

## Condensed Product Guide

define  
design

deliver



## HAYWARD® FLOW CONTROL – DEFINE, DESIGN, DELIVER...

For more than 50 years, Hayward Flow Control's thermoplastic fluid handling products and solutions have proven to excel in the harshest environments. Thousands of customers worldwide have installed our products into aggressive and corrosive systems, as well as delicate life support systems where the strictest chemical balance is required. We understand the specific demands of industrial piping and are committed to offering advantageous products for your application that will keep your systems working.

Hayward Flow Control products carry an industry-leading, full two-year warranty. As an ISO 9001:2008 certified company, we strive for the highest quality product possible for use in a wide range of demanding applications.

### HAYWARD THERMOPLASTIC VALVES, ACTUATION AND CONTROLS

Hayward manufactures flow control products in thermoplastic materials including PVC, CPVC, PP and GFPP. These materials are non-conductors and are immune to electrolytic and galvanic corrosion. Equally important, they contain nothing to leach out and contaminate sensitive fluids or delicate ecosystems.

In addition, Hayward offers one of the industry's largest range of pneumatic and electric actuators and accessories, allowing you the ability to control your systems with one partner. Starting with simple actuated ball valves up to 24" butterfly valves with proportional control, local control station technology and battery backups, Hayward continues to provide customers with an industry-leading choice of valve actuation packages to satisfy the most demanding application requirements.

### HAYWARD'S FAMOUS STRAINERS AND FILTERS

Hayward's industry leading Basket and Y-Strainers are designed to protect pipeline system components and life maintenance facilities from dirt and debris while allowing process media to flow freely. Simplex and duplex strainers are manufactured in PVC, CPVC, GFPP and clear Eastar, and are available with thermoplastic, stainless steel or alloy, perf and mesh lined baskets in a wide range of sizes. Y-Strainers are offered in PVC, clear PVC or CPVC, are compact and lightweight, and have FPM or EPDM o-ring seals and perforated thermoplastic screens.

Unlike traditional metal and plastic filters, Hayward's new patent pending FLV Series Bag Filter features a one-piece injection molded thermoplastic glass filled polypropylene body with true union end connections, ergonomic cover design with liquid displacing dome, vent valve and drain plug. Available in simplex through quadplex assembly, the FLV Series can also accommodate a single 7" cartridge or up to 5 2-1/2" cartridges.

### HAYWARD CORROSION RESISTANT THERMOPLASTIC PUMPS

To complete our product range of thermoplastic solutions, Hayward's pumps perform reliably in systems pumping water, corrosive liquids and ultra pure fluids. Choose from centrifugal, vertical, horizontal end suction, immersible and magnetic drive pumps with motors rated from 1/15 to 5 HP, and flow rates from 5 to over 140 GPM and TDHs of up to 141 feet.



BACKED BY HAYWARD FLOW CONTROL'S EXCLUSIVE TWO YEAR WARRANTY

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## TB Series True Union Ball Valves

1/4" TO 3/8" PVC AND 1/2" TO 2" PVC, CPVC AND GFPP

### KEY FEATURES

- PVC, CPVC and GFPP
- Full Port Design
- Reversible PTFE Seats
- Double O-Ring Stem Seals
- Easily Actuated
- NSF/ANSI 61 Listed (PVC and CPVC)

### OPTIONS

- Lockouts Available
- 2" Square Operating Nut
- Stem Extensions
- Pneumatic and Electric Actuators
- Spring Return Handle



**Now Available  
in Platinum GFPP!**

PVC and CPVC

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/4" – 3/8" (DN8 – DN10)	PVC	Socket and Threaded	FPM or EPDM	250 PSI @ 70°F Non-Shock
1/2" – 2" (DN15 – DN50)	PVC or CPVC	Socket and Threaded or Flanged*		
	GFPP	Threaded or Flanged		150 PSI @ 70°F Non-Shock

\* All flanged valves are rated to 150 PSI @ 70°F Non-Shock

## TB Series True Union Ball Valves

2-1/2" TO 6" PVC AND CPVC

### KEY FEATURES

- PVC and CPVC
- Full Port Design Through 4"
- Reversible PTFE Seats
- Double O-Ring Stem Seals
- Easily Actuated
- NSF/ANSI 61 Listed (2-1/2"-4")
- Actuator-Ready Design

### OPTIONS

- Pneumatic and Electric Actuators
- Lockouts Available
- Gear Operator
- 2" Square Operating Nut
- Stem Extensions
- Spring Return Handle

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
2-1/2" – 4" (DN63 – DN100)	PVC or CPVC	Socket, Threaded or Flanged**	FPM or EPDM	235 PSI @ 70°F Non-Shock
6" * (DN150)		Flanged		

\* 4" valve venturied to 6"      \*\* All flanged valves are rated to 150 PSI @ 70°F Non-Shock



2-1/2" – 4"



## TBZ Series "Z-Ball" True Union Ball Valves

1/2" TO 6" PVC AND CPVC

### KEY FEATURES

- PVC and CPVC
- Full Port Design
- Reversible PTFE Seats
- Double O-Ring Stem Seals
- For Sodium Hypochlorite Applications
- Adjustable Seat Retainer

### OPTIONS

- Lockouts Available
- Stem Extensions
- Spring Return Handle
- Pneumatic and Electric Actuators
- 2" Square Operating Nut

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 2" (DN15 – DN50)	PVC or CPVC	Socket and Threaded or Flanged**	FPM	250 PSI @ 70°F Non-Shock
2-1/2" – 4" (DN63 – DN100)		Socket, Threaded or Flanged**		235 PSI @ 70°F Non-Shock
6" * (DN150)		Flanged		150 PSI @ 70°F Non-Shock

\* 4" valve venturied to 6"

\*\* All flanged valves are rated to 150 PSI @ 70°F Non-Shock

## CV Series Profile2™ Proportional Control Ball Valves

1/2" TO 6" PVC AND CPVC

### KEY FEATURES

- PVC and CPVC
- Reversible Seats
- True Union Design
- Manual or Actuated
- Precise Flow Control

### APPLICATIONS

- Fill Station Lines
- Lateral Take-Off Line Flow Control
- Flow Reduction in Systems with Oversized Pumps
- Control Flow from Tanks



### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2", 3/4", 1" and 2" (DN15, DN20, DN25 and DN50)	PVC or CPVC	Socket and Threaded or Flanged**	FPM or EPDM	250 PSI @ 70°F Non-Shock
2-1/2" – 4" (DN63 – DN100)		Socket, Threaded or Flanged**		235 PSI @ 70°F Non-Shock
6" * (DN150)		Flanged		150 PSI @ 70°F Non-Shock

\* 4" valve venturied to 6"

\*\* All flanged valves are rated to 150 PSI @ 70°F Non-Shock



## TW Series Three-Way True Union Ball Valves

1/2" TO 6" PVC AND CPVC

### KEY FEATURES

- PVC and CPVC
- Position Indicator
- Easily Actuated
- PTFE Seats
- FPM or EPDM O-Rings
- Double O-Ring Stem Seal

### OPTIONS

- Lockouts Available
- Pneumatic and Electric Actuators
- Cross-Flow Ball
- NT Ball
- TP Ball

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 4" (DN15 – DN100)	PVC or CPVC	Socket, Threaded or Flanged	FPM or EPDM	150 PSI @ 70°F Non-Shock
6"* (DN150)		Flanged		

\* 4" valve venturied to 6"

## LA Series Lateral Three-Way True Union Ball Valves

1/2" TO 6" PVC AND CPVC

### KEY FEATURES

- PVC and CPVC
- PTFE Seats
- FPM or EPDM O-Rings
- Double O-Ring Stem Seal
- Simplifies Lateral Connections
- Replaces Valve/Tee Connection Combinations
- Quick, Easy to Install
- Replacement for Zero Dead-Leg Valves

### OPTIONS

- Lockouts Available
- Pneumatic and Electric Actuators



### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 4" (DN15 – DN100)	PVC or CPVC	Socket and Threaded or Flanged	FPM or EPDM	150 PSI @ 70°F Non-Shock
6"* (DN150)		Flanged		

\* 4" valve venturied to 6"

## QV Series QIC2™ Compact Ball Valves

1/2" TO 2" PVC

### KEY FEATURES

- Gray PVC
- Rugged, Compact and Lightweight Design
- Full Port Design
- PTFE Seats
- EPDM O-Ring Seals
- Low Torque, Easy 1/4-Turn Operation
- No Integral Parts to Replace
- Perfect for OEM Requirements



### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 2" (DN15 – DN50)	PVC	Socket and Threaded	EPDM	150 PSI @ 70°F Non-Shock

## Valve-Safe Lockouts

FOR BALL VALVES UP TO 6"

### KEY FEATURES (A)

- For Ball Valves up to 6"
- Latches and Lockable in Open/Close Position
- Simple Trigger Mechanical Design
- Can Use with Lockout/Tagout Hasp

### KEY FEATURES (B)

- PP Housing Material
- For All Ball Valves up to 6"
- Use with up to 3 Padlocks



A



B



## TBB Series Commercial True Union Ball Valves

1/2" TO 4" PVC, CPVC, PP AND PVDF

### KEY FEATURES

- PVC, CPVC, PP and PVDF
- Full Port Design
- FPM or EPDM Seals
- PTFE Seats
- Double O-Ring Stem Seals
- Adjustable Seat Retainer

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 4" (DN15 – DN100)	PVC or CPVC	Socket, Threaded or Flanged*	FPM or EPDM	225 PSI @ 70°F Non-Shock
	PP	Threaded or Flanged	FPM	150 PSI @ 70°F Non-Shock
	PVDF			

\* All flanged valves are rated to 150 PSI @ 70°F Non-Shock

## QTA Series Commercial True Union Compact Ball Valves

1/2" TO 2" PVC

### KEY FEATURES

- Gray and White PVC
- True Union End Connections
- Rated at a Full 150 PSI
- Santoprene® (TPV) Seats
- EPDM O-Ring Seals
- No Internal Parts to Replace
- Low Torque Easy 1/4-Turn Operation
- Perfect for OEM Applications
- Socket and Threaded Connections



### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 2" (DN15 – DN50)	PVC (Gray or White)	Socket and Threaded	EPDM	150 PSI @ 70°F Non-Shock

## QVC Series Commercial Compact Ball Valves

1/2" TO 4" PVC

### KEY FEATURES

- Gray and White PVC
- Compact and Lightweight Design
- Low Torque Easy 1/4-Turn Operation
- Santoprene® (TPV) Seats
- EPDM O-Ring Seals
- No Internal Parts to Replace

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 4" (DN15 – DN100)	PVC (Gray or White)	Socket or Threaded	EPDM	150 PSI @ 70°F Non-Shock





## SW Series Swing Check Valves

3" TO 6" PVC, CPVC AND GFPP AND 8" PVC AND GFPP



### KEY FEATURES

- PVC, CPVC and GFPP
- High Temperature/ Pressure Ratings
- Two-In-One Seal Design
- Built-In Flange Seals
- Two Drain Ports
- Self-Aligning Clapper Seats
- High Cv Rating and Full Flow Design

### OPTIONS

- Counterweight for Closing Assistance

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
3" – 6" (DN80 – DN150)	PVC, CPVC or GFPP	Flanged	FPM or EPDM	150 PSI @ 70°F Non-Shock
8" (DN200)	PVC or GFPP			

## WCV Series Full Pattern Wafer Check Valves

2" TO 8" PVC AND CPVC (GFPP COMING SOON)

### KEY FEATURES

- Robust Full Pattern Body
- PVC and CPVC (GFPP Coming Soon)
- No Special Spacers or Flanges Required
- High Cv Rating Equal to Metal Check Valves, Saves on Energy and Pump Wear
- FPM or EPDM Gasket and Face Seal
- One-Piece Disc and Shaft Design
- Designed for ANSI150 and PN10 Flanges

### OPTIONS

- 316 Stainless Steel or Hastelloy® Disc Spring



### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	O-RING	SPRING	PRESSURE RATING
2" – 8"	PVC and CPVC (GFPP Coming Soon)	Wafer	FPM or EPDM	316 SS, Hastelloy®	150 PSI @ 70°F Non-Shock

## WC Series Wafer Check Valves

2" TO 8" PVDF AND  
10" TO 20" PVC, PP AND PVDF

### KEY FEATURES

- PVC, PP and PVDF Body and Disc
- FPM, EPDM or PTFE O-Ring Seats
- Compact and Lightweight
- Easy Installation
- Vertical or Horizontal Operation

### OPTIONS

- Spacers
- Stainless Steel or Hastelloy® Disc Springs\*



\* Valve shown with spring option

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	O-RING	SPRING	PRESSURE RATING
2" – 6" (DN50 – DN150)	PVDF	Wafer	FPM, EPDM or PTFE*	316 SS, Hastelloy®	150 PSI @ 70°F Non-Shock
8" (DN200)					100 PSI @ 70°F Non-Shock
10" – 12" (DN250 – DN300)	90 PSI @ 70°F Non-Shock				
14" – 16" (DN350 – DN400)	PVC, PP or PVDF			Consult with Factory	
20" (DN500)	NA				

\* PTFE encapsulated FPM

# TC Series True Union Ball Check Valves

1/4" TO 3/8" PVC, 1/2" TO 2" PVC, CPVC AND PP AND 2-1/2" TO 6" PVC AND CPVC



## KEY FEATURES

- PVC, CPVC and PP
- For Horizontal or Vertical Installation
- 1/2" to 6" are Sure Block Design
- Square Cut Seat for Positive Sealing
- Seats with Minimum Back Pressure
- 1/4" and 3/8" are Trim Check Design

## OPTIONS

- Foot Valve Screens



1/4" - 4"  
PVC and CPVC

## SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/4" - 3/8" * (DN8 - DN10)	PVC	Socket or Threaded	FPM	150 PSI @ 70°F Non-Shock
1/2" - 2" (DN15 - DN50)	PVC or CPVC	Socket and Threaded or Flanged**	FPM or EPDM	235 PSI @ 70°F Non-Shock
	PP**	Threaded		
2-1/2" - 4" (DN63 - DN100)	PVC or CPVC	Socket, Threaded or Flanged	FPM or EPDM	150 PSI @ 70°F Non-Shock
6" *** (DN150)		Flanged		

\* Trim Checks      \*\* 2" PP is rated to 100 PSI @ 70°F Non-Shock      \*\*\* 4" valve venturied to 6"  
\*\*\*\* All flanged valves are rated to 150 PSI @ 70°F Non-Shock

# YC Series Y-Check Valves

1/2" TO 4" PVC AND CPVC



## KEY FEATURES

- PVC and CPVC
- Full Flow Design
- Minimum Pressure Drop
- PVC Coil to Guide Piston to a Positive Seat
- Minimal Back Pressure Required to Seat Piston

## OPTIONS

- Drilled Cap for Easy Drainage
- True Union End Connections



## SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" - 4" (DN15 - DN100)	PVC or CPVC	Socket, Threaded, Flanged or True Union	FPM or EPDM	150 PSI @ 70°F Non-Shock

# SLC Series Spring-Loaded Y-Check Valves

1/2" TO 4" PVC

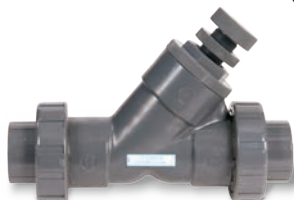


## KEY FEATURES

- PVC
- Full Flow Design
- Closes with No Back Pressure
- Adjustable - Opens From 2 to 15 PSI
- Easy Maintenance
- Opens in Any Position

## OPTIONS

- True Union End Connections



## SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" - 4" (DN15 - DN100)	PVC	Socket, Threaded or True Union	FPM or EPDM	150 PSI @ 70°F Non-Shock

## BY Series Butterfly Valves

1-1/2" TO 8" PVC, CPVC AND GFPP AND 10" TO 12" GFPP



### KEY FEATURES

- PVC, CPVC and GFPP Bodies and Discs
- FPM, EPDM and Nitrile Seat Materials
- Meets ANSI Steel Shaft B16.10 Face-to-Face Dimensions\*
- Fully Supported Flange Bolt Holes
- V-Notch Seal of Liner to Body
- Seven-Position Lever Handle or Gear Box Operator\*\*
- 316 Grade Stainless Steel Shaft
- Dead End Service Fully Rated

### OPTIONS

- Stem Extensions
- Gear Operators
- Pneumatic or Electric Actuators
- Stainless Steel Lugs
- 2" Square Operating Nut
- Titanium or Hastelloy® Shaft
- Chain Operator for Gear Box

\* Except 10"

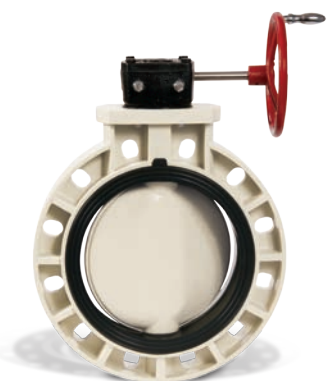
\*\* Typical operation: Lever up to 6"; Lever or gear at 8"; Gear only 10" and up

### SELECTION CHART

SIZE	BODY MATERIAL	DISC MATERIAL	LINERS	PRESSURE RATING
1-1/2" – 8" (DN40 – DN200)	PVC, CPVC or GFPP	PVC, CPVC or GFPP	FPM, EPDM or Nitrile	150 PSI @ 70°F Non-Shock
10" – 12" (DN250 – DN300)	GFPP	PVC or GFPP		

## BYB Series Large Diameter Butterfly Valves

10" TO 24" PVC, CPVC, PP AND PVDF



### KEY FEATURES

- PVC, CPVC, PP and PVDF Bodies
- CPVC, PP and PVDF Discs
- Heavy Duty Gear Operator
- 410 Grade Stainless Steel Stem
- Choice of FPM, EPDM or Nitrile Liners

### OPTIONS

- Pneumatic or Electric Actuators
- Stem Extensions

### SELECTION CHART

SIZE	BODY MATERIAL	DISC MATERIAL	LINERS	PRESSURE RATING
10" (DN250)				150 PSI @ 70°F Non-Shock
12" (DN300)				100 PSI @ 70°F Non-Shock
14" – 16" (DN350 – DN400)	PVC, CPVC, PP or PVDF	CPVC, PP or PVDF	FPM, EPDM or Nitrile	86 PSI @ 70°F Non-Shock
18" (DN450)				72 PSI @ 70°F Non-Shock
20" – 24" (DN500 – DN600)				51 PSI @ 70°F Non-Shock

## BYCN/BYCS Series Butterfly Valves

2" TO 8" PVC



### KEY FEATURES

- Distinctive Ergonomic Handle with Lockout Feature
- Wafer Body Design
- Fits ANSI 125 or PN10 Flange Patterns
- PVC Body with PVC Disc

- One-Piece Stainless Steel Stem 316 Grade for BYCN/410 Grade for BYCS
- ISO 5211 Mounting Pad
- NSF/ANSI-61 Listed (BYCN 3" – 8")

### OPTIONS

- Gear Operators
- Pneumatic or Electric Actuators

### SELECTION CHART

SERIES	NSF RATED	SIZE	BODY MATERIAL	DISC MATERIAL	STEM MATERIAL	LINERS	HANDLE COLOR	PRESSURE RATING
BYCN	Sizes 3" – 8"	2" – 8" (DN50 – DN200)	PVC	PVC	316 Grade Stainless Steel	EPDM	Blue	150 PSI @ 70°F Non-Shock
BYCS	N/A						Red	

# DAB Series True Union Diaphragm Valves

1/2" TO 2" PVC, CPVC, PP AND PVDF



## KEY FEATURES

- PVC, CPVC, PP and PVDF
- Position Indicator
- Sure-Grip Handwheel
- Choice of FPM, EPDM or PTFE Diaphragms\*

## OPTIONS

- Electric or Pneumatic Actuation
- PVDF Vapor Barrier\*\*

\* All PTFE diaphragms are EPDM backed  
 \*\* PVDF Vapor Barrier available with EPDM and PTFE diaphragm only

## SELECTION CHART

SIZE	MATERIAL	END CONNECTION	DIAPHRAGM	SEALS	PRESSURE RATING
1/2" – 2" (DN15 – DN50)	PVC or CPVC	Socket and Threaded	FPM, EPDM or PTFE*	FPM or EPDM	150 PSI @ 70°F Non-Shock
	PP or PVDF	Threaded			

\* EPDM and PTFE diaphragms are available with a PVDF Vapor Barrier

# DAB Series Flanged Diaphragm Valves

1/2" TO 4" PVC, CPVC, PP AND PVDF, 6" PVC, PP, PVDF, 8" PP AND PVDF AND 10" PP

## KEY FEATURES

- PVC, CPVC, PP and PVDF
- Position Indicator
- Sure-Grip Handwheel
- Choice of FPM, EPDM or PTFE Diaphragms\*

## OPTIONS

- Pneumatic or Electric Actuation to 4"
- Over 4" Actuation, Consult Factory
- PVDF Vapor Barrier\*\*

\* All PTFE diaphragms are EPDM backed  
 \*\* PVDF Vapor Barrier available with EPDM and PTFE diaphragm only

## SELECTION CHART

SIZE	MATERIAL	END CONNECTION	DIAPHRAGM	PRESSURE RATING
1/2" – 4" (DN15 – DN100)	PVC	Flanged	FPM, EPDM or PTFE*	150 PSI @ 70°F Non-Shock
6" (DN150)				75 PSI @ 70°F Non-Shock
1/2" – 4" (DN15 – DN100)	CPVC			150 PSI @ 70°F Non-Shock
1/2" – 4" (DN15 – DN100)	PP			150 PSI @ 70°F Non-Shock
6" – 10" (DN150 – DN250)				75 PSI @ 70°F Non-Shock
1/2" – 4" (DN15 – DN100)	PVDF			PTFE*
6" – 8" (DN150 – DN250)		75 PSI @ 70°F Non-Shock		

\* EPDM and PTFE diaphragms are available with a PVDF Vapor Barrier



## RV Series Pressure Relief Valves

1/2" TO 2" PVC AND CPVC



### KEY FEATURES

- PVC and CPVC
- Hand Adjustable, No Tools Needed
- Integrally Molded Threaded Gauge Port
- Pressure Relief from 5 PSI to 75 PSI

### OPTIONS

- 0 to 30 PSI Gauge
- 0 to 60 PSI Gauge
- 0 to 160 PSI Gauge
- Gauge Guards
- 2 to 20 PSI for 1-1/2" to 2" with Low Pressure Spring
- Flanged Ends

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 2" (DN15 – DN50)	PVC or CPVC	Threaded or Flanged	FPM or EPDM	150 PSI @ 70°F Non-Shock

## PR Series Pressure Regulator Valves

1/4" TO 1-1/2" PVC AND CPVC



### KEY FEATURES

- PVC and CPVC
- Hand Adjustable, No Tools Needed
- Integrally Molded Threaded Gauge Port
- Regulates from 5 to 75 PSI
- Prevents Downstream Pressure from Exceeding the Set Pressure

### OPTIONS

- 0 to 30 PSI Gauge
- 0 to 60 PSI Gauge
- 0 to 160 PSI Gauge
- Gauge Guards
- Flanged Ends

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE SETTING	PRESSURE RATING
1/4" – 1-1/2" (DN8 – DN40)	PVC or CPVC	Threaded or Flanged	FPM	5 to 75 PSI	150 PSI @ 70°F Non-Shock

## AV Series Angle Globe Valves

1/4" TO 2" PVC



### KEY FEATURES

- PVC
- Space Saving 90° Body
- Panel Mount Lugs on 1/4" Size
- Fine Pitch Stem Threads for Precision Adjustment
- Reliable Globe Valve Design
- Perfect for Throttling and Changing Flow Direction

### OPTIONS

- Flanged Ends

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/4" – 2" (DN8 – DN50)	PVC	Threaded or Flanged	FPM	150 PSI @ 70°F Non-Shock

# NVA Series Needle Valves

1/4" TO 1/2" PVC AND GFPP



## KEY FEATURES

- Available in PVC and GFPP
- Integrated Stem/PTFE Seat Design
- Flanges for Panel Mounting
- NPT Threaded Ends
- Accurate Flow Control
- Fine Pitch Stem Threads for Precise Adjustment
- Adjust Flow Rates Down to Drops per Minute
- Ideal for Metering Flow
- Patent Pending

## SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/4" - 1/2" (DN8 - DN15)	PVC or GFPP	Threaded	FPM	150 PSI @ 70°F Non-Shock

# LC Series Universal Stopcock™

1/4" PVC

## SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/4" (DN8)	PVC	FPT x FPT FPT x MPT FPT x Hose MPT x MPT MPT x Hose Hose x Hose	EPDM	150 PSI @ 70°F Non-Shock

FPT = female pipe thread, MPT = male pipe thread

## KEY FEATURES

- PVC
- Six End Connections in One Package
- EPDM Seat and Seals
- Hex Wrench Included for End Connection Installation
- NSF/ANSI 61 Listed



# SV Series True Union Solenoid Valves

1/4" TO 1" PVC AND CPVC



## KEY FEATURES

- PVC and CPVC
- Continuous or 100% Duty Applications
- Corrosion-Resistant Polyester Coil
- No Pressure Differential Required for Operation
- Both 1/2" Conduit or SJ-Type Cord Electrical Connection
- 110 VAC Standard

## OPTIONS

- 12 VAC, 24 VAC, 220 VAC, 12 VDC, 24 VDC

## SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/4" 1/2" 3/4" 1" (DN8 - DN25)	PVC or CPVC	Socket and Threaded	FPM or EPDM	150 PSI @ 70°F Non-Shock

## OPERATING PARAMETERS

For optimum valve performance, inlet pressure must not exceed 120 PSI. Flow velocity must not exceed 5 ft. per second.

## EA Series Automated True Union Ball Valves

1/2" TO 2" PVC AND CPVC



### VALVE FEATURES

- PVC and CPVC
- EPDM Seals
- PTFE Seats
- Full Port Design
- Fully Serviceable
- Double O-Ring Stem Seals

### ACTUATOR FEATURES

- UL/CSA Listed Motor
- Thermoplastic NEMA 4/4X Enclosure
- 2.5 Second, 90° Cycle Time
- Thermal Overload Protection
- Permanently Lubricated Gear Train
- Actuator Brake
- No Need for Manual Adjustments
- Blind Leads Connection
- Standard 120 VAC
- Unidirectional, Not Reversing

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	VALVE PRESSURE RATING
1/2" – 2" (DN15 – DN50)	PVC or CPVC	Socket and Threaded	EPDM	250 PSI @ 70°F Non-Shock

## EAU Series Automated True Union Ball Valves

1/2" TO 2" PVC AND CPVC



### VALVE FEATURES

- PVC and CPVC
- FPM or EPDM Seals
- PTFE Seats
- Full Port Design
- Fully Serviceable
- Double O-Ring Stem Seals

### ACTUATOR FEATURES

- UL/CSA Listed Motor
- Thermoplastic NEMA 4/4X Enclosure
- 2.5 Second, 90° Cycle Time
- Permanently Lubricated Gear Train
- Actuator Brake
- 90 or 180° Operation
- Unidirectional, Not Reversing
- Terminal Block Connections
- Standard 120 VAC
- End of Travel Dry Contact Limit Switch
- Thermal Overload Protection
- Lightweight, Compact and Inexpensive

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	VALVE PRESSURE RATING
1/2" – 2" (DN15 – DN50)	PVC or CPVC	Socket and Threaded	FPM or EPDM	250 PSI @ 70°F Non-Shock

## PM Series Automated True Union Ball Valves

1/2" TO 2" PVC AND CPVC



### VALVE FEATURES

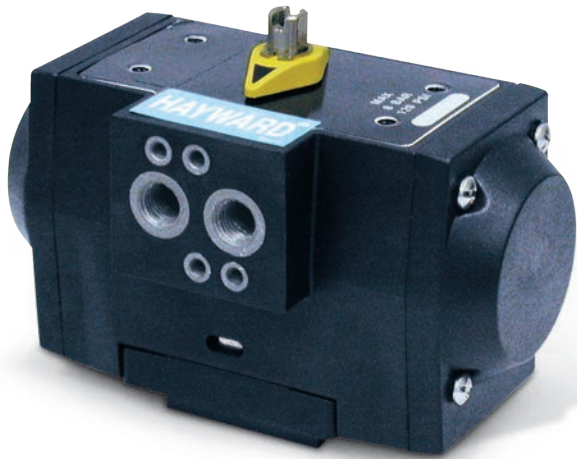
- PVC and CPVC
- FPM or EPDM Seals
- PTFE Seats
- Full Port Design
- Fully Serviceable
- Double O-Ring Stem Seals

### ACTUATOR FEATURES

- Corrosion-Resistant Thermoplastic Housing
- Permanently Lubricated Gear Train
- Manual Override
- Two-Piston Rack and Pinion Design
- Namur-Style Mounting
- Position Indicator
- Lightweight
- Air-to-Air (Double Acting) or Spring Return

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	VALVE PRESSURE RATING
1/2" – 2" (DN15 – DN50)	PVC or CPVC	Socket and Threaded	FPM or EPDM	250 PSI @ 70°F Non-Shock



## PMD/PMS Series Pneumatic Actuators

FOR BALL VALVES UP TO 4"

### KEY FEATURES

- Corrosion-Resistant Thermoplastic Housing
- Permanently Lubricated Gear Train
- Manual Override
- Two-Piston Rack and Pinion Design
- Namur-Style Mounting
- Position Indicator
- Lightweight
- ISO 5211 Mounting Base

### OPTIONS

- PMD Double Acting Air-to-Open and Close
- PMS Air-to-Spring Fail-Safe Operation
- Solenoid Valves with Optional Voltage
- Auxiliary Limit Switch
- Cycle Speed Controls

### SPECIFICATIONS

HOUSING:	..... Polyamide
OUTPUT SHAFT:	..... Stainless Steel
MINIMUM AIR PRESSURE:	..... 80 PSI
MAXIMUM AIR PRESSURE:	..... 120 PSI
SEALS:	..... Nitrile
CYCLE TIME:	..... Half Second, Typical
AIR PORT CONNECTIONS:	..... 1/4" NPT

## GFPP PMD4/PMS4 Series Pneumatic Actuators

FOR BALL AND BUTTERFLY VALVES UP TO 4"

### KEY FEATURES

- Ideal for Corrosive Atmosphere and Environments
- Available in Double Acting and Spring Return Designs (Butterfly Valves up to 3")
- Corrosion-Resistant GFPP Housing
- Anodized Aluminum Two-Piston Rack and Stainless Steel Pinion
- Manual Override (Double Acting Standard Only)
- Position Indicator
- Permanent Lubrication
- Lightweight – Easy for Installation
- Namur-Style Solenoid Mounting
- ISO 5211 Mounting Base
- Stainless Steel Fasteners
- Alternative Operating Media for 40 PSI to 120 PSI
- All Units are Marked for Traceability
- 100% Factory Tested

### OPTIONS

- Double Acting Air-to-Open and Close
- Solenoid Valves with Optional Voltages
- Auxiliary Limit Switch
- Cycle Speed Controls



### SPECIFICATIONS

HOUSING:	..... GFPP per ASTM D4101 Cell Class 85580
OUTPUT SHAFT:	..... 303 Stainless Steel per ASTM A314
SEALS:	..... Nitrile
MINIMUM AIR PRESSURE:	..... 80 PSI
MAXIMUM AIR PRESSURE:	..... 120 PSI
CYCLE TIME:	..... Half Second, Typical
AIR PORT CONNECTIONS:	..... 1/4" NPT
NAMUR MOUNTING:	..... VDI/VDE 3845
OPERATING TEMPERATURE RANGE:	..... -4°F to 176°F





## PCD/PCS Series Pneumatic Actuators

FOR BALL AND BUTTERFLY VALVES UP TO 24"

### KEY FEATURES

- For All Sizes of Ball and Butterfly Valves
- Four-Piston Rack and Pinion Design
- Manual Override
- Compact, Lightweight
- Position Indicator
- Namur-Style Solenoid Mounting
- Adjustable Travel Stops
- ISO 5211 Mounting Base

### OPTIONS

- PCD Double Acting Air-to-Open and Close
- PCS Spring Return Fail-Safe Operation
- Solenoid Valves
- Positioners
- Auxiliary Limit Switches
- Cycle Speed Controls

### SPECIFICATIONS

HOUSING:	Epoxy-Coated Aluminum
OUTPUT SHAFT:	Plated Steel
MINIMUM AIR PRESSURE:	80 PSI
MAXIMUM AIR PRESSURE:	120 PSI
CYCLE TIME:	Less Than One Second, Typical
AIR PORT CONNECTIONS:	1/4" NPT

## EAU Series Electric Actuators

FOR BALL VALVES UP TO 2"

### KEY FEATURES

- UL/CSA Listed Motor
- Thermoplastic NEMA 4/4X Enclosure
- 2.5 Second, 90° Cycle Time
- Permanently Lubricated Gear Train
- Actuator Brake
- 90 or 180° Operation
- Unidirectional, Not Reversing
- Terminal Block Connections
- Standard 120 VAC
- End of Travel Dry Contact Limit Switch
- Thermal Overload Protection
- Lightweight, Compact and Inexpensive

### OPTIONS

- Voltage Options of 12, 24 or 220 VAC and 12 or 24 VDC

### SPECIFICATIONS

HOUSING:	GFPP
OPERATION:	Unidirectional
CONDUIT SIZE:	1/2"
DUTY CYCLE:	25%
CYCLE TIMES:	2-1/2 Seconds, 90° Rotation; 5 Seconds, 180° Rotation
ENCLOSURE:	NEMA 4/4X
VOLTAGE:	120 VAC
THERMAL OVERLOAD PROTECTION MECHANICAL BRAKE MOTOR:	UL Listed
AUXILIARY LIMIT SWITCHES:	One



# EPZ Series On/Off Electric Actuators

FOR BALL VALVES UP TO 2"



## KEY FEATURES

- Ideal for Limited Space Applications
- Available in Two Sizes EPZ6 and EPZ15
- Superior Gear Design
- Lightweight Design
- On/Off Jog Control Capabilities
- ISO 5211 F03/F05 Mounting Pattern
- 8 point 14 mm Female Drive Socket
- Non-Spring Return
- Thermal Class F Motor Protection
- NEMA 4X/IP67 Rating
- Manual Override Including Lock-Out Functionality
- Override Tool Included
- Pilot Signal for Open and Closed Positions

## OPTIONS

- Power Supply Flexibility – 24 VAC, 120 VAC and 230 VAC

## SPECIFICATIONS

OPERATION:	Reversing
CONDUIT SIZE:	1/4" Sealed PF Conduit Gland Pre-Wired with 1 Meter Cable
DUTY CYCLE:	(EPZ6 and 15) 30% – 24V, 120V and 230V On/Off
CYCLE TIMES:	17 Seconds @ 60 Hz to 20 Seconds @ 50 Hz, Depending on Model
ENCLOSURE:	NEMA 4/4X/IP67
VOLTAGES:	24VAC, 120VAC and 230VAC
THERMAL OVERLOAD PROTECTION MECHANICAL BRAKE OVERRIDE:	Manual Override with Lockout Selector Switch
HOUSING:	Aluminum Alloy Electrostatic Coated

# EPM Series On/Off and Proportional Control Actuators

FOR BALL AND BUTTERFLY VALVES UP TO 24"



\* Manual Override Option (EPM6 and above) – Handwheel Shown

## KEY FEATURES

- Modular Design
- Superior Gear Design
- Data Logging and Diagnostics (Proportional Control Only)
- 4 Limit Switches (2 Auxiliary)
- Internal Low Power Heater
- NEMA 4/4X Enclosure
- Position Indicator
- Clutchless Manual Override
- Self-Locking Drive
- Permanently Lubricated
- Thermal Overload
- CE Listed and CSA Certified
- ISO 5211 Mounting Base

## OPTIONS\*

- Positioners
- Power Supply Flexibility – 3 Phase 2/230 VAC, 380 VAC or 460 VAC
- Extended Duty Motors
- Feedback Potentiometer
- Local Control Station

\* Not available on all models

## SPECIFICATIONS

OPERATION:	Reversing
CONDUIT SIZE:	(EPM2, 3 and 4) Two Conduit Fittings 1/2" NPT Each (EPM6, 8, 11, 13, 22, 35 and 130) Two Conduit Fittings 3/4" NPT Each
DUTY CYCLE:	(EPM2) AC Versions 25%–50% On/Off; DC Versions 75% On/Off (EPM3 and 4) AC Versions 25%–50% On/Off, 75% with Extended Duty Motors and 75% Proportional Control; DC Versions 75% On/Off and Proportional Control (EPM6, 8, 11, 13, 22, 35 and 130) AC Versions 25%–50% On/Off, 75% with Extended Duty Motors and 100% Managed Proportional Control; DC Versions 25%–50% On/Off and 75% Proportional Control
CYCLE TIMES:	8–46 Seconds, Depending on Model
ENCLOSURE:	NEMA 4/4X
VOLTAGES:	(EPM2) 12 VDC, 24 VDC, 120 VAC and 230 VAC (EPM3, 4, 6, 8, 11, 13, 22 and 35) 12 VAC/DC, 24 VAC/DC, 120 VAC and 230 VAC (EPM130) 24 VAC/DC, 120 VAC and 230 VAC
THERMAL OVERLOAD PROTECTION MECHANICAL BRAKE OVERRIDE:	Clutchless Manual
HOUSING:	Aluminum Alloy Dry Powder Coated

# EPS Series On/Off and Proportional Control Actuators

FOR BALL AND BUTTERFLY VALVES UP TO 8"



### KEY FEATURES

- Clockwise or Counter-Clockwise Spring Return
- 4 Limit Switches (2 Auxiliary)
- Internal Low Power Heater
- NEMA 4/4X Enclosure
- Position Indicator
- Rack and Pinion Drive
- Permanently Lubricated
- Thermal Overload
- CSA Certified
- ISO 5211 Mounting Base

### OPTIONS\*

- Positioners
- Two Additional Auxiliary Switches
- Manual Override Shown
- Local Control Station
- \* Not available on all models

### SPECIFICATIONS

OPERATION:	Reversing
CONDUIT SIZE:	Two Conduit Fittings 3/4" NPT Each
DUTY CYCLE:	(EPS5, 12 and 18) 50% On/Off and 25% Proportional Control
CYCLE TIMES:	Motor 7–13 Seconds, Spring 3–12 Seconds, Depending on Voltage
ENCLOSURE:	NEMA 4/4X
VOLTAGES:	(EPS5, 12 and 18) 24 VAC/DC, 120 VAC and 230 VAC
THERMAL OVERLOAD PROTECTION MECHANICAL BRAKE OVERRIDE:	Manual (Optional)
HOUSING:	Aluminum Alloy Dry Powder Coated

# EPL Series Linear Drive, Non-Spring Return Actuators

FOR MOST RISING STEM DIAPHRAGM VALVES UP TO 10"



### KEY FEATURES

- Modular Design
- 4 Different Output Forces
- Internal Low Power Heater
- NEMA 4/4X Enclosure
- Position Indicator
- Manual Override
- Self-Locking Drive
- Permanently Lubricated
- Thermal Overload
- CSA Certified
- Universal Bonnet Mounting
- Choice of Voltages: 24 VAC/DC, 120 VAC and 230 VAC

### SPECIFICATIONS

OPERATION:	Down and Up
STROKE LENGTH:	0.79" – 3.94", Depending Upon Model
FULL TRAVEL TIME:	(EPL5 and 11) 0.6 MM/Seconds (0.023"/Second), Regardless of Voltage (EPL22 and 44) 0.5 MM/Seconds (0.019"/Second), Regardless of Voltage
ENCLOSURE:	NEMA 4/4X
VOLTAGE:	(EPL550, 1100, 2200 and 4400) 24 VAC/DC, 120 VAC and 230 VAC
THERMAL OVERLOAD PROTECTION OVERRIDE:	Manual
HOUSING:	Aluminum Alloy Dry Powder Coated

# EPD Series Spring Return On/Off and Proportional Control Actuators

FOR BALL VALVES 1/2" TO 6" AND BUTTERFLY VALVES UP TO 4"



## KEY FEATURES

- Maintenance Free
- Field Adjustable Speed Control
- Field Adjustable Spring Return Control\*
- Auto-Switching Power Supplies
- Hex Key Override and Mounting Screws
- Internal Low Power Heater
- NEMA 4 Enclosure
- Mechanical 12mm Double-Square Drive Shaft Connection
- Manual Override
- Thermal Overload
- ATEX Rated NEMA 4/IP66
- Choice of Voltages: Units Can Operate on Any Voltage from 24 VAC/VDC to 230 VAC/VDC

## OPTIONS\*

- Two Internal End-of-Travel Non-Adjustable Switches
- Externally Mounted Switch Pack with 2 Additional Adjustable Switches
- EMT Enclosure
- Manual Override Handwheel
- \* Not available on all models

## SPECIFICATIONS

<b>OPERATION:</b> .....	Drive Open or Closed/Spring Opposite (EPD 2/3 and EPD 4/5 On/Off Control) Drive Open/Closed: Spring Engaged Upon Loss of Electric Supply (EPD 2/3 and EPD 4/5 On/Off Control) Proportional Control (EPD 2/3 and EPD 4/5)
<b>DUTY CYCLE:</b> .....	100% – 14 Sec. Mode, 10% – 3 Sec. Mode; One Power/Spring Cycle Per Minute Max. (EPD 2/3) 100% – All Models (EPD 4/5)
<b>RUN TIME (POWER):</b> .....	3/15/30/60/120 @ 90°; Field Selectable (EPD 2/3) 40/60/90/120/150 @ 90°; Field Selectable (EPD 4/5)
<b>RUN TIME (SPRING):</b> .....	3 or 10 Seconds @ 90°; Field Selectable (EPD 2/3) 20 Seconds @ 90°; Fixed (EPD 4/5)
<b>3 SECONDS MODE (SPRING):</b> .....	3–4 Seconds @ 90°; Load Dependant (EPD 2/3) N/A (EPD 4/5)
<b>ENCLOSURE:</b> .....	NEMA 4/IP66
<b>THERMAL OVERLOAD PROTECTION OVERRIDE:</b> .....	Manual
<b>HOUSING:</b> .....	Aluminum Die Casting

## Local Control Station

Local Control Stations can be used with Series EPM, EPS and EPL Actuators, connect through the EMT entry, and are available in four different models to meet specific application requirements. Custom configurations available (consult factory).



## KEY FEATURES

- Full Access Backplate
- Door with 1/4 Turn Latch
- NEMA 4 Enclosure
- Multiple Mounting Capabilities
- Remote Status Outputs
- Switches and Indicator Lamps Rated NEMA 4X/IP66
- Interfaces with 12 VAC/DC, 24 VAC/DC, 24 VAC Single Phase and Three Phase Applications

## OPTIONS\*

### For Open/Close Applications Only

- LA – Basic Control, Remote/Off/Local Switch, Open/Stop/Close Switch, No Indicator Lights (LED) and No Additional Terminals
- LB – Remote/Off/Local Switch, Open/Stop/Close Switch, Open and Closed Indicator Lights (LED) and Hot (Line Voltage) End of Travel Outputs
- LC – Remote/Off/Local Switch, Open/Stop/Close Switch, Open and Closed Indicator Lights (LED), Hot (Line Voltage) End of Travel Outputs and Dry Contact Output for Mode Switch Status
- LD – Remote/Off/Local Switch, Open/Stop/Close Switch, Open and Closed Indicator Lights (LED), Hot (Line Voltage) End of Travel Outputs, Dry Contact Output for Mode Switch Status and Terminal Strip for Auxiliary Switch Connections

### For Proportional/Modulating Applications Only

- LF – Remote/Off/Local Switch, Open/Stop/Close Switch, Power, Open and Closed Indicator Lights (LED), Includes Feedback Signal Connection Terminals, Generates 4 or 20 mA Signal to Drive Actuator to Open or Closed position, Hot (Line Voltage) End of Travel Outputs and Dry Contact Output for Mode Switch Status
- LG – Remote/Off/Local Switch, Open/Stop/Close Switch, Power, Open and Closed Indicator Lights (LED), Includes Feedback Signal Connection Terminals, Generates 4 or 20 mA Signal to Drive Actuator to Open or Closed Position, Hot (Line Voltage) End of Travel Outputs, Dry Contact Output for Mode Switch Status and Terminal Strip for Auxiliary Switch Connections

\* Contact factory for custom applications

## EBU Battery Backup

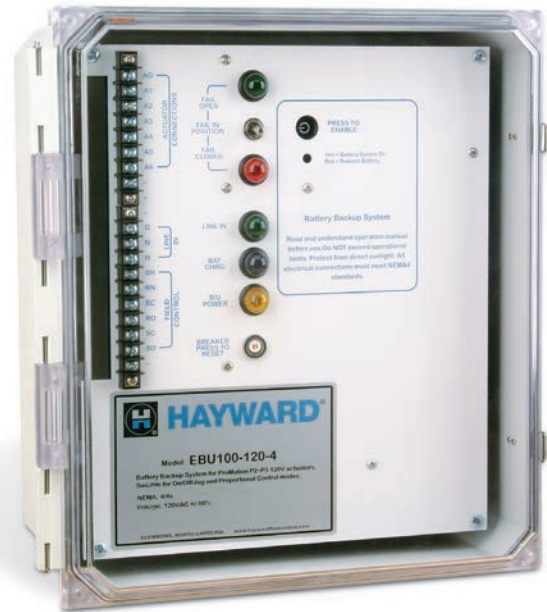
### FOR USE WITH EP SERIES ELECTRIC ACTUATORS

EBU Battery Backup Systems provide fail-safe operation for Series EPM, EPS and EPL Actuators using 2, 3 or 4 wire connections\*, and support both on/off and proportional control.

\* Additional field wiring may be required between the EBU and the actuator (consult factory).

#### KEY FEATURES

- Clear Polycarbonate Cover
- NEMA 4/4X Enclosure
- Field Selectable Fail Direction
- Provides 500% of Power Requirements for a Full Load Cycle
- Interfaces with 2, 3 or 4 Wire Control Systems
- Automatic Battery Charging and Charge Status Indicator
- Sealed Battery Packs
- Remote Alarm Outputs
- UV Stabilized Housing for Outdoor Applications
- Provides Full Signal Isolation During Loss of Power Operation



LHB-1



LHB with Spring Return (LHB-SR)



## LHB Series Manual Limit Switch

FOR BALL VALVES UP TO 6" AND BUTTERFLY VALVES UP TO 8"

#### KEY FEATURES

- Now Available with "Dead-Man" Spring Return Handle or Handlever (LHB-SR)
- Remote Monitoring of Critical Services
- Retrofits to Existing Valves
- Robust GFPP Body, Cover and Plate
- 304 Stainless Steel Stem and FPM Seals
- Fits All Hayward® Ball Valves up to 6" and Butterfly Valves up to 8"
- Two Adjustable SPDT 10 Amp at 120 VAC Switches (Open/Close Position)
- 1/2" Conduit Port
- Terminal Blocks for Ease of Wiring

- Meets ISO5211, F05, F07 and F10 Patterns
- NEMA 4X
- Switches CSA Listed
- Patent Pending Design

#### OPTIONS

- Additional Two Switches
- Potentiometer Available
- Optional Handles – Lever or T-Handle
- LED for Open/Close Indication

#### SELECTION CHART

MANUAL LIMIT SWITCH MODEL	VALVE SIZE/SERIES
LHB-1/LHB-1-SR	1/2"–2"/TB • 1-1/2"–4"/BY
LHB-2/LHB-2-SR	2-1/2"–6"/TB • 6"–8"/BY

## BFAS Series Bulkhead Fittings – Standard Flange

1/2" TO 4" PVC, CPVC AND PP



1/2" – 3"  
PVC/EPDM

### KEY FEATURES

- PVC, CPVC and PP
- FPM or EPDM Gasket Seal
- Left-Hand Threads
- Buttress Threads Protect Against Blowout
- Hex Body for One-Person Installation
- Rated at 150 PSI

### OPTIONS

- Vacuum Breaker
- Ready Flanges (for Making Flanged Connections to Tanks)
- Tank-Tite™

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 4" (DN15 – DN100)	PVC	Socket x Thread Thread x Thread	FPM or EPDM	150 PSI @ 70°F Non-Shock
	CPVC	Socket x Thread		
	PP	Thread x Thread		

## BFA Series Bulkhead Fittings – Standard Flange

1/2" TO 6" PVC, CPVC AND PP – LONG PATTERN



PVC/EPDM

### KEY FEATURES

- PVC, CPVC and PP
- Extra Long Design for Thick Tank Walls
- Left-Hand Threads
- Rated at 150 PSI
- FPM or EPDM Gasket Seal
- Hex Body for One-Person Installation
- Full Buttress Threads

### OPTIONS

- Vacuum Breaker
- Ready Flanges (for Making Flanged Connections to Tanks)
- Tank-Tite™

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 6" (DN15 – DN150)	PVC	Socket x Socket Socket x Thread	FPM or EPDM	150 PSI @ 70°F Non-Shock
	CPVC	Thread x Thread		
	PP	Thread x Thread		

## BFA Series Bulkhead Fittings – Oversized Flange

1/2" TO 1" PVC, CPVC AND PP – LONG PATTERN



### KEY FEATURES

- PVC, CPVC and PP
- Oversized Flange Base
- Extra Long Design for Thick Tank Walls
- Left-Hand Threads
- Rated at 150 PSI
- FPM or EPDM Gasket Seal
- Hex Body for One-Person Installation
- Full Buttress Threads

### OPTIONS

- Ready Flanges (for Making Flanged Connections to Tanks)
- Tank-Tite™

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 1" (DN15 – DN25)	PVC	Socket x Socket Socket x Thread	FPM or EPDM	150 PSI @ 70°F Non-Shock
	CPVC	Thread x Thread		
	PP	Thread x Thread		

## CCP Series Tank-Tite™

1/2" TO 3" PVC



### KEY FEATURES

- Robust PVC Upper and Lower Body Construction
- 17.4 PH Stainless Steel Wave Spring
- Rated to 150 PSI
- Fits with Hayward® BFAS/BFA Series Bulkhead Fittings
- Can be Used with All Bulkhead Fitting Materials

### MATERIALS

- PVC Cell Class 12454 per ASTM D1784
- 17.4 PH Stainless Steel



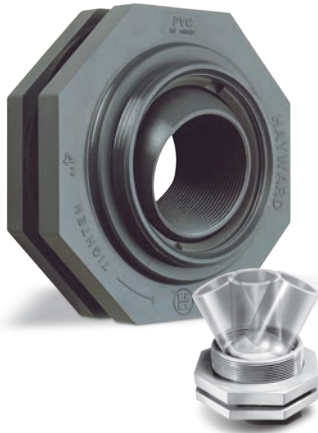
The Tank-Tite is a revolutionary patented compression ring that eliminates the need to retighten gasketed bulkhead fittings! The Tank-Tite provides a constant load on the gasket of the bulkhead fitting to overcome, and compensate for, tank wall expansion/contraction in thickness due to changes in temperature and/or pressure within the tank. The Tank-Tite also imparts at the same time a constant load on the bulkhead fitting nut that reduces the possibility of loosening of the nut due to vibration within the system.

### SELECTION CHART

SIZE	MATERIAL	SPRING	PRESSURE RATING
1/2" – 3" (DN15 – DN80)	PVC	17.4 PH SSTL	150 PSI @ 70°F Non-Shock

## SF Series Self-Aligning Bulkhead Fittings

1", 2" AND 3" PVC



### KEY FEATURES

- PVC
- Enables Easy Piping Connections to Domed Tanks
- Swivel Ball Connection Corrects for Curved Tanks
- Enables Straight Pipe Connections up to 27° of Offset Angle
- PTFE Ball Seal
- FPM or EPDM Gasket Seal

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1", 2" and 3" (DN25, DN50 and DN80)	PVC	Thread x Thread	FPM or EPDM	75 PSI @ 70°F Non-Shock

## AR Series Air Release Valves

3/4" PVC BODY WITH PP BALL



### KEY FEATURES

- PVC Body with PP Ball
- Reliable Tank Air Venting
- Prevents Tank Overflow
- Hollow, Floating Ball Design
- Closes at 0 PSI
- FPM or EPDM Seals
- Standard Screen

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
3/4" (DN20)	PVC Body PP Ball	Socket and Threaded	FPM	150 PSI @ 70°F Non-Shock

# VB Series Vacuum Breakers

3/4" PVC



## KEY FEATURES

- PVC Body
- Reliable Venting of Tanks and Piping Systems
- Advanced Design for Fast Draining
- Easy Installation
- Compact
- No Metal Parts to Stick or Jam
- FPM Membrane
- Use with BFAS/BFA Series Bulkhead Fitting to Vent Tanks (Fits 1-1/2" Only)

## SELECTION CHART

SIZE	MATERIAL	SEALS	PRESSURE RATING
3/4" * (DN20)	PVC	FPM	150 PSI @ 70°F Non-Shock

\* NPT Connection

# BVX Series Ready Flanges

1" TO 4" PVC, CPVC AND GFPP



## KEY FEATURES

- PVC, CPVC and GFPP
- One-Piece Construction
- Integral Molded Nipple
- Eliminates the Need for an Extra Fabricated Joint – Preventing a Possible Leak Path
- Easily Converts Socket Valves to Flanged
- ANSI Class 150 Bolt Pattern

## OPTIONS

- Threaded to Flanged

## SELECTION CHART

SIZE	MATERIAL	END CONNECTION	PRESSURE RATING
1" – 4" (DN25 – DN100)	PVC or CPVC	Spigot x Flanged	150 PSI @ 70°F Non-Shock
	GFPP	Threaded x Flanged	

# GG Series Gauge Guards

1/4" x 1/4" PVC, CPVC AND PP AND 1/4" x 1/2" PVC, CPVC AND PVDF



## KEY FEATURES

- PVC, CPVC, PP and PVDF
- Threaded NPT Connections
- FPM Membrane
- All Thermoplastic, No Rust or Corrosion
- No Metal Fasteners
- Rugged, Low Profile, Compact Design
- Work in Any Position
- Large Volume Gauge Guard Available

## OPTIONS

- 0 to 30 PSI Gauge
- 0 to 60 PSI Gauge
- 0 to 160 PSI Gauge
- 0 to 160 PSI SS Liquid Filled Gauge and Liquid Damped

## SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/4" x 1/4" (DN8 – DN8)	PVC, CPVC or PP	Threaded	FPM	150 PSI @ 70°F Non-Shock
1/4" x 1/2" (DN8 – DN15)				





PVC and CPVC

## SB Series Simplex Basket Strainers

1/2" TO 4" PVC, CPVC, GFPP AND EASTAR®

### KEY FEATURES

- PVC, CPVC, GFPP and Eastar®
- True Union
- Ergonomic Hand Removable Cover
- In-Line or Loop Connections
- External Cover Threads
- Integral Flat Mounting Bases
- PVC or CPVC Baskets Standard
- NSF/ANSI 61 Listed

### OPTIONS

- Stainless Steel, Monel®, Hastelloy® and Titanium Strainer Baskets
- Pressure Differential Gauge and Switch
- Baskets Available with Perforated or Mesh Liners

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION*	SEALS	PRESSURE RATING
1/2" – 4" (DN15 – DN100)	PVC or CPVC	Socket, Threaded or Flanged	FPM or EPDM	150 PSI @ 70°F Non-Shock
	Eastar®*			100 PSI @ 70°F Non-Shock
	GFPP	Threaded or Flanged		150 PSI @ 70°F Non-Shock

\* End Connections and assembly nuts are PVC

## SB Series Simplex Basket Strainers

6" TO 8" PVC AND CPVC

### KEY FEATURES

- PVC and CPVC
- Ergonomic Hand Removable Cover
- In-Line or Loop Connections
- External Cover Threads
- Integral Flat Mounting Bases
- PVC or CPVC Baskets Standard

### OPTIONS

- Stainless Steel, Monel®, Hastelloy® and Titanium Strainer Baskets
- Pressure Differential Gauge and Switch
- Baskets Available with Perforated or Mesh Liners

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
6" – 8" (DN150 – DN200)	PVC or CPVC	Flanged	FPM or EPDM	150 PSI @ 70°F Non-Shock



PVC and CPVC



## DB Series Duplex Basket Strainers

1/2" TO 4" PVC, CPVC AND EASTAR®

### KEY FEATURES

- PVC, CPVC and Eastar®
- Ergonomic Hand Removable Cover
- Uninterrupted Flow
- No System Shutdown for Basket Cleaning
- In-Line or Loop Piping
- Integral Flat Mounting Bases
- External Cover Threads
- Hand Removable Vents on Covers
- Hand Removable Drains on Bodies
- Liquid Displacing Covers

### OPTIONS

- Stainless Steel, Monel®, Hastelloy® and Titanium Strainer Baskets
- Pressure Differential Gauge and Switch
- Pneumatic or Electric Valve Automation

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 4" (DN15 – DN100)	PVC or CPVC	Socket, Threaded or Flanged	FPM or EPDM	150 PSI @ 70°F Non-Shock
	Eastar®*			100 PSI @ 70°F Non-Shock

\* End Connections and assembly nuts are PVC

## DB Series Duplex Basket Strainers

6" TO 8" PVC AND CPVC

### KEY FEATURES

- PVC and CPVC
- Ergonomic Hand Removable Cover
- Uninterrupted Flow
- No System Shutdown for Basket Cleaning
- In-Line or Loop Piping
- Integral Flat Mounting Bases
- External Cover Threads
- Hand Removable Vents on Covers
- Hand Removable Drains on Bodies
- Liquid Displacing Covers

### OPTIONS

- Stainless Steel, Monel®, Hastelloy® and Titanium Strainer Baskets
- Pressure Differential Gauge and Switch
- Pneumatic or Electric Valve Automation



### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
6" – 8" (DN150 – DN200)	PVC or CPVC	Flanged	FPM or EPDM	150 PSI @ 70°F Non-Shock



## SBN Series FRP Basket Strainers

2" TO 14" FIBERGLASS REINFORCED ISOPHTHALIC OR VINYLESTER RESIN

### KEY FEATURES

- FRP Strainer Body and Cover
- Acrylic Viewing Window
- 30 PSI or 65 PSI Design
- In-Line Piping Design
- Positive Flow Indication
- Stainless Steel Hinged Fastening Hardware
- Food Grade EPDM Seals
- Flanged End Connections
- Hand Removable Vent on Cover

- Vertically Pleated 16 Gauge Stainless Steel Baskets with a Minimum 4 to 1 Open Area
- ANSI/NSF 50 Listed

### OPTIONS

- Stainless Steel, Monel®, Hastelloy® and Titanium Strainer Baskets
- High Temperature
- Duplex Assembly

### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
2" – 14" (DN50 – DN350)	FRP	Flanged	EPDM Food Grade	30 or 65 PSI @ 70°F Non-Shock

## YS Series Y-Strainers

1/2", 3/4", 1", 1-1/2" AND 2" PVC, CPVC AND CLEAR PVC, 1-1/4" PVC AND CLEAR PVC, 2-1/2" PVC AND 3"-4" PVC AND CPVC

### KEY FEATURES

- PVC, CPVC and Clear PVC
- Horizontal or Vertical Installation
- FPM O-Ring Seals
- 2:1 Open Area Ratio
- Hex Cap for Easy Access to Screen
- Standard Screen Has 1/32" Perforation

### OPTIONS

- Stainless Steel Perf or Mesh Strainer Screens Available in Various Sizes
- True Union Connection



### SELECTION CHART

SIZE	MATERIAL	END CONNECTION	SEALS	PRESSURE RATING
1/2" – 1" (DN15 – DN25)	PVC, CPVC or Clear PVC	Socket, Threaded or True Union	FPM and EPDM	150 PSI @ 70°F Non-Shock
1-1/4" (DN32)	PVC and Clear PVC			
1-1/2" (DN40)	PVC, CPVC or Clear PVC			
2" (DN50)	PVC	Socket, Threaded, Flanged or True Union		
2-1/2" (DN63)				
3" – 4" (DN80 – DN100)	PVC and CPVC			

# FLV Series Simplex Bag Filters

SINGLE AND DOUBLE LENGTH

## KEY FEATURES

- Platinum GFPP Material
- One-Piece Injection Molded Construction
- Hand Removable Ergonomic Cover with Liquid Displacing Dome
- Vent Valve on Cover
- In-Line or Loop Configuration
- Drain Port at Bottom
- Integral Mounting Base

## OPTIONS

- Vent Gauge with Gauge Guard
- Pressure Differential Gauge and Switch
- EPDM O-Rings

## SELECTION CHART

SIZE	MATERIAL	END CONNECTIONS	PIPING SIZES	SEALS	FLOW RATE	PRESSURE RATING
Single Length 7" x 16"	GFPP	GFPP (Threaded and Flanged), PVC (Socket and Flanged) or CPVC (Socket and Flanged)	1-1/4" – 2"	FPM or EPDM	100 GPM	150 PSI @ 70°F Non-Shock
Double Length 7" x 32"			2" – 4"		150 GPM	



# FLV Series Duplex Bag Filters

SINGLE AND DOUBLE LENGTH

## KEY FEATURES

- Platinum GFPP Material
- One-Piece Injection Molded Construction
- Hand Removable, Ergonomic Cover with Liquid Displacing Dome
- Vent Valve Included on Cover
- True Union Socket, Threaded or Flanged End Connections
- In-Line or Loop Flow Configurations

- Drain Port at Bottom
- Integral Mounting Base

## OPTIONS

- Vent Gauge with Gauge Guard
- Pressure Differential Gauge and Switch
- EPDM O-Rings

## SELECTION CHART

SIZE	MATERIAL	END CONNECTIONS	PIPING SIZES	SEALS	FLOW RATE	PRESSURE RATING
Single Length 7" x 16"	GFPP	CPVC (Socket, Threaded or Flanged)	2"	FPM or EPDM	100 GPM	150 PSI @ 70°F Non-Shock
Double Length 7" x 32"			2" – 4"		150 GPM	



## FLT Series Simplex Bag Filters

PVC AND CPVC

### KEY FEATURES

- Single and Double Length
- Hand Removable Cover
- In-Line or Loop Flow
- Integral Mounting Base
- Vent Valve on Cover

### OPTIONS

- Vent Gauge with Gauge Guard
- Pressure Differential Gauge and Switch
- Flanged Connections



### SELECTION CHART

SIZE	MATERIAL	END CONNECTIONS	SEALS	FLOW RATE	PRESSURE RATING
Single Length 7" x 16"	PVC or CPVC	Socket, Threaded or Flanged	FPM or EPDM	50 GPM	150 PSI @ 70°F Non-Shock
Double Length 7" x 32"				100 GPM	

## FLT Series Duplex Bag Filters

PVC AND CPVC

### KEY FEATURES

- Single and Double Length
- Hand Removable Cover
- In-Line or Loop Flow
- Integral Mounting Base
- Vent Valve on Cover

### OPTIONS

- Vent Gauge with Gauge Guard
- Pressure Differential Gauge and Switch
- Flanged Connections

### SELECTION CHART

SIZE	MATERIAL	END CONNECTIONS	SEALS	FLOW RATE	PRESSURE RATING
Single Length 7" x 16"	PVC or CPVC	Socket, Threaded or Flanged	FPM or EPDM	50 GPM	150 PSI @ 70°F Non-Shock
Double Length 7" x 32"				100 GPM	



# CFLV Series Cartridge Filters

## SINGLE AND DOUBLE LENGTH

### KEY FEATURES

- Platinum GFPP Material
- One-Piece Injection Molded Construction
- Hand Removable Ergonomic Cover with Liquid Displacing Dome
- Vent Valve on Cover
- In-Line or Loop Configuration
- Drain Port at Bottom
- Integral Mounting Base

### OPTIONS

- Vent Gauge with Gauge Guard
- Pressure Differential Gauge and Switch
- EPDM O-Rings
- Cartridge Adapters – Chart to the Right



### SELECTION CHART

SIZE	MATERIAL	END CONNECTIONS	PIPING SIZES	SEALS	FLOW RATE	PRESSURE RATING
Single Length 7" x 16"	GFPP	GFPP (Threaded and Flanged), PVC (Socket and Flanged) or CPVC (Socket and Flanged)	2"	FPM or EPDM	100 GPM	150 PSI @ 70°F Non-Shock
Double Length 7" x 32"			2" – 4"		150 GPM	

### CARTRIDGE ADAPTER SELECTION CHART

CARTRIDGE TYPE	AVAILABLE YES/NO	
	CFLV SINGLE LENGTH	CFLV DOUBLE LENGTH
2-1/2" – 2-3/4" DOE/222XCap/222XFin	Yes	Yes
4-1/2" DOE/222XCap/222XFin	Yes	Yes
Hayward 7" x 16" DOE	Yes	No
Hayward 7" x 16" DOE (Double Stacked)	No	Yes
Hayward 7" x 30"	No	Yes
7-3/4" DOE	Yes	Yes

Consult Hayward® for Available Cartridges.

## Heavy-Duty Filter Bags

PP NEEDLE FELT, POLYESTER NEEDLE FELT, PP MESH OR NYLON MESH 1 TO 800 MICRON RATINGS

Your filtration process is only as effective as your filter bag. Don't compromise it with anything less than a Hayward precision quality filter bag that's guaranteed to fit your Hayward filter vessel.

### KEY FEATURES

- Thermoplastic Ring Seal
- Thermoplastic Flange Seal
- Heavy Duty Sewn or Welded Construction
- Silicone-Free

### OPTIONS

- Custom Filter Bags for Most Applications

### SELECTION CHART

SIZE	MATERIAL	CONSTRUCTION	SEAL MATERIAL/TYPE	MICRON RATINGS	TEMPERATURE RATINGS
7" x 16" at 90 GPM or 7" x 32" at 180 GPM	PP Needle Felt	Sewn	PP RING	1, 5, 10, 25, 50, 100, 200	200° F
		Welded	PP FLANGE		
	Polyester Needle Felt	Sewn	PP RING		300° F
		Welded	PP FLANGE		
	PP Mesh	Sewn	PP RING		200° F
	Nylon Mesh	Sewn	PP RING		

**NEW**

## T Series Vertical Seal-Less Immersible Pumps

1/3, 1/2, 3/4, 1 AND 1-1/2 HP

### KEY FEATURES

- CPVC, GFPP and PVDF
- Single, Non-Coupled Motor Shaft 303 SS
- Proprietary, Patent Pending PTFE Shaft Seal
- Extended Shaft Sleeve
- Solid, Stable One-Piece Shaft
- Seal Point Away from Weep Hole
- Less Vibration
- Runs True

### OPTIONS

- Optional Inlet Screen
- In-Tank Filtration
- Impeller Trim Variations
- Explosion-Proof Motors
- Wash-Down Motors
- 575V Motors

### SPECIFICATIONS

<b>PUMP:</b> .....	CPVC, GFPP or PVDF Construction
<b>PIPE CONNECTIONS:</b> .....	Threaded NPT
<b>MOTOR SHAFT:</b> .....	303 SS
<b>SHAFT SEAL:</b> .....	Patent Pending PTFE Shaft Seal
<b>PERFORMANCE:</b> .....	Flow rates from 5 to 80 GPM with TDH's up to 45 feet
<b>MOTORS:</b> .....	Single or Three Phase Motors
<b>MODELS WITH HP RATINGS:</b> .....	T2 1/3 HP, T4 1/2 HP, T5 3/4 HP, T6 1 HP, T7 1 HP and T8 1-1/2 HP

## S Series Vertical Seal-Less Immersible Pumps

1/15, 1/3, 1/2, 3/4, 1, 1-1/2, 3 AND 5 HP

### KEY FEATURES

- Heavy Duty Design for Continuous Duty Service
- Seal-Less Design

### OPTIONS

- Optional Inlet Screen and Extended Shaft
- In-Tank Filtration
- CPVC Inlet Screens
- Extended Shafts
- Impeller Trim Variations
- Explosion Proof Motors
- Washdown Motors
- 575V Motors
- EPDM O-Rings
- S-J Type Electrical Cord

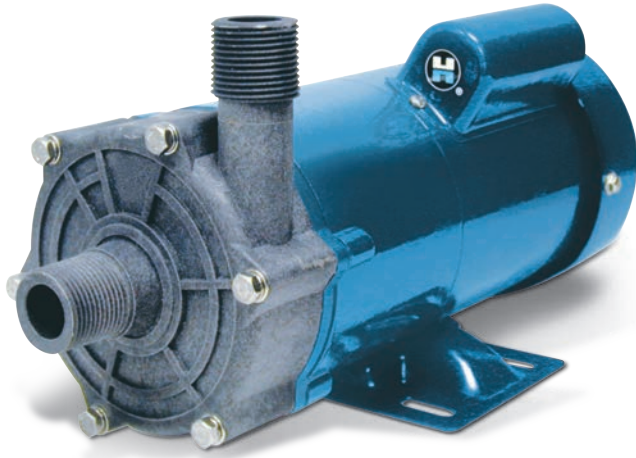
### SPECIFICATIONS

<b>PUMP:</b> .....	CPVC (1/15 – 5 HP), Natural PP (1/15 HP), GFPP (1/3 – 1-1/2 HP) and PVDF (1/15 – 1-1/2 HP)
<b>PIPE CONNECTIONS:</b> .....	Threaded NPT
<b>FUME BARRIER:</b> .....	PTFE, Protects Motor and Bearings from Corrosion Damage
<b>O-RINGS:</b> .....	FPM
<b>PERFORMANCE:</b> .....	Flow Rates from 5 to 130 GPM with TDHs up to 115 Feet
<b>MOTORS:</b> .....	Single or Three Phase Motors; HP Ratings of 1/15, 1/3, 1/2, 3/4, 1, 1-1/2, 3 and 5HP
<b>MODELS WITH HP RATINGS:</b> .....	S1 1/15, S2 1/3, S4 1/2, S5 3/4, SS6 3/4, SS7 1, S8 1-1/2, S12 3 and S16 5 HP



## R Series Magnetic Drive Pumps

1/3, 1/2, 3/4, 1, 1-1/2, 2, 3 AND 5 HP



### KEY FEATURES

- GFPP and Carbon Reinforced ETFE
- Low Friction Operation
- Easy Maintenance, No Special Tools
- Seal-Less Design

### OPTIONS

- Carbon Bushings
- Ceramic Bushings
- EPDM O-Rings
- 575V Motors
- Explosion Proof Motors
- Washdown Motors

### SPECIFICATIONS

<b>PUMP:</b>	GFPP or ETFE Construction
<b>PIPE CONNECTIONS:</b>	Threaded NPT or Flanged ANSI 150#
<b>SHAFT:</b>	Large Diameter, Ceramic with PTFE, Impeller Bushing
<b>PERFORMANCE:</b>	Flow Rates from 5 to 140 GPM with TDHs of up to 141 Feet
<b>MOTORS:</b>	Single or Three Phase Motors; HP Ratings of 1/3, 1/2, 3/4, 1, 1-1/2, 2, 3 or 5 HP; 115/230 VAC or 208-230/460 VAC, 50/60 Hz
<b>MODELS WITH HP RATINGS:</b>	RC03 1/3, RX05 1/2, RX07 3/4, RX10 1, RX15 1-1/2, RX20 2, RX30 3 and RX50 5 HP

## D Series Vertical Seal-Less Immersible Pumps

1/8 HP

### KEY FEATURES

- CPVC, Natural PP and PVDF
- No Seals to Leak or Replace
- PTFE Fume Barrier
- FPM Elastomer
- Optional Inlet Screens

### OPTIONS

- In-Tank Filtration
- Inlet Screens
- EPDM Elastomer
- Impeller Trim Variations
- Explosion Proof Motors
- Washdown Motors
- 575V Motors
- S-J Type Electrical Cord

### SPECIFICATIONS

<b>PUMP:</b>	CPVC, PP or PVDF Construction
<b>PIPE CONNECTIONS:</b>	Threaded
<b>O-RINGS:</b>	FPM
<b>FLOW RATES:</b>	From 2 to 17 GPM with TDHs up to 18 Feet
<b>MOTORS:</b>	Single-Phase Motor; 1/8 HP; 115/230 VAC, 50/60 Hz





## C Series Centrifugal Pumps

1/3, 1 AND 1-1/2 HP



### KEY FEATURES

- Rugged Design for Demanding Continuous Duty Service
- No Metal in Contact with Process Fluid
- Carbon/Ceramic Seals
- FPM Elastomers

### OPTIONS

- Impeller Trim Variations
- PTFE/Ceramic Seals
- PTFE/Carpenter 20 Seals
- EPDM Elastomers
- Waterflushed Seals
- 575V Motors
- Washdown Motors

### SPECIFICATIONS

<b>PUMP:</b>	CPVC, GFPP or PVDF Construction
<b>PIPE CONNECTIONS:</b>	Threaded
<b>SHAFT:</b>	Stainless Steel with Non-Metallic Sleeve
<b>SEAL:</b>	John Crane External Type 21 or Equal Carbon/Ceramic Seal Faces with Stainless Steel Hardware and FPM Elastomers
<b>PERFORMANCE:</b>	Flow rates from 5 to 83 GPM with TDH's up to 70 feet
<b>MOTORS:</b>	Single or Three Phase Motors; HP Ratings of 1/3, 1 and 1-1/2; 115/230 VAC or 208-230/460 VAC
<b>MODELS WITH HP RATINGS:</b>	C5 1/3, C7 1 and C8 1-1/2 HP

## In-Tank Filtration Systems

COMPATIBLE WITH D AND S SERIES IMMERSIBLE PUMPS

These highly efficient filtration systems are compatible with D and S Series Immersible Pumps.

### KEY FEATURES

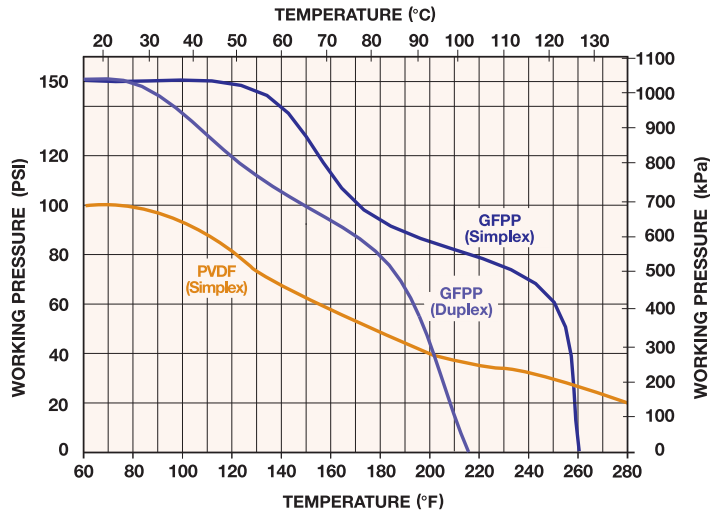
- CPVC Corrosion-Resistant Construction
- Compact and Easy to Install
- Seal-Less, Bearing-Free Pump
- Fast Filter Change
- 1/15 HP Model Features a Built-in Power Cord

### OPTIONS

- Double Filter



# Operating Temperature/Pressure for Bag and Cartridge Filter Housings



## BASKET SIZES OFFERED FOR HAYWARD SIMPLEX AND DUPLEX PLASTIC BASKET STRAINERS

Pressure Drop Correction Factors for Various Size Basket Screens

PLASTIC		STAINLESS STEEL		STAINLESS STEEL	
PERFORATION	CORRECTION FACTOR	PERFORATION	CORRECTION FACTOR	MESH	CORRECTION FACTOR
1/32"	1.05	1/32"	0.82	20	0.79
1/16"	1.00	3/64"	0.63	40	1.01
1/8"	0.58	1/16"	0.74	60	1.20
3/16"	0.46	5/64"	0.50	80	1.16
		7/64"	0.51	100	1.20
		1/8"	0.58	200	1.09
		5/32"	0.37	325	1.22
		3/16"	0.46		
		1/4"	0.58		
		3/8"	0.45		
		1/2"	0.48		

Comparative Particle Size

MESH	INCHES	MICRONS	MESH	INCHES	MICRONS	MESH	INCHES	MICRONS
3,250	0.0002	6	130	0.0043	110	24	0.028	718
1,600	0.0005	14	120	0.0046	118	20	0.034	872
750	0.0010	25	110	0.0051	131	18	0.039	1,000
325	0.0016	40	100	0.0055	149	16	0.045	1,154
250	0.0024	62	90	0.0061	156	14	0.051	1,308
200	0.0029	74	80	0.0070	179	12	0.060	1,538
180	0.0033	85	70	0.0078	200	10	0.075	1,923
170	0.0035	90	60	0.0092	238	8	0.097	2,488
160	0.0038	97	50	0.0117	300	6	0.132	3,385
150	0.0041	100	40	0.015	385	5	0.159	4,077
140	0.0042	108	30	0.020	513	4	0.203	5,205

Note: To calculate pressure drop through vessels using other than 1/16" perforated baskets, first calculate the pressure drop using the listed Cv, and then multiply the result by the correction factor in the Correction Factors chart above.

## Pressure Loss Calculation Using Cv Factor

### PRESSURE LOSS CALCULATION FORMULA

$$\Delta P = \left[ \frac{Q}{C_v} \right]^2$$

$\Delta P$  = Pressure Drop

Q = Flow in GPM

Cv = Flow Coefficient

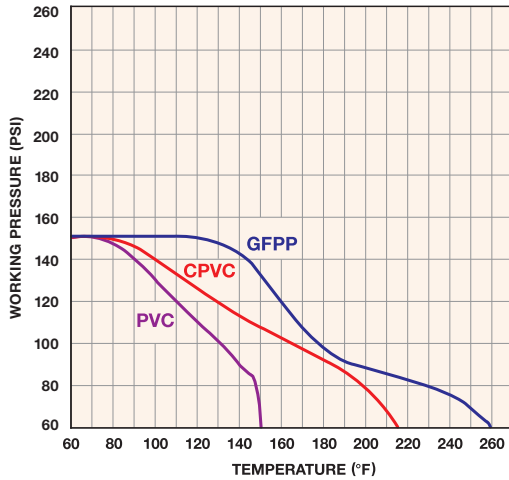
The pressure loss across a valve or filter can be calculated using the system's flow rate and the Cv factor for that valve or filter. For example, a 1" valve with a Cv factor of 8 will have a 4 PSI pressure loss in a system with a 16 GPM flow rate ( $16 \div 8$ )<sup>2</sup> = 4

#### Notes:

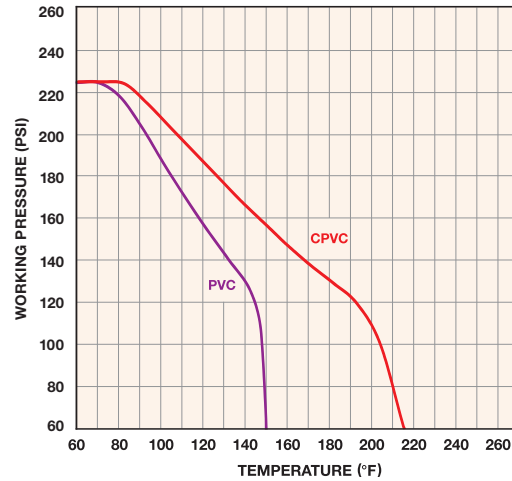
1. Working pressure (non-shock) figures are the maximum recommended for the indicated pressure.
2. It is recommended that the minimum process fluid temperature for the Hayward® product not fall below 34°F.

## Operating Temperature/Pressure for 150 PSI Rated Products

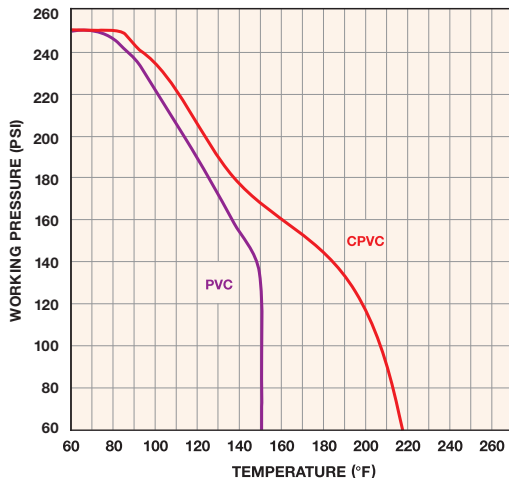
(EXCEPT FILTER HOUSINGS)



## Operating Temperature/Pressure for 235 PSI Rated Products



## Operating Temperature/Pressure for 250 PSI Rated Products



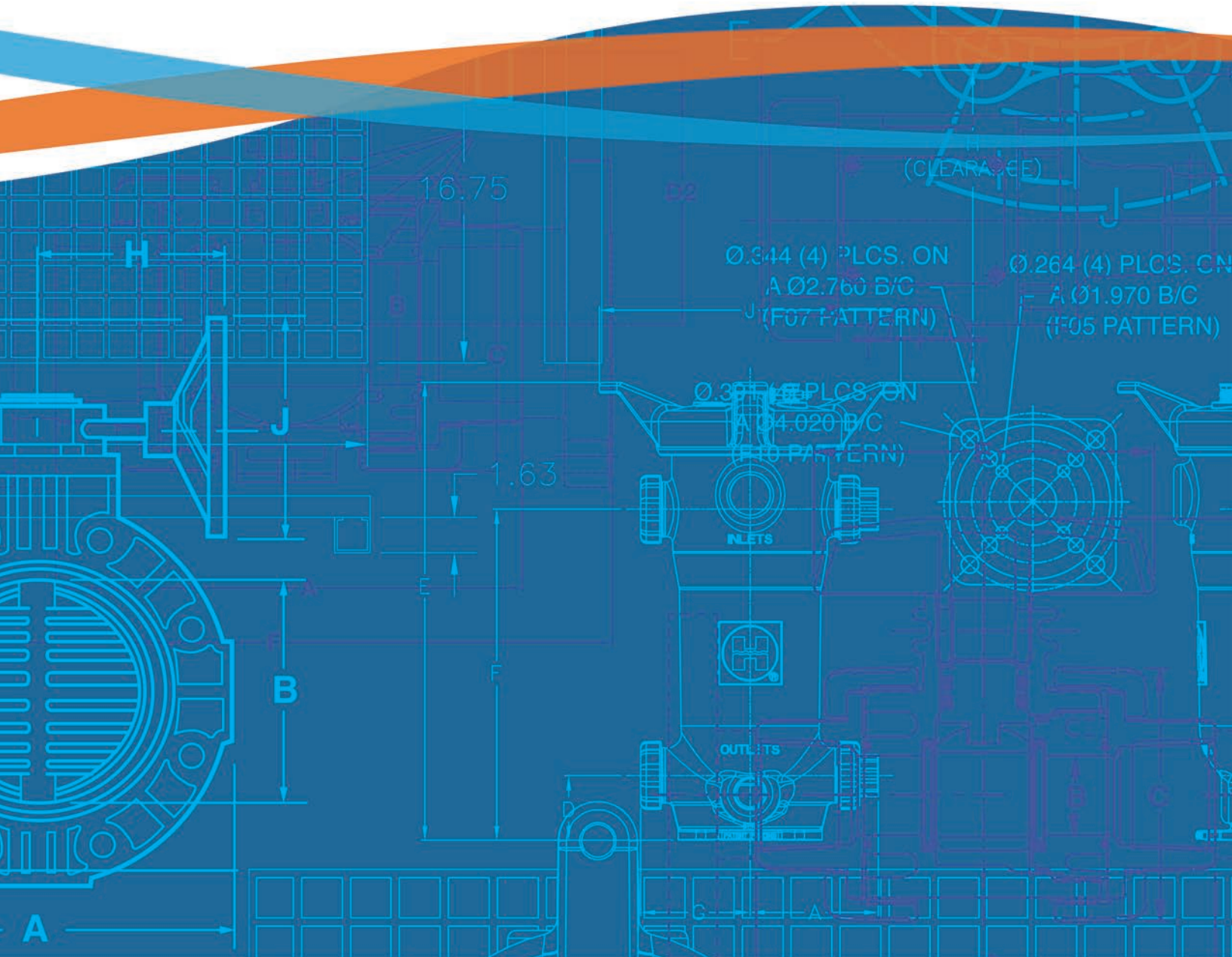
**NSF/ANSI Standard 61** is a standard defining the requirements for products that are destined for use in drinking water systems. In summary, the standard requires immersion testing of all products that will come into contact with drinking water for any elements (i.e., lead, mercury, cadmium, etc.) that may leach into

the water that passes through the product. Many of Hayward's standard products underwent testing to this standard in 2007, and are now NSF listed products.

**NSF/ANSI Standard 50** provides a comprehensive product evaluation for health effects safety, performance validation and safety for factors such as burst, sustained pressure, cyclic pressure, head loss, UV resistance, tensile strength, impact and load testing, turbidity reduction, filtration efficacy, bacterial disinfection efficacy, cyst inactivation, durability or life testing, chemical resistance, corrosion resistance and electrical safety. This applies to various filter media diatomite and other pre-coat media filters, granular media filters, cartridge filters, skimmers, pumps, valves, suction fittings or other equipment that may be used in pools, spas and other recreational water facilities.

Hayward's products that are NSF 61 and NSF 50 listed can easily be found on the NSF website, [www.NSF.org](http://www.NSF.org).

- Eastar is a registered trademark of Eastman.
- Hastelloy is a registered trademark of Haynes International, Inc.
- Monel is a registered trademark of Special Metals Corporation.
- Santoprene is a registered trademark of Advanced Elastomer Systems.



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