

Assembly rules for LM

The alignment of the couplings is the main aspect to be taken care of during the assembly phase in order to maximize not only the lifespan of the coupling but also that of the other components of the gearbox.

A precise alignment also allows the coupling to absorb any changes in position between the two shafts during operation, within the limits of the misalignment performance, as shown in the attached tables and also present in the catalog. This performance is only guaranteed if the alignment is within the tolerances detailed in these instructions.

1) Assembly steps

Proceed with the cold or hot keying of the two hubs according to the required hole tolerances. It is important that the internal surface of the flange is aligned with the end surface of the shaft head.

FIG1

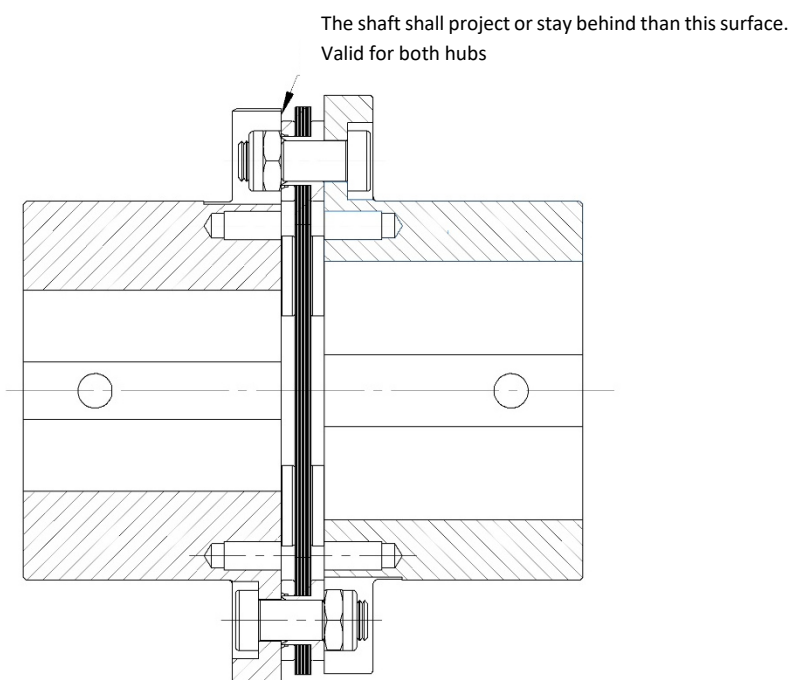


Fig.1

This way will allow you obtaining the correct measurement of the S value. Before assembling the disk pack, check, as shown in Figure 2, the alignment of the hub flanges in the radial direction, thus using a possibly metallic ruler, resting on the external diameter of the two hubs longer than the S value. This diameter is tolerated in order to serve as an accurate reference. The comparison operation must be followed on the 4 quadrants, every 90°. This operation is useful as a first check. In case of need for corrections to align the shafts correctly, it is advisable to mount the disk pack (see the Sections below) without fully tightening the nuts, so as not to force the shafts and not to deform the reeds. This ensures the rotation of the two shafts in synchrony and you can carry out the measurements during the manual rotation of the shafts.

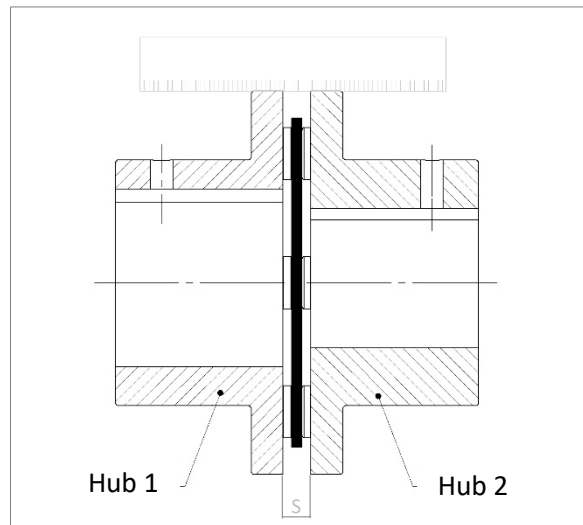


Fig.2

Then assembly the disk pack and tighten the screws. To carry out this operation, you must move the two machines to be coupled. The elements of the coupling are shown in the exploded view of Fig. 3

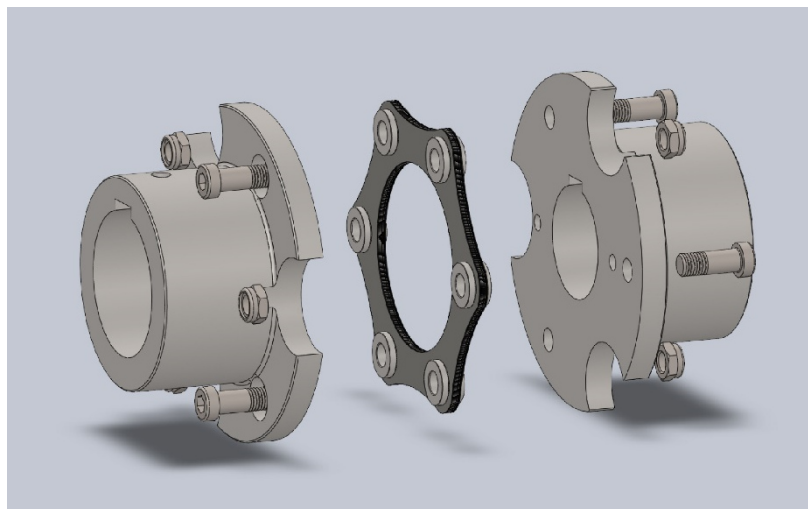


Fig.3

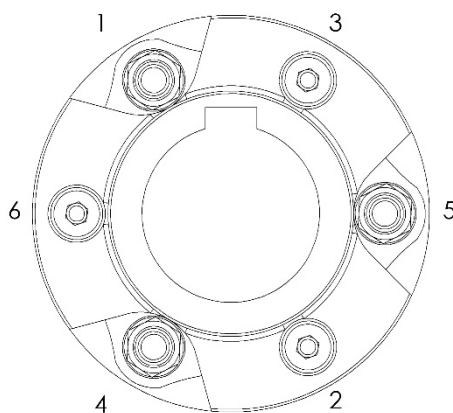
Refer to the table below for the value of the S dimension to be obtained at the end of the coupling assembly. The tolerance to be considered is 0/+0.5 for sizes from 12 to 1600 and 0/+ 1 for sizes from 2100 to 32000.

Values of the S dimension to be respected													
Size	12	18	32	72	120	180	280	430	590	704	910	1250	1600
S	8	8	10	12	13	14	15	22	24	25	28	32	32
Size	2100	2600	3700	5200	6800	9000	11000	15000	18000	22000	26000	32000	
S	32	34	37	37	42	42	42	46	46	50	50	58	

The securing screws of the disk pack are special and calibrated cylindrical-head screws, made in class 10.9 or class A4 (70 stainless steel) and have the following recommended tightening torques:

Table of the tightening torques of the screws of the disk packs					
Size / screw	Tightening torque		Size / screw	Tightening torque	
	Nm			Nm	
	10.9	A4		10.9	A4
12 / m6	14.6	7	2100 / m27	1450	700
18 / m6	14.6	7	2600 / m27	1450	700
32 / m8	36	15	3700 / m30	1990	1050
72 / m10	71	30	5200 / m33	2660	1250
120 / m12	120	51	6800 / m36	3200	1590
180 / m12	120	51	9000 / m36	3200	1590
280 / m14	195	82	11000 / m36	3200	1590
430 / m18	400	176	15000 / m39	4000	1780
590 / m18	400	176	18000 / m39	4000	1780
704 / m20	590	247	22000 / m42	5100	1900
910 / m27	1450	700	26000 / m42	5100	1900
1250 / m27	1450	700	32000 / m45	6200	2200
1600 / m27	1450	700			

To correctly tighten the screws, it is advisable you use a torque wrench where you can set the correct click value. The diagram below relates to the recommended tightening sequence that always assists to the tightening of opposing screws one after the other, regardless of the side of the hub. Provide at least two tightening sequences until the correct torque is reached.



2) Simultaneous check of the alignment

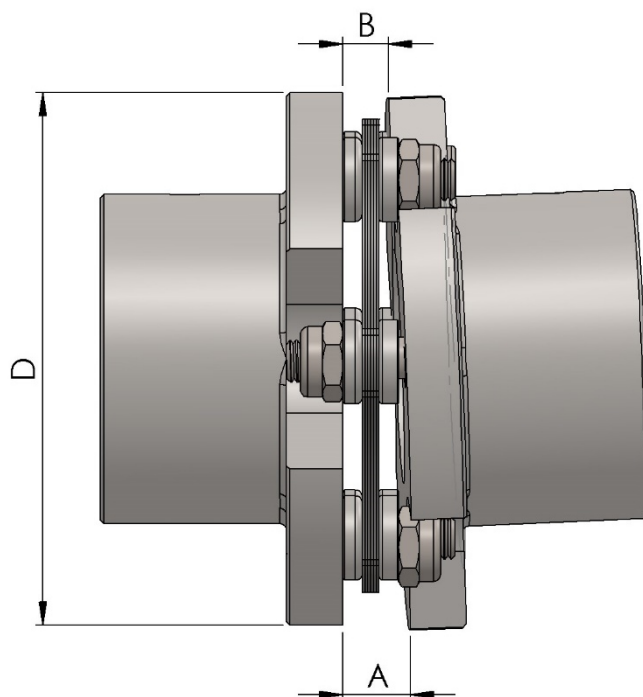


Fig.4

A simple simultaneous check procedure of the radial/angular alignment is as follows: measure the **S** dimension in 4 or 6 points along the diameter of the coupling. Obtain the maximum and minimum dimensions and apply the following formula:

$$\frac{A - B}{D} = \text{comparison value (dimensionless)}$$

Key:

A = maximum S value (mm)

B = minimum S value (mm)

D = maximum diameter of the coupling (Dh dimension in the catalog) (mm)

Based on the number of screws of the coupling,
the value obtained must be less than:

0.003 for 6-hole couplings

0.002 for 8-hole couplings