Emerson Process Management
Regulator Technologies, Inc.
3200 Emerson Way
McKinney, TX 75070

February 25, 2022

IMPORTANT PRODUCT SAFETY NOTICE

PRODUCT CONFIGURATIONS COVERED BY BULLETIN

Brand: Fisher
Model: Type 627 regulators
Types: All type codes

PRODUCTION DATES

November 1, 2019 through January 21, 2022

BACKGROUND

It has come to the attention of Emerson Process Management Regulator Technologies, Inc. ("Emerson Process Management") that a small quantity of Type 627 body bolts (Figure 1) have fractured due to hydrogen embrittlement caused during the manufacturing of the bolt. The suspect bolts have been isolated to a single batch used from November 1, 2019 through January 21, 2022 ("affected range").

Type 627 Body Bolts (Key 3, Figure 1):

Part Number: 1A560724052
Bolt Description: 3/8-16 X 1.25-inch long socket head cap screw (SHCS)
Material: ASTM A574 steel with a gray finish (Figure 2)
Quantity per unit: 2

If a bolt fractures, there is the possibility of process gas leakage, **which poses the potential risk of system shut down, fire or explosion that could result in personal injury and property damage.** The amount of leakage will vary depending on the quantity of bolts that fracture and system pressures.

To remove the risk of this issue, the Type 627 with ductile iron and steel casings are no longer manufactured with ASTM A574 SHCS. Products manufactured after January 21, 2022 use SAE J429 Grade 5 hex head bolts (Figure 3) and ASTM F837 stainless steel SHCS (Figure 4). These new bolts are normally not susceptible to hydrogen embrittlement because their material hardness is below the minimum threshold.

ACTION REQUIRED

Emerson Process Management requires that the ASTM A574 SHCS (1A560724052) in Type 627 regulators manufactured from November 1, 2019 through January 21, 2022 be replaced immediately.

Identify Type 627 Regulators that require bolt replacement and determine which replacement bolt kit to use. Regulators with a "2022" tag (Figure 5) have already been serviced per this notice.

1. Locate the manufacturing date on the nameplate (Figure 6)
    a. if in the affected range proceed to step 2
2. Identify the casing material
    a. if ductile iron (Figure 7) or steel (Figure 8) proceed to step 3
3. Identify the body material and kit
    a. if ductile iron (Figure 9) use bolt kit R627BOLTX12 which includes Grade 5 hex head bolts
    b. if steel (Figure 10) use bolt kit R627BOLTX22 which includes stainless steel SHCS
    c. Bolt kits include nitrile O-rings. If a different O-ring material is required, please contact your Emerson Impact Partner.

To order replacement bolts kits or obtain further information please contact your Emerson Impact Partner.

Replace Type 627 body bolts

See *Type 627 Body Bolts Changeout Procedure* beginning on page 5 of this bulletin

FIGURE 1 – Location of body bolt

FIGURE 2 - ASTM A574 Steel SHCS

FIGURE 3 - SAE J429 Steel Grade 5 Hex Head Bolts

FIGURE 4 - ASTM F837 Stainless Steel SHCS

FIGURE 5 – Location of “2022” tag

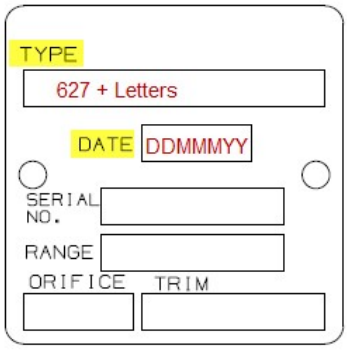

FIGURE 6 – Nameplate

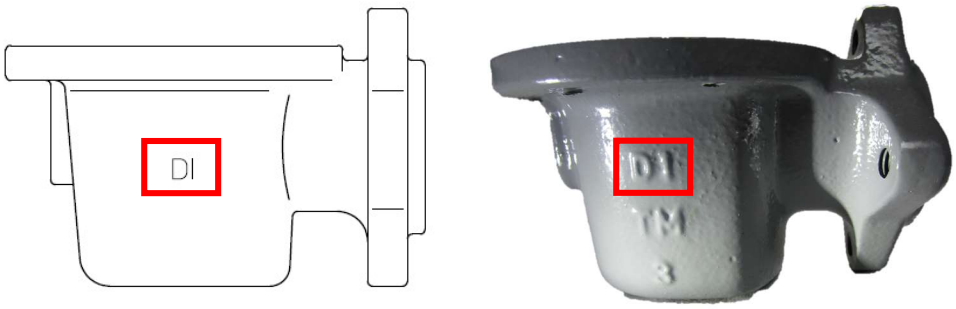

FIGURE 7 – Ductile iron (“DI”) casing marking

FIGURE 8 – Steel (“WCC” or “WCB” or “LCC”) casing marking

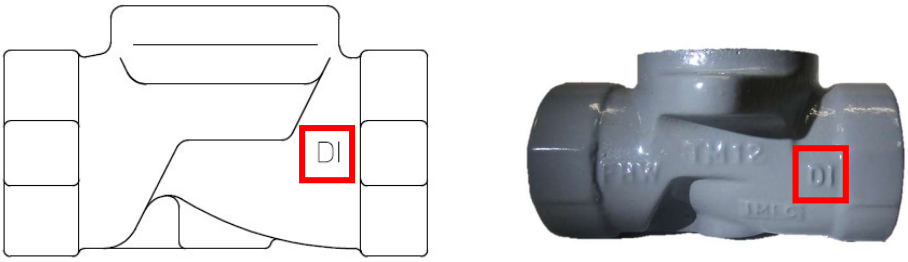

FIGURE 9 – Ductile iron (“DI”) body marking

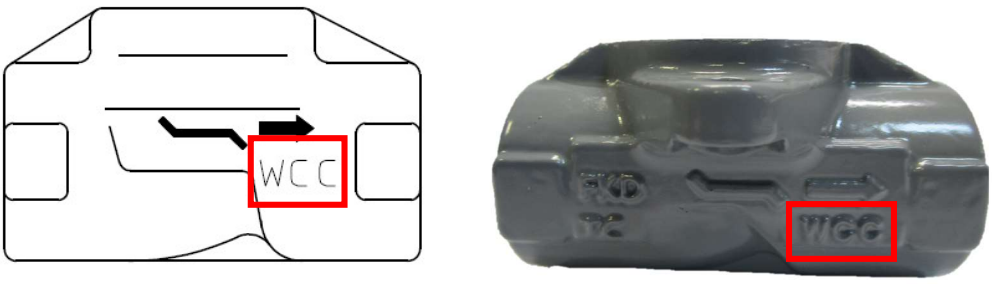

FIGURE 10 – Steel (“WCB” or “WCC” or “LCC”) body marking

TYPE 627 BODY BOLTS CHANGEOUT PROCEDURE

⚠ WARNING

Failure to follow these instructions or to properly install and maintain this equipment could result in an explosion and/or fire causing property damage and personal injury or death. Fisher™ regulators must be installed, operated and maintained in accordance with federal, state and local codes, rules and regulations, and Emerson Process Management Regulator Technologies, Inc. instructions. If the regulator vents gas or a leak develops in the system, service to the unit may be required. Failure to correct trouble could result in a hazardous condition. Call a gas service person to service the unit. Only a qualified person must install or service the regulator.

For complete safety instructions, refer to Type 627 instruction manual D101328X012, March 2020.

For Installed Regulators

1. Shut down system and remove pressure:

   ⚠ WARNING

   Isolate the regulator from all pressure to avoid personal injury and equipment damage due to explosion or sudden release of process pressure. Cautiously release pressure from the regulator before attempting disassembly.

   a. Close the nearest upstream shut-off valve.

   b. Close the nearest downstream shut-off valve.

   c. Open the vent valve between the regulator and the downstream shut-off valve.

      i. A Type 627, 627H, 627R or 627LR regulator will open to release pressure between the upstream shut-off valve and the regulator.

      ii. A Type 627M, 627HM or 627MR regulator requires venting the control line and downstream pressure.

      iii. A Type 627OSX with underpressure protection may trip and trap gas upstream of the regulator. In this case, open an upstream vent to allow gas to escape.

2. Remove the ASTM A574 SHCS body bolts (Figure 1, Key 3).

   a. It is not required to remove the casing (Figure 11, Key 5) from the body (Figure 11, Key 1). If the casing is removed from the body, inspect the O-ring (Figure 11, Key 4 or 44) and replace if necessary.

   b. If a bolt breaks, contact the local Emerson Impact Partner and return the broken bolt. If a bolt breaks and cannot be removed from the casing, return the unit (less body) along with broken bolts pieces.

3. Reassemble with the applicable bolt based on body material:
    a. Ductile iron - Grade 5 hex head bolts, P/N 1A341824052, from Kit R627BOLTX12
    b. Steel - ASTM F837 SHCS, P/N ERAA49769A0 from Kit R627BOLTX22
4. Tighten the bolts evenly, alternately torquing until each reaches 25 ft·lbs.
5. Wire the provided identification tag to a body bolt in the exposed area between the body and casing, Figure 1.
6. Startup system and apply pressure:

⚠ WARNING

To avoid personal injury or property damage due to explosion or damage to regulator or downstream components during startup, release downstream pressure to prevent an overpressure condition on the diaphragm of the regulator. In order to avoid an overpressure condition and possible equipment damage, pressure gauges should always be used to monitor pressures during startup.

    a. Close any vents that were opened during depressurization.
    b. Slowly open the upstream shut-off valve.
    c. Slowly open the downstream shut-off valve.
    d. Check all connections for leaks.

For Regulators Not Installed

1. Remove the ASTM A574 SHCS body bolts (Figure 1, Key 3).
    a. It is not required to remove the casing (Figure 11, Key 5) from the body (Figure 11, Key 1). If the casing is removed from the body, inspect the O-ring (Figure 11, Key 4 or 44) and replace if necessary.
    b. If a bolt breaks, contact the local Emerson Impact Partner and return the broken bolt. If a bolt breaks and cannot be removed from the casing, return the unit (less body) along with broken bolts pieces.
2. Reassemble with the applicable bolt based on body material:
    a. Ductile iron - Grade 5 hex head bolts, P/N 1A341824052, from Kit R627BOLTX12
    b. Steel - ASTM F837 SHCS, P/N ERAA49769A0, from Kit R627BOLTX22
3. Tighten the bolts evenly, alternately torquing until each reaches 25 ft·lbs.
4. Wire the provided identification tag to a body bolt in the exposed area between the body and casing, Figure 1.
5. Testing is not required after bolt replacement.

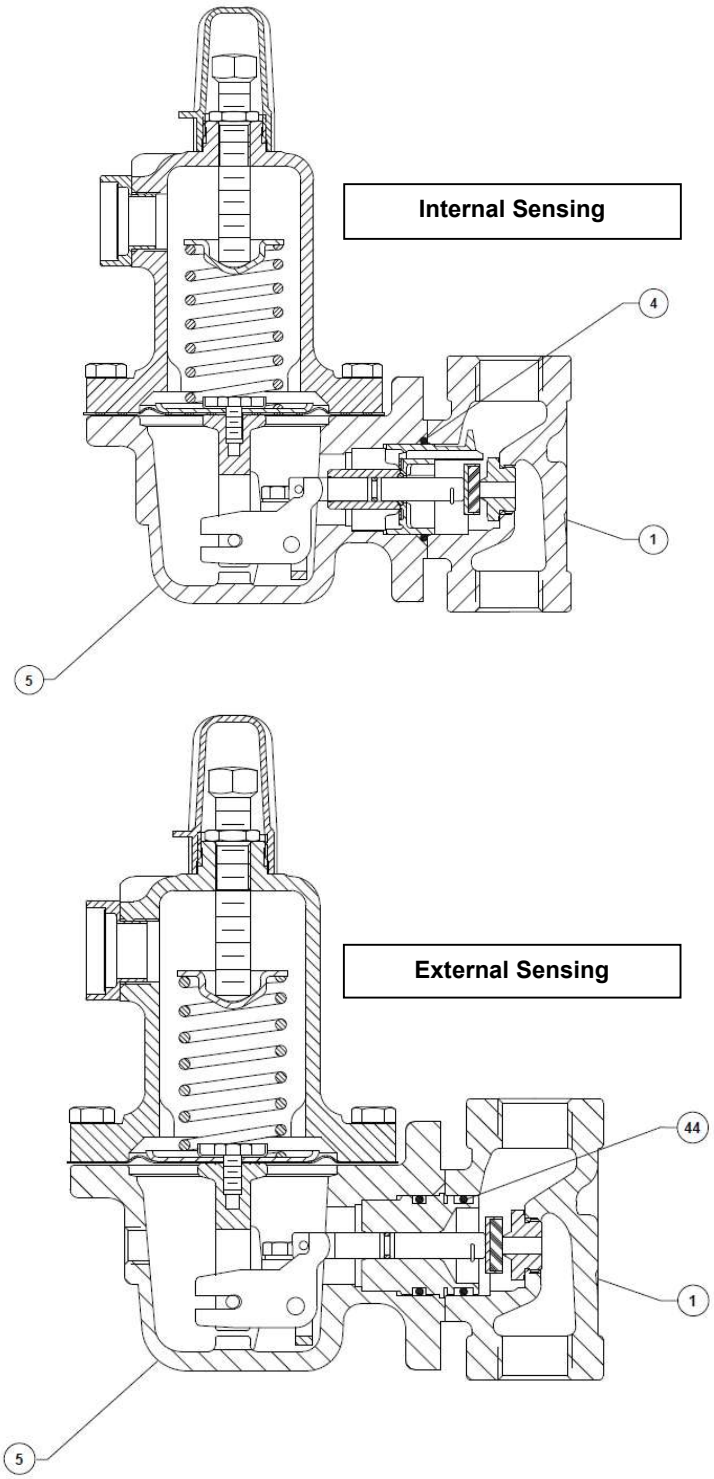

FIGURE 11 – Typical Type 627 Assemblies