

Fisher™ EHU Control Valves for Urea Plants

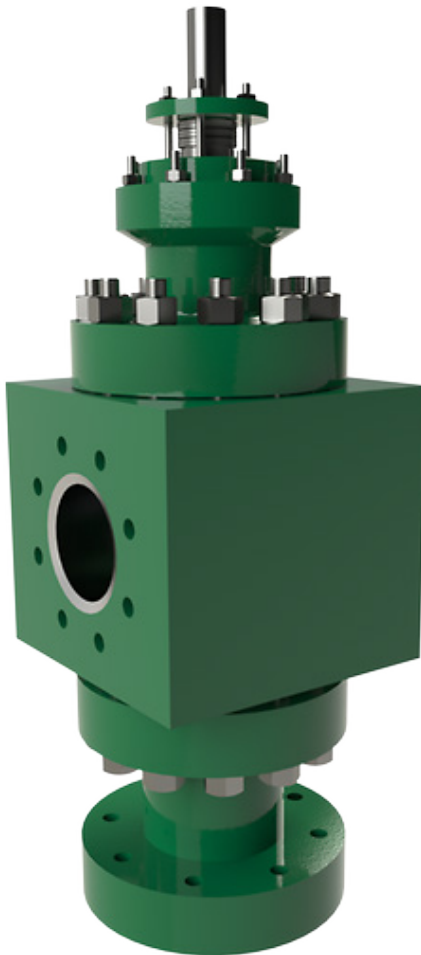


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Section 1: Introduction

1.1 Scope of the Manual

This instruction manual includes installation, maintenance and parts information for Fisher EHU Urea valves. Refer to separate manuals for instructions covering the actuator, positioner and accessories.

WARNING



Do not install, operate or maintain EHU Series valves 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 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.

Figure 1. EHU Valve with Optional Bonnet for Top Entry

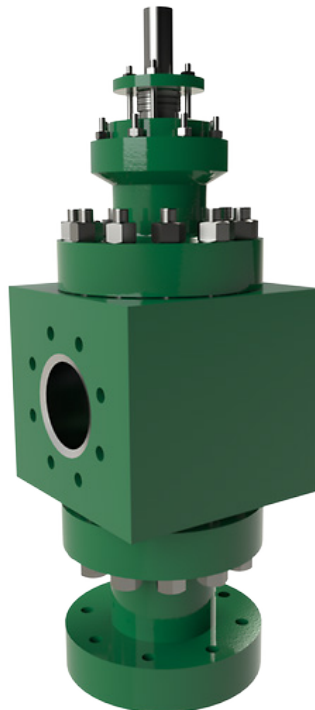


Table 1. Specifications

End Connection Styles and Ratings ^(1,2)	Shutoff Classifications
■ Lens Ring Flanges, ■ Flanged Ends: Ring-Type Joint (RTJ) or Raised-Face (RF) flanges according to ASME B16.5 and ■ EN flanges according to EN1092-1 As specified for the application. Valves can be rated in accordance with various ASME B16 or EN 1092 rating classifications.	Shutoff Classifications per ANSI/FCI 70-2 and IEC 60534-4 Metal Seat ■ CL IV (Standard) ■ CL V (Optional)
Flow Characteristic	Flow Direction
Standard Plug: ■ Equal percentage, ■ Linear or ■ Quick Open	Flow Up or Flow Down depending on application and installation
Approximate Weights (Valve Body and Bonnet Assemblies)	Additional Specifications
See order information for weight.	For specifications such as materials, valve plug travels and port, yoke boss and stem diameters, see the Parts List section.
1. The pressure or temperature limits in this manual and any applicable standard limitations should not be exceeded. 2. Consult your Emerson sales office for additional options.	

1.2 Description

The Fisher EHU Series valve is specially designed for severe service applications in urea plants. These plants containing urea, ammonium carbamate and ammonia applications demand highly engineered valves in specialty alloys to provide long life in service. The EHU is engineered with specific features to provide long life and quick serviceability in the full range of applications found in urea synthesis processes. The EHU valve body, optional bonnet and trim are available in several austenitic, super-austenitic and super-duplex stainless steels that are common in urea plants and are specified by some process licensors. Combined with a special urea service version of the industry-leading Fisher ENVIRO-SEAL™ live-loaded, low emissions packing, the EHU valve provides a design with maximum corrosion-resistance, friendly maintenance and protection against packing leaks.

1.3 Specifications

Specifications for the EHU valves are shown in Tables 1 and 2.

1.4 Education Services

Emerson Education Services
 Phone: 800-338-8158
 E-mail: education@emerson.com
emerson.com/en/final-control/services/valve-training

Table 2. Torque for Body-to-Bonnet Bolting Using Anti-Seize Lubricant⁽¹⁾

STUD SIZE	TORQUE	
	N•m	lbf•ft
	B7, B8M CL2, S32760, and 660 Studs	B7, B8M CL2, S32760, and 660 Studs
7/8	370	275
1-1/8	710	525
1-1/4	940	695
1-3/8	1270	935
1-1/2	1650	1220
1-5/8	2130	1570
1-3/4	2670	1970
1-7/8	3310	2440
2	4030	2970
2-1/4	5780	4260
STUD SIZE	B8M CL 1 Studs	B8M CL 1 Studs
7/8	240	175
1-1/8	510	375
1-1/4	710	520
1-3/8	950	700
1-1/2	1250	920
1-5/8	1600	1180
1-3/4	2010	1480
1-7/8	2490	1830
2	3030	2230
2-1/4	4340	3200
1. For other lubricants or bolting materials, contact your Emerson sales office for torques.		

Section 2: Installation

WARNING

Always wear protective gloves, clothing and eyewear when performing any installation operations to avoid personal injury.

Personal injury or equipment damage caused by sudden release of pressure may result if the valve assembly is installed where service conditions could exceed the limits given in Table 1 or on the appropriate nameplates. To avoid such injury or damage, provide a relief valve for over-pressure protection as required by government or accepted industry codes and good engineering practices.

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** at the beginning of the Maintenance section in this instruction manual.

WARNING

Some bonnet flanges have a tapped hole that was used to handle the bonnet during manufacture. Do not use this tapped hole to lift the valve assembly or personal injury may result.

WARNING

When ordered, the valve configuration and construction materials were selected to meet particular pressure, temperature, pressure drop and controlled fluid conditions indicated when the valve was ordered. Responsibility for the safety of process media and compatibility of valve materials with process media rests solely with the purchaser and end-user. Because some body/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](#).

NOTICE

To avoid product damage, inspect the valve before installation for any damage or any foreign material that may have collected in the valve body. Also remove any pipe scale, welding slag or other foreign material from the pipeline.

1. Before installing the valve, inspect it to ensure that the valve body cavity is free of foreign material.
2. Clean out all pipelines to remove scale, welding slag and other foreign materials before installing the valve.
3. Flow through the valve must be in the direction indicated by the flow arrow, which is stamped on or attached to the valve body.

4. Use accepted piping and welding practices when installing the valve in the pipeline. For flanged valve bodies, use a suitable gasket between the body and pipeline flanges.
5. Install a three-valve bypass around the valve if continuous operation is required during maintenance.
6. If the actuator and valve body are shipped separately, refer to the actuator mounting procedure in the appropriate actuator instruction manual.
7. If the valve body was shipped without packing installed in the packing box, install the packing before putting the valve body into service. Refer to instructions given in the Packing Maintenance procedure.

WARNING

Personal injury could result from packing leakage. Valve packing was tightened before shipment; however, the packing might require some re-adjustment to meet specific service conditions.

Valves with ENVIRO-SEAL live-loaded packing will not require this initial re-adjustment. See the instruction manuals titled ENVIRO-SEAL Packing System for Sliding-Stem Valves (D101642X012) for packing instructions.

2.1 Lifting Valve Assembly

WARNING

Failure to follow these lifting guidelines and accepted lifting and rigging practices could result in property damage and personal injury or death.

All lifting and rigging must be completed in accordance with federal/national/provincial, state and local regulations and applicable lifting and rigging equipment standards. Only personnel trained in proper lifting and rigging practices shall perform valve/actuator assembly lifting, rigging and installation. Because each lift will be unique, the method of lifting the valve assembly, the correct location for attaching and lifting the valve assembly and what the valve assembly will do when lifted shall be considered for each lift.

Lifting and rigging equipment used to lift, install or remove a valve assembly or component must be properly selected and sized for the weight and configuration of the valve assembly or component being lifted. The weight of the complete valve assembly, including attached accessories, must be taken in consideration for this purpose. The lifting and rigging equipment must be properly maintained and inspected for damage before each use.

If the valve is supplied with an actuator or handwheel, do not use the actuator or handwheel to lift the complete valve assembly. Lifting lugs attached to the actuator must not be used to lift the complete valve assembly unless clearly marked as being rated to support the complete valve assembly weight.

Lifting lugs or other lifting equipment attached to the valve or actuator must never be used to lift or support the weight of attached piping.

NOTICE

Care must be taken when lifting the valve/actuator assembly to ensure all accessories and tubing are not damaged in the process. Accessories and tubing may need to be removed prior to lifting to prevent damage and properly reinstalled before use. Protect valve flange faces, butt weld ends and other connection surfaces from damage during lifting.

Remove the valve/actuator assembly from its shipping container with appropriate lifting and rigging equipment for the valve/actuator assembly weight and configuration to be lifted. The valve and bonnet assembly weight is provided in the order information. Consult the appropriate actuator and valve accessory instruction manuals for the weight of each additional component, then determine the total weight of the complete valve assembly. The location of the valve/actuator assemblies center of gravity must be considered during lifting, installation and removal. Additional slings or other lifting equipment, such as a load leveler, may be necessary to prevent toppling of the equipment during lifting or to rotate the valve assembly into a different orientation for installation.

If the valve body includes attached lifting lugs, use all the lugs provided to lift the complete valve assembly. If lifting lugs are not provided on the valve body, lift the valve assembly with lifting straps secured around the valve body flanges, valve body neck and/or bonnet neck area.

Section 3: Maintenance

Valve parts are subject to normal wear and must be inspected and replaced as necessary. Inspection and maintenance frequency depends on the severity of service conditions. This section includes instructions for packing lubrication, packing maintenance and trim maintenance. All maintenance operations may be performed with the valve in the line.

** WARNING**

Avoid personal injury or damage to property from sudden release of pressure or uncontrolled process fluid. Before starting disassembly:

- **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 to avoid personal injury.**
- **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.**
- **Vent the power actuator loading pressure and relieve any actuator spring precompression.**
- **Use lock-out procedures to be sure that 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 under pressure 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.**

NOTE

The EHU Series valve may use spiral-wound gaskets which are crushed to provide their seal. A spiral-wound gasket should never be reused. Whenever a gasket seal is disturbed by removing or shifting gasketed parts, a new gasket must be installed upon reassembly. This is necessary to ensure a good gasket seal, since the used gasket will not seal properly.

NOTICE

The spiral-wound gaskets are of special design. Failure to use Fisher replacement parts may result in valve damage.

3.1 Packing Lubrication

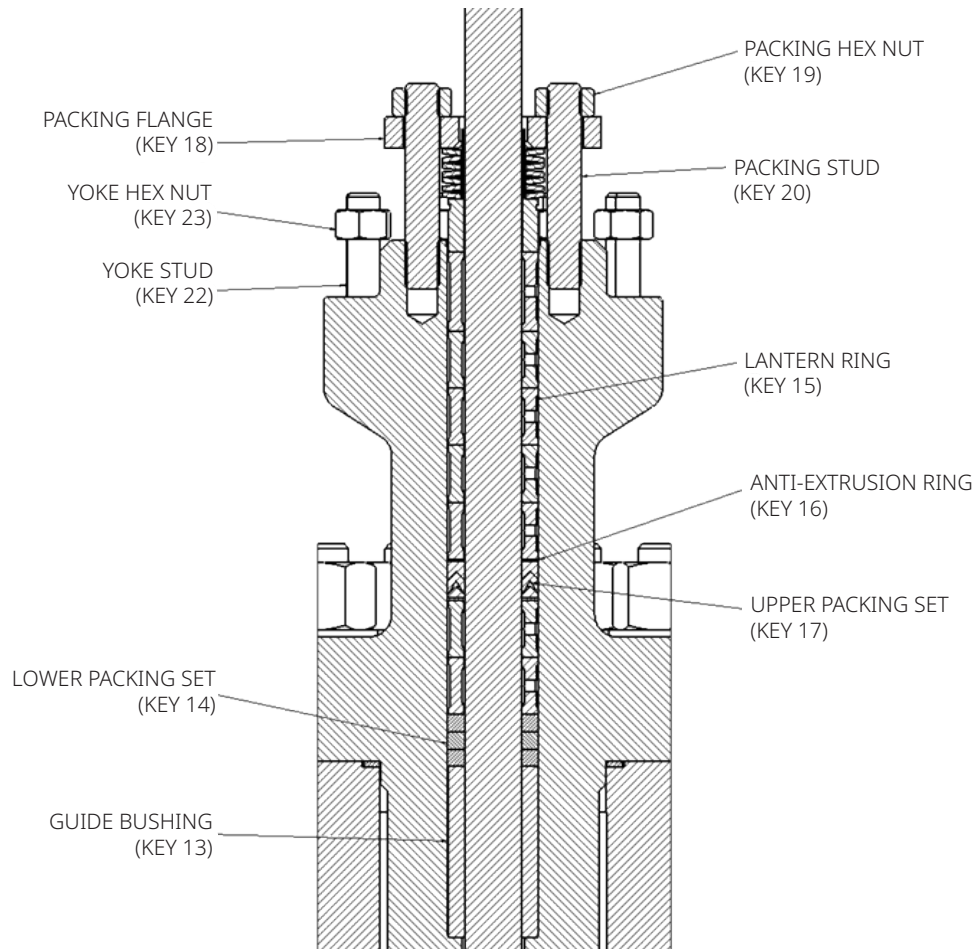
NOTE

To avoid lubricants breaking down at elevated temperatures, do not lubricate packing used in processes with temperatures over 260°C / 500°F.

3.2 Packing Maintenance

If there is undesirable packing leakage in the Urea Grade ENVIROSEAL packing as shown in Figure 2, ensure that the proper tightening technique has been followed per the ENVIROSEAL instruction manual ([D101642X012](#)).

If the packing is relatively new and tight on the valve plug stem and if tightening the packing flange nuts does not stop the leakage, it is possible that the stem is worn or nicked so that a seal cannot be made. The surface finish of a new stem is critical for making a good packing seal. If the leakage comes from the outside diameter of the packing, it is possible that the leakage is caused by nicks or scratches around the packing box wall. While replacing the packing according to the Replacing Packing procedure, inspect the valve plug stem and packing box wall for nicks or scratches.

Figure 2. Live-Loaded Packing

Replacing Packing

For bottom entry constructions, see the appropriate bottom entry sections in this manual.
For top entry constructions, see the appropriate top entry sections in this manual.

WARNING

Refer to the WARNING at the beginning of the Maintenance section in this instruction manual.

Bottom Entry Constructions

Key numbers referred to in this procedure are shown in Figure 2 unless otherwise indicated.

1. Isolate the control valve from the line pressure, release pressure from both sides of the valve body and drain the process media from both sides of the valve. If using a power actuator, also shut-off all pressure lines to the power actuator, release all pressure from the actuator. Use lock-out procedures to be sure that the above measures stay in effect while you work on the equipment.
2. Remove the cap screws in the stem connector and separate the two halves of the stem connector. Then exhaust all actuator pressure, if any was applied and disconnect the actuator supply and any leakoff piping.
3. Remove valve assembly from piping.
4. Remove yoke hex nuts (key 23) and remove the actuator from the valve body (key 1).
5. Hex nuts (key 4) attach the spool to the valve body. Loosen these nuts or cap screws approximately 3 mm / 1/8 in. Then loosen the body-to-spool gasketed joint by either rocking the spool or prying between the bonnet and valve body. Work the prying tool around the bonnet until the bonnet loosens. If no fluid leaks from the joint, proceed to the next step.
6. Unscrew the hex nuts (key 4) and carefully lift the spool off the studs. Set the spool on a cardboard or wooden surface to prevent damage to the spool gasket surface.
7. Remove the seat ring (key 3) using the provided lift holes. Inspect the seat ring and body sealing surfaces for damage.
8. Loosen the packing flange nuts (key 19) so that the packing (keys 14 and 17, Figure 2) is not tight on the valve plug stem (key 7). Remove any travel indicator disk and stem locknuts from the valve plug stem threads.
9. Lift the valve stem/plug (key 7) out of the valve body. If the valve plug is to be reused, tape or otherwise protect the valve plug/stem and the valve plug seating surface to prevent scratches.
10. Remove the packing flange nuts (key 19), packing flange (key 18) and packing follower (key 21). Carefully push out all the remaining packing parts from the valve side of the packing box using a rounded rod or other tool that will not scratch the packing box wall.
11. Clean the packing box and the following metal packing parts: packing follower (key 21) and lantern ring (key 15).
12. Inspect the valve stem threads for any sharp edges that might cut the packing. A whetstone or emery cloth may be used to smooth the threads, if necessary.
13. Install the plug. Install the seat ring then slide the spool onto the studs (key 5).
14. Lubricate the stud threads, the faces of the hex nuts (key 4) and washer face with anti-seize lubricant (not necessary if new factory prelubricated hex nuts are used). Replace the hex nuts and tighten them finger-tight. Stroke the valve several times to center the trim. Torque the nuts in a crisscross pattern to no more than 1/8 of the nominal torque value specified in the order documents.

When all nuts are tightened to that torque value, increase the torque by 1/8 of the specified nominal torque and repeat the crisscross pattern. Repeat this procedure until all nuts are tightened to the specified nominal value. Apply the final torque value again and, if any nut still turns, tighten every nut again.

NOTE

When installing packing rings, prevent entrapping air between the rings. Add the rings one at a time without forcing them below the chamfer of the packing box entrance chamber. As each successive ring is added, the stack should not be pushed down more than the thickness of the added ring (Figure 2).

15. Use Figure 2 to ensure that the packing parts are installed in the correct order.
16. Install the spring pack assembly (key 21), with the attached springs, onto the stem.
17. Install the packing flange (key 18) and packing box nuts (key 20). Hand tighten them.
18. For Urea Grade ENVIRO-SEAL live-loaded packing, refer to the ENVIRO-SEAL IM (D101642X012) for tightening instructions. Follow the PTFE/Duplex packing instructions.
19. Mount the actuator on the valve body assembly and reconnect the actuator and valve plug stems according to the procedures in the appropriate actuator instruction manual.
20. Reinstall valve assembly in line.

Top Entry Constructions

Key numbers referred to in this procedure are shown in Figure 2 unless otherwise indicated.

1. Isolate the control valve from the line pressure, release pressure from both sides of the valve body and drain the process media from both sides of the valve. If using a power actuator, also shut-off all pressure lines to the power actuator, release all pressure from the actuator. Use lock-out procedures to be sure that the above measures stay in effect while you work on the equipment.
2. Remove the cap screws in the stem connector and separate the two halves of the stem connector. Then exhaust all actuator pressure, if any was applied and disconnect the actuator supply and any leakoff piping.
3. Remove yoke hex nuts (key 23) and remove the actuator from the bonnet (key 8).
4. Loosen the packing flange nuts (key 19) so that the packing (keys 14 and 17, Figure 2) is not tight on the valve plug stem (key 7). Remove any travel indicator disk and stem locknuts from the valve plug stem threads.

NOTICE

When lifting the bonnet (key 8), be sure that the valve plug/stem (key 7) remains on the seat ring (key 3). This avoids damage to the seating surfaces as a result of the assembly dropping from the bonnet after being lifted part way out. The parts are also easier to handle separately.

Use care to avoid damaging gasket sealing surfaces.

⚠ WARNING

To avoid personal injury or property damage caused by uncontrolled movement of the bonnet, loosen the bonnet by following the instructions in the next step. 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.

NOTE

The following step also provides additional assurance that the valve body fluid pressure has been relieved.

5. Hex nuts (key 12) attach the bonnet to the valve body. Loosen these nuts or cap screws approximately 3 mm / 1/8 in. Then loosen the body-to-bonnet gasketed joint by either rocking the bonnet or prying between the bonnet and valve body. Work the prying tool around the bonnet until the bonnet loosens. If no fluid leaks from the joint, proceed to the next step.
 6. Unscrew the hex nuts (key 12) and carefully lift the bonnet off the valve stem. If the valve plug and stem assembly starts to lift with the bonnet, use a dead blow hammer on the end of the stem and tap it back down. Set the bonnet on a cardboard or wooden surface to prevent damage to the bonnet gasket surface.
 7. Remove the valve plug (key 7) and bonnet gasket (key 9).
-

NOTE

Inspect the bonnet and body gasket surface. This surface must be in good condition, with all foreign material removed. Scratches or burrs that run across the serrations are not permitted under any conditions, since they will prevent the gaskets from sealing properly.

8. Clean body to bonnet gasket surface. Clean in the same direction as the surface serrations, not across them.
9. Cover the opening in the valve body to protect the gasket surface and to prevent foreign material from getting into the valve body cavity.
10. Remove the packing flange nuts (key 19), packing flange (key 18) and packing follower (key 21). Carefully push out all the remaining packing parts from the valve side of the bonnet using a rounded rod or other tool that will not scratch the packing box wall.
11. Clean the packing box and the following metal packing parts: packing follower (key 21) and lantern ring (key 15).
12. Inspect the valve stem threads for any sharp edges that might cut the packing. A whetstone or emery cloth may be used to smooth the threads, if necessary.
13. Remove the protective covering from the valve body cavity and install the bonnet gasket (key 9). Install the plug, then slide the bonnet over the stem and onto the studs (key 10).

NOTE

The prelubricated hex nuts (key 12) referred to in step 14 can be identified by a black film coating on the nut threads. The proper bolting procedures in step 14 include—but are not limited to—ensuring that the bonnet stud threads are clean and that the hex nuts are evenly tightened to the specified torque values.

⚠ WARNING

Personal injury or damage to equipment could occur if improper stud and nut materials or parts are used. Do not operate or assemble this product with stud(s) and nut(s) that are not approved by Emerson/Fisher engineering and/or listed on the serial card provided with this product. Use of unapproved materials and parts could lead to stresses exceeding the design or code limits intended for this particular service. Install studs with the material grade and manufacturer's identification mark visible. Contact your [Emerson sales office](#) immediately if a discrepancy between actual parts and approved parts is suspected.

NOTICE

Failure to follow the bonnet-to-body bolting procedures in step 14 and the torque values shown in Table 2 may result in damage to the valve.

NOTE

Stud(s) and nut(s) should be installed such that the manufacturer's trademark and material grade marking is visible, allowing easy comparison to the materials selected and documented in the Emerson/Fisher serial card provided with this product.

14. Lubricate the stud threads, the faces of the hex nuts (key 12) and washer face with anti-seize lubricant (not necessary if new factory prelubricated hex nuts are used). Replace the hex nuts and tighten them finger-tight. Stroke the valve several times to center the trim. Torque the nuts in a crisscross pattern to no more than 1/8 of the nominal torque value specified in Table 2.

When all nuts are tightened to that torque value, increase the torque by 1/8 of the specified nominal torque and repeat the crisscross pattern. Repeat this procedure until all nuts are tightened to the specified nominal value. Apply the final torque value again and, if any nut still turns, tighten every nut again.

NOTE

When installing packing rings, prevent entrapping air between the rings. Add the rings one at a time without forcing them below the chamfer of the packing box entrance chamber. As each successive ring is added, the stack should not be pushed down more than the thickness of the added ring (Figure 2).

15. Use Figure 2 to ensure that the packing parts are installed in the correct order.
16. Install the spring pack assembly (key 21), with the attached springs, onto the stem.
17. Install the packing flange (key 18) and packing box nuts (key 20). Hand tighten them.
18. For Urea Grade ENVIRO-SEAL live-loaded packing, refer to the ENVIRO-SEAL IM (D101642X012) for tightening instructions. Follow the PTFE/Duplex packing instructions.
19. Mount the actuator on the valve body assembly and reconnect the actuator and valve plug stems according to the procedures in the appropriate actuator instruction manual.

3.3 Valve Plug Replacement

WARNING

Observe the warning at the start of the Maintenance section.

This procedure describes how the valve plug can be removed and replaced. Be certain that all gasketed surfaces have been well cleaned. Key numbers referenced in this procedure are shown in Figure 3 except where indicated.

Bottom Entry Constructions

1. Remove the actuator, spool, seat and plug/stem by following steps 1 through 8 of the bottom entry replacing packing procedure. Observe all warning and notice messages.
2. With the new plug/stem, follow steps 11 and 12 of the bottom entry replacing packing procedure.

Top Entry Constructions

1. Remove the actuator and bonnet by following steps 1 through 7 of the top entry replacing packing procedure. Observe all warning and notice messages.
2. With the new plug/stem, follow steps 12 and 13 of the top entry replacing packing procedure.

3.4 Seat Replacement

WARNING

Observe the warning at the start of the Maintenance section.

Bottom Entry Constructions

This procedure describes how the valve seat ring can be removed and replaced. Be certain that all gasketed and sealing surfaces have been well cleaned. Key numbers referenced in this procedure are shown in Figure 3 except where indicated.

1. Remove the actuator, spool and seat by following steps 1 through 6 of the replacing packing procedure. Observe all warning and notice messages.

NOTICE

The seat ring lifting holes are provided for ease of disassembly. To prevent damage to the seat lifting hole, fully engage the threaded rod into the cage hole, but do not overtighten the hoist rod. It only needs to be hand tight.

2. Take new seat ring and follow steps 12 through 13 of the bottom entry packing maintenance.

Top Entry Constructions

This procedure describes how the valve seat ring can be removed and replaced. Be certain that all gasketed and sealing surfaces have been well cleaned. Key numbers referenced in this procedure are shown in Figure 3 except where indicated.

1. Remove the actuator and bonnet by following steps 1 through 7 of the replacing packing procedure. Observe all warning and notice messages.
2. Hex nuts (key 4) attach the spool to the valve body. Loosen these nuts or cap screws approximately 3 mm / 1/8 in. If no fluid leaks from the joint, proceed to the next step.
3. Unscrew the hex nuts (key 4) and carefully lift the spool off the studs. Set the spool on a cardboard or wooden surface to prevent damage to the spool gasket surface.
4. Remove the seat ring using the provided lift holes. Inspect the seat ring and body sealing surfaces for damage.

NOTICE

The seat ring lifting holes are provided for ease of disassembly. To prevent damage to the seat lifting hole, fully engage the threaded rod into the cage hole, but do not overtighten the hoist rod. It only needs to be hand tight.

5. Take new seat ring and install into the body. Place the spool over the studs (key 5).
6. Lubricate the stud threads, the faces of the hex nuts (key 4) and washer face with anti-seize lubricant (not necessary if new factory prelubricated hex nuts are used). Replace the hex nuts and tighten them finger-tight. Stroke the valve several times to center the trim. Torque the nuts in a crisscross pattern to no more than 1/8 of the nominal torque value specified in order documents.

When all nuts are tightened to that torque value, increase the torque by 1/8 of the specified nominal torque and repeat the crisscross pattern. Repeat this procedure until all nuts are tightened to the specified nominal value. Apply the final torque value again and, if any nut still turns, tighten every nut again.

Section 4: Parts

4.1 Parts Ordering

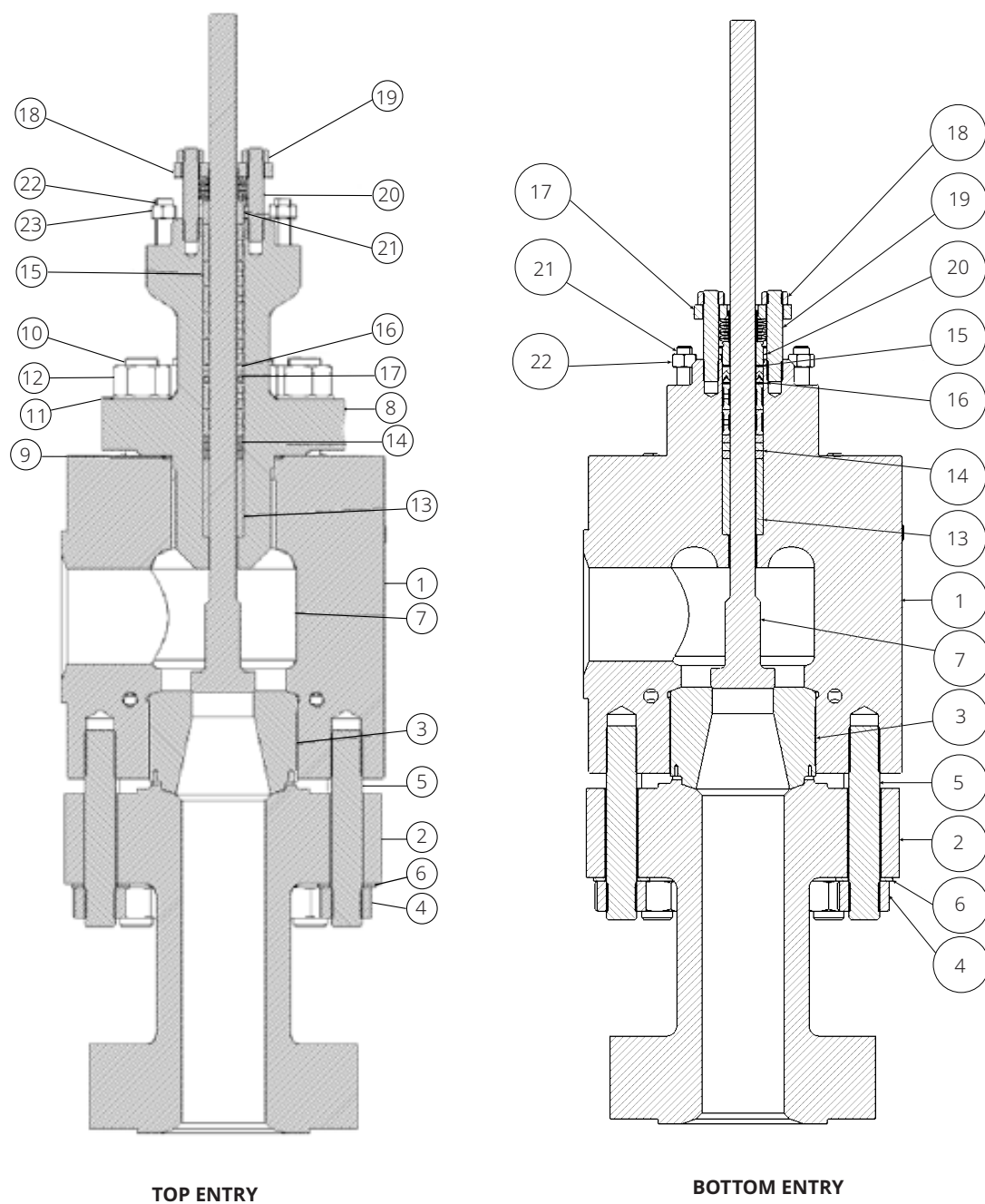
Each body-bonnet assembly is assigned a serial number, which can be found on the valve body. This same number also appears on the actuator nameplate when the valve body is shipped from the factory as part of a control valve assembly. Refer to the serial number when contacting your [Emerson sales office](#) for technical assistance or when ordering replacement parts.



WARNING

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

Figure 3. NPS 6 EHU Valve Assembly



4.2 Parts List

NOTE

Contact your [Emerson sales office](#) for Part Ordering information.

Key	Description	Key	Description
1	Valve body If you need a valve body as a replacement part, order by valve size, serial number and desired material.	13*	Guide bushing
2	Spool	14*	Lower packing set
3*	Seat ring	15*	Lantern ring
4*	Spool hex nut	16*	Anti-extrusion ring
5*	Spool stud	17*	Upper packing set
6*	Spool washer	18	Packing flange
7*	Plug/Stem	19	Packing nut
8	Bonnet ⁽¹⁾ If you need a bonnet as a replacement part, order by serial number and desired material.	20	Packing stud
9*	Bonnet gasket ⁽¹⁾	21	Spring pack assembly
10*	Bonnet stud ⁽¹⁾	22	Yoke stud
11*	Bonnet washer ⁽¹⁾	23	Yoke nut
12*	Bonnet nut ⁽¹⁾	---	---
*Recommended spare parts 1. These components are for top entry constructions only.			

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Emerson Automation Solutions
Marshalltown, Iowa 50158 USA
Sorocaba, 18087 Brazil
Cernay 68700 France
Dubai, United Arab Emirates
Singapore 128461 Singapore

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