



# 3-WAY HYDRAULIC RELAY VALVE

## Universal Relay Valve (URV)

### Model URV-3-0

The BERMAD URV-3-0 is a 3-way Spring Return Balanced Poppet type, pressure operated diaphragm actuated pilot valve. The URV changes its position from open to close in response to pressure being supplied to its control chamber. The URV pilot valve is used as a relay device designed for BERMAD Deluge and Remote Control Monitor Valves, commonly used to actuate the BERMAD main valve upon pressure release from the URV (the main valve will be "pressure to close"). The URV's balanced-poppet design enables safe reliable operation with a low control pressure using compact dimensions. The URV is specifically designed for Fire Safety systems in that it has no mechanical friction of the internal parts, greatly increasing reliability. This also makes it ideal for use with corrosive fluids such as firewater, brackish water or seawater.

### Features

- 3-Way control: No continuous release from main valve control trim, suitable for foam systems and pit installations.
- Frictionless operation: Isolating membrane increases safety and reliability, well suited for use with sea-water and corrosive fluids
- Balanced Poppet Shaft: Enables a low control / pilot pressure regardless of the line supply pressure
- Heavy duty construction: Suitable for the harsh conditions of chemical and offshore facilities
- Low control pressure regardless of system pressure: Standard 2.5bar/36psi. Low pressure version 1.2bar/17.4psi

### Technical Data

**Pressure Rating:** 365 psi  
**Temperature Range:** 180 °F  
**Flow Factor:** Cv 1.7  
**Weight:** 2.4 Lbs

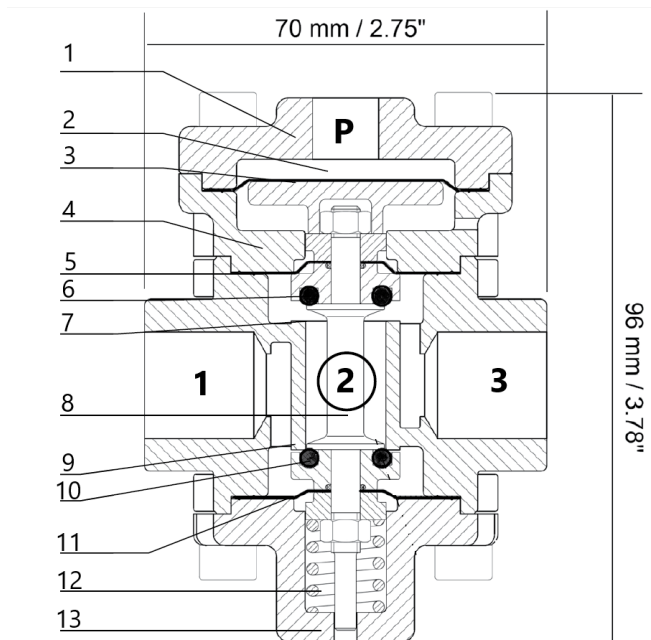
#### Standard Materials:

**Body:** St. St. 316  
**Cover:** St. St. 316  
**Diaphragm & Seals:** NBR  
**Internal Parts:** St. St. 316  
**Spring:** St. St. 316

#### Optional Materials:

**Body:** Stainless Steel, Nickel Aluminum Bronze, Duplex, Hastalloy, Titanium  
**Cover:** Stainless Steel, Nickel Aluminum Bronze, Duplex, Hastalloy, Titanium

\*Other materials are available on request



Part	Description
1	Cover
2	Control chamber
3	Diaphragm
4	Diaphragm covers
5 & 11	Isolation membrane
6 & 10	Seal
7 & 9	Seat
8	Balanced poppet shaft
12	Spring
13	Spring cover

Port	Size	Connections
1	½" NPT	Inlet
2	½" NPT	Common
3	½" NPT	Outlet
P	¼" NPT	Valve Control Chamber



URV-3-0

## Operation

The URV-3-0 utilizes a control chamber and three operational ports.

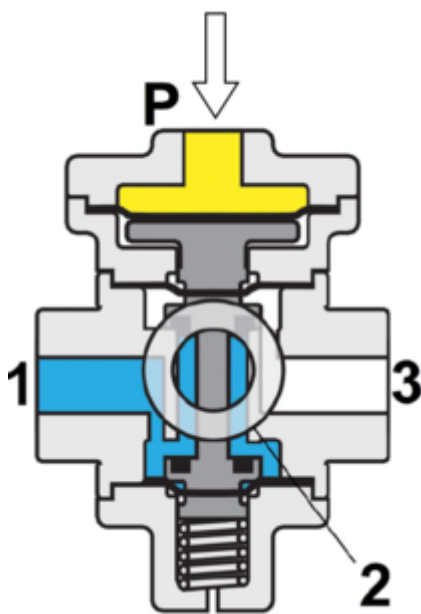
Actuation or position change is achieved by applying a relatively low control pressure (air or water) to the Control Port (P)

### Connections

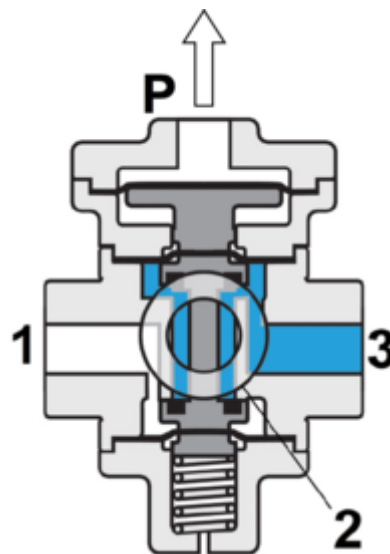
The URV-3-0 may be configured as Normally Open or Normally Closed, according to the port connections

**For the deluge valve to be Normally Closed** - Pressure to Open. The URV should be Normally Open N.O. Connect supply pressure to to port 3 Connect the deluge valve control chamber to port 2 (common) Port 1 will be the vent

**For the deluge valve to be Normally Open** - Pressure to Close. The URV should be Normally Closed N.C. Connect supply pressure to to port 1 Connect the deluge vale control chamber to port 2 (common) Port 3 will be the vent



Flow from port 1 to port 2

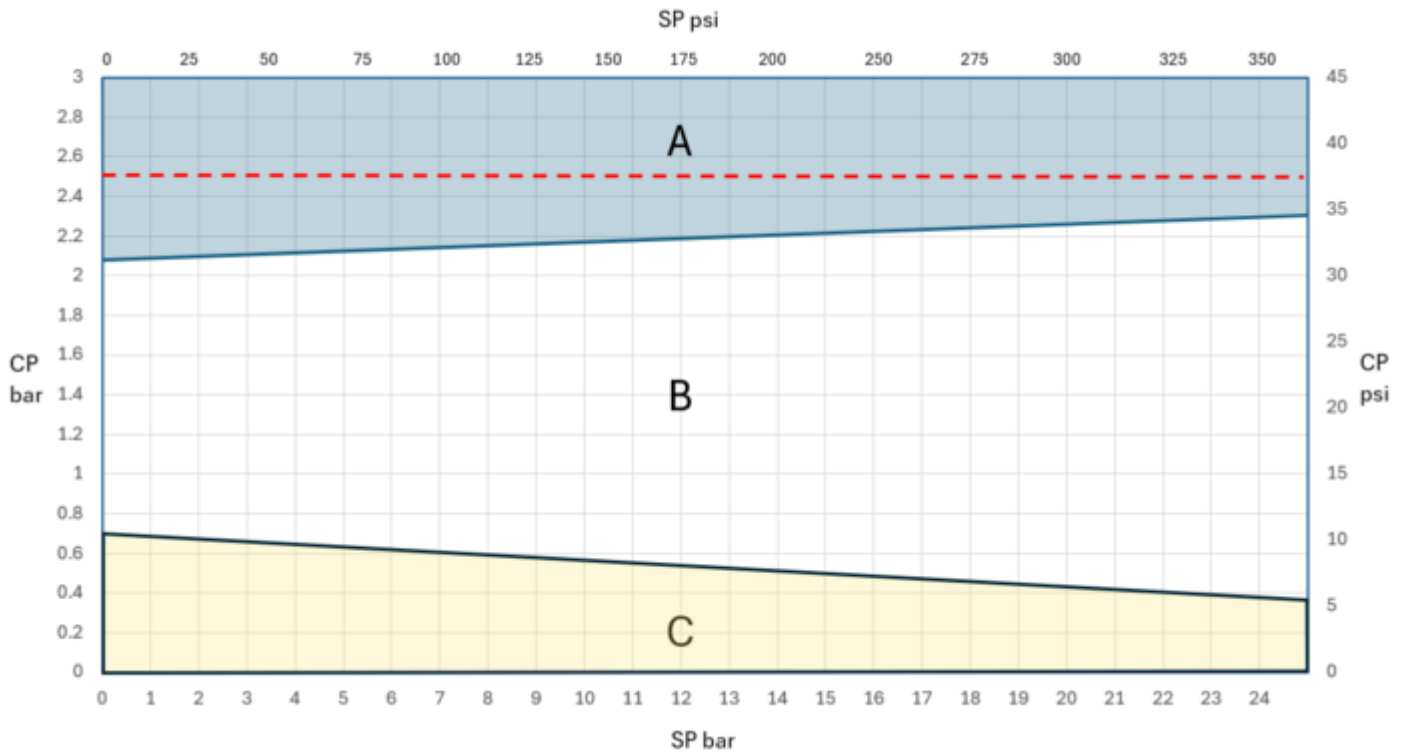


Flow from port 3 to port 2

FLOW	FUNCTION	PORT
N.O. (pressure to open main valve)	Supply	3
	Common	2
	Vent	1
	Control	P
N.C. (pressure to close main valve)	Supply	1
	Common	2
	Vent	3
	Control	P



## Control / Pilot Line Pressure Chart - for Standard Control Pressure Model



### Chart Symbols:

Symbol	Description	Symbol	Description
	Recommended Control Pressure	<b>A</b>	Open between ports 2 & 3
<b>SP</b>	Supply / System Pressure	<b>B</b>	Transitional
<b>CP</b>	Control Pressure	<b>C</b>	Open between ports 1 & 2



SS316



NAB/SS316



Duplex / Titanium

## Model Codes Selection Tables

### Standard Model

Standard Actuator: Recommended Pilot Line / Control Pressure 2.5 bar / 36 psi		
Model Code	Materials: Body & Wetted Parts	Materials: Actuator
URV-2-0-N-N	Stainless Steel 316	Stainless Steel 316
URV-2-0-U-N	Ni.Aluminium Bronze (Monel shaft)	Stainless Steel 316
URV-2-0-U-U	Ni.Aluminium Bronze (Monel shaft)	Ni.Aluminium Bronze
URV-2-0-D-N	Super-Duplex	Stainless Steel 316
URV-2-0-T-N	Titanium	Stainless Steel 316

### Low Control Pressure Model

Low Pressure Actuator: Recommended Pilot Line / Control Pressure 1.2 bar / 17.4 psi			
Model Code	Materials: Body & Wetted Parts	Materials: Actuator	Additional Function
URV-2-L-N-N	Stainless Steel 316	Stainless Steel 316	-
URV-2-L-U-N	Ni.Aluminium Bronze (Monel shaft)	Stainless Steel 316	-
URV-2-V-N-N	Stainless Steel 316	Stainless Steel 316	Latching Device
URV-2-V-U-N	Ni.Aluminium Bronze (Monel shaft)	Stainless Steel 316	Latching Device

