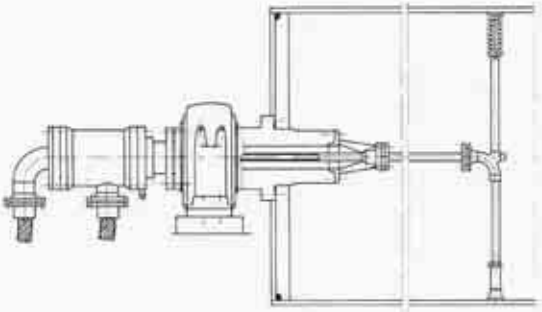
maier
heidenheim

Maier Rotary Joints

Maier rotary joints connect pressure pipes and rotating pressure systems for heating or cooling rollers with pressurized media.



Pressure-dependent (pressure-applied) designs with roller bearings are maintenance-free. However, since the sealing depends on the pressure, the speed is limited.
See series H, DA, M.

Pressure-independent (pressure-free) designs with axial face seals and roller bearings allow for considerably higher speeds and, with special seal combinations, for considerably greater temperatures.
See series DX and DP for water, DQ for thermal oil, DC for steam.

Designs with O rings are also limited in terms of speed and temperature.

Decades of experience and expertise in this area guarantee superior product quality and maximum reliability. Maier belongs to the world's most experienced manufacturers of rotary joints (sealing heads, rotary unions etc.). More than 1,000 standard versions and more than 1,000 special solutions with nominal diameters from 10 to 450 are available for many media.

Maier rotary joints are available through a worldwide net of distributors. In all industrial and many other countries, the customer will find offices with spare parts in stock. A service office 'just around the corner' is equally important for the engineer and the user.

Product Range

Use this matrix for a first overview of the application areas, product characteristics and specifications of the various rotary joint types.

Series	DX			DA	M	DQ			
Type / Medium	DX	DXS	DX-Spezial			DQL	DQ	DQT	DQTX
Cooling water	●	●		●	●				
Hot water		●		●	●				
Steam				●	●				
Cooling lubricant									
Air									
Vacuum									
Hydraulic oil									
Thermal oil				●		●	●	●	●
Multi-channel for rotating distributor			●						
Operating conditions									
PN[1] max (bar)	8	10	upon request	40	20	10	10	10	13
T[2] max (°C)	80	150	upon request	320	160	230	300	350	400
Speed n max (Upm)	50000/DN	55000/DN	upon request	100000/DN*PN	80000/DN	35000/DN	55000/DN	55000/DN	55000/DN
DN[3] (mm) min ... max	10-80	10-200	upon request	50-300	15-100	25-125	25-150	25-150	25-150
Specifications/page reference									
catalogue page	19	19	upon request	53	63	see DQ catalogue			

[1] Pressure PN [2] Temperature T [3] Nominal diameter DN

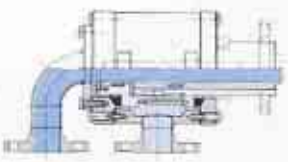
Short description

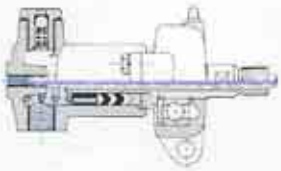
DX
Water rotary joint with axial face seal and roller bearings. DXS with highly resistant ceramics-coated counter running surface.

DA
Rod-supported rotary joint with maintenance-free metal-impregnated sealing rings. Particularly suitable for great nominal diameters.

M
Robust rotary joint for polluted media and low speeds.

DQ
Rotary joint for thermal oil and all temperature and speed ranges with pressure-free axial face seal. DQ and higher with additional cooling circuit for cooling and lubrication of bearings and seal.





Series	H		DP		DC
Type / Medium	H	HW	DP	DP-700	
Cooling water	●	●	●		
Hot water	●	●	●		●
Steam	●	●			●
Cooling lubricant					
Air					
Vacuum	○	○			
Hydraulic oil					
Thermal oil		●		●	
Multi-channel for rotating distributor					
Operating conditions					
PN[1] max (bar)	20	40	10	10	35
T[2] max (°C)	250	320	160	160	240
Speed n max (Upm)	50000/DN*PN	100000/DN*PN	55000/DN	55000/DN	upon request
DN[3] (mm) min ...max	15-100	15-250	10-100	10-100	25-100
Specifications/page reference					
catalogue page	35	35	see DP catalogue		upon request

○ also suitable

H

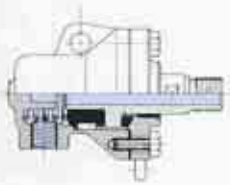
Universal rotary joint with maintenance-free carbon sealing rings and slide bearings. Metal-impregnated sealing rings for thermal oil and high pressure loads with water and steam applications. H3 with integrated vaccum valve for steam cylinder.

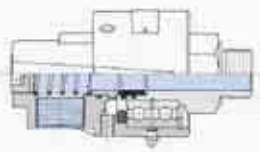
DP

Universal rotary joint for various media, with pressure-free axial face seal on roller bearings. Application-specific seal materials. Particularly suitable for the printing and plastics industries.

DC

Rotary joint for steam and hot water at high pressures and speeds. Pressure-free axial face seal. Particulary suitable for paper calenders and fibre and corrugated paperboard systems.





Development, Production and Quality

Close cooperation between CAD-supported design and field-proven development in our own laboratories ensure the functionality and reliability in the adaptation of products or new developments. At numerous test benches in our well-equipped testing laboratory, we run simulation programs with cooling water, hot water, steam, thermal oil, hydraulic oil and air in order to optimize the rotary joint performance and material combinations in long time tests. This ensures that our customers get state-of-the-art products with superior quality.

In terms of the actual production, we place great importance on repeating accuracy. Therefore, the parts are produced by CNC machines.

The surface of the seal – the most important part of the unit – requires a special quality of the finish which we obtain by means of polishing or lapping.

The production methods and the DIN ISO 9001 – certified Maier quality management system ensure the outstanding Maier product quality. Each individual rotary joint has to pass a final acceptance test before it is shipped.

Customer satisfaction is our prime objective. A standard catalogue rotary joint, a customized product, an overseas service appointment – you can be assured that we all do our best to meet your requirements.

Final assembly

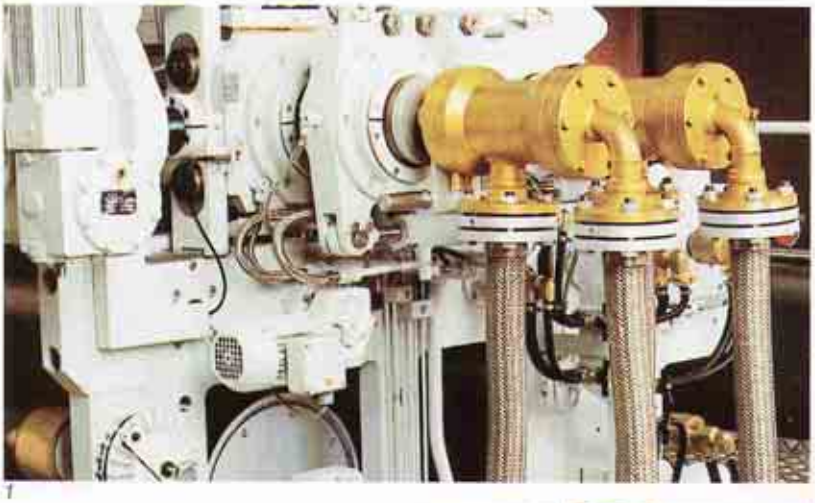
CAD design

Metal-cutting production

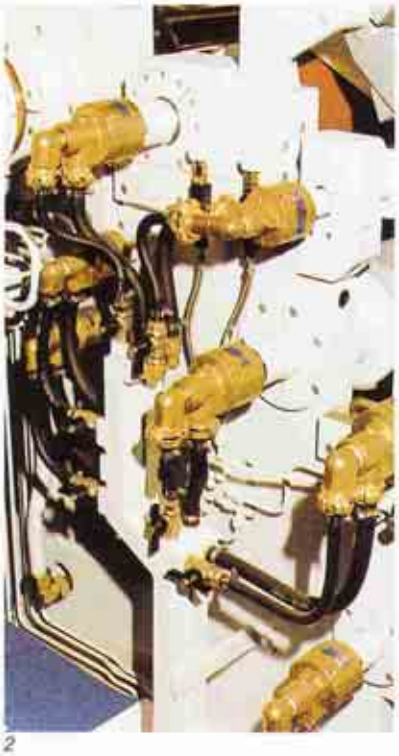
Fully automatic production center

Measuring center for reference tests

Application Examples



1



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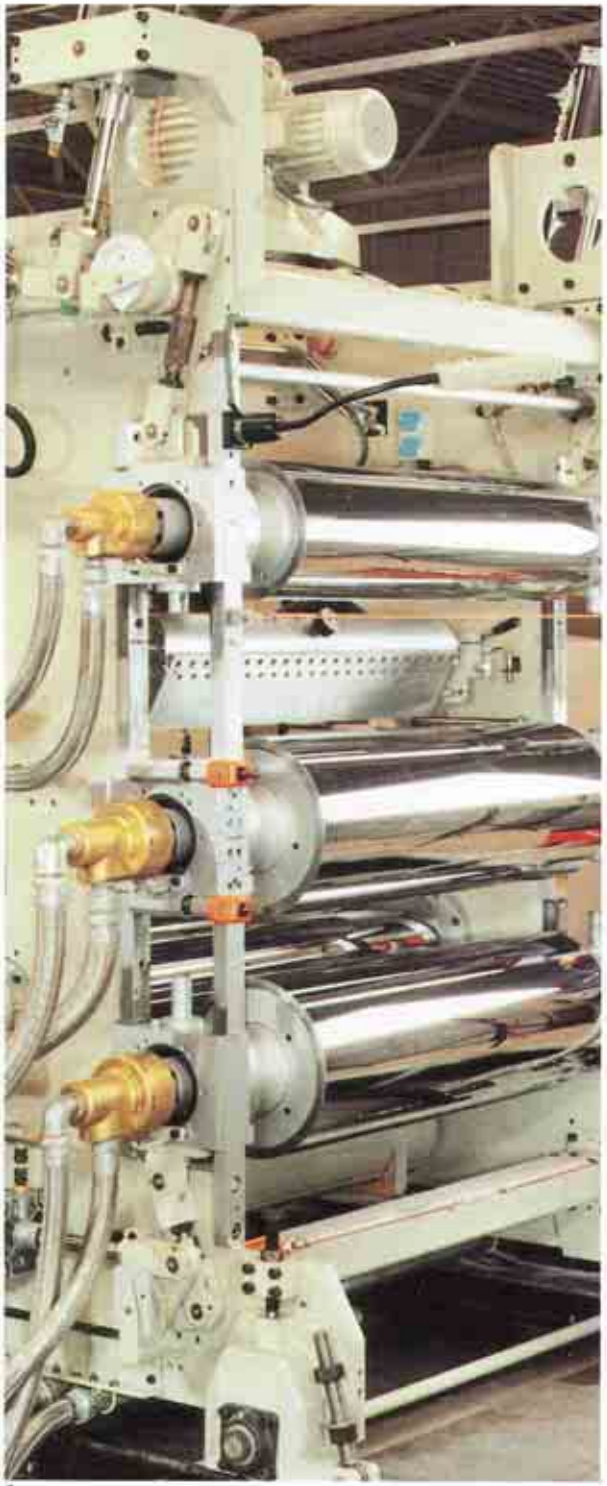


3

1. Heated rollers of an embossing calender (type HWA) for manufacturing flooring materials

2. Cooling rollers of an embossing calender (type DP) for manufacturing flooring materials

3. Cooling rollers at the nip roll unit of a flat film extruder (type DP)

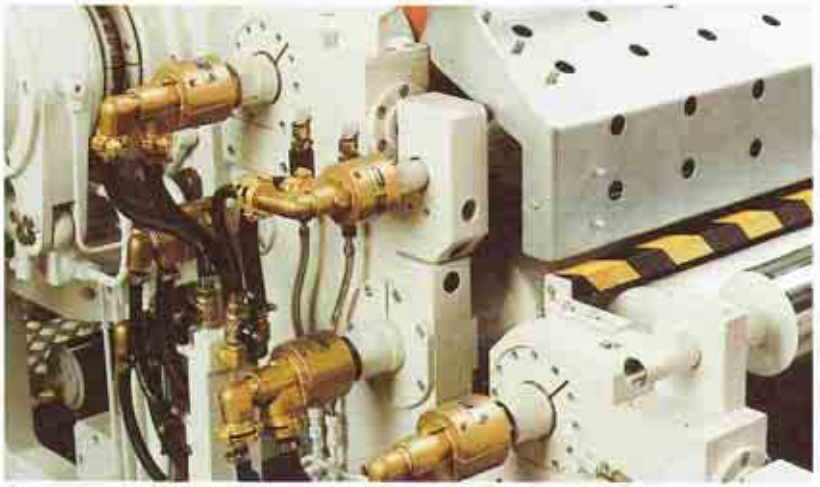
4. Cooling rollers of an embossing calender (Type DP) for manufacturing flooring materials

5. Oil-heated thermo-roller of a paper calender (type DQ with cooling unit)

6. Cooling rollers at the nip roll unit of a flat film extruder (type DP)

7. Water-cooled color distributing roller of a rotary printing machine (type DX)

8. Cooling roller in the combustion room of a destructor station



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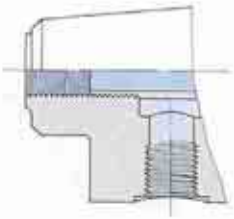
Information on construction and fitting

Housing connections

All housing connections with BSP right-hand thread ISO 228. Adapters for NPT threads or other threads are available. Some designs with flanges.

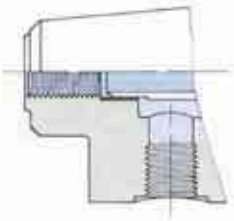
Design 1

Housing with one connection for medium inlet or outlet.



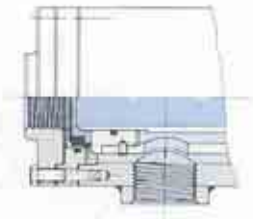
Design 2

Housing with two connections for inlet and outlet of medium. Designed for accepting a fixed inner pipe which is screwed in half the length of the thread.



Design R2

Housing with two connections for inlet and outlet of medium. Designed for a rotating inner pipe. Gland seal between flow and return through self-lubricating slide bearing.



Design A2, B2

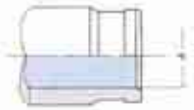
Housing with two connections for inlet and outlet of medium. Designed for a rotating pipe (static bearing in rotor). Additional seal for complete isolation of flow and return. A2: additional sealing for exact separation of inlet and outlet. B2: diaphragm gland.

Design 3

Housing with three connections for inlet of steam, outlet of condensate and built-in vacuum valve as low pressure safety device for thinwalled drying cylinders.

Nominal diameters

The nominal diameter DN of the rotary joints refers to the bore of the rotor. It approximately corresponds to the rotor's inner diameter (dimension A). The different nominal diameters comply with DIN 2402.

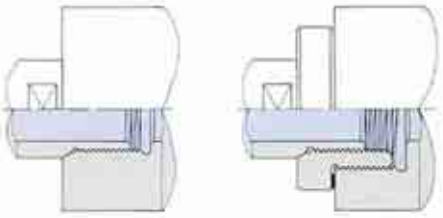


Rotor connections

Design R/L

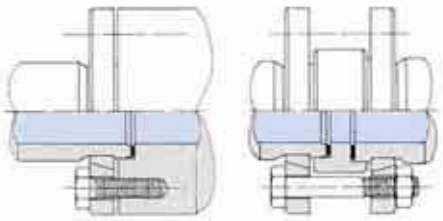
Connection to the rotating pressure system via connection piece with righthand (R) or lefthand (L) male thread BSP ISO 228. Sealing and centering cone at the end of the thread. This ensures sufficient sealing without additional sealing material as well as centering with a mating cone. If the directions of rotation of the rotor and the roller are identical, the rotor has to be protected against loosening.

Adapters for different connections such as ISO 7 threads (NPT) and others are available.



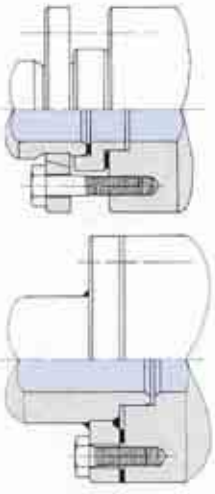
Design K

Connection to the rotating pressure system by means of K flange, conical inner ring and flat packing. Centering by means of outer diameter of rotor. Adapter rings are necessary and available for different centering diameters (accessories).

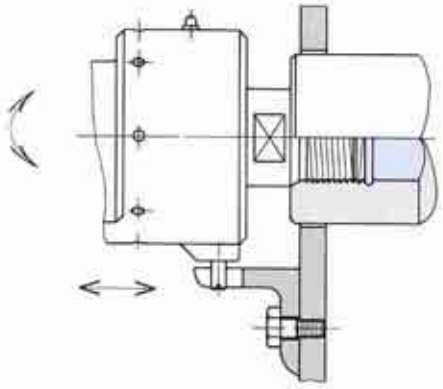


Design F

Connection to rotating pressure system by means of fixed-flange; especially suited for high speeds.



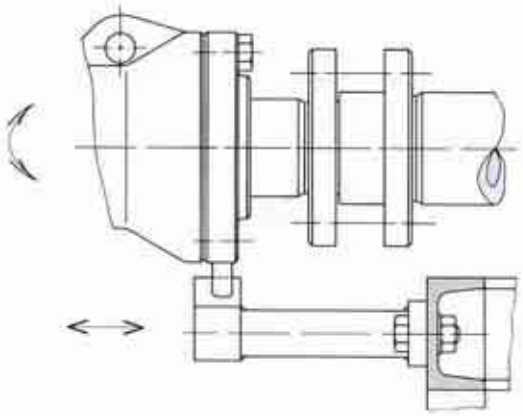
Information on construction and fitting



Protection against rotation

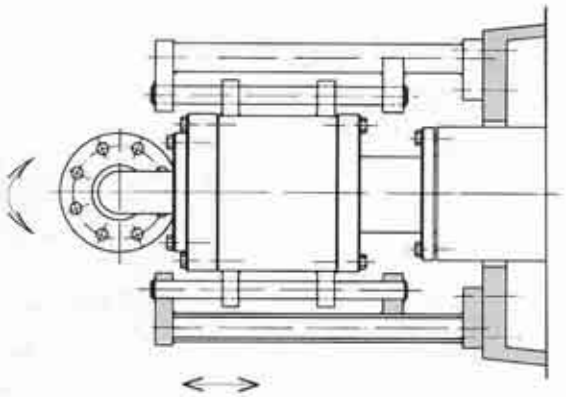
All rotating seals generate friction torque which primarily depends on the design of the seal and the operating pressure. Therefore, the fixed part of the rotary joint has to be prevented from rotating. This is achieved by means of a locking device on the housing and a support element. The dimension tables for the individual series list the respective dimensions. You have to provide sufficient clearance between tho locking device and the support element in both radial and axial directions.

Series DX rotary joints with small diameters are secured sufficiently via the hose connection. Nominal diameters 40 mm and above require a locking pin or a locking fork.



The designs of series M and H joints have a higher friction torque; they have to be secured by means of a locking fork. The wear of the sealing ring of series H rotary joints results in an axial displacement of the housing (away from the roller) of up to 15 mm. The locking mechanism must not interfere with this movement since otherwise leakage will result or wear and tear increases.

We advise that you should not connect several H rotary joints by means of a positioning bar via the upper housing bore. If wear is not exactly identical for all seals of such a combination, restraints will result which in turn cause leakage or increased wear and tear. In addition, you will not be able to use the entire wear allowance provided for by the seal design.



The locking mechanisms of series DA rotary joints are four lugs for bolts which are also used for mounting the joint. The tables for series DA also show the required bolt sizes. The bolts may be positioned e.g. via sufficiently rigid bracket so that the housing is centered in relation to the rotor. The wear of the seal ring results in an axial displacement of the housing (away from the roller) of up to 20 mm. The bolts must not interfere with this movement since otherwise leakage will result or wear and tear increases.

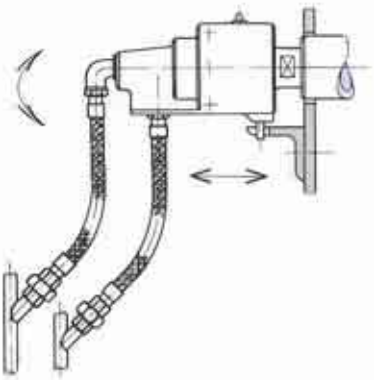
Attention: Distortion should be avoided. Therefore ensure that the Rotary Joint is free to move in all directions. (See the printed flashes).

Flexible connection between rotary joint and pipe system

Maier rotary joints are the interfaces between the fixed and rotating parts of the pressure system. The strain in this element is often underestimated or incorrectly calculated. The loads on the hose caused by the pressure of the medium have an adverse effect on the joint if the hoses are not arranged properly. The same applies to heat expansion, vibration and shocks generated by the roller, contaminated media and constraints caused by insufficient concentricity (roller – rotary joint – inner pipe) are in addition unfavorable factors.

The wear of the sealing rings of series H and DA rotary joints results in an axial displacement of the housing (away from the roller) of up to 15 mm. Hoses or compensators must not interfere with this movement since otherwise leakage results or wear and tear increases.

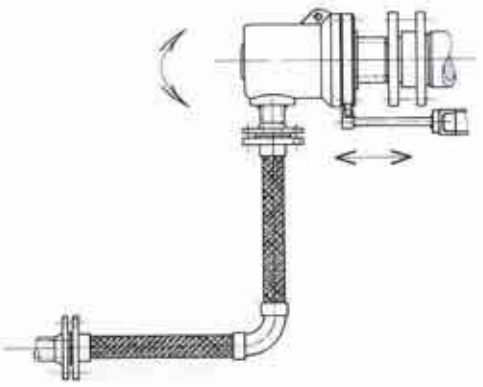
Rotary joints must never be connected directly to fixed pipes so that the bearings are not exposed to uncontrollable loads.



Flexible metal hoses

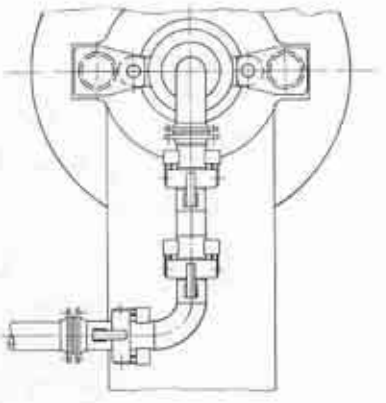
If flexible metal hoses are used, the smallest allowable bend radius has to be observed. The values specified in the section on accessories apply to Maier metal hoses.

Torsional, tensile or pressure loads must not be applied. The radius and the direction of movement always have to be in the same plane. We recommend angular (elbow) hoses for nominal diameters of 80 and above since their ability to compensate for the movement of the housing of the rotary joint is superior to that of other hoses.

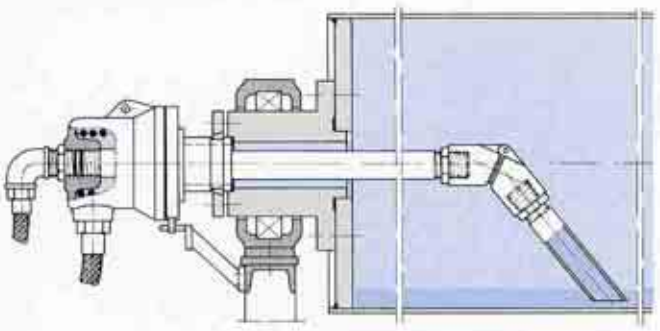


Compensators

Experience has shown that individual compensators are not suitable for connecting the rotary joint and the fixed pipe system. Since the load generated by this method puts too much strain on the joint bearing, we suggest a 3-link arrangement (especially for rotary joints with large diameters). In this way, movements in three planes are compensated and perfect compensation is guaranteed without constraints interfering with the function of the rotary joint.

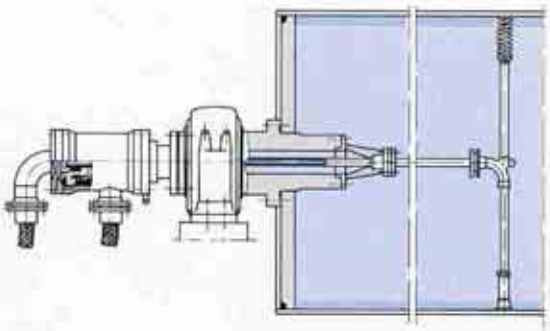


Information on construction and fitting



Syphon- and inner pipes
– non-rotating –

We offer a toggle joint for fixed inner pipes. This allows you to angle the inner part of the pipe after inserting it through the trunnion bore. You may also straighten and remove the pipe by turning it.

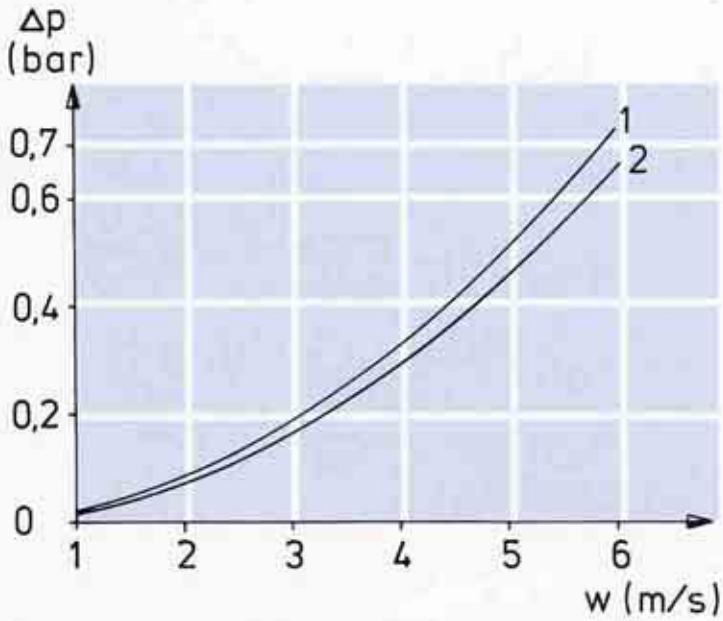


Syphon- and inner pipes
– rotating –

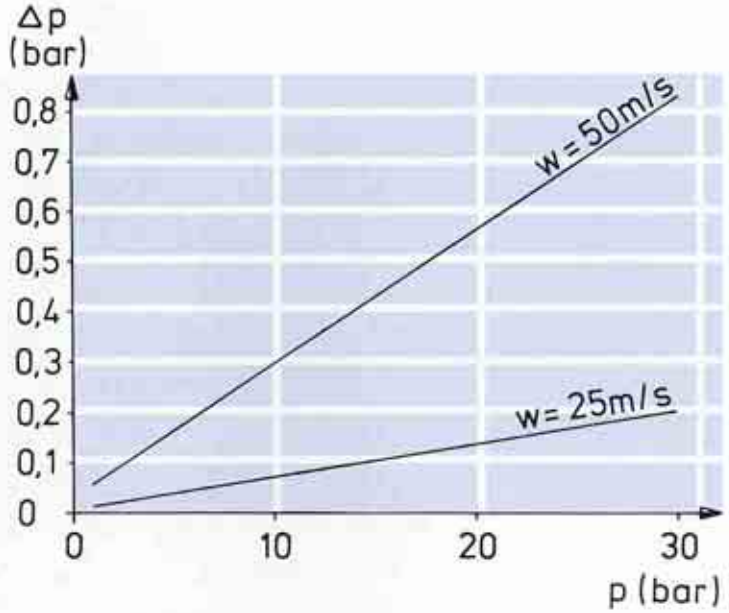
The individual sketches specify the dimensional tolerances for rotating inner pipes.
Bearing clearance $R_a = 0{,}2...0{,}4 \times 10^{-6}$m.
We suggest using hard-chrome plated steel or special steel 1.4571 for the part of the pipe rotating in the slide bearing.

We offer one of the most powerful syphons available today as an accessory. Depending on your requirements, the syphon is equipped with an inner or outer support flange.

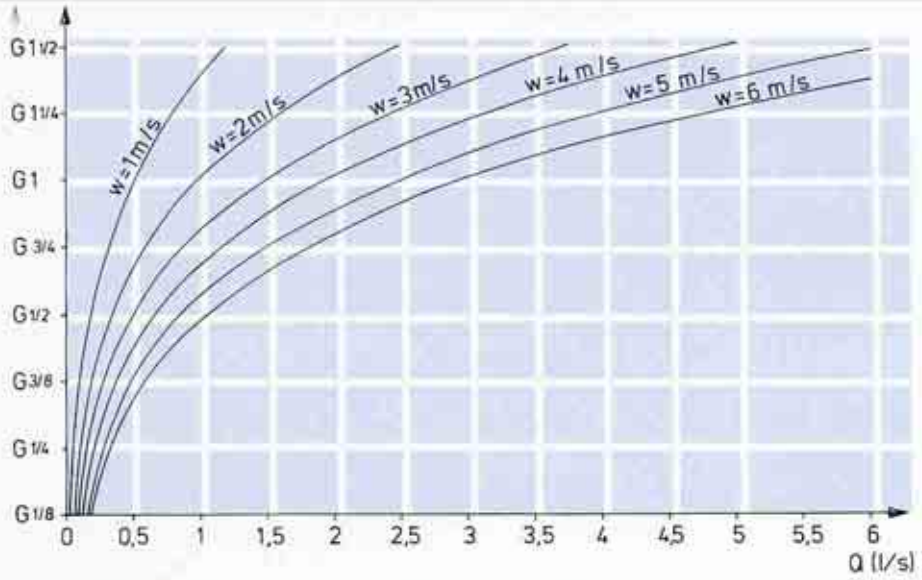
Section tables and characteristics



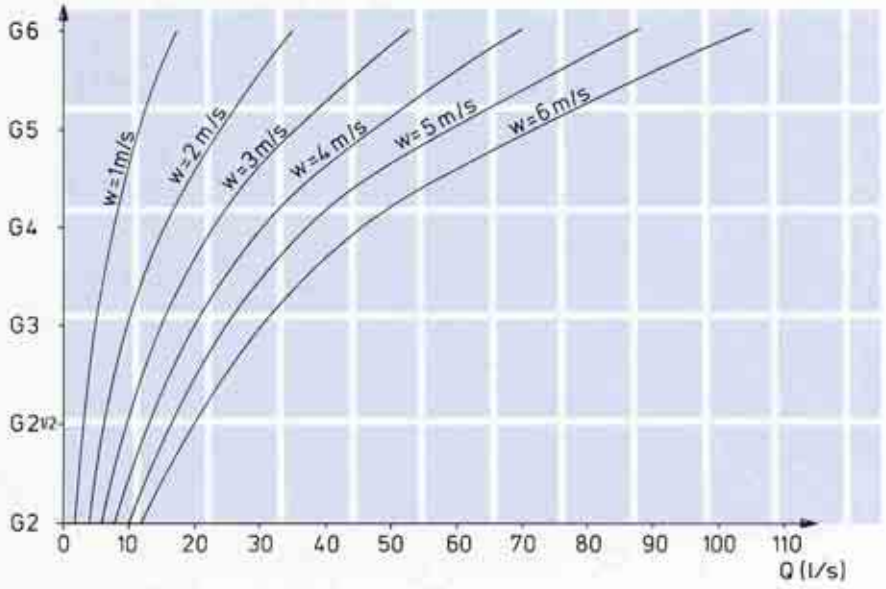
Pressure losses Δ p in the rotary joint at an average velocity w of flow of water (1) and oil (2).



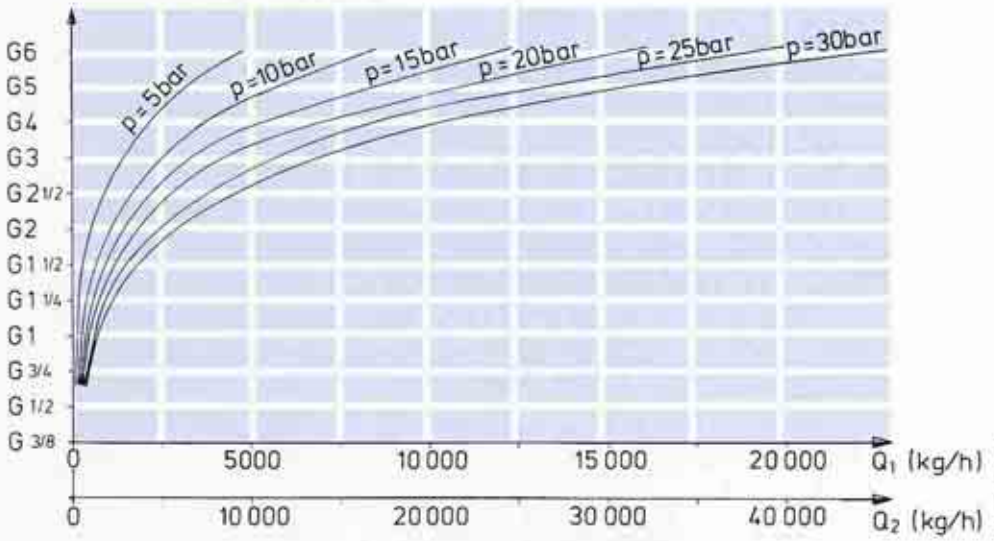
Pressure losses Δ p in the rotary joint for saturated steam at pressure p and velocity of flow w.



Required nominal diameter G 1/8 to G 1 1/2 at a rate of flow Q and average velocity of flow w.
Given figures for each individual passage.



Required nominal diameter G 2 to G 6 at rate of flow Q and average velocity offlow w.
Given figures for each individual passage.



Required nominal diameter G 3/8 to G 6 for saturated steam. Rate of flow Q1 (w = 25 m/sec.) or Q2 (w = 50m/sec.) and steam pressure p.

Operation and Service

Monitoring wear and tear

The degree of wear of the front sealing ring of series H and DA rotary joints can be easily checked by means of an annular groove on the rotor. When the maximum permissable wear is reached, the groove wil become visible (caused by the displacement of the housing). The sealing ring now has to be replaced. Checking wear of the rear sealing ring of series HWA and DA is carried out by means of a measuring gauge. You can only carry out these measurements while the rotary joint is empty. Since is it not possible to directly monitor wear of series DX and M rotary joints, we strongly recommend that you perform annual inspections. This applies to all other series as well.

Lubrication

We use a high-grade lubricant for the bearing. This lubricant can be mixed with all conventional greases. This means that you can continue using your normal grease. Please observe temperature limits and lubrication instructions.

Important guidelines for correct operation

Use only clean media in your system; if necessary, connect a filter. You have to be especially careful when starting to operate a newly installed system. Particles which result from the production and installation of the system and are left in the pipes destroy the seals.
When using thermal oils, select a brand with a low crack tendency.
Observe DIN and AD safety instructions.
You should prevent shocks and vibrations from the rollers from being transmitted to the rotary joints. The seals are abrasion-resistant, but brittle. You must not climb onto the rotary joints when performing maintenance work on your machine.

Repairs

Experienced maintenance personnel can repair Maier rotary joints without factory assistance. The spare part sketches and parts lists will help you exchange parts. Use only genuine spare parts. You may also return the rotary joints for repair in our service department. In such a case, the warranty covers genuine spare parts as well as the labor. Then your rotary joint is guaranteed to operate properly.

Please read the mounting and maintenance instructions!

Series DX + DXS

DX/DXS Rotary Joints
are suitable for
- cooling water (DX/DXS) and hot water (DXS).

- Advantages are
  - Versions for Monoflow and Duoflow. Hence, the hose connections are optimised.
  - Easy to repair.
  - Universally approved in the textile, plastic and paper industry.
  - High security for critical applications.

- Housing made of brass; diameters DN 100 and above and all DXSA models have a two-part housing made of steel.

- Rotor and running surface made of chrome steel. DXS and DXSA running surfaces with metal-ceramics.

- Compact mechanical seal; DXS (diameters DN 100 and above) and DXSA mechanical seals are relieved from pressure.

- Two ball bearings; tapered roller bearings for higher loads; bearings are factory-lubricated and maintenance-free up to 80 °C; easily accessible lubrication nipple for higher temperatures.

- Connection to rotating pressure system by-means of:
  - standard connecting piece with right-hand or left-hand male thread BSP (ISO 228).
  - Sealing and centering cone at end of thread. Adapter pieces for NPT and other threads are available.
  - K flnage with conical inner ring.
  - Fixed flange (F) for design DXSA.

- Radial and axial housing connection with right-hand thread BSP (ISO 228). Adapter pieces for NPT and other threads are available. DXSA (DN 32 to 100) is also available with screwed flange; DXS and DXSA (DN 125 and above) with welded flange DIN 2633.

Thread for fixed inner pipe always right-hand even with left-hand thread at rotor (design 2).

- Combined slide bearing and gland seal for rotating inner pipes. Static bearing for rotating inner pipe (not supplied with rotary joint) in the rotor; additional sealings for complete isolation of flow and return.

- Prevention of housing rotation by means of locking pin or locking fork (DN 100 and above as well as DXSA models).

- For safety reasons, it is absolutely necessary when using 10 bar and above to protect the rotary joint by a frame or a cage in order to prevent loosening of housing from rotor at an unforeseen incident.

DXSB Design Features
- The rotating inner pipe locates within the rotating rotor. Hence, it rotates together with the rotor. Consequently no wear takes place in this area. The cylinder design can thus be made simpler.

- Rotor seal is interchangeable. Consequently economical repair.

DXSA Design Features
- As DXSB, however, equipped with heavy duty bearings.

- Between inlet and outlet a seal ensures separation of flow.

Application data

		DX	DXS	DXS	DXS/DXSA	DXSB
Design Nominal diameter DN mm		1,2, R2 10...80	1,2 10...80	R2 10...80	1,2, A2 32...150	B2 50...100
Medium		cooling water	cooling water hot water	cooling water hot water	cooling water hot water steam	cooling water hot water
Temperature Pressure PN	min...max °C min...max bar	-15...80 0,2...8	-15...150 0,2...8	-15...150 0,2...8	-15...160 0,2...10	-15...160 0,2...10
Speed	max...min^{-1}	50000/DN	55000/DN	50000/DN	55000/DN	55000/DN

The combination of maximum values should be avoided. Designs for higher values and other media upon request.

Ordering instructions

Example:	DX	S	A	2	150	F	– 100

Series DX

S Metal ceramics for hot water and steam

Design for rotating inner pipe
R with slide bearing and gland seal
A with completely isolated flow and return
B for static innerpipe within the rotor

Number of housing connections
1 for one way flow design
2 for two way flow design
3* for two way flow design with vacuum valve
* only upon request

Nominal diameters DN in mm (≙ dimension A)
10, 15, 20, 25, 32, 40, 50, 65, 80, 100, 125, 150

Rotor connection
R right-hand thread
L left-hand thread
K K flange
F fixed flange

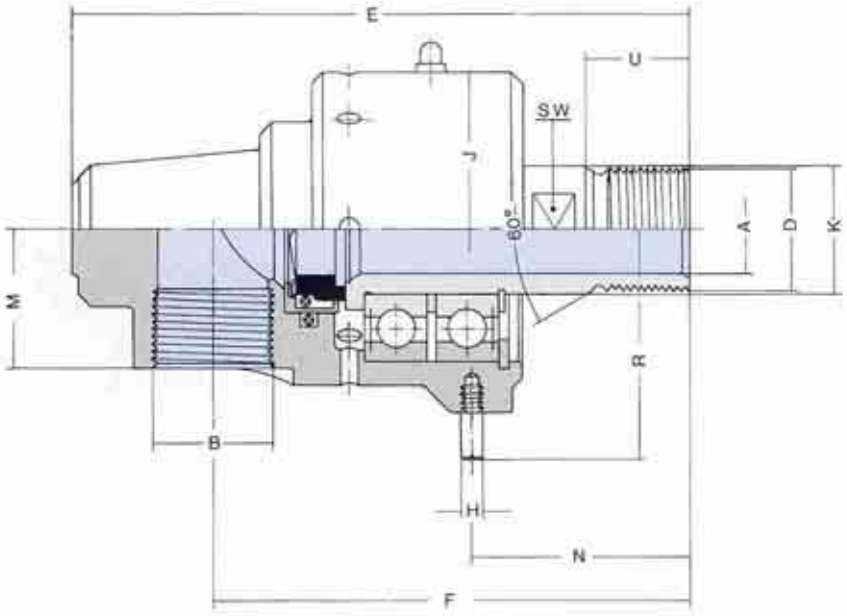
adapter pieces are available for other threads.

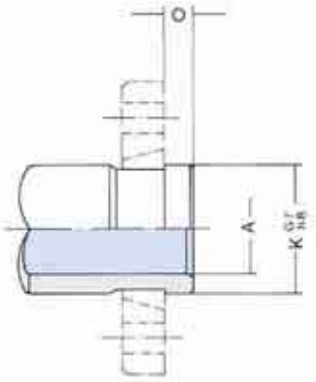
Consecutive numbers for special designs,
numbering by factory.

DX1 + DXS1

for one way flow of a medium

DN 10-80





Flanges see page 74

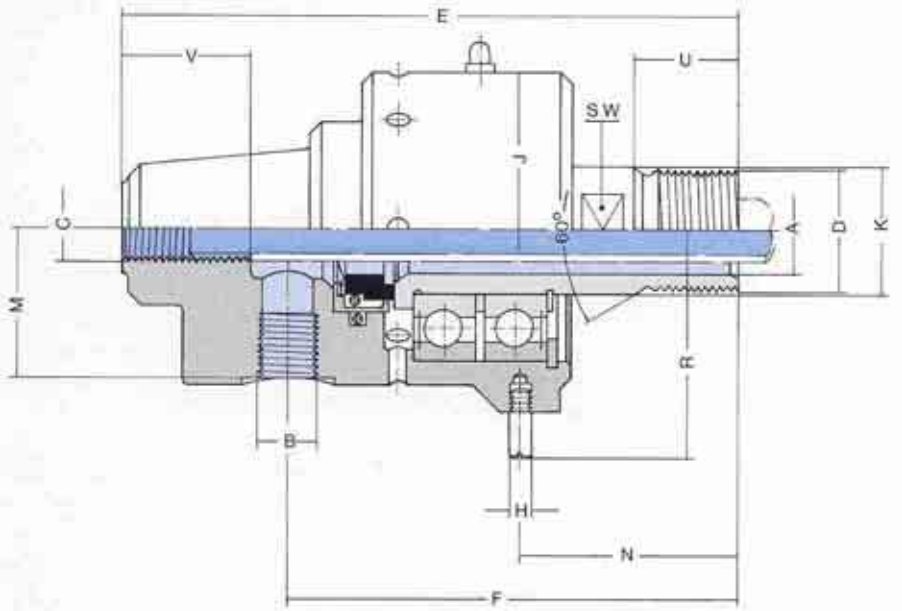
	DN	10	15	20	25	32	40	50	65	80
DX	Type	DX 110 R	DX 115 R	DX 120 R	DX 125 R	DX 132 R	DX 140 R	DX 150 R	DX 165 R	DX 180 R
	Order-No.	1106000	1106050	1106100	1106150	1106200	1106250	1106300	1106350	1106400
	Type	DX 110 L	DX 115 L	DX 120 L	DX 125 L	DX 132 L	DX 140 L	DX 150 L	DX 165 L	DX 180 L
	Order-No.	1106001	1106051	1106101	1106151	1106201	1106251	1106301	1106351	1106401
	Type	DX 110 K	DX 115 K	DX 120 K	DX 125 K	DX 132 K	DX 140 K	DX 150 K	DX 165 K	DX 180 K
	Order-No.	1106002	1106052	1106102	1106152	1106202	1106252	1106302	1106352	1106402
DXS	Type	DXS 110 R	DXS 115 R	DXS 120 R	DXS 125 R	DXS 132 R	DXS 140 R	DXS 150 R	DXS 165 R	DXS 180 R
	Order-No.	1105000	1105075	1105150	1105225	1105300	1105375	1105450	1105525	1105600
	Type	DXS 110 L	DXS 115 L	DXS 120 L	DXS 125 L	DXS 132 L	DXS 140 L	DXS 150 L	DXS 165 L	DXS 180 L
	Order-No.	1105001	1105076	1105151	1105226	1105301	1105376	1105451	1105526	1105601
	Type	DXS 110 K	DXS 115 K	DXS 120 K	DXS 125 K	DXS 132 K	DXS 140 K	DXS 150 K	DXS 165 K	DXS 180 K
	Order-No.	1105002	1105077	1105152	1105227	1105302	1105377	1105452	1105527	1105602

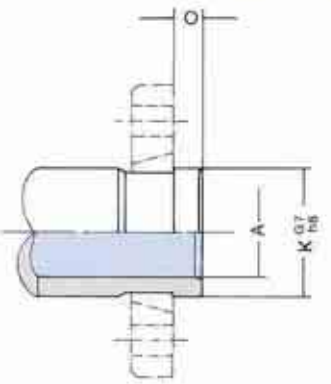
Ø A	10	13	20	25	32	38	50	66	81
B	G ⅜	G ½	G ¾	G 1	G 1 ¼	G 1 ½	G 2	G 2 ½	G 3
D	G ⅜ A	G ½ A	G ¾ A	G 1 A	G 1 ¼ A	G 1 ½ A	G 2 A	G 2 ½ A	G 3 ½ A
E	118	138	150	167	207	226	273	312	377
F	94	110	118	129	156	167	201	225	278
Ø H	5	5	5	6	6	8	8	10	10
Ø J	54	65	75	85	105	115	143	170	222
Ø K	20	25	30	35	48	52	68	84	108
Ø K G7/h8	18	24	30	35	45	50	65	85	105
M	24	29	33	37	45	49	61	70	96
N	42	48	50	59	68	75	92	100	125
O	6	6	8	8	8	10	10	10	12
R	43	48	53	63	73	83	97	114	140
U	19	23	23	28	33	36	43	48	54
SW	17	22	27	30	41	46	60	75	95
Weight (kg)	0,9	1,5	2	2,6	4,9	6,4	11	17,8	35,5

DX2 + DXS2

for two way flow of a medium
designed for non-rotating inner pipes

DN 10-80





Flanges see page 74

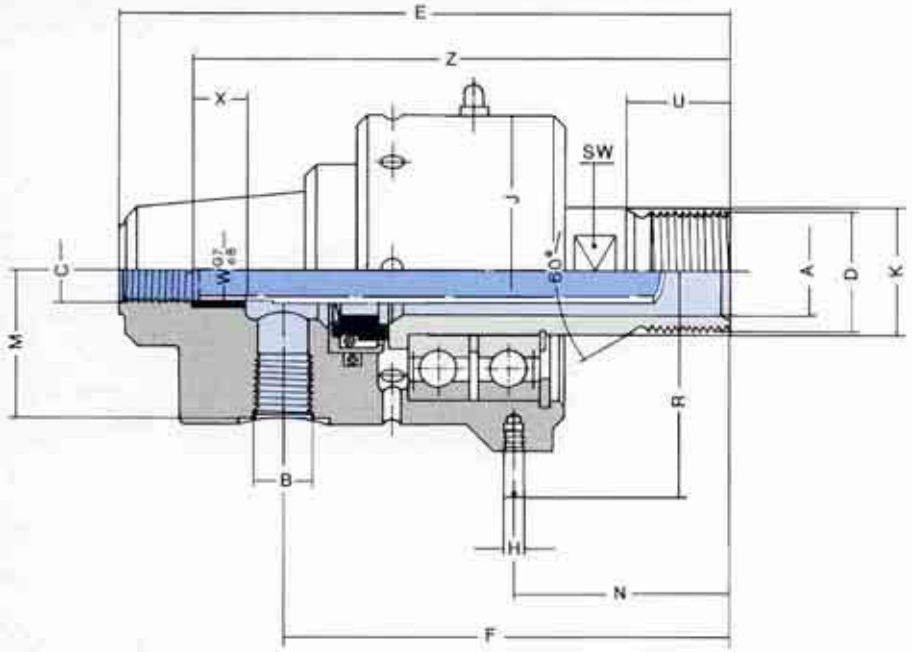
	DN	10	15	20	25	32	40	50	65	80
DX	Type	DX 210 R	DX 215 R	DX 220 R	DX 225 R	DX 232 R	DX 240 R	DX 250 R	DX 265 R	DX 280 R
	Order-No.	1106003	1106053	1106103	1106153	1106203	1106253	1106303	1106353	1106403
	Type	DX 210 L	DX 215 L	DX 220 L	DX 225 L	DX 232 L	DX 240 L	DX 250 L	DX 265 L	DX 280 L
	Order-No.	1106004	1106054	1106104	1106154	1106204	1106254	1106304	1106354	1106404
	Type	DX 210 K	DX 215 K	DX 220 K	DX 225 K	DX 232 K	DX 240 K	DX 250 K	DX 265 K	DX 280 K
	Order-No.	1106005	1106055	1106105	1106155	1106205	1106255	1106305	1106355	1106405
DXS	Type	DXS 210 R	DXS 215 R	DXS 220 R	DXS 225 R	DXS 232 R	DXS 240 R	DXS 250 R	DXS 265 R	DXS 280 R
	Order-No.	1105004	1105079	1105154	1105229	1105304	1105379	1105454	1105529	1105604
	Type	DXS 210 L	DXS 215 L	DXS 220 L	DXS 225 L	DXS 232 L	DXS 240 L	DXS 250 L	DXS 265 L	DXS 280 L
	Order-No.	1105005	1105080	1105155	1105230	1105305	1105380	1105455	1105530	1105605
	Type	DXS 210 K	DXS 215 K	DXS 220 K	DXS 225 K	DXS 232 K	DXS 240 K	DXS 250 K	DXS 265 K	DXS 280 K
	Order-No.	1105006	1105081	1105156	1105231	1105306	1105381	1105456	1105531	1105606

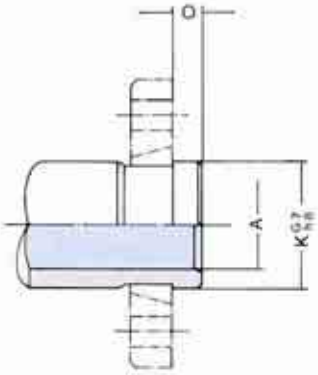
Ø A	10	13	20	25	32	38	50	66	81
B	M 8 x 0,5	G 1/8	G ¼	G 3/8	G ½	G ¾	G 1	G 1 ½	G 2
C	M 8 x 0,5	G 1/8	G ¼	G 3/8	G ½	G ¾	G 1	G 1 ½	G 2
D	G 3/8 A	G ½ A	G ¾ A	G 1 A	G 1 ¼ A	G 1 ½ A	G 2 A	G 2 ½ A	G 3 ½ A
E	118	138	150	167	207	226	273	312	377
F	92	106	114	124	149	162	192	215	268
Ø H	5	5	5	6	6	8	8	10	10
Ø J	54	65	75	85	105	115	143	170	222
Ø K	20	25	30	35	48	52	68	84	108
Ø K G7/h8	18	24	30	35	45	50	65	85	105
M	26	31	36	40	50	54	68	80	105
N	42	48	50	59	68	75	92	100	125
O	6	6	8	8	8	10	10	10	12
R	43	48	53	63	73	83	97	114	140
U	19	23	23	28	33	36	43	48	54
V	20	25	30	35	45	50	60	70	80
SW	17	22	27	30	41	46	60	75	95
Weight (kg)	0,8	1,4	1,9	2,5	4,8	6,2	10,8	17,5	35

DXR2 + DXSR2

for two way flow of a medium designed for rotating inner pipe

DN 15-80





Flanges see page 74

	DN	15	20	25	32	40	50	65	80
DX	Type	DXR 215 R	DXR 220 R	DXR 225 R	DXR 232 R	DXR 240 R	DXR 250 R	DXR 265 R	DXR 280 R
	Order-No.	1106056	1106106	1106156	1106206	1106256	1106306	1106356	1106406
	Type	DXR 215 L	DXR 220 L	DXR 225 L	DXR 232 L	DXR 240 L	DXR 250 L	DXR 265 L	DXR 280 L
	Order-No.	1106057	1106107	1106157	1106207	1106257	1106307	1106357	1106407
	Type	DXR 215 K	DXR 220 K	DXR 225 K	DXR 232 K	DXR 240 K	DXR 250 K	DXR 265 K	DXR 280 K
	Order-No.	1106058	1106108	1106158	1106208	1106258	1106308	1106358	1106408
DXS	Type	DXSR 215 R	DXSR 220 R	DXSR 225 R	DXSR 232 R	DXSR 240 R	DXSR 250 R	DXSR 265 R	DXSR 280 R
	Order-No.	1105083	1105158	1105233	1105308	1105383	1105458	1105533	1105608
	Type	DXSR 215 L	DXSR 220 L	DXSR 225 L	DXSR 232 L	DXSR 240 L	DXSR 250 L	DXSR 265 L	DXSR 280 L
	Order-No.	1105084	1105159	1105234	1105309	1105384	1105459	1105534	1105609
	Type	DXSR 215 K	DXSR 220 K	DXSR 225 K	DXSR 232 K	DXSR 240 K	DXSR 250 K	DXSR 265 K	DXSR 280 K
	Order-No.	1105085	1105160	1105235	1105310	1105385	1105460	1105535	1105610

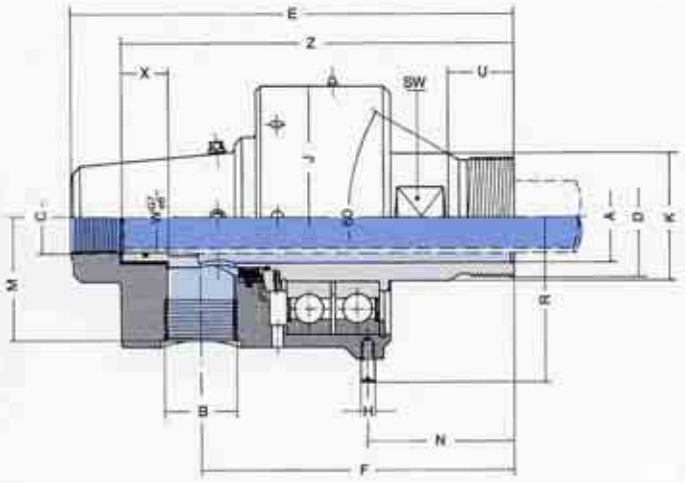
Ø A	13	20	25	32	38	50	66	81
B	G ⅛	G ¼	G ⅜	G ½	G ¾	G 1	G 1½	G 2
C	G ⅛	G ¼	G ⅜	G ½	G ¾	G 1	G 1½	G 2
D	G ½ A	G ¾ A	G 1 A	G 1¼ A	G 1½ A	G 2 A	G 2½ A	G 3½ A
E	138	150	167	207	226	273	312	377
F	106	114	124	149	162	192	215	268
Ø H	5	5	6	6	8	8	10	10
Ø J	65	75	85	105	115	143	170	222
Ø K	25	30	35	48	52	68	84	108
Ø K G7/h8	24	30	35	45	50	65	85	105
M	31	36	40	50	54	68	80	105
N	48	50	59	68	75	92	100	125
O	6	8	8	8	10	10	10	12
R	48	53	63	73	83	97	114	140
U	23	23	28	33	36	43	48	54
Ø W G7/e8	10	12	16	20	25	31,8	45	60
X	15	15	15	15	25	25	30	40
Z	128	135	147	177	201	238	272	337
SW	22	27	30	41	46	60	75	95
Weight (kg)	1,5	2,1	2,8	5,1	6,5	11,5	18,2	36,5

DXSB2

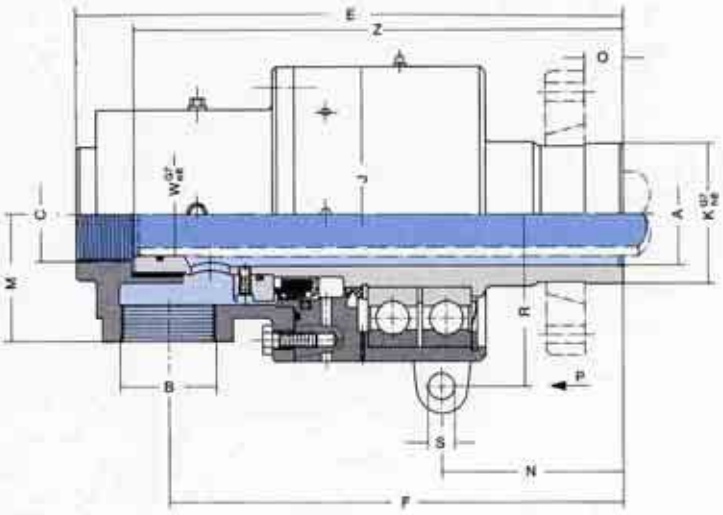
for two way flow of a medium
designed for rotating inner pipe

DN 50-100

Nominal diameter DN 50 80

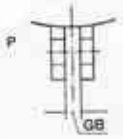


Nominal diameter DN 100



Welded flange upon request available.

DN	50	65	80	100
Typ Order-No.	DXSB 250 R 1105466	DXSB 265 R 1105541	DXSB 280 R 1105616	
Typ Order-No.	DXSB 250 L 1105467	DXSB 265 L 1105542	DXSB 280 L 1105617	
Typ Order-No.	DXSB 250 K 1105468	DXSB 265 K 1105543	DXSB 280 K 1105618	DXSB 2100 K 1105693
Ø A	49	63	78	96
B	G 1¼	G 1½	G 2	G 2½
C	G 1¼	G 1½	G 2	G 2½
D	G 2 A	G 2½ A	G 3½ A	-
E	271	312	377	420
F	192	215	268	350
Ø H	8	10	10	-
Ø J	143	170	222	244
Ø K	68	84	108	-
Ø K G7/h8	65	85	105	114
M	65	80	105	110
N	92	100	125	155
O	25	25	30	30
R	97	114	140	140
S	-	-	-	20
U	43	48	54	-
ØW G7/e8	37	45	60	75
X	35	40	40	40
Z	243	274	334	376
GB	-	-	-	26
SW	60	75	95	-
Weight (kg)	12	19	40	50

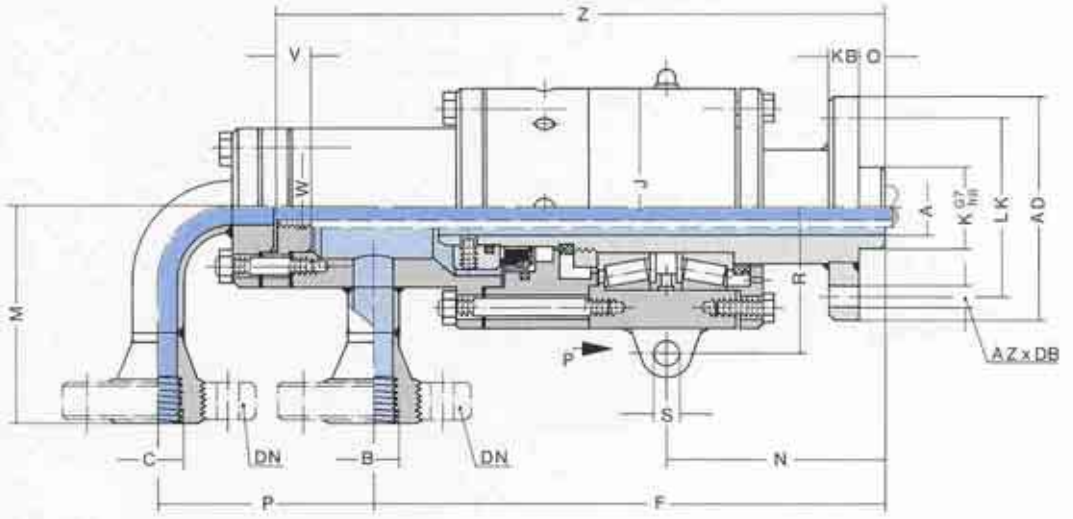


Sight P

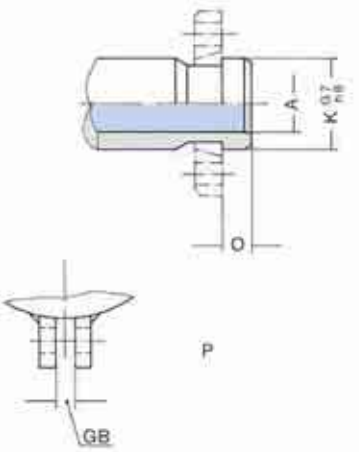
DXS2

for two way flow of a medium
designed for non-rotating inner pipes

DN 100-150

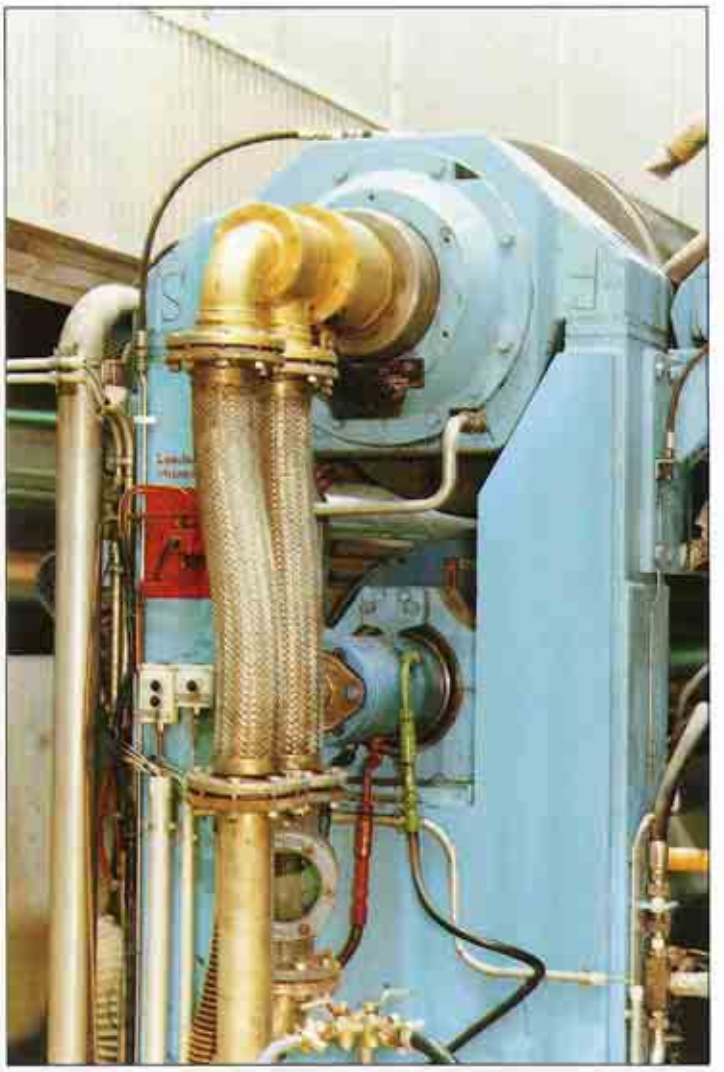


Flanges see pages 74



DN	100	125	150
Type Order-No.	DXS 2100 K 1105681	DXS 2125 K 1105756	DXS 2150 K 1105831
Type Order-No.	DXS 2100 F 1105682	DXS 2125 F 1105757	DXS 2150 F 1105832
Type Order-No.			
Type Order-No.			
Type Order-No.			
Type Order-No.			
Ø A	98	120	145
B	G 3 - DN 80	DN 100	DN 125
C	G 3 - DN 80	DN 100	DN 125
F	415	485	540
Ø J	260	310	350
Ø K G7/h8	114	150	180
M	210	235	260
N	170	200	220
O	30	35	40
P	240	290	350
R	140	170	195
S	20	25	25
V	40	50	60
Ø W	G 2)	G 3	G 4
Z	515	590	660
Ø AD	230	250	300
AZ x Ø DB	8 x 18	8 x 18	8 x 22
GB	26	30	35
KB	30	35	40
Ø LK	195	210	255

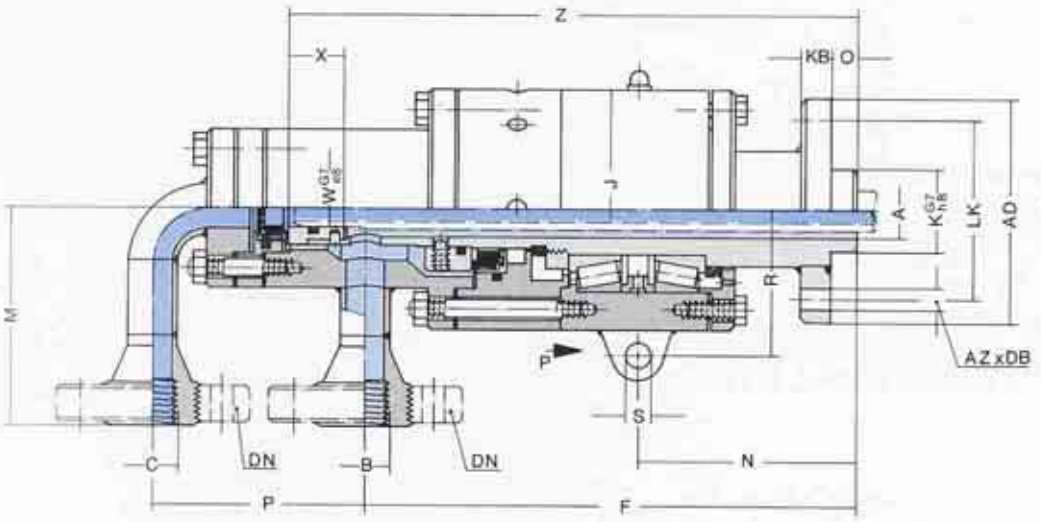
For DN 100: Flanges with thread, see page 77.

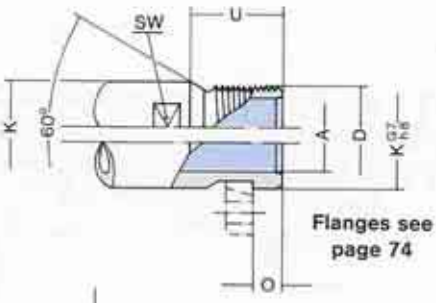


DXSA2

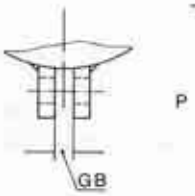
for two way flow of a medium
designed for rotating inner pipe

DN 32-150





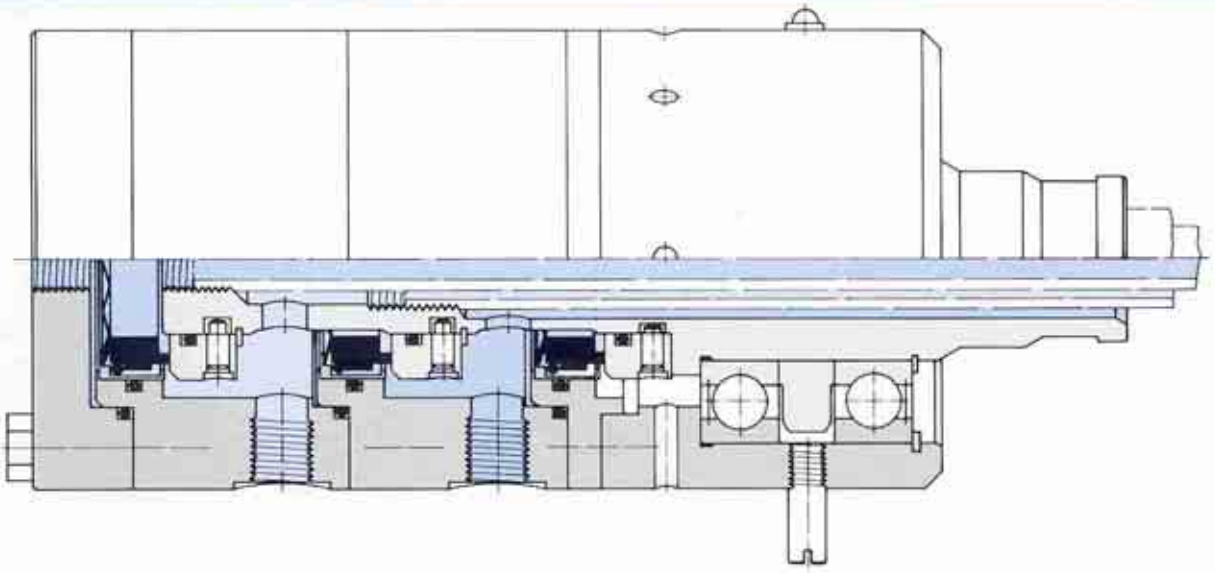
Flanges see page 74



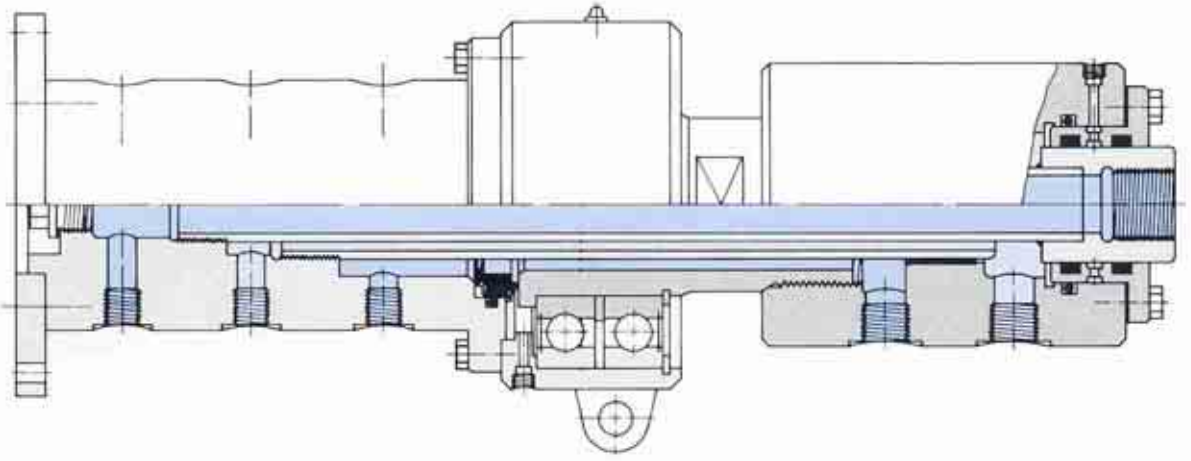
DN	32	40	50	65	80	100	125	150
Type Order-No.	DXSA 232 R 1105312	DXSA 240 R 1105387	DXSA 250 R 1105462	DXSA 265 R 1105537	DXSA 280 R 1105612			
Type Order-No.	DXSA 232 L 1105313	DXSA 240 L 1105388	DXSA 250 L 1105463	DXSA 265 L 1105538	DXSA 280 L 1105613			
Type Order-No.	DXSA 232 K 1105314	DXSA 240 K 1105389	DXSA 250 K 1105464	DXSA 265 K 1105539	DXSA 280 K 1105614	DXSA 2100 K 1105689	DXSA 2125 K 1105764	DXSA 2150 K 1105839
Type Order-No.	DXSA 232 F 1105315	DXSA 240 F 1105390	DXSA 250 F 1105465	DXSA 265 F 1105540	DXSA 280 F 1105615	DXSA 2100 F 1105690	DXSA 2125 F 1105765	DXSA 2150 F 1105840
Type Order-No.								
Type Order-No.								
Ø A	32	38	50	66	81	98	120	145
B (PN 16)	G 1-DN 25	G 1¼-DN 32	G 1½-DN40	G 2-DN 50	G 2½-DN65	G 3-DN 80	DN 100	DN 125
C (PN 16)	G 1-DN 25	G 1¼-DN32	G 1½-DN40	G 2-DN 50	G 2½-DN65	G 3-DN 80	DN 100	DN 125
D	G 1½ A	G 2 A	G 2½ A	G 3 A	G 4 A	-	-	-
F	270	290	320	360	415	415	485	540
Ø J	132	149	175	195	231	260	310	350
Ø K	52	68	84	97	118	-	-	-
Ø K G7/h8	45	50	65	85	105	114	150	180
M	120	130	145	165	190	210	235	260
N	105	120	135	150	180	170	200	220
O	15	20	25	25	30	30	35	40
P	135	160	170	180	220	240	290	350
R	80	90	105	115	135	140	170	195
S	15	15	18	18	20	20	25	25
U	36	43	48	50	66	-	-	-
Ø W G7/e8	24	29	37	45	58	75	88	110
X	35	40	40	40	45	45	50	60
Z	326	358	385	413	487	493	565	631
Ø AD	120	135	155	180	210	230	250	300
AZ x Ø DB	6 x 14	6 x 14	8 x 14	4 x 18	6 x 18	8 x 18	8 x 18	8 x 22
GB	16	16	18	20	22	26	30	35
KB	15	18	20	25	30	30	35	40
Ø LK	95	110	125	145	175	195	210	255
SW	46	60	75	85	110	-	-	-

For DN 32 to DN 100: Flanges with thread see page 77.

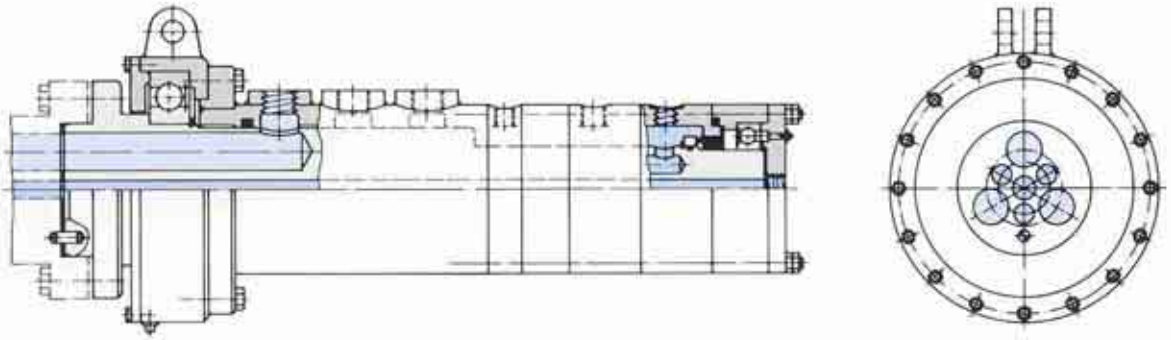
Examples
of special designs



DXSA 232 K-14: Rotary joint with 3 connections for several media.



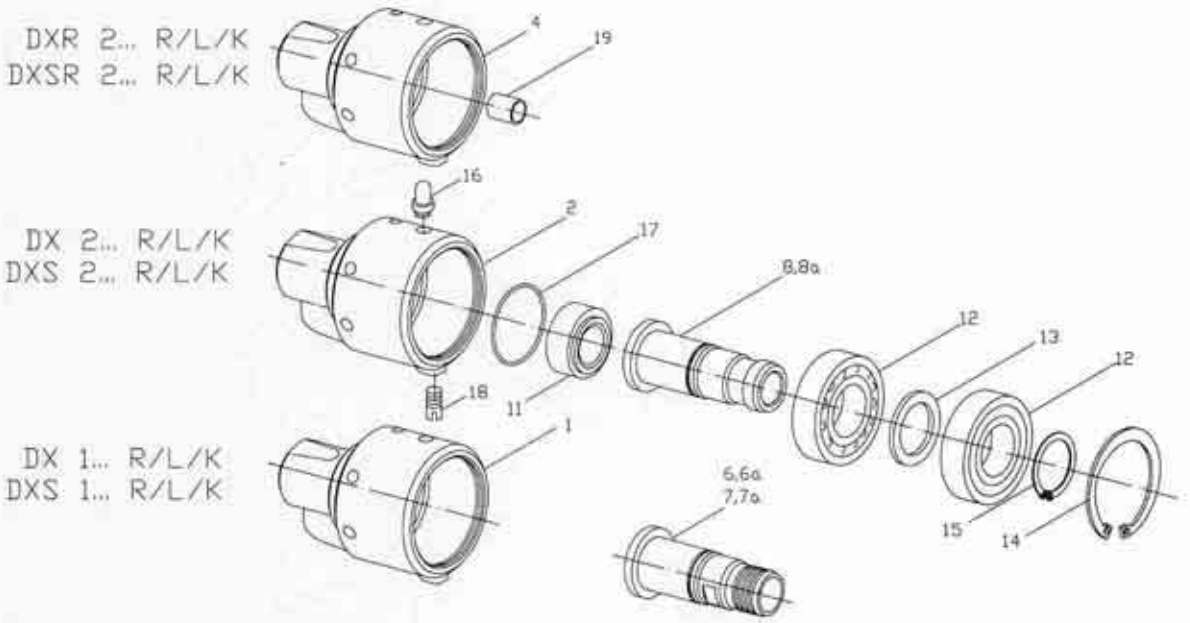
DX 280L-17: Rotary joint with distributor for turntables.



DXR 7125K-6: Rotary joint with 7 connections for several media.
Additional designs upon request.

Spare parts

for design DX1, DX2, DXR2 + DXS1, DXS2, DXSR2



	DN	10	15	20	25	32	40	50	65	80
1	Housing 1	1106010	1106060	1106110	1106160	1106210	1106260	1106310	1106360	1106410
2	Housing 2	1106011	1106061	1106111	1106161	1106211	1106261	1106311	1106361	1106411
4	Housing R 2	-	1106062	1106112	1106162	1106212	1106262	1106312	1106362	1106412
6	Rotor R	1106015	1106065	1106115	1106165	1106215	1106265	1106315	1106365	1106415
6a	Rotor SR	1106015-023	1106065-023	1106115-023	1106165-023	1106215-023	1106265-023	1106315-023	1106365-023	1106415-023
7	Rotor L	1106016	1106066	1106116	1106166	1106216	1106266	1106316	1106366	1106416
7a	Rotor SL	1106016-023	1106066-023	1106116-023	1106166-023	1106216-023	1106266-023	1106316-023	1106366-023	1106416-023
8	Rotor K	1106017	1106067	1106117	1106167	1106217	1106267	1106317	1106367	1106417
8a	Rotor SK	1106017-022	1106067-022	1106117-022	1106167-022	1106217-022	1106267-022	1106317-022	1106367-022	1106417-022
11	Mechanical seal	1501010-001	1501015-001	1501020-001	1501025-001	1501035-001	1501040-001	1501055-001	1501070-001	1501085-001
12	Ball bearing	3510200	3510201	3510202	3510203	3510204	3510205	3510206	3510207	3510208
13	Support ring	3510215	3510216	3510217	3510218	3510219	3510220	3510221	3510222	3510223
14	Circlip	3501220	3501232	3501222	3501223	3501221	3501206	3501207	3501237	3501238
15	Circlip	3501000	3501001	3501002	3501003	3501014	3501023	3501024	3501026	3501006
16	Lubricat. nipple	3500918	3500918	3500918	3500918	3500918	3500918	3500918	3500918	3500918
17	O-ring	3511875	3511876	3511877	3511878	3511879	3511880	3511881	3511882	3511883
18	Shaft screw	3500675	3500675	3500675	3500676	3500676	3500677	3500677	3500678	3500678
19	Slide bearing	-	3510502	3510504	3510506	3510501	3510509	3510512	3510514	3510523

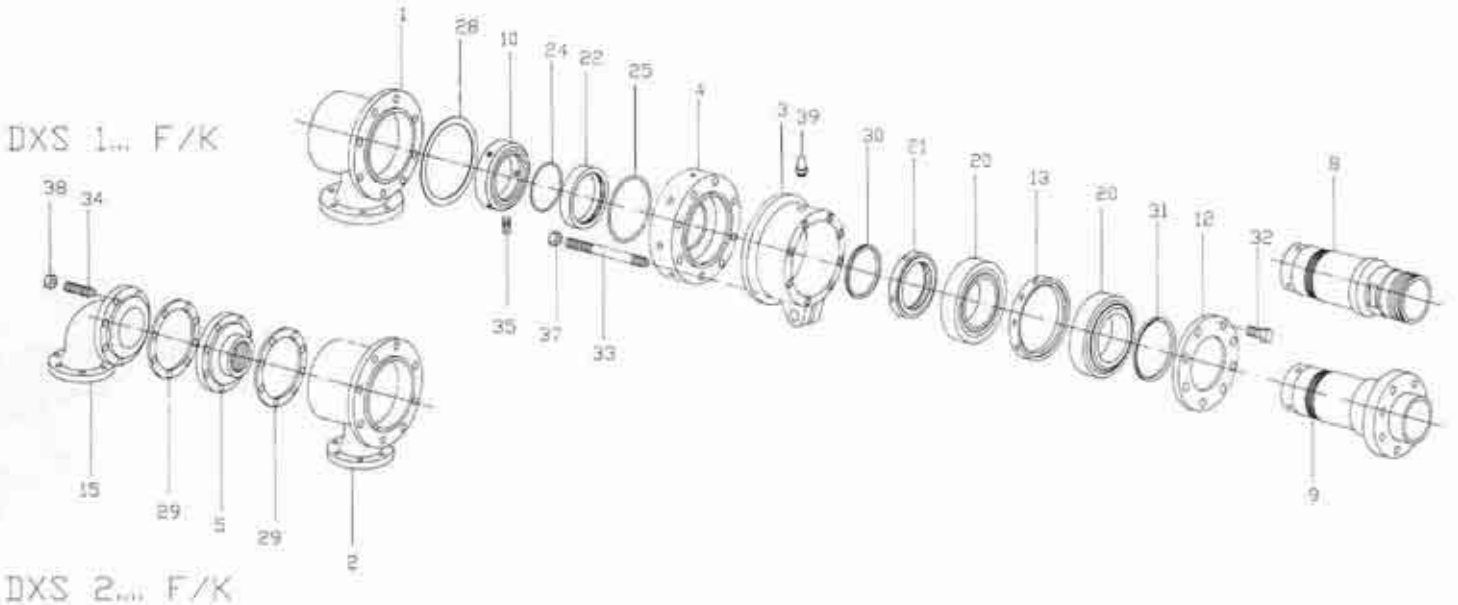
Rotary Joints Type DX have standard rotors position No. 6,7,8.
Rotary Joints Type DXS have coated rotors positions No. 6a,7a,8a.

Rotors of Type DXS can be built into Rotary Joints Type DX in order to give longer life.

Please specify exact type designation when inquiring or ordering!

Spare parts

for design DX1, DX2



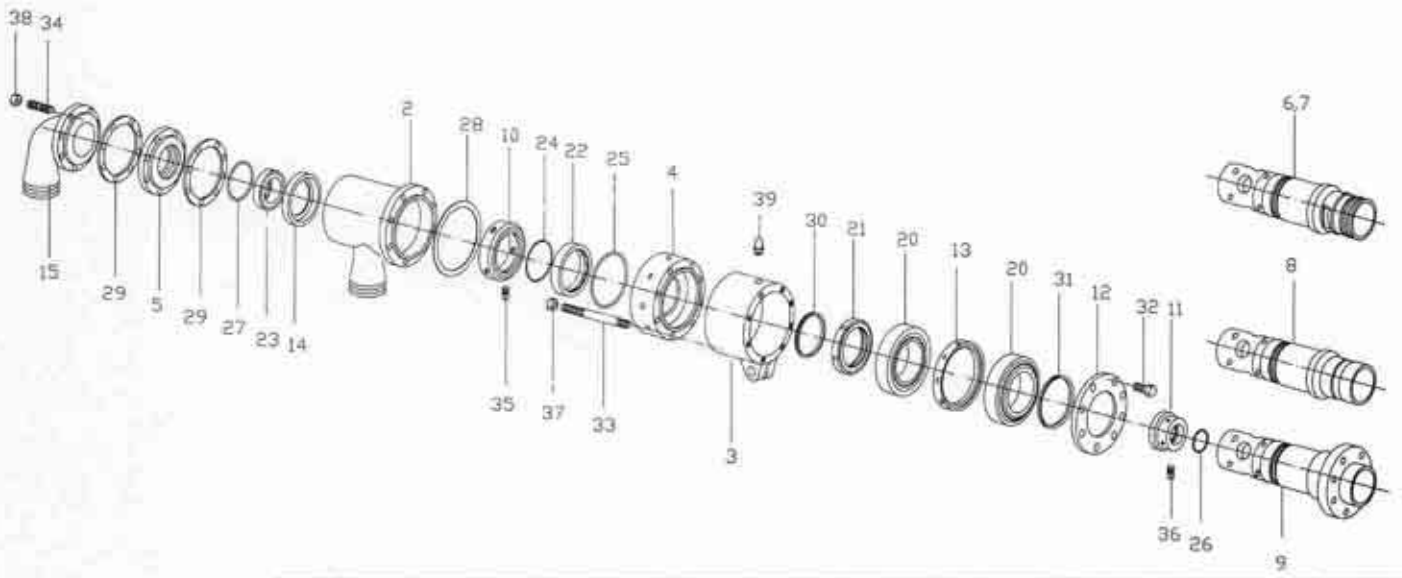
DXS 2... F/K

	DN	100	125	150
1	Housing 1	1105700	1105775	1105850
2	Housing 2	1105701	1105776	1105851
3	Bearing housing	1105706	1105781	1105856
4	Seal housing	1105725	1105800	1105875
5	Intermed. ring	1105723	1105798	1105873
8	Rotor K	1105717	1105792	1105867
9	Rotor F	1105718	1105793	1105868
10	Antirotat. ring	1105727	1105802	1105877
12	Cover	1105730	1105805	1105880
13	Distancer	1105732	1105807	1105882
15	Elbow	1105735	1105810	1105885
20	Tap. roll. bearing	3510040	3510041	3510042
21	Groove nut, sec.	3513505	3513506	3513507
22	Mechanical seal	1501120-001	1501150-001	1501170-001
24	O-ring f. pos. 10	3511819	3511821	3511743
25	O-ring f. pos. 22	3511897	3511895	3511893
28	Flat packing	1105740	1105815	1105890
29	Flat packing	1105741	1105816	1105891
30	Shaft seal	3511984	3511986	3511988
31	Shaft seal	3511987	3511988	3511989
32	Hex screw	3500165	3500192	3500194
33	Stud bolt	3500268	3500269	3500270
34	Stud bolt	3500262	3500266	3500267
35	Set screw	3500521-002	3500521-002	3500521-002
37	Hex nut	3500287	3500287	3500287
38	Hex nut	3500285	3500287	3500287
39	Lubric. nipple	3500918	3500918	3500918

Please specify exact type designation when inquiring or ordering!

Spare parts

for design DXSA2

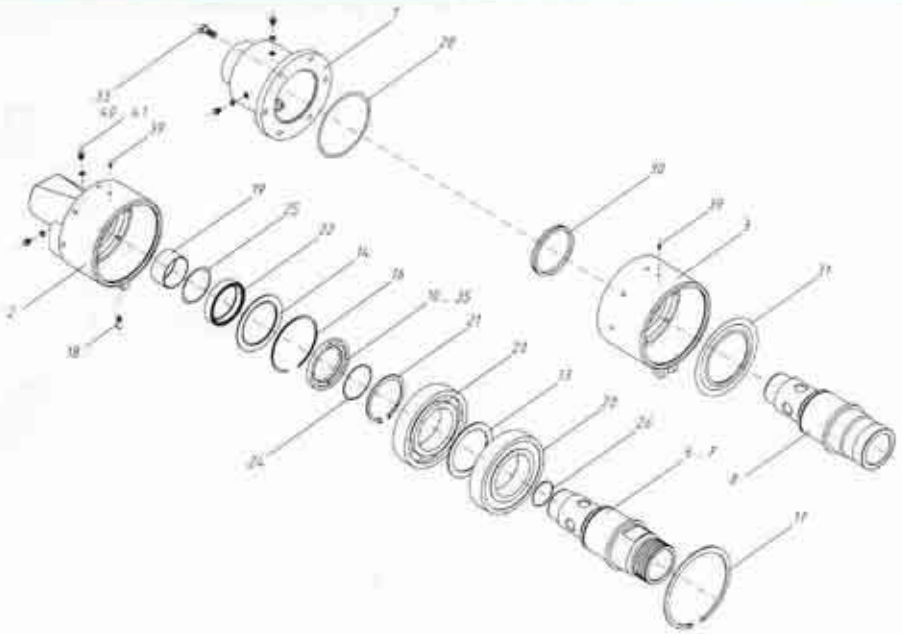


	DN	32	40	50	65	80	100	125	150
2	Housing 2	1105326	1105401	1105476	1105551	1105626	1105701	1105776	1105851
3	Bearing housing	1105331	1105406	1105481	1105556	1105631	1105706	1105781	1105856
4	Seal housing	1105350	1105425	1105500	1105575	1105650	1105725	1105800	1105875
5	Intermed. ring	1105347	1105422	1105497	1105572	1105647	1105722	1105797	1105872
6	Rotor R	1105336	1105411	1105486	1105561	1105636	-	-	-
7	Rotor L	1105337	1105412	1105487	1105562	1105637	-	-	-
8	Rotor K	1105338	1105413	1105488	1105563	1105638	1105713	1105788	1105863
9	Rotor F	1105339	1105414	1105489	1105564	1105639	1105714	1105789	1105864
10	Antirotat. ring	1105352	1105427	1105502	1105577	1105652	1105727	1105802	1105877
11	Butting bush	1105353	1105428	1105503	1105578	1105653	1105728	1105803	1105878
12	Cover	1105355	1105430	1105505	1105580	1105655	1105730	1105805	1105880
13	Distancer	1105357	1105432	1105507	1105582	1105657	1105732	1105807	1105882
14	Support ring	1105358	1105433	1105508	1105583	1105658	1105733	1105808	1105883
15	Elbow	1105360	1105435	1105510	1105585	1105660	1105735	1105810	1105885
20	Tap. roll. bearing	3510035	3510036	3510037	3510038	3510039	3510040	3510041	3510042
21	Groove nut, sec.	3513500	3513501	3513502	3513503	3513504	3513505	3513506	3513507
22	Mechanical seal	1501040-001	1501055-001	1501070-001	1501085-001	1501110-001	1501120-001	1501150-001	1501170-001
23	Mechanical seal	1501025-001	1501035-001	1501040-001	1501055-001	1501070-001	1501085-001	1501100-001	1501110-001
24	O-ring f. pos. 10	3511814	3511735	3511816	3511817	3511818	3511819	3511821	3511743
25	O-ring f. pos. 22	3511690	3511737	3511691	3511692	3511693	3511897	3511895	3511893
26	O-ring f. pos. 11	3511823	3511824	3511733	3511734	3511832	3511825	3511826	3511692
27	O-ring f. pos. 23	3511734	3511832	3511690	3511737	3511691	3511692	3511740	3511693
28	Flat packing	1105365	1105440	1105515	1105590	1105665	1105740	1105815	1105890
29	Flat packing	1105366	1105441	1105516	1105591	1105666	1105741	1105816	1105891
30	Shaft seal	3511975	3511976	3511978	3511980	3511983	3511984	3511986	3511988
31	Shaft seal	3511977	3511979	3511981	3511982	3511985	3511987	3511988	3511989
32	Hex screw	3500120	3500120	3500160	3500160	3500165	3500165	3500192	3500194
33	Stud bolt	3500261	3500261	3500264	3500265	3500265	3500268	3500269	3500270
34	Stud bolt	3500260	3500260	3500262	3500262	3500262	3500262	3500266	3500267
35	Set screw	3500516-002	3500516-002	3500517-002	3500517-002	3500521-002	3500521-002	3500521-002	3500521-002
36	Shaft screw	3500679-002	3500680-002	3500680-002	3500681-002	3500681-002	3500681-002	3500682-002	3500682-002
37	Hex nut	3500284	3500284	3500285	3500285	3500285	3500287	3500287	3500287
38	Hex nut	3500284	3500284	3500285	3500285	3500285	3500285	3500287	3500287
39	Lubric. nipple	3500918	3500918	3500918	3500918	3500918	3500918	3500918	3500918

Please specify exact type and designation when inquiring or ordering!

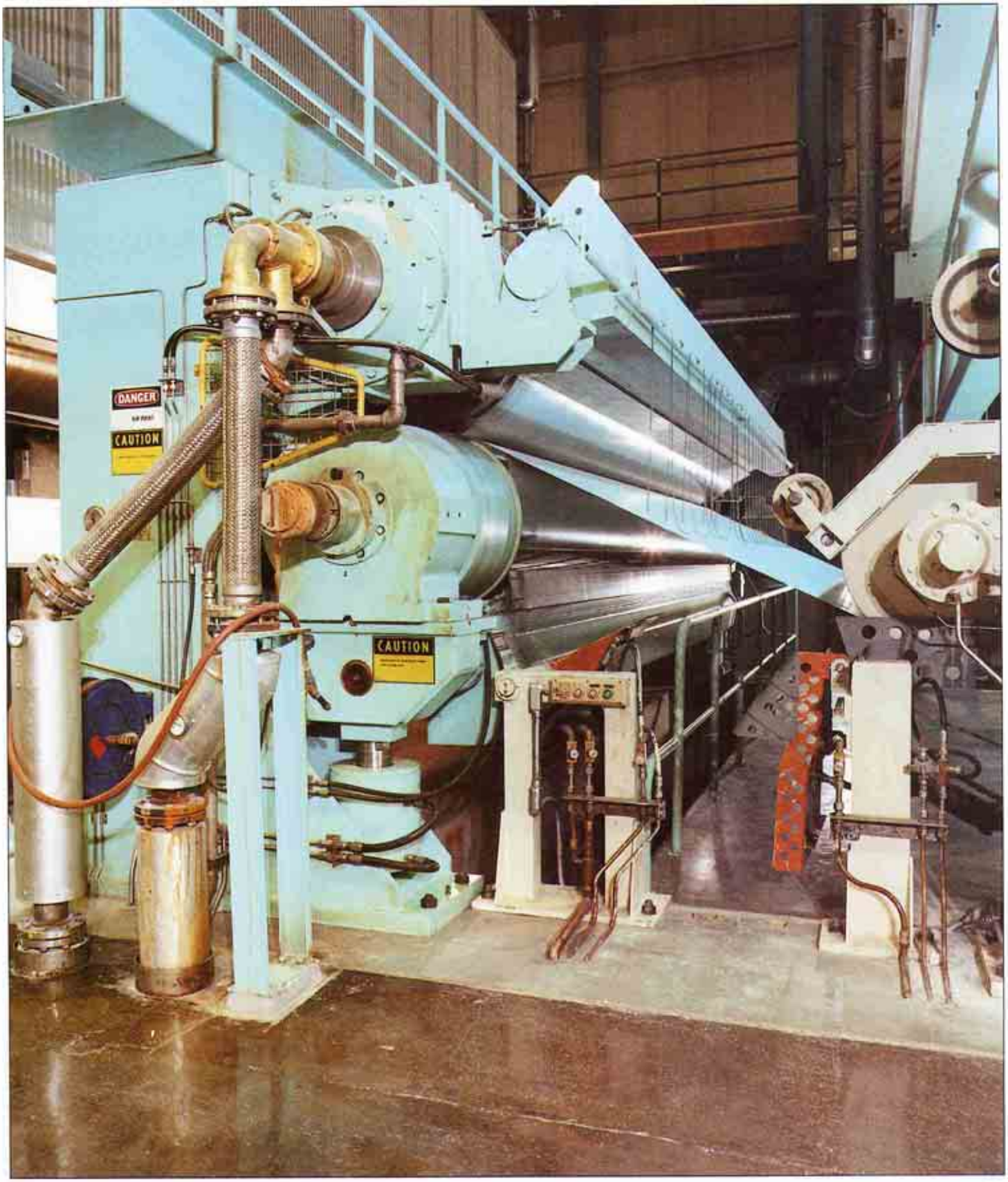
Spare parts

for design DXSB2



	DN	50	65	80	100
1	Housing DN100	–	–	–	1105701-273
2	Housing DN50-80	1106312-273	1106362-248	1106412-273	–
3	Bearing housing	–	–	–	1105706-274
6	Rotor R	1105486-275	1105561-275	1105636-275	–
7	Rotor L	1150487-275	1105562-275	1105637-275	–
8	Rotor K	1105488-276	1105563-247	1105638-276	1105713-276
10	Antirotat. ring	1105502-278	1105577-246	1105652-278	1105652
13	Support ring	3510221	3510222	3510223	3510224
14	Support ring	1106323-051	1106373-245	1106423-264	–
16	Circlip	3501235	3500873	3500693	–
17	Circlip	3501207	3501237	3501238	3501240
18	Shaft screw	3500677	3500678	3500678	–
19	Slide bearing	3510514	3510523	3510525	3510478
20	Ball bearing	3510206	3510207	3510208	3510209
21	Circlip	3501024	3501026	3501006	3501007
22	Mechanical seal	1501055-001	1501070-001	1501085-001	1501110-001
24	O-ring f. pos. 10	3511748	3511720	3511894	3511818
25	O-ring f. pos. 22	3511881	3511882	3511883	3511693
26	O-ring f. rotor	3511947	3511930	3511946	3511825
28	O-ring f. pos. 1	–	–	–	3511857
30	Shaft seal	–	–	–	3511724
31	Shaft seal	–	–	–	3509024
33	Hex screw	–	–	–	3500165
35	Hex screw	–	–	–	3500521-002
39	Lubric. nipple	3500918	3500918	3500918	3500918
40	Screw plug	3500660	3500660	3500660	3500655
41	Sealing ring	3502130	3502130	3502130	3502115-001

Please specify exact type designation when inquiring or ordering!


DANGER
CAUTION
CAUTION

Series H + HW

H/HW Rotary Joints

are suitable for
- steam: H and HW
- hot oil: HW
- water at low RPM

Advantages are:
- 2 bearings
- Housing bearing is locked to prevent rotation.
- Seal ring is resistant to fraction, even at high pressures.
- Extremely easy to repair. – Maintenance free - no lubrication necessary.

Housing made of cast iron with spheroidal graphite, diameters DN 125 and above as well as HWA made of steel.

Rotor made of chrome steel, rotor pipe for diameters DN 65 and above and HWA made of steel; sealing surface made of chrome steel.

Cover and compression springs made of chrome steel; HWA butting ring and adjustment ring also made of chrome steel.

Sealing elements made of highly wear-resistant artificial carbon. Sealing ring is pressure-loaded.

Design HW with metal-impregnated artificial carbon for considerably higher pressure, temperature and speed values.

The seal and bearing require little maintenance. Wear indicator for sealing ring at rotor. Wear of second ring (HWA) is determined by means of measurement gauge.

Connection to rotating pressure system by means of:

- standard connecting piece with right-hand or left-hand male thread BSP (ISO 228).
  Sealing and centering cone at end of thread. Adapter pieces for NPT and other threads are available.
- K flange with conical inner ring.

Radial and axial housing connection with right-hand thread BSP (ISO 228). Adapter pieces for NPT and other threads as well as flange connections are available.
Flanges PN 16 or PN 40 for DN 125 and above as well as HWA models. Since safety regulations prohibit sealing in the thread for thermal oil, we suggest using flange connections.
Thread for fixed inner pipe always right-hand even with left-hand thread at rotor (design 2).

Combined slide bearing and gland seal for rotating inner pipe. Static bearing for rotating HWA inner pipe (not supplied with rotary joint) in the rotor; additional seal for complete isolation of flow and return.

Prevention of housing rotation by means of fork at cover where the locking bolt engages. Thermal expansion of the roller and wear of the seal and bearing cause an axial displacement of the housing (away from the roller). Device for prevention of housing rotation as well as tube and inner pipe must not interfere with this axial displacement since the rotary joint will otherwise not operate properly.

Support of unit weight is suggested for DN 125 and above. Please inquire.

Application data

		H	HW	HWA
Design Nominal diameter DN mm		1, 2, R2, 3 15...100	1, 2, R2, 3 15...250	A2 32...250
Medium		Cooling water Hot water Steam	Cooling water Hot water Steam Thermal oil	Cooling water Hot water Steam Thermal oil
Temperature Pressure PN	min...max °C min...max bar	-30...250 0,8...20	-30...320* 0,8...40 ab DN 150...20	-30...320* 0,8...40 from DN 150...20
Speed	max...min^{-1}	$\frac{50000}{DN \times PN}$	$\frac{100000}{DN \times PN}$	$\frac{100000}{DN \times PN}$

Designs for other values and media upon request. *500 °C as special design.
Design H3 with vacuum valve max 160°C.
The combination of maximum values should be avoided.

Ordering instructions

Example: H | W | R | 2 | 32 | K | – 160

Series H

W High-performance sealing ring, metal impregnated

Design for rotating inner pipe
R with slide bearing and gland seal
A with complete sealing between flow and return

Number of housing connections
1 for one way flow design
2 for two way flow design
3 for two way flow design with vacuum valve

Nominal diameter in mm (△ dimension A)
15, 20, 25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250

Rotor connection
R right-hand thread
L left-hand thread
K K flange

Adapter pieces are available for other threads.

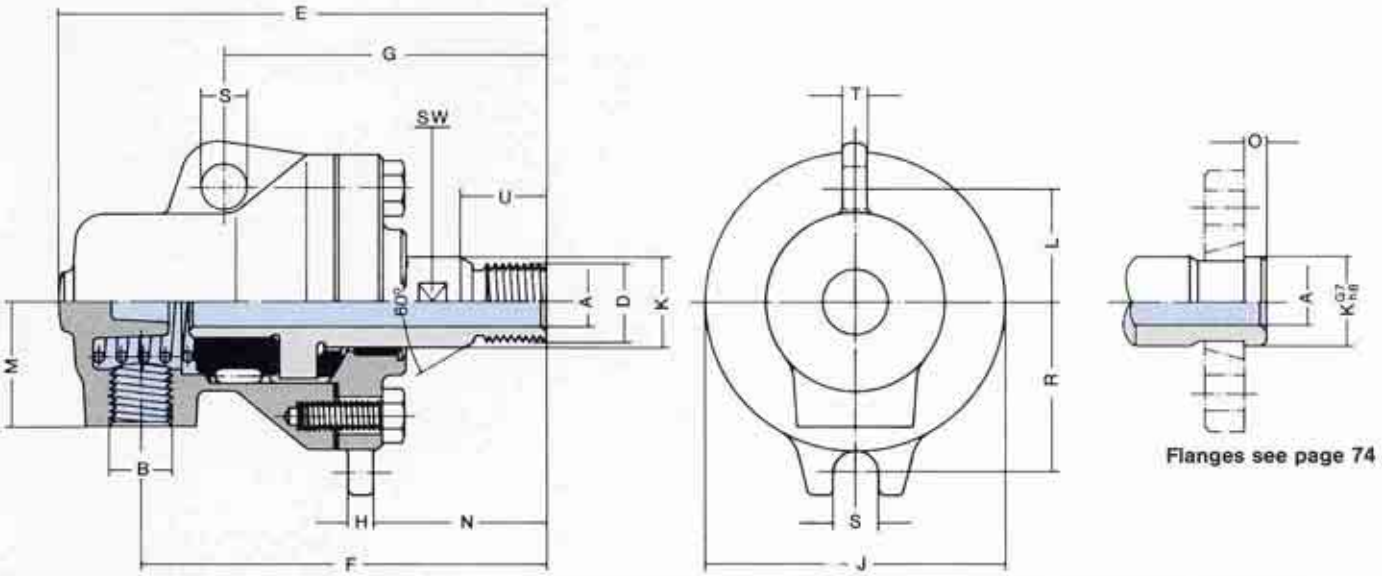
Consecutive numbers for special designs; numbering by factory.

Exception: Type-160 for 16 bar and type-400 for 40 bar when used with flanges for housing connections.

H1 + HW1

for one way flow of a medium

DN 15-100

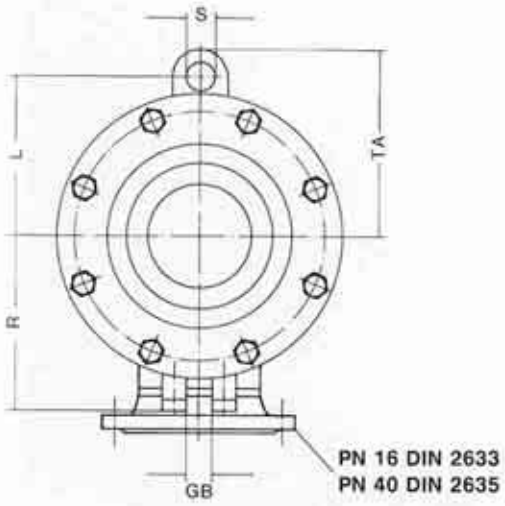


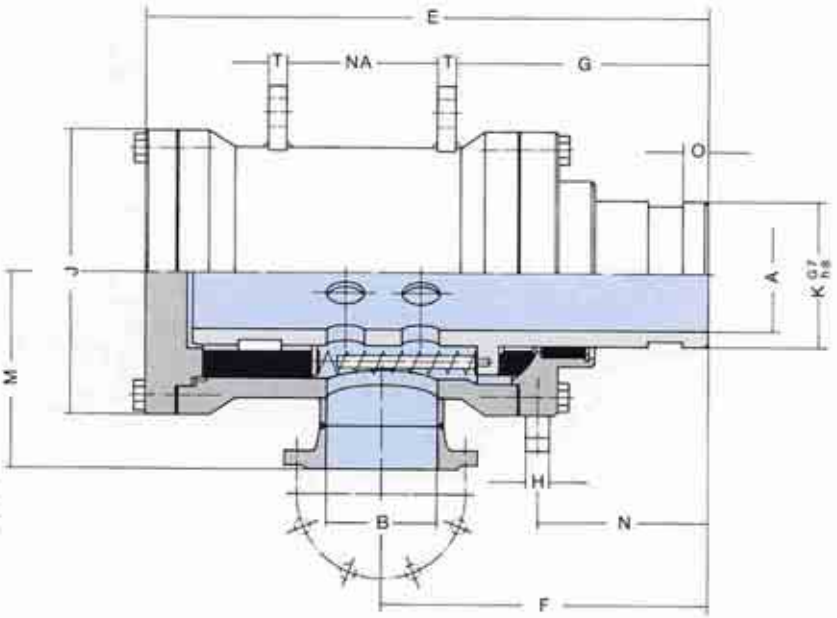
Flanges see page 74

	DN	15	20	25	32	40	50	65	80	100
H	Type	H 115 R	H 120 R	H 125 R	H 132 R	H 140 R	H 150 R	H 165 R	H 180 R	H 1100 R
	Order-No.	1108050	1108130	1108210	1108350	1108450	1108550	1108650	1108750	1108850
	Type	H 115 L	H 120 L	H 125 L	H 132 L	H 140 L	H 150 L	H 165 L	H 180 L	H 1100 L
	Order-No.	1108051	1108131	1108211	1108351	1108451	1108551	1108651	1108751	1108851
	Type	H 115 K	H 120 K	H 125 K	H 132 K	H 140 K	H 150 K	H 165 K	H 180 K	H 1100 K
	Order-No.	1108052	1108132	1108212	1108352	1108452	1108552	1108652	1108752	1108852
HW	Type	HW 115 R	HW 120 R	HW 125 R	HW 132 R	HW 140 R	HW 150 R	HW 165 R	HW 180 R	HW 1100 R
	Order-No.	1108065	1108145	1108165	1108366	1108465	1108565	1108665	1108765	1108865
	Type	HW 115 L	HW 120 L	HW 125 L	HW 132 L	HW 140 L	HW 150 L	HW 165 L	HW 180 L	HW 1100 L
	Order-No.	1108066	1108146	1108166	1108367	1108466	1108566	1108666	1108766	1108866
	Type	HW 115 K	HW 120 K	HW 125 K	HW 132 K	HW 140 K	HW 150 K	HW 165 K	HW 180 K	HW 1100 K
	Order-No.	1108067	1108147	1108169	1108368	1108467	1108567	1108667	1108767	1108867

Ø A	13	20	25	32	38	50	66	81	98
B	G ½	G ¾	G 1	G 1¼	G 1½	G 2	G 2½	G 3	G 4
D	G ½ A	G ¾ A	G 1 A	G 1¼ A	G 1½ A	G 2 A	G 2½ A	G 3½ A	G 4 A
E	132	148	174	203	226	275	327	398	480
F	109	122	143	167	183	225	264	320	383
G	87	93	104	118	124	146	165	203	243
H	7	8	8	10	11	13	18	18	25
Ø J	80	88	97	114	124	144	182	220	260
Ø K	25	30	35	45	52	66	85	107	118
Ø K G7/h8	24	30	35	45	50	65	85	105	114
L	31	36	40	48	53	62	80	100	115
M	34	42	48	55	65	80	90	115	135
N	47	50	53	62	66	82	93	121	143
O	6	8	8	8	10	10	10	12	12
R	46	50	54	65	70	81	101	121	143
S	12	12	14	16	16	18	20	22	26
T	7	8	9	10	12	13	15	20	22
U	23	23	28	33	36	43	48	54	66
SW	22	27	30	41	46	60	75	95	110
Weight (kg)	1,7	2,4	3,4	5,5	7,1	11,3	21,4	37,9	62

DN 125-250





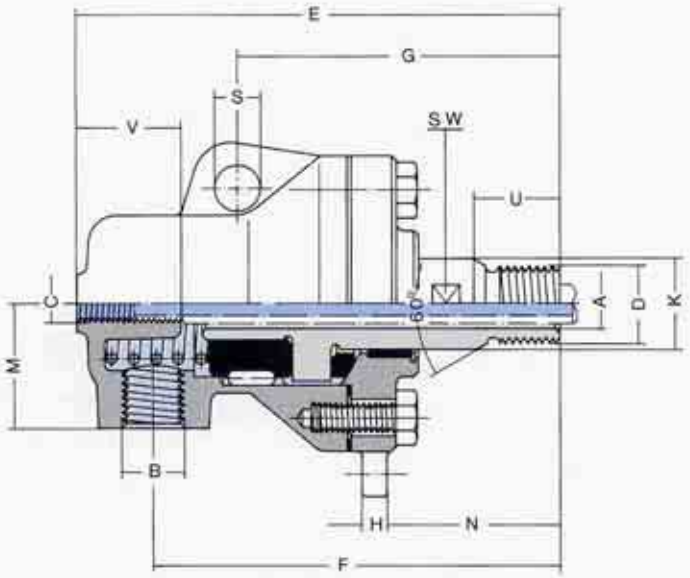
DN	125	150	200	250
Type PN 16 Order-No.	HW 1125 K-160 1104000-160	HW 1150 K-160 1104100-160	HW 1200 K-160 1104200-160	HW 1250 K-160 1104300-160
Type PN 40 Order-No.	HW 1125 K-400 1104000-400	HW 1150 K-400 1104100-400	HW 1200 K-400 1104200-400	HW 1250 K-400 1104300-400
Type Order-No.				
Type Order-No.				
Type Order-No.				
Type Order-No.				

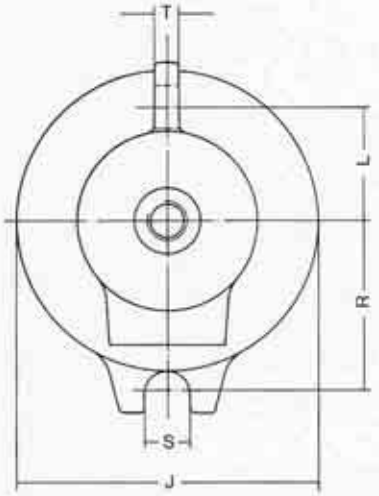
Ø A	120	145	195	240
B	DN 125	DN 150	DN 200	DN 250
E	590	670	812	972
F	345	380	455	545
G	270	305	353	420
H	25	20	25	25
Ø J	310	345	405	495
Ø K G7/h8	150	180	230	285
L	172	195	225	280
M	240	270	310	367
N	180	176	212	255
O	35	40	45	50
R	194	207	245	300
S	25	33	40	50
T	20	20	25	30
TA	197	225	260	330
GB	25	30	35	40
NA	155	200	265	340

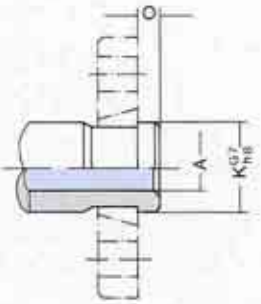
H2 + HW2

for two way flow of a medium
designed for non-rotating inner pipe

DN 15-100







Flanges see page 74

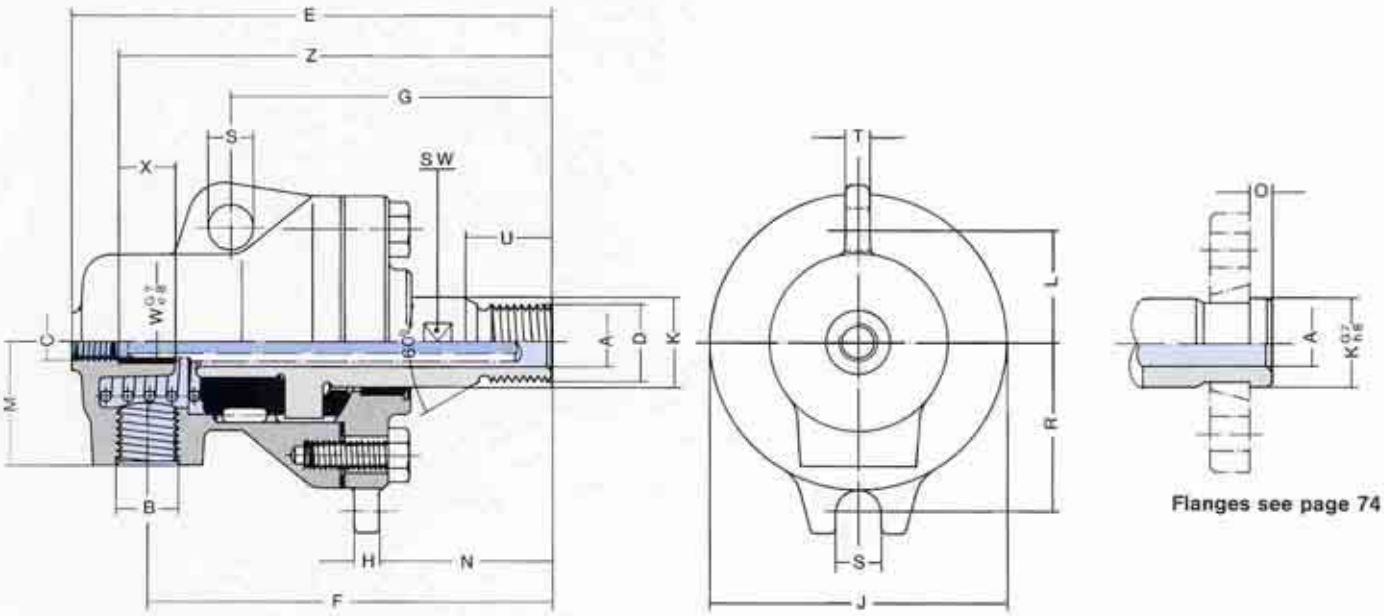
	DN	15	20	25	32	40	50	65	80	100
H	Type	H 215 R	H 220 R	H 225 R	H 232 R	H 240 R	H 250 R	H 265 R	H 280 R	H 2100 R
	Order-No.	1108053	1108133	1108213	1108353	1108453	1108553	1108654	1108753	1108853
	Type	H 215 L	H 220 L	H 225 L	H 232 L	H 240 L	H 250 L	H 265 L	H 280 L	H 2100 L
	Order-No.	1108054	1108134	1108214	1108354	1108454	1108554	1108655	1108754	1108854
	Type	H 215 K	H 220 K	H 225 K	H 232 K	H 240 K	H 250 K	H 265 K	H 280 K	H 2100 K
	Order-No.	1108055	1108135	1108215	1108355	1108455	1108555	1108656	1108755	1108855
HW	Type	HW 215 R	HW 220 R	HW 225 R	HW 232 R	HW 240 R	HW 250 R	HW 265 R	HW 280 R	HW 2100 R
	Order-No.	1108068	1108148	1108167	1108363	1108468	1108568	1108668	1108768	1108868
	Type	HW 215 L	HW 220 L	HW 225 L	HW 232 L	HW 240 L	HW 250 L	HW 265 L	HW 280 L	HW 2100 L
	Order-No.	1108069	1108149	1108168	1108364	1108469	1108569	1108669	1108769	1108869
	Type	HW 215 K	HW 220 K	HW 225 K	HW 232 K	HW 240 K	HW 250 K	HW 265 K	HW 280 K	HW 2100 K
	Order-No.	1108070	1108150	1108170	1108365	1108470	1108570	1108670	1108770	1108870

Ø A	13	20	25	32	38	50	66	81	98
B	G ⅜	G ½	G ¾	G 1	G 1¼	G 1½	G 2	G 2½	G 3
C	G ⅛	G ¼	G ⅜	G ½	G ¾	G 1	G 1½	G 1½	G 2
D	G ½ A	G ¾ A	G 1 A	G 1¼ A	G 1½ A	G 2 A	G 2½ A	G 3½ A	G 4 A
E	130	146	172	200	223	272	324	393	475
F	109	122	143	167	183	225	264	320	383
G	87	93	104	118	124	146	165	203	243
H	7	8	8	10	11	13	18	18	25
Ø J	80	88	97	114	124	144	182	220	260
Ø K	25	30	35	45	52	66	85	107	118
Ø K G7/h8	24	30	35	45	50	65	85	105	114
L	31	36	40	48	53	62	80	100	115
M	34	42	48	55	65	80	90	115	135
N	47	50	53	62	66	82	93	121	143
O	6	8	8	8	10	10	10	12	12
R	46	50	54	65	70	81	101	121	143
S	12	12	14	16	16	18	20	22	26
T	7	8	9	10	12	13	15	20	22
U	23	23	28	33	36	43	48	54	66
V	28	32	35	45	50	60	70	80	90
SW	22	27	30	41	46	60	75	95	110
Weight (kg)	1,6	2,3	3,2	5,3	6,9	11,1	21,3	37,1	61

HR2 + HWR2

for two way flow of a medium
designed for rotating inner pipe

DN 15-100



Flanges see page 74

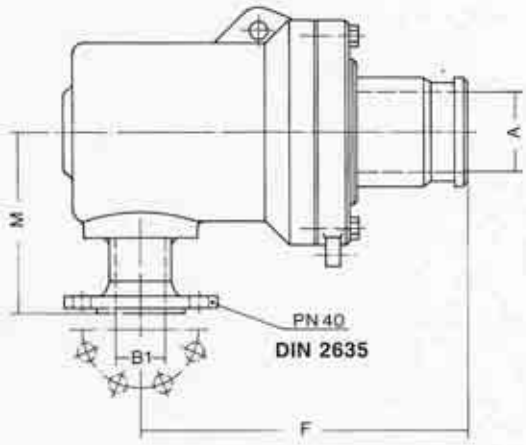
	DN	15	20	25	32	40	50	65	80	100
H	Type	HR 215 R	HR 220 R	HR 225 R	HR 232 R	HR 240 R	HR 250 R	HR 265 R	HR 280 R	HR 2100 R
	Order-No.	1108056	1108136	1108219	1108359	1108459	1108556	1108657	1108756	1108856
	Type	HR 215 L	HR 220 L	HR 225 L	HR 232 L	HR 240 L	HR 250 L	HR 265 L	HR 280 L	HR 2100 L
	Order-No.	1108057	1108137	1108220	1108360	1108460	1108557	1108658	1108757	1108857
	Type	HR 215 K	HR 220 K	HR 225 K	HR 232 K	HR 240 K	HR 250 K	HR 265 K	HR 280 K	HR 2100 K
	Order-No.	1108058	1108138	1108224	1108375	1108463	1108560	1108659	1108761	1108861
HW	Type	HWR 215 R	HWR 220 R	HWR 225 R	HWR 232 R	HWR 240 R	HWR 250 R	HWR 265 R	HWR 280 R	HWR 2100 R
	Order-No.	1108071	1108151	1108171	1108369	1108471	1108571	1108671	1108771	1108871
	Type	HWR 215 L	HWR 220 L	HWR 225 L	HWR 232 L	HWR 240 L	HWR 250 L	HWR 265 L	HWR 280 L	HWR 2100 L
	Order-No.	1108072	1108152	1108172	1108370	1108472	1108572	1108672	1108772	1108872
	Type	HWR 215 K	HWR 220 K	HWR 225 K	HWR 232 K	HWR 240 K	HWR 250 K	HWR 265 K	HWR 280 K	HWR 2100 K
	Order-No.	1108073	1108153	1108176	1108376	1108476	1108573	1108673	1108773	1108873

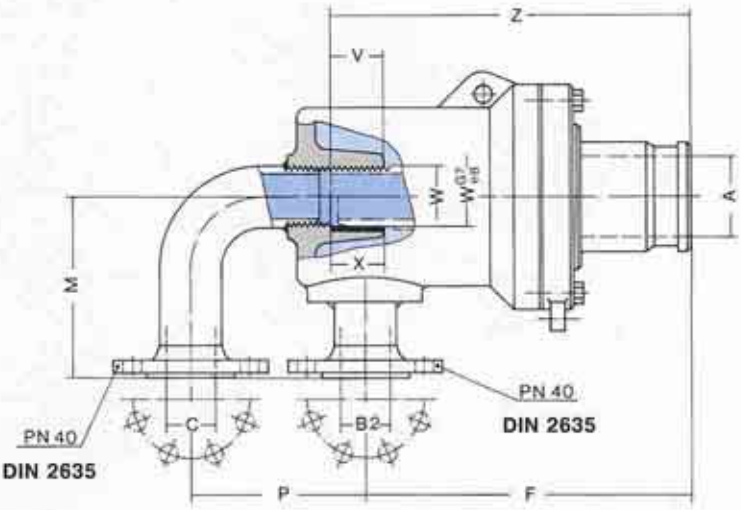
Ø A	13	20	25	32	38	50	66	81	98
B	G ⅜	G ½	G ¾	G 1	G 1¼	G 1½	G 2	G 2½	G 3
C	G ⅛	G ¼	G ⅜	G ½	G ¾	G 1	G 1½	G 1½	G 2
D	G ½ A	G ¾ A	G 1 A	G 1¼ A	G 1½ A	G 2 A	G 2½ A	G 3½ A	G 4 A
E	130	146	172	200	223	272	324	393	475
F	109	122	143	167	183	225	264	320	383
G	87	93	104	118	124	146	165	203	243
H	7	8	8	10	11	13	18	18	25
Ø J	80	88	97	114	124	144	182	220	260
Ø K	25	30	35	45	52	66	85	107	118
Ø K G7/h8	24	30	35	45	50	65	85	105	114
L	31	36	40	48	53	62	80	100	115
M	34	42	48	55	65	80	90	115	135
N	47	50	53	62	66	82	93	121	143
O	6	8	8	8	10	10	10	12	12
R	46	50	54	65	70	81	101	121	143
S	12	12	14	16	16	18	20	22	26
T	7	8	9	10	12	13	15	20	22
U	23	23	28	33	36	43	48	54	66
Ø W G7/e8	10	12	16	20	25	31,8	45	45	60
X	15	15	15	15	25	25	30	30	40
Z	117	129	152	170	198	237	284	343	425
SW	22	27	30	41	46	60	75	95	110
Weight (kg)	1,6	2,3	3,2	5,3	6,9	11,1	21,3	37,1	61

HW1 + HW2 + HWR2

with flange connections

DN 15-100





DN	15	20	25	32	40	50	65	80	100
Type PN 40 Order-No.	HW 115 K-400 1108067-400	HW 120 K-400 1108147-400	HW 125 K-400 1108169-400	HW 132 K-400 1108368-400	HW 140 K-400 1108467-400	HW 150 K-400 1108567-400	HW 165 K-400 1108667-400	HW 180 K-400 1108767-400	HW 1100 K-400 1108867-400
Type PN 40 Order-No.		HW 220 K-400 1108150-400	HW 225 K-400 1108170-400	HW 232 K-400 1108365-400	HW 240 K-400 1108470-400	HW 250 K-400 1108570-400	HW 265 K-400 1108670-400	HW 280 K-400 1108770-400	HW 2100 K-400 1108870-400
Type PN 40 Order-No.		HWR 220 K-400 1108153-400	HWR 225 K-400 1108176-400	HWR 232 K-400 1108376-400	HWR 240 K-400 1108476-400	HWR 250 K-400 1108573-400	HWR 265 K-400 1108673-400	HWR 280 K-400 1108773-400	HWR 2100 K-400 1108873-400
Type Order-No.									
Type Order-No.									
Type Order-No.									

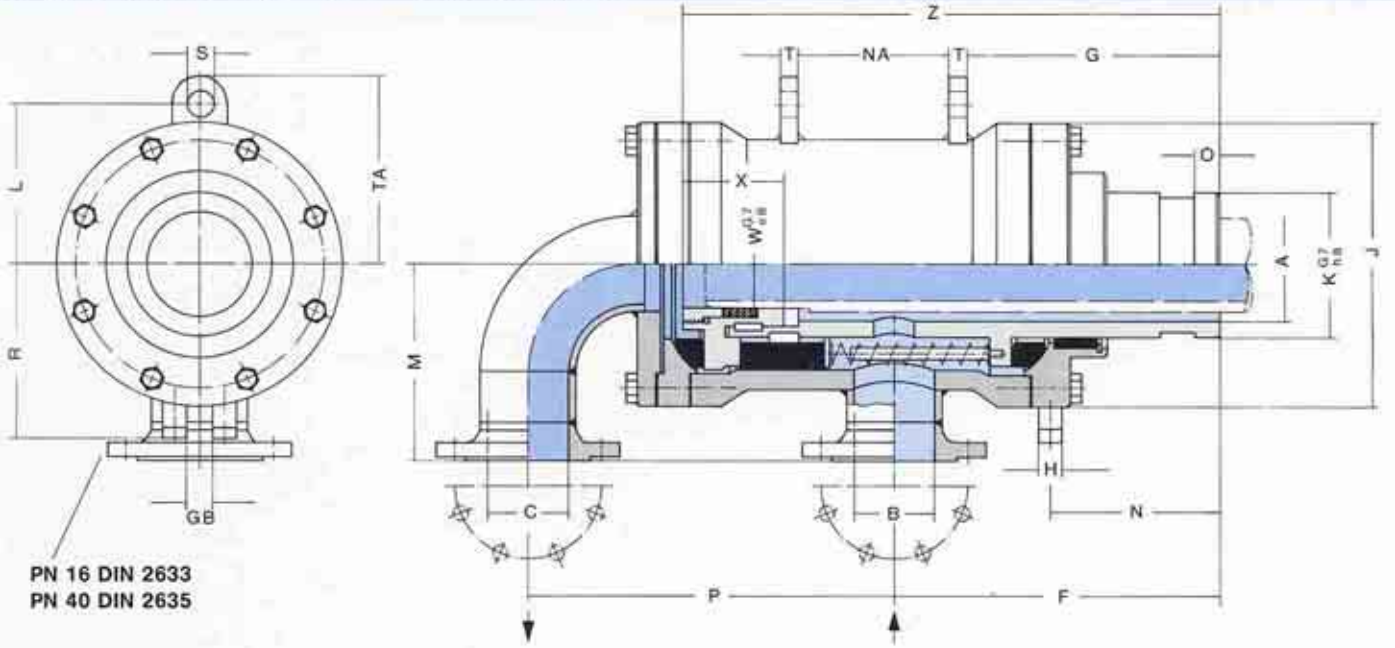
Ø A	13	20	25	32	38	50	66	81	98
B 1	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100
B 2	–	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80
C	–	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80
F	109	122	143	167	183	225	264	320	383
M	78	90	98	105	125	140	160	185	210
P	–	105	110	125	150	160	180	200	215
V	–	15	15	25	30	30	30	40	40
W	–	G ⅜	G ½	G ¾	G 1	G 1¼	G 1½	G 2	G 2½
Ø W G7/e8	–	16	18	22	28	35	45	60	75
X	–	15	15	25	30	30	30	40	40
Z	–	129	152	180	203	242	284	353	425
Weight (kg)									
HW1	2,4	3,3	4,6	7,4	9	15	26	44	70
HW2, R2	–	4	5,3	8	9,7	15,8	27	47	75

All other dimensions see pages 38/40/41.

HWA2

for two way flow of a medium
designed for rotating inner pipe

DN 32-250



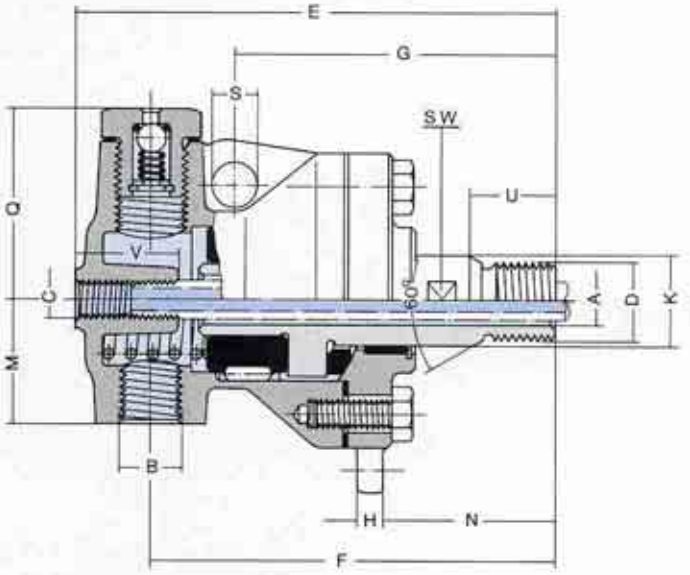
DN	32	40	50	65	80	100	125	150	200	250
Type PN 16 Order-No.							HWA 2125 K-160 1104002-160	HWA 2150 K-160 1104102-160	HWA 2200 K-160 1104202-160	HWA 2250 K-160 1104302-160
Type PN 40 Order-No.	HWA 232 K-400 1108390-400	HWA 240 K-400 1108490-400	HWA 250 K-400 1108590-400	HWA 265 K-400 1108690-400	HWA 280 K-400 1108790-400	HWA 2100 K-400 1108890-400	HWA 2125 K-400 1104002-400	HWA 2150 K-400 1104102-400	HWA 2200 K-400 1104202-400	HWA 2250 K-400 1104302-400
Type Order-No.										
Type Order-No.										
Type Order-No.										
Type Order-No.										

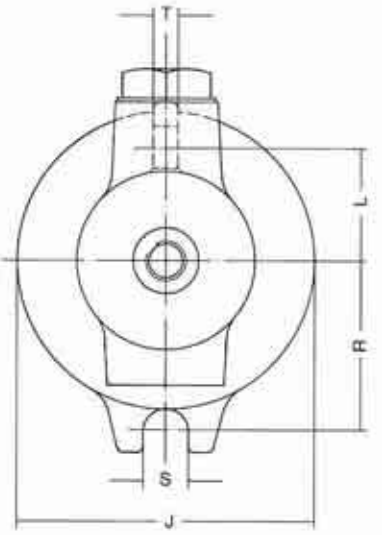
Ø A	32	38	50	66	81	98	120	145	195	240
B	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
C	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
F	145	160	185	220	252	293	330	364	430	519
G	–	–	–	–	218	245	270	305	355	420
H	10	10	18	18	18	25	25	20	25	25
Ø J	114	124	144	180	220	260	310	345	405	495
Ø K G7/h8	45	50	65	85	105	114	150	180	230	285
L	–	–	–	–	125	150	172	195	225	280
M	110	120	130	150	175	205	240	270	310	367
N	77	84	97	124	140	153	180	176	212	255
O	15	20	25	25	30	30	35	40	45	50
P	155	197	233	245	322	373	453	545	650	815
R	75	80	92	115	135	168	194	207	245	300
S	–	–	–	–	22	25	25	33	40	50
T	–	–	–	–	15	20	20	20	25	30
Ø W G7/e8	24	29	37	45	58	75	88	110	135	160
X	68	70	90	100	110	120	140	160	200	250
Z	237	263	317	375	435	507	585	665	788	953
TA	–	–	–	–	145	175	197	225	260	330
GB	16	16	18	20	22	25	25	30	35	40
NA	–	–	–	–	120	130	180	215	285	350

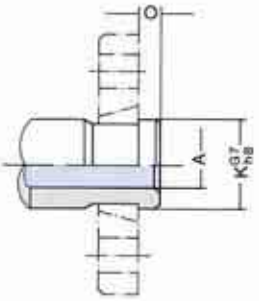
H3 + HW3

for two way flow of a medium designed for non-rotating inner pipe, with vacuum valve

DN 25-40







Flanges see page 74

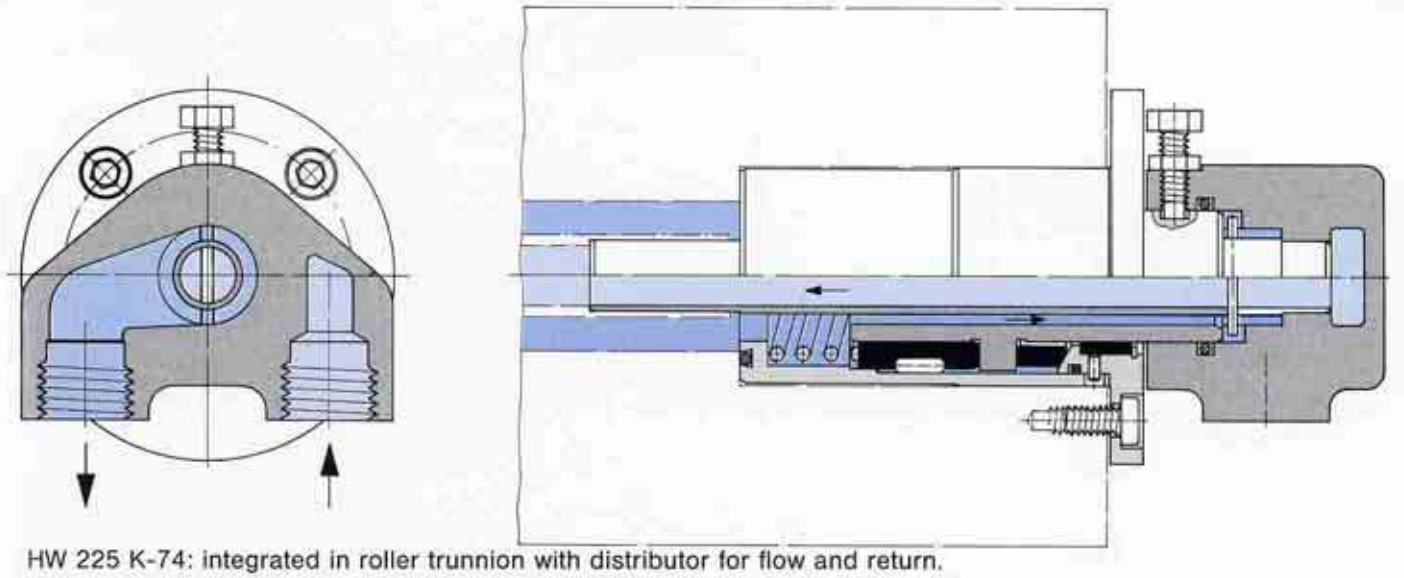
DN	25	32	40
Type	H 325 R	H 332 R	H 340 R
Order-No.	1108216	1108356	1108456
Type	H 325 L	H 332 L	H 340 L
Order-No.	1108217	1108357	1108457
Type	H 325 K	H 332 K	H 340 K
Order-No.	1108218	1108358	1108458
Type	HW 325 R	HW 332 R	HW 340 R
Order-No.	1108173	1108371	1108473
Type	HW 325 L	HW 332 L	HW 340 L
Order-No.	1108174	1108372	1108474
Type	HW 325 K	HW 332 K	HW 340 K
Order-No.	1108175	1108373	1108475

Ø A	25	32	38
B	G ¾	G 1	G 1¼
C	G ⅜	G ½	G ¾
D	G 1 A	G 1¼ A	G 1½ A
E	172	200	223
F	143	167	183
G	104	118	124
H	8	10	11
Ø J	97	114	124
Ø K	35	45	52
Ø K G7/h8	35	45	50
L	40	48	53
M	48	55	65
N	53	62	66
O	8	8	10
Q	64	69	74
R	54	65	70
S	14	16	16
T	9	10	12
U	28	33	36
V	35	45	50
SW	30	41	46
Weight (kg)	3,6	5,7	7,3

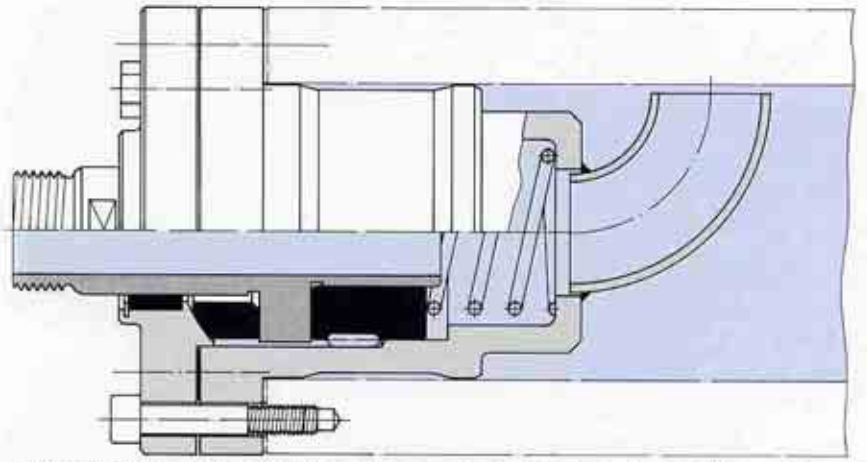
Max 160°C. Higher operating temperatures – please contact us.

Special designs

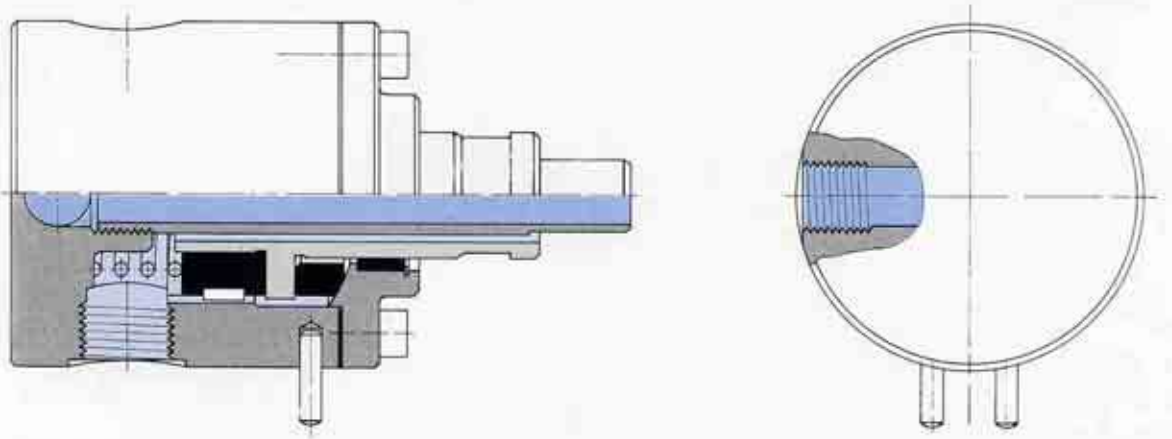
of series H rotary joints for continuous casting machines



HW 225 K-74: integrated in roller trunnion with distributor for flow and return.



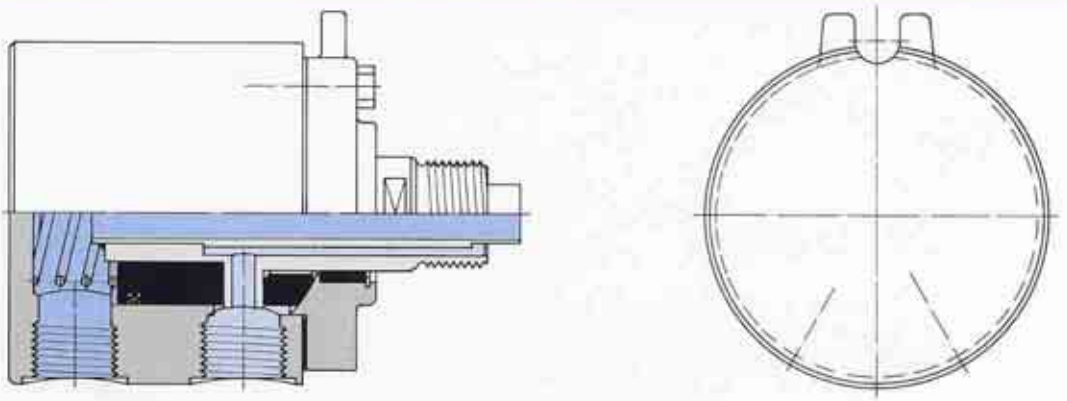
HW 125 R-24: integrated in roller trunnion at return for cooling water.



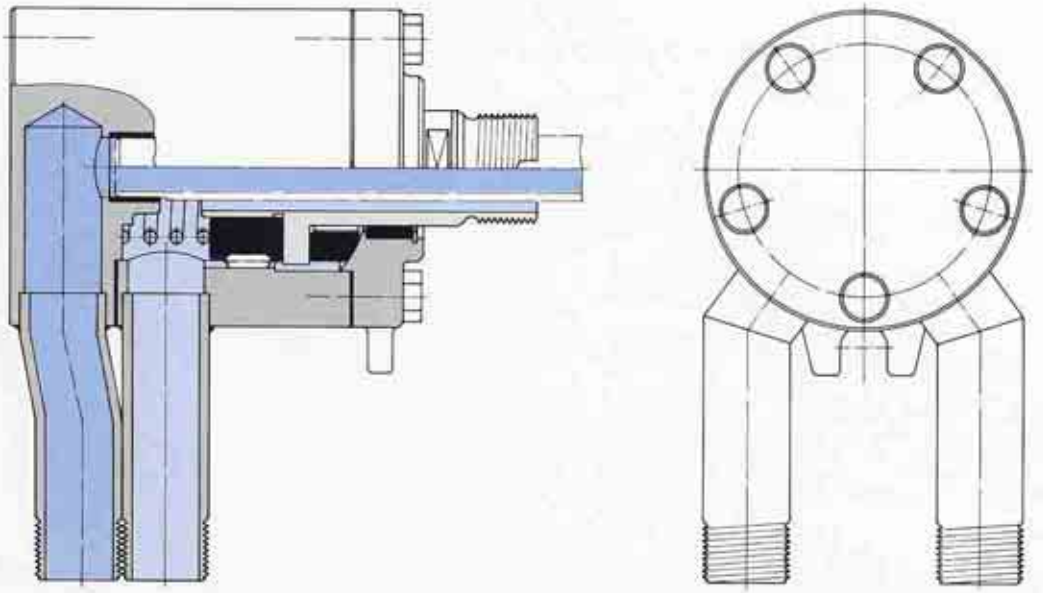
HW 225 K-27: Compact rotary joint with double connection.

Examples

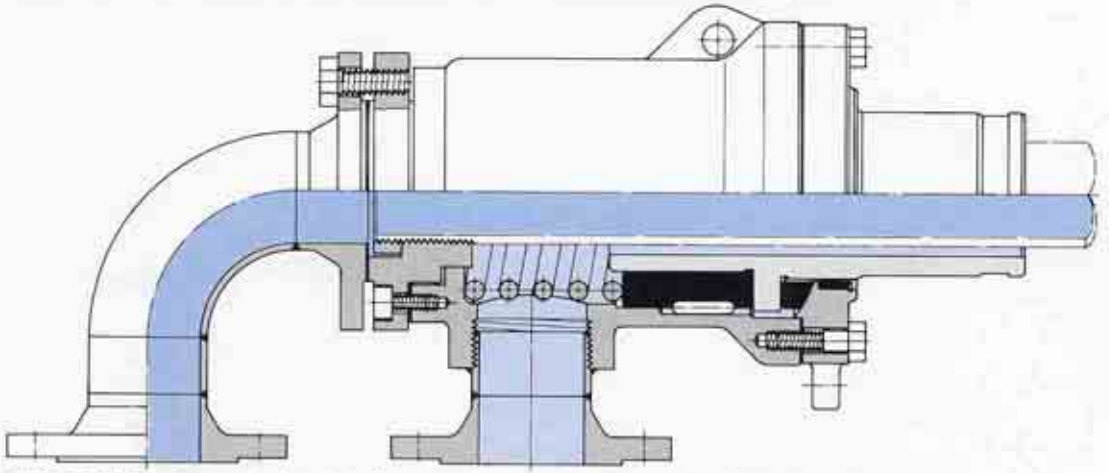
for other special designs



HWR 225-43: Rotary joint for calender. Very compact and short design with inner pipe welded into rotor. Flow and return completely isolated.



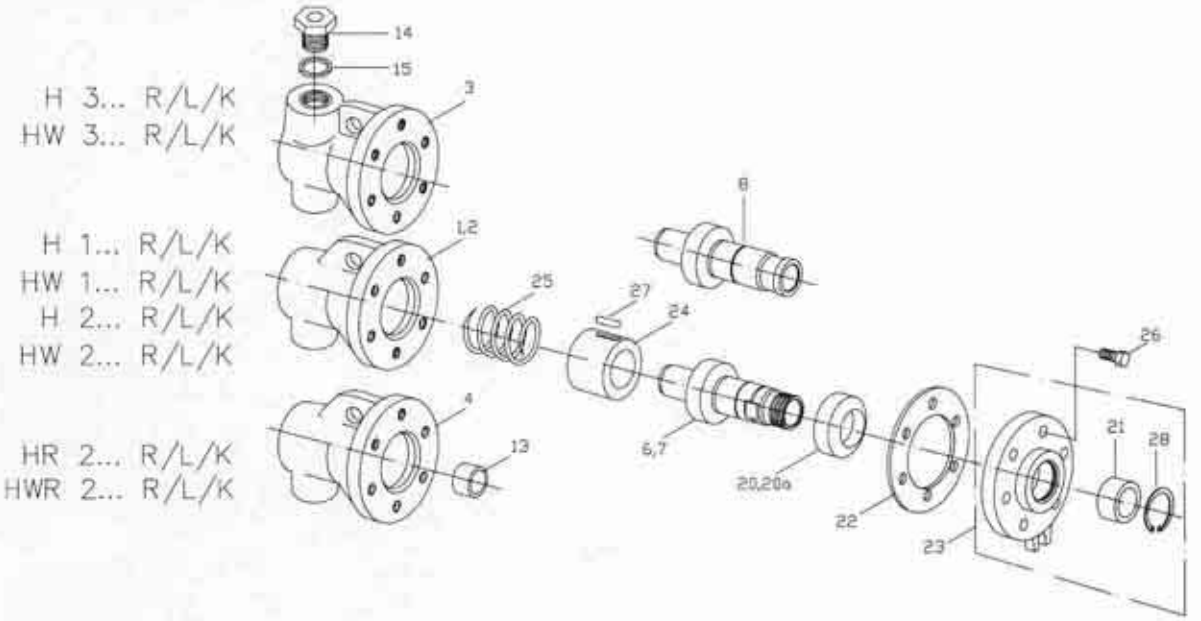
HWR 225-41: Rotary joint for calender with welded pipe connecting piece.



HW 280K-76: Rotary joint with flanges. Inner pipe secured with lock nut.
Other designs upon request.

Spare parts

for design H1 + HW1, H2 + HW2, HR2 + HWR2, H3 + HW3



	DN	15	20	25	32	40	50	65	80	100
1	Housing 1	1103059	1103139	1103222	1103362	1103462	1103559	1103633	1103762	1103862
2	Housing 2	1103060	1103140	1103223	1103363	1103463	1103560	1103634	1103763	1103863
3	Housing 3	–	–	1103224	1103364	1103464	–	–	–	–
4	Housing R 2	1103061	1103141	1103225	1103365	1103465	1103561	1103649	1103765	1103865
6	Rotor R	1103063	1103143	1103227	1103367	1103467	1103563	1103643	1103767	1103867
7	Rotor L	1103064	1103144	1103228	1103368	1103468	1103564	1103644	1103768	1103868
8	Rotor K	1103065	1103145	1103229	1103369	1103469	1103565	1103637	1103769	1103869
13	Slide bearing	3510502	3510504	3510506	3510501	3510509	3510512	3510514	3510514	3510523
14	Vacuum valve	–	–	1190020	1190020	1190020	–	–	–	–
15	CU seal	–	–	3511962	3511962	3511962	–	–	–	–
20	Stand. seal ring	3511301	3511302	3511303	3511304	3511305	3511306	3511307	3511308	3511309
20a	Sealing ring W	3510641	3510642	3510643	3510644	3510645	3510646	3510647	3510648	3510649
21	Cover bearing	3510601	3510602	3510603	3510604	3510605	3510606	3510607	3510608	3510609
22	Flat packing	3512001	3512002	3512003	3512004	3512005	3512006	3512007	3512016	3512017
23	Complete cover	1108059	1108139	1108221	1108361	1108461	1108559	1108653	1108759	1108858
24	Carbon bearing	3511341	3511342	3511343	3511344	3511345	3511346	3511347	3511348	3511349
25	Compress. spring	3511616	3511617	3511618	3511619	3511620	3511621	3511622	3511626	3511627
26	Hex screw	3500087	3500087	3500087	3500125	3500125	3500165	3500163	3500163	3500197
27	Locking pin	3500932	3500932	3500932	3500933	3500933	3500934	3500934	3500934	3500934
28	Circlip	3500701	3500697	3500702	3500703	3500704	3500705	3500706	3500707	3500708

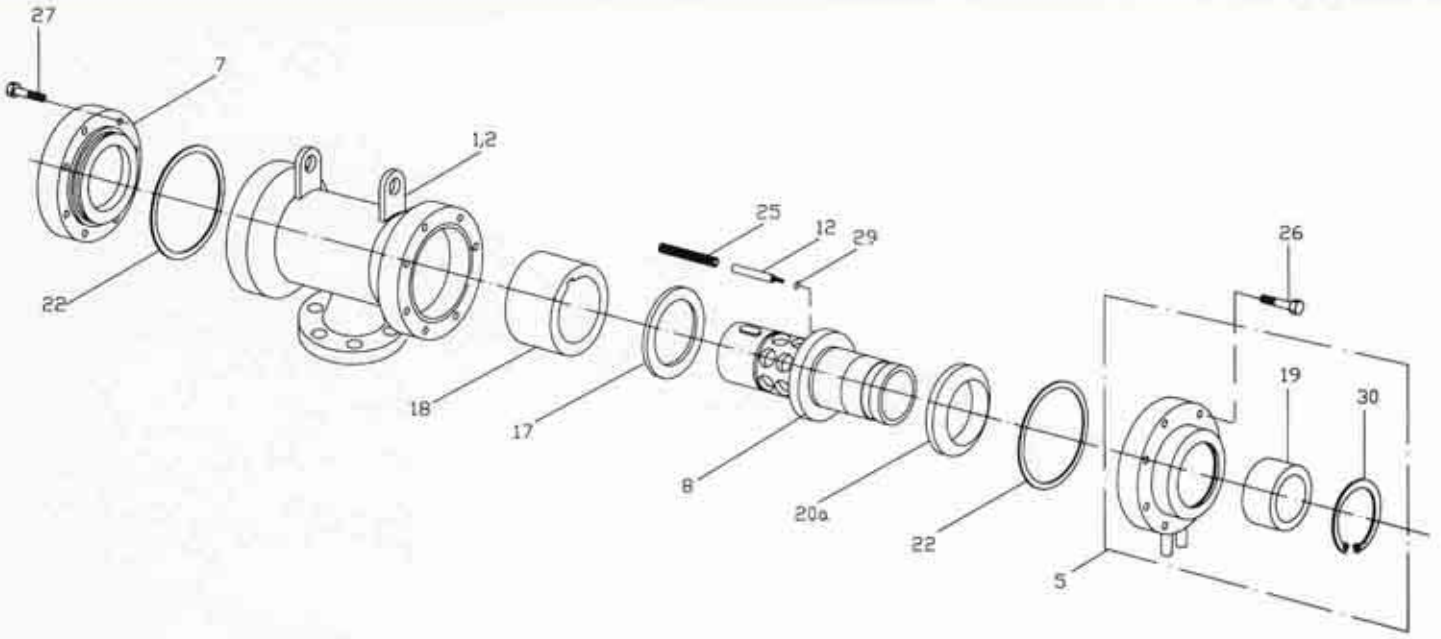
Slide bearing for design with flanges page 42

13a	Slide bearing	3510506	3510527	3510534	3510531	3510530	3510514	3510523	3510525

Please specify exact type designation when inquiring or ordering!

Spare parts

for design HW1

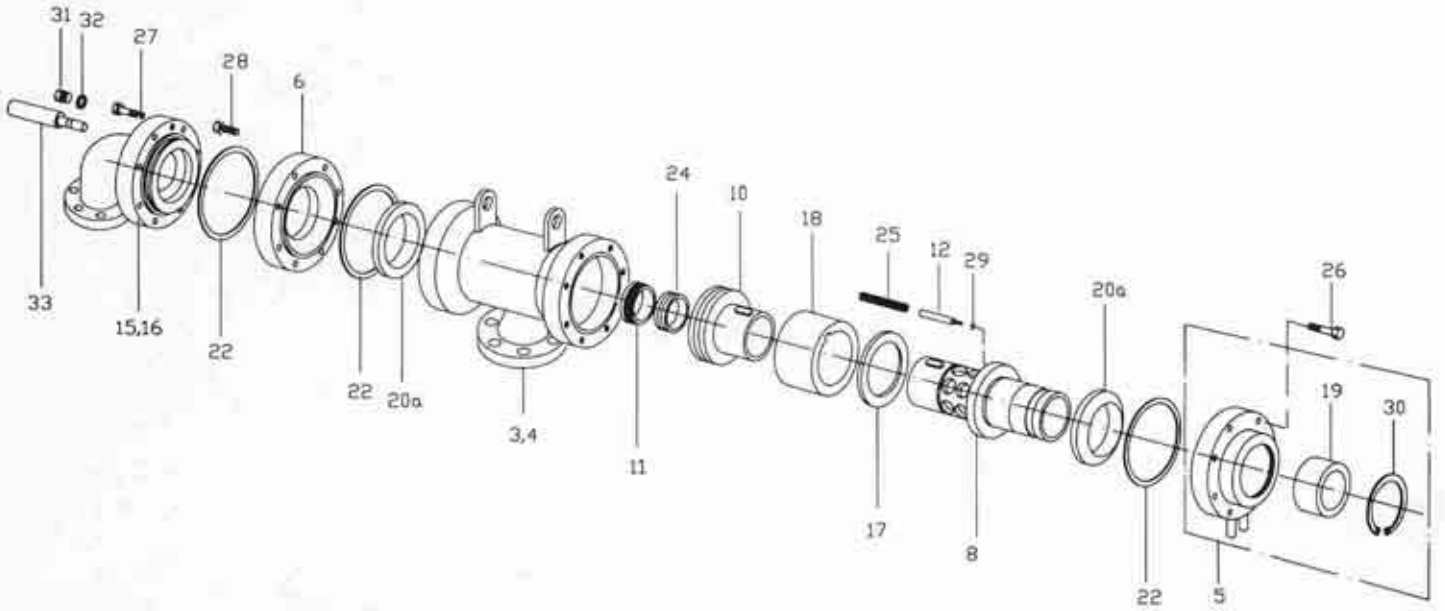


	DN	125	150	200	250
1	Housing PN 16	1104025-160	1104125-160	1104225-160	1104325-160
2	Housing PN 40	1104025-400	1104125-400	1104225-400	1104325-400
5	Compl. cover	1104030	1104130	1104230	1104330
7	Cover 1	1104045	1104145	1104245	1104345
8	Rotor K	1104054	1104154	1104254	1104354
12	Bolt	1104071-116	1104171-076	1104271-046	1104371-021
17	Thrust washer	1104073	1104173	1104273	1104373
18	Carbon bearing	3511360	3511361	3511362	3511363
19	Cover bearing	3510610	3510611	3510612	3510613
20a	Sealing ring W	3511353	3511354	3511355	3511356
22	Flat packing	1104075	1104175	1104275	1104375
25	Compress. spring	3511628-115	3511657-074	3511658-045	3511659-019
26	Hex screw 1	3500199	3500200	3500200	3500219
27	Hex screw 2	3500197	3500199	3500200	3500218
29	Locking washer	3500724	3500726	3500726	3500685
30	Circlip	3500700	3500691	3500689	3500688

Please specify exact type designation when inquiring or ordering!

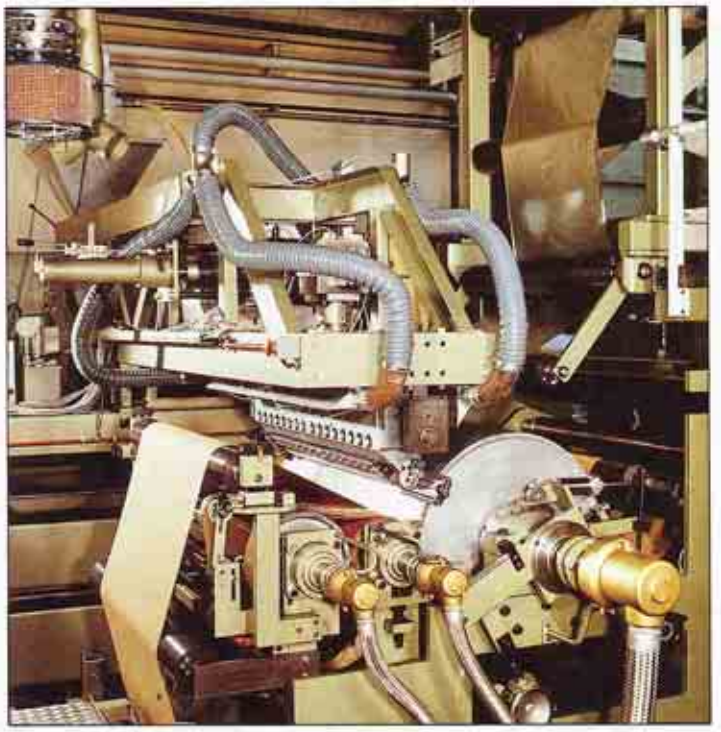
Spare parts

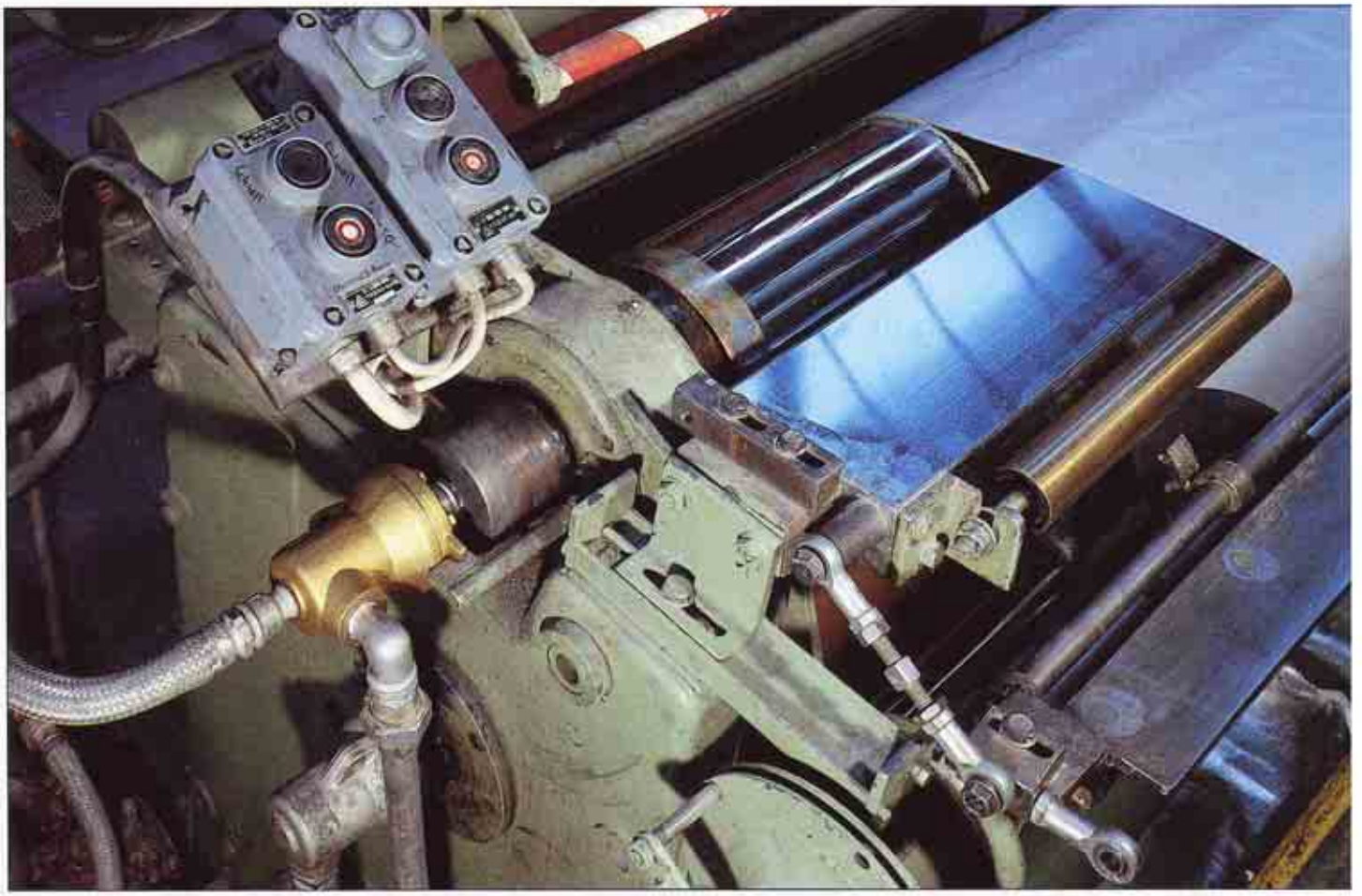
for design HWA2

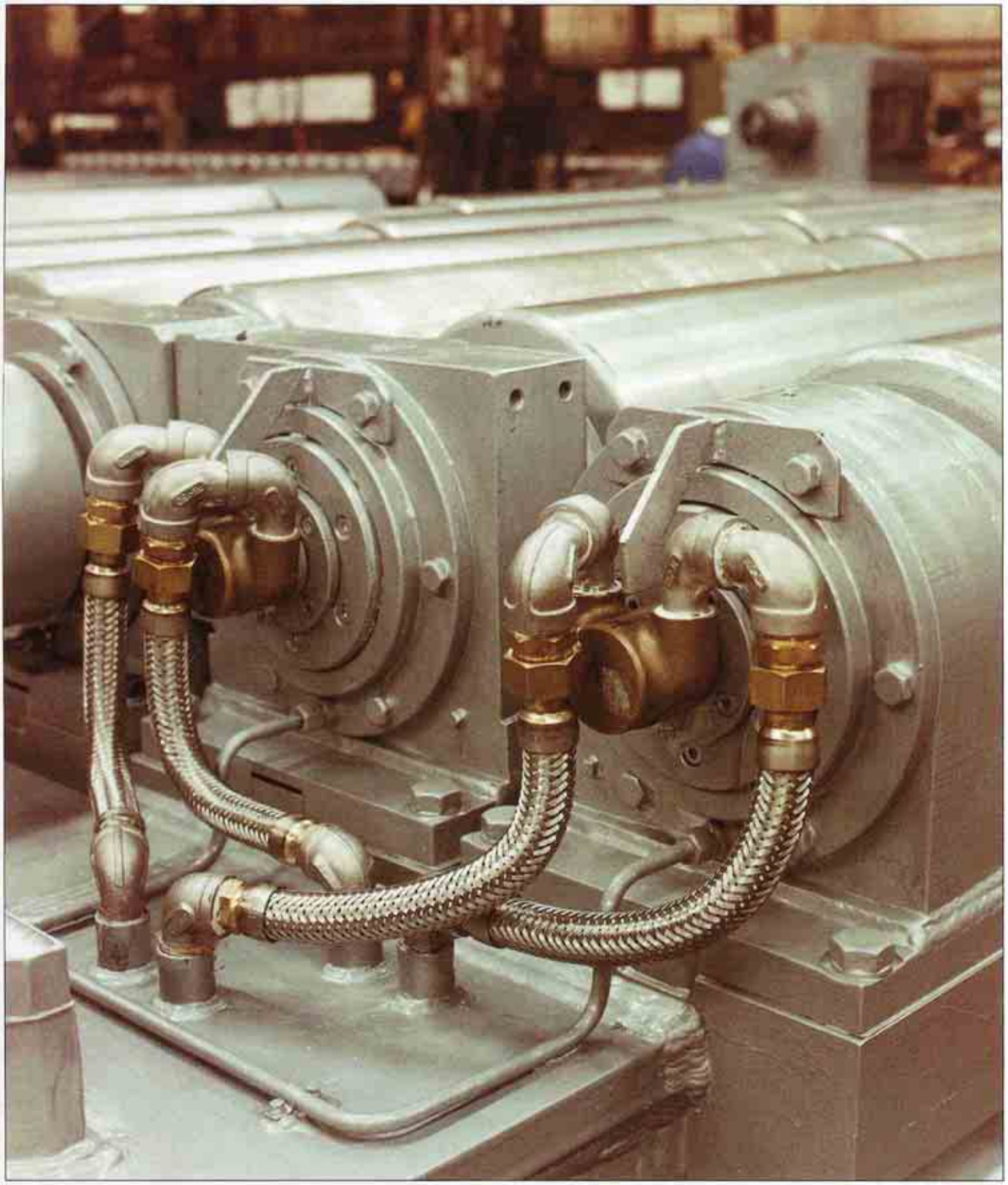


	DN	32	40	50	65	80	100	125	150	200	250
3	Housing PN 16	-	-	-	-	-	-	1104032-160	1104132-160	1104232-160	1104332-160
4	Housing PN 40	1103377-400	1103477-400	1103577-400	1103677-400	1103777-400	1103877-400	1104032-400	1104132-400	1104232-400	1104332-400
5	Complete cover	1103379	1103479	1103579	1103679	1103779	1103879	1104030	1104130	1104230	1104330
6	Flange cover	1103389	1103489	1103610	1103689	1103789	1103890	1104040	1104140	1104240	1104340
8	Rotor K	1103384	1103484	1103584	1103684	1103784	1103884	1104055	1104155	1104255	1104355
10	Butting ring A2	1103382	1103482	1103602	1103702	1103802	1103896	1104061	1104161	1104261	1104361
11	Adjustment ring	1103386	1103490	1103605	1103705	1103805	1103911	1104070	1104170	1104270	1104370
12	Bolt	-	-	-	-	-	-	1104071-015	1104171-075	1104271-047	1104371-022
15	Elbow A2 PN 16	-	-	-	-	-	-	1104051-160	1104151-160	1104251-160	1104351-160
16	Elbow A2 PN 40	1103396-400	1103496-400	1103615-400	1103728-400	1103796-400	1103906-400	1104051-400	1104151-400	1104251-400	1104351-400
17	Trust washer	1103392	1103492	1103613	1103746	1103792	1103921	1104073	1104173	1104273	1104373
18	Carbon bearing	3511365	3511366	3511367	3511368	3511369	3511370	3511360	3511361	3511362	3511363
19	Cover bearing	2 x 3510604	2 x 3510605	2 x 3510606	2 x 3510607	2 x 3510608	2 x 3510609	3510610	3510611	3510612	3510613
20a	Sealing ring W	3510644	3510645	3510646	3510647	3510648	3510649	3511353	3511354	3511355	3511356
22	Flat packing	3512004-164	3512005-179	3512006-168	3512007-261	3512016-279	3512017-091	1109520	1109620	1104275	1104375
24	Packing	3511098	3511098	3511091	3511091	3511093	3511093	3511093	3511094	3511090	3511090
25	Compress. spring	3511619	3511620	3511621	3511622	3511626	3511627	16 x 3511628-016	16 x 3511637	16 x 3511658-036	18 x 3511659-020
26	Hex screw 1	3500125	3500125	3500124	3500166	3500163	3500197	3500199	3500200	3500200	3500219
27	Hex screw 2	3500132	3500132	3500127	3500162	3500176	3500199	3500200	3500196	3500198	3500220
28	Cylinder screw	3500376	3500376	3500376	3500407	3500401	3500409	3500409	3500409	3500410	3500417
29	Locking washer	-	-	-	-	-	-	3500724	3500726	3500726	3500685
30	Circlip	3500703	3500704	3500705	3500706	3500707	3500708	3500700	3500691	3500689	3500688
31	Screw plug	3500660	3500660	3500660	3500660	3500660	3500660	3500658	3500658	3500658	3500658
32	Al seal	3502130	3502130	3502130	3502130	3502130	3502130	3502122	3502122	3502122	3502122
33	Measure gauge	1103448	1103548	1103623	1103748	1103798	1103898	1104023	1104123	1104223	1104323

Please specify exact type designation when inquiring or ordering!







Serie DA

DA Rotary Joints
are suitable for
- hot oil
- steam
- water at low RPM

- Advantages are:
  - Inexpensive design, since there are not bearings.
  - Available in large sizes, up to DN 300 mm. Nominal bore.
  - Seal rings are resistant to fraction, even at high pressures.
  - The design A2 for rotating inner pipe has a seal between inlet and outlet.
  - Maintenance free – no lubrication necessary.

- Housing made of cast iron with spheroidal graphite, diameters DN 80 and above made of steel.

- Rotor made of chrome steel, rotor pipe for diameters DN 65 and above made of steel; sealing surface made of chrome steel.

- Cover, flange cover, butting ring, adjustment ring and compression springs made of chrome steel.

- Sealing elements made of highly wear-resistant, metal-impregnated artificial carbon. Sealing ring is pressure-loaded.

The seal requires little maintenance. Wear indicator for sealing ring on rotor. Wear of second ring is determined by means of measurement gauge.

- Connection to rotating pressure system by means of:

  - K flange with conical inner ring.

- Radial and axial housing connections with flanges PN 16 or PN 40.
Thread for fixed inner pipe always right-hand (design 2).

- Static bearing for rotating inner pipe (not supplied with rotary joint) in the rotor; additional seal for complete isolation of flow and return.

- Prevention of housing rotation and radial support of housing by means of lugs at housing designed to accomodate the fastening bolts of a bracket (not supplied with rotary joint). Thermal expansion of the roller and wear of the seal cause an axial displacement of the housing (away from the roller).

Devices for prevention of housing rotation as well as hose and compensator connections and inner pipe must not interfere with this axial displacement since the rotary joint will otherwise not operate properly. Please read fitting and maintenance instructions!

Application data

		DA
Design		1,2, A2
Nominal diameter DN	mm	50...300
Medium		Cooling water Hot water Steam Thermal oil
Temperature	min...max °C	-30...320*
Pressure PN	min...max bar	0,8...40 from DN 150...20
Speed	max...min^{-1}	$\frac{100000}{DN \times PN}$

Designs for other values and media upon request. *500°C as special design.
The combination of maximum values should be avoided.

Ordering instructions

Example:	DA	A	2	300	K	– 020

Series DA

A — Design for rotating inner pipe with complete sealing between flow and return

1 — Number of housing connections for one way flow design
2 — Number of housing connections for two way flow design

Nominal diameter in mm (≙ diemension A)
50, 65, 80, 100, 125, 150, 200, 250, 300

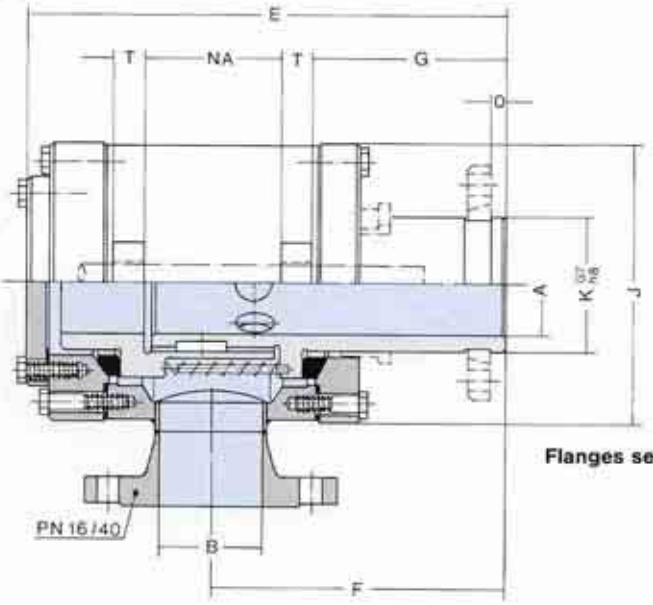
K — Rotor connection for K flange

Consecutive numbers for special designs; numbering by factory.

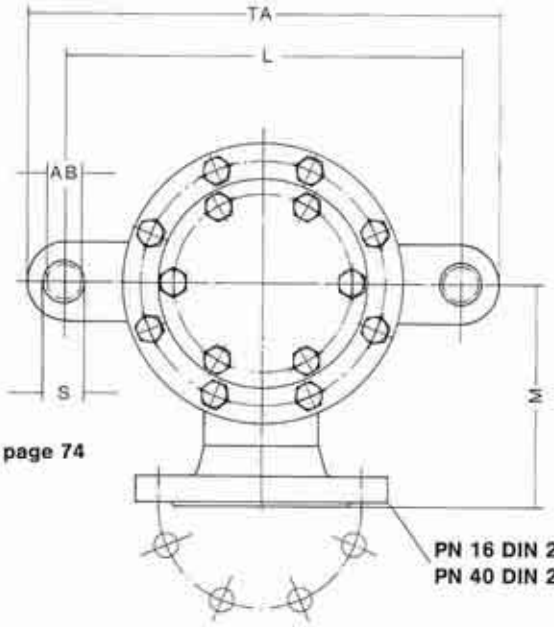
DA1

for one way flow of a medium

DN 50-300



Flanges see page 74



PN 16 DIN 2633
PN 40 DIN 2635

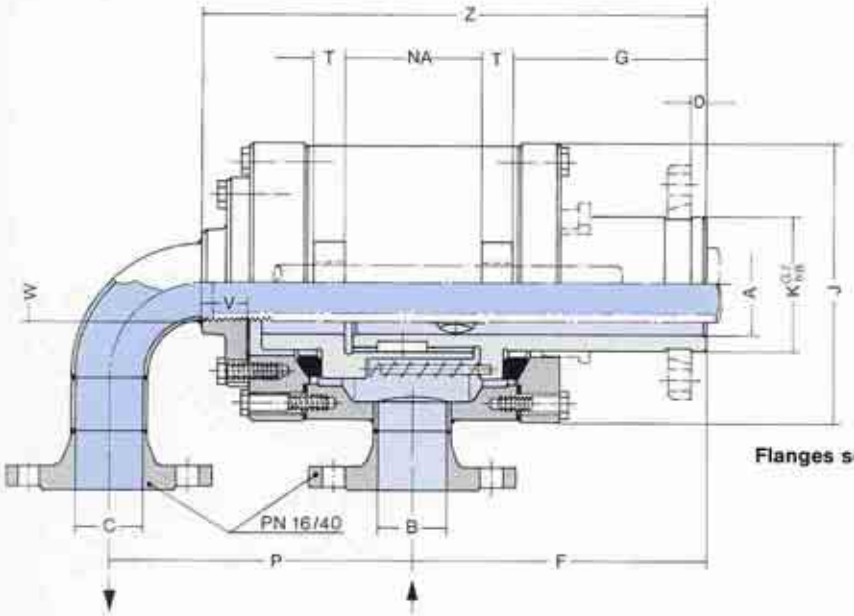
DN	50	65	80	100	125	150	200	250	300
Type PN 16 Order-No.				DA 1100 K-160 1109437-160	DA 1125 K-160 1109537-160	DA 1150 K-160 1109637-160	DA 1200 K-160 1109737-160	DA 1250 K-160 1109837-160	DA 1300 K-160 1109937-160
Type PN 40 Order-No.	DA 150 K-400 1109137-400	DA 165 K-400 1109237-400	DA 180 K-400 1109337-400	DA 1100 K-400 1109437-400	DA 1125 K-400 1109537-400	DA 1150 K-400 1109637-400	DA 1200 K-400 1109737-400	DA 1250 K-400 1109837-400	DA 1300 K-400 1109937-400
Type Order-No.									
Type Order-No.									
Type Order-No.									
Type Order-No.									

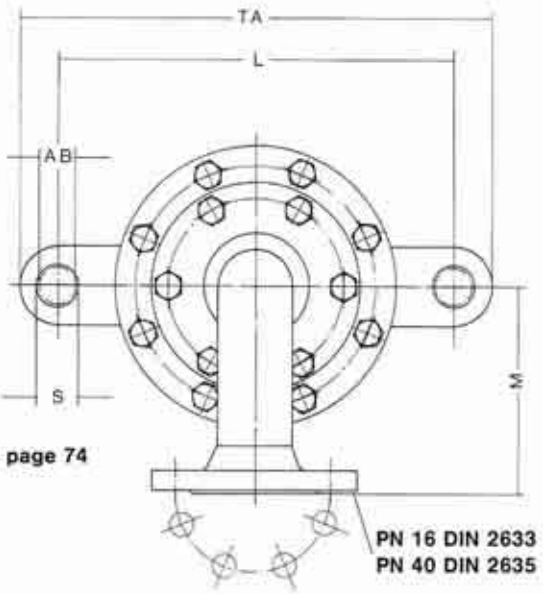
Ø A	50	66	80	98	120	145	195	240	295
B	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
E	294	337	386	457	517	555	653	749	856
F	180	206	232	275	310	337	392	453	515
G	105	121	153	179	203	208	235	263	300
Ø J	144	180	220	270	315	345	425	510	595
Ø K G7/h8	65	85	105	114	142	170	225	280	340
L ± 0,3	180	230	270	340	390	430	520	610	720
M	130	155	175	210	230	260	305	395	490
O	10	10	12	12	20	25	30	35	40
S	26	31	36	46,5	56,5	66,5	72	77	82
T	20	22	25	25	30	30	35	40	50
Ø AB -0,2	25	30	35	45	55	65	70	75	80
NA	115	131	108	143	158	198	244	300	330
TA	285	340	360	537	547	550	650	750	860
Weight (kg)	20	35	53	90	136	167	–	–	–

DA2

for two way flow of a medium
designed for non-rotating inner pipe

DN 50-150





Flanges see page 74

PN 16 DIN 2633
PN 40 DIN 2635

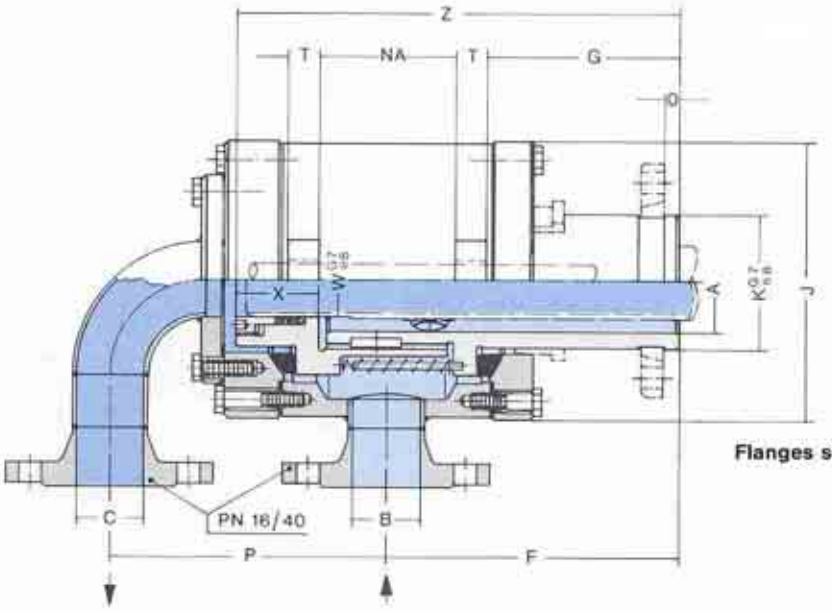
DN	50	65	80	100	125	150
Type PN 16 Order-No.					DA 2125 K-160 1109539-160	DA 2150 K-160 1109639-160
Type PN 40 Order-No.	DA 250 K-400 1109139-400	DA 265 K-400 1109239-400	DA 280 K-400 1109339-400	DA 2100 K-400 1109439-400	DA 2125 K-400 1109539-400	DA 2150 K-400 1109639-400
Type Order-No.						
Type Order-N0.						
Type Order-No.						
Type Order-No.						

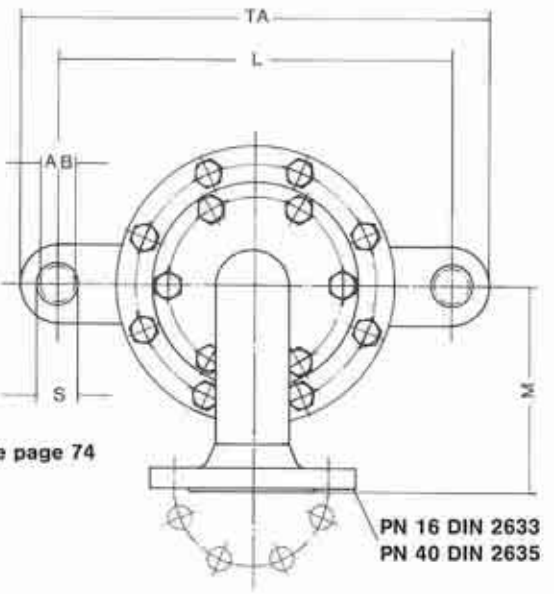
Ø A	50	66	80	98	120	145
B	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125
C	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125
F	180	206	232	275	310	337
G	105	121	153	179	203	208
Ø J	144	180	220	270	315	345
Ø K G7/h8	65	85	105	114	142	170
L ± 0,3	180	230	270	340	390	430
M	130	155	175	210	230	260
O	10	10	12	12	20	25
P	163	208	250	298	360	410
S	26	31	36	46,5	56,5	66,5
T	20	22	25	25	30	30
V	30	30	35	45	45	50
W	G 1¼	G 1½	G 2	G 2½	G 3	G 4
Z	275	335	386	457	517	555
Ø AB –0,2	25	30	35	45	55	65
NA	115	131	108	143	158	198
TA	285	340	360	537	547	550
Weight (kg)	24	39	59	97	174	190

DAA2

for two way flow of a medium
designed for rotating inner pipe

DN 50-300





Flanges see page 74

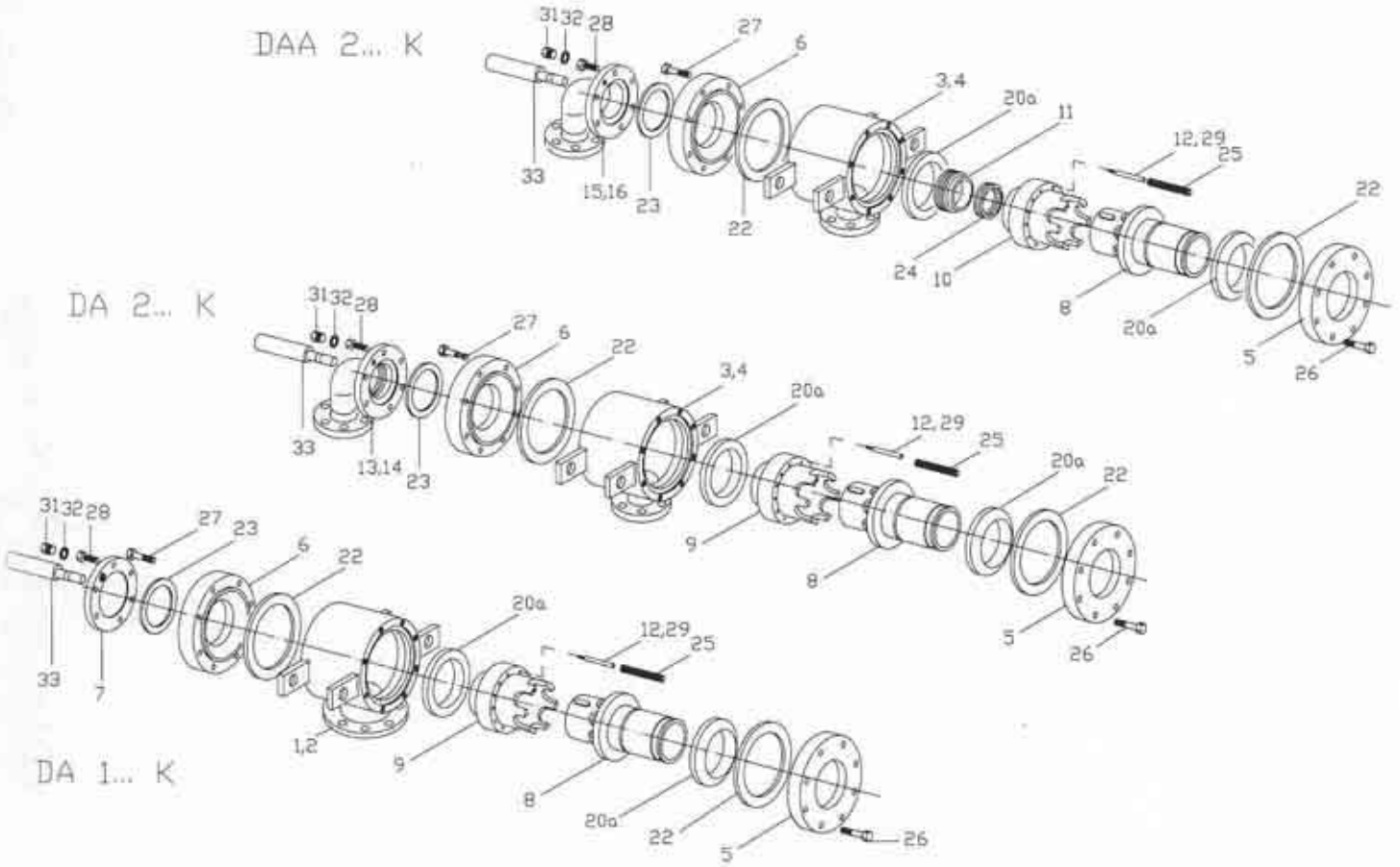
PN 16 DIN 2633
PN 40 DIN 2635

DN	50	65	80	100	125	150	200	250	300
Type PN 16 Order-No.					DAA 2125 K-160 1109541-160	DAA 2150 K-160 1109641-160	DAA 2200 K-160 1109741-160	DAA 2250 K-160 1109841-160	DAA 2300 K-160 1109941-160
Type PN 40 Order-No.	DAA 250 K-400 1109141-400	DAA 265 K-400 1109241-400	DAA 280 K-400 1109341-400	DAA 2100 K-400 1109441-400	DAA 2125 K-400 1109541-400	DAA 2150 K-400 1109641-400	DAA 2200 K-400 1109741-400	DAA 2250 K-400 1109841-400	DAA 2300 K-400 1109941-400
Type Order-No.									
Type Order-No.									
Type Order-No.									
Type Order-No.									

Ø A	50	66	80	98	120	145	195	240	295
B	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250
C	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250
F	180	206	232	275	310	337	392	453	515
G	105	121	153	179	203	208	235	263	300
Ø J	144	180	220	270	315	345	425	510	595
Ø K G7/h8	65	85	105	114	142	170	225	280	340
L ± 0,3	180	230	270	340	390	430	520	610	720
M	130	155	175	210	230	260	305	395	490
O	10	10	12	12	20	25	30	35	40
P	163	208	250	298	360	410	490	602	725
S	26	31	36	46,5	56,5	66,5	72	77	82
T	20	22	25	25	30	30	35	40	50
Ø W G7/e8	37	45	58	75	88	110	135	160	215
X	55	57	65	70	80	90	115	150	175
Z	255	293	350	410	468	488	574	688	788
Ø AB –0,2	25	30	35	45	55	65	70	75	80
NA	115	131	108	143	158	198	244	300	330
TA	285	340	360	537	547	550	650	750	860
Weight (kg)	24	39	59	97	174	190			

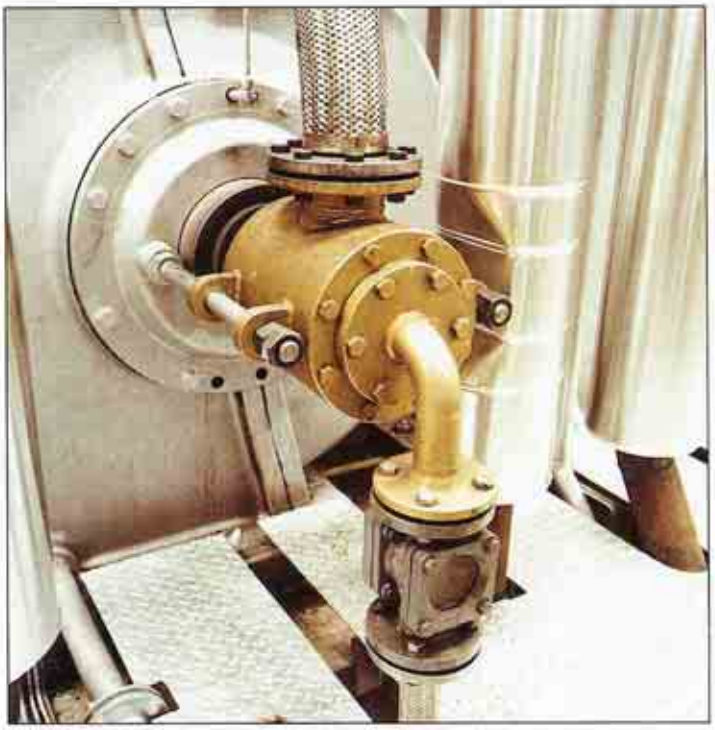
Spare parts

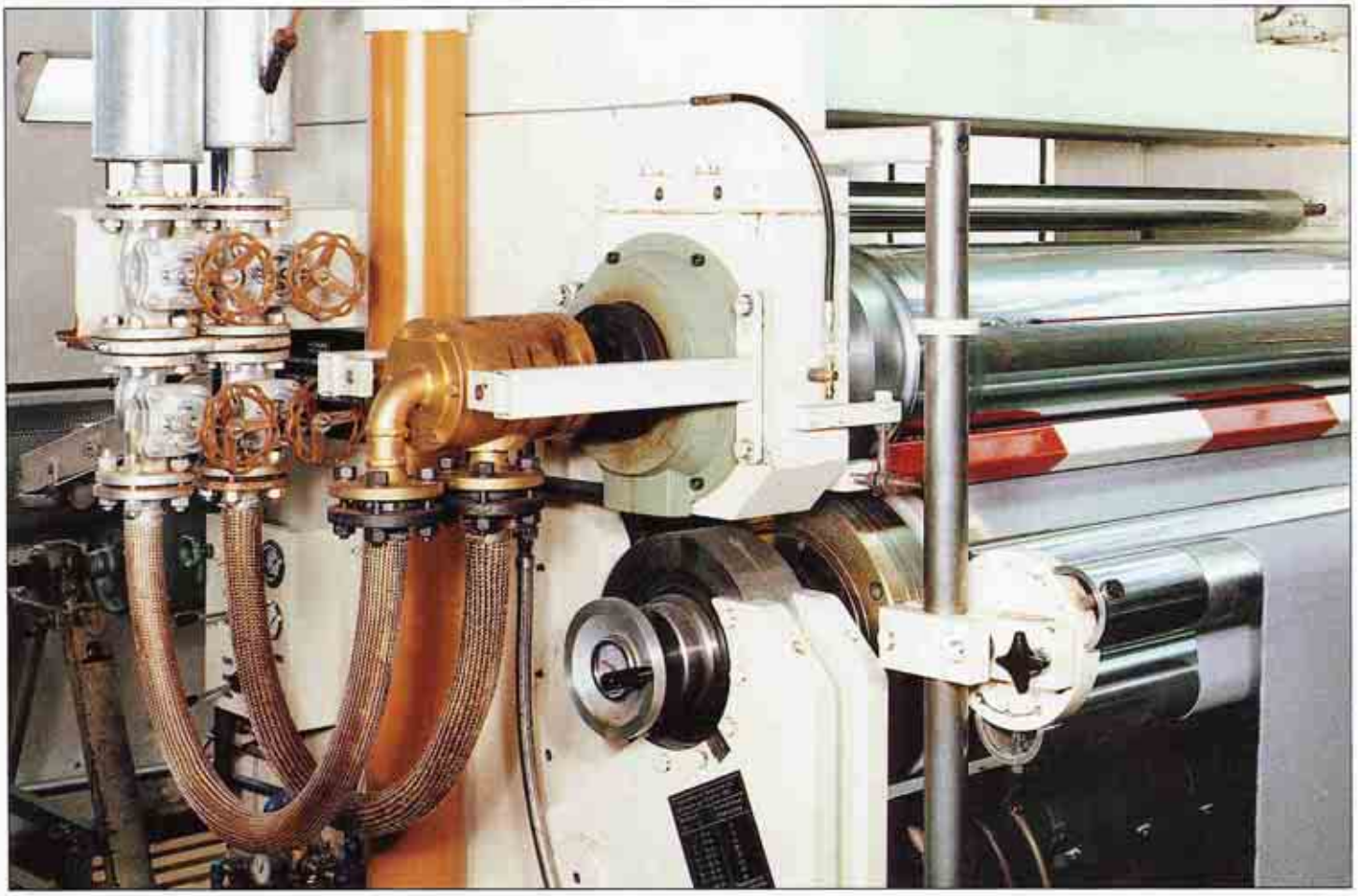
for series DA



	DN	50	65	80	100	125	150	200	250	300
1	Housing 1 PN 16	-	-	-	1109415-160	1109515-160	1109615-160	1109715-160	1109815-160	1109915-160
2	Housing 1 PN 40	1109115-400	1109215-400	1109315-400	1109415-400	1109515-400	1109615-400	1109715-400	1109815-400	1109915-400
3	Hous. 2, A2 PN 16	-	-	-	-	1109521-160	1109621-160	1109721-160	1109821-160	1109921-160
4	Hous. 2, A2 PN 40	1109121-400	1109221-400	1109321-400	1109421-400	1109521-400	1109621-400	1109721-400	1109821-400	1109921-400
5	Cover	1109124	1109224	1109324	1109424	1109524	1109624	1109724	1109824	1109924
6	Flange cover*	-	-	1109345	1109445	1109545	1109645	1109745	1109845	1109945
7	Cover 1	1109131	1109231	1109331	1109431	1109531	1109631	1109731	1109831	1109931
8	Rotor K	1109122	1109222	1109322	1109422	1109522	1109622	1109722	1109822	1109922
9	Butting ring 1,2	1109126	1109226	1109326	1109426	1109526	1109626	1109726	1109826	1109926
10	Butting ring A2	1109128	1109228	1109328	1109428	1109528	1109628	1109728	1109828	1109928
11	Adjustment ring	1109130	1109230	1109330	1109430	1109530	1109630	1109730	1109830	1109930
12	Bolt	-	-	-	-	1109519	1109619	1109719	1109819	1109919
13	Elbow 2 PN 16	-	-	-	-	1109533-160	1109633-160	1109733-160	1109833-160	1109933-160
14	Elbow 2 PN 40	1109133-400	1109233-400	1109333-400	1109433-400	1109533-400	1109633-400	1109733-400	1109833-400	1109933-400
15	Elbow A2 PN 16	-	-	-	-	1109535-160	1109635-160	1109735-160	1109835-160	1109935-160
16	Elbow A2 PN 40	1109135-400	1109235-400	1109335-400	1109435-400	1109535-400	1109635-400	1109735-400	1109835-400	1109935-400
20a	Sealing ring	3510646	3510647	3510648	3510649	3511353	3511354	3511355	3511356	3511357
22	Flat packing 1	3512006	3512007	3512255	3512250	1109520	1109620	1109720	1109820	1109920
23	Flat packing 2	3512006	3512007	3512254	3512251	1109549	1109649	1109749	1109849	1109949
24	Packing	3511091	3511091	3511093	3511093	3511093	3511093	3511094	3511090	3511092
25	Compress. spring	3511632	3511633	3511634	3511452	16 x 3511638	16 x 3511637	16 x 3511453	16 x 3511454	16 x 3511455
26	Screw 1	3500161	3500163	3500163	3500197	3500199	3500200	3500200	3500219	3500224
27	Screw 2	-	-	3500164	3500201	3500200	3500200	3500200	3500219	3500224
28	Screw 3	3500165	3500165	3500161	3500195	3500195	3500192	3500194	3500215	3500223
29	Locking washer	-	-	-	-	3500724	3500726	3500685	3500685	3500685
31	Screw plug	3500660	3500660	3500660	3500657	3500657	3500657	3500658	3500658	3500658
32	Sealing ring	3502130	3502130	3502130	3502114	3502114	3502114	3502122	3502122	3502122
33	Measuring gauge	1109144	1109244	1109344	1109444	1109544	1109644	1109744	1109844	1109944

* DN 50 and DN 65 flange covers integrated in housing Pos. 2 to 4. Please specify exact type designation when inquiring or ordering!





Series M

M Rotary Joints
are suitable for
- water
- in special cases for steam.

- Advantages are:
  - The extremely robust seal gives satisfactory results with heavily contaminated water.
    Example: Hot furnaces and stone-washing machines.

- Housing made of cast iron with spheroidal graphite, bearing housing made of cast iron.

- Rotor made of steel with polished abraison and corrosion-protective coating of metal-ceramics in the sealing surface area.

- Packing with teflon impregnation, very rugged, may also be used with high-solids media.

- Compression spring made of chrome steel.

- High-quality ball bearing. Easy access to lubrication nipple.

- Corrosion-resistant support bearing in pressure chamber.

- Connection to rotating pressure system by means of:

  - standard connection piece with right-hand or left-hand male thread BSP (ISO 228).

  - Sealing and centering cone at end of thread. Adapter pieces for NPT and other threads are available.

  - K flange with conical inner ring.

- Radial and axial housing connections with right-hand thread BSP (ISO 228). Adapter pieces for NPT and other threads are available. Thread for fixed inner pipe always right-hand even with left-hand thread at rotor (design 2).

- Combined slide bearing and gland seal for rotating inner pipe as diaphragm gland.

- Prevention of housing rotation by means of fork at bearing housing which accommodates the locking pin.

Application data

		M	M
Design Nominal diameter DN mm		1, 2, R2, 3 15...100	1, 2, R2, 3 15...100
Medium		Cooling water Hot water	Steam
Temperature Pressure PN	min...max °C min...max bar	-15...160 0,2...20	-15...160 0,2...20
Speed	max...min^{-1}	$\frac{16000}{DN}$	$\frac{8000}{DN}$

Designs for other values and media upon request.
The combination of maximum values should be avoided.

Ordering instructions

Exemple: M | R | 3 | 40 | K | – 001

Series M

R — Design for rotating inner pipe with slide bearing and gland seal

Number of housing connections
1 — for one way flow design
2 — for two way flow design
3 — for two way flow design with vacuum valve

Nominal diameter in mm (≙ dimension A)
15, 20, 25, 32, 40, 50, 65, 80, 100

Rotor connection
R — for right-hand thread
L — for left-hand thread
K — for K flange

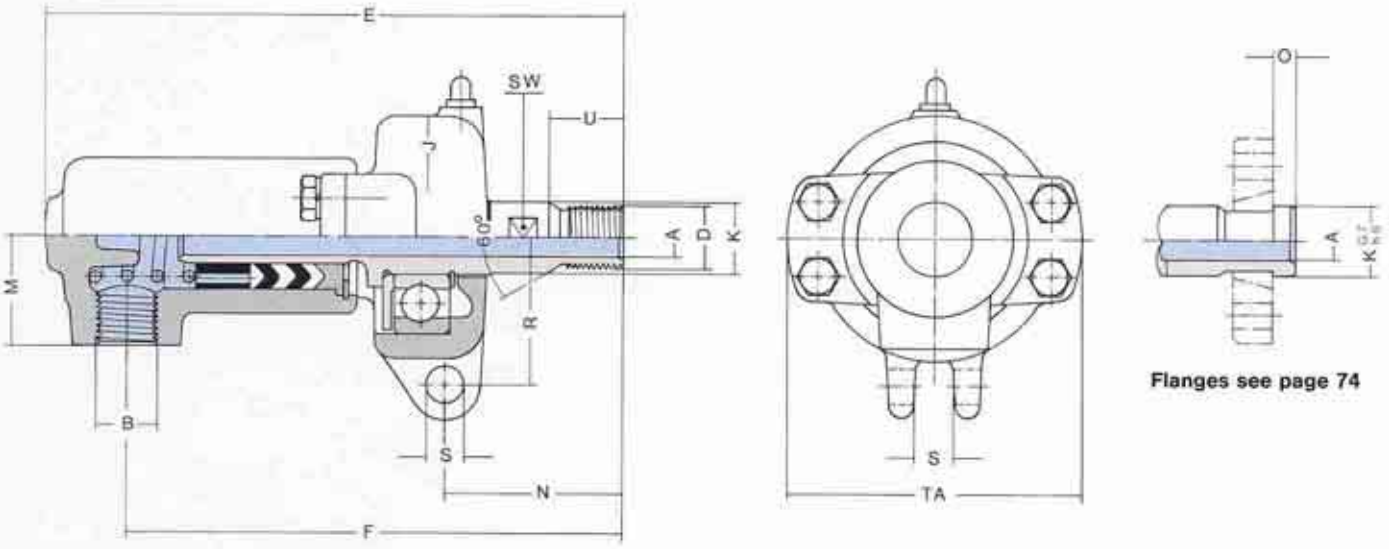
adapters for other threads are available.

Consecutive numbers for special designs; numbering by factory.

M1

for one way flow of a medium

DN 15-100



Flanges see page 74

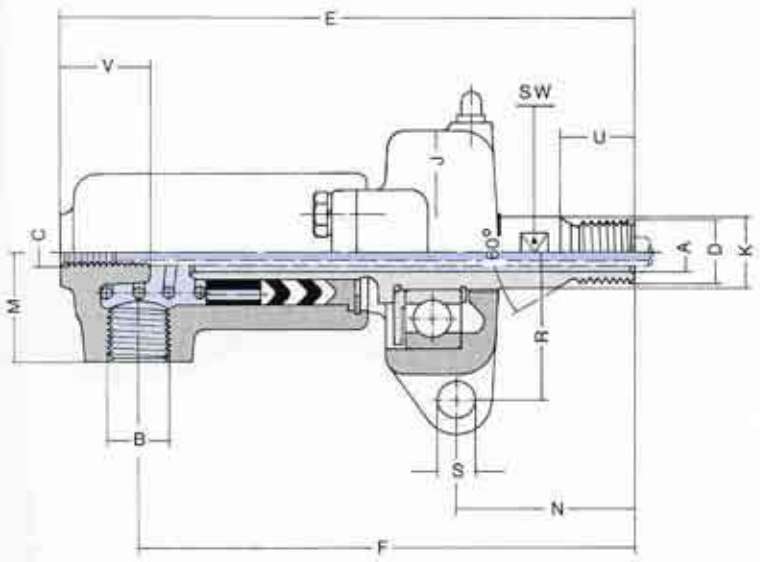
DN	15	20	25	32	40	50	65	80	100
Type Order-No.	M 115 R 1101030	M 120 R 1101080	M 125 R 1101150	M 132 R 1101250	M 140 R 1101350	M 150 R 1101450	M 165 R 1101550	M 180 R 1101650	M 1100 R 1101756
Type Order-No.	M 115 L 1101031	M 120 L 1101081	M 125 L 1101151	M 132 L 1101251	M 140 L 1101351	M 150 L 1101451	M 165 L 1101551	M 180 L 1101651	M 1100 L 1101757
Type Order-No.	M 115 K 1101032	M 120 K 1101082	M 125 K 1101152	M 132 K 1101252	M 140 K 1101352	M 150 K 1101452	M 165 K 1101552	M 180 K 1101652	M 1100 K 1101758
Type Order-No.									
Type Order-No.									
Type Order-No.									

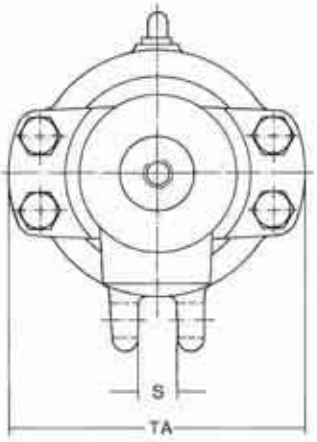
Ø A	13	20	25	32	38	50	66	81	98
B	G ½	G ¾	G 1	G 1¼	G 1½	G 2	G 2½	G 3	G 4
D	G ½ A	G ¾ A	G 1 A	G 1¼ A	G 1½ A	G 2 A	G 2½ A	G 3½ A	G 4 A
E	176	185	207	241	255	297	339	400	475
F	150	156	173	200	209	244	278	331	384
Ø J	76	76	88	130	130	145	185	225	240
Ø K	25	30	35	48	52	68	85	108	119
Ø K G7/h8	24	30	35	45	50	65	85	105	114
M	35	40	45	55	62	82	90	105	120
N	56	56	65	76	78	103	106	132	159
O	6	8	8	8	10	10	10	12	12
R	46	46	52	75	75	82	102	125	140
S	12	12	12	16	16	16	16	20	26
U	23	23	28	33	36	43	48	54	66
SW	22	27	30	41	46	60	75	95	110
TA	94	94	106	155	155	175	210	255	300
Weight (kg)	2,2	2,4	3,6	7,7	8,7	12,9	18,9	35	44,8

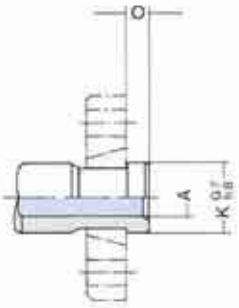
M2

for two way flow of a medium
designed for non-rotating inner pipe

DN 15-100







Flanges see page 74

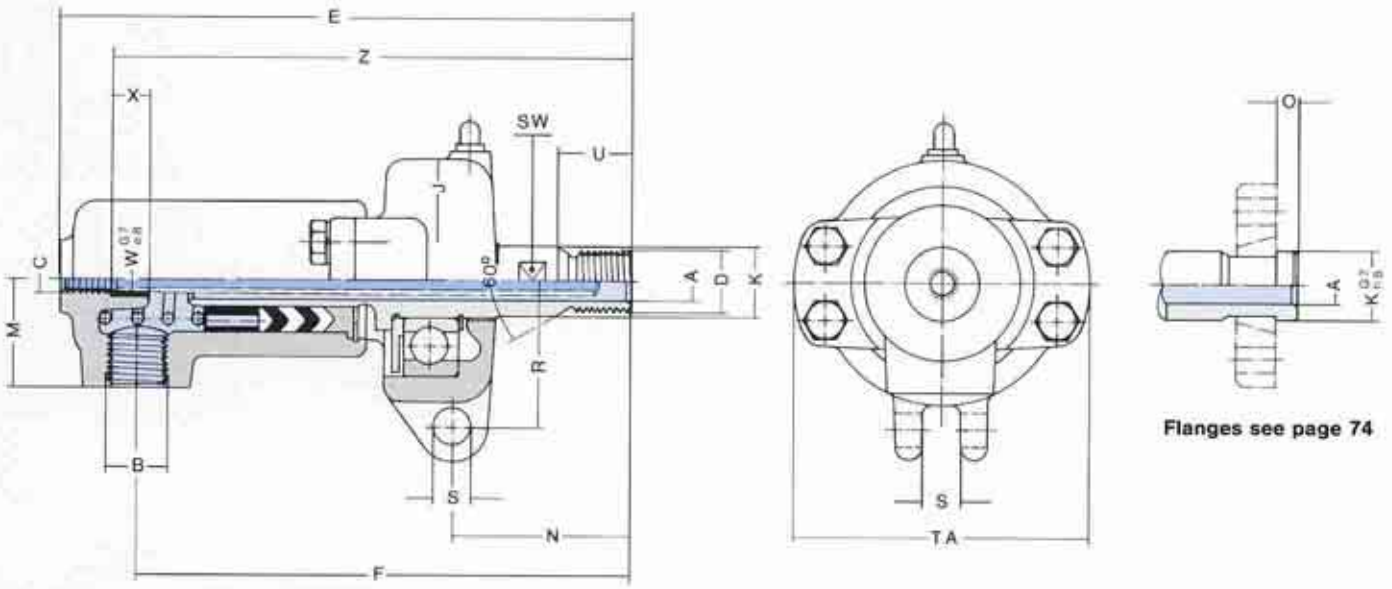
DN	15	20	25	32	40	50	65	80	100
Type Order-No.	M 215 R 1101034	M 220 R 1101083	M 225 R 1101153	M 232 R 1101253	M 240 R 1101353	M 250 R 1101453	M 265 R 1101553	M 280 R 1101653	M 2100 R 1101750
Type Order-No.	M 215 L 1101033	M 220 L 1101084	M 225 L 1101154	M 232 L 1101254	M 240 L 1101354	M 250 L 1101454	M 265 L 1101554	M 280 L 1101654	M 2100 L 1101751
Type Order-No.	M 215 K 1101035	M 220 K 1101085	M 225 K 1101155	M 232 K 1101255	M 240 K 1101355	M 250 K 1101455	M 265 K 1101555	M 280 K 1101655	M 2100 K 1101752
Type Order-No.									
Type Order-No.									
Type Order-No.									

Ø A	13	20	25	32	38	50	66	81	98
B	G ⅜	G ½	G ¾	G 1	G 1¼	G 1½	G 2	G 2½	G 3
C	G ⅛	G ¼	G ⅜	G ½	G ¾	G 1	G 1½	G 1½	G 2
D	G ½ A	G ¾ A	G 1 A	G 1¼ A	G 1½ A	G 2 A	G 2½ A	G 3½ A	G 4 A
E	174	183	205	238	252	294	336	398	470
F	150	156	173	200	209	244	278	331	384
Ø J	76	76	88	130	130	145	185	225	240
Ø K	25	30	35	48	52	68	85	108	119
Ø K G7/h8	24	30	35	45	50	65	85	105	114
M	35	40	45	55	62	82	90	105	120
N	56	56	65	76	78	103	106	132	159
O	6	8	8	8	10	10	10	12	12
R	46	46	52	75	75	82	102	125	140
S	12	12	12	16	16	16	16	20	26
U	23	23	28	33	36	43	48	54	66
V	28	32	35	45	50	60	70	80	90
SW	22	27	30	41	46	60	75	95	110
TA	94	94	106	155	155	175	210	255	300
Weight (kg)	2,1	2,3	3,5	7,6	8,5	12,7	18,6	34,5	44,3

MR2

for two way flow of a medium
designed for rotating inner pipe

DN 15-100



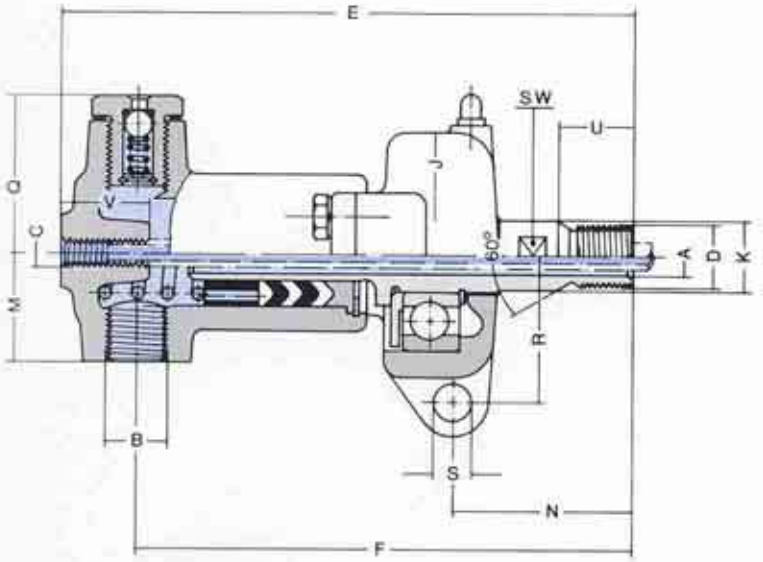
Flanges see page 74

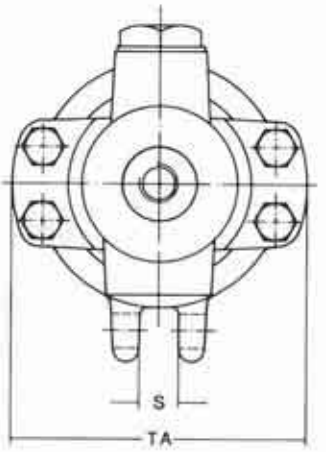
DN	15	20	25	32	40	50	65	80	100
Type Order-No.	MR 215 R 1101036	MR 220 R 1101086	MR 225 R 1101156	MR 232 R 1101256	MR 240 R 1101356	MR 250 R 1101456	MR 265 R 1101556	MR 280 R 1101656	MR 2100 R 1101753
Type Order-No.	MR 215 L 1101037	MR 220 L 1101087	MR 225 L 1101157	MR 232 L 1101257	MR 240 L 1101357	MR 250 L 1101457	MR 265 L 1101557	MR 280 L 1101657	MR 2100 L 1101754
Type Order-No.	MR 215 K 1101038	MR 220 K 1101088	MR 225 K 1101158	MR 232 K 1101258	MR 240 K 1101358	MR 250 K 1101478	MR 265 K 1101558	MR 280 K 1101658	MR 2100 K 1101755
Type Order-No.									
Type Order-No.									
Type Order-No.									
Ø A	13	20	25	32	38	50	66	81	98
B	G 3/8	G 1/2	G 3/4	G 1	G 1 1/4	G 1/2	G 2	G 2 1/2	G 3
C	G 1/8	G 1/4	G 3/8	G 1/2	G 3/4	G 1	G 1 1/2	G 1 1/2	G 2
D	G 1/2 A	G 3/4 A	G 1 A	G 1 1/4 A	G 1 1/2 A	G 2 A	G 2 1/2 A	G 3 1/2 A	G 4 A
E	174	183	205	238	252	294	336	398	470
F	150	156	173	200	209	244	278	331	384
Ø J	76	76	88	130	130	145	185	225	240
Ø K	25	30	35	48	52	68	85	108	119
Ø K G7/h8	24	30	35	45	50	65	85	105	114
M	35	40	45	55	62	82	90	105	120
N	56	56	65	76	78	103	106	132	159
O	6	8	8	8	10	10	10	12	12
R	46	46	52	75	75	82	102	125	140
S	12	12	12	16	16	16	16	20	26
U	23	23	28	33	36	43	48	54	66
Ø W G7/e8	10	12	16	20	25	31,8	45	45	60
X	15	15	15	15	25	25	30	30	40
Z	160	166	185	208	227	259	296	348	420
SW	22	27	30	41	46	60	75	95	110
TA	94	94	106	155	155	175	210	255	300
Weight (kg)	2,1	2,3	3,5	7,6	8,5	12,7	18,6	34,5	44,3

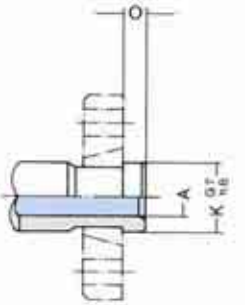
M3

for two way flow of a medium, designed for non-rotating inner pipe, with vacuum valve

DN 20-40



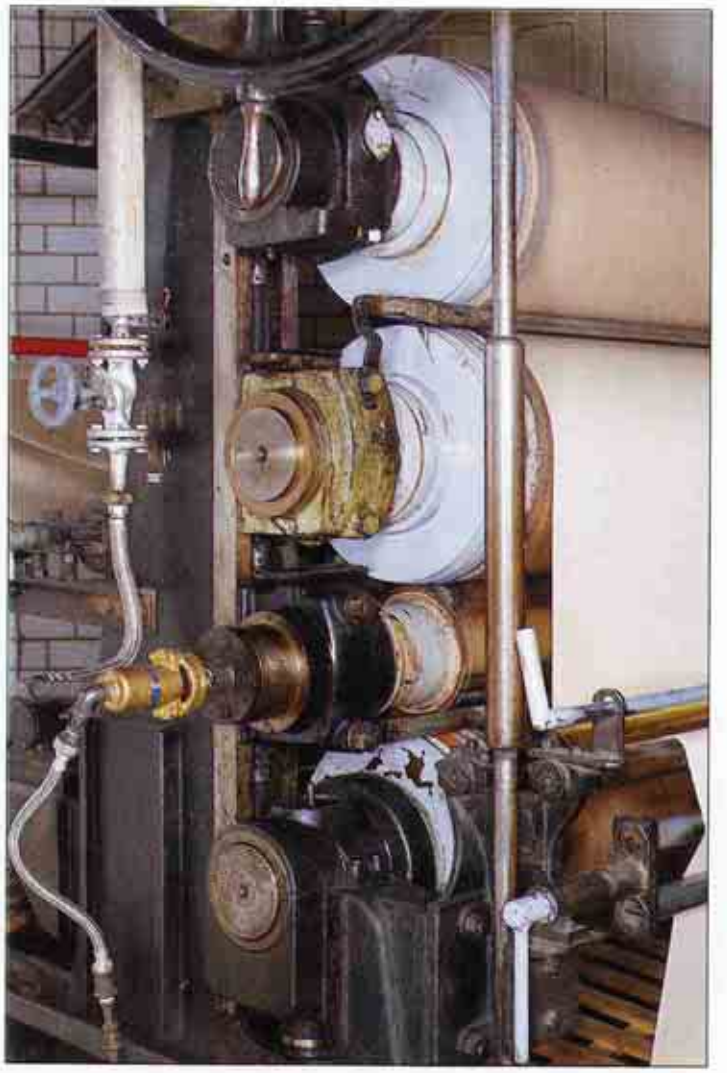




Flanges see page 74

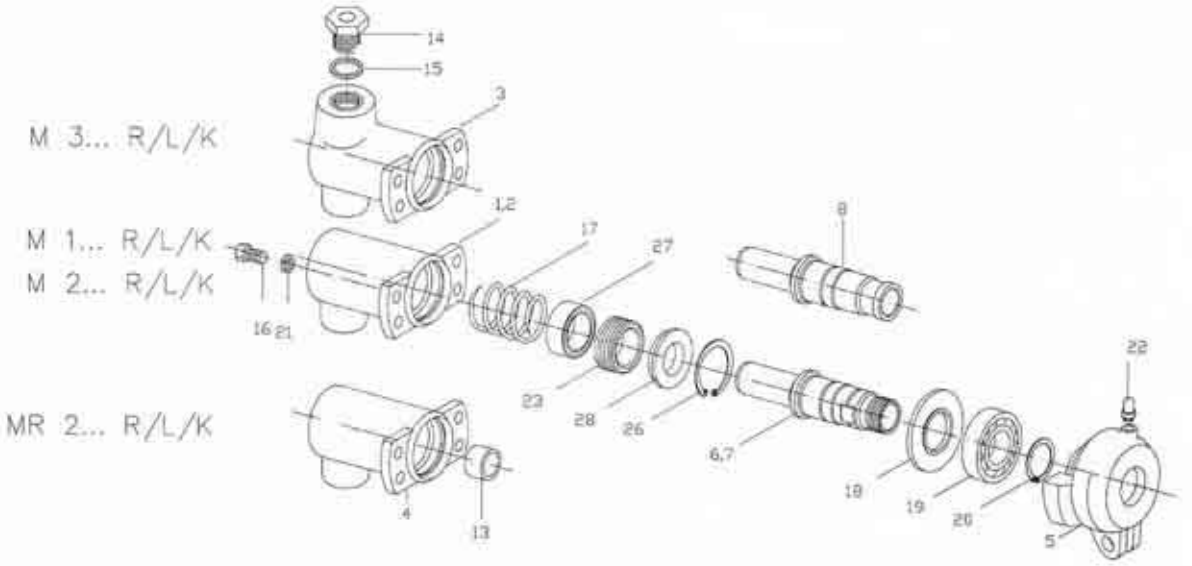
DN	20	25	32	40
Type Order-No.	M 320 R 1101103	M 325 R 1101173	M 332 R 1101259	M 340 R 1101359
Type Order-No.	M 320 L 1101104	M 325 L 1101174	M 332 L 1101260	M 340 L 1101360
Type Order-No.	M 320 K 1101105	M 325 K 1101175	M 332 K 1101261	M 340 K 1101361
Type Order-No.				
Type Order-No.				
Type Order-No.				

Ø A	20	25	32	38
B	G ½	G ¾	G 1	G 1¼
C	G ¼	G ⅜	G ½	G ¾
D	G ¾ A	G 1 A	G 1¼ A	G 1½ A
E	183	205	238	252
F	156	173	200	209
Ø J	76	88	130	130
Ø K	30	35	48	52
Ø K G7/h8	30	35	45	50
M	40	45	55	62
N	56	65	76	78
O	8	8	8	10
Q	60	73	81	86
R	46	52	75	75
S	12	12	16	16
U	23	28	33	36
V	32	35	45	50
SW	27	30	41	46
TA	94	106	155	155
Weight (kg)	3,8	4,6	8,3	8,7



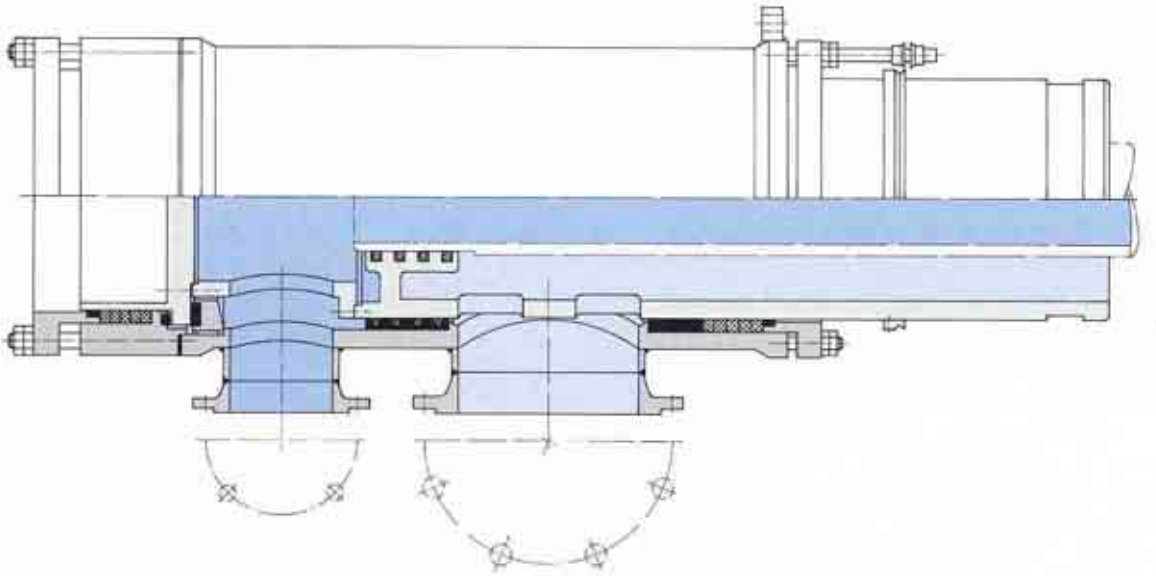
Spare parts

for series M



	DN	10	15	20	25	32	40	50	65	80	100
1	Housing 1	1101005	1101040	1101090	1101160	1101263	1101362	1101460	1101559	1101660	1101760
2	Housing 2	–	1101041	1101091	1101161	1101264	1101363	1101461	1101560	1101661	1101761
3	Housing 3	–	–	1101093	1101163	1101265	1101364	–	–	–	–
4	Housing R 2	–	1101042	1101092	1101162	1101266	1101365	1101462	1101561	1101662	1101762
5	Bear. housing	1101004	1101039	1101089	1101159	1101262	1101262	1101458	1101459	1101659	1101759
6	Rotor R	1101006	1101044	1101094	1101164	1101267	1101366	1101463	1101562	1101663	1101763
7	Rotor L	1101007	1101045	1101095	1101165	1101268	1101367	1101464	1101563	1101664	1101764
8	Rotor K	1101008	1101046	1101096	1101166	1101269	1101368	1101465	1101564	1101665	1101765
13	Slide bearing	–	3510502	3510504	3510506	3510501	3510509	3510512	3510514	3510514	3510523
14	Vacuum valve	–	–	1190010	1190020	1190020	1190020	–	–	–	–
15	Cu seal	–	–	3511961	3511962	3511962	3511962	–	–	–	–
16	Hex screw	3500040	3500080	3500080	3500080	3500120	3500120	3500160	3500160	3500190	3500194
17	Compress. spring	3511500	3511501	3511502	3511503	3511504	3511505	3511506	3511507	3511508	3511509
18	Labyr. gland	1101011	1101052	1101102	1101172	1101275	1101275	1101468	1101471	1101671	1101771
19	Ball bearing	3510000	3510001	3510002	3510003	3510005	3510005	3510014	3510007	3510008	3510009
20	Locking ring	3501000	3501001	3501002	3501003	3501004	3501004	3501024	3501005	3501006	3501007
21	Washer	3500712	3500713	3500713	3500713	3500714	3500714	3500715	3500715	3500716	3500716
22	Lubric. nipple	3500918	3500918	3500918	3500918	3500918	3500918	3500918	3500918	3500918	3500918
23	Packing	3511001	3511002	3511003	3511004	3511005	3511006	3511007	3511008	3511009	3511010
26	Circlip	3501200	3501201	3501202	3501203	3501204	3501226	3501205	3501206	3501207	3501208
27	Supp. bearing	1101009	1101051	1101101	1101171	1101274	1101373	1101470	1101569	1101670	1101770
28	Thrust collar	1101010	1101050	1101100	1101170	1101273	1101372	1101469	1101568	1101669	1101769

Please specify type designation when inquiring or ordering!

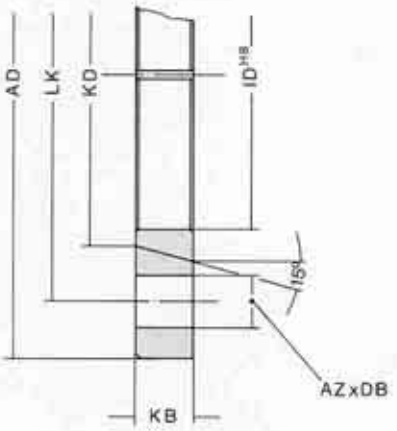


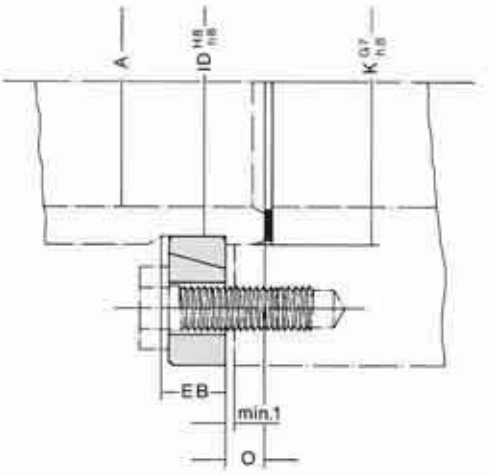
Series S: Especially suited for large steam capacities; available diameters: DN 200 to DN 450.

Accessories

Journal flange connections for rotary joints with K rotors DN 10-300

K flanges and inner rings Material: steel





DN	K flange	Order-No.	Inner ring	Order-No.	Flat packing Order-No.	Ø A	Ø AD	Ø LK	AZ x Ø DB	Ø KD	Ø ID H8/h8	KB	Ø K G7/h8	O	EB
10	KF 10-0	1190430	IR 10-0	1190400	3512230	10	55	40	4 x 7	20	17	10	18	6	11
15	KF 15-0	1190431	IR 15-0	1190401	3512231	13	70	50	4 x 9	26	22	10	24	6	11
20	KF 20-0	1190432	IR 20-0	1190402	3512232	20	75	55	4 x 9	32	28	12	30	8	13
25	KF 25-0	1190433	IR 25-0	1190403	3512233	25	80	60	4 x 9	37	33	12	35	8	13
32	KF 32-0	1190434	IR 32-0	1190404	3512234	32	100	75	4 x 11	48	43	12	45	8	13
32	KF 32-500	1190434-500	IR 32-500	1190404-500	3512234	32	115	90	4 x 11	48	43	15	45	15	16
40	KF 40-0	1190435	IR 40-0	1190405	3512235	38	105	80	4 x 11	53	48	15	50	10	16
40	KF 40-500	1190435-500	IR 40-500	1190405-500	3512235	38	120	95	4 x 11	53	48	18	50	20	20
50	KF 50-0	1190436	IR 50-0	1190406	3512236	50	130	100	4 x 14	69	63	15	65	10	16
50	KF 50-500	1190436-500	IR 50-500	1190406-500	3512236	50	145	115	4 x 14	69	63	20	65	25	22
65	KF 65-0	1190437	IR 65-0	1190407	3512237	66	150	120	4 x 14	89	82	15	85	10	16
65	KF 65-500	1190437-500	IR 65-500	1190407-500	3512237	66	165	135	4 x 14	89	82	25	85	25	28
80	KF 80-0	1190438	IR 80-0	1190408	3512238	81	180	145	4 x 18	109	102	18	105	12	20
80	KF 80-500	1190438-500	IR 80-500	1190408-500	3512238	81	205	170	4 x 18	109	102	30	105	30	34
100	KF 100-0	1190439	IR 100-0	1190409	3512239	98	195	160	6 x 18	120	110	20	114	12	22
100	KF 100-500	1190439-500	IR 100-500	1190409-500	3512239	98	220	185	6 x 18	120	110	30	114	30	34
125	KF 125-0	1190450	IR 125-0	1190410	1190025	120	225	190	6 x 18	147	137	22	142	20	25
125	KF 125-500	1190450-500	IR 125-500	1190410-500	1190035	120	260	225	8 x 18	155	145	35	150	35	39
150	KF 150-0	1190451	IR 150-0	1190411	1190026	145	255	220	8 x 18	178	165	25	170	25	28
150	KF 150-500	1190451-500	IR 150-500	1190411-500	1190036	145	300	260	8 x 18	185	175	40	180	40	44
200	KF 200-0	1190452	IR 200-0	1190412	1190027	195	310	275	8 x 18	232	220	28	225	30	32
200	KF 200-500	1190452-500	IR 200-500	1190412-500	1190037	195	360	320	8 x 18	235	224	45	230	45	49
250	KF 250-0	1190453	IR 250-0	1190413	1190028	240	390	350	8 x 23	290	273	37	280	35	40
250	KF 250-500	1190453-500	IR 250-500	1190413-500	1190038	240	435	390	8 x 23	295	278	50	285	50	54
300	KF 300-0	1190454	IR 300-0	1190414	1190029	295	470	410	16 x 23	350	332	42	340	40	45

Execution KF...-0 and IR...-0:

DX/DXS	DN 10- 80
DXSB	DN 50-100
H/HW	DN 10-100
M	DN 15-100
DA	DN 50-300

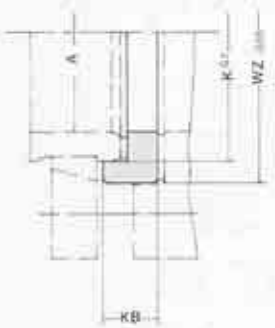
Execution KF...-500 and IR...-500:

DXS1/DXS2	DN 100-150
DXSB	DN 50-100
DXSA	DN 32-150
HW1	DN 125-250
HWA	DN 32-250

It is important to evenly tighten the screws.

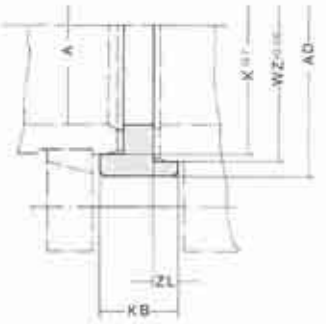
Intermediate rings Material: steel

Design ZR1



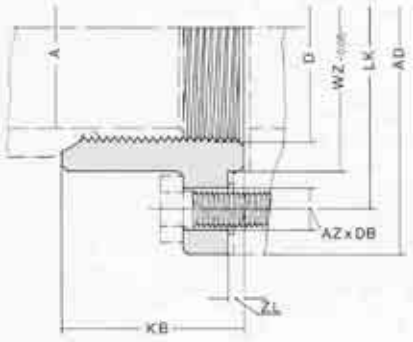
ZR2

ZR3

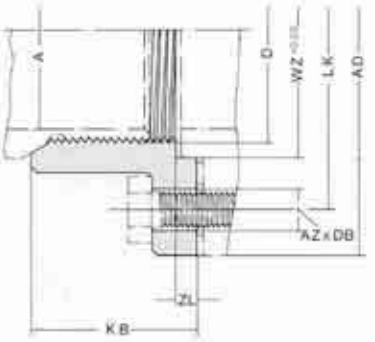


Adapter pieces for rotor with thread Material: steel

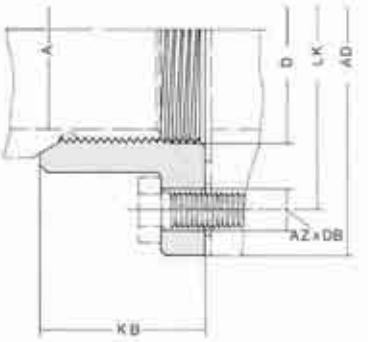
Design ÜSA1



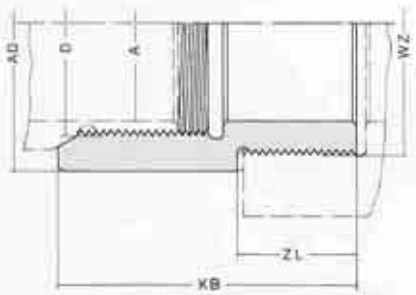
ÜSA2



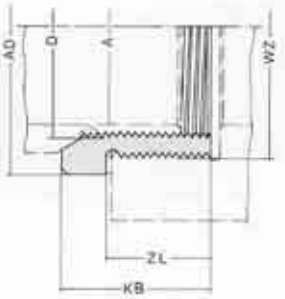
ÜSA3



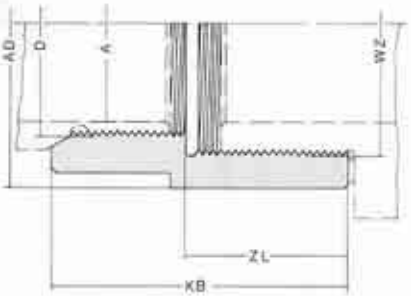
Design ÜSB1



ÜSB2



ÜSC1



When ordering, please specify: type of rotary joint, desired design and dimensions. Dimension "D" and dimension "D" of rotary joint match.

The threads have to be secured if the direction of rotation changes.

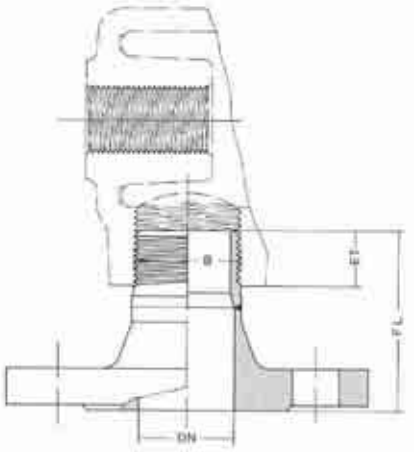
Adapter pieces ISO 228 (BSP), ISO 7 ANSI (NPT) are available both for rotors and housings. Other designs upon request.

Flanges for housing connection

Flanges for housing connections are primarily used for systems with thermal oil. We suggest using flanges for temperatures of more than 50 °C and media other than water (in accordance with DIN 4754).

The flanges consist of seamless pipes DIN 2448 with male thread ISO 228, welded to a welded neck DIN 2633/2635. The connection dimensions for PN 16 and PN 40 are identical up to DN 80. Sealing between flange and rotary joint housing by means of brazing if thermal oil is used. For other media, sealing tape is sufficient.

Some designs are factory-equipped with flanges or factory-designed for it. The flanges may also be ordered separately.

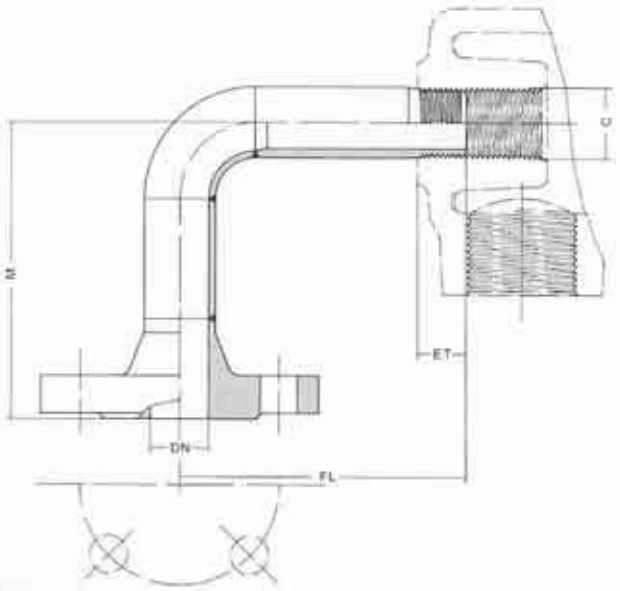


Flanges with necks PN16 DIN 2633 and PN40 DIN 2635

DN	Designation	PN max.	Order-No.	B	ET	FL	Flat packing Order-No.
10	FS 10-14	PN 40	1190200-014	G ⅜ A	13	55	3512263
15	FS 15-15	PN 40	1190201-015	G ½ A	13	60	3512264
20	FS 20- 5	PN 40	1190202-005	G ¾ A	15	60	3512265
25	FS 25-23	PN 40	1190203-023	G 1 A	20	70	3512266
32	FS 32-22	PN 40	1190204-022	G 1¼ A	20	70	3512267
40	FS 40- 6	PN 40	1190205-006	G 1½ A	25	85	3512268
50	FS 50-19	PN 40	1190206-019	G 2 A	30	85	3512269
65	FS 65-17	PN 40	1190207-017	G 2½ A	35	100	3512270
80	FS 80- 9	PN 40	1190208-009	G 3 A	35	105	3512271
100	FS 100- 2	PN 16	1190209-002	G 4 A	40	115	3512272
100	FS 100- 6	PN 40	1190209-006	G 4 A	40	115	3512272

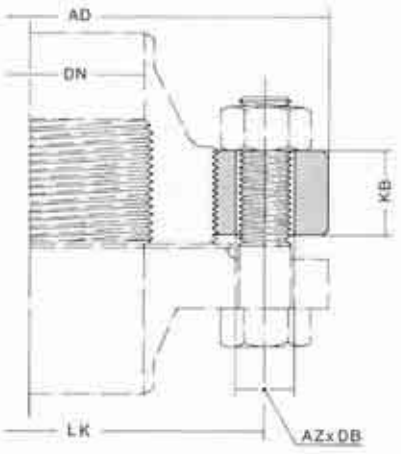
Flange with elbow PN40 DIN 2635

DN	Designation	Order-No.	C	ET	M	FL	Flat packing Order-No.
10	FB 10-10	1190300-010	G ⅜ A	13	96	90	3512263
15	FB 15- 9	1190301-009	G ½ A	13	105	96	3512264
20	FB 20-14	1190302-014	G ¾ A	15	115	110	3512265
25	FB 25-15	1190303-015	G 1 A	20	135	115	3512266
32	FB 32-18	1190304-018	G 1¼ A	20	140	120	3512267
40	FB 40-15	1190305-015	G 1½ A	25	150	135	3512268
50	FB 50-31	1190306-031	G 2 A	30	205	140	3512269
65	FB 65-37	1190307-037	G 2½ A	35	205	145	3512270
80	FB 80-12	1190308-012	G 3 A	35	205	160	3512271



Flange with thread for design DXSA PN16 DIN 2633

DN	Designation	Order-No.	Ø AD	Ø LK	AZ x Ø DB	KB	Flat packing Order-No.
25	FG 25-0	1190467	115	85	4 x 14	20	3512266
32	FG 32-0	1190468	140	100	4 x 18	20	3512267
40	FG 40-0	1190469	150	110	4 x 18	20	3512268
50	FG 50-0	1190470	165	125	4 x 18	24	3512269
65	FG 65-0	1190471	185	145	4 x 18	26	3512270
80	FG 80-0	1190472	200	160	8 x 18	30	3512271



Metal hoses and compensators

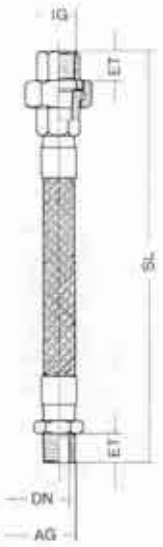
Metal hoses and compensators are flexible or elastic connections between Maier rotary joints and the fixed pipe system. The compensators are especially suited for compensation of housing displacements of series DA and H. Only bending stress may be applied to metal hoses. Torsion and axial loads have to be avoided. The core of the tubes and the metal sheathing (of 1.4541) are designed for a pressure of 16 bar. Series E...CC and B...CC are also available for pressures of 40 bar.

Ordering example: E32.600CC-40, order no. 3593046-040.

The following table and equation will help you determine the permissable pressure (depending on temperature).

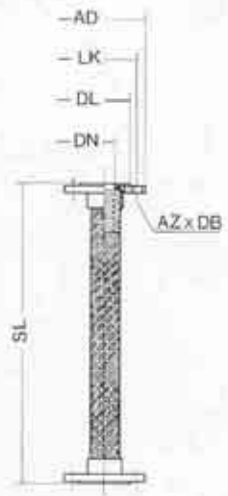
$P_{per.}$ = PN · factor (bar).

T (°C)	20	100	150	200	250	300	350	400
Factor	1,0	0,86	0,81	0,76	0,71	0,66	0,64	0,61



Design E...AB

Type	Order-No.	DN	AG (ISO 7)	IG (ISO 228)	ET	SL	r min*
E 06.500 AB	3513020	6	R ⅛	G ⅛	9	500	70
E 08.500 AB	3513021	8	R ¼	G ¼	12	500	100
E 10.500 AB	3513022	10	R ⅜	G ⅜	13	500	150
E 15.500 AB	3513023	15	R ½	G ½	14	500	180
E 20.500 AB	3513024	20	R ¾	G ¾	16	500	200
E 25.600 AB	3513025	25	R 1	G 1	19	600	235
E 32.600 AB	3513026	32	R 1¼	G 1¼	21	600	290
E 40.700 AB	3513027	40	R 1½	G 1½	22	700	365
E 50.800 AB	3513028	50	R 2	G 2	24	800	520
E 65.800 AB	3513029	65	R 2½	G 2½	28	800	600



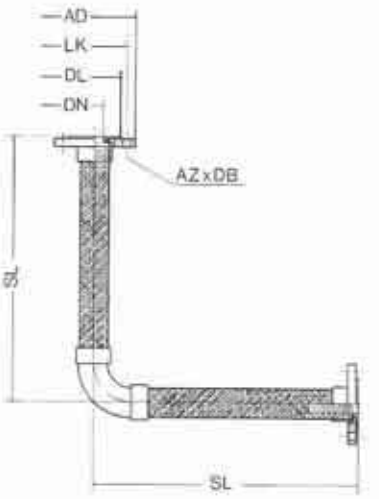
Design E...CC

Type	Order-No.	DN	Ø AD	Ø DL	Ø LK	AZ x Ø DB	SL	r min*	Flat packing Order-No.
E 10.500 CC	3513042	10	90	40	60	4 x 14	500	150	3512263
E 15.500 CC	3513043	15	95	45	65	4 x 14	500	180	3512264
E 20.500 CC	3513044	20	105	58	75	4 x 14	500	200	3512265
E 25.600 CC	3513045	25	115	68	85	4 x 14	600	235	3512266
E 32.600 CC	3513046	32	140	78	100	4 x 18	600	290	3512267
E 40.700 CC	3513047	40	150	88	110	4 x 18	700	365	3512268
E 50.800 CC	3513048	50	165	102	125	4 x 18	800	520	3512269
E 65.800 CC	3513049	65	185	122	145	4 x 18	800	600	3512270

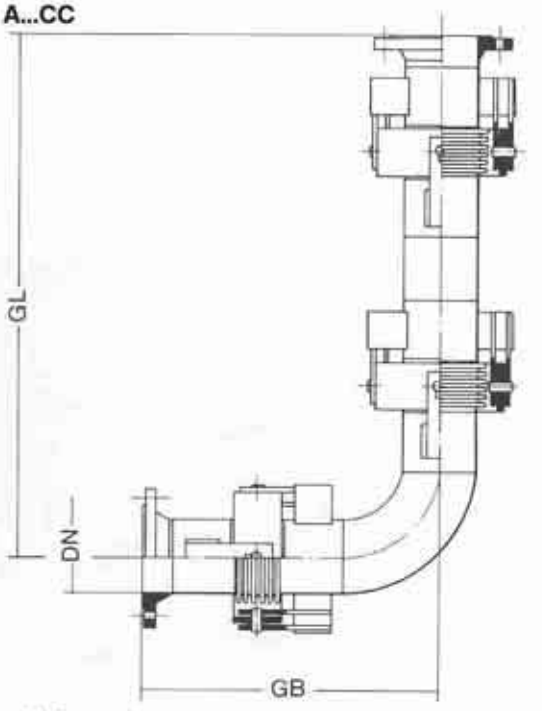
* r_{min} = smallest permissible bending radius

Design B...CC

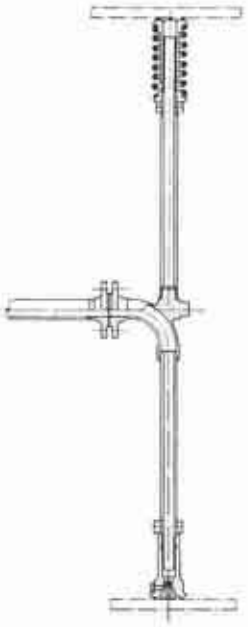
Type	Order-No.	DN	Ø AD	Ø DL	Ø LK	Az x Ø DB	SL	Flat packing Order-No.
B 80. 550 CC	3513102	80	200	138	160	8 x 18	550	3512271
B 100. 630 CC	3513103	100	220	158	180	8 x 18	630	3512272
B 125. 700 CC	3513104	125	250	188	210	8 x 18	700	3512273
B 150. 800 CC	3513105	150	285	212	240	8 x 22	800	3512274
B 200. 950 CC	3513106	200	340	268	295	12 x 22	950	3512310
B 250.1100 CC	3513107	250	405	320	355	12 x 26	1100	3512311
B 300.1300 CC	3513108	300	460	378	410	12 x 26	1300	3512312



Design A...CC



Additional information upon request.



Rotating Syphon

For the removal of condensate from drying cylinders, the inner fittings have to meet speed-specific requirements.

Apart from the correct rotary joint, the selection of a suitable syphon is a decisive factor in terms of the performance of the dryer. The difference of surface temperature is by approx. 4.5 °C per millimeter water ring thickness. Therefore, the primary objective in the process of removing the condensate from the cylinder is to keep the water ring as thin as possible. This is a main guideline for optimum heat transfer and low required power.

The temperature profile of the cylinder may be influenced by correct positioning of the syphon. It is important to reduce the amount of steam to a minimum in order to save heating energy.

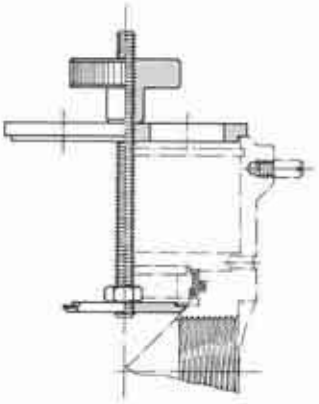
Please inquire about our special questionnaire.

Other accessories

Extractor for mechanical seals type DX

This tool allows the stationary mechanical seal to be removed without incurring any damage.

Rotary joint	Order-No.
DN 10	1190325
DN 15	1190326
DN 20	1190327
DN 25	1190328
DN 32	1190329
DN 40	1190330
DN 50	1190331
DN 65	1190332
DN 80	1190333

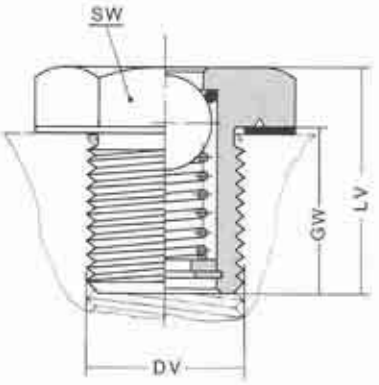


Vacuum valves

Material: brass

Vacuum valves protect steam-heated rollers against damage through low pressure. The valves are available separately or builtin (design 3).
Opens at 0,3 bar differential pressure.
Temperature max. 160 °C.

DV	G 1/2	G 1
Order-No.	1190010	1190020
LV	30	30
GW	22	19
SW	30	41
Cu seal order no.	3511961	3511962

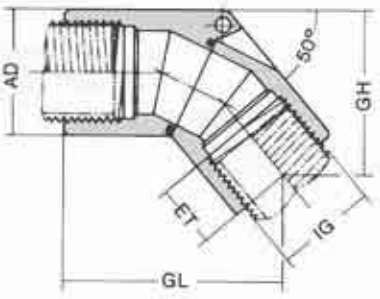


Toggle joints

Material: brass

Toggle joints facilitate the installation of syphon pipes in steam heated rollers, especially in case of long, narrow trunnions. Seals when bent. Temperature max. 160 °C.

IG	G 1/4	G 3/8	G 1/2	G 3/4	G 1	G 1 1/2	G 2
Order-No.	1190100	1190110	1190120	1190130	1190140	1190150	1190160
Ø AD	22	25	30	36	45	60	80
ET	12	15	18	20	22	30	35
GL	42,5	56	63	70	74	108	138
GH	31	37,5	45	50	57,5	81	104



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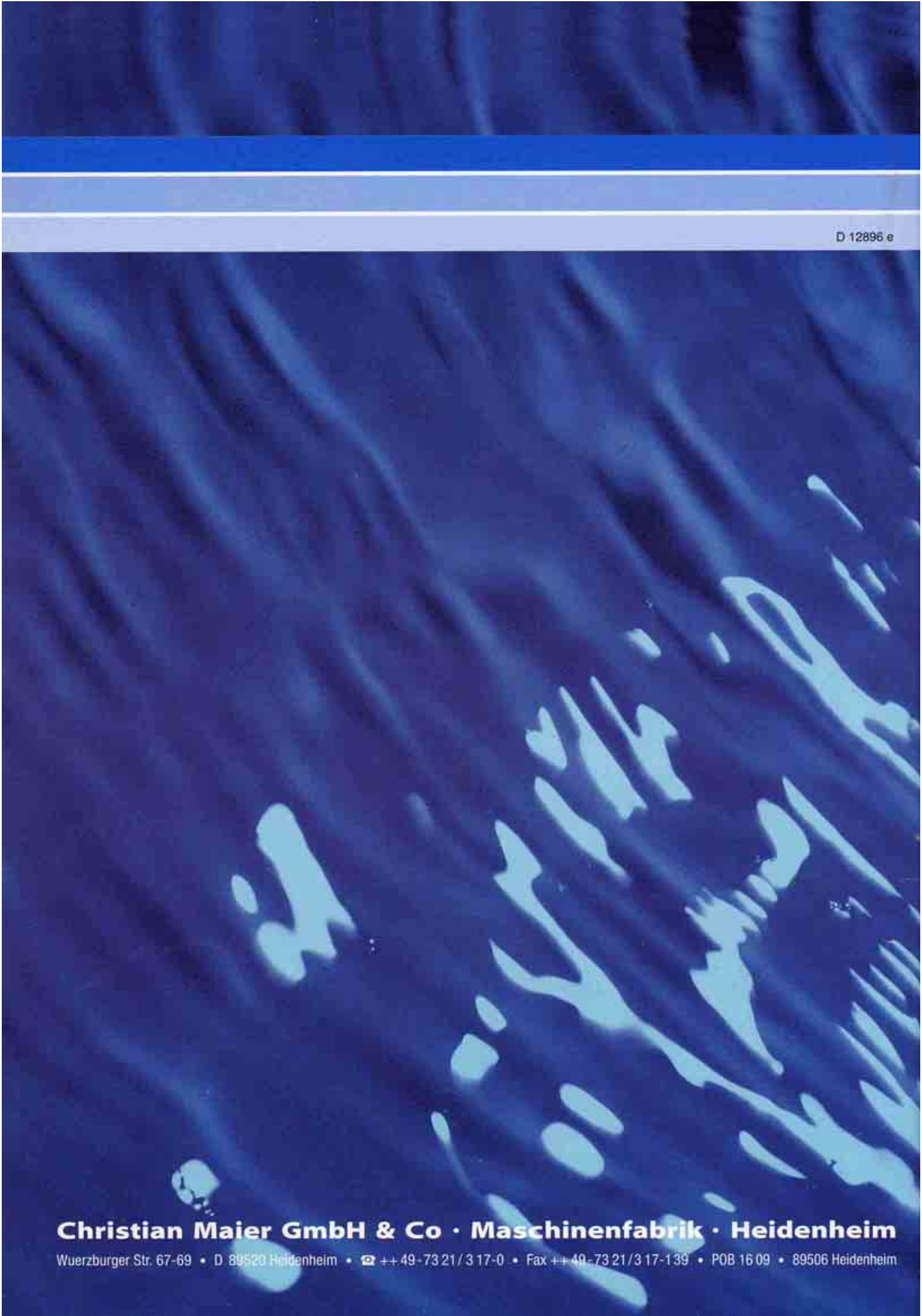

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