

VB-7000 Installation Instructions

Installation

Inspect the package for damage. If damaged, notify the appropriate carrier immediately. If undamaged, open the package and inspect the device for obvious damage. Return damaged products.

Requirements

- Tools (not provided): Pipe wrenches
- Training: Installer must be a qualified, experienced technician
- Appropriate accessories

Caution

- Install the valve with the flow in the direction of the flow arrow(s). See Table One for details on flow.
- Do not exceed the ratings of the device.
- Avoid locations where excessive moisture, corrosive fumes or vibration are present.



Danger

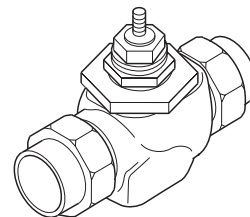
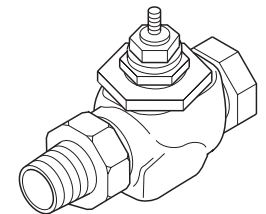
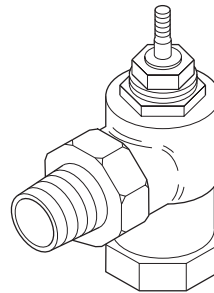
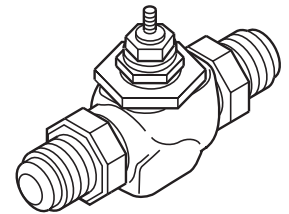
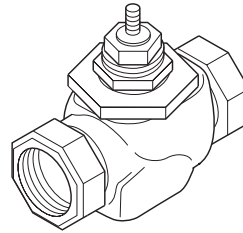
- Do not use for combustible gas applications. The valve packings are not rated for combustible gas applications, and if used in these applications, gas leaks and explosions may result.

Mounting

1. The valve should be mounted in a weather protected area, if the actuator is not rated for outdoor use, in a location that is within the ambient limits of the actuator. When selecting a location, allow sufficient room for the valve, linkage, actuator, and other accessories and for service of the product.
2. The preferred mounting position for the valve is with the valve stem vertical above the valve body. Avoid mounting the valve so that the valve stem is below horizontal.
3. For steam applications only, position the valve body so the valve stem and actuator are at 45° from vertical.
4. The two-way valves must be piped with the "A" port as the inlet and the "AB" port as the outlet. Mixing valves must be piped with two inlets ("A" and "B" ports) and one outlet ("AB" port). Diverting valves must be piped with one inlet ("B" port) and two outlets ("A" and "AB" ports).
5. Valve-specific instructions are available on pages 2 and 3.

Checkout

1. Make sure the valve stem operates smoothly before installing the valve linkage and the actuator.
2. If the stem does not operate smoothly, it may indicate that the valve was twisted or crushed during installation or that the stem was bent by rough handling. These conditions may require that the valve be replaced.
3. After the piping is under pressure, check the valve body and the connections for leaks.
4. After the valve linkage and the actuator are installed, check their operation. Allow valve to move full stroke, ensure performance per Table One.



VB-72X1 Union End NPT Valve Bodies

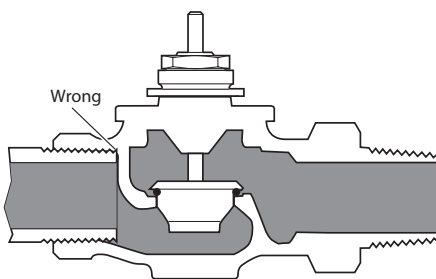
The VB-7211 and VB-7221 series of union valve bodies conform to American Standard Taper Pipe Threads (NPT).

1. Apply pipe dope sparingly to all but the last two threads of a properly threaded, reamed, and cleaned pipe. Make sure that pipe chips, scale, etc. do not get into the pipe since this material may lodge in the valve seat and prevent proper closing and opening of the valve.
2. Start the joint by hand screwing the pipe into the valve. If the thread engagement feels "right," turn the pipe by hand as far as it will go.
3. Use a pipe wrench to fully tighten the valve to the pipe. Do not over tighten or strip threads.

Normal Thread Engagement Between Male Pipe Thread and Valve Body.

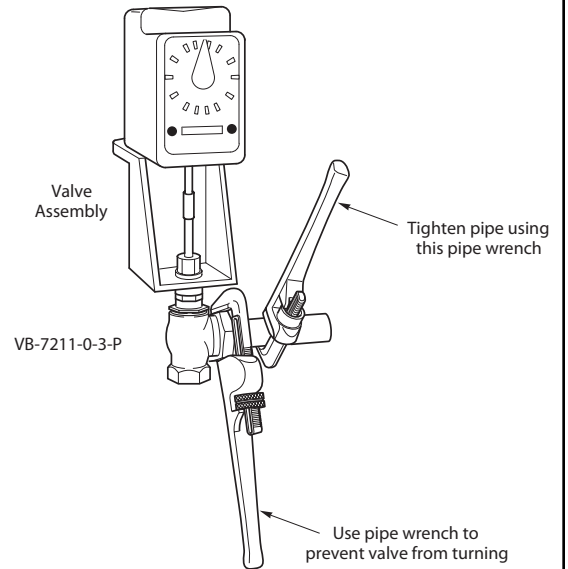
Valve Size Inches (NPT)	Normal Engagement
1/2"	1/2"
3/4"	9/16"
1"	11/16"
1-1/4"	11/16"

Normal Thread Engagement.

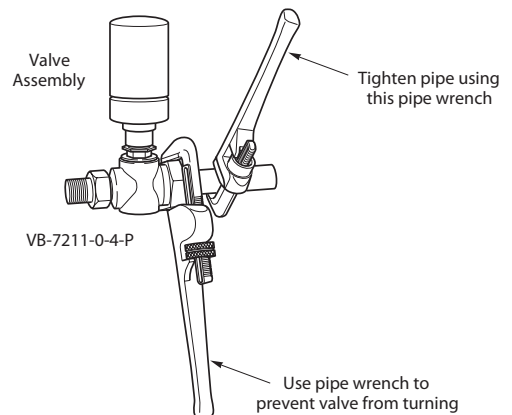


Pipe threads too long.
Pipe interferes with seat.

Union Angle



Union NPT



VB-7XX4 Union Sweat Valve Bodies

1. Remove both tail pieces and union nuts from the valve body. Apply flux to the tail pieces and pipe before sweating into place. Make sure the union nuts are mounted on the tail pieces before sweating. Caution: Do not sweat the tail pieces in place while they are mounted to the valve body. The excess heat will damage the valve body.
2. Re-install the valve body. Start the joint by hand screwing the union nut onto the valve body. If the thread engagement feels "right," turn each union nut by hand as far as it will go.
3. Using a pipe wrench to hold the valve, fully tighten the union nut to the valve. Do not over tighten or strip the threads. Take care not to apply torsion across the valve body.

VB-7XX3 and VB-7XX5 Threaded Valve Bodies

1. Apply pipe dope sparingly to all but the last two threads of a properly threaded, reamed, and cleaned pipe. Make sure that pipe chips, scale, etc. do not get into the pipe since this material may lodge in the valve seat and prevent proper closing and opening of the valve.
2. Start the joint by hand screwing the pipe into the valve. If the thread engagement feels “right,” turn the pipe by hand as far as it will go.
3. Use a pipe wrench to fully tighten the valve to the pipe. Do not over tighten or strip threads.

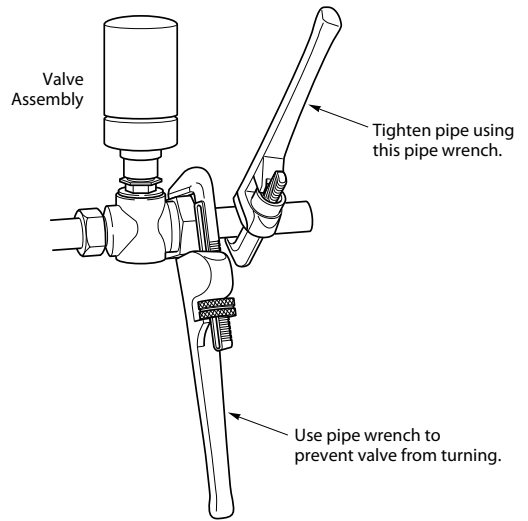
VB-7XX3 Normal Thread Engagement Between NPT Male Pipe Thread and Valve Body.

Valve Size Inches (NPT)	Normal Engagement
1/2"	1/2"
3/4"	9/16"
1"	11/16"
1-1/4"	11/16"
1-1/2"	11/16"
2"	3/4"

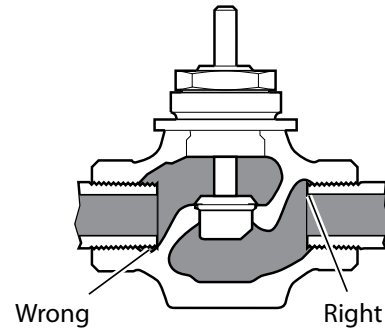
VB-7XX5 Normal Thread Engagement Between Rp Male Pipe Thread and Valve Body.

Valve Size in mm (Rp)	Normal Engagement
15	13
20	14
25	17
32	17
40	17
50	19

Threaded



Pipe threads too long.
Pipe interferes with seat.



VB-7XX2 Flared Valve Bodies

1. Cut end of tubing square using a tube cutter.
2. Slip the flare nut onto the end of the copper pipe. Move it back out of the way to allow working room.
3. Place the base of the flaring tool around the copper tube at the appropriate diameter size.
4. Attach the flare cone over the copper tube opening using screw fitting. Tighten it down until the cone is firmly seated inside the base the vise base.
5. Remove the copper tube from vise base and examine for splits. Bring the nut back to the end of the flared tubing.
6. Verify the flare fits snugly in bottom of the nut. Now attach and tighten the nut to the valve.
7. Pressure the system and check for leaks.

Table One

Valve Body Part Number Series	Valve Assembly Part Number Series*	Type of Valve	Inlet Port(s)	Outlet Port(s)	Flow Stem Up	Flow Stem Down
VB-7211	VA, VF, VK, VK4, VS or VU-7211	2-Way Stem Up Open	A	AB	Valve Open	Valve Closed
VB-7212	VA, VF, VK, VK4, VS or VU-7212					
VB-7213	VA, VC, VF, VK, VK4, VP, VS or VU-7213					
VB-7214	VA, VC, VF, VK, VK4, VP, VS or VU-7214					
VB-7215	VA, VC, VF, VK, VK4, VP, VS or VU-7215					
VB-7253	VA, VC, VF, VK, VK4, VP, VS or VU-7253					
VB-7255	VA, VC, VF, VK, VK4, VP, VS or VU-7255					
VB-7273	VA, VC, VF, VK, VK4, VP, VS or VU-7273					
VB-7275	VA, VC, VF, VK, VK4, VP, VS or VU-7275					
VB-7221	VA, VF, VK, VK4, VS or VU-7221	2-Way Stem Up Closed	A	AB	Valve Closed	Valve Open
VB-7222	VA, VF, VK, VK4, VS or VU-7222					
VB-7223	VA, VF, VK, VK4, VP, VS or VU-7223					
VB-7224	VA, VF, VK, VK4, VP, VS or VU-7224					
VB-7225	VA, VF, VK, VK4, VP, VS or VU-7225					
VB-7263	VA, VF, VK, VK4, VP, VS or VU-7263					
VB-7265	VA, VF, VK, VK4, VP, VS or VU-7265					
VB-7283	VA, VF, VK, VK4, VP, VS or VU-7283					
VB-7285	VA, VF, VK, VK4, VP, VS or VU-7285					
VB-7312	VA, VF, VK, VK4, VS or VU-7312	3-Way Mixing	B & A	AB	Flow B to AB	Flow A to AB
VB-7313	VA, VC, VF, VK, VK4, VP, VS or VU-7313					
VB-7314	VA, VC, VF, VK, VK4, VP, VS or VU-7314					
VB-7315	VA, VC, VF, VK, VK4, VP, VS or VU-7315					
VB-7323	VA, VC, VF, VK, VK4, VP, VS or VU-7323	3-Way Diverting	B	A & AB	Flow B to AB	Flow B to A
VB-7325	VA, VC, VF, VK, VK4, VP, VS or VU-7325					
VB-7332	VF, VK, VK4, VS or VU-7332	3-Way Sequencing	B & A	AB	Flow ** B to AB	Flow ** A to AB

* Valve bodies are designated by the prefix VB. When associated with an assembly, the prefix is assigned based on type of actuator. For example, the series part number of a valve assembly with a two-way, normally open, NPT Threaded valve with a pneumatic actuator is VK-7213.

** Stem mid stroke no flow both A and B ports are closed

Water and Steam System Maintenance

All heating and cooling systems are susceptible to valve and system problems caused by improper fluid treatment and system storage problems. These guidelines are provided to help avoid valve and water system problems from improperly treated water or storage procedures in cooling, hot water, and steam systems, and to obtain maximum life from Schneider Electric valves. While all cooling and heating systems are susceptible to problems, closed chilled water systems, including those containing brine or glycol, are especially prone to system and valve problems. The best way to avoid problems is to follow the advice of professional water treatment and control specialists.

To maintain non-damaging conditions, follow these guidelines:

- Clean the system prior to start up. Use a nitrite or molybdate-based treatment program.
- Use filtration equipment where needed.
- Properly store off-line systems and monitor water treatment results using corrosion test coupons.
- Boiler water treatment for steam systems should be continuous. Follow industry guidelines such as "Marks Standard Handbook for Mechanical Engineers." For oxygen removal, catalyzed sodium sulfate is usually recommended.
- Consult EN-205, Water System Guidelines Engineering Information, F-26080, for further details.