

# Installation instructions for rotary union type GHR-GHS-GHP

Please follow your company' safety procedures whenever working on Johnson-Fluiten rotary unions and read all of the instructions completely before proceeding. Please refer to the engineer drawings of your Johnson-Fluiten rotary union for part identification. If you have any question, please contact your sales representative or Johnson-Fluiten directly.

## PRELIMINARY ASSEMBLY (see figure 1)

- Clamp slightly the rotary union body
- Thread the flexible metal hose into the rotary union port and tighten using a torque of 50Nm
- Connect the hose with a compressed air source and carry out three test cycles as below defined:
  - Closure
  - Maintain the pressure for 30 sec.
  - Opening
- Verify there is no leakage through the hose fitting

*It is important to connect the hose to the rotary union prior to installing it onto the spindle to prevent damage to the rotary union's ballbearings races*

## INSTALLATION

- slide the octagonal drawbar of the spindle inside the rotor of the union.
- check that the union body gets mounted correctly in its housing. Tighten the joint with the fixing devices to the machine
- verify the fixing system do not cause locks or stresses of the union on the spindle.
- Connect the drain line to the union using a drain hole in the body using the drainfitting supplied together with the union. Plug all remaining drainholes with the plugs provided. Apply a minimum torque on plugs and drainfitting in order to avoid any deformation on the union.

### NOTICE

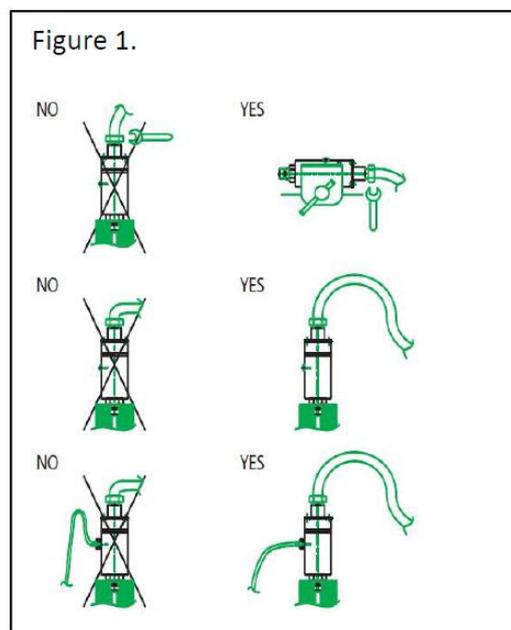
*It is suggested to use a transparent drainage line to monitor any leakage from the union. It shall be downwards d siphons curves shall be avoided to guarantee a satisfactory drainage (see figure 1)*

- 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 will lead to premature failure.
- Final check of 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 complete!



Figure 1.



## PRELIMINARY TEST

- Fit the rotary union onto the machinery, then manually rotate the shaft and verify anything is blocking it.
- Start the machine and verify at maximum speed there are no vibrations which could damage the union.

### WARNING

*This is a dry run test and should be carried out for just few seconds.*

## FUNCTIONAL TEST WITH COOLANT

- Introduce coolant into the rotary union (verify pressure and PV diagram accordingly to our catalogue or table drawing if is a custom union) and verify the correct commutation of the joint. It shall be almost instantaneous, leakage during commutation shall be as low as a few drops.
- Maintain this test for at least 1 hour for proper break-in of the ball bearings.

## Johnson-Fluiten Warranty

Johnson-Fluiten products are built to a high standard of quality. Performance is what you desire: that is what we provide. Johnson-Fluiten products are warranted against defects in materials and workmanship for a period of one year after date of shipment. It is expressly understood and agreed that the limit of Johnson-Fluiten's liability shall, at Johnson-Fluiten's sole option, be the repair or resupply of a like quantity of non-defective product.



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- The temperature measured on the union body shall not exceed 70°C during initial phase of the test and will drop to 50°C max after 1 hour.
- Eventual leakage shall not be more than 0.2ml/min (1ml is about 20/30 drops)

### FUNCTIONAL TEST WITH AIR

- Introduce air into the rotary union (verify pressure and PV diagram accordingly to our catalogue or table drawing if is a custom union)
- Run this pressure test for 5 minutes
- Verify there is no excessive leakage of air.
- Shut off the pressure
- Repeat several commutations verifying the correct functioning.

**NOTICE** To detect a leakage when using air, it is recommended to use a sensitive gauge on the drain line. If it is not possible, slight leakage can be detected by closing the drain holes for few seconds and then verifying if the drainage chamber is pressurized.

### RUN-IN PROCEDURE

After correctly mounting of rotary union, the ball bearing need to be run-in. Utilizing a proper run-in procedure will maximize bearing and grease life.

**NOTICE** Routine maintenance on a scheduled basis is recommended to prevent problems on spindle: we suggest daily visual check of drain-holes to verify correct drainage of physiological leakage.

**NOTICE** Both laboratory tests and practical experience show considerable variations in working life of rotary joint, even operating under identical conditions. Johnson-Fluiten's standard working life is about 10.000 hours, but this value is anyway depending on application, quality of medium, operating conditions, working cycle and maintenance applied on the machine.

**! WARNING** The service life of the seal and the perfect operation of the rotating union is largely determined by filter quality: we recommend a filtering of 50 µm and a media purity of ISO 4406 – 17/15/12.

phase	Type	Run-in speed	Conditions	Important
1	GHR/GHRA GHS/GHSA GHP/GHPA	15min @5.000rpm	P=0 barg NO fluid	<p>If the temperature exceeds 50°C during run-in, stop rotation and wait until bearing temperature returns to ambient. Then repeat the phase</p> <p>Do not run-in the bearings of the rotary union at higher rpm than the maximum operating conditions</p> <p>Reach to speed limit of each phase in about 2 minutes</p>
2	GHR/GHRA GHS/GHSA GHP/GHPA	15min @10.000rpm	Cool down rotary union bearings to ambient temperature between each phase	
3	GHR/GHRA GHS/GHSA GHP/GHPA	15min @15.000rpm		
4	GHS/GHSA GHP/GHPA	15min @20.000rpm		
5	GHS/GHSA	15min @25.000rpm		
6	GHS/GHSA	15min @30.000rpm		

### TROUBLESHOOTING

Problem	Possible Cause	Action
High vibrations/noise	Rotor connection is not tight	Verify rotor and drawbar connection
	Damaged bearings	Replace rotary union
Leakage through drain holes during service	Wearing or damage of sealfaces	Replace rotary union
	Insufficient flow rate	Increase flow rate
Overheating	Lack of cooling liquid	Verify coolant is flowing to the rotary union. Dry running at high speed will cause failure in shortest time
	Damaged bearings	Replace rotary union

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