

FIRE-SAFE THERMAL/ ELECTRO-THERMAL VALVES



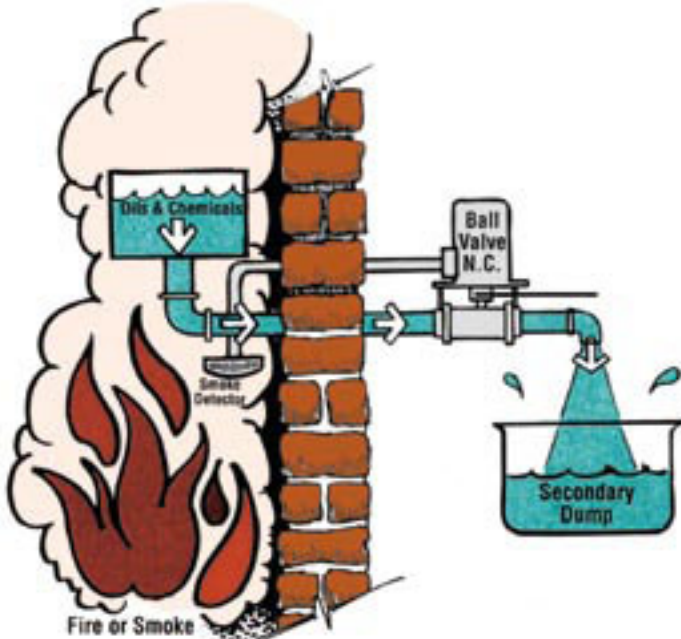
BALL VALVES

ESSEXTM
INDUSTRIES

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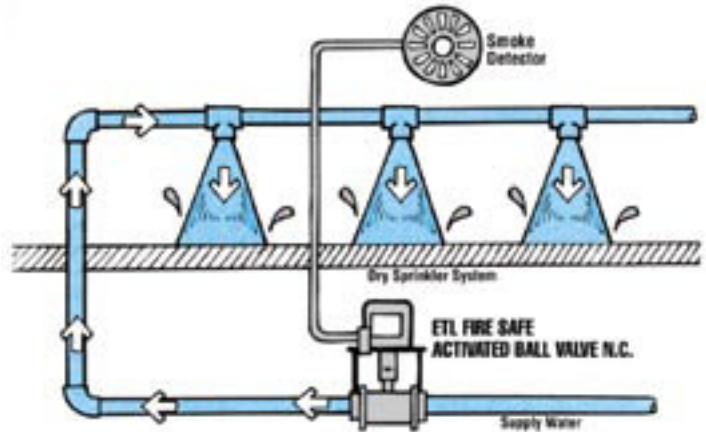
Essex Application Sheet for Fire Safe Actuated Ball Valve

FIGURE 1
ETL Fire Safe Ball Valve
with Smoke Detector



- A) An Electro-Thermal link fire safe activated ball valve will open to dump flammable fluids to another source as shown.
- B) A fire safe thermal shut-off ball valve will close to prevent fueling of a fire as in such cases of petroleum plants or hazardous fluids in chemical processing plants.

FIGURE 2
Electro-Remote or
Smoke Analyzer**



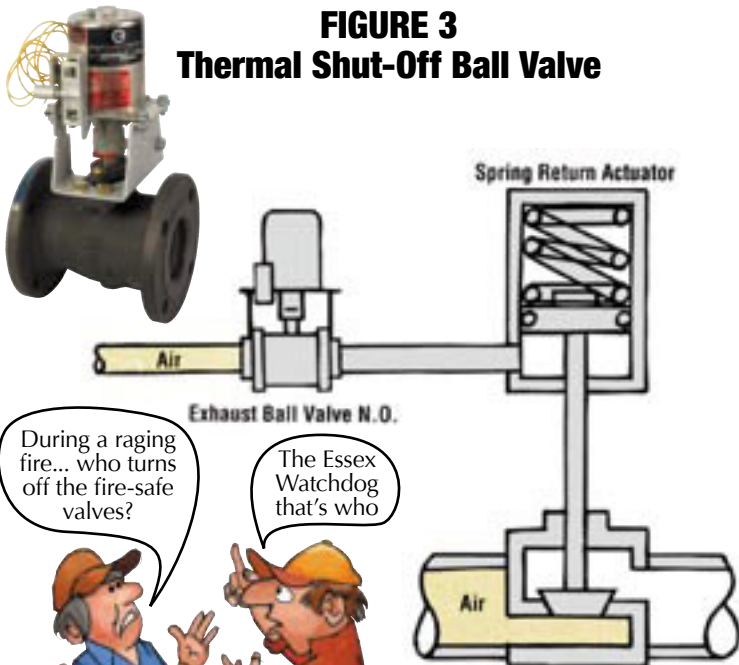
A) This system is used mainly where areas to be protected will be exposed to below freezing temperatures at some time during the year.

** If smoke analyzer is used be sure it operates below freezing.

Smoke detectors are not UL listed for this service and are not claimed. It is also important to note that many detectors will activate the ETL when battery or power source is low so that a warning signal may be announced.

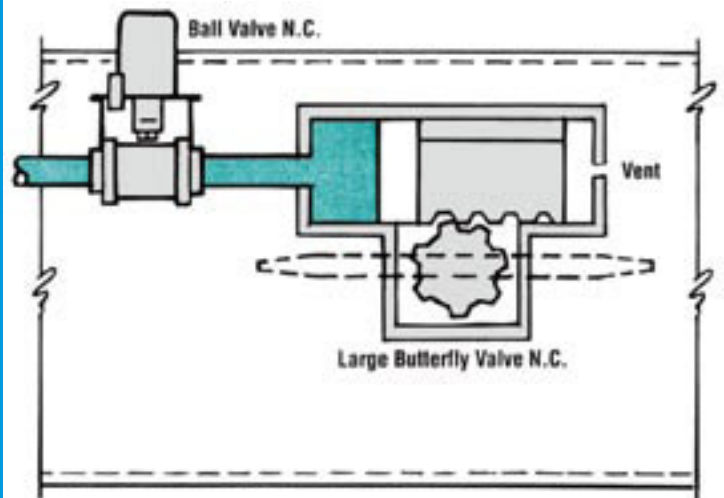


FIGURE 3
Thermal Shut-Off Ball Valve



A) thermal shut-off ball valve will close to block air supply to spring return valve actuator. Pressure in actuator will bleed off through exhaust ball valve.

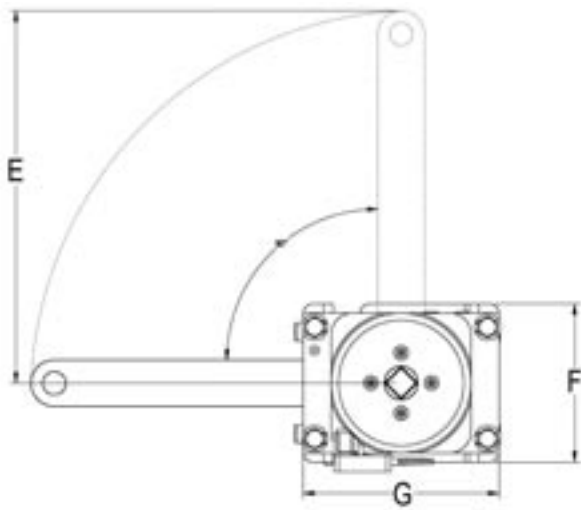
FIGURE 4
Thermal Activated Ball Valve N.C.



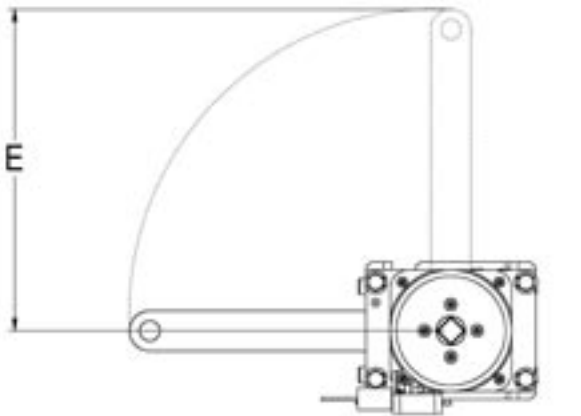
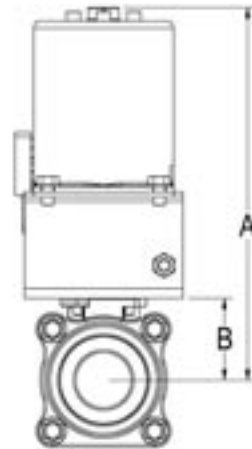
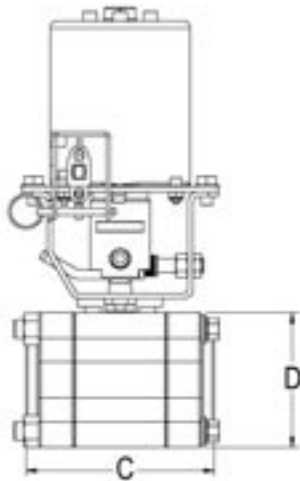
- A) Thermal activated ball valve will open to allow pressure from auxiliary pressure supply to open a large valve such as a butterfly to allow ventilation of dangerous gases or fumes.
- B) Thermal shut-off ball valve will also close main supply pressure to large pinch valve to allow valve to open.

Threaded / Socket-weld / Butt-weld Assembly Dimensions

Thermal Link Assemblies

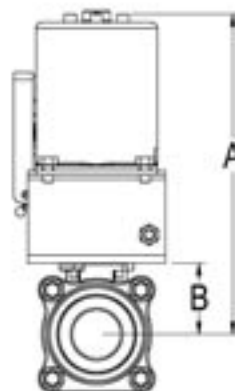
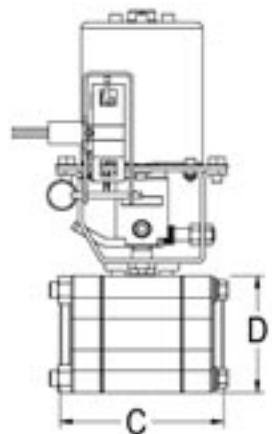


	A	B	THREADED/SOCKET-WELD C	BUTT-WELD C	D	E	F	G
1/4" - 3/8"		CALL	FOR	INFORMATION				
1/2"	6.9	1.1	2.6	2.9	2.1	7.8	3.3	4.8
3/4"	7.1	1.3	3.1	3.4	2.3	7.8	3.3	4.8
1"	7.5	1.7	3.7	4.0	2.6	7.8	3.3	4.8
1-1/4"	9.7	1.8	4.3	4.6	2.9	10.0	4.3	5.3
1-1/2"	10.0	2.1	4.6	5.5	3.4	10.0	4.3	5.3
2"	10.2	2.3	5.2	6.0	3.7	10.0	4.3	5.3
2-1/2"	10.2	2.3	6.5	N/A	4.6	10.0	4.3	5.3



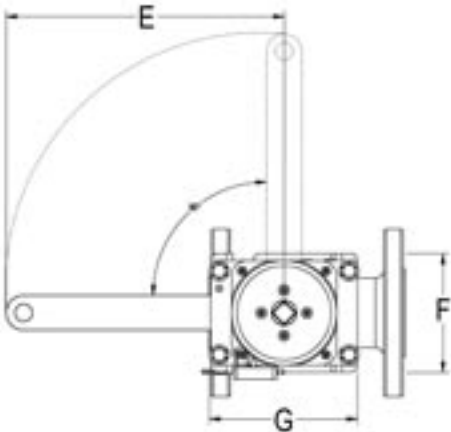
Electro-Thermal Link Assemblies

	A	B	THREADED/SOCKET-WELD C	BUTT-WELD C	D	E	F	G
1/4" - 3/8"		CALL	FOR	INFORMATION				
1/2"	7.0	1.1	2.6	2.9	2.1	7.8	3.3	4.8
3/4"	7.1	1.3	3.1	3.4	2.3	7.8	3.3	4.8
1"	7.1	1.7	3.7	4.0	2.6	7.8	3.3	4.8
1-1/4"	9.7	1.8	4.3	4.6	2.9	10.0	4.3	5.3
1-1/2"	10.0	2.1	4.6	5.5	3.4	10.0	4.3	5.3
2"	10.1	2.3	5.2	6.0	3.7	10.0	4.3	5.3
2-1/2"	10.2	2.3	6.5	N/A	4.6	10.0	4.3	5.3

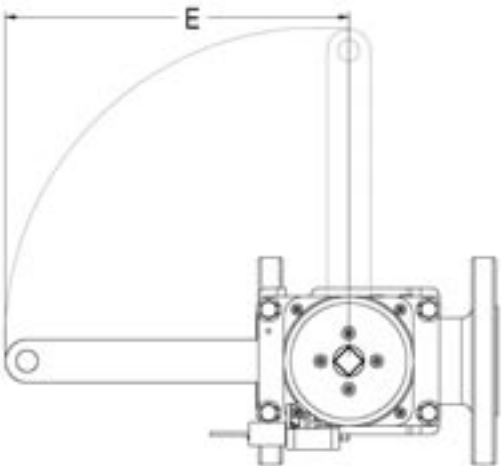
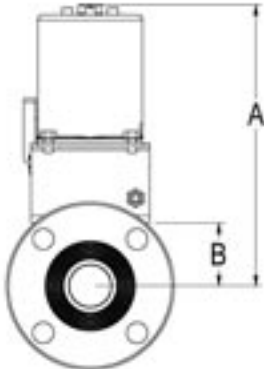
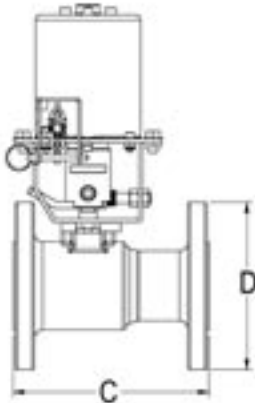


Flanged Assembly Dimensions

Thermal Link Assemblies

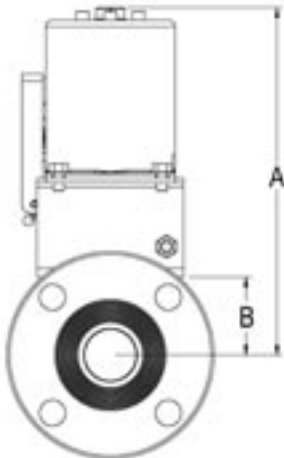
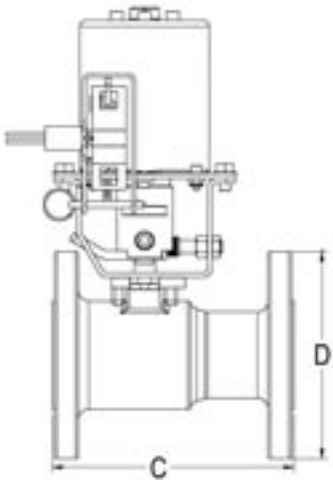


	A	B	C	D	E	F	G
1/2"	6.9	1.1	4.3	3.6	7.8	3.3	4.8
3/4"	7.0	1.3	4.7	3.9	7.8	3.3	4.8
1"	7.4	1.7	5.0	4.3	7.8	3.3	4.8
1-1/2"	10.0	2.1	6.6	5.0	10.0	4.3	5.3
2"	10.2	2.3	7.0	6.0	10.0	4.3	5.3
3"	12.1	3.5	8.0	7.5	10.0	4.3	5.3
4"	12.6	4.0	9.0	9.0	18.0	4.3	5.3



Electro-Thermal Link Assemblies

	A	B	C	D	E	F	G
1/2"	7.1	1.1	4.3	3.6	7.8	3.3	4.8
3/4"	7.3	1.3	4.7	3.9	7.8	3.3	4.8
1"	7.3	1.7	5.0	4.3	7.8	3.3	4.8
1-1/2"	10.0	2.1	6.6	5.0	10.0	4.3	5.3
2"	10.2	2.3	7.0	6.0	10.0	4.3	5.3
3"	12.1	3.5	8.0	7.5	10.0	4.3	5.3
4"	12.6	4.0	9.0	9.0	18.0	4.3	5.3



Thermal Shut-Off, Heat Actuated Ball Valve



Thermal Link - Figure 1

The Essex thermal actuated shut-off ball valve combines the operating characteristics of a manual operated ball valve with the added safety feature of automatic operation. To the event of fire or other determined ambient temperature, the operation can be set to automatically open or close as required.

Thermal links may be furnished U.L. listed for 135°, 165°, 212°, 286°, 360°, and 500° F.

All links are Factory Mutual approved.

Applications include activating sprinkler systems for fire control, or shutting off hazardous lines in event of fire.

The Essex standard thermal shut-off ball valve, THR0001CT, will operate with pressures in excess of 1000 psi at temperatures of -20 to 425° F (for upper limit 500° F thermal link).

Factory Mutual approved rating is for flammable liquids and 125 psi.

MODEL TA0001X, TA0002X and TA0003X - Factory Mutual Approved

VALVE OPTIONS:

- Stainless steel, carbon steel, monel, inconel, hastelloy B&C, alloy 20, copper and brass.
- Valves sizes 1/4 thru 4 inches.
- Valves in figures 1 and 2 are shown with removable handle.
- Manual remote models are optional. Send for catalog application sheet HR-3

Electro-Thermal Shut-Off, Electric or Heat Actuated Ball Valve

The electro-thermal link (ETL) used on the Essex actuated shut-off ball valve is compatible with most smoke or gas detectors on the market.

The operating range of the link is 6 to 30 VAC or 6 to 30 VDC. It requires less than 0.2 amperes of power, .5 milliseconds at 24 volts. The unit may be used with other similar circuitry such as a rate of rise detector or other automatic alarm switch (see application sheet HR-1 & HR-2).

Applications include those of the 165° F Essex standard thermal link shown in Fig. 1, but, in addition will operate when subjected to an electrical impulse of low power and short duration from local or remote location.

ETL may be furnished at 212° F or 255° F but are not U.L. listed.

This unit is used with fuel and combustion controls, combustion safe-guards, electrical signaling systems which are:

- a) heat activated
- b) smoke or gas activated
- c) flame-energy activated
- d) activated by rate of rise or maximum temperature

MODEL EA0001X, EA0002X and EA0003X - Factory Mutual Approved

VALVE OPTIONS:

- Thermal links may be furnished U.L. listed for 135°, 165°, 212°, 286°, 360°, and 500° F.
- Heat or electrical actuated links are U.L. listed for 165° F—Not U.L. listed for 212° F and 255° F.
- May be purchased as a deadman handle without fusible link.
- Only the ETL in figure 2 is listed. Components used in conjunction with this unit are not claimed.



ETL (Electro-Thermal-Link) - Figure 2

A ball valve that can sense heat, smoke or a gas leak and shut off or open automatically.

THE ESSEX FLUID CONTROLS THERMAL SHUT-OFF BALL VALVE

ESSEXTM
INDUSTRIES

is the first of its kind on the market today. It may be purchased to shut, open, or be activated to its last position.

The primary function of this unit is to have the valving unit shut itself off in case of fire. This in effect prevents a fire from spreading by fueling itself when the piping system ruptures and carries flammable fluids such as oil, gasoline, paints, natural gas, etc.

In addition, the unit as an option may be purchased to sense and activate itself during other hazardous conditions such as in the presence of a gas leak, smoke, heat, dust or over-pressurization, when connected with appropriate sensor not furnished, claimed, or approved by Essex Fluid Controls.

The basic unit comes standard with a 165° thermal link, but may be purchased as an option with other links set at 135°F, 212°F, 286°F, 360°F, and 500°F, or you may, as an option, purchase the unit with an ETL (Electro Thermal Link) for operating the unit remotely or for the purpose of hooking the unit to a gas or smoke detector, etc.

The unit's power output is self contained and operates automatically when dangerous situations occur. **The unit also may be operated manually to the on-off position or remote manually operated from over 30 feet without tampering with or voiding the fusible links warranty** under normal operating conditions (i.e., the valve is like any other manually operated fire safe ball valve used in on-off service). If fire or other hazardous conditions occur and the valve is left in the open position, the valve will close itself automatically.

The unit is available from 1/4" through 4" in size and the valve may be purchased in 316 S.S. or Carbon Steel as standard or optional materials such as inconel, monel, alloy 20, hastelloy, etc. the unit may also be purchased with a removable handle to prevent injury or damage from the high powered quick acting handle in the event of actuation due to fire or other hazards. Optional instrument packages such as lights, sirens, horns, etc. used to indicate the status of the Essex valve are available, but not provided by Essex Fluid Controls. These devices can indicate if the valve has been operated manually, or if the thermal link override operation has been activated due to an emergency such as fire, smoke, gas leak, etc.



**NATIONAL FIRE PROTECTION ASSN.
PAMPHLET 58, 1979 EDITION**

2343. Emergency shut-off valves shall be approved and incorporate all of the following means of closing (see 3168 and 3223):

- (a) Automatic shut-off through thermal (fire) actuation. When fusible elements are used they shall have a melting point not exceeding 250°F.
- (b) Manual shut-off from a remote location.
- (c) Manual shut-off at the installed location.

NOTE: The only proposed change is in section 3168 where the compliance date of December 31, 1978 is moved to December 31, 1980.

SEE OSHA STANDARDS

(Page 176, Part 1910 Section 106, Title 29 of the Code of Federal Regulations dated June 1981. OSHA 2206) "Flammable or combustible tanks located inside of buildings...shall be provided with an automatic-closing heat-actuated valve on each withdrawal connection below the liquid level...to prevent continued flow in the event of fire in the vicinity of the tank."



Your Valve Here



Essex Fluid Controls can install an FM approved actuator to your fire-safe valve.* The actuator will retain its FM approval and be purchased as an accessory to your fire-safe valve. This will allow you or your customers to maintain consistency through out the applicati

Thermal

TA0001X
 TA0002X
 TA0003X
 TA0003XBF

Electro-Thermal

EA0001X
 EA0002X
 EA0003X
 EA0003XBF

Applications

1/4" - 1" **
 1-1/4" - 2" **
 2-1/2" - 4" **
 2" - 12" ***
 Butterfly Valve

* Valve must be soft seated & either API607 or FM fire rated.
 ** Actuator sizing & price determined by valve torque.
 *** Butterfly valves priced by torque. Call for further information.
 The above examples are informational only.

Carbon Steel Fire Safe Shut-off Ball Valve with 165° F Thermal Link & Stainless Steel Actuator	MODEL NUMBER	TYPE CONN.
	THR0001CT	THREADED
	THR0001CF	FLANGED

316 SS Thermal Fire Safe Shut-off Ball Valve with 165° F Thermal Link & Stainless Steel Actuator	MODEL NUMBER	TYPE CONN.
	THR0001CST	THREADED
	THR0001CSF	FLANGED

Carbon Steel Electro-Thermal Fire Safe Shut-off Ball Valve with 165° F Electro-Thermal Link & Stainless Steel Actuator	MODEL NUMBER	TYPE CONN.
	*EA SERIES	THREADED
	*EA SERIES	FLANGED

316 SS Electro-Thermal Fire Safe Shut-off Ball Valve with 165° F Electro-Thermal Link & Stainless Steel Actuator	MODEL NUMBER	TYPE CONN.
	*EA SERIES	THREADED
	*EA SERIES	FLANGED

*CALL FOR ORDERING INFORMATION ON EA & TA SERIES VALVES

HOW TO ORDER MODEL NUMBER

Example 1

1-1/2" DTHRO001CTO

BLK. 1 1-1/2	BLK. 2 D	BLK. 3 T	BLOCK 4 HR0001	BLK. 5 CT	BLK. 6 O
VALVE SIZE	REMOVABLE HANDLE	THERMAL LINK	BASIC MODEL NUMBER	S.S. ACT. & VALVE TH'D	MOVE TO OPEN

1-1/2" Valve with Removable Handle & Standard 165° F Thermal Link Actuator & Valve Made From Carbon Steel with NPT SCREW Thread. Unit will Heat Actuate to the Open Position.

Example 2

EA0002X2CSF

2" Valve with Standard Handle & Electro-Thermal Link, Actuator is Stainless Steel with 316 S.S. 150 # flange. Heat or Electric will Actuate Valve to the Shut-off Position.

Standard Shut-off Valve is Furnished with 165° F Thermal Link. For other temperatures, Shut-off Valve Links are available at 135° F, 212° F, 286° F, 360° F, & 500° F.

Units can be supplied with "Fixed" Handles.

SHUT-OFF VALVE CODE BLOCK

BLOCK 3

T — Thermal Link (165° F Standard)

BLOCK 4

HR0001 — Basic Shut-off Valve Model Number

BLOCK 5

- CF — Stainless steel actuator & valve flanged carbon steel 150 CL'S
- C3 — Stainless steel actuator & valve flanged carbon steel 300 CL'S
- CS — Stainless steel actuator & valve socket weld carbon steel
- CT — Stainless steel actuator & valve threaded carbon steel (NPT)
- CW — Stainless steel actuator & valve butt weld carbon steel
- CSF — Stainless steel actuator & 316 stainless steel valve flanged 150 CL'S
- CS3 — Stainless steel actuator & 316 stainless steel valve flanged 300 CL'S
- CSS — Stainless steel actuator & 316 stainless steel valve socket weld
- CST — Stainless steel actuator & 316 stainless steel valve threaded (NPT)
- CSW — Stainless steel actuator & 316 stainless steel valve butt weld

OPTION CODE BLOCK 2 & 6

BLOCK 2

D — Removable handle (Standard)

BLOCK 6 (MOVE TO CLOSE IS STANDARD)

O — Move to Open Position

CALL FOR ORDERING INFORMATION ON FM APPROVED MODELS TA SERIES FOR 3" & 4" VALVES

Standard Combinations of Fire-Safe Ball Valves

MODEL TYPE	Standard Valve Sizes in Inches									
	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	3	4
Screwed End	*	*	*	*	*	*	*	*	*	*
Socket Weld	*	*	*	*	*	*	*	*	*	*
Butt Weld	*	*	*	*	*	*	*	*	*	*
Flanged End 150 lb Rating			*	*	*		*	*	*	*
Flanged End 300 lb Rating			*	*	*		*	*	*	*

CALL FOR INFORMATION ON ACTUATED HIGH PERFORMANCE BUTTERFLY VALVES!

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