

Double-jointed coupling with sleeve 1 or sleeve S (special length) and shrink disk hubs, external clamping

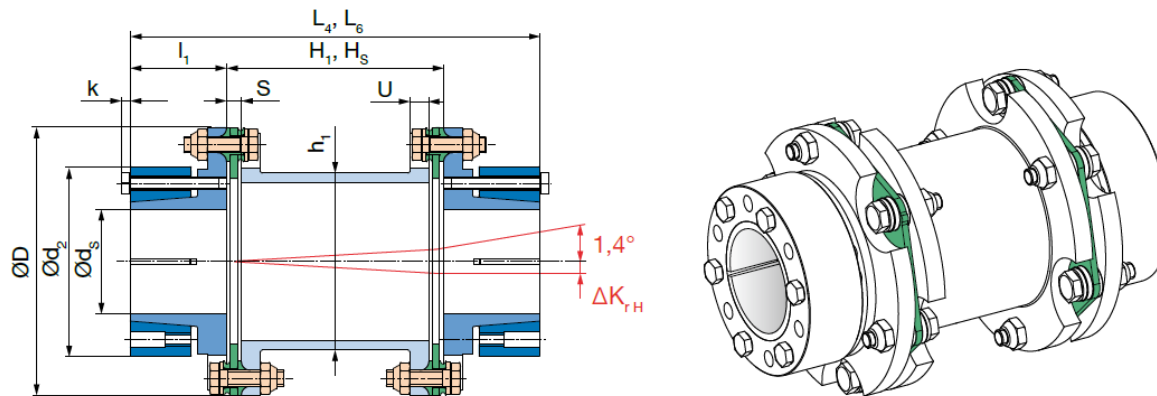


Fig. 21: Type 953.222 (Sleeve 1: H_1 , L_4), Type 953.223 (Sleeve S: H_S , L_6)

| Technical Data and Main Dimensions | | | Size | | | | | | | |
|---------------------------------------|---|-----------------------|-----------------|-------------------------------|-------|------|------|------|------|------|
| | | | 16 | 25 | 40 | 64 | 100 | 160 | | |
| Nominal torque ¹⁾ | T_{KN} | [Nm] | 300 | 420 | 650 | 1100 | 1600 | 2600 | | |
| Peak torque ²⁾ | T_{KS} | [Nm] | 450 | 630 | 975 | 1650 | 2400 | 3900 | | |
| Outer diameter | D | [mm] | 77 | 89 | 104 | 123 | 143 | 167 | | |
| Minimum hub bore ³⁾ | d_{Smin} | [mm] | 14 | 20 | 25 | 30 | 35 | 40 | | |
| Maximum hub bore ³⁾ | d_{Smax} | [mm] | 26 | 36 | 45 | 45 | 55 | 65 | | |
| Maximum speed ⁴⁾ | n_{max} | [rpm] | 13600 | 11800 | 10100 | 8500 | 7300 | 6200 | | |
| Permitted misalignments ⁵⁾ | permitted axial displacement ^{6) 7)} | ΔK_a | [mm] | 0,8 | 0,9 | 1,1 | 1,3 | 1,5 | 1,7 | |
| | | with connection plate | ΔK_r | [mm] | 0,2 | 0,2 | 0,25 | 0,3 | 0,3 | 0,35 |
| | permitted radial misalignment ⁶⁾ | with sleeve 1 | ΔK_{rH} | [mm] | 0,7 | 0,8 | 1 | 1,25 | 1,45 | 1,5 |
| with sleeve S | | ΔK_{rH} | [mm] | (H _S - S) x 0,0122 | | | | | | |
| Spring rigidity | torsion ¹¹⁾ | disk pack | C_{TLP} | [10 ³ Nm/rad] | 180 | 290 | 320 | 1350 | 1900 | 2950 |
| | | tube sleeve S | C_{THrel} | [10 ⁶ Nm mm/rad] | 19 | 34 | 71 | 108 | 217 | 415 |
| | angular spring rigidity ⁸⁾ | | | [Nm/rad] | 285 | 305 | 875 | 1285 | 2025 | 3260 |

Dimensions [mm]

| Size | 16 | 25 | 40 | 64 | 100 | 160 |
|-------|------------------------------|-------|-------|-------|-------|-------|
| d_2 | 53 | 64 | 74 | 84 | 104 | 118 |
| d_3 | 33 | 41 | 46 | 51 | 66 | 76 |
| H_1 | 65 | 75,6 | 91,4 | 112,8 | 133,2 | 135,2 |
| H_S | acc. customer specifications | | | | | |
| h_1 | 50 | 60 | 70 | 80 | 100 | 110 |
| k | 3,5 | 3,5 | 3,5 | 4 | 5,5 | 5,5 |
| L | 74,6 | 85 | 96,1 | 108 | 118,6 | 129,2 |
| L_2 | 91,2 | 102 | 116,2 | 134 | 145,2 | 160,4 |
| L_4 | 135 | 155,6 | 181,4 | 212,8 | 243,2 | 255,2 |
| L_6 | dependent on H_S | | | | | |
| l_1 | 35 | 40 | 45 | 50 | 55 | 60 |
| S | 4,6 | 5 | 6,1 | 8 | 8,6 | 9,2 |
| U | 7 | 7 | 8 | 10 | 10 | 12 |
| U_1 | 21,2 | 22 | 26,2 | 34 | 35,2 | 40,4 |

1) Valid for changing load direction as well as for max. permitted shaft misalignment.

2) Valid for unchanging load direction, max. load cycles $\leq 10^5$.

3) Transmittable torques dependent on bore, see page 60.

4) Not valid for coupling with sleeve S.

5) The permitted misalignments may not simultaneously reach their maximum values.

6) The values refer to couplings with 2 disk packs.

7) Only permitted as a static or virtually static value.

8) The values refer to 1 disk pack.

9) Mass moments of inertia and weights are valid for 1 disk pack.

10) Mass moments of inertia and weights are valid for maximum bore.

Mass Moments of Inertia J [10⁻³ kgm²]

| Size | 16 | 25 | 40 | 64 | 100 | 160 |
|-------------------------------|------|------|------|-------|-------|-------|
| Disk pack ⁹⁾ | 0,08 | 0,13 | 0,30 | 0,81 | 1,36 | 3,43 |
| Hub ¹⁰⁾ | 0,27 | 0,57 | 1,15 | 2,46 | 5,59 | 11,14 |
| Connection plate | 0,23 | 0,44 | 0,95 | 2,30 | 4,60 | 9,72 |
| Sleeve 1 | 0,32 | 0,61 | 1,38 | 3,02 | 6,10 | 12,96 |
| Sleeve S with $H_S = 1000$ mm | 2,11 | 3,77 | 7,81 | 12,62 | 24,98 | 49,43 |
| Sleeve S per 1000 mm tube | 1,93 | 3,43 | 7,12 | 10,86 | 21,86 | 41,61 |

Weight [kg]

| Size | 16 | 25 | 40 | 64 | 100 | 160 |
|-------------------------------|------|------|------|------|-------|-------|
| Disk pack ⁹⁾ | 0,08 | 0,09 | 0,16 | 0,32 | 0,39 | 0,71 |
| Hub ¹⁰⁾ | 0,49 | 0,71 | 1,03 | 1,71 | 2,73 | 3,99 |
| Connection plate | 0,31 | 0,43 | 0,68 | 1,19 | 1,96 | 2,96 |
| Sleeve 1 | 0,39 | 0,54 | 0,93 | 1,46 | 2,04 | 3,38 |
| Sleeve S with $H_S = 1000$ mm | 3,63 | 4,42 | 6,82 | 8,09 | 10,22 | 16,83 |
| Sleeve S per 1000 mm tube | 3,48 | 4,22 | 6,51 | 7,50 | 9,47 | 15,34 |

11) The C_T -value of a double-jointed coupling can be roughly calculated as follows:

$$C_{T \text{ tot.}} = \frac{1}{\frac{2}{C_{TLP}} + \frac{H_S [\text{mm}] - 2S [\text{mm}]}{C_{THrel}}}$$