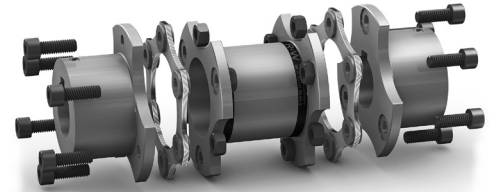



# INSTALLATION AND OPERATING INSTRUCTIONS FOR R+W DISC PACK COUPLINGS: SERIES LP



## 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.



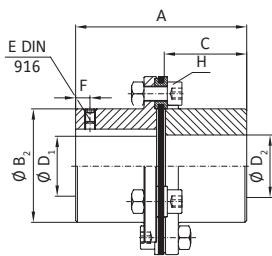
**Please pay attention to important notes / Safety warning**

### MANUFACTURER'S DECLARATION

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

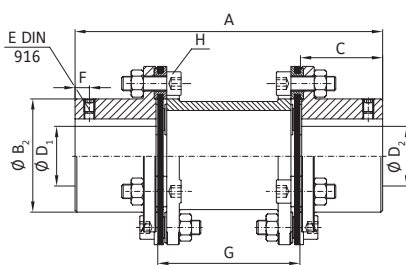
As per machinery guidelines (MR), shaft couplings are not considered machines, but rather components for installation in a machine. Their putting into operation is subject to the fulfillment of all requirements of machinery regulations by or after integration into the final product.

## MODELS WITH PARTS LIST



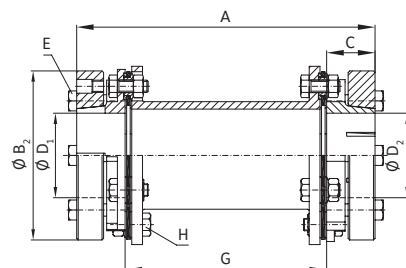
### MODEL LP1

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



### MODEL 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.

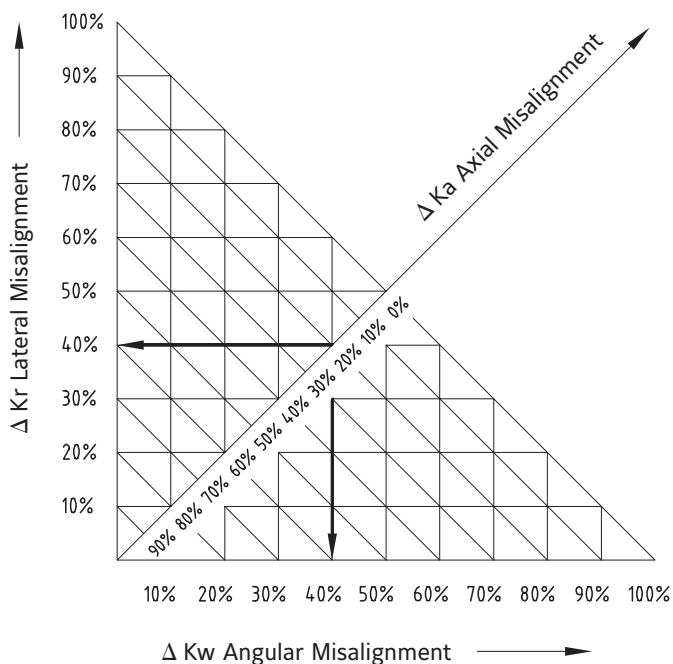
## MAX. TRANSMITTABLE TORQUE/MISALIGNMENT VALUES

### 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%

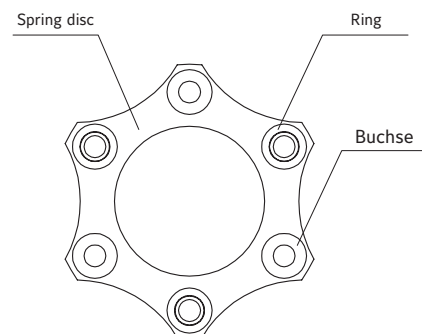
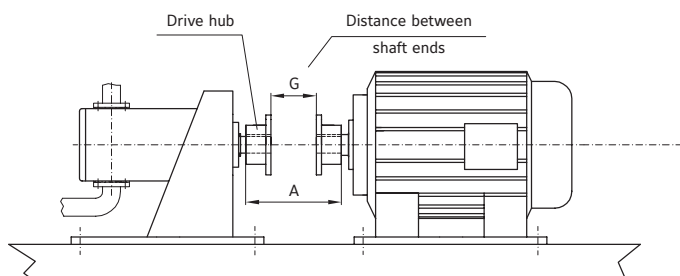
Result: The calculated present misalignment values can be compensated for by the coupling. The LP disc pack coupling can be installed.

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

## 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

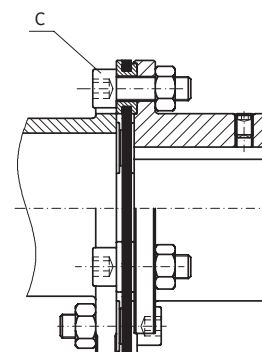
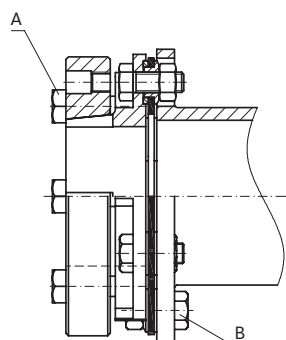
12 assembly screws and nuts, and possibly an intermediate spacer.



- 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	(Nm)	41	41	83	83	355	355	690	690	1200	1200	1200	1200



## MAINTENANCE

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**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.