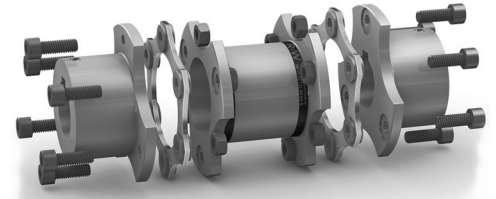



# INSTALLATION AND OPERATING INSTRUCTIONS FOR R+W DISC PACK COUPLINGS: SERIES LP



## 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.



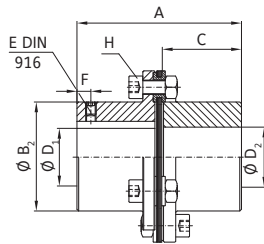
**Please pay attention to important notes / Safety warning**

### MANUFACTURER'S DECLARATION

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

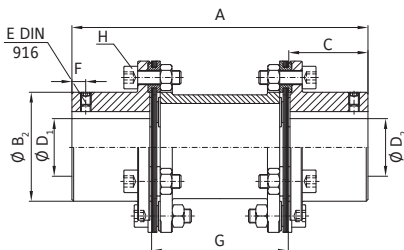
As per machinery guidelines (MR), shaft couplings are not considered machines, but rather components for installation in a machine. Their putting into operation is subject to the fulfillment of all requirements of machinery regulations by or after integration into the final product.

## MODELS WITH PARTS LIST



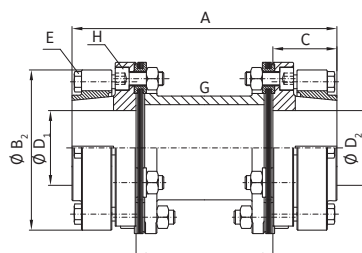
### MODEL LP1

2x LP Drive hub	6x Assembly nut (DIN 934)
6x LP Spring disc	2x Set screw (DIN 916)
6x Assembly screw (ISO 4762)	6x Bushing + ring



### MODEL LP2

2x LP Drive hub	12x Assembly nut (DIN 934)
1x Intermediate spacer	2x Set screw (DIN 916)
12x LP Spring disc	12x Bushing + ring
12x Assembly screw (ISO 4762)	



### MODEL LP3

2x LP3 Conical clamping hub	12x Assembly nut (DIN 934)
2x LP3 Conical clamping ring	2x Set screw (DIN 933)
1x Intermediate spacer	12x Bushing + ring
12x LP Spring disc	12x Clamping screw (ISO 4017)
12x Assembly screw (ISO 4762)	

## FUNCTION

R+W disc pack couplings are delivered pre-assembled as a standard, allowing for faster and simpler installation. The coupling can be delivered as individual components upon request. 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 shoulder bolts. 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.

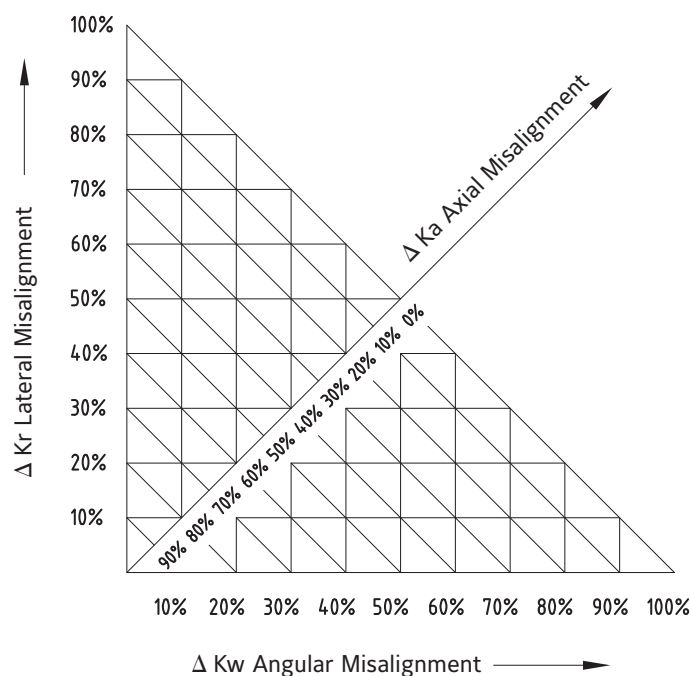
## MAX. TRANSMITTABLE TORQUE/MISALIGNMENT VALUES

### MODELS LP2 / LP3

SIZE			300		700		2000		4000		7000		10000	
Rated torque (Nm)	$T_{KN}$		350		700		2000		4500		7600		10000	
Max. torque (Nm)	$T_{KN}$		700		1400		4000		9000		15200		20000	
LP2 Coupling length (mm)	A		170	186	206	226	286	292	320	340	370	394	470	482
LP3 Coupling length (mm)	A		153		198		303		321		410		490	
axial ± (mm)			1		1.5		2		2.5		2.5		3	
lateral ± LP2 (mm)		Max. values	0.8	1	1	1.3	1.4	1.5	1.4	1.6	1.6	1.9	2.2	2.4
lateral ± LP3 (mm)			0.8		1		1.5		1.4		1.6		2.2	
angular ± (mm)			1°		1°		1°		1°		1°		1°	



**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: 0.45mm → 20%  
 Lateral misalignment: 0.40 mm → 40%  
 Angular misalignment: 0.25° → 40%

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

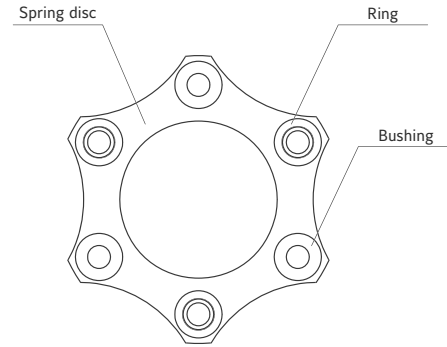
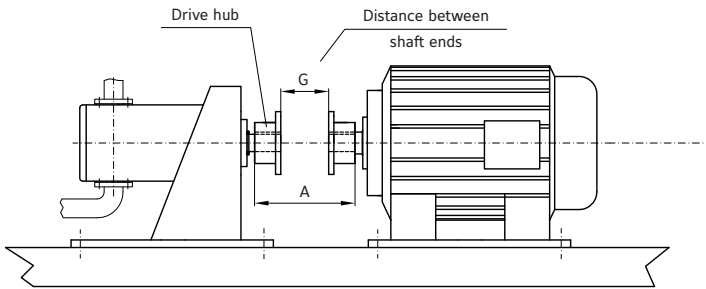
Result: The calculated present misalignment values can be compensated for by the coupling. The LP disc pack coupling can be installed.

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

## 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

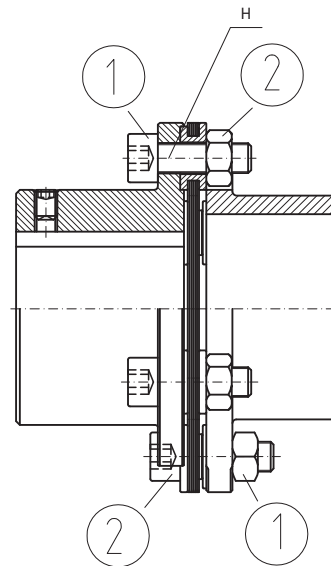
12 assembly screws and nuts, and possibly an intermediate spacer.



### MODELS LP2 / LP3

SIZE			300		700		2000		4000		7000		10000	
LP2 Coupling length	(mm)	A	170	186	206	226	286	292	320	340	370	394	470	482
LP2 DBSE	(mm)	G	80	96	96	116	136	142	140	160	170	194	220	232
LP3 Coupling length	(mm)	A	153		198		303		321		410		490	
LP3 DBSE	(mm)	G	79		100		161		137		170		220	

- 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 Check the table for the required DBSE based on the coupling length. Make axial adjustments if necessary.
- 4 Tighten the drive hub screws.
- 5 Position disc pack set and intermediate spacer between mounted drive hubs and insert assembly screws through disc pack set(s) so that the screw heads are optimally positioned on the drive hub side.
- 6 Tighten the assembly screws by hand.
- 7 Every assembly screw must be tightened to the specified torque value (see table) in multiple intervals. Ensure that screw heads (1), nuts, bushings and rings (2) are all optimally seated. Be careful that the screw and nut are counter-rotating during tightening process. This serves to avoid excessive torsional tension from being applied to the disc pack sets.



### SERIES LP

SIZE			300	700	2000	4000	7000	10000
Assembly screw (ISO 4762)	H		M8	M10	M16	M20	M24	M24
Assembly nut (DIN 934)								
Tightening torque	(Nm)		38	75	320	650	1000	1100

## INSTALLATION LP1 / LP2

### Mounting:

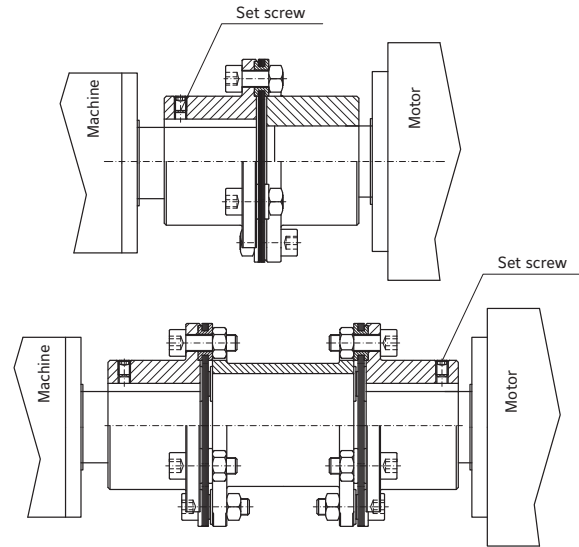
If pre-assembled, slide the disc pack coupling onto the first shaft. When the drive hub is correctly positioned axially, tighten the set screw (DIN 916). Insert the second shaft into the coupling. When the second drive hub is correctly positioned axially, tighten the set screw. For easier mounting, the drive hubs may be heated up to 80 C prior to installation.

### Dismounting:

Simply loosen the set screws and slide the coupling off the shaft, using proper tools if needed.



**Caution!** During the mounting or dismounting process, a large axial force can be exerted onto the disc packs if not properly installed. This force can reduce the service life of the coupling.



## INSTALLATION LP3

### Mounting:

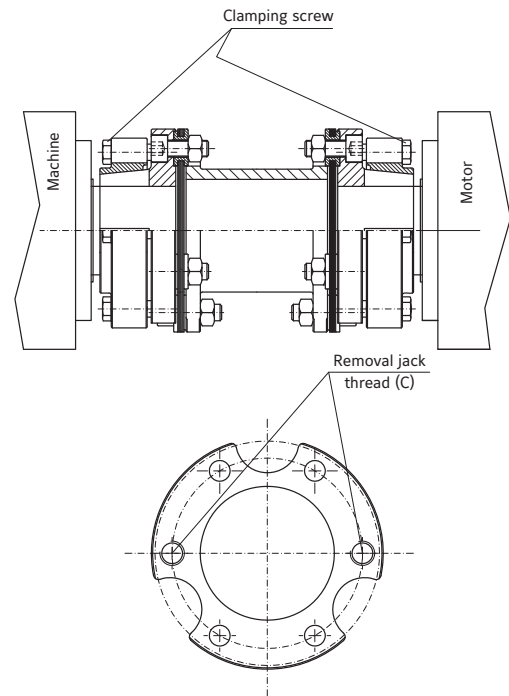
If pre-assembled, slide the disc pack coupling onto the first shaft. When the drive hub is correctly positioned axially, using a torque wrench, apply the specified tightening torque (see table) in intervals of 1/3, 2/3, and full torque to the clamping screws. Insert second shaft into the coupling and repeat the process.

### Dismounting:

Loosen all of the clamping screws. Completely remove 2-6 screws (at 60-180 degrees opposed). In the conical clamping ring, 2-6 holes serve a second purpose as removal jack threads (C). Tighten removal jack screws to against the base of the drive hub to remove the conical clamping ring. The coupling can now be removed from the shaft.



**Caution!** During the mounting or dismounting process, a large axial force can be exerted onto the disc packs if not properly installed. This force can reduce the service life of the coupling.



## ALIGNMENT / MAINTENANCE

R+W disc pack couplings are maintenance free. A visual check of the disc pack connection (screws and nuts) should occur during regular inspection intervals.

Should the R+W disc pack coupling be installed between a pump and a foot-mounted motor, special care must be taken to ensure proper alignment. Alignment should be verified using dial indicators or a laser kit.

