

Alarm Check Valve

As an essential part of a wet sprinkler system, Paradise Alarm Check Valves are used for device that detects water flow of fixed type extinguisher installed in high-rise apartments or parking lots. Made of cast bronze, Paradise Alarm Check Valve undergoes strict in-house test on pressure-withstanding and functional compliance, and again is inspected by national authorities before delivery. Paradise Alarm Check Valve is sold along with pressure gauge and other parts necessary to function the system.

Features

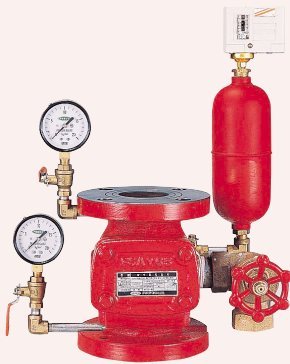
- There is no false alarm that might result from remaining air in the outlet pipe.
- In case of pipe leakage that causes water flow to drop down to 17ℓ /min, a ball check valve inside will supply properly pressurized water to the pipe, preventing a false alarm.
- It is designed to fit into tiny space for installation.

Operation

Water always fills both inlet and outlet ports, making itself ready to extinguish fire at all times. As the pressure of outlet side drops due to the sprinkler operation, clapper is lifted and alarm switch or pressure switch is triggered through the hole of seat-ring. Built with a test & drain valve inside, an alarm valve opens the valve easily to be readily tested. It's valve can be completely opened, making itself empty by draining water out of the drain valve.

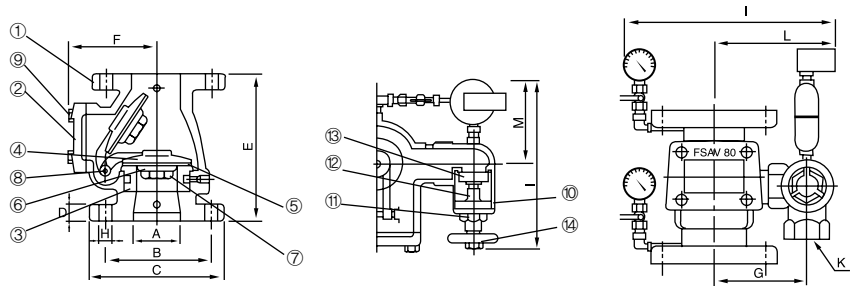
Specification

Model No.	FSAV 65R	FSAV 80R	Attachment	Vertical
Size	65A	80A	Max. Pressure	14 kgf/cm ²
Max. Flow (4.5m/sec)	900ℓ /min	1,350ℓ /min	Test Pressure	20 kgf/cm ²
Weight	18.3kg	21.4kg	Flange Size	KSB 1513 10K
Packaging	2Ea	1Ea	Color	Red



FSAV65(80)R

Assembly Diagram

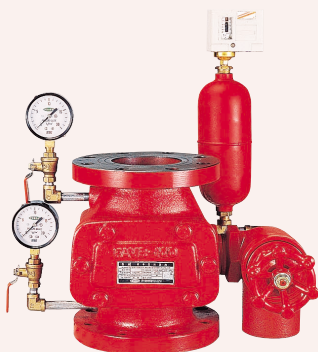


Material

No.	Part	Material	No.	Part	Material
1	Body	Cast Iron(GC200)	8	Spindle	Brass
2	Cover	Cast Iron(GC200)	9	Bolt	Steel
3	Seat Ring	Bronze(BC6)	10	T.V Body	Bronze(BC6)
4	Disc & Arm	Bronze(BC6)	11	T.V Cover	Bronze(BC6)
5	Disc Seat	EPDM	12	T.V Spindle	Brass
6	Seat Cover	Bronze(BC6)	13	T.V Disc	Brass
7	Seat Bushing	Brass	14	Handle	Cast Iron(GC200)

Dimension

Model No.	Size	A	B	C	D	E	F	G	H	I	J	K	L	M
FSAV 65R	65	140	175	22	200	116	130		∅19×4EA	344	262	32A	186	139
FSAV 80R	80	150	185	22	220	123	142		∅19×8EA	361	273	32A	198	145

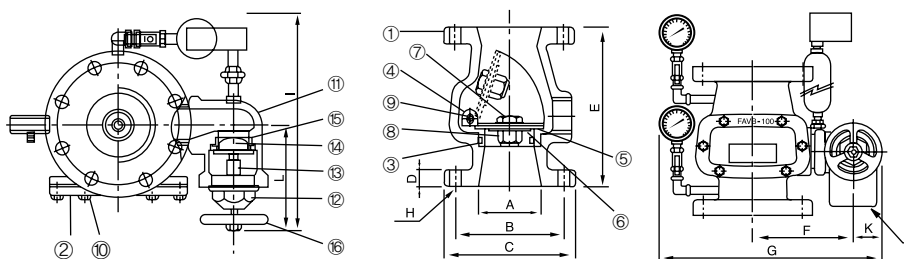


FAVB100(150)R

Specification

Model No.	FAVB 100R	FAVB 125R	FAVB 150R	Attachment	Vertical
Size	100A	125A	150A	Max. Pressure	14 kgf/cm ²
Max. Flow (4.5m/sec)	2,100ℓ /min	3,300ℓ /min	4,800 ℓ /min	Test Pressure	20kgf/cm ²
Weight	32.2kg	42.2kg	53.2kg	Flange Size	KSB 1513 10K
Packaging	1Ea	1Ea	1Ea	Color	Red

Assembly Diagram



Material

No.	Part	Material	No.	Part	Material
1	Body	Cast Iron(GC200)	9	Spindle	STS304
2	Cover	Cast Iron(GC200)	10	Bolt	Steel
3	Seat Ring	Bronze(BC6)	11	T.V Body	Cast Iron(GC200)
4	Disc & Arm	STS	12	T.V Cover	Cast Iron(GC200)
5	Disc Seat	EPDM	13	T.V Spindle	Brass
6	Seat Cover	STS304	14	T.V Disc	Brass
7	Bushing	Brass	15	T.V Bushing	Bronze(BC6)
8	Nut	Steel	16	Handle	Cast Iron(GC200)

Dimension

Model No.	Size	A	B	C	D	E	F	G	H	I	J	K	L
FAVB 100R		100	175	210	24	250	169	394	8-Ø19	325	50A	50	153
FAVB 125R		125	210	250	24	260	184	429	8-Ø23	340	50A	50	153
FAVB 150R		150	240	280	26	280	199	459	8-Ø23	350	50A	50	153

Valve

Handling & Installation

Handling

⚠ Caution

Paradise Alarm Check Valve Trim is made of cast steel from the valve body to the test & drain valve. Paradise Alarm Check Valve must be handled with extreme care to prevent any damage during loading and unloading.

Contents Check-Up

Open the box and check if the following contents are all intact.

Part	Qty.	Remark
Valve Body	1	Incl. pressure switch line pipe & retarding chamber.
Pressure Gauge	2	Delivered in separate package.
Pressure Switch	1	Delivered in separate package.
Gauge fitting pipe and gauge valve	2	Packed together with valve body.

Installation Procedure

A. Before Installation

- Prepare two gasket packings (3t) suitable for the Alarm Check Valve flange to be installed.
- Flange Bolt & Nut (Incl. plain and spring washer)
 100A : M16 × 75φ 16Ea
 150A : M20 × 75φ 16Ea
- Also prepare teflon tape for piping purpose and wiring materials if needed.

B. Pipe Flange Welding

Properly position Alarm Check Valve and bolt hole and then firmly weld in accordance to the pipe flange plan considering the height of Alarm Check Valve and gasket packing.

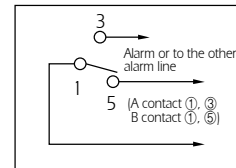
C. Pipe Cleaning

When the installation is completed, clean thoroughly the pipe interior. Remove slag by knocking welded parts of pipe with a hammer, and if possible, flush the interior with pressurized water of 5kgf/cm² until it is completely rinsed out.
 Negligence of cleaning will:

1. cause repeated false alarm due to the damaged seat rubber in the Alarm Check Valve.
2. retard or even result in failure of fire suppression when the orifice of sprinkler head is choked up.

D. Valve Installation

1. Once again, clean interior of valve body. Check disk, seat rubber and seating hole before installation.
2. Install valve body, inlet and outlet pressure gauge.
3. Install retarding chamber (incl. pressure switch).
4. Unused holes must be plugged in order to prevent leakage.
5. Refer to the pressure gauge wire connection diagram below.



⚠ Caution

1. Apply frost-protection to where the risk of frost is expected in order to prevent any frost-caused leakage.
2. Make sure to perform flushing of piping after the installation. Otherwise, the system may not engage in proper operation due to the clotting of pipe hole or seat rubber damage by dirt or foreign particles.
3. Do not step on the pipe. It may damage the pipe.

Operation Test

A. Preparation

- Close ball valve. • Close test & drain valve. • Close OS&Y valve. • Open both the inlet and outlet gauge valve.

⚠ Caution

- Using monkey-spanner, pipe wrench or other such tool may damage to the valve bar, valve disc or seat rubber.
- Frequent inspection on pipe installation will prevent damages caused by sudden shower of water.

B. Operation Procedure and Check

To prevent false alarm, retarding chamber time is set not to buzz immediately when you open the test valve. Ideal time setting may as well be adjusted between 4 ~ 7 seconds.

Step	Procedure	Check
1	Pump operation	Add pressure by operating auxiliary ump.
2	Open OS & Y Valve	Slowly open until the pressure of both inlet and outlet gauge is balanced.
3	Open Ball Valve	Slowly open to prevent false alarm.
4	Activate Test Valve	Check for the alarm signal by turning the handle counter-clockwise.



Valve

Warning Position

Part	State
OS & Y Valve	Open
Ball Valve	Open
Test & Drain Valve	Close
Gauge Valve	Open

Check-Up

A. Daily Check-up (Routine Inspection)

B. Monthly Check-up

Check if the alarm functions properly through the repetition of opening of test valve 2~3 times. It should be performed when there is no possibility of fire.

C. Regular Check-up

Check if no one is in the spray area and any cause of fire is completely eliminated.

1. Turn the power off,
2. Close OS & Y Valve,
3. Completely drain the water inside the pipe,
4. Open front cover by loosening the bolts on the cover, clean up the interior thoroughly, check if the seat rubber is damaged or seat ring hall is choked up, and repair if needed. Place front cover back and make sure to tighten up each bolt evenly so as to prevent water leakage. Then, power on to start pump and add pressure before going through the general procedures of operation test.

	Checklist
1	Closing of Test & Drain valve
2	Opening of OS & Y Valve
3	Opening of ball valve
4	Opening of gauge valve
5	Inlet/Outlet pressure gauge
6	Any leakage

Maintenance

Condition	Check-Up	Correction
False alarm (Alarm is on without actual fire in place)	Check if test & drain valve is opened.	Close the valve.
	Alarm is off when the ball valve is closed.	Check if there is any foreign material between disc and seat ring. If the rubber is damaged or deformed, replace it.
	Leakage is found from piping.	Repair the leakage.
No alarm when the test valve is opened.	When terminal ①, & ③ are connected, short both lines and when ①, & ⑤ are connected, disconnect one to check the alarm operation.	Replace pressure switch.
	No alarm is the above case.	A. Check the voltage. B. Check for wire disconnection. C. Check the buzzer and replace if necessary.
Aux. pump is frequently started.	Leakage is found on test & drain valve.	Replace disc of test & drain valve.
	Leakage is found from piping.	Repair the leakage.

Specification

Type	SIPS
Max. Pressure	15kgf/cm ²
Test Pressure	16.5kgf/cm ²
Pressure Adj. Range	1-10kgf/cm ²
Power	DC or AC
Pipe Connection Screw	UNF7/16(20Threads)



Pressure Switch



FSAV65(80)

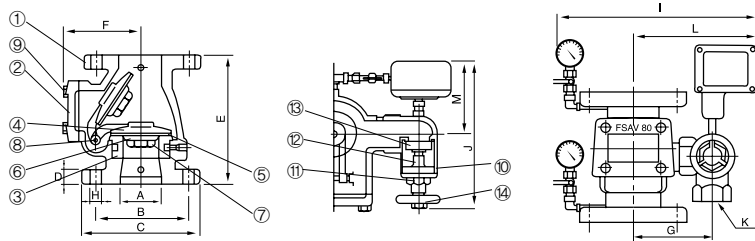


FAVB100(150)

Specification

Model No.	FSAV65	FSAV80	Attachment	Vertical
Size	65A	80A	Max. Pressure	14kgf/cm ²
Max. Flow (4.5m/sec)	900 ℓ /min	1,350 ℓ /min	Test Pressure	20kgf/cm ²
Weight	18.6 kg	21.7 kg	Flange Size	KSB 1513 10K
Packaging	2Ea	1Ea	Color	Red

Assembly Diagram



Dimension

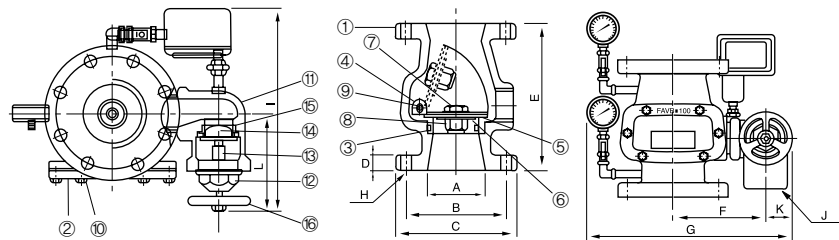
Model No.	Size	A	B	C	D	E	F	G	H	I	J	K	L	M
FSAV 65		65	140	175	22	200	116	130	∅19×4EA	364(323)	255	32A	206	139
FSAV 80		80	150	185	22	220	123	142	∅19×8EA	381(340)	226	32A	218	145

※ Size within () shows the size when the alarm switch is turned sideways.

Specification

Model No.	FAVB100	FAVB125	FAVB150	Attachment	Vertical		
	10kgf/cm ²	22kgf/cm ²	10kgf/cm ²	10kgf/cm ²	22kgf/cm ²	Max. Pressure	14kgf/cm ²
Size	100A	125A	150A	Test Pressure	20kgf/cm ²		
Max. Flow (4.5m/sec)	2,100 ℓ /min	3,300 ℓ /min	4,800 ℓ /min	Flange Size	KSB 1513 10K		
Weight	32.5kg	35kg	42.5kg	53.5kg	61 kg	Color	Red
Packaging	1Ea	1Ea	1Ea				

Assembly Diagram



Dimension

Model No.	Size	A	B	C	D	E	F	G	H	I	J	K	L
FAVB 100	10kgf/cm ²	100	175	210	24	250	169	394	8-∅19	318	50A	50	153
	22kgf/cm ²		185	225	26	254			8-∅23				
FAVB 125	10kgf/cm ²	125	210	250	24	260	184	429	8-∅23	333	50A	50	153
	22kgf/cm ²		240	280	26	280			8-∅23				
FAVB 150	10kgf/cm ²	150	240	280	26	280	199	459	8-∅23	343	50A	50	153
	22kgf/cm ²		260	305	28	284			12-∅25				

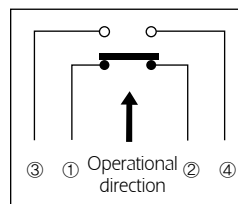


Valve

Handling & Installation

Valve Installation

1. Once again, clean interior of Alarm Check Valve.
Check disk, seat rubber and seating hole before installation.
2. Install valve body, inlet and outlet pressure gauge.
3. Install alarm switch.
4. Unused holes must be plugged in order to prevent leakage.
5. Refer to the alarm switch wire connection diagram below



Maintenance

Condition	Check-up	Correction
False alarm (Alarm is on without actual fire in place)	Alarm is on automatically for short time and then off.	Adjust the time setting of alarm switch.
	Check if test & drain valve is opened.	Close the valve.
	Alarm is off when the ball valve is closed.	Check if there is any foreign material between disc and seat ring. If the rubber is damaged or deformed, replace it.
	Leakage is found from piping.	Repair the leakage.
No alarm when the test valve is opened.	When terminal ③ & ④ are connected, short both lines and when ① & ② are connected, disconnect one to check the alarm operation.	Replace alarm switch.
	No alarm in the above case.	A. Check the voltage. B. Check for wire disconnection. C. Check the buzzer and replace if necessary.
Aux. pump is frequently started.	Leakage is found on test & drain valve.	Replace disc of test & drain valve.
	Leakage is found from piping.	Repair the leakage.

Specification

Type	WP : AS1
Max. Pressure	14 kgf/cm ²
Test Pressure	21 kgf/cm ²
Preset Pressure	0.4 kgf/cm ²
Setting Time	4sec
No. of Contacts	1 ab
Pipe Connection Screw	PT 3/8"



Alarm Switch