



Pressure Reducing Control Valve

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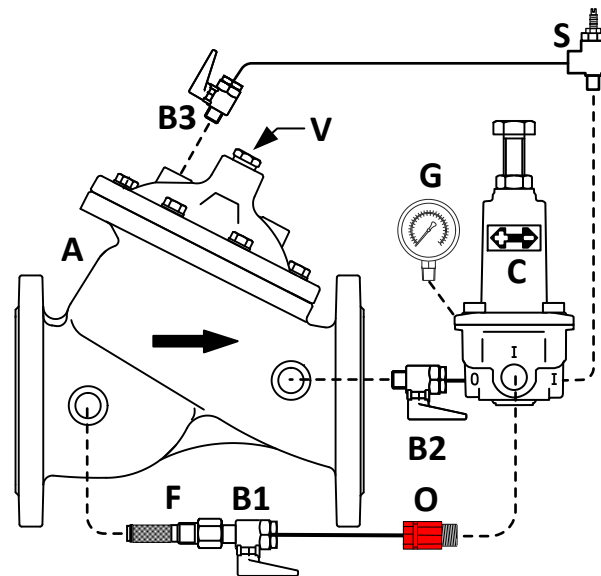
ACVxx-HF5PR (Full Port: 1.50-2.50)

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- Reduces a fluctuating higher inlet pressure to a constant lower outlet pressure
- Outlet setpoint is adjustable
- Valve will regulate near-zero flow without the use of special trim or low-flow bypass

Standard Components

- A – Main Valve
- B – Ball Valve
- C – Pressure Reducing Pilot
- F – Self Cleaning Strainer
- G – Pressure Gauge
- O – Orifice / Restrictor
- S – Adjustable Speed Control
- V – Air Vent

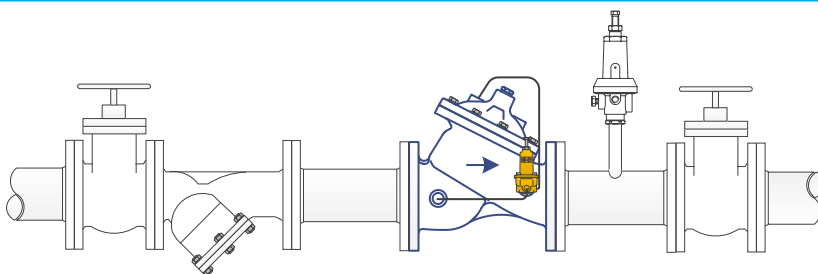


Operation

The BEECO Model “HF5PR” Pressure Reducing Control Valve is a pilot controlled diaphragm valve designed to reduce a fluctuating higher upstream pressure to a constant lower downstream pressure regardless of varying flow rates. It is controlled by Pressure Reducing Pilot (C) which internally senses downstream pressure, and allows fluid out of the main valve control chamber when downstream pressure is below the adjustable setting, and fluid to fill the main valve control chamber through Orifice / Restrictor (O) when downstream pressure is above the adjustable setting.

A decrease in downstream pressure below the adjustable setting of Pressure Reducing Pilot (C) causes the valve to modulate toward an open position, raising downstream pressure. An increase in downstream pressure above the adjustable setting causes the valve to modulate toward a closed position, lowering downstream pressure.

The downstream pressure setting can be changed by turning the Adjusting Screw of Pressure Reducing Pilot (C) clockwise (in) to increase or counterclockwise (out) to decrease the setting. Pressure Gauge (G) indicates downstream pressure setting. Speed of valve operation/response is controlled by Speed Control (S).



The Model HF5PR reduces high pressure from near zero to the maximum flow rate without the need for an additional Low-Flow Bypass. If the system is subjected to potentially static downstream conditions, a Pressure Relief Valve (½” or larger) is recommended for additional system protection.

Pressure Reducing Control Valve

ACVxx-HF5PR (Full Port)

Materials

Main Valve

Pilot Control System

Body & Cover	Ductile Iron 100% Fusion Bonded Polyester Coated (RAL 5010)	Control Pilot(s)	Brass w/ Stainless Steel Seat
Disc Retainer	Stainless Steel (1.50"-2.50") Ductile Iron-Polyester Coated (3"-6")	Tubing	Fiber Reinforced Nylon SAE J844
Seat	304 Stainless Steel	Fittings	Brass
Throttling Guide	GRP Composite	Strainer	Self Cleaning (1.50"-2.50") Removable Self-Cleaning (3"-6")
Elastomers	Nylon Reinforced EPDM Diaphragm Buna-N Seat Disc	Ball Valves	Standard (all sizes)
Diaphragm Washer	GRP Composite		
Stem, Spring & Nut	Stainless Steel		
External Fasteners	Stainless Steel		

Sizes & End Connections

Globe Pattern	1-1/2	2	2-1/2	3	4	6
Threaded (FNPT)	•	•				
ANSI 150 Flanged		•	•	•	•	•

Main Valve Components and Options

Optional Valve Position Indicator (-I)

A Valve Position Indicator can be added to any new or existing Control Valve. The Position Indicator installs in the center of the Main Valve Cover/Bonnet. The stainless steel Indicating Shaft attaches to the Main Valve Stem by a floating ball & socket connection. An adjustable trip collar is included for the addition of an optional Limit Switch.

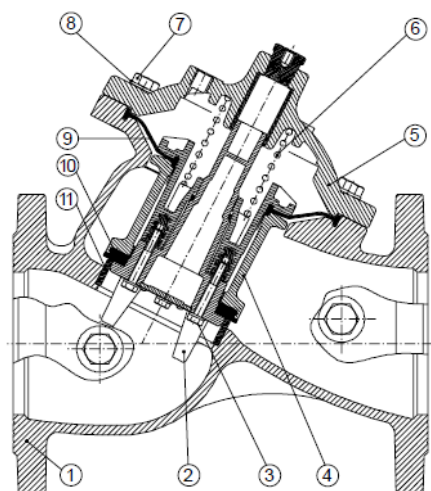
Repair Kits

Repair Kits are available for each size Main Valve, and contain all Rubber Components necessary to rebuild the valve. Repair Kits are also available for each Control Pilot.

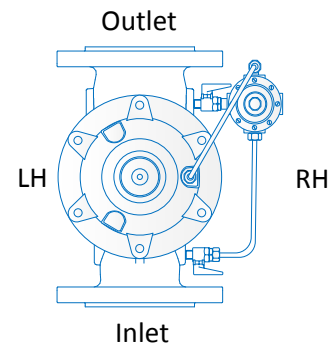
No special tools are required to Service or Repair the Main Valve or Control Pilots.

Pilot Control System

The Pilot Control System is assembled using the tapped Body ports on the "Right Hand" side of the Control Valve. During Design and Installation adequate room should be provided to allow access the Pilot Control System for Start-Up and Maintenance Operations.



- | | |
|----------------------|--------------------------|
| 1 – Body | 7 – Cover Bolt |
| 2 – Throttling Guide | 8 – Cover Washer |
| 3 – Bolts | 9 – Diaphragm* |
| 4 – Disc Retainer | 10 – Seat Disc* |
| 5 – Cover | 11 – Seat |
| 6 – Spring | * Included in Repair Kit |



(xx = Size)

Specification

The Pressure Reducing Control Valve shall be a pilot controlled diaphragm valve designed to automatically reduce a fluctuating higher upstream pressure to a constant lower downstream pressure regardless of varying flow rates. The valve shall be capable of stable throttling from a minimum of <5 gpm to the rated capacity of the valve size without the use of an external low-flow bypass valve arrangement.

The valve Body and Cover shall be a Ductile Iron Globe Pattern Full Port design, internally and externally coated with an Electrostatic Fusion Bonded Polyester (blue) and have [Threaded, ANSI 150 Flanged](#) end connections. Direction of flow through shall be clearly indicated by a large highly visible flow arrow cast into the Valve Body. All external fasteners shall be stainless steel. The valve Cover shall be equipped with an Air Release Vent to assist in start-up and troubleshooting procedures.

The Diaphragm shall be constructed of nylon reinforced EPDM, contour formed and molded to evenly contact the support surfaces of the Body and Cover without buckling or wrinkling when installed. The Disc and Diaphragm Assembly shall contain an Buna-N Seal Disc.

The Disc and Diaphragm Assembly must be separately top and bottom guided to avoid deflection and assure positive disc-to-seat contact. The Main Valve Throttling Guide and Diaphragm Washer shall be constructed of corrosion resistant GRP Composite and the Seat and Disc Retainer be Stainless Steel.

The Pilot Control System shall contain a Flo-Clean Strainer, a Brass Pressure Reducing Pilot with pre-installed liquid filled pressure gauge, Color-Coded Fixed Orifice Restriction, Adjustable Valve Speed Control, Type B Nylon Core Fiber Reinforced and Jacketed Control Tubing conforming with SAEJ844 / DOT FMVSS 49CFR 571.106 with Brass Fittings and Isolation Ball Valves on all Body and Cover port connections.

The Main Valve with Pilot Control System installed shall be factory tested hydrostatically to 160% of the maximum working pressure and functionally tested to assure proper valve performance prior to shipment.

The valve will be sized as shown on the plans and associated valve schedules, and shall be BEECO Model ACV-HF5PR Pressure Reducing Control Valve.

Other BEECO HF5 Pressure Reducing Control Valves

HF5PR-CV	Pressure Reducing Control Valve w/ Hydraulic Check Feature
HF5PR-EL	Pressure Reducing Control Valve w/ Electric On-Off Feature
HF5PR-PS	Pressure Reducing Control Valve w/ Pressure Sustaining Feature
HF5PR-Q	Pressure Reducing Control Valve w/ Quick-Closing Feature