



# FLOW CONTROL & PRESSURE REDUCING VALVE

with Hydraulic Control

## Model IR-172-50-3W-Xt

The BERMAD Flow Control and Pressure Reducing Valve is a hydraulically operated, diaphragm actuated control valve that limits system demand to the designed maximum allowed value; reduces downstream pressure to constant preset maximum and shut in respond to hydraulic pressurized command.



- [1] BERMAD Model IR-172-50-Xt limits over-demand, controls laterals and distribution line fill-up while reducing pressure.
- [2] C10-Combination Air Valve
- [3] Turbo - IR Water Meter
- [4] RTU - Remote Terminal Unit

### Features and Benefits

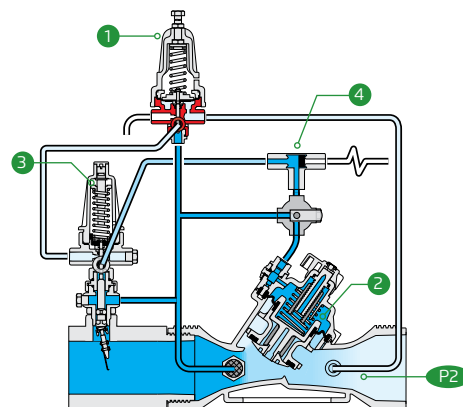
- Line Pressure Driven Hydraulic Flow Control
  - Limits fill-up rate and consumer over-demand
  - Protects downstream system
  - Adjustable Paddle-Type Hydro-Mechanic Flow Pilot with no added head loss
  - Easy flow and pressure setting with wide setting range
- Engineered Plastic Valve with Industrial Grade Design
  - Adaptable on-site to a wide range of end connection sizes and types
  - Highly durable, chemical & cavitation resistant
- hYflow 'Y' Valve Body with "Look Through" Design
  - Ultra-high flow capacity at Low pressure loss
- Unitized Flexible Super Travel Diaphragm with a Guided Plug
  - Accurate and stable regulation with smooth closing
  - Requires low actuation pressure
  - Prevents diaphragm erosion and distortion
  - Simple In-Line Inspection and Service

### Typical Applications

- Line Fill Up Control
- Pressure Reducing Systems
- Multiple Independent Consumer Systems
- Systems Subject to Varying Supply Pressure
- Mechanized Irrigation Systems
- Filter Stations

### Operation:

The Pressure Reducing Pilot (PRP) ① is hydraulically connected to the control chamber ② through the Flow Control Pilot (FCP) ③. The PRP commands the valve to throttle closed should downstream pressure rise above setting and to fully open when downstream pressure drops below setting. The FCP commands the valve to throttle closed should demand rise above setting and to open fully when demand drops below setting. The Shuttle Valve ④ allows valve remote closing by introducing pressurized command to the control chamber, shutting the valve.



All images in this catalog are for illustration only



**IR-172-50-Xt**

### Technical Data

**Pressure Rating:**  
10 bar; 145 psi

**Operating Pressure Range:**  
0.5-10 bar; 7-145 psi

**Setting Range:**  
1-7 bar; 15-100 psi

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

**Flow Setting Range:**  
±20% from valve predetermined flow

### Materials:

**Body, Cover and Plug:**  
Polyamid 6 & 30% GF

**Diaphragm:**  
NR, Nylon fabric reinforced

**Seals:** NR

**Spring:** Stainless Steel

**Cover Bolts:** Stainless Steel

### Control Accessories:

**Tubing and Fittings:**  
Polyethylene

#### PRP Pilot Spring Range:

Spring	Spring color	Setting Range
J	Green	0.2-1.7 bar
K	Gray	0.5-3.0 bar
N	Colorless	0.8-6.5 bar

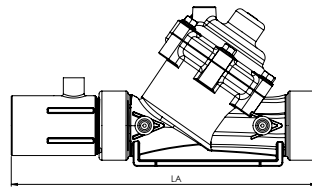
#### FCP Pilot Spring Range:

Spring	Flow velocity m/sec
E-Purple	1-5

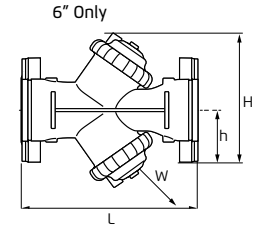
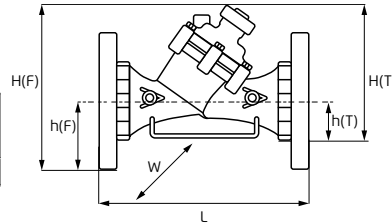
### Technical Specifications

#### Y Pattern Valves Dimensions & Weights

For BERMAD angle, dual & T pattern, Please see our full engineering page.



For valve length with adaptor, please consult BERMAD



Sizes Inch ; DN	1½" ; 40	2" ; 50		2"L ; 50	2½" ; 65	3" ; 80		
End Connections	Rc (BSP.T), NPT	Rc (BSP.T), NPT	G (BSP.F)	Rc (BSP.T), NPT	G (BSP.F)	Rc (BSP.T), NPT	Universal Flanges	
							Metal	Plastic
L (mm)	200	230	230	230	230	298	308	308
H (F) (mm)	—	—	—	—	—	—	244	244
H (T) (mm)	173	173	173	187	187	199	—	—
h (F) (mm)	—	—	—	—	—	—	100	100
h (T) (mm)	40	40	40	43	43	55	—	—
W (mm)	97	97	97	135	135	135	200	200
CCDV (lit)	0.12	0.12	0.12	0.15	0.15	0.15	0.15	0.15
Weight (kg)	1.1	1.2	1.2	1.47	1.47	1.6	4.4	2.5

Sizes Inch ; DN	3"L ; 80L		4" ; 100		4"L ; 100L		6"R ; 150R	6" ; 150	6" ; 150		
End Connections	Rc (BSP.T), NPT	Universal Flanges		Universal Flanges		Universal Flanges		Groove	Universal Flanges		
		Metal	Plastic	Metal	Plastic	Metal	Plastic		Metal	Groove	Universal Flanges
											Plastic
L (mm)	298	308	308	350	350	442	442	400	470	480	504
H (F) (mm)	—	317	317	329	329	340	340	286	377	198	286
H (T) (mm)	278	—	—	—	—	—	—	—	—	—	—
h (F) (mm)	—	100	100	112	112	112	112	57	149	100	143
h (T) (mm)	60	—	—	—	—	—	—	—	—	—	—
W (mm)	168	200	200	224	224	226	226	226	287	475	475
CCDV (lit)	0.62	0.62	0.62	0.62	0.62	1.15	1.15	1.15	1.15	2 x 0.62	2 x 0.62
Weight (kg)	3	4.6	3.7	7.4	4.6	13.5	10	8	16.5	11	12.5

CCDV = Control Chamber Displacement Volume • **BSP.T** = Internal Threaded • **BSP.F** = External Threaded • Other End Connections are available on request. For dimensions and weights of adapters or valve with adapters please consult with customer service

### Flow Properties

Sizes Inch DN	1½" 40	2" 50	2"L 50L	2½" 65
KV	50	50	100	100

Sizes Inch DN	3" 80	3"L 80L	4" 100	4"L 100L	6" R 150L	6" 150
KV	100	200	200	340	340	400

### Valve Flow Coefficient

$$\Delta P = \left( \frac{Q}{Kv} \right)^2$$

$Kv = m^3/h @ \Delta P \text{ of } 1 \text{ bar}$   
 $Q = m^3/h$   
 $\Delta P = \text{bar}$

### Flow Chart

