



ÜV Überlastschutz u. Verbindungssysteme GmbH

Technical Information - ÜV Sprung couplings

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1.0 Description

ÜV sprung couplings are torsionally rigid couplings which can be used for compensating for shaft misalignment in drives. Usually these couplings are mounted frictionally to the shafts of the drive, so that a permanent highly dynamic loadable connection with no backlash is guaranteed.

The fit on shafts and couplings should be determined so that a motion allows seat (between running and sliding), a quick and easy installation. A light film of oil makes this installation.

Example of the fit: Shaft diameter 20h7 / 20H7 coupling hole

In highly dynamic drive trains (small shaft diameter - large torque transmission), we recommend our types with cone clamping elements. The radial clamping hub allows an easier mounting in many cases. The movement between the shaft and the cone system or clamping hub should be at maximum 0.05 mm.

Many of our types can be supplied with keyways or with plastic inserts to the potential free production.



2.0 Calculations

Moment - while accelerating the motor

$$M_o = \frac{F_1 * J_{Mot} * n * V}{9,55 * T_A * \eta}$$

$$F_1 = \frac{J_M + J_{Masch}}{J_{Mot}}$$

Moment - while accelerating the coupling

$$M_k = M_b * \frac{J_{Masch} * V}{J_{Masch} + J_{Mot}}$$

Moment - while cutting

$$M_s = \frac{F_A * S * L}{\eta * 628}$$

In many cases the user can use the Moment of the motor.

$$Md = \frac{9550 * P}{n}$$

- F₁ = Inertia factor
- J_{Mot} = Moment of inertia - motor (kg m²)
- J_{Mach} = Moment of inertia - machine (kg m²)
- n = RPM difference (min⁻¹)
- T_A = Start time in seconds
- η = Degree of efficiency
- F_A = Cutting force (axial vector in N)
- S = Spindle pitch (cm)
- L = Withstanding ratio (app. 3 in Nm)
- P = Power (kW)
- V = Safety factor

Interpretation

In order to achieve the maximum life-span of the coupling, the following criteria must be observed:

1. The maximum load must not be higher than the nominal moment of the coupling itself.
2. The shaft misalignment must be adapted to the compensation possibilities of the coupling.
3. The assembly must be carried out properly.

3.0 Assembly

3.1 Important points for Assembly and Disassembly

1. Align the shafts
2. Clean shaft and bores (a thin film of oil is recommended)
3. Connect both shafts using the coupling (TYPE 330/340)
4. Tighten bolts in diagonally (TYPE 330)

Disassembly TYPE 330

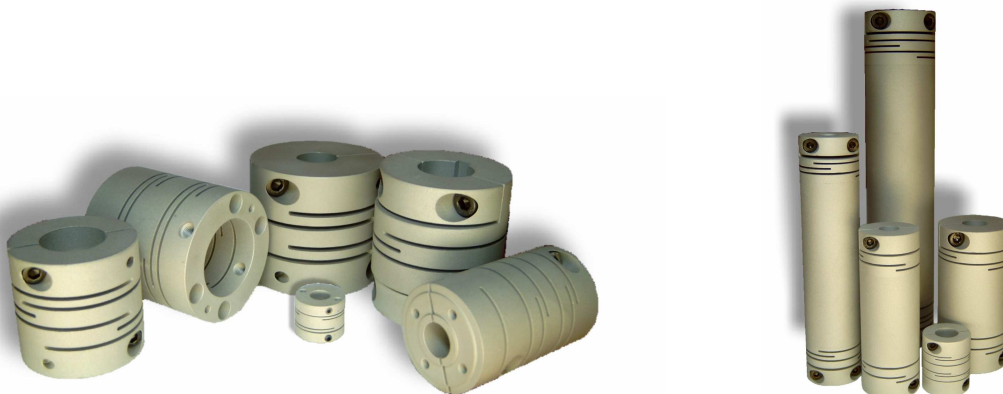
1. Loosen retaining screws.
2. Force taper off against bellows holder (3 threads per taper bushing provided)

3.2 Tighten torque of bolts:

Size	Tighten torque in Nm
M 2,5	1
M 3	1,5
M 4	3,5
M 5	7
M 6	12
M 8	25
M 10	50
M 12	85
M 14	135
M 16	220
M 20	430

4.0 Special couplings

You didn't find a coupling for your use in our catalogue? No problem- just call us. Longer or wider couplings are always possible. We also can offer holes or thread circles in our products.



5.0 Ordering Details

For example: **TYPE 340 – 80 Ø 10H7 Ø 12H7**

⏟
⏟
⏟
⏟

Type
Size
D1
D2

For extended coupling state length required.
Available with keyway according to DIN 6885



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