



**Chang Der Fire Protections Corp**

# Technical Data of Wet Alarm Check Valve

**Ultimate Protection**



## MODEL "A" 4 and 6 inch

### Technical Data

Size: 4 inch and 6 inch

Maximum Working pressure: 175 psi

Hydrostatic test Pressure: 100 % test at 350psi

Standard finish: red enamel pating Flange

Dimension: ANSI B150 16.5Lb

### Description

The Chang Der's "CD" brand model A wet pipe Alarm Check Valves are designed to hold back water pressure in the piping system until the sprinkler head is activated, to be used in wet pipe sprinkler installations in buildings where not subject to freezing temperatures, Alarm valve includes trim package valves pressure gauges, pressure switch, fittings and nipples to provide retard chamber connection, drain connection and alarm test by-pass.

The CD brand Alarm Check Valve is a wet pipe sprinkler system water flow check valve, which is installed in the wet pipe sprinkler system, it is designed to that water pressure in the pipe system will hold back after pressure at the valve until such time as a sprinkler is activated, hence activating the alarm.

### Accessories

- Standard trim
- Retard chamber
- Water motor alarm or gong
- Pressure gauges
- Pressure switched
- Drain valve

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# Features

Wet type  
Vertical installation  
ANSI B16.5  
Flanges connection  
UL Listed



## 1. Retard chamber

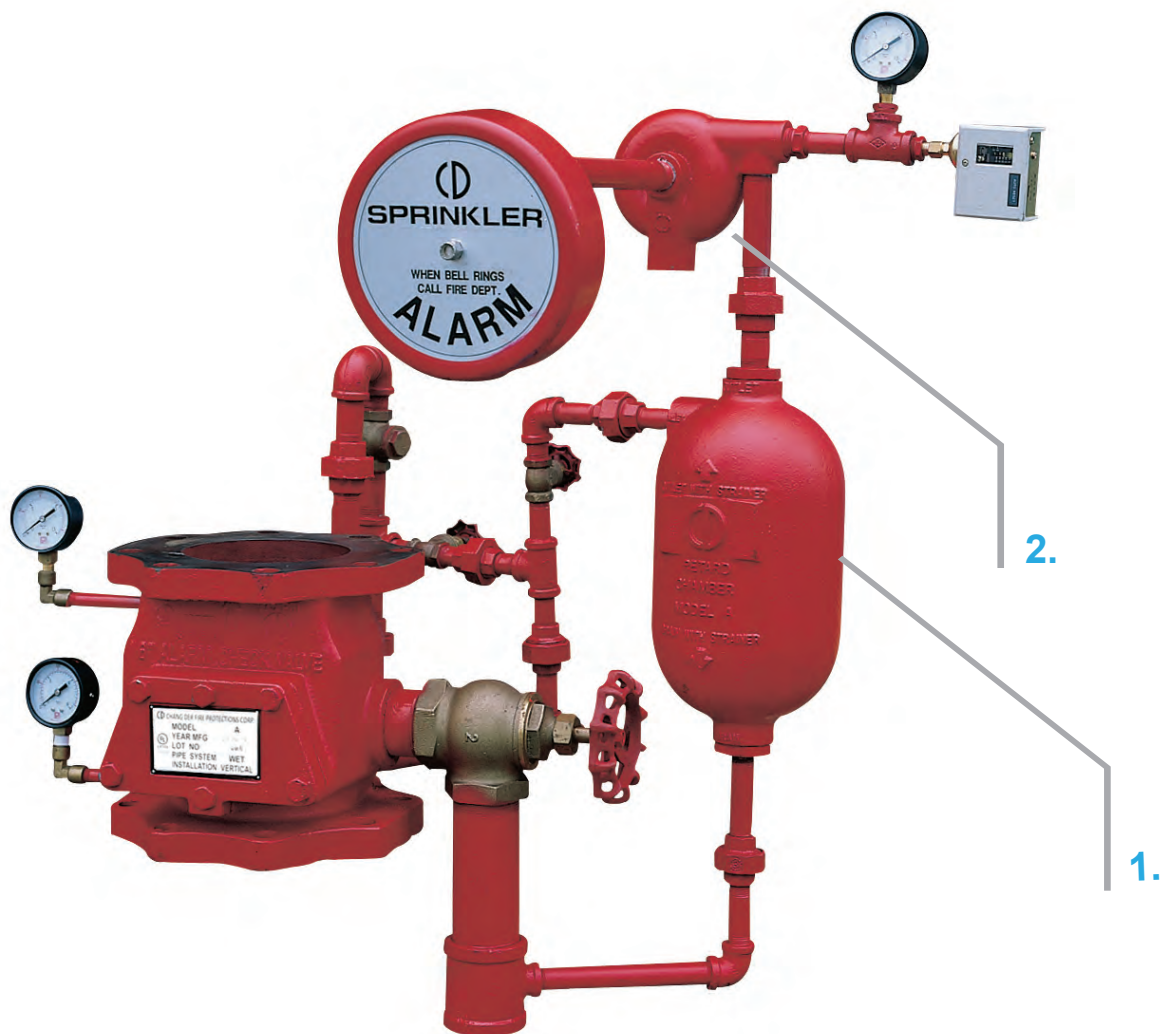
The device is a valve accessory which may be used for variable pressure wet system where mechanical motor alarms or pressure switch are used . in situations where excessive water pressure surge occur the retarding chamber is needed to collect excess water from the alarm valve and feed water back into the main drain,before activating the alarm .

## 2. Water Motor Alarm (Gong)

The device is a hydraulically driven mechanical gong that automatically sounds a continuous alarm when the sprinkler system activates .

Water motor alarm (gong) is used along with alarm check valve in automatic sprinkler system, the water motor alarm is hydraulically driven that automatically sounds a continuous alarm when sprinkler system actuates. It is easily mounted on an outside building wall, water motor alarm can generate sufficient sound that can be heard by human being .





### Retard chamber

The outlet plug and drain plug assemblies should be checked . properly for the obstructions and must be cleaned **thoroughly**

The retard chamber is used along with alarm check valve in automatic sprinkler system. the retard chamber is a valve accessory. Which may be used for variable pressure wet sprinkler system, where mechanical water motor alarm and /or pressure switch are used

### Alarm test valve

main drain valve and inspectors test valve  
Ensure that all controlling valves are in their set position and are not leaking

### By-pass check valve

The check valve in the external by-pass trim set should be checked for obstructions .and must be cleaned properly

### Seat ring

The seat ring should be visually checked for nicks and for stones, dirt or other foreign matter lodged in the groove or holes, clean . the seat ring thoroughly

# About Our Company



Chang Der Fire Protections Corp. is a professional manufacture producing a series of fire fighting equipment. The brand CD (Chang Der) is a trade-mark which created by industries which are in compliance with a hundred year fire fighting conception and conscience. The product qualities are relative to the safety of all human's lives and their properties. In order to promote the product qualities, we have invested a large amount of capital to conduct the research and development, leading to the advanced automated production facilities, and the entire system test instruments. The manufacturing is controlled by a high standard management system certificated by BSMI (Bureau of Standard, Metrology and Inspection), the Taiwan government ISO 9001, some products are UL listed, and the series products are exported worldwide.

## Maintenance

### Constant Pressure Condition

Under constant pressure conditions the system and the supply pressure will be the same, when there is no considerable surge and fluctuation in pressure retard chamber is not necessary, when a sprinkler operates the system pressure drops allowing the alarm clapper valve to open, when the water flows into the system simultaneously it flows into the alarm line thereby operating the alarming device.

### Maintenance

It is imperative that the alarm check valve and its related device must be inspected and tested on regular basis to ensure proper and trouble free operation of the system, several areas to be routinely inspected are.

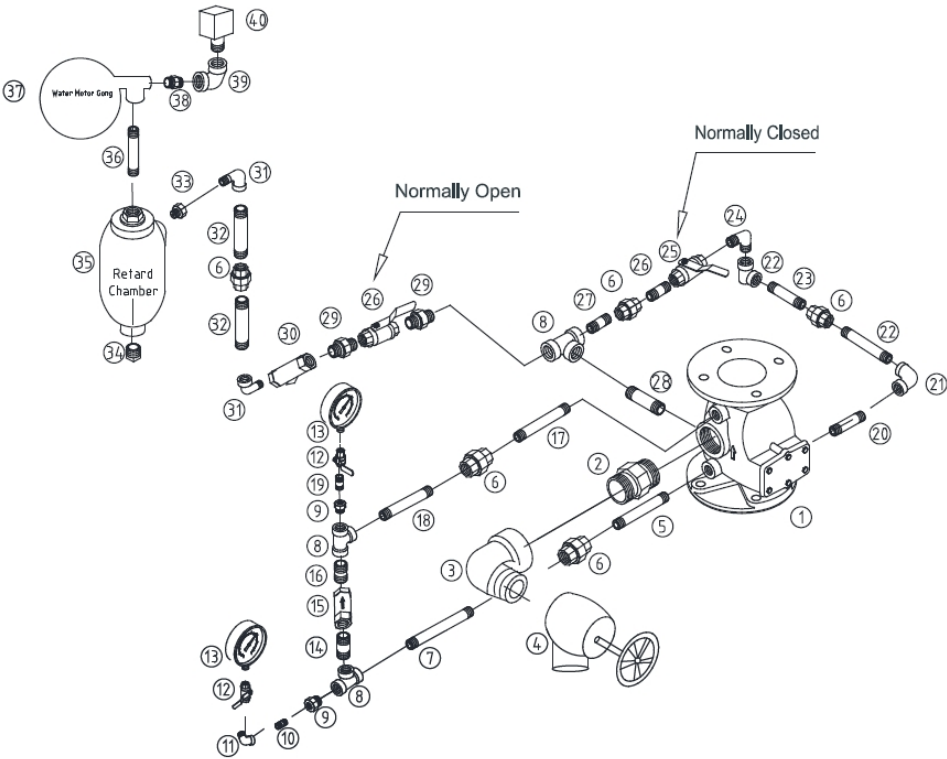
### Clapper facing

The clapper facing should be checked for wear and tear and to ensure that it is free from dirt and foreign matter, replace the facing if it is damaged, clean the facing if it is found dirty.

# ALARM CHECK VALVE

## INSTALLATION AND MAINTENANCE GUIDE

MODEL A Size "4



Part No.	Specification	Material
1	Valve	See Above
2	2" NPT Pipe Fitting	Malleable Iron
3	2" NPT Street Elbows	Malleable Iron
4	2" Angle Valve	Brass
5	1/2" NPT Screwed Pipe	Carbon Steel
6	1/2" Cone Union	Malleable Iron
7	1/2" NPT Screwed Pipe	Carbon Steel
8	1/2" Straight Tees	Malleable Iron
9	1/2" x 1/4" Reducers	Malleable Iron
10	1/4" NPT Screwed Pipe	Carbon Steel
11	1/4" 90° Elbow	Malleable Iron
12	1/4" Ball Valve	Brass
13	Pressure Gage	
14	1/2" NPT Screwed Pipe	Carbon Steel
15	1/2" Check Valve	Brass
16	1/2" NPT Screwed Pipe	Carbon Steel
17	1/2" NPT Screwed Pipe	Carbon Steel
18	1/2" NPT Screwed Pipe	Carbon Steel
19	1/2" NPT Screwed Pipe	Carbon Steel
20	1/2" NPT Screwed Pipe	Carbon Steel
21	1/2" 90° Elbow	Malleable Iron
22	1/2" NPT Screwed Pipe	Carbon Steel
23	1/2" NPT Screwed Pipe	Carbon Steel
24	1/2" 90° Elbow	Malleable Iron
25	1/2" Ball Valve	Brass
26	1/2" NPT Screwed Pipe	Carbon Steel
27	1/2" NPT Screwed Pipe	Carbon Steel
28	1/2" NPT Screwed Pipe	Carbon Steel
29	1-2" NPT Pipe Fitting	Malleable Iron
30	1-2" Y-Strainer	Brass
31	1-2" 90° Street Elbow	Malleable Iron
32	1/2" NPT Screwed Pipe	Carbon Steel
33	Pipe Fitting	AISI 304
34	Plug 1	Brass
35	Plug 2	Brass
36	3/4" NPT Screwed Pipe	Carbon Steel
37	Water Motor Gung	
38	3/4" NPT Screwed Pipe	Carbon Steel
39	3/4" x 1/2" 90° Reducing Elbow	Malleable Iron
40	Pressure Switch	



## Operation and installation

The CD brand alarm check valve has flange by flange connection ends with a set of auxiliary piping called trim set

To put the system in service the water is allowed to flow into the system until the pressure gauge on the system side of the alarm check valve should indicate water pressure equal to or greater than the water pressure indicated on the gauge located on the supply side, this causes the clapper of the alarm check valve to close tightly on the seat ring.

In the variable pressure condition, in most of the cases pressure on the system side will be found greater than the water supply pressure, this condition is achieved because pressure surges and fluctuation in the water supply is allowed to pass through the external by pass trim minimize the false alarms .

When a sprinkler operates, the sustained water flow through the sprinkler relieves the system pressure, the greater supply pressure then causes the clapper valve to open, allowing unobstructed supply of water into the system, simultaneously water flows through the seat ring opening and via trim lines into the retard chamber. But now the retarding chamber will fill faster than water can drain through the restricted drain of the alarm trim, the water fills the chamber and then flows into the water motor alarm and or actuate the alarm pressure switch .

Retard chamber should be installed properly between the alarm check valve and the water motor alarm and/or an electric alarm . pressure switch

The water motor alarm must be properly installed as per the requirements of NFPA standards and any other authority having jurisdiction, in order to ensure the nominal operation the total length of 3/4" supply wet pipe line from the alarm valve, dry pipe valve or deluge valve to the water motor alarm should not exceed 75 feet, and the number of fittings should be . kept to a minimum

Where the length exceeds 75 feet, the diameter of the supply piping should be increased to 1" or 1-1/4" to reduce friction losses, the water motor alarm should not be located more than feet above the alarm check valve, dry pipe valve or deluge 20 valve to which it is connected .

To ensure clean water supply to the water motor alarm, a 3/4" screen filter (strainer) must be installed in the supply line .



## Caution

Care must be taken to avoid air trapping inside the system, the pressure surge can compress this trapped air and allow the clapper to move off the seat ring, thus causing the false alarm, therefore while putting the system in service it is recommended to bleed off the confined air to fill the system with water to water to the fullest extent possible .

# TECHNICAL SPECIFICATIONS

**:Approvals**

UL and FM

**Maximum system working pressure:**

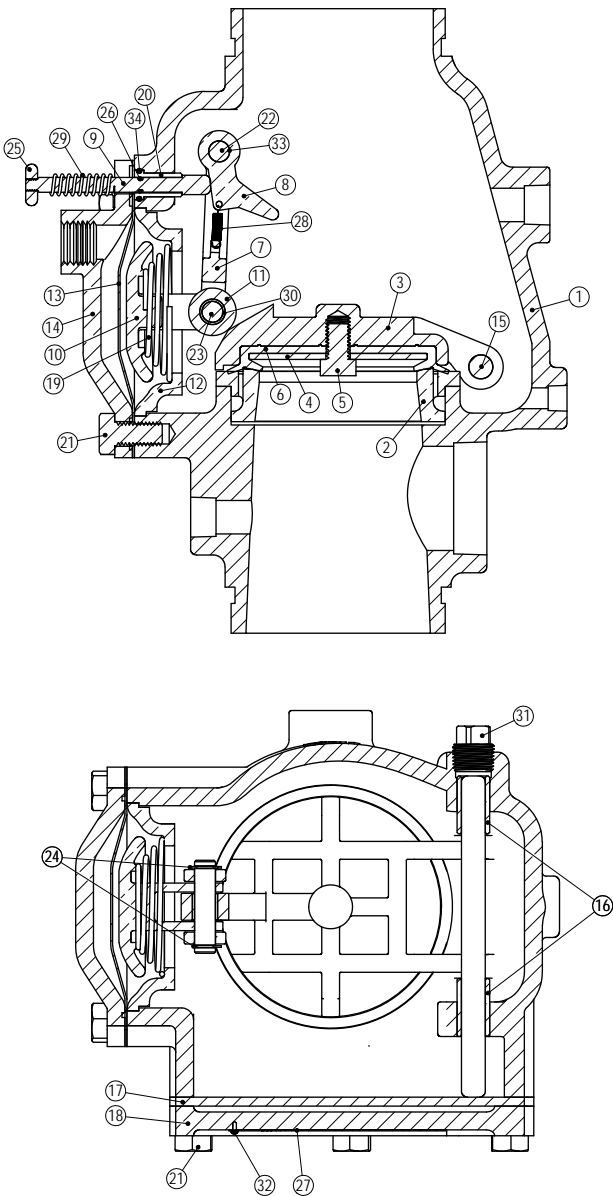
300 psi (20.6 bar)

**Materials of construction:**

See Table below

**Take out dimensions (end to end):**

4" (DN100) Valve	13.13" (333,5mm)
4" (DN100) Valve w/ Model GLR300G	17.66" (448,5mm)
6" (DN150) Valve	14.47" (367,5mm)
6" (DN150) Valve w/ Model GLR300G	19.69" (500mm)



ITEM	DESCRIPTION	MATERIAL
1	"RCW-2" Body (groove/groove)	Ductile Iron
2	Seat Ring	Bronze
3	Clapper	Bronze
4	Retaining Ring	Stainless
5	Retaining Bolt	Steel
6	Clapper Facing Disc	EPDM
7	Latch Arm	Bronze
8	Clapper Latch	Bronze
9	Reset Plunger	Bronze
10	Push Rod	Bronze
11	Roller	Stainless
12	Diaphragm Retainer	Ductile Iron
13	Diaphragm	Rubber
14	Diaphragm Cover	Ductile Iron
15	Clapper Hinge Pin	Stainless
16	Clapper Hinge Pin Bushing	Bronze
17	Hand Hole Cover Gasket	Rubber
18	Hand Hole Cover	Ductile Iron
19	Diaphragm Spring	Stainless
20	Reset Bushing	Bronze
21	Cover Bolt	Steel
22	Clapper Latch Hinge Pin	Stainless
23	Roller Arm Hinge Pin	Stainless
24	Roller Arm Hinge Pin Clip	Stainless
25	Reset Plunger Knob	Bronze
26	Plunger O-Ring	Rubber
27	Name Plate	Aluminum
28	Return Spring	Stainless
29	Reset Plunger Spring	Stainless
30	Roller Bushing	Bronze
31	1/2" NPT Plug	Steel
32	Drive Screw	Stainless
33	Clapper Latch Bushing	Bronze



Technical Support

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