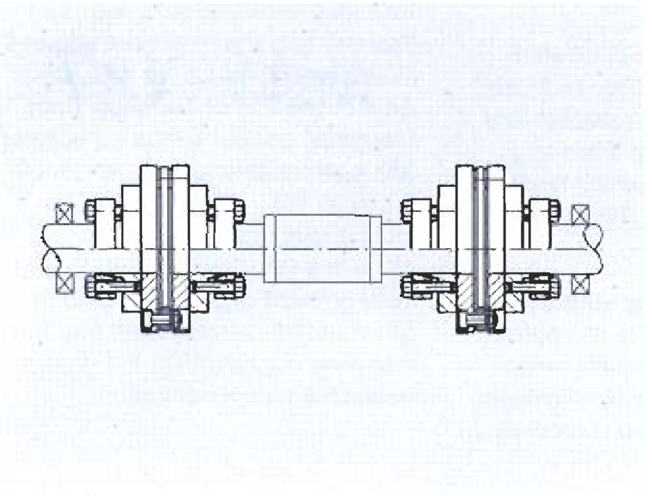
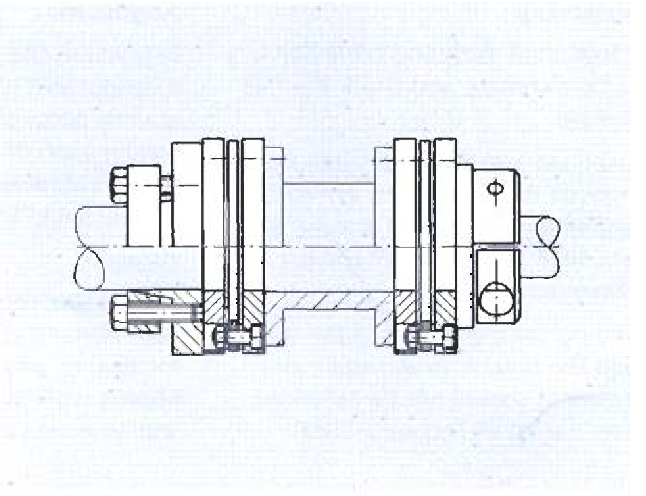
Flexible disc couplings

Example applications

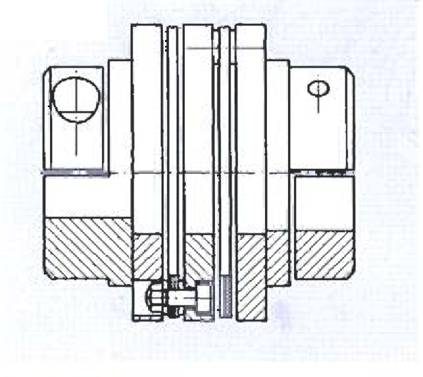


Series FSS
With outer conical hub, used in printing and packaging machines.

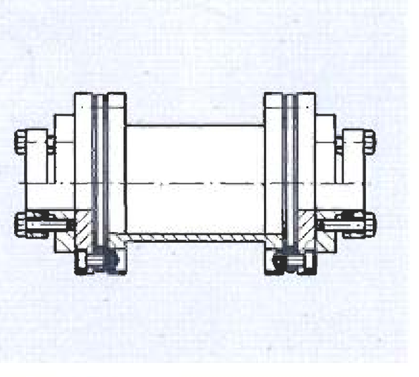


Series FSS/FSD
With inner flange, used in testing equipment.

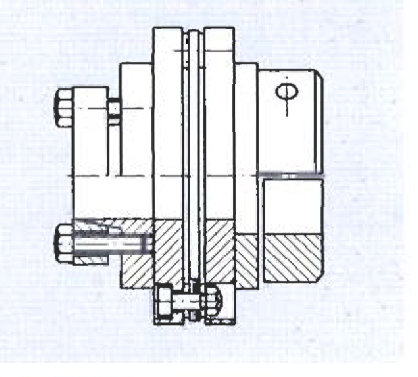
Modular design series



Series FSD
Short version with two-sided collet clamps. Radial flexibility due to two flexible elements.



Series FSS
With outer conical hub and inner flange; for linking larger shaft gaps.



Series FSS/FSD
With outer conical hub and collet clamp. Simple connection between two shafts.

Flexible disc couplings

Assembly instructions

Assembly

Clean shaft ends and boreholes in hubs, degrease and check the tolerances.

Insert both shafts trunks into the hubs of the flexible disc coupling, and firmly tighten the screws, after examining the axial installation dimensions.

The tightening torque of the screws and the maximum allowed misalignment should not be exceeded (see the list of Technical Data).

Alignment

In practice, the three illustrated misalignment types (Fig. 12.1) frequently occur simultaneously. The combination of these leads to a total misalignment, which must be compensated for by the coupling.

Caution!

Flexible disc couplings with a flexible element can only compensate for axial or angular misalignment. Models with two flexible elements and an inner case also compensate for radial misalignments (Fig. 12.1). You will find the maximum allowed misalignment values for ΔK_a and ΔKw in the lists of Technical Data. The radial compensation capacity of ΔKr is dependent on the length of the inner case. The following formula is used to calculate this: $\Delta Kr = b \times \tan 1° = [mm]$. If an axial misalignment exists, then ΔKw or ΔKr must be compensated for. The following diagram (Fig. 11) illustrates such a compensation.

Figure 11: Compensating for misalignment

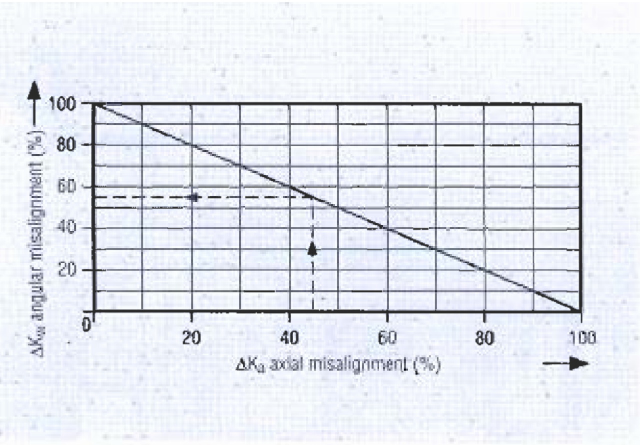


Figure 12: Flexible disc coupling

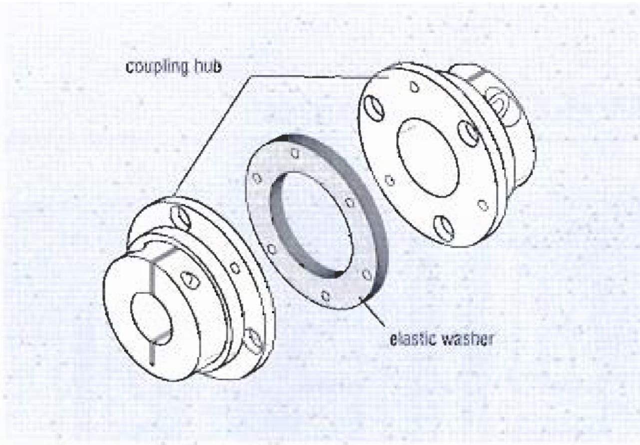
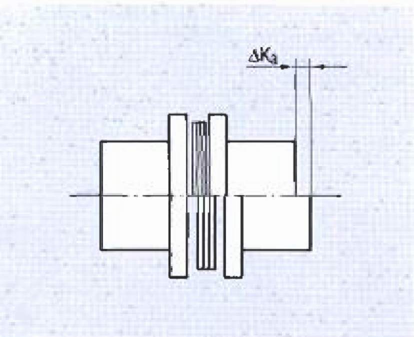
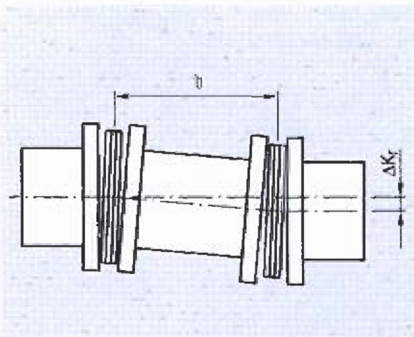


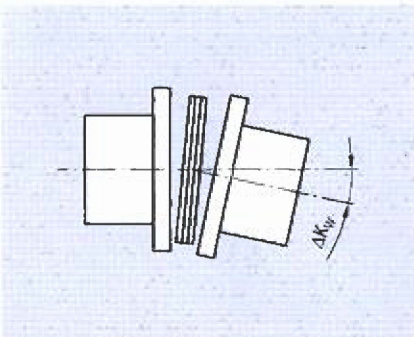
Figure 12.1: Types of misalignment



axial



radial



angular

Flexible disc couplings

Assembly instructions

Assembly

The installed flexible disc coupling must now be aligned.

The more precise the alignment, the more reserves are available to handle additional misalignments during operation. This will have an advantageous effect on the service life, balance quality, and the precision of transmission.

Dismantling

After releasing the backlash-free shaft-hub connections, the drive can be pulled apart and the flexible disc coupling can be removed.

Conical bushings for series AK are forced off with a hexagonal socket screw.

Please ask for our detailed assembly instructions.

Calculating the existing axial force Fa = [N]

We have indicated the maximum allowed values for ΔKa and ΔKw in the lists of Technical Data. We have summarized these values once again in the following table and have also plotted the coordinates as a curve on the graph.

The individual diagrams are illustrated in the graph. You can use this to define the corresponding axial force Fa for each axial misalignment ΔKa.

Example:

Flexible disc coupling, Size 500

max. ΔK_a = 1.2 mm
max. F_a = 586 N

Existing axial misalignment:

ΔK_a = 0,6 mm ≙ 50 %
F_a = 27 % of F_a max.
F_a = 158 N

Size	max. axial misalignment K_a (mm)	max. axial stiffness F_a (N)	Curve
18	0,3	76	A
30	0,4	98	A
60	0,7	116	A
80	0,7	116	A
150	0,8	166	B
200	0,8	166	B
300	0,9	232	B
500	1,2	586	B
800	1,3	1236	B
1400	1,5	1768	C
3000	1,9	2498	D
5000	2,1	4140	B

Table: Coupling characteristic values ΔK_a + F_a

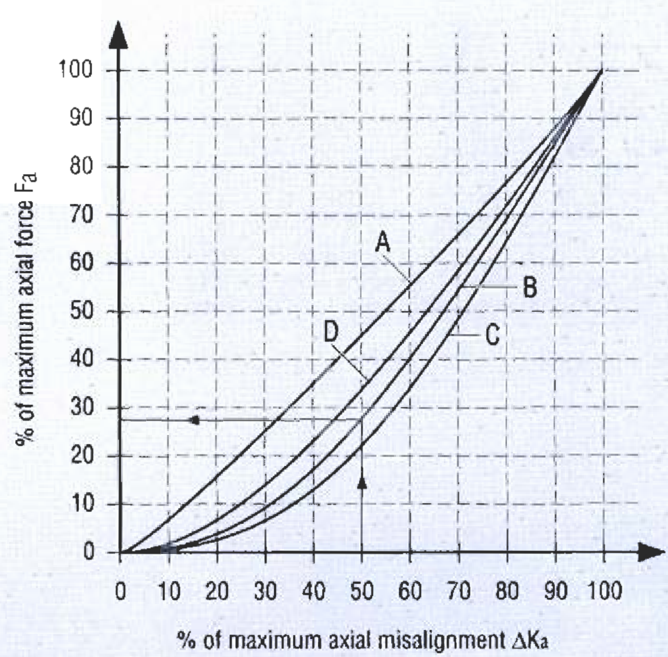


Diagram: dependent on characteristic values