Flow Control Valve

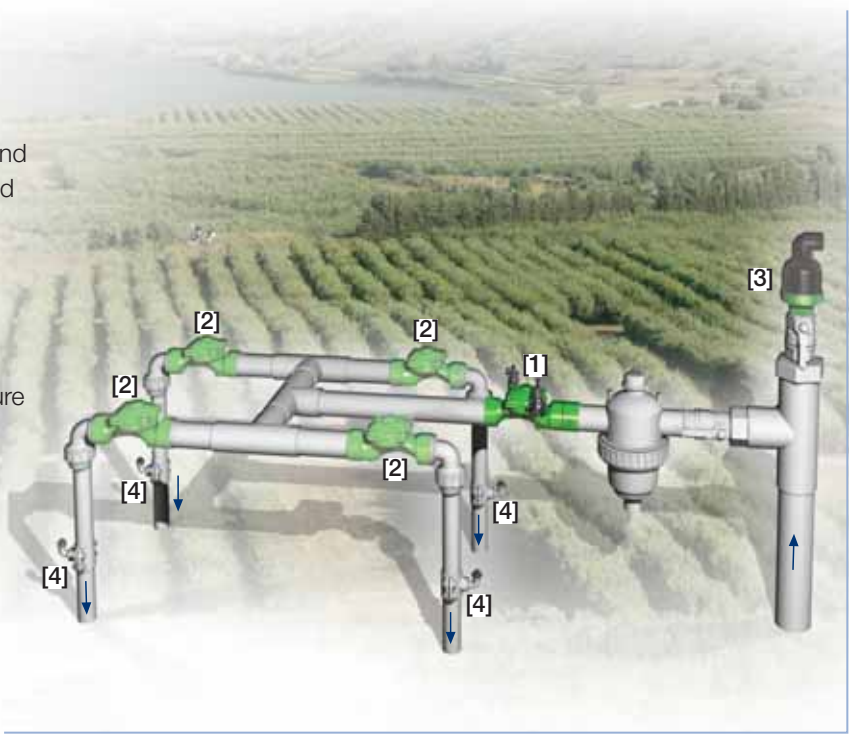
Normally Closed with Hydraulic Control

IR-470-54-bKU

The BERMAD Normally Closed, Flow Control Valve with Hydraulic Control is a hydraulically operated, diaphragm actuated control valve that limits system demand to a constant preset maximum flow rate. It is a Normally Closed valve, which opens in response to a remote pressure rise command and shuts in the absence of that command.

Features and Benefits

- Hydraulic Pressure Control, Normally Closed
  - Closes upon control failure
  - Limits fill-up rate and consumer over-demand
  - Amplifies and relays weak remote command
- Advanced Globe Hydro-Efficient Design
  - Unobstructed flow path
  - Single moving part
  - High flow capacity
- Fully Supported & Balanced Diaphragm
  - Requires low opening and actuation pressure
  - Excellent low flow regulation performance
  - Progressively restrains valve closing
  - Prevents diaphragm distortion
- Hydraulic Flow Sensor (upstream installation)
  - No moving parts
  - No need for flow straightening
- Simple In-Line Inspection and Service



Typical Applications

- Computerized Irrigation Systems
- Line Fill-Up Control Solutions
- Multiple Independent Consumer Systems
- Systems Subject to Varying Supply Pressure
- Remote and/or Elevated Plots
- Distribution Centers

[1] BERMAD Model IR-470-54-bKU opens upon pressure rise command, limits consumer over-demand, and controls laterals and distribution line fill-up.
[2] BERMAD On/Off Control Valve Model IR-405-Z
[3] BERMAD Air Valve Model ARA-A-P-P
[4] BERMAD Vacuum Breaker Model ½"-ARV

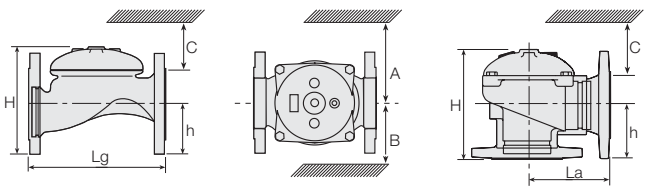
For full technical details, refer to Engineering Section.

Technical Specifications

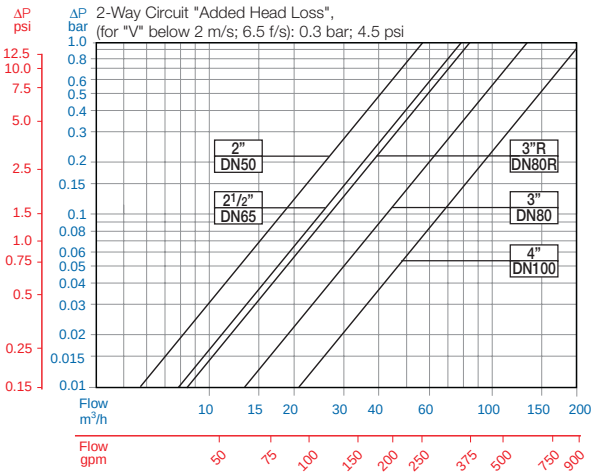
Dimensions and Weights

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

The orifice assembly adds to valve length.



Flow Chart



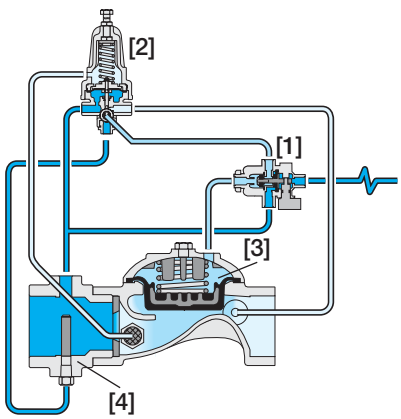
Technical Data

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: ±20% from valve predetermined flow
Orifice diameter is calculated in accordance with desired ΔP at predetermined flow. Although the standard calculated ΔP is 0.4 bar; 5.5 psi, the actual head loss is 0.2 bar; 2.8 psi.

Operation



The 3-Way Hydraulic Relay Valve (3W-HRV) **[1]** hydraulically connects the Flow Pilot (FP) **[2]** to the Valve Control Chamber **[3]**. Pressure Differential **[ΔP]** across the Orifice Assembly **[4]** is in direct proportion to demand. The FP continuously senses **[ΔP]** and commands the Valve to throttle closed should demand rise above pilot setting. The 3W-HRV switches upon pressure drop command, directing line pressure into the control chamber, and thereby causing the main Valve to shut. The 3W-HRV also features local manual closing.

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"	470	54	-	G	I	BP	PG	-	PP	bKU

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.

Plastic Tubing & Fittings	PP
Plastic Tubing & Brass Fittings	PB

Servo	b
Plastic Control Accessories	K
Orifice Assembly	U
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