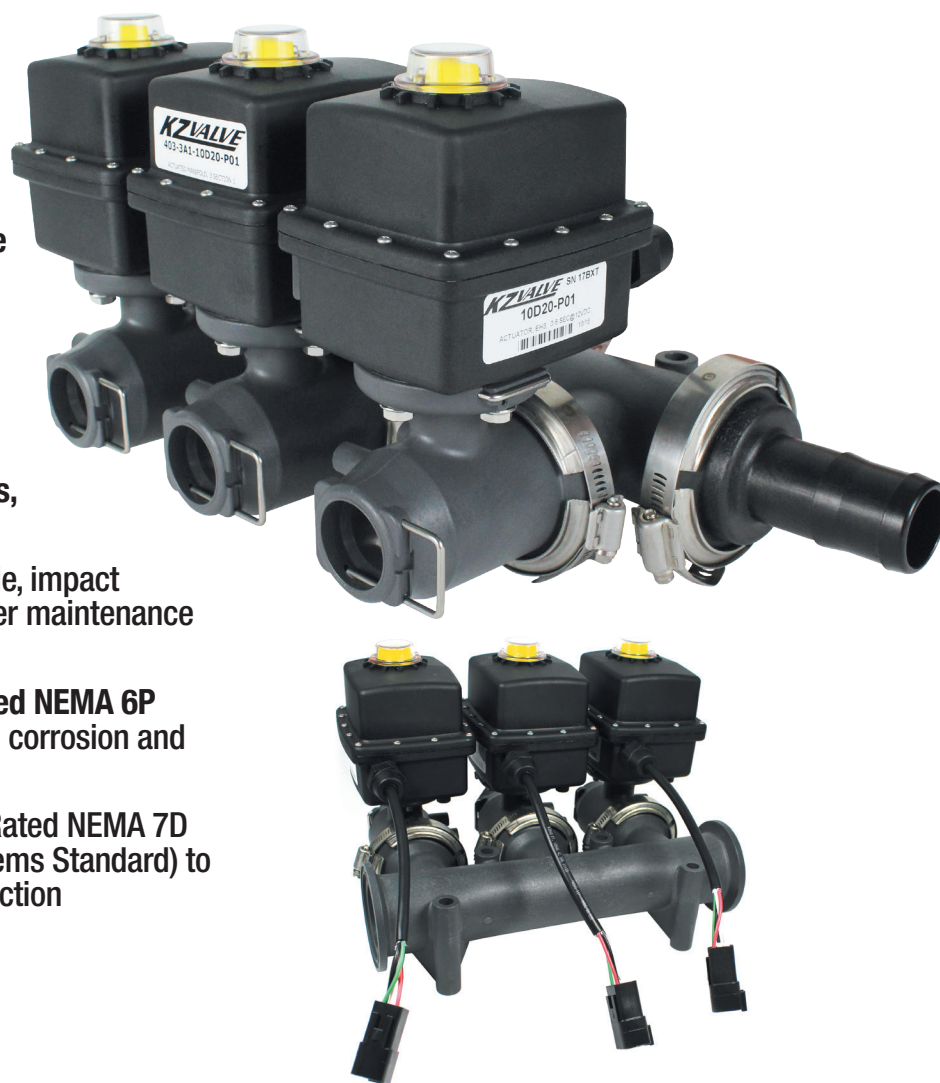
\* GPM at 1 PSI drop, water

Please consult your Distributor/Key Account Manager for additional options.



**QX SERIES****Polypropylene 3-Section, 1-Piece Ball Valve Manifold**

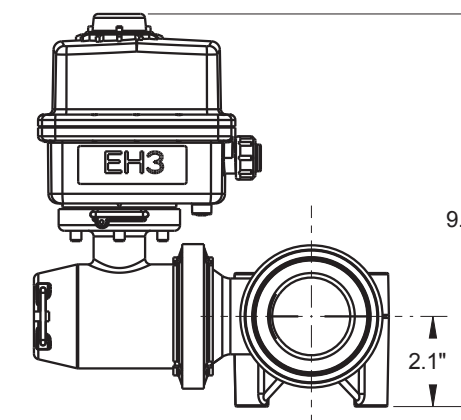
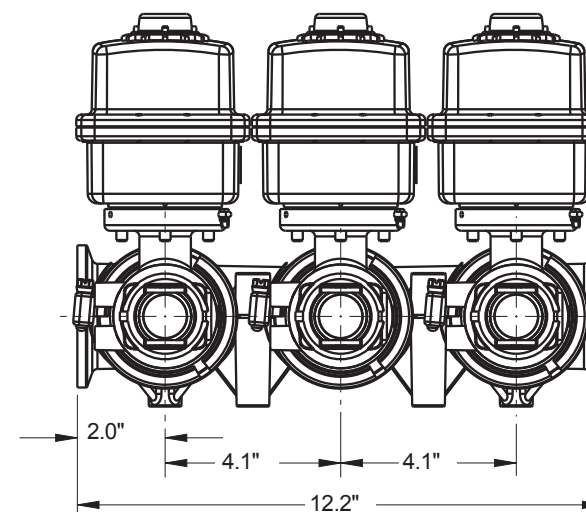
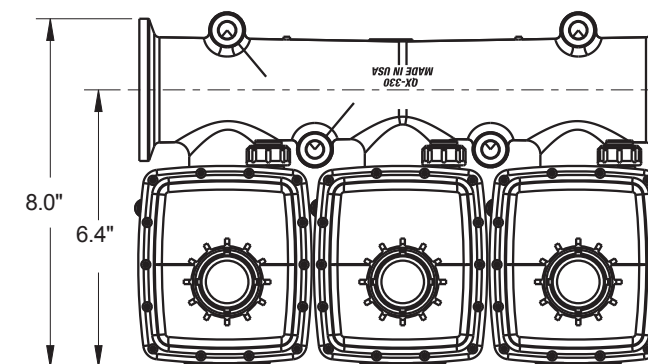
- 1" full port valves
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Valve/manifold body: Polypropylene
- Valve seat: Virgin PTFE with EPDM back-up O-rings
- Stem seal: Dual Viton™ O-ring
- Body seals: EPDM
- Available with quick hairpin fittings, FNPT or flange outlet
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection

**1" Polypropylene 3-Section, 1-Piece, Ball Valve Manifold**

2-Way, full port, stainless steel ball, FNPT, ball valve manifold, 12 VDC actuator.  
Maximum PSI: 150 psi at 70° F (polypropylene)

KZ Valve Standard Part #	Size	Valves	Control	Cycle Time
403-320-10D20-P01	1"	3	On/Off	0.8 sec.

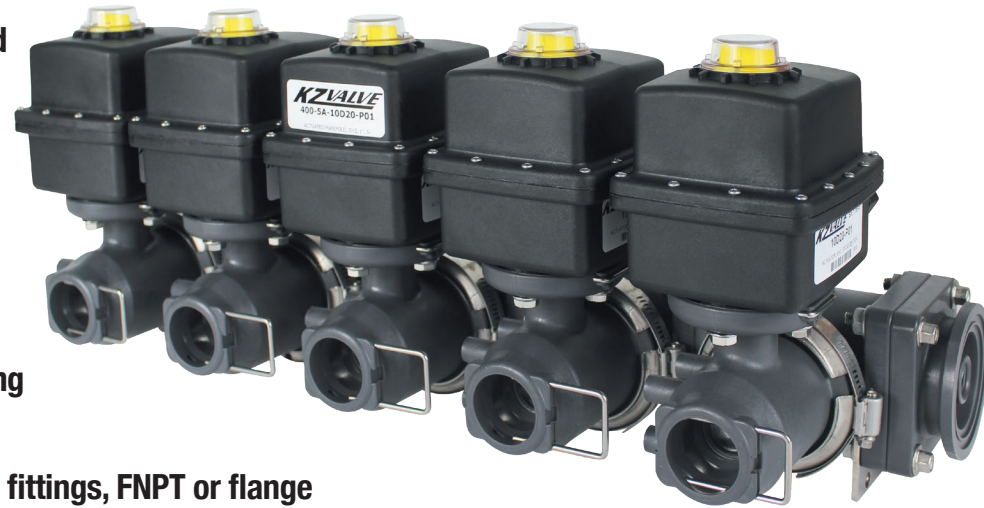
Please consult your Distributor/Key Account Manager for additional options.



# QX SERIES

## 2-Way, Full Port Modular Valve Manifold

- 1" full port valves
- 2 to 9 valves on the manifold
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Valve/manifold body: Polypropylene
- Valve seat: Virgin PTFE with EPDM back-up O-rings
- Stem seal: Dual Viton™ O-ring
- Body seals: EPDM
- Available with quick hairpin fittings, FNPT or flange outlet
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection



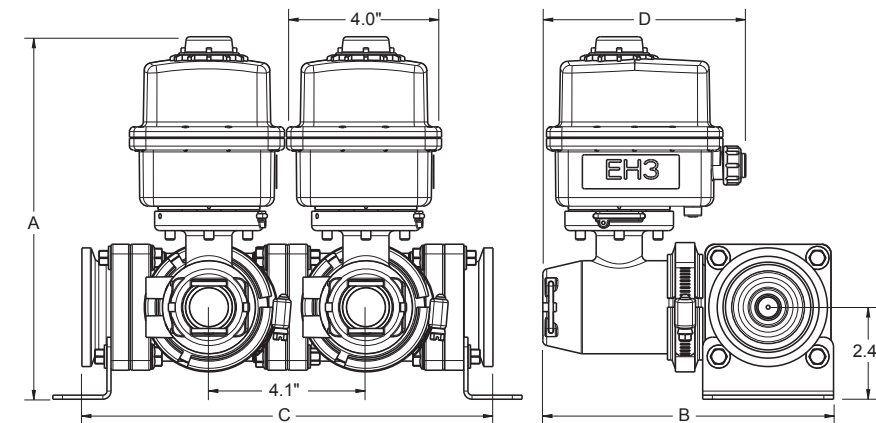
### 1" Polypropylene Modular Ball Valve Manifold

2-Way, full port, stainless steel ball, FNPT, ball valve manifold, 12 VDC actuator.  
Maximum PSI: 150 psi at 70° F (polypropylene)

NOTE: Add 4.3 lbs. per each additional section • Add 4.1" per each additional section

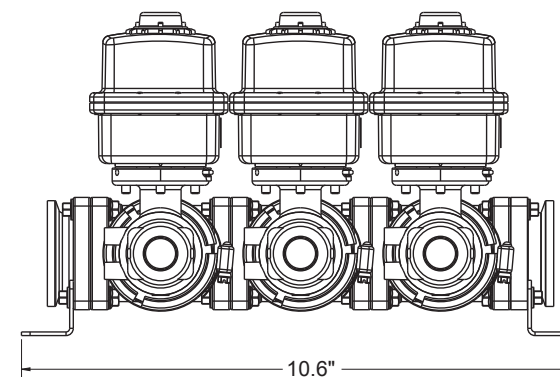
KZValve StandardPart#	Size	Valves	Control	Cycle Time	A	B	C	D
400-1F-10D20-P01	1"	1	On/Off	0.8 sec.	9.4"	7.5"	6.6"	5.2"
400-2F-10D20-P01	1"	2	On/Off	0.8 sec.	9.4"	7.5"	10.6"	5.2"
400-3F-10D20-P01	1"	3	On/Off	0.8 sec.	9.4"	7.5"	14.7"	5.2"
400-4F-10D20-P01	1"	4	On/Off	0.8 sec.	9.4"	7.5"	18.7"	5.2"
400-5F-10D20-P01	1"	5	On/Off	0.8 sec.	9.4"	7.5"	22.8"	5.2"

Please consult your Distributor/Key Account Manager for additional options.



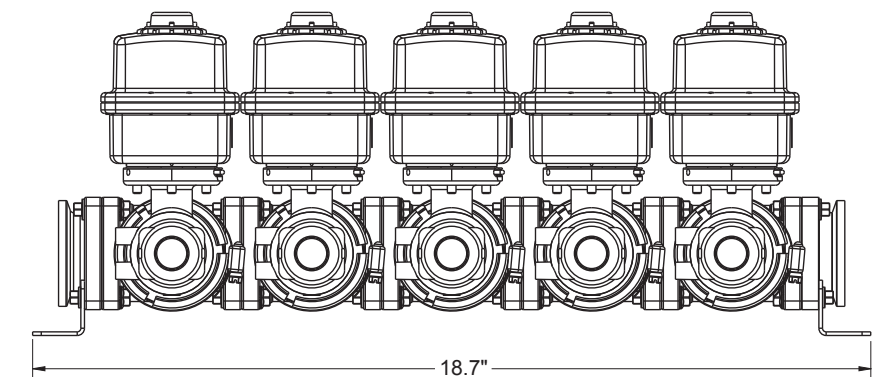
#### 400-3F-10D20-P01

3 section manifold • 1" full port valves



#### 400-5F-10D20-P01

5 section manifold • 1" full port valves



# TRU-TORQ SERIES

## 2-Way Motorized Ball Valves

- Designed to mount directly to a *KZ Valve* EH Series actuator
- 1½", 2" and 3" full port 2-Way ball valves
- Valve body: Polypropylene, EPDM O-rings
- Ball: Stainless Steel (1½" and 2")  
Polypropylene (2" and 3")
- Stem: 316 stainless steel
- Valve seat: Virgin PTFE with EPDM back-up O-rings
- Stem seal: Dual Viton™ O-rings
- Mounting bosses are molded into the valve body which reduces mounting time and maintains undisturbed torque specifications of the ball and end caps, a common problem for plastic, bolted ball valves
- Waterproof nylon actuator case is IP68, NEMA 6P, and NEMA 7D rated for long life and lower cost of service



Also available in premium quality, consistently smooth operating manual valve



**FLANGED**

1½", 2" and 3" Valves



**FNPT THREADS**

2" and 3" Valves

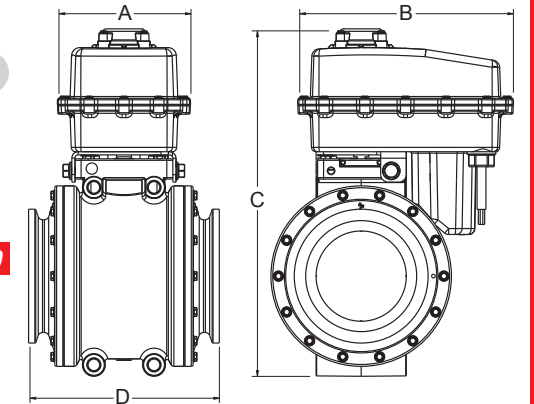
### 1½" Polypropylene 2-Way Ball Valves **FLANGED**

Full port, **stainless steel ball**, polypropylene valve body, stainless steel valve stem, flange connection, 12 VDC actuator.

- 1½" Valve Maximum PSI: 150 psi at 70° F

Poly Part #	Size	Valve Control	Cycle Time	Flow GPM*	A	B	C	D
T2H22-10DY0-PF1	1½"	On/Of	1.5 sec.	170	4.4"	7.2"	9.1"	4.5"
T2H22-20DU0-PF1	1½"	Positionable	8.0 sec.	170	4.4"	7.2"	9.1"	4.5"

\* GPM at 1 PSI drop, water



### 2" and 3" Polypropylene 2-Way Ball Valves **FLANGED**

Full port, **polypropylene ball**, polypropylene valve body, stainless steel valve stem, flange connection, 12 VDC actuator.

- 2" Valve Maximum PSI: 150 psi at 70° F (polypropylene)
- 3" Valve Maximum PSI: 100 psi at 70° F (polypropylene)

Poly Part #	Size	Valve Control	Cycle Time	Flow GPM*	A	B	C	D
M2I22-10DY0-PF1	2"	On/Off	1.5 sec.	370	4.4"	7.2"	9.9"	5.2"
M2I22-20DU0-PF1	2"	Positionable	8.0 sec.	370	4.4"	7.2"	9.9"	5.2"
M2K22-10DW0-PF1	3"	On/Off	3.0 sec.	995	4.4"	7.2"	11.5"	6.3"
M2K22-20DU0-PF1	3"	Positionable	8.0 sec.	995	4.4"	7.2"	11.5"	6.3"

\* GPM at 1 PSI drop, water

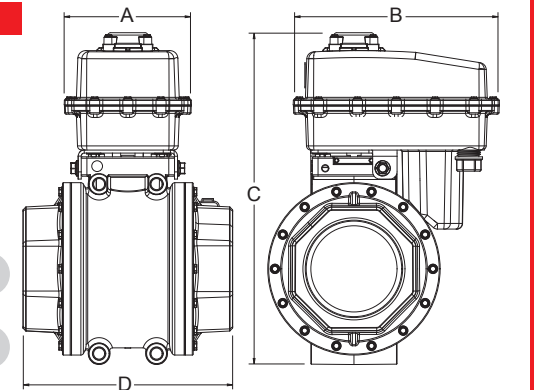
### 2" and 3" Polypropylene 2-Way Ball Valves **FNPT**

Full port, **polypropylene ball**, polypropylene valve body, stainless steel valve stem, FNPT connection, 12 VDC actuator.

- 2" Valve Maximum PSI: 150 psi at 70° F (polypropylene)
- 3" Valve Maximum PSI: 100 psi at 70° F (polypropylene)

Poly Part #	Size	Valve Control	Cycle Time	Flow GPM*	A	B	C	D
FM2I22-10DW0-PF1	2"	On/Off	3.0 sec.	370	4.4"	7.2"	9.9"	5.2"
FM2I22-20DU0-PF1	2"	Positionable	8.0 sec.	370	4.4"	7.2"	9.9"	5.2"
FM2K22-10DW0-PF1	3"	On/Off	3.0 sec.	995	4.4"	7.2"	11.5"	7.3"
FM2K22-20DU0-PF1	3"	Positionable	8.0 sec.	995	4.4"	7.2"	11.5"	7.3"

\* GPM at 1 PSI drop, water

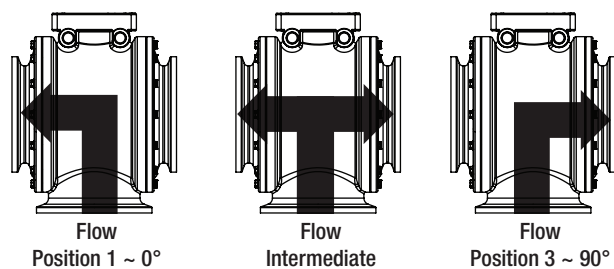


Please consult your Distributor/Key Account Manager for additional options.

# TRU-TORQ SERIES

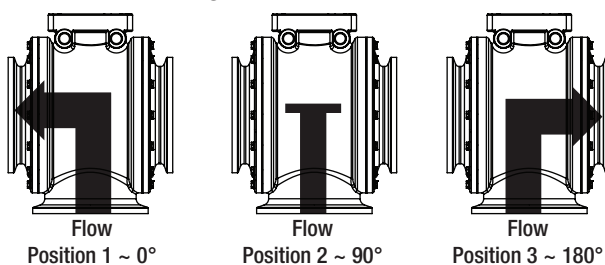
## 3-Way Motorized Ball Valves

- Designed to mount directly to a **KZ Valve EH Series** actuator
- 1½", 2" and 3" full port 3-Way ball valves
- **Valve body:** Polypropylene, EPDM O-rings
- **Ball:** Polypropylene
- **Stem:** 316 stainless steel
- **Valve seat:** Virgin PTFE with EPDM back-up O-rings
- **Stem seal:** Dual Viton™ O-rings
- **Mounting bosses** are molded into the valve body which reduces mounting time and maintains undisturbed torque specifications of the ball and end caps, a common problem for plastic, bolted ball valves
- **Waterproof nylon actuator case is IP68, NEMA 6P, and NEMA 7D** rated for long life and lower cost of service
- **Designed flows for 180° rotation On/Off/On with no mixing or On/On with no mixing**



### 3-Way, Bottom-Load Diverter Valves

\*On/On \*Mixing \*3-Port Ball



### 3-Way, Bottom-Load Selector Valves

\*On/Off/On \*No-Mixing \*L-Port Ball



## 1½", 2" and 3" Polypropylene 3-Way Ball Valves On/Off/On with No Mixing and On/On with No Mixing

Full port, polypropylene ball, polypropylene valve body, stainless steel valve stem, flange connection, 12 VDC actuator

1½" valve maximum PSI: 100 psi at 70° F (polypropylene)

2" valve maximum PSI: 100 psi at 70° F (polypropylene)

3" valve maximum PSI: 70 psi at 70° F (polypropylene)

### Selector 2 Position On/On Valve - No Mixing

**FLANGED**

Part #	Size	Control	180° Cycle Time	Flow GPM*	A	B	C	D
M4H22-10DY0-PFV	1½"	On/On	3.0 sec.	30	7.2"	3.8"	4.5"	9.8"
M4I22-10DW0-PFV	2"	On/On	6.0 sec.	58	7.2"	4.2"	5.2"	10.1"
M4K22-10DW0-PFV	3"	On/On	6.0 sec.	190	8.1"	6.0"	6.3"	12.0"

**FNPT**

FM4I22-10DW0-PFV	2"	On/On	6.0 sec.	58	7.2"	4.2"	5.2"	12.4"
FM4K22-10DW0-PFV	3"	On/On	6.0 sec.	190	8.1"	6.0"	7.4"	14.7"

\* GPM at 1 PSI drop, water

### Selector 3 Position On/Off/On Valve - No Mixing

**FLANGED**

Part #	Size	Control	90° Cycle Time	Flow GPM*	A	B	C	D
M4H22-90DY0-PFV	1½"	On/Off/On	1.5 sec.	30	7.2"	3.8"	4.5"	9.8"
M4I22-90DW0-PFV	2"	On/Off/On	3.0 sec.	58	7.2"	4.2"	5.2"	10.1"
M4K22-90DW0-PFV	3"	On/Off/On	3.0 sec.	190	8.1"	6.0"	6.3"	12.0"

**FNPT**

FM4I22-90DW0-PFV	2"	On/Off/On	3.0 sec.	58	7.2"	4.2"	5.2"	12.4"
FM4K22-90DW0-PFV	3"	On/Off/On	3.0 sec.	190	8.1"	6.0"	7.4"	14.7"

\* GPM at 1 PSI drop, water

### Diverter 3 Position On/Off/On Valve - Mixing

**FLANGED**

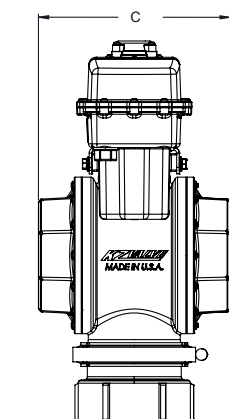
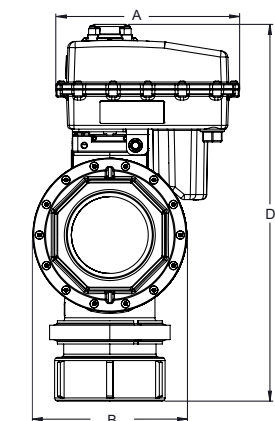
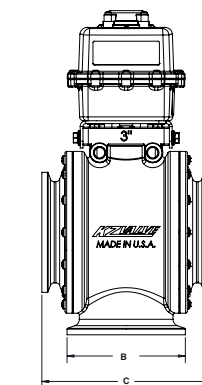
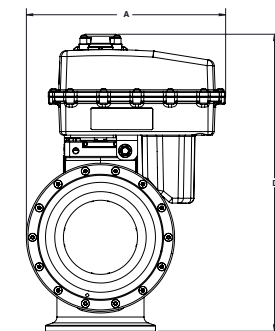
Part #	Size	Control	90° Cycle Time	Flow GPM*	A	B	C	D
T7H22-10DW0-P31	1½"	On/Off/On	1.5 sec.	30	7.2"	3.8"	4.5"	9.8"
T7I22-10DW0-P31	2"	On/Off/On	3.0 sec.	58	7.2"	4.2"	5.2"	10.1"
M7K22-10DW0-P31	3"	On/Off/On	3.0 sec.	190	8.1"	6.0"	6.3"	12.0"

**FNPT**

FM7I22-10DW0-P31	2"	On/Off/On	3.0 sec.	58	7.2"	4.2"	5.2"	12.4"
FM7K22-10DW0-P31	3"	On/Off/On	3.0 sec.	190	8.1"	6.0"	7.4"	14.7"

\* GPM at 1 PSI drop, water

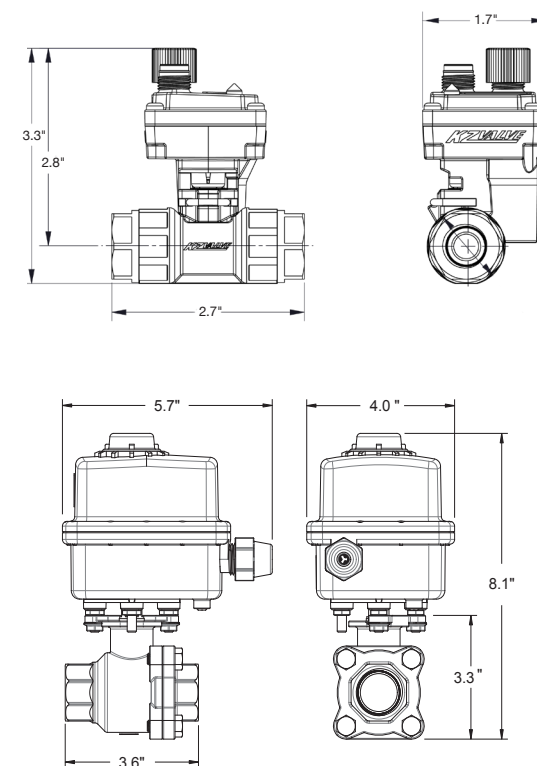
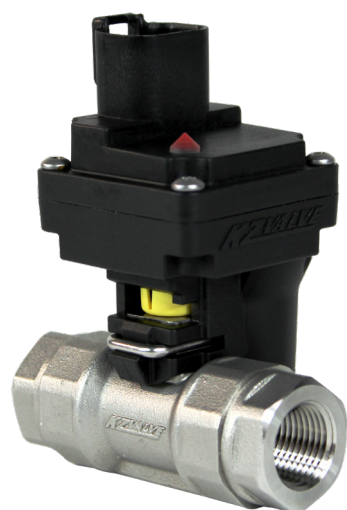
Please consult your Distributor/Key Account Manager for additional options.



# S SERIES

## 2 Way S Series

- 1/4", 1" and 1 1/2" full port valves
- Inlets/Outlets: 1/2", 3/4" MNPT, 1/4", 3/8", & 1" FNPT
- Valve body: CF8M stainless steel
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Seat: Carbon-graphite-filled PTFE or Virgin PTFE with Viton™ back-up O-rings



### 1/4" - 1" Stainless Steel Valves

2-Way, 1/4-3/4" standard port, 1" full port, stainless steel ball, FNPT, 12 VDC actuator.  
**Maximum PSI:** 250 PSI @ 70° F operating pressure differential • 600 PSI @ 70° F (Valve Body)

Part #	Size	Control	Cycle Time	CV
S2B28-1CEBS-D01	1/4"	On/On	0.2 sec.	3.5
S2B28-1CEBS-R01	1/4"	On/On	0.2 sec.	3.5
S2C28-1CEBS-D01	3/8"	On/On	0.2 sec.	5.2
S2C28-1CEBS-R01	3/8"	On/On	0.2 sec.	5.2

MNPT Part #	Size	Control	Cycle Time	CV
KZ1754-1CEBS-D01	1/2"	On/On	0.2 sec.	5.2
KZ1733-1CEBS-D01	3/4"	On/On	0.2 sec.	5.2

Please consult your Distributor/Key Account Manager for additional options such as BSPT.

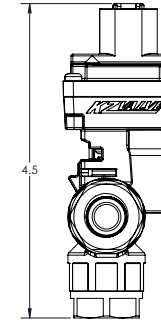
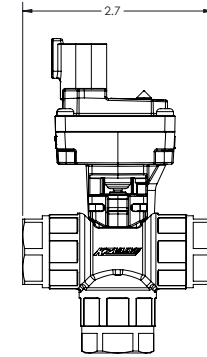
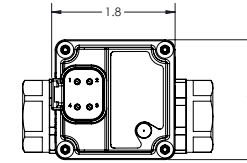
Part #	Size	Control	Cycle Time	CV
S2F33-10D20-P01	1"	On/Off	0.8 sec.	24
S2F22-20DW0-PF1	1"	Positionable	3.0 sec.	24
S2F22-20DU0-PF1	1"	Positionable	8.0 sec.	24

Please consult your Distributor/Key Account Manager for additional options.

# S SERIES

## 3 Way S Series

- Use as a diverter, selector style, or as a more linear-regulating v-ball valve for precision plumbing with your application
- 1/4", 1" and 1 1/2" full port valves
- Inlets/Outlets: 1/2" MNPT, 1/4", 3/8", 1" & 1 1/2" FNPT
- Valve body: CF8M stainless steel
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Seat: Carbon-graphite-filled PTFE or Virgin PTFE with Viton™ back-up O-rings



### 1/4" and 3/8" 3-Way Bottom Load Valves

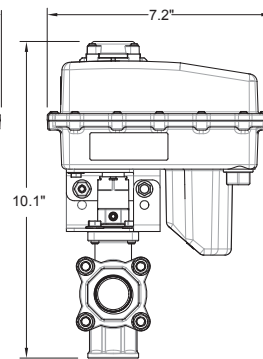
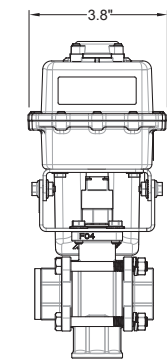
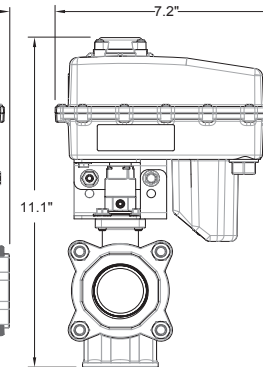
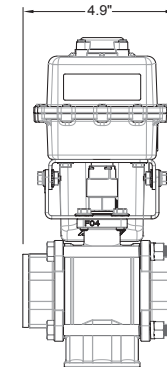
Standard port, stainless steel ball, stainless steel valve body, stainless steel valve stem  
 1/4" & 3/8" Maximum PSI: 150 PSI @ 70° F operating pressure differential • 600 PSI @ 70° F (Valve Body)

Part #	Size	CV	Description
S4B28-1CEBS-DOV	1/4"	3.5	2 position ON-ON option (180° rotation)
S4B28-1CEBS-ROV	1/4"	3.5	2 position ON-ON option (180° rotation)
S4C28-1CEBS-DOV	3/8"	5.2	2 position ON-ON option (180° rotation)
S4C28-1CEBS-ROV	3/8"	5.2	2 position ON-ON option (180° rotation)

Please consult your Distributor/Key Account Manager for additional options such as MNPT or BSPT.

### 1" and 1 1/2" 3-Way Bottom Load Valves

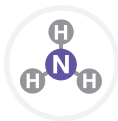
Full port, stainless steel ball, stainless steel valve body, stainless steel valve stem  
 1" & 1 1/2" Maximum PSI: 150 PSI @ 70° F operating pressure differential • 600 PSI @ 70° F (Valve Body)



Part #	Size	CV	Description
<b>3-Way Bottom Load "Selector"</b>			
S4F22-10DW0-PFV	1"	20	2 position ON-ON option (180° rotation)
S4H22-10DW0-PFV	1 1/2"	47	2 position ON-ON option (180° rotation)
S4F22-90EY0-DFV	1"	20	3 position ON-OFF-ON option (180° rotation)
S4H22-90EY0-DFV	1 1/2"	47	3 position ON-OFF-ON option (180° rotation)
<b>3-Way Bottom Load "Regulating" V-Ball</b>			
S6F22-20DW0-PFL	1"	20	Requires 225° operation
S6H22-20DW0-PFL	1 1/2"	47	Requires 225° operation
<b>3-Way Bottom Load "Diverter"</b>			
S7F22-10DW0-P31	1"	20	2 position (90° rotation)
S7H22-10DW0-P31	1 1/2"	47	2 position (90° rotation)

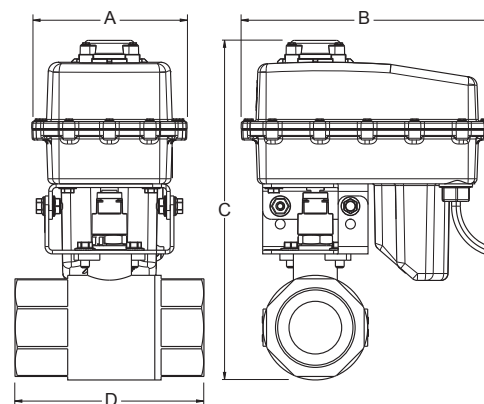
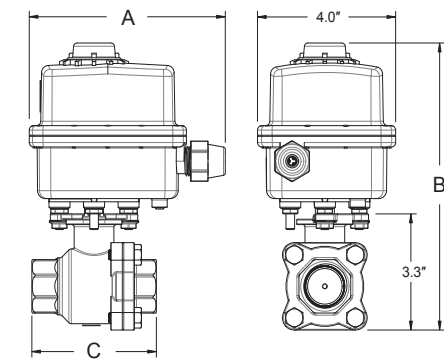
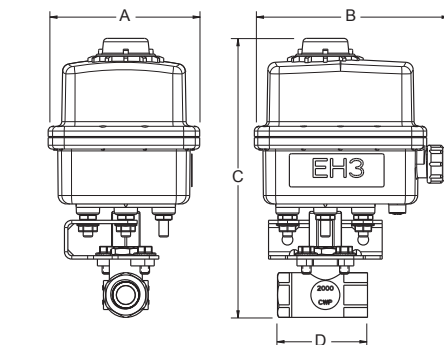
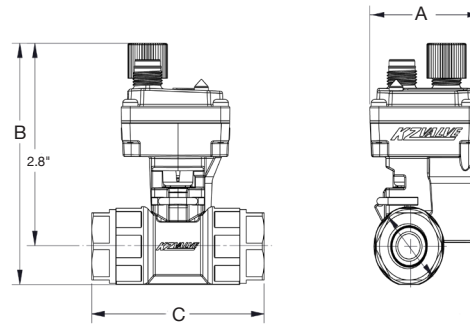
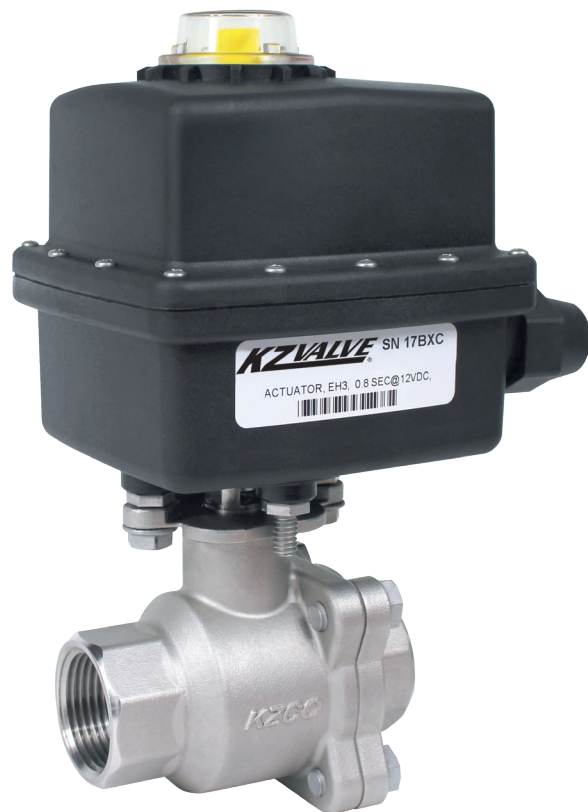
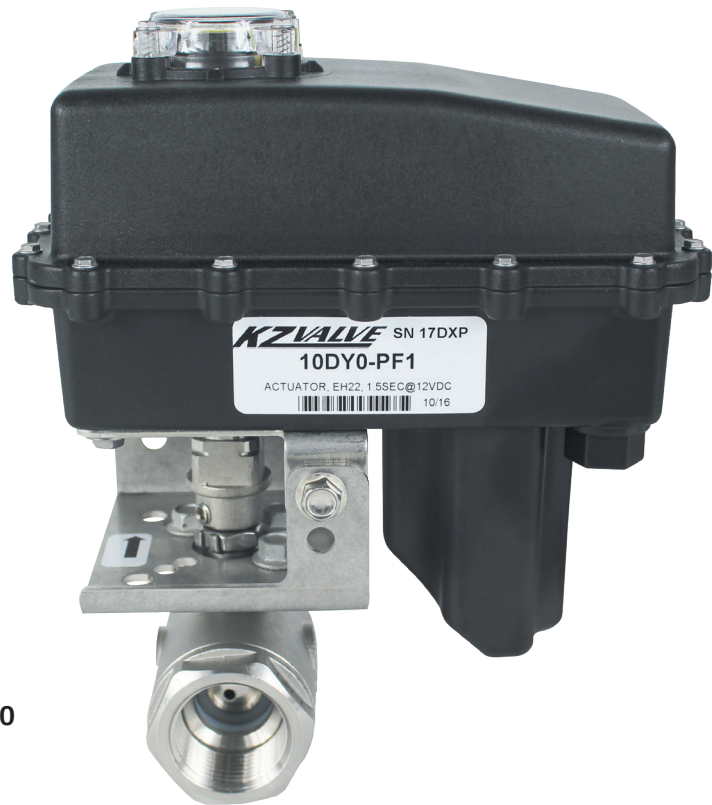
\* Part numbers listed above are examples, please contact your Distributor/Key Account Manager if you would like to discuss additional options.

# NH3 Vented Stainless Steel Ammonia Ball Valves



- 1/4"- 2" vented 2-Way stainless steel valves
- Valve body: CF8M stainless steel
- Ball: 316 stainless steel (vented)
- Stem: 316 stainless steel with EPDM O-ring
- Seat: Molecularly Enhanced Teflon® (ME-PTFE) or virgin PTFE
- Stem packing: Adjustable molecularly enhanced Teflon®(ME-PTFE) or virgin PTFE with EPDM back-up O-rings
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection

\* Conxall connector available on some models.



## 1/4", 3/8", 1/2" & 3/4" Vented Stainless Steel Ammonia Valves

2-Way, standard port, stainless steel vented ball, FNPT, ammonia ball valve, 12 VDC actuator. Maximum PSI: 250 PSI @ 70° F operating pressure differential • 600 PSI @ 70° F (Valve Body)

Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C
S8B28-1CEBS-D01	1/4"	On/Off	0.2 sec.	3.5	1.7"	3.3"	2.7"
S8B28-1CEBS-R01	1/4"	On/Off	0.2 sec.	3.5	1.7"	3.3"	2.7"
S8C28-1CEBS-D01	3/8"	On/Off	0.2 sec.	5.2	1.7"	3.3"	2.7"
S8C28-1CEBS-R01	3/8"	On/Off	0.2 sec.	5.2	1.7"	3.3"	2.7"

\* GPM at 1 PSI drop, water      \*\* OAL AN -6 threaded connection 3.7"

## 1/4" and 1/2" Vented Stainless Steel Ammonia Valves

2-Way, full port, stainless steel vented ball, FNPT, ammonia ball valve, 12 VDC actuator. Maximum PSI: 2,000 psi at 70° F

KZ Valve Standard Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
67B33-20DP0-P01	1/4"	Positionable	2.5 sec.	3.5	4.0"	5.1"	7.4"	2.2"
67B33-20DQ0-P01	1/4"	Positionable	7.0 sec.	3.5	4.0"	5.1"	7.4"	2.2"
67D33-20DP0-P01	1/2"	Positionable	2.5 sec.	15	4.0"	5.1"	7.4"	2.4"
67D33-20DQ0-P01	1/2"	Positionable	7.0 sec.	15	4.0"	5.1"	7.4"	2.4"

## 1" Vented Stainless Steel Ammonia Valves

2-Way, full port, stainless steel vented ball, FNPT, ammonia ball valve, 12 VDC actuator. Maximum PSI: 600 PSI at 70° F

Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C
S8F33-10D20-P01	1"	On/Off	0.8 sec.	24	5.7"	8.1"	3.6"
S8F22-20DW0-PF1	1"	Positionable	3.0 sec.	24	7.2"	8.6"	3.6"
S8F22-20DU0-PF1	1"	Positionable	8.0 sec.	24	7.2"	8.6"	3.6"

## 3/4", 1 1/2" and 2" Vented Stainless Steel Ammonia Valves

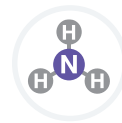
2-Way, standard port, stainless steel vented ball, FNPT, ammonia ball valve, 12 VDC actuator. 3/4" Maximum PSI: 2,000 psi at 70° F • 1 1/2" and 2" Maximum PSI: 1,500 psi at 70° F

KZ Valve Standard Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
67E22-10DY0-PF1	3/4"	On/Off	1.5 sec.	30	4.4"	7.2"	8.0"	3.2"
67E22-20DW0-PF1	3/4"	Positionable	3.0 sec.	30	4.4"	7.2"	8.0"	3.2"
67E22-20DU0-PF1	3/4"	Positionable	8.0 sec.	30	4.4"	7.2"	8.0"	3.2"
67H22-10DY0-PF1	1 1/2"	On/Off	1.5 sec.	84	4.4"	7.2"	9.3"	4.4"
67H22-20DW0-PF1	1 1/2"	Positionable	3.0 sec.	84	4.4"	7.2"	9.3"	4.4"
67H22-20DU0-PF1	1 1/2"	Positionable	8.0 sec.	84	4.4"	7.2"	9.3"	4.4"
67I22-10DW0-PF1	2"	On/Off	3.0 sec.	108	4.4"	7.2"	9.7"	5.4"
67I22-20DW0-PF1	2"	Positionable	3.0 sec.	108	4.4"	7.2"	9.7"	5.4"
67I22-20DU0-PF1	2"	Positionable	8.0 sec.	108	4.4"	7.2"	9.7"	5.4"

Please consult your Distributor/Key Account Manager for additional options such as MNPT and BSPT.

# RETROFIT KITS RAVEN SYSTEMS

## Ammonia Valves



- Retrofit kits will allow *KZValve* actuators to be used with common RAVEN systems valves
- Use a *KZValve* actuator and stainless steel valve or retrofit a *KZValve* actuator onto the RAVEN valve
- Raven retrofit kits for 3 valve types: Jamesbury Eliminator, Raven Clincher, and Jamesbury Clincher valves
- Actuator retrofit kits for Raven Valve: EH2 Series Actuator (1" to 1½")
- Actuators are constructed with solid state components for increased durability and maintenance-free performance
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection



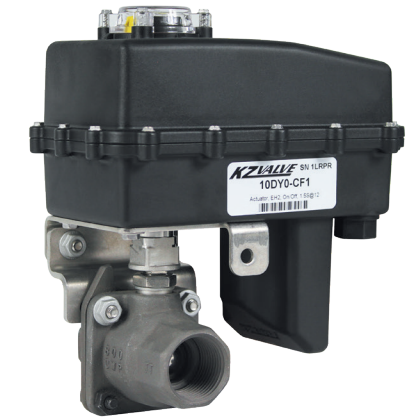
1½" RAVEN VALVE



JAMESBURY ELIMINATOR VALVE



RAVEN CLINCHER VALVE



JAMESBURY CLINCHER VALVE

### Actuator Retrofit Capabilities for Raven 1" and 1¼" NH3 Valves

Part #	Description
<b>KR-KIT+10DY0-CF1</b>	EH2 Waterproof Actuator, ON/OFF CONTROL, 1.5 seconds, with Conxall Connector, mounting kit
<b>KR-KIT+20DY0-CF1</b>	EH2 Waterproof Actuator, FLOW CONTROL, 1.5 seconds, with Conxall Connector, mounting kit
<b>KR-KIT+K0HU0-CF1</b>	EH2 Waterproof Actuator, FLOW CONTROL, 8.0 seconds, with Conxall Connector, mounting kit

Please consult your Distributor/Key Account Manager for additional options.

### ALL RAVEN RETROKITS INCLUDE:

- Waterproof *KZValve* EH2 Actuator
- Conxall connector plug for Raven System
- Coupler
- Mounting bracket
- Fasteners
- Simple replacement instructions

NOTE: These kits do not include the valves

KR - KIT

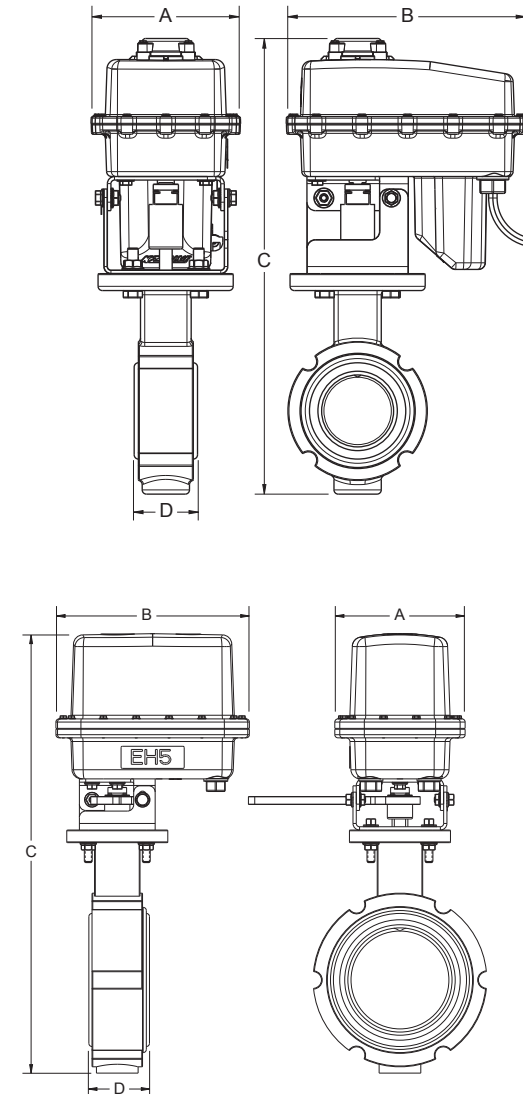




# 50 SERIES

## Cast Iron and Aluminum Butterfly Valves

- Engineered for actuation and designed to work with the *KZValve* actuators
- 2" and 3" cast iron valves
- 4" and 5" aluminum valves
- Disk: 316 stainless steel
- Stem: 316 stainless steel
- Valve body: Cast iron or aluminum
- Seat: EPDM (BUNA or Viton™ available)
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D) and meets the USCG Electrical Systems Standard to support user and environment protection



### 2" Cast Iron Butterfly Valves

EPDM seats, stainless steel disk and valve stem, 12 VDC actuator. Maximum PSI: 150 psi at 70° F

<i>KZValve</i> Standard Part #	Size	Control	Time	Cycle GPM*	Flow A	B	C	D
59i22-10DY0-PF1	2"	On/Off	1.5 sec.	277	4.4"	7.2"	13.5"	1.9"
59i22-20DW0-PF1	2"	Positionable	3.0 sec.	277	4.4"	7.2"	13.5"	1.9"
59i22-20DU0-PF1	2"	Positionable	8.0 sec.	277	4.4"	7.2"	13.5"	1.9"

\* GPM at 1 PSI drop, water

### 3" Cast Iron Butterfly Valves

EPDM seats, stainless steel disk and valve stem, 12 VDC actuator. Maximum PSI: 150 psi at 70° F

<i>KZValve</i> Standard Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
59K35-10D50-DB1	3"	On/Off	3.0 sec.	720	5.2"	7.7"	15.7"	1.8"
59K35-20D50-DB1	3"	Positionable	3.0 sec.	720	5.2"	7.7"	15.7"	1.8"

\* GPM at 1 PSI drop, water

### 4" and 5" Aluminum Butterfly Valves

EPDM seats, stainless steel disk and valve stem, 12 VDC actuator. Maximum PSI: 50 psi at 70° F

<i>KZValve</i> Standard Part #	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
59L35-10D50-DB1	4"	On/Off	3.0 sec.	1,366	5.2"	7.7"	17.4"	2.0"
59L35-20D50-DB1	4"	Positionable	3.0 sec.	1,366	5.2"	7.7"	17.4"	2.0"
59M35-10D50-DB1	5"	On/Off	3.0 sec.	2,192	5.2"	7.7"	17.9"	2.1"
59M35-20D50-DB1	5"	Positionable	3.0 sec.	2,192	5.2"	7.7"	17.9"	2.1"

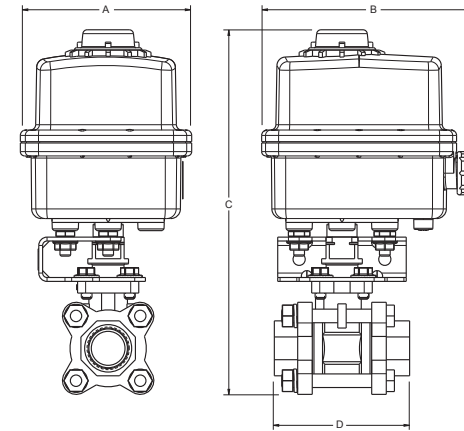
Please consult your Distributor/Key Account Manager for additional options.

\* GPM at 1 PSI drop, water

# 61 SERIES

## NSF 61 Stainless Steel Ball Valves

- ANSI/NSF 61 certified, Low-Lead certified, and approved for drinking water applications
- Engineered for actuation and designed to work with **KZValve** actuators
- ½", ¾", 1", 1½" and 2" stainless steel valves
- 3-piece swing-out style, 2-Way ball valve
- All valve sizes are actuator ready (ISO 5211 mounting pad)
- Available with or without manual handle
- Valve body: CF8M stainless steel
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Seat: Virgin PTFE
- Stem packing: PTFE
- Stem O-ring: EPDM
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated **NEMA 6P** to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection

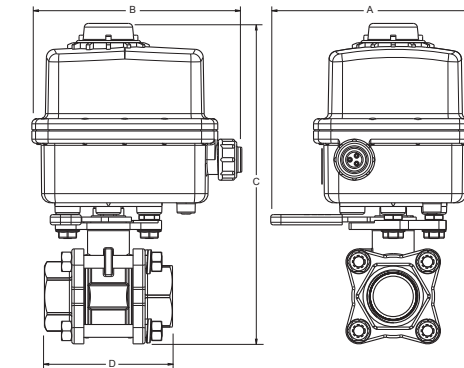


### ½" and ¾" Stainless Steel 3-piece, 2-Way Ball Valves

Full port, stainless steel ball, FNPT, ball valve, ANSI/NSF 61 certified, Low-Lead certified and approved for drinking water applications in all 50 states. 12 VDC actuator. **Maximum PSI: 1,000 psi at 70° F**

Part #	Size	Valve Control	Manual Handle	Cycle Time	Flow GPM*	A	B	C	D
61DG3-10D20-P01	½"	On/Off	Yes	0.8 sec.	30	6.1"	5.1"	8.3"	3.0"
61D33-10D20-P01	½"	On/Off	No	0.8 sec.	30	4.0"	5.1"	8.3"	3.0"
61EG3-10D20-P01	¾"	On/Off	Yes	0.8 sec.	51	6.1"	5.1"	8.3"	3.2"
61E33-10D20-P01	¾"	On/Off	No	0.8 sec.	51	4.0"	5.1"	8.3"	3.2"

\* GPM at 1 PSI drop, water

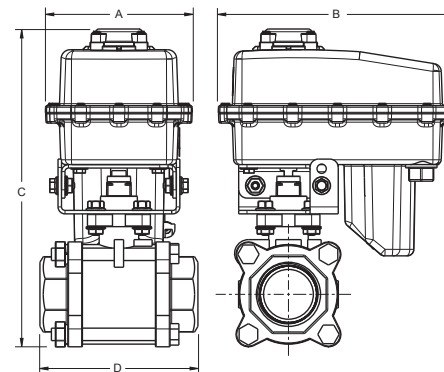


### 1" Stainless Steel 3-piece, 2-Way Direct Mount Ball Valve

Full port, stainless steel ball, FNPT, ball valve, direct mount to actuator with manual handle, ANSI/NSF 61 certified, Low-Lead certified and approved for drinking water applications in all 50 states. 12 VDC actuator. **Maximum PSI: 600 psi at 70° F**

Part #	Size	Valve Control	Manual Handle	Cycle Time	Flow GPM*	A	B	C	D
61FM33-10D20-P03	1"	On/Off	Yes	0.8 sec.	68	5.0"	5.1"	7.8"	3.1"

\* GPM at 1 PSI drop, water



### 1", 1½" and 2" Stainless Steel 3-piece, 2-Way Ball Valves

Full port, stainless steel ball, FNPT, ball valve, ANSI/NSF 61 certified, Low-Lead certified and approved for drinking water applications in all 50 states. 12 VDC actuator. **Maximum PSI: 1,000 psi at 70° F**

Part #	Size	Valve Control	Manual Handle	Cycle Time	Flow GPM*	A	B	C	D
61FF2-10DW0-PF1	1"	On/Off	Yes	3.0 sec.	68	4.3"	11.1"	8.4"	3.6"
61F22-10DW0-PF1	1"	On/Off	No	3.0 sec.	68	4.3"	7.1"	8.4"	3.6"
61HF2-10DW0-PF1	1½"	On/Off	Yes	3.0 sec.	170	4.3"	11.1"	9.4"	4.8"
61H22-10DW0-PF1	1½"	On/Off	No	3.0 sec.	170	4.3"	7.1"	9.4"	4.8"
61IF2-10DW0-PF1	2"	On/Off	Yes	3.0 sec.	376	4.3"	11.1"	9.4"	5.4"
61I22-10DW0-PF1	2"	On/Off	No	3.0 sec.	376	4.3"	7.1"	9.4"	5.4"

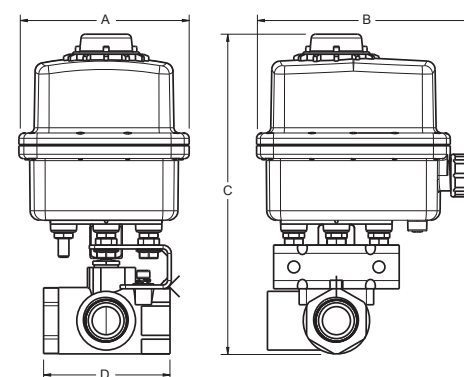
Please consult your Distributor/Key Account Manager for additional options.

\* GPM at 1 PSI drop, water

# 78 SERIES

## 3-Way Bronze Ball Valves

- ½" to 2" bronze 3-Way diverter ball valves
- Valve body: C84400 bronze
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Seat: Virgin PTFE
- Stem packing: PTFE
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection

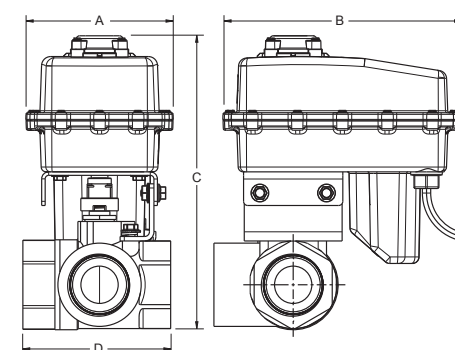


### ½" Bronze Ball Valves

3-Way, full port, stainless steel ball, FNPT, ball valve, 12 VDC actuator.  
Maximum PSI: 400 psi at 70° F

KZ Valve Standard Part#	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
78D23-10D20-P31	½"	On/On	0.8 sec.	5.4	4.0"	5.1"	7.0"	2.3"

\* GPM at 1 PSI drop, water



### ¾", 1", 1½" and 2" Bronze Ball Valves

3-Way, standard port, stainless steel ball, FNPT, ball valve, 12 VDC actuator.  
Maximum PSI: 400 psi at 70° F

KZ Valve Standard Part#	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
78E22-10DY0-P3U	¾"	On/On	1.5 sec.	12	4.4"	7.2"	7.2"	3.0"
78F22-10DY0-P3U	1"	On/On	1.5 sec.	14	4.4"	7.2"	7.5"	3.3"
78H22-10DW0-P3U	1½"	On/On	3.0 sec.	34	4.4"	7.2"	8.8"	4.4"
78I22-10DW0-P3U	2"	On/On	3.0 sec.	47	4.4"	7.2"	9.2"	4.7"

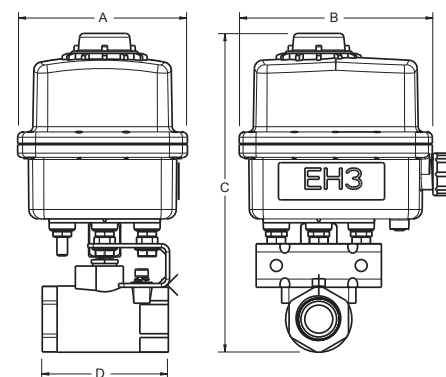
\* GPM at 1 PSI drop, water

Please consult your Distributor/Key Account Manager for additional options.

# 84 SERIES

## 2-Way Bronze Ball Valves

- 1/4" to 2" bronze 2-Way ball valves
- Valve body: C84400 bronze
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Seat: Virgin PTFE
- Stem packing: PTFE
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection

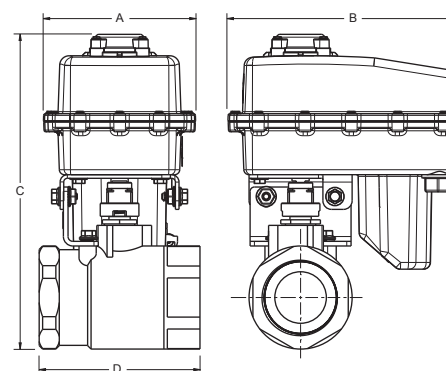


### 1/4", 3/8" and 1/2" Bronze Ball Valves

2-Way, full port, stainless steel ball, FNPT, ball valve, 12 VDC actuator.  
Maximum PSI: 600 psi at 70° F

KZ Valve Standard Part#	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
84B23-10D20-P41	1/4"	On/Off	0.8 sec.	8.4	4.0"	5.1"	8.3"	3.0"
84B23-20DP0-P41	1/4"	Positionable	2.5 sec.	8.4	4.0"	5.1"	8.3"	3.0"
84B23-20DQ0-P41	1/4"	Positionable	7.0 sec.	8.4	4.0"	5.1"	8.3"	3.0"
84C23-10D20-P41	3/8"	On/Off	0.8 sec.	7.2	4.0"	5.1"	8.3"	3.0"
84C23-20DP0-P41	3/8"	Positionable	2.5 sec.	7.2	4.0"	5.1"	8.3"	3.0"
84C23-20DQ0-P41	3/8"	Positionable	7.0 sec.	7.2	4.0"	5.1"	8.3"	3.0"
84D23-10D20-P41	1/2"	On/Off	0.8 sec.	15	4.0"	5.1"	8.3"	3.0"
84D23-20DP0-P41	1/2"	Positionable	2.5 sec.	15	4.0"	5.1"	8.3"	3.0"
84D23-20DQ0-P41	1/2"	Positionable	7.0 sec.	15	4.0"	5.1"	8.3"	3.0"

\* GPM at 1 PSI drop, water



### 3/4", 1", 1 1/2" and 2" Bronze Ball Valves

2-Way, standard port, stainless steel ball, FNPT, ball valve, 12 VDC actuator.  
Maximum PSI: 600 psi at 70° F

KZ Valve Standard Part#	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
84E22-10DY0-PF1	3/4"	On/Off	1.5 sec	30	4.4"	7.2"	7.2"	3.0"
84E22-20DW0-PF1	3/4"	Positionable	3.0 sec	30	4.4"	7.2"	7.2"	3.0"
84E22-20DU0-PF1	3/4"	Positionable	8.0 sec	30	4.4"	7.2"	7.2"	3.0"
84F22-10DY0-PF1	1"	On/Off	1.5 sec	43	4.4"	7.2"	7.5"	3.4"
84F22-20DW0-PF1	1"	Positionable	3.0 sec	43	4.4"	7.2"	7.5"	3.4"
84F22-20DU0-PF1	1"	Positionable	8.0 sec	43	4.4"	7.2"	7.5"	3.4"
84H22-10DY0-PF1	1 1/2"	On/Off	1.5 sec	84	4.4"	7.2"	8.8"	4.3"
84H22-20DW0-PF1	1 1/2"	Positionable	3.0 sec	84	4.4"	7.2"	8.8"	4.3"
84H22-20DU0-PF1	1 1/2"	Positionable	8.0 sec	84	4.4"	7.2"	8.8"	4.3"
84i22-10DW0-PF1	2"	On/Off	3.0 sec	108	4.4"	7.2"	9.2"	4.7"
84i22-20DW0-PF1	2"	Positionable	3.0 sec	108	4.4"	7.2"	9.2"	4.7"
84i22-20DU0-PF1	2"	Positionable	8.0 sec	108	4.4"	7.2"	9.2"	4.7"

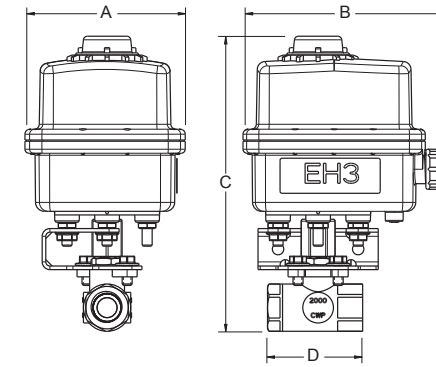
Please consult your Distributor/Key Account Manager for additional options.

\* GPM at 1 PSI drop, water

# 88 SERIES

## 2-Way Stainless Steel Ball Valves

- 1/4" to 2" stainless steel 2-Way ball valves
- Valve body: CF8M stainless steel
- Ball: 316 stainless steel
- Stem: 316 stainless steel with Viton™ O-ring
- Seat: Molecularly Enhanced Virgin Teflon® (ME-PTFE)
- Stem packing: Adjustable molecularly enhanced virgin Teflon®(ME-PTFE)
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection

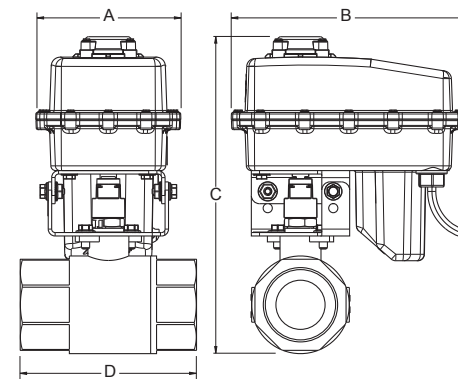


### 1/4", 3/8", and 1/2" Stainless Steel 2-Way Ball Valves

Full port, stainless steel ball, FNPT, ball valve, 12 VDC actuator.  
Maximum PSI: 2,000 psi at 70° F

KZValve StandardPart#	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
88B33-10D20-P01	1/4"	On/Off	0.8 sec.	8.4	4.0"	5.1"	7.4"	2.2"
88B33-20DP0-P01	1/4"	Positionable	2.5 sec.	8.4	4.0"	5.1"	7.4"	2.2"
88B33-20DQ0-P01	1/4"	Positionable	7.0 sec.	8.4	4.0"	5.1"	7.4"	2.2"
88C33-10D20-P01	3/8"	On/Off	0.8 sec.	7.2	4.0"	5.1"	7.4"	2.2"
88C33-20DP0-P01	3/8"	Positionable	2.5 sec.	7.2	4.0"	5.1"	7.4"	2.2"
88C33-20DQ0-P01	3/8"	Positionable	7.0 sec.	7.2	4.0"	5.1"	7.4"	2.2"
88D33-10D20-P01	1/2"	On/Off	0.8 sec.	15	4.0"	5.1"	7.4"	2.4"
88D33-20DP0-P01	1/2"	Positionable	2.5 sec.	15	4.0"	5.1"	7.4"	2.4"
88D33-20DQ0-P01	1/2"	Positionable	7.0 sec.	15	4.0"	5.1"	7.4"	2.4"

\* GPM at 1 PSI drop, water



### 3/4", 1", 1 1/2" and 2" Stainless Steel 2-Way Ball Valves

Standard port, stainless steel ball, FNPT, ball valve, 12 VDC actuator.  
3/4" and 1" Maximum PSI: 2,000 psi at 70° F • 1 1/2" and 2" Maximum PSI: 1,500 psi at 70° F

KZValve StandardPart#	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
88E22-10DY0-PF1	3/4"	On/Off	1.5 sec.	30	4.4"	7.2"	8.0"	3.2"
88E22-20DW0-PF1	3/4"	Positionable	3.0 sec.	30	4.4"	7.2"	8.0"	3.2"
88E22-20DU0-PF1	3/4"	Positionable	8.0 sec.	30	4.4"	7.2"	8.0"	3.2"
88F22-10DY0-PF1	1"	On/Off	1.5 sec.	43	4.4"	7.2"	8.4"	3.4"
88F22-20DW0-PF1	1"	Positionable	3.0 sec.	43	4.4"	7.2"	8.4"	3.4"
88F22-20DU0-PF1	1"	Positionable	8.0 sec.	43	4.4"	7.2"	8.4"	3.4"
88H22-10DY0-PF1	1 1/2"	On/Off	1.5 sec.	84	4.4"	7.2"	9.3"	4.4"
88H22-20DW0-PF1	1 1/2"	Positionable	3.0 sec.	84	4.4"	7.2"	9.3"	4.4"
88H22-20DU0-PF1	1 1/2"	Positionable	8.0 sec.	84	4.4"	7.2"	9.3"	4.4"
88i22-10DW0-PF1	2"	On/Off	3.0 sec.	108	4.4"	7.2"	9.7"	5.4"

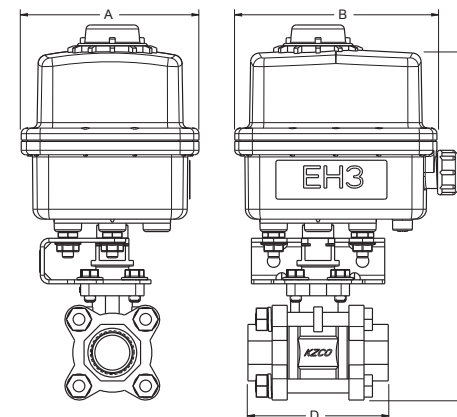
Please consult your Distributor/Key Account Manager for additional options.

\* GPM at 1 PSI drop, water

# 89 SERIES

## Stainless Steel 3-Piece, 2-Way Ball Valves

- ½" to 3" stainless steel 3-piece swing out style, 2-Way ball valves
- Valve body: CF8M stainless steel
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Seat: Virgin PTFE
- Stem packing: PTFE and Viton™
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection

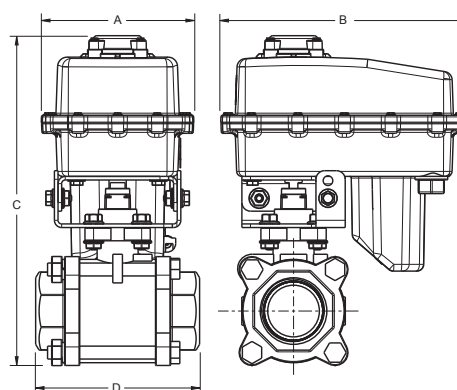


### ½" Stainless Steel 3-Piece, 2-Way Ball Valves

Full port, stainless steel ball, FNPT, ball valve, 12 VDC actuator. Maximum PSI: 1,000 psi at 70° F

KZValve StandardPart#	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
89D33-10D20-P01	½"	On/Off	0.8 sec.	30	4.0"	5.1"	8.3"	3.0"
89D33-20DP0-P01	½"	Positionable	2.5 sec.	30	4.0"	5.1"	8.3"	3.0"
89D33-20DQ0-P01	½"	Positionable	7.0 sec.	30	4.0"	5.1"	8.3"	3.0"

\* GPM at 1 PSI drop, water



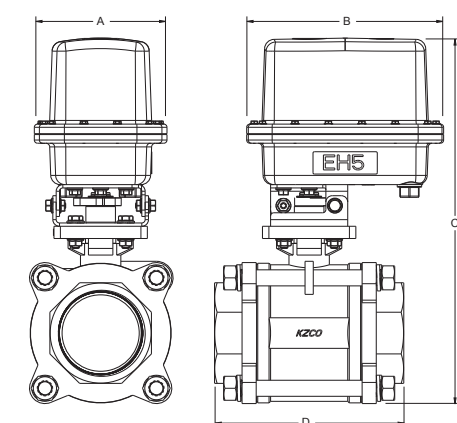
### ¾", 1", 1¼" and 1½" Stainless Steel 3-Piece, 2-Way Ball Valves

Full port, stainless steel ball, FNPT, ball valve, 12 VDC actuator. Maximum PSI: 1,000 psi at 70° F

KZValve StandardPart#	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
89E22-10DY0-PF1	¾"	On/Off	1.5 sec.	51	4.4"	7.2"	8.2"	3.2"
89E22-20DW0-PF1	¾"	Positionable	3.0 sec.	51	4.4"	7.2"	8.2"	3.2"
89E22-20DU0-PF1	¾"	Positionable	8.0 sec.	51	4.4"	7.2"	8.2"	3.2"
89F22-10DY0-PF1	1"	On/Off	1.5 sec.	68	4.4"	7.2"	8.6"	3.6"
89F22-20DW0-PF1	1"	Positionable	3.0 sec.	68	4.4"	7.2"	8.6"	3.6"
89F22-20DU0-PF1	1"	Positionable	8.0 sec.	68	4.4"	7.2"	8.6"	3.6"
89G22-10DY0-PF1	1¼"	On/Off	1.5 sec.	112	4.4"	7.2"	9.1"	4.4"
89G22-20DW0-PF1	1¼"	Positionable	3.0 sec.	112	4.4"	7.2"	9.1"	4.4"
89G22-20DU0-PF1	1¼"	Positionable	8.0 sec.	112	4.4"	7.2"	9.1"	4.4"
89H22-10DY0-PF1	1½"	On/Off	1.5 sec.	170	4.4"	7.2"	9.6"	4.8"
89H22-20DW0-PF1	1½"	Positionable	3.0 sec.	170	4.4"	7.2"	9.6"	4.8"
89H22-20DU0-PF1	1½"	Positionable	8.0 sec.	170	4.4"	7.2"	9.6"	4.8"

Please consult your Distributor/Key Account Manager for additional options.

\* GPM at 1 PSI drop, water



### 2", 2½" and 3" Stainless Steel 3-Piece, 2-Way Ball Valves

Full port, stainless steel ball, FNPT, ball valve, 12 VDC actuator. Maximum PSI: 1,000 psi at 70° F

KZValve StandardPart#	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
89I35-10D50-DB1	2"	On/Off	3.0 sec.	376	5.2"	7.7"	11.1"	4.4"
89I35-20D50-DB1	2"	Positionable	3.0 sec.	376	5.2"	7.7"	11.1"	4.4"
89J35-10D50-DB1	2½"	On/Off	3.0 sec.	750	5.2"	7.7"	11.1"	4.4"
89J35-20D50-DB1	2½"	Positionable	3.0 sec.	750	5.2"	7.7"	11.1"	4.4"
89K35-10D50-DB1	3"	On/Off	3.0 sec.	1,300	5.2"	7.7"	11.5"	5.5"
89K35-20D50-DB1	3"	Positionable	3.0 sec.	1,300	5.2"	7.7"	11.5"	5.5"

Please consult your Distributor/Key Account Manager for additional options.

\* GPM at 1 PSI drop, water

# 92 SERIES

## Stainless Steel 3-Piece, 2-Way Ball Valves

- 1" full port stainless steel valve with manual handle
- Mounts directly to actuator
- Valve body: CF8M stainless steel
- Ball: 316 stainless steel
- Stem: 316 stainless steel
- Seat: Virgin PTFE
- Stem packing: PTFE and Viton™
- Glass-filled nylon housing is durable, impact resistant, provides long life and lower maintenance cost
- Waterproof actuator housing is rated NEMA 6P to protect internal components from corrosion and extend actuator life
- Actuator housing is ignition safe (Rated NEMA 7D and meets the USCG Electrical Systems Standard) to support user and environment protection



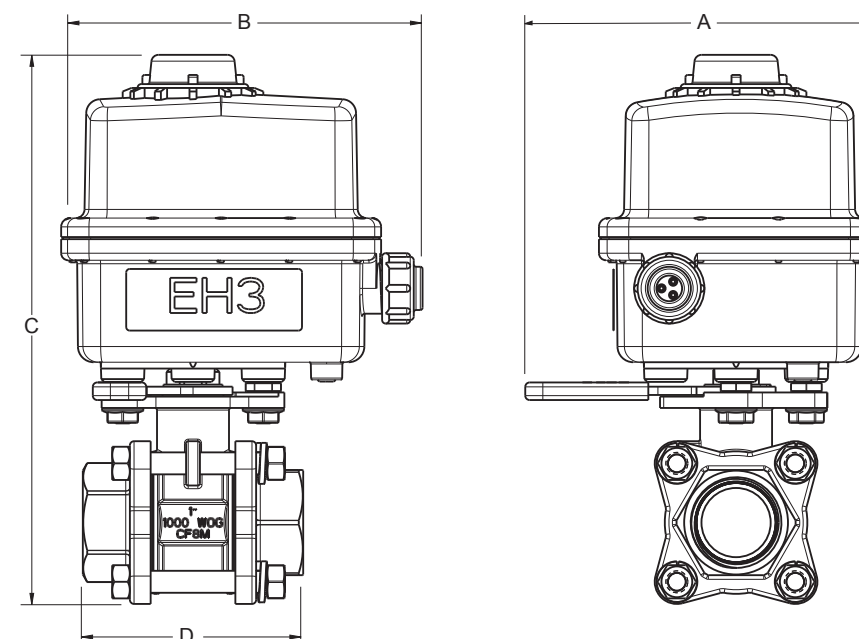
### 1" Stainless Steel 3-Piece, 2-Way Direct Mount Ball Valves

Full port, stainless steel ball, FNPT, ball valve, direct mount to actuator, with manual handle, 12 VDC actuator.  
Maximum PSI: 600 psi at 70° F

KZ Valve Standard Part#	Size	Control	Cycle Time	Flow GPM*	A	B	C	D
92FM33-10D20-P03	1"	On/Off	0.8 sec.	68	5.0"	5.1"	7.8"	3.1"

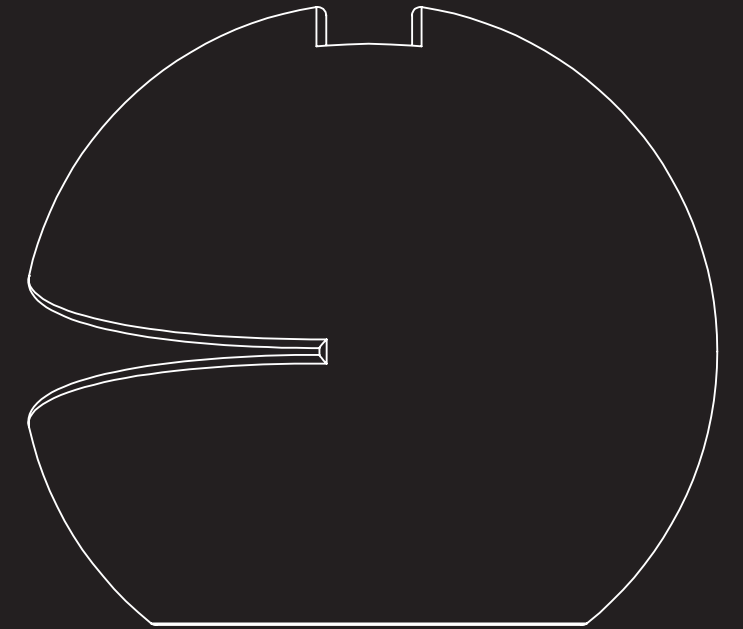
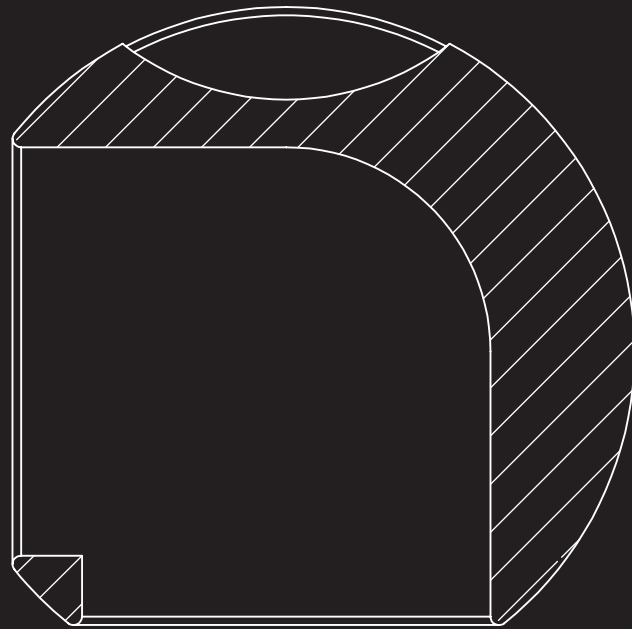
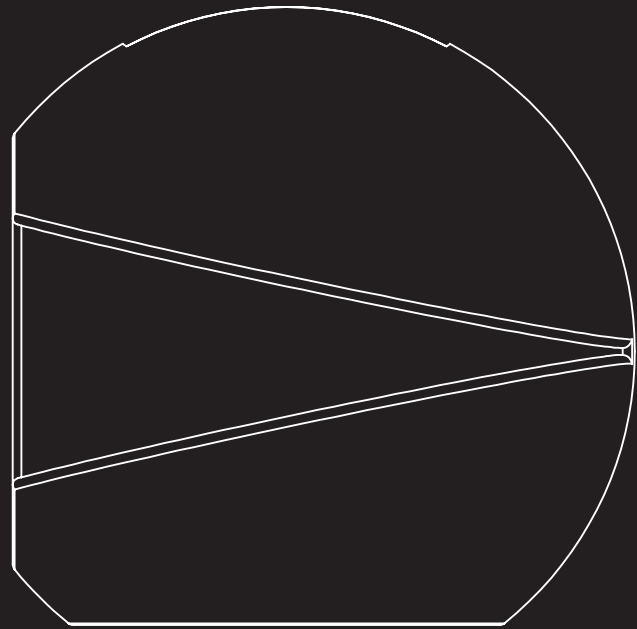
Please consult your Distributor/Key Account Manager for additional options.

\* GPM at 1 PSI drop, water



# Accessories

Pages 63-72





# ACCESSORIES

## Electrical Connectors

KZValve offers a wide variety of weather proof electrical connectors to solve connectivity needs when performance is on the line.

- Deutsch DT Series: 2, 3, 4, 6, & 8 position available. Overmold Options available.
- ConXAll Series: 3 and 4 Pin available.
- Ampseal 16 Series: 4 and 6 Pin available.
- WeatherPak Series: 2, 3, 4, 5, 6, & 8 Pin available.
- Metri-Pak 150 & 280 Series: 2, 3, 4, & 6 Pin available.
- M12 Series: 4 & 5 Pin available.



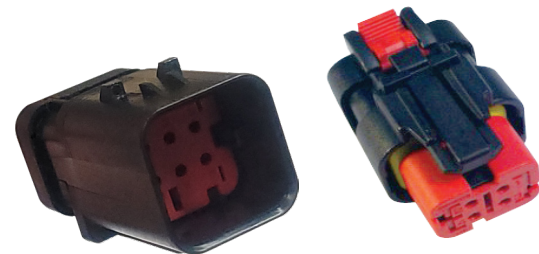
Deutsch DT Series



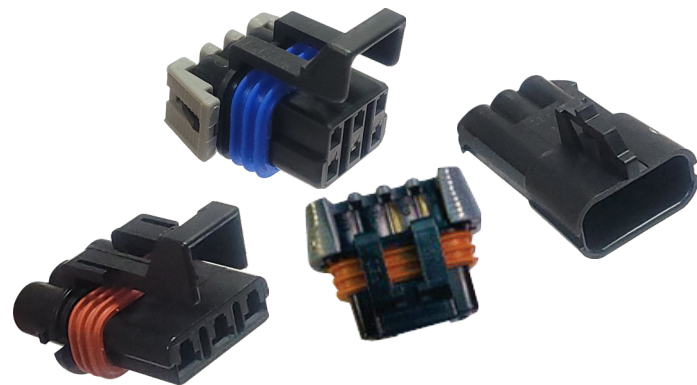
ConXAll Series



M12 Series



Ampseal 16 Series



Metri-Pak 150 & 280 Series



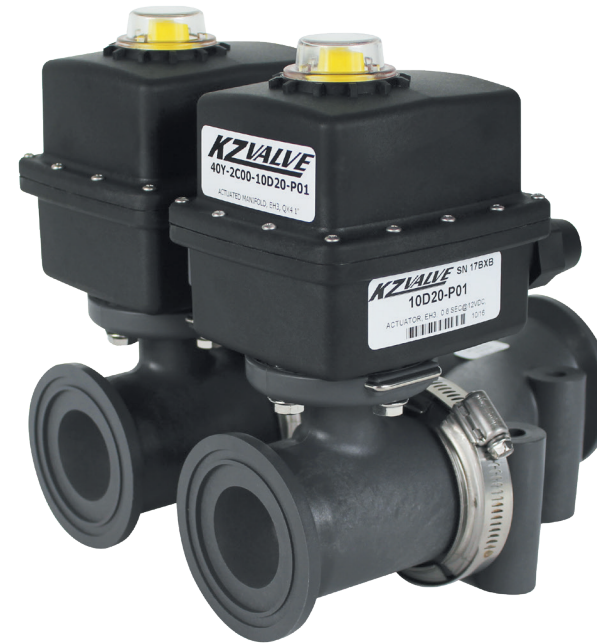
WeatherPak Series

Please consult your Distributor/ Key Account Manager for additional connectivity options.

# ACCESSORIES

## Flanged Manifolds and Clamps

To improve plumbing efficiency, KZValve offers custom manifolds and flanged accessories to maximize performance.



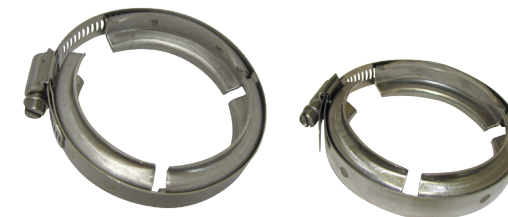
Part #	Male Hose Barbs
211-0035	M200 x 1" Straight HB
211-0031	M200 x 1 1/4" Straight HB
QX-132	M220 x 2" Straight HB
QX-183	M200 x 1 1/2" 90° HB



Part #	Specialty Manifolds
QX-330	3-Section, Linear, M220 Inlet with 3 M200 Outlets
QX-120	2-Section, Y, M220 Inlet with 2 M200 Outlets
100349	3-Section, Tree, M220 Inlet with 3 M220 Outlets



Part #	Tee Fittings
203-0030	M100 Outlet x M200 Inlets
203-0021	M200 Inlet x M200 Outlets
203-0040	M200 Inlet x 1 1/2" HB Outlets
203-0042	M100 Inlet x 1 1/2" HB Outlets



Part #	Description
209-0004	Clamp, M100, Stainless Steel
QX4-200	Clamp, M200, Stainless Steel
100266	Clamp, M220, Stainless Steel
100449	Gasket, M100, EPDM



Part #	Description
211-0075	M200 x M100 Reducer
100264	M200 Cap with Blink 3/8" Gauge Port

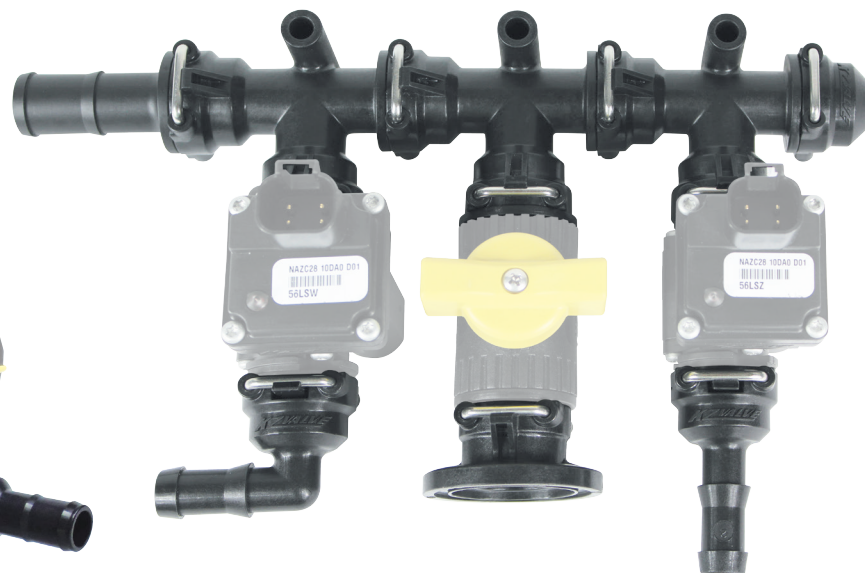
Please consult your Distributor/ Key Account Manager for additional fittings and material options.

# ACCESSORIES

## QD Fittings



KZ Valve offers a wide variety of fittings and manifold configurations for the TX2 family and 3/8" ZIP Valve.



Kit #	Part #	FNPT
511-0019	211-0224	1/2" FNPT x Female QD
511-0016	211-0017	3/4" FNPT x Female QD
511-0164	412-0008	1/2" FNPT x Male QD
511-0163	412-0007	1/4" FNPT x Male QD
511-0162	412-0006	3/4" FNPT x Male QD



Kit #	Part #	90° Hose Barbs
511-0027	211-0228	1/2" 90° Hose Barb x Female QD
511-0014	211-0118	3/4" 90° Hose Barb x Female QD
511-0015	211-0119	1" 90° Hose Barb x Female QD



Kit #	Part #	Blank Caps
511-0010	211-0062	Female QD End Cap
511-0011	412-0004	Male QD End Cap



Kit #	Part #	Female Hose Barbs
511-0026	211-0227	1/2" Straight Hose Barb x Female QD
511-0012	211-0066	3/4" Straight Hose Barb x Female QD
511-0013	211-0074	1" Straight Hose Barb x Female QD



Kit #	Part #	Additional Accessories
511-0023	412-0001	1/2" ID Tee Fitting, Female QD x Female QD x Male QD (use to build manifolds)
511-0028	211-0239	M100 Flange x Female QD
	106-0018	Hairpin Retainer
511-0017	299-0030	Metered Bypass Assembly



Kit #	Part #	Male Hose Barbs
511-0024	412-0002	1/2" Straight Hose Barb x Male QD
511-0025	412-0003	3/4" Straight Hose Barb x Male QD

All Female QD kits include Hairpin, EPDM O-Rings, and Silicone pack.

All Male QD kits include EPDM O-Rings, and Silicone pack.

Please consult your Distributor/Key Account Manager for additional options.

# ACCESSORIES

## QF Fittings

KZValve introduces the new QF Series to add to a wide variety of fittings and manifold configurations for the TX2 family and 3/8" ZIPValve.



Kit #	Part #	MNPT
511-0169	211-0313	1/4" QF Male Cap NPT
511-0172	211-0357	3/8" QF Male Cap NPT



Kit #	Part #	Blank Caps
511-0170	211-0316	Male QF End Cap



Kit #	Part #	Additional Accessories
511-0167	211-0312	M100 Flange x Female QF
	106-0031	Hairpin 3/16"
511-0181	203-0064	QF x QD Manifold Tee



Kit #	Part #	Gaskets
511-0179	205-0161	QF EPDM Gasket
	205-0181	QF Viton Gasket



Kit #	Part #	Female Hose Barbs
511-0168	211-0315	1" Straight Hose Barb x Female QF



Kit #	Part #	Male Hose Barbs
511-0171	211-0314	1" Straight Hose Barb x Male QF

All Female QF fitting kits include Hairpin and Silicone Grease Pack.

All Male QF fitting kits include EPDM Gasket and Silicone Grease Pack.

Please consult your Distributor/Key Account Manager for additional options.

# ACCESSORIES

## QH Fittings

Designed to fit the QX Series Valves, KZ Valve offers the QH Series connections to accommodate a wide variety of fluid plumbing solution needs.



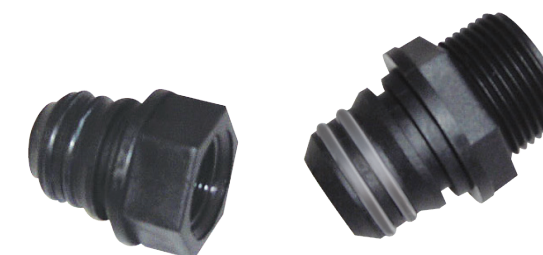
Part #	Male Hose Barbs
QHP-050	1/2" Straight Hose Barb x QH Hairpin Quick-Connect, Polypropylene
QHP-075	3/4" Straight Hose Barb x QH Hairpin Quick-Connect, Polypropylene
QHP-100	1" Straight Hose Barb x QH Hairpin Quick-Connect, Polypropylene



Part #	90° Hose Barbs
QHP-050L	1/2" 90° HB x Male QH Hairpin Quick-Connect, Polypropylene
QHP-075L	3/4" 90° HB x Male QH Hairpin Quick-Connect, Polypropylene
QHP-100L	1" 90° HB x Male QH Hairpin Quick-Connect, Polypropylene



Part #	Description
QX-102	Hairpin, Stainless Steel



Part #	Description
QHP-075F	3/4" Female NPT x QH Hairpin Quick-Connect, Polypropylene
QHP-100M	1" Male NPT x QH Hairpin Quick-Connect, Polypropylene

Please consult your Distributor/Key Account Manager for additional connection options.

**CHARACTERIZED**  
**V-PORT BALL VALVES**

**3-Way Bottom Load**

**1/2", 1" and 1 1/2" Polypropylene and Stainless Steel 3-Way, Throttling V-Ball Valves**

Full port valves with stainless steel ball, FNPT. Requires 225° operation.

**Maximum PSI: 1" Valves**

150 psi (10.3 bar) at 70° F (21° C) Polypropylene  
600 psi (41.4 bar) at 70° F (21° C) Stainless Steel

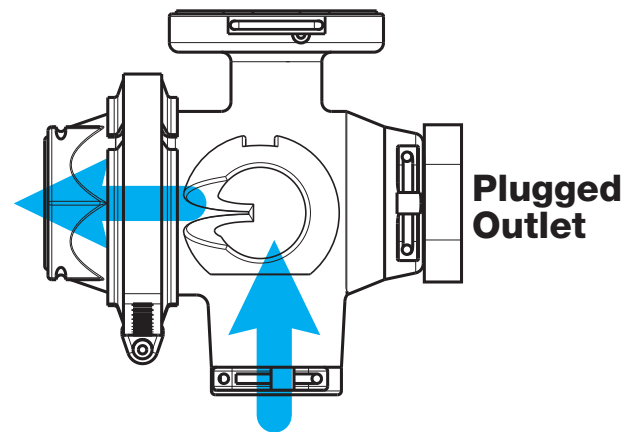
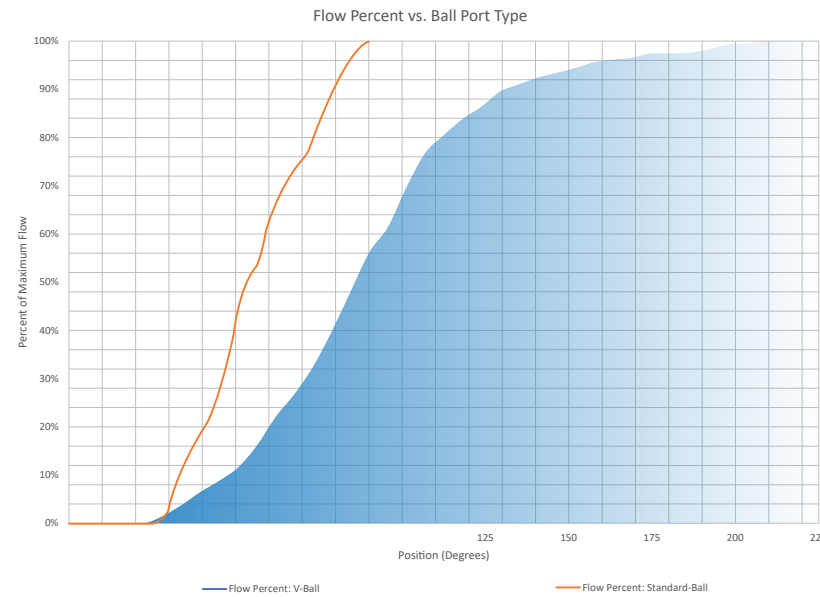
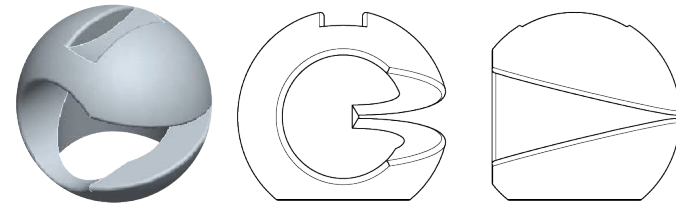
**1 1/2" Valve**

150 psi (8.6 bar) at 70° F (21° C) Polypropylene  
600 psi (41.4 bar) at 70° F (21° C) Stainless Steel

Poly Part #	SS Part #	Size	GPM Flow Rate*	Liter/min Flow Rate*
H6D37	S6F22	1/2"	6	22.7
F6F33	S6F22	1"	25	94
F6H22	S6H22	1 1/2"	47	177

\*Flow rate at 1 psi drop, water

Please consult your Distributor/Key Account Manager for additional options.



**KEY FEATURES**

- Near linear flow control
- Larger range of fluid control
- 225° or 255° rotation V-Ball
- From low volume to full port

**CHARACTERIZED**  
**Q-PORT BALL VALVES**

**2-Way Stainless Steel**

**1/4", 3/8", 1/2", 1" and 1 1/2" Stainless Steel 2-Way, Throttling Q-Ball Valves**

Stainless steel valves with stainless steel ball, FNPT. 90° operation.

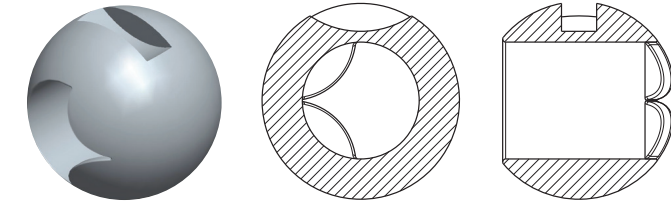
**Maximum PSI: 1/4", 3/8" and 1/2" Valves**

2,000 psi (137.9 bar) at 70° F (21° C)

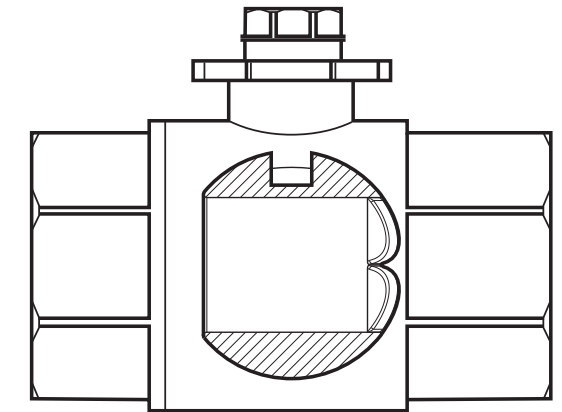
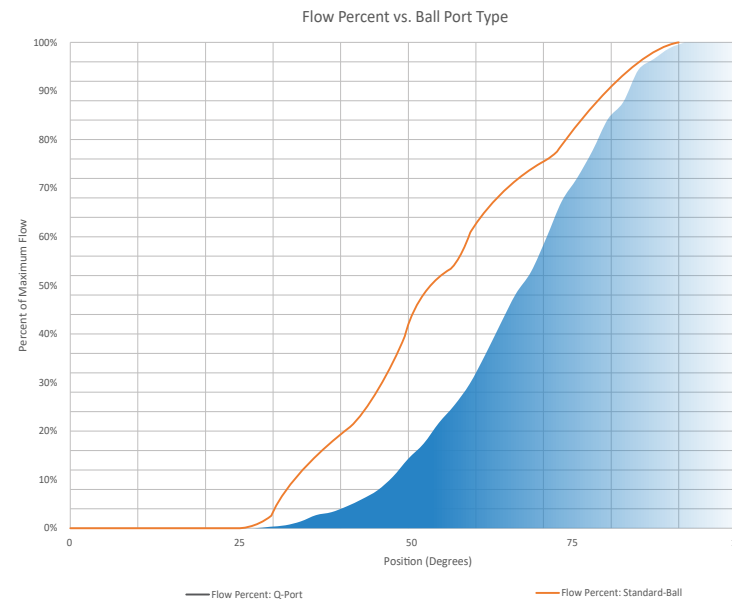
**1 1/2" Valves**

1,500 psi (103.4 bar) at 70° F (21° C)

Part #	Size	Valve Control
88BQ3	1/4"	Regulating
88CQ3	3/8"	Regulating
88DQ3	1/2"	Regulating
S2FQ2	1"	Regulating
88HQ2	1 1/2"	Regulating

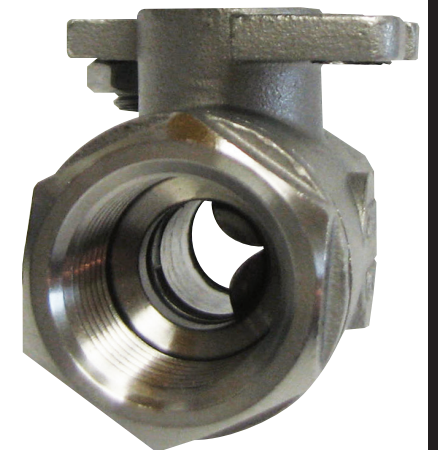


Please consult your Distributor/Key Account Manager for additional options.



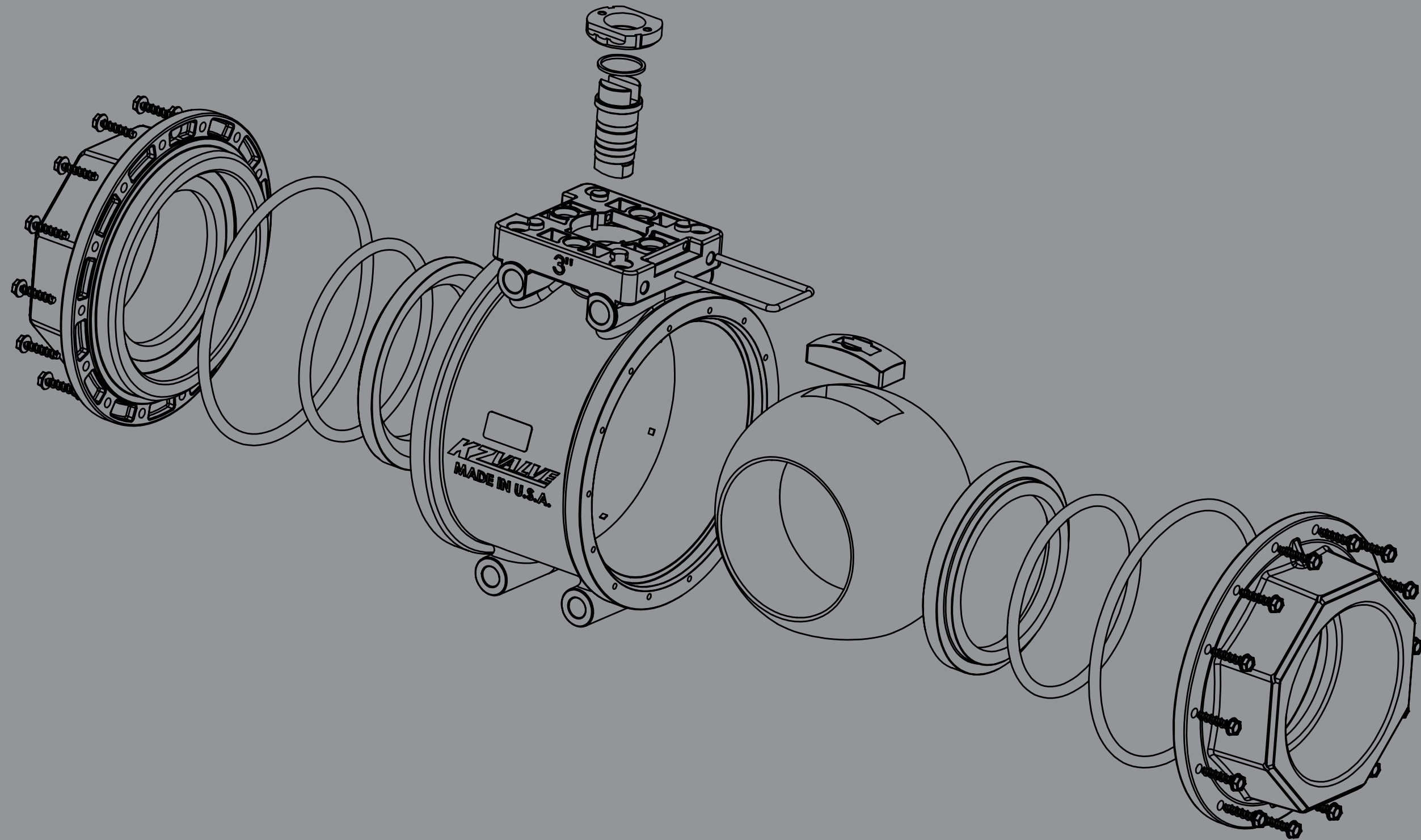
**KEY FEATURES**

- More precise low end flow control with a 2-way ball valve
- 90° rotation
- Various valve sizes available



# Technical Data & Wiring Diagrams

Pages 75-134

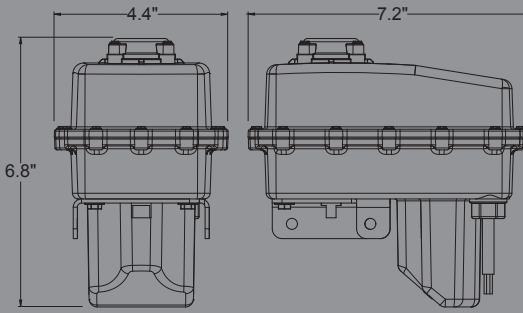


# EH2 SERIES

## Technical Data & Wiring Diagrams

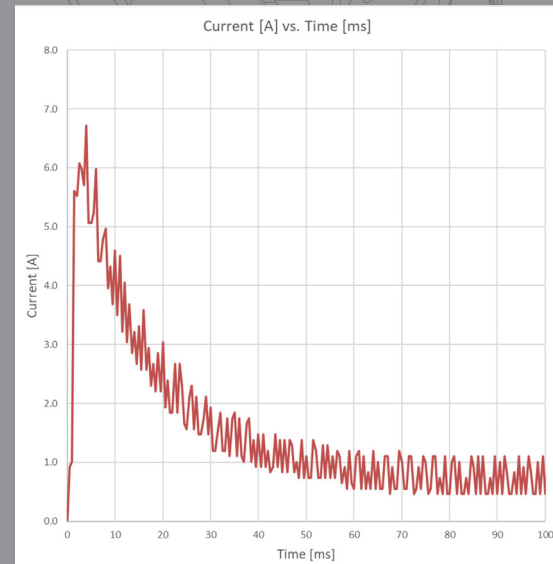
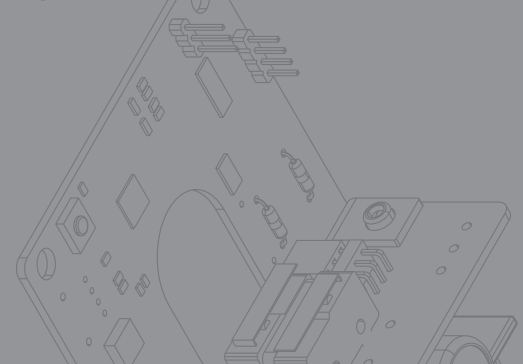
### Specifications

Motor Options*	5 RPM Brushed Motor	2 RPM Brushed Motor
Operating Amperage	0.8 - 2.5 Amps @ 12 VDC	0.3 - 0.8 Amps @12 VDC
Stall Amperage	7.5 Amps @ 12 VDC	2.0 Amps @ 12 VDC
Idle Amperage	0.040 Amps @ 12 VDC	0.040 Amps @ 12 VDC
Speed - No Load	5 RPM/ 3.0 Sec. per ¼ Turn	2 RPM/ 7.5 Sec. per ¼ Turn
Speed - On Load	4 RPM/ 3.8 Sec. per ¼ Turn	1.5 RPM/ 10 Sec. per ¼ Turn
Operating Torque	100 in. lbs.	100 in. lbs.
Stall Torque	600 in. lbs	500 in. lbs
Operating Voltage	12 VDC (9-18 VDC) 24 VDC (18-32 VDC)	
Operating Frequency	50% Duty Cycle at 70°F	
Input Impedance	1.2KΩ @ 9 - 18 VDC 15KΩ @18 - 32 VDC	
Switching Threshold	2.5 VDC @ 12 VDC	
In-Rush Current	4.4 - 11.5 Amps @ 12 VDC, 35 mS Duration	
Signal Line Current	Minimum of 5 mA Input	
Feedback Line Current	Maximum of 40 mA Output	
Operating Temperature	-32°F to 125°F (-36°C to 52°C)	
Storage Temperature	-40°F to 185°F (-40°C to 85°C)	
Weight	3.8 lbs. (1.7 kg.)	
Enclosure Material	Glass Filled Nylon, Stainless Steel Hardware and Output Shaft, Silicone and Viton Seals, Optional Polycarbonate Indicator Dome	
Enclosure Ratings	NEMA 6P per NEMA 250 NEMA 7D per NEMA 250 IP68 per ISO 20653 and IEC 60529	
Electrical Connections	16" Free Length as standard, 18 AWG Tinned Copper, XLPE Conductor Insolation and PVC Jacket Terminated in a Variety of Different Connector Options	
Electrical Protections	Internally Fused, Self Resetting Electrical Cable Meets SAE-J1128 and USCG 33 C.F.R. Part 183	
Available Diagnostics	Position Feedback	



**Installation** May be installed in any orientation without concern of moisture ingress. Should the valve plumbing support the actuated valve, independent support or mount is not required.

**KZValve** utilizes brushed DC Gear motors, typically the base motors have a short duration current spike on startup. A typical in-rush current profile is shown below:



LED INDICATOR STATES			
INDICATOR	RATE	COLOR	STATUS
BLINKING	2.8Hz	RED	FAULT
SOLID	-	RED	CLOSED
SOLID	-	GREEN	OPEN

\*Other Motor and Speed Options Available on Request. Please Consult your Distributor/ Key Account Manager for Additional Options and Technical Details.

## Specification Sheet

**Control Types**

**On/Off, 3-wire, SPST**

**Positionable, 4-wire, SPDT**

**Positionable, 2-wire, DPDT**

**CAN/ISO BUS**

**Feedback Options**

**Potentiometer: 1% Tolerance**  
**Max Power: 0.4 Watt**  
**Wiper Current: Max <math>\lt; 1 \mu\text{A}</math>**

Potentiometer calibrated on 5 V source.  
Signal/wiper set to 1 V @ Closed.

Black -VDC/Neutral  
Blue Signal (0-5 VDC)  
Red +5 VDC

**POSITIVE ENERGIZED AUXILIARY CONTACT(S) INSIDE ACTUATOR**

Feedback at Position

Feedback Voltage = System Voltage

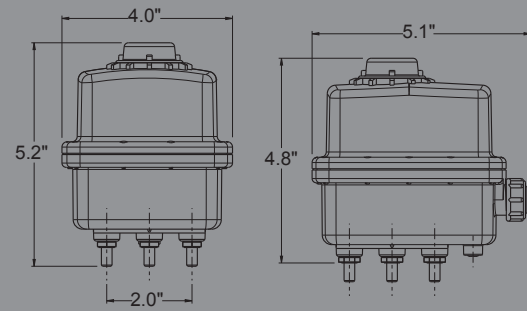
# EH3 SERIES

## Technical Data & Wiring Diagrams

### Specifications

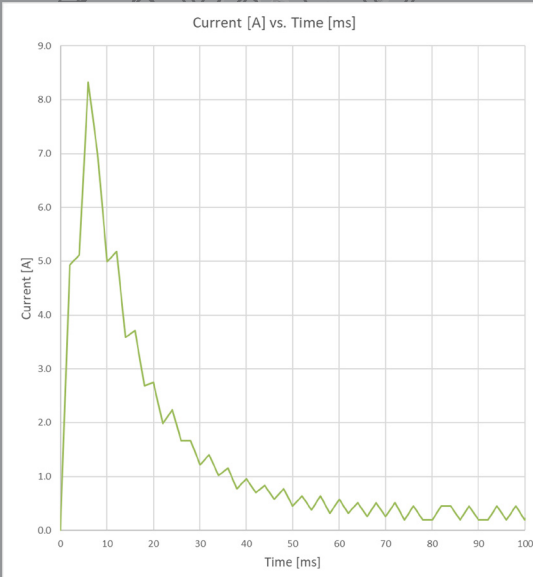
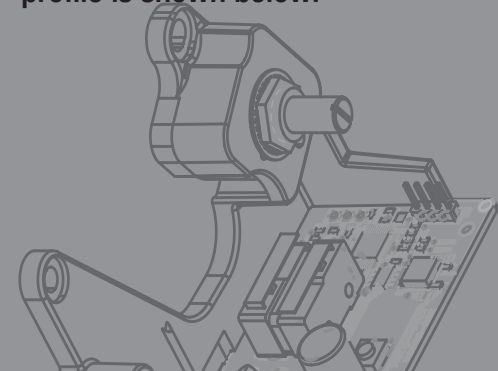
Motor Options*	17 RPM Brushed Motor	2 RPM Brushed Motor
Operating Amperage	0.8 - 2.5 Amps @ 12 VDC	0.3 - 0.8 Amps @12 VDC
Stall Amperage	7.0 Amps @ 12 VDC	1.0 Amps @ 12 VDC
Idle Amperage	0.040 Amps @ 12 VDC	0.040 Amps @ 12 VDC
Speed - No Load	18 RPM/ 0.8 Sec. per ¼ Turn	2 RPM/ 7.5 Sec. per ¼ Turn
Speed - On Load	14 RPM/ 1.1 Sec. per ¼ Turn	1.8 RPM/ 8.3 Sec. per ¼ Turn
Operating Torque	50 in. lbs.	50 in. lbs.
Stall Torque	175 in. lbs	140 in. lbs
Operating Voltage	12 VDC (9-18 VDC)	
	24 VDC (18-32 VDC)	
Operating Frequency	50% Duty Cycle at 70°F	
Input Impedance	0.41KΩ @ 9 - 18 VDC	
	15KΩ @18 - 32 VDC	
Switching Threshold	2.5 VDC @ 12 VDC	
In-Rush Current	7.9 - 9.9 Amps @ 12 VDC, 35 mS Duration	
Signal Line Current	Minimum of 5 mA Input	
Feedback Line Current	Maximum of 40 mA Output	
Operating Temperature	-32°F to 125°F (-36°C to 52°C)	
Storage Temperature	-40°F to 185°F (-40°C to 85°C)	
Weight	1.8 lbs. (0.8 kg.)	
Enclosure Material	Glass Filled Nylon, Stainless Steel	
	Hardware and Output Shaft, Silicone and	
	Viton Seals, Optional Polycarbonate Indicator Dome	
Enclosure Ratings	NEMA 6P per NEMA 250	
	NEMA 7D per NEMA 250	
	IP68 per ISO 20653 and IEC 60529	
Electrical Connections	16" Free Length as standard, 18 AWG Tinned Copper, XLPE Conductor Insolation and PVC Jacket	
	Terminated in a Variety of Different Connector Options	
Electrical Protections	Internally Fused, Self Resetting	
	Electrical Cable Meets SAE-J1128 and	
	USCG 33 C.F.R. Part 183	
Available Diagnostics	Position Feedback	

\*Other Motor and Speed Options Available on Request. Please Consult your Distributor/ Key Account Manager for Additional Options and Technical Details.



**Installation** May be installed in any orientation without concern of moisture ingress. Should the valve plumbing support the actuated valve, independent support or mount is not required.

**KZ Valve** utilizes brushed DC Gear motors, typically the base motors have a short duration current spike on startup. A typical in-rush current profile is shown below:



## Specification Sheet

Control Types	
<p><b>On/Off, 3-wire, SPST</b></p>	<p><b>Positionable, 4-wire, SPDT</b></p>
<p><b>Positionable, 2-wire, DPDT</b></p>	<p><b>CAN/ISO BUS</b></p>
Feedback Options	
<p><b>Potentiometer: 1% Tolerance</b>  <b>Max Power: 0.4 Watt</b>  <b>Wiper Current: Max &lt;1 μA</b></p> <p>Potentiometer calibrated on 5 V source.          Signal/wiper set to 1 V @ Closed.</p> <p>Black -VDC/Neutral          Blue Signal (0-5 VDC)          Red +5 VDC</p>	<p><b>POSITIVE ENERGIZED AUXILIARY CONTACT(S) INSIDE ACTUATOR</b></p>

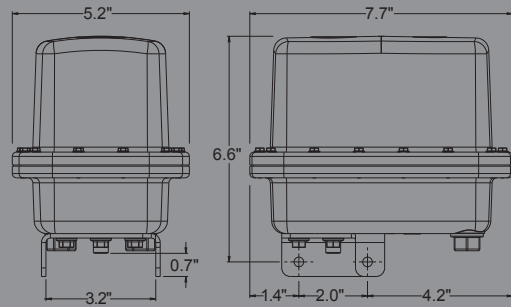


# EH5 SERIES

## Technical Data & Wiring Diagrams

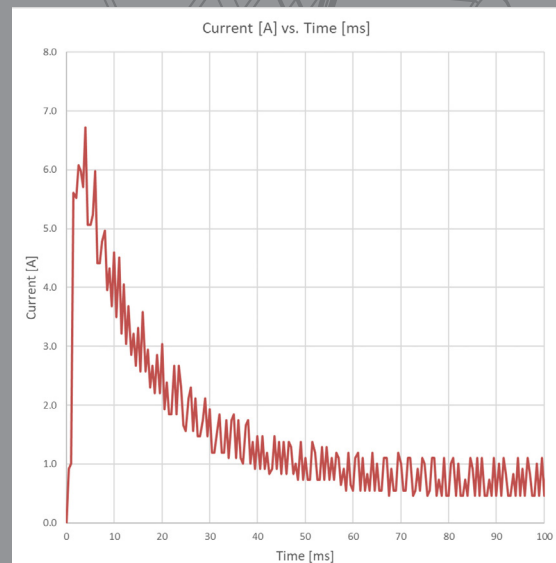
### Specifications

Motor Options	5 RPM Brushed Motor
Operating Amperage	1.0 - 3.0 Amps @ 12 VDC
Stall Amperage	10 Amps @ 12 VDC
Idle Amperage	0.040 Amps @ 12 VDC
Speed - No Load	5 RPM/ 3.0 Sec. per ¼ Turn
Speed - On Load	4 RPM/ 3.8 Sec. per ¼ Turn
Operating Torque	200 in. lbs.
Stall Torque	830 in. lbs
Operating Voltage	12 VDC (9-18 VDC) 24 VDC (18-32 VDC)
Operating Frequency	50% Duty Cycle at 70°F
Input Impedance	1.2KΩ @ 9 - 18 VDC 15KΩ @18 - 32 VDC
Switching Threshold	2.5 VDC @ 12 VDC
In-Rush Current	6.6 - 7.2 Amps @ 12 VDC, 35 mS Duration
Signal Line Current	Minimum of 5 mA Input
Feedback Line Current	Maximum of 40 mA Output
Operating Temperature	-32°F to 125°F (-36°C to 52°C)
Storage Temperature	-40°F to 185°F (-40°C to 85°C)
Weight	5.7 lbs. (2.4 kg.)
Enclosure Material	Glass Filled Nylon, Stainless Steel Hardware and Output Shaft, Silicone and Viton Seals
Enclosure Ratings	NEMA 6P per NEMA 250 NEMA 7D per NEMA 250 IP68 per ISO 20653 and IEC 60529
Electrical Connections	16" Free Length as standard, 18 AWG Tinned Copper, XLPE Conductor Insulation and PVC Jacket Terminated in a Variety of Different Connector Options
Electrical Protections	Internally Fused, Self Resetting Electrical Cable Meets SAE-J1128 and USCG 33 C.F.R. Part 183
Available Diagnostics	Position Feedback



**Installation** May be installed in any orientation without concern of moisture ingress. Should the valve plumbing support the actuated valve, independent support or mount is not required.

**KZ Valve** utilizes brushed DC Gear motors, typically the base motors have a short duration current spike on startup. A typical in-rush current profile is shown below:



# Specification Sheet

Control Types	
<p><b>On/Off, 3-wire, SPST</b></p>	<p><b>Positionable, 4-wire, SPDT</b></p>
<p><b>CAN/ISO BUS</b></p>	<p><b>Analog, 0-5/0-10 V Input</b></p>
Feedback Options	
<p><b>Potentiometer: 1% Tolerance Max Power: 0.4 Watt Wiper Current: Max &lt;1 μA</b></p> <p>Potentiometer calibrated on 5 V source. Signal/wiper set to 1 V @ Closed.</p> <p>Black -VDC/Neutral Blue Signal (0-5 VDC) Red +5 VDC</p>	<p><b>POSITIVE ENERGIZED AUXILIARY CONTACT(S) INSIDE ACTUATOR</b></p>

# EH7 SERIES

## Technical Data & Wiring Diagrams

### Specifications

Motor Options	50 RPM Brushed Motor	3 RPM Brushed Motor
Operating Amperage	1.0 - 1.5 Amps @ 12 VDC	0.3 - 0.5 Amps @ 12 VDC
Stall Amperage	5.0 - 6.0 Amps @ 12 VDC	0.7 - 1.0 Amps @ 12 VDC
Idle Amperage	0.040 Amps @ 12 VDC	0.040 Amps @ 12 VDC
Speed - No Load	50 RPM/ 0.4 Sec. per 1/4 Turn	3 RPM/ 5.0 Sec. per 1/4 Turn
Speed - On Load	32 RPM/ 0.5 Sec. per 1/4 Turn	2 RPM/ 7.5 Sec. per 1/4 Turn
Operating Torque	10 in. lbs.	10 in. lbs.
Stall Torque	35 in. lbs.	48 in. lbs.
Operating Voltage	12 VDC (9-18 VDC)	
	24 VDC (18-32 VDC)	

Operating Frequency	50% Duty Cycle at 70°F
Input Impedance	1.2KΩ @ 9 - 18 VDC
	15KΩ @ 18 - 32 VDC
Switching Threshold	2.5 VDC @ 12 VDC
In-Rush Current	5.0 - 6.5 Amps @ 12 VDC, 35 mS Duration
Signal Line Current	Minimum of 5 mA Input
Feedback Line Current	Maximum of 40 mA Output
Operating Temperature	-32°F to 125°F (-36°C to 52°C)
Storage Temperature	-40°F to 185°F (-40°C to 85°C)
Weight	0.94 lbs. (0.43 kg.)
Enclosure Material	Glass Filled Nylon, Stainless Steel
	Hardware and Output Shaft, Silicone and Viton Seals, Optional Polycarbonate Indicator Dome

Enclosure Ratings	NEMA 6P per NEMA 250
	IP68 per ISO 20653 and IEC 60529

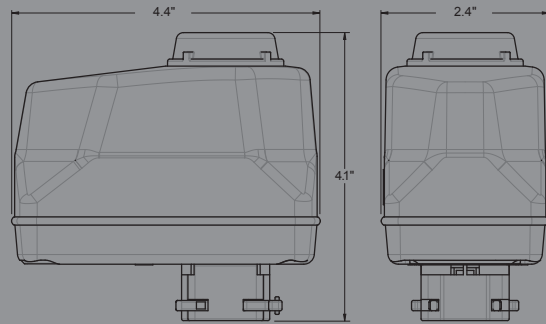
Electrical Connections	16" Free Length as standard, 18 AWG Tinned Copper, XLPE Conductor Insolation and PVC Jacket
	Terminated in a Variety of Different Connector Options

Electrical Protections	Internally Fused, Self Resetting
	Electrical Cable Meets SAE-J1128 and USCG 33 C.F.R. Part 183

Available Diagnostics	Voltage Feedback, Position Feedback, Stall Conditions, Signal Inout Error, and Device Timeout
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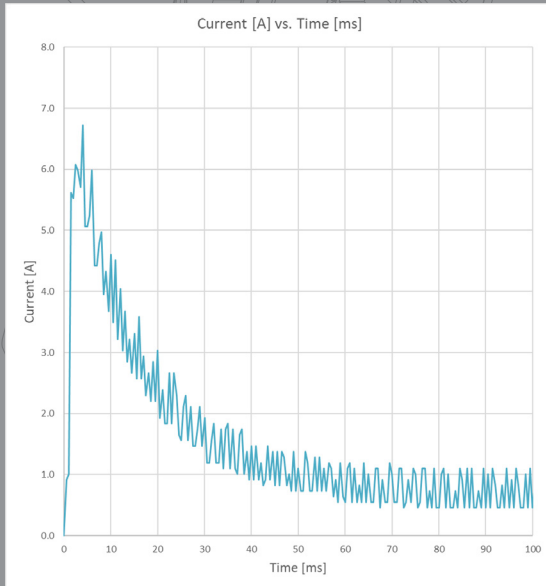
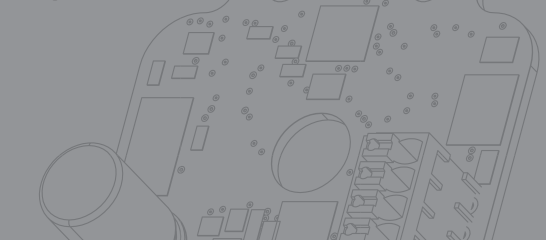
### LED INDICATOR STATES

INDICATOR	RATE	COLOR	STATUS
BLINKING	2.8Hz	RED	FAULT
SOLID	-	RED	CLOSED
SOLID	-	GREEN	OPEN

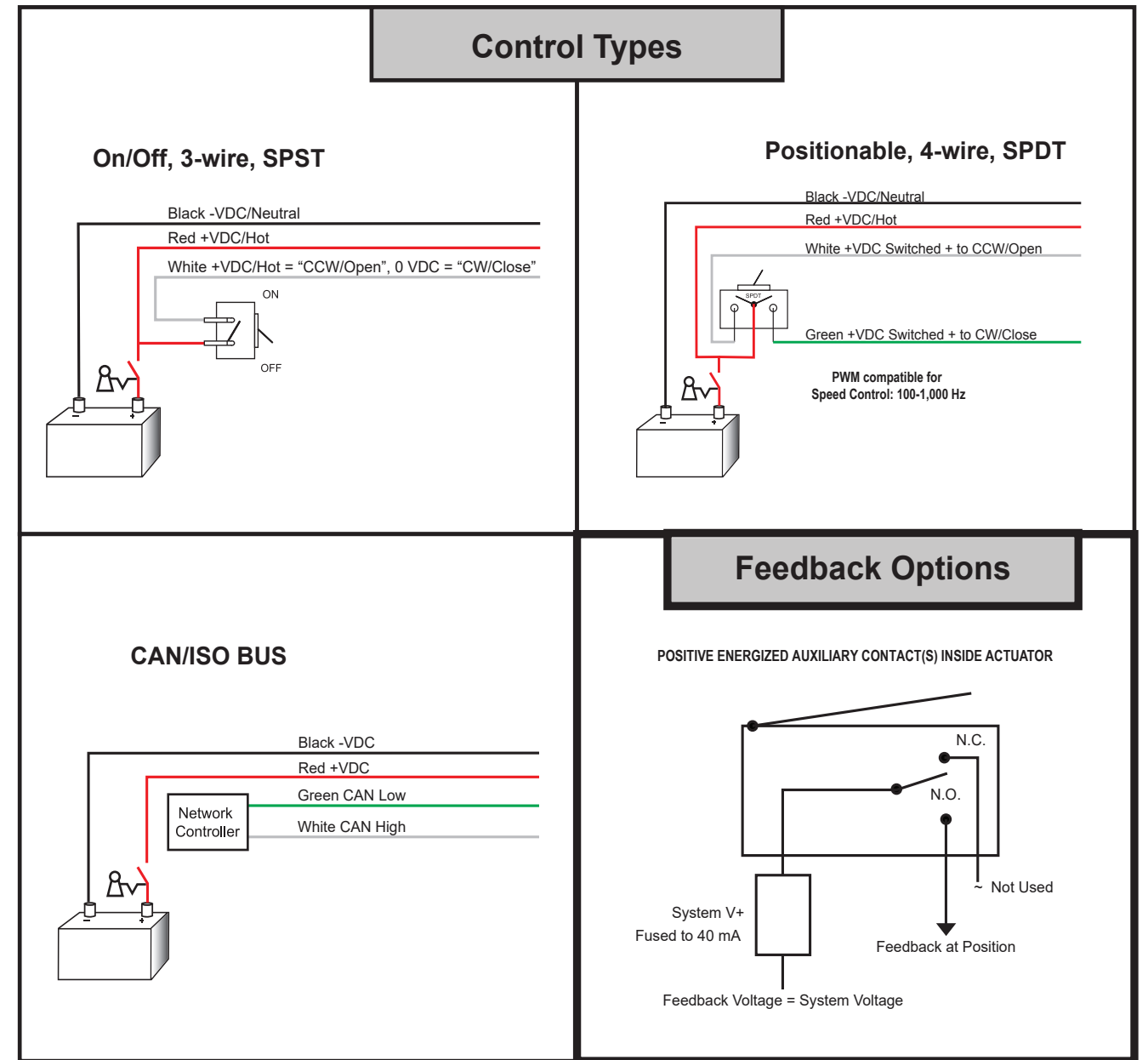


**Installation** May be installed in any orientation without concern of moisture ingress. Should the valve plumbing support the actuated valve, independent support or mount is not required.

**KZValve** utilizes brushed DC Gear motors, typically the base motors have a short duration current spike on startup. A typical in-rush current profile is shown below:

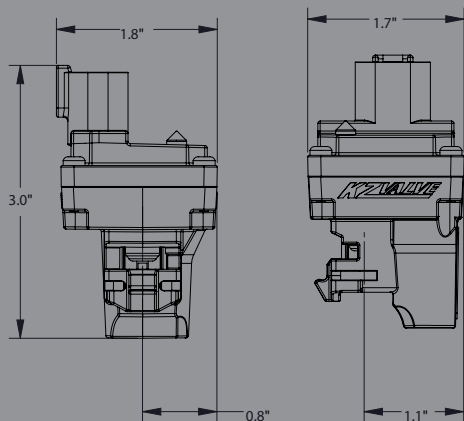


## Specification Sheet



# EH8 SERIES

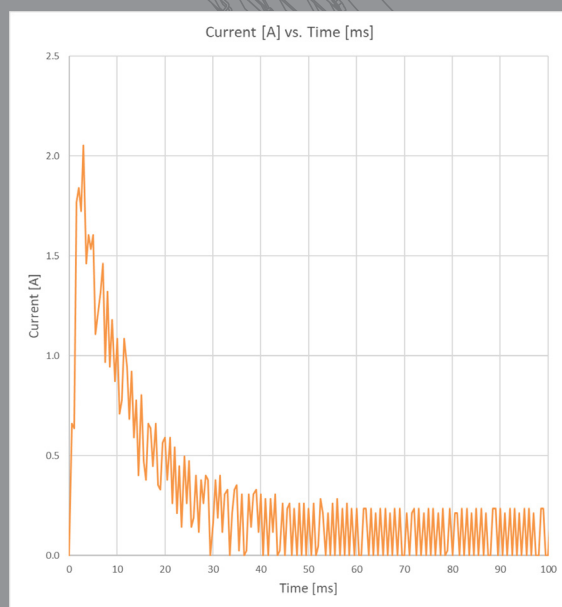
## Technical Data & Wiring Diagrams



Specifications	
Motor Options	110 RPM Brushed Motor
Operating Amperage	0.4 Amps @ 12 VDC
Stall Amperage	1.8 Amps @ 12 VDC
Idle Amperage	0.040 Amps @ 12 VDC
Speed - No Load	110 RPM/ 0.2 Sec. per ¼ Turn
Speed - On Load	90 RPM/ 0.25 Sec. per ¼ Turn
Operating Torque	2 in. lbs.
Stall Torque	8 in. lbs.
Operating Voltage	12 VDC (9-18 VDC) 24 VDC (18-32 VDC)
Operating Frequency	50% Duty Cycle at 70°F
Input Impedance	3.3KΩ @ 9 - 18 VDC 15KΩ @18 - 32 VDC
Switching Threshold	2.5 VDC @ 12 VDC
In-Rush Current	1.8 - 2.3 Amps @ 12 VDC, 35 mS Duration
Signal Line Current	Minimum of 5 mA Input
Feedback Line Current	Maximum of 40 mA Output
Operating Temperature	-40°F to 185°F (-40°C to 85°C)
Storage Temperature	-67°F to 221°F (-55°C to 105°C)
Weight	0.25 lbs. (0.11 kg.)
Enclosure Material	Glass Filled Nylon, Stainless Steel Hardware and Output Shaft, Silicone and Viton Seals, Polycarbonate Indicator Dome
Enclosure Ratings	NEMA 6P per NEMA 250 NEMA 7D per NEMA 250 IP68 per ISO 20653 and IEC 60529
Electrical Connections	Integrated Direct Plug Available in Deutsch DT Series, AMPSEAL 16 Series, and M12 Series
Electrical Protections	Internally Fused, Self Resetting
Available Diagnostics	Voltage Feedback, Position Feedback, Stall Conditions, Signal Input Error, and Device Timeout

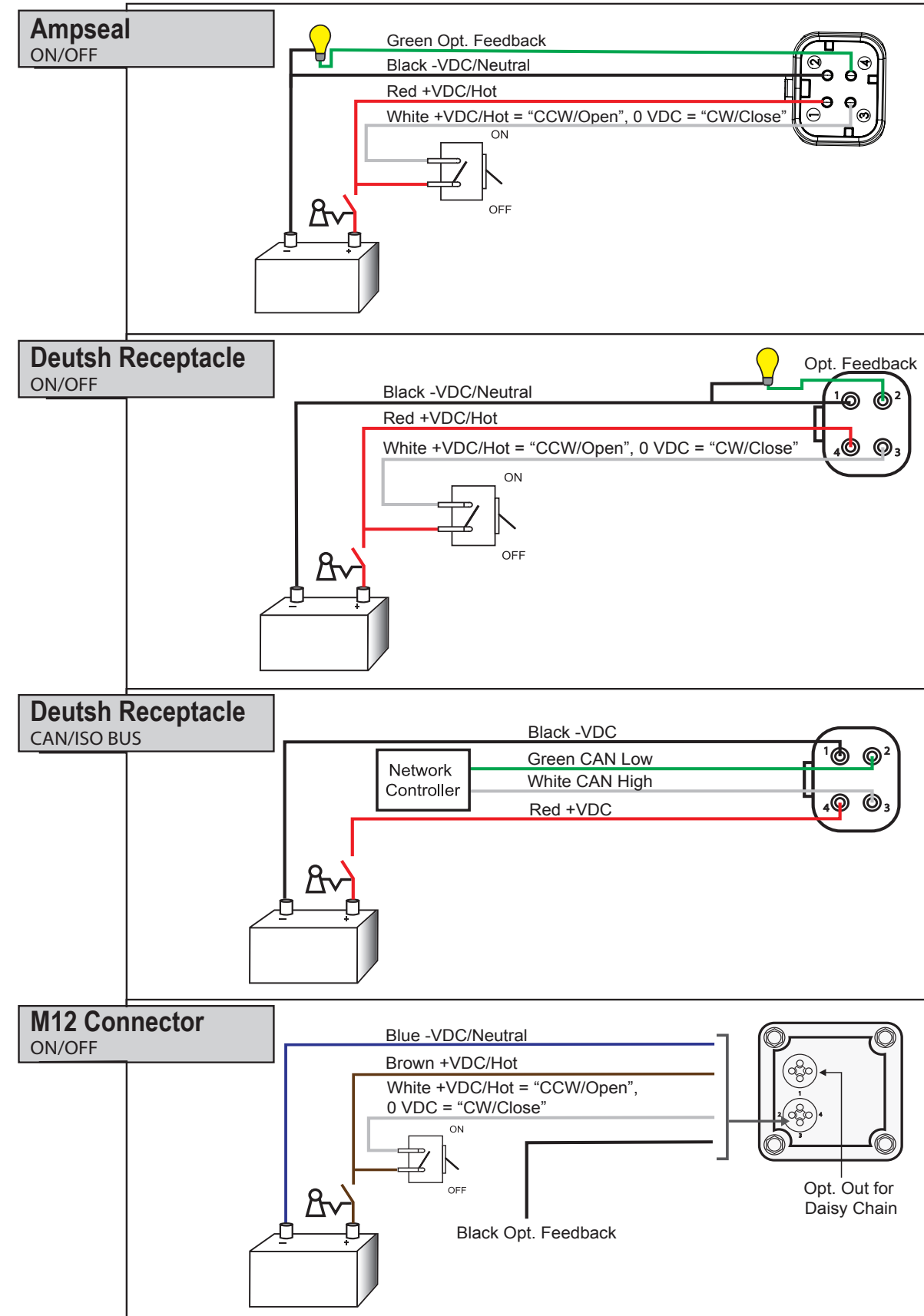
**Installation** May be installed in any orientation without concern of moisture ingress. Should the valve plumbing support the actuated valve, independent support or mount is not required.

**KZValve** utilizes brushed DC Gear motors, typically the base motors have a short duration current spike on startup. A typical in-rush current profile is shown below:



LED INDICATOR STATES			
INDICATOR	RATE	COLOR	STATUS
BLINKING	2.8Hz	RED	FAULT
SOLID	-	RED	CLOSED
SOLID	-	GREEN	OPEN

## Specification Sheet



# TROUBLESHOOTING GUIDE

**KZValve** motorized valve actuators are built to provide years of maintenance-free use when properly installed in compatible applications.

Disregarding feedback signals, there are two primary types of control circuits; **Variable Positioning** (commonly polarity reversing) and **ON/OFF** (commonly one or two switched signals).

Always refer to the standard wiring diagrams for testing of the control harness before opening the actuator housing. As a general rule, standard actuators will rotate clockwise (viewed from top) while running to a valve closed position and counterclockwise while running to a valve open position.

All **KZValve** motorized valve actuators currently require power to operate in either direction. Actuators are operable in any direction, even upside down.

See our website, [KZValve.com](http://KZValve.com), for:

- Technical Documents
- LED Indicator guides
- Actuator Manuals
- Valve Manuals
- STP Files
- Line Drawings
- Warranty Information
- Compliance Documents
- Environmental Regulation Documents

# TROUBLESHOOTING GUIDE

**IF UNIT IS UNDER WARRANTY, CONTACT A KZValve AUTHORIZED SERVICE/REPAIR CENTER. OPENING ACTUATOR VOIDS WARRANTY.**

## ACTUATOR ISSUES

Problem	Possible Cause	Solution
Actuator will not run at all	i) Limited switch problem	i) Check and adjust limit switches per instructions.
	ii) Cam assembly problem	ii) Check and adjust cams per instructions.
	iii) Integrated circuit breaker tripped	iii) Disconnect power to unit for 20 seconds; reconnect power
	iv) Dead or open short in control harness	iv) Check harness for cuts in installation or sharp pinch point. Check for continuity of each wire in the harness. Check connectors for damage or corrosion. Repair or replace as needed.
	v) Dead or open short in actuator control circuit	v) Check actuator housing for damage or missing hardware. Check actuator for internal corrosion. Check for loose motor lead. Clean circuit with electrical contact cleaner and compressed air. Solder connections if necessary. Replace circuit board assembly if required.
	vi) Failed gear motor	vi) Disconnect motor leads at circuit board or motor. Apply power directly to motor terminals. Motor should run continuously when power is applied. Replace motor if rotation is not smooth.
	Motor runs continuously	i) Limit switch problem
ii) Cam assembly problem		ii) Check and adjust cams per instructions.
iii) Defective or damaged circuit board component		iii) Replace circuit board assembly.
Constantly tripping integrated circuit breaker or blowing line fuse	i) Valve operating torque excessive; tight from incompatible valve or media, or buildup	i) Remove motorized actuator from valve. Manually turn valve with torque wrench when possible. Confirm that valve torque is within actuator capability. Refer to Actuator Information chart in Actuator Data Spec Sheet section of catalog. Disassemble and clean valve.
	ii) Defective or damaged circuit board component	ii) Many models have internal relays. Listen for audible click upon activation. Bypass circuit board assembly to test motor, see <i>iii) Failed gear motor</i> . Replace motor if rotation is not smooth.
	iii) Failed gear motor	iii) Disconnect motor leads at circuit board or motor. Apply power directly to motor terminals. Motor should run continuously when power is applied. Replace motor if rotation is not smooth.

\*For additional troubleshooting information regarding device LED feedback options, please reference **KZValve** LED Feedback Manual, available upon request.

## VALVE ISSUES

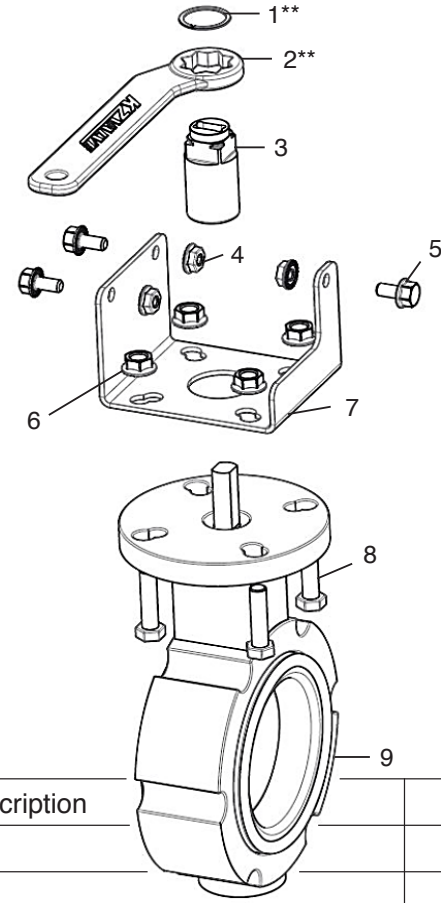
Problem	Possible Cause	Solution
Valve is leaking past ball	i) Seats damaged or worn out	i) Install valve repair kit.
	ii) Valve is not stopping at proper closed position	ii) Adjust limit switches of actuator.
Valve stem leaks	i) Worn stem seats	i) On metal valves: tighten stem packing nut ~ ¼ - ½ turn. <b>CAUTION!</b> Over tightening stem nut could cause excessive operating torque and trip internal circuit breaker. If leak continues or for plastic valves, install repair kit.
	ii) Damaged stem or stem bore	ii) Replace valve stem if available, otherwise replace valve.
Valve body leaks	i) Loose body bolts or excessive operating pressure	i) Check bolts and confirm application is within recommended pressure ratings.
	ii) Defective body seals	ii) Install repair kit or replace valve.
Valve operating torque excessive	i) Swollen seals or particulate buildup in valve chamber	i) Check valve for compatibility with product. May require valve cleaning, repair kit, or new valve.
	ii) Valve bolts too tight	ii) Loosen bolts slightly. Plastic, bolted valves only.
	iii) Stem nut too tight or damaged stem seal	iii) Loosen stem nut slightly. Install repair kit if needed.

# VALVE PARTS

## 50 Series – EH2

### Design Features:

- 2" - 3" Butterfly Valve
- Max PSI: 150 at 70° F
- Manual Override Capabilities
- Valve Body:
  - Cast Iron (2" - 3")
  - Stainless Steel (3")
- Disk: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: BUNA, VITON, EPDM



No.	Part Number	Description	Qty
1**	100289	retaining ring, spiral	1
2**	212-0002	handle	1
3	208-0016	coupler - 2" (57i, 58i, 59i), 3" (57K, 58K, 59K)	1
4	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	
5	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	3
6	EHPT-191	nut, 5/16 - 18, stainless steel, hex	4
	QX-221	nut, serrated flange, 5/16 - 18, stainless steel, coated	
7	100255	bracket, stainless steel - 2" (57i, 58i, 59i), 3" (57K, 58K, 59K)	1
8	EHPT-101	bolt, 5/16 - 18 x 1 1/4, stainless steel	4
9	EHPT-57i	valve, 2" cast iron/ stainless steel butterfly, BUNA seat	1
	EHPT-57K	valve, 3" cast iron/ stainless steel butterfly, BUNA seat	
	EHPT-58i	valve, 2" cast iron/ stainless steel butterfly, VITON seat	
	EHPT-58K	valve, 3" cast iron/ stainless steel butterfly, VITON seat	
	EHPT-59i	valve, 2" cast iron/ stainless steel butterfly, EPDM seat	
	EHPT-59K	valve, 3" cast iron/ stainless steel butterfly, EPDM seat	

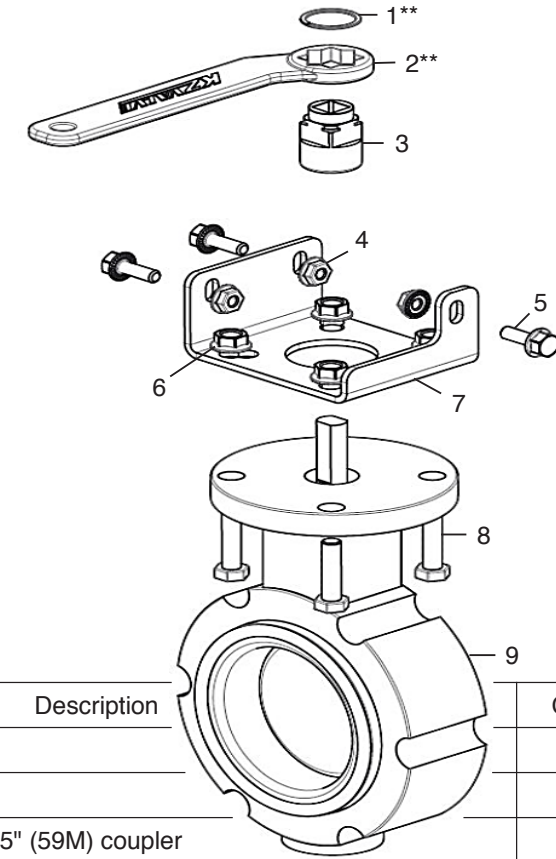
\*\*Manual handle override only

# Exploded View Diagrams

## 50 Series – EH5

### Design Features:

- 3" - 5" Butterfly Valve
- Max PSI: 150 at 70° F (3")
- Max PSI: 50 at 70° F (4" - 5")
- Manual Override Capabilities
- Valve Body:
  - Cast Iron (3")
  - Stainless Steel (3")
  - Cast Aluminum (4" - 5")
- Disk: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: BUNA, VITON, EPDM\*\*\*
- \*\*\* 5" valve only available with EPDM seats



No.	Part Number	Description	Qty
1**	100289	retaining ring, spiral	1
2**	212-0002	handle	1
3	208-0007	coupler - 4" (57L, 58L, 59L), 5" (59M)	1
	208-0024	- 2" (57i, 58i, 59i), 3" (57K, 58K, 59K)	
4	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
5	100338	bolt, serrated flange, 1/4 - 20 x 3/4	3
6	EHPT-191	nut, 5/16 - 18, stainless steel, hex	4
	QX-221	nut, serrated flange, 5/16 - 18, stainless steel, coated	
7	105-0002	bracket, stainless steel - 3" (57K, 58K, 59K), 4" (57L, 58L, 59L), 5" (59M)	1
8	EHPT-101	bolt, 5/16 - 18 x 1 1/4, stainless steel	4
9	EHPT-57K	valve, 3" cast iron/stainless steel butterfly, BUNA seats	1
	EHPT-58K	valve, 3" cast iron/stainless steel butterfly, VITON seats	
	EHPT-59K	valve, 3" cast iron/stainless steel butterfly, EPDM seats	
	EHPT-57L	valve, 4" aluminum/stainless steel butterfly, BUNA seats	
	EHPT-58L	valve, 4" aluminum/stainless steel butterfly, VITON seats	
	EHPT-59L	valve, 4" aluminum/stainless steel butterfly, EPDM seats	
EHPT-59M	valve, 5" aluminum/stainless steel butterfly, EPDM seats		

\*\*Manual handle override only

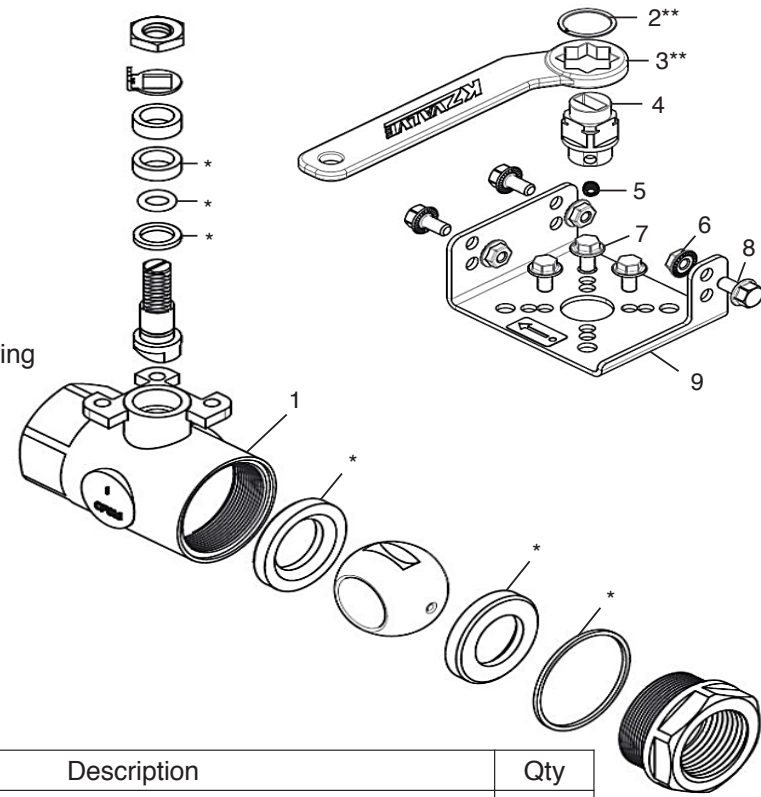
# VALVE PARTS

## 67 Series – EH2

### Design Features:

- 3/4" - 2" Vented 2-Way Stainless Steel Ammonia Ball Valves
- Max PSI: 2,000 at 70° F (3/4" - 1")
- Max PSI: 1,500 at 70° F (1 1/4" - 2")
- Valve Body: CF8M Stainless Steel
- Ball: 316 Stainless Steel (vented)
- Stem: 316 Stainless Steel with EPDM O-ring
- Seat: ME-PTFE\*\*\*
- Stem Packing: Adjustable ME-PTFE\*\*\*

\*\*\*Molecularly Enhanced Virgin Teflon



No.	Part Number	Description	Qty
1	200-0033	valve, 2-way, 1" stainless steel, vented	1
	200-0042	valve, 2-way, 1 1/4" stainless steel, vented	
	200-0075	valve, 2-way, 1 1/2" stainless steel, vented	
	299-0007	valve, 2-way, 3/4" stainless steel, vented	
	299-0008	valve, 2-way, 2" stainless steel, vented	
2**	100289	retaining ring, spiral	1
3**	212-0002	handle	1
4	208-0023	coupler - 1 1/4" (67G), 1 1/2" (67H), 2" (67i)	1
	208-0043	coupler - 3/4" (67E), 1" (67F)	
	208-0072	coupler - 1 1/2" (67H)	
5	100-0036	set screw, 1/4 - 20 x 1/4	1
6	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
7	100-0011	bolt, hex flange, 1/4 - 20 x 1/2, coated	3
	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	
9	100042	bracket, stainless steel - 1 1/4" (67G), 1 1/2" (67H), 2" (67i)	1
	105-0025	bracket, stainless steel - 3/4" (67E), 1" (67F)	
*	210-0003-1	valve repair kit - 3/4" (67E)	
	210-0013-1	valve repair kit - 1" (67F)	
	210-0017-1	valve repair kit - 1 1/4" (67G)	
	210-0001-1	valve repair kit - 1 1/2" (67H)	
	210-0002-1	valve repair kit - 2" (67i)	

\*Items included in valve repair kits

\*\*Manual handle override only

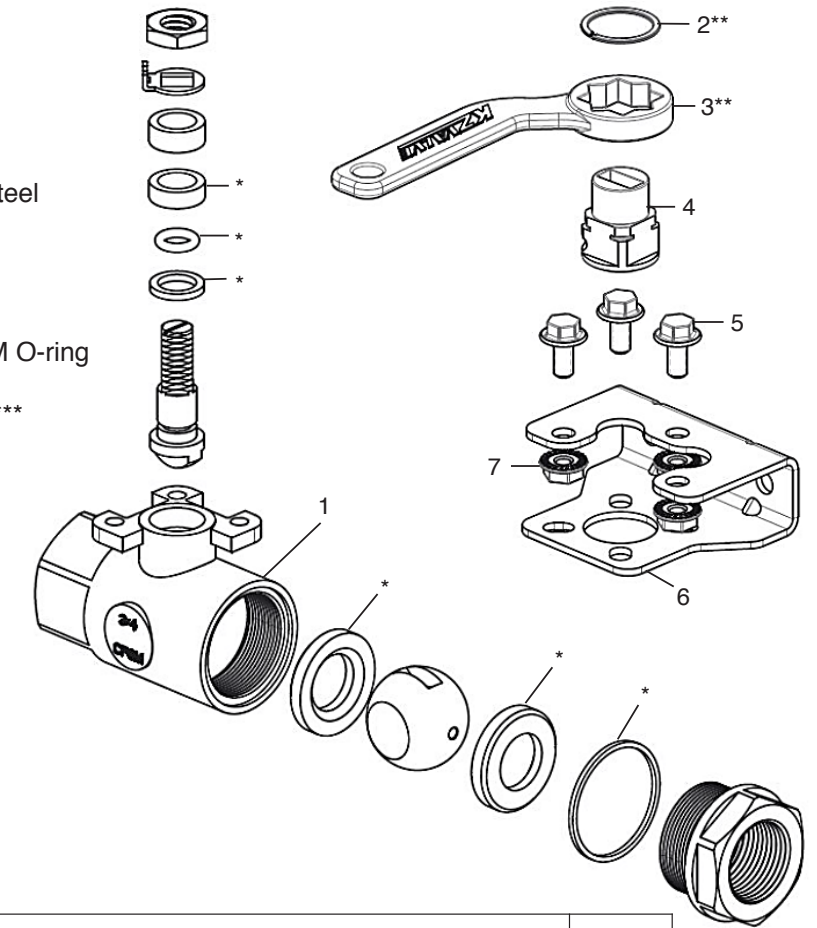
# Exploded View Diagrams

## 67 Series – EH3

### Design Features:

- 1/4" - 3/4" Vented 2-Way Stainless Steel Ammonia Ball Valves
- Max PSI: 2,000 at 70° F (1/4" - 3/4")
- Valve Body: CF8M Stainless Steel
- Ball: 316 Stainless Steel (vented)
- Stem: 316 Stainless Steel with EPDM O-ring
- Seat: ME-PTFE\*\*\*
- Stem Packing: Adjustable ME-PTFE\*\*\*

\*\*\*Molecularly Enhanced Virgin Teflon



No.	Part Number	Description	Qty
1	200-0029	valve, 2-way, 1/4" stainless steel, vented	1
	200-0073	valve, 2-way, 1/2" stainless steel, vented	
	299-0007	valve, 2-way, 3/4" stainless steel, vented	
	299-0013	valve, 2-way, 1/2" stainless steel, vented	
2**	100289	retaining ring, spiral	1
3**	212-0006	handle	1
4	208-0040	coupler - 1/4" (67B), 1/2" (67D), 3/4" (67E)	1
5	100-0011	bolt, hex flange, 1/4 - 20 x 1/2, coated	3
6	105-0045	bracket, stainless steel - 1/4" (67B), 1/2" (67D), 3/4" (67E)	1
7	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
*	210-0007-1	valve repair kit - 1/4" (67B), 1/2" (67D)	
	210-0003-1	valve repair kit - 3/4" (67E)	

\*Items included in valve repair kit

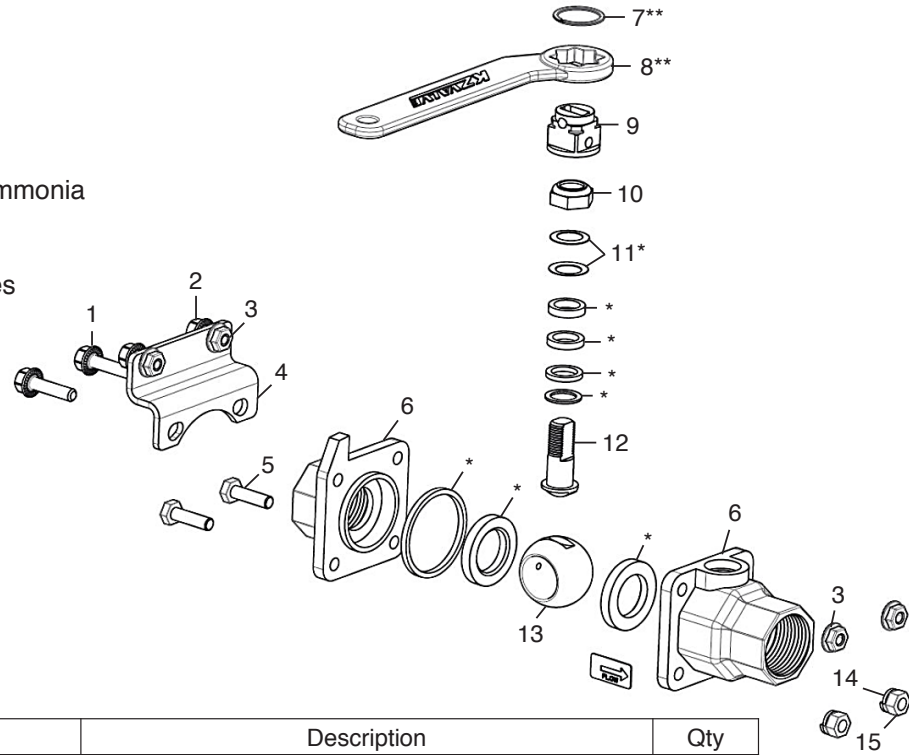
\*\*Manual handle override only

# VALVE PARTS

## 68 Series – EH2

### Design Features:

- 1" - 1 1/4" Vented 2-Way Ammonia Ball Valves
- Max PSI: 800 at 70° F
- Manual Override Capabilities
- Valve Body: Carbon Steel
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem Packing: PTFE



No.	Part Number	Description	Qty
1	100340	bolt, serrated flange, 1/4 - 20 x 1	2
2	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	2
3	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	3
4	EHPT-164	bracket, stainless steel - 1" (68F), 1 1/4" (68G)	1
5	EHPT-68F body bolt EHPT-68G body bolt	body bolt (68F) body bolt (68G)	2
6	299-0016	valve sub, 1" vented	1
7**	100289	retaining ring, spiral	1
8**	212-0002	handle	1
9	208-0025	coupler - 1" (68F), 1 1/4" (68G)	1
10	EHPT-68F stem nut EHPT-68G stem nut	stem nut (68F) stem nut (68G)	1
11*	EHPT-68F spring washer EHPT-68G spring washer	spring washer (68F) spring washer (68G)	2
12	EHPT-68F stem EHPT-68G stem	stem, 1" threaded-end ball valve stem, 1 1/4" threaded-end ball valve	1
13	EHPT-68F valve ball EHPT-68G valve ball	valve ball, 1" threaded-end ball valve valve ball, 1 1/4" threaded-end ball valve	1
14	EHPT-68F split lock washer EHPT-68G split lock washer	1/4 split lock washer 5/16 split lock washer	2
15	EHPT-68F hex nut EHPT-68G hex nut	hex nut (68F) hex nut (68G)	2
*	EHPT-720 EHPT-721	valve repair kit - 1" (68F) valve repair kit - 1 1/4" (68G)	

\*Items included in valve repair kits

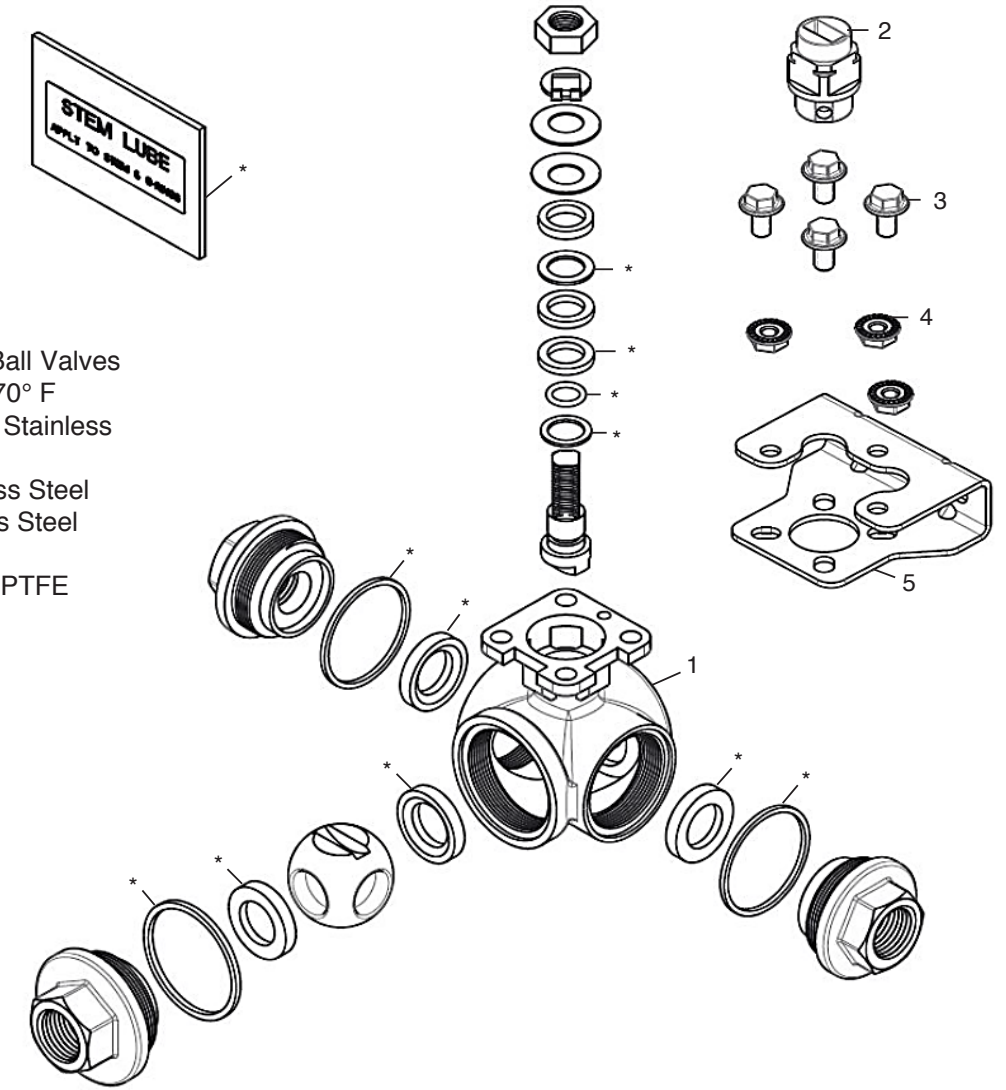
\*\*Manual handle override only

# Exploded View Diagrams

## 73 Series – EH3

### Design Features:

- 3/8" - 1/2" 3-Way Ball Valves
- Max PSI: 1,000 at 70° F
- Valve Body: CF8M Stainless Steel
- Ball: CF8M Stainless Steel
- Stem: 316 Stainless Steel
- Seat: ME-PTFE
- Stem Packing: ME-PTFE



No.	Part Number	Description	Qty
1	299-0021 299-0023	valve, 3-way, 3/8" standard port 4-seat valve, 3-way, 1/2" 4-piece, 4-seat	1
2	208-0043	coupler - 3/8" (73C), 1/2" (73D)	1
3	100-0011	bolt, hex flange, 1/4 - 20 x 1/2, coated	4
4	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	3
5	105-0045	bracket, stainless steel - 3/8" (73C), 1/2" (73D)	1
*	210-0008-1 210-0029	valve repair kit - 3/8" (73C) valve repair kit - 1/2" (73D)	

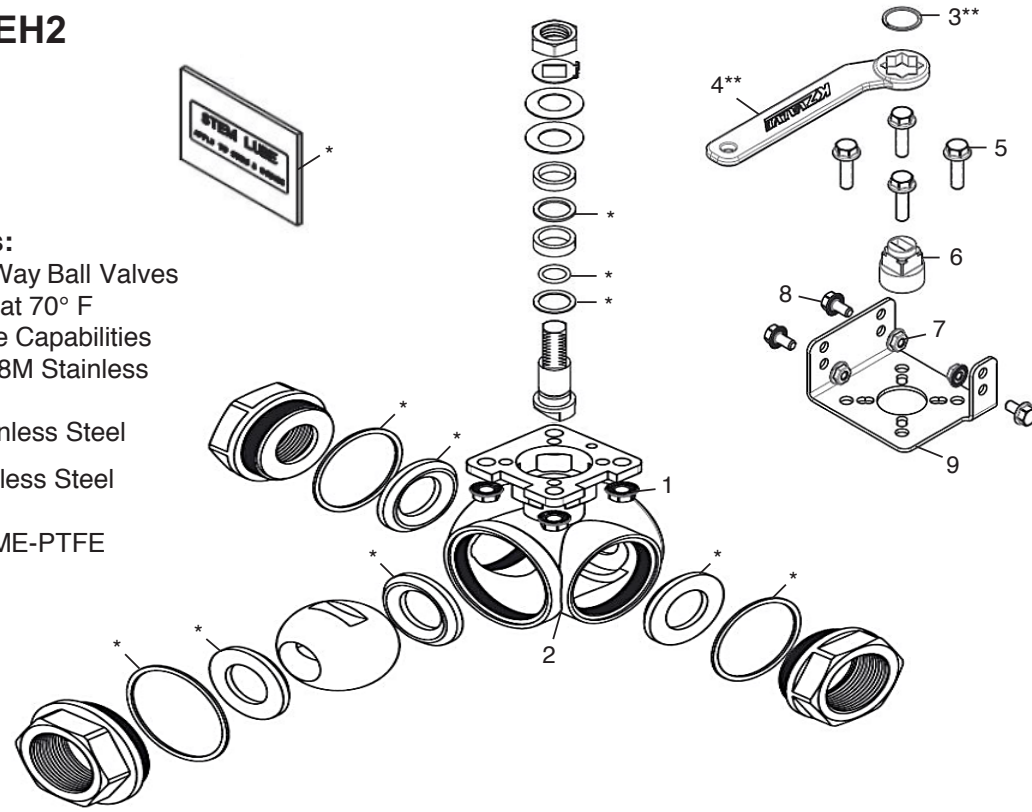
\*Items included in valve repair kits

# VALVE PARTS

## 73 Series – EH2

**Design Features:**

- 3/4" - 1 1/2" 3-Way Ball Valves
- Max PSI: 1,000 at 70° F
- Manual Override Capabilities
- Valve Body: CF8M Stainless Steel
- Ball: CF8M Stainless Steel
- Stem: 316 Stainless Steel
- Seat: ME-PTFE
- Stem Packing: ME-PTFE



No.	Part Number	Description	Qty
1	QX-221	nut, serrated flange, 5/16 - 18, stainless steel, coated	4
2	299-0025	valve, 3-way, 1 1/2" 4-piece, 4-seat	1
	299-0005	valve, 3-way, 3/4" 4-piece, 4-seat	
	299-0024	valve, 3-way, 1" 4-piece, 4-seat	
3**	100289	retaining ring, spiral	1
4**	212-0002	handle	1
5	100-0011	bolt, hex flange, 1/4 - 20 x 1/2, coated	4
	100433	bolt, serrated flange, 5/16 - 18 x 1, stainless steel hex	
6	208-0008	coupler - 1" (73F), 1 1/2" (73H)	1
	208-0023	coupler - 1" (73F)	
	208-0043	coupler - 3/4" (73E)	
7	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	3
8	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	3
9	100042	bracket, stainless steel - 3/4" (73E), 1" (73F), 1 1/2" (73H)	1
*	210-0009-1	valve repair kit - 3/4" (73E)	
	210-0010-1	valve repair kit - 1" (73F)	
	210-0011-1	valve repair kit - 1 1/2" (73H)	

\*Items included in valve repair kits

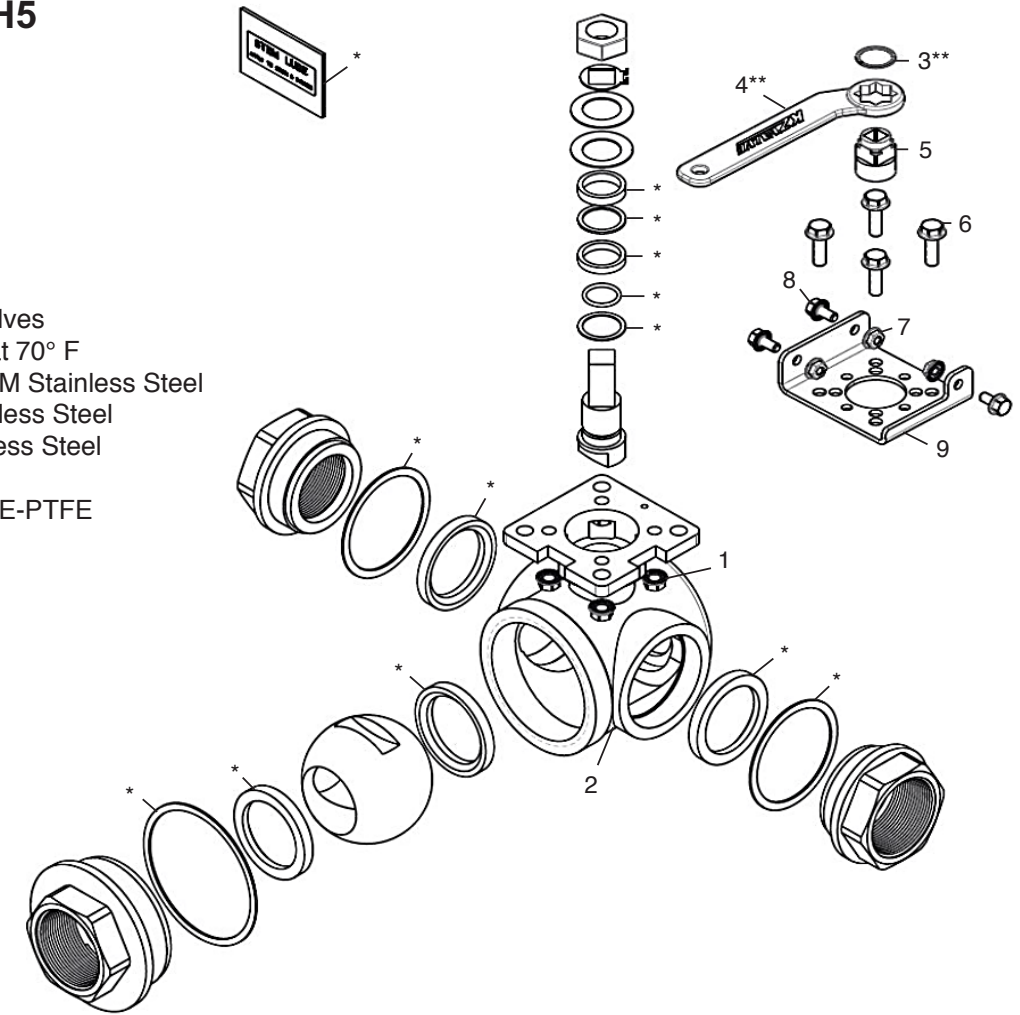
\*\*Manual handle override only

# Exploded View Diagrams

## 73 Series – EH5

**Design Features:**

- 2" 3-Way Ball Valves
- Max PSI: 1,000 at 70° F
- Valve Body: CF8M Stainless Steel
- Ball: CF8M Stainless Steel
- Stem: 316 Stainless Steel
- Seat: ME-PTFE
- Stem Packing: ME-PTFE



No.	Part Number	Description	Qty
1	QX-221	nut, serrated flange, 5/16 - 18, stainless steel, coated	4
2	299-0026	valve, 3-way, 2" stainless steel, L-port, 4-seat	1
3**	100289	retaining ring, spiral	1
4**	212-0002	handle	1
5	208-0005	coupler - 2" (73i)	1
6	100433	bolt, serrated flange, 5/16 - 18 x 1, stainless steel, hex	4
7	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	3
8	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	3
9	105-0026	bracket, stainless steel - 2" (73i)	1
*	210-0012-1	valve repair kit - 2" (73i)	

\*Items included in valve repair kits

\*\*Manual handle override only

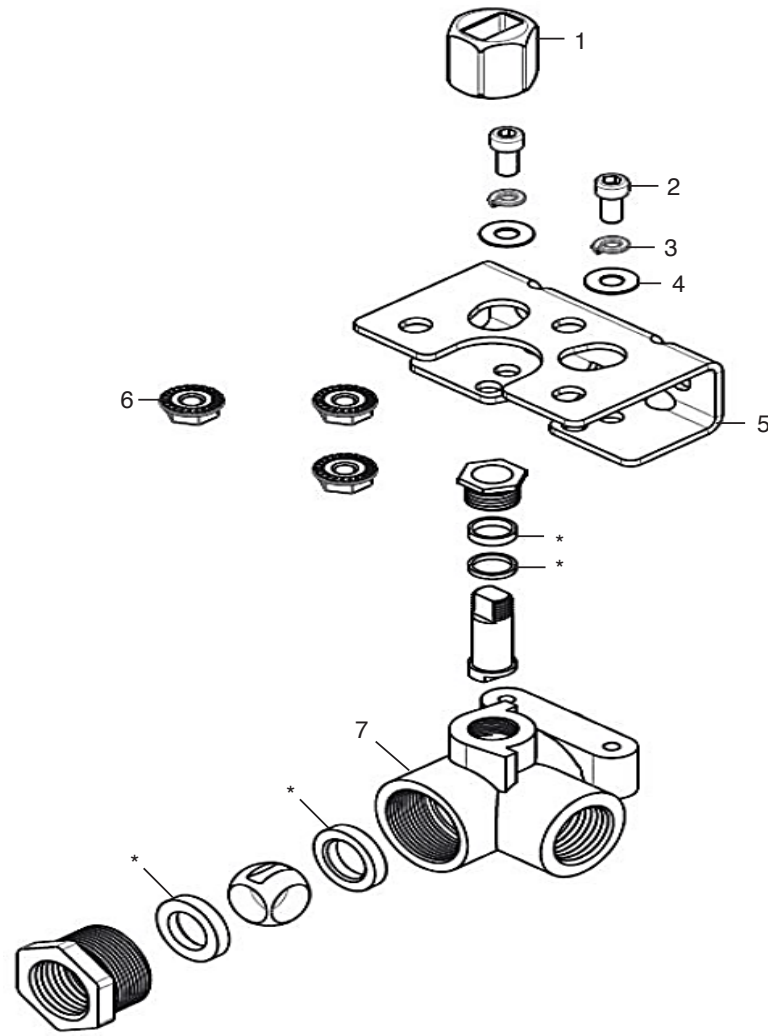


# VALVE PARTS

## 78 Series – EH3

### Design Features:

- 1/2" - 3/4" 3-Way Ball Valves
- Max PSI: 400 at 70° F
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem Packing: PTFE



No.	Part Number	Description	Qty
1	EH-145	coupler - 1/2" (78D)	1
	EH-146	coupler - 3/4" (78E)	
2	EH-158	screw, 10 - 24 x 3/8, stainless steel socket head	2
3	EHPT-109	washer, #10, split lock, 18 - 8, stainless steel	2
4	EHPT-150	washer, #10, flat, 18 - 8, stainless steel	2
5	EH3-174	bracket, stainless steel - 1/2" (78D), 3/4" (78E)	1
6	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
7	EH3-78D	valve, 3-way, bronze, 1/2" diverter	1
	EHPT-78E	valve, 3-way, bronze, 3/4"	
*	EHPT-710	valve repair kit - 3/4" (78E)	

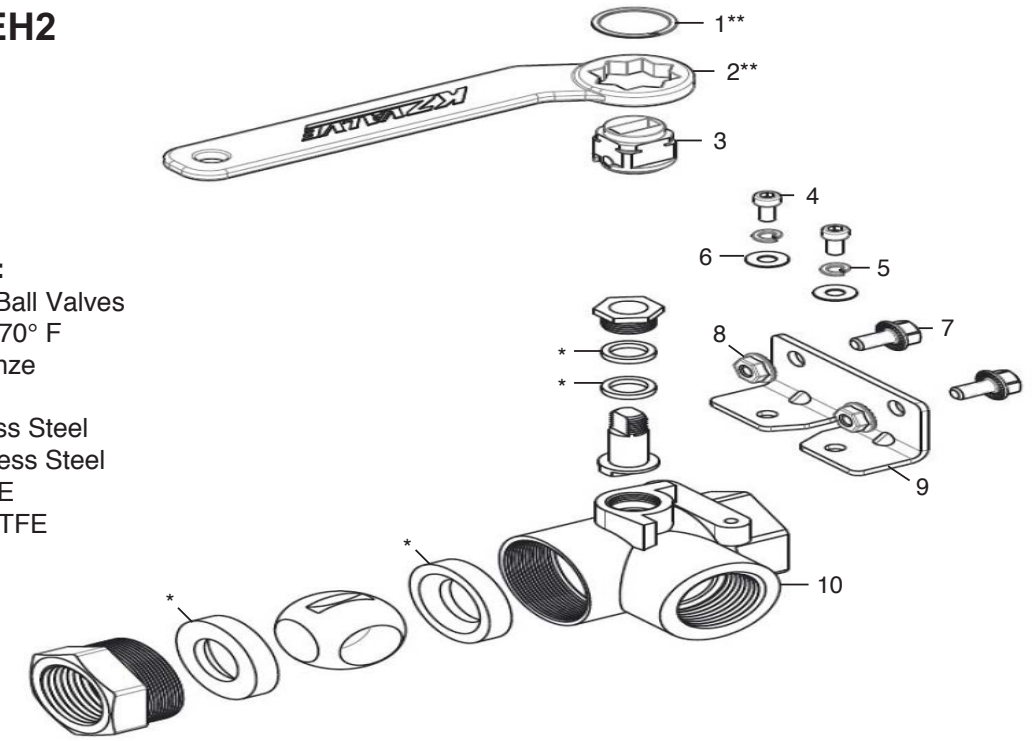
\*Items included in valve repair kits

# Exploded View Diagrams

## 78 Series – EH2

### Design Features:

- 3/4" - 2" 3-Way Ball Valves
- Max PSI: 400 at 70° F
- Valve Body: Bronze (C84400)
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem Packing: PTFE



No.	Part Number	Description	Qty
1**	100289	retaining ring, spiral	1
2**	212-0002	handle	1
3	208-0034	coupler - 1 1/2" (78H), 2" (78i)	1
	208-0050	coupler - 3/4" (78E), 1" (78F)	
4	EH-158	screw, 10 - 24 x 3/8, stainless steel socket head	2
5	EHPT-109	washer, #10, split lock, 18 - 8, stainless steel	2
6	EHPT-150	washer, #10, flat, 18 - 8, stainless steel	2
7	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	2
8	101-0002	nut, serrated flanged, 1/4 - 20, stainless steel, coated	2
9	EHPT-161	bracket, stainless steel - 3/4" (78E), 1" (78F)	1
		EHPT-161-L	
10	EHPT-78E	valve, 3-way, bronze, 3/4"	1
	EHPT-78F	valve, 3-way, bronze, 1"	
	EHPT-78H	valve, 3-way, bronze, 1 1/2"	
	EHPT-78I	valve, 3-way, bronze, 2"	
*	EHPT-710	valve repair kit - 3/4" (78E)	
	EHPT-711	valve repair kit - 1" (78F)	
	EHPT-713	valve repair kit - 1 1/2" (78H)	
	EHPT-714	valve repair kit - 2" (78i)	

\*Items included in valve repair kits

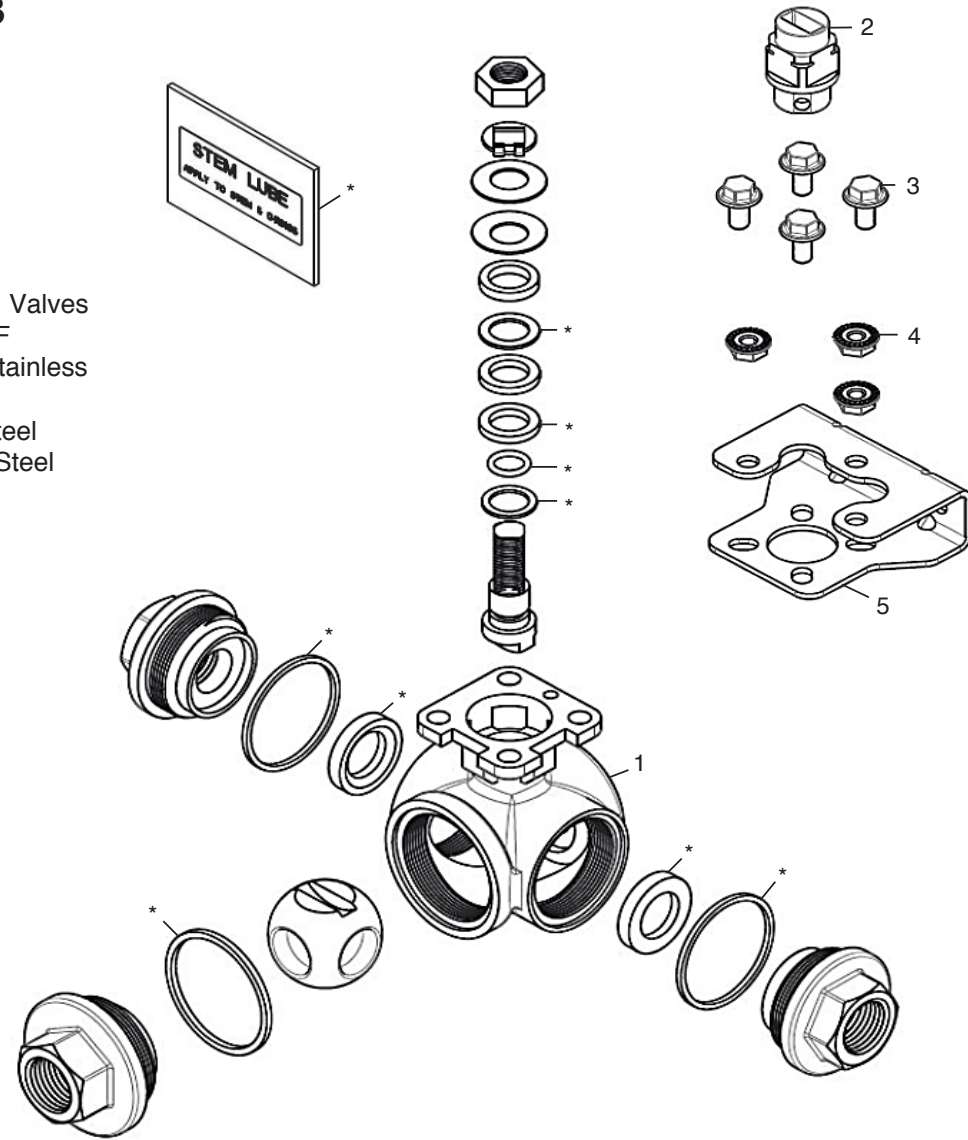
\*\*Manual handle override only

# VALVE PARTS

## 79 Series – EH3

**Design Features:**

- 1/2" - 3/4" 3-Way Ball Valves
- Max PSI: 800 at 70° F
- Valve Body: CF8M Stainless Steel
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem Packing: PTFE



No.	Part Number	Description	Qty
1	299-0027	valve, 3-way, 1/2" 2-seat, stainless steel	1
	EHPT-79E	valve, 3-way, 3/4" stainless steel	
2	208-0043	coupler - 1/2" (79D), 3/4" (79E)	1
3	100-0011	bolt, hex flange, 1/4 - 20 x 1/2, coated	4
4	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	3
5	105-0045	bracket, stainless steel - 1/2" (79D)	1
	EH3-174	bracket, stainless steel - 3/4" (79E)	
*	210-0009-1	valve repair kit - 3/4" (79E)	
	EHPT-710	valve repair kit - 3/4" (79E)	

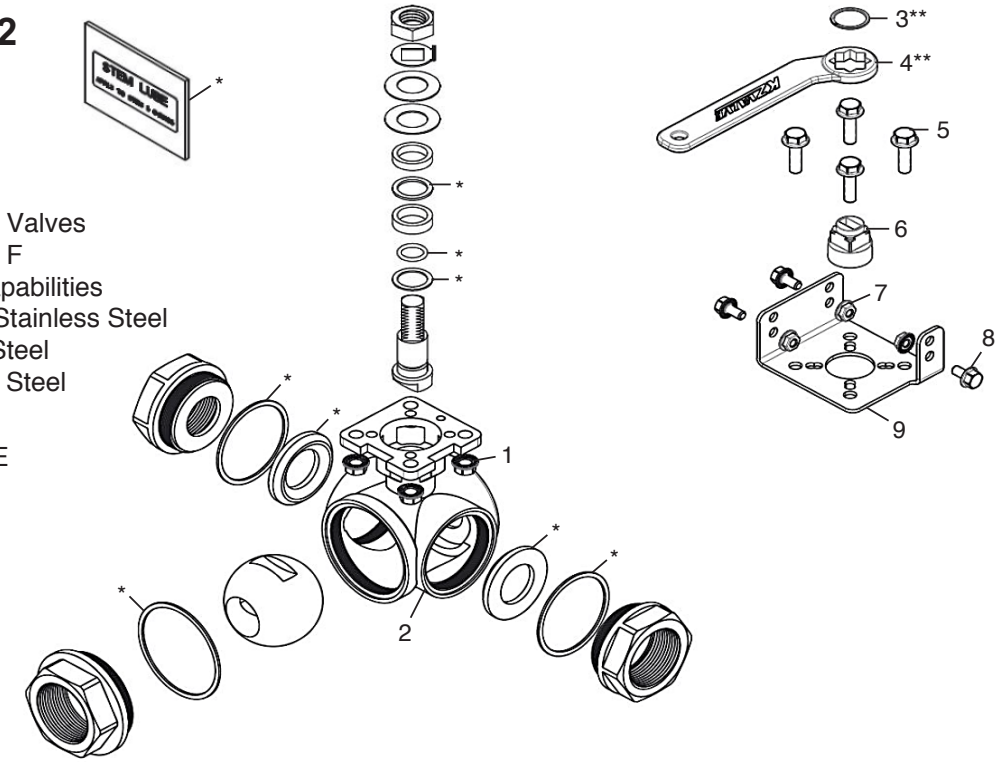
\*Items included in valve repair kits

# Exploded View Diagrams

## 79 Series – EH2

**Design Features:**

- 3/4" - 2" 3-Way Ball Valves
- Max PSI: 800 at 70° F
- Manual Override Capabilities
- Valve Body: CF8M Stainless Steel
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem Packing: PTFE



No.	Part Number	Description	Qty
1	QX-221	nut, serrated flange, 5/16 - 18, stainless steel, coated	4
	299-0020	valve, 3-way, 1 1/2" 4-piece, 2-seat	
	299-0028	valve, 3-way, 1" 4-piece, 2-seat	
	299-0029	valve, 3-way, 2" 2-seat	
2	EHPT-79E	valve, 3-way, 3/4" stainless steel	1
3**	100289	retaining ring, spiral	1
4**	212-0002	handle	1
5	100338	bolt, serrated flange, 1/4 - 20 x 3/4	4
	100433	bolt, serrated flange, 5/16 - 18 x 1, stainless steel, hex	
	100-0011	bolt, hex flange, 1/4 - 20 x 1/2, coated	
6	208-0008	coupler - 1 1/2" (79H), 2" (79i)	1
	208-0023	coupler - 1" (79F)	
	208-0050	coupler - 3/4" (79E)	
7	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	3
8	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	3
9	100042	bracket, stainless steel - 1" (79F), 1 1/2" (79H), 2" (79i)	1
	EHPT-161	bracket, stainless steel - 3/4" (79E)	
*	EHPT-710	valve repair kit - 3/4" (79E) - Before 2008	
	210-0009-1	valve repair kit - 3/4" (79E) - 2008 to present	
	210-0010-1	valve repair kit - 1" (79F)	
	210-0011-1	valve repair kit - 1 1/2" (79H)	
	210-0012-1	valve repair kit - 2" (79i)	

\*Items included in valve repair kits

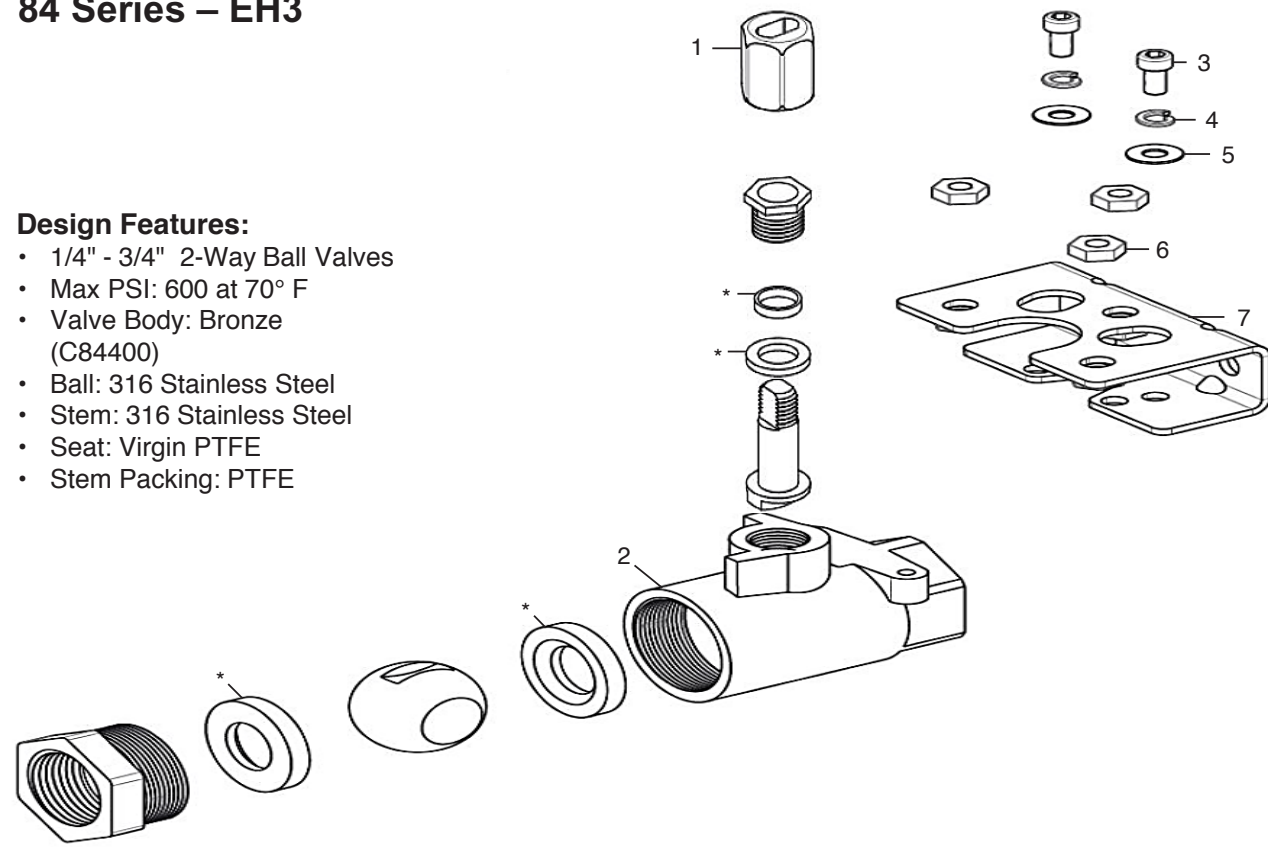
\*\*Manual handle override only

# VALVE PARTS

## 84 Series – EH3

### Design Features:

- 1/4" - 3/4" 2-Way Ball Valves
- Max PSI: 600 at 70° F
- Valve Body: Bronze (C84400)
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem Packing: PTFE



No.	Part Number	Description	Qty
1	EH-145	coupler - 1/4" (84B), 3/8" (84C), 1/2" (84D)	1
	EH-146	coupler - 3/4" (84E)	
2	EH3-84B	valve,2-way,bronze,1/4"	3
	EH3-84C	valve,2-way,bronze,3/8"	
	EH3-84D	valve,2-way,bronze,1/2"	
	EHPT-84E	valve, 2-way, bronze, 3/4"	
3	EH-158	screw, 10 - 24 x 3/8, stainless steel socket head	2
4	EHPT-109	washer, #10, split lock, 18 - 8, stainless steel	2
5	EHPT-150	washer, #10, flat, 18 - 8, stainless steel	2
6	EH-105	nut, 1/4 - 20, stainless steel	3
7	EH3-174	bracket, stainless steel - 1/4" (84B), 3/8" (84C), 1/2" (84D), 3/4" (84E)	1
*	EHPT-710	valve repair kit - 3/4" (84E)	

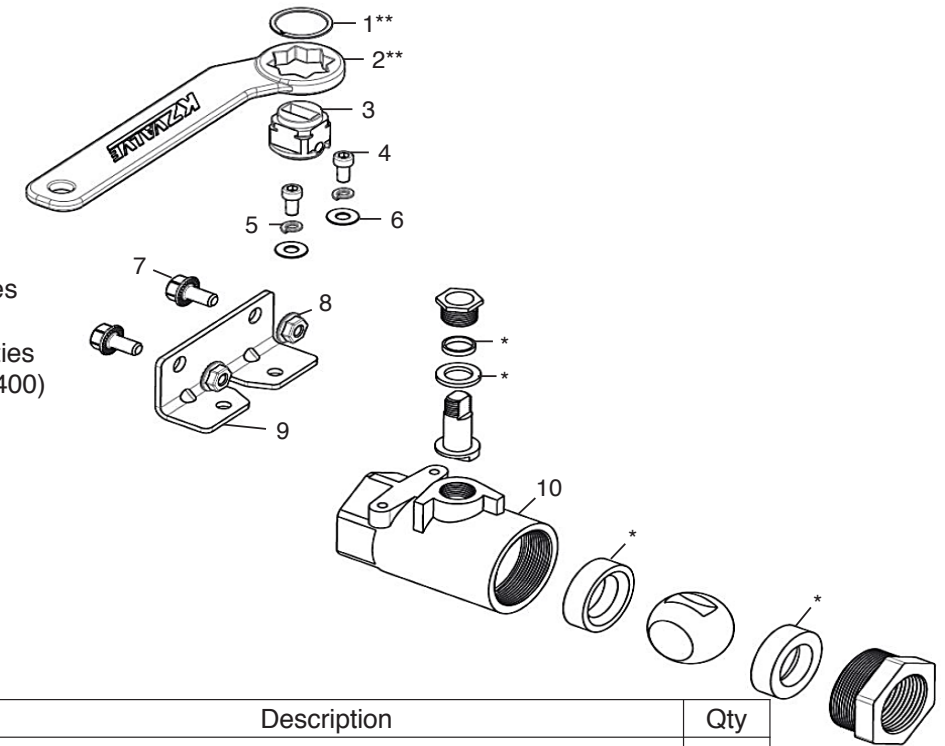
\*Items included in valve repair kits

# Exploded View Diagrams

## 84 Series – EH2

### Design Features:

- 3/4" - 2" 2-Way Ball Valves
- Max PSI: 600 at 70° F
- Manual Override Capabilities
- Valve Body: Bronze (C84400)
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem Packing: PTFE



No.	Part Number	Description	Qty
1**	100289	retaining ring, spiral	1
2**	212-0002	handle	1
3	208-0034	coupler - 1 1/4" (84G), 1 1/2" (84H), 2" (84i)	1
	208-0050	coupler - 3/4" (84E), 1" (84F)	
	EH-146	coupler - 3/4" (84E), 1" (84F)	
4	EH-158	screw, 10 - 24 x 3/8, stainless steel socket head	2
5	EHPT-109	washer, #10, split lock, 18 - 8, stainless steel	2
	EHPT-152	washer, split lock, 1/4, stainless steel	
6	EHPT-150	washer, #10, flat, 18 - 8, stainless steel	2
7	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	2
8	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	2
9	EHPT-161	bracket, stainless steel - 3/4" (84E), 1" (84F)	1
	EHPT-161-L	bracket, stainless steel - 1 1/4" (84G), 1 1/2" (84H), 2" (84i)	
10	EHPT-84E	valve, 2-way, bronze, 3/4"	1
	EHPT-84F	valve, 2-way, bronze, 1"	
	EHPT-84G-1	valve, 2-way, bronze, 1 1/4"	
	EHPT-84H-1	valve, 2-way, bronze, 1 1/2"	
*	EHPT-84I-1	valve, 2-way, bronze, 2"	
	EHPT-710	valve repair kit - 3/4" (84E)	
	EHPT-711	valve repair kit - 1" (84F)	
	EHPT-712	valve repair kit - 1 1/4" (84G)	
	EHPT-713	valve repair kit - 1 1/2" (84H)	
	EHPT-714	valve repair kit - 2" (84i)	

\*Items included in valve repair kits

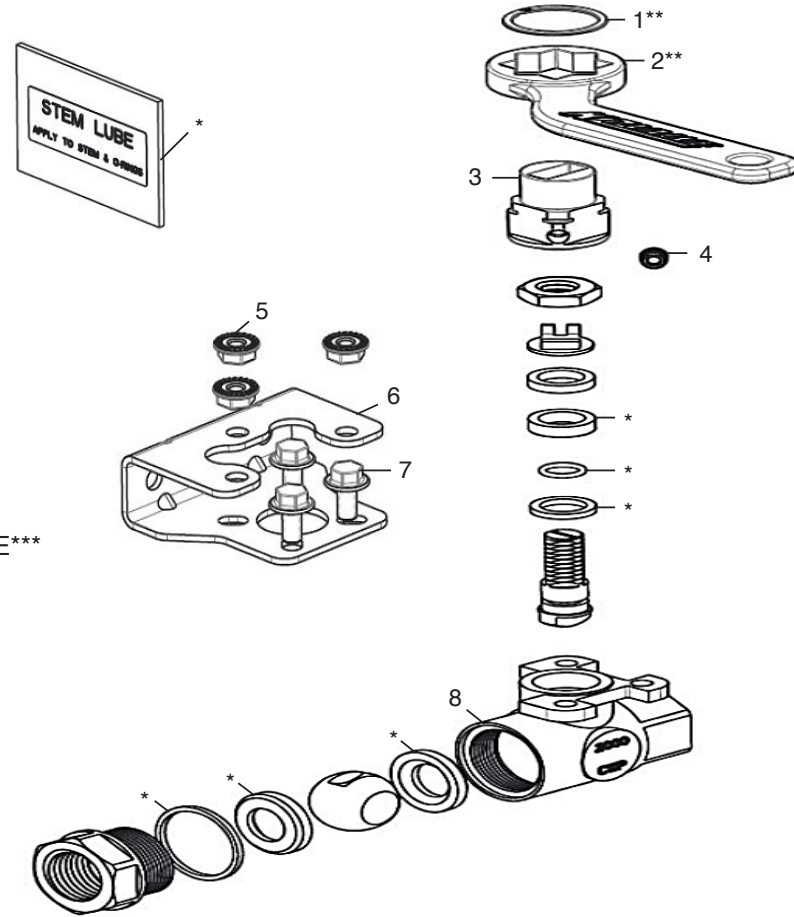
\*\*Manual handle override only

# VALVE PARTS

## 88 Series – EH3

### Design Features:

- 1/4" - 3/4" 2-Way Ball Valves
  - Max PSI: 2,000 at 70° F
  - Manual Override Capabilities
  - Valve Body: CF8M Stainless Steel
  - Ball: 316 Stainless Steel
  - Stem: 316 Stainless Steel
  - Seat: ME-PTFE\*\*\*
  - Stem Packing: Adjustable ME-PTFE\*\*\*
- \*\*\*Molecularly Enhanced Virgin Teflon



No.	Part Number	Description	Qty
1**	100289	retaining ring, spiral	1
2**	212-0006	handle	1
3	208-0040	coupler - 1/4" (88B), 3/8" (88C), 1/2" (88D), 3/4" (88E)	1
4	100-0036	set screw, 1/4 - 20 x 1/4	1
5	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
6	105-0045	bracket, stainless steel - 1/4" (88B), 3/8" (88C), 1/2" (88D)	1
	105-0058	bracket, stainless steel - 3/4" (88E)	
7	100-0011	bolt, hex flange, 1/4 - 20 x 1/2, coated	3
8	200-0001	valve, 2-way, 1/4" 2-piece, stainless steel	1
	200-0002	valve, 2-way, 3/8" 2-piece, stainless steel	
	200-0003	valve, 2-way, 1/2" 2-piece, stainless steel	
	200-0004	valve, 2-way, 3/4" 2-piece, stainless steel	
*	210-0014	valve repair kit - 1/4" (88B), 3/8" (88C), 1/2" (88D)	
	210-0015	valve repair kit - 3/4" (88E)	

\*Items included in valve repair kits

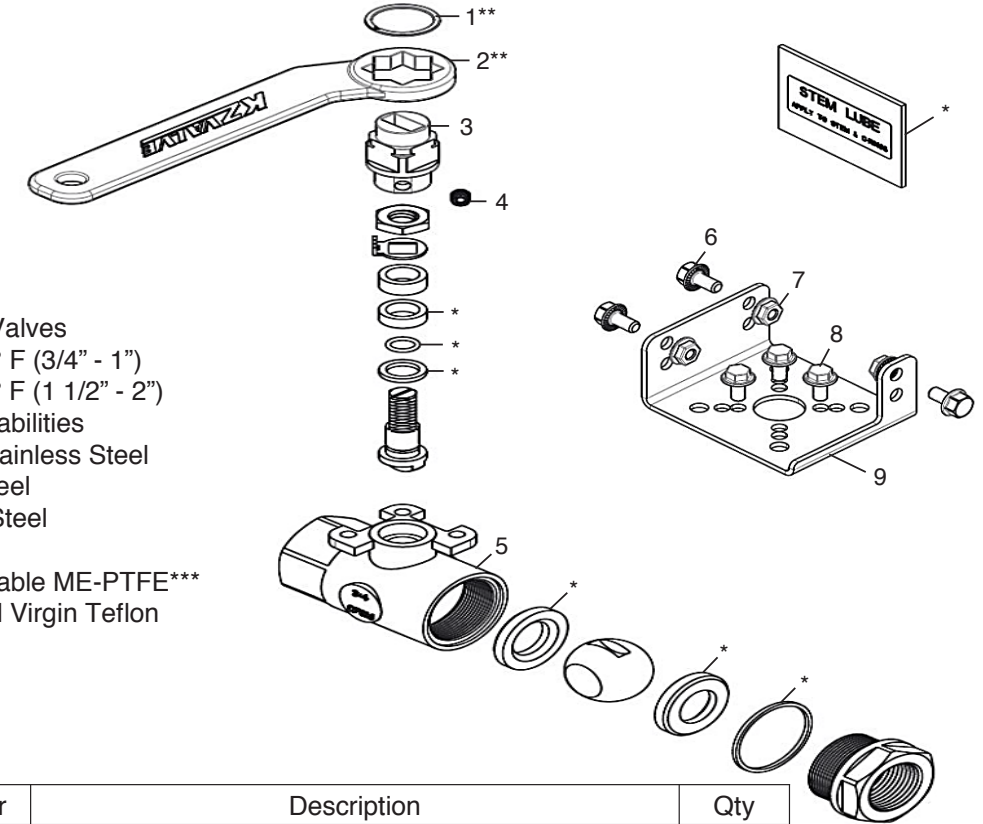
\*\*Manual handle override only

# Exploded View Diagrams

## 88 Series – EH2

### Design Features:

- 3/4" - 2" 2-Way Ball Valves
  - Max PSI: 2,000 at 70° F (3/4" - 1")
  - Max PSI: 1,500 at 70° F (1 1/2" - 2")
  - Manual Override Capabilities
  - Valve Body: CF8M Stainless Steel
  - Ball: 316 Stainless Steel
  - Stem: 316 Stainless Steel
  - Seat: ME-PTFE\*\*\*
  - Stem Packing: Adjustable ME-PTFE\*\*\*
- \*\*\*Molecularly Enhanced Virgin Teflon



No.	Part Number	Description	Qty
1**	100289	retaining ring, spiral	1
2**	212-0002	handle	1
3	208-0023	coupler - 1 1/2" (88H), 2" (88i)	1
	208-0043	coupler - 3/4" (88E), 1" (88F)	
	208-0072	coupler - 1 1/2" (88H)	
4	100-0036	set screw, 1/4 - 20 x 1/4	1
5	200-0003	valve, 2-way, 1/2" 2-piece, stainless steel	1
	200-0004	valve, 2-way, 3/4" 2-piece, stainless steel	
	200-0005	valve, 2-way, 1" 2-piece, stainless steel	
	200-0007	valve, 2-way, 1 1/2" 2-piece, stainless steel	
	200-0008	valve, 2-way, 2" 2-piece, stainless steel	
6	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	3
7	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	3
8	100-0011	bolt, hex flange, 1/4 - 20 x 1/2, coated	3
9	100042	bracket, stainless steel - 1 1/2" (88H), 2" (88i)	1
	105-0025	bracket, stainless steel - 3/4" (88E), 1" (88F)	
*	210-0015	valve repair kit - 3/4" (88E)	
	210-0016	valve repair kit - 1" (88F)	
	210-0001-1	valve repair kit - 1 1/2" (88H)	
	210-0002-1	valve repair kit - 2" (88i)	

\*Items included in valve repair kits

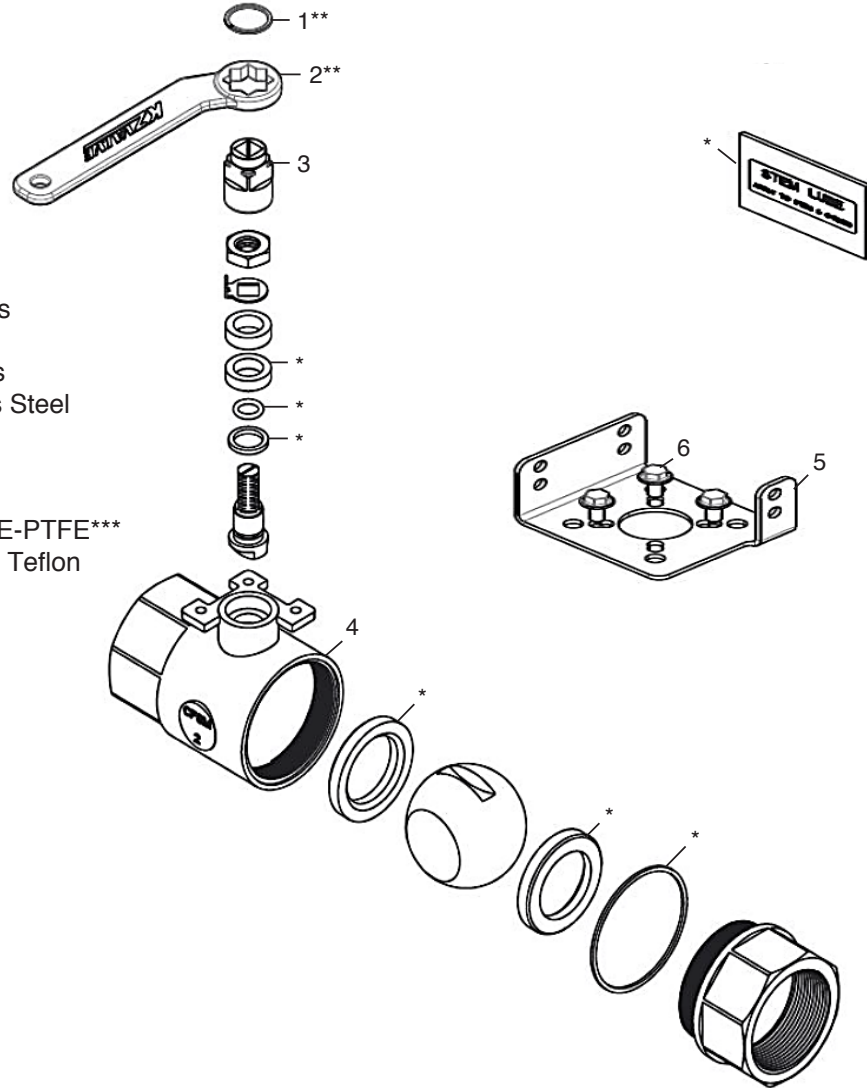
\*\*Manual handle override only

# VALVE PARTS

## 88 Series – EH5

### Design Features:

- 1 1/2" - 2" 2-Way Ball Valves
  - Max PSI: 1,500 at 70° F
  - Manual Override Capabilities
  - Valve Body: CF8M Stainless Steel
  - Ball: 316 Stainless Steel
  - Stem: 316 Stainless Steel
  - Seat: ME-PTFE\*\*\*
  - Stem Packing: Adjustable ME-PTFE\*\*\*
- \*\*\*Molecularly Enhanced Virgin Teflon



No.	Part Number	Description	Qty
1**	100289	retaining ring, spiral	1
2**	212-0002	handle	1
3	208-0023	coupler - 1 1/2" (88H), 2" (88i)	1
4	200-0007	valve, 2-way, 1 1/2" 2-piece, stainless steel	1
	200-0008	valve, 2-way, 2" 2-piece, stainless steel	
5	100042	bracket, stainless steel - 1 1/2" (88H), 2" (88i)	1
6	100-0011	bolt, hex flange, 1/4 - 20 x 1/2, coated	3
*	210-0031	valve repair kit - 1 1/2" (88H)	
	210-0032	valve repair kit - 2" (88i)	

\*Items included in valve repair kits

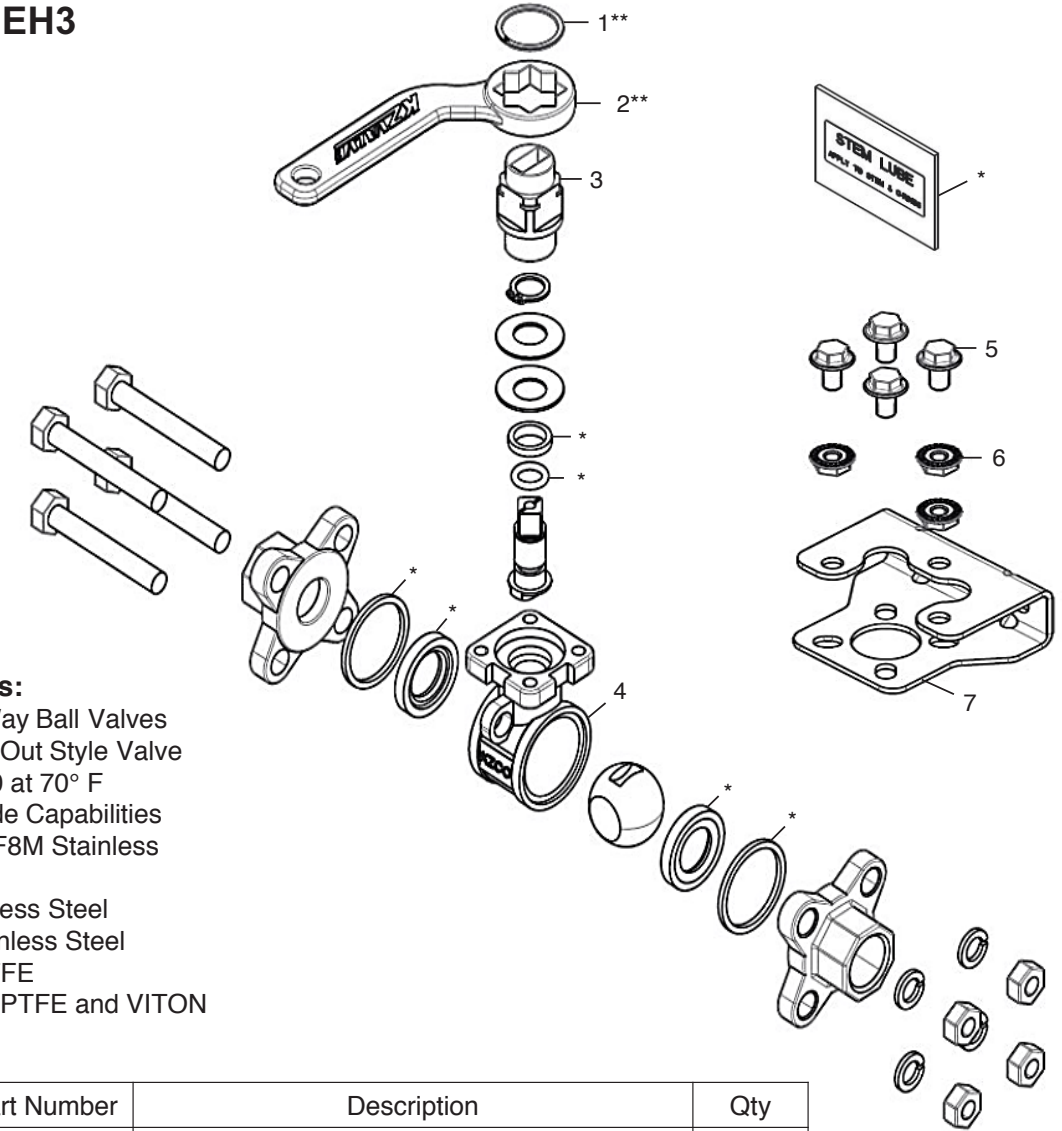
\*\*Manual handle override only

# Exploded View Diagrams

## 89 Series – EH3

### Design Features:

- 1/2" - 3/4" 2-Way Ball Valves
- 3-Piece Swing Out Style Valve
- Max PSI: 1,000 at 70° F
- Manual Override Capabilities
- Valve Body: CF8M Stainless Steel
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem Packing: PTFE and VITON



No.	Part Number	Description	Qty
1**	100289	retaining ring, spiral	1
2**	212-0006	handle	1
3	208-0043	coupler - 1/2" (89D), 3/4" (89E)	1
4	EH-89D	valve, 2-way, 1/2" 3-piece, stainless steel	1
	EH-89E	valve, 2-way, 3/4" 3-piece, stainless steel	
5	100-0011	bolt, hex flange, 1/4 - 20 x 1/2, coated	4
6	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
7	105-0045	bracket, stainless steel - 1/2" (89D), 3/4" (89E)	1
*	EH-124-1	valve repair kit - 1/2" (89D)	
	EH-125-1	valve repair kit - 3/4" (89E)	

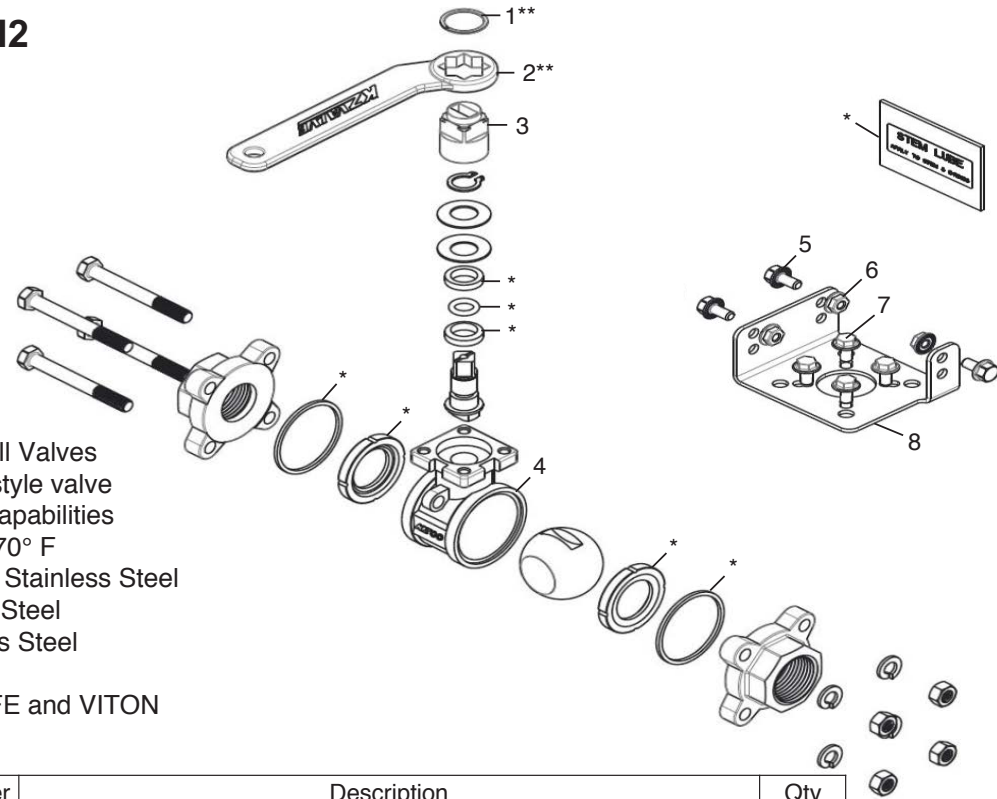
\*Items included in valve repair kits

\*\*Manual handle override only

# VALVE PARTS

# Exploded View Diagrams

## 89 Series – EH2



### Design Features:

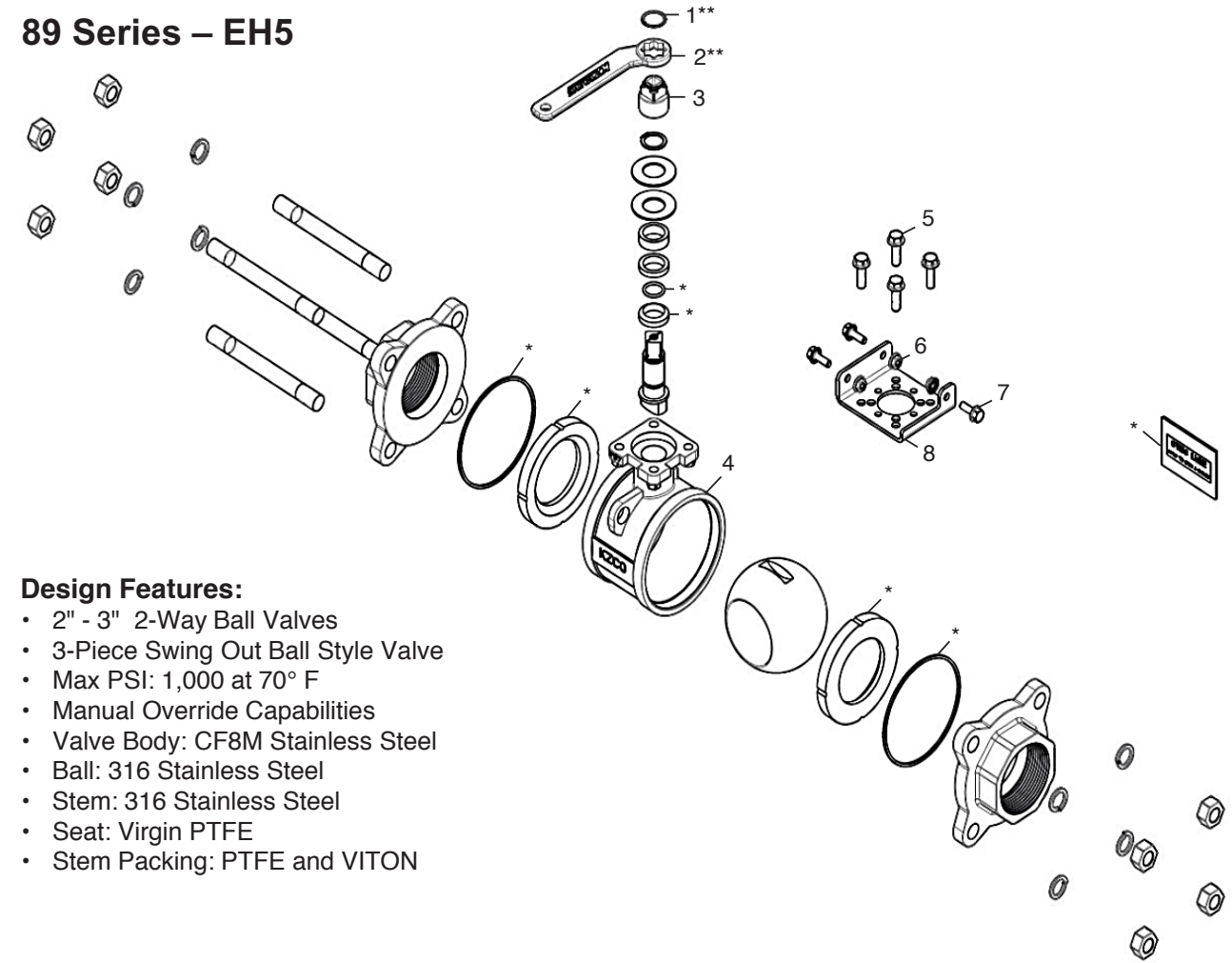
- 1/2" - 2" 2-Way Ball Valves
- 3-piece swing out style valve
- Manual Override Capabilities
- Max PSI: 1,000 at 70° F
- Valve Body: CF8M Stainless Steel
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem Packing: PTFE and VITON

No.	Part Number	Description	Qty
1**	100289	retaining ring, spiral	1
2**	212-0002	handle	1
3	100043	coupler, inline mount - 1" (89F)	1
	208-0008	coupler, offset mount - 1 1/2" (89H), 2" (89i)	
	208-0015	coupler, inline mount - 1 1/2" (89H), 2" (89i)	
	208-0023	coupler, offset mount - 1" (89F), 1 1/4" (89G)	
	208-0043	coupler, offset mount - 1/2" (89D), 3/4" (89E)	
4	EH-89D	valve, 2-way, 1/2" 3-piece, stainless steel	1
	EH-89E	valve, 2-way, 3/4" 3-piece, stainless steel	
	EH-89F	valve, 2-way, 1" 3-piece, stainless steel	
	EH-89G	valve, 2-way, 1 1/4" 3-piece, stainless steel	
	EH-89H	valve, 2-way, 1 1/2" 3-piece, stainless steel	
	EH-89I	valve, 2-way, 2" 3-piece, stainless steel	
5	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	3
6	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	3
7	100338	bolt, serrated flange, 1/4 - 20 x 3/4	4
	100-0011	bolt, hex flange, 1/4 - 20 x 1/2, coated	
8	100042	bracket, stainless steel - 1" (89F), 1 1/4" (89G), 1 1/2" (89H), 2" (89i)	1
	105-0025	bracket, stainless steel - 1/2" (89D), 3/4" (89E)	
*	EH-124-1	valve repair kit - 1/2" (89D)	
	EH-125-1	valve repair kit - 3/4" (89E)	
	EH-126-1	valve repair kit - 1" (89F)	
	EH-127-1	valve repair kit - 1 1/4" (89G)	
	EH-128-1	valve repair kit - 1 1/2" (89H)	
	EH-129-1	valve repair kit - 2" (89i)	

\*Items included in valve repair kits

\*\*Manual handle override only

## 89 Series – EH5



### Design Features:

- 2" - 3" 2-Way Ball Valves
- 3-Piece Swing Out Ball Style Valve
- Max PSI: 1,000 at 70° F
- Manual Override Capabilities
- Valve Body: CF8M Stainless Steel
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem Packing: PTFE and VITON

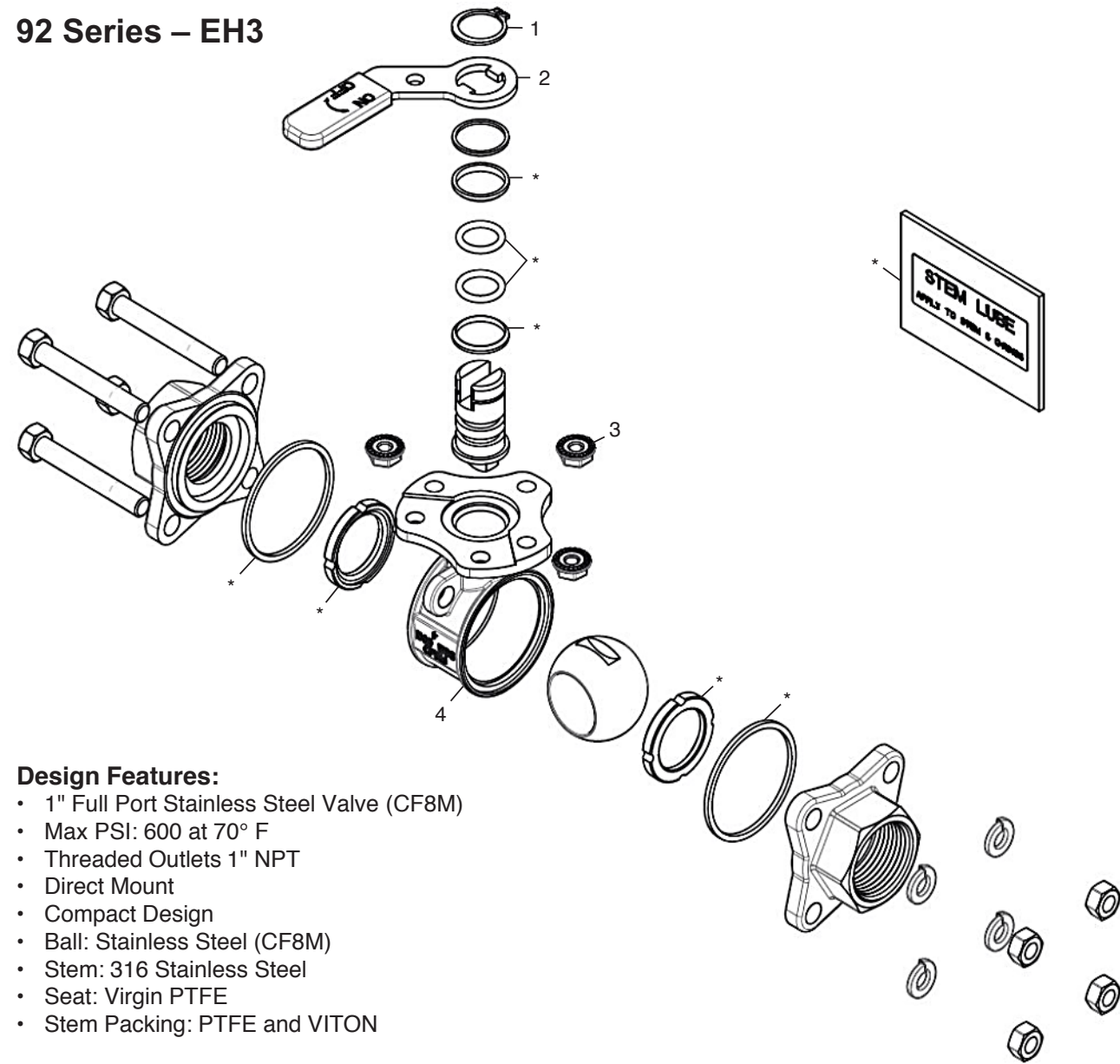
No.	Part Number	Description	Qty
1**	100289	retaining ring, spiral	1
2**	212-0002	handle	1
3	208-0013	coupler - 2 1/2" (89J), 3" (89K)	1
4	EH-89J	valve, 2 1/2", 3-piece, full port, stainless steel	1
	EH-89K	valve, 3", 3-piece, full port, stainless steel	
5	100433	bolt, serrated flange, 5/16 - 18 x 1, stainless steel hex	4
6	QX-221	nut, serrated flange, 5/16 - 18, stainless steel, coated	3
7	100338	bolt, serrated flange, 1/4 - 20 x 3/4	3
8	105-0026	bracket, stainless steel - 2 1/2" (89J), 3" (89K)	1
*	210-0005-1	valve repair kit - 2 1/2" (89J)	
	210-0006-1	valve repair kit - 3" (89K)	

\*Items included in valve repair kits

\*\*Manual handle override only

# VALVE PARTS

## 92 Series – EH3



**Design Features:**

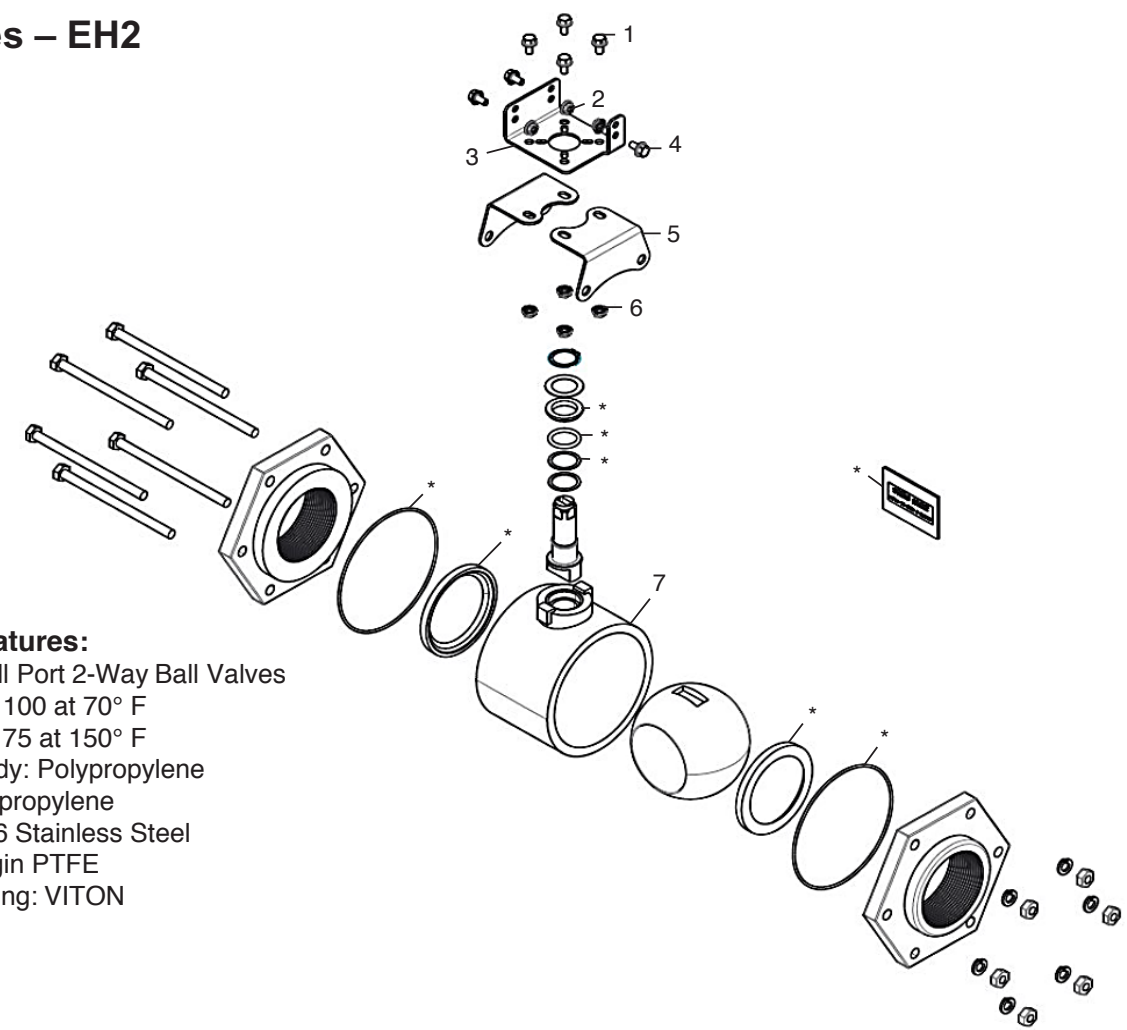
- 1" Full Port Stainless Steel Valve (CF8M)
- Max PSI: 600 at 70° F
- Threaded Outlets 1" NPT
- Direct Mount
- Compact Design
- Ball: Stainless Steel (CF8M)
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem Packing: PTFE and VITON

No.	Part Number	Description	Qty
1	EH-712	snap ring	1
2	EH-711	handle	1
3	EHPT-191	nut, 5/16 - 18, stainless steel, hex	3
4	EH-92FM	valve, 1", 3-piece, full port, stainless steel, direct mount	1
*	100200	valve repair kit - 1" (EH-92FM)	

\*Items included in valve repair kits

# Exploded View Diagrams

## 99 Series – EH2



**Design Features:**

- 3" - 4" Full Port 2-Way Ball Valves
- Max PSI: 100 at 70° F
- Max PSI: 75 at 150° F
- Valve Body: Polypropylene
- Ball: Polypropylene
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem O-ring: VITON

No.	Part Number	Description	Qty
1	100433	bolt, serrated flange, 5/16 - 18 x 1, stainless steel, hex	4
2	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	3
3	100042	bracket, stainless steel - 3" (99K), 4" (99L)	1
4	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	3
5	100190	bracket, stainless steel - 4" (99L)	2
	100210	bracket, stainless steel - 3" (99K)	
6	QX-221	nut, serrated flange, 5/16 - 18, stainless steel, coated	4
7	EH2-1180	valve, 3" polypropylene	1
	EH2-1185	valve, 4" polypropylene	
*	EHPT-704-1	valve repair kit - 3" (99K) - Before 2002	
	EH2-1181-1	valve repair kit - 3" (99K) - 2002 to present	
	210-0004-1	valve repair kit - 4" (99L)	

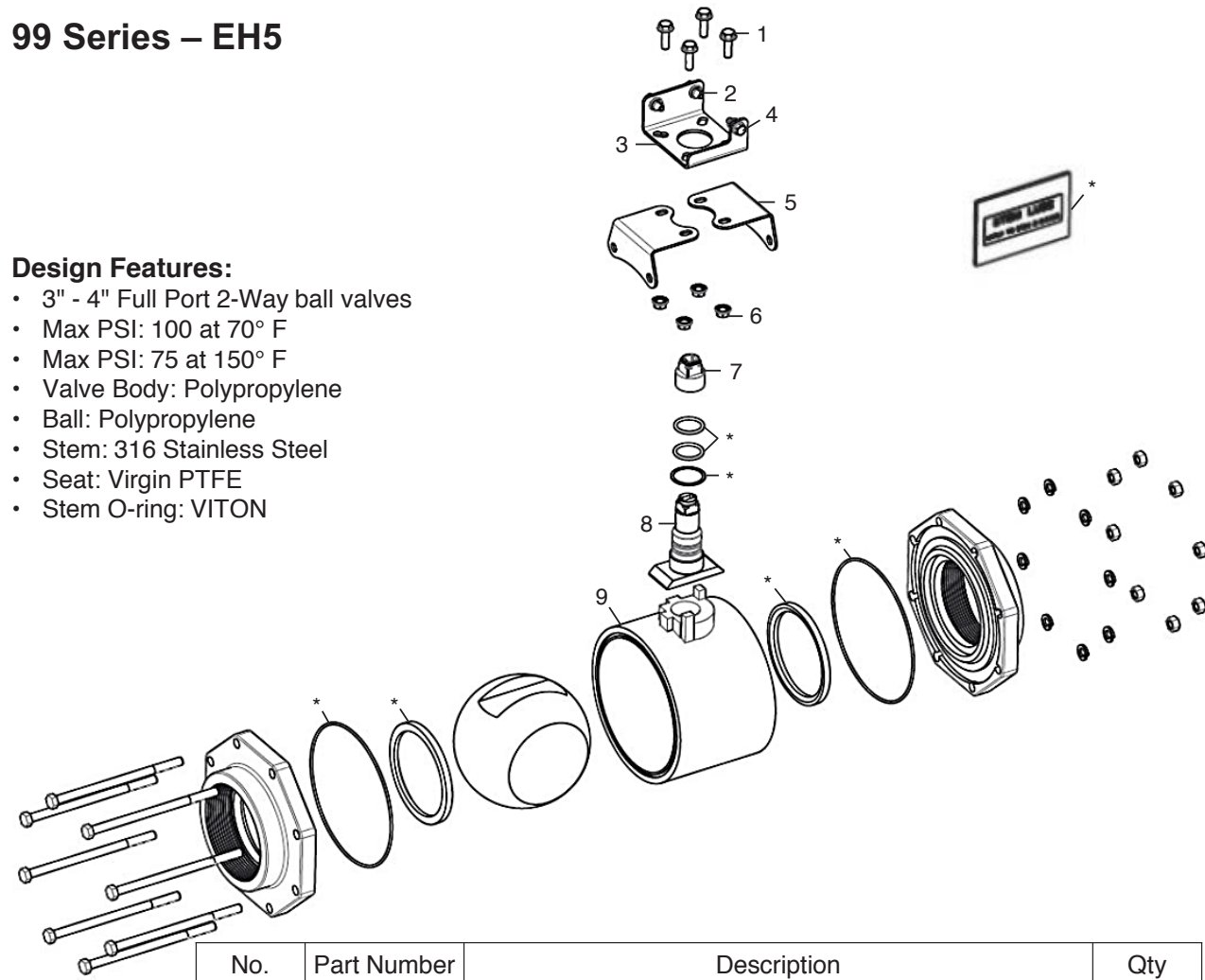
\*Items included in valve repair kits

# VALVE PARTS

## 99 Series – EH5

### Design Features:

- 3" - 4" Full Port 2-Way ball valves
- Max PSI: 100 at 70° F
- Max PSI: 75 at 150° F
- Valve Body: Polypropylene
- Ball: Polypropylene
- Stem: 316 Stainless Steel
- Seat: Virgin PTFE
- Stem O-ring: VITON

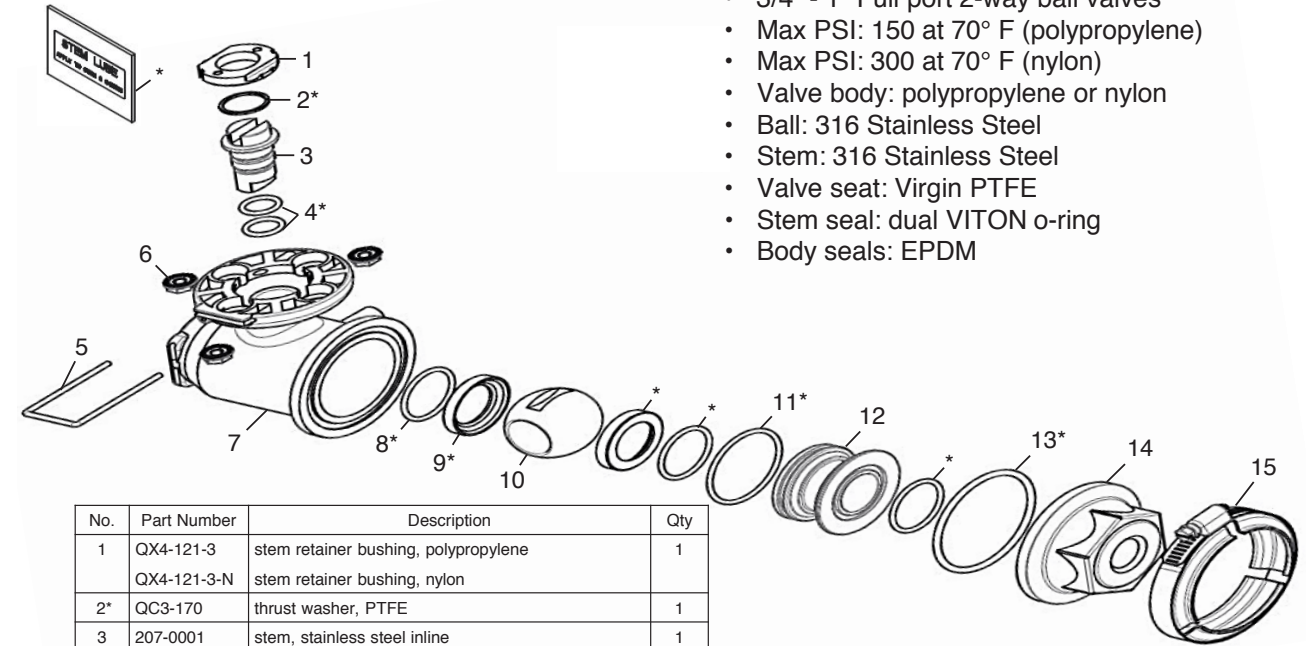


No.	Part Number	Description	Qty
1	100433	bolt, serrated flange, 5/16 - 18 x 1, stainless steel, hex	4
2	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	3
3	105-0002	bracket, stainless steel - 3" (99K), 4" (99L)	1
4	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	3
5	100190	bracket, stainless steel - 4" (99L)	2
	100210	bracket, stainless steel - 3" (99K)	
6	QX-221	nut, serrated flange, 5/16 - 18, stainless steel, coated	4
7	208-0020	coupler - 3" (99K), 4" (99L)	1
8	800098	stem assembly	1
9	EH2-1180	valve, 3" polypropylene	1
	EH2-1185	valve, 4" polypropylene	
*	EHPT-704-1	valve repair kit - 3" (99K) - Before 2002	
	EH2-1181-1	valve repair kit - 3" (99K) - 2002 to present	
	210-0004-1	valve repair kit - 4" (99L)	

\*Items included in valve repair kits

# Exploded View Diagrams

## QX3 QX4 2-way



### Design Features:

- 3/4" - 1" Full port 2-way ball valves
- Max PSI: 150 at 70° F (polypropylene)
- Max PSI: 300 at 70° F (nylon)
- Valve body: polypropylene or nylon
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: Virgin PTFE
- Stem seal: dual VITON o-ring
- Body seals: EPDM

No.	Part Number	Description	Qty
1	QX4-121-3	stem retainer bushing, polypropylene	1
	QX4-121-3-N	stem retainer bushing, nylon	
2*	QC3-170	thrust washer, PTFE	1
3	207-0001	stem, stainless steel inline	1
4*	QC3-130	o-ring, #113, VITON	2
5	QX-103	hairpin, stem retainer stainless steel	1
6	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
	201-0005	valve body, 3/4" 2-way, 1" flange & NPT connection	
	201-0015	valve body, 1" flange & 3/4" NPT connection valve	
	QX4-110	body, 2-way, 1" polypropylene QHP outlet valve	
7	QX4-110-N	body, 2-way, 1" nylon QHP	1
	QX4-115	valve body, 2-way, 2" standard port flange	
	QX4-140	valve body, 2-way, 1" polypropylene NPT	
	QX4-140-N	valve body, 2-way, 1" nylon NPT	
	QX4-170	valve body, 2-way, 3/4" polypropylene NPT	
8*	QX4-161	o-ring, #123, EPDM	3
	QC3-131	o-ring, #119, EPDM	
9*	QC3-168	seat, 3/4" virgin teflon, PTFE	2
	QX4-119	seat, 1" virgin, PTFE	
10	QX4-130	valve ball, 2-way, 1" full port stainless steel	1
11*	QX4-162	o-ring, #132, EPDM	1
12	QX4-118	donut seat, polypropylene	1
13*	QC3-134	o-ring, #229, EPDM	1
	QX4-126	endcap, 1" polypropylene QHP	
	QX4-126-N	endcap, 1" nylon QHP	
14	QX4-127	endcap, 1" polypropylene NPT	1
	QX4-127-N	endcap, 1" nylon NPT	
	QX4-128	endcap, 3/4" polypropylene NPT	
	QX4-128-N	endcap, 3/4" nylon NPT	
15	QX4-200	v-clamp, stainless steel, 2" standard port flange	1
16**	QX-102	hairpin, outlet fitting stainless steel	1
*	QX4-RKT	valve repair kit, QX3 & QX4 series (3/4" - 1")	
	QX4-RKT-C	valve repair kit, with CG PTFE seat (3/4" - 1")	
	QX4-RKTV	valve repair kit, VITON (3/4" - 1")	

Polypropylene standard, nylon available

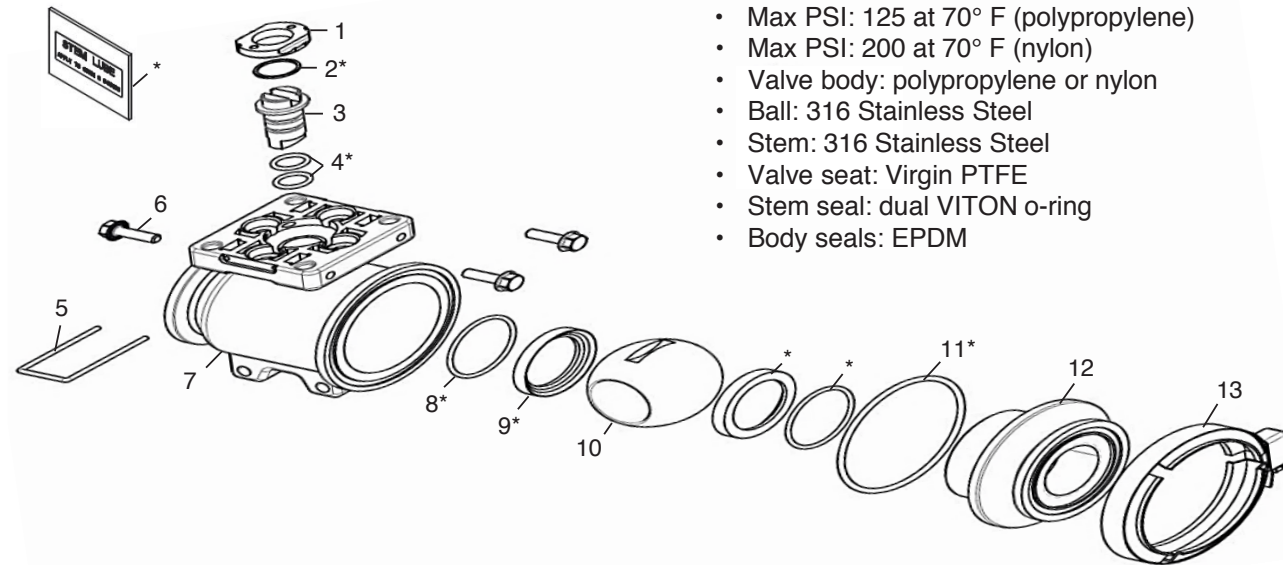
\* Items included in valve repair kits \*\* Not pictured in assembly



# VALVE PARTS

# Exploded View Diagrams

## QX5 QX6 2-way



### Design Features:

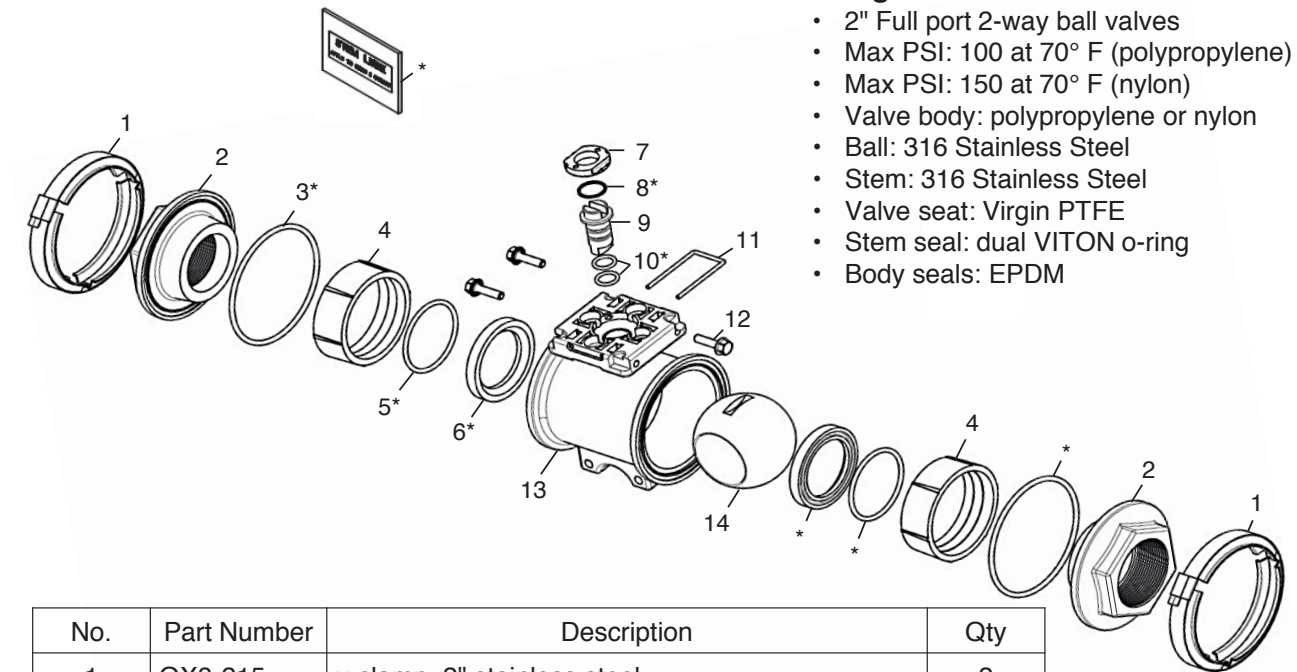
- 1 1/4" - 1 1/2" Full port 2-way ball valves
- Max PSI: 125 at 70° F (polypropylene)
- Max PSI: 200 at 70° F (nylon)
- Valve body: polypropylene or nylon
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: Virgin PTFE
- Stem seal: dual VITON o-ring
- Body seals: EPDM

No.	Part Number	Description	Qty
1	QX4-121-3	stem retainer bushing, polypropylene	1
2*	QC3-170	thrust washer, PTFE	1
3	QX-101	stem, stainless steel offset	1
4*	QC3-130	o-ring, #113, VITON	2
5	QX-103	hairpin, stainless steel	1
6	100340	bolt, serrated flange, 1/4 - 20 x 1	3
7	QX5-125	valve body, 2-way, 1 1/4" NPT	1
	QX5-125-N	valve body, 2-way, 1 1/4" nylon NPT	
	QX5-140	valve body, 2-way, M200, 2" polypropylene smooth standard port	
	QX5-160	valve body, 2-way, 1 1/2" NPT	
	QX5-160-N	valve body, 2-way, 1 1/2" nylon NPT	
8*	QX5-180	o-ring, #131, EPDM	2
9*	QX5-149	seat, PTFE	2
10	QX5-150	valve ball, 2-way, 1 1/2" full port stainless steel	1
11*	QX5-181	o-ring, #236, EPDM	1
12	QX5-145	endcap, M200, 2" polypropylene smooth standard port	1
	QX5-146	endcap, 1 1/2" NPT	
	QX5-146-N	endcap, 1 1/2" nylon NPT	
	QX5-147	endcap, 1 1/4" polypropylene NPT	
	QX5-147-N	endcap, 1 1/4" nylon NPT	
13	QX5-210	v-clamp, stainless steel	1
*	QX5-RKT	valve repair kit, QX5 & QX6 series (1 1/4" - 1 1/2")	

Polypropylene standard, nylon available

\*Items included in valve repair kits

## QX8 2-way



### Design Features:

- 2" Full port 2-way ball valves
- Max PSI: 100 at 70° F (polypropylene)
- Max PSI: 150 at 70° F (nylon)
- Valve body: polypropylene or nylon
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: Virgin PTFE
- Stem seal: dual VITON o-ring
- Body seals: EPDM

No.	Part Number	Description	Qty
1	QX8-215	v-clamp, 2" stainless steel	2
2	QX8-110	endcap, 2" polypropylene NPT	2
	QX8-110-N	endcap, 2" nylon NPT	
3*	QX8-112	endcap, M220, 2" polypropylene full port flange	2
	QX8-182	o-ring, #98-4, EPDM	
4	QX8-111	seat donut, polypropylene	2
	QX8-111-N	seat donut, nylon	
5*	QX8-183	o-ring, #228, EPDM	2
6*	QX8-120	seat, virgin PTFE	2
7	QX4-121-3	stem retainer bushing, polypropylene	1
	QX4-121-3-N	stem retainer bushing, nylon	
8*	QC3-170	thrust washer, PTFE	1
9	QX-101	stem, stainless steel offset	1
10*	QC3-130	o-ring, #113, VITON	2
11	QX-103	hairpin, stainless steel	1
12	100340	bolt, serrated flange, 1/4 - 20 x 1	3
	QX8-100	valve body, 2-way, 2" polypropylene	
13	QX8-100-N	valve body, 2-way, 2" nylon	1
	QX8-115	valve ball, 2-way, 2" full port, stainless steel	
*	QX8-RKT	valve repair kit, QX8 series (2")	

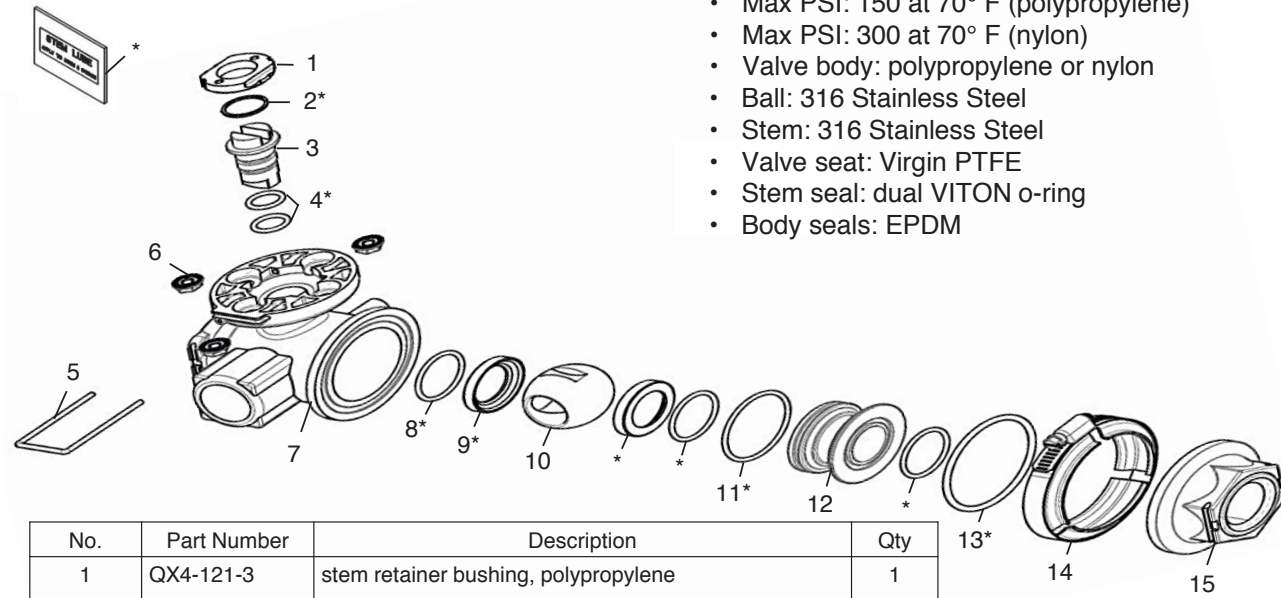
Polypropylene standard, nylon available

\*Items included in valve repair kits

# VALVE PARTS

# Exploded View Diagrams

## QX3 QX4 Side Load



### Design Features:

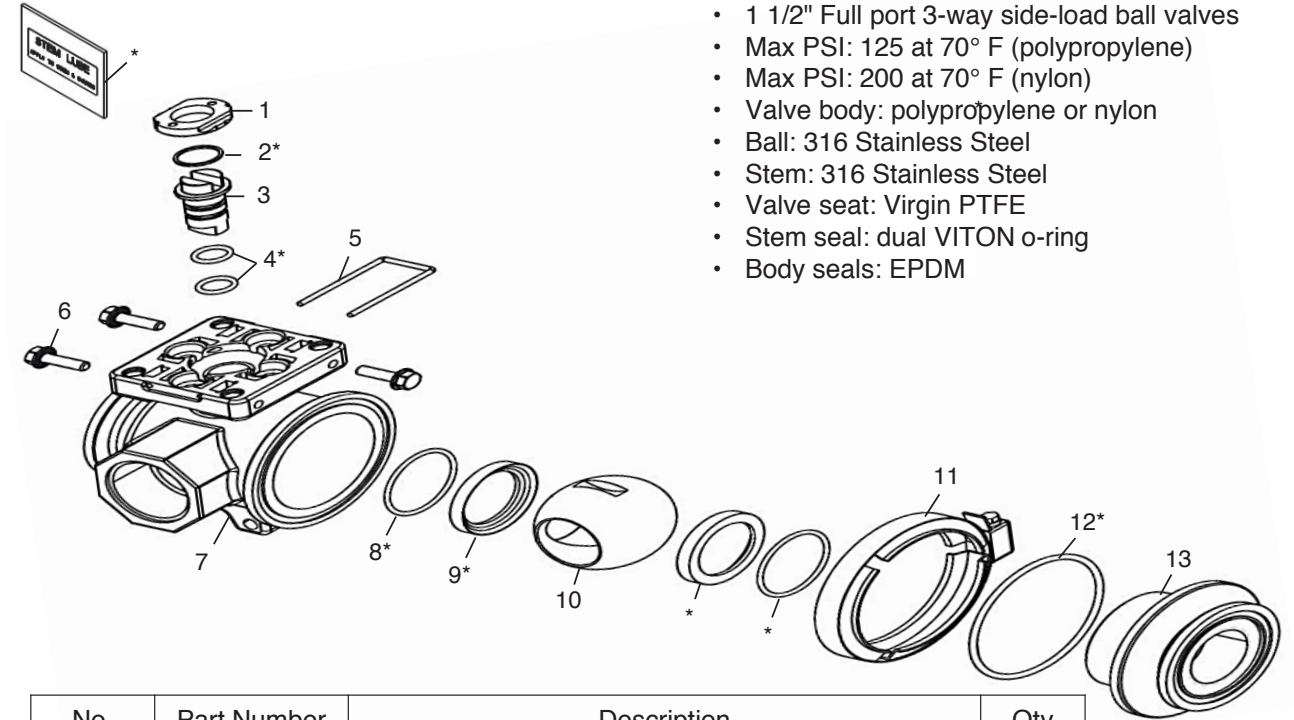
- 3/4" - 1" Full port 3-way side-load ball valves
- Max PSI: 150 at 70° F (polypropylene)
- Max PSI: 300 at 70° F (nylon)
- Valve body: polypropylene or nylon
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: Virgin PTFE
- Stem seal: dual VITON o-ring
- Body seals: EPDM

No.	Part Number	Description	Qty
1	QX4-121-3	stem retainer bushing, polypropylene	1
	QX4-121-3-N	stem retainer bushing, nylon	
2*	QC3-170	thrust washer, PTFE	1
3	207-0001	stem, stainless steel inline	1
4*	QC3-130	o-ring, #113, VITON	2
5	QX-103	hairpin, stainless steel	1
6	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
7	QX4-111	valve body, 3-way, side load, polypropylene QHP	1
	QX4-141	valve body, 3-way, side load, 1" NPT	
	QX4-141-N	valve body, 3-way, side load, 1" nylon NPT	
	QX4-171	valve body, 3-way, side load, 3/4" NPT	
	QX4-171-N	valve body, 3-way, side load, 3/4" nylon NPT	
8*	QX4-161	o-ring, #123, EPDM	3
9*	QX4-119	seat, 1" virgin, PTFE	2
10	QX4-131	valve ball, 3-way, side load, 1" L-port	1
11*	QX4-162	o-ring, #132, EPDM	1
12	QX4-118	donut seat, polypropylene	1
13*	QC3-134	o-ring, #229, EPDM	1
14	QX4-200	v-clamp, stainless steel, M200, 2" standard port flange	1
15	QX4-126	endcap, 1" polypropylene QHP	1
	QX4-127	endcap, 1" polypropylene NPT	
	QX4-127-N	endcap, 1" nylon NPT	
	QX4-128	endcap, 3/4" polypropylene NPT	
	QX4-128-N	endcap, 3/4" nylon NPT	
16**	QX-102	hairpin, stainless steel	1
*	QX4-RKT	valve repair kit, QX3 & QX4 series (3/4" - 1")	
	QX4-RKTV	valve repair kit, VITON (3/4" - 1")	

Polypropylene standard, nylon available

\*Items included in valve repair kits  
 \*\*Not pictured in assembly

## QX6 Side Load



### Design Features:

- 1 1/2" Full port 3-way side-load ball valves
- Max PSI: 125 at 70° F (polypropylene)
- Max PSI: 200 at 70° F (nylon)
- Valve body: polypropylene or nylon
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: Virgin PTFE
- Stem seal: dual VITON o-ring
- Body seals: EPDM

No.	Part Number	Description	Qty
1	QX4-121-3	stem retainer bushing, polypropylene	1
	QX4-121-3-N	stem retainer bushing, nylon	
2*	QC3-170	thrust washer, PTFE	1
3	207-0001	stem, stainless steel inline	1
4*	QC3-130	o-ring, #113, VITON	2
5	QX-103	hairpin, stainless steel	1
6	100340	bolt, serrated flange, 1/4 - 20 x 1	3
7	QX5-142	valve body, 3-way, side load, 1 1/2" NPT	1
	QX5-142-N	valve body, 3-way, side load, 1 1/2" nylon NPT	
8*	QX5-180	o-ring, #131, EPDM	2
9*	QX5-149	seat, PTFE	2
10	QX5-155	valve ball, 3-way, side load, 1 1/2" L-port	1
11	QX5-210	v-clamp, stainless steel	1
12*	QX5-181	o-ring, #236, EPDM	1
13	QX5-146	endcap, 1 1/2" NPT x M200, 2" standard port flange	1
	QX5-146-N	endcap, 1 1/2" nylon NPT flange	
*	QX5-RKT	valve repair kit, QX5 & QX6 series (1 1/2")	

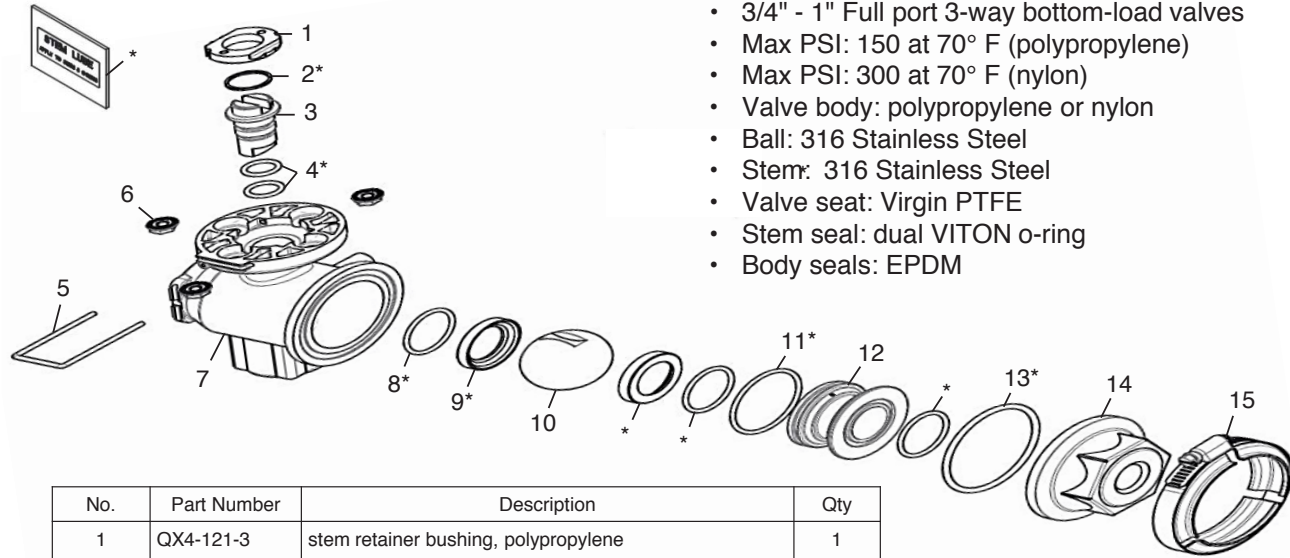
Polypropylene standard, nylon available

\*Items included in valve repair kits

# VALVE PARTS

# Exploded View Diagrams

## QX3 QX4 Bottom Load



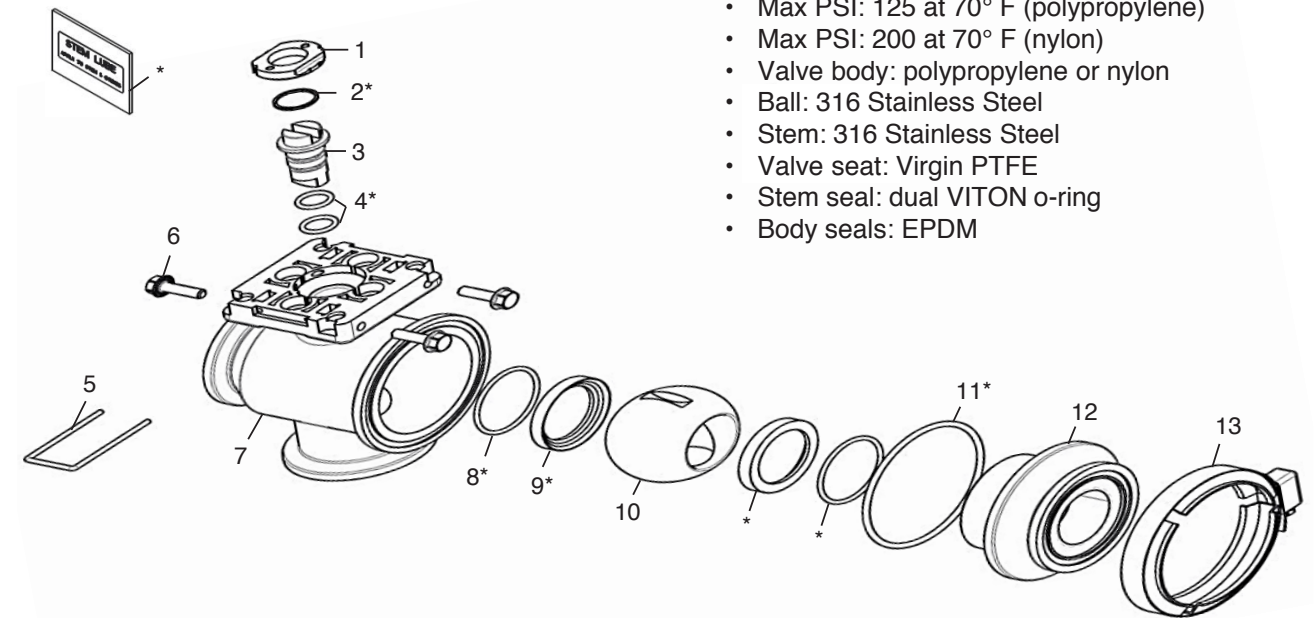
### Design Features:

- 3/4" - 1" Full port 3-way bottom-load valves
- Max PSI: 150 at 70° F (polypropylene)
- Max PSI: 300 at 70° F (nylon)
- Valve body: polypropylene or nylon
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: Virgin PTFE
- Stem seal: dual VITON o-ring
- Body seals: EPDM

No.	Part Number	Description	Qty
1	QX4-121-3	stem retainer bushing, polypropylene	1
	QX4-121-3-N	stem retainer bushing, nylon	
2*	QC3-170	thrust washer, PTFE	1
3	207-0001	stem, stainless steel inline	1
	QX-101	stem, stainless steel offset	
4*	QC3-130	o-ring, #113, VITON	2
5	QX-103	hairpin, stainless steel	1
6	101-0002	nut, serrated flange, 1/4 - 20, stainless steel, coated	3
7	QX4-112	valve body, 3-way, bottom load, polypropylene QHP	1
	QX4-142	valve body, 3-way, bottom load, 1" NPT	
	QX4-142-N	valve body, 3-way, bottom load, 1" nylon NPT	
	QX4-172	valve body, 3-way, bottom load, 3/4" NPT	
	QX4-172-N	valve body, 3-way, bottom load, 3/4" nylon NPT	
8*	QX4-161	o-ring, #123, EPDM	3
9*	QX4-119	seat, PTFE	2
10	QX4-132	valve ball, 3-way, bottom load, L-port	1
	QX4-136	valve ball, 3-way, bottom load, 1" L-port	
11*	QX4-162	o-ring, #132, EPDM	1
12	QX4-118	donut seat, polypropylene	1
	QX4-118-N	donut seat, nylon	
13*	QC3-134	o-ring, #229, EPDM	1
14	QX4-126	endcap, 1" polypropylene QHP	1
	QX4-127	endcap, 1" polypropylene NPT	
	QX4-127-N	endcap, 1" nylon NPT	
	QX4-128	endcap, 3/4" polypropylene NPT	
	QX4-128-N	endcap, 3/4" nylon NPT	
15	QX4-200	v-clamp, stainless steel, M200, 2" standard port flange	1
*	QX4-RKT	valve repair kit, QX3 & QX4 series (3/4" - 1")	
	QX4-RKT-C	valve repair kit, with CG PTFE seat (3/4" - 1")	
	QX4-RKTV	valve repair kit, VITON (3/4" - 1")	

Polypropylene standard, nylon available  
 \*Items included in valve repair kits

## QX6 Bottom Load



### Design Features:

- 1 1/2" Full port 3-way bottom-load valves
- Max PSI: 125 at 70° F (polypropylene)
- Max PSI: 200 at 70° F (nylon)
- Valve body: polypropylene or nylon
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: Virgin PTFE
- Stem seal: dual VITON o-ring
- Body seals: EPDM

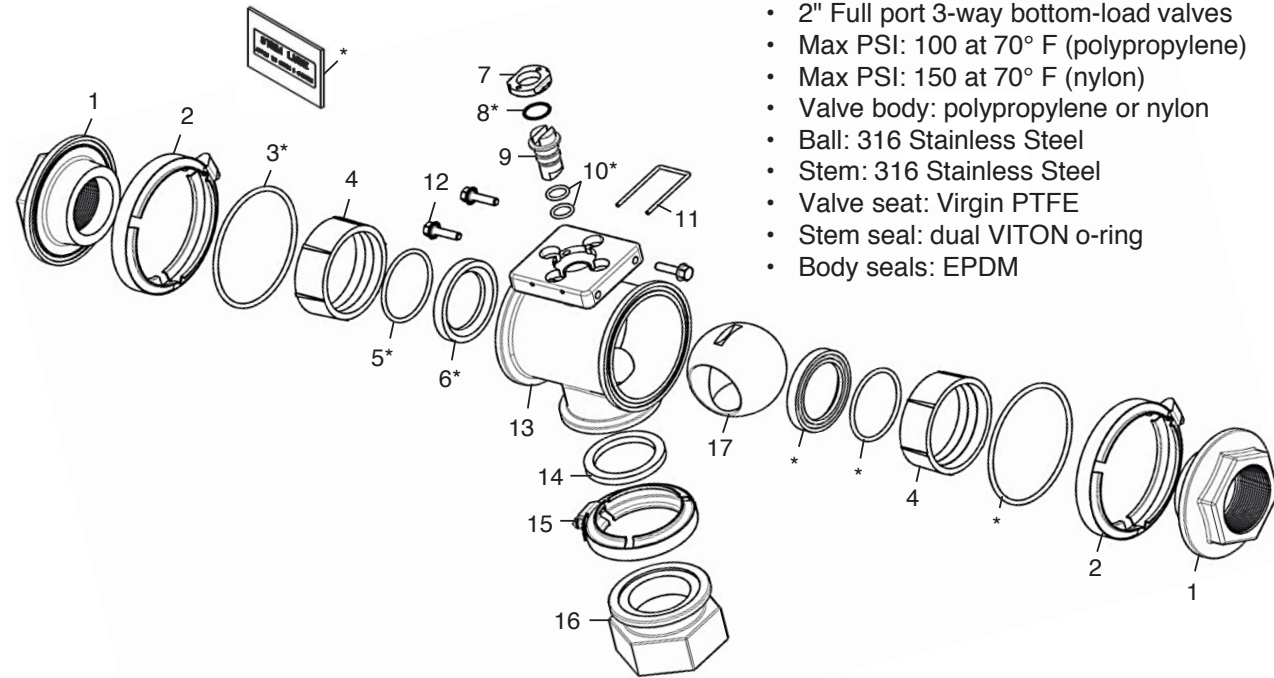
No.	Part Number	Description	Qty
1	QX4-121-3	stem retainer bushing, polypropylene	1
	QX4-121-3-N	stem retainer bushing, nylon	
2*	QC3-170	thrust washer, PTFE	1
3	207-0001	stem, stainless steel inline	1
4*	QC3-130	o-ring, #113, VITON	2
5	QX-103	hairpin, stainless steel	1
6	100340	bolt, serrated flange, 1/4 - 20 x 1	3
7	QX5-141	valve body, 3-way, bottom load, M200, 1 1/2" smooth standard port	1
	QX5-161	valve body, 3-way, bottom load, 1 1/2" polypropylene NPT	
	QX5-161-N	valve body, 3-way, bottom load, 1 1/2" nylon NPT	
8*	QX5-180	o-ring, #131, EPDM	2
9*	QX5-149	seat, PTFE	2
10	QX5-152	valve ball, 3-way, bottom load, 1 1/2" L-port	1
	QX5-153	valve ball, 3-way, bottom load, 1 1/2" diverter style	
11*	QX5-181	o-ring, #236, EPDM	1
12	QX5-146	endcap, 1 1/2" NPT x 2" standard port flange	1
	QX5-146-N	endcap, 1 1/2" nylon NPT flange	
13	QX5-210	v-clamp, stainless steel	1
*	QX5-RKT	valve repair kit, QX5 & QX6 series (1 1/2")	

Polypropylene standard, nylon available  
 \*Items included in valve repair kits

# VALVE PARTS

# Exploded View Diagrams

## QX8 Bottom Load



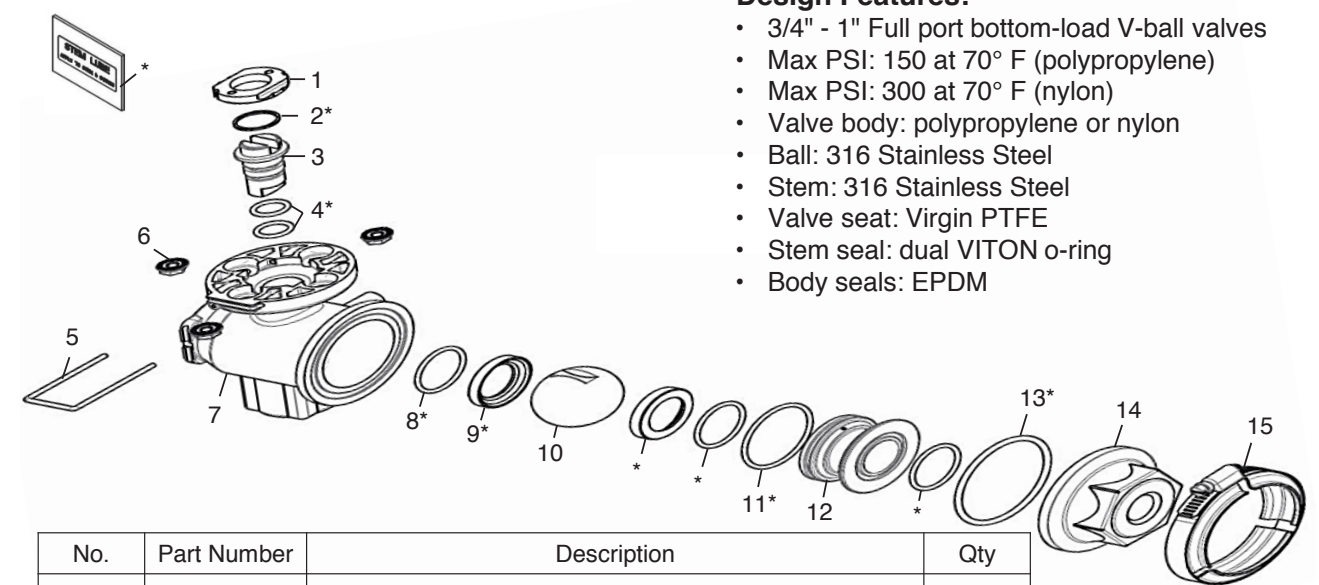
### Design Features:

- 2" Full port 3-way bottom-load valves
- Max PSI: 100 at 70° F (polypropylene)
- Max PSI: 150 at 70° F (nylon)
- Valve body: polypropylene or nylon
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: Virgin PTFE
- Stem seal: dual VITON o-ring
- Body seals: EPDM

No.	Part Number	Description	Qty
1	QX8-110	endcap, 2" polypropylene NPT	2
	QX8-110-N	endcap, 2" nylon NPT	
	QX8-112	endcap, M220, 2" polypropylene full port flange	
2	QX8-215	v-clamp, 2" stainless steel	2
3*	QX8-182	o-ring, #98-4, EPDM	2
4	QX8-111	seat donut, polypropylene	2
	QX8-111-N	seat donut, nylon	
5*	QX8-183	o-ring, #228, EPDM	2
6*	QX8-120	seat, virgin PTFE**	2
7	QX4-121-3	stem retainer bushing, polypropylene	1
8*	QC3-170	thrust washer, PTFE	1
9	207-0001	stem, stainless steel inline	1
10*	QC3-130	o-ring, #113, VITON	2
11	QX-103	hairpin, stainless steel	1
12	100340	bolt, serrated flange, 1/4 - 20 x 1	3
13	QX8-102	valve body, 3-way, bottom load, 2" polypropylene	1
	QX8-102-N	valve body, 3-way, bottom load, 2" nylon	
14	100389	gasket, M220, 2" full port, flat cut EPDM	1
15	100266	v-clamp, M220, 2" full port flange, stainless steel	1
16	100391	fitting, M220, 2" full port flange x 2" polypropylene NPT	1
17	QX8-116	valve ball, bottom load, 2" L-port	1
	QX8-117	valve ball, bottom load, 2" 3-port diverter	
*	QX8-RKT	valve repair kit, QX8 series (2")	

Polypropylene standard, nylon available  
 \*Items included in valve repair kits

## QX3 QX4 Bottom Load V-ball



### Design Features:

- 3/4" - 1" Full port bottom-load V-ball valves
- Max PSI: 150 at 70° F (polypropylene)
- Max PSI: 300 at 70° F (nylon)
- Valve body: polypropylene or nylon
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: Virgin PTFE
- Stem seal: dual VITON o-ring
- Body seals: EPDM

No.	Part Number	Description	Qty
1	QX4-121-3	stem retainer bushing, polypropylene	1
	QX4-121-3-N	stem retainer bushing, nylon	
2*	QC3-170	thrust washer, PTFE	1
3	207-0001	stem, stainless steel inline	1
	QX-101	stem, stainless steel offset	
4*	QC3-130	o-ring, #113, VITON	2
5	QX-103	hairpin, stainless steel	1
6	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
7	QX4-142	valve body, 3-way, 1" NPT	1
	QX4-172	valve body, 3-way, 3/4" NPT	
	QX4-172-N	valve body, 3-way, 3/4" nylon NPT	
8*	QX4-161	o-ring, #123, EPDM	3
9*	QX4-119	seat, 1" virgin, PTFE	3
	QX4-123	seat, valve OX4 carbon graphite PTFE	
10	QX4-135	valve ball, stainless steel V-ball	1
11*	QX4-162	o-ring, #132, EPDM	1
12	QX4-118	donut seat, polypropylene	1
	QX4-118-N	donut seat, nylon	
13*	QC3-134	o-ring, #229, EPDM	1
14	QX4-129	endcap, blank, 1" polypropylene	1
	QX4-129-N	endcap, blank, 1" nylon NPT	
15	QX4-200	v-clamp, stainless steel, M200, 2" standard port flange	1
*	QX4-RKT	valve repair kit, QX3 & QX4 series (3/4" - 1")	
	QX4-RKTV	valve repair kit, VITON (3/4" - 1")	

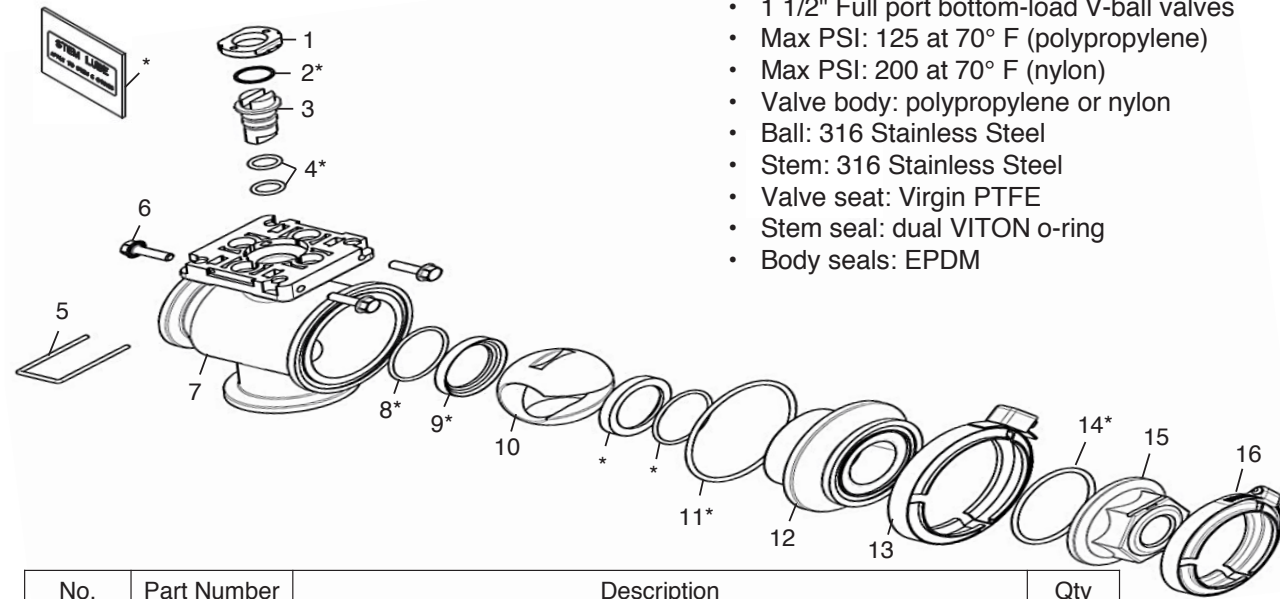
Polypropylene standard, nylon available

\*Items included in valve repair kits

# VALVE PARTS

# Exploded View Diagrams

## QX6 Bottom Load V Ball



### Design Features:

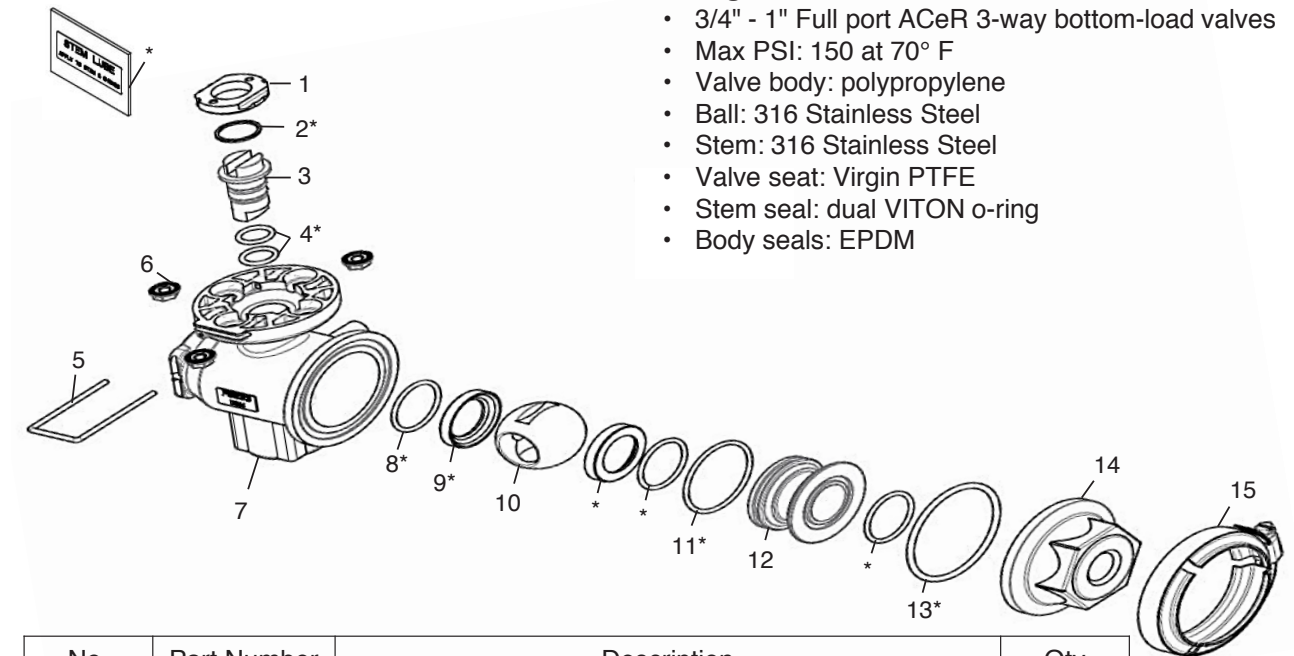
- 1 1/2" Full port bottom-load V-ball valves
- Max PSI: 125 at 70° F (polypropylene)
- Max PSI: 200 at 70° F (nylon)
- Valve body: polypropylene or nylon
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: Virgin PTFE
- Stem seal: dual VITON o-ring
- Body seals: EPDM

No.	Part Number	Description	Qty
1	QX4-121-3	stem retainer bushing, polypropylene	1
	QX4-121-3-N	stem retainer bushing, nylon	
2*	QC3-170	thrust washer, PTFE	1
3	207-0001	stem, stainless steel inline	1
	QX-101	stem, stainless steel offset	
4*	QC3-130	o-ring, #113, VITON	2
	QC3-130	o-ring, #113, VITON	
5	QX-103	hairpin, stainless steel	1
6	100340	bolt, serrated flange, 1/4 - 20 x 1	3
7	QX5-141	valve body, 3-way, bottom load, M200, 1 1/2" smooth standard port	1
	QX5-161	valve body, 3-way, bottom load, 1 1/2" polypropylene NPT	
	QX5-161-N	valve body, 3-way, bottom load, 1 1/2" nylon NPT	
8*	QX5-180	o-ring, #131, EPDM	2
9*	QX5-149	seat, PTFE	2
10	QX5-154	valve ball, stainless steel V-port	1
11*	QX5-181	o-ring, #236, EPDM	1
12	QX5-145	endcap, M200, 1 1/2" smooth standard port flange	1
	QX5-146	endcap, 1 1/2" NPT x 2" standard port flange	
	QX5-146-N	endcap, 1 1/2" nylon NPT flange	
13	QX5-210	v-clamp, stainless steel	1
14*	QC3-134	o-ring, #229, EPDM	1
15	QX4-129	endcap blank, 1" NPT x M200	1
	QX4-129-N	endcap, blank, 1" nylon NPT	
16	QX4-200	v-clamp, stainless steel, M200, 2" standard port flange	1
*	QX5-RKT	valve repair kit, QX5 & QX6 series (1 1/2")	

Polypropylene standard, nylon available

\*Items included in valve repair kits

## ACeR Bottom Load



### Design Features:

- 3/4" - 1" Full port ACeR 3-way bottom-load valves
- Max PSI: 150 at 70° F
- Valve body: polypropylene
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: Virgin PTFE
- Stem seal: dual VITON o-ring
- Body seals: EPDM

No.	Part Number	Description	Qty
1	QX4-121-3	stem retainer bushing, polypropylene	1
2*	QC3-170	thrust washer, PTFE	1
3	207-0001	stem, stainless steel inline	1
4*	QC3-130	o-ring, #113, VITON	2
	QC3-130	o-ring, #113, VITON	
5	QX-103	hairpin, stainless steel	1
6	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
7	QX4-142	valve body, 3-way, 1" NPT	1
	QX4-172	valve body, 3-way, 3/4" NPT	
8*	QX4-161	o-ring, #123, EPDM	3
9*	QX4-119	seat, 1" virgin, PTFE	2
10	QX4-133	valve ball, 1" ACeR bottom load, 3-port	1
11*	QX4-162	o-ring, #132, EPDM	1
12	QX4-118	donut seat, polypropylene	1
13*	QC3-134	o-ring, #229, EPDM	1
14	QX4-127	endcap, 1" polypropylene NPT	1
	QX4-128	endcap, 3/4" polypropylene NPT	
15	QX4-200	v-clamp, stainless steel, M200, 2" standard port flange	1
*	QX4-RKT	valve repair kit, QX3 & QX4 series (3/4" - 1")	
	QX4-RKTV	valve repair kit, VITON (3/4" - 1")	

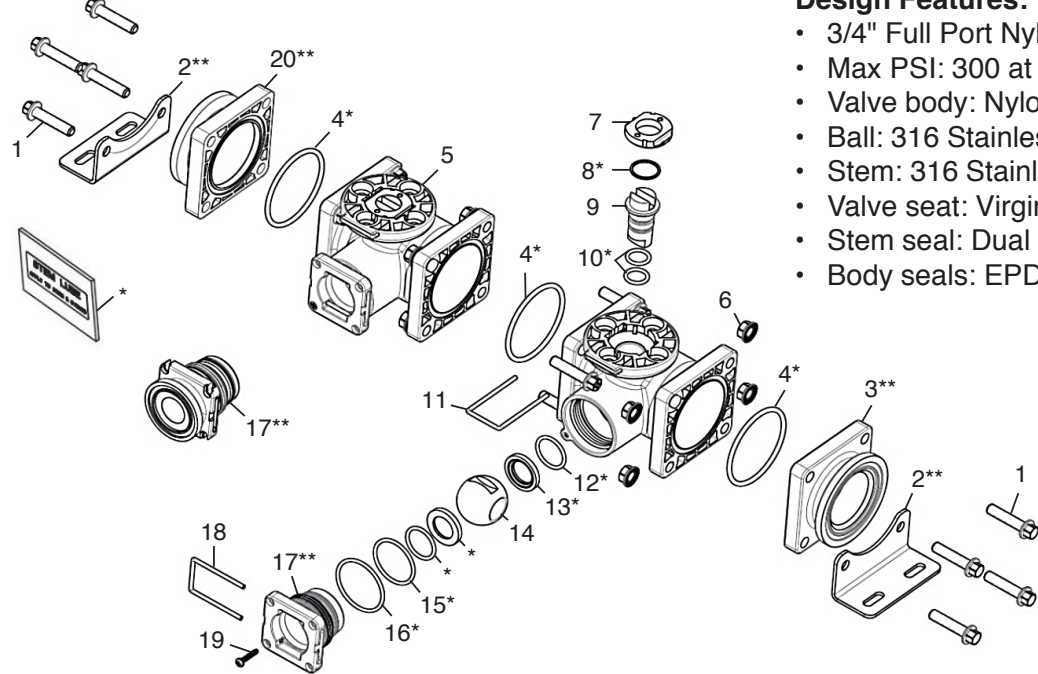
Polypropylene standard, nylon available

\*Items included in valve repair kits

# VALVE PARTS

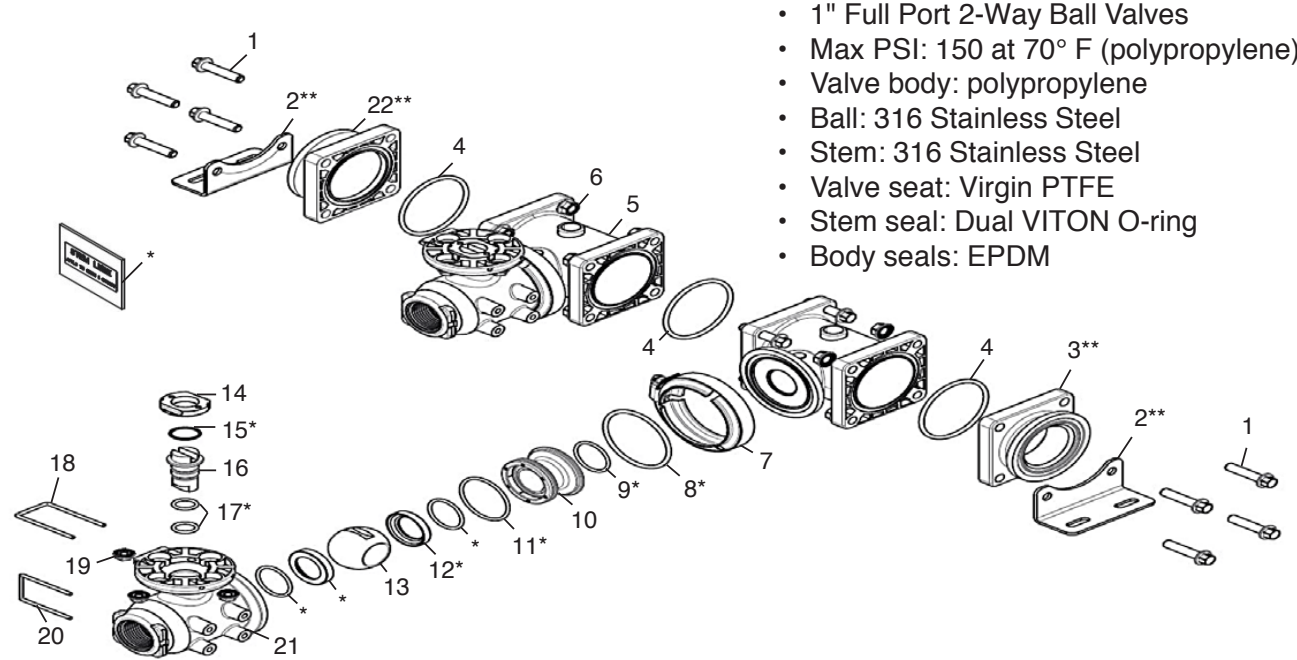
# Exploded View Diagrams

## QC3 3/4" Manifold



- Design Features:**
- 3/4" Full Port Nylon Compact Valves
  - Max PSI: 300 at 70° F (Nylon)
  - Valve body: Nylon
  - Ball: 316 Stainless Steel
  - Stem: 316 Stainless Steel
  - Valve seat: Virgin PTFE
  - Stem seal: Dual VITON O-ring
  - Body seals: EPDM

## QX4 1" Manifold



- Design Features:**
- 1" Full Port 2-Way Ball Valves
  - Max PSI: 150 at 70° F (polypropylene)
  - Valve body: polypropylene
  - Ball: 316 Stainless Steel
  - Stem: 316 Stainless Steel
  - Valve seat: Virgin PTFE
  - Stem seal: Dual VITON O-ring
  - Body seals: EPDM

No.	Part Number	Description	Qty
1	QX-220	bolt, flanged hex head, 5/16 - 18 x 1 1/2	12
2**	QX-111	bracket, stainless steel	2
	EHPT-196	bracket, 1 1/4" - 1 1/2", adapter bracket	
3**	QX-180-N	endcap, 1 1/2" NPT with M200, 2" nylon standard port flange	1
4*	QC3-134	o-ring, #229, EPDM	3
5	QC3-300	valve body, 3/4" nylon	2
6	QX-221	nut, serrated flange, 5/16 - 18, stainless steel	12
7	QX4-121-3-N	stem retainer bushing, nylon	2
8*	QC3-170	thrust washer, PTFE	2
9	207-0001	stem, stainless steel inline	2
10*	QC3-130	o-ring, #113, VITON	4
11	QX-103	hairpin, stainless steel	2
12*	QC3-131	o-ring, #119, EPDM	4
13*	QC3-168	seat, 3/4" virgin, PTFE	4
14	QC3-315	valve ball, 2-way, 3/4" full port	2
15*	QC3-133	o-ring, #126, EPDM	2
16*	QC3-136	o-ring, #130, EDPM	2
17**	QC3-153	buttress fitting, 3/4" QHN, nylon	2
	QC3-157	buttress fitting, M100, 1" nylon flange QC3 outlet x 3/4" NPT	
18	QX-102	hairpin, stainless steel	2
19	DJPT-101E	screw, #8, 3/4" stainless steel	2
20**	QX-181-N	endcap, 3/8" NPT closed port, nylon	1
*	QC3-RKT	valve repair kit, QC3 series (3/4")	

No.	Part Number	Description	Qty
1	QX-220	bolt, flanged hex head, 5/16 - 18 x 1 1/2	12
2**	QX-111	bracket, stainless steel	2
3**	QX-181	endcap, 3/8" NPT, closed port	1
4	QX-201	o-ring, EPDM	3
5	QX4-100	manifold, section, M200, 2" standard port flange, 1" polypropylene port	2
6	QX-221	nut, serrated flange, 5/16 - 18, stainless steel, coated	12
7	QX4-200	v-clamp, stainless steel, M200, 2" standard port flange	2
8*	QC3-134	o-ring, #229, EPDM	1
9*	QX4-161	o-ring, #123, EPDM	3
10	QX4-118	donut seat, polypropylene	2
11*	QX4-162	o-ring, #132, EPDM	1
12*	QX4-119	seat, 1" virgin, PTFE	2
13*	QX4-130	valve ball, 2-way, 1" full port, stainless steel	2
14	QX4-121-3	stem retainer bushing, polypropylene	2
	QX4-121-3-N	stem retainer bushing, nylon	
15*	QC3-170	thrust washer, PTFE	1
16	207-0001	stem, stainless steel inline	2
17*	QC3-130	o-ring, #113, VITON	2
18	QX-103	hairpin, stainless steel	2
19	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
20	QX-102	hairpin, stainless steel	2
	QX4-110	valve body, 2-way, 1" polypropylene QHP outlet	
21	QX4-115	valve body, 2-way, M200, 2" standard port flange	2
	QX4-140	valve body, 2-way, 1" polypropylene NPT	
22**	QX-180	endcap, 1 1/2" NPT with M200, 2" standard port flange	1
*	QX4-RKT	valve repair kit, QX3 & QX4 series (1")	

Polypropylene standard, nylon available

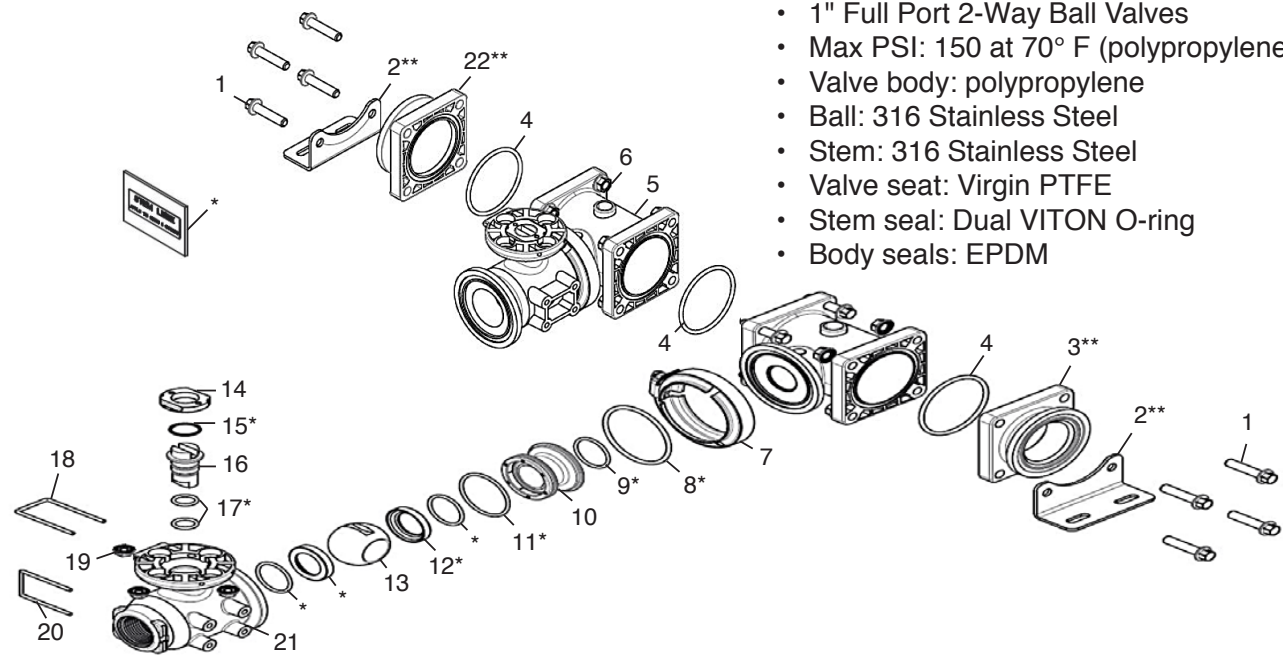
\*Items included in valve repair kits \*\*Other brackets and endcaps available

\*Items included in valve repair kits  
\*\*Other brackets and endcaps available

# VALVE PARTS

# Exploded View Diagrams

## QX4 1" Manifold (valve bodies)



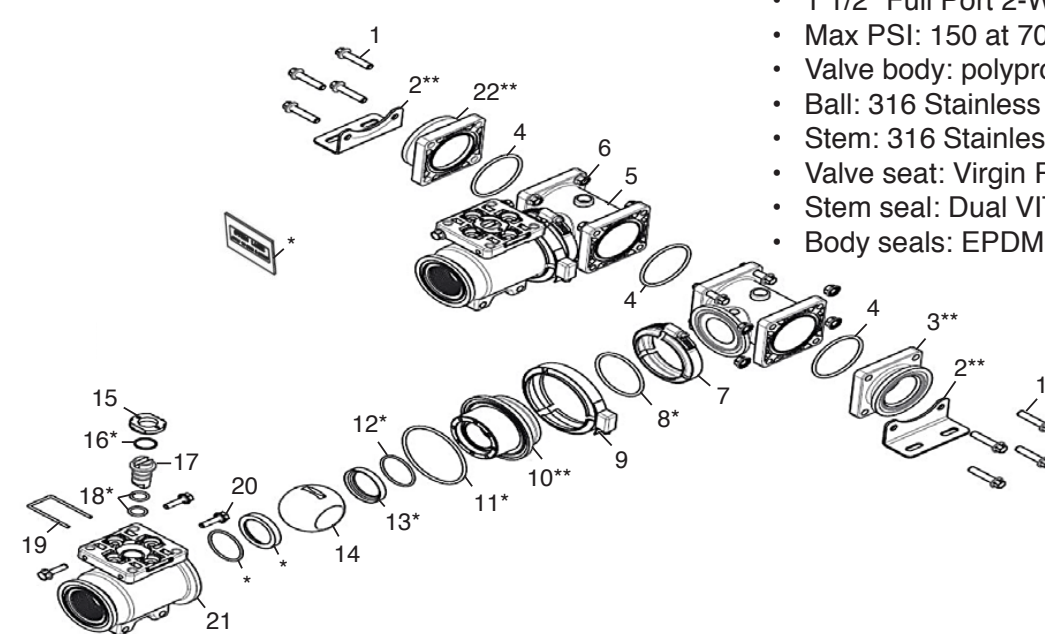
- Design Features:**
- 1" Full Port 2-Way Ball Valves
  - Max PSI: 150 at 70° F (polypropylene)
  - Valve body: polypropylene
  - Ball: 316 Stainless Steel
  - Stem: 316 Stainless Steel
  - Valve seat: Virgin PTFE
  - Stem seal: Dual VITON O-ring
  - Body seals: EPDM

No.	Part Number	Description	Qty
1	QX-220	bolt, flanged hex head, 5/16 - 18 x 1 1/2	12
2**	QX-111	bracket, stainless steel	2
3**	QX-181	endcap, 3/8" NPT, closed port	1
4	QX-201	o-ring, EPDM	3
5	QX4-100	manifold, section, M200, 2" standard port flange, 1" polypropylene port	2
6	QX-221	nut, serrated flange, 5/16 - 18, stainless steel, coated	12
7	QX4-200	v-clamp, stainless steel, M200, 2" standard port flange	2
8*	QC3-134	o-ring, #229, EPDM	1
9*	QX4-161	o-ring, #123, EPDM	3
10	QX4-118	donut seat, polypropylene	2
11*	QX4-162	o-ring, #132, EPDM	1
12*	QX4-119	seat, 1" virgin, PTFE	2
13*	QX4-130	valve ball, 2-way, 1" full port, stainless steel	2
14	QX4-121-3	stem retainer bushing, polypropylene	2
	QX4-121-3-N	stem retainer bushing, nylon	
15*	QC3-170	thrust washer, PTFE	1
16	207-0001	stem, stainless steel inline	2
17*	QC3-130	o-ring, #113, VITON	2
18	QX-103	hairpin, stainless steel	2
19	QX-222	nut, serrated flange, 1/4 - 20, stainless steel	3
20	QX-102	hairpin, stainless steel	2
	QX4-110	valve body, 2-way, 1" polypropylene QHP outlet	
21	QX4-115	valve body, 2-way, M200, 2" standard port flange	2
	QX4-140	valve body, 2-way, 1" polypropylene NPT	
22**	QX-180	endcap, 1 1/2" NPT with M200, 2" standard port flange	1
*	QX4-RKT	valve repair kit, QX3 & QX4 series (1")	

Polypropylene standard, nylon available

\*Items included in valve repair kits \*\*Other brackets and endcaps available

## QX6 1 1/2" Manifold



- Design Features:**
- 1 1/2" Full Port 2-Way Ball Valves
  - Max PSI: 150 at 70° F (polypropylene)
  - Valve body: polypropylene
  - Ball: 316 Stainless Steel
  - Stem: 316 Stainless Steel
  - Valve seat: Virgin PTFE
  - Stem seal: Dual VITON O-ring
  - Body seals: EPDM

No.	Part Number	Description	Qty
1	QX-220	bolt, flanged hex head, 5/16 - 18 x 1 1/2	12
2**	QX-111	bracket, stainless steel	2
	EHPT-196	bracket, stainless steel, 1 1/4 - 1 1/2	1
3**	QX-181	endcap, 3/8" NPT, closed port	3
4	QX-201	o-ring, EPDM	2
5	QX4-101	manifold, 1 1/2" polypropylene	12
6	QX-221	nut, serrated flange, 5/16 - 18, stainless steel, coated	2
7	QX4-200	v-clamp, stainless steel, 2" standard port flange	2
8*	QC3-134	o-ring, #229, EPDM	2
9	QX5-210	v-clamp, stainless steel	2
10**	QX5-145	endcap, M200, 2" polypropylene smooth port flange	2
	QX5-146	endcap, 1 1/2" NPT x M200, 2" standard port flange	2
11*	QX5-181	o-ring, #236, EPDM	2
12*	QX5-180	o-ring, #131, EPDM	2
13*	QX5-149	seat, PTFE	4
14	QX5-150	valve ball, 2-way, 1 1/2" full port, stainless steel	2
15	QX4-121-3	stem retainer bushing, polypropylene	2
16*	QC3-170	thrust washer, PTFE	2
17	QX-101	stem, stainless steel inline	2
18*	QC3-130	o-ring, #113, VITON	4
19	QX-103	hairpin, stainless steel	2
20	100340	bolt, serrated flange, 1/4 - 20 x 1	3
21	QX5-141	valve body, 3-way, bottom load, M200, 2" smooth standard port flange	2
	QX5-160	valve body, 2-way, 1 1/2" NPT	
22**	QX-180	endcap, 1 1/2" NPT with M200, 2" standard port flange	1
*	QX5-RKT	valve repair kit, QX5 & QX6 series (1 1/2")	

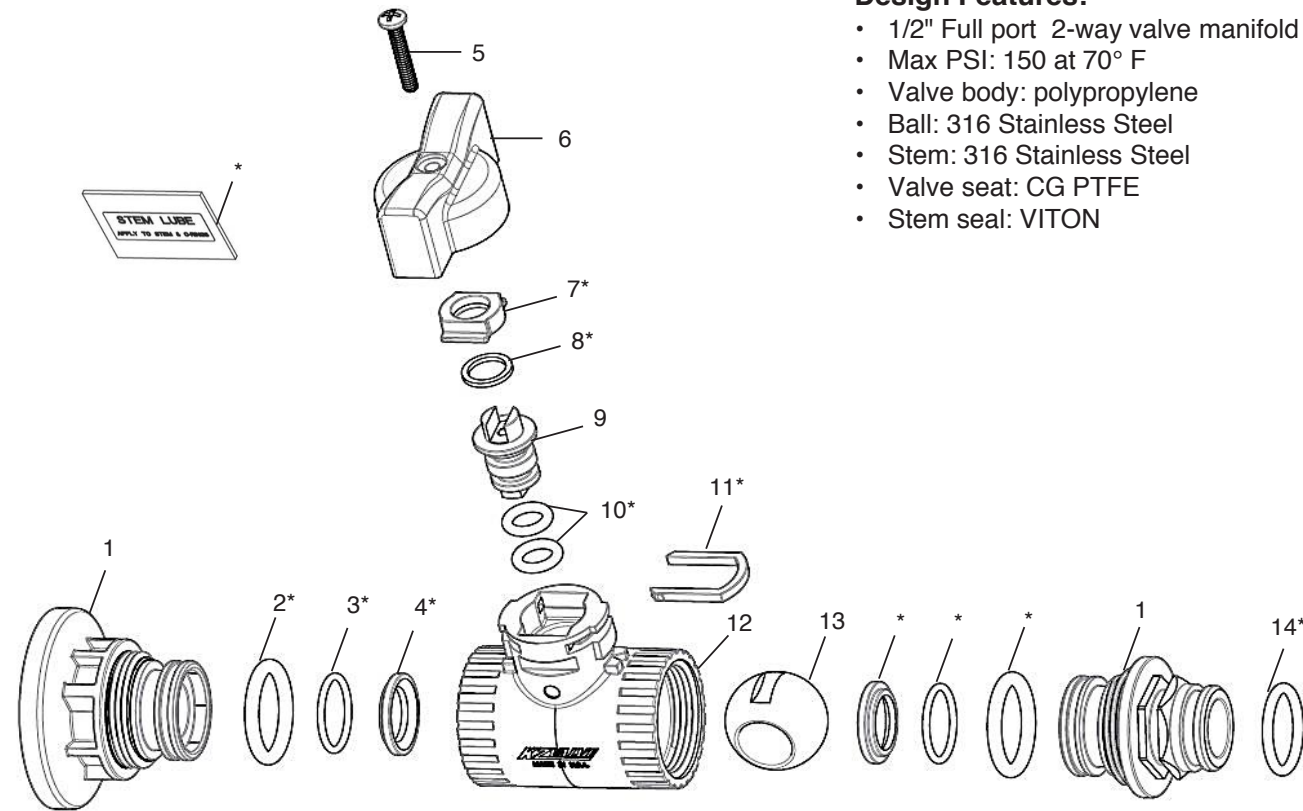
Polypropylene standard, nylon available

\*Items included in valve repair kits \*\*Other endcaps and brackets available

# VALVE PARTS

# Exploded View Diagrams

## TX2 2-way Valve – EH7



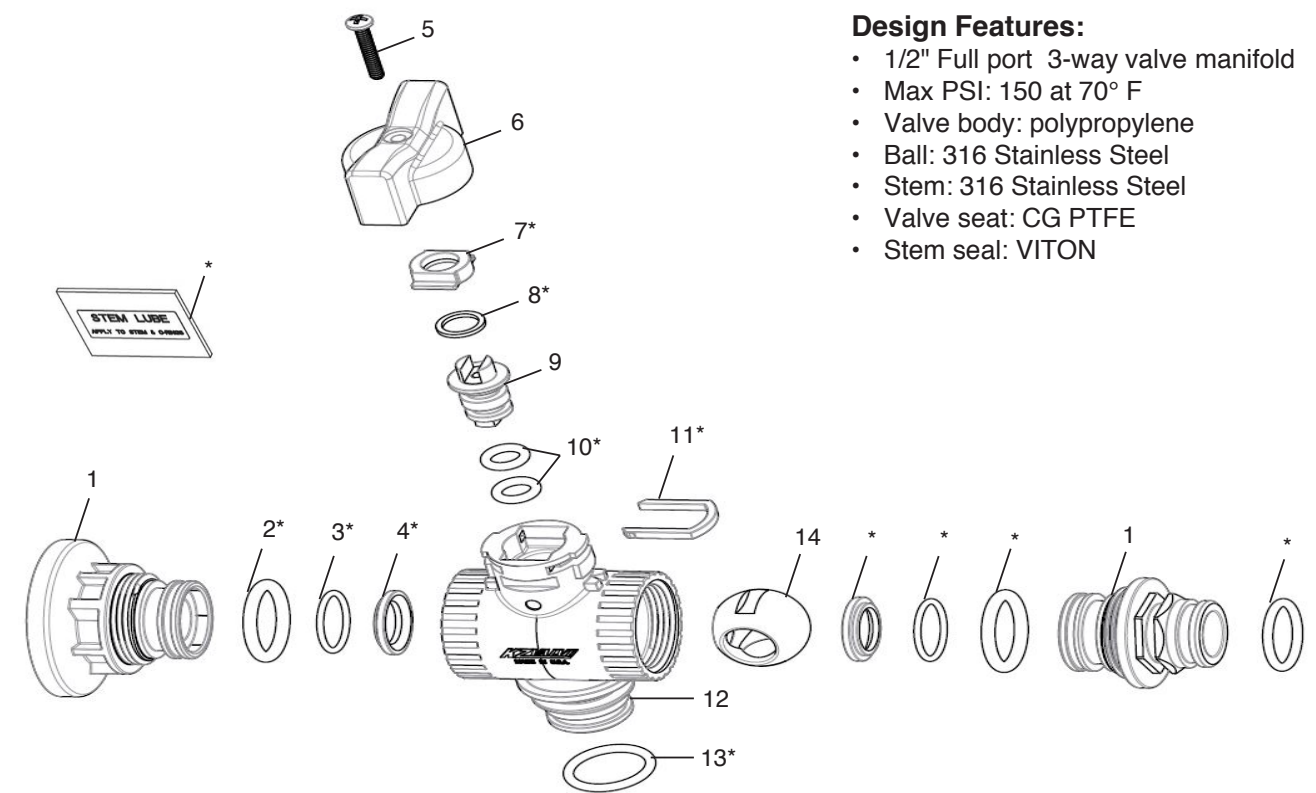
### Design Features:

- 1/2" Full port 2-way valve manifold
- Max PSI: 150 at 70° F
- Valve body: polypropylene
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: CG PTFE
- Stem seal: VITON

No.	Part Number	Description	Qty
1	202-0020	endcap, 1/2" Male QD	2
	202-0023	endcap, 1/2" M100 Flange	
2*	205-0096	o-ring, #211	2
3*	205-0060	o-ring, #017	2
4*	206-0016	seat, 1/2" full port, carbon graphite, PTFE	2
5	100-0021	screw, stainless steel	1
6	212-0026	handle, yellow, 90°	1
7*	106-0012	stem retainer	1
8*	102-0042	thrust washer	1
9	207-0012	stem, stainless steel	1
10*	205-0095	o-ring, #109	2
11*	106-0011	stem capture retainer	1
12	201-0185	valve body, 2-way, 1/2" polypropylene	1
13	204-0111	valve ball, 2-way, 1/2" stainless steel	1
14*	205-0062	o-ring, #116	1
*	210-0030	valve repair kit, TX2, 1/2"	

\*Items included in valve repair kits

## TX2 3-way Valve – EH7



### Design Features:

- 1/2" Full port 3-way valve manifold
- Max PSI: 150 at 70° F
- Valve body: polypropylene
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: CG PTFE
- Stem seal: VITON

No.	Part Number	Description	Qty
1	202-0020	endcap, 1/2" Male QD	2
	202-0023	endcap, 1/2" M100 Flange	
2*	205-0096	o-ring, #211	2
3*	205-0060	o-ring, #017	2
4*	206-0016	seat, 1/2" full port, carbon graphite, PTFE	2
5	100-0021	screw, stainless steel	1
6	212-0026	handle, yellow, 90°	1
	212-0027	handle, red, 255°	
7*	106-0012	stem retainer	1
8*	102-0042	thrust washer	1
9	207-0012	stem, stainless steel	1
10*	205-0095	o-ring, #109	2
11*	106-0011	stem capture retainer	1
12	201-0191	valve body, 3-way, 1/2" polypropylene	1
13*	205-0062	o-ring, #116	2
14	204-0100	valve ball, 3-way, 1/2" stainless steel, diverter	1
	204-0112	valve ball, 1/2" stainless steel, regulating v-ball	
*	210-0030	valve repair kit, TX2, 1/2"	

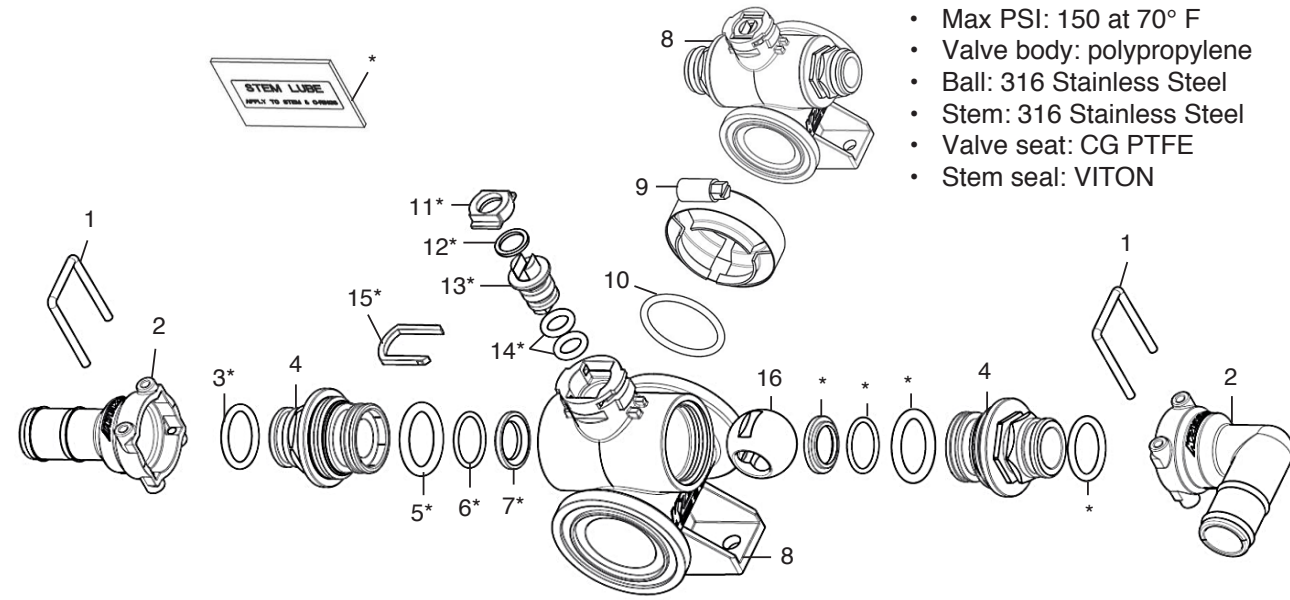
\*Items included in valve repair kits



# VALVE PARTS

# Exploded View Diagrams

## TX2 Series – EH7



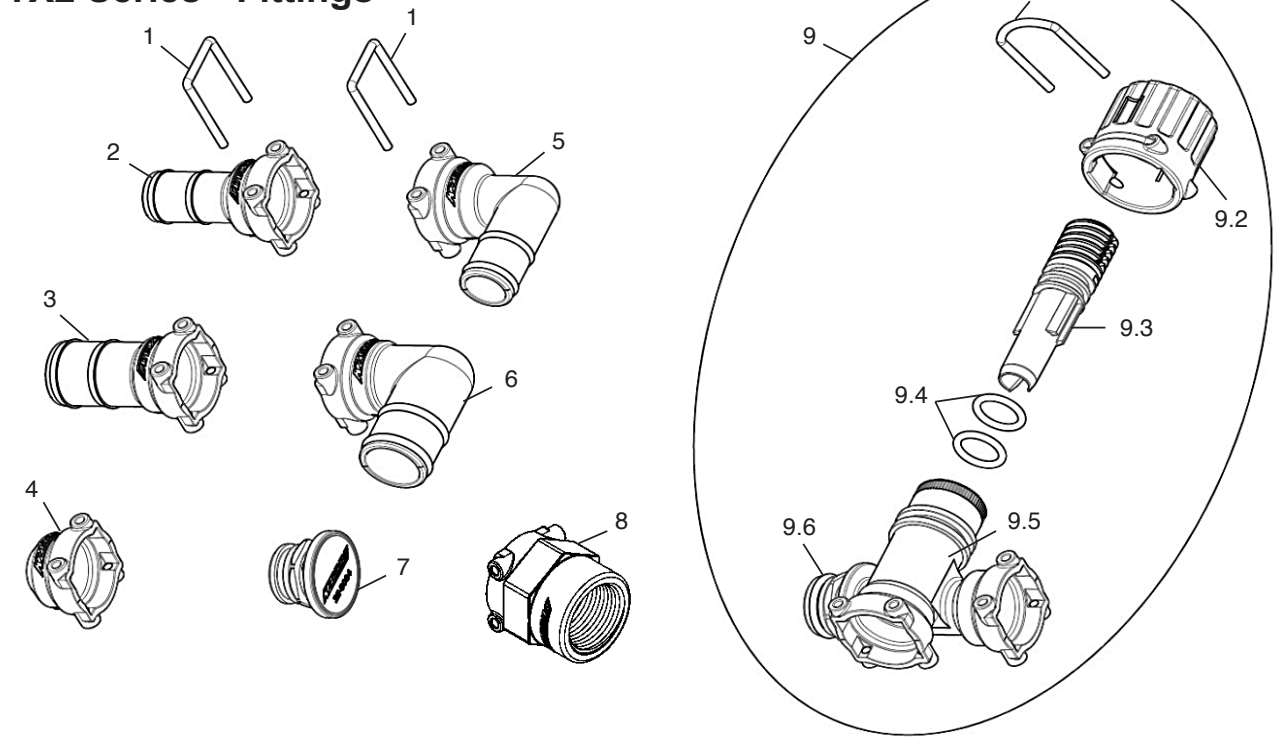
### Design Features:

- 1/2" Full port 3-way valve manifold
- Max PSI: 150 at 70° F
- Valve body: polypropylene
- Ball: 316 Stainless Steel
- Stem: 316 Stainless Steel
- Valve seat: CG PTFE
- Stem seal: VITON

No.	Part Number	Description	Qty
1	106-0018	hairpin, stainless steel	2
2	211-0017	fitting, QC x 3/4" FNPT	1
	211-0118	fitting, 3/4" 90 degree hose barb	
	211-0119	fitting, 1" 90 degree hose barb	
	211-0062	fitting, QD 1/2" female blank cap	
	211-0064	fitting, QD 1/2" male blank plug	
	211-0066	fitting, 3/4" straight hose barb	
	211-0074	fitting, 1" straight hose barb	
299-0030	fitting, QD - Metered Bypass		
3*	205-0062	o-ring, #116	2
4	202-0020	endcap, quick fitting connect	2
5*	205-0096	o-ring, #211, EPDM	2
6*	205-0060	o-ring, #017, EPDM	2
7*	206-0016	seat, 1/2" full port, carbon graphite PTFE	2
8	201-0181	valve body, 3-way, M100, 1" flange, diverter	1
9	100450	v-clamp, M100, 1" flange	1
10	205-0074	o-ring, EPDM	1
11*	106-0012	stem retainer, polypropylene	1
12*	102-0042	thrust washer, PTFE	1
13	207-0012	stem, stainless steel	1
14*	205-0095	o-ring, #109, VITON	2
15*	106-0011	stem capture retainer	1
16	204-0100	valve ball, 1/2" 3-port diverter	1
*	210-0030	valve repair kit, TX2, 1/2"	

\*Items included in valve repair kits

## TX2 Series - Fittings



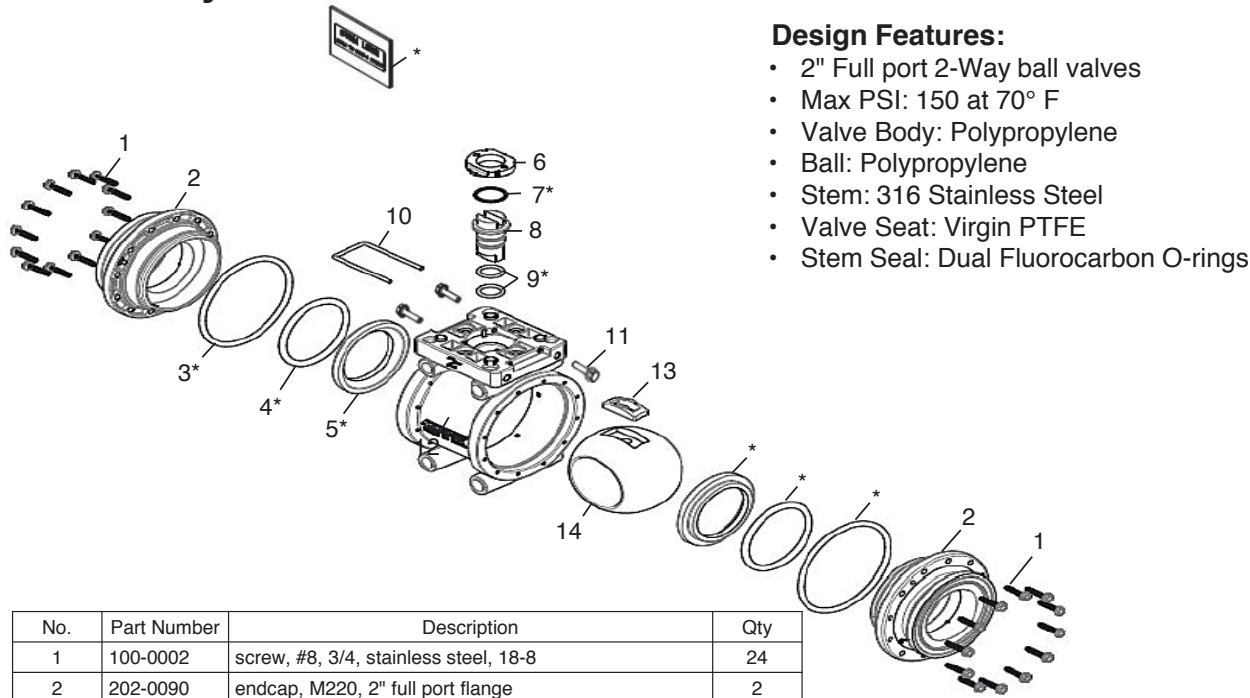
No.	Part Number	Description	Qty
1	106-0018	hairpin, stainless steel	2
2	211-0066	fitting, 3/4" straight hose barb	1
*	KZ1146	fitting kit, 3/4" straight hose barb with stainless steel hairpin	
3	211-0074	fitting, 1" straight hose barb	1
*	KZ1147	fitting kit, 1" straight hose barb with stainless steel hairpin	
4	211-0062	fitting, 1/2" female blank cap	1
*	KZ1128	fitting kit, 1/2" female blank cap with stainless steel hairpin	
5	211-0118	fitting, 3/4" 90 degree hose barb	1
*	KZ1148	fitting kit, 3/4" 90 degree hose barb with stainless steel hairpin	
6	211-0119	fitting, 1" 90 degree hose barb	1
*	KZ1149	fitting kit, 1" 90 degree hose barb with stainless steel hairpin	
7	211-0064	fitting, 1/2" male blank plug	1
*	KZ1129	fitting kit, 1/2" male blank plug with stainless steel hairpin	
8	211-0017	fitting, QC x 3/4" FNPT	1
*	KZ1150	fitting kit, QC x 3/4" FNPT with stainless steel hairpin	
9	299-0030	fitting, metered bypass	1
*	KZ1152	fitting kit, metered bypass with stainless steel hairpin	
9		Fitting, Metered Bypass	
9.1	106-0017	hairpin, stainless steel	1
9.2	212-0040	yellow metering adjustment knob	1
9.3	207-0020	metering rod stem	1
9.4	QC3-130	o-ring, #113, EPDM	2
9.5	201-0190	fitting, metering bypass	1
9.6	205-0062	o-ring, #116, EPDM	1

\*Fitting Kit includes hairpin connector

# VALVE PARTS

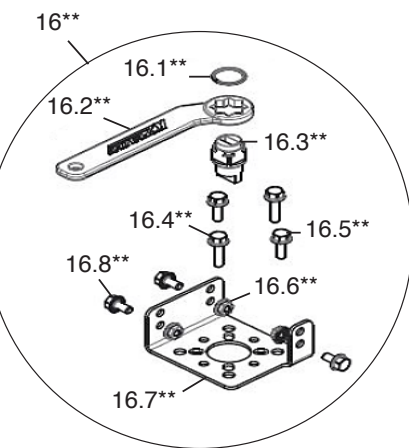
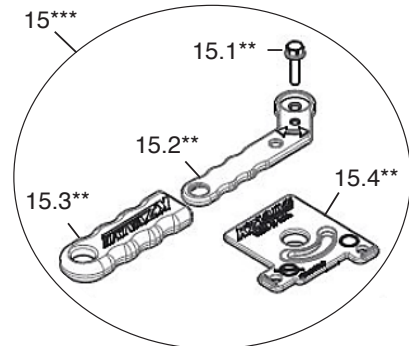
# Exploded View Diagrams

## MX8 2-way



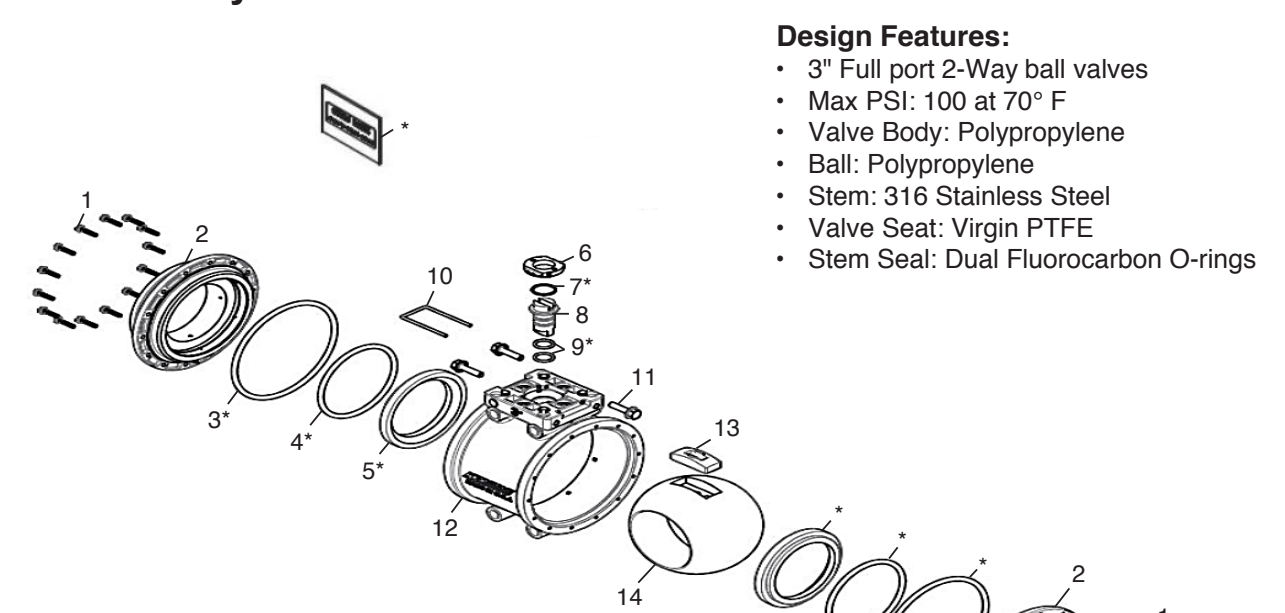
- Design Features:**
- 2" Full port 2-Way ball valves
  - Max PSI: 150 at 70° F
  - Valve Body: Polypropylene
  - Ball: Polypropylene
  - Stem: 316 Stainless Steel
  - Valve Seat: Virgin PTFE
  - Stem Seal: Dual Fluorocarbon O-rings

No.	Part Number	Description	Qty
1	100-0002	screw, #8, 3/4, stainless steel, 18-8	24
2	202-0090	endcap, M220, 2" full port flange	2
3*	205-0050	o-ring, EPDM	2
4*	205-0049	o-ring, EPDM	2
5	206-0027	seat, 2" full port	2
6	QX4-121-3	stem retainer bushing, polypropylene	1
7*	QC3-170	thrust washer, PTFE	1
8	207-0001	stem, stainless steel inline	1
	207-0009***	stem, stainless steel inline, tapped for manual valve	
9*	QC3-130	o-ring, #113, VITON	2
10	QX-103	hairpin, stainless steel	1
11	100340	bolt, serrated flange, 1/4 - 20 x 1	3
12	201-0130	valve body, 2-way, M220, 2" polypropylene full port	1
13	250-0060	shoe, ball/stem engagement	1
14	204-0047	valve ball, 2-way, 2" polypropylene	1
15*** Manual Valve Only			
15.1***	100340	bolt, serrated flange, 1/4 - 20 x 1	1
15.2***	212-0010	handle	1
15.3***	212-0015	handle cover	1
15.4***	250-0030-P	retainer, stop plate	1
16** Manual Handle Override			
16.1**	100289	retaining ring, spiral	1
16.2**	212-0002	handle	1
16.3**	208-0070	coupler - 2" (M2i)	1
16.4**	100340	bolt, serrated flange, 1/4 - 20 x 1	2
16.5**	100338	bolt, serrated flanged, 1/4 - 20 x 3/4	2
16.6**	QX-222	nut, serrated flanged, 1/4 - 20, stainless steel	3
16.7**	100042X	bracket, stainless steel - 2" (M2i)	1
16.8**	100204	bolt, hex flange, 1/4 - 20 x 1/2, stainless steel	3
*	210-0025	valve repair kit, MX - 2" (M2i)	



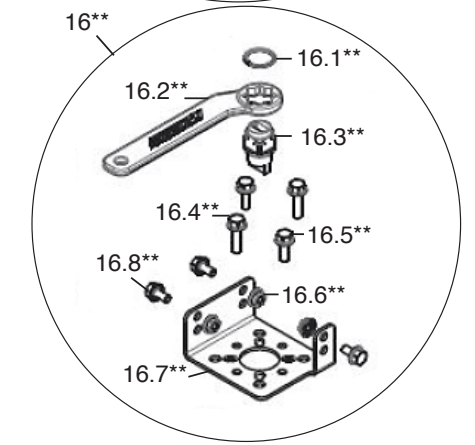
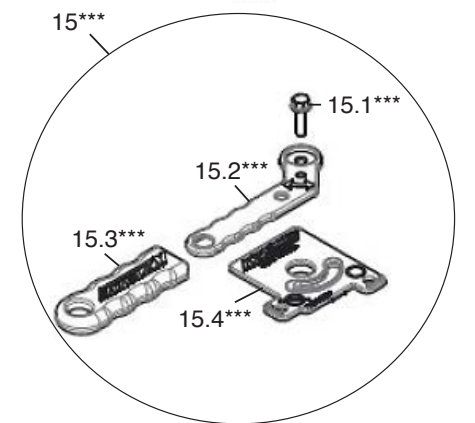
\*Items included in valve repair kits  
 \*\*Manual handle override only  
 \*\*\*Manual valve only

## MX12 2-way



- Design Features:**
- 3" Full port 2-Way ball valves
  - Max PSI: 100 at 70° F
  - Valve Body: Polypropylene
  - Ball: Polypropylene
  - Stem: 316 Stainless Steel
  - Valve Seat: Virgin PTFE
  - Stem Seal: Dual Fluorocarbon O-rings

No.	Part Number	Description	Qty
1	100-0002	screw, #8, 3/4, stainless steel, 18-8	28
2	202-0080	endcap, M300, 3" full port flange	2
3*	205-0030	o-ring, EPDM**	2
4*	205-0041	o-ring, EPDM**	2
5*	206-0025	seat, 3" full port**	2
6	QX4-121-3	stem retainer bushing, polypropylene	1
7*	QC3-170	thrust washer, PTFE**	1
8	207-0001	stem, stainless steel inline	1
	207-0009***	stem, stainless steel inline, tapped for manual valve	
9*	QC3-130	o-ring, #113, VITON**	2
10	QX-103	hairpin, stainless steel	1
11	100340	bolt, serrated flange, 1/4 - 20 x 1	3
12	201-0110	valve body, 2-way, M300, 3" polypropylene full port	1
13	250-0050	shoe, ball/stem engagement	1
14	204-0055	valve ball, 3" full port polypropylene	1
15*** Manual Valve Only			
15.1***	100340	bolt, serrated flange, 1/4 - 20 x 1	1
15.2***	212-0010	handle	1
15.3***	212-0015	handle cover	1
15.4***	250-0030-P	retainer, stop plate	1
16** Manual Handle Override			
16.1**	100289	retaining ring	1
16.2**	212-0002	handle	1
16.3**	208-0070	coupler - 3" (M2K)	1
16.4**	100340	bolt, serrated flange, 1/4 - 20 x 1	2
16.5**	100338	bolt, serrated flanged, 1/4 - 20 x 3/4	2
16.6**	QX-222	nut, serrated flanged, 1/4 - 20, stainless steel	3
16.7**	100042X	bracket, stainless steel - 3" (M2K)	1
16.8**	100204	bolt, hex flange, 1/4 - 20 x 1/2 stainless steel	3
*	210-0026	valve repair kit, MX - 3" (M2K)	

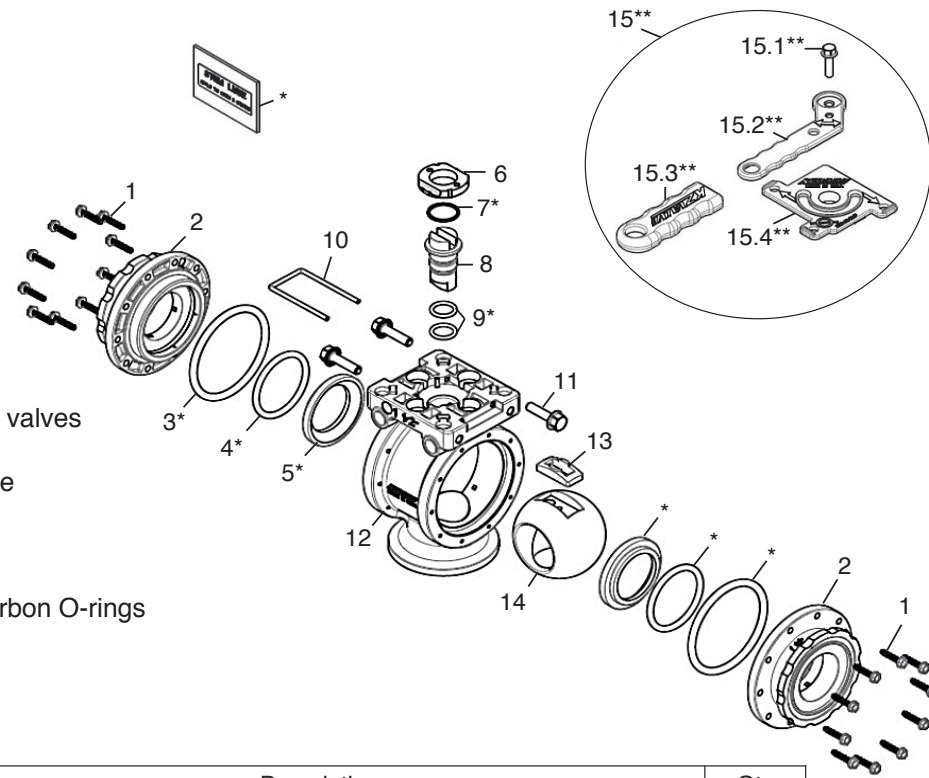


\*Items included in valve repair kits  
 \*\*Manual handle override only  
 \*\*\*Manual valve only

# VALVE PARTS

# Exploded View Diagrams

## MX6 3-way



### Design Features:

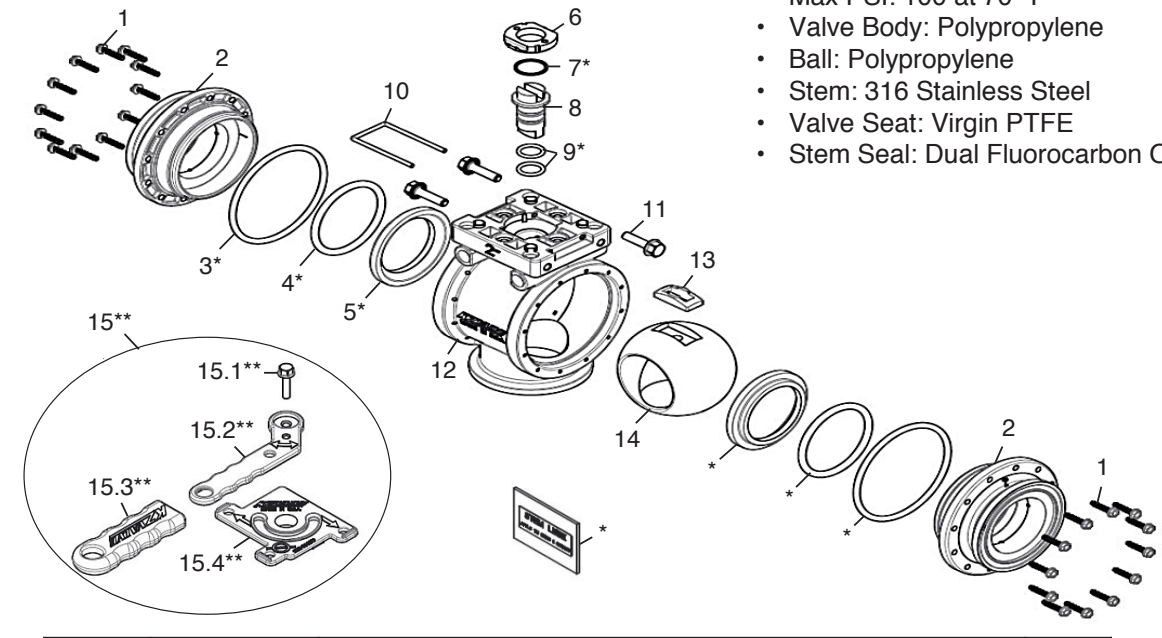
- 1 1/2" Full port 3-Way ball valves
- Max PSI: 100 at 70° F
- Valve Body: Polypropylene
- Ball: Polypropylene
- Stem: 316 Stainless Steel
- Valve Seat: Virgin PTFE
- Stem Seal: Dual Fluorocarbon O-rings

No.	Part Number	Description	Qty
1	100-0002	screw, #8, 3/4, stainless steel, 18-8	20
2	202-0100	endcap, M200, 2" standard port flange	2
3*	205-0047	o-ring, EPDM	2
4*	205-0070	o-ring, EPDM	2
5*	206-0026	seat, 1 1/2, virgin PTFE	2
6	QX4-121-3	stem retainer bushing, polypropylene	1
7*	QC3-170	thrust washer, PTFE	1
8	207-0001	stem, stainless steel inline	1
	207-0009**	stem, stainless steel inline, tapped for manual valve	
9*	QC3-130	o-ring, #113, VITON	2
10	QX-103	hairpin, stainless steel	1
11	100340	bolt, serrated flange, 1/4 - 20 x 1	3
12	201-0145	valve body, 3-way, bottom load, M200, 2" polypropylene standard port	1
13	250-0060	shoe, ball/stem engagement	1
14	204-0029	valve ball, 3-way, 1 1/2" diverter with relief slot	1
	204-0071	valve ball, 1 1/2" polypropylene, 2-port	
15**		Manual Valve	
15.1**	100340	bolt, serrated flange, 1/4 - 20 x 1	1
15.2**	212-0010	handle	1
15.3**	212-0015	handle cover	1
15.4**	250-0040-P	retainer, stop plate	1
*	210-0024	valve repair kit, MX - 1 1/2" (M4H)	

\*Items included in valve repair kits

\*\*Manual valve only

## MX8 3-way



### Design Features:

- 2" Full port 3-Way ball valves
- Max PSI: 100 at 70° F
- Valve Body: Polypropylene
- Ball: Polypropylene
- Stem: 316 Stainless Steel
- Valve Seat: Virgin PTFE
- Stem Seal: Dual Fluorocarbon O-rings

No.	Part Number	Description	Qty
1	100-0002	screw, #8, 3/4, stainless steel, 18-8	24
2	202-0090	endcap, M220, 2" full port flange	2
3*	205-0050	o-ring, EPDM	2
4*	205-0049	o-ring, EPDM	2
5*	206-0027	seat, 2" full port	2
6	QX4-121-3	stem retainer bushing	1
7*	QC3-170	thrust washer, PTFE	1
8	207-0001	stem, stainless steel inline	1
	207-0009**	stem, stainless steel inline, tapped for manual valve	
9*	QC3-130	o-ring, #113, VITON	2
10	QX-103	hairpin, stainless steel	1
11	100340	bolt, serrated flange, 1/4 - 20 x 1	3
12	201-0135	valve body, 3-way, bottom load, M220, 3" polypropylene full port	1
13	250-0060	shoe, ball/stem engagement	1
14	204-0044	valve ball, 3-way, 2" diverter	
	204-0045	valve ball, 2" 2-port	1
	204-0110	valve ball, 2" V-port	
	QX8-116	valve ball, 2" L-port	
15**		Manual Valve	
15.1**	100340	bolt, serrated flange, 1/4 - 20 x 1	1
15.2**	212-0010	handle	1
15.3**	212-0015	handle cover	1
15.4**	250-0040-P	retainer, stop plate	1
*	210-0025	valve repair kit, MX - 2" (M4i)	

\*Items included in valve repair kits

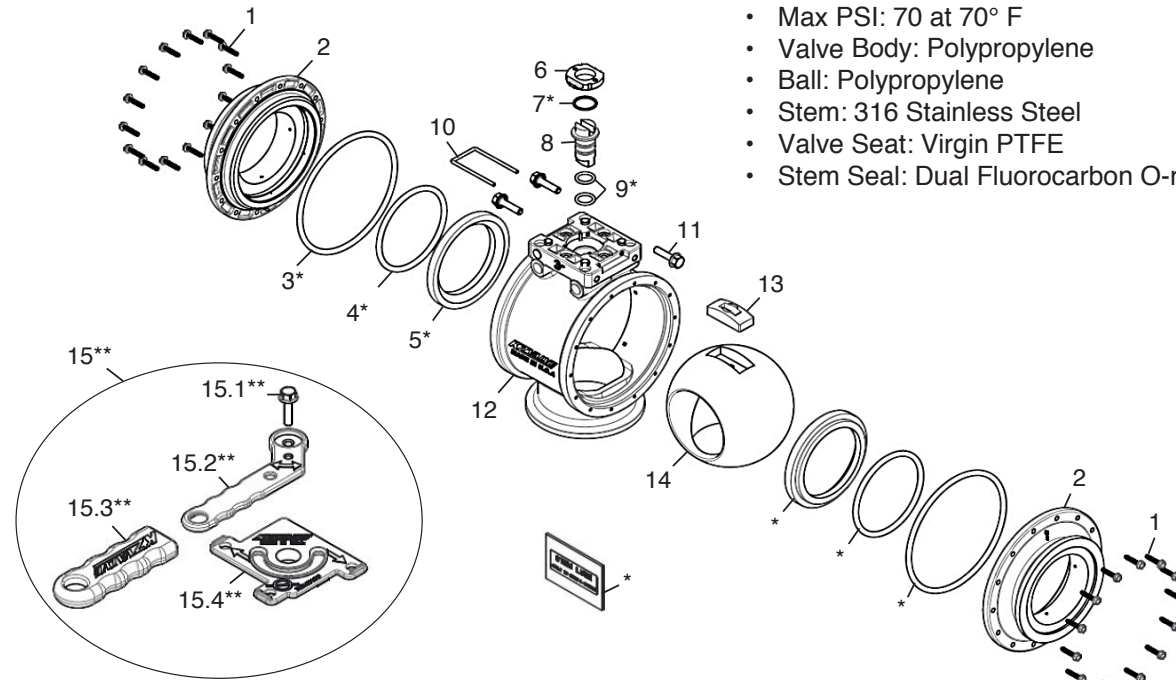
\*\*Manual valve only

# VALVE PARTS

# Exploded View Diagrams

## MX12 3-way

- Design Features:**
- 3" Full port 3-Way ball valve
  - Max PSI: 70 at 70° F
  - Valve Body: Polypropylene
  - Ball: Polypropylene
  - Stem: 316 Stainless Steel
  - Valve Seat: Virgin PTFE
  - Stem Seal: Dual Fluorocarbon O-rings

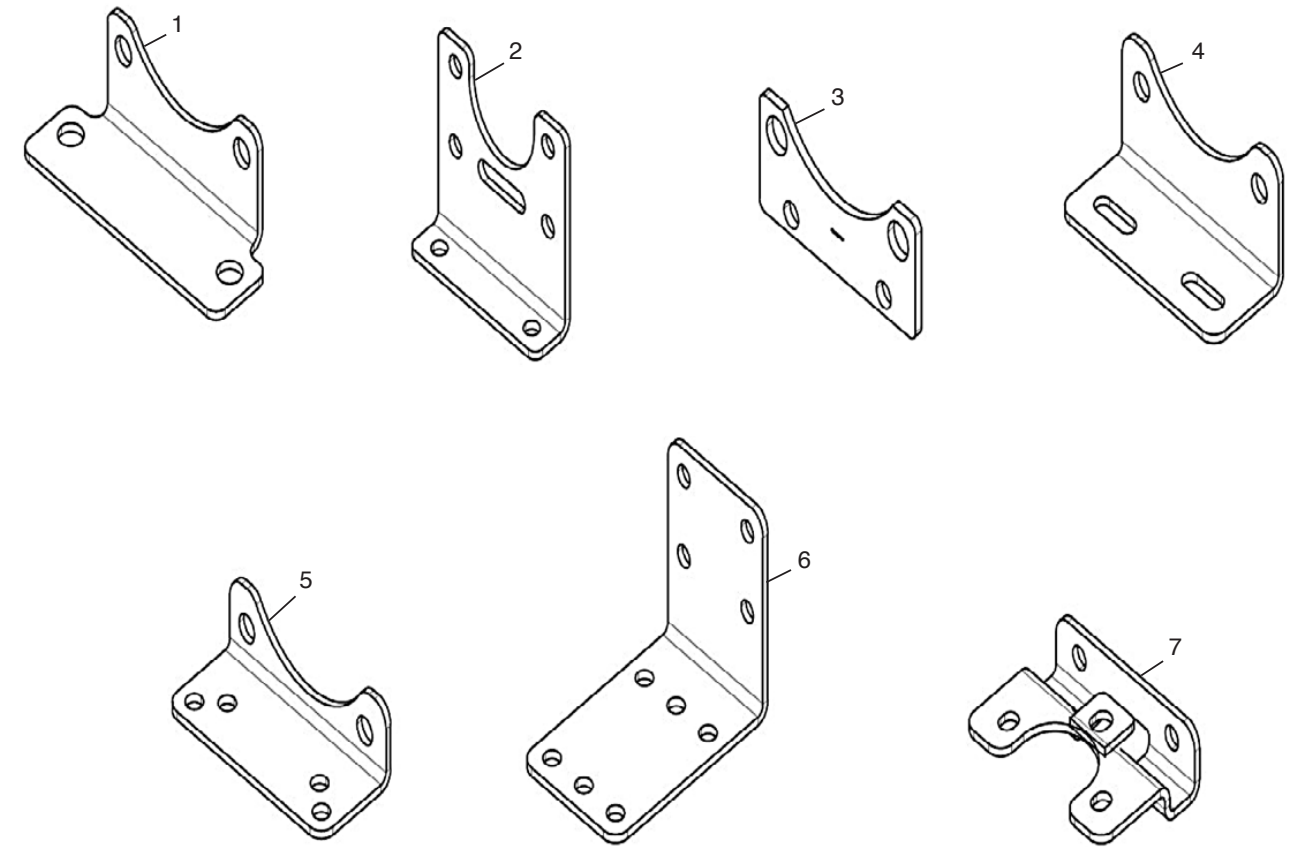


No.	Part Number	Description	Qty
1	100-0002	screw, #8, 3/4, stainless steel, 18-8	28
2	202-0080	endcap, M300, 3" full port flange	2
3*	205-0030	o-ring, EPDM	2
4*	205-0040	o-ring, EPDM	2
5*	206-0025	seat, 3" full port	2
6	QX4-121-3	stem retainer bushing, polypropylene	1
7*	QC3-170	thrust washer, PTFE	1
8	207-0001 207-0009**	stem, stainless steel inline stem, stainless steel inline, tapped for manual valve	1
9*	QC3-130	o-ring, #113, VITON	2
10	QX-103	hairpin, stainless steel	1
11	100340	bolt, serrated flange, 1/4 - 20 x 1	3
12	201-0115	valve body, 3-way, bottom load, M300, 3" polypropylene full port	1
13	250-0050	shoe, ball/stem engagement	1
14	204-0030 204-0057	valve ball, 3-way, 2" diverter valve ball, 3" polypropylene full port	1
15**	Manual Valve		
15.1**	100340	bolt, serrated flange, 1/4 - 20 x 1	1
15.2**	212-0010	handle	1
15.3**	212-0015	handle cover	1
15.4**	250-0040-P	retainer, stop plate	1
*	210-0026	valve repair kit, MX - 3" (M4K)	

\*Items included in valve repair kits

\*\*Manual valve only

## Brackets



No.	Part Number	Description	Qty
1	QX-112	bracket, mounting Q series manifolds	1
2	QX-109	bracket, mounting QX4/99F adapter	1
3	EHPT-196	bracket, 1 1/4" - 1 1/2", polypropylene adapter	1
4	QX-111	bracket, mounting QX3-QX4 series	1
5	QX-100	bracket, mounting Q series manifolds	1
6	100411	bracket, mounting QX3-QX4 series	1
7	105-0048	bracket, EH2 to QX4 adapter	1

# VALVE REPAIR KIT GUIDE

61 Series		Valve	Repair Kit
	61B	200-0052	210-0018-1
	61E	200-0053	210-0019-1
	61F	200-0054	210-0020-1
	61FM	200-0055	210-0021-1
	61H	200-0056	210-0022-1
	61I	200-0057	210-0023-1
67 Series		Valve	Repair Kit
	67B	200-0029	210-0007-1
	67D	200-0031	210-0007-1
	67E	299-0007	210-0003-1
	67F	200-0033	210-0013-1
	67G	200-0042	210-0017-1
	67H	200-0075	210-0001-1
	67I	299-0008	210-0002-1
68 Series		Valve	Repair Kit
		EHPT-68F	EHPT-720
73 Series		Valve	Repair Kit
	73C	200-0022	210-0008-1
	73D	200-0013	210-0029
	73E	200-0023	210-0009-1
	73F	200-0024	210-0010-1
	73H	200-0021	210-0011-1
	73i	200-0010	210-0012-1
	73i (NH3)	200-0035	210-0033
79 Series		Valve	Repair Kit
	79C	299-0022	210-0008-1
	79D	299-0027	210-0029
	79E	299-0047	210-0009-1
	79F	299-0028	210-0010-1
	79H	299-0020	210-0011-1
	79i	299-0029	210-0012-1
79 Series		Valve	Repair Kit
	Apollo	EH3-79D	N/A
		EHPT-79E	EHPT-710
		EHPT-79F	EHPT-715
		EHPT-79H	EHPT-713
		EHPT-79I	EHPT-714
84 Series		Valve	Repair Kit
		EHPT-84E	EHPT-710
		EHPT-84F	EHPT-711
		EHPT-84H-1	EHPT-713
		EHPT-84I-1	EHPT-714
89 Series		Valve	Repair Kit
	89i w/ custom seats use EH-129C	EH-89D	EH-124-1
		EH-89E	EH-125-1
		EH-89F	EH-126-1
		EH-89G	EH-127-1
		EH-89H	EH-128-1
		EH-89i	EH-129-1
		EH89J	210-0005-1
		EH-89K	210-0006-1
78 Series		Valve	Repair Kit
		EH3-78D	N/A
		EHPT-78E	EHPT-710
		EHPT-78F	EHPT-711
		EHPT-78H	EHPT-713
		EHPT-78I	EHPT-714

88 Series		Valve	Repair Kit	
	Ta-Chen	88B	200-0001	210-0014
		88C	200-0002	210-0014
		88D	200-0003	210-0014
		88E	200-0004	210-0015
		88F	200-0005	210-0016
		88G	200-0006	N/A
		88H	200-0007	210-0031
		88i	200-0008	210-0032
Square stem & full U-Bend Bracket				
88 Series		Valve	Repair Kit	
	Apollo	EH3-88B	N/A	
		EH3-88C	N/A	
		EH3-88D	N/A	
		EHPT-88E	EHPT-710	
		EHPT-88F	EHPT-711	
		EHPT-88H	EHPT-713	
		EHPT-88i	EHPT-714	
Double D Stem/L shaped bracket				
92 Series		Valve	Repair Kit	
		EH-92FM	100200	
99 Series		Valve	Repair Kit	
	disc Banjo	EHPT-99F	EHPT-701-1	
	disc Banjo	EHPT-99H	EHPT-702-1	
	Greenleaf 99K	EH2-1180	EH2-1181-1	
S Series		Valve	Repair Kit	
		S2B	210-0038	
		S2C	210-0038	
		S4F	SVF-RKT	
		S4H	SVF-RKT	
		S6F	SVF-RKT	
		S6H	SVF-RKT	
		S7F	SVF-RKT	
		S7H	SVF-RKT	
		S8B	210-0029	
		S8C	210-0029	
		S8F	210-0036	
MX Series		Valve	Repair Kit	
		M2HMO	210-0024	
		M4H22	210-0024	
		T4H22	210-0024	
		FM2i22	210-0025	
		M2i22	210-0025	
		M4i22	210-0025	
		T4i2B	210-0025	
		T6i2B	210-0025	
		FM2K22	210-0026	
		M2K22	210-0026	
		M4K2B	210-0026	
		M7K2B	210-0026	
TX2 Series		Valve	Repair Kit	
		½"	210-0030	
QX Series		Valve	Repair Kit	
		¾" - 1"	QX4-RKT	
		1¼" - 1½"	QX5-RKT	
		2"	QX8-RKT	

Rev. 1/20/2023

# AUTHORIZED REPAIR CENTERS

## WARRANTY REPAIRS ONLY

**AG EXPRESS**  
ELECTRONICS

308 Claude Road  
Grand Island, NE 68803  
(308) 381-2905

 Reference RMA Number Given by KZValve

## NON-WARRANTY REPAIRS (ANY 3 LOCATIONS)

**AG EXPRESS**  
ELECTRONICS

308 Claude Road  
Grand Island, NE 68803  
(308) 381-2905

**AG EXPRESS**  
ELECTRONICS

6280 NE 14<sup>TH</sup> Street  
Des Moines, IA 50313  
(515) 289-2746

**AG EXPRESS**  
ELECTRONICS

106 West Main Street  
Sulphur Springs, IN 47388  
(765) 533-4809

## CANADIAN REPAIR CENTER

**FARMTRONICS**

380 Henderson Drive  
Regina, SK Canada S4N 5W9  
(800) 667-8001

# TERMS AND CONDITIONS OF SALE

## TERMS

Our standard terms are net 30 days. Shipments will be billed at the prices in effect at the time of shipment.

All new accounts are required to complete, sign and return a confidential credit application and receive credit approval prior to shipment. This credit application may be obtained from us and faxed to 402-944-2402 or emailed to your point-of-contact at **KZValve**.

## CONDITIONS OF SALE

All sales made by **KZValve** are subject to these terms and conditions unless otherwise agreed to in writing by a duly authorized representative of **KZValve**, Inc. In all cases of conflict between these terms and conditions and the requirements of the purchase order, these terms and conditions shall prevail.

## ORDERING

Orders may be submitted using the following:

**EMAIL:** [kzvsales@idexcorp.com](mailto:kzvsales@idexcorp.com)

**PHONE:** 800-288-1112

**FAX:** 402-944-2402

To ensure proper shipment, please order by complete part number and description. All prices are in U.S. dollars, FOB **KZValve**, Greenwood, NE. Standard lead time is two weeks (10 business days).

Returned items will be accepted on a case-by-case basis. If **KZValve** agrees to return stocked items, they will be subject to a 20% restocking fee.

## PRICES

Prices, discounts, quotations and specifications are subject to change without notice and will be applied as in effect at time of shipment.

## SHIPMENTS

All shipments are FOB, **KZValve**, Greenwood, NE, USA. If specified on the order, we will make every attempt to follow the routing requested for shipment if it is available to us. Otherwise, routing is subject to our choice. Collect small package shipments will be charged a \$5.00 handling fee.

## PRODUCT SHORTAGES

All claims for product shortages must be made within seven (7) days after receipt of merchandise. Claims for product shortages must be received at **KZValve**. Please call 402-944-2767 or fax your claim to Customer Service at 402-944-2402.

## FREIGHT CLAIMS or DAMAGED SHIPMENTS

If any shipment is received in damaged condition, your claim must be filed with the delivering carrier and noted on the freight bill before you accept your merchandise.

## TAXES

Any Federal, sales, excise or similar tax for which we may be liable on any sale will be charged to and paid by the buyer. Buyer is responsible for furnishing a resale certificate prior to purchase.

# WARRANTY AND RETURNS

## Limited Warranty

**KZValve** will warranty all new actuators sold against defective material and/or workmanship under normal use, maintenance, and service for a period of ONE YEAR after the date of purchase.

This warranty coverage applies only to the original customer and is non-transferrable. This warranty is effective as long as the goods are used for the normal purposes for which they are intended and are used in conformance with industry established engineering, installation, operating, and maintenance specifications, recommendations and instructions.

Any defective part will be repaired or replaced at **KZValve's** discretion, at no charge, providing the customer returns the defective unit to **KZValve** (pre-paid) along with a factory issued Return Authorization Number and briefly describes the problem.

This warranty does not apply to valves to which the actuator is mounted to unless the valve leaks or is otherwise defective when new. This warranty does not apply if the product has been damaged by improper installation, neglect, accident, misuse, or as a result of service or modification by other than an authorized **KZValve** service center.

All costs of removing and re-installing the product are the customer's responsibility. **KZValve** will not pay for shipping charges incurred in sending the defective product from the customer to **KZValve**, but will pay for standard ground FedEx return shipment.

This warranty is expressly in lieu of all other warranties, expressed or implied, and all other obligations or liabilities on the part of **KZValve**. In no event shall **KZValve** be liable for any direct, incidental, or consequential damages of any nature, or losses or expenses resulting from any defective product or the use of any product.

The repair or replacement of a product is the customer's exclusive remedy. By its acceptance of the goods, customer hereby specifically and expressly waives all other liability or obligation of any kind or character of company, including

without limitation liability predicated upon strict liability or tort, and all damages and losses as a result thereof, including but not limited to all known, unknown, foreseeable, unforeseeable, absolute, contingent, liquidated, non-liquidated, compensatory, general, special, consequential, incidental, or punitive damages, and with respect to the goods, their return, repair, restoration and replacement. With respect to such waiver, customer hereby waives all statutory, common law rights, defenses and limitations which would seek to limit application of the above general release.

This warranty gives the customer specific legal rights, and the customer may also have other legal rights which vary from state to state.

**New product or product less than one year old returned for warranty consideration must be accompanied by a Return Authorization Number available only from KZValve. To obtain an authorization number, phone: (402) 944-2767.**

## ENVIRONMENTAL REGULATIONS

Product sent to **KZValve** or to any of **KZValve's** Authorized Repair Centers for repair must be thoroughly cleaned, decontaminated, and dried per OSHA Regulations. Product received that has not been decontaminated will not be returned. MDS and Decontamination Statement are required. To receive a copy of this form, call 402-944-2767.

## Non-Warranty Repairs

Product needing repair that is over one year old or that does not meet the terms of our Limited Warranty should be returned to a **KZValve** Authorized Repair Center. **KZValve** Authorized Repair Centers are listed on page 136.

When returning product, please include company name, contact person, address, telephone number and a short description of the problem you are having. MSDS must be included for all chemicals in contact with the equipment.



A Unit of IDEX Corporation