

# Fisher™ Digital Isolation™ NL Trunnion Mounted Ball Valve (TMBV) (Obsolete Product)

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## Introduction

The product covered in this document is no longer in production. This document, which includes the latest published version of the instruction manual, is made available to provide updates of newer safety procedures. Be sure to follow the safety procedures in this supplement as well as the specific instructions in the included instruction manual.

Part numbers in the included instruction manual should not be relied on to order replacement parts. For replacement parts, contact your [Emerson sales office](#).

For more than 30 years, Fisher products have been manufactured with asbestos-free components. The included manual might mention asbestos containing parts. Since 1988, any gasket or packing which may have contained some asbestos, has been replaced by a suitable non-asbestos material. Replacement parts in other materials are available from your sales office.

## Safety Instructions

Please read these safety warnings, cautions, and instructions carefully before using the product.

These instructions cannot cover every installation and situation. Do not install, operate, or maintain this product without being fully trained and qualified in valve, actuator and accessory installation, operation and maintenance. To avoid personal injury or property damage it is important to carefully read, understand, and follow all of the contents of this manual, including all safety cautions and warnings. If you have any questions about these instructions, contact your Emerson sales office before proceeding.

## Specifications

This product was intended for a specific range of service conditions--pressure, pressure drop, process and ambient temperature, temperature variations, process fluid, and possibly other specifications. **Do not expose the product to service conditions or variables other than those for which the product was intended.** If you are not sure what these conditions or variables are, contact your [Emerson sales office](#) for assistance. Provide the product serial number and all other pertinent information that you have available.

## Inspection and Maintenance Schedules

All products must be inspected periodically and maintained as needed. The schedule for inspection can only be determined based on the severity of your service conditions. Your installation might also be subject to inspection schedules set by applicable governmental codes and regulations, industry standards, company standards, or plant standards.

In order to avoid increasing dust explosion risk, periodically clean dust deposits from all equipment.

When equipment is installed in a hazardous area location (potentially explosive atmosphere), prevent sparks by proper tool selection and avoiding other types of impact energy.

## Parts Ordering

Whenever ordering parts for older products, always specify the serial number of the product and provide all other pertinent information that you can, such as product size, part material, age of the product, and general service conditions. If you have modified the product since it was originally purchased, include that information with your request.

### **⚠ WARNING**

**Use only genuine Fisher replacement parts. Components that are not supplied by Emerson should not, under any circumstances, be used in any Fisher product, because they may void your warranty, might adversely affect the performance of the product, and could cause personal injury and property damage.**

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## Installation

### **⚠ WARNING**

- Personal injury or equipment damage caused by sudden release of pressure or bursting of parts may result if the valve assembly is installed where service conditions could exceed the limits given in the applicable product literature, the limits on the appropriate nameplates, or the mating pipe flange rating. Use pressure-relieving devices as required by government or relevant industry codes and good engineering practices. If you cannot determine the ratings and limits for this product, contact your [Emerson sales office](#) before proceeding.
- To avoid personal injury, always wear protective gloves, clothing, and eyewear when performing any installation operations.
- To avoid personal injury or property damage, use proper lifting and rigging practices while lifting, installing or removing the valve assembly. Be sure to use lifting and rigging equipment properly sized and selected for the weight and configuration of the valve assembly or component being lifted.
- Personal injury could result from packing leakage. Valve packing was tightened before shipment; however, the packing might require some readjustment to meet specific service conditions.
- Many rotary shaft valves are not necessarily grounded to the pipeline when installed in a flammable, hazardous, oxygen service, or explosive atmospheres. An explosion is possible, due to the discharge of static electricity from the valve components. To avoid personal injury or property damage, make sure that the valve is grounded to the pipeline before placing the control valve assembly into service. Use and maintain alternate shaft-to-body bonding, such as a shaft-to-body bonding strap assembly.
- Rotary shaft valves are designed and intended for installation between flanges. Personal injury or property damage may result from improper installation. To avoid personal injury or property damage caused by the sudden release of pressure or bursting of parts, do not use or install rotary shaft valves (including single lug constructions) for dead-end service.
- Check with your process or safety engineer for any additional measures that must be taken to protect against process media.
- If installing into an existing application, also refer to the WARNING in the Maintenance section.
- When ordered, the valve configuration and construction materials were selected to meet particular pressure, temperature, pressure drop, and controlled fluid conditions. Responsibility for the safety of process media and compatibility of valve materials with process media rests solely with the purchaser and end-user. To avoid possible personal injury and because some valve/trim material combinations are limited in their pressure drop and temperature ranges, do not apply any other conditions to the valve without first contacting your Emerson sales office.

### **CAUTION**

- Ensure that the valve and adjacent pipelines are free of foreign material that could damage the valve seating surfaces.

## Maintenance

### **⚠ WARNING**

Avoid personal injury or property damage from sudden release of process pressure or bursting of parts. Before performing any maintenance operations:

- Always wear protective gloves, clothing, and eyewear.
- Disconnect any operating lines providing air pressure, electric power, or a control signal to the actuator. Be sure the actuator cannot suddenly open or close the valve.
- Use bypass valves or completely shut off the process to isolate the valve from process pressure.
- Do not remove the actuator while the valve is pressurized.
- Relieve process pressure from both sides of the valve. Drain the process media from both sides of the valve.
- Vent the pneumatic actuator loading pressure and relieve any actuator spring pre-compression.
- Use lock-out procedures to be sure that the above measures stay in effect while you work on the equipment.
- The valve packing box might contain process fluids that are pressurized, *even when the valve has been removed from the pipeline*. Process fluids might spray out under pressure when removing the packing hardware or packing rings, or when loosening the packing box pipe plug. Cautiously remove parts so that fluid escapes slowly and safely.
- Many valve parts that are moving can injure you by pinching, cutting, or shearing. To help prevent such injury, stay clear of any moving part.
- Never apply pressure to a partially assembled valve.
- To avoid personal injury or property damage caused by uncontrolled movement of a valve bonnet, loosen the bonnet by following these instructions: Do not remove a stuck bonnet by pulling on it with equipment that can stretch or store energy in any other manner. The sudden release of stored energy can cause uncontrolled movement of the bonnet. Loosen bonnet nuts approximately 3 mm (0.125 inch). Then loosen the body-to-bonnet gasketed joint by either rocking the bonnet or prying between the bonnet and body. Work the prying tool around the bonnet until the bonnet loosens. If no fluid leaks from the joint, proceed with bonnet removal.
- As you remove parts, such as valve shafts, other parts, such as disks can fall from the valve body or suddenly move to another position in the valve. To avoid injury from falling or moving parts, be sure to support parts and be sure they are in a stable position as you disassemble the valve.
- Personal injury could result from packing leakage. Do not scratch the drive shaft or packing box wall while removing packing parts.
- Check with your process or safety engineer for any additional measures that must be taken to protect against process media.

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# Service Instructions for Fisher™ Digital Isolation™ Trunnion Mounted Ball Valve (TMBV) Solution

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Figure 1. Fisher Digital Isolation TMBV Solution



X1507

## Introduction

Fisher Digital Isolation Solutions leverage Emerson’s automation expertise with time-tested products to provide a complete and dependable isolation valve solution for your most critical isolation, SIS, and ESD valve applications.

## Scope of Manual

This instruction manual includes the web links for product specifications, installation and maintenance instructions for each component.

Do not install, operate or maintain this product without being fully trained and qualified in valve, actuator and accessory installation, operation and maintenance. To avoid personal injury or property damage it is important to carefully read, understand, and follow all of the contents of this manual, including all safety cautions and warnings. If you have any questions about these instructions, contact your [Emerson sales office](#) before proceeding.

## Component Specifications

For product specifications click on the following web link ([TMBV Specs](#)) where you will find the technical specifications documents for the components used on Fisher Digital Isolation Solutions products.

## Component Instruction and Maintenance manuals

For Component Instruction and Maintenance manuals click on the following links ([ASCO](#), [TopWorx](#), [DVC6200 SIS](#), [BETTIS](#)) where you will find the documents for the components used on Fisher Digital Isolation Solutions.

If a paper copy of component specifications or Instruction/Maintenance manuals is required please consult your Emerson Sales office.

### **⚠ WARNING**

**Avoid personal injury and property damage from sudden release of process pressure or bursting of parts. Before performing any maintenance operations:**

- Do not remove the actuator from the valve while the valve is still pressurized.
  - Always wear protective gloves, clothing, and eyewear when performing any maintenance operations.
  - Disconnect any operating lines providing air pressure, electric power, or a control signal to the actuator. Be sure the actuator cannot suddenly open or close the valve.
  - Use bypass valves or completely shut off the process to isolate the valve from process pressure. Relieve process pressure on both sides of the valve. Drain the process media from both sides of the valve.
  - Depending on the actuator construction, it will be necessary to manage the pneumatic actuator spring pre-compression. It is essential to refer to the relevant actuator instructions in this manual to provide safe removal of the actuator from the valve.
  - Use lock-out procedures to be sure the above measures stay in effect while you work on the equipment.
  - The valve packing box may contain process fluids that are pressurized, *even when the valve has been removed from the pipeline*. Process fluids may spray out when removing the packing hardware or packing rings, or when loosening the packing box pipe plug.
  - Check with your process or safety engineer for any additional measures that must be taken to protect against process media.
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## Actuator Mounting Bracket-to-Valve Bolt Torque

### SA 193-B7/zinc plated

Fastener Size	N • m	Ft • lb
5/16"	30	22
3/8"	53	39
7/16"	84	62
1/2"	130	96
9/16"	176	130
5/8"	230	170
3/4"	380	280
1"	786	580
1-1/4"	1424	1050

### SA193 Grade B8 CL2

Fastener Size	N • m	Ft • lb
5/16"	19	14
3/8"	35	26
7/16"	56	41
1/2"	85	63
9/16"	123	91
5/8"	163	120
3/4"	258	190
1"	536	395
1-1/4"	969	715

### SA 193-B7/zinc plated

Fastener Size	N • m	Ft • lb
M10	69	51
M12	116	86
M16	241	178
M20	413	305
M24	656	484
M30	1164	859

### SA193 Grade B8 CL2

Fastener Size	N • m	Ft • lb
M10	48	35
M12	80	59
M16	165	122
M20	284	209
M24	451	333
M30	800	590

Lubrication should always be used with the SA 193-B8 Class 2 bolt material to prevent galling.

## Educational Services

For information on available courses for Fisher Digital Isolation products, as well as a variety of other products, contact: Emerson Automation Solutions

Educational Services - Registration  
Phone: 1-641-754-3771 or 1-800-338-8158  
E-mail: [education@emerson.com](mailto:education@emerson.com)  
[emerson.com/fishervalvetraining](http://emerson.com/fishervalvetraining)

## Part Ordering

Each Fisher Digital Isolation package has a unique Fisher serial number. When corresponding with your [Emerson sales office](#) about this equipment, always mention the valve serial number.

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