

# Pressure Relief Valve

## Model FP 730-UF

The BERMAD Model FP 730-UF pilot operated relief valve prevents overpressure, maintaining a constant preset system pressure regardless of fluctuating conditions. It is UL-Listed (up to 350 psi) and FM-Approved in accordance with NFPA-20. The valve offers reliable performance when installed in: Refineries, petrochemical complexes, tank farms, high-rise buildings, aviation and airports, marine and on-shore installations.



### Features and Benefits

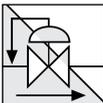
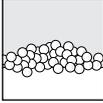
- **Hydraulically powered valve seal design**
  - Reliable drip tight sealing
  - Eliminates jamming problems
- **Hydro-efficient body design**
  - Wide operating range
  - Unobstructed straight through flow path
- **Double-chambered unitized actuator**
  - Easy, inline inspection ensures minimal down time
  - Quick and smooth valve action

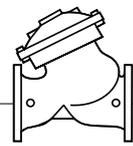
### Optional Features

- **Large control filter** (code: F)
- **Seawater service construction**

**Note:** Optional features can be mixed and matched. Consult your local BERMAD representative for full details.

### Typical Applications

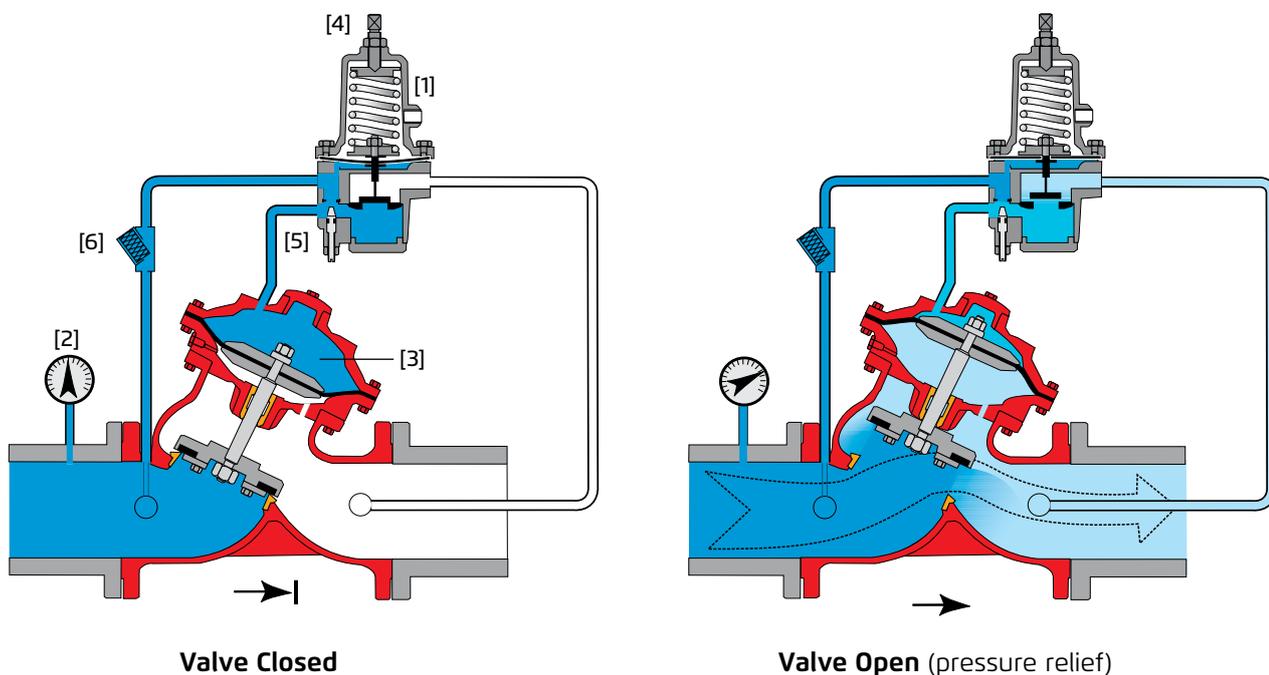
-  Pressure relief for individual diesel fire pumps
-  Pump station pressure relief
-  Centralized thermal pressure relief
-  Foam recirculation; maintains required foam pressure
-  Zone safety relief



## Operation

The BERMAD Model FP 730-UF remains closed as long as the sensed inlet pressure is lower than the adjustable set point. When the Pressure Relief Pilot [1] senses inlet pressure [2] that is higher than the pilot setting, it opens releasing water pressure from the control chamber [3] causing the main valve to modulate open, relieving excess pressure to either a reservoir or sump, preventing system overpressure.

The Pressure Relief Pilot is equipped with an adjusting screw [4] to preset the desired inlet pressure and an integral adjustable needle valve [5] to control the main valve closing speed. The valve's unique design and quick reaction to system demand keeps pressure loss at a minimum. To further enhance reliability the control system is equipped with a control strainer [6].



## Engineer Specifications

The Pressure Relief Valve shall be UL-Listed, FM-Approved and hydraulic pilot controlled. The main valve shall be an angle or "Y" pattern. All necessary inspection and servicing of the main valve shall be possible in-line.

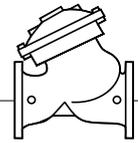
Valve actuation shall be accomplished by a double chambered actuator, which shall include a stainless steel stem and a flat seal disk creating a drip tight seal.

The valve seat shall be made of stainless steel and have an **unobstructed flow path**, with no stem guide or **supporting ribs**.

The pilot system shall be field adjustable, with adjustable valve closing speed, integrated to the pilot valve, hydraulically tested and supplied as an assembly consisting of:

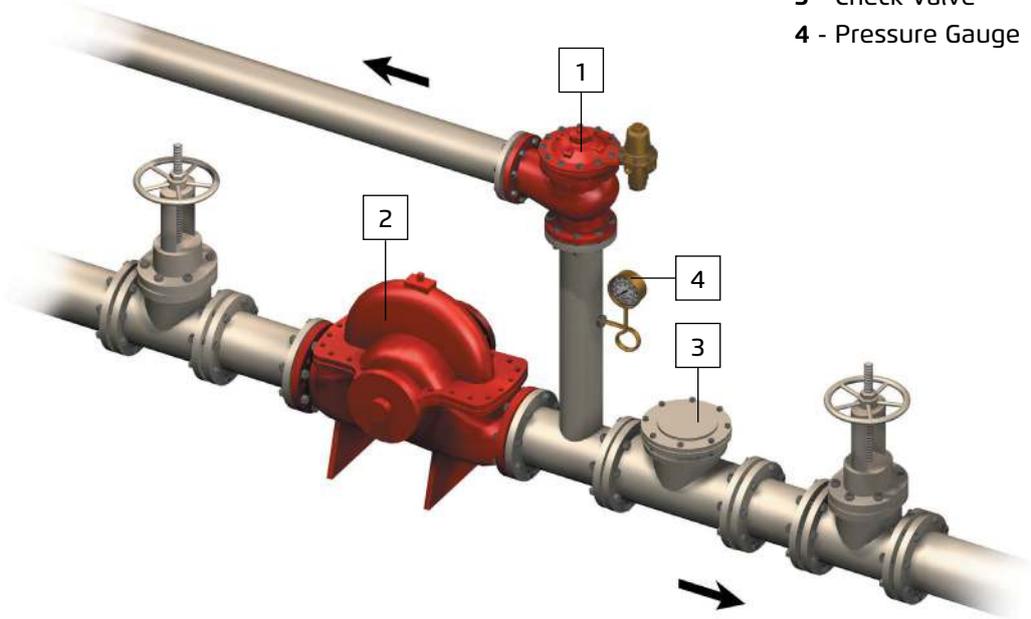
- Relief pilot valve UL-Listed and FM-Approved as part of the assembly with built-in, internal needle valve
- "Y" strainer

The control trim shall be supplied as an assembly, pre-assembled and hydraulically tested at an ISO 9000 and 9001 certified factory.

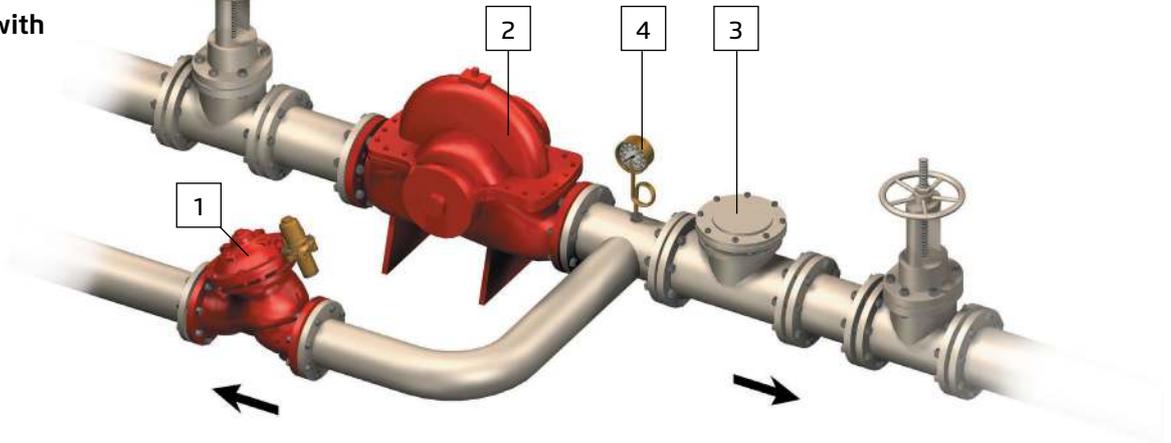


## Typical Installations

Installation with  
Angle pressure  
relief valve



Installation with  
"Y" Pattern  
relief valve



For illustration only

## System Components

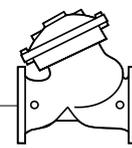
- 1 - BERMAD Model FP 730-UF
- 2 - Fire Pump
- 3 - Check Valve
- 4 - Pressure Gauge

## Installation Considerations

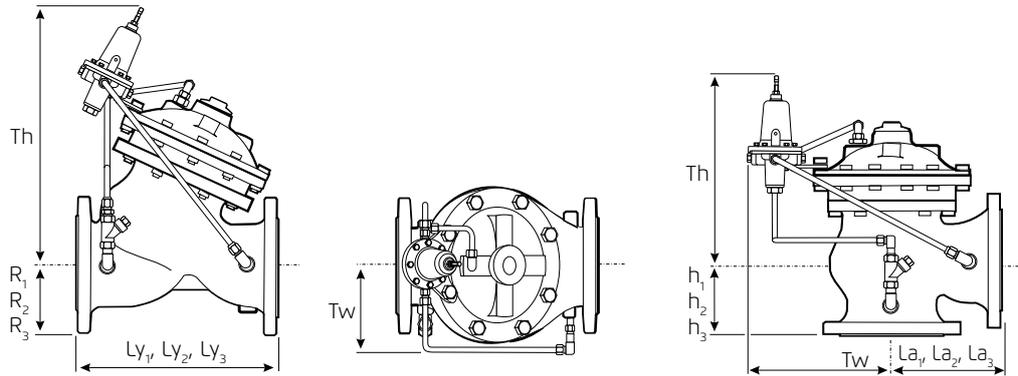
- Valve size should be no less than NFPA-20 requirements
- Provide adequate clearance around valve for maintenance, ensuring that the actuator can be easily removed
- Design installation with the valve cover up for best performance
- Ensure that before the valve is installed, instructions are given to flush the pipeline at full flow

## UL Listed

The BERMAD Model FP 730-UF is UL-Listed and FM-Approved when installed as a unit



## Technical Data



Size	1½"		2"		2½"		3"		4"		6"		8"		10"		12"		14"		16"		
	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
Dimensions	Ly <sub>1</sub> <sup>(1)</sup>	205	8 <sup>1</sup> / <sub>16</sub>	205	8 <sup>1</sup> / <sub>16</sub>	210	8 <sup>3</sup> / <sub>4</sub>	250	9 <sup>7</sup> / <sub>8</sub>	320	12 <sup>5</sup> / <sub>8</sub>	415	16 <sup>3</sup> / <sub>8</sub>	500	19 <sup>1</sup> / <sub>16</sub>	605	23 <sup>13</sup> / <sub>16</sub>	725	28 <sup>9</sup> / <sub>16</sub>	733	28 <sup>7</sup> / <sub>8</sub>	990	39
	Ly <sub>2</sub> <sup>(2)</sup>	155	6 <sup>1</sup> / <sub>8</sub>	155	6 <sup>1</sup> / <sub>8</sub>	212	8 <sup>3</sup> / <sub>8</sub>	250	9 <sup>13</sup> / <sub>16</sub>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Ly <sub>3</sub> <sup>(3)</sup>	210	8 <sup>3</sup> / <sub>4</sub>	210	8 <sup>3</sup> / <sub>4</sub>	212	8 <sup>3</sup> / <sub>8</sub>	264	10 <sup>7</sup> / <sub>16</sub>	335	13 <sup>1</sup> / <sub>4</sub>	433	17 <sup>1</sup> / <sub>16</sub>	524	20 <sup>5</sup> / <sub>8</sub>	637	25	762	30	767	30 <sup>3</sup> / <sub>16</sub>	1,024	40 <sup>3</sup> / <sub>4</sub>
	La <sub>1</sub> <sup>(1)</sup>	121	4 <sup>3</sup> / <sub>4</sub>	121	4 <sup>3</sup> / <sub>4</sub>	140	5 <sup>1</sup> / <sub>2</sub>	152	6	190	7 <sup>1</sup> / <sub>2</sub>	225	8 <sup>7</sup> / <sub>8</sub>	265	10 <sup>7</sup> / <sub>16</sub>	320	12 <sup>5</sup> / <sub>8</sub>	396	15 <sup>9</sup> / <sub>16</sub>	400	15 <sup>3</sup> / <sub>4</sub>	450	17 <sup>3</sup> / <sub>4</sub>
	La <sub>2</sub> <sup>(2)</sup>	120	4 <sup>3</sup> / <sub>4</sub>	120	4 <sup>3</sup> / <sub>4</sub>	140	5 <sup>1</sup> / <sub>2</sub>	159	6 <sup>1</sup> / <sub>4</sub>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	La <sub>3</sub> <sup>(3)</sup>	127	5	127	5	149	5 <sup>7</sup> / <sub>8</sub>	159	6 <sup>1</sup> / <sub>4</sub>	200	7 <sup>7</sup> / <sub>8</sub>	234	9 <sup>3</sup> / <sub>16</sub>	277	10 <sup>7</sup> / <sub>8</sub>	336	13 <sup>1</sup> / <sub>4</sub>	415	16 <sup>5</sup> / <sub>16</sub>	419	16 <sup>1</sup> / <sub>2</sub>	467	18 <sup>3</sup> / <sub>8</sub>
	h <sub>1</sub> <sup>(1)</sup>	82	3 <sup>1</sup> / <sub>4</sub>	82	3 <sup>1</sup> / <sub>4</sub>	102	4	102	4	127	5	152	6	203	8	219	8 <sup>5</sup> / <sub>8</sub>	275	10 <sup>13</sup> / <sub>16</sub>	275	10 <sup>13</sup> / <sub>16</sub>	369	14 <sup>1</sup> / <sub>2</sub>
	h <sub>2</sub> <sup>(2)</sup>	82	3 <sup>1</sup> / <sub>4</sub>	82	3 <sup>1</sup> / <sub>4</sub>	102	4	114	4 <sup>1</sup> / <sub>2</sub>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	h <sub>3</sub> <sup>(3)</sup>	89	3 <sup>1</sup> / <sub>2</sub>	89	3 <sup>1</sup> / <sub>2</sub>	109	4 <sup>5</sup> / <sub>16</sub>	108	4 <sup>1</sup> / <sub>4</sub>	135	5 <sup>5</sup> / <sub>16</sub>	165	6 <sup>1</sup> / <sub>2</sub>	216	8 <sup>1</sup> / <sub>2</sub>	235	9 <sup>1</sup> / <sub>4</sub>	294	11 <sup>1</sup> / <sub>2</sub>	294	11 <sup>1</sup> / <sub>2</sub>	386	5 <sup>3</sup> / <sub>16</sub>
	R <sub>1</sub> <sup>(1)</sup>	75	2 <sup>15</sup> / <sub>16</sub>	83	3 <sup>1</sup> / <sub>4</sub>	93	3 <sup>5</sup> / <sub>8</sub>	100	3 <sup>15</sup> / <sub>16</sub>	114	4 <sup>1</sup> / <sub>2</sub>	140	5 <sup>1</sup> / <sub>2</sub>	171	6 <sup>3</sup> / <sub>4</sub>	203	8	241	9 <sup>1</sup> / <sub>2</sub>	267	10 <sup>1</sup> / <sub>2</sub>	298	11 <sup>3</sup> / <sub>4</sub>
	R <sub>2</sub> <sup>(2)</sup>	40	1 <sup>9</sup> / <sub>16</sub>	40	1 <sup>9</sup> / <sub>16</sub>	48	1 <sup>7</sup> / <sub>8</sub>	55	21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	R <sub>3</sub> <sup>(3)</sup>	78	3 <sup>1</sup> / <sub>16</sub>	83	3 <sup>1</sup> / <sub>4</sub>	95	3 <sup>3</sup> / <sub>4</sub>	108	4 <sup>1</sup> / <sub>4</sub>	127	5	159	6 <sup>1</sup> / <sub>4</sub>	191	7 <sup>1</sup> / <sub>2</sub>	222	8 <sup>3</sup> / <sub>4</sub>	260	10 <sup>1</sup> / <sub>4</sub>	292	11 <sup>1</sup> / <sub>2</sub>	324	12 <sup>3</sup> / <sub>4</sub>
	Tw	191	7 <sup>1</sup> / <sub>2</sub>	191	7 <sup>1</sup> / <sub>2</sub>	191	7 <sup>1</sup> / <sub>2</sub>	207	8 <sup>1</sup> / <sub>16</sub>	242	9 <sup>1</sup> / <sub>2</sub>	290	11 <sup>7</sup> / <sub>16</sub>	325	12 <sup>13</sup> / <sub>16</sub>	370	14 <sup>9</sup> / <sub>16</sub>	515	20 <sup>1</sup> / <sub>4</sub>	525	20 <sup>11</sup> / <sub>16</sub>	610	24
	Th	312	12 <sup>5</sup> / <sub>16</sub>	312	12 <sup>5</sup> / <sub>16</sub>	312	12 <sup>5</sup> / <sub>16</sub>	364	14 <sup>1</sup> / <sub>2</sub>	405	15 <sup>15</sup> / <sub>16</sub>	505	20	566	22 <sup>5</sup> / <sub>16</sub>	639	25 <sup>3</sup> / <sub>16</sub>	449	17 <sup>11</sup> / <sub>16</sub>	449	17 <sup>11</sup> / <sub>16</sub>	541	21 <sup>5</sup> / <sub>16</sub>

### Notes:

1. Ly<sub>1</sub> for ANSI#150, ISO PN16 & Grooved ends (see available sizes below)
2. La<sub>1</sub> & h<sub>1</sub> for Angle body, ANSI#150 and ISO PN16.
3. Ly<sub>2</sub>, La<sub>2</sub> & h<sub>2</sub> for threaded female, NPT or BSP.
4. Ly<sub>3</sub>, La<sub>3</sub> & h<sub>3</sub> for flanged ANSI #300 and ISO PN25.
5. Data is for maximum envelope dimensions, component positioning may vary.
6. Provide adequate space around valve for maintenance.

### Connection Standards

- Flanged:
  - Ductile Iron - ANSI B16.42
  - Steel, Stainless Steel, Ni.Al.Bronze - ANSI B16.5
- Threaded: NPT or ISO-7-Rp 2, 2½ & 3"
- Grooved: ANSI/AWWA C606 for 2, 3, 4, 6 & 8"

### Water Temperature

- 0.5 - 80°C (33 - 180°F)

### Manufacturers Standard Materials

#### Main valve body and cover

- Ductile Iron ASTM A-536

#### Main valve internals

- Stainless Steel, Bronze and coated Steel

#### Control Trim System

- Brass control components/accessories
- Forged Brass fittings & Copper tubing

#### Elastomers

- NBR (Buna-N)

#### Coating

- Electrostatic Powder Coating Polyester, Red (RAL 3002)

### Sizes ("Y" & Angle)

- Available Y: 1½ - 20", Angle: 1½ - 18"
- UL Listed:
  - 2, 2½, 3, 4, 6 & 8"
- FM approved:
  - 2, 3, 4, 6 & 8"

### Optional Materials

#### Main Valve Body/Internals

- Carbon Steel ASTM A-216-WCB
- Stainless Steel 316
- Ni-Al-Bronze ASTM B-148
- Titanium
- Super Duplex
- Hastalloy

#### Control Trim

- Stainless Steel 316
- Monel® and Al-Bronze
- Hastalloy C-276

#### Coating

- High Build Epoxy Fusion-Bonded with UV Protection, Anti-Corrosion

### Pressure Rating

- UL Listed - 2 to 6": 350 psi (24 bar)
- 8": 175 psi (12 bar)
- FM approved - 2 to 8": 200 psi (14 bar)
- ANSI#150 235 psi/16 bar (code A5)
- ANSI#300 350/24 bar (code A3)
- ISO 16 235 psi/16 bar (code 16)
- ISO 25 350/24 bar (code 25)
- Grooved 235psi/PN16, ANSI C606 (code V1)
- Grooved 365psi/PN25, ANSI C606 (code V2)
- Threaded 235psi/PN16, ISO-7-Rp (code BP)
- Threaded 365psi/PN25, ISO-7-Rp (code BH)
- Threaded 235psi/PN16, NPT (code NP)
- Threaded 365psi/PN25, NPT (code NH)

### Pressure Settings Range

- Class #150: 30 - 235 psi (2 - 16 bar)
- Class #300: 100 - 350 psi (7 - 24 bar)

### Approvals

- UL Listed - Fire Pump Relief Valve (QXZQ)
- FM Approved - Water Relief Valve and Fire Pump Relief Valve
- ISO 9001 QA certified
- ABS - Type Approved
- Lloyd's Register - Type Approved

