

# ROTARY COUPLING

**with/without leakage  
return  $p_{max.}$  400 bar**



## Important operating instructions

For the operating circumstances operating pressure and torque must be aligned. Please see the diagrams on page 2 and 3.

Operating temperature range:  $-10^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$

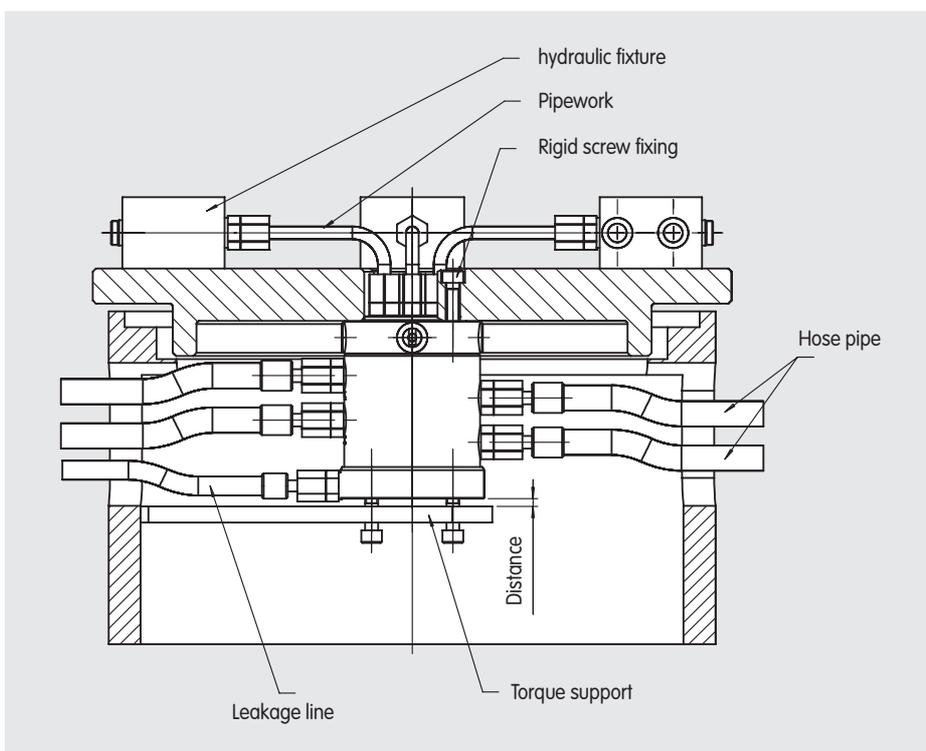
## Assembly

The rotary coupling must be mounted in a way that no transverse moment is effected on the standing or rotating element. It has proven to be best to screw the rotating housing with its ports towards the clamping devices and to protect the rotating piston only against twisting (no initiation of bearing forces). The line connection from the torque support to the rotating piston should be done via hoses only.

The rotary coupling may only be taken into operation when all junction levels are connected to the power unit in order to guarantee the necessary seal lubrication.

The multiple passage rotary couplings have axial and radial G1/4 threaded ports in the rotating piston. In addition, they can be connected axially at the rotating piston with O-Rings 16 x 2. In this case, please calculate the necessary screw forces of the fixing screws imperatively.

## Assembly example



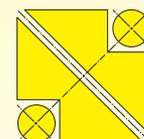
## General information

Rotary Couplings transfer hydraulic oil from a fixed to a rotating machine part. The assembly is done in the rotating axis of the sub-assembly. Depending on the number of junction levels several single or double acting hydraulic elements can be connected. On principle, the rotary coupling is only suitable for hydraulic oil. If pneumatic shall be transferred, the catalogued elements can be used providing that the air is filtered and lubricated to guarantee seal greasing and corrosion protection. In the design stage it needs to be considered that the rotation movement is obstructed by the seal friction. This frictional drag is pressure dependant and must be considered for the drive torque of the rotary table. Corresponding information can be found in the relating diagrams which show the starting torques existing while all junction levels are pressurised.

## Ordering information

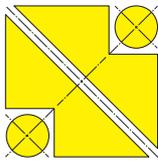
When placing an enquiry or an order, the operating circumstances should be stated. These are for example operating pressure, medium, functionality (sa, da) and cycle time.

**Special versions are available on request. Please also see our application examples on page 4.**



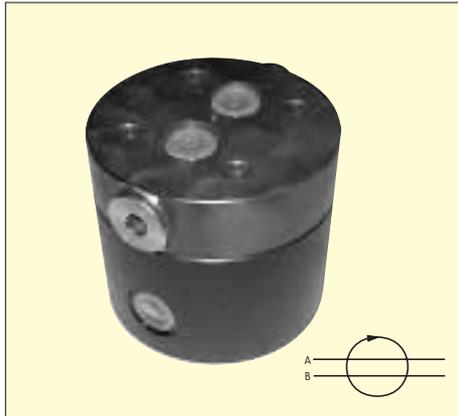
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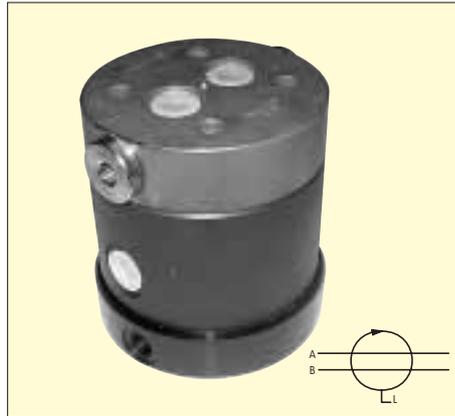


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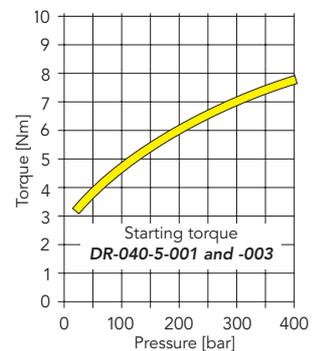
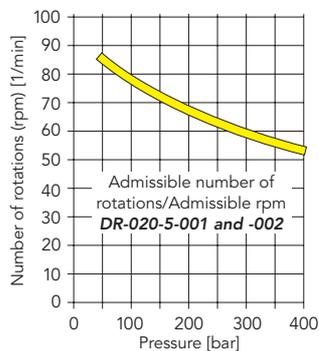
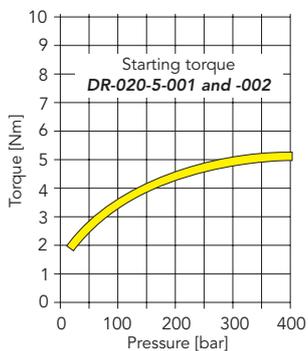
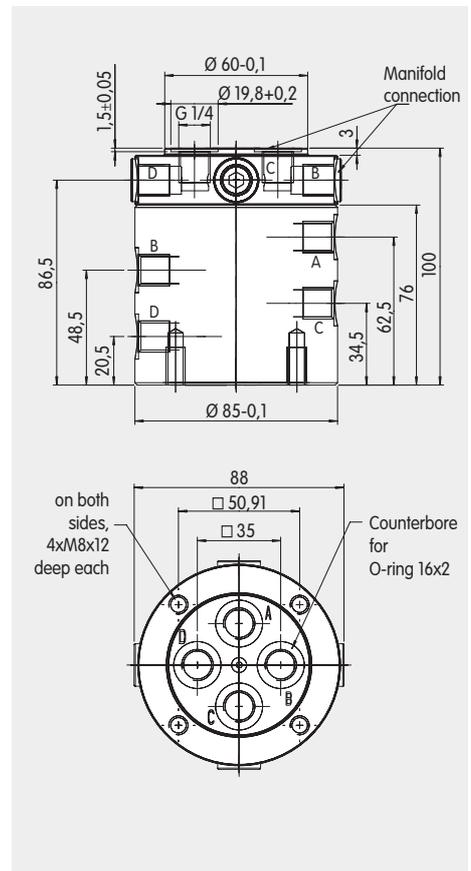
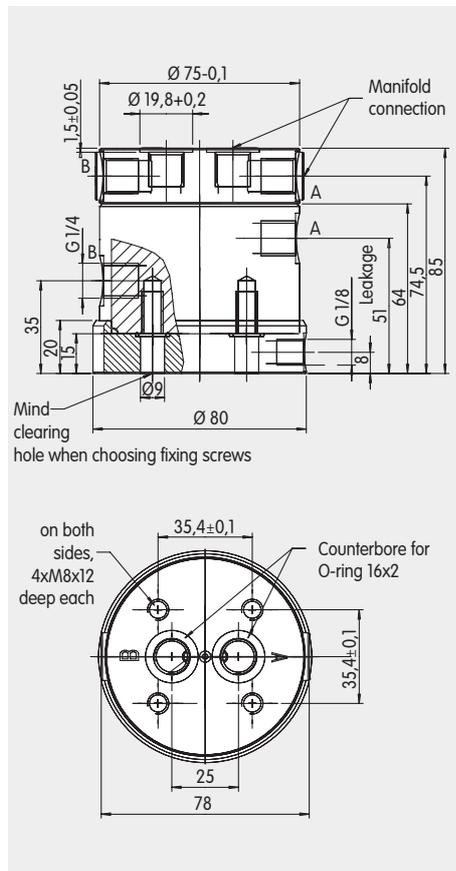
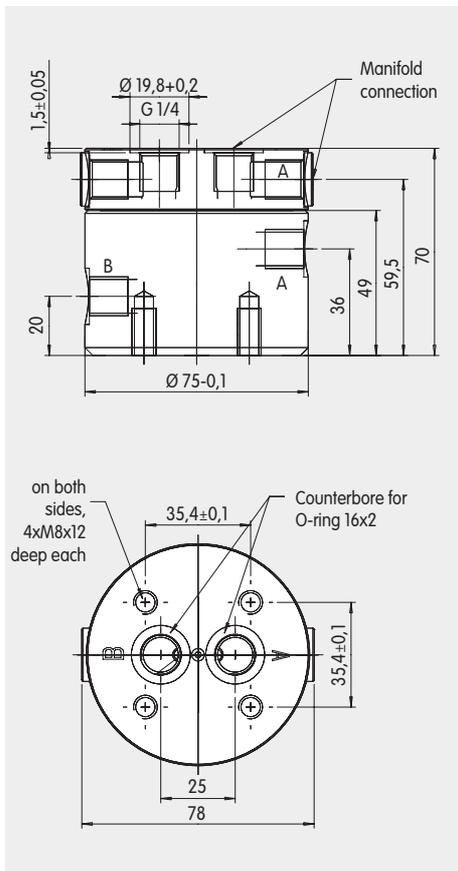
**Twin passage, without leakage return**



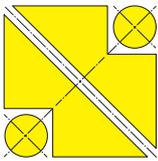
**Twin passage, with leakage return**



**Four passage, without leakage return**



Connections	2	2	4
Nominal diameter	5	5	5
Adm. operating pressure [bar]	0-400	0-400	0-400
Leakage rate [ccm/100h]	max. 30	0	max. 50
Weight [kg]	2.2	2.5	3.8
<b>Part-no.</b>	<b>DR-020-5-001</b>	<b>DR-020-5-002</b>	<b>DR-040-5-001</b>



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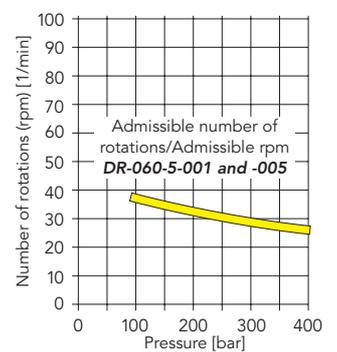
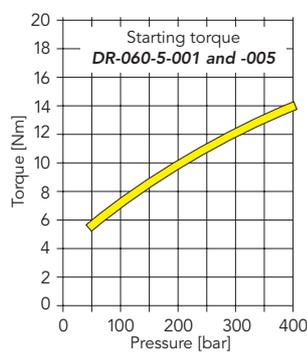
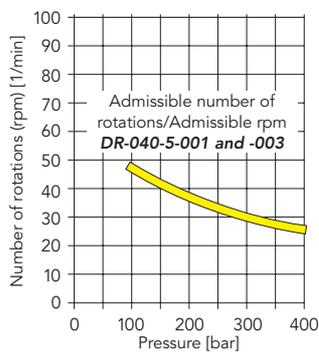
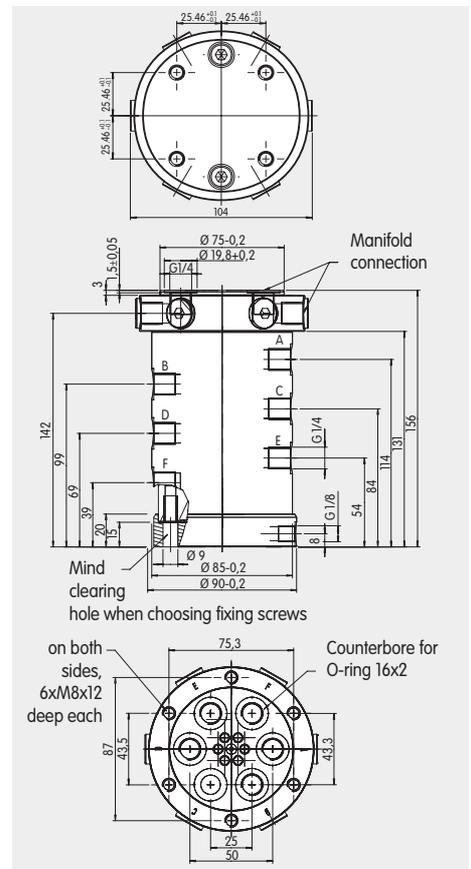
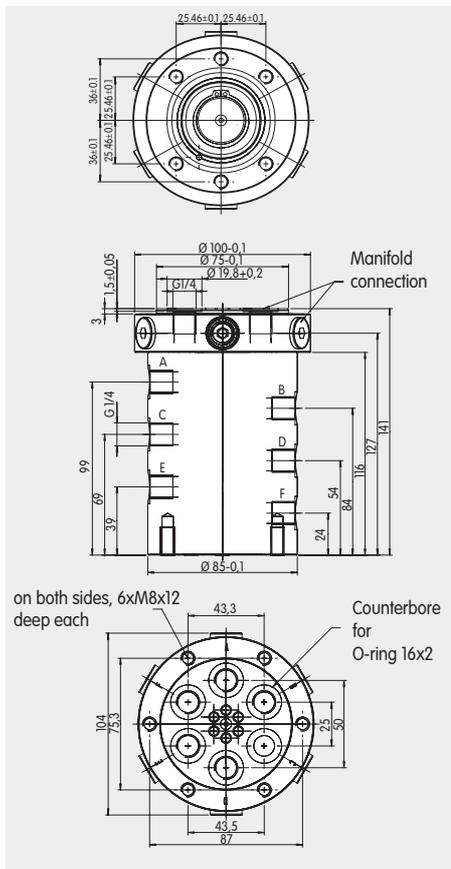
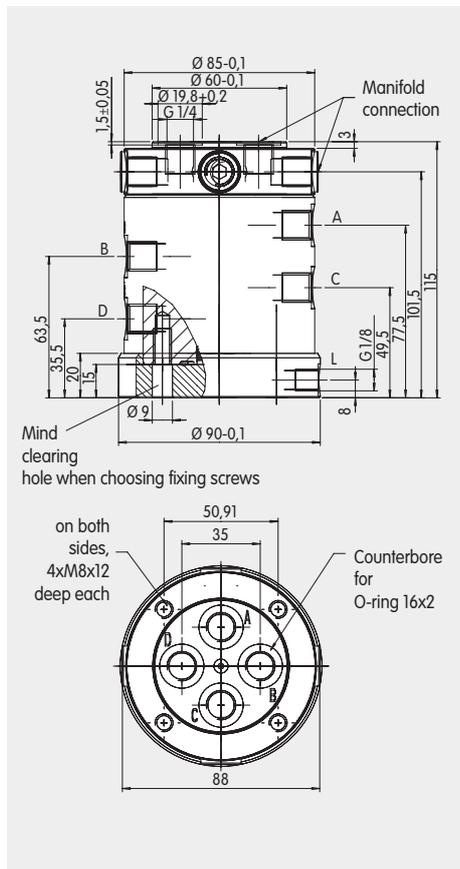
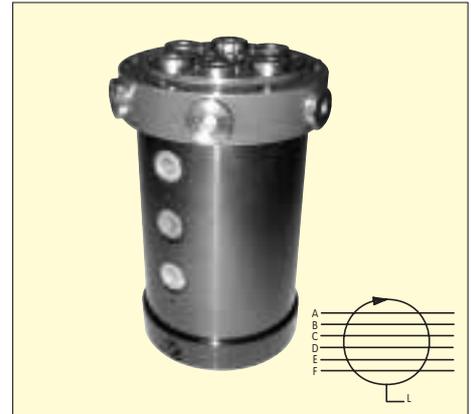
**Four passage, with leakage return**



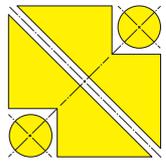
**Six passage, without leakage return**



**Six passage, with leakage return**



Connections	4	6	6
Nominal diameter	5	5	5
Adm. operating pressure [bar]	0-400	0-400	0-400
Leakage rate [ccm/100h]	0	max. 60	0
Weight [kg]	4.2	5.8	6.2
<b>Part-no.</b>	<b>DR-040-5-003</b>	<b>DR-060-5-001</b>	<b>DR-060-5-005</b>



## APPLICATION EXAMPLES/SPECIAL VERSIONS



### Example 1

Six passage rotary coupling with integrated 6-passage electric revolving joint

2 lines hydraulic oil, 400 bar max.

4 lines pneumatic, 10 bar max.

1 leakage line

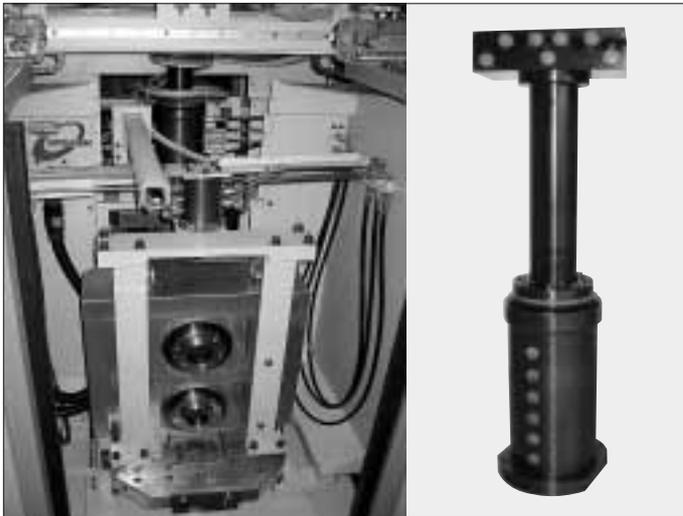
6 electrical lines, 24V, AC/DC

max. 2A per line

The rotary coupling is used in a robot supported welding device.

By the electric revolving joints hydraulic directional valves are controlled which are connected to the pressure- resp. tank line by 2 lines.

Four pneumatic lines supply several pneumatic clamping elements. The hydraulic connection levels are equipped with a leakage return line.



### Example 2

A twelve passage rotary coupling and two six passage rotary couplings provide two fixtures with pressurized oil. The 180° pallet changer swifels both fixtures between the loading-/unloading station and the work station.

Both six passage rotary couplings rotate 360°. The twelve passage rotary coupling was designed with special seal elements to produce an insignificant torque.



### Example 3

Twin passage rotary coupling, mounted in an articulated bracket construction on a 2-pallet tool machine. One rotary coupling each is mounted in the rotating axis of the two fixture pallets and allows the rotation of 360°. The pressure supply in the rotating axis of the 180° pallet changer is done by hoses.

Utilised operating pressure = 240 bar, ND 5