

NYLON & PVC VALVES

PRESSURE REDUCING VALVES ENSURE DOWNSTREAM PRESSURE



NYLON
For Gold Mines



PVC
For Gold and Copper Mines

DESCRIPTION

The valve maintains a preset downstream pressure, regardless of upstream pressure or flow rate fluctuation.

The main valve is controlled by a 3-way pilot, allowing full opening when the pressure drops below a downstream pressure set-point.

FEATURES & BENEFITS

- Accurate, stable control from no-flow to full-flow.
- Exceptionally low head losses at high flows.
- High resistance to corrosive water and other acid media (including 3-way pilot).
- Simple to install - manufactured with threaded or socket (slip) connections.
- Simple and reliable design - diaphragm is the only moving component. Shaft, seals or bearings are not located within the water's passage way.

PURCHASE SPECIFICATIONS

- Hydraulic valve with direct sealing flexible diaphragm.
- Inline maintenance.
- Stem, shaft or guide bearing are not located within the water passage.

- Activated by the line pressure or by an external hydraulic or pneumatic pressure.
- Operated by a pressure reducing pilot valve to achieve constant outlet pressure, regardless of upstream pressure or flow variations.
- Valve and the controls are Netafim Series 61PRXPLS (X is used to signify size of valve - 3", 4", 6", etc.).

QUICK SIZING

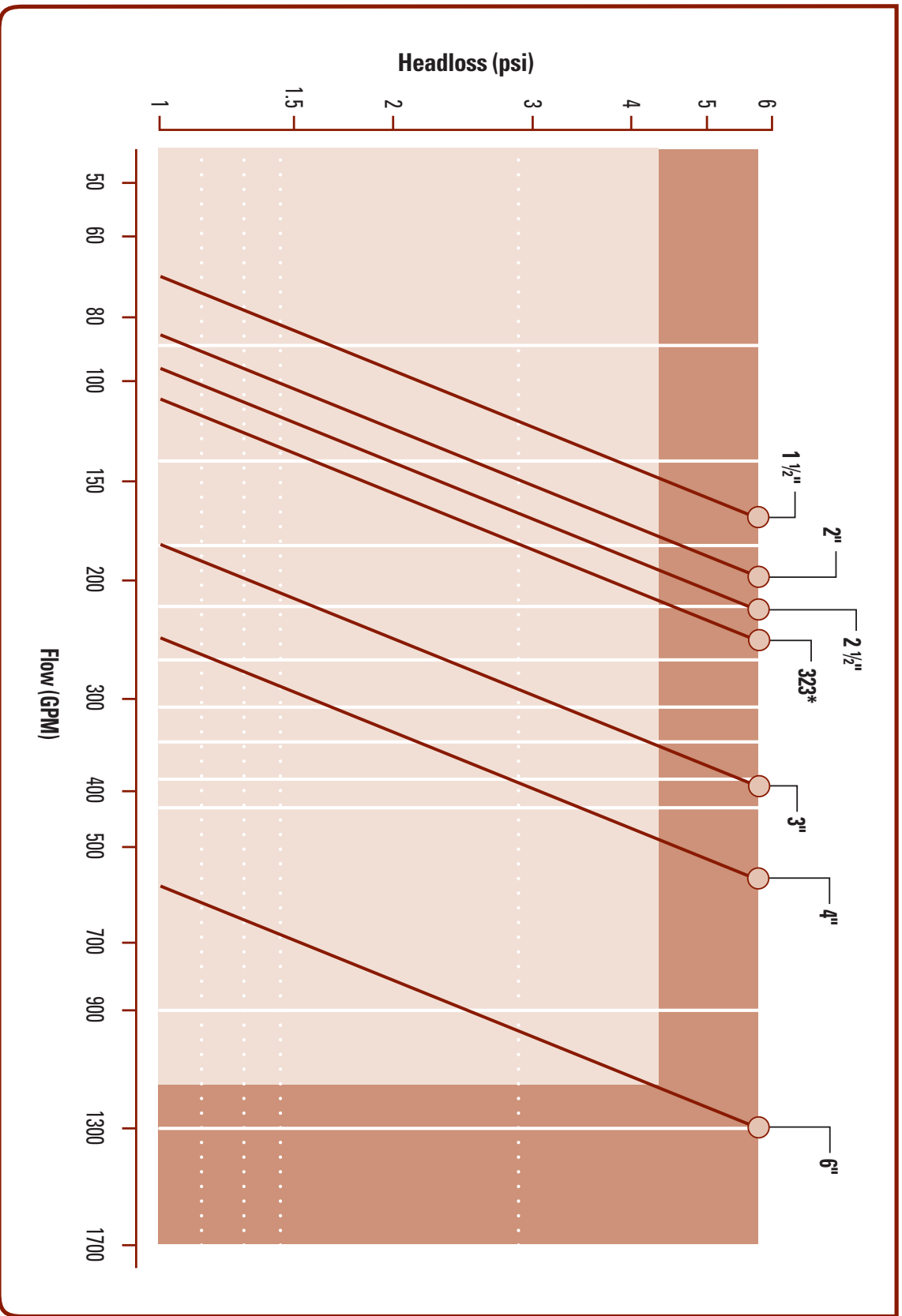
- Valve size same as line size or one size smaller.
- Maximum flow speed for continuous operation of 18 ft/sec.

DESIGN CONSIDERATIONS

- The valve should be suited for the maximal flow and allowed headloss.
- Large pressure differentials may cause cavitation damage. Consult with Netafim if such conditions are expected.

PVC VALVE SPECIFICATIONS

3-WAY CONTROL MODEL HEADLOSS



Light brown area indicates recommended operating range.
 *Refers to a 2" Valve with a 3" Inlet/Outlet.

PVC VALVE SPECIFICATIONS

NYLON & PVC VALVE DIMENSIONS AND WEIGHTS

Connection →	NYLON			PVC			
	Threaded			Threaded	Slip		
Size	1 1/2"	2"	323*	3"	3"	4"	6"
Length	7 3/8"	7 3/8"	9 1/4"	10 1/8"	10 1/8"	11"	14"
Height	4 3/4"	4 3/8"	4 3/4"	7 5/8"	7 5/8"	8"	15"
Weight (lbs)	2	2.2	3.1	9.3	9.3	9.5	20

*Refers to a 2" valve with 3" inlet and outlet

MAXIMUM RECOMMENDED FLOW RATES (GPM)

90	175	225	395	600	1,300
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*Refers to a 2" valve with 3" inlet and outlet

PVC MODELS

3"	3	3
4"	-	3
6"	-	3

SPECIFICATIONS*

Nylon Valve Operating Pressure:

- Maximum pressure: 145 psi (10 bar)
- Minimum pressure: 8 psi (0.6 bar)

3" and 4" PVC Valve Operating Pressure:

- Maximum pressure: 115 psi (8 bar)
- Minimum pressure: 8 psi (0.6 bar)

6" PVC Valve Operating Pressure:

- Maximum pressure: 145 psi (10 bar)
- Minimum pressure: 8 psi (0.6 bar)

Maximum water temperature:

- 100°F at maximum pressure

*Pressure refers to upstream pressure

AVAILABLE SIZES: 1.5" - 6"

FUNCTION

The Pressure Reducing Valve shall maintain a constant downstream pressure regardless of changing flow rate and/or inlet pressure. Valve should be able to operate properly at pH=1.

MAIN VALVE

The valve shall be hydraulically operated, diaphragm actuated, direct flexible diaphragm sealing, weir type. The valve shall consist of three major components: the body, with no seats installed; the cover, with no bearings installed; and the diaphragm assembly (diaphragm, spring and spring seat). The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. There shall be no pistons operating the main valve, no shafts, or discs as the sealing mechanism of the main valve.

MAIN VALVE BODY

No separate chambers shall be allowed between the main valve cover and body. Valve body and cover shall be of Glass Reinforced Polyamide (GRP or "Nylon") or PVC. No discs will be permitted as seating surface neither O-ring type discs (circular, square, or quad type) shall be permitted as the seating surface. No disc guides shall be permitted. No disc retainers shall be permitted. No V-type or U-type slotted type disc guides shall be used.

PVC VALVE SPECIFICATIONS

The diaphragm assembly should contain no stems or bearings in the valve cover and/or the valve seat. No center guides shall be permitted. The sealing mechanism should not be guided in any way.

The flexible diaphragm shall consist of nylon fabric bonded with synthetic rubber compatible with the operating fluid and resistant to pH =1 for the length of the warranty terms.

All necessary repairs and/or modifications other than replacement of the main valve body shall be possible without removing the valve from the pipeline. The valve manufacturer shall warrant the valve body to be free of defects in material and workmanship for a period of five years from date of shipment, provided the valve is installed and used in accordance with all applicable instructions.

The valve manufacturer shall be able to supply a complete line of equipment from 1.5" through 6" sizes and a complete selection of complementary equipment. The valve manufacturer shall also provide a computerized cavitation chart with flow rate, differential pressure, Cv factor, system velocity, and possibility of cavitation damage.

PILOT CONTROL SYSTEM

The pressure reducing pilot control shall be a direct-acting, adjustable, spring-loaded, 3-way pilot design to vent the control chamber of the main valve to the atmosphere when the downstream pressure decreases below a certain setpoint. The pilot control is held open by the force of the compression on the spring above the diaphragm, and it closes when the delivery pressure acting on the underside of the diaphragm exceeds the spring setting.

No orifices shall be permitted in the pilot circuit. A full range of spring settings shall be available in ranges up to 90 psi. The materials of the pilot and pilot control systems shall be compatible with the operating fluid and resistant to pH=1, such as stainless steel and rubber.

MATERIAL SPECIFICATION FOR PILOT CONTROL:

- Pressure Rating: up to 90 psi
- Diaphragm Assembly: Natural Rubber
- Tubing and Fittings: Plastic
- Adjustment Bolt and Locking Nut: SST
- Spring: SST
- Operating Fluids: pH=1 and higher

PRESSURE REDUCING VALVE MATERIAL SPECIFICATION

Model	Description	Material
61BXPL-S	Valve Basic X" PVC Slip Connection	PVC
61PILPLSSS	Pilot PR/PS Blue	Plastic
61SF25P	In-line Filter Plastic 1/4" x 2 3/8"	Plastic
55P4684802	Plastic Male Connector 8mm x 1/8"	Plastic
55P4694802	Plastic Male 90-Elbow 8mm x 1/8"	Plastic
55P4694804	Plastic Male 90-Elbow 8mm x 1/4"	Plastic
15CONT-6-1	PE Control Tube 8mm	PE
55P1200202	Plastic Adapter 1/8" Male x Female	Plastic
NA**	Adjusting Bolt	Stainless Steel
NA**	Manual Selector	Stainless Steel
NA**	1/8" Male x 8mm x 1/8" Male	Plastic
55P1220204	Plastic Nipple 1/4"	Plastic
55P4714802	Plastic Male Round Tee 8mm x 1/8 x 8mm	Plastic

*X indicates size of valve.

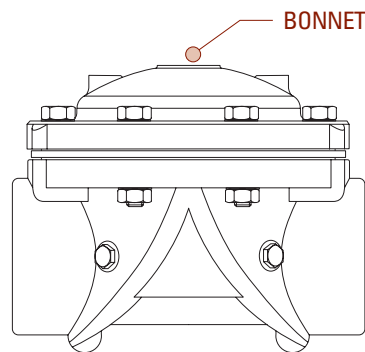
**For more information call Netafim Customer Service at 888-638-2346.

OPERATING INSTRUCTIONS

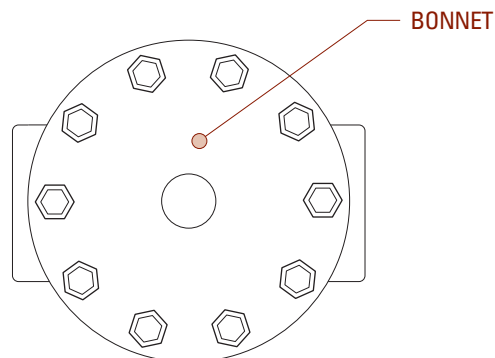
The Netafim PVC Valve for Mining Series 61PRXPLS (when x represents the size of the valve - 1.5", 2", 2.5", 3", 4", 6") is an automatic control valve designed to reduce higher inlet pressure to a constant lower downstream pressure regardless of changing flow rate and/or inlet pressure. The valve is a hydraulically operated, pilot-controlled, diaphragm type globe valve. When downstream pressure exceeds the pressure set point of the control pilot, the main valve closes. The control system is very sensitive to slight pressure changes and immediately controls the main valve to maintain the desired downstream pressure. Pressure setting adjustment is made with a single adjusting bolt.

INSTALLATION

1. Allow sufficient room around the valve assembly for adjustments and servicing.
2. Before the valve is installed, pipe lines should be flushed of all chips, scale and debris.
3. Place the valve assembly in the line of flow through the valve in the direction indicated by the flow arrow. Check that all fittings and hardware are in proper condition and that no apparent damage is evident. Be sure main valve cover nuts/bolts are tight. Pressure in some applications can be very high, thoroughly check and inspect for proper installation and makeup.
4. Valve's bonnet should be installed in top (vertical) position, except for 6" valves bonnet should be installed in side (horizontal) position (see drawings below). This makes periodic inspection of internal parts easily accessible.



VERTICAL TOP POSITION



HORIZONTAL SIDE POSITION

START-UP AND OPERATION

1. Prior to pressurizing the valve assembly make sure the necessary gauges to measure pressure in the system are installed as required by the system engineer.
Caution: During start-up and test procedures a large volume operating fluid may be discharged downstream. Check that the downstream venting is adequate to prevent damage to personnel and equipment. Under flowing conditions all pressure adjustments should be made slowly. If the main valve closes too fast it may cause surging in upstream pressure.
2. Adjust the control pilot to desired pressure. To increase pressure, turn the adjusting screw clockwise. To decrease pressure, turn counterclockwise. There must be fluid flowing through the valve during pressure adjustments. When the desired setting has been made, tighten locking nut at the pilot.

MAINTENANCE

1. Netafim Valves and Controls require no lubrication or packing and a minimum of maintenance. However, a regular inspection schedule should be established, at a minimum of once per year.
2. When ordering parts always refer to the model number and item number on the valve nameplate.

TROUBLESHOOTING

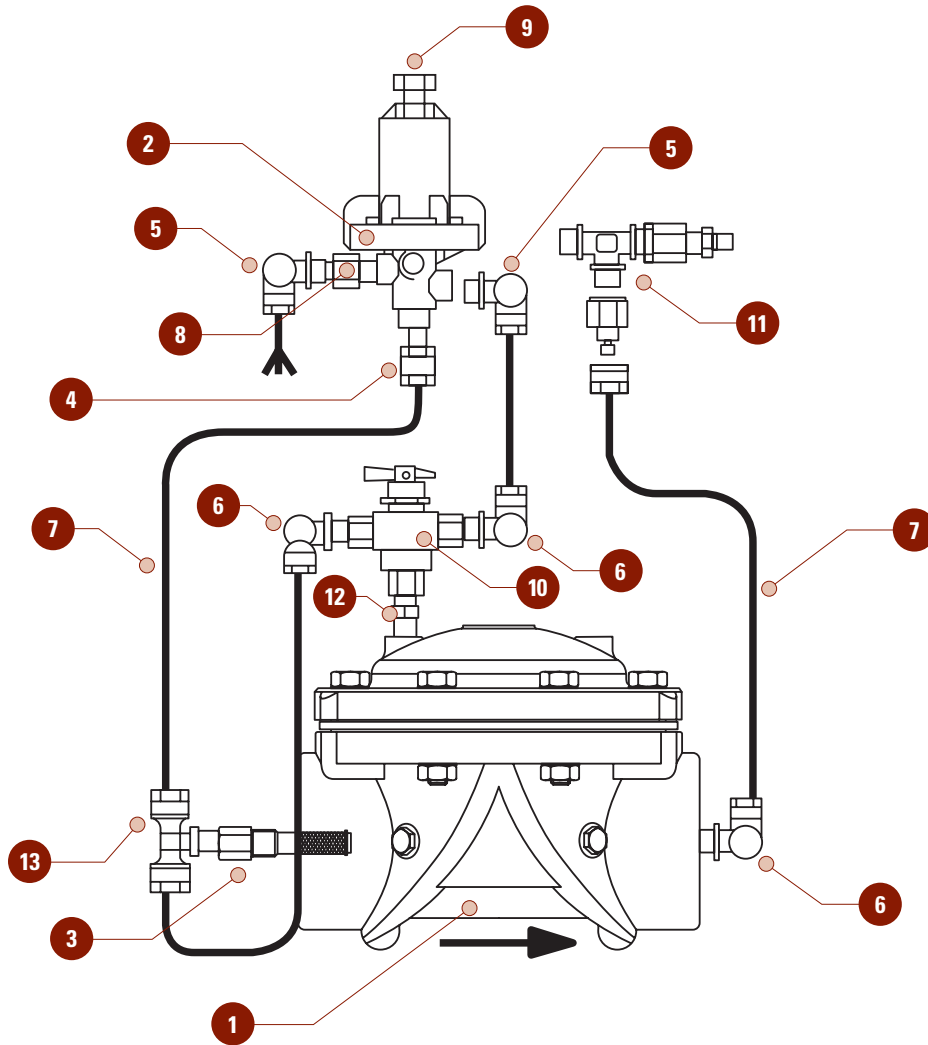
PROBLEM	CAUSE	REMEDY
Main valve fails to open.	Insufficient pressure at valve inlet. Pilot is not opening. (2)* Manual selector is closed. (10)**	Check inlet pressure, increase as needed. No spring compression - tighten adjusting screw. Open manually.
Valve does not close.	Punctured diaphragm. Foreign substance on sealing seat. Faulty pilot.	Replace diaphragm. Refer to I.D. number. Dismantle, clean and reassemble. Disassemble and remove obstructions. Replace internal parts or pilot.
Valve does not regulate.	Incorrect connections. Wrong spring in pilot. Inlet pressure too low. Clogged filter. Faulty pilot.	Change according to schematics. Change according to supporting material. Increase pressure. Clean or replace. Clean pilot or replace.
Unstable performance.	Extreme low flow or high pressure differential.	Install dripper or needle valve at vent port of the pilot.

*See #2 callout on exploded drawing on Valve Description page.

**See #10 callout on exploded drawing on Valve Description page.

VALVE DESCRIPTION

PRESSURE REDUCING VALVE, PVC FOR MINING, PART NUMBER 61PRXPLS-YM



NO.	QTY.	MODEL	DESCRIPTION
1	1	61B*XPL-S	Valve Basic *X PVC Slip Connection
2	1	61PILPLSSS	Pilot PR/PS Blue Stainless Steel
3	1	61SF25P	In-line Filter Plastic 1/4" x 2 3/8"
4	1	55P4684802	Plastic Male Connector 8MM x 1/8"
5	4	55P4694802	Plastic Male 90-Elbow 8MM x 1/8"
6	3	55P4694804	Plastic Male 90-Elbow 8MM x 1/4"
7	3	15CONT-8-I	PE Control Tube 8MM
8	1	55P1200202	Plastic Adapter 1/8" Male x Female
9	1	NA**	Adjusting Bolt
10	1	NA**	Manual Selector
11	1	NA**	1/8" Male x 8mm x 1/8" Male
12	1	55P1220204	Plastic Nipple 1/4"
13	1	55P4714802	Plastic Male Branch Tee 8mm x 1/8 x 8mm

*X indicates size of valve.

**For more information call Netafim Customer Service at 888-638-2346.



NETAFIM USA
5470 E. Home Ave.
Fresno, CA 93727
CS 888 638 2346
www.netafimusa.com