

# Pressure Reducing Valve

Normally Closed with Hydraulic Control

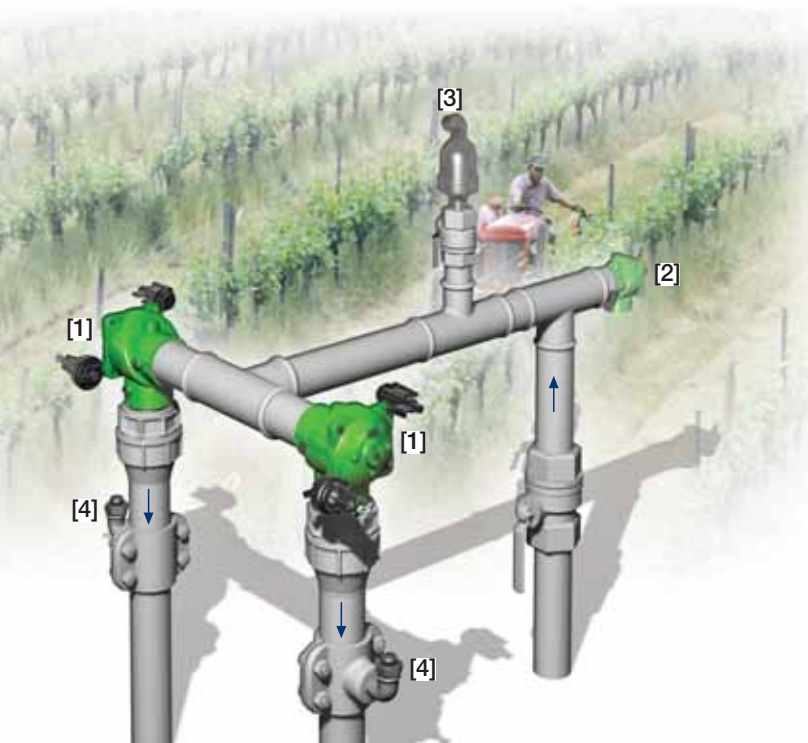
IR-420-54-KX

The BERMAD Normally Closed, Pressure Reducing Valve with Hydraulic Control, is a hydraulically operated, diaphragm actuated control valve that reduces higher upstream pressure to lower constant downstream pressure regardless of fluctuating demand, and opens fully upon line pressure drop. 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
  - Line pressure driven
  - Closes upon control failure
  - Protects downstream systems
  - Opens fully upon line pressure drop
  - 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 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

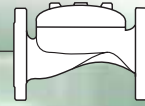


## Typical Applications

- Computerized Irrigation
- Pressure Reducing Stations
- Systems Subject to Varying Supply Pressure
- Remote and/or Elevated Plots
- Distribution Centers

- [1] BERMAD Model IR-420-54-KX opens upon pressure rise command, and establishes reduced pressure zone protecting laterals and distribution line.
- [2] BERMAD Relief Valve Model IR-43Q-K
- [3] BERMAD Air Valve Model ARA-A-P-P
- [4] BERMAD Vacuum Breaker Model 1/2"-ARV

# BERMAD Irrigation



## IR-420-54-KX

For full technical details, refer to Engineering Section.

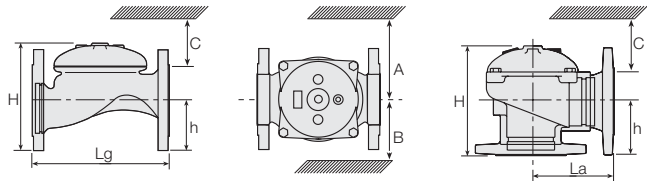
## 400 Series

Pressure Reducing Standard

### Technical Specifications

#### Dimensions and Weights

| Pattern     | Globe    |      |      |      |      |      | Angle |          |      |      |      |      |
|-------------|----------|------|------|------|------|------|-------|----------|------|------|------|------|
|             | Threaded |      |      |      |      |      | Fl.   | Threaded |      |      |      |      |
| Connections | Threaded |      |      |      |      |      | Fl.   | Threaded |      |      |      |      |
| 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:** 1-7 bar; 15-100 psi

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

### How to Order

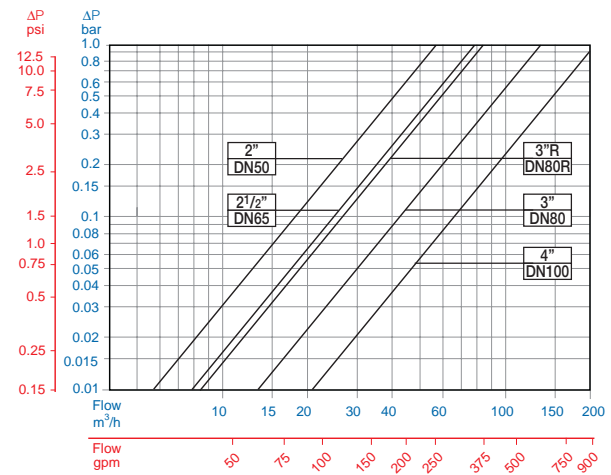
Please specify the requested valve in the following sequence: (for more options, refer to Ordering Guide.)

| 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"<br><small>Other sizes available on request.</small> | 420             | 54                     | -                  | G       | I                               | BP              | PG      | -                             | PP  | KX                    |
| Globe  |  | G               | BSP                    |                    | BP      | Plastic Tubing & Fittings       |                 | PP      |                               | Plastic Control Accessories                           | K                     |
| Angle  |  | A               | NPT                    |                    | NP      | Plastic Tubing & Brass Fittings |                 | PB      |                               | 3-Way Control Valve Position Indicator <sup>(1)</sup> | X                     |
|        |  |                 | ISO-16                 |                    | 16      |                                 |                 |         |                               | Valve Position Indicator <sup>(1)</sup>               | I                     |
|        |  |                 | ISO-10                 |                    | 10      |                                 |                 |         |                               | Flow Stem <sup>(1)</sup>                              | M                     |
|        |  |                 | IS 14 (ISO 10/4 Holes) |                    | 14      |                                 |                 |         |                               |   |                       |
|        |  |                 | ANSI-125               |                    | A1      |                                 |                 |         |                               |   |                       |
|        |  |                 | JIS-10                 |                    | J1      |                                 |                 |         |                               |   |                       |
|        |  |                 | BST-D                  |                    | BD      |                                 |                 |         |                               |   |                       |
|        |  |                 | Grooved                |                    | VI      |                                 |                 |         |                               |   |                       |

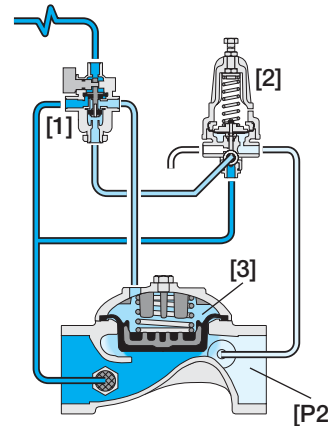
For available end connections/sizes, see End Connections Table above.

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

### 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 it drops below 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.



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