

Pressure Reducing Valve

Normally Closed with Relief Override

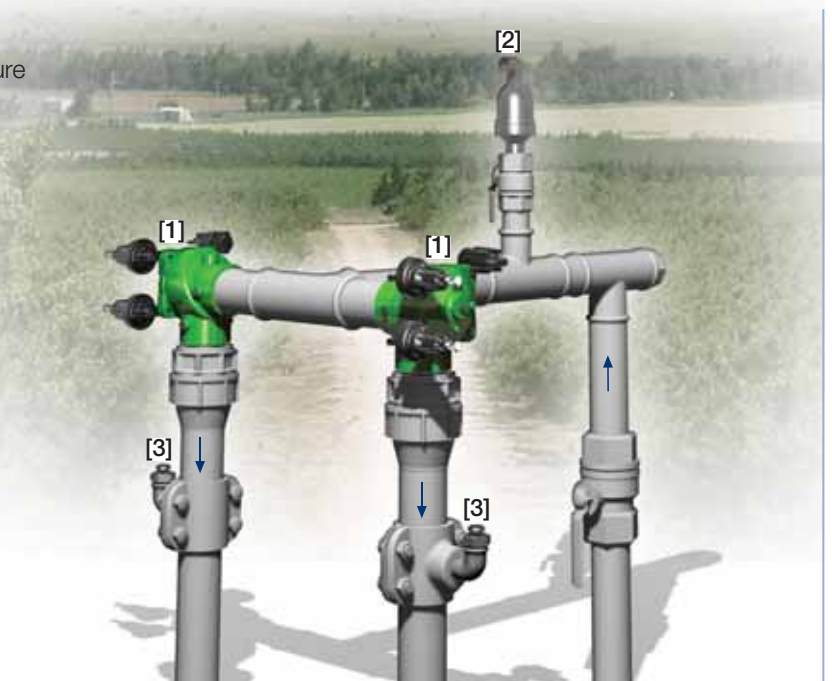
IR-420-54-3Q-KX

The BERMAD Model IR-420-54-3Q-KX is a operated, diaphragm actuated control valve that accurately reduces higher upstream pressure to lower and stable preset downstream pressure. It is a Normally Closed valve that opens in response to a remote pressure drop command and shuts in the absence of that command. The BERMAD Model IR-420-54-3Q-b also serves as a Pressure Relief Valve protecting the system even when in closed position.



Features and Benefits

- Normally Closed PRV with Relief Override Feature
 - Protects downstream and upstream systems
 - Closes upon control failure
 - Amplifies and relays weak remote command
- 3-Way Pilot Controlled
 - Dynamic integrated needle valve
- Advanced Globe Hydro-Efficient Design
 - Unobstructed flow path
 - Single moving part
 - High flow capacity
- Fully Supported & Balanced Diaphragm
 - Requires low actuation pressure
 - Excellent low flow regulation performance
 - Progressively restrains valve closing
 - Prevents diaphragm distortion
- Simple In-Line Inspection and Service



Typical Applications

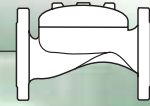
- Computerized Irrigation
- Systems Subject to Varying Supply Pressure
- Energy Saving Irrigation Systems
- Remote and/or Elevated Plots
- Multiple Control Valves Systems

[1] BERMAD Model IR-420-54-3Q-KX opens upon pressure rise command, establishes reduced pressure zone, and relieves supply pressure peaks even when in closed position.

[2] BERMAD Air Valve Model ARA-A-P-P

[3] BERMAD Vacuum Breaker Model 1/2"-ARV

BERMAD Irrigation



400 Series

Pressure Reducing Standart

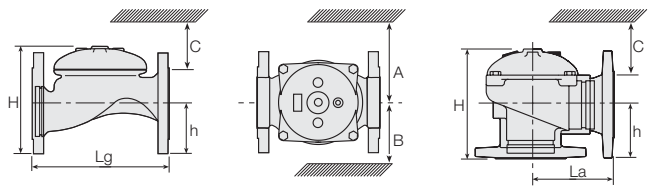
IR-420-54-3Q-KX

For full technical details, refer to Engineering Section.

Technical Specifications

Dimensions and Weights

Pattern	Globe						Angle					
	Connections	Threaded					Fl.	Threaded				Fl.
Size	DN	1½"	2"	2½"	3"R	3"	4"	2"	2½"	3"R	3"	4"
Lg	mm inch	153 6	180 7.1	210 8.3	210 8.3	255 10.0	320 12.6	N.A.	N.A.	N.A.	N.A.	N.A.
La	mm inch	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	86	110	110	110	160
H	mm inch	87 3.4	114 4.5	132 5.2	140 5.5	165 6.5	242 9.5	136 5.4	180 7.1	178 7	184 7.2	223 8.8
C	mm inch	52 2	68 2.7	80 3.1	84 3.3	100 3.9	145 5.7	82 3.2	108 4.2	107 4.2	110 4.3	134 5.3
h	mm inch	29 1.1	39 1.5	45 1.8	53 2.1	55 2.2	112 4.4	61 2.4	93 3.7	91 3.6	80 3.1	112 4.4
A; B	mm inch	130 5	130 5	130 5	140 6	175 7	312 12.3	130 5.1	130 5.1	140 5.5	175 6.9	312 12.3
Weight	Kg lb.	2 4.4	4 8.8	5.7 12.6	5.8 12.8	13 28.7	28 61.7	4.4 9.7	5.8 12.8	7 15.4	11 24.3	26 57.3



Technical Data

End connections:

Size	End connections:					
	1½"	2"	2½"	3"R	3"	4"
	DN40	DN50	DN65	DN80R	DN80	DN100
Threaded	Globe	■	■	■	■	■
	Angle		■	■		■
Flanged	Globe		■	■	■	■
	Angle		■	■		■
Grooved	Globe		■		■	■
	Angle				■	■

Pressure Rating: 10 bar; 145 psi

Operating Pressure Range: 0.5-10 bar; 7-145 psi

For lower pressure requirements, consult factory.

Setting Range: Reducing: 1-7 bar; 15-100 psi

Relief: 1-7 bar; 15-100 psi

Setting ranges vary according to specific pilot spring. Please consult factory.

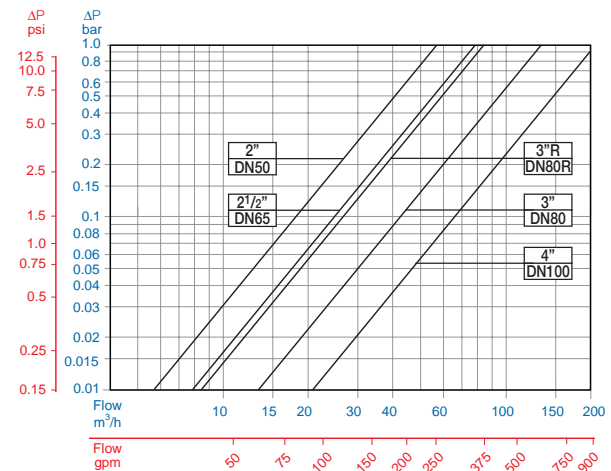
How to Order

Please specify the requested valve in the following sequence: (for more options, refer to Ordering Guide.)

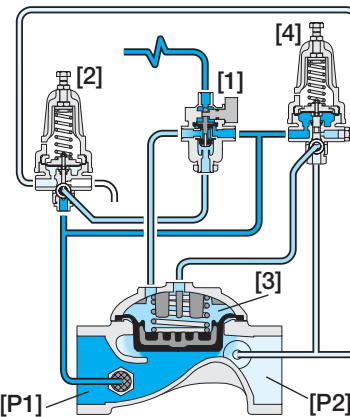
Sector	Size	Primary Feature	Additional Feature	Additional Feature	Pattern	Construction Materials	End Connections	Coating	Voltage -Main Valve Position	Tubing & Fittings	Additional Attributes
IR	1½"-4"	420	54	3Q	G	I	BP	PG	-	PP	KX
Other sizes available on request		G	BSP		BP	Plastic Tubing & Fittings		PP		3-Way Control Loop	X
Globe		A	NPT		NP	Plastic Tubing & Brass Fittings		PB		Plastic Control Accessories	K
Angle			ISO-16		16					Valve Position Indicator ⁽¹⁾	I
			ISO-10		10					Flow Stem ⁽¹⁾	M
			IS 14 (ISO 10/4 Holes)		14					⁽¹⁾ Standard Irrigation Cover & Diaphragm are unfitted to Attributes I, M.	
			ANSI-125		A1					Other additional attributes are optional. Please consult full-stop	
			JIS-10		J1						
			BST-D		BD						
			Grooved		VI						

For available end connections/sizes, see End Connections Table above.

Flow Chart



Operation



The 3-Way Hydraulic Relay Valve (3W-HRV) [1] hydraulically connects the Pressure Reducing Pilot (PRP) [2] to the Valve Control Chamber [3]. The PRP commands the Valve to throttle closed should Downstream Pressure [P2] rise above setting and to open fully when [P2] is below setting. The 3W-HRV switches upon pressure drop command, causing the main Valve to shut. Should Upstream Pressure [P1] rise above setting, the Relief Pilot [4] opens, and thereby opening the Valve to relieve excessive pressure.



info@bermad.com • www.bermad.com

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