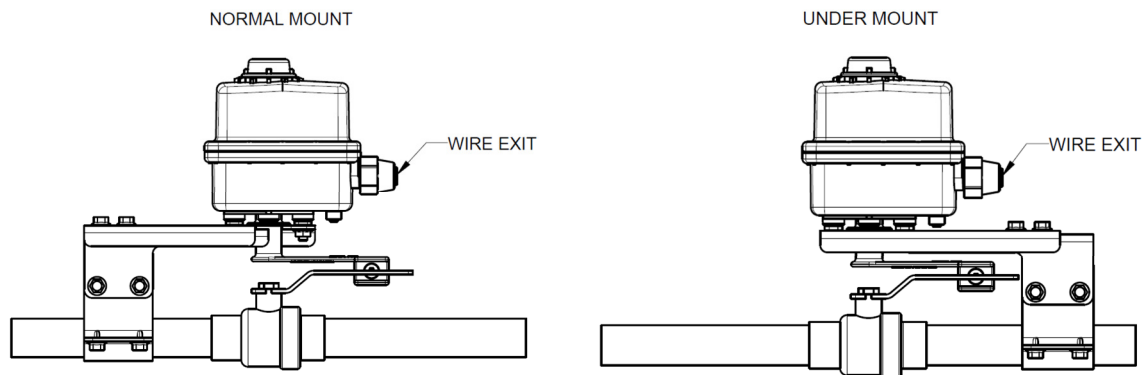




DIRECT, LLC

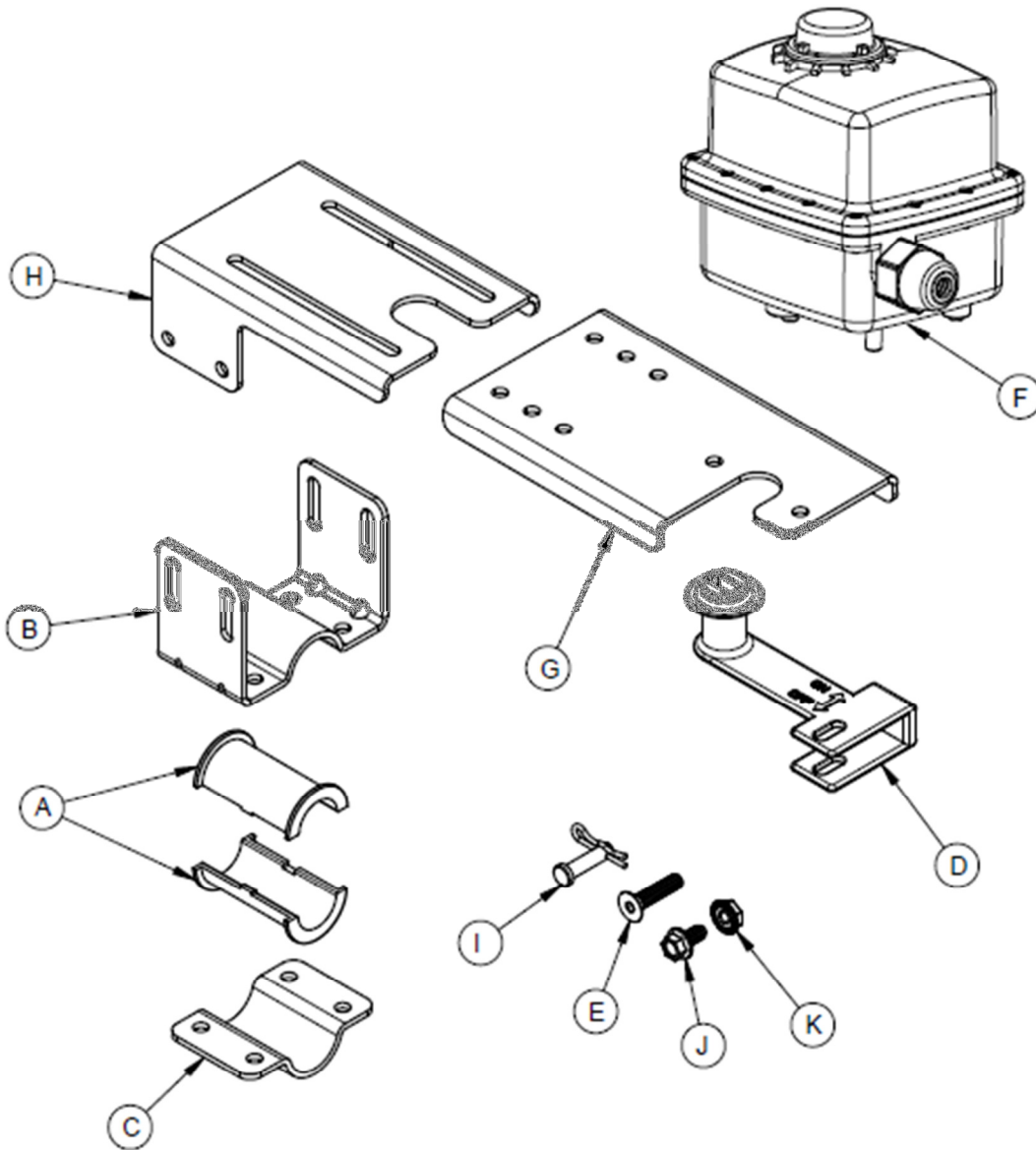
Clamp-On Actuator Installation Manual

V1.3.17.16



This product is only intended for installation on copper piping.
Do NOT install on pipe material other than copper.

1. Product Components



	Quantity	Part Name
A	1	3/4" Adapter Sleeve
B	1	Upper Mounting Bracket
C	1	Lower Mounting Bracket
D	1	Actuator Handle
E	1	Manual Handle Set Screw
F	1	Electric Actuator
G	1	Horizontal Adjustment Bracket
H	1	Vertical Adjustment Bracket
I	1	Cotter Pin and Key
J	12	3/8" Bolts
K	15	7/16" Nuts

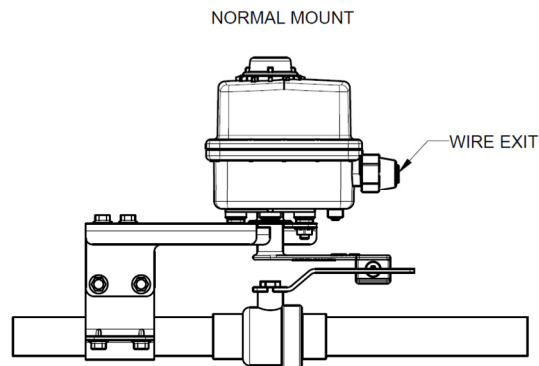
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1. Tools Needed

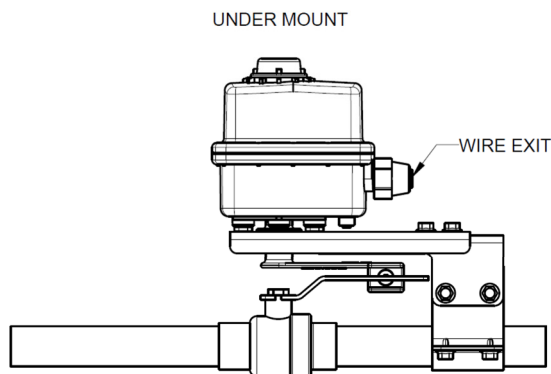
- 1.1. 7/16" Crescent Wrench
- 1.2. 3/8" Crescent Wrench
- 1.3. 5/32" Allen Wrench

2. Pre-Installation Checklist

- 2.1. Determine the direction of open/close for the installed manual ball valve.
- 2.2. Determine which side of the installed manual ball valve has a minimum of 6 inches of space along the pipe from the solder connection between the valve and the pipe.
 - 2.2.1. If the 6 inches of space is on the **non-handle** side of the Manual Ball Valve, proceed to section **3. Installation Steps for Normal Mounting**, page 4.



- 2.2.2. If the 6 inches of open space is on the **handle** side of the Manual Ball Valve, proceed to section **4. Installation Steps for Under Mounting**, page 10.

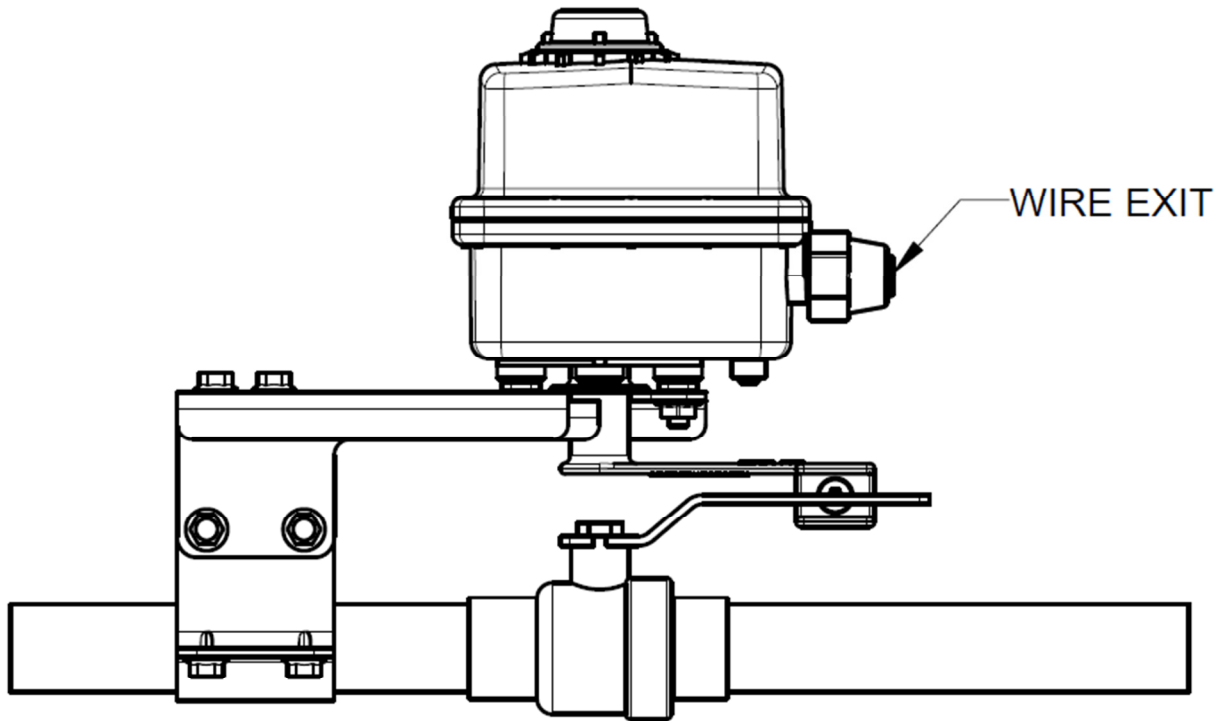


- 2.3. Make sure the pipe and valve are at least two inches from any obstruction such as a wall.
- 2.4. Ensure there is a power source within 6 ft. of the Clamp-On Actuator.

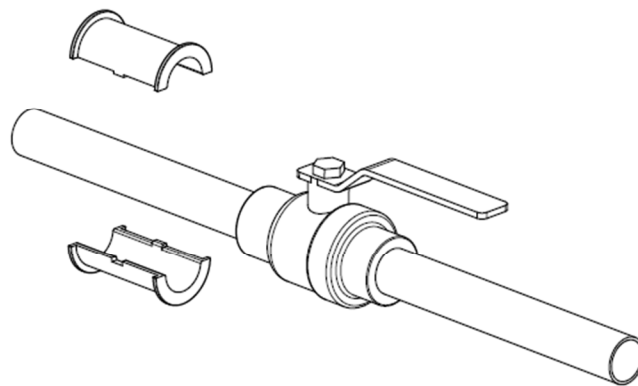
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3. Installation Steps For Normal Mounting

NORMAL MOUNT

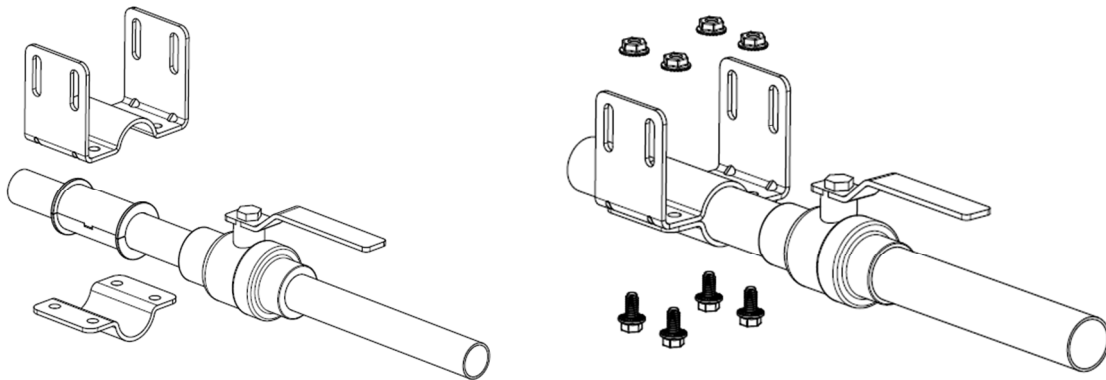


- 3.1. If you are installing on a 3/4" pipe, affix the 3/4" Adapter Sleeve (a) to the pipe. If you are installing on a 1" pipe, you can set the 3/4" Adapter Sleeve (a) aside as you will not need it.

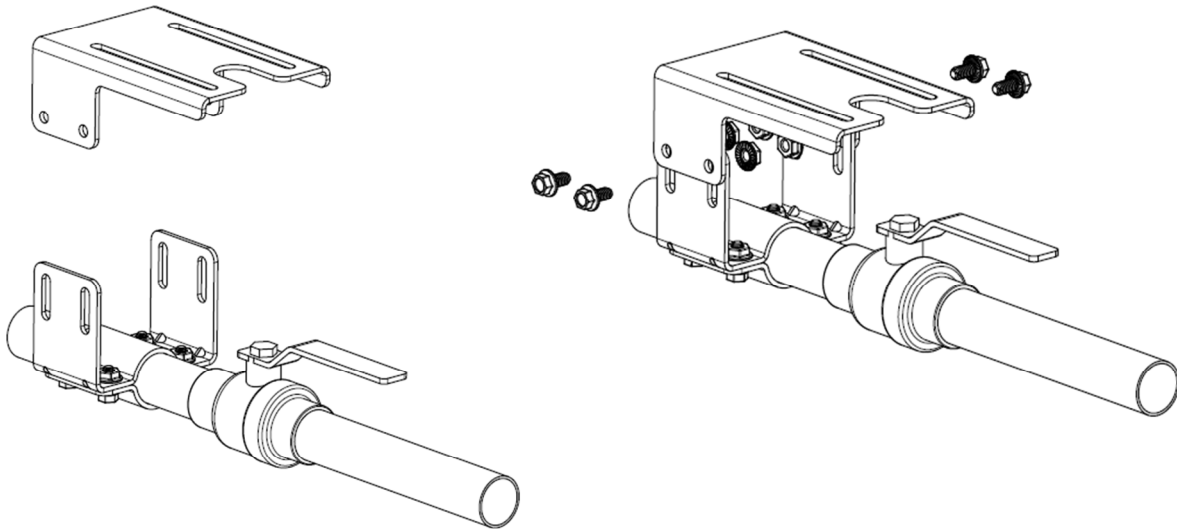


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- 3.2. Install the Upper Mounting Bracket and Lower Mounting Bracket onto the pipe approximately 2" from the soldered end of the Manual Ball Valve on the non-handle side.
- 3.2.1. Use four bolts and four nuts to attach the brackets to the pipe.
- 3.2.2. Make sure the bolts and nuts are finger tight, but do not tighten with wrenches yet.

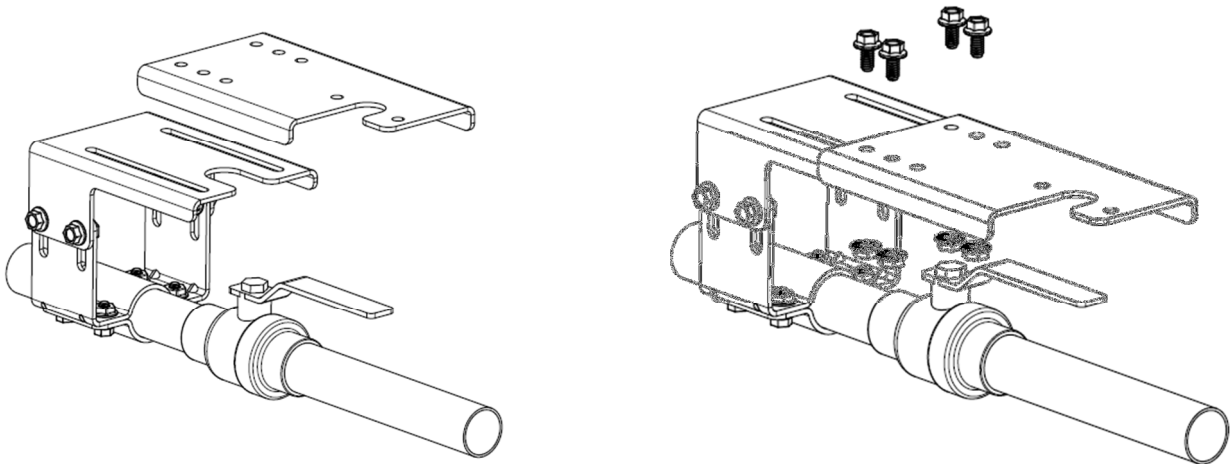


- 3.3. Install the Vertical Adjustment Bracket on to the Upper Mounting Bracket
- 3.3.1. Use four bolts and four nuts to attach the Vertical Adjustment Bracket to the Upper Mounting Bracket.
- 3.3.2. Make sure the bolts and nuts are finger tight, but do not tighten with wrenches yet.

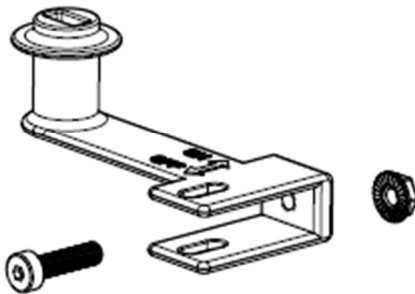


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- 3.4. Install the Horizontal Adjustment Bracket on the Vertical adjustment bracket.
- 3.4.1. Use four bolts and four nuts to attach the Vertical Adjustment Bracket to the Upper Mounting Bracket.
- 3.4.2. Make sure the bolts and nuts are finger tight, but do not tighten with wrenches yet.

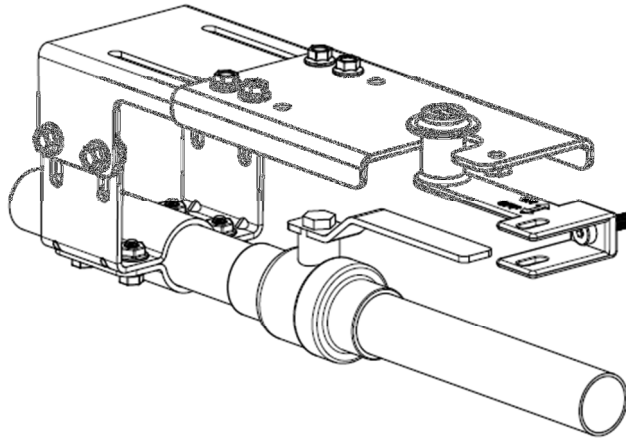


- 3.5. Use the Allen Wrench to seat the Manual Handle Set Screw into the interior of the Actuator Handle.
- 3.5.1. Screw a nut onto the shaft of the bolt that is now exposed through the back of the Actuator Handle.
- 3.5.2. Make sure the bolt and nut are finger tight but do not tighten with wrenches



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- 3.6. Insert the Actuator Handle into the cut out of the Horizontal Adjustment Bracket so that the flange around the top of the shaft is on the top of the bracket.

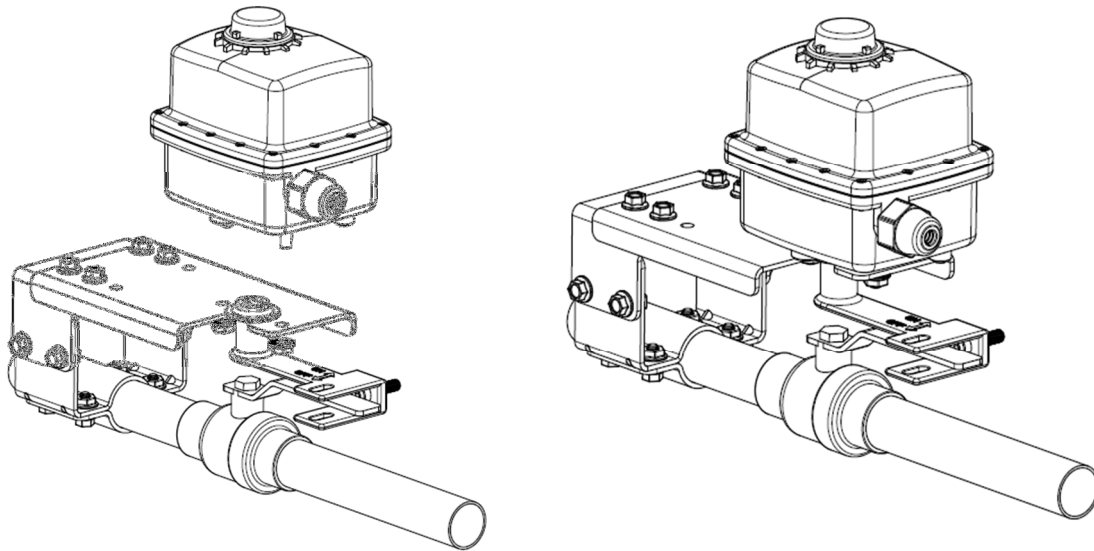


- 3.7. Install the Electric Actuator onto the Horizontal Adjustment Bracket so that the “pigtail” for the Electric Actuator is facing the same direction as the Actuator Handle.

3.7.1. The stem of the Electric Actuator should fit into the slot on top of the shaft of the Actuator handle and the two bolts sticking out of the bottom of the Electric Actuator should fit into the corresponding holes on the Horizontal Adjustment Bracket.

3.7.2. Use two Nuts to screw the Electric Actuator on to the Horizontal Adjustment Bracket.

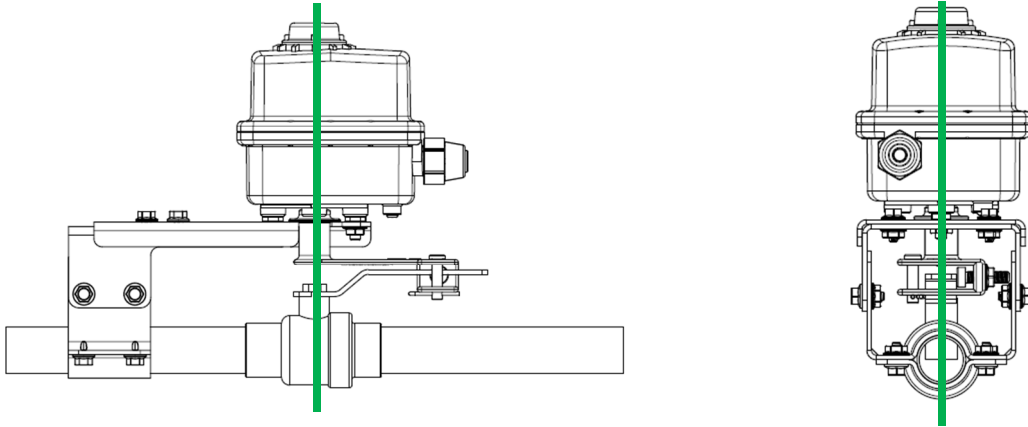
3.7.3. Use the 7/16” Wrench to tighten these two nuts.



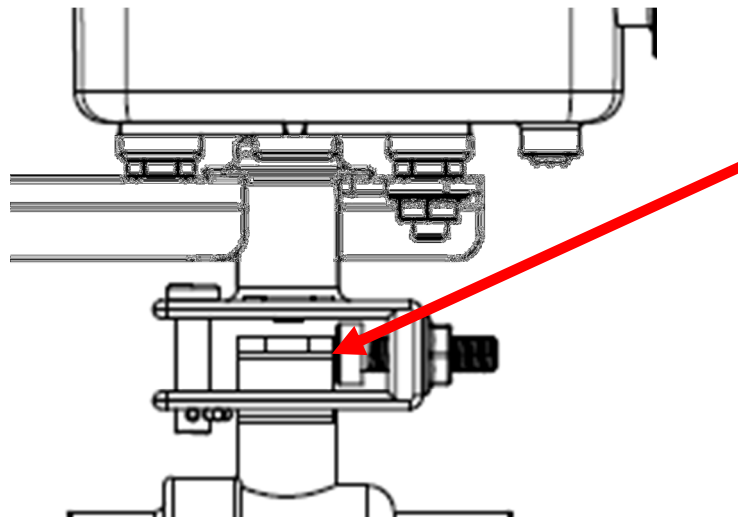
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- 3.8. Line up the cylindrical stem of the Actuator Handle with the stem of the Manual Ball Valve.
3.8.1. Make sure that the stems are inline from front to back and side to side.

It is crucial that the stems of the Actuator Handle and the Manual Ball Valve are in line with each other. If they are not lined up correctly, damage to the Clamp-On Actuator and/or Manual Ball Valve could occur, possibly resulting in bodily injury



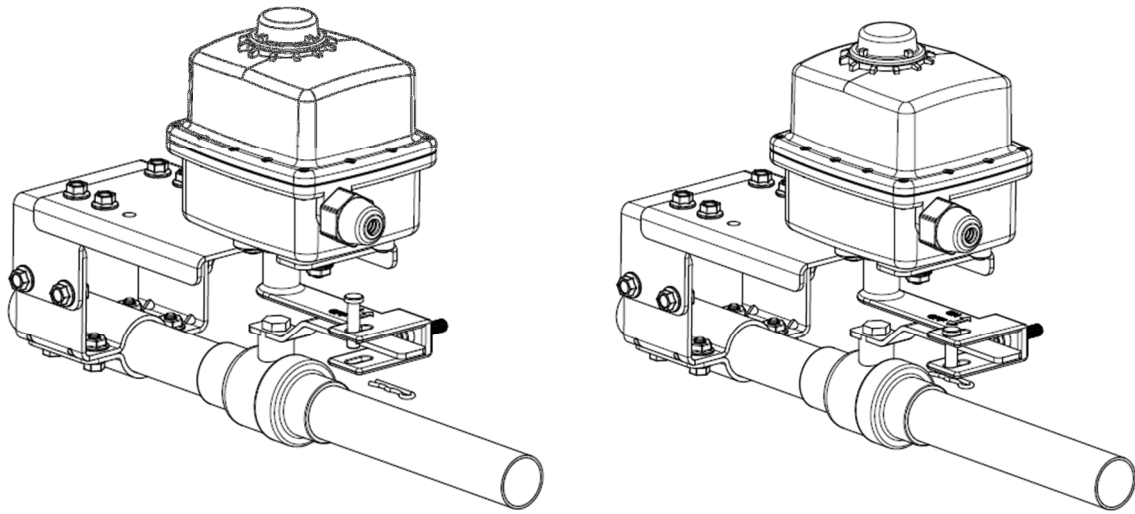
- 3.9. Once the stem of the Actuator Handle is positioned directly over the top of the stem of the Manual Ball Valve, use wrenches to tighten all nuts and bolts already in place.
- 3.10. To set the Manual Handle Set Screw, turn the Manual Ball Valve Handle so that it is perpendicular to the pipe.
- 3.11. When set properly, the Manual Handle Set Screw will be flush against the Manual Ball Valve Handle when the Manual Ball Valve is CLOSED. This will ensure that the valve is closed all the way without trying to over close the valve.



- 3.11.1. In the open position, the Manual Handle Set Screw may not touch the Manual Ball Valve Handle. This is considered normal operation.
- 3.11.1.1. Once the Manual Handle Set Screw is set correctly, tighten the nut on the back of the Manual Handle Set Screw to hold the position of the screw.

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- 3.12. The Clamp-On Actuator is designed to close the Manual Ball Valve in the case of an emergency. Thus, the Cotter Pin and Key are not mandatory components of the installation. If you chose to utilize the Cotter Pin and Key to assist with opening the Manual Ball Valve, we recommend that you check the Manual Ball Valve position to ensure that it has closed and opened properly.
- 3.13. Insert the Cotter Pin into the open slots on the Actuator Handle.
- 3.13.1. Seat the Cotter Pin Key into the hole on the Cotter Pin.

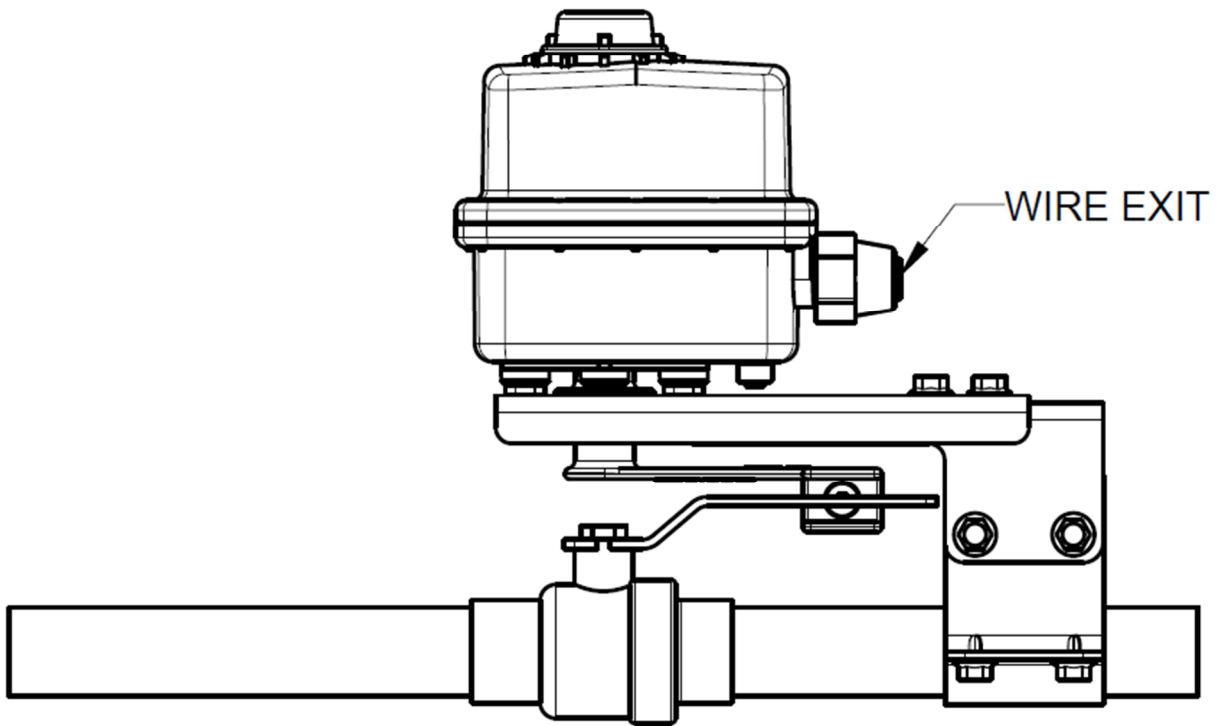


- 3.14. This completes the installation instructions for the Normal Mount Process.

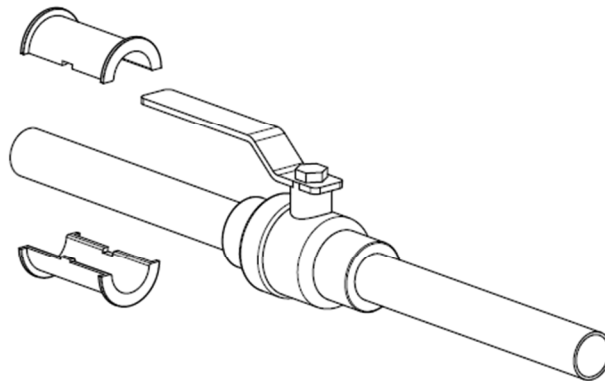
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4. Installation Steps For Under Mounting

UNDER MOUNT

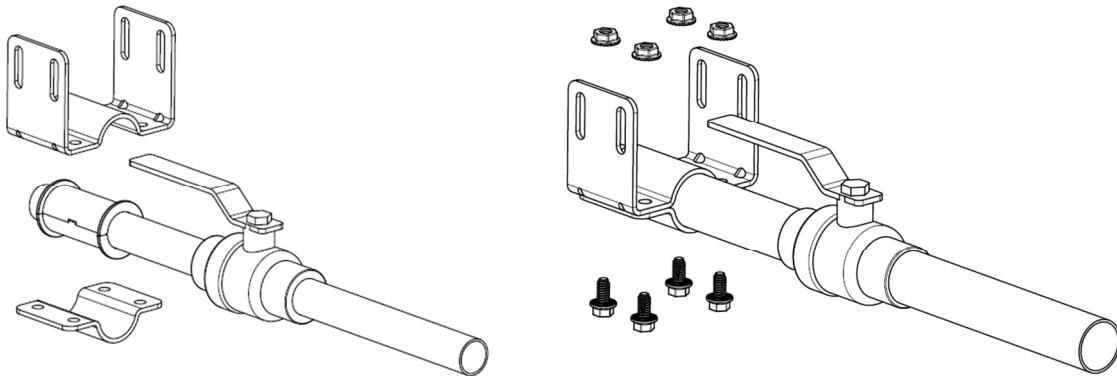


- 4.1. If you are installing on a 3/4" pipe, affix the 3/4" Adapter Sleeve (a) to the pipe. If you are installing on a 1" pipe, you can set the 3/4" Adapter Sleeve (a) aside as you will not need it.

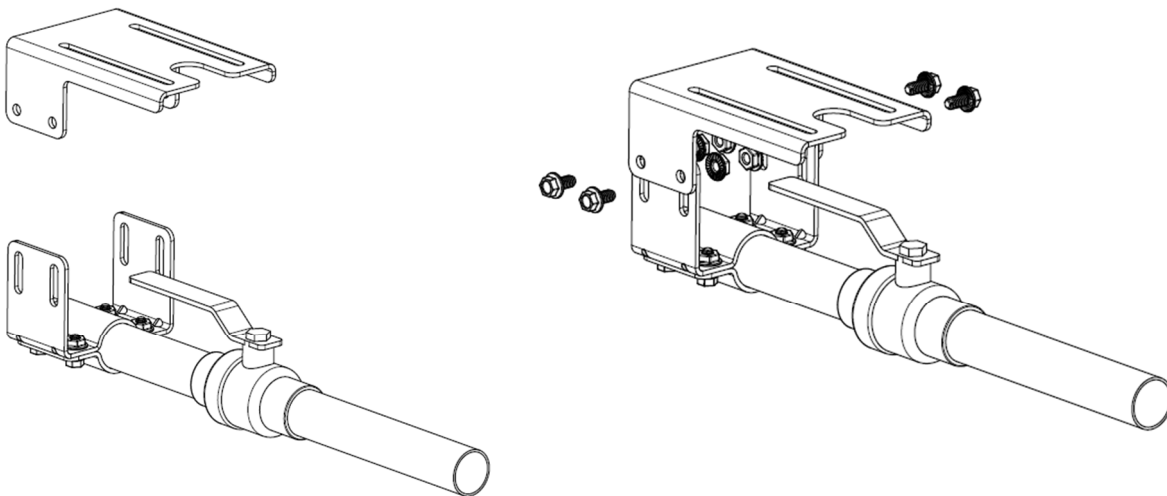


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- 4.2. Install the Upper Mounting Bracket and Lower Mounting Bracket onto the pipe approximately 4" from the soldered end of the Manual Ball Valve on the handle side.
- 4.2.1. Use four bolts and four nuts to attach the brackets to the pipe.
- 4.2.2. Make sure the bolts and nuts are finger tight, but do not tighten with wrenches yet.



- 4.3. Install the Vertical Adjustment Bracket on to the Upper Mounting Bracket
- 4.3.1. Use four bolts and four nuts to attach the Vertical Adjustment Bracket to the Upper Mounting Bracket.
- 4.3.2. Make sure the bolts and nuts are finger tight, but do not tighten with wrenches yet.

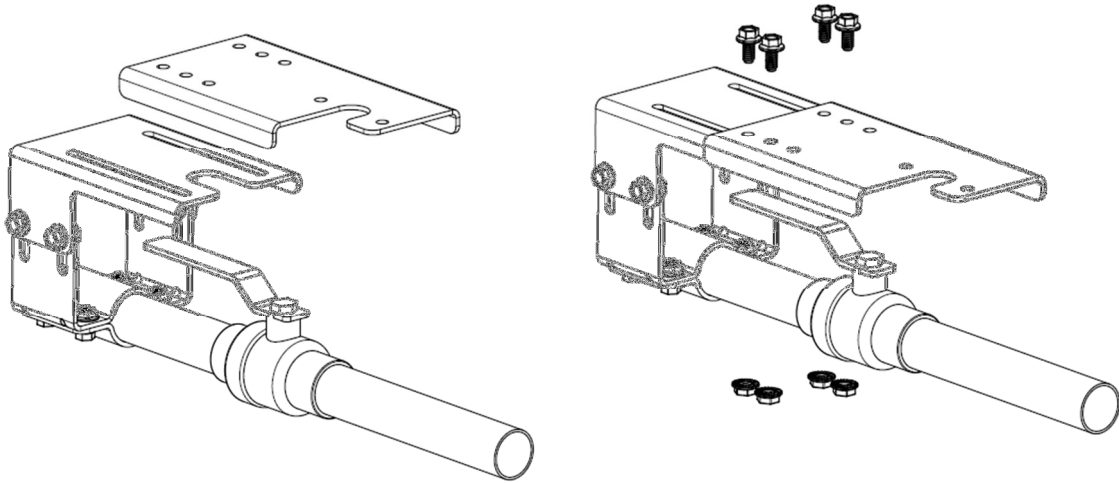


- 4.4. Install the Horizontal Adjustment Bracket on the Vertical adjustment bracket.

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4.4.1. Use four bolts and four nuts to attach the Vertical Adjustment Bracket to the Upper Mounting Bracket.

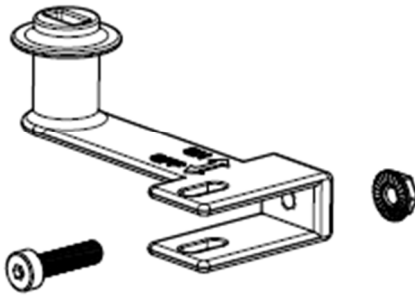
4.4.2. Make sure the bolts and nuts are finger tight, but do not tighten with wrenches yet.



4.5. Use the Allen Wrench to seat the Manual Handle Set Screw into the interior of the Actuator Handle.

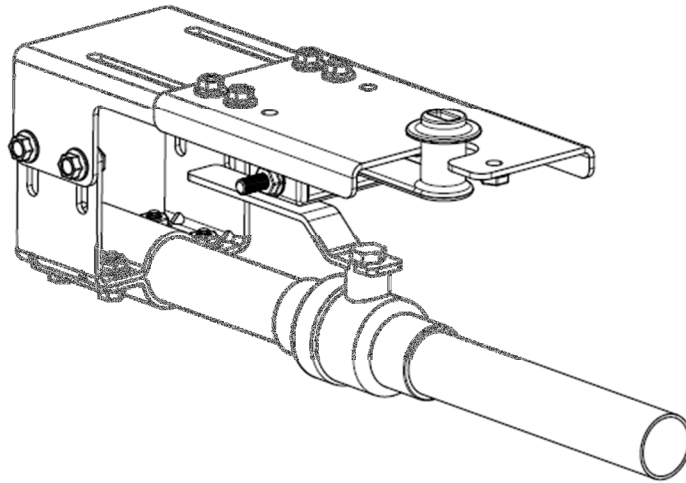
4.5.1. Screw a nut onto the shaft of the bolt that is now exposed through the back of the Actuator Handle.

4.5.2. Make sure the bolt and nut are finger tight but do not tighten with wrenches

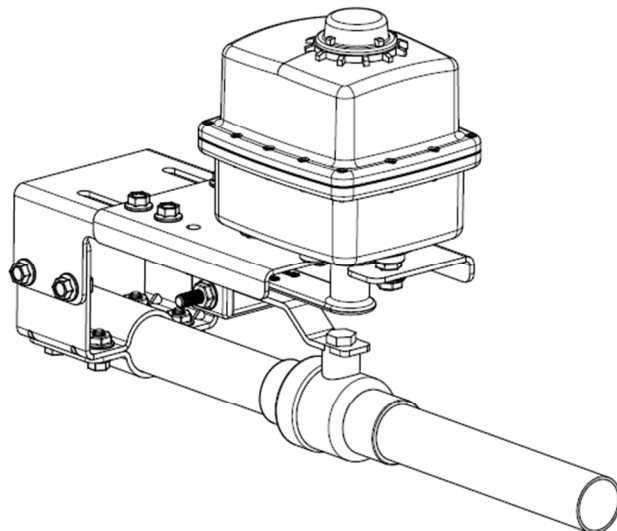


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- 4.6. Insert the Actuator Handle into the cut out of the Horizontal Adjustment Bracket so that the flange around the top of the shaft is on the top of the bracket.
- 4.6.1. The Actuator Handle should be underneath the Vertical Adjustment Bracket and Horizontal Adjustment Bracket.
- 4.6.2. The Actuator Handle and Manual Ball Valve Handle should be able to turn freely without interference from the Vertical Adjustment Bracket or Upper Mounting Bracket.
- 4.6.3. The Manual Ball Valve Handle should be inside the bracket of the Actuator Handle.



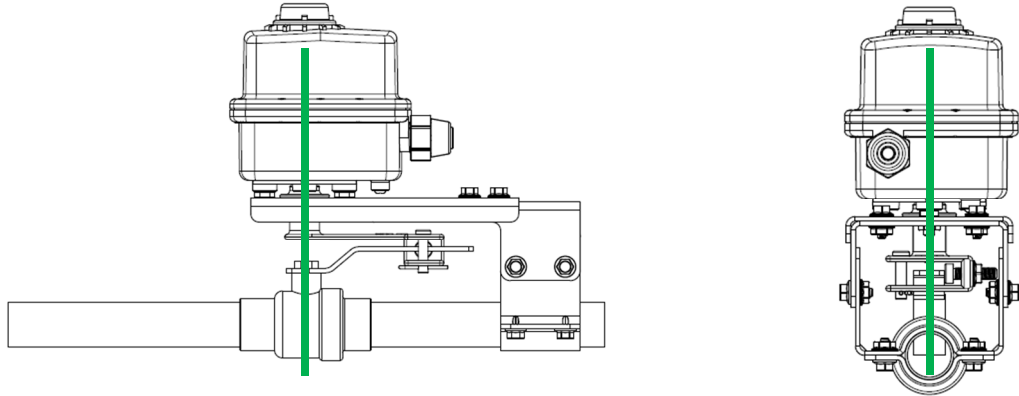
- 4.7. Install the Electric Actuator onto the Horizontal Adjustment Bracket so that the “pigtail” for the Electric Actuator is facing the same direction as the Actuator Handle.
- 4.7.1. The stem of the Electric Actuator should fit into the slot on top of the shaft of the Actuator handle and the two bolts sticking out of the bottom of the Electric Actuator should fit into the corresponding holes on the Horizontal Adjustment Bracket.
- 4.7.2. Use two Nuts to screw the Electric Actuator on to the Horizontal Adjustment Bracket.
- 4.7.3. Use the 7/16” Wrench to tighten these two nuts.



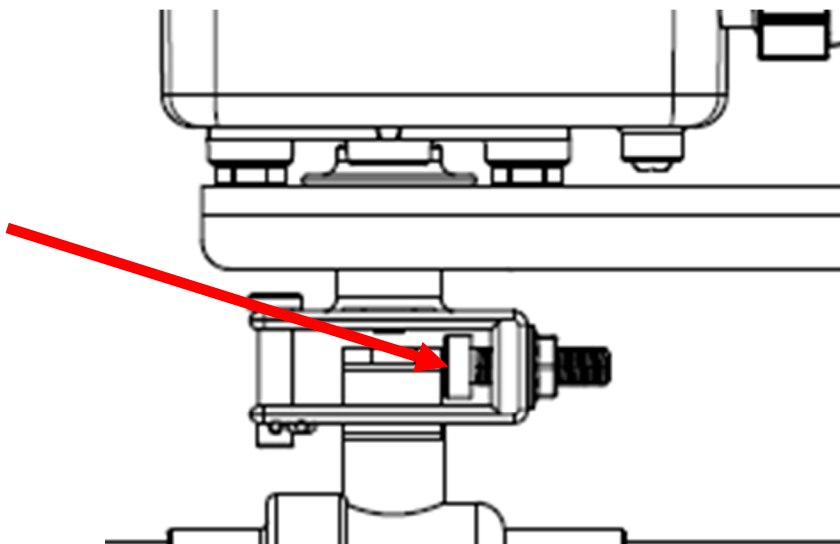
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- 4.8. Line up the cylindrical stem of the Actuator Handle with the stem of the Manual Ball Valve.
4.8.1. Make sure that the stems are inline from front to back and side to side.

It is crucial that the stems of the Actuator Handle and the Manual Ball Valve are in line with each other. If they are not lined up correctly, damage to the Clamp-On Actuator and/or Manual Ball Valve could occur, possibly resulting in bodily injury



- 4.9. Once the stem of the Actuator Handle is positioned directly over the top of the stem of the Manual Ball Valve, use wrenches to tighten all nuts and bolts already in place.
- 4.10. To set the Manual Handle Set Screw, turn the Manual Ball Valve Handle so that it is perpendicular to the pipe.
- 4.11. When set properly, the Manual Handle Set Screw will be flush against the Manual Ball Valve Handle when the Manual Ball Valve is CLOSED. This will ensure that the valve is closed all the way without trying to over close the valve.



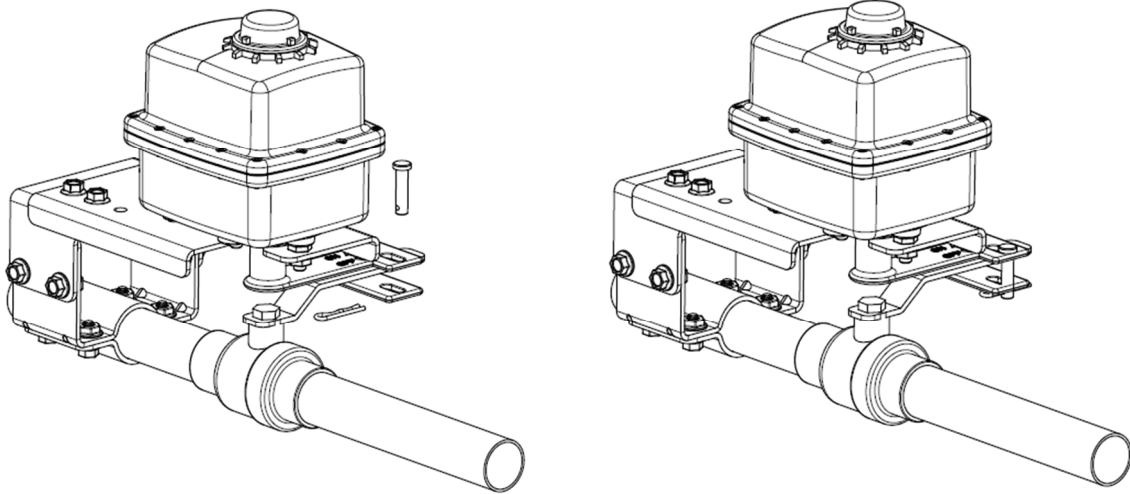
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4.11.1. In the open position, the Manual Handle Set Screw may not touch the Manual Ball Valve Handle. This is considered normal operation.

4.11.1.1. Once the Manual Handle Set Screw is set correctly, tighten the nut on the back of the Manual Handle Set Screw to hold the position of the screw.

4.12. Insert the Cotter Pin into the open slots on the Actuator Handle.

4.12.1. Seat the Cotter Pin Key into the hole on the Cotter Pin.



4.13. The Clamp-On Actuator is designed to close the Manual Ball Valve in the case of an emergency. Thus, the Cotter Pin and Key are not mandatory components of the installation. If you chose to utilize the Cotter Pin and Key to assist with opening the Manual Ball Valve, we recommend that you check the Manual Ball Valve position to ensure that it has closed and opened properly.

4.14. This completes the installation instructions for the Under Mount Process.

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