Pressure Reducing Valve

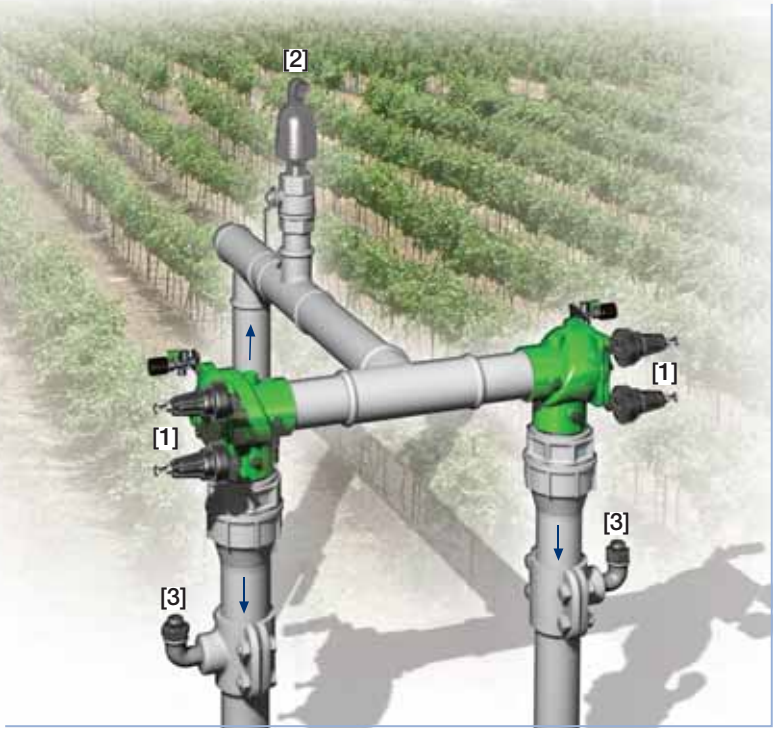
Solenoid Controlled with Relief Override for Drip-Tape Applications

IR-420-55-3Q-bK

The BERMAD Model IR-420-55-3Q-bK is a hydraulically operated, diaphragm actuated control valve that accurately reduces higher upstream pressure to very low and stable preset downstream pressure. It either opens or shuts in response to an electric signal. The Bermad IR-420-55-3Q-bK 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
- Pressure Reducing Servo Pilot Controlled
  - Progressive needle valve
  - Settable to 0.5 bar; 7 psi
  - Very low hysteresis
- 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

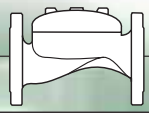


Typical Applications

- Computerized Irrigation Systems
- Drip-Tape Systems
- Low Set Pressure Applications
- Remote and/or Elevated Plots
- Multiple Control Valve Systems
- Low Supplied Pressure Irrigation Systems

[1] Bermad Model IR-420-55-3Q-bK 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 ½"-ARV

BERMAD Irrigation



IR-420-55-3Q-bK

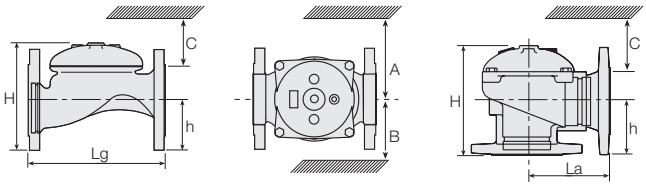
400 Series
Pressure Reducing
Drip-Tape

For full technical details, refer to Engineering Section.

Technical Specifications

Dimensions and Weights

Pattern		Globe						Angle				
Connections		Threaded					Fl.	Threaded				Fl.
Size	DN / Inch	40 1½"	50 2"	65 2½"	80R 3"R	80 3"	100 4"	50 2"	65 2½"	80R 3"R	80 3"	100 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

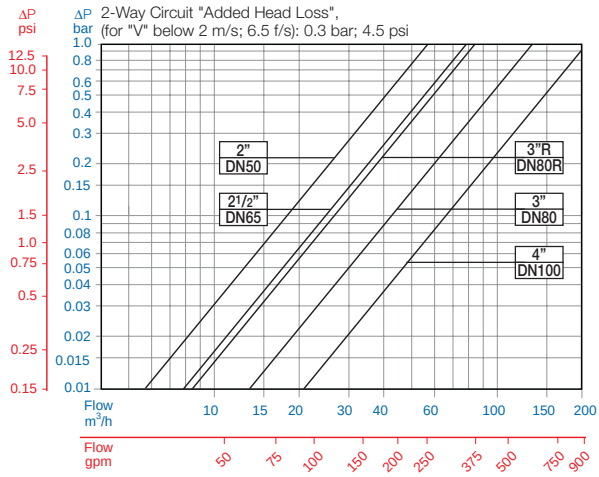
End connections:

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

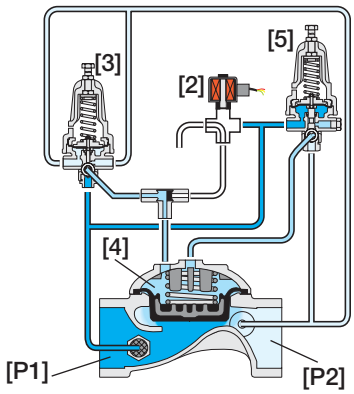
Pressure Rating: 10 bar; 145 psi
Operating Pressure Range: 0.5-10 bar; 7-145 psi
For lower pressure requirements, consult factory
Setting Range: Reducing: 0.5-1.7 bar; 7-25 psi
Relief: 0.5-3 bar; 7-40 psi
Setting ranges vary according to specific pilot spring. Please consult factory.

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.

Flow Chart



Operation



The Shuttle Valve **[1]** hydraulically connects the Solenoid **[2]** or the Pressure Reducing Servo Pilot (PRSP) **[3]** to the Valve Control Chamber **[4]**. When the solenoid is closed, the PRSP commands the Hydrometer to throttle closed, preventing Downstream Pressure **[P2]** from rising above pilot 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.

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	Additonal Attributes
IR	1½-4"	420	55	3Q	G	I	BP	PG	4AC	PP	bK

Other sizes available on request.

Globe	G
Angle	A

BSP	BP
NPT	NP
ISO-16	16
ISO-10	10
IS 14 (ISO 10/4 Holes)	14
ANSI-125	A1
JIS-10	J1
BST-D	BD
Grooved	VI

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

9VDC –	Latch	9DS
12VDC –	Latch	1DS
24VDC –	N.C.	4DC
24VDC –	N.O.	4DC
24VAC –	N.C.	4AC
24VAC –	N.O.	4AO
24VAC, Lightning Proof –	N.C.	4RC
24VAC, Lightning Proof –	N.O.	4RO

Other electrical raitings are available

Plastic Tubing & Fittings	PP
Plastic Tubing & Brass Fittings	PB

Servo	b
Plastic Control Accessories	K
Valve Position Indicator(1)	I
Flow Stem(1)	M

(1) Standard Irrigation Cover & Diaphragm are unfitted to Attributes I, M.
Other additional attributes are optional.
Please consult full-stop

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