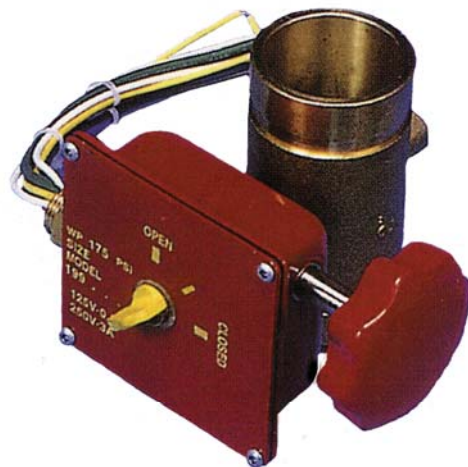
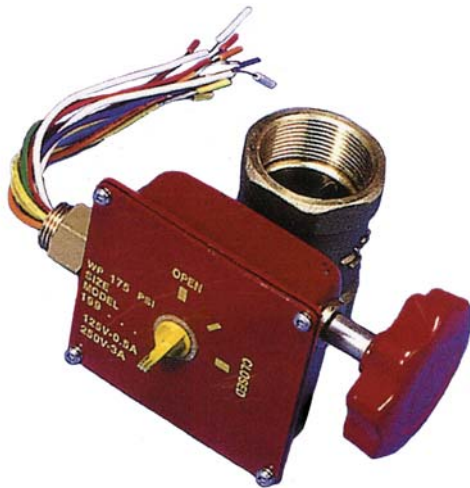


# **GLOBE**

**FIRE SPRINKLER CORPORATION**

## **Butterfly Valves**



4077 AIRPARK DRIVE • STANDISH, MICHIGAN 48658  
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# GLOBE BUTTERFLY VALVE INSTALLATION AND MAINTENANCE GUIDE

## Table of Contents

|                                      | Page |
|--------------------------------------|------|
| Design Requirements and Installation | 1    |
| Care and Maintenance                 | 1    |
| GL175T                               | 2    |
| GL175G                               | 3    |
| GLR300G                              | 4    |
| GL300W                               | 5    |
| Friction Loss                        | 6    |
| Product Warranty                     | 7    |

# GLOBE BUTTERFLY VALVE INSTALLATION AND MAINTENANCE GUIDE

## Design Requirements

The Globe grooved butterfly valve should be connected to the piping system with approved couplings or flange adapters. Flow may be from either direction, and the valve may be positioned in any direction.

Globe butterfly valves have been designed with a slow close hand wheel operator, which effectively minimizes water hammer. These valves feature minimum flow restriction and pressure loss when in the fully open position.

## Installation

When the valves are received from the manufacturer they should be handled carefully to avoid breakage and damage to the seating area. Before installation of the valve, clean piping, flange and coupling. When the valve closes hard, it is usually due to debris lodged in the sealing area. Often this may be corrected by backing off the hand wheel and closing again.

The valve should never be forced to seat by applying a wrench to the hand wheel as this may distort the valve components or score the sealing surface. The use of excessive force to open or close the valve violates all warranties whether express or implied.

The inlet and outlet pipe adjacent to the valve should be properly supported to prevent excessive stress on the valve body. The valves should not be used to force a pipeline into position as this may result in distortion of the valve body.

Conduit and electrical connections to the optional tamper switch must be in accordance with National Electrical Code (NFPA 72) and requirements of the local authority having jurisdiction.

## Care and Maintenance

Globe butterfly valves require no regular maintenance, however, it is advisable to inspect and verify proper operation of the unit annually or in accordance with the authority having jurisdiction.

The inspection should include a visual check for leakage at the valve pipe connection and body to operator connection. Inspection and maintenance should be performed by a qualified inspection service.

## Switch Installation

Globe butterfly valves are provided with internal supervisory position switches. The tamper switch operates by a cam connected to the valve stem. The switch will change position within two (2) full turns of the hand wheel from the fully open position.

### Switch #1

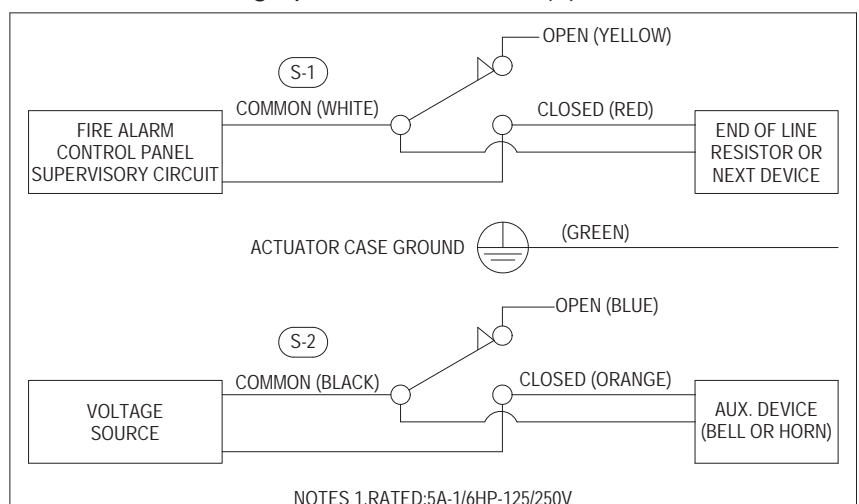
For connection to the supervisory circuit.

Normally closed: 2 Red  
Normally open: 2 Yellow  
Common: 2 White

### Switch #2

Auxiliary switch connected per authority.

Normally closed: 1 Orange  
Normally open: 1 Blue  
Common: 1 Black  
Ground Lead: 1 Green



Shown with valve in closed position.



# GL175T

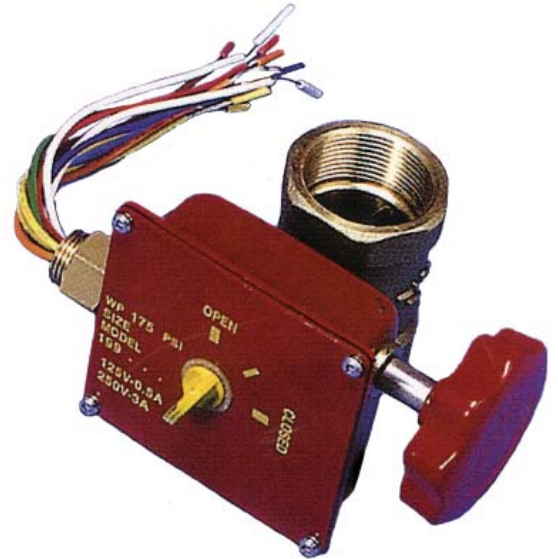
## Bronze Butterfly Valves

Threaded End, Sizes :  
1", 1 ¼", 1 ½", 2" and 2 ½"

### Specifications:

Working Pressure : 175 PSI (12.5 Bars)  
 Max. Test Pressure : 350 PSI (25.0 Bars)  
 Max. Working Temp. : 250°F (120°C)

Factory Installed UL Listed Double Tamper Switch for Indoor and Outdoor Use.

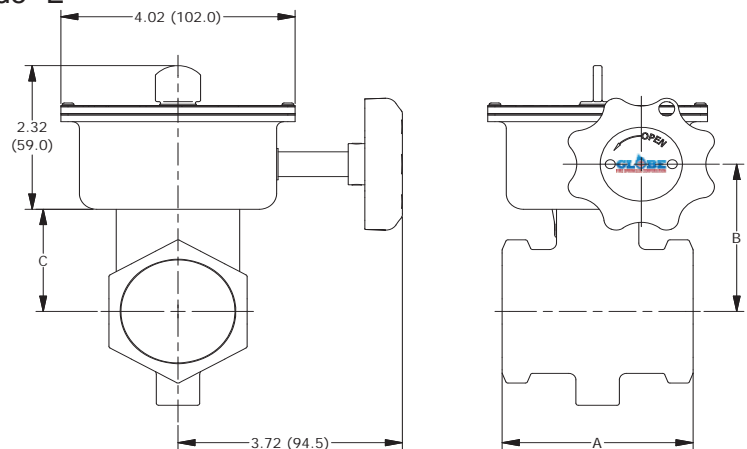


### Materials of Primary Components

Body : ASTM B-505  
 Disc : ASTM B-584 EPDM  
 Encapsulated  
 Upper Stem : ASTM A-564 Type XM 12  
 Lower Stem : ASTM A-564 Type XM 12  
 Gear Housing, Cover : ASTM A-619  
 Hand Wheel : ASTM A-619  
 Flag Indicator : ASTM B-16  
 York Mechanism : ASTM A-283  
 Stem Bushing : ASTM B-16  
 Conduit Connector : ASTM A-307  
 O-Rings (All) : EPDM Grade "E"  
 Cover Gasket : NBR

### Approvals:

- cULus Listed
- FM Approved
- NYC - DOB MEA 155-06-E



| DIMENSION |              |             |             | UNIT: IN (mm) |
|-----------|--------------|-------------|-------------|---------------|
| SIZE      | A            | B           | C           | Part No.      |
| 1"        | 2.16 (54.8)  | 2.06 (52.4) | 1.48 (37.6) | 311725-G      |
| 1 ¼"      | 2.68 (67.9)  | 2.25 (57.2) | 1.63 (41.4) | 311735-G      |
| 1 ½"      | 2.94 (74.6)  | 2.38 (60.3) | 2.50 (63.5) | 311745-G      |
| 2"        | 3.31 (84.2)  | 2.56 (65.1) | 1.97 (50.0) | 311755-G      |
| 2 ½"      | 4.16 (105.6) | 2.75 (69.9) | 2.19 (55.6) | 311760-G      |

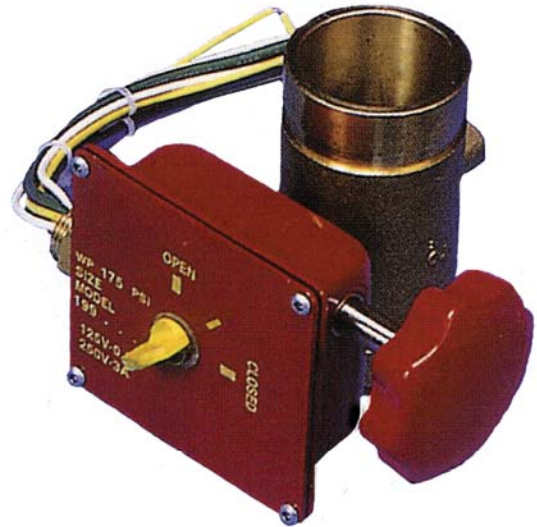


**GL175G**  
**Bronze Butterfly Valves**  
**Grooved End, Sizes :**  
**2" and 2 ½"**

**Specifications:**

**Working Pressure :** 175 PSI (12.5 Bars)  
**Max. Test Pressure :** 350 PSI (25.0 Bars)  
**Max. Working Temp. :** 250°F (120°C)

Factory Installed UL Listed Double Tamper Switch for Indoor and Outdoor Use.

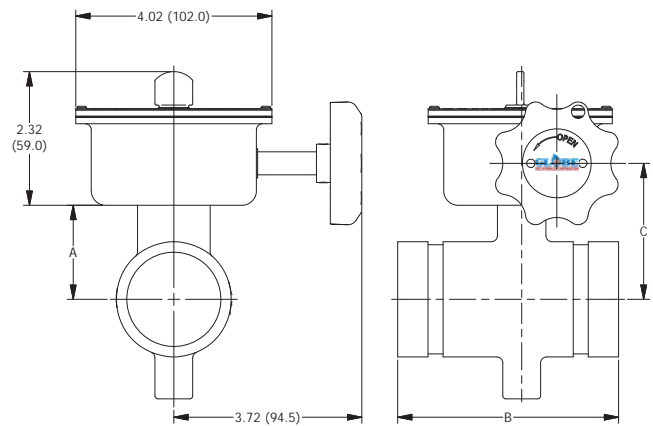


**Materials of Primary Components**

**Body :** ASTM B-505  
**Disc :** ASTM B-584 EPDM Encapsulated  
**Upper Stem :** ASTM A-564 Type XM 12  
**Lower Stem :** ASTM A-564 Type XM 12  
**Gear Housing, Cover :** ASTM A-619  
**Hand Wheel :** ASTM A-619  
**Flag Indicator :** ASTM B-16  
**York Mechanism :** ASTM A-283  
**Stem Bushing :** ASTM B-16  
**Conduit Connector :** ASTM A-307  
**O-Rings (All) :** EPDM Grade "E"  
**Cover Gasket :** NBR

**Approvals:**

- cULus Listed
- FM Approved
- NYC - DOB MEA 155-06-E



| DIMENSION |             | UNIT: IN (mm) |             |          |
|-----------|-------------|---------------|-------------|----------|
| SIZE      | A           | B             | C           | Part No. |
| 2"        | 1.97 (50.0) | 4.56 (115.8)  | 3.62 (91.9) | 311765-G |
| 2 ½"      | 2.18 (55.4) | 4.56 (115.8)  | 3.81 (96.8) | 311775-G |



# GLR300G

## Grooved Butterfly Valves

Grooved End, Sizes :  
2 1/2", 65mm, 3", 4", 6", 150mm, 8"

### Specifications:

**Working Pressure :** 300 PSI (21.4 Bars)  
**Max. Test Pressure :** 600 PSI (42.8 Bars)  
**Max. Working Temp. :** 250°F (120°C)

Factory Installed UL Listed Double Tamper Switch for Indoor and Outdoor Use.

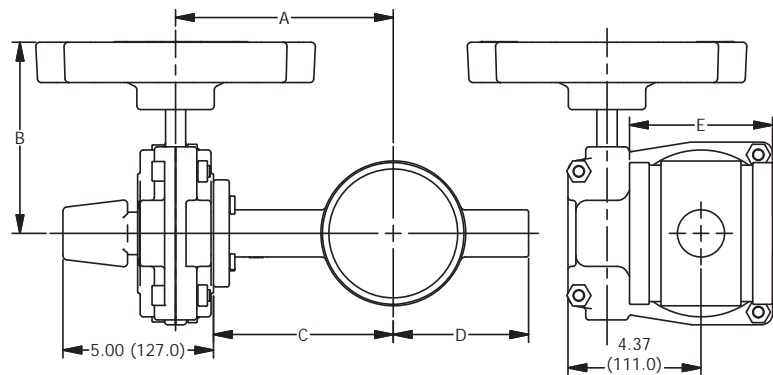


### Materials of Primary Components

**Body :** ASTM A-536 Nylon-11 Coated  
**Disc :** ASTM A-536 EPDM Encapsulated  
**Upper and Lower Stems :** AISI 420-SS  
**Worm Gear Shaft :** AISI 410-SS  
**Housing :** ASTM A-536  
**Hand Wheel :** ASTM A-536  
**Flag Indicator :** ASTM A-536  
**Sheer Pin :** ASTM A-510  
**Segment Gear :** ASTM B-148 or B-584  
**Housing Gasket :** EPDM Grade "E"  
**O-Rings (All) :** EPDM Grade "E"

### Approvals:

- cULus Listed
- FM Approved
- NYC - DOB MEA 155-06-E



| DIMENSION               |              | UNIT: IN (mm) |              |              |              |           |
|-------------------------|--------------|---------------|--------------|--------------|--------------|-----------|
| SIZE                    | A            | B             | C            | D            | E            | Part No.  |
| 2 1/2"                  | 5.31 (134.9) | 5.06 (128.5)  | 4.13 (104.9) | 3.31 (84.1)  | 3.81 (96.8)  | 311785-G  |
| 65mm (76mm PIPE O.D.)   | 5.31 (134.9) | 5.06 (128.5)  | 4.13 (104.9) | 3.31 (84.1)  | 3.81 (96.8)  | 311785-GD |
| 3"                      | 5.59 (142.0) | 5.06 (128.5)  | 4.41 (112.0) | 3.61 (91.7)  | 3.81 (96.8)  | 311790-G  |
| 4"                      | 6.88 (174.8) | 5.06 (128.5)  | 5.71 (145.0) | 4.31 (109.5) | 4.53 (115.1) | 311795-G  |
| 6"                      | 8.25 (209.6) | 8.66 (220.0)  | 7.06 (179.3) | 5.71 (145.0) | 5.22 (132.6) | 311805-G  |
| 150mm (165mm PIPE O.D.) | 8.25 (209.6) | 8.66 (220.0)  | 7.06 (179.3) | 5.71 (145.0) | 5.22 (132.6) | 311805-GD |
| 8"                      | 9.22 (234.2) | 8.66 (220.0)  | 8.03 (204.0) | 6.71 (170.4) | 5.81 (147.6) | 311815-G  |



# GLR300W

## Wafer Type Butterfly Valves

Wafer Type End, Sizes :  
2 1/2", 3", 4", 6" and 8"

### Specifications:

**Working Pressure :** 300 PSI (21.4 Bars)  
**Max. Test Pressure :** 600 PSI (42.8 Bars)  
**Max. Working Temp. :** 250°F (120°C)

Factory Installed UL Listed Double Tamper Switch for Indoor and Outdoor Use.

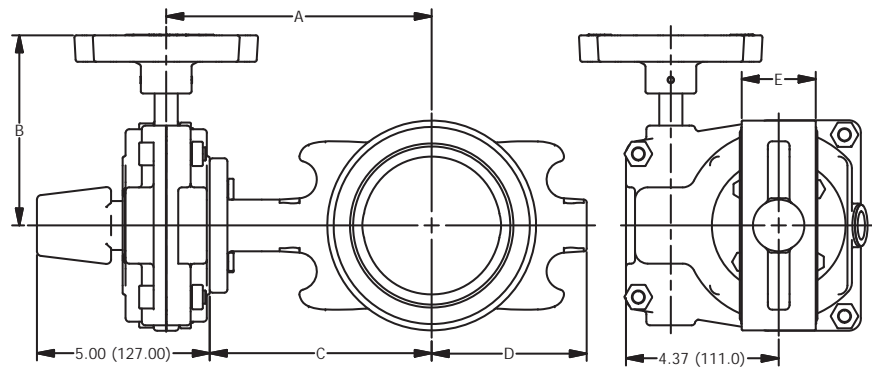


### Materials of Primary Components

**Body :** ASTM A-536 Nylon-11 Coated  
**Disc :** ASTM A-536 EPDM Encapsulated  
**Upper and Lower Stems :** AISI 420-SS  
**Worm Gear Shaft :** AISI 410-SS  
**Housing :** ASTM A-536  
**Hand Wheel :** ASTM A-536  
**Flag Indicator :** ASTM A-536  
**Sheer Pin :** ASTM A-510  
**Segment Gear :** ASTM B-148 or B-584  
**Housing Gasket :** EPDM Grade "E"  
**O-Rings (All) :** EPDM Grade "E"

### Approvals:

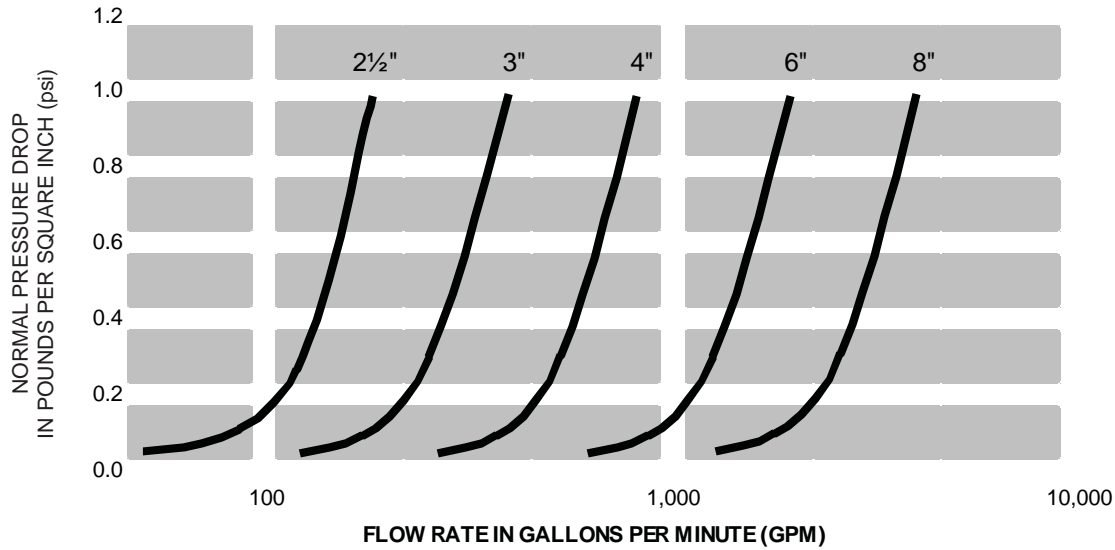
- cULus Listed
- FM Approved
- NYC - DOB MEA 155-06-E



| DIMENSION |              |              |              |              |             | UNIT: IN (mm) |
|-----------|--------------|--------------|--------------|--------------|-------------|---------------|
| SIZE      | A            | B            | C            | D            | E           | Part No.      |
| 2 1/2"    | 6.55 (166.4) | 5.31 (134.9) | 5.35 (135.9) | 3.44 (87.4)  | 1.81 (46.0) | 311836-G      |
| 3"        | 6.81 (173.0) | 5.31 (134.9) | 5.63 (143.0) | 3.66 (93.0)  | 1.81 (46.0) | 311839-G      |
| 4"        | 7.31 (185.7) | 5.31 (134.9) | 6.13 (155.7) | 4.28 (108.7) | 2.06 (52.3) | 311846-G      |
| 6"        | 8.58 (217.9) | 8.66 (220.0) | 7.41 (188.2) | 5.67 (144.0) | 2.20 (55.9) | 311861-G      |
| 8"        | 9.92 (252.0) | 8.66 (220.0) | 8.75 (222.3) | 6.53 (165.9) | 2.28 (57.9) | 311871-G      |

## Grooved End

Flow Characteristics



## Wafer and Grooved End

Friction Loss

| Valve Model | Valve Size Inches (mm) | Friction Loss in Equivalent Feet of Pipe |
|-------------|------------------------|--|
| DW (Wafer)  | 2½ (65)                | 4.8                                      |
|             | 3 (76.2)               | 3.5                                      |
|             | 4 (100)                | 2.4                                      |
|             | 6 (150)                | 5.1                                      |
|             | 8 (200)                | 5.4                                      |

| Valve Model  | Valve Size Inches (mm) | Friction Loss in Equivalent Feet of Pipe |
|--------------|------------------------|--|
| DG (Grooved) | 2½ (65)                | 6.9                                      |
|              | 3 (76.2)               | 4.1                                      |
|              | 4 (100)                | 3  |
|              | 6 (150)                | 5.5                                      |
|              | 8 (200)                | 5.4                                      |

## Grooved End

Flow Coefficient : CV

| DN (mm) | SIZE (in) | Disk Open Angle |      |      |      |      |      |      |
|---------|-----------|-----------------|------|------|------|------|------|------|
|         |           | 30°             | 40°  | 50°  | 60°  | 70°  | 80°  | 90°  |
| 65      | 2 ½"      | 12              | 27.4 | 53.1 | 96   | 138  | 156  | 163  |
| 80      | 3"        | 18.9            | 39.4 | 78.9 | 144  | 210  | 243  | 249  |
| 100     | 4"        | 30              | 65.1 | 129  | 226  | 377  | 488  | 514  |
| 150     | 6"        | 84              | 184  | 369  | 634  | 964  | 1196 | 1286 |
| 200     | 8"        | 165             | 339  | 677  | 1230 | 2002 | 2850 | 3129 |

## Wafer Type

Flow Coefficient : CV at full open

|           |     |     |      |      |      |
|-----------|-----|-----|------|------|------|
| DN (mm)   | 65  | 80  | 100  | 150  | 200  |
| SIZE (in) | 2½" | 3"  | 4"   | 6"   | 8"   |
| CV        | 222 | 389 | 1000 | 1998 | 4619 |

$$C_v = \frac{\text{flow (gpm)}}{\sqrt{\text{pressure loss (psi)}}} = \frac{Q}{\sqrt{\Delta P}}$$



# GLOBE WARRANTY

Listed and approved sprinkler products and devices manufactured by Globe Fire Sprinkler Corporation are produced in strict accordance with standard quality control procedures. We warrant our products to be free from defects in material and workmanship under normal use and service. Our obligation under this warranty shall be limited to replacing, at our plant, any parts thereof which shall, within one year after delivery to the ORIGINAL PURCHASER, be demonstrated to be defective. In order to accomplish demonstration of defectiveness, the parts claimed to be defective must be sent by the original purchaser to Globe Fire Sprinkler Corporation, 4077 Airpark Drive, Standish, MI 48658. Globe's warranty does not extend to incidental or consequential damages of any nature. In no event shall Globe Fire Sprinkler Corporation be liable, in contract, tort, strict liability or under any other legal theory, for incidental, indirect, special or consequential damages, including but not limited to labor charges, regardless of whether Globe Fire Sprinkler Corporation was informed about the possibility of such damages, and in no event shall Globe Fire Sprinkler Corporation liability exceed an amount equal to the sales price. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED INCLUDING MERCHANT ABILITY AND FITNESS for purpose intended. No person, firm or corporation is authorized to assume for us any other liability in connection with the sale of our products.