

# Rotary Joints

## Series H



# Rotary Joints Series H

Standard series H and HW are designed up to Nominal Diameter 100 mm (4") to accommodate transfer of water, steam and thermal oil under temperature, rotation and pressure.

Furthermore the heavy duty designs HWA, HWB, HWX are designed for higher speeds and higher loads and bigger diameters.

A flexible modular system with housing flange and gasket connections, which can be subsequently modified.

Operating manuals are available at [www.maier-heidenheim.de](http://www.maier-heidenheim.de) or directly from our works. Our sales staff will be happy to provide you with user identification and password. After placing an order you will find this information on the delivery note.



## Standard Series

- Housing made of ductile cast iron, cover and rotor made of chrome steel, rotors for Nominal Diameter 65 mm (2 1/2") and above made of steel, sealing face made of chrome steel. High-temperature resistant spring made of stainless steel.
- Sealing ring of compression-loaded wear-resistant graphite carbon. Due to its design, it is, unlike others, and is shatter-proof under high pressure. Series HW with metal-impregnated graphite carbon, is especially suitable for thermal oil and for considerably higher pressures, temperatures and speeds. The bearing is secured against rotation. Slide bushing is used as gap seal for rotating inner pipe. There is a wear indicator for the sealing ring at the rotor.
- Easy to repair. Maintenance-free, no relubrication required.
- Connection to rotating pressurised system by means of:
  - Standardised connecting piece with right-hand or left-hand male thread BSP (ISO 228). Sealing and centring cone at end of thread. Adapter pieces for NPT and other threads are available.
  - K flange with conical inner ring – quick disconnect (must be ordered separately).
- Radial and axial housing connection with right-hand thread BSP (ISO 228). Adapter pieces available for NPT and other threads as well as for flange connections.
- According to safety regulations DIN 4757, sealing in the thread is not admissible when using thermal oil. We recommend using flange connections. Screw thread for fixed inner pipe is always right-handed, even when thread on rotor is left-handed.
- Rotation of the housing is prevented by means of the anti-rotating fork on the cover, where the locking bolt engages. Thermal expansion of the roller and wear of seals and bearing cause an axial displacement of the housing (away from the roller). Anti-rotation device, hose connection and inner pipe must not impede this axial displacement. Otherwise the rotary joint will not operate or seal properly.

### The fortified designs HWA, HWB, HWX are

- More robust
  - Greater distance between bearings, double-sized cover bushing, two large bearings from Nominal Diameter 80 mm (3") and above.
  - Anti-rotation device between the bearings ensures low moment of friction.
  - Housing flange connection is sealed with a gasket, no soldering.
- Faster
  - Up to 50 % higher speed possible.
- More flexible
  - Modular system: please specify required – position when placing the order.
  - Housing flanges can be screwed in later.



### The different designs are equipped as follows:

- Housing of ductile cast iron, HWA Nominal Diameter 100 mm (4") and above of steel in welded design.
- Rotor of stainless steel 1.4571 (316) or carbide coated carbon steel. All other steel parts in stainless steel.
  - Metal-impregnated sealing ring, suitable for high pressure.
  - Housing bearing secured against rotation.
  - Connection to the rotating pressurised system by means of K-flange and conical inner ring (quick disconnect).
  - Radial and axial housing connections with right-hand thread to ISO 228. As an option, Nominal Diameter DN 32-100 (1 1/4" - 4") with screw flange and gasket PN 40 DIN 2656; Nominal Diameter DN 100-300 (4" - 12") with welded flanges PN 40 DIN 2635. For Nominal Diameter DN 15-25 (1/2" - 1"), we offer metal hoses sealed with a gasket, since housing flanges would be too heavy for this purpose.
  - According to safety regulations DIN 4757, sealing in the thread is not admissible when using thermal oil.
  - Rotation of the housing is prevented by means of the anti-rotating fork at the housing, where the locking bolt engages.
- From Nominal Diameter DN 100 (4"), the unit weight is to be partially supported by means of the housing lug.
- Great number of different designs:
  - HW1, 2, R2 – 450. Based on standard basic design, however suitable for higher loads with rotors made of stainless steel 1.4571 (316) or carbide coated carbon steel.
  - HW1 – 500 and HWA, B, X2 – 500. Based on standard basic design (HW 1) and on fortified design (HWA, B, X), however suitable for higher loads with rotors made of stainless steel 1.4571(316) or carbide coated steel, with screw flanges, sealed with gasket, PN 40 DIN 2656.
  - HWX for stationary inner pipe, right-hand thread.
  - HWB for rotating inner pipe, bearing bush rotating with rotor, no wear. Gap seal, suitable for liquids, low pressure loss between flow and return.
  - HWA for rotating inner pipe, bearing bush rotating with rotor, no wear. Bearing shrunk into stainless steel bushing. Bearing bush/rotor and bearing are sealed with O-ring. Suitable for steam and high pressure loss between flow and return. HWA for big Nominal Diameter > 100 (4") in welded design.

## Application data

| Series              |                        | H                          | HW                          | HW -450                     |                             | HW                          |                             |                      |
|---------------------|------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|----------------------|
| Design              |                        | 1, 2, R2, 3                | 1, 2, R2, 3                 | 1                           |                             | X2, A2                      |                             |                      |
| Nominal diameter DN | mm                     | 15...100                   | 15...100                    | 15...25                     |                             | 32...100                    |                             |                      |
| Design              |                        |                            |                             | 2, R2                       |                             |                             |                             |                      |
| Nominal diameter DN | mm                     |                            |                             | 20 + 25                     |                             |                             |                             |                      |
| Medium              |                        | Water<br>Steam             | Thermal<br>oil              | Water<br>Steam              | Thermal<br>oil              | Water<br>Steam              | Thermal<br>oil              | Wa                   |
| Temperature         | min...max °C           | -10...220                  | -10...300                   | -10...220                   | -10...300                   | -10...230                   | -10...300                   | -10..                |
| Pressure PN         | min...max bar          | 0,8...20                   | 0,8...10                    | 0,8...20                    | 0,8...10                    | 0,8...28                    | 0,8...10                    | 0,8..                |
| Speed               | max. min <sup>-1</sup> | <u>50.000</u><br>(DN x PN) | <u>100.000</u><br>(DN x PN) | <u>100.000</u><br>(DN x PN) | <u>100.000</u><br>(DN x PN) | <u>150.000</u><br>(DN x PN) | <u>150.000</u><br>(DN x PN) | <u>150.</u><br>(DN x |

### Overspeed limitation

| DN    |                        | 15  | 20  | 25  | 32  |  |
|-------|------------------------|-----|-----|-----|-----|--|
| Speed | max. min <sup>-1</sup> | 470 | 400 | 340 | 420 |  |

\* For DN 200 + 300 max. 200° C, 16 bar. Series H3 with vacuum breaker. Designs for higher values and media on request. The combination of maximum values should be avoided.

## Ordering instructions

Example:

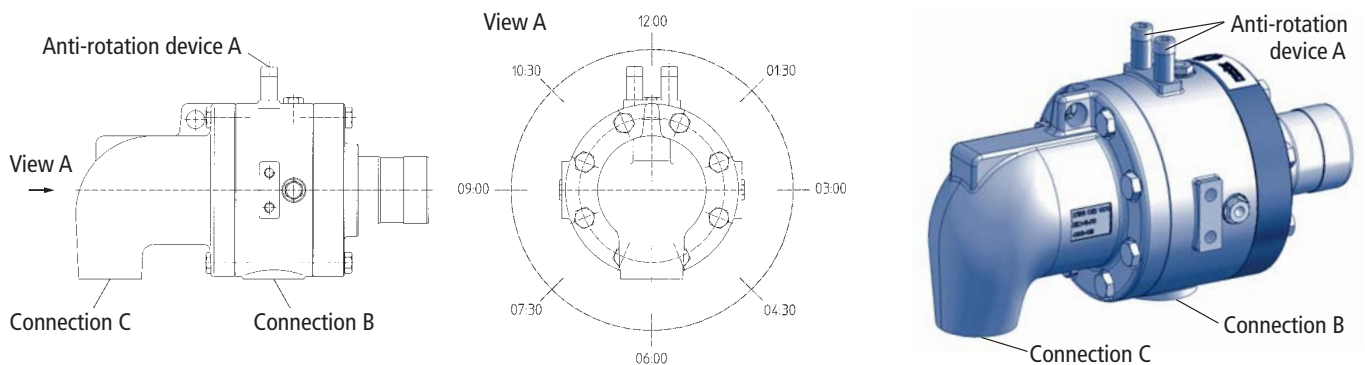
H W X 2 32 K -500

|   |   |
|---|---|
| <b>Series H</b>   |   |
| <b>W</b> High-performance sealing ring, metal-impregnated   |   |
| <b>X</b> Design for screwed stationary inner pipe   |   |
| <b>R</b> rotating inner pipe with slide bushing and gap seal in the housing   |   |
| <b>B</b> rotating inner pipe with gap seal between flow and return  |   |
| <b>A</b> rotating inner pipe with complete sealing between flow and return  |   |
| <b>1</b> Number of housing connections for one way flow design  |   |
| <b>2</b> for two way flow design  |   |
| <b>3</b> for two way flow design with vacuum breaker  |   |
| Nominal diameter in mm (≙ dimension A)<br>15, 20, 25, 32, 40, 50, 65, 75, 80, 100, 125, 150, 200, 300   |   |
| <b>R</b> Rotor connection for right-hand thread   |   |
| <b>L</b> for left-hand thread   |   |
| <b>K</b> for K flange   | Adapters for other threads are available, upon request. |
| Consecutive numbers for special designs; numbering by factory.<br>Exceptions: variant -450 without flange connections; variant -500 with screw flanges. |   |

| HW   |  | HW -500  |  | HW -500  |  | HW -500  |  | HW   |  |
|--|--|--|--|--|--|--|--|--|--|
| B2<br>32...100                                 |  | 1<br>32...100                                  |  | X2, A2<br>32...100                             |  | B2<br>32...100                                 |  | 1<br>125...300<br>A2<br>100...300              |  |
| Water  | Thermal oil                                    | Water<br>Steam                                 | Thermal oil                                    | Water<br>Steam                                 | Thermal oil                                    | Water  | Thermal oil                                    | Water<br>Steam                                 | Thermal oil                                    |
| -10...230<br>0,8...28                          | -10...300<br>0,8...10                          | -10...230<br>0,8...20                          | -10...300<br>0,8...10                          | -10...230<br>0,8...28                          | -10...300<br>0,8...10                          | -10...230<br>0,8...28                          | -10...300<br>0,8...10                          | -10...210*<br>0,8...20*                        | -10...300<br>0,8...10                          |
| $\frac{150.000}{(\text{DN} \times \text{PN})}$ | $\frac{150.000}{(\text{DN} \times \text{PN})}$ | $\frac{100.000}{(\text{DN} \times \text{PN})}$ | $\frac{100.000}{(\text{DN} \times \text{PN})}$ | $\frac{150.000}{(\text{DN} \times \text{PN})}$ | $\frac{150.000}{(\text{DN} \times \text{PN})}$ | $\frac{150.000}{(\text{DN} \times \text{PN})}$ | $\frac{150.000}{(\text{DN} \times \text{PN})}$ | $\frac{150.000}{(\text{DN} \times \text{PN})}$ | $\frac{150.000}{(\text{DN} \times \text{PN})}$ |
| 40   | 50   | 65   | 75   | 80   | 100  | 125  | 150  | 200  | 300  |
| 370  | 350  | 300  | 250  | 250  | 200  | 100  | 80   | 60   | 30   |

## Assembly by modular system for HWX – HWB – HWA DN 32-100

When placing the order, please copy this page, fill in the blanks and send it by fax to **+49 7321 317-139**.



Customer

Order number

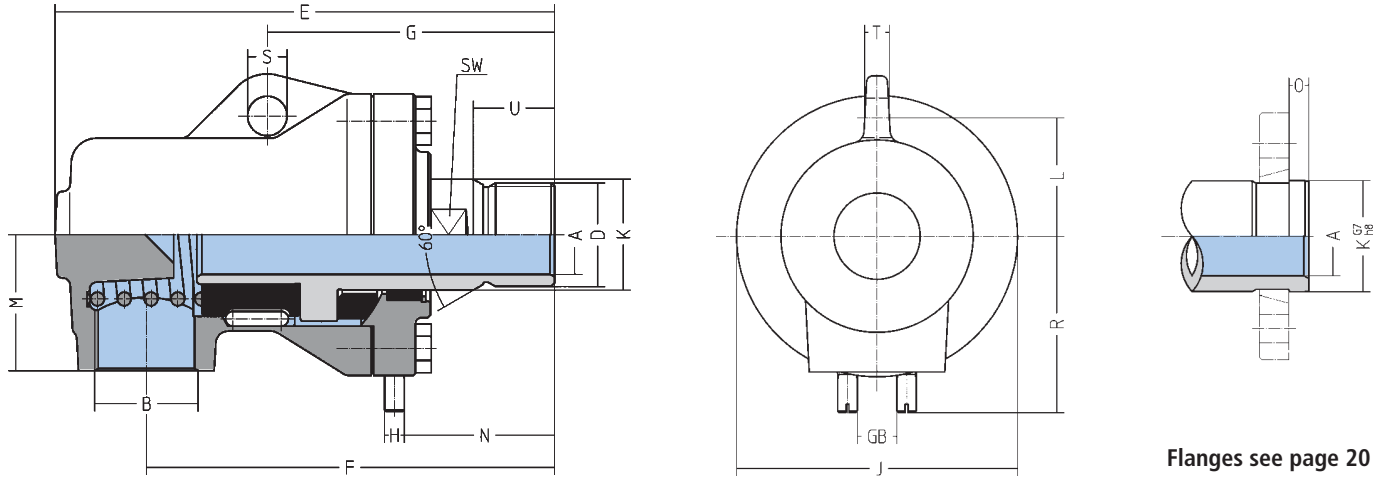
| Connection B             |       | Anti-rotation device A   |       | Connection C             |       |
|--------------------------|-------|--------------------------|-------|--------------------------|-------|
| <input type="checkbox"/> | 06:00 | <input type="checkbox"/> | 03:00 | <input type="checkbox"/> | 01:30 |
| <input type="checkbox"/> |       | <input type="checkbox"/> | 09:00 | <input type="checkbox"/> | 03:00 |
| <input type="checkbox"/> |       | <input type="checkbox"/> | 12:00 | <input type="checkbox"/> | 04:30 |
| <input type="checkbox"/> |       |                          |       | <input type="checkbox"/> | 06:00 |
| <input type="checkbox"/> |       |                          |       | <input type="checkbox"/> | 07:30 |
| <input type="checkbox"/> |       |                          |       | <input type="checkbox"/> | 09:00 |
| <input type="checkbox"/> |       |                          |       | <input type="checkbox"/> | 10:30 |
| <input type="checkbox"/> |       |                          |       | <input type="checkbox"/> | 12:00 |

Orientation of connection B always in 6 o'clock position. Line of sight to the rotary joint: view A (from the rear).

Please tick required positions of anti-rotation device A and connection C. The ordered rotary joint will be assembled according to these details.

# H1 + HW1 DN 15-100

for one way flow of a medium

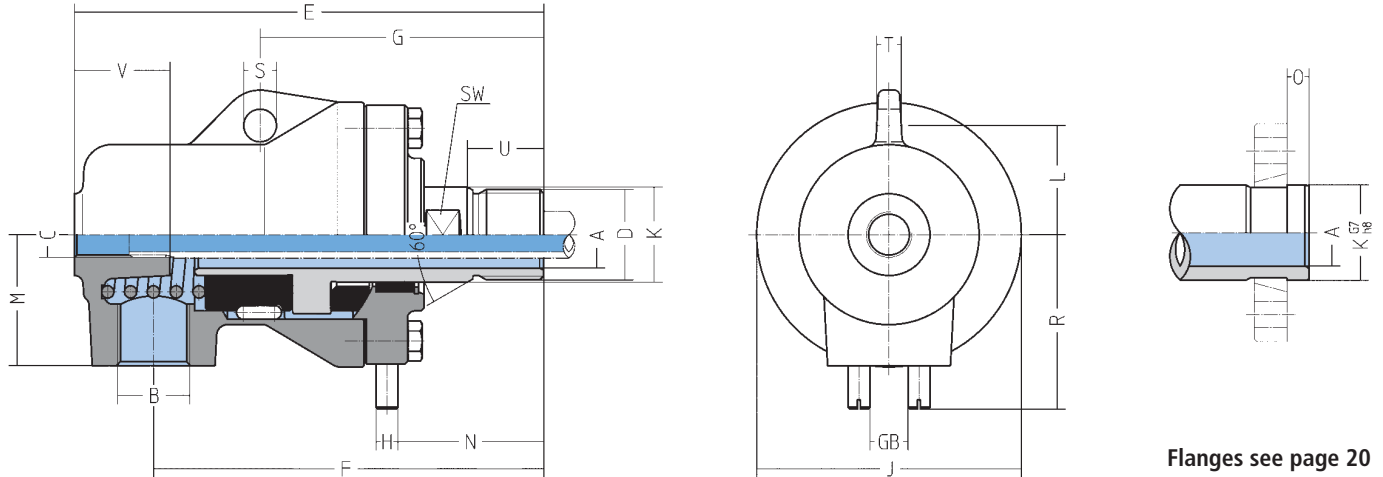


| DN | 15        | 20       | 25       | 32       | 40       | 50       | 65       | 80       | 100      |           |
|----|-----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| H  | Type      | H 115 R  | H 120 R  | H 125 R  | H 132 R  | 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   |
| H  | 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   |
| H  | 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   |
| HW | 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   |
| HW | 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 1/2   | G 3/4   | G 1   | G 1 1/4   | G 1 1/2   | G 2   | G 2 1/2   | G 3       | G 4   |
| 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           | 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/GB        | 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    |

# H2 + HW2 DN 15-100

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



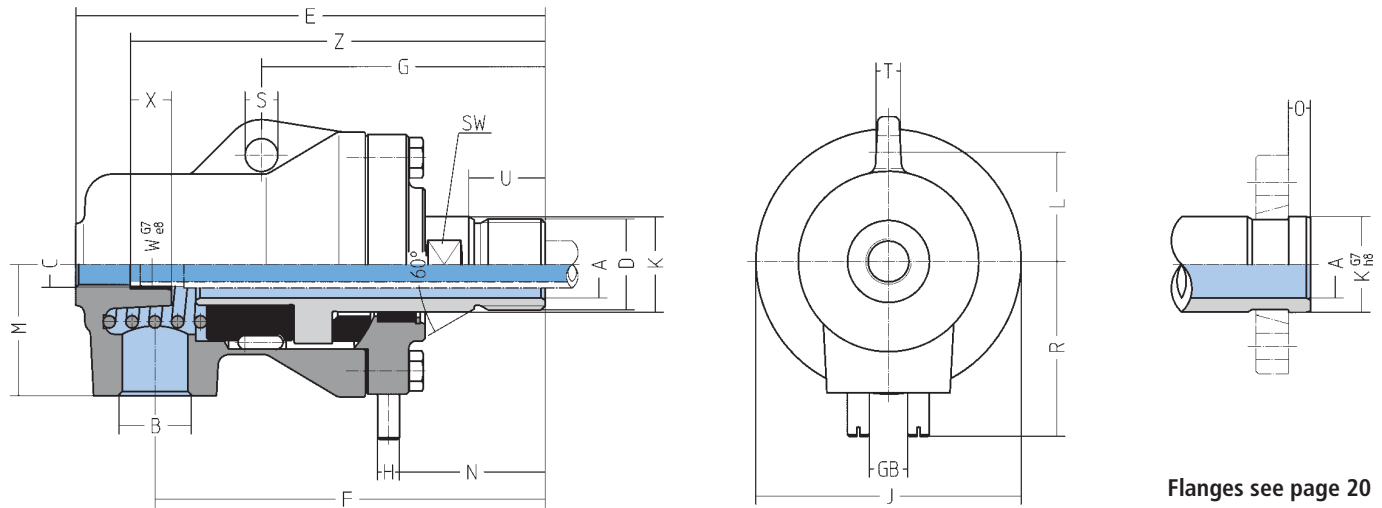
Flanges see page 20

| DN        | 15       | 20       | 25       | 32       | 40       | 50       | 65       | 80       | 100       |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| 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   |
| 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 3/8   | G 1/2   | G 3/4 | G 1       | G 1 1/4   | G 1 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           | 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/GB        | 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 DN 15-100

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



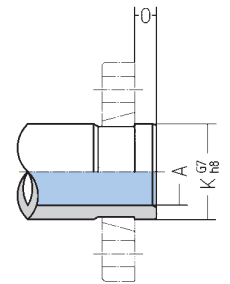
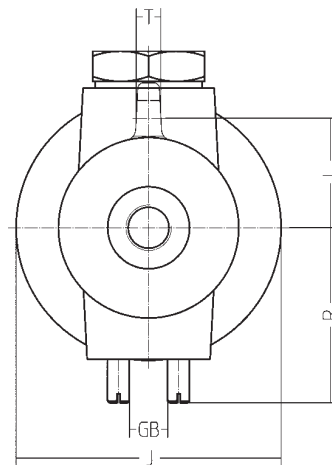
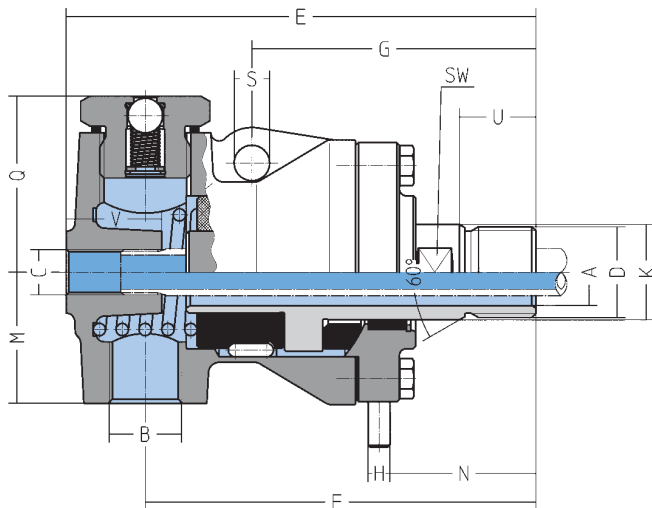
| DN        | 15        | 20        | 25        | 32        | 40        | 50        | 65        | 80        | 100        |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Type      | HR 215 R  | HR 220 R  | HR 225 R  | HR 232 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    |
| 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 3/8   | G 1/2   | G 3/4 | G 1       | G 1 1/4   | G 1 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           | 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/GB        | 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    |



# H3 DN 25-40

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



Flanges see page 20

| 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 |

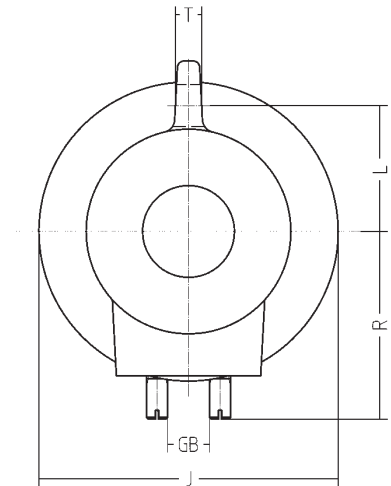
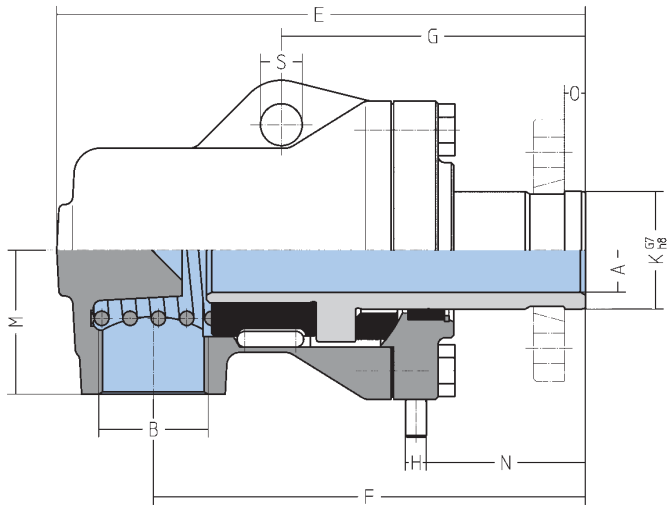
|             |       |           |           |
|-------------|-------|-----------|-----------|
| Ø A         | 25    | 32        | 38        |
| B           | G 3/4 | G 1       | G 1 1/4   |
| C           | G 3/8 | G 1/2     | G 3/4     |
| D           | G 1 A | G 1 1/4 A | G 1 1/2 A |
| E           | 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/GB        | 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.

# HW1 DN 15 - 25 series -450

for one way flow of a medium



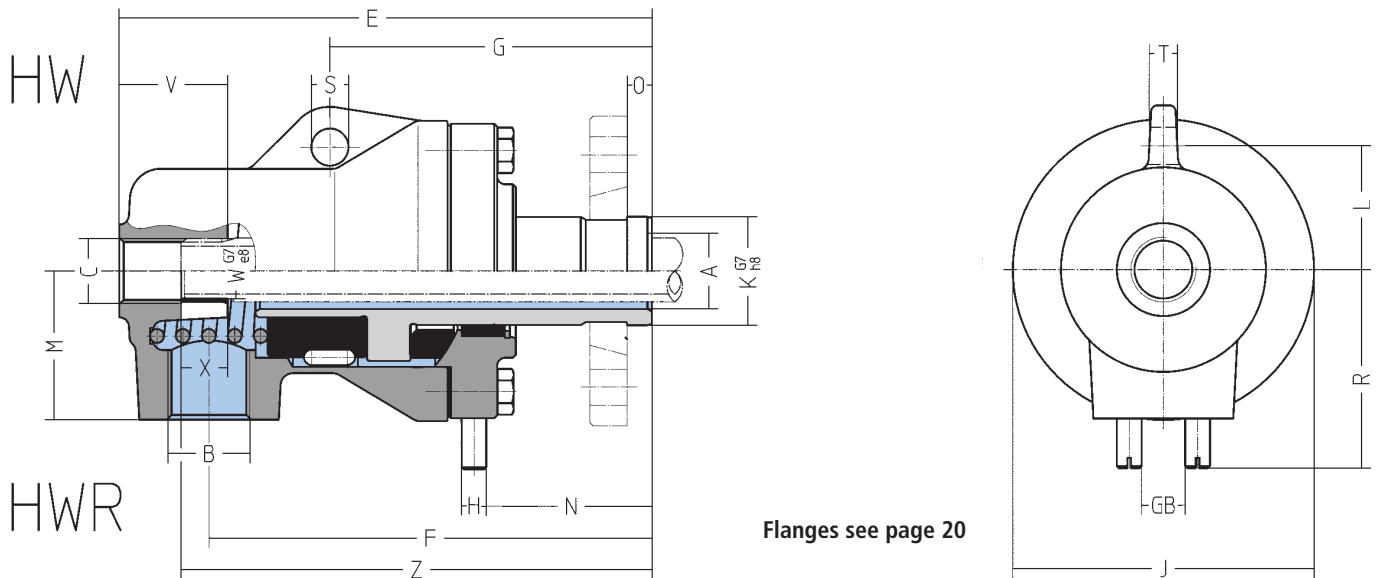
Flanges see page 20

| DN        | 15           | 20           | 25           |
|-----------|--------------|--------------|--------------|
| Type      | HW 115 K-450 | HW 120 K-450 | HW 125 K-450 |
| Order-No. | 1108067-450  | 1108147-450  | 1108169-450  |

|             |       |       |      |
|-------------|-------|-------|------|
| Ø A         | 13    | 20    | 24,5 |
| B           | G 1/2 | G 3/4 | G 1  |
| E           | 130   | 146   | 174  |
| F           | 107   | 120   | 143  |
| G           | 85    | 91    | 104  |
| H           | 6     | 6     | 8    |
| Ø J         | 80    | 88    | 97   |
| Ø K G7/h8   | 24    | 30    | 35   |
| L           | 31    | 36    | 40   |
| M           | 34    | 42    | 48   |
| N           | 44    | 49    | 53   |
| O           | 6     | 8     | 8    |
| R           | 52    | 56    | 64   |
| Ø S         | 12    | 12    | 12   |
| T           | 7     | 8     | 9    |
| GB          | 12    | 12    | 14   |
| Weight (kg) | 1,7   | 2,4   | 3,4  |

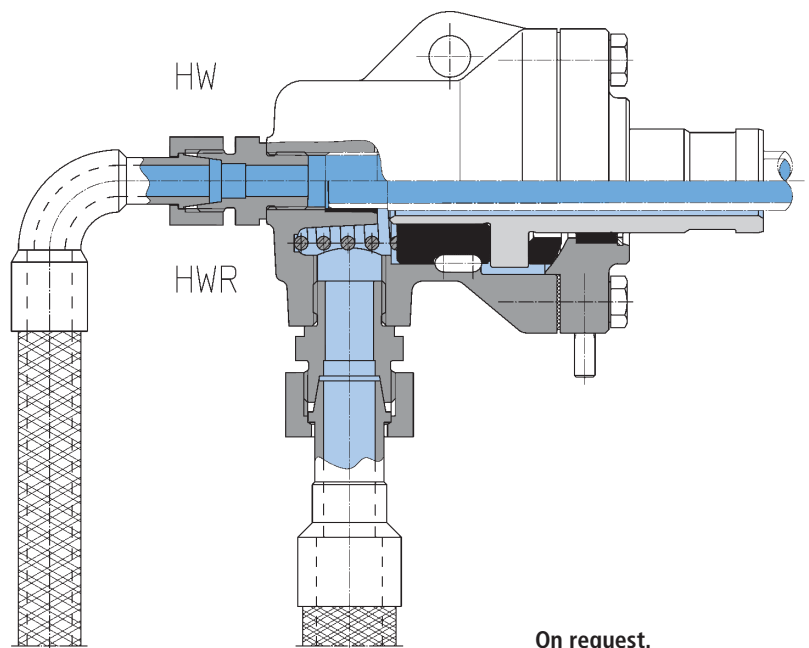
# HW2 + HWR2 DN 20 + 25 series -450

for two way flow of a medium



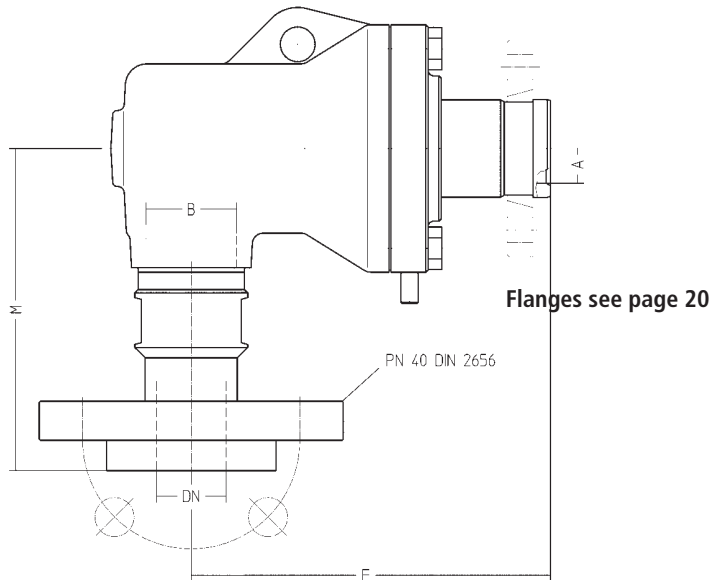
| DN        | 20            | 25            |
|-----------|---------------|---------------|
| Type      | HW 220 K-450  | HW 225 K-450  |
| Order-No. | 1108150-450   | 1108170-450   |
| Type      | HWR 220 K-450 | HWR 225 K-450 |
| Order-No. | 1108153-450   | 1108176-450   |

|             |       |       |
|-------------|-------|-------|
| Ø A         | 20    | 24,5  |
| B           | G 1/2 | G 3/4 |
| C           | G 3/8 | G 1/2 |
| E           | 144   | 172   |
| F           | 120   | 143   |
| G           | 91    | 104   |
| H           | 6     | 8     |
| Ø J         | 88    | 97    |
| Ø K G7/h8   | 30    | 35    |
| L           | 36    | 40    |
| M           | 42    | 48    |
| N           | 49    | 53    |
| O           | 8     | 8     |
| R           | 56    | 64    |
| Ø S         | 12    | 12    |
| T           | 8     | 9     |
| V           | 32    | 35    |
| Ø W G7/e8   | 16    | 18    |
| X           | 15    | 15    |
| Z           | 127   | 152   |
| GB          | 12    | 14    |
| Weight (kg) | 2,3   | 3,2   |



# HW1 DN 32-100 series -500

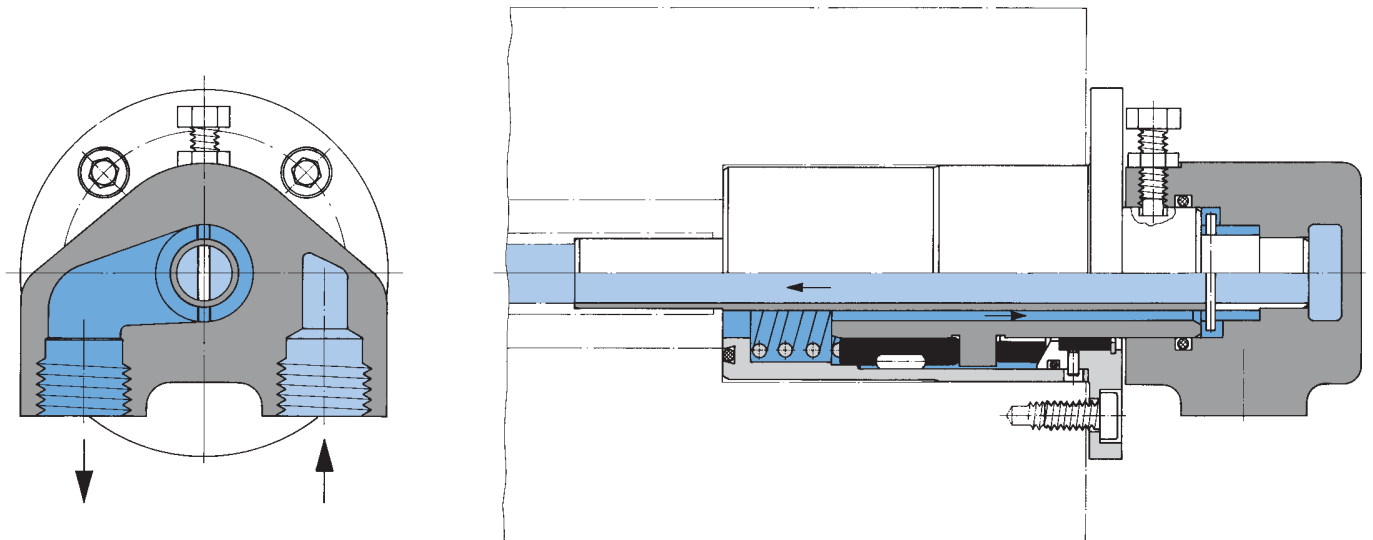
for one way flow of a medium



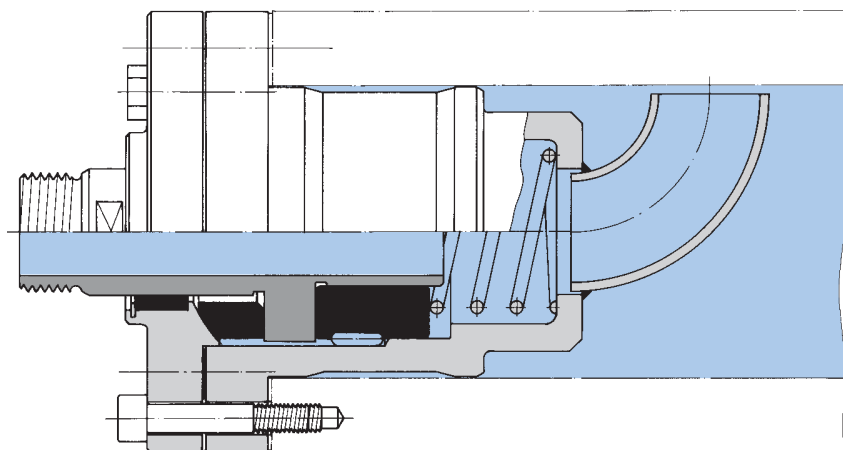
| DN                 | 32           | 40           | 50           | 65           | 80           | 100           |
|--------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Type               | HW 132 K-500 | HW 140 K-500 | HW 150 K-500 | HW 165 K-500 | HW 180 K-500 | HW 1100 K-500 |
| Order-No.          | 1108368-500  | 1108467-500  | 1108567-500  | 1108667-500  | 1108767-500  | 1108867-500   |
| <b>Ø A</b>         | 32           | 38           | 50           | 66           | 81           | 98            |
| <b>B</b>           | G 1 1/4      | G 1 1/2      | G 2          | G 2 1/2      | G 3          | G 4           |
| <b>F</b>           | 167          | 183          | 225          | 264          | 320          | 383           |
| <b>M</b>           | 148,5        | 160,5        | 179          | 193          | 239,5        | 277           |
| <b>DN</b>          | 32           | 40           | 50           | 65           | 80           | 100           |
| <b>Weight (kg)</b> | 8,5          | 10,5         | 16           | 27           | 46           | 74            |

All other dimensions see page 6.

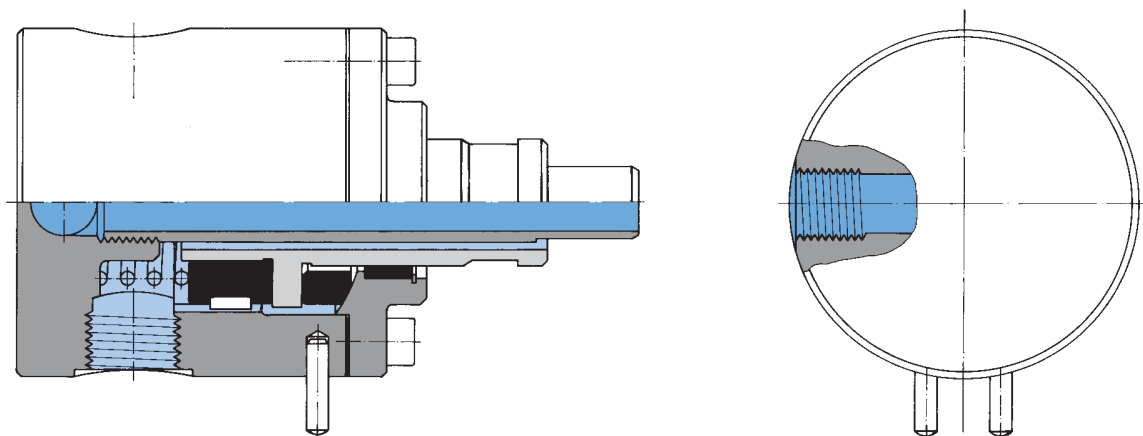
# Special designs of series H rotary joints for continuous casting machines



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



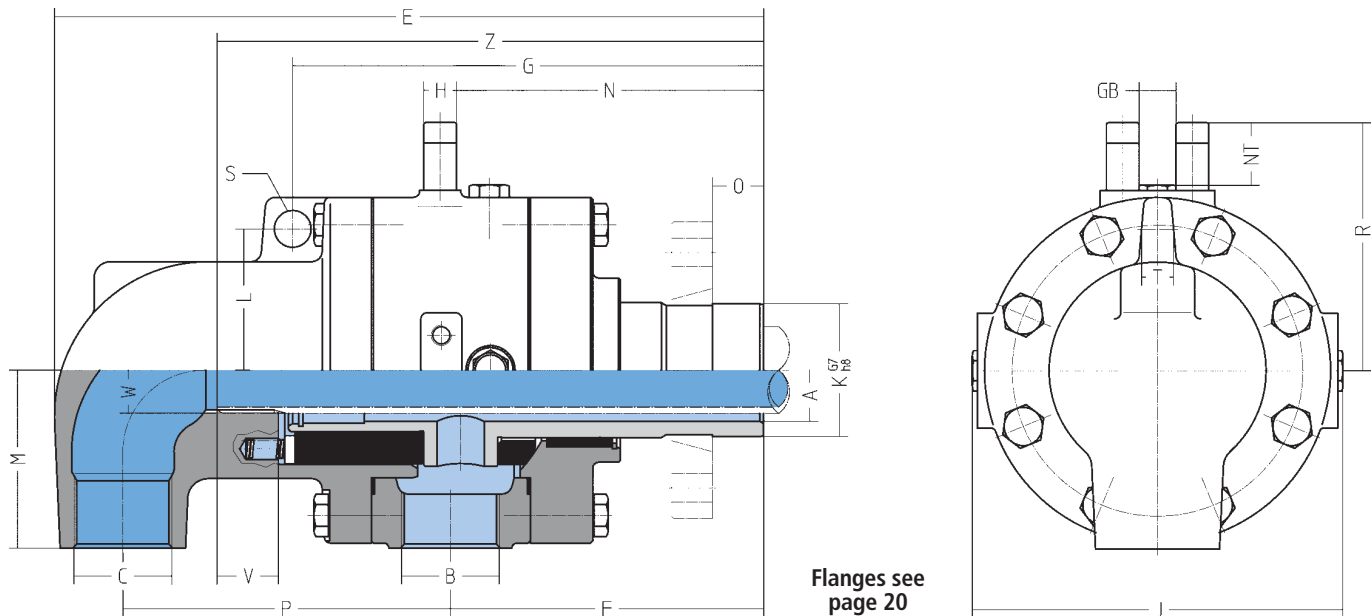
HW 125 K-24: integrated in roller trunnion at return for cooling water.



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

# HWX2 DN 32-100

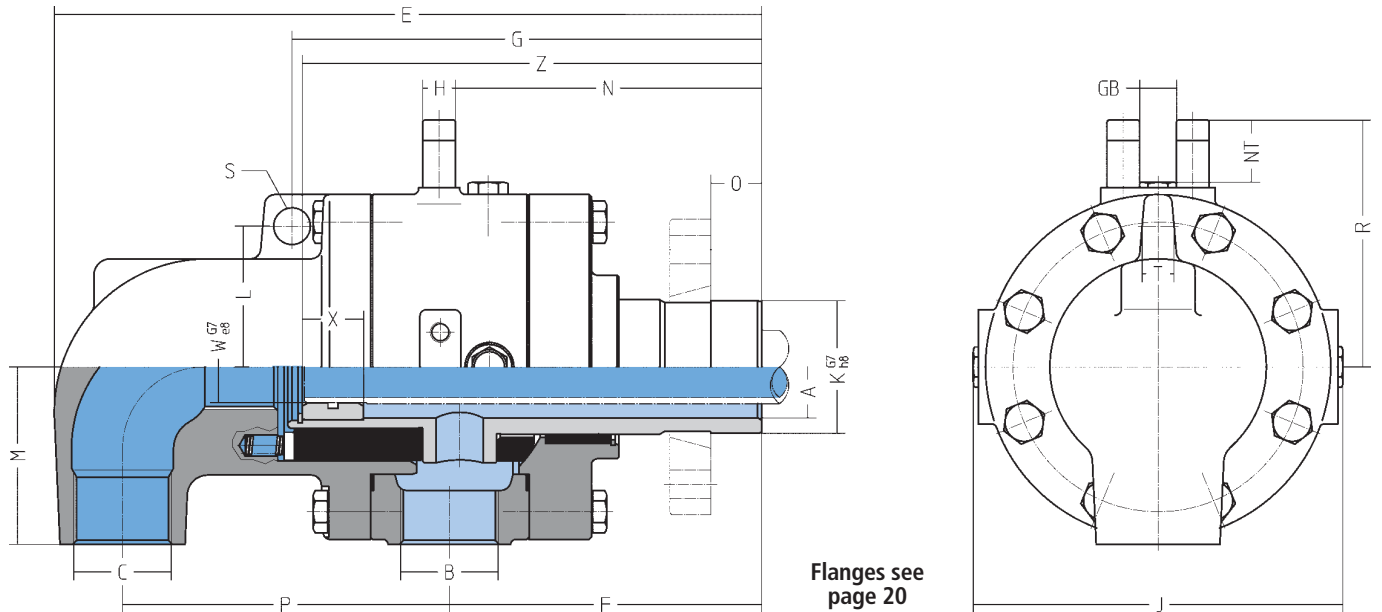
for two way flow of a medium  
designed for non-rotating inner pipe



| DN          | 32        | 40        | 50        | 65        | 75        | 80        | 100        |
|-------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Type        | HWX 232 K | HWX 240 K | HWX 250 K | HWX 265 K | HWX 275 K | HWX 280 K | HWX 2100 K |
| Order-No.   | 1108385   | 1108485   | 1108585   | 1108685   | 1108705   | 1108785   | 1108885    |
| ØA          | 32        | 38        | 50        | 66        | 67        | 80        | 98         |
| B           | G 1       | G 1 1/4   | G 1 1/2   | G 2       | G 2 1/2   | G 2 1/2   | G 3        |
| C           | G 1       | G 1 1/4   | G 1 1/2   | G 2       | G 2 1/2   | G 2 1/2   | G 3        |
| E           | 271       | 313       | 347       | 402       | 535       | 540       | 609        |
| F           | 120       | 132       | 153       | 178       | 270       | 275       | 305        |
| G           | 183       | 204,5     | 230       | 272       | 380       | 385       | 424        |
| H           | 13,5      | 16        | 16        | 18        | 18        | 18        | 25         |
| J           | 150       | 159       | 181       | 218       | 274       | 274       | 302        |
| ØK G7 / h8  | 45        | 50        | 65        | 85        | 87,29     | 105       | 114        |
| L           | 55        | 58        | 69        | 85        | 106       | 106       | 120        |
| M           | 70        | 75        | 87        | 103       | 130       | 130       | 145        |
| N           | 118       | 129       | 150       | 179       | 267       | 272       | 299        |
| O           | 15        | 20        | 25        | 25        | 22,2      | 30        | 30         |
| P           | 125       | 151       | 160       | 180       | 210       | 210       | 240        |
| R           | 98        | 110       | 121       | 144       | 172       | 172       | 194        |
| ØS          | 16        | 16        | 18        | 20        | 22        | 22        | 26         |
| T           | 13        | 15        | 16        | 18        | 25        | 25        | 26         |
| V           | 25        | 30        | 30        | 30        | 25        | 30        | 30         |
| W           | G 3/4     | G 1       | G 1 1/4   | G 1 1/2   | G 1 1/2   | G 2       | G 2 1/2    |
| Z           | 206       | 230       | 267       | 307       | 416       | 426       | 472        |
| GB          | 16        | 16        | 18        | 20        | 22        | 22        | 26         |
| NT          | 23        | 30,5      | 30,5      | 35        | 35        | 35        | 43         |
| Weight (kg) | 12        | 16,5      | 22        | 37        | 73        | 73        | 92         |

# HWB2 DN 32-100

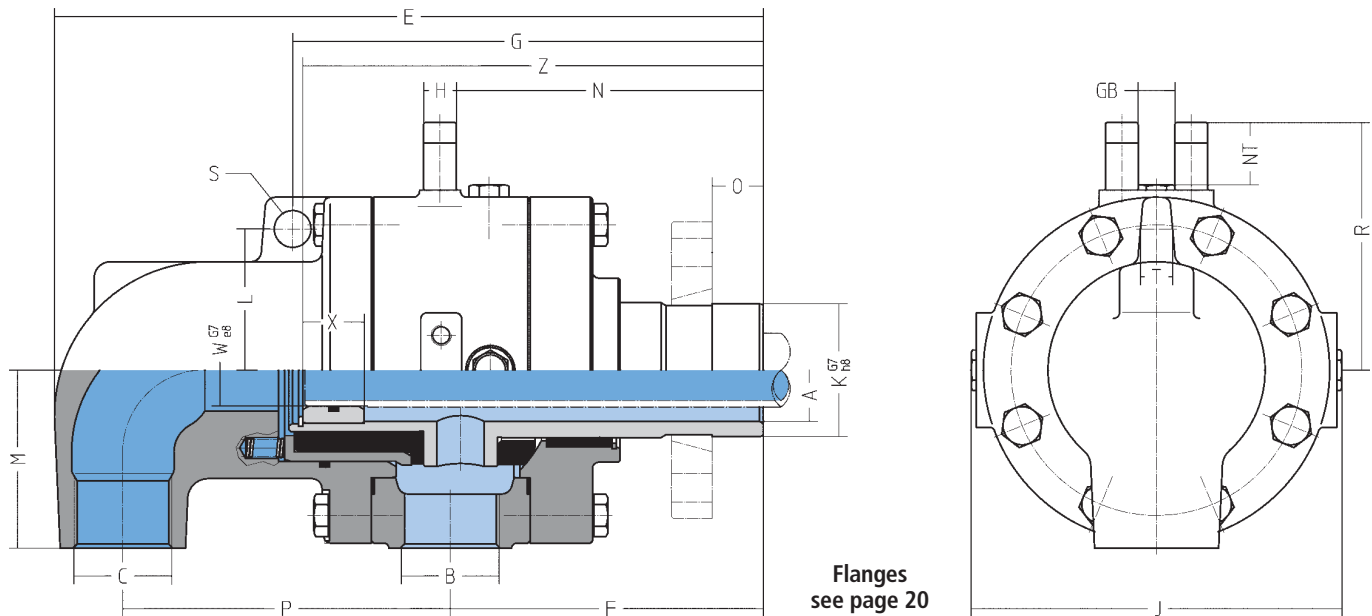
for two flow of a medium  
designed for rotating inner pipe



| DN                 | 32        | 40        | 50        | 65        | 75        | 80        | 100        |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Type               | HWB 232 K | HWB 240 K | HWB 250 K | HWB 265 K | HWB 275 K | HWB 280 K | HWB 2100 K |
| Order-No.          | 1108402   | 1108482   | 1108577   | 1108677   | 1108702   | 1108778   | 1108902    |
| <b>Ø A</b>         | 32        | 38        | 50        | 66        | 67        | 80        | 98         |
| <b>B</b>           | G 1       | G 1 1/4   | G 1 1/2   | G 2       | G 2 1/2   | G 2 1/2   | G 3        |
| <b>C</b>           | G 1       | G 1 1/4   | G 1 1/2   | G 2       | G 2 1/2   | G 2 1/2   | G 3        |
| <b>E</b>           | 271       | 313       | 347       | 402       | 535       | 540       | 609        |
| <b>F</b>           | 120       | 132       | 153       | 178       | 270       | 275       | 305        |
| <b>G</b>           | 183       | 204,5     | 230       | 272       | 380       | 385       | 424        |
| <b>H</b>           | 13,5      | 16        | 16        | 18        | 18        | 18        | 25         |
| <b>J</b>           | 150       | 159       | 181       | 218       | 274       | 274       | 302        |
| <b>Ø K G7/h8</b>   | 45        | 50        | 65        | 85        | 87,29     | 105       | 114        |
| <b>L</b>           | 55        | 58        | 69        | 85        | 106       | 106       | 120        |
| <b>M</b>           | 70        | 75        | 87        | 103       | 130       | 130       | 145        |
| <b>N</b>           | 118       | 129       | 150       | 179       | 267       | 272       | 299        |
| <b>O</b>           | 15        | 20        | 25        | 25        | 22,2      | 30        | 30         |
| <b>P</b>           | 125       | 151       | 160       | 180       | 210       | 210       | 240        |
| <b>R</b>           | 98        | 110       | 121       | 144       | 172       | 172       | 194        |
| <b>Ø S</b>         | 16        | 16        | 18        | 20        | 22        | 22        | 26         |
| <b>T</b>           | 13        | 15        | 16        | 18        | 25        | 25        | 26         |
| <b>Ø W G7/e8</b>   | 22        | 28        | 35        | 45        | 45        | 60        | 75         |
| <b>X</b>           | 30        | 30        | 30        | 40        | 40        | 40        | 50         |
| <b>Z</b>           | 172       | 190       | 225       | 260       | 372       | 377       | 419        |
| <b>GB</b>          | 16        | 16        | 18        | 20        | 22        | 22        | 26         |
| <b>NT</b>          | 23        | 30,5      | 30,5      | 35        | 35        | 35        | 43         |
| <b>Weight (kg)</b> | 12        | 16,5      | 22        | 37        | 73        | 73        | 92         |

# HWA2 DN 32-100

for two flow of a medium  
designed for rotating inner pipe

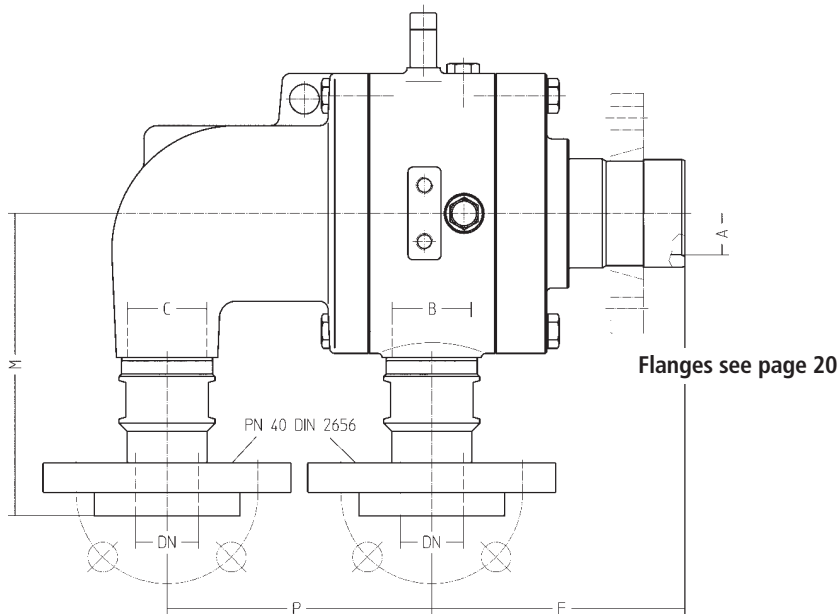


| DN          | 32        | 40        | 50        | 65        | 75        | 80        | 100        |
|-------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| Type        | HWA 232 K | HWA 240 K | HWA 250 K | HWA 265 K | HWA 275 K | HWA 280 K | HWA 2099 K |
| Order-No.   | 1108390   | 1108490   | 1108590   | 1108690   | 1108710   | 1108790   | 1108880    |
| Ø A         | 32        | 38        | 50        | 66        | 67        | 80        | 98         |
| B           | G 1       | G 1 1/4   | G 1 1/2   | G 2       | G 2 1/2   | G 2 1/2   | G 3        |
| C           | G 1       | G 1 1/4   | G 1 1/2   | G 2       | G 2 1/2   | G 2 1/2   | G 3        |
| E           | 271       | 313       | 347       | 402       | 535       | 540       | 609        |
| F           | 120       | 132       | 153       | 178       | 270       | 275       | 305        |
| G           | 183       | 204,5     | 230       | 272       | 380       | 385       | 424        |
| H           | 13,5      | 16        | 16        | 18        | 18        | 18        | 25         |
| J           | 150       | 159       | 181       | 218       | 274       | 274       | 302        |
| Ø K G7/h8   | 45        | 50        | 65        | 85        | 87,29     | 105       | 114        |
| L           | 55        | 58        | 69        | 85        | 106       | 106       | 120        |
| M           | 70        | 75        | 87        | 103       | 130       | 130       | 145        |
| N           | 118       | 129       | 150       | 179       | 267       | 272       | 299        |
| O           | 15        | 20        | 25        | 25        | 22,2      | 30        | 30         |
| P           | 125       | 151       | 160       | 180       | 210       | 210       | 240        |
| R           | 98        | 110       | 121       | 144       | 172       | 172       | 194        |
| Ø S         | 16        | 16        | 18        | 20        | 22        | 22        | 26         |
| T           | 13        | 15        | 16        | 18        | 25        | 25        | 26         |
| Ø W G7/e8   | 22        | 28        | 35        | 45        | 45        | 60        | 75         |
| X           | 30        | 30        | 30        | 40        | 40        | 40        | 50         |
| Z           | 172       | 190       | 225       | 260       | 372       | 377       | 419        |
| GB          | 16        | 16        | 18        | 20        | 22        | 22        | 26         |
| NT          | 23        | 30,5      | 30,5      | 35        | 35        | 35        | 43         |
| Weight (kg) | 12        | 16,5      | 22        | 37        | 73        | 73        | 92         |



# HWX2 + HWB2 + HWA2 DN 32-100 series -500

with flange connections



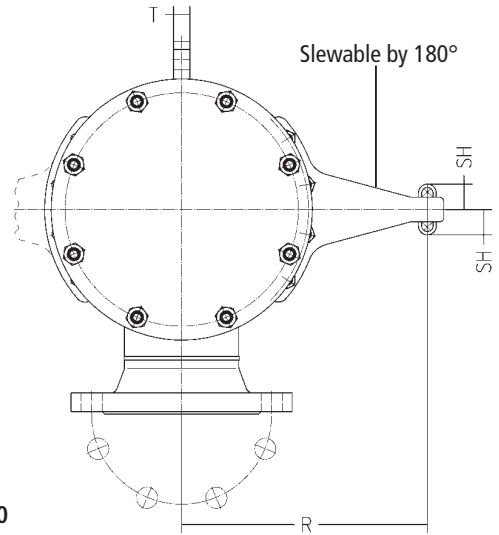
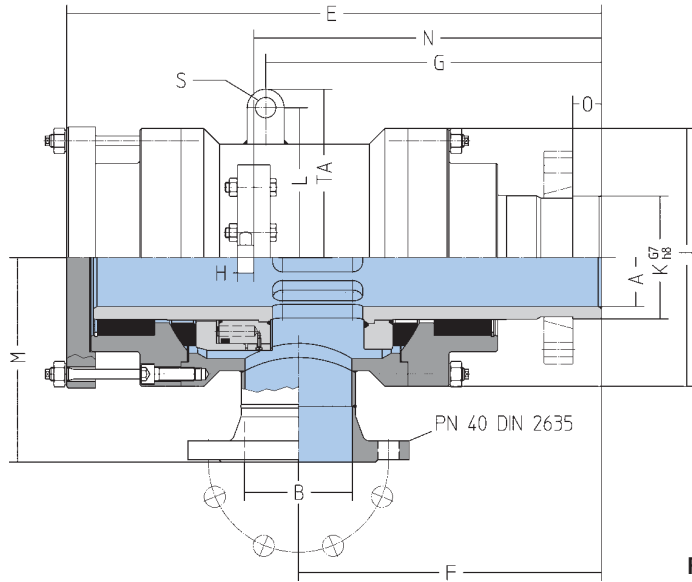
| DN        | 32            | 40            | 50            | 65            | 75            | 80            | 100            |
|-----------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Type      | HWX 232 K-500 | HWX 240 K-500 | HWX 250 K-500 | HWX 265 K-500 | HWX 275 K-500 | HWX 280 K-500 | HWX 2100 K-500 |
| Order-No. | 1108385-500   | 1108485-500   | 1108585-500   | 1108685-500   | 1108705-500   | 1108785-500   | 1108885-500    |
| Type      | HWB 232 K-500 | HWB 240 K-500 | HWB 250 K-500 | HWB 265 K-500 | HWB 275 K-500 | HWB 280 K-500 | HWB 2100 K-500 |
| Order-No. | 1108402-500   | 1108482-500   | 1108577-500   | 1108677-500   | 1108702-500   | 1108778-500   | 1108902-500    |
| Type      | HWA 232 K-500 | HWA 240 K-500 | HWA 250 K-500 | HWA 265 K-500 | HWA 275 K-500 | HWA 280 K-500 | HWA 2099 K-500 |
| Order-No. | 1108390-500   | 1108490-500   | 1108590-500   | 1108690-500   | 1108710-500   | 1108790-500   | 1108880-500    |

| Ø A         | 32    | 38      | 50      | 66   | 67      | 80      | 98    |
|-------------|-------|---------|---------|------|---------|---------|-------|
| B           | G 1   | G 1 1/4 | G 1 1/2 | G 2  | G 2 1/2 | G 2 1/2 | G 3   |
| C           | G 1   | G 1 1/4 | G 1 1/2 | G 2  | G 2 1/2 | G 2 1/2 | G 3   |
| F           | 120   | 132     | 153     | 178  | 270     | 275     | 305   |
| M           | 161,5 | 168,5   | 182,5   | 202  | 233     | 233     | 269,5 |
| P           | 125   | 151     | 160     | 180  | 210     | 210     | 240   |
| DN          | 25    | 32      | 40      | 50   | 65      | 65      | 80    |
| Weight (kg) | 16    | 22      | 29      | 46,5 | 84,5    | 84,5    | 107   |

All other dimensions see pages 14, 15 und 16.

# HW1 DN 125-300

for one way flow of a medium



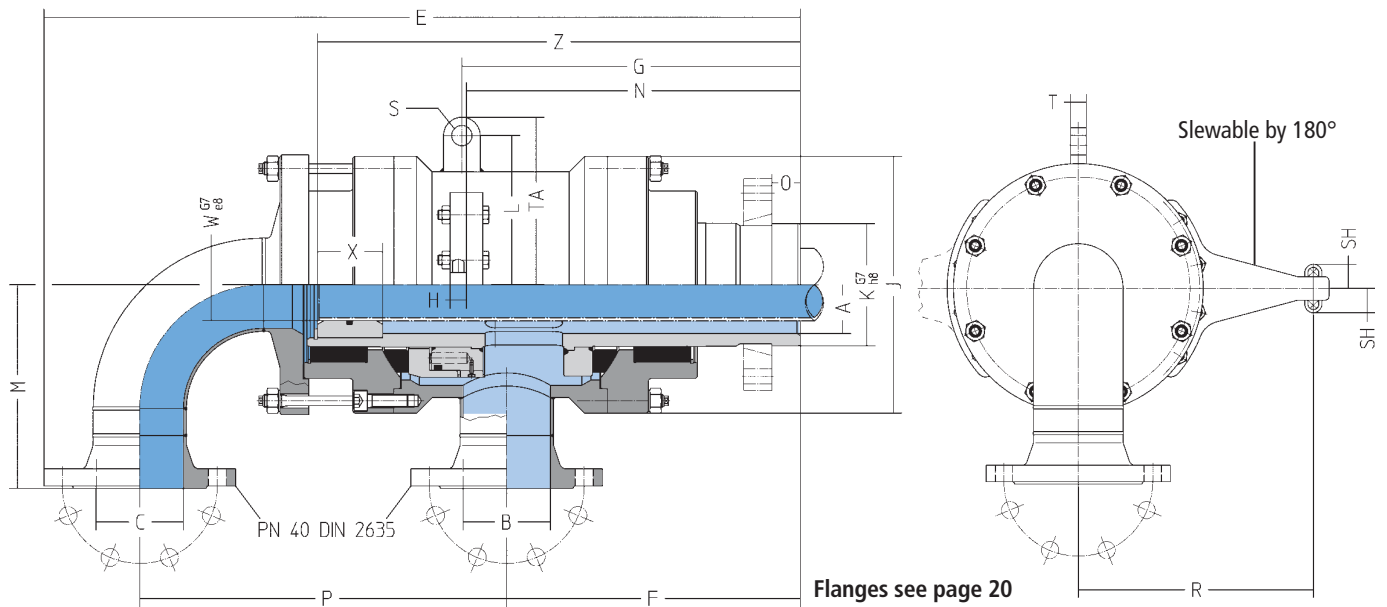
Flanges see page 20

| DN        | 125       | 150       | 200       | 300       |
|-----------|-----------|-----------|-----------|-----------|
| Type      | HW 1125 K | HW 1150 K | HW 1200 K | HW 1300 K |
| Order-No. | 1104001   | 1104101   | 1104201   | 1104401   |
| Ø A       | 120       | 145       | 195       | 298       |
| B         | DN 125    | DN 150    | DN 200    | DN 300    |
| E         | 653       | 706       | 881       | 1314      |
| F         | 370       | 393       | 498       | 700       |
| G         | 410       | 440       | 560       | 840       |
| H         | 20        | 25        | 25        | 35        |
| Ø J       | 319       | 346       | 420       | 595       |
| Ø K G7/h8 | 150       | 180       | 230       | 350       |
| L         | 183       | 210       | 265       | 385       |
| M         | 250       | 258       | 320       | 486       |
| N         | 410       | 413       | 593       | 853       |
| O         | 35        | 40        | 45        | 60        |
| R         | 300       | 350       | 400       | 700       |
| Ø S       | 25        | 40        | 40        | 50        |
| T         | 20        | 25        | 25        | 40        |
| SH        | 31        | 46        | 46        | 58        |
| TA        | 206       | 245       | 305       | 435       |

Weight (kg)

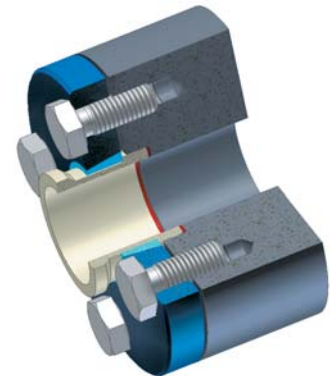
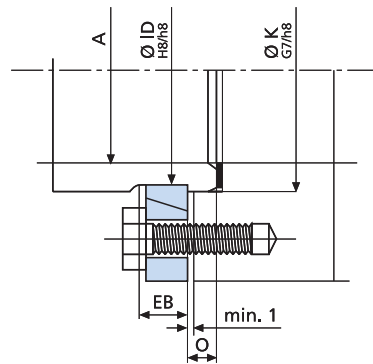
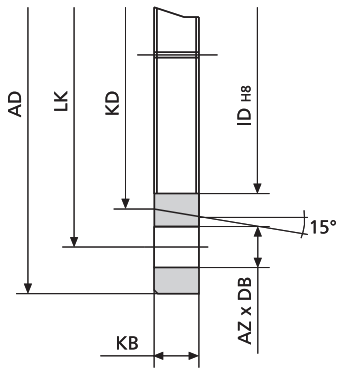
# HWA2 DN 100-300

for two flow of a medium  
designed for rotating inner pipe



| DN                 | 100        | 125        | 150        | 200        | 300        |
|--------------------|------------|------------|------------|------------|------------|
| Type               | HWA 2100 K | HWA 2125 K | HWA 2150 K | HWA 2200 K | HWA 2300 K |
| Order-No.          | 1108890    | 1104002    | 1104102    | 1104202    | 1104402    |
| <b>Ø A</b>         | 98         | 120        | 145        | 195        | 298        |
| <b>B</b>           | DN 80      | DN 100     | DN 125     | DN 150     | DN 250     |
| <b>C</b>           | DN 80      | DN 100     | DN 125     | DN 150     | DN 250     |
| <b>E</b>           | 815        | 928        | 1030       | 1286       | 1910       |
| <b>F</b>           | 328        | 360        | 394        | 498        | 708        |
| <b>G</b>           | 365        | 415        | 445        | 570        | 840        |
| <b>H</b>           | 20         | 20         | 25         | 25         | 35         |
| <b>Ø J</b>         | 268        | 319        | 346        | 420        | 595        |
| <b>Ø K G7/h8</b>   | 114        | 150        | 180        | 230        | 350        |
| <b>L</b>           | 152        | 183        | 210        | 265        | 385        |
| <b>M</b>           | 210        | 250        | 258        | 304        | 486        |
| <b>N</b>           | 360        | 410        | 413        | 593        | 853        |
| <b>O</b>           | 30         | 35         | 40         | 45         | 60         |
| <b>P</b>           | 388        | 450        | 502        | 638        | 977        |
| <b>R</b>           | 250        | 300        | 350        | 400        | 700        |
| <b>Ø S</b>         | 25         | 25         | 40         | 40         | 50         |
| <b>T</b>           | 20         | 20         | 25         | 25         | 40         |
| <b>Ø W G7/e8</b>   | 75         | 88         | 110        | 135        | 215        |
| <b>X</b>           | 80         | 80         | 80         | 100        | 150        |
| <b>Z</b>           | 528        | 592        | 635        | 808        | 1169       |
| <b>SH</b>          | 31         | 31         | 46         | 46         | 58         |
| <b>TA</b>          | 117        | 206        | 245        | 305        | 435        |
| <b>Weight (kg)</b> |            |            |            |            |            |

# Journal Flanges for K Rotor Connection



| DN  | K-flange   | Order-No.   | Inner ring | Order-No.   | Flat pack.<br>Order-No. | Ø A | Ø AD | Ø LK  | AZ x<br>Ø DB | Ø KD | Ø ID<br>H8/h8 | KB | Ø K<br>G7/h8 | O    | EB |
|-----|------------|-------------|------------|-------------|-------------------------|-----|------|-------|--------------|------|---------------|----|--------------|------|----|
| 10  | KF 10-0    | 1190430     | IR 10-0    | 1190400     | 3512230                 | 10  | 55   | 40    | 4x7          | 20   | 17            | 10 | 18           | 6    | 11 |
| 15  | KF 15-0    | 1190431     | IR 15-0    | 1190401     | 3512231                 | 13  | 70   | 50    | 4x9          | 26   | 22            | 10 | 24           | 6    | 11 |
| 20  | KF 20-0    | 1190432     | IR 20-0    | 1190402     | 3512232                 | 20  | 75   | 55    | 4x9          | 32   | 28            | 12 | 30           | 8    | 13 |
| 25  | KF 25-0    | 1190433     | IR 25-0    | 1190403     | 3512233                 | 25  | 80   | 60    | 4x9          | 37   | 33            | 12 | 35           | 8    | 13 |
| 32  | KF 32-0    | 1190434     | IR 32-0    | 1190404     | 3512234                 | 32  | 100  | 75    | 4x11         | 48   | 43            | 12 | 45           | 8    | 13 |
| 32  | KF 32-500  | 1190434-500 | IR 32-500  | 1190404-500 | 3512234                 | 32  | 115  | 90    | 4x11         | 48   | 43            | 15 | 45           | 15   | 16 |
| 40  | KF 40-0    | 1190435     | IR 40-0    | 1190405     | 3512235                 | 38  | 105  | 80    | 4x11         | 53   | 48            | 15 | 50           | 10   | 16 |
| 40  | KF 40-500  | 1190435-500 | IR 40-500  | 1190405-500 | 3512235                 | 38  | 120  | 95    | 4x11         | 53   | 48            | 18 | 50           | 20   | 20 |
| 50  | KF 50-0    | 1190436     | IR 50-0    | 1190406     | 3512236                 | 50  | 130  | 100   | 4x14         | 69   | 63            | 15 | 65           | 10   | 16 |
| 50  | KF 50-500  | 1190436-500 | IR 50-500  | 1190406-500 | 3512236                 | 50  | 145  | 115   | 4x14         | 69   | 63            | 20 | 65           | 25   | 22 |
| 65  | KF 65-0    | 1190437     | IR 65-0    | 1190407     | 3512237                 | 66  | 150  | 120   | 4x14         | 89   | 82            | 15 | 85           | 10   | 16 |
| 65  | KF 65-500  | 1190437-500 | IR 65-500  | 1190407-500 | 3512237                 | 66  | 165  | 135   | 4x14         | 89   | 82            | 25 | 85           | 25   | 28 |
| 65  | KF 65-37   | 1190437-037 | IR 65-0    | 1190407     | 3512237                 | 66  | 150  | 120   | 6x14         | 89   | 82            | 15 | 85           | 25   | 28 |
| 75  | KF 75-0    | 1190440     | IR 75-0    | 1190420     | 1190191-058             | 67  | 203  | 171,5 | 5x17,5       | 89   | 84,2          | 31 | 87,29        | 22,2 |    |
| 80  | KF 80-0    | 1190438     | IR 80-0    | 1190408     | 3512238                 | 81  | 180  | 145   | 4x18         | 109  | 102           | 18 | 105          | 12   | 20 |
| 80  | KF 80-500  | 1190438-500 | IR 80-500  | 1190408-500 | 3512238                 | 81  | 205  | 170   | 4x18         | 109  | 102           | 30 | 105          | 30   | 34 |
| 100 | KF 100-0   | 1190439     | IR 100-0   | 1190409     | 3512239                 | 98  | 195  | 160   | 6x18         | 120  | 110           | 20 | 114          | 12   | 22 |
| 100 | KF 100-500 | 1190439-500 | IR 100-500 | 1190409-500 | 3512239                 | 98  | 220  | 185   | 6x18         | 120  | 110           | 30 | 114          | 30   | 34 |
| 125 | KF 125-0   | 1190450     | IR 125-0   | 1190410     | 1190025                 | 120 | 225  | 190   | 6x18         | 147  | 137           | 22 | 142          | 20   | 25 |
| 125 | KF 125-500 | 1190450-500 | IR 125-500 | 1190410-500 | 1190035                 | 120 | 260  | 225   | 8x18         | 155  | 145           | 35 | 150          | 35   | 39 |
| 150 | KF 150-0   | 1190451     | IR 150-0   | 1190411     | 1190026                 | 145 | 255  | 220   | 8x18         | 178  | 165           | 25 | 170          | 25   | 28 |
| 150 | KF 150-500 | 1190451-500 | IR 150-500 | 1190411-500 | 1190036                 | 145 | 300  | 260   | 8x18         | 185  | 175           | 40 | 180          | 40   | 44 |
| 200 | KF 200-0   | 1190452     | IR 200-0   | 1190412     | 1190027                 | 195 | 310  | 275   | 8x18         | 232  | 220           | 28 | 225          | 30   | 32 |
| 200 | KF 200-500 | 1190452-500 | IR 200-500 | 1190412-500 | 1190037                 | 195 | 360  | 320   | 8x18         | 235  | 224           | 45 | 230          | 45   | 49 |
| 250 | KF 250-0   | 1190453     | IR 250-0   | 1190413     | 1190028                 | 240 | 390  | 350   | 8x23         | 290  | 273           | 37 | 280          | 35   | 40 |
| 250 | KF 250-500 | 1190453-500 | IR 250-500 | 1190413-500 | 1190038                 | 240 | 435  | 390   | 8x23         | 295  | 278           | 50 | 285          | 50   | 54 |
| 300 | KF 300-0   | 1190454     | IR 300-0   | 1190414     | 1190029                 | 295 | 470  | 410   | 16x23        | 350  | 332           | 42 | 340          | 40   | 45 |

## Versions KF...-0 and IR...-0:

|                     |             |
|---------------------|-------------|
| DX/DXS              | DN 10 – 80  |
| DXSB                | DN 50 – 80  |
| DP                  | DN 40 – 100 |
| H/HW                | DN 15 – 100 |
| HWB/A) <sup>1</sup> | DN 32 – 100 |
| M                   | DN 15 – 100 |
| DA                  | DN 50 – 300 |

## Versions KF...-500 and IR...-500:

|      |              |
|------|--------------|
| DXSB | DN 100 – 150 |
| HWA  | DN 100 – 300 |
| DQ   | DN 25 – 150  |

It is important to evenly tighten the screws.

)<sup>1</sup> KF65-0 only up to 210°C, 20 bar or 300°C, 10 bar.  
For higher data use KF 65-37.

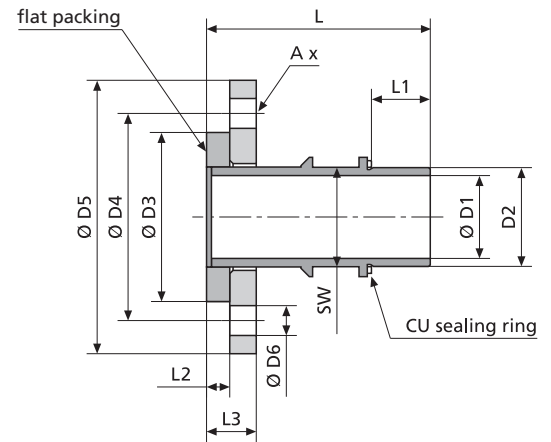
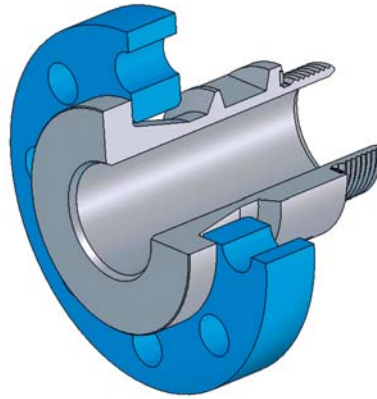
# Loose Flanges for Housing Connection

## Sealing with sealing rings

The flanges consist of a threaded piece with male thread ISO 228, welded to a welded neck with loose flange DIN 2656 (PN 40).

Sealing between flange and rotary joint housing by means of a copper sealing ring.

Suitable for HWA, HWB and HWX.



Dimension table for screw-in flanges rated pressure PN 40

| DN  | L   | L1   | L2 | L3 | D1   | D2        | D3  | D4  | D5  | A | D6 | SW  | Order No. Screw-in flange | Order No. CU sealing ring / flat packing | Order No. Flat packing |
|-----|-----|------|----|----|------|-----------|-----|-----|-----|---|----|-----|---------------------------|--|------------------------|
| 25  | 112 | 20,5 | 14 | 32 | 23,3 | G 1 A     | 68  | 85  | 115 | 4 | 14 | 36  | 1190203-101               | 3502111-001                              | 3512266                |
| 32  | 116 | 22,5 | 14 | 32 | 32   | G 1 1/4 A | 78  | 100 | 140 | 4 | 18 | 46  | 1190204-101               | 3502117-001                              | 3512267                |
| 40  | 120 | 24,5 | 14 | 32 | 38,3 | G 1 1/2 A | 88  | 110 | 150 | 4 | 18 | 50  | 1190205-101               | 3502118-001                              | 3512268                |
| 50  | 128 | 29,0 | 16 | 36 | 50   | G 2 A     | 102 | 125 | 165 | 4 | 18 | 60  | 1190206-101               | 3502121-010                              | 3512269                |
| 65  | 135 | 32,0 | 16 | 36 | 64   | G 2 1/2 A | 122 | 145 | 185 | 8 | 18 | 75  | 1190207-101               | 3502124-010                              | 3512270                |
| 80  | 158 | 33,5 | 18 | 40 | 77   | G 3 A     | 138 | 160 | 200 | 8 | 18 | 90  | 1190208-101               | 3502125-010                              | 3512271                |
| 100 | 180 | 38   | 20 | 42 | 98   | G 4 A     | 162 | 190 | 235 | 8 | 22 | 110 | 1190209-101               | 3502108-010                              | 3512272                |

### Maximum application data (pressure reduction factor at higher operating temperatures considered):

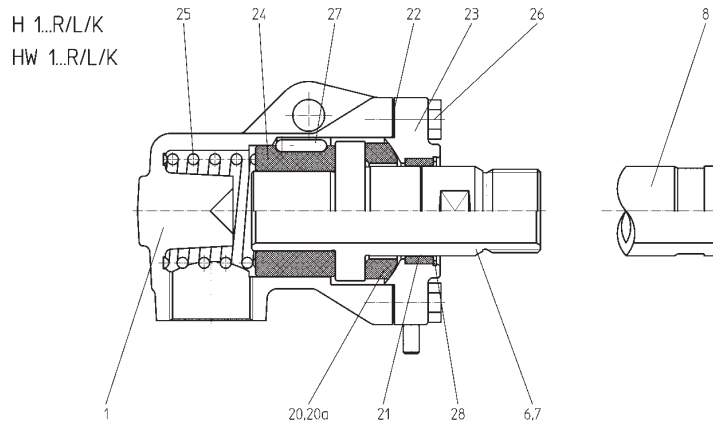
- water 28 bar and 230°C
- thermal oil 10 bar and 300°C

Please order a flat packing for the connection flange, if required.

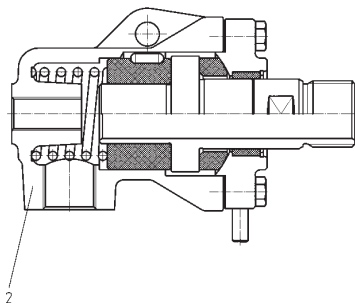
Material: steel, lacquered.  
Special stainless steel version available upon request.

# Spare parts for types H / HW – DN 15-100

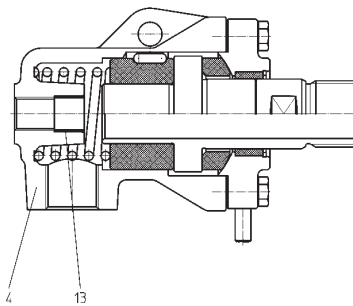
## Spare parts H1 + HW1, H2 + HW2, HR2 + HWR2, H3



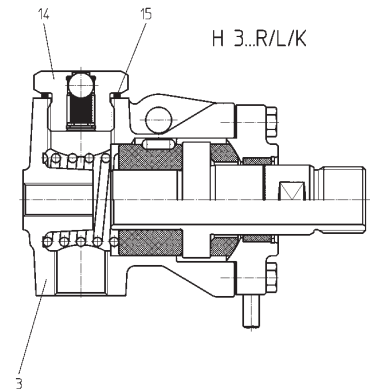
H 2...R/L/K  
HW 2...R/L/K



HR 2...R/L/K  
HWR 2...R/L/K



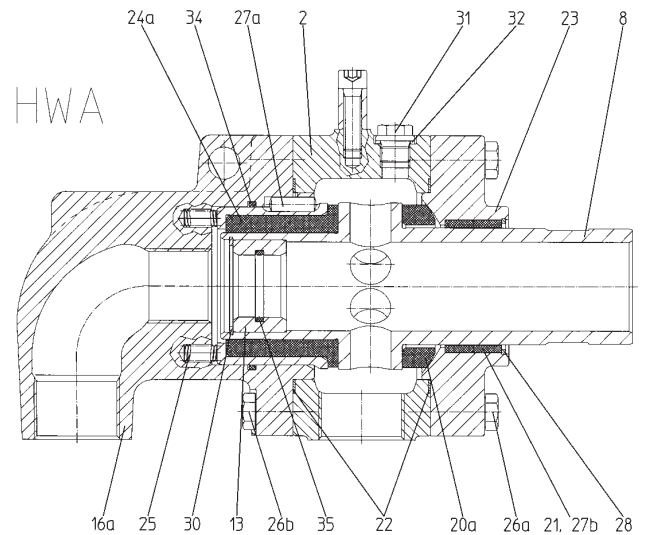
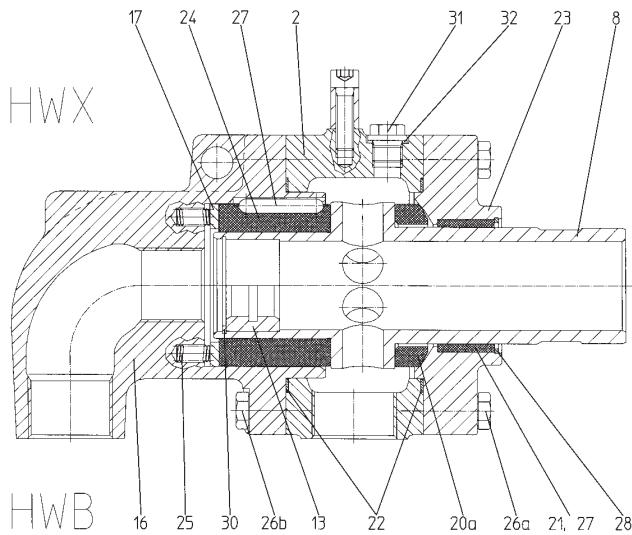
H 3...R/L/K



| 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 R2          | 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 x    | 3510502 | 3510504 | 3510506 | 3510501 | 3510509 | 3510512 | 3510514 | 3510514 | 3510523 |
| 14 Vacuum valve       | -       | -       | 1190020 | 1190020 | 1190020 | -       | -       | -       | -       |
| 15 CU seal            | -       | -       | 3511962 | 3511962 | 3511962 | -       | -       | -       | -       |
| 20 Sealing 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 | -       | -       |
| 22 Flat packing       | 3512001 | 3512002 | 3512003 | 3512004 | 3512005 | 3512006 | 3512007 | 3512016 | 3512017 |
| 23 Cover compl.       | 1108059 | 1108139 | 1108221 | 1108361 | 1108461 | 1108559 | 1108653 | 1108759 | 1108858 |
| 24 Carbon bearing     | 3511341 | 3511342 | 3511343 | 3511344 | 3511345 | 3511346 | 3511347 | 3511348 | 3511349 |
| 25 Compression spring | 3511616 | 3511617 | 3511618 | 3511619 | 3511620 | 3511621 | 3511622 | 3511626 | 3511627 |
| 26 Hexagon 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 |

Please specify exact type designation when inquiring or ordering!

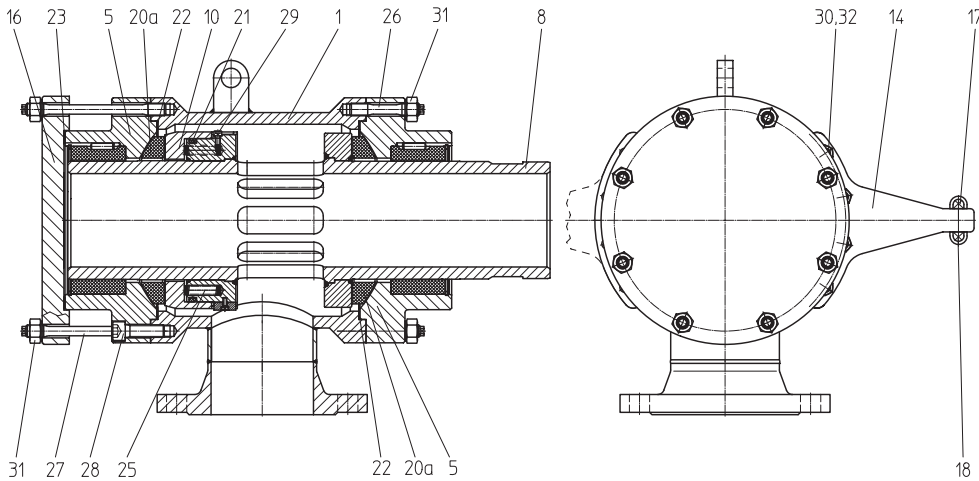
# Spare parts for types HWX2 / HWB2 / HWA2 – DN 32-100



| DN                       | 32             | 40             | 50             | 65             | 75             | 80             | 100            |
|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 2 Housing                | 1103400        | 1103500        | 1103582        | 1103700        | 1103810        | 1103810        | 1103930        |
| 8 Rotor                  | 1103404        | 1103504        | 1103587        | 1103704        | 1103752        | 1103814        | 1103934        |
| 13 Bushing               | 1103387-417    | 1103481-365    | 1103581-428    | 1103651-397    | 1103755-054    | 1103787-446    | 1103888-552    |
| 16 Elbow B2, X2          | 1103409        | 1103509        | 1103594        | 1103709        | 1103757        | 1103819        | 1103939        |
| 16a Elbow A2             | 1103410        | 1103510        | 1103595        | 1103710        | 1103758        | 1103820        | 1103940        |
| 17 Thrust washer         | 1103392-432    | 1103492-377    | 1103613-441    | 1103746-419    | 1103792-463    | 1103792-463    | 1103921-570    |
| 20a Sealing ring W       | 3510644        | 3510645        | 3510646        | 3510647        | 3510648        | 3510648        | 3510649        |
| 21 Cover bushing         | 3510604        | 3510605        | 3510606        | 3510607        | 3511348        | 3511348        | 3511349        |
| 22 Gasket                | 1114193-059    | 1103799-419    | 3512013        | 3512018        | 1110669-063    | 1110669-063    | 3512355-071    |
| 23 Cover compl.          | 1103407        | 1103507        | 1103592        | 1103707        | 1103817        | 1103817        | 1103937        |
| 24 Carbon bushing B2, X2 | 3511344        | 3511345        | 3511346        | 3511347        | 3511348        | 3511348        | 3511349        |
| 24a Carbon bushing A2    | 3511344-421    | 3511345-362    | 3511346-426    | 3511347-398    | 3511348-449    | 3511348-449    | 3511349-549    |
| 25 Compression spring    | 5x 3511668-001 | 6x 3511668-001 | 8x 3511668-001 | 4x 3511564     | 8x 3511564     | 8x 3511564     | 12x 3511564    |
| 26a Hexagon screw 1      | 8x 3500123-008 | 8x 3500124-008 | 8x 3500166-008 | 8x 3500163     | 8x 3500197     | 8x 3500197     | 8x 3500197     |
| 26b Hexagon screw 2      | 8x 3500125     | 8x 3500123-008 | 8x 3500165     | 8x 3500163     | 8x 3500197     | 8x 3500197     | 8x 3500197     |
| 27 Locking pin B2, X2    | 1x 3500933     | 1x 3500933     | 1x 3500934     | 1x 3500934     | 2x 3500934     | 2x 3500934     | 2x 3500934     |
| 27a Locking pin 1 A2     | 3500951-001    | 3500933        | 3500889-001    | 3500961-001    | 3500961-001    | 3500961-001    | 3500934        |
| 27b Locking pin 2 A2     | –              | –              | –              | –              | 3500934        | 3500934        | 3500934        |
| 28 Circlip               | 3500703        | 3500704        | 3500705        | 3500706        | 3501237-001    | 3501237-001    | 3501043        |
| 30 Circlip               | 3501234        | 3501225        | 3501232        | 3501236        | 3501205        | 3501205        | 3501251        |
| 31 Screw plug            | 3x 3500657     | 3x 3500658-007 | 3x3500658-007  | 3x 3500655-007 | 3x 3500655-007 | 3x 3500655-007 | 3x 3500655-007 |
| 32 Sealing ring          | 3x 3502114-001 | 3x 3502116-001 | 3x 3502116-001 | 3x3502115-001  | 3x 3502115-001 | 3x 3502115-001 | 3x 3502115-001 |
| 34 O-ring                | 3511701        | 3511708        | 3511694        | 3511692        | 3511702        | 3511702        | 3512515        |
| 35 O-ring                | 3511955        | 3511824        | 3511733        | 3511931        | 3511734        | 3511816        | 3511825        |

Please specify exact type designation when inquiring or ordering!

# Spare parts for type HW1 – DN 125-300

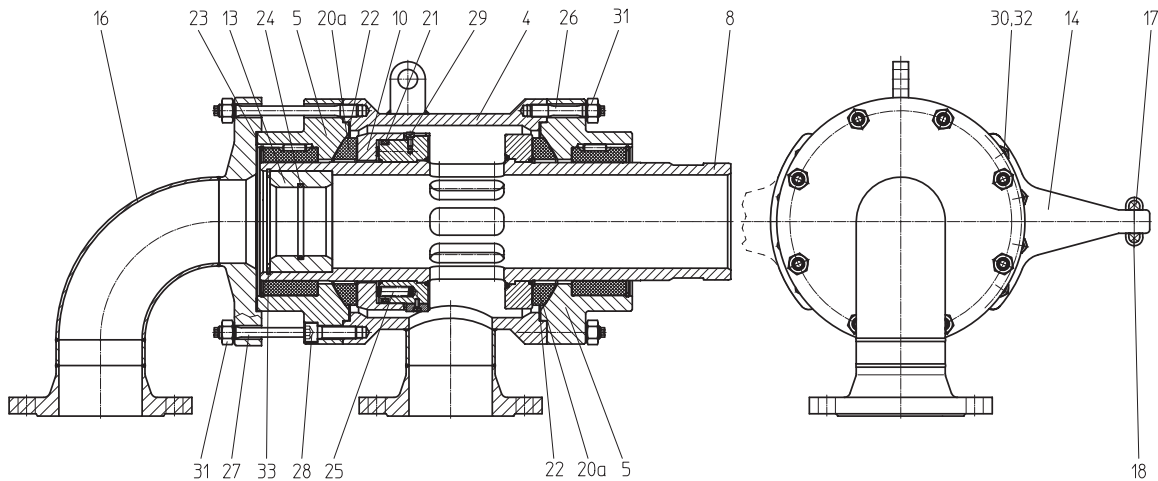


| DN                      | 125            | 150            | 200             | 300             |
|-------------------------|----------------|----------------|-----------------|-----------------|
| 1 Housing 1             | 1104025-240    | 1104125-210    | 1104225-164     | 1104425-132     |
| 5 Cover compl. (2x)     | 1104030-200    | 1104130-184    | 1104230-129     | 1104430-040     |
| 8 Rotor K compl.        | 1104054-242    | 1104154-212    | 1104254-166     | 1104454-134     |
| 10 Butting ring         | 1104061-221    | 1104161-199    | 1104261-156     | 1104461-116     |
| 14 Anti-rotation device | 1104074-231    | 1104174-209    | 1104274-163     | 1104447-137     |
| 16 Cover 1              | 1104045-244    | 1104145-214    | 1104245-168     | 1104445-136     |
| 17 Contact bolt 1       | 1103899-578    | 1104124-205    | 1104124-205     | 1104424-104     |
| 18 Contact bolt 2       | 1103899-579    | 1104124-206    | 1104124-206     | 1104424-106     |
| 20a Sealing ring W      | 3511353        | 3511354        | 3511355         | 3511357         |
| 21 O-ring               | 3512512-015    | 3512517-015    | 3511751-015     | 3512518-015     |
| 22 Gasket               | 1104075-185    | 1104175-178    | 1104275-105     | 3512022         |
| 23 Gasket               | 1190037        | 1104075-185    | 1105695-050     | 3512023-063     |
| 25 Compression spring   | 16x 3511564    | 18x 3511564    | 26x 3511532     | 28x 3511457     |
| 26 Screw 1              | 8x 3500236     | 8x 3500236     | 16x 3500200-008 | 16x 3500248-002 |
| 27 Screw 2              | 8x 3500244-007 | 8x 3500432-007 | 16x 3500435-007 | 16x 3500436-007 |
| 28 Cyl. head screw      | 2x 3500410     | 2x 3500410     | 2x 3500410      | 2x 3500444      |
| 29 Cyl. head screw      | 2x 3500329-003 | 2x 3500433-003 | 2x 3500376-003  | 2x 3500376-003  |
| 30 Hexagon Screw        | 4x 3500162-008 | 4x 3500434-008 | 4x 3500434-008  | 4x 3500248-002  |
| 31 Hexagon nut          | 16x 3500300    | 16x 3500300    | 16x 3500300     | 16x 3500304     |
| 32 Hexagon nut          | 4x 3500285-008 | 4x 3500287-008 | 4x 3500287-008  | 4x 3500304      |

Please specify exact type designation when inquiring or ordering!

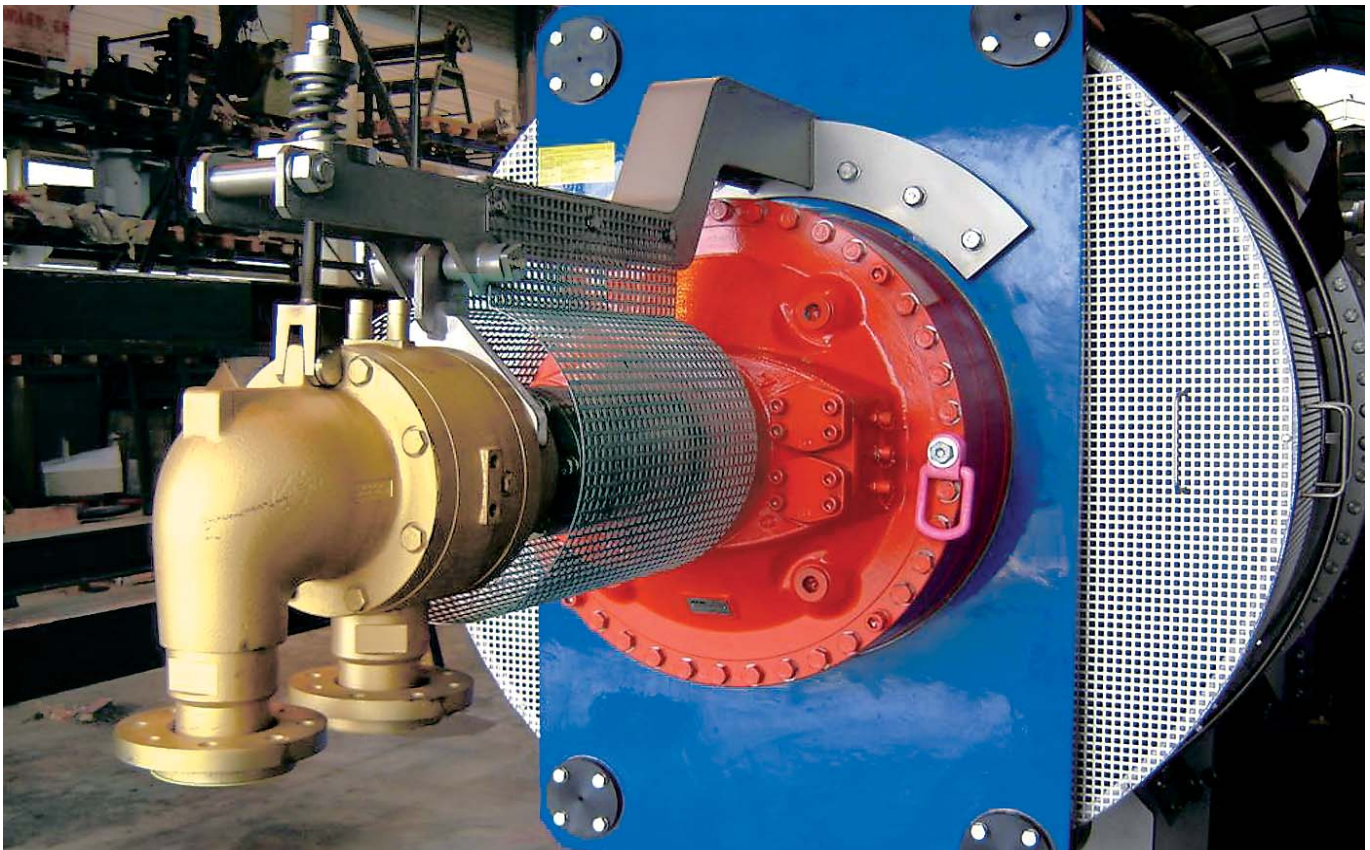
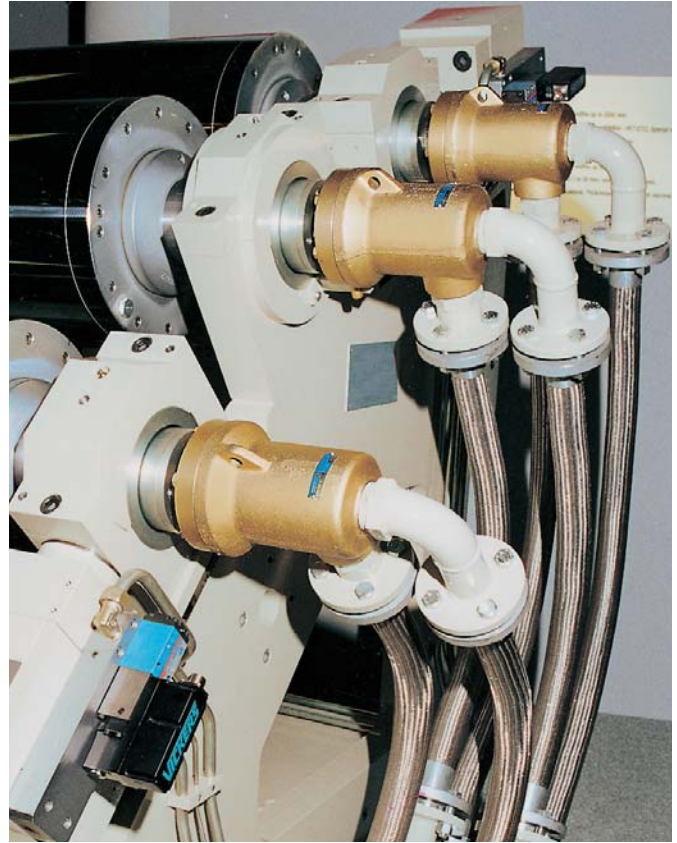
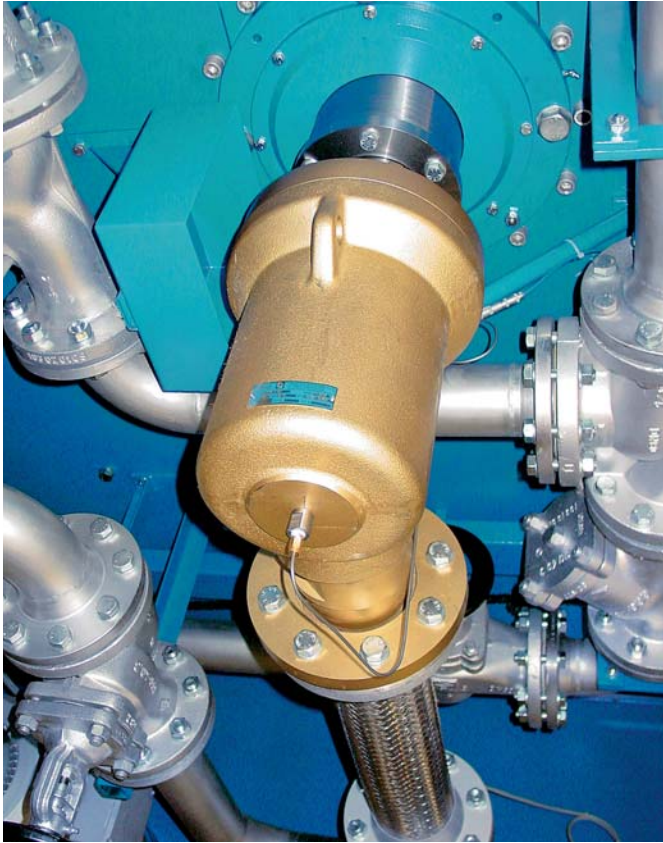


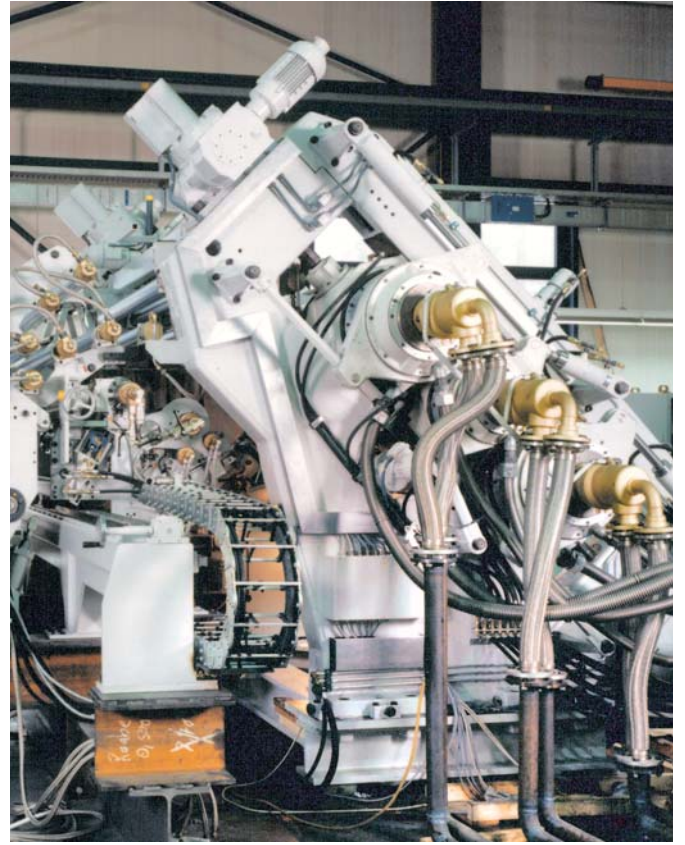
# Spare parts for type HWA2 – DN 100-300



| DN                      | 100             | 125            | 150            | 200             | 300             |
|-------------------------|-----------------|----------------|----------------|-----------------|-----------------|
| 4 Housing 2             | 1103877-532     | 1104025-245    | 1104125-201    | 1104225-159     | 1104425-110     |
| 5 Cover compl. (2x)     | 1103879-541     | 1104030-200    | 1104130-184    | 1104230-129     | 1104430-040     |
| 8 Rotor K compl.        | 1103884-534     | 1104055-217    | 1104155-175    | 1104255-155     | 1104455-112     |
| 10 Butting ring         | 1103896-539     | 1104061-221    | 1104161-199    | 1104261-156     | 1104461-116     |
| 13 Rotor bushing        | 1103888-540     | 1104059-214    | 1104129-208    | 1104248-157     | 1104446-117     |
| 14 Anti-rotation device | 1103924-542     | 1104074-231    | 1104174-209    | 1104274-163     | 1104447-137     |
| 16 Elbow A2             | 1103906-536     | 1104051-224    | 1104151-197    | 1104251-160     | 1104451-108     |
| 17 Contact bolt 1       | 1103899-578     | 1103899-578    | 1104124-205    | 1104124-205     | 1104424-104     |
| 18 Contact bolt 2       | 1103899-579     | 1103899-579    | 1104124-206    | 1104124-206     | 1104424-106     |
| 20a Sealing ring W      | 3510649         | 3511353        | 3511354        | 3511355         | 3511357         |
| 21 O-ring               | 3511703-015     | 3512512-015    | 3512517-015    | 3511751-015     | 3512518-015     |
| 22 Gasket               | 1103909-335     | 1104075-185    | 1104175-178    | 1104275-105     | 3512022         |
| 23 Gasket               | 1110518-113     | 1190037        | 1104075-185    | 1105695-050     | 3512023-063     |
| 24 O-ring               | 3511855         | 3511826        | 3511692        | 3511873         | 3512519         |
| 25 Compression spring   | 12x 3511564     | 16x 3511564    | 18x 3511564    | 26x 3511532     | 28x 3511457     |
| 26 Screw 1              | 16x 3500196-007 | 8x 3500236     | 8x 3500236     | 16x 3500200-008 | 16x 3500248-002 |
| 27 Screw 2              | 16x 3500209-007 | 8x 3500244-007 | 8x 3500432-007 | 16x 3500435-007 | 16x 3500436-007 |
| 28 Cyl. head screw      | 2x 3500428      | 2x 3500410     | 2x 3500410     | 2x 3500410      | 2x 3500444      |
| 29 Cyl. head screw      | 2x 3500329-003  | 2x 3500329-003 | 2x 3500433-003 | 2x 3500376-003  | 2x 3500376-003  |
| 30 Hexagon screw        | 4x 3500162-008  | 4x 3500162-008 | 4x 3500434-008 | 4x 3500434-008  | 4x 3500248-002  |
| 31 Hexagon nut          | –               | 16x 3500300    | 16x 3500300    | 16x 3500300     | 16x 3500304     |
| 32 Hexagon nut          | 4x 3500285-008  | 4x 3500285-008 | 4x 3500287-008 | 4x 3500287-008  | 4x 3500304      |
| 33 Circlip              | 3501251         | 3501252-001    | 3501237-001    | 3501231         | 3501264         |

Please specify exact type designation when inquiring or ordering!







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