

# Installation Instructions for Type G Rotary Unions



**NOTE:** Please follow your company's safety procedures whenever working on Johnson-Fluiten rotary unions and read all of the instructions completely before proceeding.

All retrofit installations should be carefully inspected and gauged for actual pilot bore diameter. The high precision Type G union cannot be properly installed if the rotor pilot and spindle pilot bore are not properly matched.

## STEP 1

Check the spindle face. The spindle face must be clean and free from dents or chips to ensure a proper installation. Clean and deburr if necessary. Using a dial indicator, check the flatness of the spindle face and confirm it is perpendicular to the pilot's bore centerline within 0.005 mm (0.0002") TIR. The spindle pilot bore should be concentric to the centerline of the spindle within 0.008 mm (0.0003") TIR.

## STEP 2

Inspect the rotary union and determine the thread size, type, and direction (LH or RH) to ensure the proper union is prepared for installation onto the spindle.

## STEP 3

If using a hose fitting to adapt the flexible hose to the rotary union, thread the fitting into the rotary union port and tighten using a torque of 40 N-m (30 ft-lb).

## STEP 4

Using a 300 mm (12") or longer flexible metal hose, thread the hose into the rotary union connection port or hose fitting. It is important to connect the hose to the rotary union PRIOR to installing the union onto the spindle to prevent damage to the rotary union's ball bearing races.

## STEP 5

Using a transparent drainage line, connect the drain line to the union using a drain port facing in the "down" direction as shown in Figures 1 and 2. Effective drainage is achieved with a continuous downward flow path. The transparent drainage line allows any leakage from the rotary union to be monitored. Plug all remaining drain holes with the plugs provided with your Type G union.

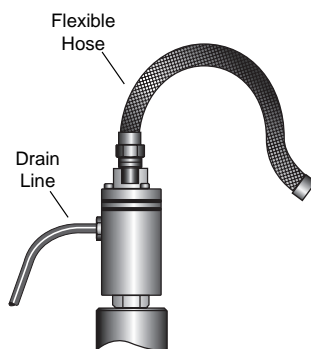
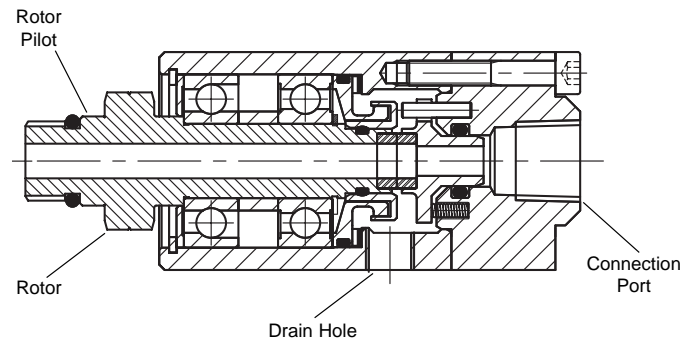


Figure 1. Vertical Installation



## STEP 6

Lubricate the surface of the o-ring located on the rotor with a non-petroleum based o-ring lubricant. Do not use Vaseline, Never Seize, grease, or lubricating oil as an o-ring lubricant. Mount the union to the spindle and tighten using a torque of 60 N-m (45 ft-lb). Use a dial indicator to verify the union is within 0.03 mm (0.0012") TIR.

## STEP 7

Connect the flexible hose to the coolant supply. Be sure to install the piping to avoid any side loading of the rotary union. Side loading or other excessive forces on the union will lead to premature failure. Two pieces of flexible hose with a minimum length of 150 mm (6") each may be used in place of a single hose. Kadant Johnson recommends SAE 100R1 Type AT single-braid hose.

## STEP 8

Check the installation of rotary union, flexible hose, and drain line. Make sure the rotary union is able to move freely and there is no side loading from the flexible hose installation. The installation is now completed.

## START UP TEST WITH COOLANT

Remove all tools and engage safety devices required to start machine. Start the machine turning. Verify that at maximum operating speed there is no visible vibration of the rotary union. This is a dry run test and should only be run for a short period of time.

Introduce coolant into the rotary union. Maintain this test for at least one hour to allow for proper break-in of the ball bearings. The temperature on the rotary union should not exceed 70° C (158° F) during the initial phase of the test. After one hour, the temperature should not exceed 50° C (122° F). No leakage will be seen with conventional Type G unions. The maximum expected leakage when using the Auto-Off™ GX and GZ unions is 4 to 5 drops (0.2 ml/min).

If using GX or GZ unions, shut off the coolant and verify the opening of the seal faces by confirming a small amount of coolant leakage through the drain tube. This is the "off" position for the seals. Leakage should be no more than 4 to 5 drops. Repeat this test to verify proper operation of the Auto-Off seal device.

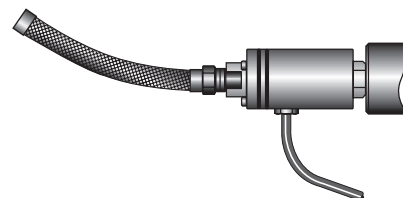


Figure 2. Horizontal Installation

**START UP TEST WITH AIR**

Remove all tools and engage safety devices required to start machine. Start the machine turning. Verify that at maximum operating speed there is no visible vibration of the rotary union. This is a dry run test and should only be run for a short period of time.

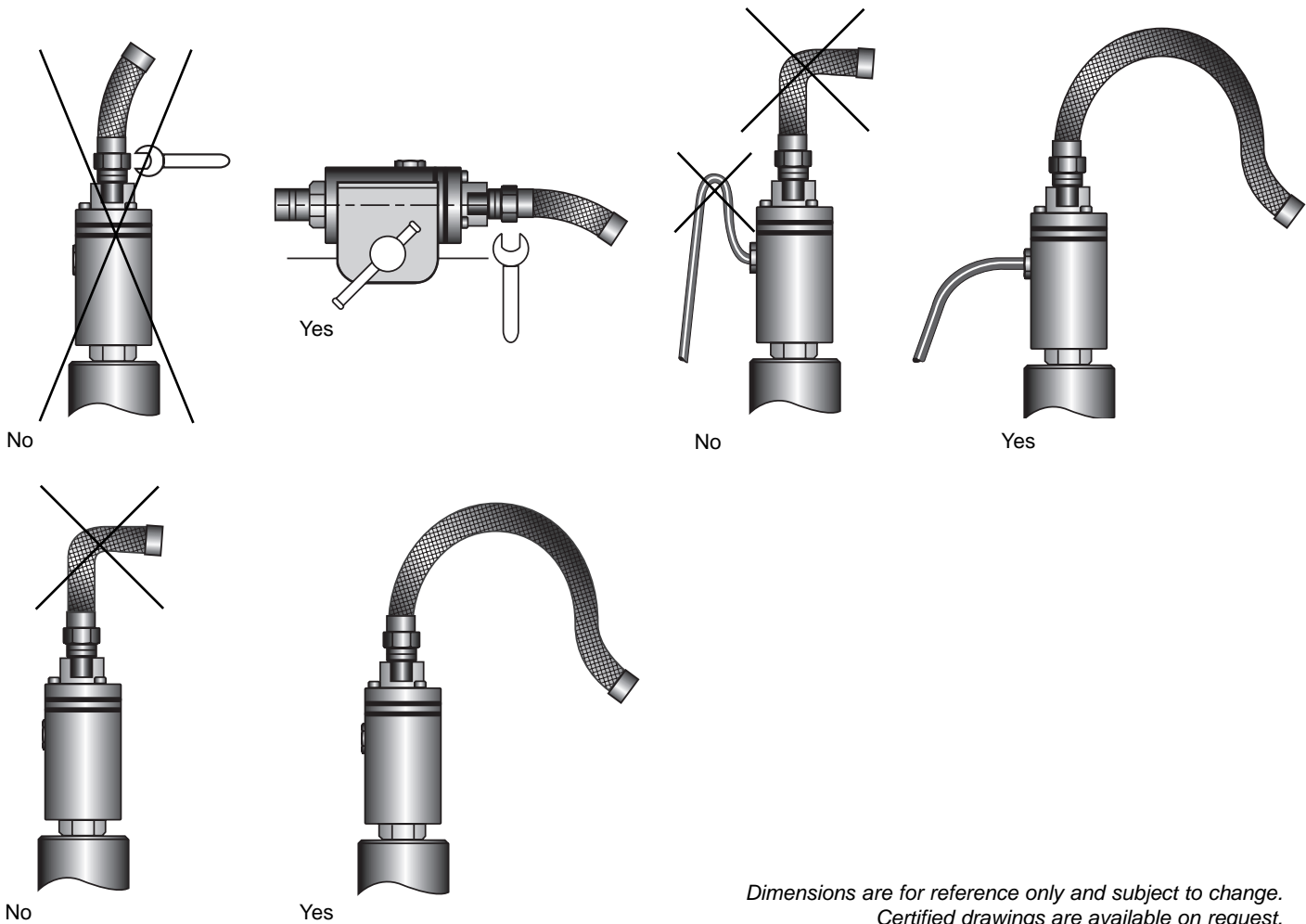
Introduce air into the rotary union. Run this pressure test for five minutes. Verify there is no excessive leakage of air.

Note: To detect a leak when using air, it is recommended that a sensitive pressure gauge be used on the drain line. If this is not practical, slight leakage can be detected by closing the drainage holes for several seconds and then confirming the drainage line is pressurized.

**TROUBLESHOOTING**

PROBLEM	POSSIBLE CAUSE	ACTION
Elevated vibration or high noise	Rotor connection is not tight	Tighten the rotor
	Damaged bearings	Replace the rotary union
Leaking found through drain line with seal device engaged	Worn or damaged seal faces	Replace the rotary union
	Insufficient media flow rate	Increase the media flow rate
Overheating	Lack of coolant media	Ensure coolant is flowing to the rotary union – dry running at high speed with closed seal faces will cause failure in a short period of time
	Damaged bearings	Replace the rotary union

**PROPER FLEXIBLE HOSE INSTALLATION**



*Dimensions are for reference only and subject to change. Certified drawings are available on request.*

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