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General Guidelines

- The owner must comply exclusively with these operating instructions and the authorized use of this piece of equipment. Should problems arise that cannot be solved using these operating instructions, please contact Dixon®. We will be happy to provide further assistance.
- If any modification work is performed on the product by the owner, Dixon shall no longer be considered the manufacturer of the device. In such cases, all components must be subjected to a new certification process for any applicable certifications that the equipment holds. Unless agreed to in writing by Dixon, liability, warranties, and guarantees shall immediately be deemed null and void as soon as the owner:
 - Performs modifications/conversion work on the product.
 - Uses the product for unauthorized purposes.
 - Removes or disables safety elements.
 - Processes products whose material, form, and size do not correspond exactly to the description provided.
 - Makes alterations to the original state of the device.
- The operating instructions are regarded as part of the product.
- The operating and maintenance personnel must always be able to access the operating instructions.
- The safety instructions provided in the operating instructions must be observed.
- The operating instructions shall be valid for the entirety of the device's lifespan.
- The operating instructions must be maintained and updated as necessary.
- The operating instructions must be passed on to any subsequent owners or operators of the device.

Safety Information

The following signs may be used in this manual. To avoid serious injury and/or possible damage to equipment, pay attention to these messages. Hazards or unsafe practices could result in severe personal injury or death.



DANGER Indicates a hazardous situation that, if not avoided, will result in death or serious injury.



WARNING Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



CAUTION Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE:



WARNING: Use only replacement parts and devices recommended by the manufacturer to maintain the integrity of the equipment. Make sure the parts are correctly matched to the series, model, serial number, and revision level of the equipment.



WARNING: Safety labels are placed on equipment where appropriate. Do not remove any labeling from any piece of equipment. Replace any label that is missing.



WARNING: DO NOT modify any Dixon® product. Non-factory modifications could create hazardous conditions and void all warranties. DO NOT attempt to use a Dixon product in any application that exceeds the product rating.

Regulations and Safety Requirements

Regulations: Dixon 1" angle valves are used in contact with a variety of products, many of which are hazardous materials and could cause serious injury or damage if mishandled. The acceptance and transportation of products are regulated by the DOT and the Association of American Railroads (AAR) in the U.S., and in Canada by CTC and Transport Canada. Regulations of other governmental bodies must be complied with for stationary and mobile applications. All personnel should be familiar with and follow these regulations. Nothing in these instructions is intended to conflict with or supersede these regulations. The information in this document was gathered from knowledgeable sources. However, Dixon makes no representations or guarantees about its accuracy or completeness and assumes no liability for this information.

Specifications are subject to change without notice.

This valve should only be installed, operated, and maintained by qualified personnel. Read these instructions carefully before proceeding. Operation of the valve must conform to all applicable specifications from TC, AAR, DOT, 49 CFR (Parts 173.31, 174.67, 179.100, 179.300, etc.), and other governmental bodies, along with the operating instructions of your company.

Safety Precautions

Safety Warnings and Precautions: Please carefully read each of the following warnings and cautions prior to performing any work.



WARNING: Toxic Hazard: Always use extreme caution and proper equipment when involved with hazardous materials. To avoid exposure to toxic or hazardous materials, make sure the tank car is empty and clean, and that the work area is free of hazardous chemicals before removing or installing any valve.

- Wear protective clothing and equipment suitable for withstanding the materials to which you may be exposed.
- Position yourself on the upwind side of the valve when possible.
- Work in a well-ventilated area.
- Work with a partner who can help you in the event of an emergency.
- Follow approved safety precautions for hazardous or toxic materials.
- Obtain SDS sheets for all the commodities used with the associated valve.



WARNING: Valve Leakage: Improper valve-tongue seating in the flange groove, loose nuts, and damaged gaskets may result in leaks at the valve-mounting joint.



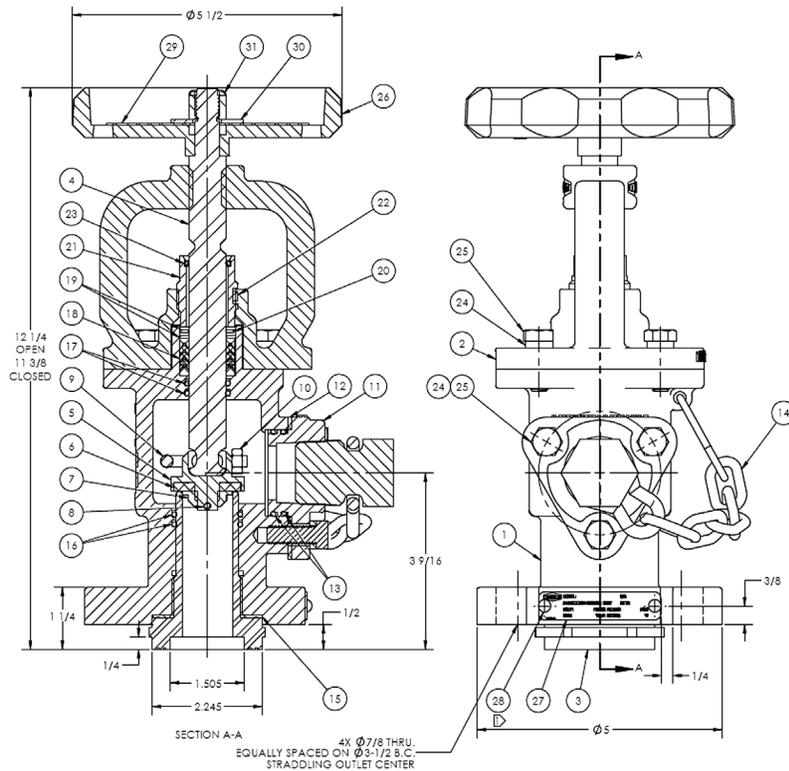
CAUTION: Groove Damage:

- Do not use a sharp tool to seat the gasket as damage may result.
- Verify that the valve tongue fits into the cover plate groove. Improper fit up could result in a leak and possible valve damage.
- To prevent tongue damage do not install a valve having damaged sealing surfaces.



WARNING: When removing the angle valve from the tank car or performing maintenance, make sure the valve is in the open position. If the valve is seated and the plug is installed, hazardous commodity can be trapped inside the valve. If a fully closed valve with the plug installed is encountered, follow your company's guidelines on handling potentially hazardous material.

Valve Introduction



Item	Part #	Description	Material	Qty
1	180081-100-ML	body	ASTM A494 GR. M35-1	1
2	180082-100-ML	bonnet	ASTM A494 GR. M35-1	1
3	180083-100-HC	seat insert	Hastelloy C	1
4	180084-100-HC	stem	Hastelloy C	1
5	180085-100-ML	seat retainer	Monel	1
6	180086-100-PG	soft seat	25% glass-filled PTFE	1
7	180087-100-ML	disc nut	Monel	1
8	180088-100-ML	knurled dowel pin	Monel	1
9	180089-100-ML	U-bolt	Monel	1
10	180143-ML	hex lock nut	Monel	2
11	180090-100-ML	outlet flange	Monel	1
12	180091-100-GL	outlet flange gasket	Garlock 3510	1
13	AS568A129VXLT	outlet flange O-ring	FKM	2
14	280006-100	plug/chain assembly	Monel/stainless steel	1
15	180092-100-GL	seat insert gasket	Garlock 3510	1
16	AS568A124VXLT	seat insert O-ring	FKM	2
17	AS568A116VXLT	stem O-ring	FKM	2
18	180094-100-PF	packing set	PTFE	1
19	180095-100-ML	washer	Monel	2
20	180096-100-ML	wave spring	Monel	1
21	180097-100-ML	packing bushing	Monel	1
22	180098-100-PF	PTFE insert	PTFE	2
23	180099-100-PF	wiper seal	PTFE	1
24	W33800000XK500	split lock washer	Monel	7
25	F23816100XK500	hex bolt	Monel	7
26	180100-100-GL	handwheel	gray iron	1
27	180105-ML	nameplate	Monel	1
28	180138-S4	drive screw	stainless steel	2
29	180106-100-S6	warning label	stainless steel	1
30	W25600000X0304	washer	stainless steel	1
31	180107-100-S6	lock nut	stainless steel / nylon	1

NOTE: Alternate materials of construction are available.

Valve Installation

New valves are assembled, tested, and sealed at Dixon® prior to shipment.

Installation Procedure and Recommended Tools

Tool	Component
1-1/4" SAE wrench	mounting stud nuts
1-1/4" crowfoot	mounting stud nuts
1-1/16" SAE wrench	packing bushing
1-1/16" crowfoot	packing bushing
torque wrench	mounting stud nuts and packing bushing
lint-free cloth	for cleaning valve and cover plate sealing surfaces
Scotch-Brite®	for cleaning valve and cover plate sealing surfaces
wire brush	for cleaning mounting studs

Inspect the mounting stud threads and ensure there is no damage. Inspect the cover plate and tongue-and-groove sealing surface to ensure there are no dents or peened surfaces.

For tongue-and-groove installations:

- Inspect the groove in the cover plate. The fitment with the tongue on the valve should be very tight. Any peening of the tongue or groove edges could interfere with the proper installation of the valve. If there is damage to the groove, make any necessary corrections to meet the tolerances specified by the AAR.
- Inspect the tongue of the valve (new or reconditioned) by running your fingernail around both the inner and outer edges checking for damages. The tolerances on the tongue are +/- .003" so any excess material due to peening could cause the valve to not seat in the groove of the cover plate. Remove any excess material to meet the tolerances specified by the AAR.
- Install the new gasket into the groove. Ensure the gasket is seated evenly. There should be 1/16" of space above the gasket to allow the valve tongue to locate properly in the groove.



CAUTION: Groove Damage:

- Do not use a sharp tool to seat the gasket as damage may result.
- Verify that the valve tongue fits into the cover plate groove. Improper fit up could result in a leak and possible valve damage.
- To prevent tongue damage to the cover plate, do not install a valve with damaged sealing surfaces.

Install the mounting studs into the cover plate following your company's procedure and requirements.

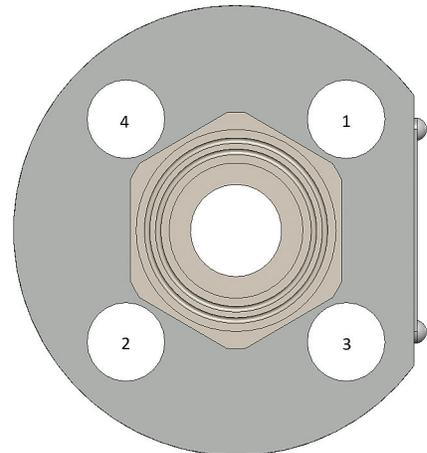
Mount the nuts onto the mounting studs and tighten in 1/3 torque increments using the pattern shown below. For recommended torque values contact your gasket manufacturer.

To complete this installation process, the tank car will need to be pressurized in accordance with the tank car owner's requirements. A bubble leak test must be performed per car owner's specifications.

Test all newly installed valves to conform with tank car owner specifications. No leaks should be present. Improper valve tongue seating in the groove, damaged gaskets, or loose mounting nuts may result in leaks at the cover plate mounting joint.



WARNING: Valve Leakage: Improper valve-tongue seating in the flange groove, loose nuts, and damaged gaskets may result in leaks at the valve-mounting joint.



Valve Removal

Removal Procedure and Recommended Tools

Tool	Component
1-1/4" SAE wrench	mounting stud nuts
lint-free cloth	for cleaning valve and cover plate sealing surfaces
Scotch-Brite®	for cleaning valve and cover plate sealing surfaces
wire brush	for cleaning mounting studs

1. Remove the valve by following your company's procedure for removal and securing the opening in the cover plate.
2. Using a wire brush, clean the threads of the mounting studs removing any rust or scale. The mounting nuts should move freely on the studs. Inspect the threads for any excessive wear, corrosion, or pitting. If any are found, the parts are rejectable and should be replaced.
3. Remove and dispose of any old mounting gasket material. Use care to ensure the mounting groove is not scratched or damaged.
4. Using a lint-free cloth and an appropriate solvent, clean the mounting studs as well as the sealing surfaces on the valve and cover plate.

Valve Disassembly and Inspection

During disassembly of the valve, key components of the valve must be thoroughly inspected to ensure a properly operating valve after reassembly. These components include the handwheel, stem, seal retainer, body, bonnet, plug, outlet flange, and seat insert. Inspection includes looking for cracks, excessive wear, and other potential issues as described in more detail in the steps that follow.

Per the requirements by the AAR, all inspection and testing of pressure angle valves must follow the procedures developed by an American Society for Nondestructive Testing (ASNT) Level III Technician and be performed by a Nondestructive Testing (NDT) qualified operator. See AAR M-1002 Appendix D "Retest and Qualification Requirements" and Appendix T "Nondestructive Examination". Additionally, all maintenance activity for this valve must be performed by an AAR M-1003 certified repair facility.

NOTICE: Machining is not allowed without consent from Dixon® or the car owner. Machining, grinding, welding, or other alterations to the valve seat or stem is not allowed per AAR M-1002, Paragraph A3.11.1 of the tank car specifications.

NOTICE: Repair work is limited to cleaning and polishing without consent from the valve manufacturer (Dixon) or the car owner. See AAR M-1002, Paragraph A3.11.1 of the tank car specifications.

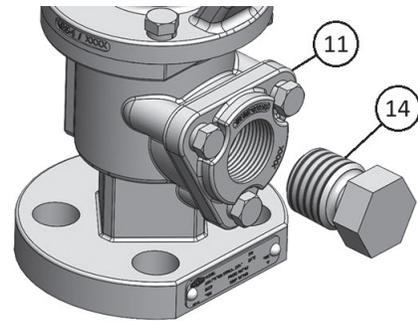
Valve Disassembly and Recommended Tools

Tool	Component(s)/Description	Item #
9/16" SAE socket	hex bolts	25
7/16" SAE socket	hex lock nut on U-bolt	10
1-3/8" SAE wrench or large adjustable wrench	plug	14
2-3/8" SAE socket or wrench	packing screw	3
1-1/16" SAE wrench	packing lock nut	21
3/4" SAE socket or wrench	handwheel lock nut	31
punch and hammer	knurled dowel pin	8
11/16" SAE socket or wrench	disc nut	7
non-scratching hook tool	O-rings	13, 16, 17

1.

Using a 1-3/8" wrench, remove the plug (item 14) from the outlet flange (item 11).

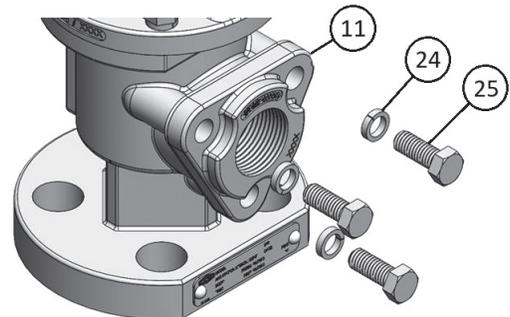
Inspect the thread on the plug (item 14) for corrosion or physical damage. Gauge the thread with a 1" – 11 1/2 NPT ring gauge. If the thread is heavily corroded, damaged, or does not gauge, discard the plug (item 14).



2.

Using a 9/16" socket, remove hex bolts (items 25) and split lock washers (items 24) from the outlet flange (item 11).

Discard the split lock washers. Inspect the threads of the hex bolts, and gauge threads with a 3/8" – 16 UNC go/no go gauge. If threads are damaged or fail gauging, discard the hex bolt.

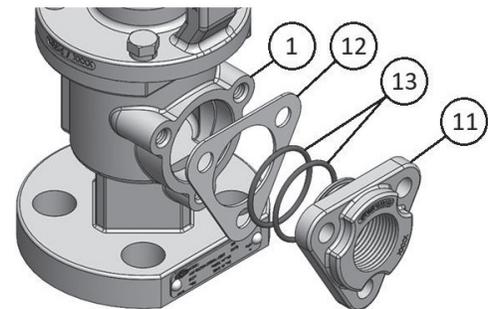


3.

Remove the outlet flange (item 11) and outlet flange gasket (item 12) from the body (item 1). If the outlet flange (item 11) is difficult to remove, use a twisting motion.

Remove the two outlet flange O-rings (items 13) from the outlet flange (item 11). Discard the outlet flange gasket (item 12) and O-rings (items 13).

Visually inspect and gauge the thread on the outlet flange (item 11) with a 1" – 11 1/2 go/no go gauge. If the threads are damaged, heavily corroded, or fail gauging, discard the outlet flange (item 11).

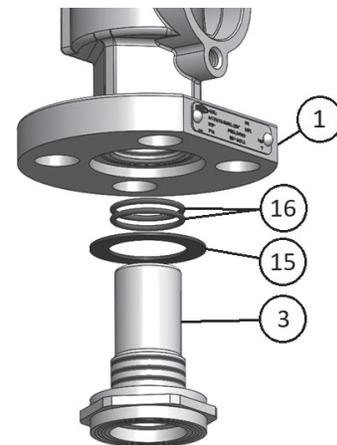


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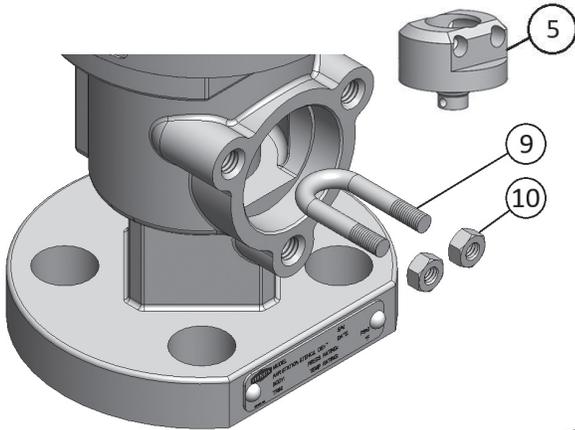
Using a large adjustable crescent wrench, unscrew the seat insert (item 3) from the bottom of the valve body (item 1).

Remove the seat insert gasket (item 15) and the seat insert O-rings (items 16) with a non-scratching hook tool from the body (item 1) and discard them.

Inspect and gauge the threads on the seat insert (item 3) with a 1-7/16" – 12 UN-2A go/no go ring gauge. If the threads are damaged, heavily corroded, or fail gauging, discard the seat insert (item 3).



5.

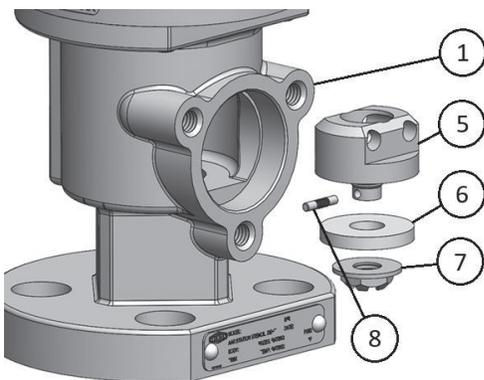


Using the handwheel, close the valve until the seat retainer (item 5) bottoms out on the bottom of the body cavity. Make sure the hex lock nuts (items 10) are facing the outlet of the valve.

Using a 7/16" socket, remove the two hex lock nuts (items 10). Open the valve slightly, rotate the seal retainer (item 5), and take out the U-bolt (item 9).

Examine the threads on the U-bolt (item 9) and the hex lock nuts (items 10). If excessive wear, damage, or corrosion is present, discard them.

6.



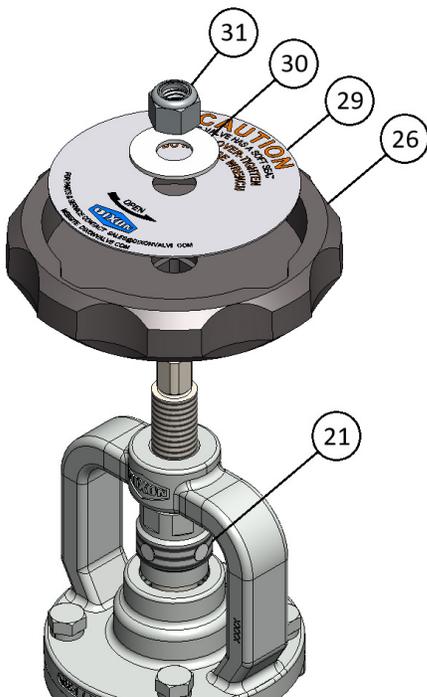
Using the handwheel, fully open the valve until the stem hits the backstop on the bonnet. Remove the seat retainer (item 5) from inside the body (item 1).

Using a punch and hammer, push out the knurled dowel pin (item 8) from the seat retainer (item 5).

Using a 11/16" socket, unthread the disc nut (item 7). Remove the soft seat (item 6) using a hook tool. Take care not to scratch the seating surface on the seat retainer (item 5). Discard the soft seat (item 6) and the knurled dowel pin (item 8).

Inspect the seat retainer (item 5) and disc nut (item 7) for excessive corrosion or damage to the threads. If present, discard them.

7.



Using a 3/4" wrench, unthread the lock nut (item 31). Remove the handwheel (item 26), warning label (item 29), and washer (item 30).

Using a 1-1/16" wrench, loosen and unthread the packing bushing (item 21). Discard the lock nut (item 31) and washer (item 30).

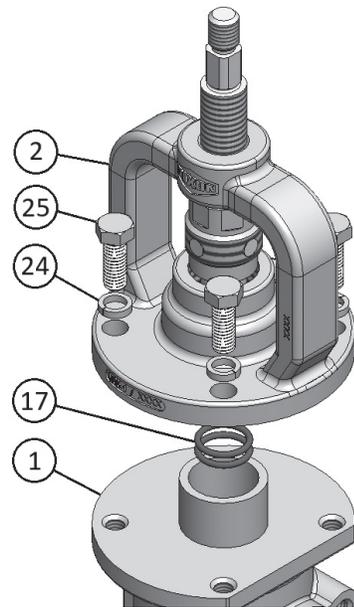
Inspect the handwheel (item 26) for cracks around the square bore. If cracks are present, discard the handwheel.

8.

Using a 9/16" socket, remove the four hex bolts (items 25) and split lock washers (items 24) on the bonnet (item 2).

Take out the two stem O-rings (items 17) from the body (item 1) with a non-scratching hook tool. Discard the split lock washers (items 24) and stem O-rings (items 17).

Inspect hex bolts (items 25) for damage or excessive corrosion. If part is damaged or corroded, discard the hex bolts (items 25).

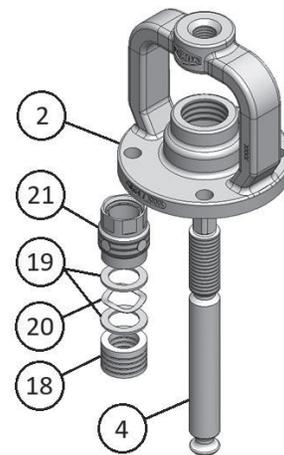


9.

Unthread the stem (item 4) from the bonnet (item 2) and remove the packing bushing (item 21). Separate the washers (items 19), wave spring (item 20), and packing set (item 18) from the stem (item 4). Discard the washers (items 19) and the packing set (item 18).

Inspect the stem (item 4) for damage and gauge the threads with 3/4" - 6 ACME-2G and 1/2" - 13 UNC-2A go/no go ring gauges. If there are scratches in the packing area, damage to the threads, or the threads do not gauge, discard the stem (item 4). Roll the stem (item 4) on a flat surface. If it is bowed, discard it.

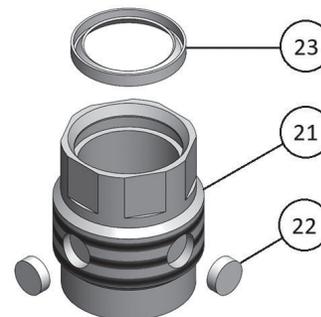
Inspect the bonnet (item 2) for damage and gauge the threads with 3/4" - 6 ACME-2G and 1-1/4" - 12 UNF-2B go/no go plug gauges. If the threads are damaged or do not gauge, discard and bonnet (item 2).



10.

Using a hook tool, remove the two PTFE inserts (items 22) and the wiper seal (item 23) from packing bushing (item 21). Discard the PTFE inserts (items 22) and the wiper seal (item 23).

Inspect the packing bushing (item 21) for damage and gauge the thread with a 1-1/4" - 12 UNF-2A go/no go plug gauge. If the packing bushing (item 21) is damaged or the thread does not gauge, discard it.



Valve Reassembly and Requalification

Tool	Component(s)/Description	Item #
9/16" SAE socket	outlet flange hex bolts	25
deep 7/16" SAE socket or nut driver	hex lock nut on U-bolt	10
1-3/8" SAE wrench or large adjustable wrench	plug	14
2-3/8" SAE socket or crowfoot	seat insert	3
1-1/16" crowfoot	packing bushing	21
3/4" SAE socket or wrench	handwheel lock nut	31
arbor press	knurled dowel pin	8
11/16" SAE socket	disc nut	7
torque wrench	seat insert, packing bushing, and joint/outlet flange hex bolts	3, 21, and 25
fluorolube or fluorinated grease	stem, O-rings, packing set, and hex bolts	4, 13, 16, 17, 18, and 25

Sealing surfaces on body, seat insert, and outlet flange shall be thoroughly cleaned with cleaning agent such as semiconductor grade acetone before assembling. Torque fasteners to the appropriate value from the following table.

NOTICE: Torque values for the disc nut, hex lock nuts fastening the U-bolt, and handwheel lock nut are not listed. These fasteners are to be snugged tight and not overly torqued.

Part	Torque Value (ft-lbs)
joint/outlet flange bolts	28 (lubricated)
packing bushing	30
seat insert	170
disc nut	25
handwheel lock nut	10-15

NOTICE: Torque values provided correspond to the standard material configuration. If valve has a non-standard material configuration, contact Dixon® for appropriate values.

Install new consumable parts. The following parts are considered consumable and need to be replaced:

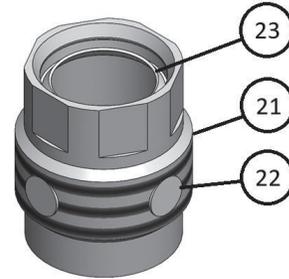
- O-rings
- Wiper seal
- Gaskets
- PTFE inserts on packing bushing
- Packing set
- Handwheel lock nut
- Soft seat
- Handwheel washer
- Knurled dowel pin
- Split lock washers

Reassembly

1.

Using a non-scratching hook tool, install the wiper seal (item 23) and two PTFE inserts (items 22) into the packing bushing (item 21).

Ensure the wiper seal (item 23) is oriented in the correct position with the wiper upwards.

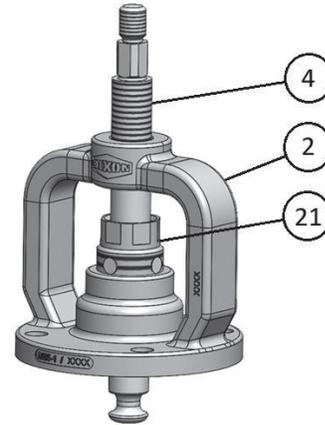


2.

Inspect both threads and the bottom surface of the bonnet (item 2). Make sure they are clean. Use a wire brush to clean the threads if necessary.

Using a 1-1/16" wrench, install the packing bushing (item 21) onto the bonnet (item 2) and thread the packing bushing (item 21) in just enough to hold it in place.

Apply fluorolube to the ACME threads on the stem (item 4). Install the stem into the bonnet from the bottom side. Thread the stem (item 4) into the bonnet (item 2) through its full range of motion a few times to evenly spread the fluorolube. Fully thread the stem (item 4) in until it engages the backstop on the bonnet (item 2).



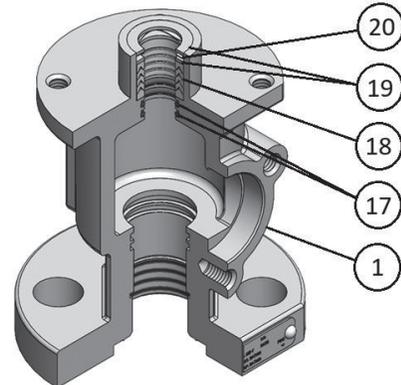
3.

Inspect the body (item 1) and ensure all surfaces are clean and free of debris. Use a soft cloth to clean all internal areas. Examine the O-ring and gasket seating surfaces to make sure there are no scratches.

Install the two stem O-rings (items 17) into the body (item 1) and apply a thin layer of fluorolube on the O-rings (items 17).

Place the packing set (item 18) into the body (item 1) in the correct orientation with the chevrons facing downward. Apply a thin layer of fluorolube to the I.D. of the packing set (item 18).

Place a Monel® washer (item 19) on top of the packing set followed by the wave spring (item 20) and the second Monel washer.

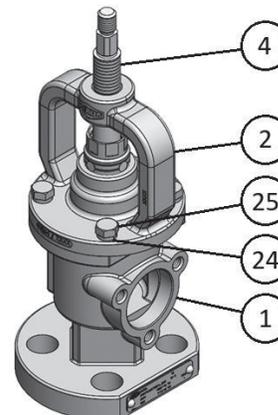


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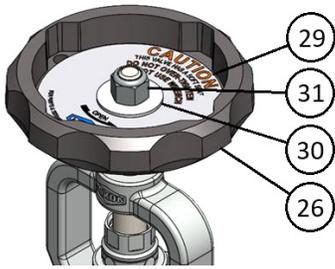
Install the bonnet (item 2) assembly onto the body (item 1) pushing the stem (item 4) through the packing area.

Apply fluorolube to four hex bolts (items 25) and install them with split lock washers (items 24).

Using a 9/16" socket, tighten the hex bolts in a cross pattern to 28 ft-lbs of torque.



5.

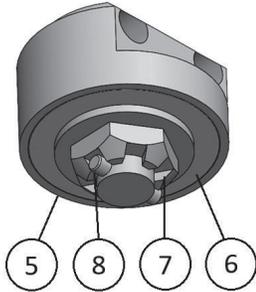


Install handwheel (item 26) onto the square portion of the stem.

Place the warning label (item 29) followed by the handwheel washer (item 30) on top of the handwheel. Thread the lock nut (item 31) onto the end of the stem.

Using a 3/4" socket, tighten the lock nut to 10-15 ft-lbs of torque.

6.

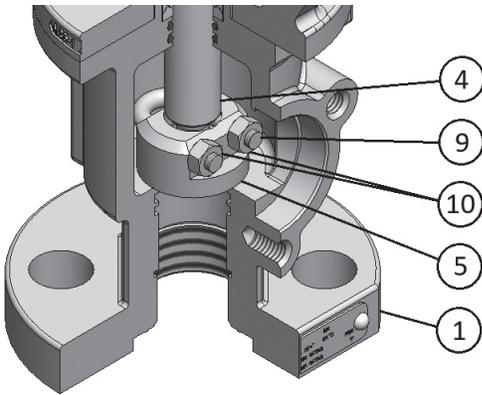


Examine the back sealing surface of the seat retainer (item 5). Ensure the surface is clean and smooth, with no scratches.

Install the soft seat (item 6) into the seat retainer (item 5). Thread on the disc nut (item 7) and tighten it to 25 ft-lbs of torque using a 11/16" socket. Torque the disc nut (item 7) further until the through hole on the seat retainer (item 5) lines up with one of the cut outs on the disc nut.

Using an arbor press, press the knurled dowel pin (item 8) into the through hole on the seat retainer (item 5) until it is centered with equal lengths sticking out of each side.

7.



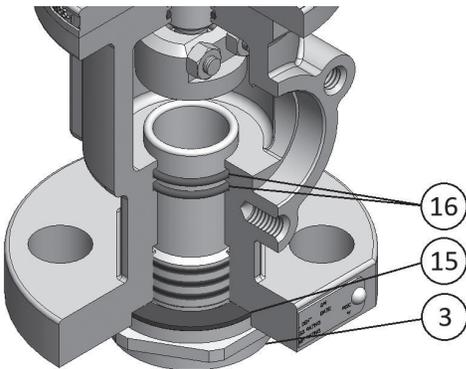
Using the handwheel, open the valve to the full open position. Place the seat retainer (item 5) into the body (item 1) with the top through holes facing the side outlet of the valve. Close the valve ensuring the stem (item 4) slots into the top hole of the seat retainer (item 5) until the seat retainer bottoms out onto the bottom of the body cavity.

Insert the U-bolt (item 9) into the through holes on the seat retainer (item 5) retaining the end of the stem (item 4).

Next, turn the handwheel to open the valve until the seat retainer (item 5) is not bottomed out on the body cavity. Rotate the seat retainer (item 5) 180° until the threads on the U-bolt (item 9) are facing the side outlet. Fully close the valve, bottoming out the seat retainer. Lightly hold one thread on the U-bolt (item 9) and install a hex lock nut (item 10) on the other thread. Install the other hex lock nut (item 10) on the other side of the U-bolt (item 9).

Use a 7/16" socket, tighten the hex lock nuts (items 10) until they are snug. It is not necessary to overtighten them. Open the valve and check that the seat retainer (item 5) moves freely on the stem (item 4).

8.



Using the handwheel, open the valve to the full open position. Apply a thin layer of flourolube to the seat insert O-rings (items 16) and insert them into the valve body as shown.

Place the seat insert gasket (item 15) onto the seat insert (item 3). Thread the seat insert (item 3) into the bottom of the body.

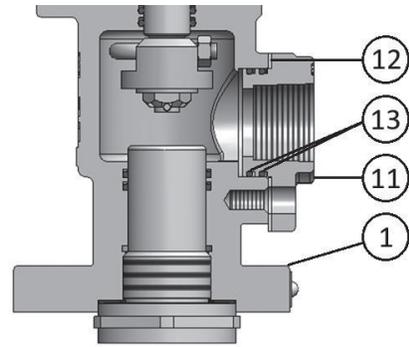
Using a 2-3/8" socket, tighten the seat insert to 170 ft-lbs of torque.

9.

Inspect the side outlet of the valve body (item 1). Ensure the surfaces on the inner bore and face of the outlet are not scratched, free of debris, and are clean.

Install the two outlet flange O-rings (items 13) onto the outlet flange (item 11) and apply a thin layer of fluorolube to the O-rings.

Place the outlet flange gasket (item 12) onto the outlet flange (item 11). Firmly press the outlet flange (item 11) into the valve body taking care not to damage the outlet flange O-rings (items 13). A slight twisting motion may be used to fully insert the outlet flange (item 11).

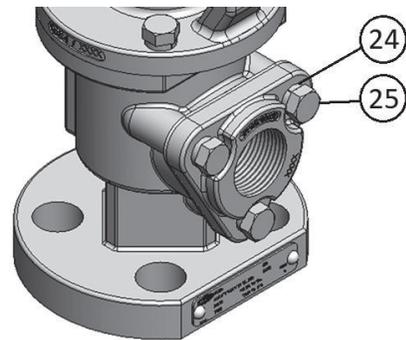


10.

Apply a thin layer of fluorolube to three hex bolts (items 25).

Install the hex bolts (items 25) with split lock washers (items 24), fastening the outlet flange to the body.

Use a 9/16" socket to tighten the outlet flange bolts (items 25) in a cross pattern to 28 ft-lbs of torque.



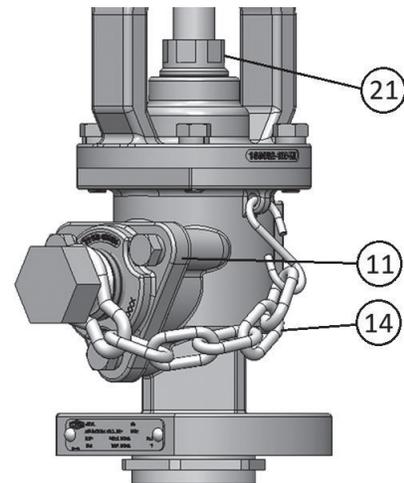
11.

Apply pipe thread sealant to the threads of the plug in the plug/chain assembly (item 14) and install it into the outlet flange (item 11).

Using a 1-3/8" wrench, tighten the plug to the appropriate torque.

Feed the S-hook on the plug/chain assembly's (item 14) chain through the loop on the body. Crimp the end of the S-hook securing the chain to the valve body.

Using a 1-1/16" crow foot, tighten the packing bushing (item 21) to 30 ft-lbs of torque.



Requalification

As part of the requalification procedure, your company's test procedure(s) must be developed by an American Society for Nondestructive Testing (ASNT) Level III technician and be performed by a Nondestructive Testing (NDT) qualified operator. See AAR Appendix T "Nondestructive Examination". Additionally, all maintenance activity for this valve must be performed by an AAR M-1003 certified repair facility. Follow your company's requirements for safety and personal protection equipment (PPE).

Seat Pressure Test:

1. Secure the valve onto a test fixture with the correct gasket.
2. Remove the outlet flange plug.
3. Close the valve applying 20 to 25 ft-lbs. of torque to the handwheel. Perform a seat test using a suitable method per your company's procedure. Check for any signs of leakage past the seat. There should be no leaks past the valve seat.

Shell Pressure Test:

1. Release the pressure from the valve and fully open it.
2. Reinstall the outlet flange plug.
3. Following your company's procedures, perform a shell test. Check for leaks at the packing area, between the body and the seat insert, between the body and the outlet flange, and between the outlet flange and the plug using a suitable method.
4. Once complete, depressurize the valve.



WARNING: Ensure the valve is open when it is depressurized for the final time. If the valve is closed, pressure may be trapped inside which is hazardous and could lead to injury.

5. Wipe or blow away any liquids remaining on the valve from testing.
6. Put a plastic endcap over the seat insert tongue.

Routine Maintenance

Periodic checks with a bubble leak detector fluid at the packing area, outlet flange interface, tongue and groove seal at the bottom of the valve, and the plug are recommended to ensure the integrity of the sealing surfaces.

Measure the gap between the bottom of the handwheel and the top of the bonnet when the valve is fully closed. If the gap measures less than 1/8", the soft seat is excessively deformed and needs replacement.

The top of the packing bushing should not be less than 3/8" from the bonnet surface in the packing area. If the packing bushing is threaded down more than this, the packing set is overly worn and must be replaced. For convenience, the flats on the packing bushing are 3/8" in length providing a visual for when the packing set is too worn and needs replacement.

NOTICE: Dixon® does not consider the replacement of the outlet flange as part of Resealing, Rebuilding, or Remanufacturing of the valve or fitting. The outlet flange may be changed as part of routine maintenance, without removal of the valve from the tank car. The removal and replacement instructions in this manual should be followed and OEM approved components should be used. See torque specifications and leak testing procedures to ensure proper performance.

Operation

Never use a wrench or any other handle extension to turn the handwheel. The handwheel is designed to break with excess torque to prevent damage to the valve. The valve is designed to seal with 20 to 25 ft-lbs. of torque applied to the handwheel.

To close the valve, turn the handwheel clockwise. To open the valve, turn the handwheel counterclockwise as shown on the nameplate. Ensure packing screw is torqued to a minimum of 30 ft-lbs. If leaking through the packing is detected, tighten packing screw until leak stops. Avoid unnecessary overtightening as it will cause excessive friction against the stem.

Emergency Response for Leaking Valve

Emergency response is the temporary remediation to a valve observed to be releasing product in an unintended manner. Install the plug and tighten the packing bushing. If leaking continues, install a capping kit over the valve. Once the car is unloaded and pressure is relieved, the valve should be removed for a complete inspection and repair, and qualification to the car owner's standard qualification and maintenance program. Leak repairs are unscheduled and not part of regular maintenance.

This manual is not intended to provide all the information necessary to complete emergency maintenance. Personnel must be specifically trained and qualified in hazmat procedures before attempting to service a leaking valve.

Limited Warranty

DIXON VALVE AND COUPLING COMPANY, LLC (herein called "Dixon") warrants the products described herein and manufactured by Dixon to be free from defects in material and workmanship for a period of one (1) year from date of shipment by Dixon under normal use and service. Its sole obligation under this warranty being limited to repairing or replacing, as hereinafter provided, at its option any product found to Dixon's satisfaction to be defective upon examination by it, provided that such product shall be returned for inspection to Dixon's factory within three (3) months after discovery of the defect. The repair or replacement of defective products will be made without charge for parts or labor. This warranty shall not apply to: (a) parts or products not manufactured by Dixon, the warranty of such items being limited to the actual warranty extended to Dixon by its supplier; (b) any product that has been subject to abuse, negligence, accident, or misapplication; (c) any product altered or repaired by others than Dixon; and (d) to normal maintenance services and the replacement of service items (such as washers, gaskets, and lubricants) made in connection with such services. To the extent permitted by law, this limited warranty shall extend only to the buyer and any other person reasonably expected to use or consume the goods who is injured in person by any breach of the warranty. No action may be brought against Dixon for an alleged breach of warranty unless such action is instituted within one (1) year from the date the cause of action accrues. This limited warranty shall be construed and enforced to the fullest extent allowable by applicable law.

Other than the obligation of Dixon set forth herein, Dixon disclaims all warranties, express or implied, including but not limited to any implied warranties of merchantability or fitness for a particular purpose, and any other obligation or liability. The foregoing constitutes Dixon's sole obligation with respect to damages, whether direct, incidental or consequential, resulting from the use or performance of the product.

Some products and sizes may be discontinued when stock is depleted or may require a minimum quantity for ordering.

