



# THERMAL SHUT-OFF VALVES FLP - MT SERIES

## INSTALLATION, OPERATION & MAINTENANCE



# GENERAL INFORMATION

## OVERVIEW

BI-TORQ Valve Automation® Thermal Shut-Off Valves (TSVs) are designed for flow shut-off protection in piping systems handling flammable gasses, liquids, solvents, toxic fluids, or any other potentially dangerous media. These fire control valves terminate flow in the event of fire, aiding in reducing fire intensity. In the event of fire, the fusible link separates, allowing the top mounted spring pack to drive an API 607 fire-safe rated valve into a closed position. Fusible links are available in a range of temperature settings. The TSVs also are available in a fail open position, ideal for a fire suppression system in the event of a fire.

The TSV you have received has been assembled and tested at our factory with attention to safety in mind. BI-TORQ Valve Automation® uses high quality materials and tested engineering to ensure that this product will operate safely and reliably. Carefully read all instructions before handling in order to avoid injury to the operator or damage to the product.

**NOTE: PLEASE REFER TO ASSEMBLY DRAWING FL-MW-0600 (FIG. 4) FOR PARTS IDENTIFICATION AND A COMPLETE PARTS LIST (TABLE 2).**

## GENERAL SAFETY INSTRUCTIONS



**WARNING: THIS THERMAL SHUT-OFF VALVE ASSEMBLY HAS BEEN SHIPPED FROM THE FACTORY IN THE ARMED POSITION AND IS READY FOR INSTALLATION IN LINE. USE EXTREME CAUTION IN HANDLING THE ASSEMBLY BECAUSE THE SPRING PACK IS UNDER FULL TENSION AT ALL TIMES.**



**IMPORTANT:**  
**FOR SHIPPING PURPOSES, THE FUSIBLE LINK HAS BEEN REPLACED WITH A SAFETY LINK. THE RED SAFETY LINK (FIG. 1) MUST BE REMOVED AND REPLACED WITH THE FUSIBLE LINK AFTER THE VALVE HAS BEEN PUT IN LINE. IF SAFETY LINKS ARE NOT REMOVED, FUSIBLE LINK WILL NOT OPERATE CORRECTLY.**

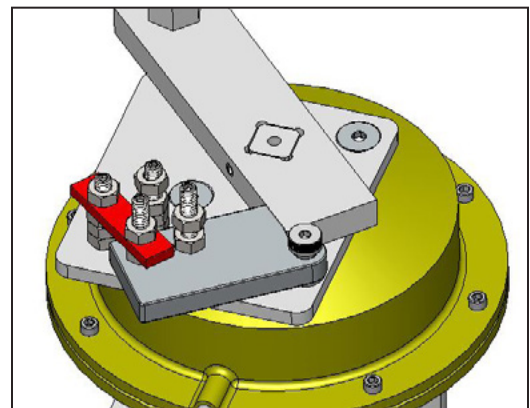


FIG. 1

The unit must be installed in a location with carefully maintained ambient temperatures. Installing the link in locations where high temperature fluctuations are possible (such as direct sunlight) is not recommended. Exposure to high ambient temperatures can cause the fusible links to break prematurely. (See Table 1 for link temperature ratings.)

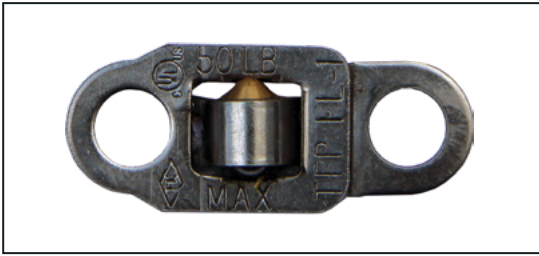


FIG. 2A FL-1 LINK FOR SPRING PACK 109-020 (6 PER UNIT)



FIG. 2B K LINK FOR SPRING PACK 129-020 (6 PER UNIT)

LINK SERIES	PART NO.	YIELD TEMP	MAX AMBIENT TEMP
FL-1	FL-1-165	165° F (74° C)	135° F (57° C)
FL-1	FL-1-212	212° F (100° C)	185° F (82° C)
FL-1	FL-1-286	286° F (141° C)	253° F (123° C)
FL-1	FL-1-360	360° F (182° C)	330° F (166° C)
K LINK	314165	165° F (74° C)	135° F (57° C)
K LINK	314212	212° F (100° C)	185° F (82° C)
K LINK	314280	280° F (138° C)	253° F (123° C)
K LINK	314360	360° F (182° C)	330° F (166° C)

TABLE 1 PLEASE CONSULT FACTORY FOR SPECIAL ORDER LINKS.

# INSTALLATION

## ARMING THE HT SERIES ASSEMBLY



**CAUTION: THE UNIT HAS BEEN SHIPPED IN THE ARMED (OPEN) POSITION WITH A SAFETY LINK (RED LINK).**



**CAUTION: ALWAYS INSTALL VALVE IN PIPELINE OR SECURED IN VISE BEFORE PROCEEDING!**

### REQUIRED TOOLS:

- $\frac{7}{16}$ " open end wrench
- 18" or longer breaker bar
- $\frac{3}{4}$ " (19mm) socket



BREAKER BAR

1. Remove  $\frac{1}{4}$ " x 20 nuts (10) on link retaining studs (11) securing red safety link. See Fig. 3.
2. Attach  $\frac{3}{4}$ " (19mm) socket fully to male hex portion (12) of the tripper (5) turning counter clockwise (CCW).
3. Holding the breaker bar firmly, apply pressure toward open position CCW to relieve pressure on red safety link.
4. While maintaining pressure on breaker bar, remove the red safety link and replace with two fusible links on link studs.
5. Ease tension on breaker bar until fusible links hold spring tension.
6. Remove breaker bar from tripper (5). The unit is now properly armed.
7. Add  $\frac{1}{4}$ " x 20 nuts to retaining studs. (10). Fig. 4

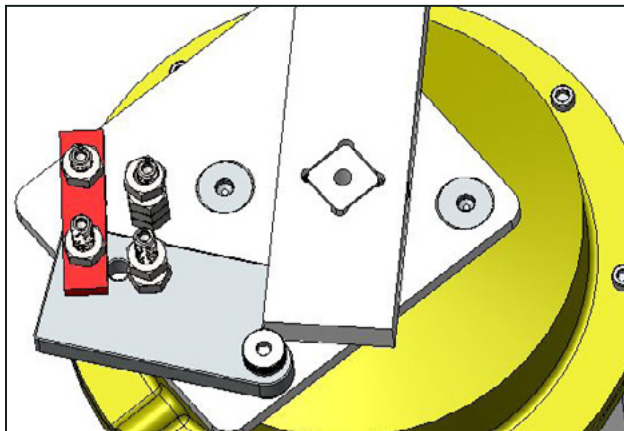


FIG 3

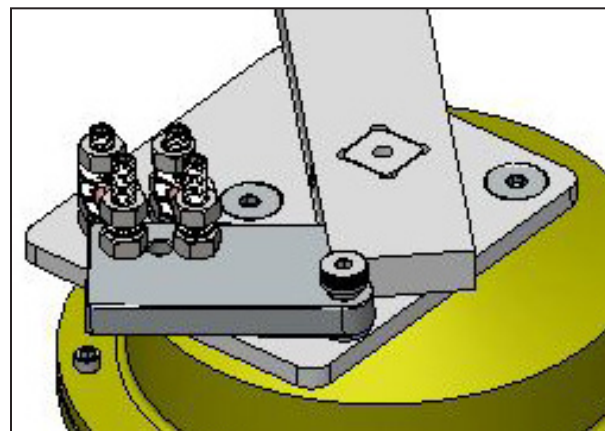


FIG 4



**WARNING: FAILURE TO REMOVE BREAKER BAR FROM UNIT COULD RESULT IN SERIOUS INJURY OR DEATH.**



**CAUTION: HAND TIGHTEN NUTS ONLY. TIGHTENING WILL STRESS THE LINKS AND COULD RESULT IN IMPROPER FUNCTIONING.**

## OPERATION (AFTER INSTALLATION AND ARMING)

Once the unit is properly armed, the valve may be operated closed-open in the normal manner using the valve handle (4) without disturbing the fusible link. See Fig. 5A & 5B.

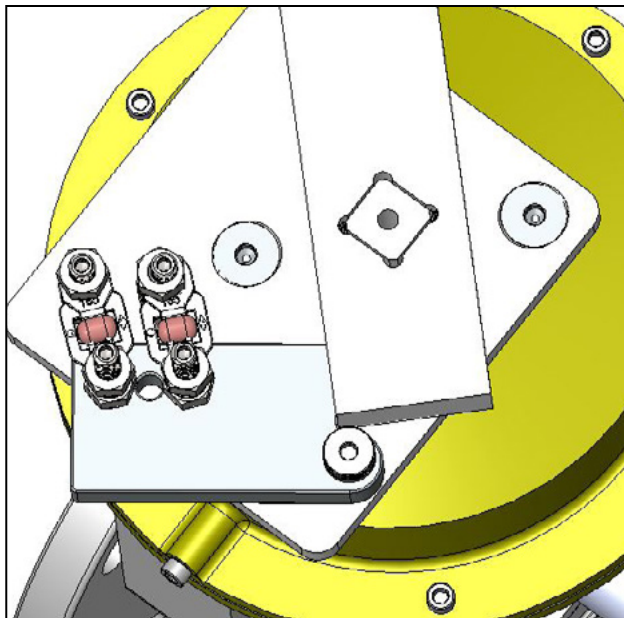


FIG. 5A

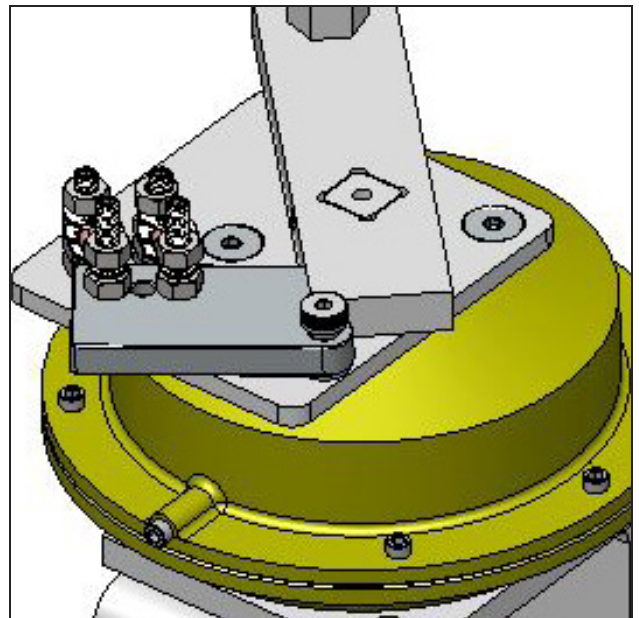


FIG. 5B

## MAINTENANCE



**IMPORTANT: THE FUSIBLE LINK MANUFACTURER RECOMMENDS ANNUAL REPLACEMENT OF LINK(S) AS PART OF A REGULAR MAINTENANCE SCHEDULE.**

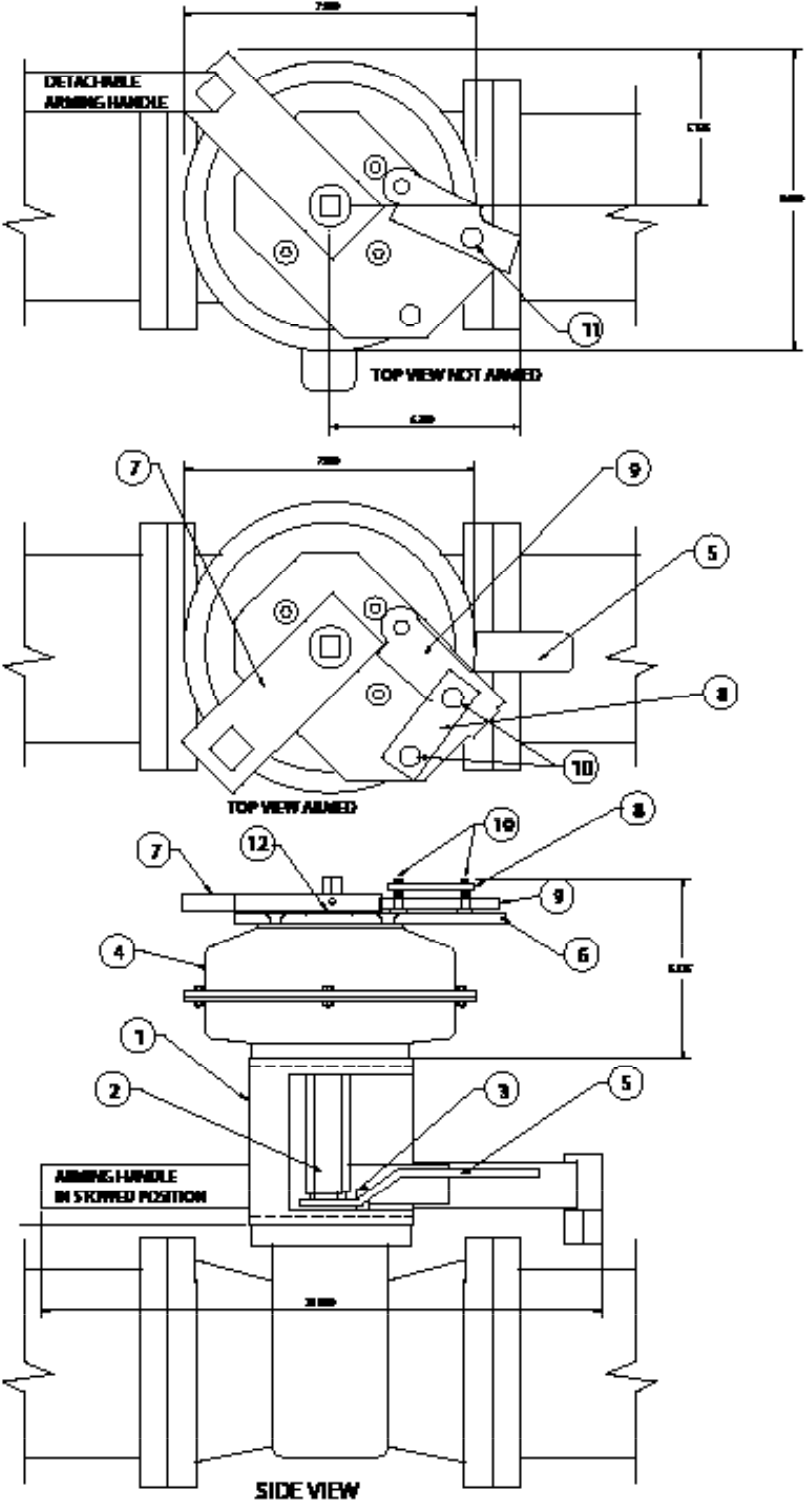
Contact your local distributor or Strahman Group for replacement links. Order by part number or temperature rating on old link. To change out links, engage the declutch mechanism and follow the arming procedure outlined in **Arming the MT Series Assembly** section. Replacement valve seats and seals subject to normal wear are also available from your local distributor or contact Strahman Group directly.

The spring case and declutchable gear are lifetime lubricated and do not require maintenance. Disassembly of the spring case or gear will void any written or verbal warranties.



**WARNING: THE SPRING CASE CLOCKSING IS ALWAYS UNDER PRESSURE. DO NOT DISASSEMBLE SPRING PACK UNDER ANY CIRCUMSTANCES. DISASSEMBLY OF THE SPRING PACK COULD RESULT IN SERIOUS INJURY OR DEATH.**

# PARTS



PARTS LIST	
1	MOUNTING BRACKET
2	CONNECTING COUPLER
3	SPRING PACK
4	VALVE HANDLE
5	TRIPPER
6	SAFETY LINK
7	TRIGGER
8	VALVE
9	LEVER RETAINING ARM
10	RETAINING STUDS
11	FUSIBLE LINK

TABLE 2.

FIG. 6

## THE STRAHMAN FAMILY OF PRODUCTS INCLUDE:



### WASH DOWN EQUIPMENT

Cleaning and sanitizing equipment for applications where safety is the number one concern — built to outlast and outperform all others.

### AUTOMATED VALVES & THERMAL SHUT-OFF VALVES

Completely assembled automated valves and fire-safe thermal shut-off valves fabricated for quick and reliable problem-solving solutions for industrial applications.

### VALVES & LINE BLINDS


Engineered solutions for the transfer of fluid and flow control for highly critical applications from sampling to inline process to permanent isolation.





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