

INSTALLATION & MAINTENANCE FOR MT-SERIES

I. OVERVIEW OF THERMAL SHUT-OFF VALVES

BI-TORQ Valve Automation[®] thermal shut-off valves are designed for flow shutoff 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 API607 fire safe rated valve into a closed position. Fusible links are available in a range of temperature settings. The thermal shut-off valves also are available in a fail open position, ideal for a fire suppression system in the event of a fire.

The assembly 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 the attached assembly drawing FL-HD-0600 for parts identification and complete parts list.

II. GENERAL SAFETY INSTRUCTIONS

WARNING: Use extreme caution in handling the assembly because the spring pack is under full tension at all times.

NOTE: *Ball valves are shipped in the OPEN and ARMED position; butterfly valves are shipped in the CLOSED and ARMED position.*

BALL VALVES ONLY: For shipping purposes, a safety link (#9) has been installed. This part is PAINTED RED. (see illustration 2.1)

IMPORTANT: THE SAFETY LINK MUST BE REMOVED AND REPLACED WITH THE FUSIBLE LINK(S) AFTER THE VALVE HAS BEEN PUT IN LINE. IF SAFETY LINKS ARE NOT REMOVED, FUSIBLE LINK WILL NOT OPERATE CORRECTLY.

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 chart 1 for link temperature ratings.)

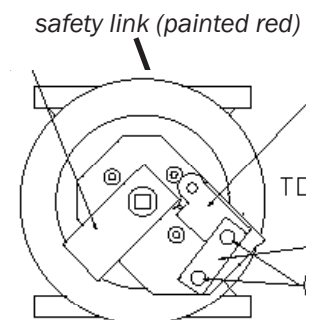


illustration 2.1

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III. INSTALLING FUSIBLE LINKS ON THE MT SERIES ASSEMBLY

FOR DISARMED ASSEMBLY USING BUTTERFLY VALVES

IMPORTANT: ASSEMBLIES WITH HIGH PERFORMANCE BUTTERFLY VALVES ARE SHIPPED IN THE OPEN POSITION

NOTE: INSTALL VALVE IN PIPELINE BEFORE PROCEEDING!

Please refer to the attached assembly drawing FL-MW-0600 for parts identification and complete parts list.

REQUIRED TOOLS: 1/2" open ended wrench to install 5/16" x 18 nuts

1. Remove 5/16" x 18 nuts on link retaining studs (#10) securing red safety link.
2. Insert the detachable handle onto the square hole on the arming lever (#7).
3. Apply pressure on the detachable handle toward the open position (CCW) to relieve tension on the safety link (#8).
3. Loosen and remove both 5/16" x 18 nuts on link retaining studs (#10).
4. While maintaining pressure on the detachable handle, remove the safety link and replace with the fusible link.(see illustration 3.1) **NOTE: 2" valve with 08 spring pack requires 2 (two) links.**
5. Place link(s) on retaining arm studs (#10) with 5/16" x 18 nuts until link is held firmly in position. CAUTION: Do not tighten nuts. Tightening will stress the links and could result in improper functioning.
6. Remove detachable handle from arming lever. The unit is now properly armed. NOTE: Ensure that the handle is stored in a location near the valve with the chain provided. The handle will be necessary to re-set the unit when links are changed as part of annual maintenance.



illustration 3.1

IMPORTANT: FAILURE TO REMOVE DETACHABLE HANDLE FROM ARMING LEVER COULD RESULT IN SERIOUS INJURY OR DEATH. AFTER INSTALLING LINKS STORE HANDLE NEAR THE ASSEMBLY OR IN A WELL-IDENTIFIED LOCATION. UNIT CANNOT BE PROPERLY REARMED WITHOUT HANDLE.



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IV. OPERATION

Once the unit is properly armed, the valve may be operated closed-open in the normal manner using the valve handle (#5) without disturbing the fusible link.

V. MAINTENANCE

IMPORTANT: The fusible link manufacturer recommends annual replacement of link(s) as part of a regular maintenance schedule. Contact your local distributor or BI-TORQ® Valve Automation for replacement links. Order by part number or temperature rating on old link.

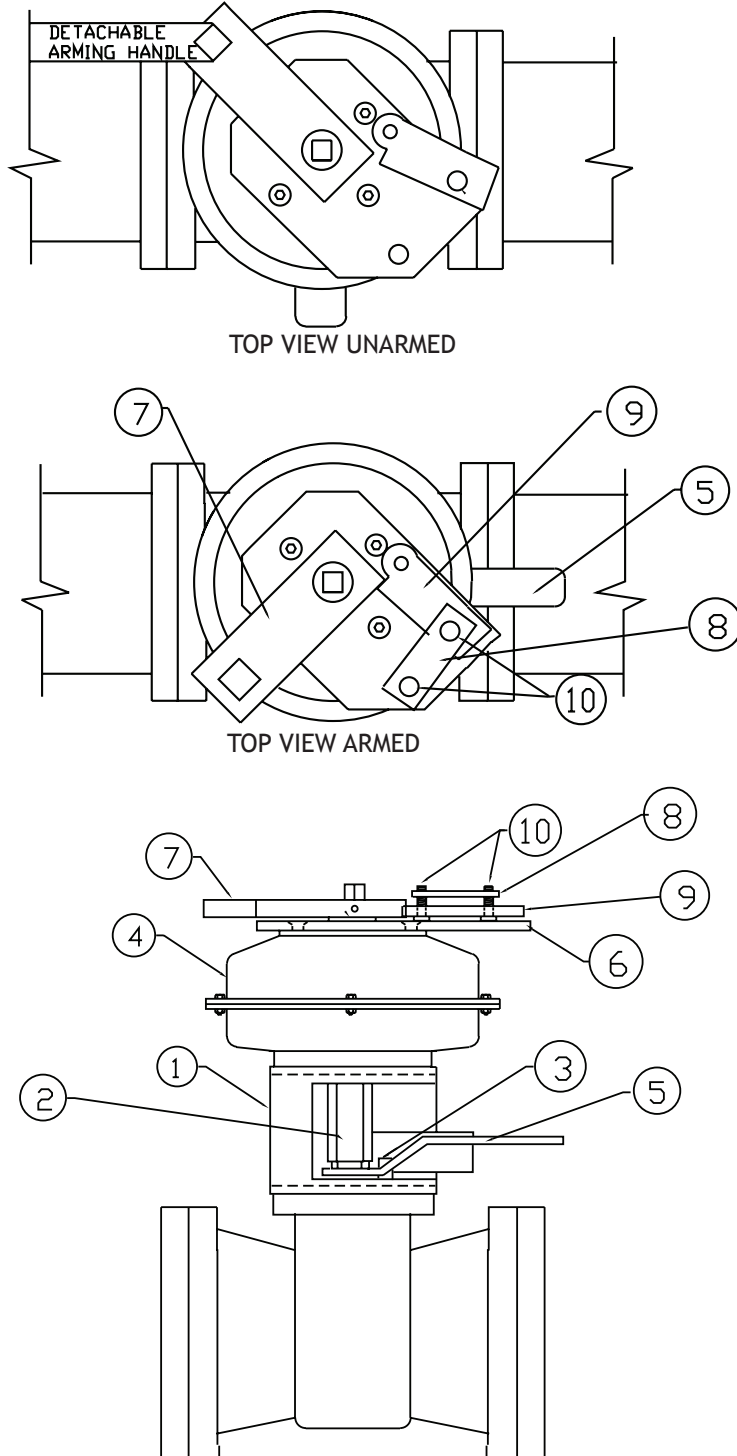
In order to remove fusible links, **REVERSE** installation instructions listed in section III. After removing fusible links, store in a safe place. **DO NOT** re-install red safety link(s). To engage the declutchable gear operator for manual operation, refer to section VI (operating declutchable manual override gear). The gear lever must always be returned to the DISENGAGED position after manually operating the valve and the links must be put back into place. Replacement valve seats and seals subject to normal wear are available from your local distributor or BI-TORQ® Valve Automation

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.

| FL-1: FOR SIZE 07, 08, 09, 10 SPRING | | |
|--------------------------------------|------------------------|-----------------------------|
| LINK PART NUMBER | LINK YIELD TEMPERATURE | MAXIMUM AMBIENT TEMPERATURE |
| FL-1-165 | 165° F/74° C | 135° F/57° C |
| FL-1-212 | 212° F/100° C | 185° F/82° C |
| FL-1-286 | 286° F/138° C | 253° F/123° C |
| FL-1-360 | 360° F/182° C | 330° F/166° C |

Please consult factory for special order links



| | | | |
|---|------------------------------|----|------------------------------|
| 1 | SPRING PACK MOUNTING BRACKET | 7 | ARMING LEVER |
| 2 | SPRING CLOSE ASSEMBLY | 8 | SAFETY LINK |
| 3 | VALVE OPEN/CLOSE STOP | 9 | LEVER RETAINING ARM |
| 4 | 079/089/099 SPRING PACK | 10 | FUSIBLE LINK RETAINING STUDS |
| 5 | VALVE HANDLE | 11 | SECURITY STOP |
| 6 | FUSIBLE LINK MOUNTING PLATE | 12 | SPACE WASHER |

IMPORTANT: IMPROPER INSTALLATION OR ARMING OF FUSIBLE LINK ASSEMBLIES WILL VOID WARRANTY, AS WILL DISASSEMBLY OF THE PRODUCT WITHOUT PRIOR APPROVAL FROM FACTORY.