



Fisher Controls International LLC
301 South First Ave.
P.O. Box 190
Marshalltown, Iowa 50158-0190
USA
T (641) 754-3011
F (641) 754-2830

August 23, 2019

To Whom It May Concern:

Attached is a Fisher Information Notice, (FIN) 2019-01

Emerson Process Management – Fisher Valves complies with the reporting requirements of 10 CFR Part 21 Section 21.21 (b) and 10 CFR Part 50.55 (e) by informing the U.S. Nuclear Regulatory Commission Licensees or Purchaser of deviations or failures to comply.

Please review the attached FIN notice for applicability to your facility.

George Baitinger
Director, Quality Americas

Attachments

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NRR





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Fisher Information Notice: FIN 2019-01

23 August 2019

Subject: Mechanical Setting of Disk/Stem Taper Pins

Equipment Affected by this Fisher Information Notice:

All Fisher Type 7600, 7700, 7800, 9100, 9200, and 9500 Series Butterfly Valves that use Taper Pins to secure the Valve Shaft to the Valve Disk. This FIN does NOT apply to constructions that use straight pins or grooved straight pins.

Purpose:

The purpose of this FIN is to alert affected customers that, as of 25 June 2019, Fisher became aware of a situation which may affect the performance of the aforementioned equipment, including its safety-related function. Fisher is informing the affected customer of this circumstance in accordance with 10 CFR 21.21.

Applicability:

This notice applies only to the subject equipment supplied by Fisher Controls International LLC that meet the following criteria:

- All Fisher valve shaft classes, all ANSI classes, and all sizes of Fisher Types 7600, 7700, 7800, 9100, 9200, and 9500 Series butterfly valves, regardless of ship date, and construction that use taper pins for the disk/shaft connection. Note: this information does not apply to special valve constructions that use straight pins (or grooved pins) in place of the taper pins.

Discussion of Potential Issue:

The subject butterfly valves all use a pinned disk/shaft arrangement for the transmission of the actuator motive force from the valve shaft to the valve disk. Most constructions use several taper pins to connect the valve disk to the valve shaft. If the pins are not correctly installed, it is possible that the taper pins may be able to work loose prior to or while in service. If the pins come out, the control of the fluid process is lost because the valve disc can no longer be correctly positioned by the actuator.

Discussion:

Fisher has previously provided instructions on the staking and setting of Taper Pins in Disk/Shaft assemblies. However, Fisher was recently notified by FirstEnergy Davis-Besse of one instance where a taper pin became loose in an NPS 20 Type 9100 (serial number F000892011) after valve shipment and prior to valve installation at the customer site. Fisher has since corrected the taper pin connection in this assembly. The subject valve assembly shipped from Fisher in 2017, but the customer did not discover the issue until June of 2019.

A review of the assembly showed that the pins had been ground flush with the surface of the disk and then staked in three places. However, in order to properly secure the pins in place, the



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surface of the pins must be below the surface of the disk prior to final staking and the disk material must then be deformed to roll over the edge of the pins. Previous guidance did not adequately describe the need to deform the material over the pin heads. As a result, Fisher has reviewed and revised the instruction procedure for clarity. The revised instruction on Mechanical Setting of Disk/Stem Taper Pins can be found below. Additionally, the below image shows one example of proper Taper Pin staking.

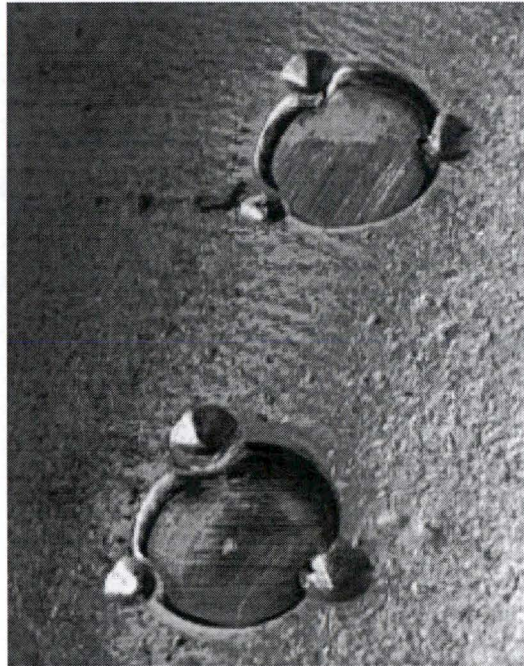


Figure 1: Proper Staking - Pin surface is slightly below disk surface and disk material is staked over the top of the pins

Correctly seated and staked taper pins are very difficult to remove, often requiring the destruction of the pin during the removal process. Failure to achieve proper seating and staking of the pins is normally evident at the time of pin installation.

Extent of Condition:

An investigation was opened to examine root cause and potentially impacted constructions. Fisher has determined that the affected impacted constructions are limited to ALL Fisher Type 7600, 7700, 7800, 9100, 9200, and 9500 Series Butterfly Valves that use Taper Pins. A search of Fisher's historical data and service request database has shown only one similar issue. This issue was addressed in Fisher Information Notice FIN 93-03. Additionally, Fisher believes the root cause of this issue to be overall clarity of the staking procedure.

Action Required:

Fisher recommends the owners for these valve assemblies perform normal maintenance at regular intervals in order to inspect the valve assembly and replace worn, aged, and damaged parts. At the same time, the customer should verify that the taper pins are correctly installed and



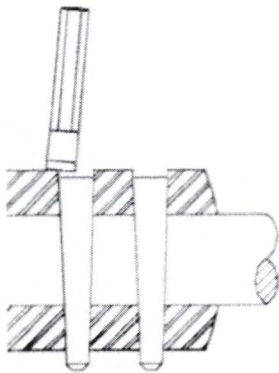
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reset them if necessary. Additionally, the customer should review their internal taper pin staking procedures to make sure they are in agreement with the below method or are appropriate for the specific application.

Fisher has opened Corrective Action CAR 1885 to revise the Installation Instructions and provide updated training to assembly personnel on the correct assembly methods to be used when setting taper pins in disk/shaft assemblies. This CAR is expected to be closed by August 30, 2019.

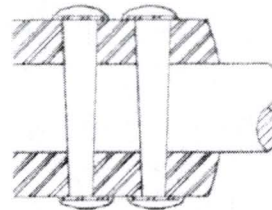
Installation Instructions:

1. Install the disk and shaft into the valve body.
2. Insert the pins into the larger end of the pin holes. Without driving the pins in with a hammer, mark the match-line between the pins and the disk on the surface of the pins.
3. Remove the pins and grind the top of the pins down to the marked match-line
4. Reinsert the pins into the larger end of the pin holes. Drive with a hammer to seat the pins. The surface of the pin should be approximately 1/8" below the surface of the disk. Additionally, the smaller end of the pins should extend past the surface of the disk on the smaller end of the pin holes.
5. To stake the pins, deform the metal at the outer perimeter of the pinholes in three locations to secure the pins inside the disk. Ensure that disk material has been deposited over the pins in order to prevent them from slipping out. Additionally, ensure that the disk material is deformed deep enough to contact the top surface of the pins.
6. For elastomer-lined valves, consult the appropriate product literature for instructions on coating the taper pin with sealant. The pins should be coated with a thin, uniform film of sealant prior to installation.



Stake the pins by deforming disk material in three locations from the circumference of each pinhole over the pins

OR



Grind large and small ends of pins flush with surface of disc. Cover pins with seals that are the same material as the disc. Weld seals to disc.



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10 CFR 21 Implications:

Fisher requests that the recipient of this FIN review it and take appropriate action in accordance with 10 CFR 21. If there are any technical questions, please contact:

Jacob Clos
Quality Manager
Emerson Automation Solutions
Fisher Controls International LLC
301 South First Avenue
Marshalltown, IA 50158
Phone: (641) 754-2108
Jacob.Clos@Emerson.com

A handwritten signature in cursive script that reads "Benjamin Ahrens". The signature is written in black ink and is positioned above a horizontal line.

Benjamin Ahrens
Manager, North America Nuclear Business Unit
Fisher Controls