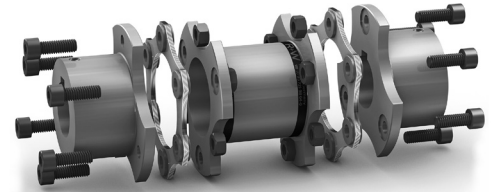



INSTALLATION AND OPERATING INSTRUCTIONS FOR R+W DISC PACK COUPLINGS: SERIES LP



GENERAL INFORMATION

The installation and operating instructions are important to successful use of R+W disc pack couplings. The document includes critical information regarding proper installation, operation, and maintenance. Please thoroughly read this document. Installation should only be performed by qualified personnel. Disc pack couplings should only be operated within the technical specifications. Additional information can be found in the product catalog LP.

 **This installation and operating instruction manual is not valid for ATEX requirements.**

SAFETY ALERT

Rotating couplings can be very dangerous. Proper guarding should be in place at all times and is the responsibility of the machine builder, user, or operator. Do not approach or touch a

coupling while it is rotating. Make sure the machine is "locked out" and cannot be accidentally started during installation or maintenance of the coupling.



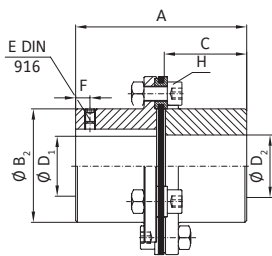
Please pay attention to important notes / Safety warning

MANUFACTURER'S DECLARATION

According to EG guidelines for machinery 2006/42/EG, Appendix IIB.

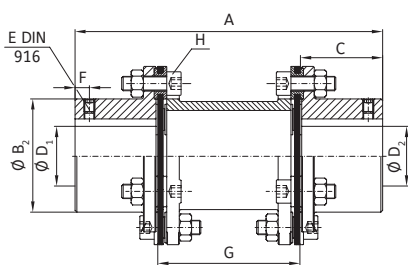
As per machinery guidelines (MR), shaft couplings are not considered machines, but rather components for installation in a machine. Their putting into operation is subject to the fulfillment of all requirements of machinery regulations by or after integration into the final product.

MODELS WITH PARTS LIST



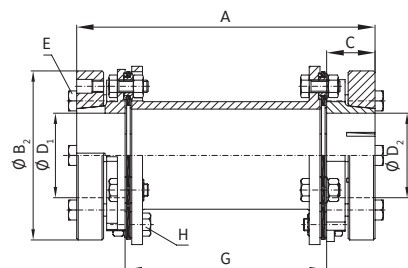
MODEL LP1

| | |
|-------------------------|------------|
| 2x Hub with keyway | 6x Bushing |
| 6x Screw (ISO 4762) | 6x Ring |
| 6x Nut (ISO 4032) | Disc pack |
| 2x Set screw (ISO 4029) | |



MODEL LP2

| | |
|------------------------|-------------------------|
| 2x Hub with keyway | 2x Set screw (ISO 4029) |
| 1x Intermediate spacer | 12x Bushing |
| 12x Screw (ISO 4762) | 12x Ring |
| 12x Nut (ISO 4032) | Disc pack |



MODLL LP3

| | |
|------------------------------|----------------------|
| 2x LP3 Conical clamping hub | 12x Nut (DIN 4032) |
| 2x LP3 Conical clamping ring | 12x Bushing |
| 1x Intermediate spacer | 12x Ring |
| 12x Screw (ISO 4017) | 12x Screw (ISO 4017) |
| Disc pack | |

FUNCTION

R+W disc pack couplings are supplied pre-assembled. On request the couplings can also be delivered unassembled. Their purpose is to compensate for shaft misalignment (axial / lateral / angular) while transmitting rotary power. R+W disc pack couplings transmit torque across the disc pack assemblies purely by

friction, thus avoiding stress concentration, backlash, and micro-movements resulting from transmitting torque across the bolts (Grade 12.9). This aids in making the complete coupling assembly more torsionally stiff.

MOUNTING PREPARATION

The disc packs must not be flexed beyond their catalog rated misalignment values prior to or during installation or removal. Avoid any excessive force while mounting the coupling. All mounting surfaces including shafts, keys, bores, and keyways must be clean and free of burrs, nicks and dents. Inspect shaft diameters, coupling bore diameters, key, and keyway dimensions and tolerances. R+W disc pack coupling bores are machined to ISO tolerance H7. Clearances between shaft and

hub should be 0.01 - 0.05 mm. A light coating of machine oil is recommended to ease the mounting process and will not affect the clamping force of the hub.



Caution!

Do not use sliding grease or other oils and greases with molybdenum disulfide or other high pressure additives.

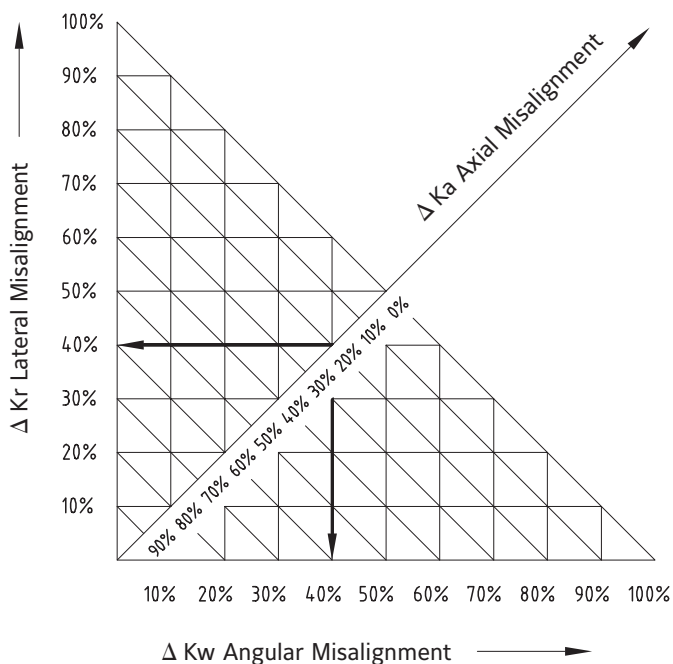
MAX. TRANSMITTABLE TORQUE/MISALIGNMENT VALUES

MODELS LP2 / LP3

| SIZE | | | 300 | 500 | 700 | 800 | 2000 | 2500 | 4000 | 5000 | 7000 | 8000 | 10000 | 12000 |
|--------------|----------|----------|-------|-------|------|------|------|------|------|-------|-------|-------|-------|-------|
| Rated torque | (Nm) | T_{KN} | 350 | 500 | 700 | 800 | 2000 | 2500 | 4500 | 5000 | 7600 | 8000 | 10000 | 12000 |
| Max. torque | (Nm) | T_{KN} | 700 | 1000 | 1400 | 1600 | 4000 | 5000 | 9000 | 10000 | 15200 | 16000 | 20000 | 24000 |
| axial ± | (mm) | | 1 | 1 | 1.5 | 1.5 | 2 | 2 | 2.5 | 2.5 | 2.5 | 2.5 | 3 | 3 |
| lateral ± | (mm) | | 0.8 | 0.8 | 1 | 1 | 1.4 | 1.4 | 1.4 | 1.5 | 1.6 | 1.6 | 2.2 | 2.2 |
| angular ± | (°) | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Speed | (1/min.) | | 10000 | 10000 | 8000 | 8000 | 6000 | 6000 | 5000 | 5000 | 4500 | 4500 | 4000 | 4000 |



Caution! The maximum torque value must not be exceeded. The maximum misalignment of the disc pack coupling must not exceed a total of 100%.



Prior to installation, the shaft misalignment must be measured. Each type of misalignment (axial / lateral / angular) must be calculated and checked against this chart.

Example LP 700:

Axial misalignment: 0.30mm → 20%
 Lateral misalignment: 0.40 mm → 40%
 Angular misalignment: 0.40° → 40%

Total misalignment = 20% + 40% + 40% = 100%

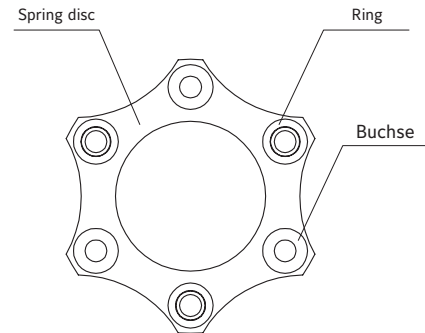
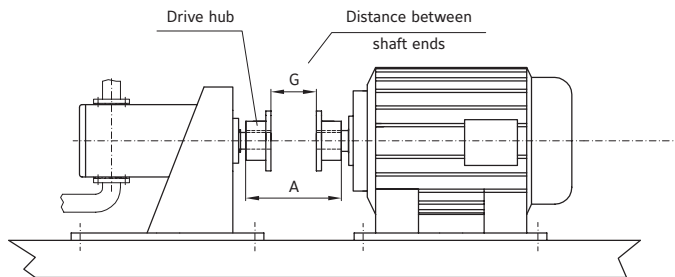
Result: The calculated present misalignment values can be compensated for by the coupling. The LP disc pack coupling can be installed.

$$\Delta K_{total} = \Delta K_r + \Delta K_w + \Delta K_a \leq 100\%$$

ASSEMBLY OF THE DISC PACK

If the R+W disc pack coupling is delivered unassembled, the following steps must be taken to ensure proper assembly. Delivery consists of 2 drive hubs, 1 or 2 disc pack sets, 6 or

12 assembly screws and nuts, and possibly an intermediate spacer.

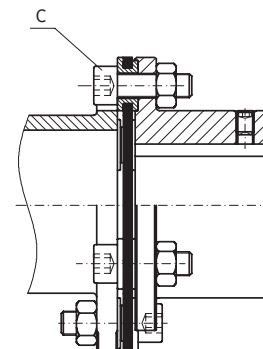
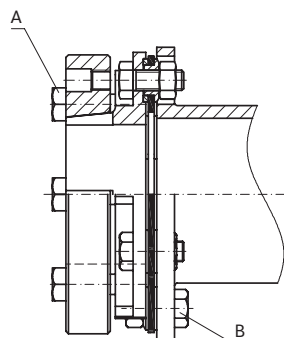


- 1 The connecting shafts and bores must be clean and free of nicks, burrs and dents. Clean the contact surfaces of the drive hubs, disc pack sets, assembly screws and nuts.
- 2 Slide the drive hubs onto their respective shafts. For easier installation, the drive hubs can be heated to 80 C.
- 3 Insert the disc packs, including space, as well as the bolt and nuts, and tighten until the disc pack bushings are seated in their pockets.
- 4 In a circular pattern (not crosswise) apply the bolt tightening torque in steps (30% / 60% / 100%).
- 5 Tighten the drive hub screws.

MODELS LP1 / LP2 / LP3

| SIZE | | 300 | 500 | 700 | 800 | 2000 | 2500 | 4000 | 5000 | 7000 | 8000 | 10000 | 12000 |
|--------------------------------------|---|-----|-----|-----|-----|------|------|------|------|------|------|-------|-------|
| LP3 Set screw (ISO 4017) | A | - | M8 | - | M10 | - | M12 | - | M12 | - | M20 | - | M20 |
| Tightening torque (Nm) | | - | 35 | - | 69 | - | 120 | - | 295 | - | 580 | - | 580 |
| LP3 Assembly screw (ISO 4017) | B | - | M8 | - | M10 | - | M16 | - | M20 | - | M24 | - | M24 |
| Tightening torque (Nm) | | - | 41 | - | 83 | - | 355 | - | 690 | - | 1200 | - | 1200 |
| LP1/2 Assembly screw (ISO 4762) | C | M8 | M8 | M10 | M10 | M16 | M16 | M20 | M20 | M24 | M24 | M24 | M24 |
| Tightening torque ¹⁾ (Nm) | | 35 | 40 | 65 | 70 | 245 | 260 | 510 | 515 | 860 | 795 | 860 | 1035 |

¹⁾ If MoS₂-grease is used on the screw head contact surface and the thread, the tightening torque can be reduced by 40%.



MAINTENANCE

The following inspection intervals are recommended for R+W disc pack couplings:

- ① Prior to commissioning: Check the assembly parameters (misalignment and tightening torques), and perform a visual inspection of the coupling to check for any abnormalities or deformation.
- ② Every 1100 hours or 3 months: Perform a visual inspection, check misalignment and tightening torques. Check for backlash or any kind of deformation.
- ③ If after the second inspection interval no irregularities or wear are discovered, the inspection interval can be extended to 4100 hours or 12 months.