ALARM
CHECK
VALVE

ALARM CHECK VALVE FIRE PROTECTION PRODUCTS

PROTECTOR SPRINKLER

An ISO 9001certified company

Model P

UL and CUL Model P check valves 4"/ 6" are designed for use in wet pipe systemsn and may be installed in the vertical or horizontal position with the appropriate trim package.

PRODUCT DESCRIPTION

The model P 4" and 6" alarm check valves are installed between the watersupply and the riser for sprinklers system and open in the event of an activation of the sprinklers system in a fire situation or during periodic testing of the system.
Trim packages are available to connect to a water driven gong and options include electrical or pressure switches which may be used to activate the fire pump and / or send an additional signal to monitoring or alarm devices

OPERATION

The valve construction incorporates a rubber clapper and operates on the basis of differential pressure. Pressure in the system above the clapper is always greater than pressure below.
A bypass can accommodate minor pressure surges but it is recommended that a retard chamber be installed to account for any variable pressure conditions. When a sprinkler operates or a test is in progress, the clapper lifts to allow a flow of water into the system and activates the alarm gong and pressure switches (If fitted).
Alarms will continue to sound until the shut off valve on the supply side of the system is closed. Always ensure that the shut off valve is monitored and will set off an alarm if tampered with.

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TRIM PACKAGES

Trim packages available :

1. Vertical trim for the Model P alarm check valve installed vertically.
2. Horizontal trim configuration for the Model P alarm check valve installed horizontally.

Trim packages include :

1. All required pipe and fittings.
2. All standard trim accessories.
3. All required gauges.

Optional accessories :

* **Retard Chamber-** Required when the Model P alarm check valve is installed in a variable pressure installation in order to reduce the possibility of false alarms.
* **Water Motor Alarm-** The Model P alarm check valve is designed to activate a mechanical alarm when a flow of water (such as an open sprinkler) causes the alarm check's clapper to lift from its seat.
* **Alarm Pressure Switch-** The Model P alarm check valve is designed to allow the installation of pressure switches to activate electric alarms and control panels when a flow of water (such as an open sprinkler) causes the alarm check's clapper to lift from its seat.

ALARM CHECK VALVE

MATERIAL SPECIFICATIONS

Body: Cast Iron, ASTM A48 Class 35

Cover: Cast Iron, ASTM A48 Class 35

Clapper: AISI 304 STAINESS STEEL

Seat Rubber : NBR

Seat O-Ring : NBR

Seat : ASTM C83600 B584

Hinge Pin : AISI 304 STAINESS STEEL

INSTALLATION

Inlet and outlet flanges can be provided to ANSI DIN BS or JIS Standards (Specify when ordering)
Valves should be installed in accordance with NFPA or other apprpriate local standards in accordance with the authority having jurisdiction. Connecting piping should be flushed clean of dirt and all other materials that may interfere with proper operation of the sysytem to ensure that the system has a proper flow of clean uncontaminatedwater.
Make sure that the direction of flow indicated by the arrow is in the correct direction.
Check to ensure that the clapper can move freely and is clear of all associated piping

The system should be activated in the following sequence:

1. **Close** the system control valve.
2. **Close** the alarm line control valve.
3. **Open** inspectors check valve.
4. **Slowly** open the system valve
(* Rapid opening of the control may cause water hammer and allow air to be trapped in the system *)
5. **Continue** to fill the system until water flows from the test orifice of the check valve.
6. **Close** the inspectors test valve.
7. **Fully open** the system control valve and observe the pressure gauge until system pressure is achieved.
8. **Conduct** a main drain test .
9. **Open** the alarm control valve.
10. **Conduct** alarm device test.
11. **Seal, lock and secure** the system control valve in accordance with the local regulations of the authority having jurisdiction
12. If connected to a central alarm or fire department - promptly inform the appropriate personnel

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TESTING

Systems must be periodically tested in accordance with the authority having jurisdiction.
NEVER CLOSE THE SYSTEM CONTROL VALVE WITHOUT INFORMING :-
The building owner
The local Fire Department and all other appropriate authorities.

NFPA 25 recommends testing at least 4 times per year. Other authorities having jurisdiction may have different regulations and the user should ensure that frequent tests are conducted strictly in accordance with local regulations.

Any pressure variations should be investigated to determine cause and immediately corrected to ensure that the system functions correctly.

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TECHNICAL DATA

Water working pressure rating 175 psig (12.3 bar)
Factory hydrostatic test pressure 350 psig (24.6 bar)
US standard flanged inlet and outlet mate with ANSI B16.5 (150 lb) flange.

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MAINTENANCE

The owner is responsible for the proper operation of the system and all related components and accessories.

NFPA 24 recommends periodic maintenance procedures and the local authority having jurisdiction may have additional requirements.

The model P alarm check valve has been carefully constructed from superior quality materials in order to give trouble free service and proper operation and should be routinely checked to ensure proper operation.
Never close the system valve without informing:-
The building owner
The Fire Department and all other appropriate authorties

The following routine maintenance inspections should be undertaken.

1. Clapper Facing

The rubber clapper facing should be checked for wear or damage and should be free from all external matter or materials. If damage is observed it should be immediately replaced. All dirt or extraneous matter should be carefully cleaned from the surface. Do not use solvents or any hydrocarbon derivatives for cleaning purposes. If in doubt replace completely.

2. Seat Ring

Check the seat ring for dirt and damage to the seating surfaces and thoroughly clean of all dirt and extraneous matter. Seat ring damage could lead to a failure of the system to operate in a fire condition. ln the case of any damage to the seat ring which may cause non-operation of the system , the valve should be replaced.

3. Retard Chamber

Check that the outlet and inlet orifices are free from dirt and extraneous matter and are undamaged and clean all elements thoroughly before replacing in service.

4. By Pass Line

The by pass line must be undamaged and free of any dirt and extraneous matter . Clean out before replacing in service.
The whole system should be periodically checked to ensure proper function.
Care should be taken to inspect for physical damage and system leaks.
The fire protection piping and all components are integral parts of a building safety system to protect life and proper operation is a function of correct design, installation, and carefully conducted periodic maintenance.

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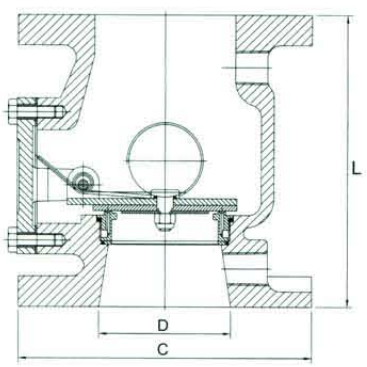
Retard Chamber

The retard chamber is installed to cater for fluctuations in water supply pressures.
Increased pressures water enters the intermediate chamber and fills the retard chamber.
Water then drains through the retard chamber through a restricted orifice.
Constant operation of the retard chamber may indicate problems with the system and should be inyestigated.

During a fire condition or system testing, water flows into the intermediate and retard chambers, activating the water motor alarm and other signaling devices and the system operates as normal.

ALARM CHECK VALVE

DIMENSIONS



Dimension			unit:mm
Size	L	C	D
4"	229	190.5	100
6"	255	241.5	150

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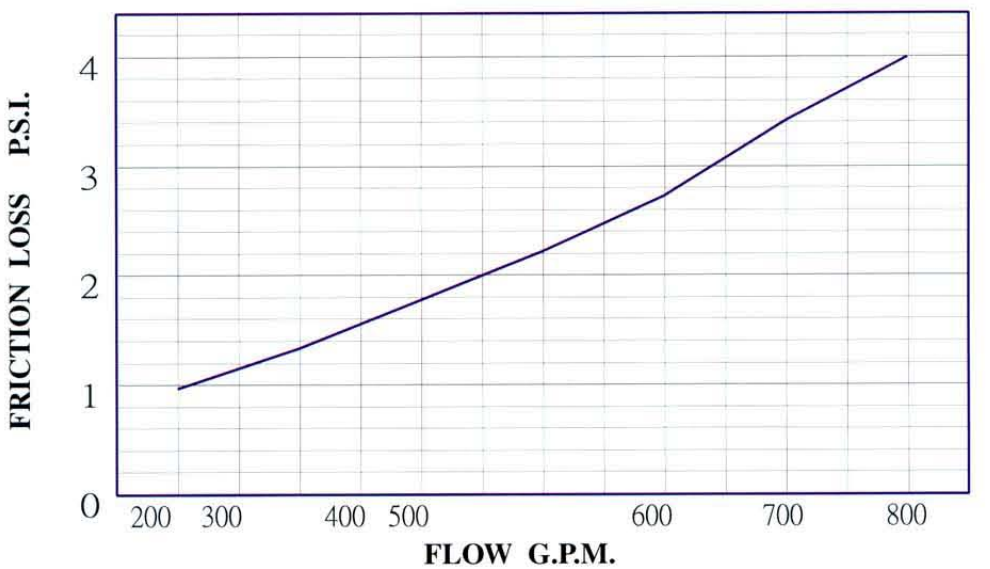
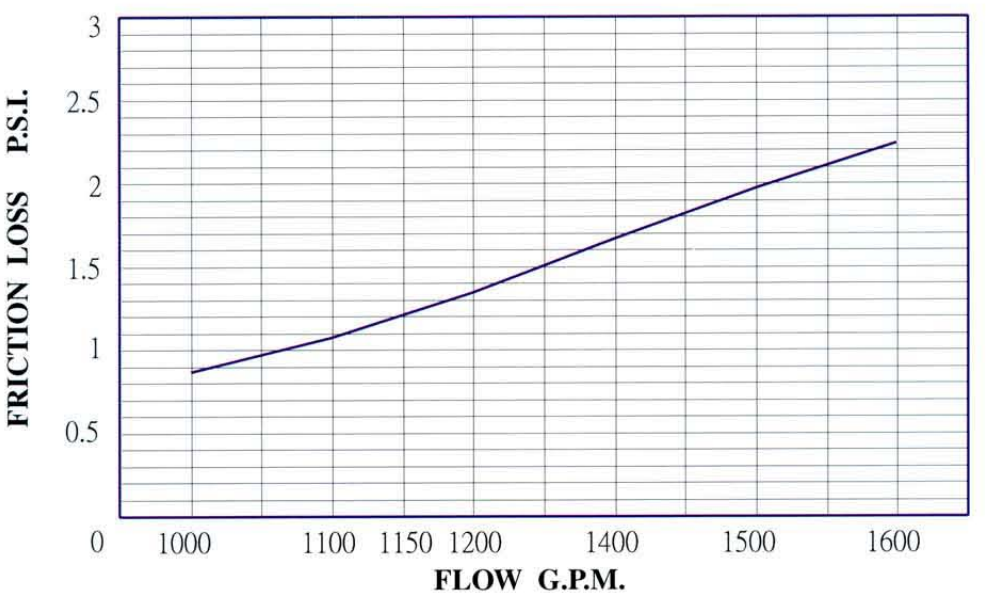
PERFORMANCE

FLOW VS. FRICTION LOSS MODEL P 4" ALARM VALVE



FLOW VS. FRICTION LOSS MODEL P 6" ALARM VALVE



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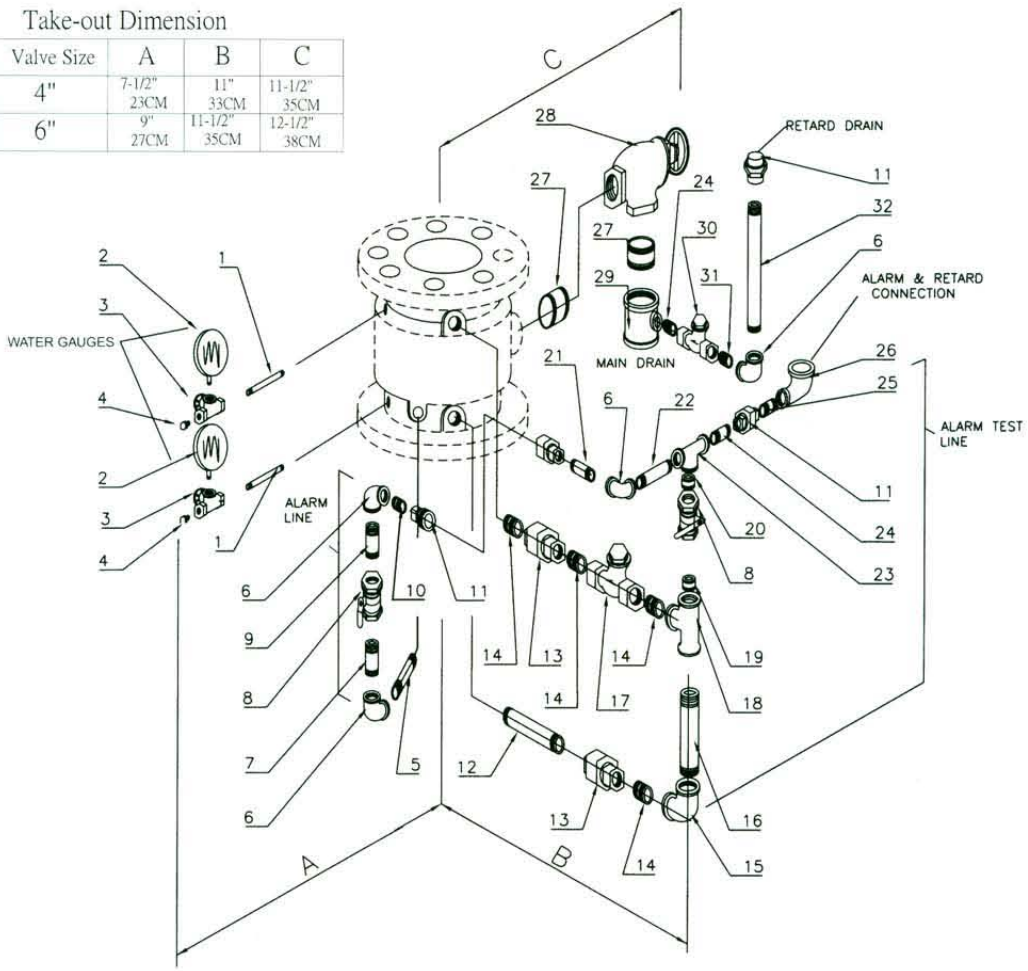
Vertical Component Trim

Take-out Dimension

Valve Size	A	B	C
4"	7-1/2" 23CM	11" 33CM	11-1/2" 35CM
6"	9" 27CM	11-1/2" 35CM	12-1/2" 38CM



NO.	DESCRIPTION	4" Qty	6" Qty	NO.	DESCRIPTION	4" Qty	6" Qty
1	1/4"x10cm Nipple	2	2	17	3/4" Check Valve	1	1
2	3"Water Gauge(0~300psi)	2	2	18	3/4"x3/4"x1/2" Tee	1	1
3	1/4" 3-Way Valve	2	2	19	1/2"x4cm Nipple	1	1
4	1/4" Plug	2	2	20	1/2" Close Nipple	1	1
5	1/2"x6cm Nipple	1	N/A	21	1/2"x9cm Nipple	1	N/A
	1/2"x10cm Nipple	N/A	1		1/2"x5cm Nipple	N/A	1
6	1/2" Elbow	4	4	22	1/2"x8cm Nipple	1	N/A
7	1/2"x10cm Nipple	1	N/A		1/2"x12cm Nipple	N/A	1
	1/2"x12cm Nipple	N/A	1	23	1/2" Tee	1	1
8	1/2" Ball Valve	2	2	24	1/2"x7cm Nipple	1	N/A
9	1/2"x12cm Nipple	1	N/A		1/2"x11cm Nipple	N/A	1
	1/2"x10cm Nipple	N/A	1	25	1/2"x7cm Nipple	1	N/A
10	1/2"x5cm Nipple	1	N/A		1/2"x11cm Nipple	N/A	1
	1/2" Close Nipple	N/A	1	26	1/2"x3/4" Elbow	1	1
11	1/2" Union	2	2	27	2"x7cm Nipple	1	N/A
12	3/4"x15cm Nipple	1	N/A		2"x6cm Nipple	N/A	1
	3/4"x14cm Nipple	N/A	1	28	2" Angle Valve	1	1
13	3/4" Union	2	2	29	2"x1/2"x2" Tee	1	1
14	3/4"x5cm Nipple	4	4	30	1/2" Check Valve	1	1
15	3/4" Elbow	1	1	31	1/2"X8cm Nipple	1	N/A
16	3/4"x14cm Nipple	1	N/A		1/2"x12cm Nipple	N/A	1
	3/4"x15cm Nipple	N/A	1	32	1/2"x15cm Nipple	1	1

ALARM CHECK VALVE

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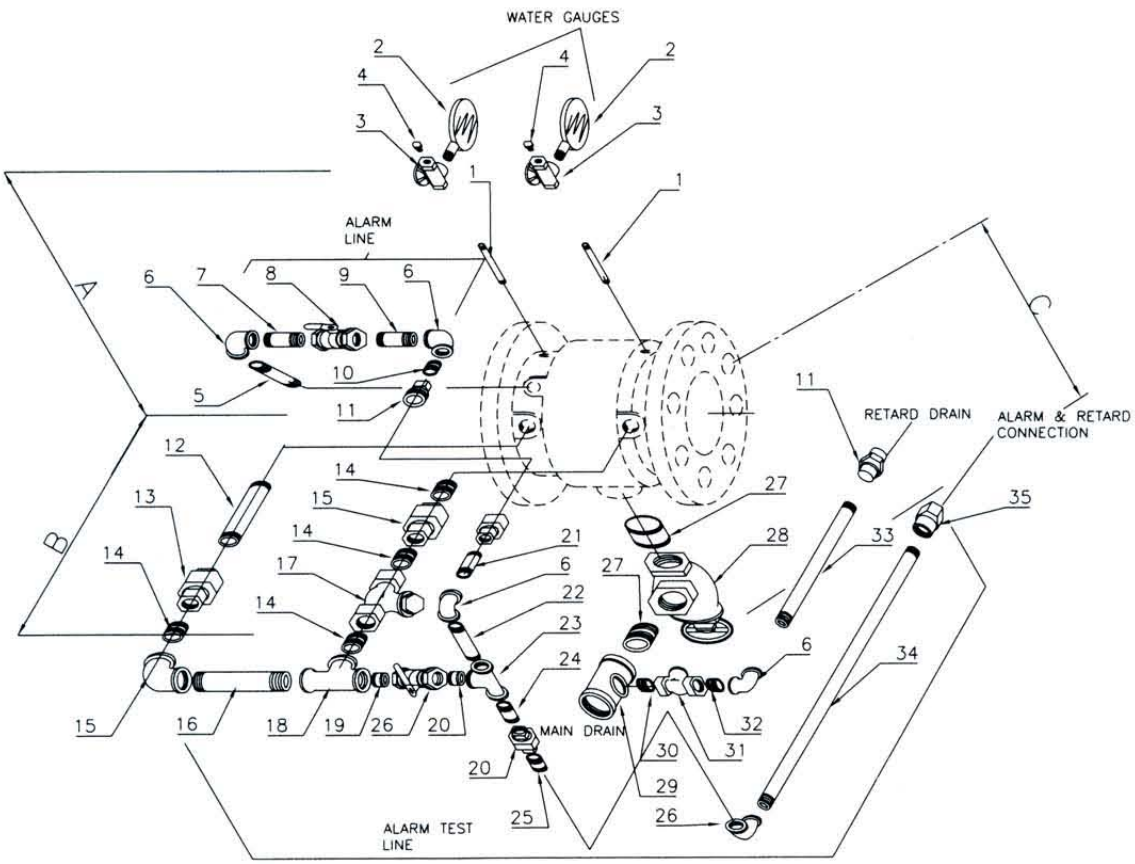
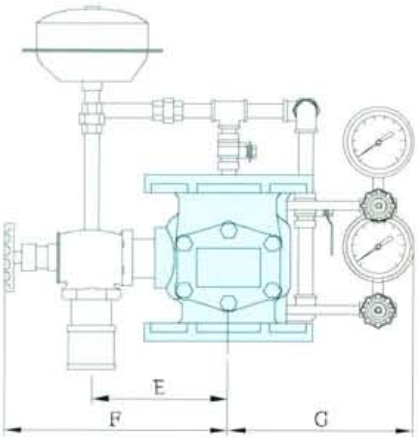
Horizontal Component Trim



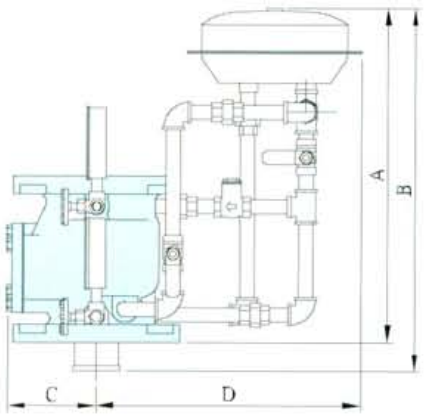
NO.	DESCRIPTION	4" Qty	6" Qty	NO.	DESCRIPTION	4" Qty	6" Qty
1	1/4"x10cm Nipple	2	2	19	1/2"x4cm Nipple	1	1
2	3"Water Gauge(0~300psi)	2	2	20	1/2" Close Nipple	1	1
3	1/4" 3-Way Valve	2	2	21	1/2"x9cm Nipple	1	N/A
4	1/4" Plug	2	2		1/2"x5cm Nipple	N/A	1
5	1/2"x6cm Nipple	1	N/A	22	1/2"x8cm Nipple	1	N/A
	1/2"x10cm Nipple	N/A	1		1/2"x12cm Nipple	N/A	1
6	1/2" Elbow	4	4	23	1/2" Tee	1	1
7	1/2"x10cm Nipple	1	N/A	24	1/2"x7cm Nipple	1	N/A
	1/2"x12cm Nipple	N/A	1		1/2"x11cm Nipple	N/A	1
8	1/2" Ball Valve	2	2	25	1/2"x7cm Nipple	1	N/A
9	1/2"x12cm Nipple	1	N/A		1/2"x6cm Nipple	N/A	1
	1/2"x10cm Nipple	N/A	1	26	1/2" Elbow	1	1
10	1/2"x5cm Nipple	1	N/A	27	2"x6cm Nipple	2	2
	1/2" Close Nipple	N/A	1	28	2" Angle Valve	1	1
11	1/2" Union	2	2	29	2"x1/2"x2" Tee	1	1
12	3/4"x15cm Nipple	1	N/A	30	1/2" Close Nipple	1	N/A
	3/4"x14cm Nipple	N/A	1		1/2"x5cm Nipple	N/A	1
13	3/4" Union	2	2	31	1/2" Check Valve	1	1
14	3/4"x5cm Nipple	4	4	32	1/2"x7cm Nipple	1	N/A
15	3/4" Elbow	1	1		1/2" Close Nipple	N/A	1
16	3/4"x14cm Nipple	1	N/A	33	1/2"x15cm Nipple	1	1
	3/4"x15cm Nipple	N/A	1	34	1/2"X15cm Nipple	1	N/A
17	3/4" Check Valve	1	1		1/2"x30cm Nipple	N/A	1
18	3/4"x3/4"x1/2" Tee	1	1	35	1/2"x3/4" Coupling	1	1

INSTALLATION

VERTICAL INSTALLATION



FRONT VIEW

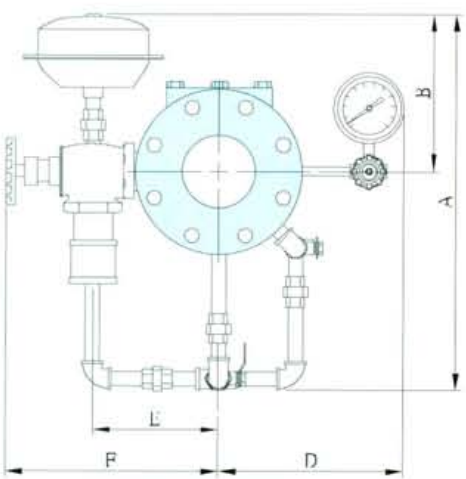


SIDE VIEW

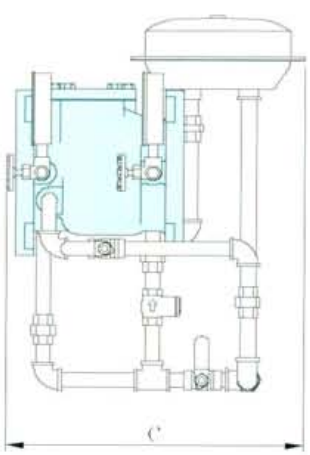
SIZE	A	B	C	D	E	F	D
4"	17" 52CM	18" 55CM	4-1/4" 13CM	12" 37CM	7" 21CM	11-1/2" 35CM	8" 24CM
6"	17" 52CM	18" 55CM	5" 16CM	13" 40CM	7-1/2" 23CM	13" 39CM	9" 27CM

ALARM CHECK VALVE

HORIZONTAL INSTALLATION



FRONT VIEW



SIDE VIEW

SIZE	A	B	C	D	E	F
4"	17-1/2" 53CM	17-1/2" 23CM	15" 46CM	8" 24CM	6" 18CM	11" 33CM
6"	19-1/2" 59CM	8-1/2" 26CM	5" 46CM	9" 27CM	7-1/2" 23CM	12" 36CM

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