Hayward Plastic Valves and Process Control Products

Hayward manufactures products from compounds of PVC, CPVC, PVDF, natural PPL, glass fiber reinforced PPL and polyetherimide. 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.

Hayward FloSite Flow Meters and Instrumentation

Hayward's FloSite sensors offer superior performance with unique five blade rotors for accurate flow velocity measurement; ceramic shaft to eliminate corrosion problems; encapsulated micro-magnets to greatly reduces fouling; and, non-corrosive plastic construction.

Hayward Plastic Corrosion Resistant Pumps

Hayward's Webster Pumps perform reliably in systems pumping water, corrosive liquids or ultra pure fluids. Choose from centrifugal, vertical 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.

When you need complete information and you need it fast, go to:
www.haywardindustrial.com

Over 1,200 pages of product descriptions, specifications, engineering drawings, instructions & operating manuals, application information, FAQs, corrosion resistance charts, pressure loss calculators, water hammer calculators, and much more in one of the most informative and easiest to navigate websites in the industrial world. See back cover for more web information

Our North Carolina Manufacturing Facility

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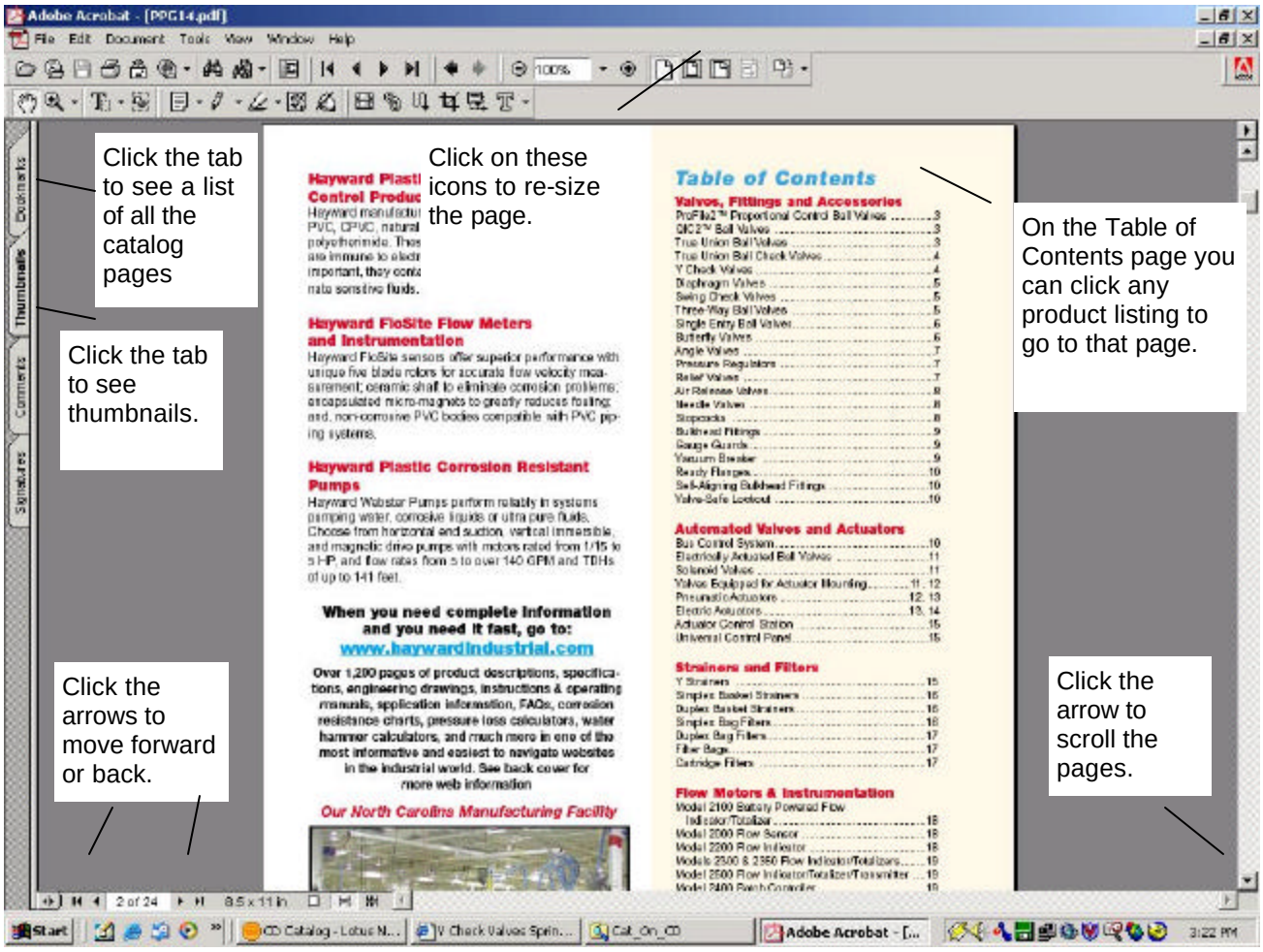
HAYWARD FLOW CONTROL SYSTEMS—CATALOG PPG-15

Navigating through the Hayward Condensed Plastic Valve and Flow Control Products is easy. If you are not familiar with Adobe Acrobat Reader the Screen shot below will explain the basic ways to move through the catalog.

The easiest way to jump from page to page is to click on “Bookmarks” tab. That lists every page in the catalog. Clicking on a page takes you directly to that page. On the Table Of Contents page you can click on any product listed and go directly to that page. For quick navigation click on “Thumbnails” to see pictures of each page. Click on the thumbnail and go directly to that page.

For complete product information including dimensions drawings, AutoCAD files, instruction manuals and more visit our web site at www.haywardindustrial.com.



Valves, Fittings and Accessories

True Union Ball Valves, 1/4" to 6", PVC, Corzan® CPVC and PPL

Features
- Full port design
- Reversible PTFE seats
- Double stem seals
- Easy to service
- Easily automated

Options
- 2" square operating nut
- Stem extensions
- Pneumatic and electric actuators
- Spring return handle
- Valve safe lockout

C_V Factors

Size	Value	Size	Value
1/4"	1.0	1-1/2"	90
3/8"	2.8	2"	150
1/2"	8.0	2-1/2"	340
3/4"	16	3"	490
1"	30	4"	600
1-1/4"	75	6"	550

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/4" - 3/8"	PVC	Socket or Threaded	FPM or EPDM	225 psi@ 70°F non-shock
1/2" - 4" (20 mm – 110 mm)	PVC or CPVC	Socket, Threaded or Flanged**		
1/2" - 2" (20 mm – 63 mm)	PPL*	Threaded		
6"** (160 mm)	PVC or CPVC	Flanged		

* Natural PPL, 1/2" to 1-1/2" rated at 150 psi, 2" at 120 psi
** 4" valve venturied to 6"

ProFile2™ Proportional Control Ball Valves, 1", 2", 3" and 4", PVC and Corzan® CPVC

Features
- All plastic
- Precise flow control
- True union design
- Manual or actuated
- Viton® Seals
- Socket or threaded connections

Applications
- Methane gas recovery
- 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" (32, 63, 90, 110 mm)	PVC or CPVC	Socket, Threaded or Flanged	FPM or EPDM	225 psi@ 70°F non-shock
6" (160 mm)	PVC or CPVC	Flanged		

* 4" valve venturied to 6"

QIC2™ Ball Valves, Quality, Inexpensive and Compact, 1/2" to 2", PVC

Features
- Rugged, compact, lightweight
- Low torque, easy-to-operate design
- Full 150 psi pressure rating
- PTFE seats
- EPDM seals
- Full port design

C_V Factors

Size	Value	Size	Value
1/2"	8.0	1-1/4"	75
3/4"	16	1-1/2"	90
1"	30	2"	150

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/2" - 2"	PVC	Socket or Threaded	EPDM	150 psi@ 70°F non-shock

Valves, Fittings and Accessories

True Union Ball Check Valves, 1/4" to 6", PVC, Corzan® CPVC and PPL

Ball check valve with foot valve screen installed.

Features
- Square cut seat for positive sealing
- Seats with minimum back pressure
- For horizontal or vertical installation
- 1/4" to 4" are full port
- 1/2" to 6" are Sure Block design
- 1/4" & 3/8" are Trim Check design

Options
- Foot valve screens

C_V Factors

Size	Value	Size	Value
1/4"	1.0	1-1/2"	45
3/8"	3.0	2"	130
1/2"	4.8	2-1/2"	170
3/4"	7.7	3"	250
1"	16	4"	400
1-1/4"	25	6"	340

Selection Chart

Size	Material	End Connection	Seal	Pressure Rating
1/4" - 3/8" *	PVC	Socket or Threaded	FPM	150 psi @ 70°F Non-shock
1/2" - 4" (20 mm – 110 mm)	PVC or CPVC	Socket, Threaded or Flanged	FPM or EPDM	
1/2" - 2" (20 mm – 63 mm)	PPL***	Threaded	FPM	
6" **	PVC or CPVC	Flanged	FPM or EPDM	

* Trim Checks ** 4" Valve venturied to 6" *** Glass Fiber Reinforced

Y Check Valves, 1/2" to 4", PVC

Features
- Full flow design
- Minimum pressure drop
- Hex cap removes easily for screen cleaning
- PVC coil to guide disc to a positive seat
- Minimal back pressure required to seat disc

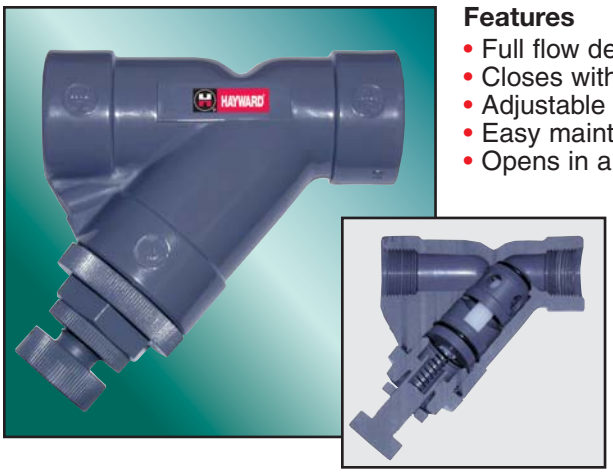
C_V Factors

Size	Value	Size	Value
1/2"	0.8	2"	65
3/4"	3.0	2-1/2"	75
1"	9.0	3"	110
1-1/4"	26	4"	240
1-1/2"	45		

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/2" - 4"	PVC	Socket, Threaded or Flanged	FPM	150 psi@ 70°F non-shock

Spring-Loaded Y Check Valves, 1/2" to 4", PVC



Features
- Full flow design
- Closes with no back pressure
- Adjustable – opens from 2 to 15 psi
- Easy maintenance
- Opens in any position

C_V Factors

Size	Value	Size	Value
1/2"	0.8	2"	65
3/4"	3.0	2-1/2"	75
1"	9.0	3"	110
1-1/4"	26	4"	240
1-1/2"	45		

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/2" - 4"	PVC	Threaded	FPM or EPDM	150 psi@ 70°F non-shock

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Valves, Fittings and Accessories

Swing Check Valves, 3" to 8", PVC, Corzan® CPVC and PPL

Features
- High temperature/pressure ratings
- Patent-Pending, Two-in-One seal design
- Built-in flange seals
- Two drain ports
- Self-aligning clapper seal

Options
- Counterweight for closing assistance
- Limit switch

C_V Factors	
Size	**Value**
3"	328
4"	514
6"	1278
8"	2549

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
3" and 4" (75 & 100 mm)	PVC,CPVC*, or PPL**	Flanged	FPM or EPDM	225 psi@ 70°F
6" and 8" (150 & 200 mm)				150 psi @ 70°F

* 8" not available in CPVC

** Glass fiber reinforced

Diaphragm Valves, 1/2" to 6", PVC, Corzan® CPVC and PPL

Above left: 1/2" through 2" style.
Above right: 3" through 6" style.

Features
- Position indicator
- Rated to 225 psi
- Diaphragm saver
- Double stem seals
- EPDM, Viton® or PTFE diaphragms
- True Union design

Options
- Pneumatic actuation, air-to-air, double acting
- Pneumatic actuation, air-to-spring, fail safe
- Panel mounting fittings

C_V Factors - full open position			
Size	**Value**	**Size**	**Value**
1/2"	3.5	2"	47
3/4"	7.0	3"	160
1"	13	4"	280
1-1/4"	32	6"	700
1-1/2"	32		

Selection Chart

Size	Material	End Connection	Diaphragm	Pressure Rating
1/2" - 6" (20 mm – 160 mm)	PVC or CPVC	Socket, Threaded or Flanged	FPM, EPDM or PTFE	225 psi – 1/2" - 2" 150 psi – 3" & 4" 110 psi – 6" @ 70°F, non-shock
1/2" - 2" (20 mm – 63 mm)	PPL	Spigot		

Notes: 3" and 4" valves with PTFE diaphragms are rated at 90 psi, 6"at 75 psi. Flanged connections only available for 3", 4" and 6" sizes. 3", 4" and 6" sizes not available with Viton® diaphragm. Spigot connection valves are not true union. 1-1/4" not available in PPL. 6" not available in CPVC. PPL is glass fiber reinforced.

Three-Way Ball Valves, 1/2" to 6", PVC and Corzan® CPVC

Features
- Position indicator
- Integrally molded bottom port
- PTFE seats
- Viton® seals
- True union end connections

Options
- Valve safe lockout
- Electric actuators
- Pneumatic actuators

C_V Factors			
Size	**Value**	**Size**	**Value**
1/2"	3.0	2"	58
3/4"	7.0	3"	190
1"	12	4"	450
1-1/2"	30	6"	340

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/2" - 4"	PVC or CPVC	Socket, Threaded or Flanged**	FPM or EPDM	150 psi@ 70°F non-shock
6"*	PVC or CPVC	Flanged		

* 4" valve venturied to 6"

Valves, Fittings and Accessories

Lateral Ball Valves, 1/2" to 6", PVC and Corzan® CPVC

Features
- Simplifies lateral connections
- Replaces valve/tee connection combinations
- Quick, easy to install
- True union end connections
- Replacement for zero dead-leg valves
- Full port construction
- PTFE seals, Viton® seals

Option
- Valve safe lockout

C_V Factors			
Size	Value	Size	Value
1/2"	3.0	2"	58
3/4"	7.0	3"	190
1"	12	4"	450
1-1/2"	30	6"	340

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/2" - 4"	PVC or CPVC	Socket, Threaded or Flanged**	FPM or EPDM	150 psi@ 70°F non-shock
6"*	PVC or CPVC	Flanged		

* 4" valve venturied to 6"

Butterfly Valves, 1-1/2" to 12", PVC, CPVC & PPL Bodies with PVC, Corzan® CPVC, PPL or PVDF Discs

Features
- Fully supported flange bolt holes
- V-notch seal of liner to body
- Seven-position, all-plastic lever handle or gear box operator
- Type 316 Stainless steel shaft
- Standard face-to-face dimensions for easy retrofit of metal valves

Options
- Stem extensions
- Gear operators
- Electric or pneumatic actuators
- Stainless steel lugs
- 2" square operating nut
- Titanium shaft
- Chain operator

C_V Factors	
Size	Value
1-1/2"	90
2"	125
3"	280
4"	575
6"	1100
8"	2500
10"	4700
12"	6000

Selection Chart

Size	Body Material	Disc Material	Liner & Seals	Pressure Rating
1-1/2" to 8" (50 mm – 225 mm)	PVC, CPVC or PPL*	PVC, PPL*, CPVC or PVDF	EPDM, Nitrile or FPM	150 psi @ 70˚F non-shock
10" & 12" (280 mm – 315 mm)	PPL*	PVC or PPL*		

* Glass fiber reinforced

Butterfly Valves, 14" to 24", Natural PPL, PVC and PVDF

Features
- Dual lifting lug/handles
- Easily modified for unique applications
- Type 316 stainless steel stem
- High torque gear box
- Bonded liner
- Sphered disc for positive shut off

Options
- Type 410 stainless steel stem
- Pneumatic or electric actuation
- Type 316 stainless steel lugs

C_V Factors	
Size	Value
14"	7000
16"	8800
18"	11,000
20"	14,500
24"	18,800

Selection Chart

Size	Body Material	Disc Material	Seals	Operators	Pressure Rating
14", 16", 18" 20", 24"	PPL PVC, PVDF	PPL PVC, PVDF	EPDM, FPM or Nitrile	Electric Actuator Pneumatic Actuator Gear Box	* psi @ 70°F non-shock

*14" = 105 psi, 16" = 90 psi, 18" = 75 psi, 20" and 24" = 56 psi

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Valves, Fittings and Accessories

Angle Valves, 1/4" to 2", PVC

Features
- 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

C_V Factors	
Size	**Value**
1/4"	1.0
1/2"	5.0
3/4"	10
1"	16
1-1/2"	45
2"	70

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/4" to 2"	PVC	Threaded	FPM	150 psi @ 70°F non-shock

Pressure Relief Valves, 1/2" to 2", PVC or Corzan® CPVC

Features
- No metal parts to stick or jam
- Hand adjustable, no tools needed
- Integrally molded threaded gauge port
- Pressure relief from 5 psi to 75 psi
- Relieves liquid pressure in pipelines

Options
- 0 to 30 psi gauge
- 0 to 60 psi gauge
- 0 to 160 psi gauge
- Gauge guards

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/2" - 2"	PVC or CPVC	Threaded	FPM or EPDM	150 psi@ 70°F non-shock

Pressure Regulators, 1/4" to 1-1/2", PVC or Corzan® CPVC

Features
- No metal parts to stick or jam
- 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

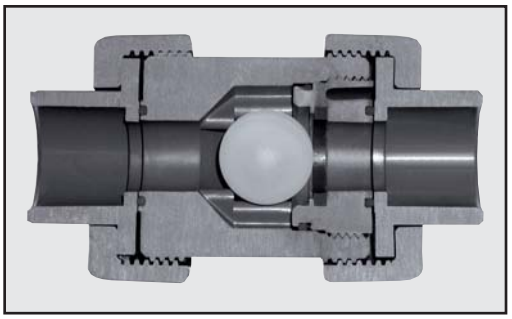
Selection Chart

Size	Material	End Connection	Seal	Pressure Setting	Pressure Rating
1/4" - 1-1/2"	PVC or CPVC	Threaded	FPM	5 to 75 psi	150 psi @ 70°F non-shock

Valves, Fittings and Accessories

Air Release Valves, 3/4", PVC

Features
- 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. Conn.	Seals	Pressure Rating
3/4"	PVC Body PPL Ball	Socket or Threaded	FPM	225 PSI @ 70°F Non-Shock

Needle Valves, 1/4", 3/8" and 1/2", PVC and PPL

Features
- Lugs for panel mounting
- Accurate flow control
- Fine pitch stem threads for precise alignment
- Unique molded PTFE seat

Maximum Flow Rates

Size	Rate
1/4"	5.0 gpm
3/8"	7.5 gpm
1/2"	8.0 gpm

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/4", 3/8", 1/2"	PVC or PPL*	Threaded	FPM	150 psi @ 70°F non-shock

* Glass fiber reinforced

Universal Stopcocks, 1/4", PVC

Features
- Six end connections in one package
- Adjust flow rates down to "drops per minute"
- EPDM seat and seals
- Calibrated adjustment marks molded into valve body
- Hex wrench included for end connection installation

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/4"	PVC & CPVC	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

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Valves, Fittings and Accessories

Vacuum Breaker, 3/4", PVC

Features
- Reliable venting of tanks and piping systems
- Advanced design for fast draining
- Easy installation
- Compact
- No metal parts to stick or jam
- FPM membrane
- Can mount to 1-1/2" bulkhead fitting

Just solvent weld the vacuum breaker into the socket connection of a standard Hayward 1-1/2" bulkhead fitting. Then install the bulkhead fitting onto the tank. No extra piping is required.
Or thread directly onto a 3/4" pipe.

Gauge Guards 1/4" x 1/4" and 1/4" x 1/2", PVC, Corzan® CPVC, PPL and PVDF

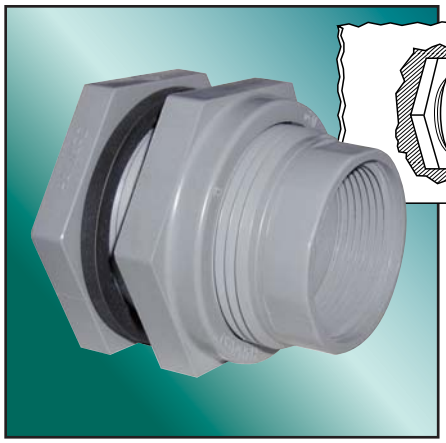
Features
- Threaded NPT connections
- FPM membrane
- Air bleed port for gauge installation
- All plastic, no rust or corrosion
- No metal fasteners
- Rugged, low profile, compact design
- Work in any position
- Rugged, low profile design

Options
- 0 to 30 psi gauge
- 0 to 60 psi gauge
- 0 to 160 psi gauge

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/4" x 1/4"	PVC, CPVC, PPL	Threaded	FPM	150 psi@ 70°F non shock
1/4" x 1/2"	PVC, CPVC, PVDF			

Bulkhead Fittings, 1/2" to 4", PVC, Corzan® CPVC and PPL



Features
- Safe-T-Loc™ design
- Buttress threads protect against blowout
- Hex body for one-person installation
- Rated at a full 150 psi

Minimum Inside Diameters of Tanks for Safe-T-Loc Bulkhead Fitting Installation

Bulkhead Size	Min. Rigid Tank I.D.	Min. Flexible Tank I.D.
1/2"	7.25"	5.56"
3/4"	10.00"	7.75"
1"	11.75"	8.94"
1-1/4"	16.25"	12.19"
1-1/2"	16.25"	12.19"
2"	25.75"	19.38"
3"	42.50"	36.25"
4"	90.00"	76.81"

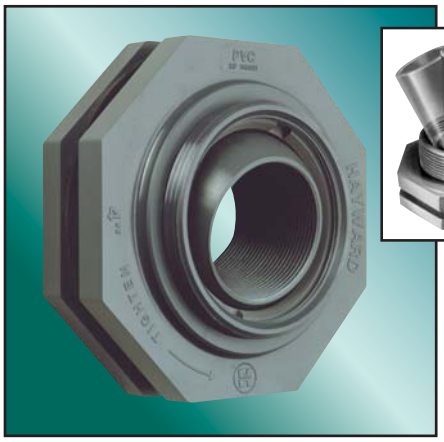
Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/2" - 4"	PVC	Socket x Thread, Thread x Thread	EPDM or FPM	150 psi @ 70°F non-shock
	CPVC	Socket x Thread		
	PPL*	Thread x Thread		

* Natural PPL

Valves, Fittings and Accessories

Self-Aligning Bulkhead Fittings, 1", 2" and 3", PVC



Features

- 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

Minimum Inside Diameters of Tanks for Self-Aligning Bulkhead Fitting Installation

Bulkhead Size	Min. Rigid Tank I.D.	Min. Flexible Tank I.D.
1"	25.75"	19.38"
2"	42.50"	36.25"
3"	90.00"	76.81"

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1", 2" and 3"	PVC	Thread x Thread	EPDM, Teflon, FPM	75 psi@ 70°F non-shock

Valve-Safe Lockouts, PPL

Features

- All-plastic PPL construction
- For all ball valves up to 6" size
- Use with up to 3 padlocks
- Valve handle is completely enclosed
- Impact resistant

Ready Flanges
PVC, Corzan® CPVC and PPL, 1" to 4"

Features

- 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
- 150# ANSI bolt pattern

All-Plastic Strainers and Filters

Plastic Y Strainers, 1/2" to 4", PVC, Clear PVC and Corzan® CPVC

NEW!
Clear PVC Y Strainer

Features

- Horizontal or vertical installation
- 2:1 open area ratio
- Hex cap for easy access to screen
- Plastic screen has 1/32" perforation

Options

- Stainless steel strainer screens
- Clear, translucent PVC construction

CV Factors

Size	Value	Size	Value
1/4"	4.0	2"	28.0
3/4"	6.8	2-1/2"	40.0
1"	9.0	3"	65.0
1-1/4"	12.0	4"	100
1-1/2"	12.0		

Selection Chart

Size	Material	End Connection	Seal	Pressure Rating
1/2" – 4"	PVC or CPVC	Socket , Threaded or Flanged	FPM	150 psi @ 70°F non-shock
1/2" – 2"	Clear PVC	Socket or Threaded		

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All-Plastic Strainers and Filters

Simplex Plastic Basket Strainers, 1/2" to 8" PVC, Corzan® CPVC and Eastar

Features
- Protects against dirt and debris damage
- Hand removable cover
- In-line or loop connections
- External Cover Threads
- Clear, Eastar model available

Options
- Stainless steel strainer baskets
- Pressure differential gauge and switch

C_V Factors			
Size	Value	Size	Value
1/2"	15	2-1/2"	290
3/4"	18	3"	300
1"	20	4"	350
1-1/4"	55	6"	1000
1-1/2"	58	8"	750
2"	60		

Selection Chart				
Size	Material	End Connection	Seal	Pressure Rating
1/2" - 4"	PVC, CPVC	Threaded, Socket or Flanged	FPM	150 psi @70° non-shock
1" to 4"	Eastar	Threaded or Flanged		
6" to 8"	PVC, CPVC	Flanged		

*EPDM Seals, POA

Duplex Plastic Basket Strainers, 1/2" to 6", PVC, Corzan® CPVC and Eastar

Features
- All-plastic construction
- No system shutdown for basket cleaning
- In-line or loop connections
- External cover threads

Options
- Stainless steel strainer baskets
- Pressure differential gauge and switch

C_V Factors			
Size	Value	Size	Value
1/2"	12.5	2"	48
3/4"	13	3"	200
1"	14	4"	230
1-1/4"	40	6"	660
1-1/2"	45		

Selection Chart				
Size	Material	End Connection	Seal	Pressure Rating
1/2" - 4"	PVC or CPVC	Socket, Threaded or Flanged	FPM	150 psi @ 70°F non-shock
6"	PVC or CPVC	Flanged		
1" - 4"	Eastar	Threaded or Flanged		

*EPDM Seals, POA

Plastic Simplex Bag Filter, Single and Double Length, PVC, CPVC, PPL or PVDF

Features
- All-plastic construction
- Hand removable cover
- Integral mounting base
- In-line or loop flow
- Vent valve on cover

Options
- Vent gauge with gauge guard
- Pressure differential gauge
- Pressure differential switch
- PPL filter bags
- Flanged connections
- EPDM seals

Technical Specifications

Material of Construction: ..PVC, CPVC, PPL or PVDF
Piping Connections: .....2" Threaded, Socket or Flanged
Bag Sizes: .....Single length 7" x 17", 2.5 sq ft
Double length 7" x 32", 4.4 sq ft
Pressure Rating: .....PVC, CPVC, PPL 150 psi, PVDF 100 psi both @ 70°F
Seals: .....Viton®
Flow Rate: .....Up to 100 gpm (clean bag) double length
Up to 50 gpm (clean bag) single length

All-Plastic Strainers and Filters

Plastic Duplex Bag Filter, Single and Double Length Sizes, PVC, CPVC or PPL with CPVC Valve Assembly

Features
- Two simplex bag filters linked with a custom valve assembly
- No line shutdown for bag changeout
- Built-in mounting platform
- In-line or loop flow

Options
- Vent gauge with gauge guards
- Pressure differential gauges
- Pressure differential switches
- Automated operation - electric or pneumatic
- EPDM Seals

Technical Specifications

Materials of Construction: ...PVC, CPVC or PPL with CPVC Valve Assembly
Piping Connections: .....2" Threaded, Socket or Flanged
Pressure Rating:.....150 psi @ 70°F
Seals:.....Viton®
Hardware: .....Stainless steel
Flow Rate:.....Up to 100 gpm (clean bag) double length
Up to 50 gpm (clean bag) single length

Heavy-Duty Filter Bags, PPL Felt or Mesh, 1 to 800 Micron Ratings

SENTINEL® PPL flange with failsafe sealing is standard on all welded filter bags.

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.

Features
- All-plastic ring seal
- Heavy duty sewn or welded construction
- Silicone-free

Options
- Custom filter bags for most any application

Selection Chart

Material	Construction	Seal Material/Type	Micron Ratings
PPL Felt	Welded	PPL/SENTINEL®	1, 5, 10, 25, 50, 100, 200
PPL Felt	Sewn	PPL/SNAP RING	1, 5, 10, 25, 50, 100, 200
PPL Mesh	Sewn	PPL/SNAP RING	400, 600, 800

All-Plastic, High Capacity Cartridge Filters with PPL and PVDF Housings

Features
- No rust, corrosion or contamination
- Rated to 150 psi
- Threaded or flanged connections
- Viton® or EPDM seals
- Inline or loop flow
- Hand-removable cover
- Simplex or Duplex designs

Cartridge Types
- Hayward HC 16" cellulose nominally rated 5 and 25 microns
- Hayward PF 20" and 30" PPL absolutely rated at 1, 5 or 10 microns

Selection Chart

Housing	Hayward HC Cartridge	Max. Flow Rate	Hayward PF Cartridge	Max. Flow Rate
CFLT4201	One 16"	50 gpm	—	—
CFLT4202	Two 16"	100 gpm	Five 30"	100 gpm
CFLT4203	—	—	Five 20"	50 gpm

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Automated Valves and Actuators

Bus Control System

For Cost Effective Multiple Automated Valve Installation

Features

- Works with electric and pneumatic actuators
- Controls multiple valve actuators through a PLC with a single pair of wires
- Lowers installation costs
- Lowers maintainance costs
- Compatible with all communications protocols

The **pneumatic bus module** (mounted atop butterfly valve at far left) is housed in a transparent, screw-on Lexan® housing that is rated NEMA 4, 4X and IP67.

The **electric bus module** (in yellow circle at near left) mounts directly into the actuator housing and is completely contained within the housing.

Solenoid Valves, 1/4" to 1", PVC and Corzan® CPVC

Features

- True Union design
- 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 is standard

Optional Voltages

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

C_V Factors

Size	Value	Size	Value
1/4"	1.3	3/4"	3.2
1/2"	2.2	1"	3.8

Operating Parameters

For optimum valve performance, inlet pressure must not exceed 120 psi. Flow rate should not exceed 5 ft. per second.

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/4", 1/2", 3/4", 1" (20 , 25, 32 mm)	CPVC or PVC *	Socket or Threaded	FPM or EPDM	150 psi@ 70°F non-shock

* 1/4" not available in PVC

Series EA Electrically Actuated True Union Ball Valves, 1/2" to 2", PVC

Low Cost, Full Featured Valve and Actuator Combination

Valve Features

- All-plastic PVC construction
- Rated to 225 psi
- EPDM seals
- PTFE seats
- Full port design
- Fully serviceable
- Double O-ring stem seal

C_V Factors

Size	Value	Size	Value
1/2"	8.0	1-1/4"	75
3/4"	16	1-1/2"	90
1"	30	2"	150

Actuator Features

- All-plastic NEMA 4X enclosure
- Thermal overload protection
- Permanently lubricated gear train
- Actuator brake
- No need for manual adjustments

Selection Chart

Size	Material	End Conn.	Seal	Pressure Rating
1/2" - 2" (20 mm – 63 mm)	PVC	Socket and Threaded	EPDM	225 psi @ 70°F

Automated Valves and Actuators

True Union Ball Valves Equipped for Actuator Mounting, 1/4" to 6", PVC and Corzan® CPVC

Features
- True Union, sure block design
- Rated to 225 psi
- Double O-ring stem seals
- Full port design for low pressure loss
- PTFE seats - 3", 4" and 6" O-ring-backed

Options
- Electric actuators
- Pneumatic actuators
- Stem extensions for 3", 4" and 6" valves

C_V Factors

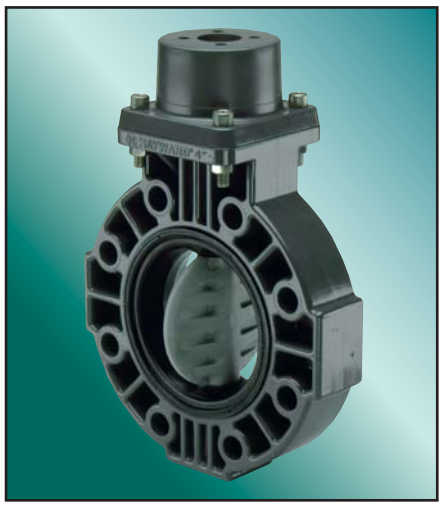
Size	Value	Size	Value
1/4"	1.0	1-1/2"	90
3/8"	2.8	2"	150
1/2"	8.0	2-1/2"	340
3/4"	16	3"	490
1"	30	4"	600
1-1/4"	75	6"	550

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/4" - 4" (20 mm – 110 mm)	PVC or CPVC	Socket , Threaded or Flanged	FPM or EPDM	225 psi @ 70°F non-shock
6" *	PVC or CPVC	Flanged		

* 4" Venturied to 6"

Butterfly Valves Equipped for Actuator Mounting
1-1/2" to 24", PVC, CPVC or PPL Bodies with PVC, Corzan® CPVC, PPL or PVDF Discs



*Glass fiber reinforced
** @70°F non-shock

Features
- Fully supported flange bolt holes
- Positive seal of liner to valve body
- Integrally molded mounting pad
- Stainless steel shaft

Options
- Electric actuators
- Pneumatic actuators
- Stem extensions
- Stainless steel lugs
- Titanium shaft

C_V Factors

Size	Value	Size	Value
1-1/2"	90	12"	6000
2"	125	14"	7000
3"	280	16"	8800
4"	575	18"	11,000
6"	1100	20"	14,500
8"	2500	24"	18,800
10"	4700		

Selection Chart

Size	Body Material	Disc Material	Seals	Operators	Pressure Rating
1-1/2" to 8" (50 mm – 225 mm)	PVC, CPVC, PPL*	PVC, CPVC, PPL or PVDF	EPDM, Nitrile or FPM	Electric Actuator Pneumatic Actuator	150 psi@ 70°F non-shock
10", 12" (280 mm – 315 mm)	PPL*	PVC or PPL*			
14"	PPL*	PPL*			105 psi**
16"					90 psi**
18"					75 psi**
20"					56 psi**
24"					56 psi**

Three-Way Ball Valves Equipped for Actuator Mounting, 1/2" to 6", PVC and Corzan® CPVC

Features
- Double O-ring stem seals
- Integrally molded mounting pad
- One-piece body

Options
- Electric actuators
- Pneumatic actuators
- Stem extensions for 3", 4" and 6" sizes

Size	Value	Size	Value
1/2"	3.0	2"	58
3/4"	7.0	3"	190
1"	12	4"	450
1-1/2"	30	6"	340

Selection Chart

Size	Material	End Connection	Seals	Pressure Rating
1/2" - 4"	PVC or CPVC	Socket, Threaded or Flanged	FPM or EPDM	150 psi@ 70°F non-shock
6"*	PVC or CPVC	Flanged		

*4" valve venturied to 6"

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Automated Valves and Actuators

Series PCD/PCS Pneumatic Actuators, For All Sizes of Ball and Butterfly Valves

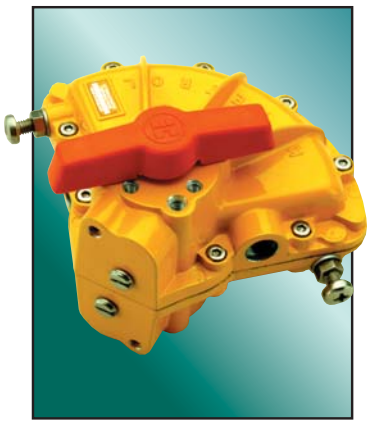
Features
- Four-piston rack and pinion design
- Manual override
- Compact, lightweight
- Position indicator
- Namur style solenoid mounting
- Adjustable travel stops
- ISO 5211 mounting base

Options
- Air-to-spring, fail-safe operation
- Solenoid valves
- Positioners
- Auxiliary limit switches
- Cycle speed controls

Technical Specifications

Housing: .....Epoxy-coated aluminum
Output Shaft: .....Plated steel
Minimum Air Pressure: ..80 psi
Maximum Air Pressure: ..120 psi
Air Transfer: .....Internal manifold
Cycle Time: .....Less than one second- typical
Air Port Connections: ....1/4" NPT

Series PKD/PKS Pneumatic Actuators
For All Size Ball Valves and 1-1/2" to 8" Butterfly Valves



Features
- Rugged vane design
- Epoxy coated zinc/ titanium alloy housing
- Manual override
- Position indicator

Options
- Air-to-spring fail-safe operation
- Direct-mount solenoid valves with speed control
- Voltage options
- Positioners
- Limit switches

Series PAD/PAS Plastic Pneumatic Actuators
For 1/4" Through 2" Ball Valves

Features
- Reliable vane design
- All-plastic, corrosion-resistant body
- Manual override
- Position indicator
- Very light weight

Options
- Air-to-spring fail-safe operation
- Solenoid valves
- Voltage options
- Limit switches
- Cycle speed controls
- Position stop

Series PMD/PMS Pneumatic Actuators, For 1/4" Through 2" Ball Valves

Features
- Choice of air-to-air or air-to-spring operation
- Corrosion-resistant plastic housing
- Two-piston rack & pinion design
- Manual override, position indicator
- Permanent lubrication
- Light weight
- Stainless steel output shaft
- Namur-style mounting

Options
- Solenoid valves
- Solenoid voltages
- Limit switch
- Cycle speed controls

Technical Specifications

Housing: .....Polyarylamide plastic
Output Shaft: .....Stainless steel
Minimum Air Pressure: .....80 psi
Maximum Air Pressure: .....120 psi
Seals: .....Nitrile
Cycle Time: .....1/2 Second - Typical
Air Port Connections: .....1/4" NPT

Automated Valves and Actuators

Series EJM Actuators for Ball and Butterfly Valves up to 24"

Features
- 2 Auxiliary limit switches
- Heater and thermostat
- NEMA 4/4X housing
- Position indication
- Manual override
- Self-locking gear train
- Permanently lubricated
- Thermal overload protection
- CE and CSA approved
- ISO 5211 mounting base

Options
- Positioners
- Voltage options
- 3-Phase motors
- Feedback potentiometer
- Control stations

Technical Specifications

Operation: ..... Reversing
Conduit Size: . 1/2"
Duty Cycle: ... 25%
Cycle Times: .. 8 to 46 seconds–depending on model
Enclosure: ..... NEMA 4/4X
Voltage: 120VAC

Thermal Overload Protection
Brake: .....Self-locking Gear Train
Override: .....Manual
Housing: .....Aluminum Alloy Dry Power Coated

Series EVS/EVT Electric Actuators, For Ball and Butterfly Valves up to 12"

Features
- Sizes for all ball and butterfly valves to 12"
- Multi-option availability
- On/off or modulating applications
- Position indicator

Options
- Limit switches
- Positioners
- Voltage options
- Fail-safe operation
- Feedback potentiometer
- Extended duty motor
- Heater and thermostat
- NEMA 4/4X/7/9 enclosure
- UL or CSA certification
- Mechanical brake

Technical Specifications

Operation: .....Reversing
Conduit Size: .....1/2"
Duty Cycle: 75%
Cycle Times: .....5 to 45 seconds depending on model
Enclosure: .....NEMA 4/4X
Voltage: ....120 VAC

Thermal Overload Protection
Brake: .....Mechanical brake standard for butterfly valves
Override: ..Manual
Housing: ...Epoxy-coated with aluminum alloy base

Series EAU Electric Actuators, For 1/4" Through 2" Ball Valves

Features
- Corrosion-resistant plastic housing
- Inexpensive
- Lightweight and compact
- On/Off service applications

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

Technical Specifications

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

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Automated Valves and Actuators

Series EVR Electric Actuators, For All Sizes of Ball Valves and 1-1/2" through 4" Butterfly Valves

Features
- Position indicator
- Manual override
- On/Off service applications
- Mechanical brake

Options
- Heater and thermostat
- Voltage options
- Timer

Technical Specifications

Operation: .....Reversing
Conduit Size: ...1/2"
Duty Cycle: 25%
Cycle Time: .....5 - 13 seconds depending on model
Enclosure: .....NEMA 4/4X
Voltage: .....120 VAC

Thermal Overload Protection
Brake:.....Mechanical brake standard for butterfly valves
Base: .....Epoxy coated aluminum with plastic cover
Motor: .....UL certified

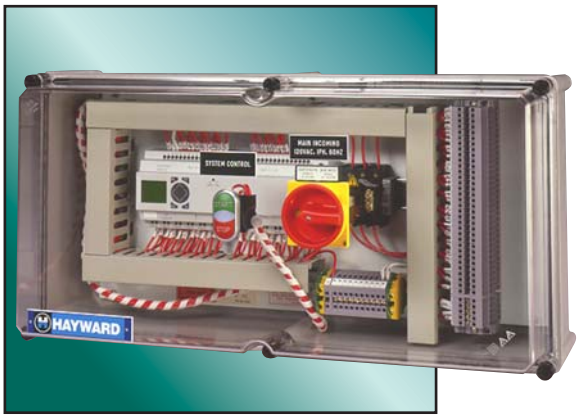
Electric Actuator Control Station

Control stations permit direct operation of electric actuators while providing information regarding the valve's position. **Manual switches** control the actuator's operation (open/stop/closed). **Colored indicator lights** show the valve's position (open/closed). **A second set of indicator lights** indicates the station's status (local/remote).

Features
- Corrosion-resistant plastic enclosure
- Remote and/or local actuator control
- Mounts to actuator or, remotely, to a wall or panel
- Easily installed in the field
- Visual indication of valve position
- Rugged, heavy-duty construction
- NEMA 4X

Options
- Keyed selector switches for added security
- Built in 4-20mA generator for modular applications

Universal Control Panel, Cost Effective Control for up to 25 Automated Valves



Features
- Eliminates need for expensive programmable controllers
- Easy installation and maintenance
- Works with electrically- or pneumatically-actuated valves
- Programmable relays serve as timers, counters, clocks and relays
- User-friendly LCD display panel shows circuit diagrams and function updates
- Easily programmed
- NEMA 4X

Now you can control, sequence and monitor automated valves without the complexity and cost of a programmable controller or the confusing maze of wires associated with hard-wired relays.

Flow Meters & Instrumentation

FloSite Battery Powered Flow Indicator/Totalizer

An economical, direct mount battery-powered flow sensor with a self-contained indicator/totalizer. It provides indication of flow rate and accumulated total flow displayed at the point of use. It is completely stand alone, ideal for use in installations where a power supply is not available. Complete with two 3.6 V long life lithium batteries.

Features

- Choice of CPVC or PVDF construction
- Five Blade Halar rotor for high accuracy
- NEMA 4 X Rating
- Easy installation and calibration, no special tools are needed
- Viton® seals standard, EPDM optional

FloSite Flow Sensor

The FloSite Flow Sensor offers high accuracy along with excellent low flow performance and long life. It outputs a signal proportional to the flow for up to 984 feet without conditioning. This sensor is the perfect companion to the FloSite Analog Flow Indicator, Digital Indicator/ Totalizer/Batch Controller or Digitial Indicator/Totalizer/Transmitter.

Features

- Choice of CPVC of PVDF construction
- Five Blade Halar rotor for high accuracy
- NEMA 4 X Rating
- Easy installation
- Reliable Hall effect sensor
- Viton® seals standard, EPDM optional

FloSite Analog Flow Indicator

The Flow Indicator is a low cost, easy to install analog flow monitor. It provides both accurate and reliable indication of pipeline flow rates. The indicator can be panel or surface mounted using the optional rear cover. The highly visible analog display provides easy viewing of the flow rate from a distance. Meter dampening is provided to minimize the effect of pressure fluctuations on the meter reading. Signal input for the indicator is provided by the Flow Sensor. Line size and maximum estimated flow rate must be provided for factory calibration.

Features

- Economical flow monitoring
- Highly visible analog display
- Corrosion resistant NEMA 4X enclosure
- Six dial scales are provided for application versatility

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Flow Meters & Instrumentation

FloSite Digital Flow Indicator/Totalizer/Batch Controller

These digital meters provide large, easy to read digital indication of both the flow rate and totalized flow and allows batching as well. Batching information is entered via an easy to use front keypad. The direct mount unit is complete with an integral sensor, while the panel and wall mount remote units require a FloSite Sensor. Both require a 12-24 VDC power supply.

Direct Mount Sensor Features
- Choice of CPVC or PVDF
- Five Blade Halar rotor for high accuracy
- NEMA 4 X Rating
- Viton® seals standard, EPDM optional
- Ceramic shaft and bearings

Meter Features
- Three Line LCD Display
- Five Button Keypad
- Two Stage Shutdown
- Up or down batch counting
- Two modes of operation
- Easy installation and calibration

FloSite Digital Flow Indicator/Totalizer/Transmitter

These digital meters provide large, easy to read digital indication of both the flow rate and totalized flow and can transmit a 4 to 20mA signal proportional to the flow rate. The direct mount unit is complete with an integral sensor, while the panel and wall mount remote units require a FloSite Sensor. Both require a 12-24 VDC power supply.

Direct Mount Sensor Features
- Choice of CPVC or PVDF
- Five Blade Halar rotor for high accuracy
- NEMA 4 X Rating
- Viton® seals standard, EPDM optional
- Ceramic shaft and bearings

Meter Features
- Three Line LCD Display
- Five Button Keypad
- Easy set-up with menus
- Plug-in removable terminals
- Epoxy encapsulated electronics
- Auto calibration of K factors

FloSite Blind Flow Transmitter

The FloSite Blind Flow Transmitter is perfect for transmitting a 4 to 20mA signal proportional to the flow when visual indiction of the flow rate is not required and is a cost effective alternative to the FloSite Digital Flow Indicator/Totalizer/Transmitter. Requires a 12-24 VDC power supply.

Features
- Choice of CPVC or PVDF construction
- Five Blade Halar rotor for high accuracy
- NEMA 4 X Rating
- Easy installation
- Reliable Hall effect sensor
- Viton® seals standard, EPDM optional

Flow Meters & Instrumentation

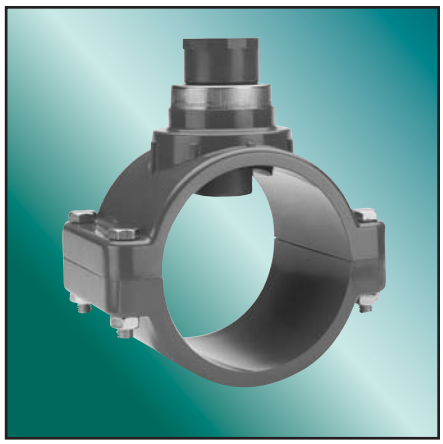
FloSite No-Flow Switch

Designed to shut off an electrical device, typically a valve or pump if the process flow slows. Applications include protecting a pump from running dry or pumping against a closed valve. When the system flow drops below 0.5 ft/sec an internal relay is actuated, shutting down the electrical device. Requires a 12-24 VDC power supply.

Features

- Choice of CPVC or PVDF construction
- Five Blade Halar rotor for high accuracy
- NEMA 4 X Rating
- LED indicator lights, green flow, red low flow
- Reliable Hall effect sensor
- Viton® seals standard, EPDM optional
- Ceramic shaft and bearings

FloSite Installation Fittings



Installation fittings are used to install FloSite instrumentation into piping systems. Two types of fittings are available. A true union tee fitting for 1/4" to 1 1/2" pipelines and bolt on saddle fittings for 2" to 8" pipelines. Viton® seals standard, EPDM optional.

Plastic Corrosion Resistant Pumps

Webster Series R Magnetic Drive Pumps

Features

- Leak-proof, seal-less
- Friction-free operation
- Easy maintenance, no special tools
- All plastic pump construction
- Two year warranty

Specifications

- **Pump:** Glass reinforced, polypropylene construction or PVDF
- **Pipe Connection:** Threaded NPT or flanged ANSI 150#
- **Shaft:** Large diameter, ceramic with PTFE bushing
- **Performance:** Flow rates from 5 to 140 GPM with TDH's of up to 141 feet
- **Motors:** 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
- ***Models* With HP Ratings:** *RC03 1/3, RX05 1/2, RX07 3/4, RX10 1, RX15 1 1/2, RX20 2, RX30 3, RX50 5*

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Plastic Corrosion Resistant Pumps

Webster Series D Vertical Seal-Less Immersible Pumps

Features
- Small capacity pumps built for years of trouble-free service
- No metal in contact with the process fluid
- Can be run dry or against a closed valve
- Optional inlet screens
- Two year warranty

Specifications
- **Pump:** Natural PPL, CPVC, or PVDF construction
- **Pipe Connection:** Threaded
- **Fume Barrier:** PTFE, protects motor and bearings from corrosion damage
- **O-rings:** Viton®
- **Flow Rates:** From 2 to 17 GPM with TDHs up to 18 feet
- **Motors:** 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

Webster Series S Vertical Seal-Less Immersible Pumps

Features
- Heavy duty design for continuous duty service
- No metal in contact with the process fluid
- Can be run dry or against a closed valve
- Optional inlet screen and extended shaft
- Two year warranty

Specifications
- **Pump:** Glass reinforced PPL, natural PPL, PVDE or CPVC (only with 3 and 5 HP motors)
- **Pipe Connection:** Threaded NPT or socket
- **Fume Barrier:** PTFE, protects motor and bearings from corrosion damage
- **O-rings:** Viton
- **Performance:** Flow rates from 5 to 130 GPM with TDH's up to 115 feet
- **Motors:** Single or three phase motors; HP ratings of 1/15, 1/8, 1/3, 1/2, 1, 1 1/2, 3 and 5HP
- ***Models* With HP Ratings:** *S1 1/15, S2 1/3, S4 1/2, S5 3/4, SS6 3/4, SS7 1, S8 1 1/2, S12 3, S16 5 HP*

Webster Series C Centrifugal Pumps

Features
- Rugged design for demanding continuous duty service
- No metal in contact with process fluid
- Pump cannot fail due to rust or corrosion
- Two year warranty

Specifications
- **Pump:** Glass reinforced PPL, CPVC or PVDF construction
- **Pipe Connection:** Threaded
- **Shaft:** Stainless steel with non-metallic sleeve
- **Seal:** John Crane external Type 21 or equal carbon/ceramic seal faces with stainless steel hardware and Viton® elastomers
- **Performance:** Flow rates from 5 to 130 GPM with TDH's up to 140 feet
- **Motors:** Single or three phase motors; HP ratings of 1/3, 1, 1 1/2, 3 or 5 HP; 115/230 VAC or 208-230/460 VAC
- ***Models* With HP Ratings:** *C5 1/3, C7 1, C8 1 1/2, C10 3 or 5 HP*

Plastic Corrosion Resistant Pumps

Webster In-Tank Filtration Systems

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

Features

- CPVC corrosion-resistant construction
- Compact and easy to install
- Seal-less, bearing-free pump
- Can be run dry
- Fast filter change
- 1/15 HP Model features a built-in power cord
- Two year pump warranty

Webster Pumps Backed By The HAYWARD Exclusive 2-Year Warranty

Setting The Standard For Quality And Reliability

The quality Hayward has built into it's Webster Pumps is your assurance of the reliability you want...and will get...for your system.

Heavy duty Webster Pumps reliably move aggressive liquids in the most demanding applications, too tough for metal pumps. Webster Pumps are ideal for aeration, agitation, filtration, recirculation, spraying or transfer. These rugged, continuous duty, all-plastic pumps are used extensively in the plating, electronic, photo processing, pollution control, chemical processing and water treatment industries.

Consult your Webster Distributor for complete warranty details.

Application-Proven Pump Accessories

Hayward Isolation Valves:

Used to isolate the pump from the system for maintenance without having to drain the entire system. Hayward has heavy duty, corrosion-resistant, all-plastic Ball Valves, Butterfly Valves and Diaphragm Valves in a wide range of sizes, materials and end connections for any pump application.

Hayward Check Valves:

Used to prevent loss of prime and/or draining of the system. Plastic Ball Checks, Foot Valves, and Spring-Loaded Check Valves are available for all R Series Webster Pumps.

Hayward Pipeline Strainers:

Protect your pump investment with a Hayward Pipeline Strainer. These all-plastic strainers remove damage-causing particulate matter from the process media before it reaches your pump. Strainers pay for themselves through reduced parts costs and downtime. Simplex strainers are used when the line can be shut down for basket cleaning while duplex strainers can have their baskets serviced without line shutdown... perfect for continuous or batch process.

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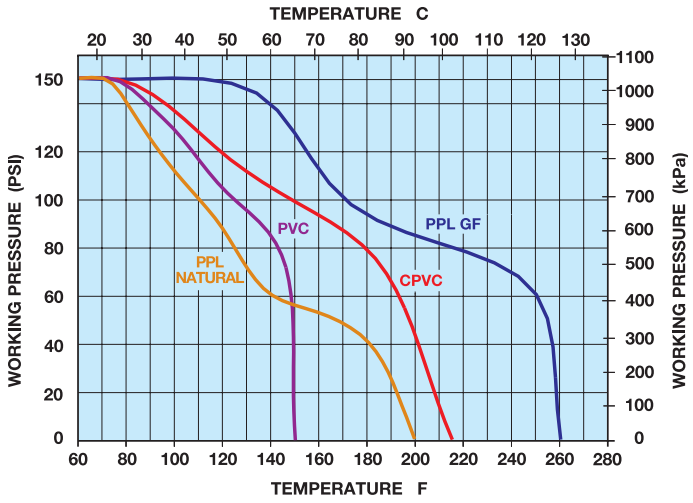
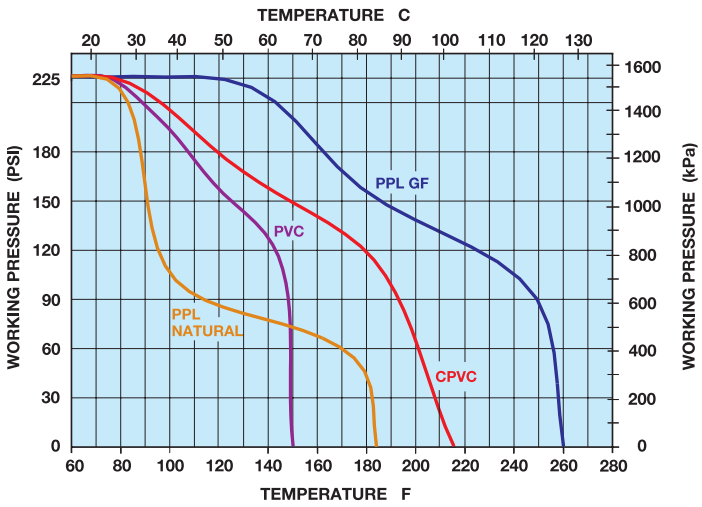
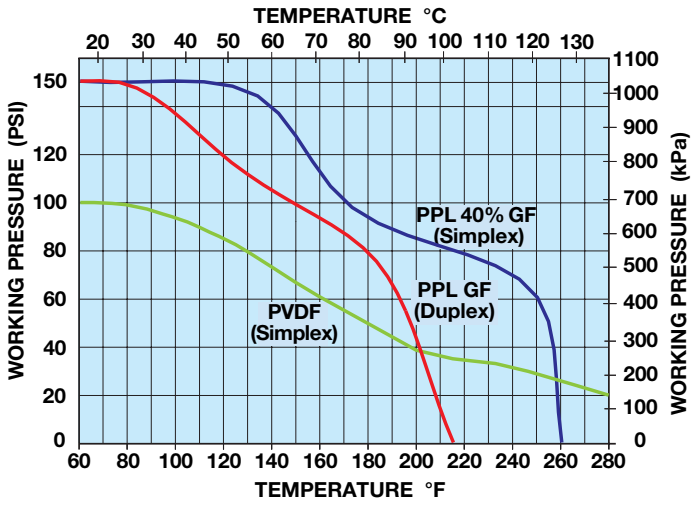
Operating Temperature/Pressure for 150 psi Rated Products (Except Filter Housings)



Operating Temperature/Pressure for 225 psi Rated Products



Operating Temperature/Pressure for Bag and Cartridge Filter Housings



Pressure Loss Calculation Using C_V Factor

Pressure Loss Calculation Formula

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

ΔP = Pressure Drop
Q = Flow in GPM
C_V = Flow Coefficient

The pressure loss across a valve or filter can be calculated using the system's flow rate and the C_V factor for that valve or filter.

For example, a 1" valve with a C_V factor of 8 will have a 4 psi pressure loss in a system with a 16 gpm flow rate $(16 \div 8)^2 = 4$

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.

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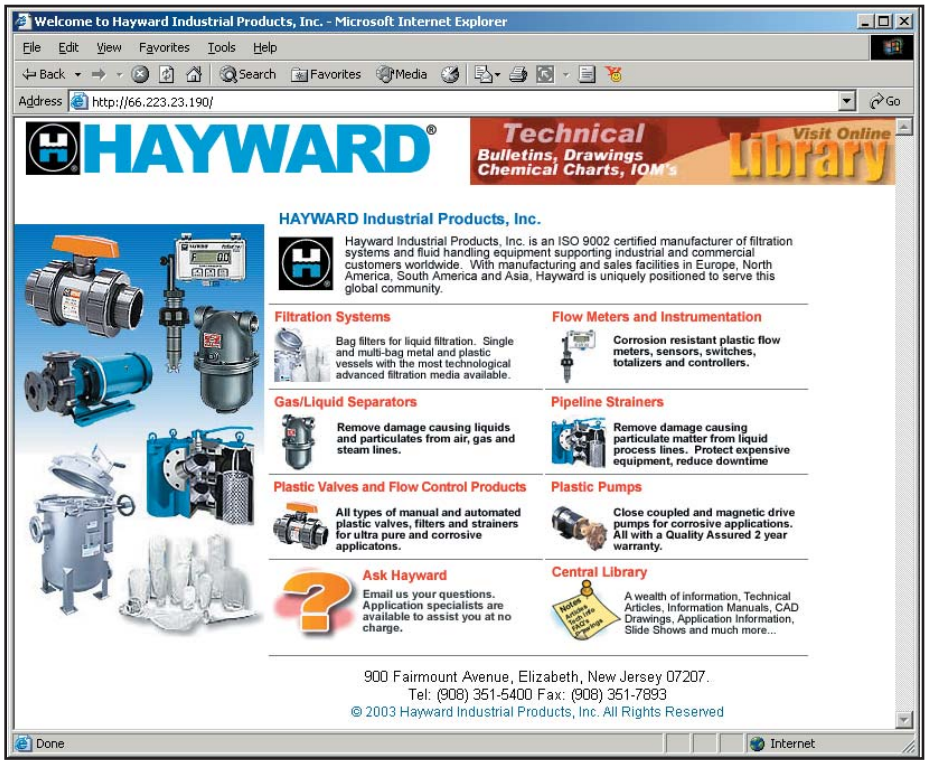

In addition to product descriptions, specifications, engineering drawings, IOMs, application information, FAQs, extensive corrosion resistance charts, pressure loss calculators, water hammer calculators, distributor locations, video and slide shows, our unique web design enables us to post changes and new product descriptions within minutes that they become available.

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