

FEBCO 825

FEBCO 825D

SIZE

1 1/2", 2", 2 1/2", 3", 4", 6", 8", 10"

DESCRIPTION

Febco model 825 is a reduced pressure backflow assembly. The model 825 was produced from approximately 1975 to 1988. The 1 1/2" and 2" sizes were discontinued in 1978 and the body was made of bronze. The 2 1/2"-10" check valve body was made of cast iron construction with a painted epoxy coating to inhibit rust. The first few years this valve was produced with some internal parts constructed out of aluminum causing premature and serious erosion. These parts were re-designed to avoid this problem. The check valves use the 805Y design of construction. The 2 1/2"-3" have an uncontained check spring. The 4"-10" have a contained check spring. Some versions of the contained spring check assembly required the spring tension to be released to change the rubber check discs. A spring removal tool is suggested to release the spring tension. Check seats were replaceable and a seat removal tool was needed to replace the seats. The 825D series was built from 1988-1989. The check valve utilizes the 805YD design of construction. The 2 1/2"-3" have uncontained check springs. The 4"-10" have a contained check spring design. The changes were that the body was made of ductile iron instead of cast iron and internal check parts are stainless steel instead of epoxy painted iron or bronze. The check bodies on 2 1/2"-10" were painted epoxy coated. In 1991 it was changed to a fused epoxy coating. The check seats are bronze and replaceable. In the 825 D the check seats are bolted in and a special tool is not needed to replace the seat. The relief valve on both models was the same, it is a side mounted relief valve assembly that attaches by a special bushing to the body and can be removed from the check body. The relief valve utilizes an external relief valve sensing line. Most repair parts are the same for the 825 and the 825D models.

BASIC REPAIR KIT

The repair kit contains all rubber discs, diaphragms, cover O-rings, R.V. O'ring and washers.

<u>SIZE</u>	<u>KIT NO</u>	<u>AIR GAP</u>	<u>SIZE</u>	<u>KIT NO</u>	<u>AIR GAP</u>
		<u>DRAIN</u>			<u>DRAIN</u>
1 1/2"	825150	◆ AGDL	4" 825	825400	* AGDL
2"	825200	◆ AGDL	4" 825D	825D400	* AGDL
2 1/2"	825250	* AGDL	6"	825600	* AGDL
3"	825300	* AGDL	8"	825800	* AGDL
			10"	825001	* AGDL

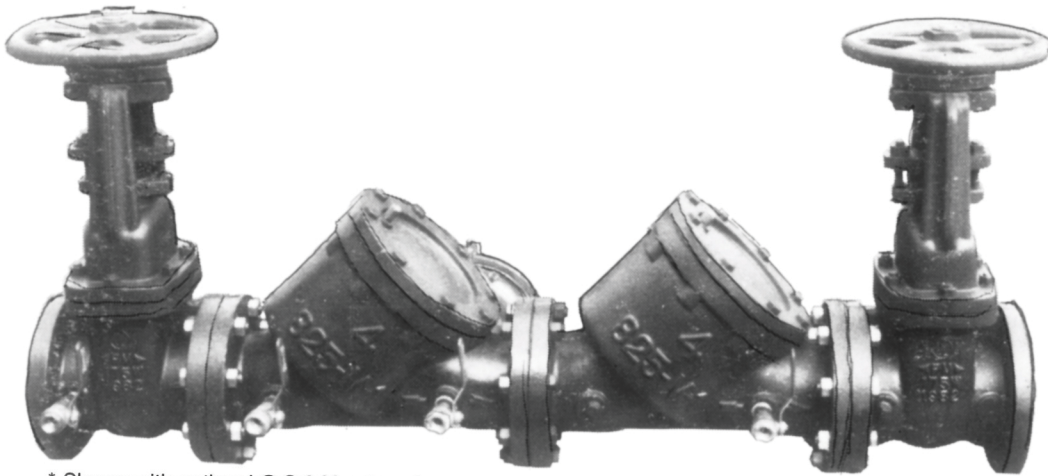
IMPORTANT FEATURES

~ See description above for important features

~ Factory repair information enclosed



Model 825 (2½" through 10") Reduced Pressure Backflow Preventer For High Hazard Service



* Shown with optional O S & Y gate valves.

Features

- Ultimate mechanical protection of potable water against hazards of cross connection contamination.
- Meets all specifications of AWWA, ASSE, CSA and USC Foundation for Cross Connection Control and Hydraulic Research and UL classified for fire line service.
- Documented flow curves established by University of Southern California Foundation for Cross Connection Control and Hydraulic Research.
- Simple service procedures. All internal parts serviceable in line.
- Double diaphragm differential relief valve.
- Independent spring loaded "Y" type check valves.
- Replaceable seats on both check valves and differential relief valve.
- Corrosion resistant internal parts.

Description

The Febco 825 RP Device consists of two independent "Y" pattern spring loaded check valves, a differential pressure relief valve mounted between the two checks, and three test cocks. An inlet shut-off valve with a fourth test cock and an outlet shutoff valve are added to make a complete and serviceable assembly. In normal operation, the check valves are open with the pressure between the checks, called the zone, being maintained at least 5 PSI Lower than the inlet pressure and the relief valve is maintained closed. Should abnormal conditions arise under backflow, the differential relief valve will open and discharge to maintain the zone at least 2 PSI Lower than the inlet pressure; thus preventing the contamination of the supply.

Typical Applications

RP devices are used to protect against high hazard (toxic) fluids in water services to industrial plants, hospitals, morgues, mortuaries, and chemical plants. They are also used in irrigation systems, boiler feed, water lines and other installations requiring maximum protection.

Specifications

The reduced pressure backflow preventer shall consist of two separate spring loaded "Y" type check valves and one differential relief valve having two diaphragms separated by a spacer. This device shall automatically reduce the pressure in the "zone" between the check valves. Should the differential between the upstream and the zone of the unit drop to 2 PSI, the differential relief valve shall open and maintain the proper differential.

Both check valves and the differential relief valve shall be constructed so they may be serviced without removing the device from the line.

Backflow preventers 2" and smaller shall have bronze bodies with bronze trim. 2-1/2" and larger shall have cast iron bodies with internal epoxy coating and bronze trim. Rated to 150 PSI working pressure and water temperatures from 32°F to 140°F.

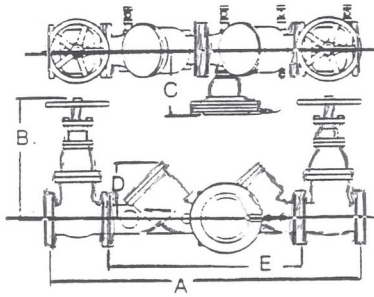
The device shall meet the requirements of ASSE Standard 1013, AWWA Standard C506-78, and USC Foundation for Cross Connection Control and Hydraulic Research.

Characteristics 825

Maximum working pressure	150 PSI
Hydrostatic test pressure	300 PSI
Temperature range	32°F to 140°F
Fluid	Water
End detail	1-1/2" and 2" Threaded ANSI B2.1 2-1/2"-10" Flanged ANSI B16.1
Main valve body	Bronze ASTM B-62 (1-1/2" and 2") Gray iron ASTM A-126 (2-1/2"-10") epoxy coated internal
Main valve trim	Bronze ASTM B-61
Relief valve body and trim	Bronze ASTM B-61
Elastomers	Nitrile ASTM D-2000 Diaphragms Nitrile, fabric reinforced

Dimensions and Weights

Size	A	B	C	D	E	Wt./lbs
1-1/2"	25-1/4"	7"	9"	5-3/4"	16-13/16"	90
2"	29-3/8"	12"	10"	6-1/4"	18-1/16"	136
2-1/2"	37-3/16"	12-1/2"	10-1/2"	7-1/2"	22-1/16"	280
3"	41-11/16"	14"	11-1/2"	8-1/16"	25-9/16"	285
4"	50-7/16"	17-3/8"	12-1/2"	11"	32-5/16"	460
6"	59-11/16"	21-1/4"	14"	14"	38-9/16"	775
8"	69-3/16"	26"	15"	18"	46-1/16"	1270
10"	84-3/16"	30"	16"	22"	58-1/16"	1720



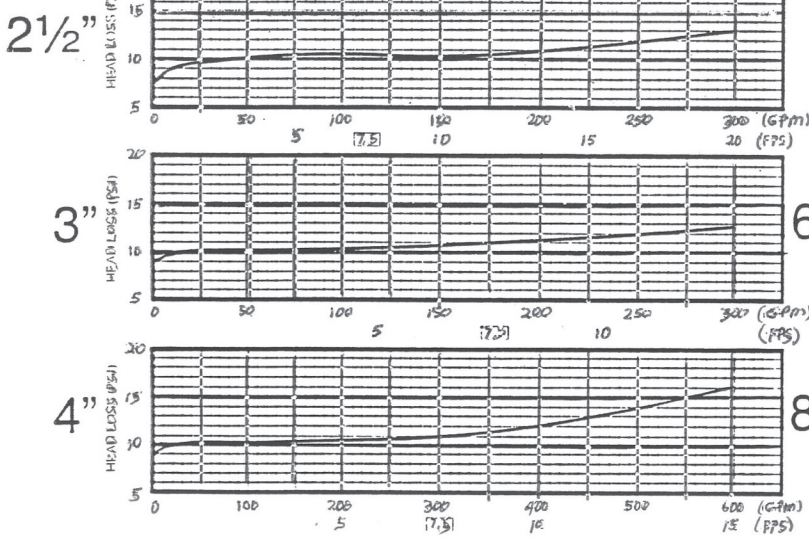
Approvals Model 825 1-1/2" — 10"

ASSE USC IAMPO SBCC CSA UL*

*2-1/2" through 10"

Model 825 (2 1/2", 3", and 4") FLOW CURVES

Flow Curves as Established by the USC Foundation for Cross Connection Control and Hydraulic Research

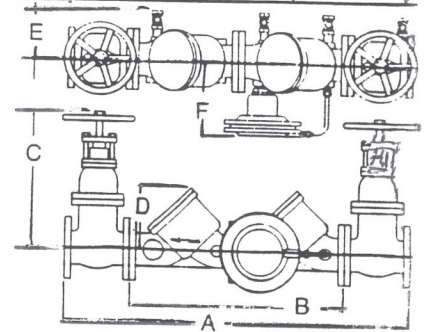


Characteristics and Materials 825D

Maximum working pressure	175 PSI
Hydrostatic test pressure	350 PSI
Temperature range	32°F to 140°F (0°C to 60°C)
Fluid	Water
End detail	2 1/2"-10" Flanged ANSI B16.1
Main valve body	Ductile iron ASTM A-536 grade 65-45-12 epoxy coated internal 10-20 mils
Main valve trim	Bronze ASTM B-61
Internal check assembly	Stainless steel, 300 series
Relief valve body and trim	Bronze ASTM B-61
Elastomers	Nitrile ASTM D-2000 Diaphragms: Nitrile, fabric reinforced
Springs	Stainless steel, 300 series
Internal check assembly	Stainless steel, 300 series
Shut-offs	Non-rising stem, metal seated gates. standard. Others available.

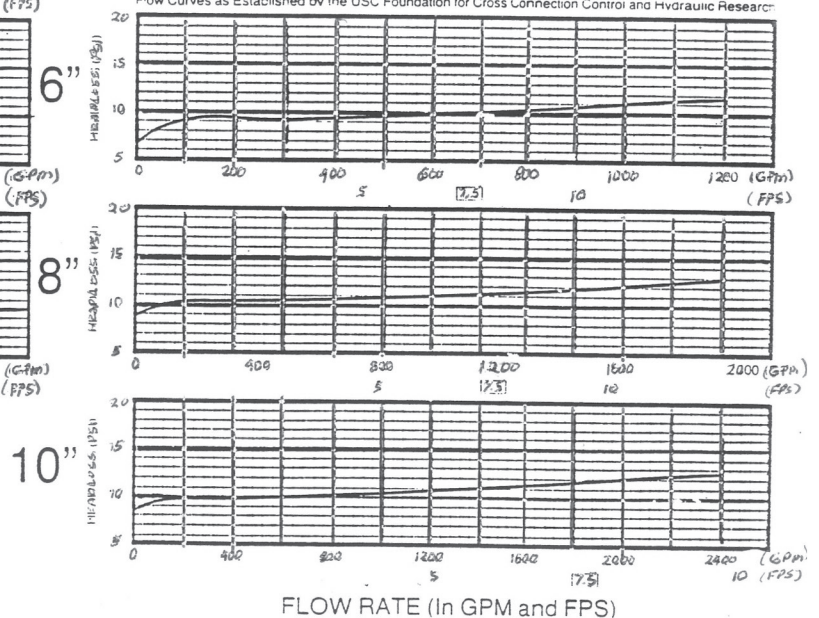
Dimensions and Weights** (U.S.-Inches)

SIZE	A	B	C*	D	E	F	NET WT.(Lbs.)
2 1/2"	37 3/16"	22 1/16"	12 1/2"	7 1/2"	5 1/4"	10 1/2"	260
3"	41 11/16"	25 9/16"	14"	8 1/16"	6"	11 1/2"	295
4"	50 7/16"	32 5/16"	17 3/8"	11"	6 3/4"	12 1/2"	460
6"	59 11/16"	38 9/16"	21 1/4"	14"	8 1/4"	14"	800
8"	69 3/16"	46 1/16"	26"	18"	9 1/2"	15"	1150
10"	84 3/16"	58 1/16"	30"	22"	10 1/2"	16"	1570



Model 825 (6", 8", and 10") FLOW CURVES

Flow Curves as Established by the USC Foundation for Cross Connection Control and Hydraulic Research



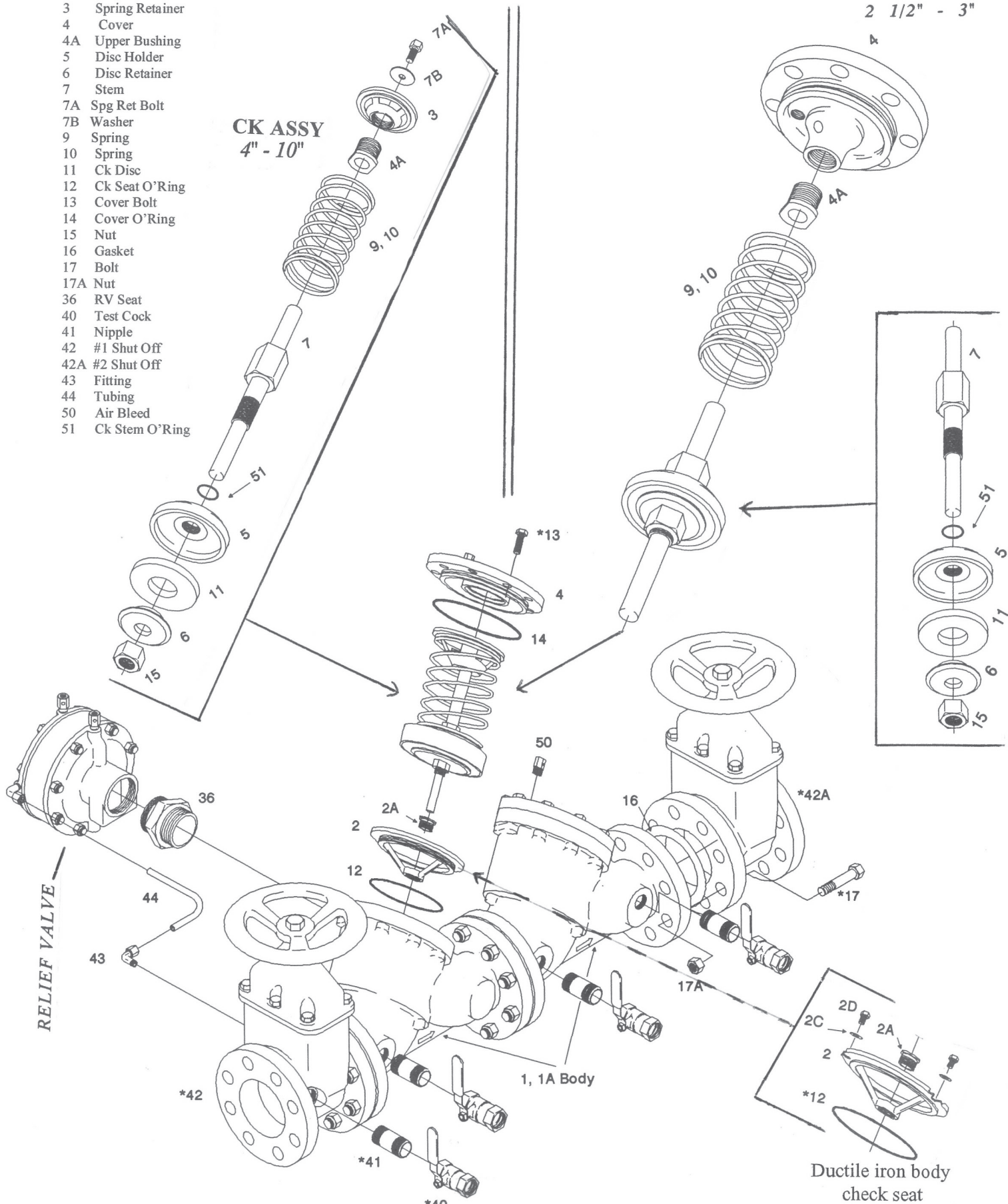
- 2 Ck Seat
- 2A Ck Seat Bushing
- 2C Ck Seat Wshr
- 2D Ck Seat Bolt
- 3 Spring Retainer
- 4 Cover
- 4A Upper Bushing
- 5 Disc Holder
- 6 Disc Retainer
- 7 Stem
- 7A Spg Ret Bolt
- 7B Washer
- 9 Spring
- 10 Spring
- 11 Ck Disc
- 12 Ck Seat O'Ring
- 13 Cover Bolt
- 14 Cover O'Ring
- 15 Nut
- 16 Gasket
- 17 Bolt
- 17A Nut
- 36 RV Seat
- 40 Test Cock
- 41 Nipple
- 42 #1 Shut Off
- 42A #2 Shut Off
- 43 Fitting
- 44 Tubing
- 50 Air Bleed
- 51 Ck Stem O'Ring

(2 1/2" - 10")

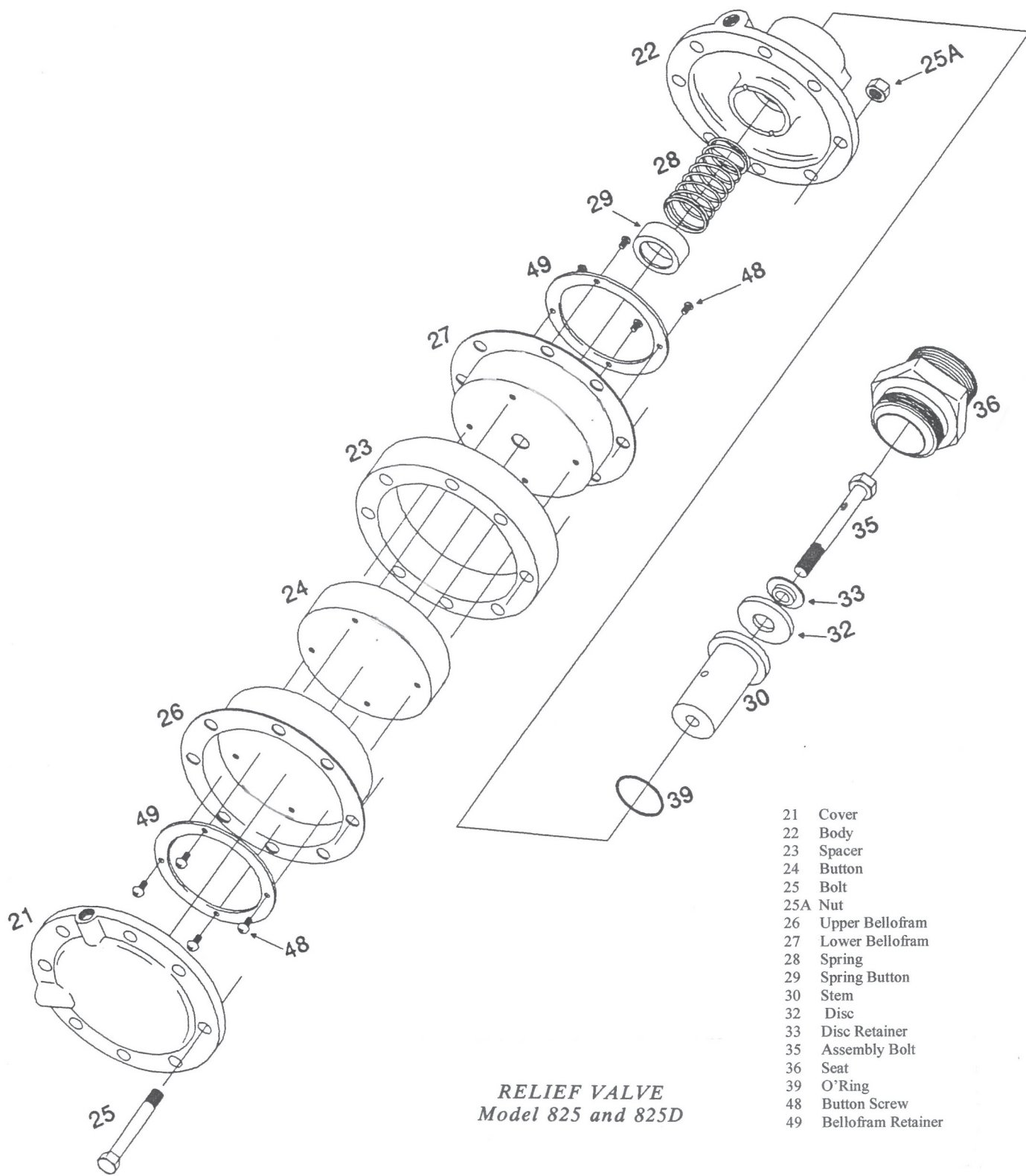
COVER AND CHECK ASSEMBLY

2 1/2" - 3"

CK ASSY
4" - 10"



Ductile iron body
check seat



- 21 Cover
- 22 Body
- 23 Spacer
- 24 Button
- 25 Bolt
- 25A Nut
- 26 Upper Bellofram
- 27 Lower Bellofram
- 28 Spring
- 29 Spring Button
- 30 Stem
- 32 Disc
- 33 Disc Retainer
- 35 Assembly Bolt
- 36 Seat
- 39 O'Ring
- 48 Button Screw
- 49 Bellofram Retainer