maier
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Rotary Joints

Series DC

DCL and DC Rotary Joints

DCL and DC rotary joints are suitable for hot water (series DCL up to 180°C, 16 bar and series DC up to 250 °C, 40 bar) and speeds of up to 1200 min^{-1}. Series DC rotary joints are also suitable for steam up to 250 °C, 40 bar. Typical applications include coating and laminating systems, paper, nonwoven and textile calenders as well as dryers.

When these media are sealed, there is the danger of dry run at the seal which reduces reliability and service life. The internationally patented system of series DC successfully prevents this problem (EP 0806578, US 5778971). The temperature in the area of the mechanical seal is reduced by means of cooling water to ensure proper functioning of the units. Flow and temperature sensors monitor operation. Clean, treated and filtered water is required.

Advantages and Features:

- Considerably longer service life as compared to other rotary joints.
- Greater application data range as compared to other rotary joints.
- Longer machine running times, easily forecastable maintenance due to temperature sensor at the mechanical seal. This sensor monitors the function of the mechanical seal in the rotary joint.
- The mechanical seal is pressurized from the outside for superior reliability and low friction torque.
- Usage of cooling water for the integrated cooling system.
- An insulating disk protects the mechanical seal from abrasive pollutants and prevents the dissipation of heat from the heating circuit to the cooled seal area.
- Rigid tapered roller bearings for high speed, pressure and additional loads.
- DCL and DC bearing lubrication with high temperature grease up to 220°C, 25 bar.
- The static support in the rotor of the version with rotating inner pipe (version B2) prevents wear at this point.

Special Advantages and Features of DC:

- Double-walled rotor with air gap protects the bearing and seal area from excessively high temperatures.
- PTFE shaft seal between steam and condensate channel separates the steam from the condensate chamber to assure reliable discharge of condensate.
- The roller bearings are lubricated by means of a recirculating oil system in the range from 220°C-25 bar to 250°C-40 bar.

Technical information:

- Rotor and seal housing made of stainless steel.
- Housing parts made of stainless steel (spheroidal graphite cast iron for DCL DN 80 – DN 125).
- Housing connections at B and C for DCL DN 32 and DN 40 through right-hand thread ISO 228. Other versions with housing connections as per DIN 2635. Flanges according to ANSI are available.
- Housing connections B and C can be turned in increments of 8 x 45° each.
- Connection to rotating pressurized system by means of screw flanges.
- Anti-rotation device can be swiveled in increments of 8 x 45°.
- Cooling water supply connection for DCL at position 180° (for DC at position 0°), cooling water return connection at position 0°, connection with female thread according to ISO 228. The position of the given connections must not be changed.
- Bleed screws for DN 80 – DN 125 in the seal housing 3 x 90° G ½.

Application Data

	DCL	DC
Type Nominal diameter DN mm	1, B2 32...150	1, B2 32...100
Medium	Water	Water, Steam
Temperature min...max °C Pressure PN min...max bar	-10...180 0,8...16	-10...250* 0,8...40*
Speed max.min^{-1}	$\frac{1.000.000}{(DN \times PN)}$	$\frac{1.000.000}{(DN \times PN)}$

Speed limitation DN	32	40	50	65	80	100	125	150
Speed max.min^{-1}	1200	1000	950	800	750	650	550	500

* Values 220° to 250°C and 25 to 40 bar with recirculating oil lubricating system. Avoid operating the unit under conditions involving several maximum values attained at the same time.

Ordering Information

Example:	DC	L	B	2	32	F	-005

Series DC	
DC DCL	Up to 250°C Up to 180°C ("light version")
B	Version with rotating inner pipe with rotating inner pipe between supply and return
1 2	Number of housing connections for Monoflow version Duoflow version
	Nominal diameter DN in mm (corresponds to dimension A) 32, 40, 50, 65, 80, 100, 125, 150
F	Rotor connection for screw flange connection
	Consecutive number assigned by plant.