

**MO\M****Manually Actuated Monitor Valve**

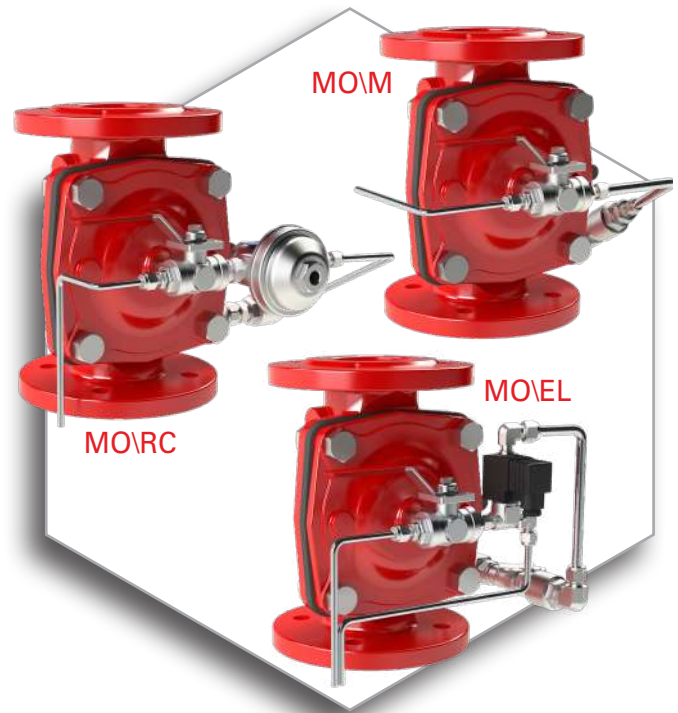
The valve is closed in its normal, set position and opens when an activation selector valve is turned to the open position. It gradually closes drip tight when the selector valve is turned back to the closed position, reducing the risk of water hammer damage.

**MO\RC****Remote Hydraulic/Pneumatic Actuated Monitor Valve**

The valve is closed in its normal, set position and opens when the activation ball valve is turned to the open position or when a remote activation ball valve is turned to the open position. It gradually closes drip tight when the selector valve is turned back to the closed position, reducing the risk of water hammer damage.

**MO\EL****Electrically Actuated Monitor Valve**

The valve is closed in its normal, set position and opens when an activation ball valve is turned to the open position or when a solenoid valve is energized. It gradually closes drip tight when the ball valve is turned back to the closed position or the solenoid valve is de-energized, reducing the risk of water hammer damage.



\* General representation of valves

**CERTIFICATION & COMPLIANCE**

- ANSI FCI 70-2 Class VI seat leakage class
- Fire tested to EN ISO 6182-5:2006 (Model 68: 2" - 6" only)
- Lloyd's & ABS approvals

**FEATURES & BENEFITS**

- High pressure (PN25/375psi), high flow systems
- Automatic or manual emergency actuation
- Hazardous, flammable & explosion classified area fire suppression
- Superior design featuring exceptionally low pressure losses at high flow rates
- Low lifelong maintenance costs due to straightforward design
- Applicable for fresh or brackish water, seawater & foam
- Out of box fully assembled & tested valves
- Factory trimmed for vertical or horizontal installations without modification
- Extensive valve & trim materials selection and corrosion protection coating
- Optional low power electric actuation

**TYPICAL APPLICATIONS**

Automatic or Manual Actuated  
Fire Suppression Systems



Petrochemical, Oil & Gas  
Installations



Power Generation, Transformer  
& Transmission Plants



Flammable Storage



Hangers



Onshore / Offshore

## OPERATION

These hydraulically, pneumatically or electrically actuated monitor valves are designed for local, remote controlled and oscillating monitors. The basic control valve [1] used for these monitor systems is a direct sealing elastomeric diaphragm, hydraulically operated control valve engineered specifically for fire protection systems.

In the standby position, the monitor valve is held closed by the upstream water pressure, trapped in the valve's control chamber. The water pressure enters the control chamber through a Y-type strainer [2], a check valve [3], a restrictor [4] and a 3-way ball valve [5].

Under fire conditions, the monitor valves will open following these circumstances:

MO\M: The 3-way ball valve is manually opened.

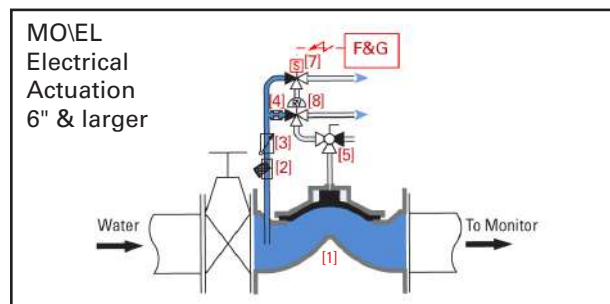
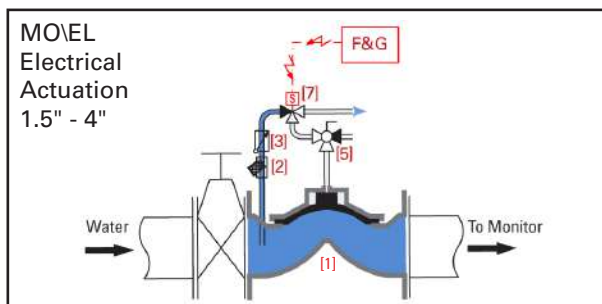
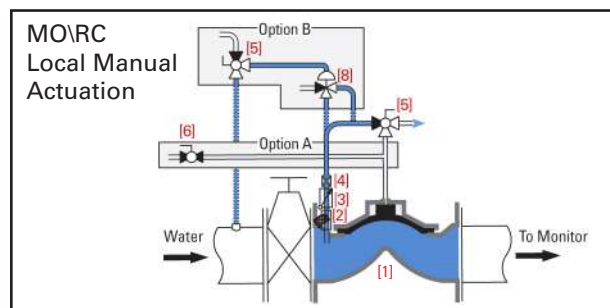
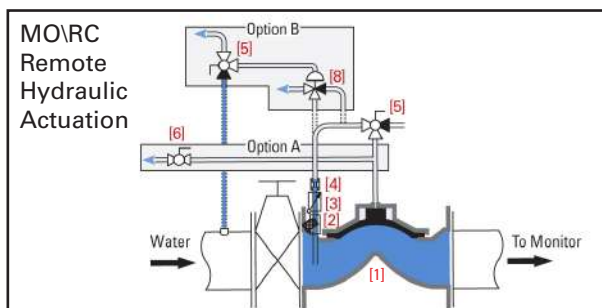
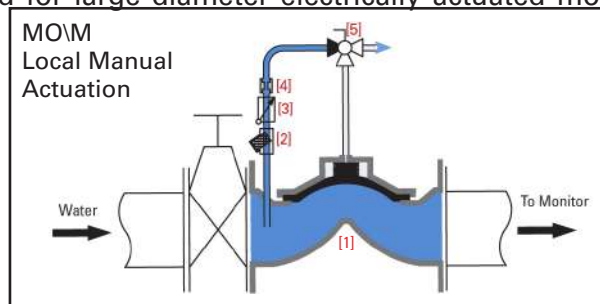
MO\RC: A) A remote 2-way ball valve [6] or a local 3-way ball valve is manually opened.

B) With relay valve [8] - a remote 3-way ball valve or a local 3-way ball valve is manually opened.

MO\EL: A fire alarm control panel (F&G panel) energizes the 3/2-way N.O. solenoid [7] (or de-energizes the coil of a continuously energized ED 100% normally closed solenoid for SIL 3-4 rated systems).

When opened, water begins to drain from the monitor valve's control chamber. The valve opens instantly, allowing water to flow into the pipeline and through the monitor and over the protected area. Adding a relay valve (see Option B - MO\RC) allows remote hydraulic actuation even for long pipelines or changing topography.

A relay valve is also added for large diameter electrically actuated monitor valves (see Electrically Actuated - 6" and larger).



## TYPICAL MATERIALS

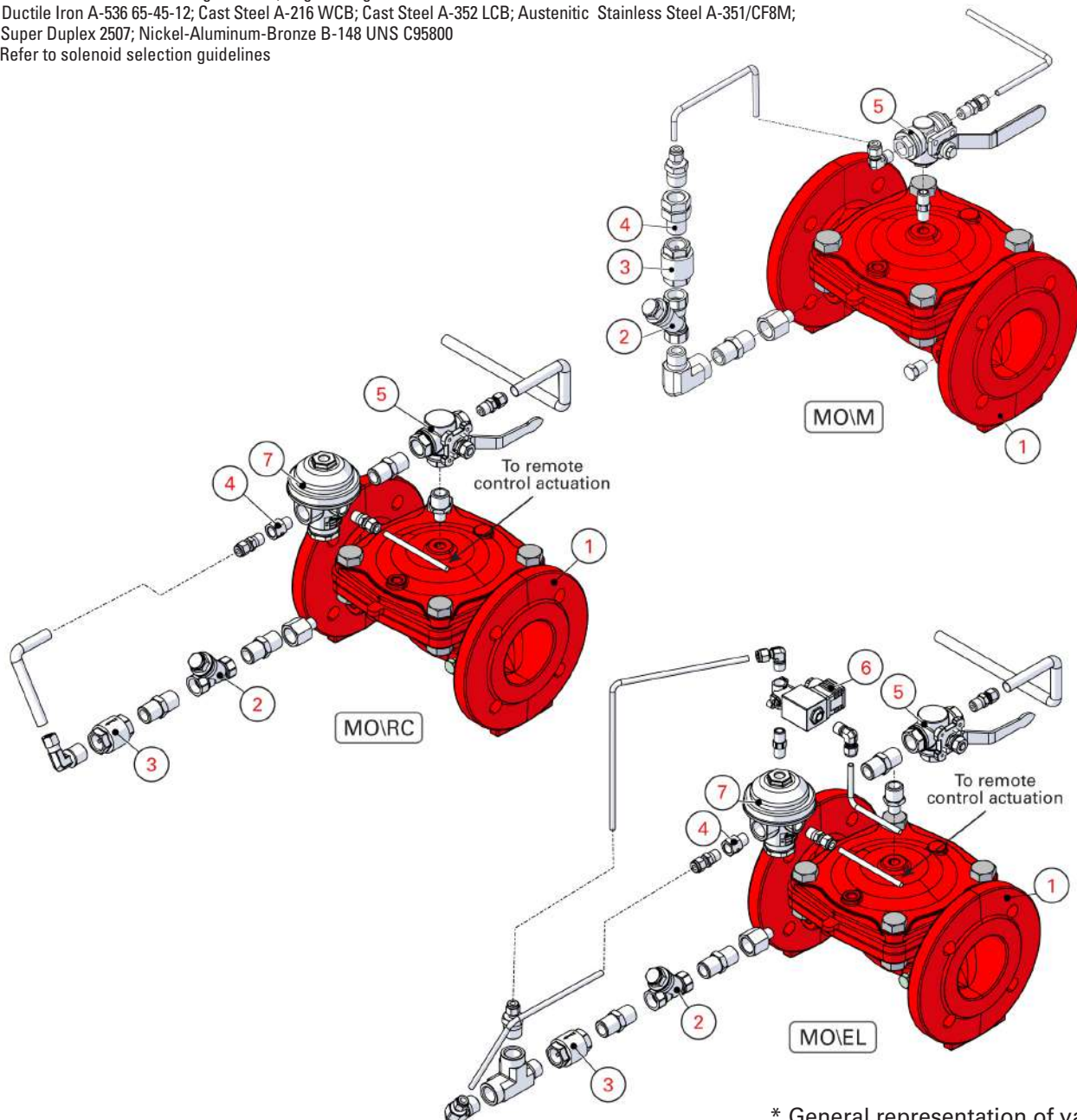
ID	Description	Standard	POG <sup>(1)</sup> Applications
1	Valve Body	See Series 100 Engineering Data <sup>(2)</sup>	
2	Y-Type Strainer	Bronze, Stainless Steel Screen	Stainless Steel 316
3	Check Valve	Bronze	Stainless Steel 316
4	Restrictor	Brass	Stainless Steel 316
5	3 Way Ball Valve	Bronze	Stainless Steel 316
6	3/2 Way N.O. Solenoid <sup>(3)</sup>	Brass	Stainless Steel 316
7	66-213 Relay	Brass	Stainless Steel 316

(1) Petrochemical, Oil &amp; Gas

(2) Refer to materials selection guidelines, Engineering Data - Materials:

 Ductile Iron A-536 65-45-12; Cast Steel A-216 WCB; Cast Steel A-352 LCB; Austenitic Stainless Steel A-351/CF8M;  
 Super Duplex 2507; Nickel-Aluminum-Bronze B-148 UNS C95800

(3) Refer to solenoid selection guidelines

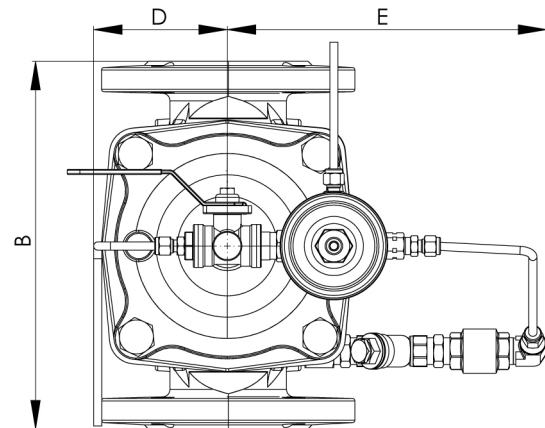
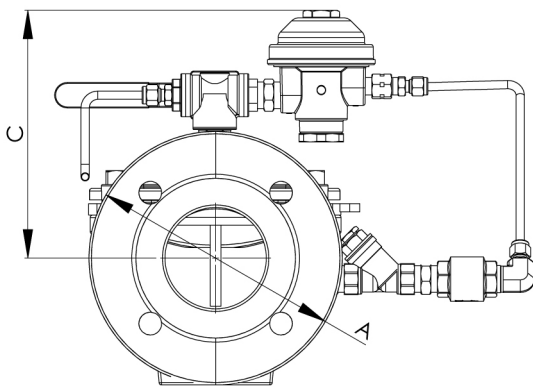


\* General representation of valve

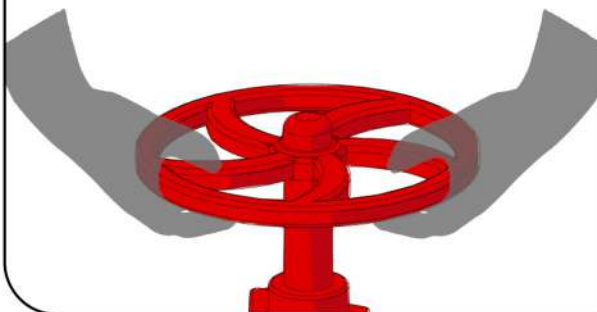
**GENERAL ARRANGEMENT & DIMENSIONS**

Valve	2" (50)		3" (80)		4" (100)		6" (150)		8" (200)		10" (250)	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
A	6 1/2	166	7 7/8	200	9 1/8	230	11	280	13 1/2	342	17 5/16	440
B	7 7/8	200	11 3/16	285	12	305	15 3/8	390	18 1/8	460	21 1/8	535
C	7 5/8	192	7 13/16	197	8 1/2	216	12 3/16	309	14	355	15 1/8	383
D	3 3/8	86	9 7/8	252	10 1/8	256	11 5/8	294.5	13 5/16	338	13 1/2	343
E	3 1/8	80	4 1/8	105	4 3/16	106	6	153	7 13/16	197	9 3/8	240

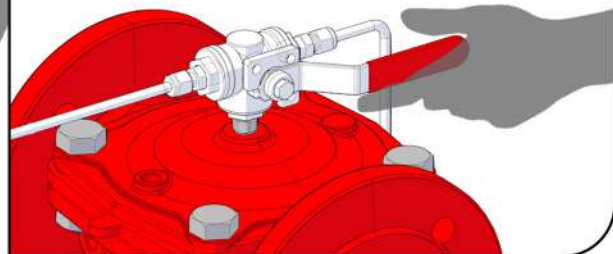
\* Approximate dimensions for Model 77 MO\RC


**Traditional Monitor Valves**

Difficult mechanical actuation


**OCV Monitor Valves**

Easy & effortless hydraulic actuation

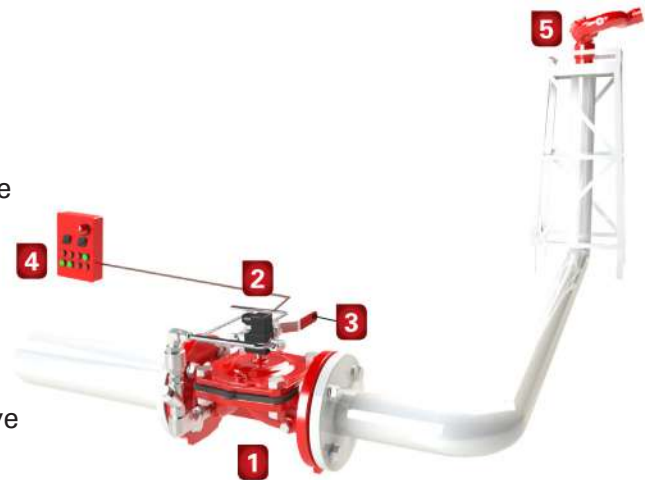


\* General representation of valve

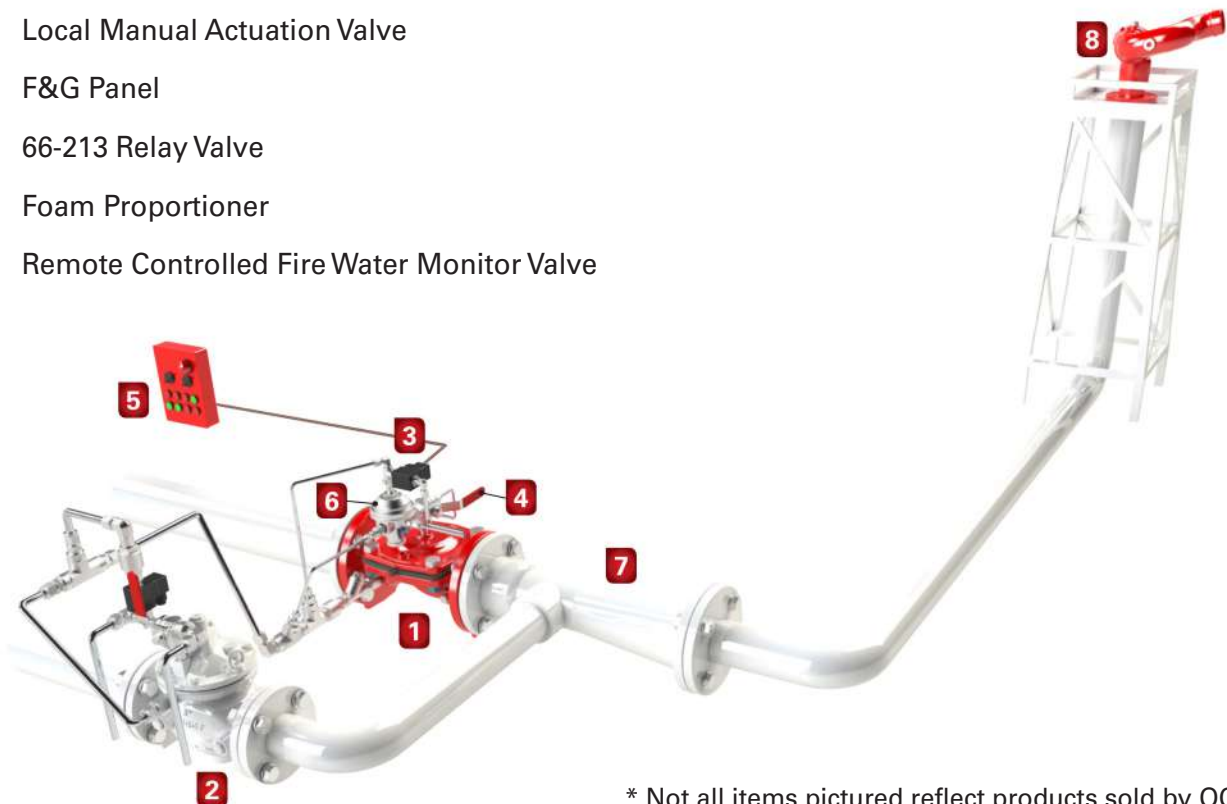


**TYPICAL INSTALLATION****Electrically Actuated Fire Water Monitor Valve**

- 1** MO\EL - Electrically Actuated Monitor Valve
- 2** 3/2 Way N.O. Solenoid
- 3** Local Manual Actuation Valve
- 4** F&G Panel
- 5** Remote Controlled Fire Water Monitor Valve

**Electrically Actuated Monitor Valve with Optional Foam Solution Valve**

- 1** MO\EL - Electrically Actuated Monitor Valve
- 2** ZP\EL - Foam Concentrate Electrically Actuated Control Valve
- 3** 3/2 Way N.O. Solenoid
- 4** Local Manual Actuation Valve
- 5** F&G Panel
- 6** 66-213 Relay Valve
- 7** Foam Proportioner
- 8** Remote Controlled Fire Water Monitor Valve



\* Not all items pictured reflect products sold by OCV

## TECHNICAL DATA

### Temperature:

- Media up to 85°C = 185°F
- Elastomers suitable for extreme climates available upon request

### Sizes:

- Straight Flow: 2" - 24"
- Lloyd's type approved sizes:  
Model 68 (Flanged): 2" - 10"  
Model 77 (Flanged): 2" - 24"  
Model 44 (Threaded): 1" - 3"

### End Connections:

- Flanged:  
ISO-PN16 & ISO-PN25  
ANSI B16.42 & B16.5 Class #150 & #300  
Additional options available upon request
- Grooved: 2" - 8"
- Threaded: 1" - 3"

### Pressure Rating:

- 250 psi for Class #150
- 375 psi for Class #300
- Models 44 & 77: up to 16 bar / 230 psi
- Model 68: up to 25 bar / 375 psi

### Body and Cover Material:

- Ductile Iron
- Cast Steel
- Stainless Steel
- NAB

### Trim Material:

- Bronze/Brass - Copper
- Stainless Steel
- Monel

### Optional Components:

- Pressure Switch
- Limit Proximity Switch
- Upstream Drain Valve

### Items to Specify:

- Electrical features other than standard (24VDC, IP65/NEMA4)
- If explosion proof accessories are required such as solenoids, pressure switches, etc., please define classification
- Control trim material other than standard
- Required standards, certifications and approvals

## ENGINEERING SPECIFICATIONS

The monitor valve shall be hydraulically operated, direct elastomeric diaphragm-seal, single chamber weir type. The valve shall consist of three major components: the body, the cover and the diaphragm assembly. The diaphragm assembly shall be the only moving part. The diaphragm forms a sealed control chamber in the upper portion of the valve, separating operating pressure from line pressure. Packing glands, stuffing boxes and dynamic O-ring seals are not permitted and there shall not be shafts, discs, bearings or pistons operating the valve. No hourglass shaped disc retainers shall be permitted, and no V-type, U-type or other slotted type disc guides shall be used. The valve shall contain a nylon reinforced rubber diaphragm, elastic & resilient through its entire surface without vulcanized radial seals and/or reinforcements. The diaphragm assembly shall not be guided by any shafts or bearings and shall not be in close contact with other valve parts except for its sealing surface. The monitor valve shall be fully trimmed, hydrostatically and operationally tested at the factory. Maintenance, disassembly and reassembly of all the valve's components shall be made possible on-site and in-line, without the need to remove the valve from the line. Main valve body and bonnet standard material shall be Ductile Iron or Cast Steel. Main valve body and bonnet surfaces shall include a fire red epoxy coating. Other materials and coatings available upon request. The monitor valve shall be a Series 100 Model MO\M, MO\RC or MO\EL, Lloyd's type approved.

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