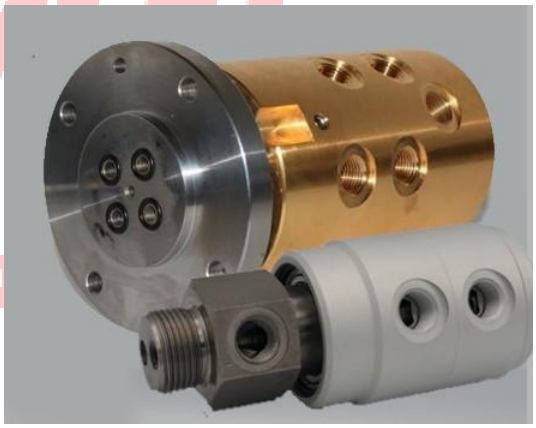
1 - Safety information



This manual provides information about the safety use of TURIAN Rotary Joints.
For your own safety and that of others, read this user manual carefully and completely before carrying out work with TURIAN Rotary Joints.
This user manual refers only to Rotating Joints produced by TURIAN even if the name TURIAN is omitted in the following.
This manual is an integral part of the Rotating Joints to which it refers; make sure that all operators are aware of the instructions contained in this user manual. Always use the latest version available which can be downloaded from the website www.turian.it.
The user is not authorized to make any change without the authorization of TURIAN.
For correct installation of the Rotary Joint, follow the installation instructions.

- Permitted applications

The Rotating joint with radial seals can be used with the following fluids: water, air, vacuum and oil.
Rotary Joints must NOT be used in potentially explosive environments and with flammable fluids. Details of the operating conditions are contained in the catalogs and on the specific drawings. The drawings can be downloaded from the website www.turian.it.
Standard Rotary Joints with radial composite seals can be used at a maximum temperature of 90 ° C.
The simplest application of these Rotary Joints is for the rod outward and retraction command of a pneumatic / hydraulic cylinder. If the cylinder is single acting, a one way rotating joint is used.
In the most common case of double-acting cylinder a two-way rotary joint is used, in this case the two ports on the rotary joint are used alternately to inject and discharge fluid.
Couplings with several ways have the function of feeding several independent tools for functionality or pressures.

- Incorrect use

Rotary Joints are NOT suitable for the areas and applications described below.
Using in such areas or for such applications is forbidden

It is forbidden in the following areas:

Areas at risk of explosion

Rotary Joints of these series should NOT be used in potentially explosive areas, as they are not approved for the requirements of these areas. Operation in such areas can cause explosions.

Food

Food, detergent and disinfectant residues are difficult to remove from these rotary joints. Please contact TURIAN for a request of customized joint.

Use in the following applications is forbidden:

Transfer of flammable fluids and hydrocarbons in general.

Flammable fluids and hydrocarbons can start fires or explosions.
Exception: diathermic oil within the permitted temperature limit. See fluid safety sheet.

Connection to a system with too high pressure.

If excessive pressure is applied to the Rotary Joints, power supplies can be disconnected and cause personal injury and property damage. Also avoid use at maximum pressure with maximum speed and temperature. Follow only the drawing specifications.

Operation without lubrication

Dry running can shorten the life of the component.

Rigid pipe connection

Connection via rigid pipes can cause fluid leaks and damage the ball bearings.

Fluid transfer too hot
If the fluids exceed the maximum temperature for the Rotary Joint, the seals can be damaged with consequent leaks and with the risk of injury to people.

This list is updated following observations of the product in operation.

- ***Safety Instructions***

information on the dangers arising from the use of Rotating Joints is provided below.

- Dangers due to hot surfaces
The Rotary Joints are heated by the temperature of the fluid, skin contact with the external surface of the Rotary Joints can cause injury.
Use safety gloves and personal protective equipment against heat.
Place a clearly visible warning sign next to the rotating joint to warn of danger**.**

- Dangers due to the use of unsuitable pipes
To connect the Rotary Joint to the machine, it is necessary to choose hoses that are appropriate for the fluid used and that meet the specifications of the application.
Improper use of the hoses can cause personal injury and / or material damage to the machine components.
Always use suitable hoses for maximum pressure and maximum fluid temperature.

- ***Fluid hazards***

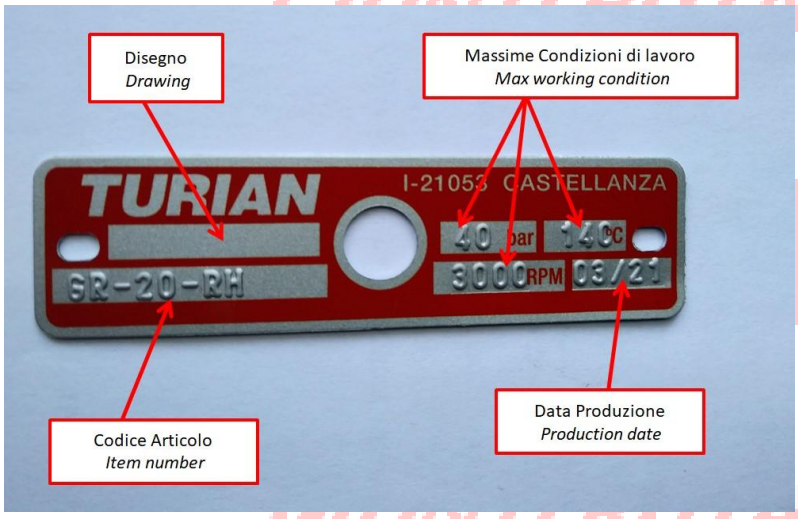
When working on the Rotary Joint, contact of the fluid used with the skin or eyes may occur.
Observe the safety instructions for the fluid used.

- ***Dangers due to incorrect installation***

If the rotary joint is installed incorrectly, leaks can occur from the fittings and pipes.
Depending on the type of fluid used, people could be injured and / or machinery components could be damaged. Before working with the Rotating Joint make sure that there is no pressure present in the line.
Always install the Rotating Joint using only flexible hoses to avoid stress on the Rotating Joint itself.
Install the hoses in such a way that they are not under tension.
Install the Rotary Joint in such a way that any leakage can escape from the lowest point of the Rotary Joint and that any drainage line has a minimum slope such as to allow the fluid to flow freely.
Install the hoses on the Rotary joint before mounting it on the machine.

The latest version of this manual can be downloaded from the website www.turian.it
Always use the latest version of this manual.

2 – Information on the identification plate



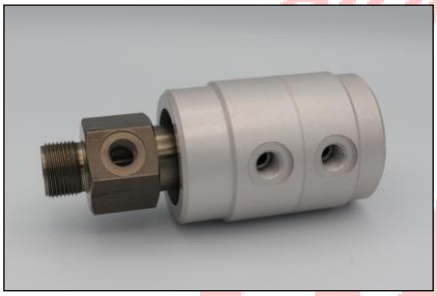
3 – Information for planning

This chapter provides information that has positive effects for maximizing the life of the Rotary Joint

- Fluid Filtration

A good filtration of the fluid reduces the wear of the seals by extending the life of the Rotating Joint, it is suggested to insert a filter upstream of the Rotating Joint that filters particles of dimensions equal to or greater than 50 µm.
Use fluids according to ISO 4406-99 17-15-12, industrial compressed air according to ISO 8573-1 Class 4-4-4

- Possible connections of the Rotating Joint

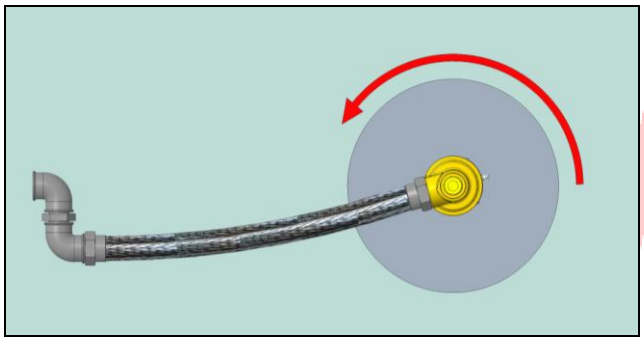


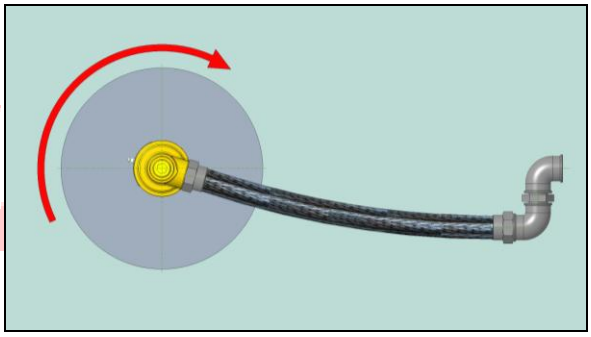
The Rotary Joints can be mounted on the machine shaft using a thread (left) or a flange (right).

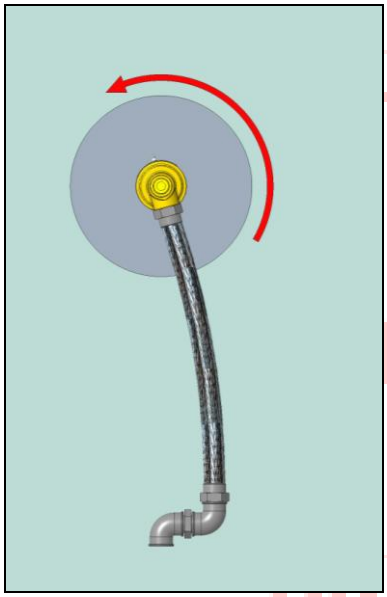
- Installation of hoses

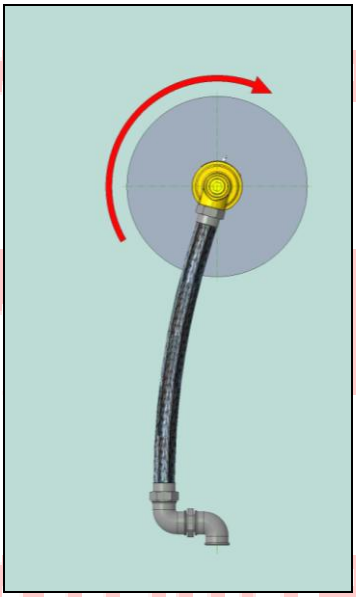
The following pics show examples of how to install hoses on Rotary Joints.
These connection examples prevent the pipes from transferring stresses to the Rotary Joints when the machine is in operation.

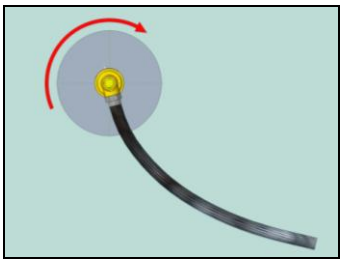
We suggest to connect the hoses as the pictures below show.

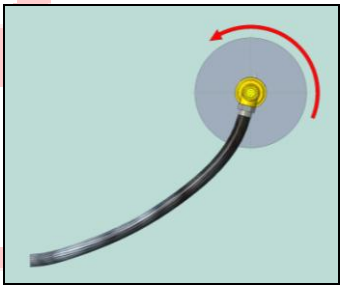


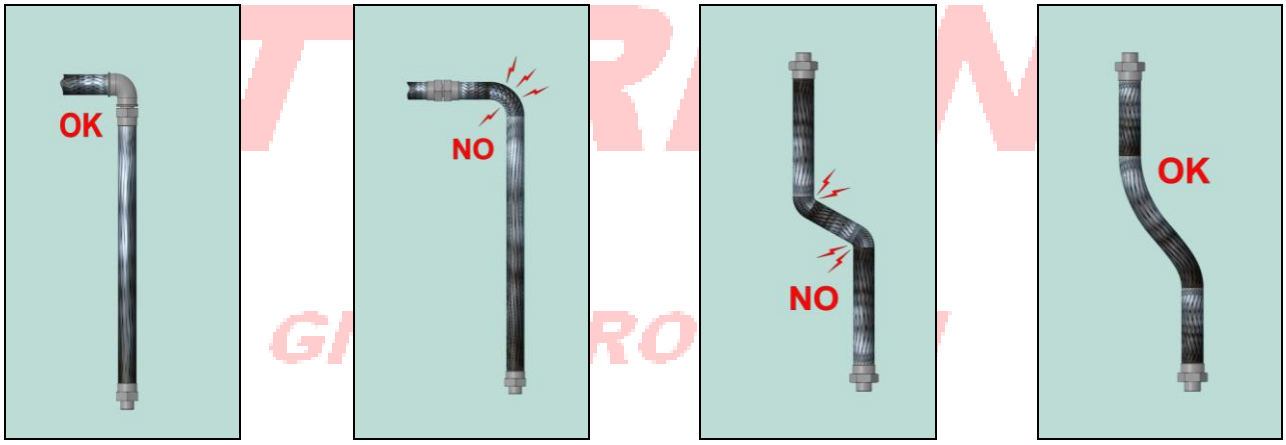






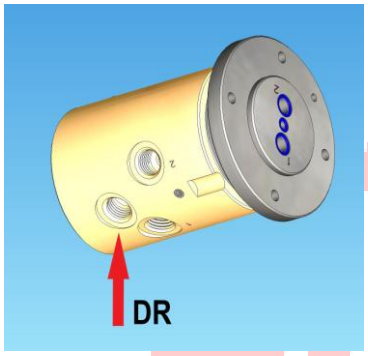






If the Rotary Joints are installed on shafts that have axial movement, the hoses must not exert stresses in either of the two extreme positions.

- ***Connection to a drain line***



To prevent surrounding components being damaged by fluid leaks, a drain line can be connected to the Rotary Joint. Some models are already prepared, for others it is an option to be requested.
Position the swivel so that you can always connect the drain line to its threaded hole at the lowest point.

4 – Installation / Operative Informations

The installation of the Rotating Joint is described in another manual to be requested from TURIAN.
Provide the operator / installer with the following additional instructions for a safe and correct installation of the Rotary Joint:
Position and location of the Rotary Joint in the machine
Diagram for connecting the hoses
Location of the drain line
Information on the fluid to be used

- ***Antitorque***

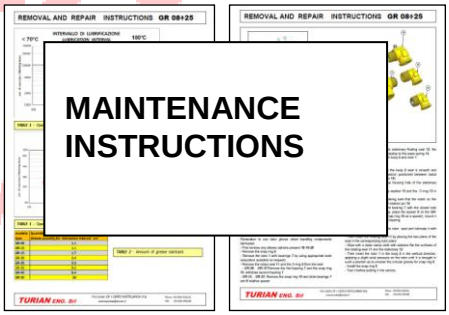
The rotating joint must be secured against being dragged into rotation during operation by means of a contrast element: the pipe fittings can be used as a contrast to the drag torque by means of a fork whose milling must allow both axial and lateral movement of the rotating joint.

5 – Storage

Store the Rotating Joints in a dry environment with temperatures between 0 and 40° C
Store Rotary Joints for a maximum of two years.

6 - Maintenance

Observe the maintenance instructions to avoid premature wear of the rotating unions.
Visually check the tightness of the rotary union connections daily.
Make sure the circuit is without pressure before any operation.
If you find a leak, check if it comes from a fitting or rotary joint.
If the swivel is leaking, replace it with a new one.
Only for models equipped with grease fittings periodic lubrication of the bearings is required.



Remember: too much grease can damage ball bearings.
Maintenance instructions can be requested from TURIAN.

7 - Bad performance

- *Possible causes of malfunction and remedies*

Risk of injuries if the circuit is under pressure

If you have to work on the Rotary Joint make sure that the supply line is **NOT** pressurized and that there is no residual pressure in the joint

FAILURE	POTENTIAL CAUSES	REMEDIES - ACTIONS
Rotary joint leaks after installation	Wrong installation	- Stop the machine - Check piping for tightness - Check piping for absence of tensions - Check cleanliness of seal faces
	Seals faces of mechanical seal are damaged	- Pack the joint without disassembling - Ship joint to TURIAN for checking or repair
	The rotary joint is defective	
Life is less than expected due to leakage of the rotary joint	Contamination of the fluid or the fluid is dirty	- Stop the machine - Drain the fluid - Ship the joint to TURIAN for control or repair - Replace the filter - Flush the line with a clean compatible liquid - Fill up with fresh fluid
	The rotary joint is not suitable to the required service	Contact TURIAN to source a suitable rotary joint
The rotary joint is vibrating	Thread and center are out of tolerance	- Stop the machine - Remove the joint - Correct thread or re-center - Re-install the rotary joint
	The rotary joint is improperly installed	

- Packing for transportation

Protect properly the rotating joint from bumps and from humidity during transportation so that the joint may reach destination without being damaged

8 - Disposal

Dispose packings (wooden or plastic) according to local laws
Rotary joints are metal based and may be reused thru recovery
In case of repair, TURIAN properly disposes the parts being removed

9 - Spare parts

Rotary joints have its own life ad are using wearable components
Parts subject to wear are excluded from guarantee,
All sealing components, static or dynamic, of a rotary joint are considered parts subject to wear, including ball bearings of any type
Ripear kits are available for all models and may be supplied by TURIAN
Special instruments and repair instructions may be asked to TURIAN

TURIAN has a repair service available upon request

TURIAN

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