

## Pressure Reducing Valve

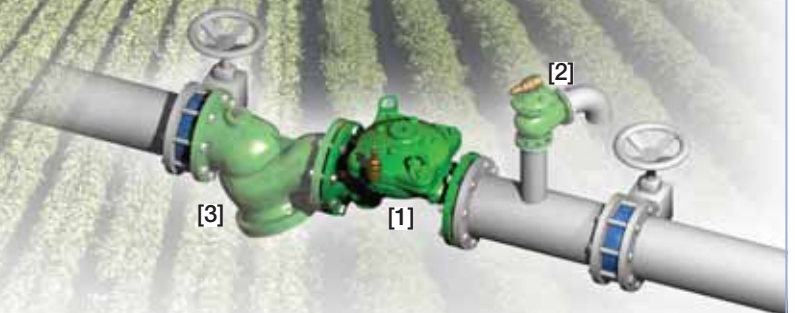
### IR-420

The BERMAD Model IR-420 Pressure Reducing Valve is a hydraulically operated, diaphragm actuated control valve that reduces higher upstream pressure to lower constant downstream pressure regardless of fluctuating demand or varying upstream pressure.



### Features and Benefits

- Line Pressure Driven Pressure Reducing Valve
  - Protects downstream systems
- 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
- User Friendly Design
  - Easy pressure setting
  - Simple in-line inspection and service
  - Easy addition of control features



### Typical Applications

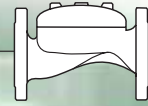
- Pressure Reducing Stations
- Flow and Leakage Reduction
- Cavitation Damage Protection
- Pressure Zoning
- Downhill Supply Lines
- System Maintenance Savings

[1] BERMAD Model IR-420 reduces line pressure, protecting downhill line and consumers.

[2] BERMAD Pressure Relief Valve Model 73Q

[3] BERMAD Strainer Model 70F

# BERMAD Irrigation



## IR-420

For full technical details, refer to Engineering Section.

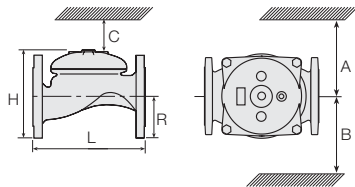
## 400 Series

Pressure Reducing

### Technical Specifications

#### Dimensions and Weights

| Size   | DN<br>Inch | 80<br>3 | 100<br>4 | 150<br>6 | 200<br>8 | 250<br>10 | 300<br>12 | 350<br>14 | 400<br>16 |
|--------|------------|---------|----------|----------|----------|-----------|-----------|-----------|-----------|
| L      | mm         | 250     | 320      | 415      | 500      | 605       | 725       | 742       | 742       |
|        | inch       | 9.8     | 12.6     | 16.3     | 19.8     | 23.8      | 28.5      | 29.2      | 29.2      |
| H      | mm         | 210     | 242      | 345      | 430      | 460       | 635       | 655       | 965       |
|        | inch       | 8.3     | 9.5      | 13.6     | 16.9     | 18.1      | 25        | 25.8      | 38        |
| C      | mm         | 125     | 145      | 207      | 258      | 276       | 381       | 393       | 579       |
|        | inch       | 5       | 5.7      | 8.2      | 10.2     | 10.9      | 15        | 15.5      | 22.8      |
| R      | mm         | 100     | 112      | 140      | 170      | 202       | 242       | 260       | 300       |
|        | inch       | 3.9     | 4.4      | 5.5      | 6.7      | 8         | 9.5       | 10.2      | 11.8      |
| A; B   | mm         | 300     | 312      | 353      | 383      | 403       | 490       | 494       | 500       |
|        | inch       | 11.8    | 12.3     | 13.9     | 15.1     | 15.9      | 19.3      | 19.4      | 19.7      |
| Weight | Kg         | 19      | 28       | 68       | 125      | 140       | 290       | 358       | 377       |
|        | lb.        | 41.9    | 61.7     | 149.9    | 275.6    | 308.6     | 639.3     | 789.2     | 831.1     |



### Technical Data

Patterns and Sizes: Globe: 3-16"; DN80-400 Angle: 3-4"; DN80-100

End Connections:

| Size     |       | 3"   | 4"    | 6"    | 8-16"     |
|----------|-------|------|-------|-------|-----------|
|          |       | DN80 | DN100 | DN150 | DN200-400 |
| Threaded | Globe | ■    |       |       |           |
|          | Angle | ■    |       |       |           |
| Flanged  | Globe | ■    | ■     | ■     | ■         |
|          | Angle | ■    | ■     |       |           |
| Grooved  | Globe | ■    | ■     | ■     |           |
|          | Angle | ■    | ■     |       |           |

Pressure Rating: 16 bar; 232 psi

Operating Pressure Range: 0.5-16 bar; 7-232 psi

For lower pressure requirements, consult factory

Setting Range: 1.5-16 bar; 22-232 psi

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

Materials:

Body and Cover:

Polyester Coated Cast or (10"; DN250 and larger) Ductile Iron

Spring: Stainless Steel

Diaphragm: Nylon fabric Reinforced NR with rugged insert

Bolts, Studs and Nuts: Zinc-Cobalt plated Steel

Control Accessories: Brass

Tubing and Fittings: Reinforced Plastic and Brass

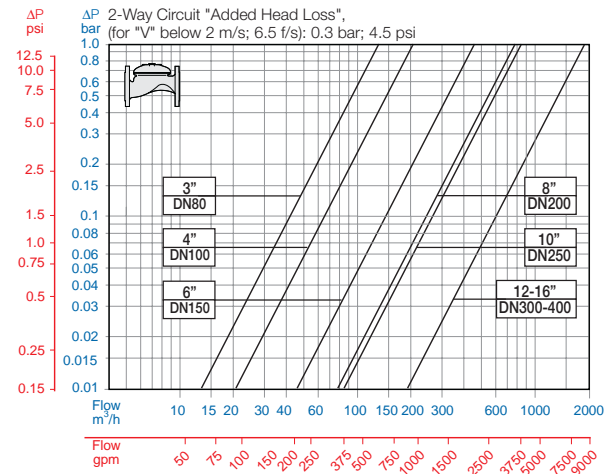
### How to Order

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

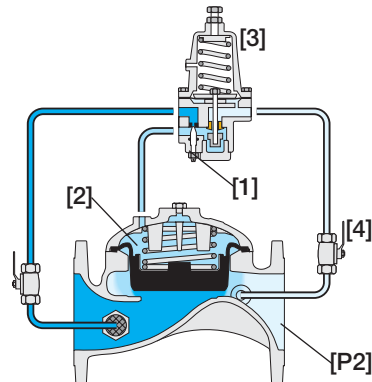
| Sector | Size   | Primary Feature | Additional Feature   | Additional Feature | Pattern                                      | Construction Materials  | End Connections | Coating  | Voltage -Main Valve Position   | Tubing & Fittings | Additional Attributes |
|--------|--|-----------------|--|--------------------|--|---|-----------------|----------|--|-------------------|-----------------------|
| IR     | 3-16"<br><small>Other sizes available on request.</small>        | 420             | 00   | -                  | G  | I   | 16              | PG       | -  | PB                | -                     |
|        | Globe<br>Angle (up to 4"; DN100)                                 | G<br>A          | ISO-16<br>ISO-10<br>IS 14 (ISO 10/4 Holes)<br>ANSI-125<br>ANSI-150<br>JIS-10<br>BST-D<br>Grooved (3-6"; DN80-150 only) |                    | 16<br>10<br>14<br>A1<br>A5<br>J1<br>BD<br>VI | Plastic Tubing & Brass Fittings<br>Copper Tubing & Brass Fittings |                 | PB<br>CB | Metal Control Accessories<br>Large Control Filter<br>Valve Position Indicator <sup>(1)</sup><br>Flow Stem <sup>(1)</sup>                 | R<br>F<br>I<br>M  |                       |
|        | Cast Iron (up to 8"; DN200)<br>Ductile Iron (10"; DN250 & above) | I<br>C          |  |                    |  |   |                 |          | <small>(1) Standard Irrigation Cover &amp; Diaphragm are unfitted to Attributes I, M.<br/>Other attributes available on request.</small> |                   |                       |

Other end connections available on request

### Flow Chart



### Operation



The Needle Valve [1] continuously allows line pressure into the Control Chamber [2]. The Pressure Reducing Pilot [3] senses Downstream Pressure [P2], and throttles when it rises above setting. Pressure then accumulates in the control chamber causing the Valve to throttle closed, decreasing [P2] to pilot setting. The pilot releases accumulated pressure when [P2] falls below setting, thereby causing the Valve to modulate open. The needle valve controls the closing speed. The Downstream Cock Valve [4] enables manual closing.



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