

## Pressure Reducing Valve

Solenoid Controlled with Relief Override

**IR-420-55-3Q-KX**

The BERMAD Model IR-420-55-3Q-KX is a hydraulically operated, diaphragm actuated control valve that reduces higher upstream pressure to lower and stable preset downstream pressure. It either opens or shuts in response to an electric signal. The BERMAD IR-420-55-3Q-KX also serves as a Pressure Relief Valve, protecting the system even when in closed position.

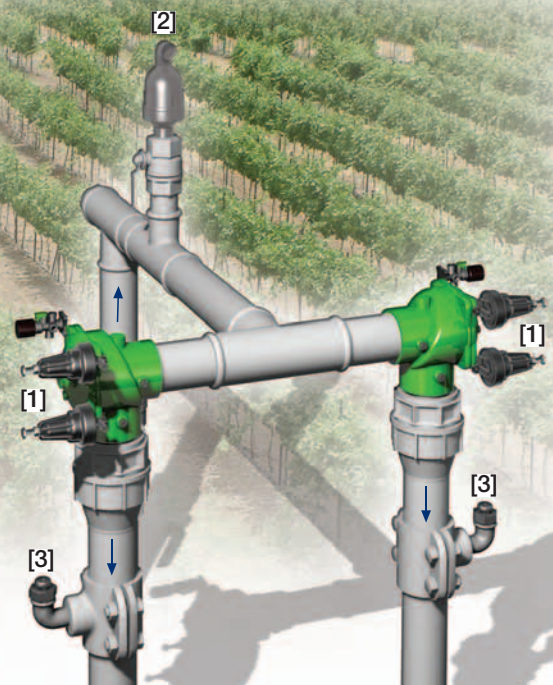


### Features and Benefits

- Solenoid Controlled PRV with Relief Override Feature
  - Protects downstream system
  - Relieves pressure peaks
  - Electrically controlled On/Off
- 3-Way Pilot Controlled
  - Opens fully upon line pressure drop
- 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 Valve Systems

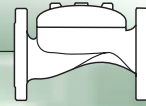


[1] BERMAD Model IR-420-55-3Q-KX opens in response to electric signal, establishes reduced pressure zone, and relieves supply pressure peaks even when in closed position.

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

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

# BERMAD Irrigation



**400 Series**  
Pressure Reducing Standart

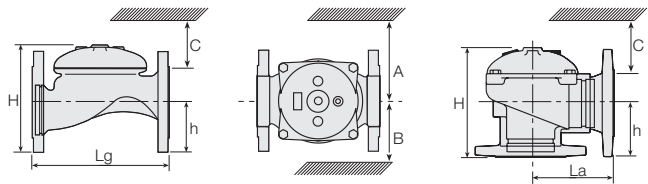
## IR-420-55-3Q-KX

For full technical details, refer to Engineering Section.

### Technical Specifications

#### Dimensions and Weights

Pattern	Globe						Angle					
	Threaded						Fl.	Threaded				Fl.
Connections	Threaded						Fl.	Threaded				Fl.
Size	DN	40	50	65	80R	80	100	50	65	80R	80	100
	Inch	1½"	2"	2½"	3"R	3"	4"	2"	2½"	3"R	3"	4"
Lg	mm	153	180	210	210	255	320	N.A.	N.A.	N.A.	N.A.	N.A.
	inch	6	7.1	8.3	8.3	10.0	12.6	N.A.	N.A.	N.A.	N.A.	N.A.
La	mm	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	86	110	110	110	160
	inch	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	3.4	4.3	4.3	4.3	6.3
H	mm	87	114	132	140	165	242	136	180	178	184	223
	inch	3.4	4.5	5.2	5.5	6.5	9.5	5.4	7.1	7	7.2	8.8
C	mm	52	68	80	84	100	145	82	108	107	110	134
	inch	2	2.7	3.1	3.3	3.9	5.7	3.2	4.2	4.2	4.3	5.3
h	mm	29	39	45	53	55	112	61	93	91	80	112
	inch	1.1	1.5	1.8	2.1	2.2	4.4	2.4	3.7	3.6	3.1	4.4
A; B	mm	130	130	130	140	175	312	130	130	140	175	312
	inch	5	5	5	6	7	12.3	5.1	5.1	5.5	6.9	12.3
Weight	Kg	2	4	5.7	5.8	13	28	4.4	5.8	7	11	26
	lb.	4.4	8.8	12.6	12.8	28.7	61.7	9.7	12.8	15.4	24.3	57.3



#### Technical Data

End connections:

Size		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.

**Solenoid Voltage Range:**

**S-390 & S-400:** 24 VAC, 24 VDC

**S-392 & S-402:** 9-20 VDC, Latch

**S-982 & S-985:** 12-50 VDC, Latch

Other voltages available.

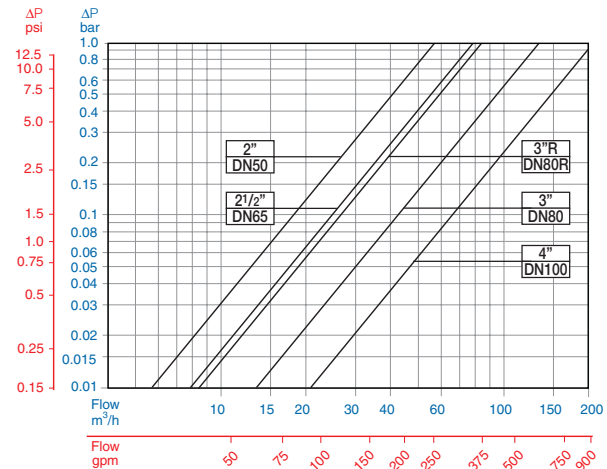
For full electric data, refer to Accessories Section.

#### How to Order

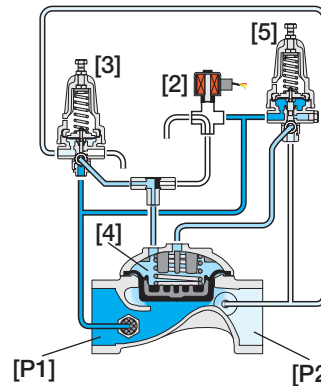
Please specify the requested valve in the following sequence: (for more options, refer to Ordering Guide.)

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	55	3Q	G	I	BP	PG	4AC	PP	KX
Other sizes available on request											
Globe		G	BSP		BP	9VDC -	Latch	9DS	3-Way Control Loop		X
Angle		A	NPT		NP	12VDC -	Latch	1DS	Plastic Control Accessories		K
			ISO-16		16	24VDC -	N.C.	4DC	Valve Position Indicator <sup>(1)</sup>		I
			ISO-10		10	24VDC -	N.O.	4DC	Flow Stem <sup>(1)</sup>		M
			IS 14 (ISO 10/4 Holes)		14	24VAC -	N.C.	4AC			
			ANSI-125		A1	24VAC -	N.O.	4AO			
			JIS-10		J1	24VAC Lightning Proof -	N.C.	4RC			
			BST-D		BD	24VAC Lightning Proof -	N.O.	4RO			
			Grooved		VI						
			For available end connections/sizes, see End Connections Table above.			Plastic Tubing & Fittings		PP			
						Plastic Tubing & Brass Fittings		PB			

#### Flow Chart



#### Operation



The Shuttle Valve [1] hydraulically connects the Solenoid [2] or the Pressure Reducing Pilot (PRP) [3] to the Valve Control Chamber [4]. When the solenoid is closed, the PRP commands the Hydrometer to throttle closed should Downstream Pressure [P2] rise above setting and to open fully when [P2] is below setting. In response to an electric signal, the solenoid switches, directing line pressure through the shuttle valve into the control chamber, shutting the Valve. Should Upstream Pressure [P1] rise above setting, the Relief Pilot [5] opens, and thereby opening the Valve to relieve excessive pressure.



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