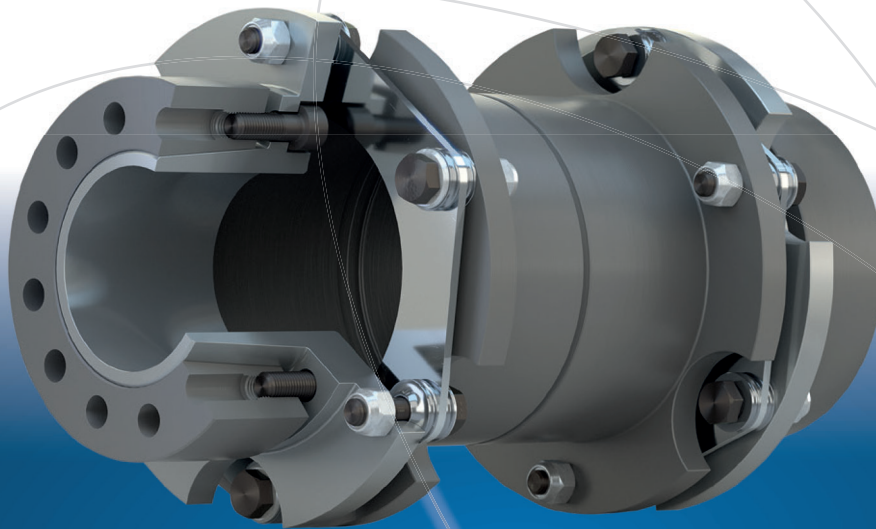




your reliable partner

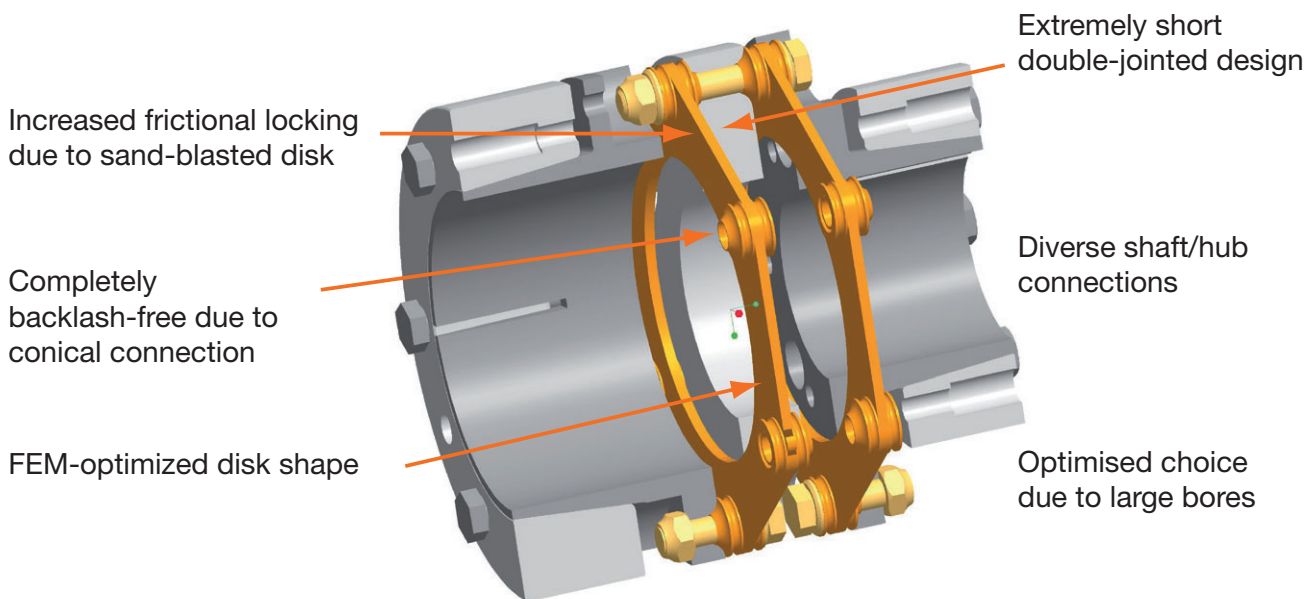


ROBA®-DS

ROBA[®]-DS

Technologically superior

- Non-sensitive to alternating loads of up to 100 % of the nominal torque
- Low mass inertia due to high performance density
- Completely backlash-free up to nominal torque
- High misalignment compensation capability at low restoring forces
- High torsional rigidity up to nominal torque
- Completely wear and maintenance-free
- Optimum construction shape due to large variant range



The ROBA[®]-DS transmits drive torques up to the nominal torque completely backlash-free and with permanently high torsional spring rigidity. Problems to be found on other commercially available couplings, such as denting the disks or overcoming the frictional locking, are not a problem on our couplings. The specified shaft misalignments can be 100 % utilized without affecting the transmittable torque. This guarantees unlimited use.

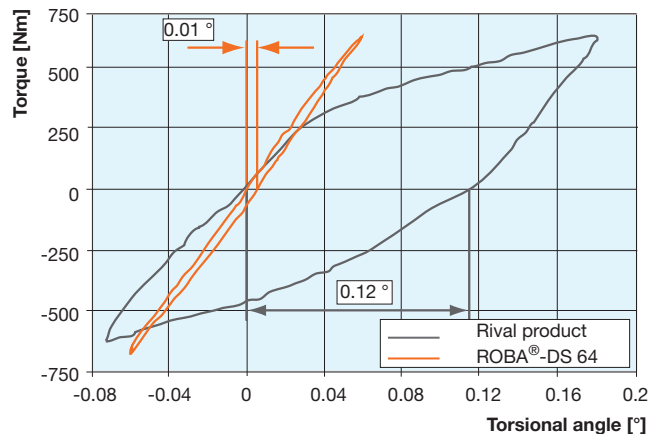


Diagram: A ROBA[®]-DS coupling rigidity characteristic curve in comparison to a typical rival product with frictionally-locking/positively-locking torque transmission.



ROBA[®]-DS couplings are also available in ATEX design according to the directive 2014/34/EU.



ROBA[®]-DS couplings are also available in rustproof design.

Backlash-free Servo Couplings (Aluminium)

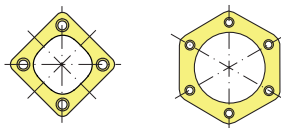
Sizes 3 to 15

Nominal torques
35 to 150 Nm

Bores
10 to 45

Angular misalignment **1°**

Disk pack-Servo
with 4x divisions and 6x divisions



Page 8 ►

Backlash-free All-steel Couplings

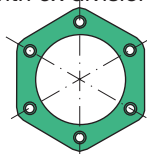
Sizes 16 to 160

Nominal torques
300 to 2600 Nm

Bores
14 to 110

Angular misalignment **0.7°**

Disk pack-HT
with 6x divisions



Shaft connection

Page 14 ►

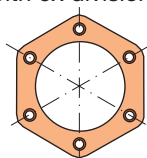
Sizes 16 to 160

Nominal torques
190 to 1600 Nm

Bores
14 to 110

Angular misalignment **1°**

Disk pack-HT
with 6x divisions



Shaft connection

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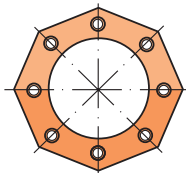
Sizes 180 to 2200

Nominal torques
2100 to 24000 Nm

Bores
40 to 170

Angular misalignment **0.5°**

Disk pack
with 8x divisions



Shaft connection

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Heavy Load Couplings

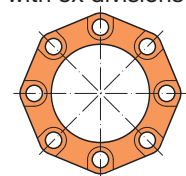
Sizes 2200 to 11000

Nominal torques
22 to 110 kNm

Bores
140 to 240

Angular misalignment **0.4°**

Disk pack
with 8x divisions



Shaft connection

Customer-specific adaptations
e. g.:
key hub, shrink disk hub, flange

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Integrated Torque Measurement

Page 60 ►

Variable Length Sleeve S/Sleeve CFRP/Options and Variants on Intermediate Shafts

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Safe Against Overload

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Installation Examples

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Dimensioning, Size Selection

Page 70 ►

Technical Explanations

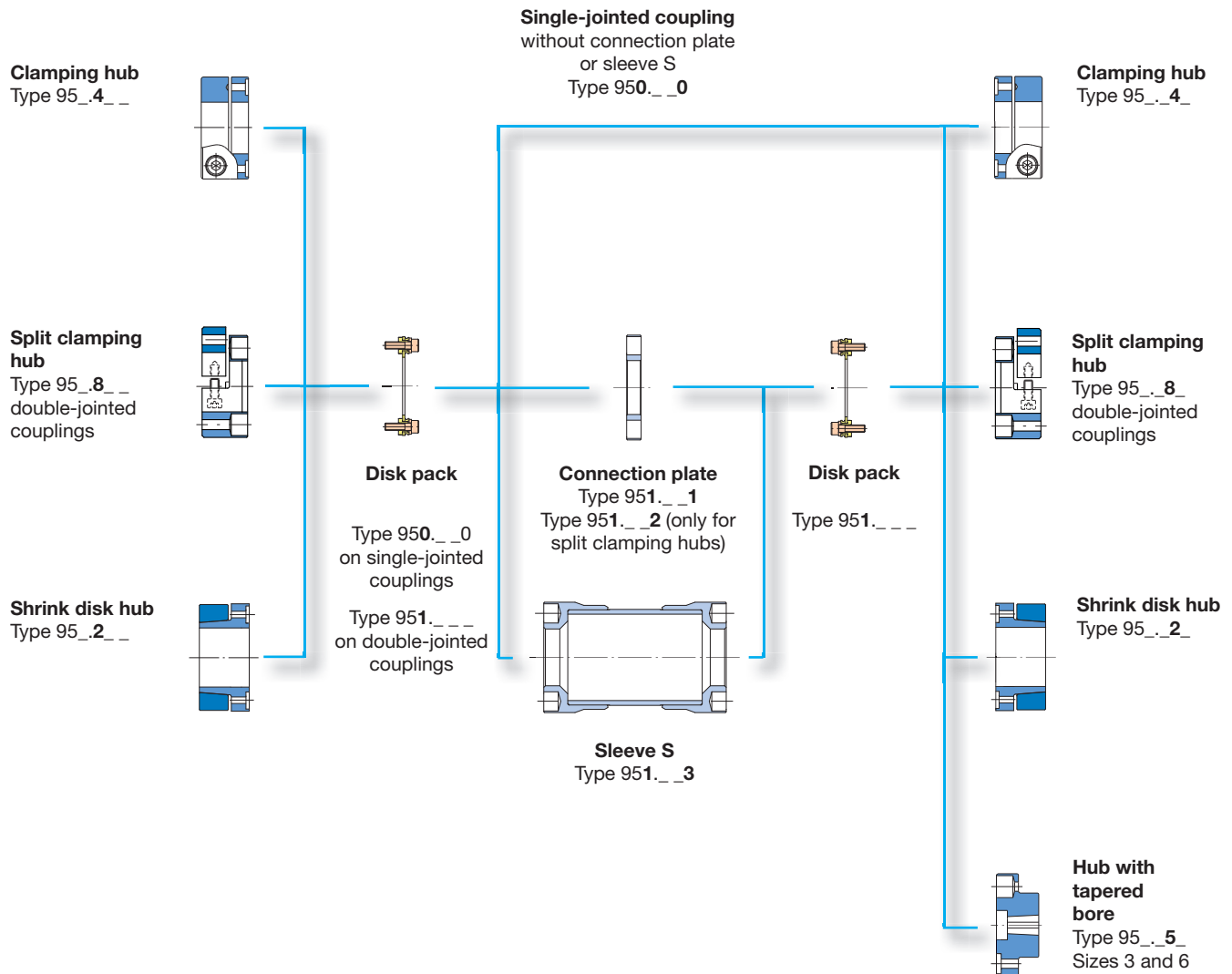
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Transmittable Torques on Shrink Disk, Split Clamping, Clamping Ring, Clamping and Key Hubs

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ROBA®-DS Backlash-free Servo Couplings

Configuration Possibilities/Standard Designs



ROBA[®]-DS Backlash-free Servo Couplings

Type Key/Order Number

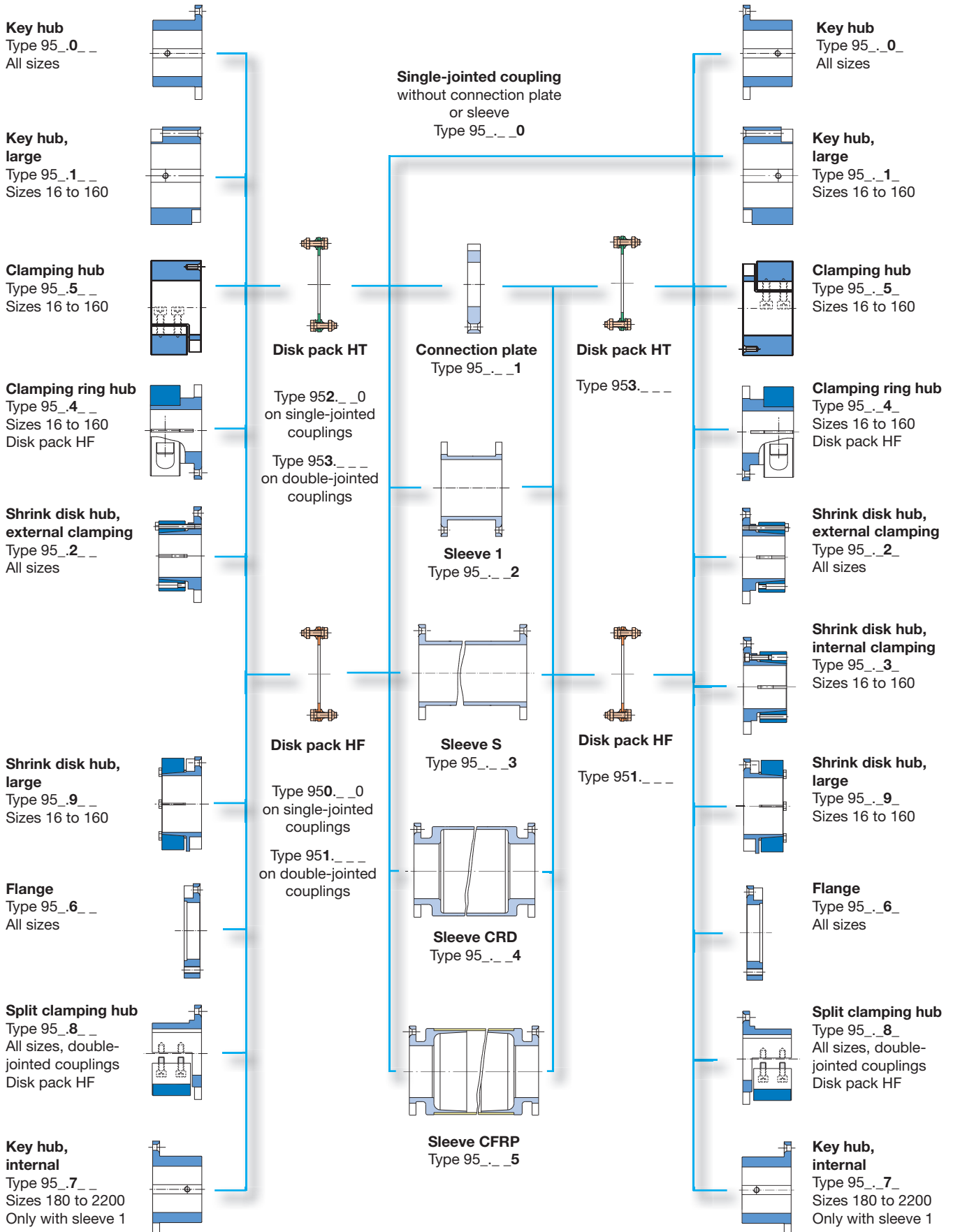
Sizes 3 to 15

Type Key/Order Number									
			Hub 1		Hub 2				
Shrink disk hub			2		2		Shrink disk hub		
Clamping hub			4		4		Clamping hub		
					5		Hub with tapered bore		
Split clamping hub			8		8		Split clamping hub		
			▽		▽				
— / 9 5 — . — — — / — / — / — / —									
△			△		△		△		△
Size	Single-jointed coupling	0	Single-jointed coupling	0	Bore Hub 1 ø	Bore Hub 2 ø	Operating speed [rpm]		
3									
6	Double-jointed coupling	1	Double-jointed coupling						
10			Connection plate	1					
15			Connection plate HSK	2					
			Sleeve S	3					



ROBA[®]-DS Backlash-free All-steel Couplings

Configuration Possibilities/Standard Designs



Type Key/Order Number

Type Key/Order Number

Sizes 180 to 2200

Type Key/Order Number

[illegible]

ROBA®-DS Sizes 3 to 15

Single-jointed coupling with clamping hubs

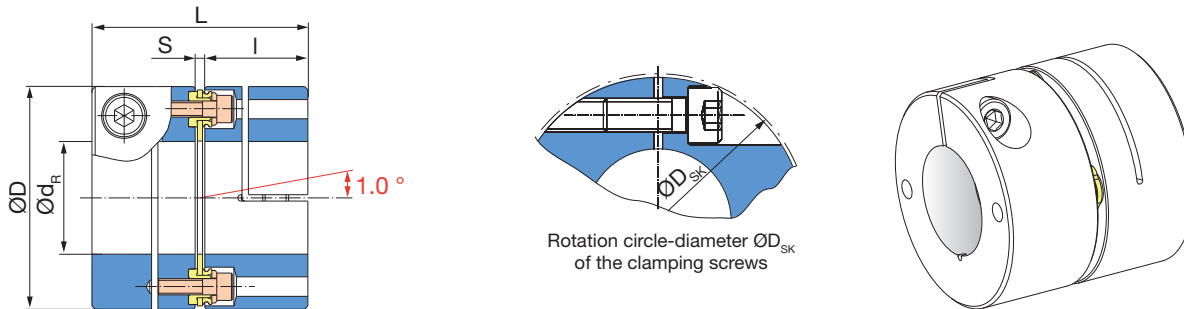


Fig. 1: Type 950.440

Technical Data and Main Dimensions				Size			
				3	6	10	15
Nominal torque ¹⁾	T_{KN}	[Nm]		35	60	100	150
Peak torque ²⁾	T_{KS}	[Nm]		52	90	150	225
Alternating torque	T_{KW}	[Nm]		21	36	60	90
Outer diameter	D	[mm]		45	56	69	79
Minimum hub bore ^{3) 4)}	$d_{R \min}^{H7}$	[mm]		10	14	19	25
Maximum hub bore ^{3) 4)}	$d_{R \max}^{H7}$	[mm]		20	28	35	42
Maximum speed ⁵⁾	$n_{\max}$	[rpm]		13500	10800	9000	7800
Permitted misalignments ⁶⁾	perm. axial displacement ^{7) 8)}	ΔK_a	[mm]	0.5	0.7	0.9	1.1
	perm. radial misalignment ⁷⁾	ΔK_r	[mm]	0.15	0.15	0.2	0.2
	with connection plate	ΔK_{rH}	[mm]	$(H_s - S) \times 0.0174$			
	with sleeve S						
Spring rigidity	torsion ⁹⁾	$C_{T LP}$	$[10^3 \text{ Nm/rad}]$	17	35	60	145
	disk pack	$C_{T H \text{ rel.}}$	$[10^6 \text{ Nm mm/rad}]$	3.3	6.8	12	19
	tube sleeve S						
angular spring rigidity ¹⁰⁾			[Nm/rad]	43	64	76	229

Dimensions [mm]

Size	3	6	10	15
D_{SK}	47	-	71	-
d_3	17	22.5	35.5	40
H_s	acc. customer specifications			
h_2	40	50	60	70
L	48.5	52.6	66.9	69.9
L_2	59	64.7	79.3	82.8
L_6	dependent on H_s			
I	23	25	32	33.5
S	2.5	2.6	2.9	2.9
U	28	32	40	46
U_1	13	14.7	15.3	15.8

Mass moments of inertia $J [10^{-3} \text{ kgm}^2]$

Size	3	6	10	15
Disk pack ¹¹⁾	0.006	0.018	0.035	0.077
Clamping hub ¹²⁾	0.021	0.054	0.164	0.295
Connection plate	0.018	0.050	0.121	0.208
Sleeve S mit $H_s = 1000 \text{ mm}$	0.349	0.755	1.373	2.341
Sleeve S per 1000 mm tube	0.323	0.682	1.175	1.981

Weights [kg]

Size	3	6	10	15
Disk pack ¹¹⁾	0.023	0.041	0.050	0.077
Clamping hub ¹²⁾	0.070	0.112	0.221	0.297
Connection plate	0.063	0.111	0.161	0.218
Sleeve S mit $H_s = 1000 \text{ mm}$	1.009	1.361	1.678	2.079
Sleeve S per 1000 mm tube	0.938	1.231	1.443	1.762

1) Valid for max. permitted shaft misalignment.

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

3) Recommended hub / shaft tolerance: H7 / k6

4) Preferred bores and transmittable torques dependent on bore see page 76.

5) Not valid for coupling with sleeve S.

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

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

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

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

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{T LP}} + \frac{H_s [\text{mm}] - 2 S [\text{mm}]}{C_{T H \text{ rel.}}}}$$

10) The values refer to 1 disk pack.

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

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

ROBA®-DS Sizes 3 to 15

Double-jointed coupling with connection plate and clamping hubs

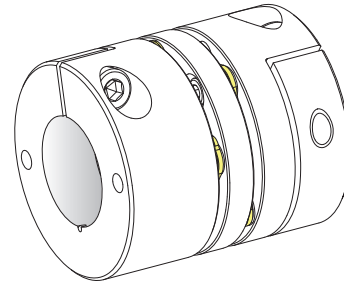
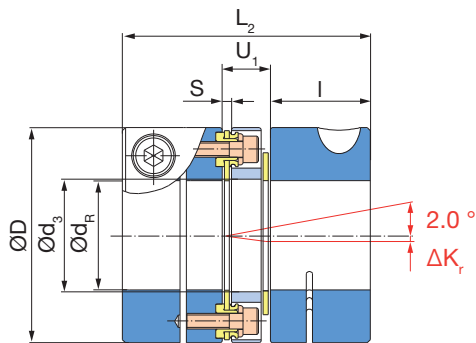


Fig. 2: Type 951.441

Double-jointed coupling with sleeve S (special length) and clamping hubs

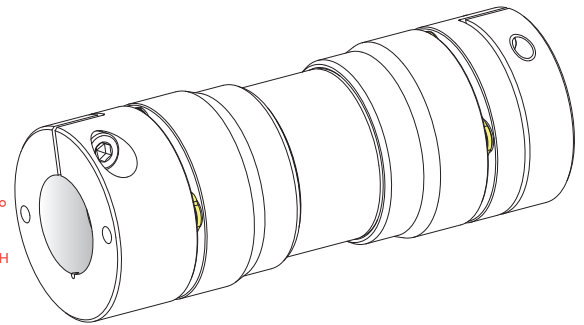
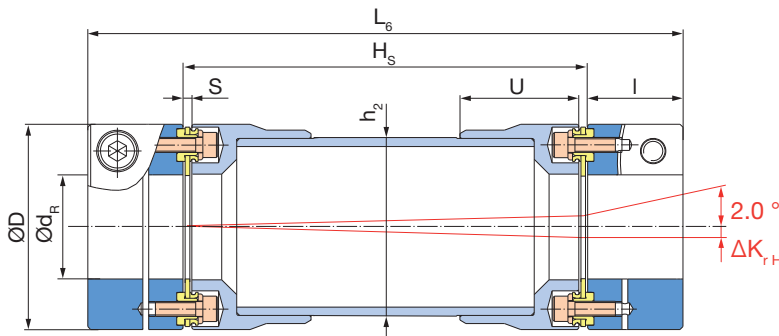


Fig. 3: Type 951.443 (sleeve S: H_s , L_6)

Order Number												
— / 9 5 — . 4 4 — / — / — / — / —												
      												
Sizes 3 to 15	Single-jointed coupling			0	Single-jointed coupling			0	Bore* Hub 1 ø (Dim. page 8)	Bore* Hub 2 ø (Dim. page 8)	Sleeve length H _s [mm]	Operating speed n _s [rpm]
	Double-jointed coupling			1	Connection plate			1				
					Sleeve S			3				
for special sleeve S												

Example: 10 / 951.441 / Hub 1 – ø 25 ^{H7} / Hub 2 – ø 25 ^{H7}

* Standard H7, other tolerances possible
Clamping hub also available with keyway

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Transmittable Torques on Clamping Hubs	Page 76	▷

ROBA®-DS Sizes 3 to 15

Double-jointed coupling with connection plate and split clamping hubs

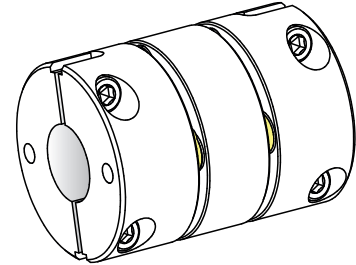
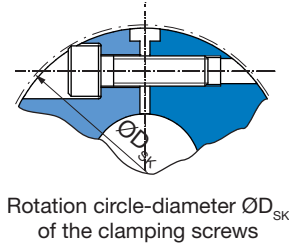
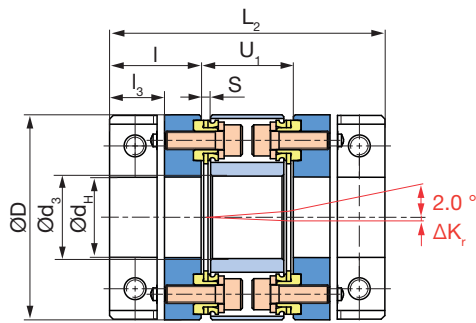


Fig. 4: Type 951.882

Optional keyway design according to DIN 6885/1 possible (up to bore $d_H = 18$ mm on Size 3, up to bore $d_H = 22$ mm on Size 6, for all bores on Sizes 10 and 15)

Technical Data and Main Dimensions				Size				
				3	6	10	15	
Nominal torque ¹⁾			T _{KN}	[Nm]	35	60	100	150
Peak torque ²⁾			T _{KS}	[Nm]	52	90	150	225
Alternating torque			T _{KW}	[Nm]	21	36	60	90
Outer diameter			D	[mm]	45	56	69	79
Minimum hub bore ^{3) 4)}			d _H ^{H7} _{min}	[mm]	10	14	19	25
Maximum hub bore ^{3) 4)}			d _H ^{H7} _{max}	[mm]	20	28	35	42
Maximum speed ⁵⁾			n _{max}	[rpm]	6000	5000	4000	3500
Permitted misalignments ⁶⁾	perm. axial displacement ^{7) 8)}		ΔK _a	[mm]	0.5	0.7	0.9	1.1
	perm. radial misalignment ⁷⁾	with connection plate HSK	ΔK _{r HSK}	[mm]	0.35	0.4	0.45	0.5
		with sleeve S	ΔK _{r H}	[mm]	(H _S - S) x 0.0174			
Spring rigidity	torsion ⁹⁾	disk pack	C _{T LP}	[10 ³ Nm/rad]	17	35	60	145
		tube sleeve S	C _{T H rel.}	[10 ⁶ Nm mm/rad]	3.3	6.8	12	19
	angular spring rigidity ¹⁰⁾			[Nm/rad]	43	64	76	229

Dimensions [mm]

Size	3	6	10	15
D_{sk}	47	-	71	-
d_3	17	22.5	35.5	40
H_s	dependent on L_R			
h_2	40	50	60	70
L_2	69	75.2	93.8	100.8
L_6	dependent on L_R			
L_R	acc. customer specifications			
I	23	25	32	33.5
I_3	14.5	15	20.5	20
S	2.5	2.6	2.9	2.9
U	28	32	40	46
U_1	23	25.2	29.8	33.8

Mass moments of inertia J [10⁻³ kgm²]

Size	3	6	10	15
Disk pack ¹¹⁾	0.006	0.018	0.035	0.077
Split clamping hub ¹²⁾	0.018	0.048	0.143	0.266
Connection plate HSK	0.017	0.044	0.119	0.264
Sleeve S mit $H_s = 1000$ mm	0.349	0.755	1.373	2.341
Sleeve S per 1000 mm tube	0.323	0.682	1.175	1.981

Weights [kg]

Size	3	6	10	15
Disk pack ¹¹⁾	0.023	0.041	0.050	0.077
Split clamping hub ¹²⁾	0.060	0.098	0.195	0.270
Connection plate HSK	0.057	0.096	0.161	0.270
Sleeve S mit $H_s = 1000$ mm	1.009	1.361	1.978	2.079
Sleeve S per 1000 mm tube	0.938	1.231	1.443	1.762

- Valid for unchanging load direction as well as for max. permitted shaft misalignment. When the load direction changes, max. 60% of the stated nominal torque is permitted.
- Valid for unchanging load direction, max. load cycles $\leq 10^5$.
- Recommended hub / shaft tolerance: H7/g6
- Preferred bores and transmittable torques dependent on bore see page 75.
- Not valid for coupling with sleeve S.
- The permitted misalignments may not simultaneously reach their maximum values.
- The values refer to couplings with 2 disk packs.
- Only permitted as a static or virtually static value.

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

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{T \text{ LP}}} + \frac{H_s [\text{mm}] - 2 S [\text{mm}]}{C_{T \text{ H rel.}}}}$$

- The values refer to 1 disk pack.
- Mass moments of inertia and weights are valid for 1 disk pack.
- Mass moments of inertia and weights are valid for maximum bore.

ROBA[®]-DS Sizes 3 to 15

Double-jointed coupling with sleeve S (special length) and split clamping hubs

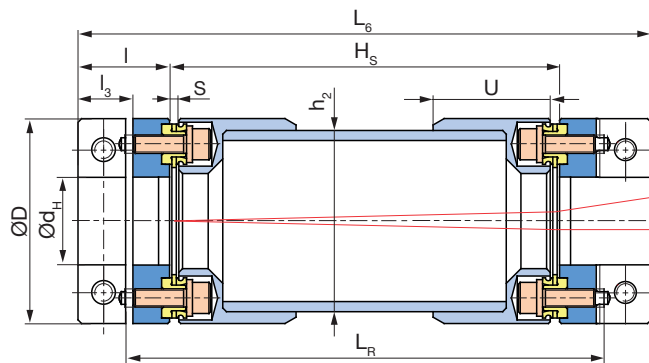
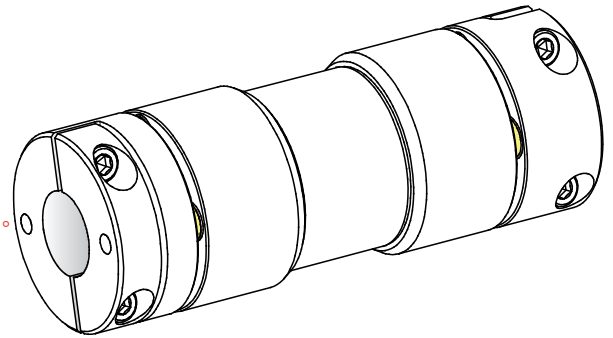


Fig. 5: Type 951.883 (sleeve S: H_s , L_6)



Optional keyway design
according to DIN 6885/1 possible
(up to bore $d_H = 18$ mm on Size 3,
up to bore $d_H = 22$ mm on Size 6,
for all bores on Sizes 10 and 15)

Order Number

Order Number																			
—		/	9	5	1	.	8	8	—		/	—		/	—		/	—	
▲									▲			▲			▲			▲	
Sizes 3 to 15							Connection plate HSK Sleeve S			2 3		Bore* Hub 1 $\varnothing$ (Dim. page 10)		Bore* Hub 2 $\varnothing$ (Dim. page 10)		Shaft distance L_R [mm]		Operating speed n_s [rpm] for special sleeve S	

Example: 10 / 951.882 / Hub 1 – $\varnothing 25^{H7}$ / Hub 2 – $\varnothing 25^{H7}$

* Standard H7, other tolerances possible

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ROBA®-DS Sizes 3 to 15

Single-jointed coupling with shrink disk hubs

Alternative shaft connection Hub with tapered bore

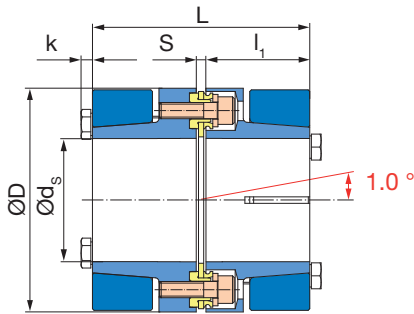


Fig. 6: Type 950.220

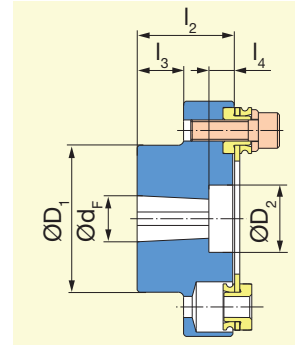
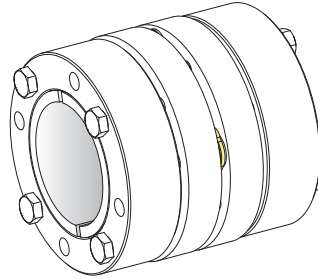


Fig. 7: Type 95...5_ (only Sizes 3 and 6)
e.g. for Fanuc motors

Technical Data and Main Dimensions				Size			
				3	6	10	15
Nominal torque ¹⁾	T_{KN}	[Nm]		35	60	100	150
Peak torque ²⁾	T_{KS}	[Nm]		52	90	150	225
Alternating torque	T_{KW}	[Nm]		21	36	60	90
Outer diameter	D	[mm]		45	56	69	79
Minimum hub bore ^{3) 4) 5)}	$d_{S \min}^{H7}$	[mm]		10	14	19	25
Maximum hub bore ^{3) 4)}	$d_{S \max}^{H7}$	[mm]		20	28	38	45
Maximum speed ⁶⁾	$n_{\max}$	[rpm]		22500	18000	15000	13000
Permitted misalignments ⁷⁾	perm. axial displacement ^{8) 9)}	ΔK_a	[mm]	0.5	0.7	0.9	1.1
	perm. radial misalignment ⁸⁾	ΔK_r	[mm]	0.15	0.15	0.2	0.2
	with connection plate	ΔK_{rH}	[mm]	(H _S - S) x 0.0174			
	with sleeve S						
Spring rigidity	torsion ¹⁰⁾	C_{TLP}	[10 ³ Nm/rad]	17	35	60	145
	disk pack	$C_{TH \text{ rel.}}$	[10 ⁶ Nm mm/rad]	3.3	6.8	12	19
	tube sleeve S						
angular spring rigidity ¹¹⁾			[Nm/rad]	43	64	76	229

Dimensions [mm]

Size	3	6	10	15
d_3	17	22.5	35.5	40
H_S	acc. customer specifications			
h_2	40	50	60	70
k	2.8	3.5	3.5	3.5
L	50.5	58.6	66.9	77.9
L_2	61	70.7	79.3	90.8
L_6	dependent on H _S			
l_1	24	28	32	37.5
S	2.5	2.6	2.9	2.9
U	28	32	40	46
U_1	13	14.7	15.3	15.8
Hub with tapered bore	$d_F \pm 0.05$	11 14 11 14 16	-	-
	D_1	27 27 35 35 35	-	-
	D_2	16 21 16 25 25	-	-
	l_2	23 30 23 30 40	-	-
	l_3	13 20 11 18 28	-	-
	l_4	6 10 6 10 10	-	-

- Valid for max. permitted shaft misalignment.
- Valid for unchanging load direction, max. load cycles $\leq 10^5$.
- Recommended hub / shaft tolerance: H7 / g6
- On shrink disk hubs, the preferred bores are identical to the preferred bores on the clamping hubs (see preferred bores clamping hubs page 76).
- Ø10: frictionally locking transmittable torque = 80 % of T_{KS}
- Not valid for coupling with sleeve S.
- The permitted misalignments may not simultaneously reach their

Mass moments of inertia J [10⁻³ kgm²]

Size	3	6	10	15
Disk pack ¹²⁾	0.006	0.018	0.035	0.077
Shrink disk hub ¹³⁾	0.043	0.129	0.303	0.605
Hub with tapered bore ¹³⁾	0.012	0.039	-	-
Connection plate	0.018	0.050	0.121	0.208
Sleeve S mit H _S = 1000 mm	0.349	0.755	1.373	2.341
Sleeve S per 1000 mm tube	0.323	0.682	1.175	1.981

Weights [kg]

Size	3	6	10	15
Disk pack ¹²⁾	0.023	0.041	0.050	0.077
Shrink disk hub ¹³⁾	0.142	0.254	0.379	0.570
Hub with tapered bore ¹³⁾	0.053	0.121	-	-
Connection plate	0.063	0.111	0.161	0.218
Sleeve S mit H _S = 1000 mm	1.009	1.361	1.678	2.079
Sleeve S per 1000 mm tube	0.938	1.231	1.443	1.762

maximum values.

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

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

10) The $C_{T \text{ ges.}}$ -value of a double-jointed coupling can be roughly calculated as follows:

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

11) The values refer to 1 disk pack.

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

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

ROBA[®]-DS Sizes 3 to 15

Double-jointed coupling with connection plate and shrink disk hubs

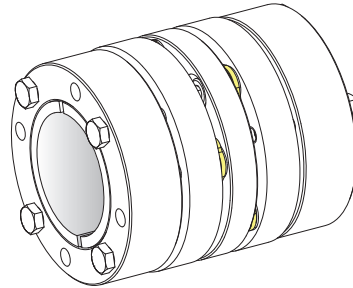
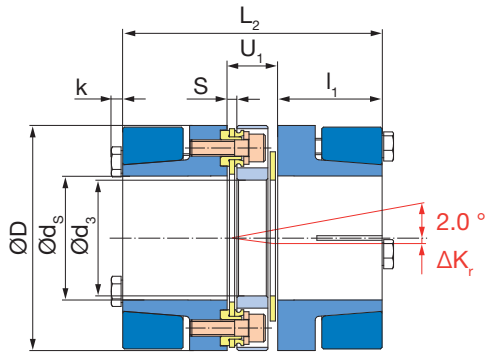


Fig. 8: Type 951.221

Double-jointed coupling with sleeve S (special length) and shrink disk hubs

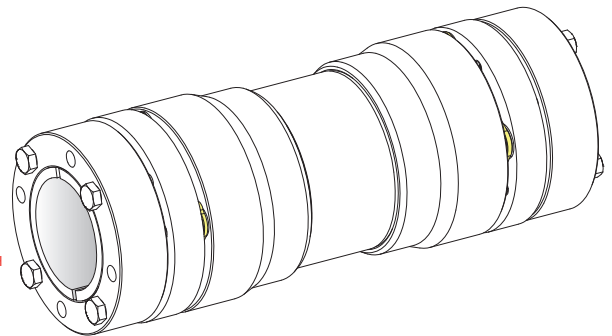
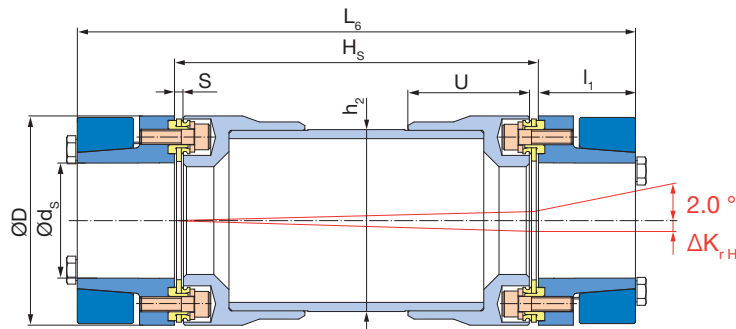


Fig. 9: Type 951.223 (sleeve S: H_s, L₆)

Order Number

Hub 2												
2 Shrink disk hub												
5 Hub with tapered bore**												
▽												
— / 9 5 — . 2 — — / — / — / — / —												
△			△			△	△	△	△	△		
Sizes 3 to 15	Single-jointed coupling			0	Single-jointed coupling Connection plate			0	Bore*	Bore*	Sleeve	Operating
	Double-jointed coupling			1	Sleeve S			3	Hub 1 ø	Hub 2 ø	length	speed
									(Dim. page 12)	(Dim. page 12)	H _s [mm]	n _s [rpm]
										for special sleeve S		

Example: 10 / 951.221 / Hub 1 – ø 25^{H7} / Hub 2 – ø 25^{H7}

* Standard H7, other tolerances possible
** Only Sizes 3 and 6

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ROBA®-DS Sizes 16 to 160 – disk pack-HT

Single-jointed coupling with key hubs

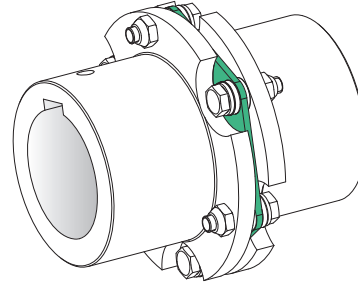
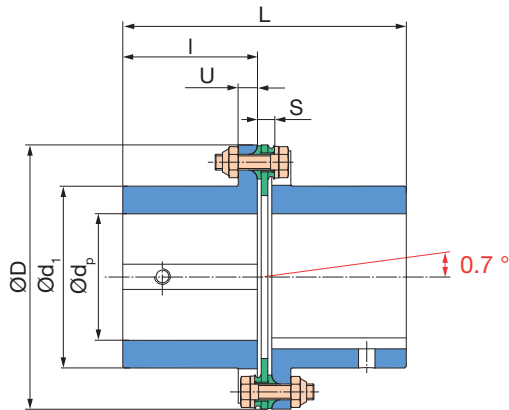


Fig. 10: Type 952.000

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 _{p.min}	[mm]		16	20	25	30	35	40
Maximum hub bore ³⁾	d _{p.max}	[mm]		32	40	50	55	70	80
Maximum speed ⁴⁾	n _{max}	[rpm]		13600	11800	10100	8500	7300	6200
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}	ΔK _a	[mm]	0.8	0.9	1.1	1.3	1.5	1.7
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	0.2	0.2	0.25	0.3	0.3	0.35
		with sleeve 1	ΔK _{r,H}	0.7	0.8	1	1.25	1.45	1.5
		with sleeve S	ΔK _{r,H}	(H _s - S) x 0.0122					
Spring rigidity	torsion ⁸⁾	C _{T LP}	[10 ³ Nm/rad]	180	290	450	1350	1900	2950
		C _{T H rel.}	[10 ⁶ Nm mm/rad]	19	34	71	108	217	415
	angular spring rigidity ⁹⁾		[Nm/rad]	285	305	875	1285	2025	3260

Dimensions [mm]

Size	16	25	40	64	100	160
d ₁	50	60	70	80	100	115
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
L	84.6	95	116.1	138	158.6	179.2
L ₂	101.2	112	136.2	164	185.2	210.4
L ₄	145	165.6	201.4	242.8	283.2	305.2
L ₆	dependent on H _s					
I	40	45	55	65	75	85
S	4.6	5	6.1	8	8.6	9.2
U	7	7	8	10	10	12
U _i	21.2	22	26.2	34	35.2	40.4

Mass moments of inertia J [10⁻³ kgm²]

Size	16	25	40	64	100	160
Disk pack ¹⁰⁾	0.08	0.13	0.30	0.81	1.36	3.43
Hub ¹¹⁾	0.27	0.55	1.16	2.58	6.18	12.51
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ¹⁰⁾	0.08	0.09	0.16	0.32	0.39	0.71
Hub ¹¹⁾	0.46	0.69	1.02	1.72	2.83	4.25
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

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

2) Valid for unchanging load direction, max. load cycles ≤ 10⁵.

3) Transmittable torques dependent on bore, see table page 76.

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

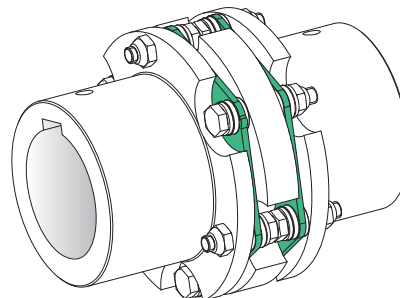
$$C_{T ges.} = \frac{1}{\frac{2}{C_{T LP}} + \frac{H_s [mm] - 2 S [mm]}{C_{T H rel.}}}$$

9) The values refer to 1 disk pack.

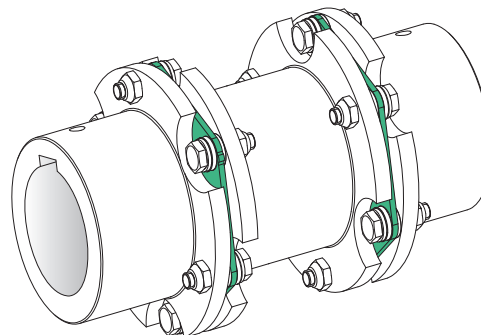
10) Mass moments of inertia and weights are valid for 1 disk pack.

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

Double-jointed coupling with connection plate and key hubs



Double-jointed coupling with sleeve 1 or sleeve S (special length) and key hubs



Order Number

Example: 100 / 952.000 / Hub 1– ø 50 ^{H7} / Hub 2 – ø 60 ^{H7}

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HT

Single-jointed coupling with key hubs, large

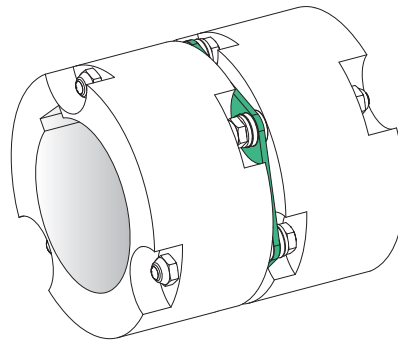
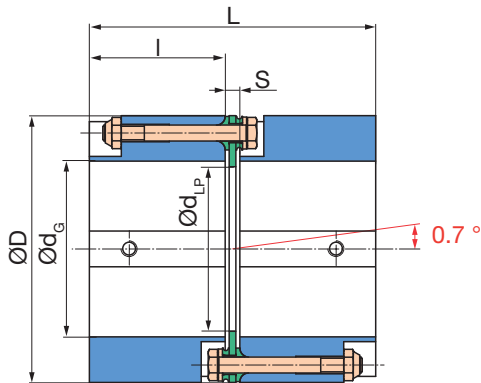


Fig. 13: Type 952.110

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	d _{G min}	[mm]		30	35	45	55	65	75
Maximum hub bore	d _{G max}	[mm]		45	55	65	75	95	110
Maximum speed ³⁾	n _{max}	[rpm]		13600	11800	10100	8500	7300	6200
Permitted misalignments ⁴⁾	perm. axial displacement ^{5) 6)}	ΔK _a	[mm]	0.8	0.9	1.1	1.3	1.5	1.7
	perm. radial misalignment ⁵⁾ with connection plate	ΔK _r	[mm]	0.2	0.2	0.25	0.3	0.3	0.35
	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 ¹⁰⁾ disk pack	C _{T LP}	[10 ³ Nm/rad]	180	290	450	1350	1900	2950
	tube sleeve S	C _{T H rel.}	[10 ⁶ Nm mm/rad]	19	34	71	108	217	415
	angular spring rigidity ⁷⁾		[Nm/rad]	285	305	875	1285	2025	3260

Dimensions [mm]

Size	16	25	40	64	100	160
d ₃	33	41	46	51	66	76
d _{H1}	43	54	62	71	92	98
d _{LP}	45	55	65	74	88	103
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
L	84.6	95	116.1	138	158.6	179.2
L ₂	101.2	112	136.2	164	185.2	210.4
L ₄	145	165.6	201.4	242.8	283.2	305.2
L ₆	dependent on H _s					
l	40	45	55	65	75	85
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 ≤ 10⁵.

3) Not valid for coupling with sleeve S.

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

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

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

7) The values refer to 1 disk pack.

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

9) 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 ⁸⁾	0.08	0.13	0.30	0.81	1.36	3.43
Hub ⁹⁾	0.86	1.71	3.89	8.98	18.12	36.00
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ⁸⁾	0.08	0.09	0.16	0.32	0.39	0.71
Hub ⁹⁾	0.87	1.26	2.08	3.47	4.94	7.23
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

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

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{T LP}} + \frac{H_s [\text{mm}] - 2 S [\text{mm}]}{C_{T H \text{ rel.}}}}$$

ROBA®-DS Sizes 16 to 160 – disk pack-HT

Double-jointed coupling with connection plate and key hubs, large

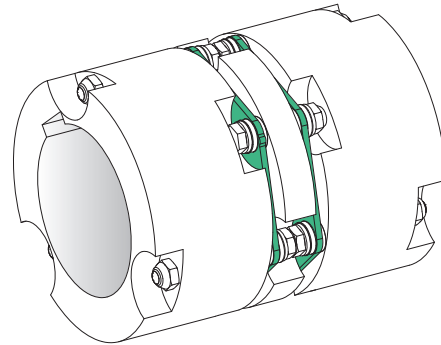
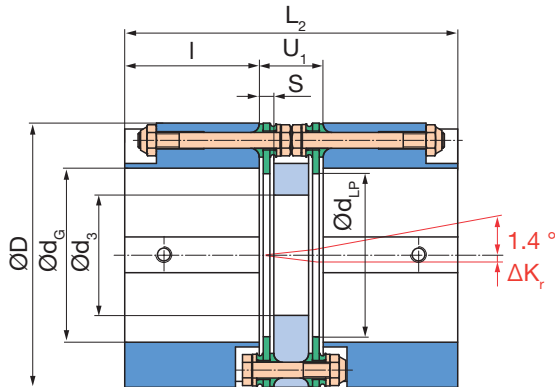


Fig. 14: Type 953.111

Double-jointed coupling with sleeve 1 or sleeve S (special length) and key hubs, large

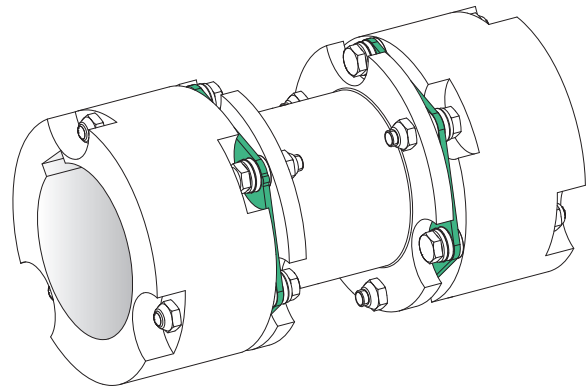
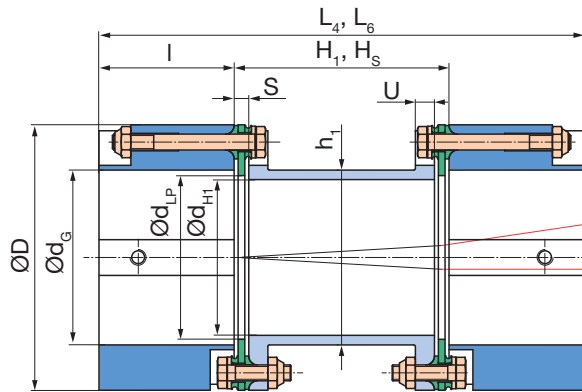


Fig. 15: Type 953.112 (sleeve 1: H_1, L_4), Type 953.113 (sleeve S: H_S, L_6)

Order Number

Order Number																
—	/	9	5	—	.	1	1	—	/	—	/	—	/	—	/	—
▲				▲				▲		▲		▲		▲		▲
Sizes 16 to 160	Single-jointed coupling			2	Single-jointed coupling			0	Bore* Hub 1 ø (Dim. page 16)	Bore* Hub 2 ø (Dim. page 16)	Sleeve length H _s [mm]	Operating speed n _s [rpm]				
	Double-jointed coupling				3	Connection plate							1			
				Sleeve 1			2									
				Sleeve S			3									
				Sleeve CRD (page 64)			4									
			Sleeve CFRP (page 64)			5	for special sleeve S / CRD / CFRP									

Example: 100 / 952.110 / Hub 1– ø 70 ^{H7} / Hub 2 – ø 80 ^{H7}

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HT

Single-jointed coupling with clamping hubs

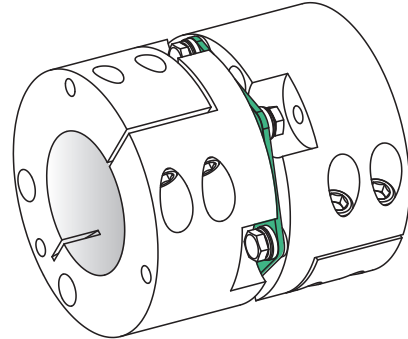
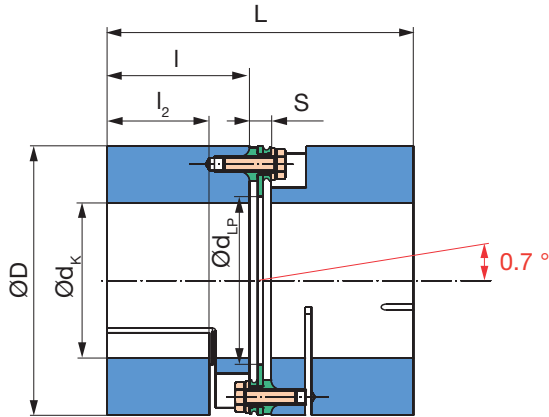


Fig. 16: Type 952.550

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 _{K min}	[mm]	20	22	25	28	32	40	
Maximum hub bore ³⁾		d _{K max}	[mm]	45	52	60	70	90	100	
Maximum speed ⁴⁾		n _{max}	[rpm]	9500	8200	7000	6000	5100	4300	
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}		ΔK _a	[mm]	0.8	0.9	1.1	1.3	1.5	1.7
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	[mm]	0.2	0.2	0.25	0.3	0.3	0.35
		with sleeve 1	ΔK _{r,H}	[mm]	0.7	0.8	1	1.25	1.45	1.5
		with sleeve S	ΔK _{r,H}	[mm]	(H _s - S) x 0.0122					
Spring rigidity	torsion ¹¹⁾	disk pack	C _{T LP}	[10 ³ Nm/rad]	180	290	450	1350	1900	2950
		tube sleeve S	C _{T H rel.}	[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_3	33	41	46	51	66	76
d_{H1}	43	54	62	71	92	98
d_{LP}	45	55	65	74	88	103
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
L	84.6	95	116.1	138	158.6	179.2
L_2	101.2	112	136.2	164	185.2	210.4
L_4	145	165.6	201.4	242.8	283.2	305.2
L_6	dependent on H_s					
I	40	45	55	65	75	85
I_2	27	32	39.6	44.8	54.5	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

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⁾	0.74	1.49	3.64	8.42	16.94	34.32
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

Weights [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⁾	0.73	1.11	2.05	3.43	4.82	6.94
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

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 table page 76.

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.

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

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{TLP}} + \frac{H_s [\text{mm}] - 2 S [\text{mm}]}{C_{TH \text{ rel.}}}}$$

ROBA®-DS Sizes 16 to 160 – disk pack-HT

Double-jointed coupling with connection plate and clamping hubs

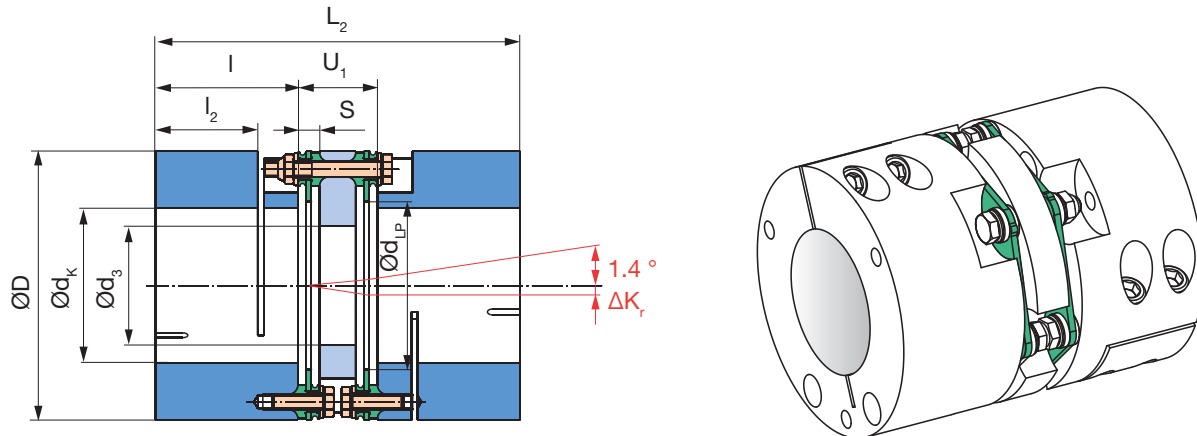


Fig. 17: Type 953.551

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

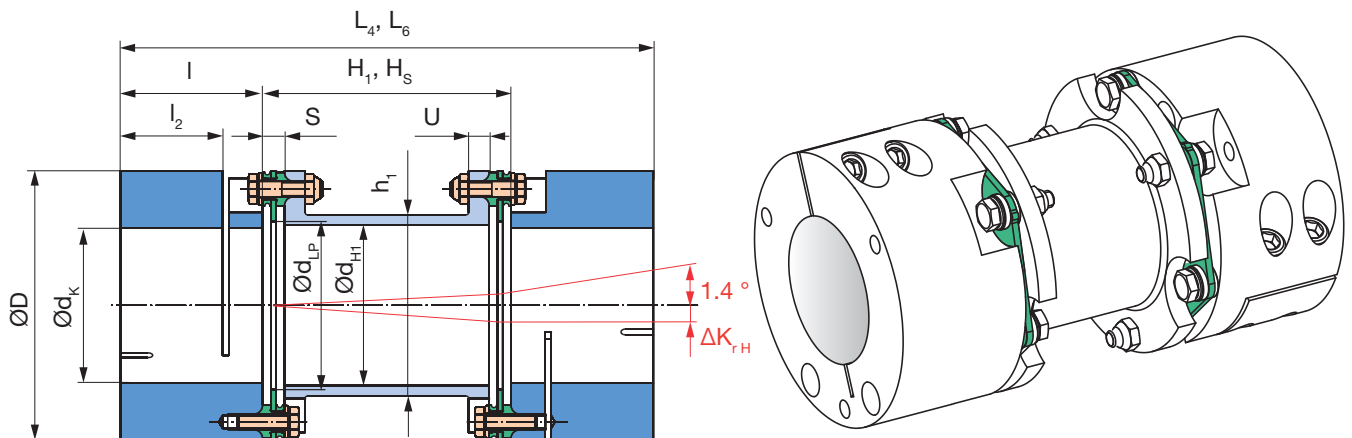


Fig. 18: Type 953.552 (sleeve 1: H_1 , L_4), Type 953.553 (sleeve S: H_S , L_6)

Order Number

Order Number							
—	/	9	5	—	.	5	5
△				△			
Sizes 16 to 160	Single-jointed coupling	2	Single-jointed coupling	0	Bore* Hub 1 ø	Bore* Hub 2 ø	Sleeve length
	Double-jointed coupling	3	Connection plate	1	(Dim. page 18)	(Dim. page 18)	H_S [mm]
			Sleeve 1	2			for special sleeve S / CRD / CFRP
			Sleeve S	3			
			Sleeve CRD (page 64)	4			
			Sleeve CFRP (page 64)	5			

Example: 100 / 952.550 / Hub 1 – ø 75 ^{H7} / Hub 2 – ø 90 ^{H7}

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HT

Single-jointed coupling with shrink disk hubs, external clamping

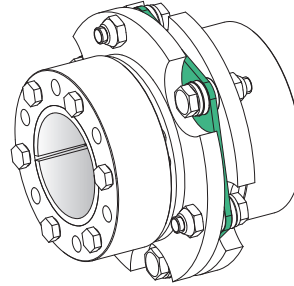
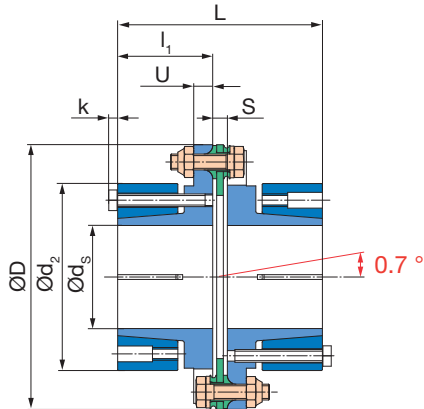


Fig. 19: Type 952.220

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 _{S min}	[mm]	14	20	25	30	35	40	
Maximum hub bore ³⁾		d _{S max}	[mm]	26	36	45	45	55	65	
Maximum speed ⁴⁾		n _{max}	[rpm]	13600	11800	10100	8500	7300	6200	
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}		ΔK _a	[mm]	0.8	0.9	1.1	1.3	1.5	1.7
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	[mm]	0.2	0.2	0.25	0.3	0.3	0.35
		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 _{T LP}	[10 ³ Nm/rad]	180	290	450	1350	1900	2950
		tube sleeve S	C _{T H rel.}	[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					
I_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

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

Weights [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

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 75.

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.

11) The C_{T-} -value of a double-jointed coupling can be roughly calculated as follows:

$$C_{T ges.} = \frac{1}{\frac{2}{C_{TLP}} + \frac{H_s [mm] - 2 S [mm]}{C_{THrel.}}}$$

ROBA®-DS Sizes 16 to 160 – disk pack-HT

Double-jointed coupling with connection plate and shrink disk hubs, external clamping

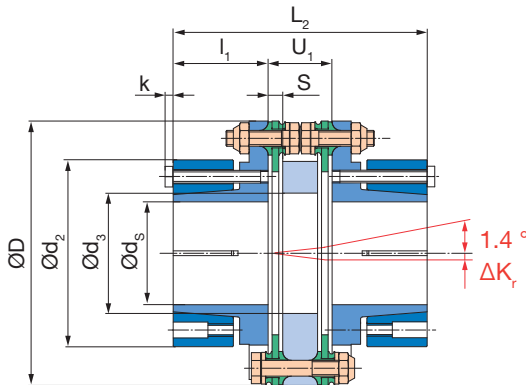


Fig. 20: Type 953.221

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

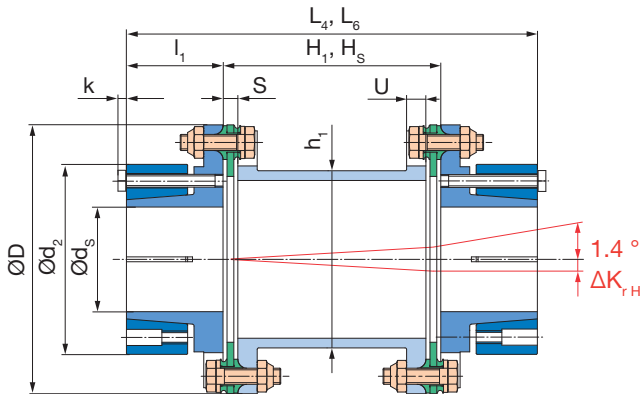


Fig. 21: Type 953.222 (sleeve 1: H_1 , L_4), Type 953.223 (sleeve S: H_S , L_6)

Order Number

Order Number								
—	/	9	5	—	.	2	2	— / — / — / — / —
▲			▲		▲	▲	▲	▲
Sizes 16 to 160	Single-jointed coupling Double-jointed coupling			2 3	Single-jointed coupling Connection plate Sleeve 1 Sleeve S Sleeve CRD (page 64) Sleeve CFRP (page 64)			0 1 2 3 4 5
					Bore* Hub 1 ø (Dim. page 20)			Bore* Hub 2 ø (Dim. page 20)
								Sleeve length H_S [mm] for special sleeve S / CRD / CFRP
								Operating speed n_s [rpm]

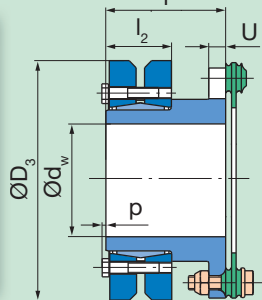
Example: 40 / 953.221 / Hub 1 – ø 30 ^{H7} / Hub 2 – ø 30 ^{H7}

*Standard H7, other tolerances possible

Additional Option:

Size	d_w	D_3	l	l_2	p
16	28/30	72	40	27.5	2.5
	32	75	40	28.5	3.5
25	32/35	80	45	29.5	-
	38/40/42	90	45	31.5	1.5
40	42/45/48	100	55	34.5	-
64	50/55/60	115	65	34.5	-
100	55/60/65	138	75	38	-
160	65/70/75	155	85	44.5	-

External shrink disk hub



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ROBA®-DS Sizes 16 to 160 – disk pack-HT

Single-jointed coupling with shrink disk hubs, external clamping and internal clamping

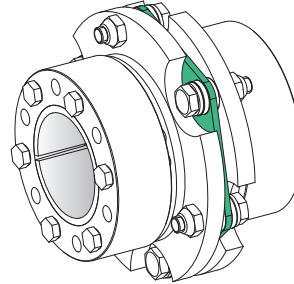
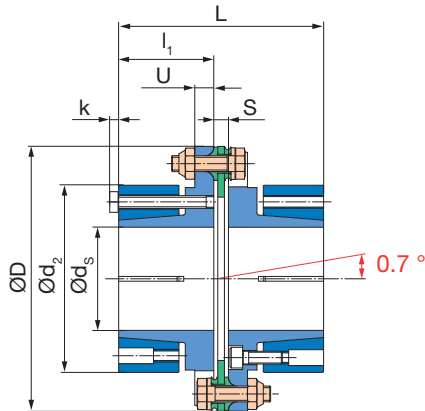


Fig. 22: Type 952.230

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⁾	$d_{S\ min}$		[mm]	14	20	25	30	35	40
Maximum hub bore ³⁾	$d_{S\ max}$		[mm]	26	36	45	45	55	65
Maximum speed ⁴⁾	n_{max}		[rpm]	13600	11800	10100	8500	7300	6200
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}	ΔK_a	[mm]	0.8	0.9	1.1	1.3	1.5	1.7
	perm. radial mis-alignment ⁶⁾ with connection plate	ΔK_r	[mm]	0.2	0.2	0.25	0.3	0.3	0.35
	with sleeve 1	ΔK_{rH}	[mm]	0.7	0.8	1	1.25	1.45	1.5
	with sleeve S	ΔK_{rH}	[mm]	$(H_s - S) \times 0.0122$					
Spring rigidity	torsion ¹¹⁾ disk pack	$C_{T\ LP}$	[10 ³ Nm/rad]	180	290	450	1350	1900	2950
	tube sleeve S	$C_{T\ H\ rel.}$	[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

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

Weights [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

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 75.

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.

11) The C_{T-} value of a double-jointed coupling can be roughly calculated as follows:

$$C_{T\ ges.} = \frac{1}{\frac{2}{C_{T\ LP}} + \frac{H_s [mm] - 2 S [mm]}{C_{T\ H\ rel.}}}$$

ROBA®-DS Sizes 16 to 160 – disk pack-HT

Double-jointed coupling with connection plate and shrink disk hubs, external clamping and internal clamping

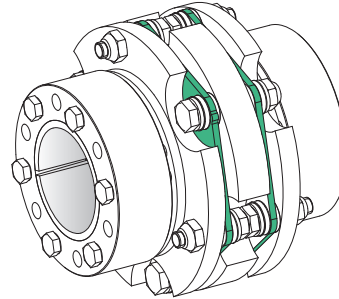
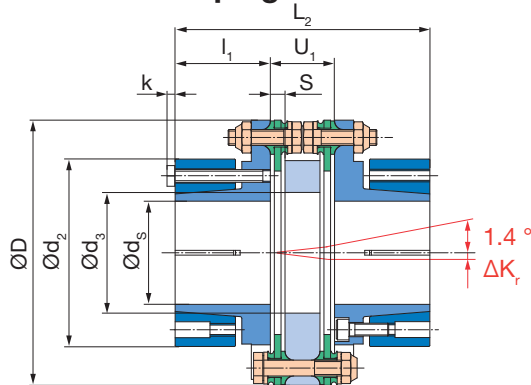


Fig. 23: Type 953.231

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

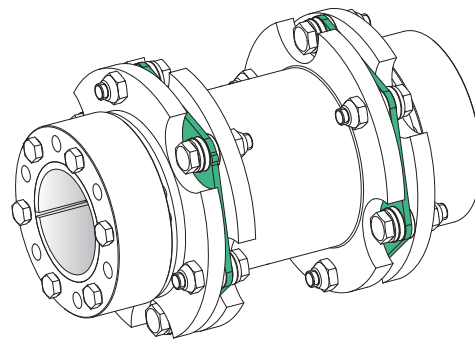
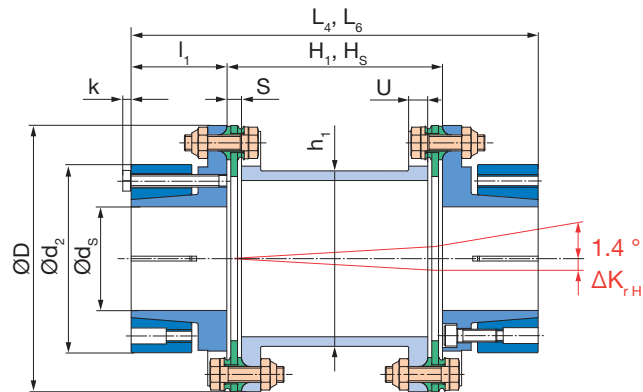


Fig. 24: Type 953.232 (sleeve 1: H_1 , L_4), Type 953.233 (sleeve S: H_S , L_6)

Order Number								
—	/	9	5	—	.	2	3	— / — / — / — / —
▲				▲			▲	▲
Sizes 16 to 160	Single-jointed coupling		2	Single-jointed coupling		0	Bore* Hub 1 ø (Dim. page 22)	Bore* Hub 2 ø (Dim. page 22)
	Double-jointed coupling		3	Connection plate		1		
				Sleeve 1		2		
				Sleeve S		3		
				Sleeve CRD (page 64)		4		
				Sleeve CFRP (page 64)		5		
								Sleeve length H_s [mm]
								Operating speed n_s [rpm]
								for special sleeve S / CRD / CFRP

Example: 64 / 953.231 / Hub 1 – ø 35 ^{H7} / Hub 2 – ø 40 ^{H7}

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HT

Single-jointed coupling with shrink disk hubs, large

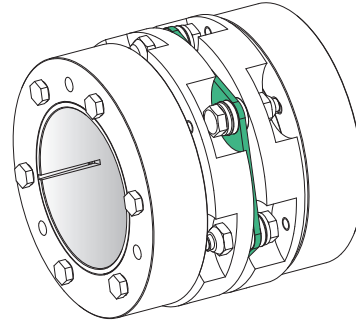
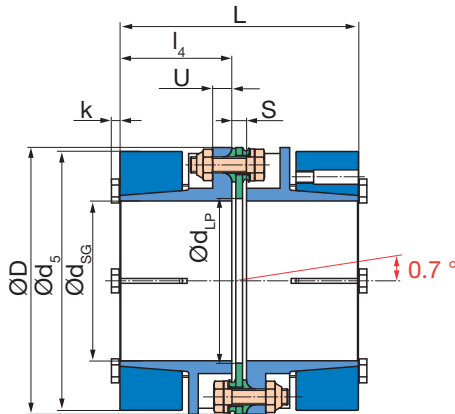


Fig. 25: Type 952.990

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 _{SG min}	[mm]	25	32	40	45	55	65	
Maximum hub bore ³⁾		d _{SG max}	[mm]	45	52	60	70	90	100	
Maximum speed ⁴⁾		n _{max}	[rpm]	13600	11800	10100	8500	7300	6200	
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}		ΔK _a	[mm]	0.8	0.9	1.1	1.3	1.5	1.7
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	[mm]	0.2	0.2	0.25	0.3	0.3	0.35
		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 _{T LP}	[10 ³ Nm/rad]	180	290	450	1350	1900	2950
		tube sleeve S	C _{T H rel.}	[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_3	33	41	46	51	66	76
d_5	77	82	100	115	143	162
d_{H1}	43	54	62	71	92	98
d_{LP}	45	55	65	74	88	103
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	84.6	95	106.1	118	128.6	150.2
L_2	101.2	112	126.2	144	155.2	181.4
L_4	145	165.6	191.4	222.8	253.2	276.2
L_6	dependent on H_s					
l_4	40	45	50	55	60	70.5
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

- Valid for changing load direction as well as for max. permitted shaft misalignment.
- Valid for unchanging load direction, max. load cycles $\leq 10^5$.
- Transmittable torques dependent on bore, see page 75.
- Not valid for coupling with sleeve S.
- The permitted misalignments may not simultaneously reach their maximum values.
- The values refer to couplings with 2 disk packs.
- Only permitted as a static or virtually static value.
- The values refer to 1 disk pack.

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⁾	0.78	1.23	2.88	5.81	13.77	27.35
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

Weights [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⁾	0.79	1.02	1.71	2.53	3.92	6.08
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

- Mass moments of inertia and weights are valid for 1 disk pack.
- Mass moments of inertia and weights are valid for maximum bore.
- The C_T -value of a double-jointed coupling can be roughly calculated as follows:

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{TLP}} + \frac{H_s [\text{mm}] - 2 S [\text{mm}]}{C_{TH \text{ rel.}}}}$$

Double-jointed coupling with connection plate and shrink disk hubs, large

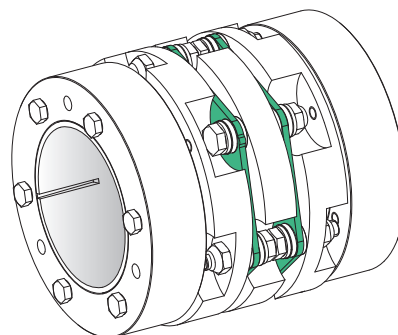


Fig. 26: Type 953.991

Technical drawing of a shaft-hub assembly. The drawing shows a shaft (green) passing through a hub (blue). Key dimensions are labeled: L_4, L_6 (total lengths), H_1, H_S (heights), I_4 (distance between keys), S (key width), U (distance from end to key), k (key fit), h_1 (hub thickness), $\varnothing D$ (outer diameter), $\varnothing d_5$ (inner diameter), $\varnothing d_{SG}$ (shaft diameter), $\varnothing d_{LP}$ (shaft diameter at key), and $\varnothing d_{H1}$ (hub bore diameter). Red lines indicate the fit of the shaft in the hub.

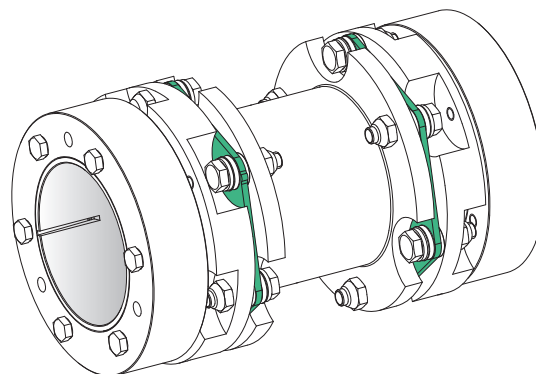


Fig. 27: Type 953.992 (sleeve 1: H_1 , L_4), Type 953.993 (sleeve S: H_S , L_6)

— / 9 5		— . 9 9		— / — / — / — / —				
Sizes 16 to 160	Single-jointed coupling	2	Single-jointed coupling	0	Bore* Hub 1 ø (Dim. page 24)			
	Double-jointed coupling		Connection plate			Bore* Hub 2 ø (Dim. page 24)		
			Sleeve 1				Sleeve length H_s [mm]	
			Sleeve S					Operating speed n_s [rpm]
			Sleeve CRD (page 64)					
			Sleeve CFRP (page 64)					for special sleeve S / CRD / CFRP

Example: 16 / 953.991 / Hub 1 – ø 35 ^{H7} / Hub 2 – ø 35 ^{H7}

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HT

Single-jointed coupling with flanges

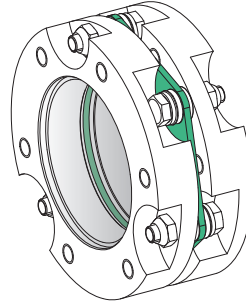
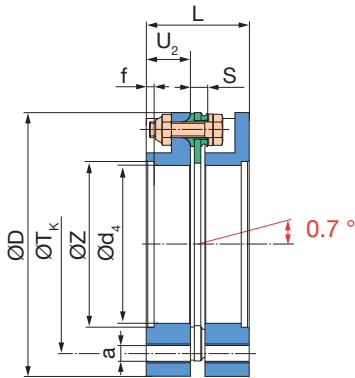


Fig. 28: Type 952.660

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	
Centering bore		Z ^{H7}	[mm]	45	55	65	75	92	105	
Maximum speed ³⁾		n _{max}	[rpm]	13600	11800	10100	8500	7300	6200	
Permitted misalignments ⁴⁾	perm. axial displacement ^{5) 6)}		ΔK _a	[mm]	0.8	0.9	1.1	1.3	1.5	1.7
	perm. radial misalignment ⁵⁾	with connection plate	ΔK _r	[mm]	0.2	0.2	0.25	0.3	0.3	0.35
		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 ⁷⁾	disk pack	C _{T LP}	[10 ³ Nm/rad]	180	290	450	1350	1900	2950
		tube sleeve S	C _{T H rel.}	[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
a	6 x M8	6 x M8	6 x M10	6 x M10	6 x M12	6 x M14
d ₃	33	41	46	51	66	76
d ₄	40	50	60	70	85	100
f	4	4	4	5	5	5
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
L	34.6	35	42.1	48	48.6	66.2
L ₂	51.2	52	62.2	74	75.2	97.4
L ₄	95	105.6	127.4	152.8	173.2	192.2
L ₆	dependent on H _s					
S	4.6	5	6.1	8	8.6	9.2
T _K	62	75	86	103	116	140
U	7	7	8	10	10	12
U ₁	21.2	22	26.2	34	35.2	40.4
U ₂	15	15	18	20	20	28.5

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
Flange	0.23	0.43	0.89	1.95	3.87	9.48
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.09	0.16	0.32	0.39	0.71
Flange	0.26	0.34	0.52	0.82	1.16	2.10
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

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) Not valid for coupling with sleeve S.

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

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

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

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

$$C_{T ges.} = \frac{1}{\frac{2}{C_{TLP}} + \frac{H_s [mm] - 2 S [mm]}{C_{THrel.}}}$$

8) The values refer to 1 disk pack.

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

ROBA®-DS Sizes 16 to 160 – disk pack-HT

Double-jointed coupling with connection plate and flanges

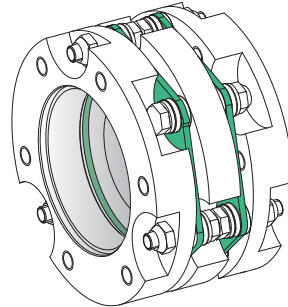
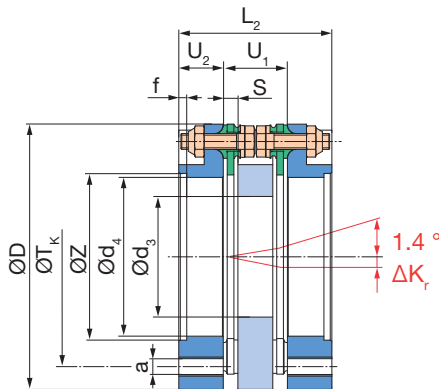


Fig. 29: Type 953.661

Double-jointed coupling with sleeve 1 or sleeve S (special length) and flanges

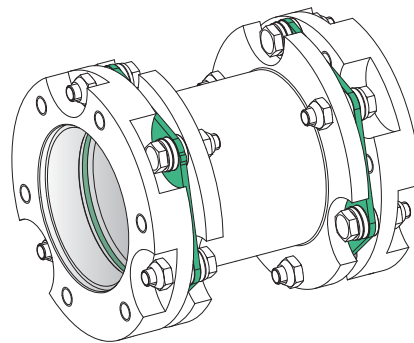
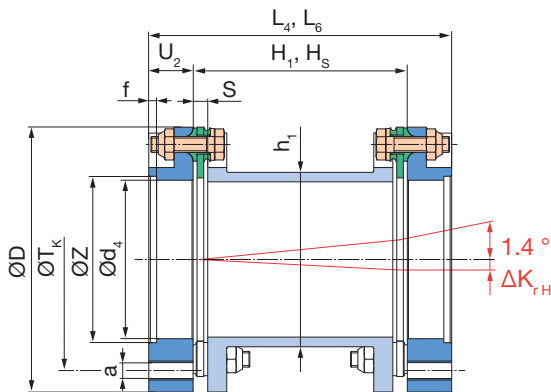


Fig. 30: Type 953.662 (sleeve 1: H_1 , L_4), Type 953.663 (sleeve S: H_S , L_6)

Order Number						
—	/	9	5	—	.	6 6 — / — / —
▲			▲		▲	▲
Sizes 16 to 160	Single-jointed coupling Double-jointed coupling		2 3	Single-jointed coupling Connection plate Sleeve 1 Sleeve S Sleeve CRD (page 64) Sleeve CFRP (page 64)	0 1 2 3 4 5	Sleeve length H_S [mm] Operating speed n_s [rpm] for special sleeve S / CRD / CFRP

Example: 40 / 953.661

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ROBA®-DS Sizes 16 to 160 – disk pack-HF

Single-jointed coupling with key hubs

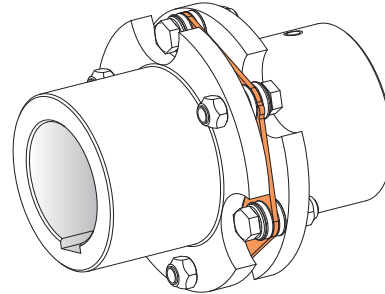
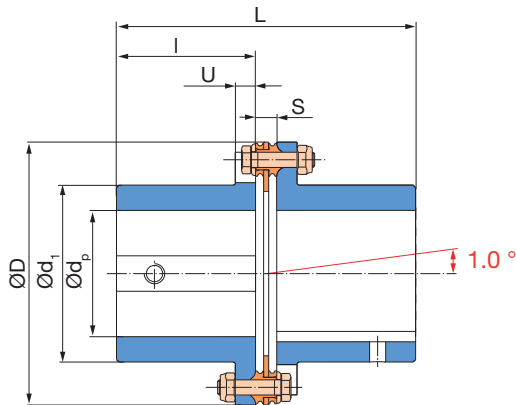


Fig. 31: Type 950.000

Technical Data and Main Dimensions				Size					
				16	25	40	64	100	160
Nominal torque ¹⁾	T _{KN}	[Nm]		190	290	450	720	1000	1600
Peak torque ²⁾	T _{KS}	[Nm]		285	435	675	1080	1500	2400
Outer diameter	D	[mm]		77	89	104	123	143	167
Minimum hub bore ³⁾	d _{p min}	[mm]		16	20	25	30	35	40
Maximum hub bore ³⁾	d _{p max}	[mm]		32	40	50	55	70	80
Maximum speed ⁴⁾	n _{max}	[rpm]		13600	11800	10100	8500	7300	6200
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}	ΔK _a	[mm]	1.1	1.3	1.5	1.8	2.1	2.5
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	0.3	0.3	0.4	0.45	0.45	0.55
		with sleeve 1	ΔK _{r H}	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	ΔK _{r H}	(H _s - S) x 0.0174					
Spring rigidity	torsion ⁸⁾	C _{T LP}	[10 ³ Nm/rad]	145	280	301	748	1135	1920
		C _{T H rel.}	[10 ⁶ Nm mm/rad]	19	34	71	108	217	415
	angular spring rigidity ⁹⁾		[Nm/rad]	229	248	298	876	1089	1990

Dimensions [mm]

Size	16	25	40	64	100	160
d ₁	50	60	70	80	100	115
d ₃	33	41	46	51	66	76
H ₁	70	80	96	116	136	140
H _s	acc. customer specifications					
h ₁	50	60	70	80	100	110
L	87.1	97.2	118.4	139.6	160	181.6
L ₂	106.2	116.4	140.8	167.2	188	215.2
L ₄	150	170	206	246	286	310
L ₆	dependent on H _s					
I	40	45	55	65	75	85
S	7.1	7.2	8.4	9.6	10	11.6
U	7	7	8	10	10	12
U ₁	26.2	26.4	30.8	37.2	38	45.2

Mass moments of inertia J [10⁻³ kgm²]

Size	16	25	40	64	100	160
Disk pack ¹⁰⁾	0.08	0.12	0.26	0.74	1.19	3.27
Hub ¹¹⁾	0.27	0.55	1.16	2.58	6.18	12.51
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ¹⁰⁾	0.08	0.09	0.15	0.29	0.35	0.67
Hub ¹¹⁾	0.46	0.69	1.02	1.72	2.83	4.25
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

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

2) Valid for unchanging load direction, max. load cycles ≤ 10⁵.

3) Transmittable torques dependent on bore, see table page 76.

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

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{T \text{ LP}}} + \frac{H_s [\text{mm}] - 2 S [\text{mm}]}{C_{T \text{ H rel.}}}}$$

9) The values refer to 1 disk pack.

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

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

ROBA®-DS Sizes 16 to 160 – disk pack-HF

Double-jointed coupling with connection plate and key hubs

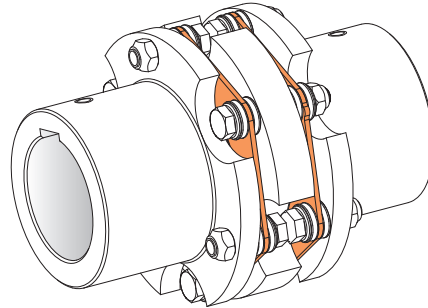
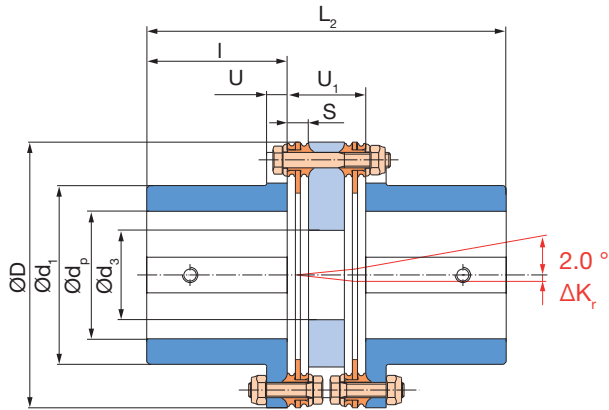


Fig. 32: Type 951.001

Double-jointed coupling with sleeve 1 or sleeve S (special length) and key hubs

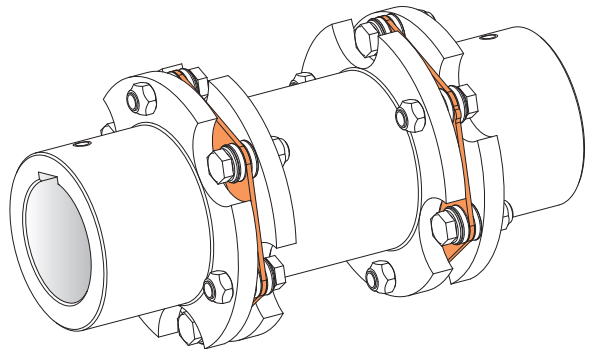
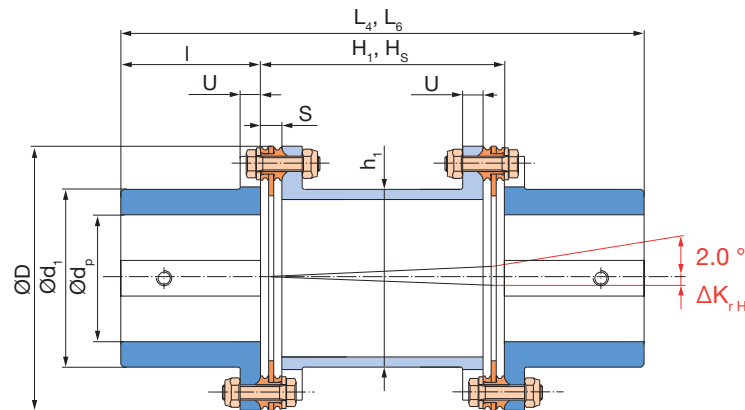


Fig. 33: Type 951.002 (sleeve 1: H_1 , L_4), Type 951.003 (sleeve S: H_S , L_6)

Order Number								
—	/	9	5	—	.	0	0	— / — / — / — / —
▲				▲			▲	▲
Sizes 16 to 160	Single-jointed coupling		0	Single-jointed coupling		0	Bore* Hub 1 ø (Dim. page 28)	Bore* Hub 2 ø (Dim. page 28)
	Double-jointed coupling		1	Connection plate		1		
				Sleeve 1		2		
				Sleeve S		3		
				Sleeve CRD (page 64)		4		
				Sleeve CFRP (page 64)		5		
								Sleeve length H_S [mm]
								Operating speed n_s [rpm]
								for special sleeve S / CRD / CFRP

Example: 16 / 951.001 / Hub 1 – ø 25 ^{H7} / Hub 2 – ø 25 ^{H7}

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HF

Single-jointed coupling with key hubs, large

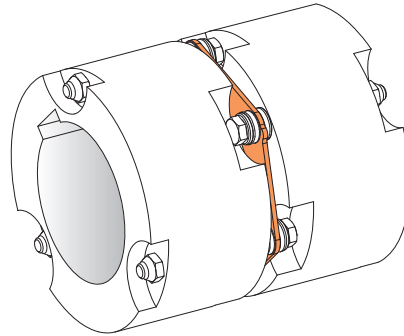
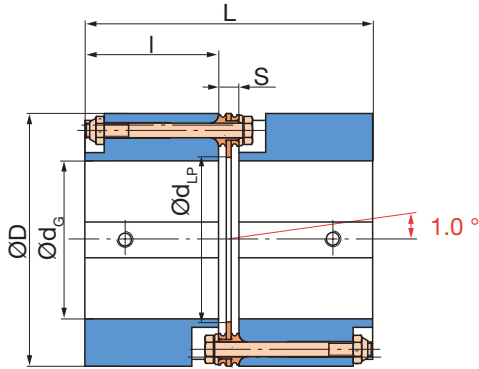


Fig. 34: Type 950.110

Technical Data and Main Dimensions				Size					
				16	25	40	64	100	160
Nominal torque ¹⁾	T _{KN}	[Nm]		190	290	450	720	1000	1600
Peak torque ²⁾	T _{KS}	[Nm]		285	435	675	1080	1500	2400
Outer diameter	D	[mm]		77	89	104	123	143	167
Minimum hub bore	d _{G min}	[mm]		30	35	45	55	65	75
Maximum hub bore	d _{G max}	[mm]		45	55	65	75	95	110
Maximum speed ³⁾	n _{max}	[rpm]		13600	11800	10100	8500	7300	6200
Permitted misalignments ⁴⁾	perm. axial displacement ^{5) 6)}	ΔK _a	[mm]	1.1	1.3	1.5	1.8	2.1	2.5
	perm. radial misalignment ⁵⁾ with connection plate	ΔK _r	[mm]	0.3	0.3	0.4	0.45	0.45	0.55
	with sleeve 1	ΔK _{rH}	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
	with sleeve S	ΔK _{rH}	[mm]	(H _s - S) x 0.0174					
Spring rigidity	torsion ¹⁰⁾ disk pack	C _{T LP}	[10 ³ Nm/rad]	145	280	301	748	1135	1920
	tube sleeve S	C _{T H rel.}	[10 ⁶ Nm mm/rad]	19	34	71	108	217	415
	angular spring rigidity ⁷⁾		[Nm/rad]	229	248	298	876	1089	1990

Dimensions [mm]

Size	16	25	40	64	100	160
d ₃	33	41	46	51	66	76
d _{H1}	43	54	62	71	92	98
d _{LP}	45	55	65	74	88	103
H ₁	70	80	96	116	136	140
H _s	acc. customer specifications					
h ₁	50	60	70	80	100	110
L	87.1	97.2	118.4	139.6	160	181.6
L ₂	106.2	116.4	140.8	167.2	188	215.2
L ₄	150	170	206	246	286	310
L ₆	dependent on H _s					
l	40	45	55	65	75	85
S	7.1	7.2	8.4	9.6	10	11.6
U	7	7	8	10	10	12
U ₁	26.2	26.4	30.8	37.2	38	45.2

Mass moments of inertia J [10⁻³ kgm²]

Size	16	25	40	64	100	160
Disk pack ⁸⁾	0.08	0.12	0.26	0.74	1.19	3.27
Hub ⁹⁾	0.86	1.71	3.89	8.98	18.12	36.00
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ⁸⁾	0.08	0.09	0.15	0.29	0.35	0.67
Hub ⁹⁾	0.87	1.26	2.08	3.47	4.94	7.23
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

- 1) Valid for changing load direction as well as for max. permitted shaft misalignment.
- 2) Valid for unchanging load direction, max. load cycles ≤ 10⁵.
- 3) Not valid for coupling with sleeve S.
- 4) The permitted misalignments may not simultaneously reach their maximum values.
- 5) The values refer to couplings with 2 disk packs.
- 6) Only permitted as a static or virtually static value.
- 7) The values refer to 1 disk pack.
- 8) Mass moments of inertia and weights are valid for 1 disk pack.
- 9) Mass moments of inertia and weights are valid for maximum bore

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

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{T LP}} + \frac{H_s [\text{mm}] - 2 S [\text{mm}]}{C_{T H \text{ rel.}}}}$$

ROBA[®]-DS Sizes 16 to 160 – disk pack-HF

Double-jointed coupling with connection plate and key hubs, large

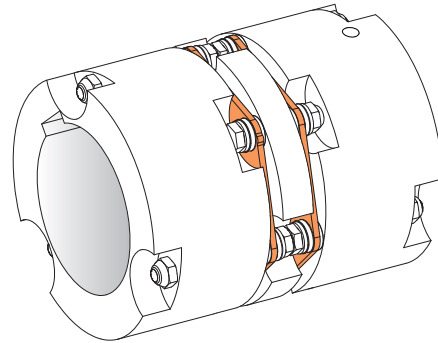
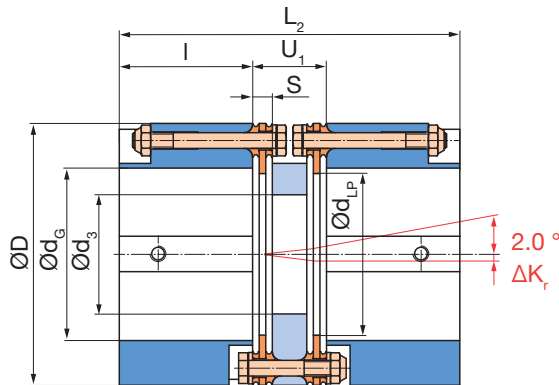


Fig. 35: Type 951.111

Double-jointed coupling with sleeve 1 or sleeve S (special length) and key hubs, large

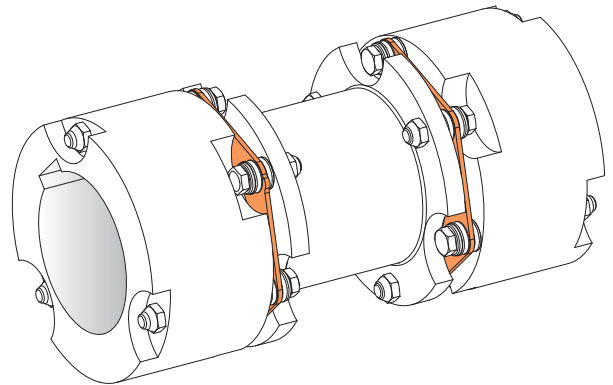
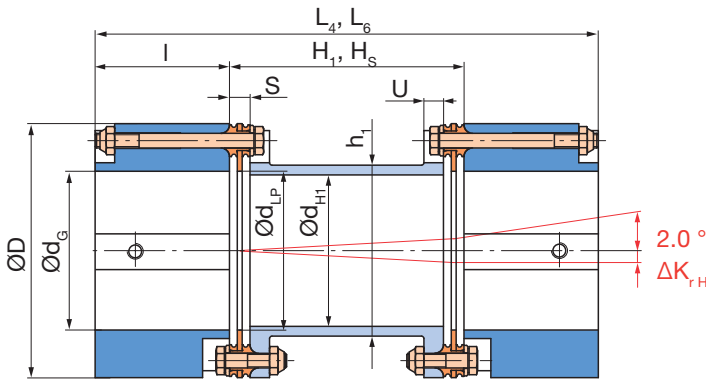


Fig. 36: Type 951.112 (sleeve 1: H_1 , L_4), Type 951.113 (sleeve S: H_S , L_6)

Order Number

—	/	9	5	—	.	1	1	—	/	—	/	—	/	—	/	—
▲				▲				▲		▲		▲		▲		▲
Sizes 16 to 160	Single-jointed coupling			0	Single-jointed coupling			0	Bore* Hub 1 ø (Dim. page 30)		Bore* Hub 2 ø (Dim. page 30)		Sleeve length H_s [mm]	Operating speed n_s [rpm]		
	Double-jointed coupling			1	Connection plate			1								
					Sleeve 1			2								
					Sleeve S			3								
					Sleeve CRD (page 64)			4								
				Sleeve CFRP (page 64)			5					for special sleeve S / CRD / CFRP				

Example: 25 / 950.110 / Hub 1 – ø 45^{H7} / Hub 2 – ø 45^{H7}

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HF

Single-jointed coupling with clamping hubs

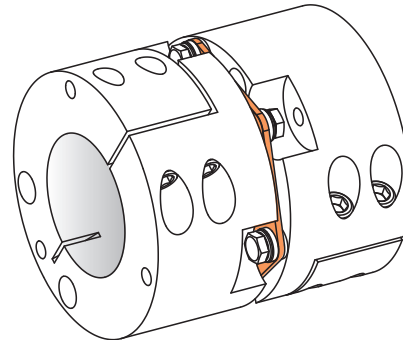
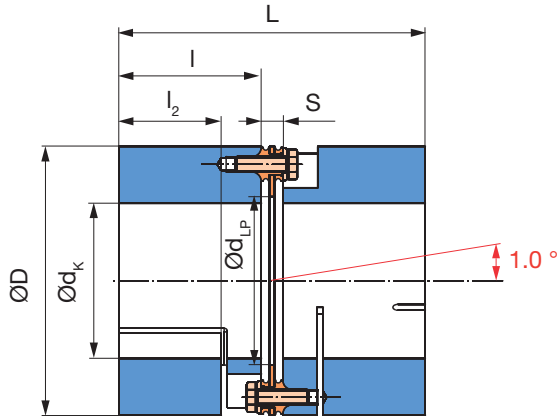


Fig. 37: Type 950.550

Technical Data and Main Dimensions				Size						
				16	25	40	64	100	160	
Nominal torque ¹⁾		T _{KN}	[Nm]	190	290	450	720	1000	1600	
Peak torque ²⁾		T _{KS}	[Nm]	285	435	675	1080	1500	2400	
Outer diameter		D	[mm]	77	89	104	123	143	167	
Minimum hub bore ³⁾		d _{K min}	[mm]	20	22	25	28	32	40	
Maximum hub bore ³⁾		d _{K max}	[mm]	45	52	60	70	90	100	
Maximum speed ⁴⁾		n _{max}	[rpm]	9500	8200	7000	6000	5100	4300	
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}		ΔK _a	[mm]	1.1	1.3	1.5	1.8	2.1	2.5
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	[mm]	0.3	0.3	0.4	0.45	0.45	0.55
		with sleeve 1	ΔK _{rH}	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	ΔK _{rH}	[mm]	(H _S - S) x 0.0174					
Spring rigidity	torsion ¹¹⁾	disk pack	C _{T LP}	[10 ³ Nm/rad]	145	280	301	748	1135	1920
		tube sleeve S	C _{T H rel.}	[10 ⁶ Nm mm/rad]	19	34	71	108	217	415
	angular spring rigidity ⁸⁾			[Nm/rad]	229	248	298	876	1089	1990

Dimensions [mm]

Size	16	25	40	64	100	160
d_3	33	41	46	51	66	76
d_{H1}	43	54	62	71	92	98
d_{LP}	45	55	65	74	88	103
H_1	70	80	96	116	136	140
H_s	acc. customer specifications					
h_1	50	60	70	80	100	110
L	87.1	97.2	118.4	139.6	160	181.6
L_2	106.2	116.4	140.8	167.2	188	215.2
L_4	150	170	206	246	286	310
L_6	dependent on H_s					
l	40	45	55	65	75	85
l_2	27	32	39.6	44.8	54.5	60
S	7.1	7.2	8.4	9.6	10	11.6
U	7	7	8	10	10	12
U_1	26.2	26.4	30.8	37.2	38	45.2

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 table page 76.

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	0.12	0.26	0.74	1.19	3.27
Hub ¹⁰⁾	0.74	1.49	3.64	8.42	16.94	34.32
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.09	0.15	0.29	0.35	0.67
Hub ¹⁰⁾	0.73	1.11	2.05	3.43	4.82	6.94
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:

$$C_{T ges.} = \frac{1}{\frac{2}{C_{T LP}} + \frac{H_s [mm] - 2 S [mm]}{C_{T H rel.}}}$$

ROBA®-DS Sizes 16 to 160 – disk pack-HF

Double-jointed coupling with connection plate and clamping hubs

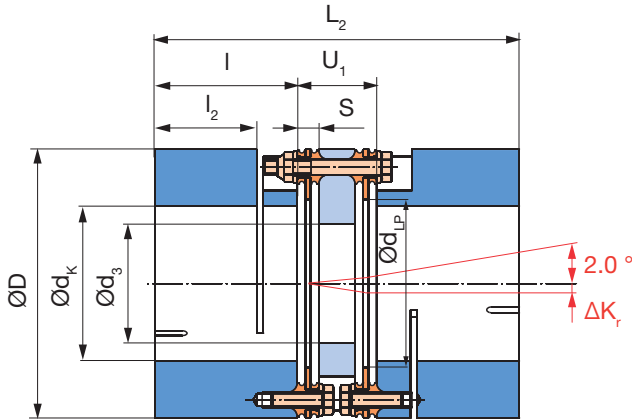
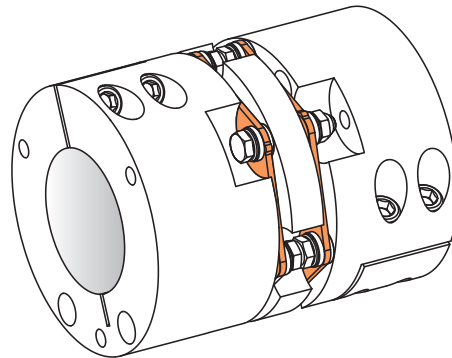


Fig. 38: Type 951.551



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

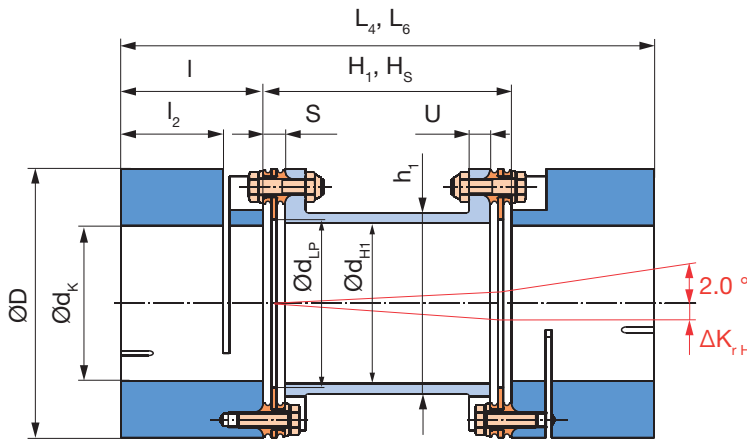
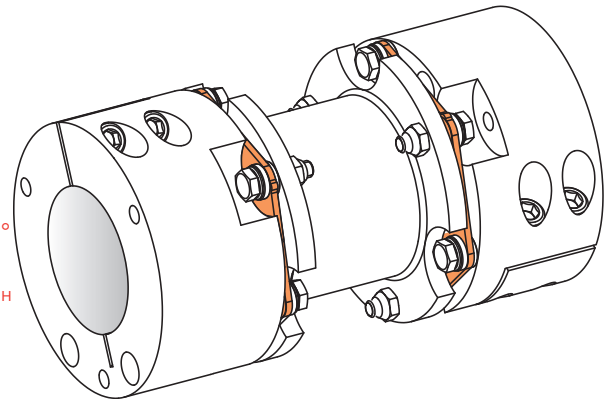


Fig. 39: Type 951.552 (sleeve 1: H_1, L_4), Type 951.553 (sleeve S: H_S, L_6)



Order Number

— / 9 5 — . 5 5 — / — / — / — / —									
▲		▲		▲		▲	▲	▲	▲
Sizes 16 to 160	Single-jointed coupling	0	Single-jointed coupling	0	Bore*	Bore*	Sleeve length	Operating speed	
	Double-jointed coupling	1	Connection plate	1	Hub 1 $\varnothing$	Hub 2 $\varnothing$	H_s	n_s	
			Sleeve 1	2	(Dim. page 32)	(Dim. page 32)	[mm]	[rpm]	
			Sleeve S	3					
			Sleeve CRD (page 64)	4					
		Sleeve CFRP (page 64)	5						for special sleeve S / CRD / CFRP

Example: 16 / 951.551 / Hub 1 – $\varnothing 45^{H7}$ / Hub 2 – $\varnothing 45^{H7}$

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HF

Single-jointed coupling with clamping ring hubs

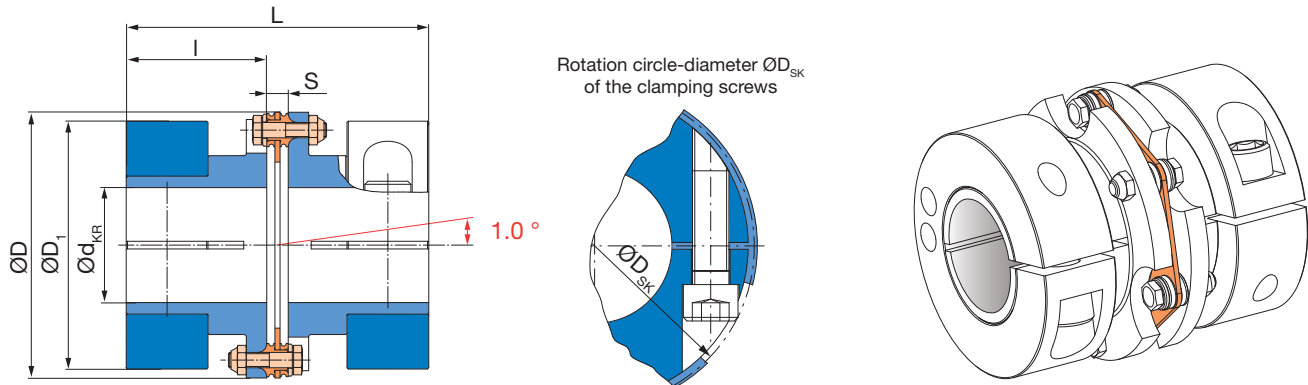


Fig. 40: Type 950.440

Technical Data and Main Dimensions				Size						
				16	25	40	64	100	160	
Nominal torque ¹⁾		T _{KN}	[Nm]	190	290	450	720	1000	1600	
Peak torque ²⁾		T _{KS}	[Nm]	285	435	675	1080	1500	2400	
Outer diameter		D	[mm]	77	89	104	123	143	167	
Minimum hub bore ³⁾		d _{KR min}	[mm]	20	22	25	28	32	40	
Maximum hub bore ³⁾		d _{KR max}	[mm]	35	40	45	55	68	80	
Maximum speed ⁴⁾		n _{max}	[rpm]	9500	8200	7000	6000	5100	4300	
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}		ΔK _a	[mm]	1.1	1.3	1.5	1.8	2.1	2.5
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	[mm]	0.3	0.3	0.4	0.45	0.45	0.55
		with sleeve 1	ΔK _{rH}	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	ΔK _{rH}	[mm]	(H _s - S) x 0.0174					
Spring rigidity	torsion ¹¹⁾	disk pack	C _{T LP}	[10 ³ Nm/rad]	145	280	301	748	1135	1920
		tube sleeve S	C _{T H rel.}	[10 ⁶ Nm mm/rad]	19	34	71	108	217	415
	angular spring rigidity ⁸⁾			[Nm/rad]	229	248	298	876	1089	1990

Dimensions [mm]

Size	16	25	40	64	100	160
D_1	73	84	97	115	135	158
D_{sk}	77	89	103	122	143	167
d_3	33	41	46	51	66	76
H_1	70	80	96	116	136	140
H_s	acc. customer specifications					
h_1	50	60	70	80	100	110
L	87.1	97.2	118.4	139.6	160	181.6
L_2	106.2	116.4	140.8	167.2	188	215.2
L_4	150	170	206	246	286	310
L_6	dependent on H_s					
I	40	45	55	65	75	85
S	7.1	7.2	8.4	9.6	10	11.6
U	7	7	8	10	10	12
U_1	26.2	26.4	30.8	37.2	38	45.2

Mass moments of inertia J [10^{-3} kgm²]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.12	0.26	0.74	1.19	3.27
Hub ¹⁰⁾	0.63	1.29	2.84	6.3	13.49	28.71
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.09	0.15	0.29	0.35	0.67
Hub ¹⁰⁾	0.76	1.20	2.00	3.17	4.90	7.61
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

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 75.

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.

11) The C_{T-} value of a double-jointed coupling can be roughly calculated as follows:

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{TLP}} + \frac{H_s [\text{mm}] - 2 S [\text{mm}]}{C_{TH \text{ rel.}}}}$$

ROBA®-DS Sizes 16 to 160 – disk pack-HF

Double-jointed coupling with connection plate and clamping ring hubs

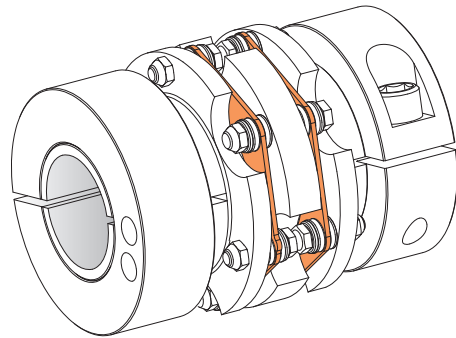
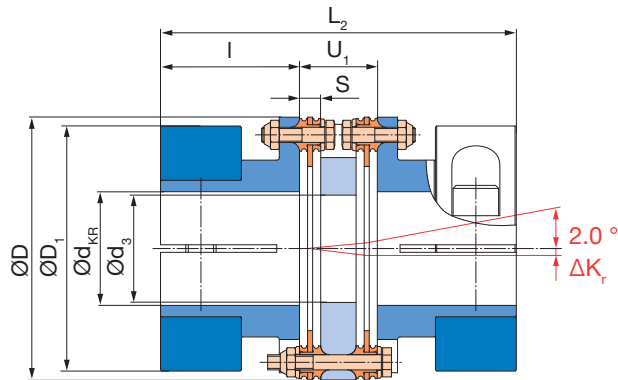


Fig. 41: Type 951.441

Double-jointed coupling with sleeve 1 or sleeve S (special length) and clamping ring hubs

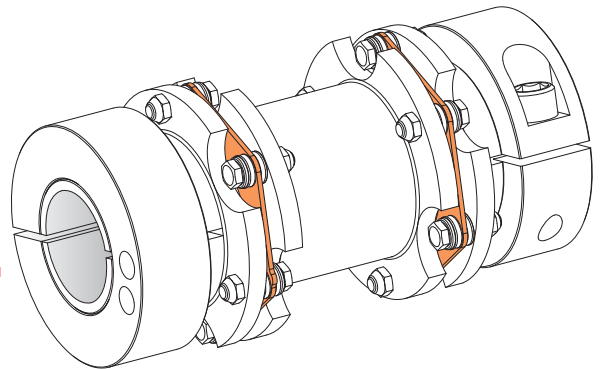
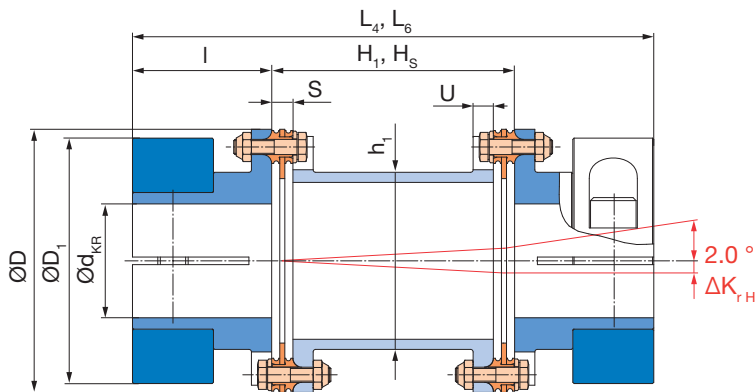


Fig. 42: Type 951.442 (sleeve 1: H_1 , L_4), Type 951.443 (sleeve S: H_S , L_6)

Order Number

—	/	9	5	—	.	4	4	—	/	—	/	—	/	—	/	—
▲				▲				▲		▲		▲		▲		▲
Sizes 16 to 160		Single-jointed coupling		0		Single-jointed coupling	0	Bore*		Bore*		Sleeve		Operating		
		Double-jointed coupling		1		Connection plate	1	Hub 1 ø		Hub 2 ø		length		speed		
						Sleeve 1	2	(Dim.		(Dim.		H_s		n_s		
						Sleeve S	3	page 34)		page 34)		[mm]		[rpm]		
						Sleeve CRD (page 64)	4					for special sleeve				
						Sleeve CFRP (page 64)	5					S / CRD / CFRP				

Example: 16 / 951.441 / Hub 1 – ø 25 ^{H7} / Hub 2 – ø 25 ^{H7}

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HF

Single-jointed coupling with shrink disk hubs, external clamping

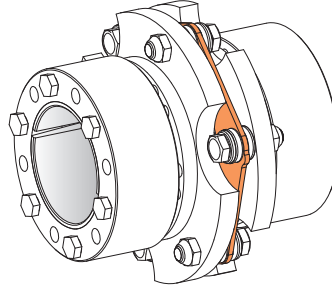
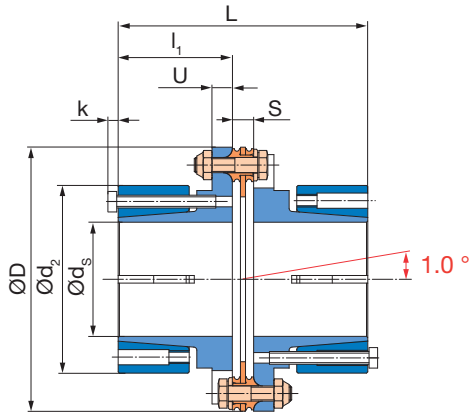


Fig. 43: Type 950.220

Technical Data and Main Dimensions				Size					
				16	25	40	64	100	160
Nominal torque ¹⁾	T _{KN}	[Nm]		190	290	450	720	1000	1600
Peak torque ²⁾	T _{KS}	[Nm]		285	435	675	1080	1500	2400
Outer diameter	D	[mm]		77	89	104	123	143	167
Minimum hub bore ³⁾	d _{S min}	[mm]		14	20	25	30	35	40
Maximum hub bore ³⁾	d _{S max}	[mm]		26	36	45	45	55	65
Maximum speed ⁴⁾	n _{max}	[rpm]		13600	11800	10100	8500	7300	6200
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}	ΔK _a	[mm]	1.1	1.3	1.5	1.8	2.1	2.5
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	0.3	0.3	0.4	0.45	0.45	0.55
		with sleeve 1	ΔK _{r,H}	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	ΔK _{r,H}	(H _S - S) x 0.0174					
Spring rigidity	torsion ¹¹⁾	C _{T LP}	[10 ³ Nm/rad]	145	280	301	748	1135	1920
		C _{T H rel.}	[10 ⁶ Nm mm/rad]	19	34	71	108	217	415
	angular spring rigidity ⁸⁾		[Nm/rad]	229	248	298	876	1089	1990

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	70	80	96	116	136	140
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	77.1	87.2	98.4	109.6	120	131.6
L ₂	96.2	106.4	120.8	137.2	148	165.2
L ₄	140	160	186	216	246	260
L ₆	dependent on H _S					
I ₁	35	40	45	50	55	60
S	7.1	7.2	8.4	9.6	10	11.6
U	7	7	8	10	10	12
U ₁	26.2	26.4	30.8	37.2	38	45.2

Mass moments of inertia J [10⁻³ kgm²]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.12	0.26	0.74	1.19	3.27
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.09	0.15	0.29	0.35	0.67
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

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

2) Valid for unchanging load direction, max. load cycles ≤ 10⁵.

3) Transmittable torques dependent on bore, see page 75.

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.

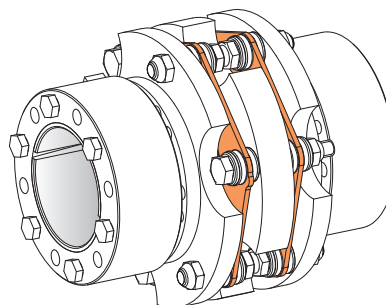
9) Mass moments of inertia and weights are valid for 1 disk pack.

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

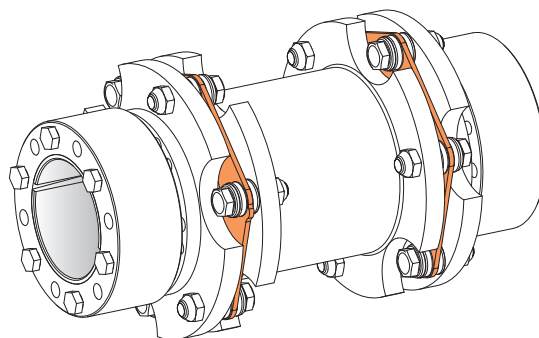
11) The C_T-value of a double-jointed coupling can be roughly calculated as follows:

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{T \text{ LP}}} + \frac{H_S [\text{mm}] - 2 S [\text{mm}]}{C_{T \text{ H rel.}}}}$$

Double-jointed coupling with connection plate and shrink disk hubs, external clamping



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



Order Number

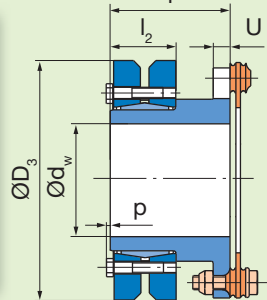
— / 9 5 — . 2 2 — / — / — / — / —	
      	
Sizes 16 to 160	Single-jointed coupling Double-jointed coupling 0 1
	Single-jointed coupling Connection plate Sleeve 1 Sleeve S Sleeve CRD (page 64) Sleeve CFRP (page 64) 0 1 2 3 4 5
	Bore* Hub 1 ø (Dim. page 36)
	Bore* Hub 2 ø (Dim. page 36)
	Sleeve length H_s [mm]
	Operating speed n_s [rpm]
	for special sleeve S / CRD / CFRP

Example: 100 / 951.221 / Hub 1– ø 45 ^{H7} / Hub 2 – ø 45 ^{H7}

*Standard H7, other tolerances possible

External shrink disk hub

Size	d_w	D_3	l	l_2	p
16	24/25	60	40	25	-
	28/30	72	40	27.5	2.5
25	32/35	80	45	29.5	-
	38/40/42	90	45	31.5	1.5
40	42/45/48	100	55	34.5	-
64	50/55/60	115	65	34.5	-
100	55/60/65	138	75	38	-
160	65/70/75	155	85	44.5	-



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ROBA®-DS Sizes 16 to 160 – disk pack-HF

Single-jointed coupling with shrink disk hubs, external clamping and internal clamping

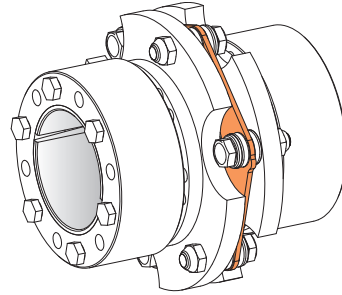
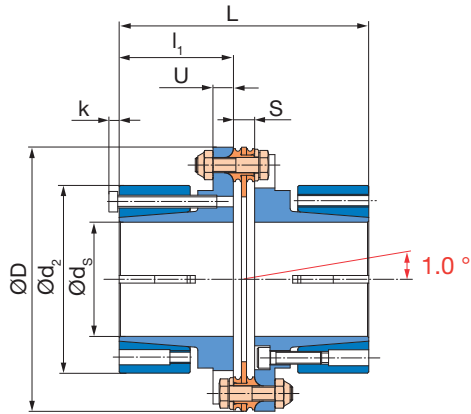


Fig. 46: Type 950.230

Technical Data and Main Dimensions				Size					
				16	25	40	64	100	160
Nominal torque ¹⁾	T_{KN}	[Nm]		190	290	450	720	1000	1600
Peak torque ²⁾	T_{KS}	[Nm]		285	435	675	1080	1500	2400
Outer diameter	D	[mm]		77	89	104	123	143	167
Minimum hub bore ³⁾	$d_{S\ min}$	[mm]		14	20	25	30	35	40
Maximum hub bore ³⁾	$d_{S\ max}$	[mm]		26	36	45	45	55	65
Maximum speed ⁴⁾	n_{max}	[rpm]		13600	11800	10100	8500	7300	6200
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}	ΔK_a	[mm]	1.1	1.3	1.5	1.8	2.1	2.5
	perm. radial misalignment ⁶⁾ with connection plate	ΔK_r	[mm]	0.3	0.3	0.4	0.45	0.45	0.55
	with sleeve 1	ΔK_{rH}	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
	with sleeve S	ΔK_{rH}	[mm]	$(H_s - S) \times 0.0174$					
Spring rigidity	torsion ¹¹⁾ disk pack	$C_{T\ LP}$	[10 ³ Nm/rad]	145	280	301	748	1135	1920
	tube sleeve S	$C_{T\ H\ rel.}$	[10 ⁶ Nm mm/rad]	19	34	71	108	217	415
	angular spring rigidity ⁸⁾		[Nm/rad]	229	248	298	876	1089	1990

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	70	80	96	116	136	140
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	77.1	87.2	98.4	109.6	120	131.6
L_2	96.2	106.4	120.8	137.2	148	165.2
L_4	140	160	186	216	246	260
L_6	dependent on H_s					
I_1	35	40	45	50	55	60
S	7.1	7.2	8.4	9.6	10	11.6
U	7	7	8	10	10	12
U_1	26.2	26.4	30.8	37.2	38	45.2

Mass moments of inertia J [10⁻³ kgm²]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.12	0.26	0.74	1.19	3.27
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.09	0.15	0.29	0.35	0.67
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

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 75.

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.

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

$$C_{T\ ges.} = \frac{1}{\frac{2}{C_{T\ LP}} + \frac{H_s [mm] - 2 S [mm]}{C_{T\ H\ rel.}}}$$

ROBA®-DS Sizes 16 to 160 – disk pack-HF

Double-jointed coupling with connection plate and shrink disk hubs, external clamping and internal clamping

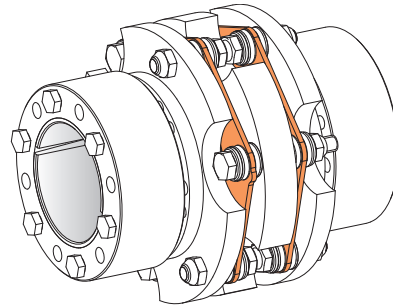
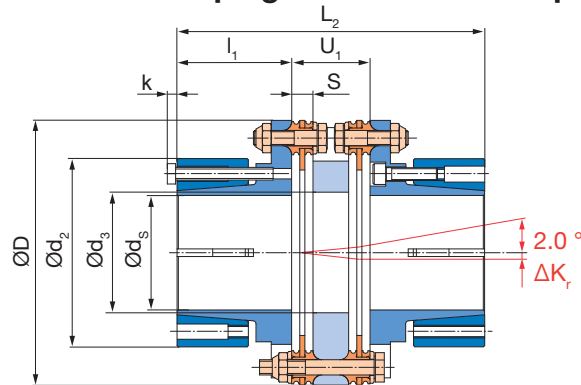


Fig. 47: Type 951.231

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

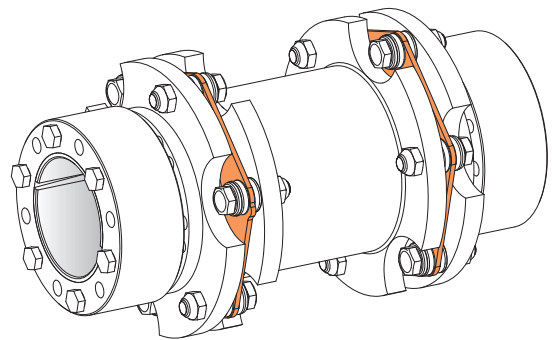
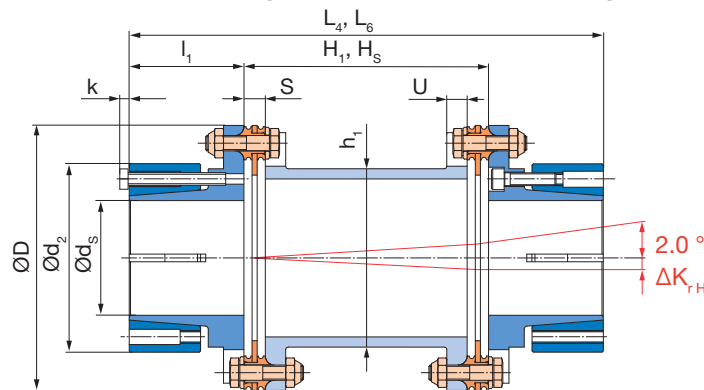


Fig. 48: Type 951.232 (sleeve 1: H_1 , L_4), Type 951.233 (sleeve S: H_s , L_6)

Order Number								
—	/	9	5	—	.	2	3	— / — / — / — / —
▲			▲			▲	▲	▲
Sizes 16 to 160	Single-jointed coupling		0	Single-jointed coupling		0	Bore* Hub 1 Ø (Dim. page 38)	Bore* Hub 2 Ø (Dim. page 38)
	Double-jointed coupling		1	Connection plate		1		
				Sleeve 1		2		
				Sleeve S		3		
				Sleeve CRD (page 64)		4		
				Sleeve CFRP (page 64)		5		
								Sleeve length H_s [mm]
								Operating speed n_s [rpm]
								for special sleeve S / CRD / CFRP

Example: 64 / 951.231 / Hub 1 – $\varnothing 35^{H7}$ / Hub 2 – $\varnothing 40^{H7}$

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HF

Single-jointed coupling with shrink disk hubs, large

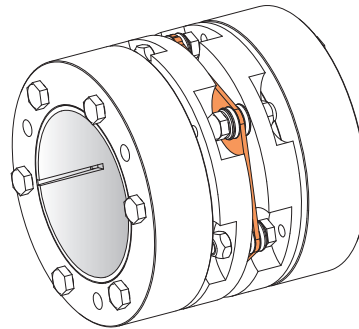
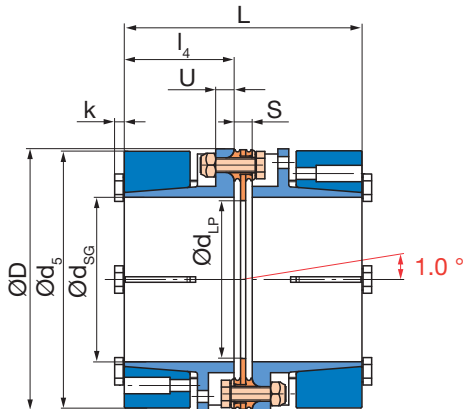


Fig. 49: Type 950.990

Technical Data and Main Dimensions				Size					
				16	25	40	64	100	160
Nominal torque ¹⁾	T_{KN}	[Nm]		190	290	450	720	1000	1600
Peak torque ²⁾	T_{KS}	[Nm]		285	435	675	1080	1500	2400
Outer diameter	D	[mm]		77	89	104	123	143	167
Minimum hub bore	$d_{SG \min}$	[mm]		25	32	40	45	55	65
Maximum hub bore	$d_{SG \max}$	[mm]		45	52	60	70	90	100
Maximum speed ³⁾	$n_{\max}$	[rpm]		13600	11800	10100	8500	7300	6200
Permitted misalignments ⁴⁾	perm. axial displacement ^{5) 6)}	ΔK_a	[mm]	1.1	1.3	1.5	1.8	2.1	2.5
	perm. radial misalignment ⁵⁾	with connection plate	ΔK_r	0.3	0.3	0.4	0.45	0.45	0.55
		with sleeve 1	ΔK_{rH}	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	ΔK_{rH}	$(H_s - S) \times 0.0174$					
Spring rigidity	torsion ¹⁰⁾	C_{TLP}	[10 ³ Nm/rad]	145	280	301	748	1135	1920
		$C_{TH \text{ rel.}}$	[10 ⁶ Nm mm/rad]	19	34	71	108	217	415
	angular spring rigidity ⁷⁾		[Nm/rad]	229	248	298	876	1089	1990

Dimensions [mm]

Size	16	25	40	64	100	160
d_3	33	41	46	51	66	76
d_5	77	82	100	115	143	162
d_{H1}	43	54	62	71	92	98
d_{LP}	45	55	65	74	88	103
H_1	70	80	96	116	136	140
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	87.1	97.2	108.4	119.6	130	152.6
L_2	106.2	116.4	130.8	147.2	158	186.2
L_4	150	170	196	226	256	281
L_6	dependent on H_s					
l_4	40	45	50	55	60	70.5
S	7.1	7.2	8.4	9.6	10	11.6
U	7	7	8	10	10	12
U_1	26.2	26.4	30.8	37.2	38	45.2

Mass moments of inertia J [10⁻³ kgm²]

Size	16	25	40	64	100	160
Disk pack ⁸⁾	0.08	0.12	0.26	0.74	1.19	3.27
Hub ⁹⁾	0.78	1.23	2.88	5.81	13.77	27.35
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ⁸⁾	0.08	0.09	0.15	0.29	0.35	0.67
Hub ⁹⁾	0.79	1.02	1.71	2.53	3.92	6.08
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

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) Not valid for coupling with sleeve S.

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

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

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

7) The values refer to 1 disk pack.

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

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

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

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{TLP}} + \frac{H_s [\text{mm}] - 2 S [\text{mm}]}{C_{TH \text{ rel.}}}}$$

ROBA®-DS Sizes 16 to 160 – disk pack-HF

Double-jointed coupling with connection plate and shrink disk hubs, large

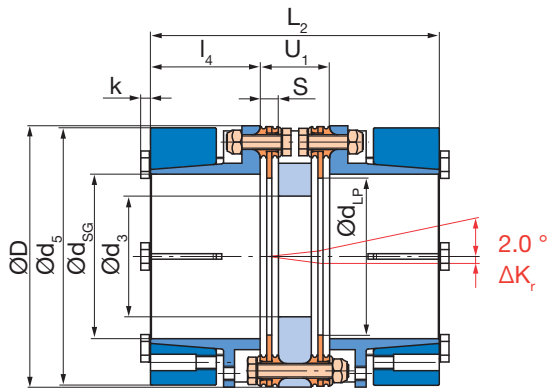
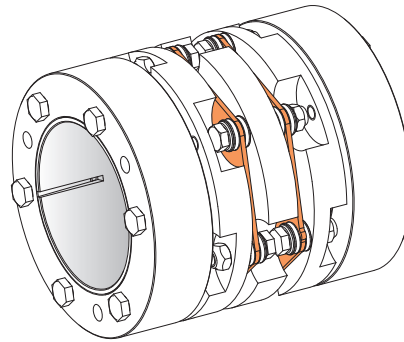


Fig. 50: Type 951.991



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

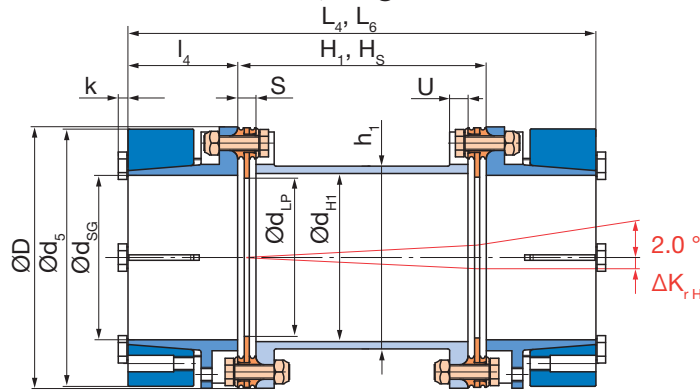
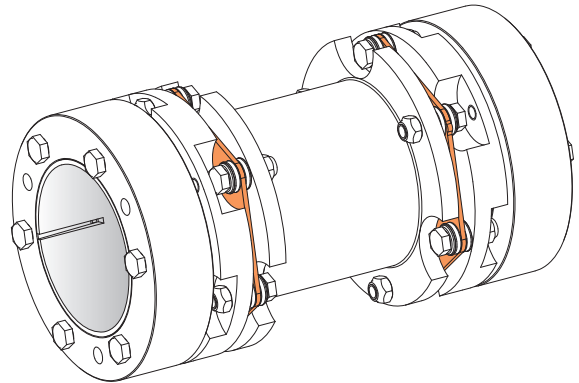


Fig. 51: Type 951.992 (sleeve 1: H_1 , L_4), Type 951.993 (sleeve S: H_S , L_6)



Order Number

Order Number								
—	/	9	5	—	.	9	9	— / — / — / — / —
▲				▲			▲	▲ ▲ ▲ ▲ ▲
Sizes 16 to 160		Single-jointed coupling		0		Single-jointed coupling	0	Bore* Hub 1 ø (Dim. page 40)
		Double-jointed coupling		1		Connection plate	1	Bore* Hub 2 ø (Dim. page 40)
						Sleeve 1	2	Sleeve length H_S [mm]
						Sleeve S	3	Operating speed n_s [rpm]
						Sleeve CRD (page 64)	4	for special sleeve S / CRD / CFRP
						Sleeve CFRP (page 64)	5	

Example: 16 / 951.991 / Hub 1 – ø 35 ^{H7} / Hub 2 – ø 35 ^{H7}

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HF

Double-jointed coupling with connection plate and split clamping hubs

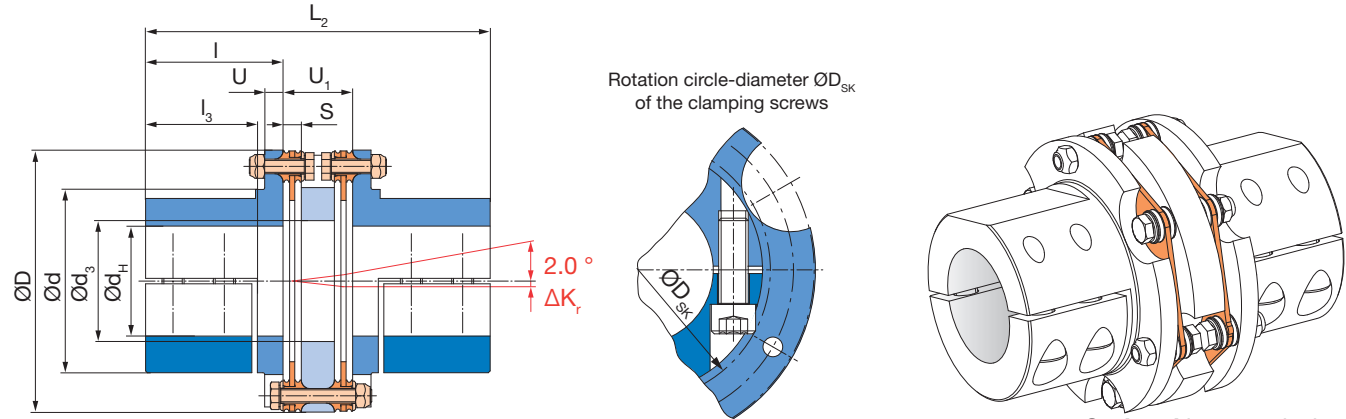


Fig. 52: Type 951.881

Technical Data and Main Dimensions				Size						
				16	25	40	64	100	160	
Nominal torque ¹⁾		T _{KN}	[Nm]	190	290	450	720	1000	1600	
Peak torque ²⁾		T _{KS}	[Nm]	285	435	675	1080	1500	2400	
Outer diameter		D	[mm]	77	89	104	123	143	167	
Minimum hub bore ³⁾		d _{H min}	[mm]	18	22	25	30	35	40	
Maximum hub bore ³⁾		d _{H max}	[mm]	28	32	40	45	60	75	
Maximum speed ⁴⁾		n _{max}	[rpm]	9500	8200	7000	6000	5100	4300	
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}		ΔK _a	[mm]	1.1	1.3	1.5	1.8	2.1	2.5
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	[mm]	0.3	0.3	0.4	0.45	0.45	0.55
		with sleeve 1	ΔK _{rH}	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	ΔK _{rH}	[mm]	(H _s - S) x 0.0174					
Spring rigidity	torsion ¹¹⁾	disk pack	C _{T LP}	[10 ³ Nm/rad]	145	280	301	748	1135	1920
		tube sleeve S	C _{T H rel.}	[10 ⁶ Nm mm/rad]	19	34	71	108	217	415
	angular spring rigidity ⁸⁾			[Nm/rad]	229	248	298	876	1089	1990

Dimensions [mm]

Size	16	25	40	64	100	160
D_{SK}	55	67	76	87	108	122
d	50	60	70	80	100	115
d_3	33	41	46	51	66	76
H_1	70	80	96	116	136	140
H_s	dependent on L_R					
h_1	50	60	70	80	100	110
L_2	106.2	116.4	140.8	167.2	188	215.2
L_4	150	170	206	246	286	310
L_6	dependent on L_R					
L_R	acc. customer specifications					
I	40	45	55	65	75	85
I_3	31	35	43	51	61	69
I_A	25.7	30.8	40	51.2	56.6	58.6
S	7.1	7.2	8.4	9.6	10	11.6
U	7	7	8	10	10	12
U_1	26.2	26.4	30.8	37.2	38	45.2

- Valid for unchanging load direction as well as for max. permitted shaft misalignment. When the load direction changes, max. 60% of the stated nominal torque is permitted.
- Valid for unchanging load direction, max. load cycles $\leq 10^5$.
- Transmittable torques dependent on bore, see page 75.
- Not valid for coupling with sleeve S.
- The permitted misalignments may not simultaneously reach their maximum values.
- The values refer to couplings with 2 disk packs.
- Only permitted as a static or virtually static value.
- The values refer to 1 disk pack.

Mass moments of inertia J [10^{-3} kgm²]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.12	0.26	0.74	1.19	3.27
Hub ¹⁰⁾	0.25	0.54	1.20	2.63	6.31	12.49
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.09	0.15	0.29	0.35	0.67
Hub ¹⁰⁾	0.47	0.76	1.21	1.96	3.17	4.45
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

- Mass moments of inertia and weights are valid for 1 disk pack.
- Mass moments of inertia and weights are valid for maximum bore.
- The C_T -value of a double-jointed coupling can be roughly calculated as follows:

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{TLP}} + \frac{H_s [\text{mm}] - 2 S [\text{mm}]}{C_{TH \text{ rel.}}}}$$

ROBA[®]-DS Sizes 16 to 160 – disk pack-HF

Double-jointed coupling with sleeve 1 or sleeve S (special length) and split clamping hubs

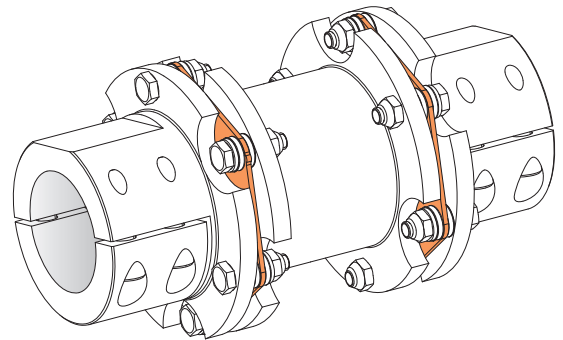
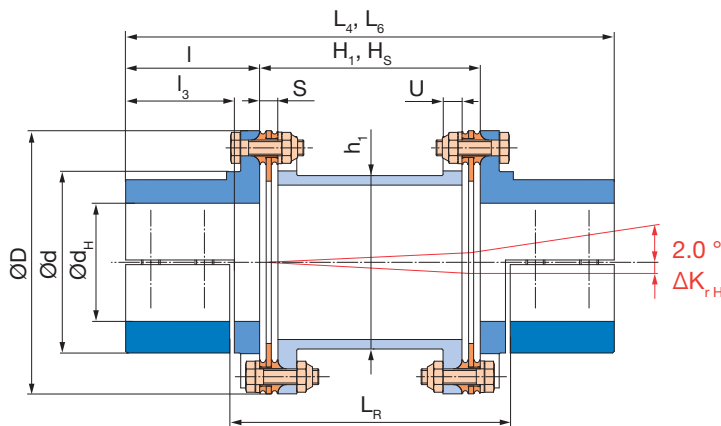


Fig. 53: Type 951.882 (sleeve 1: H_1 , L_4),
Type 951.883 (sleeve S: H_S , L_6)

Optional keyway design according to DIN 6885 possible

1. Installation coupling with split clamping hubs

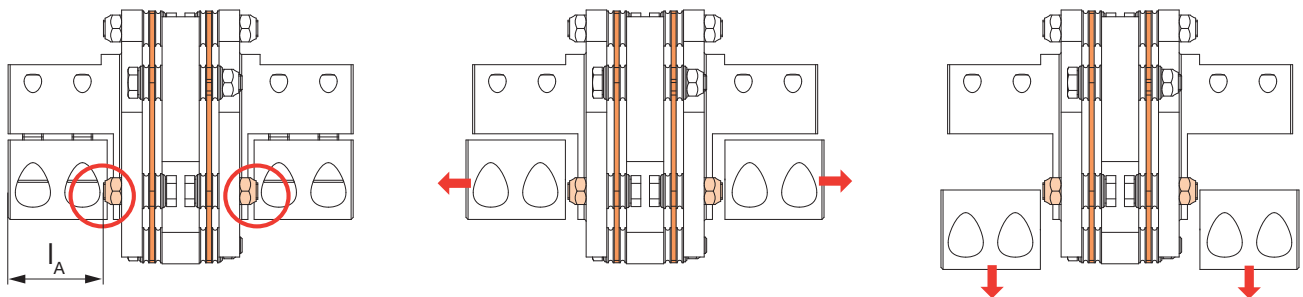


Fig. 54: Axial displacement of the half-shells during radial assembly/disassembly (only necessary on Type 951.881)

Order Number

— / 9 5 1 . 8 8 — / — / — / — / —										
△					△	△	△	△	△	
Sizes 16 to 160					Connection plate Sleeve 1 Sleeve S Sleeve CRD (page 64) Sleeve CFRP (page 64)	1 2 3 4 5	Bore* Hub 1 ø (Dim. page 42)	Bore* Hub 2 ø (Dim. page 42)	Shaft distance L _R [mm]	Operating speed n _s [rpm] for special sleeve S / CRD / CFRP

Example: 100 / 951.881 / Hub 1– Ø 50 ^{H7} / Hub 2 – Ø 50 ^{H7}

*Standard H7, other tolerances possible

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ROBA®-DS Sizes 16 to 160 – disk pack-HF

Single-jointed coupling with flanges

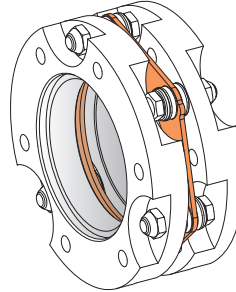
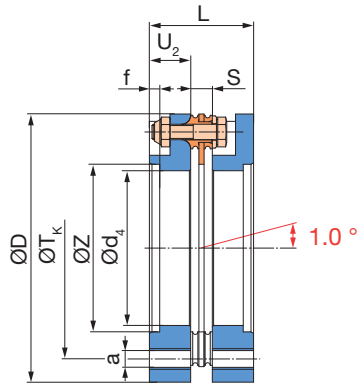


Fig. 55: Type 950.660

Technical Data and Main Dimensions				Size						
				16	25	40	64	100	160	
Nominal torque ¹⁾		T _{KN}	[Nm]	190	290	450	720	1000	1600	
Peak torque ²⁾		T _{KS}	[Nm]	285	435	675	1080	1500	2400	
Outer diameter		D	[mm]	77	89	104	123	143	167	
Centering bore		Z ^{H7}	[mm]	45	55	65	75	92	105	
Maximum speed ³⁾		n _{max}	[rpm]	13600	11800	10100	8500	7300	6200	
Permitted misalignments ⁴⁾	perm. axial displacement ^{5) 6)}		ΔK _a	[mm]	1.1	1.3	1.5	1.8	2.1	2.5
	perm. radial misalignment ⁵⁾	with connection plate	ΔK _r	[mm]	0.3	0.3	0.4	0.45	0.45	0.55
		with sleeve 1	ΔK _{r,H}	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	ΔK _{r,H}	[mm]	(H _S - S) x 0.0174					
Spring rigidity	torsion ⁷⁾	disk pack	C _{T LP}	[10 ³ Nm/rad]	145	280	301	748	1135	1920
		tube sleeve S	C _{T H rel.}	[10 ⁶ Nm mm/rad]	19	34	71	108	217	415
	angular spring rigidity ⁸⁾			[Nm/rad]	229	248	298	876	1089	1990

Dimensions [mm]

Size	16	25	40	64	100	160
a	6 x M8	6 x M8	6 x M10	6 x M10	6 x M12	6 x M14
d ₃	33	41	46	51	66	76
d ₄	40	50	60	70	85	100
f	4	4	4	5	5	5
H ₁	70	80	96	116	136	140
H _s	acc. customer specifications					
h ₁	50	60	70	80	100	110
L	37.1	37.2	44.4	49.6	50	68.6
L ₂	56.2	56.4	66.8	77.2	78	102.2
L ₄	100	110	132	156	176	197
L ₆	dependent on H _s					
S	7.1	7.2	8.4	9.6	10	11.6
T _k	62	75	86	103	116	140
U	7	7	8	10	10	12
U ₁	26.2	26.4	30.8	37.2	38	45.2
U ₂	15	15	18	20	20	28.5

Mass moments of inertia J [10⁻³ kgm²]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.12	0.26	0.74	1.19	3.27
Flange	0.23	0.43	0.89	1.95	3.87	9.48
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

Weights [kg]

Size	16	25	40	64	100	160
Disk pack ⁹⁾	0.08	0.09	0.15	0.29	0.35	0.67
Flange	0.26	0.34	0.52	0.82	1.16	2.10
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

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

2) Valid for unchanging load direction, max. load cycles ≤ 10⁵.

3) Not valid for coupling with sleeve S.

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

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

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

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

$$C_{T ges.} = \frac{1}{\frac{2}{C_{TLP}} + \frac{H_s [mm] - 2 S [mm]}{C_{THrel.}}}$$

8) The values refer to 1 disk pack.

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

ROBA[®]-DS Sizes 16 to 160 – disk pack-HF

Double-jointed coupling with connection plate and flanges

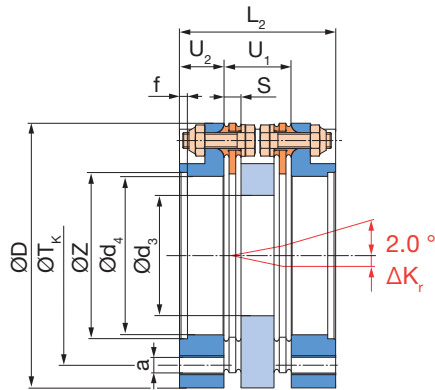


Fig. 56: Type 951.661

Double-jointed coupling with sleeve 1 or sleeve S (special length) and flanges

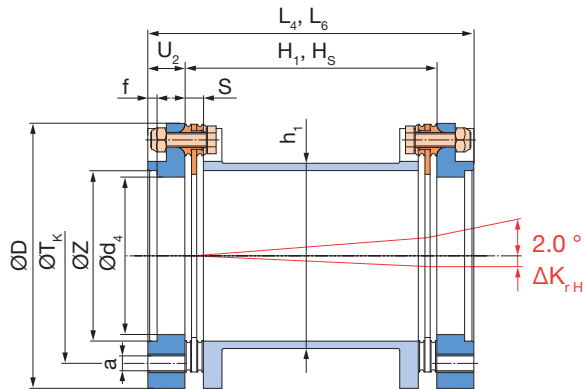


Fig. 57: Type 951.662 (sleeve 1: H₁, L₄), Type 951.663 (sleeve S: H_S, L₆)

Order Number

Order Number						
—	/	9	5	—	.	6 6 — / — / —
▲				▲		▲ ▲ ▲
Sizes 16 to 160	Single-jointed coupling Double-jointed coupling		0 1	Single-jointed coupling Connection plate Sleeve 1 Sleeve S Sleeve CRD (page 64) Sleeve CFRP (page 64)		0 1 2 3 4 5
				Sleeve length H _S [mm]		Operating speed n _s [rpm]
				for special sleeve S / CRD / CFRP		

Example: 40 / 951.661

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ROBA®-DS Sizes 180 to 2200

Single-jointed coupling with key hubs

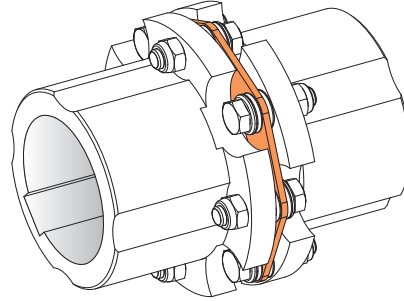
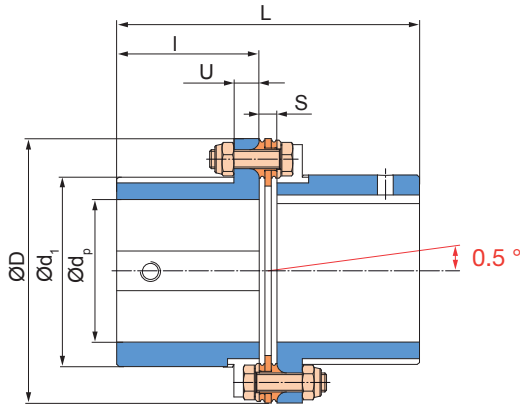


Fig. 58: Type 950.000

Technical Data and Main Dimensions				Size						
				180	300	500	850	1400	2200	
Nominal torque ¹⁾		T _{KN}	[Nm]	2100	3500	5800	9500	15000	24000	
Peak torque ²⁾		T _{KS}	[Nm]	3150	5250	8700	14250	22500	36000	
Outer diameter		D	[mm]	143	167	198	234	274	314	
Minimum hub bore ³⁾		d _{p,min}	[mm]	40	45	55	65	75	90	
Maximum hub bore ³⁾		d _{p,max}	[mm]	75	90	105	120	140	170	
Maximum speed ⁴⁾		n _{max}	[rpm]	7300	6200	5200	4400	3800	3300	
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}		ΔK _a	[mm]	1.0	1.2	1.4	1.6	1.9	2.2
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	[mm]	0.25	0.25	0.35	0.4	0.5	0.55
		with sleeve 1	ΔK _{r,H}	[mm]	1.2	1.25	1.35	1.7	2	2.6
		with sleeve S	ΔK _{r,H}	[mm]	(H _s - S) x 0.00873					
Spring rigidity	torsion ¹¹⁾	disk pack	C _{T,LP}	[10 ³ Nm/rad]	3000	3480	11900	20600	30150	46800
		tube sleeve S	C _{T,H rel.}	[10 ⁶ Nm mm/rad]	250	415	894	1690	2734	4961
	angular spring rigidity ⁸⁾			[Nm/rad]	3890	6980	11250	18580	26120	28520

Dimensions [mm]

Size	180	300	500	850	1400	2200
d_1	104	121	141	164	190	230
d_3	54	61	66	76	86	110
$d_{pi\ min}$	40	45	55	65	75	90
$d_{pi\ max}$	55	70	85	95	110	130
H_1	150	160	170	220	266	320
H_s	acc. customer specifications					
h_1	92.5	111	132	150	174	206
h_s	92	110	130	150	165	190
L	181.2	191.2	212	264	316	377.8
L_1	178	192	206	260	310	370
L_2	212.4	224.4	252	315	374	443.6
L_4	320	340	370	470	566	680
L_6	dependent on H_s					
I	85	90	100	125	150	180
S	11.2	11.2	12	14	16	17.8
U	14	16	18	20	22	25
U_1	42.4	44.4	52	65	74	83.6

- 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 table page 76.
- 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.

Mass moments of inertia J [10^{-3} kgm²]

Size	180	300	500	850	1400	2200
Disk pack ⁹⁾	2.64	5.60	14.58	36.85	83.86	132.19
Hub key ¹⁰⁾	6.45	13.14	28.21	63.01	134.49	323.57
Hub key internal ¹⁰⁾	4.26	9.18	20.64	46.85	95.76	207.12
Connection plate	3.91	8.60	21.54	53.27	114.26	241.16
Sleeve 1	6.85	14.22	29.94	67.40	149.09	341.78
Sleeve S with $H_s = 1000$ mm	28.41	51.24	109.74	210.27	364.62	705.89
Sleeve S per 1000 mm tube	25.08	41.61	89.57	169.22	273.78	496.68

Weights [kg]

Size	180	300	500	850	1400	2200
Disk pack ⁹⁾	0.73	1.15	2.14	3.92	6.52	7.51
Hub key ¹⁰⁾	2.80	4.01	6.25	10.51	16.62	28.46
Hub key internal ¹⁰⁾	2.38	3.32	5.36	9.00	14.44	23.26
Connection plate	1.53	2.44	4.48	8.04	12.64	19.55
Sleeve 1	2.61	3.66	5.38	9.32	15.62	26.98
Sleeve S with $H_s = 1000$ mm	14.37	17.45	27.01	38.66	53.84	77.23
Sleeve S per 1000 mm tube	13.64	15.34	23.97	34.36	46.78	64.41

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

$$C_{T\ ges.} = \frac{1}{\frac{2}{C_{T\ LP}} + \frac{H_s [mm] - 2 S [mm]}{C_{T\ H\ rel.}}}$$

ROBA®-DS Sizes 180 to 2200

Double-jointed coupling with connection plate and key hubs

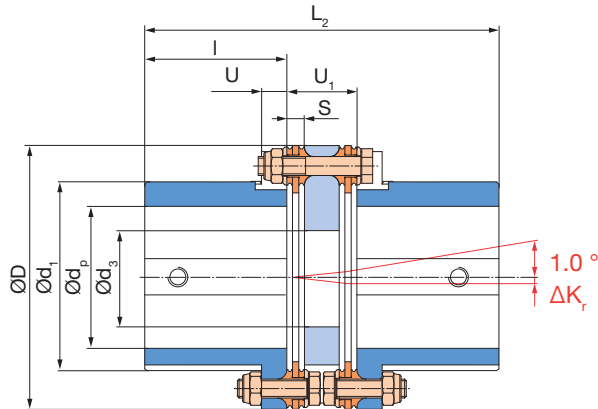
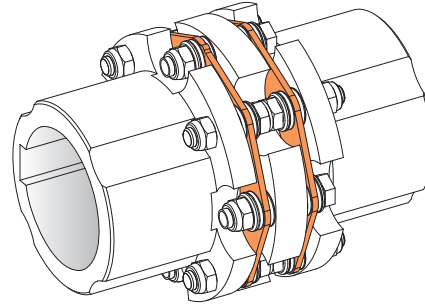


Fig. 59: Type 951.001



Double-jointed coupling with sleeve 1 or sleeve S (special length) and key hubs

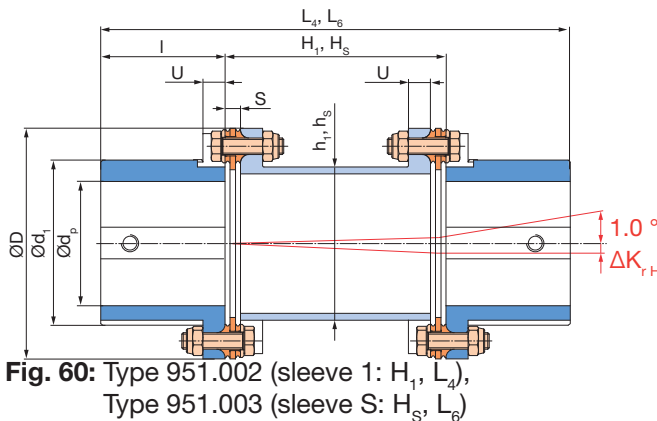


Fig. 60: Type 951.002 (sleeve 1: H_1, L_1),
Type 951.003 (sleeve S: H_S, L_S)

Double-jointed coupling with sleeve 1 and key hubs (internal/internal)

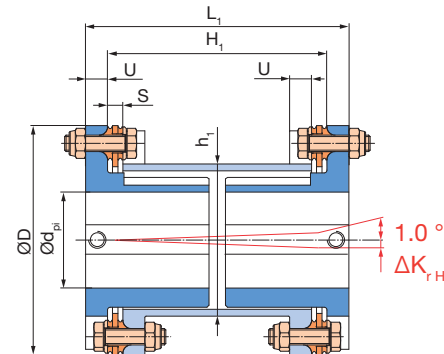


Fig. 61: Type 951.772 (sleeve 1: H_1, L_1)

Order Number

		Hub 1		Hub 2							
Key hub, standard		0		0		Key hub, standard					
Key hub, internal (Fig. 61)		7		7		Key hub, internal (Fig. 61)					

ROBA®-DS Sizes 180 to 2200

Single-jointed coupling with shrink disk hubs, external clamping

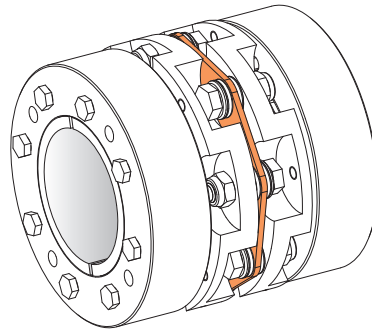
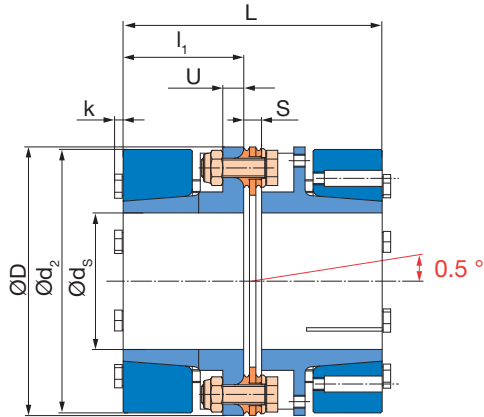


Fig. 62: Type 950.220

Technical Data and Main Dimensions				Size						
				180	300	500	850	1400	2200	
Nominal torque ¹⁾		T _{KN}	[Nm]	2100	3500	5800	9500	15000	24000	
Peak torque ²⁾		T _{KS}	[Nm]	3150	5250	8700	14250	22500	36000	
Outer diameter		D	[mm]	143	167	198	234	274	314	
Minimum hub bore ³⁾		d _{S min}	[mm]	42	50	60	70	80	100	
Maximum hub bore ³⁾		d _{S max}	[mm]	75	85	100	120	140	170	
Maximum speed ⁴⁾		n _{max}	[rpm]	7300	6200	5200	4400	3800	3300	
Permitted misalignments ⁵⁾	perm. axial displacement ^{6) 7)}		ΔK _a	[mm]	1.0	1.2	1.4	1.6	1.9	2.2
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	[mm]	0.25	0.25	0.35	0.4	0.5	0.55
		with sleeve 1	ΔK _{rH}	[mm]	1.2	1.25	1.35	1.7	2	2.6
		with sleeve S	ΔK _{rH}	[mm]	(H _S - S) x 0.00873					
Spring rigidity	torsion ¹¹⁾	disk pack	C _{T LP}	[10 ³ Nm/rad]	3000	3480	11900	20600	30150	46800
		tube sleeve S	C _{T H rel.}	[10 ⁶ Nm mm/rad]	250	415	894	1690	2734	4961
	angular spring rigidity ⁸⁾			[Nm/rad]	3890	6980	11250	18580	26120	28520

Dimensions [mm]

Size	180	300	500	850	1400	2200
d ₂	141	164	198	234	274	300
d ₃	54	61	66	76	86	110
H ₁	150	160	170	220	266	320
H _S	acc. customer specifications					
h ₁	92.5	111	132	150	174	206
h _S	92	110	130	150	165	190
k	5.3	5.3	6.4	7.5	8.8	8.8
L	141.2	161.2	202	244	276	317.8
L ₂	172.4	194.4	242	295	334	383.6
L ₄	280	310	360	450	526	620
L ₆	dependent on H _S					
l ₁	65	75	95	115	130	150
S	11.2	11.2	12	14	16	17.8
U	10	13	18	20	22	25
U ₁	42.4	44.4	52	65	74	83.6
U _H	14	16	18	20	22	25

Mass moments of inertia J [10⁻³ kgm²]

Size	180	300	500	850	1400	2200
Disk pack ⁹⁾	2.64	5.60	14.58	36.85	83.86	132.19
Hub ¹⁰⁾	14.41	31.64	83.82	192.23	409.20	723.01
Connection plate	3.91	8.60	21.54	53.27	114.26	241.16
Sleeve 1	6.85	14.22	29.94	67.40	149.09	341.78
Sleeve S with H _S = 1000 mm	28.41	51.24	109.74	210.27	364.62	705.89
Sleeve S per 1000 mm tube	25.08	41.61	89.57	169.22	273.78	496.68

Weights [kg]

Size	180	300	500	850	1400	2200
Disk pack ⁹⁾	0.73	1.15	2.14	3.92	6.52	7.51
Hub ¹⁰⁾	4.65	7.61	14.12	23.00	35.72	49.20
Connection plate	1.53	2.44	4.48	8.04	12.64	19.55
Sleeve 1	2.61	3.66	5.38	9.32	15.62	26.98
Sleeve S with H _S = 1000 mm	14.37	17.45	27.01	38.66	53.84	77.23
Sleeve S per 1000 mm tube	13.64	15.34	23.97	34.36	46.78	64.41

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

2) Valid for unchanging load direction, max. load cycles ≤ 10⁵.

3) Transmittable torques dependent on bore, see page 75.

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.

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

$$C_{T \text{ ges.}} = \frac{1}{\frac{2}{C_{T \text{ LP}}} + \frac{H_S [\text{mm}] - 2 S [\text{mm}]}{C_{T \text{ H rel.}}}}$$

ROBA®-DS Sizes 180 to 2200

Double-jointed coupling with connection plate and shrink disk hubs, external clamping

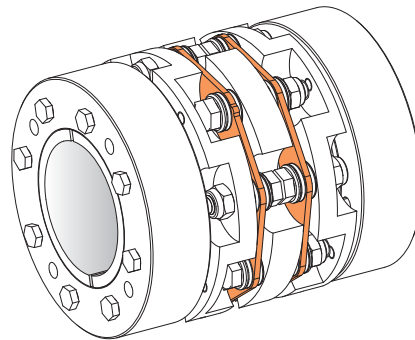
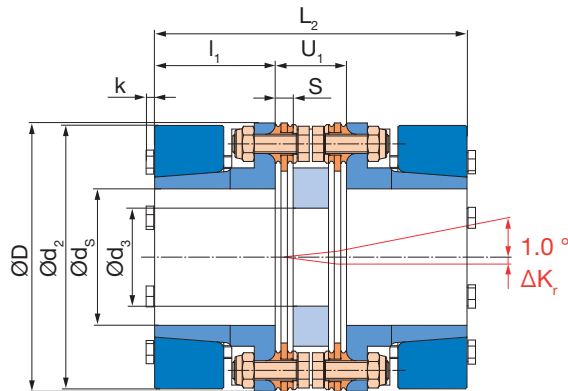


Fig. 63: Type 951.221

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

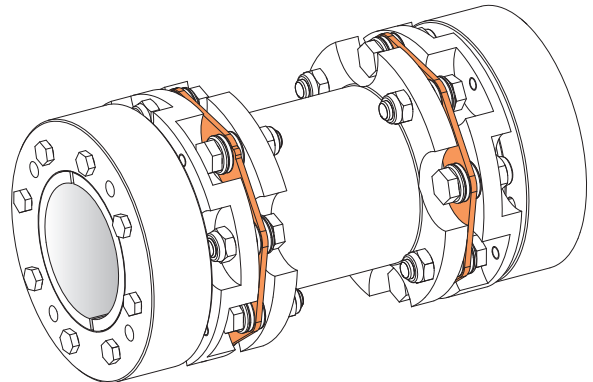
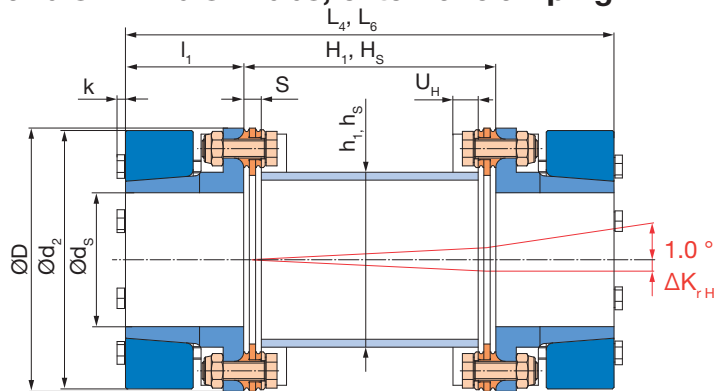


Fig. 64: Type 951.222 (sleeve 1: H_1 , L_4), Type 951.223 (sleeve S: H_S , L_6)

Order Number								
—	/	9	5	—	.	2	2	— / — / — / — / —
▲			▲			▲	▲	▲
Sizes 180 to 2200	Single-jointed coupling		0	Single-jointed coupling		0	Bore* Hub 1 ø	Bore* Hub 2 ø
	Double-jointed coupling		1	Connection plate		1	(Dim. page 48)	(Dim. page 48)
				Sleeve 1		2		
				Sleeve S		3		
				Sleeve CRD (page 64)		4		
				Sleeve CFRP (page 64)		5		
							Sleeve length H_S [mm]	Operating speed n_s [rpm]
							for special sleeve S / CRD / CFRP	

Example: 100 / 951.221 / Hub 1– ø 45 ^{H7} / Hub 2 – ø 45 ^{H7}

*Standard H7, other tolerances possible

Additional Option:						External shrink disk hub	
Size	d_w	D_3	l	l_2	p		
180	65/70	145	85	39	-		
300	75/80	170	90	50	-		
500	80/85	185	100	57	-		
850	95/100/105	230	125	82	4		
1400	110/115	265	150	88	-		
2200	130/135	300	180	98	-		

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Transmittable Torques on Shrink Disk Hubs	Page 75	▶
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ROBA®-DS Sizes 180 to 2200

Double-jointed coupling with connection plate and split clamping hubs

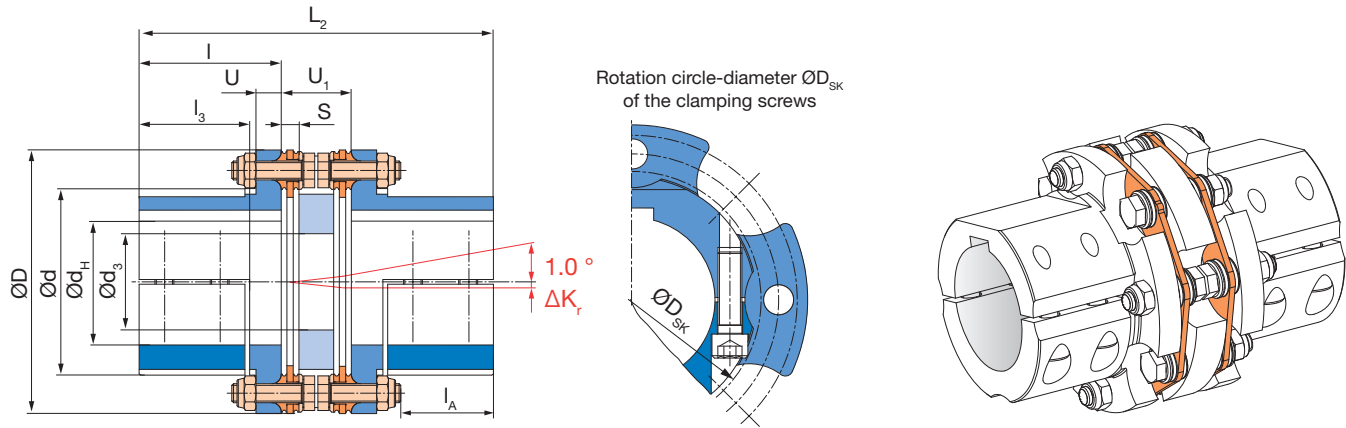


Fig. 65: Type 951.881

Only available with keyway acc. DIN 6885!

Technical Data and Main Dimensions				Size						
				180	300	500	850	1400	2200	
Nominal torque ¹⁾		T _{KN}	[Nm]	2100	3500	5800	9500	15000	24000	
Peak torque ²⁾		T _{KS}	[Nm]	3150	5250	8700	14250	22500	36000	
Outer diameter		D	[mm]	143	167	198	234	274	314	
Minimum hub bore		d _{H min}	[mm]	42	50	60	70	80	100	
Maximum hub bore		d _{H max}	[mm]	65	80	95	110	120	150	
Maximum speed ³⁾		n _{max}	[rpm]	5100	4300	3600	3100	2600	2300	
Permitted misalignments ⁴⁾	perm. axial displacement ^{6) 7)}		ΔK _a	[mm]	1.0	1.2	1.4	1.6	1.9	2.2
	perm. radial misalignment ⁶⁾	with connection plate	ΔK _r	[mm]	0.25	0.25	0.35	0.4	0.5	0.55
		with sleeve 1	ΔK _{rH}	[mm]	1.2	1.25	1.35	1.7	2	2.6
		with sleeve S	ΔK _{rH}	[mm]	(H _s - S) x 0.00873					
Spring rigidity	torsion ⁵⁾	disk pack	C _{T LP}	[10 ³ Nm/rad]	3000	3480	11900	20600	30150	46800
		tube sleeve S	C _{T H rel.}	[10 ⁶ Nm mm/rad]	250	415	894	1690	2734	4961
	angular spring rigidity ⁸⁾			[Nm/rad]	3890	6980	11250	18580	26120	28520

Dimensions [mm]

Size	180	300	500	850	1400	2200
D_{SK}	107	128	150	173	200	-
d	102	121	141	164	190	230
d_3	54	61	66	76	86	110
H_1	150	160	170	220	266	320
H_s	acc. customer specifications					
h_1	92.5	111	132	150	174	206
h_s	92	110	130	150	165	190
L_2	212.4	224.4	252	315	374	443.6
L_4	320	340	370	470	566	680
L_6	dependent on H_s					
I	85	90	100	125	150	180
I_3	68	70	77	97	117	147
I_A	58.7	58.7	65.1	83.2	100.6	127.3
I_B	64.6	66.5	72	92.5	113	140
S	11.2	11.2	12	14	16	17.8
U	14	16	18	20	22	25
U_1	42.4	44.4	52	65	74	83.6

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

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

3) Not valid for coupling with sleeve S.

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

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

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

Mass moments of inertia J [10⁻³ kgm²]

Size	180	300	500	850	1400	2200
Disk pack ⁹⁾	2.64	5.60	14.58	36.85	83.86	132.19
Hub ¹⁰⁾	6.61	14.02	30.01	65.69	146.71	352.20
Connection plate	3.91	8.60	21.54	53.27	114.26	241.16
Sleeve 1	6.85	14.22	29.94	67.40	149.09	341.78
Sleeve S with $H_s = 1000$ mm	28.41	51.24	109.74	210.27	364.62	705.89
Sleeve S per 1000 mm tube	25.08	41.61	89.57	169.22	273.78	496.68

Weights [kg]

Size	180	300	500	850	1400	2200
Disk pack ⁹⁾	0.73	1.15	2.14	3.92	6.52	7.51
Hub ¹⁰⁾	3.19	4.66	7.20	11.70	20.26	33.95
Connection plate	1.53	2.44	4.48	8.04	12.64	19.55
Sleeve 1	2.61	3.66	5.38	9.32	15.62	26.98
Sleeve S with $H_s = 1000$ mm	14.37	17.45	27.01	38.66	53.84	77.23
Sleeve S per 1000 mm tube	13.64	15.34	23.97	34.36	46.78	64.41

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.

ROBA®-DS Sizes 180 to 2200

Double-jointed coupling with sleeve 1 or sleeve S (special length) and split clamping hubs

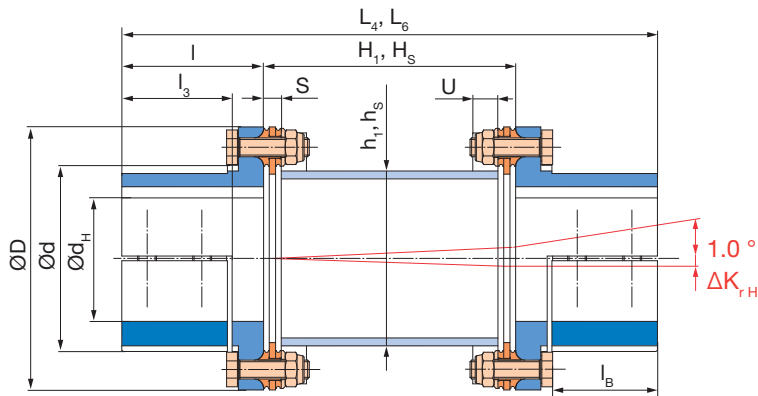
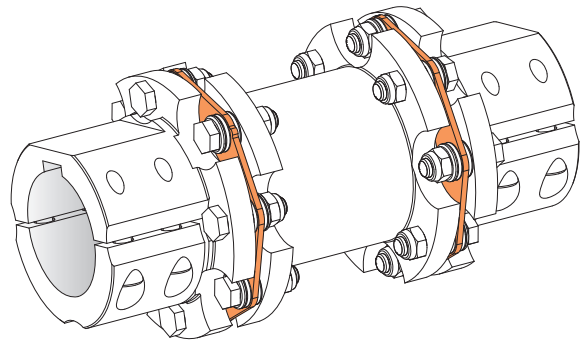


Fig. 66: Type 951.882 (sleeve 1: H_1, L_4)
Type 951.883 (sleeve S: H_s, L_6)



Only available with keyway acc. DIN 6885!

2. Installation coupling with split clamping hubs

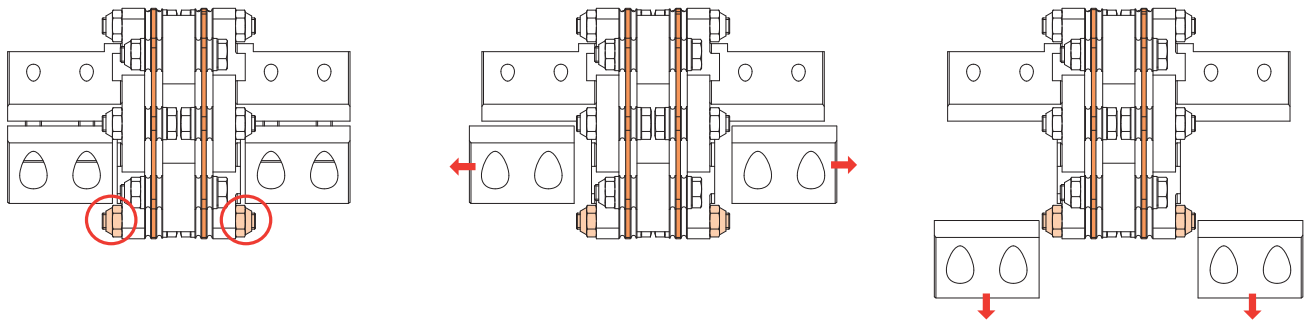


Fig. 67: Axial displacement of the half-shells during radial assembly/disassembly
Please observe dimensions l_A and l_B !

Order Number

Order Number					Order Number													
—	/	9	5	1	.	8	8	—	/	—	/	—	/	—	/	—		
△								△		△		△		△		△		
Sizes 180 to 2200					Connection plate					1	Bore* Hub 1 ø (Dim. page 50)		Bore* Hub 2 ø (Dim. page 50)		Sleeve length H _s [mm]		Operating speed n _s [rpm]	
					Sleeve 1					2								
					Sleeve S					3								
					Sleeve CRD (page 64)					4								
					Sleeve CFRP (page 64)					5								
																	for special sleeve S / CRD / CFRP	

Example: 100 / 951.881 / Hub 1 – ϕ 50 ^{H7} / Hub 2 – ϕ 50 ^{H7}

*Standard H7, other tolerances possible



Only available with keyway acc. DIN 6885! The hubs transmit only 30 – 40 % of the value T_{KN} using frictional locking. Larger torques are transmitted via positive locking with the key. The hubs are only suitable to a limited extent for changing load directions.

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			Dimensioning, Size Selection		Page 70
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ROBA®-DS Sizes 180 to 2200

Single-jointed coupling with flanges

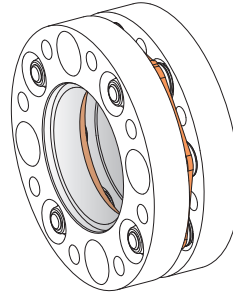
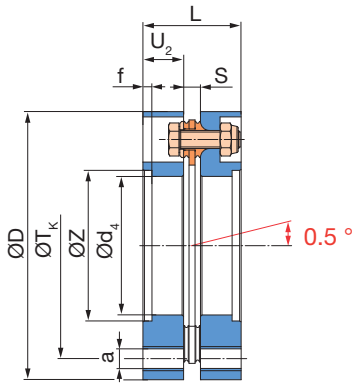


Fig. 68: Type 950.660

Technical Data and Main Dimensions				Size						
				180	300	500	850	1400	2200	
Nominal torque ¹⁾		T _{KN}	[Nm]	2100	3500	5800	9500	15000	24000	
Peak torque ²⁾		T _{KS}	[Nm]	3150	5250	8700	14250	22500	36000	
Outer diameter		D	[mm]	153	178	210	250	290	336	
Centering bore		Z ^{H7}	[mm]	85	100	120	140	160	180	
Maximum speed ³⁾		n _{max}	[rpm]	7300	6200	5200	4400	3800	3300	
Permitted misalignments ⁴⁾	perm. axial displacement ^{5) 6)}		ΔK _a	[mm]	1.0	1.2	1.4	1.6	1.9	2.2
	perm. radial misalignment ⁵⁾	with connection plate	ΔK _r	[mm]	0.25	0.25	0.35	0.4	0.5	0.55
		with sleeve 1	ΔK _{r,H}	[mm]	1.2	1.25	1.35	1.7	2	2.6
		with sleeve S	ΔK _{r,H}	[mm]	(H _S - S) x 0.00873					
Spring rigidity	torsion ⁷⁾	disk pack	C _{T LP}	[10 ³ Nm/rad]	3000	3480	11900	20600	30150	46800
		tube sleeve S	C _{T H rel.}	[10 ⁶ Nm mm/rad]	250	415	894	1690	2734	4961
	angular spring rigidity ⁸⁾			[Nm/rad]	3890	6980	11250	18580	26120	28520

Dimensions [mm]

Size	180	300	500	850	1400	2200
a	8 x M12	8 x M16	8 x M16	8 x M20	8 x M24	8 x M30
d ₃	54	61	66	76	86	110
d ₄	77	92	112	132	150	170
f	6	6	6	6	6	6
H ₁	150	160	170	220	266	320
H _s	acc. customer specifications					
h ₁	92.5	111	132	150	174	206
h _s	92	110	130	150	165	190
L	57.2	65.2	84	102	118	129.8
L ₂	88.4	98.4	124	153	176	195.6
L ₄	196	214	242	308	368	432
L ₆	dependent on H _s					
S	11.2	11.2	12	14	16	17.8
T _K	125	150	175	210	240	275
U	14	16	18	20	22	25
U ₁	42.4	44.4	52	65	74	83.6
U ₂	23	27	36	44	51	56

Mass moments of inertia J [10⁻³ kgm²]

Size	180	300	500	850	1400	2200
Disk pack ⁹⁾	2.64	5.60	14.58	36.85	83.86	132.19
Flange	6.26	13.08	34.04	79.39	162.60	359.24
Connection plate	3.91	8.60	21.54	53.27	114.26	241.16
Sleeve 1	6.85	14.22	29.94	67.40	149.09	341.78
Sleeve S with H _s = 1000 mm	28.41	51.24	109.74	210.27	364.62	705.89
Sleeve S per 1000 mm tube	25.08	41.61	89.57	169.22	273.78	496.68

Weights [kg]

Size	180	300	500	850	1400	2200
Disk pack ⁹⁾	0.73	1.15	2.14	3.92	6.52	7.51
Flange	1.70	2.61	4.79	7.88	12.24	20.54
Connection plate	1.53	2.44	4.48	8.04	12.64	19.55
Sleeve 1	2.61	3.66	5.38	9.32	15.62	26.98
Sleeve S with H _s = 1000 mm	14.37	17.45	27.01	38.66	53.84	77.23
Sleeve S per 1000 mm tube	13.64	15.34	23.97	34.36	46.78	64.41

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

2) Valid for unchanging load direction, max. load cycles ≤ 10⁵.

3) Not valid for coupling with sleeve S.

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

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

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

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

$$C_{T ges.} = \frac{1}{\frac{2}{C_{TLP}} + \frac{H_s [mm] - 2 S [mm]}{C_{THrel.}}}$$

8) The values refer to 1 disk pack.

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

ROBA®-DS Sizes 180 to 2200

Double-jointed coupling with connection plate and flanges

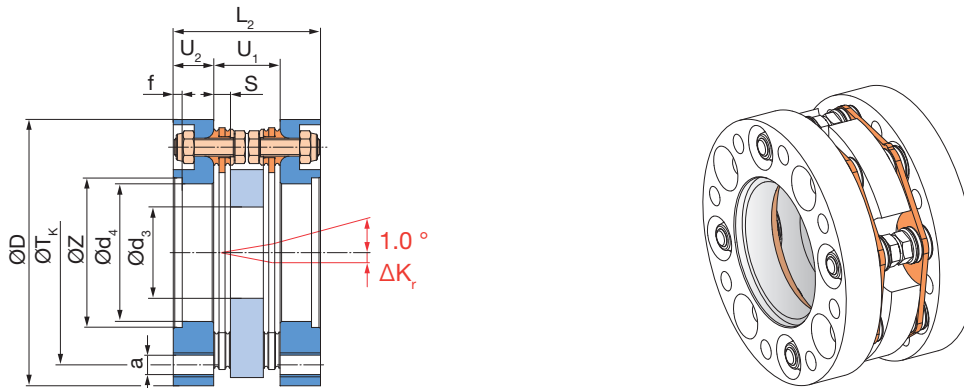


Fig. 69: Type 951.661

Double-jointed coupling with sleeve 1 or sleeve S (special length) and flanges

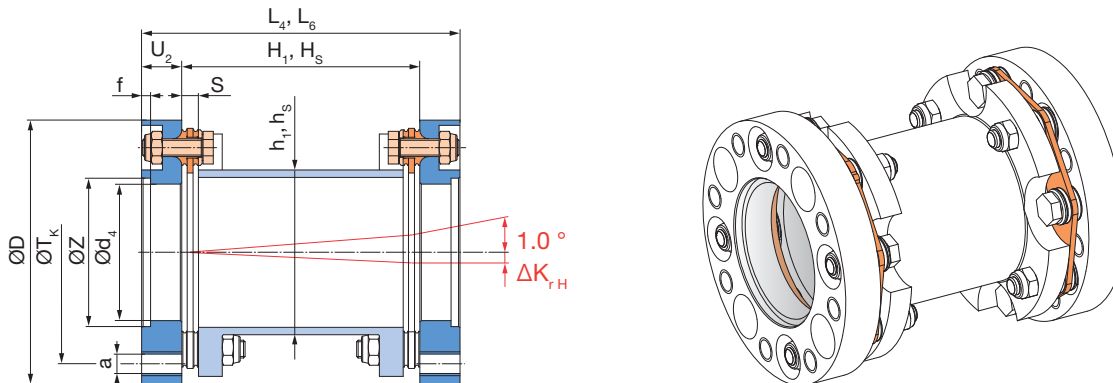


Fig. 70: Type 951.662 (sleeve 1: H_1 , L_4), Type 951.663 (sleeve S: H_s , L_6)

Order Number

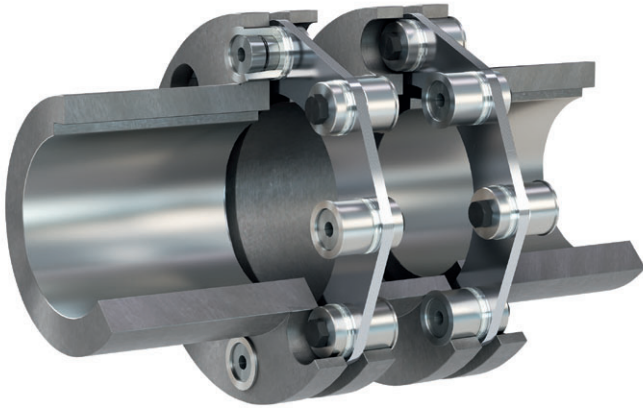
—	/	9	5	—	.	6	6	—	/	—	/	—
▲				▲				▲	▲			▲
Sizes 180 to 2200		Single-jointed coupling		0		Single-jointed coupling	0		Sleeve length		Operating speed	
		Double-jointed coupling		1		Connection plate	1		H_s		n_s	
						Sleeve 1	2		[mm]		[rpm]	
						Sleeve S	3					
						Sleeve CRD (page 64)	4					
						Sleeve CFRP (page 64)	5					
											for special sleeve S / CRD / CFRP	

Example: 40 / 950.661

◀ Backlash-free Servo Couplings	Page 8	Integrated Torque Measurement	Page 60 ▶
Heavy Load Couplings	Page 54 ▶	Variable Length Sleeve S / Sleeve CFRP / Options	Page 64 ▶
		Safe Against Overload	Page 67 ▶
		Installation Examples	Page 68 ▶
		Dimensioning, Size Selection	Page 70 ▶
		Technical Explanations	Page 71 ▶

ROBA[®]-DS for High Torques - Sizes 2200 to 11000

ROBA[®]-DS with conical connection



On the ROBA[®]-DS with conical connection, the disk pack is connected via positive locking with the hubs, the flanges or the sleeves. Externally conical bolts are pulled into conical bores in the attachment parts and the collar bushings of the disk packs by tensioning screws. The conical shape produces forces which widen the collar bushings and the attachment parts radially elastically, thus guaranteeing a backlash-free connection of the disk pack.

For this backlash-free, positive locking connection, far lower screw tightening torques are required in comparison to standard frictionally locking connections. This makes installation substantially easier.

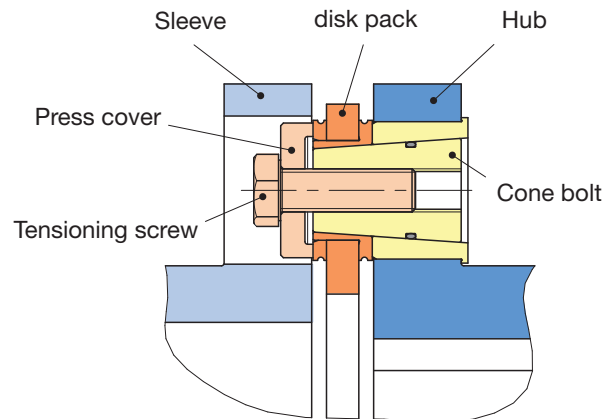
The disk packs and the sleeves can be installed and de-installed radially without having to move the respective aggregates.

- ☐ Low screw tightening torques
- ☐ Can be installed / de-installed radially
- ☐ Easy and quick installation / de-installation
- ☐ No hydraulic installation tools required; can be installed with a torque wrench
- ☐ Backlash-free torque transmission
- ☐ FEM-optimized disk shape
- ☐ High torsional rigidity
- ☐ High performance density
- ☐ Compensation of axial, angular and radial misalignments
- ☐ Wear and maintenance-free
- ☐ High flexibility through customer-specific hubs and sleeves



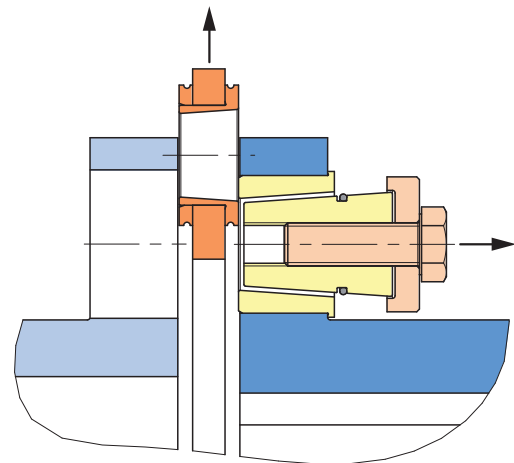
Easy installation and de-installation

When installed, the cone bolt is pulled by the tensioning screw into the conical core.



Conical connection in installed condition

For de-installation of the disk pack, the tensioning screw is screwed out and together with the press cover screwed into the cone bolt on the opposite side. This loosens the cone bolt and it can be pulled back axially. In this way, the disk pack and the sleeve can be de-installed radially.



De-installation

The ROBA[®]-DS disk pack couplings by *mayr*[®] power transmission are robust, reliable and temperature-resistant. They are therefore particularly suitable for use in extreme ambient conditions. In addition, the ROBA[®]-DS couplings are wear-free, meaning that they reduce the required maintenance effort to a minimum.

mayr[®] power transmission has equipped the large ROBA[®]-DS disk pack couplings for high torques, i.e. with a nominal torque range from 22,000 to 110,000 Nm, with an installation-friendly, positive locking conical connection. This conical connection acts as a power transmission and reduces the screw tightening torques to a fraction of their amount in comparison to conventional frictional-locking designs. This makes

installation and de-installation substantially easier. In addition, the drive units such as the motor and gears need not be displaced in order to install and deinstall the coupling.

The ROBA[®]-DS disk pack couplings by *mayr*[®] power transmission simultaneously unite high performance density with absolute backlash-free function: They transmit torques up to the nominal torque backlash-free and with a constant, high torsional rigidity. The specified shaft misalignments can be 100 % utilized without affecting the transmittable torque. The disk pack couplings compensate for the radial, axial and angular misalignments on shafts, and thus protect the bearings against inadvertent loads and therefore unnecessary failure times and costs.

ROBA[®]-DS for High Torques - Sizes 2200 to 11000

Single-jointed coupling with key hubs

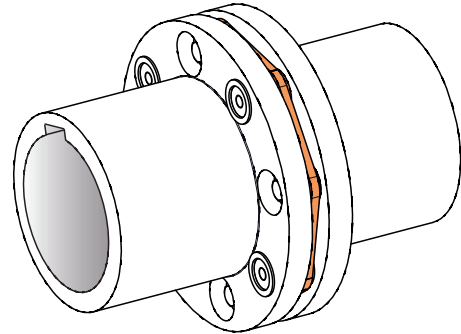
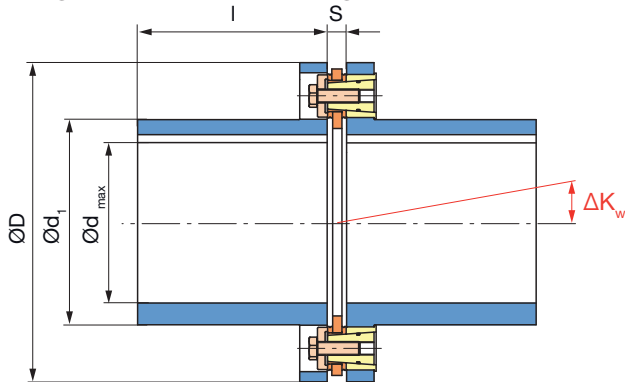


Fig. 71

Double-jointed coupling with sleeve and key hubs

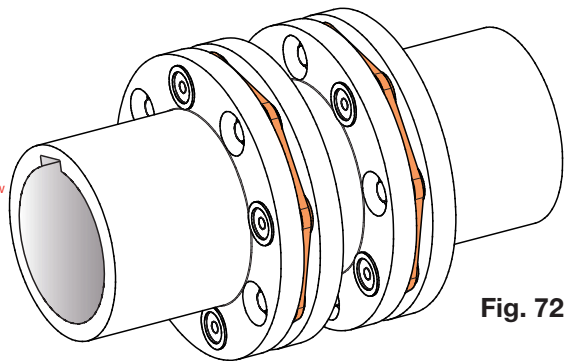
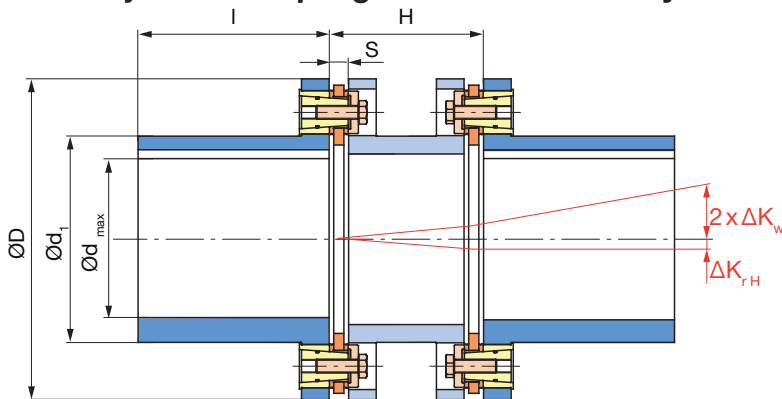


Fig. 72

Backlash-free shaft-hub connection with a shrink disk is possible.

Technical Data and Main Dimensions				Size				
				2200	3300	5000	7300	11000
Alternating torque ¹⁾		T _{KW}	[Nm]	14 700	22 000	33 300	48 700	73 300
Nominal torque ²⁾		T _{KN}	[Nm]	22 000	33 000	50 000	73 000	110 000
Peak torque ³⁾		T _{KS}	[Nm]	44 000	66 000	100 000	146 000	220 000
Outer diameter		D	[mm]	290	332	378	431	492
Maximum hub bore ⁶⁾		d _{max}	[mm]	140	160	180	210	240
Maximum speed		n _{max}	[rpm]	3600	3100	2700	2400	2100
Hub		d ₁	[mm]	186	215	243	279	321
		l	[mm]	175	200	225	265	310
Minimum sleeve length		H _{min}	[mm]	156	166	182	208	223
Distance dimension		S	[mm]	17.8	19	23	24.2	26.5
Permitted misalignments ⁴⁾	perm. axial displacement ⁵⁾	ΔK _a	[mm]	1.6	1.7	2.1	2.3	2.3
	perm. radial misalignment with special sleeve	ΔK _{rH}	[mm]	(H - S) x 6.98 x 10 ⁻³			(H - S) x 5.24 x 10 ⁻³	
	perm. angular misalignment	ΔK _w	[°]	0.4	0.4	0.4	0.4	0.3
Spring rigidity	torsion ⁷⁾	C _T	[10 ³ Nm/rad]	18100	24100	26000	51200	80400
	angular spring rigidity ⁷⁾	C _w	[Nm/rad]	56800	102000	121000	177000	263000

- 1) Valid for changing load direction as well as for max. permitted shaft misalignment.
 2) Valid for unchanging load direction as well as for max. permitted shaft misalignment.
 3) Valid for unchanging load direction, max. load cycles $\leq 10^5$.

- 4) The permitted misalignments may not simultaneously reach their maximum values.
 5) The values refer to couplings with 2 disk packs.
 6) Transmittable torques dependent on bore, see page 76.
 7) The values refer to 1 disk pack.

Order Number

— / 9 5 6 . —

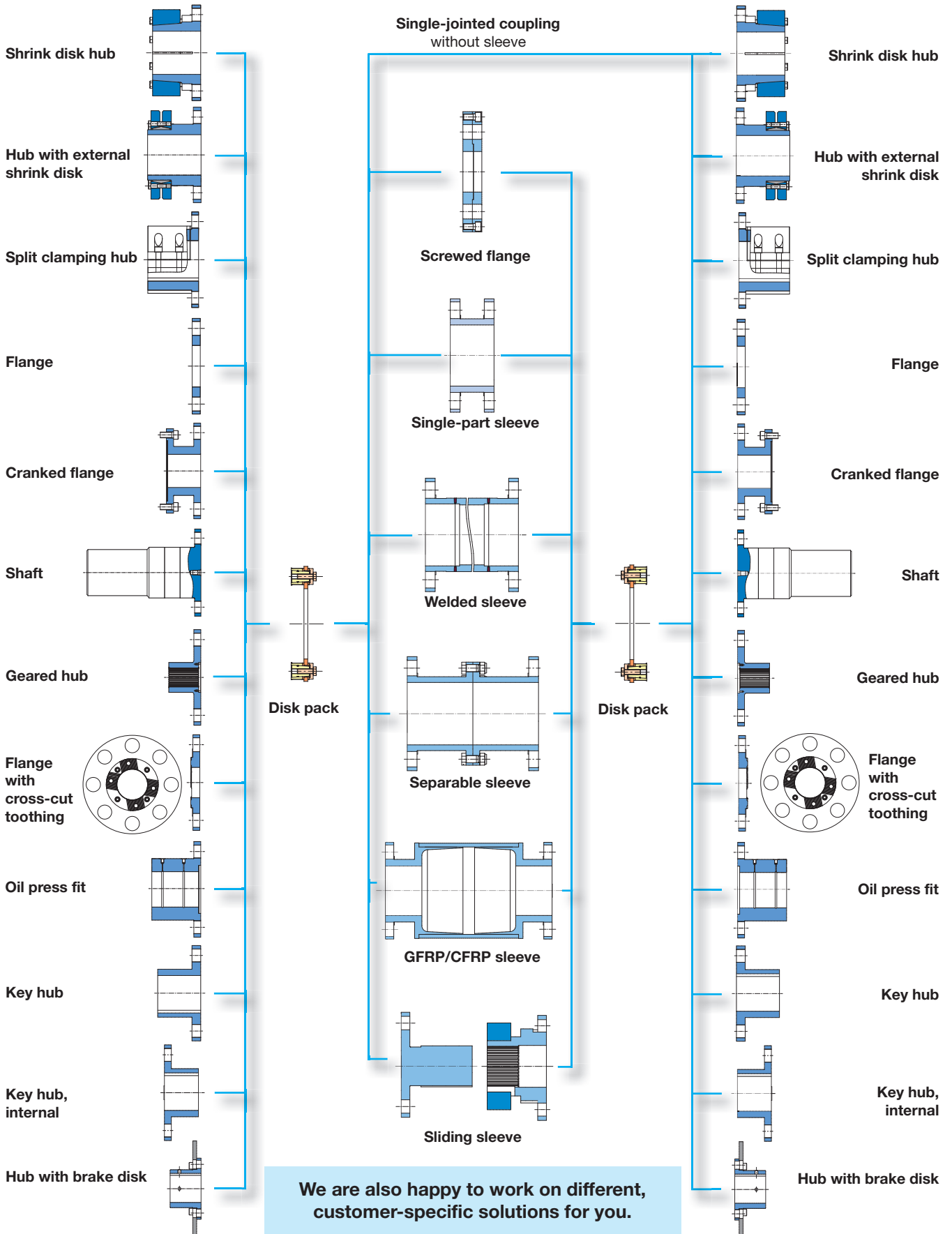


Sizes
2200
to
11000

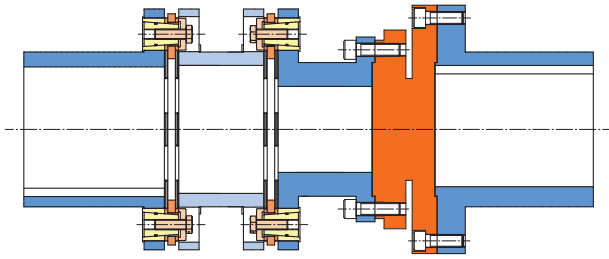
The design of the hubs and sleeves is carried out
according to the customers requirements.
Please contact the manufacturer.

ROBA[®]-DS – Heavy Load Couplings

Configuration possibilities

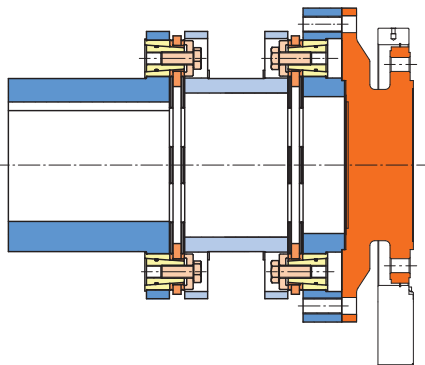


ROBA[®]-DS – Heavy Load Couplings, Measurement Flange Variants



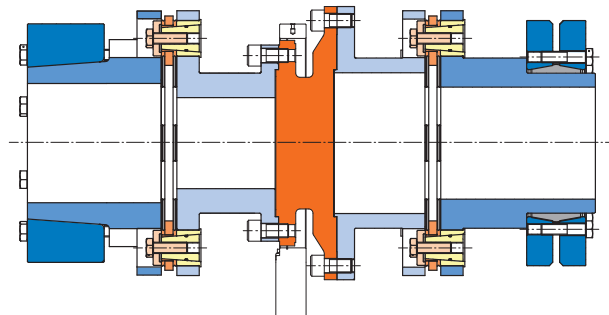
Classic design for applications with measurement flange. The screw connection on the measurement flange is accessible from the outside. The measurement flange is tied rigidly to the hub.

Fig. 73



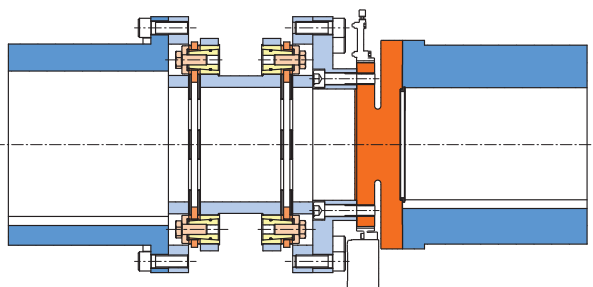
Direct installation of the measurement flange onto the input or output. This produces a very rigid connection.

Fig. 74



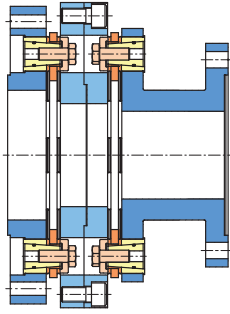
The measurement flange is positioned between the two disk packs. This way, the measurement flange can be de-installed radially with the sleeve, for example for calibration, without de-installing the hubs. Backlash-free shaft-hub connection via shrink disk hub or hub with external shrink disks ensures maximum precision.

Fig. 75



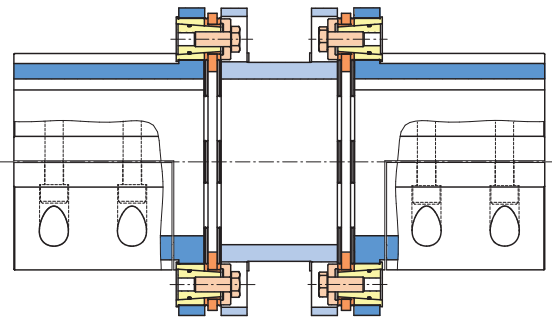
Many different connection variants can be implemented through externally bolted flange hubs or internally bolted measurement flanges, e.g. combinations of very different shaft diameters / measurement flange sizes.

ROBA[®]-DS – Heavy Load Couplings, Application Examples



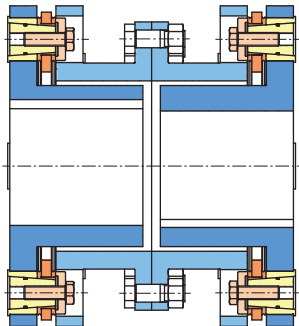
By using two flanges which are screwed together as an intermediate element, very short double-jointed designs can be realized. In contrast to the single-jointed coupling, this design can be used to compensate for radial misalignment.

Fig. 77



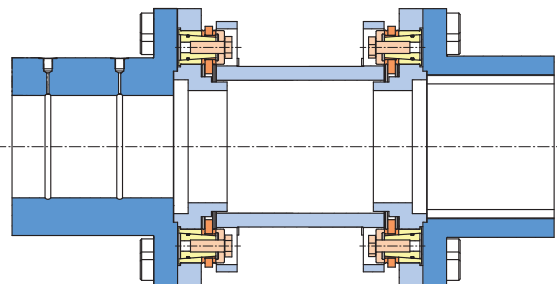
Split clamping hubs make it possible to assemble and disassemble the coupling radially without axial displacement of input and output. This is an advantage when the aggregates cannot be moved axially. Very fast assembly possible.

Fig. 78



The key hubs on the inside make a minimum shaft distance possible. The separable sleeve allows radial disassembly of input and output without axial displacement.

Fig. 79



Thanks to the flanges protruding into the sleeve, the sleeve is additionally trapped independently of the disk pack. Different hub types can be mounted onto the flanges, e.g. hubs for oil press fit, key hubs, etc.

Fig. 80

ROBA®-DSM – the Measuring Machine Element

The torque measuring shaft coupling ROBA®-DSM is based on the tried and tested backlash-free ROBA®-DS disk pack coupling. The areas of application for this torque measurement coupling range from test stand construction through use in serial production machines right up to condition monitoring. The system permits uncomplicated condition monitoring of machines and systems. Machines can be optimally utilised through evaluation of the coupling data.

Valuable data for maximum productivity

The ROBA®-DSM monitors machines and records the measurement values¹⁾. From this data, important information can be obtained for the user:

- Machine performance data
- Unpermitted operating conditions lying outside the specifications (in case of a defect or reclaim)
- Utilisation or runtime of the machine
- Current operating conditions and condition changes to the machine for preventative maintenance purposes
- Dynamic maintenance intervals dependent on the utilisation

Highlights and system advantages

- Direct PC connection possible (USB connection)
- Software for visualisation of the measurement values available as an option
- Use without bearings
- Wide temperature range from -20 °C to +70 °C
- Simple installation and set-up
- Low space requirements on the drive line, no torque support required
- Resistant to vibrations and distance changes on the energy transmitter
- Housing and plug-in connector suitable for industrial purposes (protected against water spray)
- High measuring rate of 7000 measurements per second permits the recording of highly-dynamic loads
- Operation of strain sensor without battery via contactless power supply

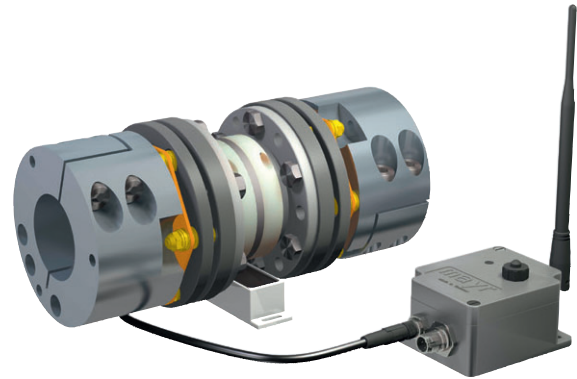


Fig. 81

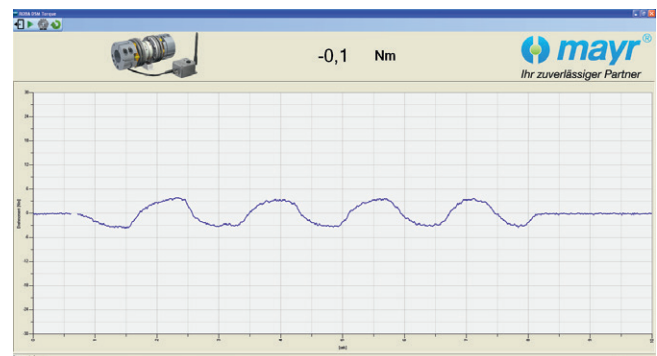


Fig. 82

Order Number

	Hub 1	Hub 2
Key hub, standard (page 28)	0	0
Key hub, large (page 30)	1	1
Shrink disk hub / external clamping (page 36)	2	2
Clamping ring hub (page 34)	4	4
Clamping hub (Figs. 81, 83 and page 32)	5	5
Flange (page 44)	6	6
Split clamping hub ³⁾ (page 42)	8	8
Shrink disk hub, large (page 40)	9	9

— / 9 7 1 . — — 5 / — / —												
Sizes 16 to 160						Bore²⁾ Hub 1 ø (See Dimensions sheets pages 28 – 44)				Bore²⁾ Hub 2 ø (See Dimensions sheets pages 28 – 44)		
Example: 16 / 971.005 / Hub 1 – ø 25^{H7} / Hub 2 – ø 30^{H7}												



For detailed information, detailed technical data and dimensions, please see our product catalogue P.971005.V_..._

- 1) Recording of the measurement values possible only with the aid of appropriate software
- 2) Standard H7, other tolerances possible
- 3) For Type 971.885 (double-sided split clamping hub), radial assembly/disassembly is not possible as the hubs are offset at an angle.

ROBA[®]-DSM

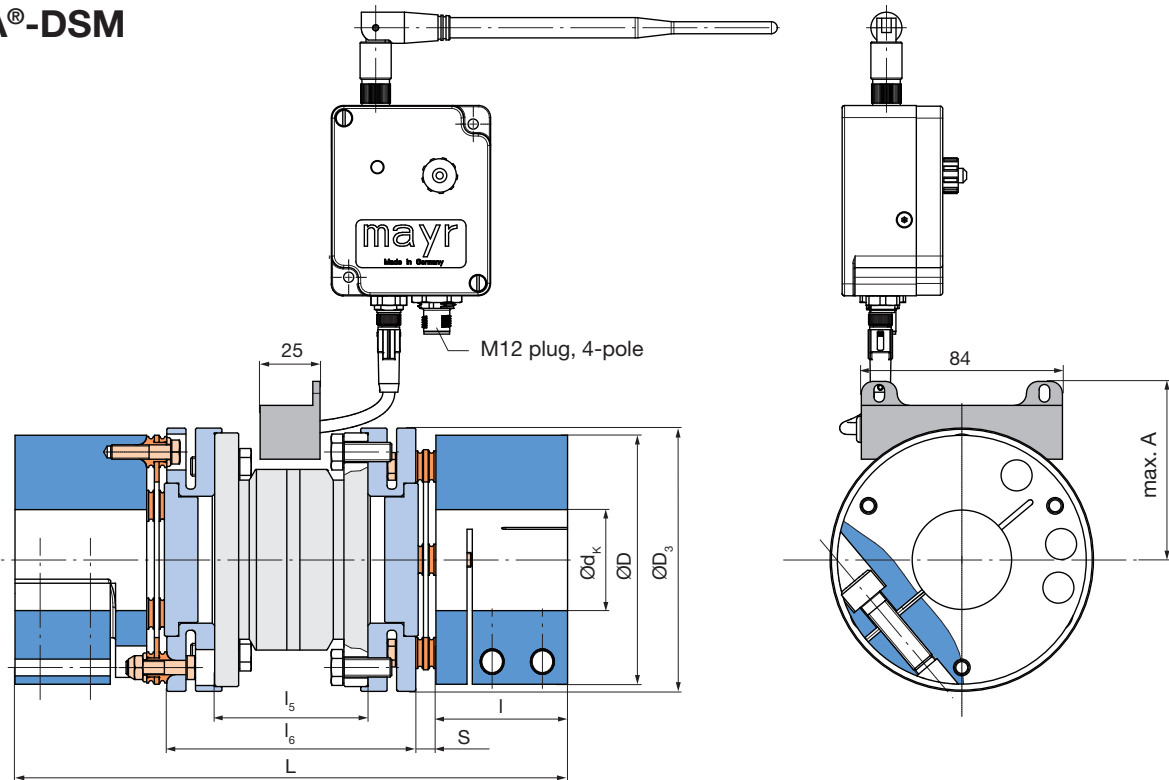


Fig. 83: Type 971.555 (for other mounting variants, see pages 28 – 44)

Technical Data and Main Dimensions				Size			
				16	40	100	160
Nominal torque ^{1) 2)}		T _{KN}	[Nm]	190	450	800	1600
Peak torque ³⁾		T _{KS}	[Nm]	285	675	1200	2400
Ultimate torque		T _{KB}	[Nm]	570	1350	2400	4800
Minimum hub bore Type 971.555 (Figs. 81 and 83) ^{4) 5)}		d _{K min}	[mm]	20	25	32	40
Maximum hub bore Type 971.555 (Figs. 81 and 83) ^{4) 5)}		d _{K max}	[mm]	45	60	90	100
Maximum speed		n _{max}	[rpm]	9500	7000	5100	4300
Permitted misalignments ⁶⁾	perm. axial displacement ^{7) 8)}	ΔK _a	[mm]	0.8	1.1	1.5	1.7
	perm. angular misalignment ⁹⁾	ΔK _w	[mm]	0.7	0.7	0.7	0.7
	perm. radial misalignment ⁷⁾	ΔK _r	[mm]	1.1	1.3	1.6	1.8
Spring rigidity	Total torsional rigidity		[10 ³ Nm/rad]	36.2	114.3	320	585
	angular spring rigidity ⁹⁾		[Nm/rad]	229	298	1089	1990

Mass moments of inertia J [10⁻³ kgm²]

Size	16	40	100	160
Clamping hub ^{5) 10)}	0.74	3.64	16.94	34.32
disk pack	0.08	0.26	1.19	3.27
Adaptor flange	0.38	1.67	7.06	15.36
Strain sensor	0.51	2.21	7.97	20.04

Weights [kg]

Size	16	40	100	160
Clamping hub ^{5) 10)}	0.73	2.05	4.82	6.94
disk pack	0.08	0.15	0.35	0.67
Adaptor flange	0.43	1.11	2.44	3.89
Strain sensor	0.58	1.34	2.91	4.27

Dimensions [mm]

Size	A	D	D ₃	I ⁵⁾	I ₅	I ₆	L ⁵⁾	S
16	66.7	77	82	40	54	84	178.2	7.1
40	74.9	104	110	55	64	104	230.8	8.4
100	85.8	143	150	75	72	122	292	10
160	99.0	167	175	85	78	136	329.2	11.6

- 1) Other torques and construction sizes available on request.
- 2) Valid for changing load direction as well as for max. permitted shaft misalignment. For split clamping hubs (Type 971.8_5), the following applies:
Valid for unchanging load direction as well as for max. permitted shaft misalignment. When the load direction changes, max. 60% of the stated nominal torque is permitted.
- 3) Valid for unchanging load direction, max. load cycles $\leq 10^5$.
- 4) Transmittable torques dependent on bore, see page 76.
- 5) For technical data on alternative mounting variations, see pages 28 – 44.
- 6) The permitted misalignments may not simultaneously reach their maximum values.
- 7) The values refer to couplings with 2 disk packs.
- 8) Only permitted as a static or virtually static value.
- 9) The values refer to 1 disk pack.
- 10) Mass moments of inertia and weights are valid for maximum bore.

Safe Against Overload Page 67

Installation Examples Page 68

Dimensioning, Size Selection Page 70

Technical Explanations Page 71

Backlash-free Servo Couplings Page 8

Backlash-free All-steel Couplings Page 14

Heavy Load Couplings Page 54

ROBA®-DSM Measuring System

ROBA®-DSM receiver

The ROBA®-DSM receiver establishes the contactless connection to the strain sensor and supplies it with energy via the ROBA®-DSM stator.

ROBA®-DSM stator

The stator must be aligned centrally to the strain sensor. The radial distance can total between 1 mm and 5 mm. If installed correctly, the LED on the ROBA®-DSM receiver lights up green and indicates that the data transmission works. The strain sensor is rotated slowly by 360° for inspection purposes.

If the LED lights up red at different angle positions, please select a different mounting place for the ROBA®-DSM receiver.

Technical data

Supply voltage:	24 VDC ($\pm 10\%$)
Max. current consumption:	1 A
Measuring signal output:	0 ... ± 10 V (rotational direction right positive, 0V refers to T_{KN})
Nominal temperature range:	-20 °C to +70 °C
Temperature drift, zero point:	0.04 % of final value / K
Temperature drift, measured value:	0.03 % of final value / K
Max. total errors:	< 1 % of final value (< 0.5 % via USB)
Bandwidth:	3 kHz (-3 dB)
Max. dyn. load:	100 % of T_{KN}
Protection:	Receiver/stator IP65 Strain sensor IP52
Permitted speed:	0 ... n_{max} (Tech. Data, page 61)

Electrical connection (Fig. 84)

- ❑ The ROBA®-DSM receiver is equipped manufacturer-side with a firmly installed 4-pole, A-encoded M12 plug.
- ❑ The voltage supply takes place via Pin 1 = +24V $\pm 10\%$ and Pin 3 = GND.
- ❑ The output signal is provided to Pin 4 = U_a torque 0 ... ± 10 V and Pin 2 = GND.
- ❑ The digital measurement data can be read into a PC directly via the USB port using the *mayr®* software.
- ❑ The radio ID and the radio channel can be set and the offset compensation can be carried out via the USB port using the service software.

Recommended accessories (please include in your order)

Connection cable, 4-wire, shielded, 3 m long

Article-No. 8233264

USB cable, bayonet lock, IP65, 2 m long

Article-No. 8233265

Only when using original accessories, the receiver has Protection IP65 also when the USB cable is connected. Non-original mini USB plugs might not be compatible mechanically.

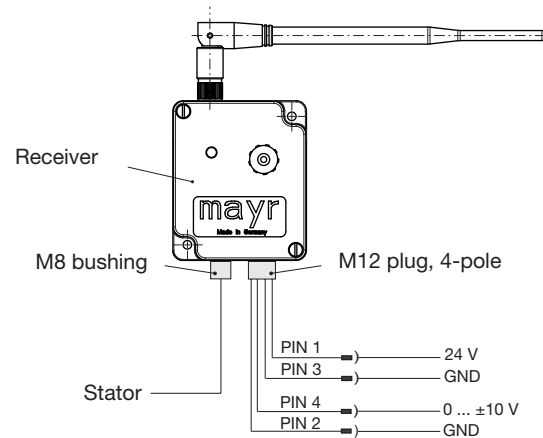


Fig. 84

Detail drawing

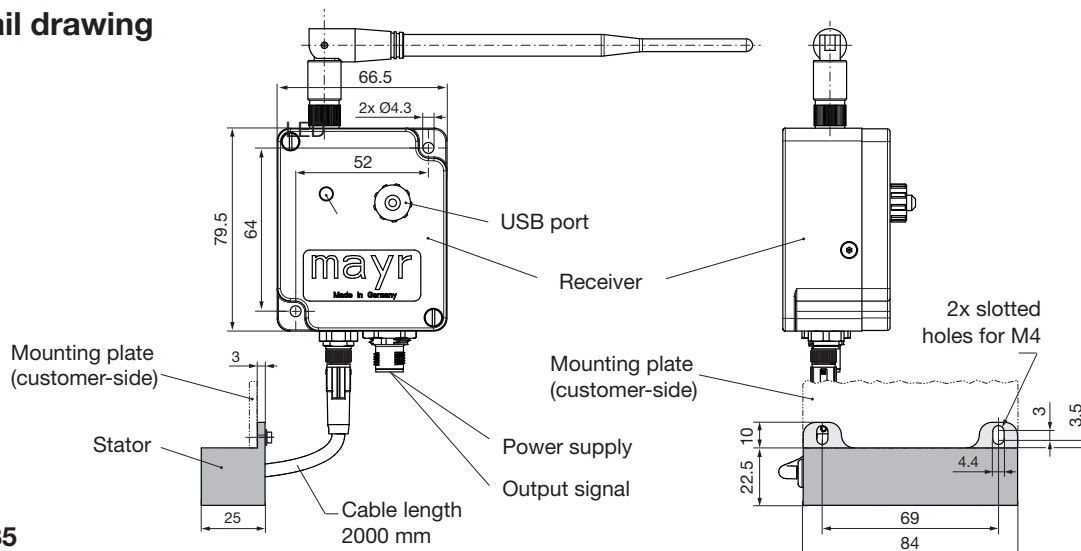
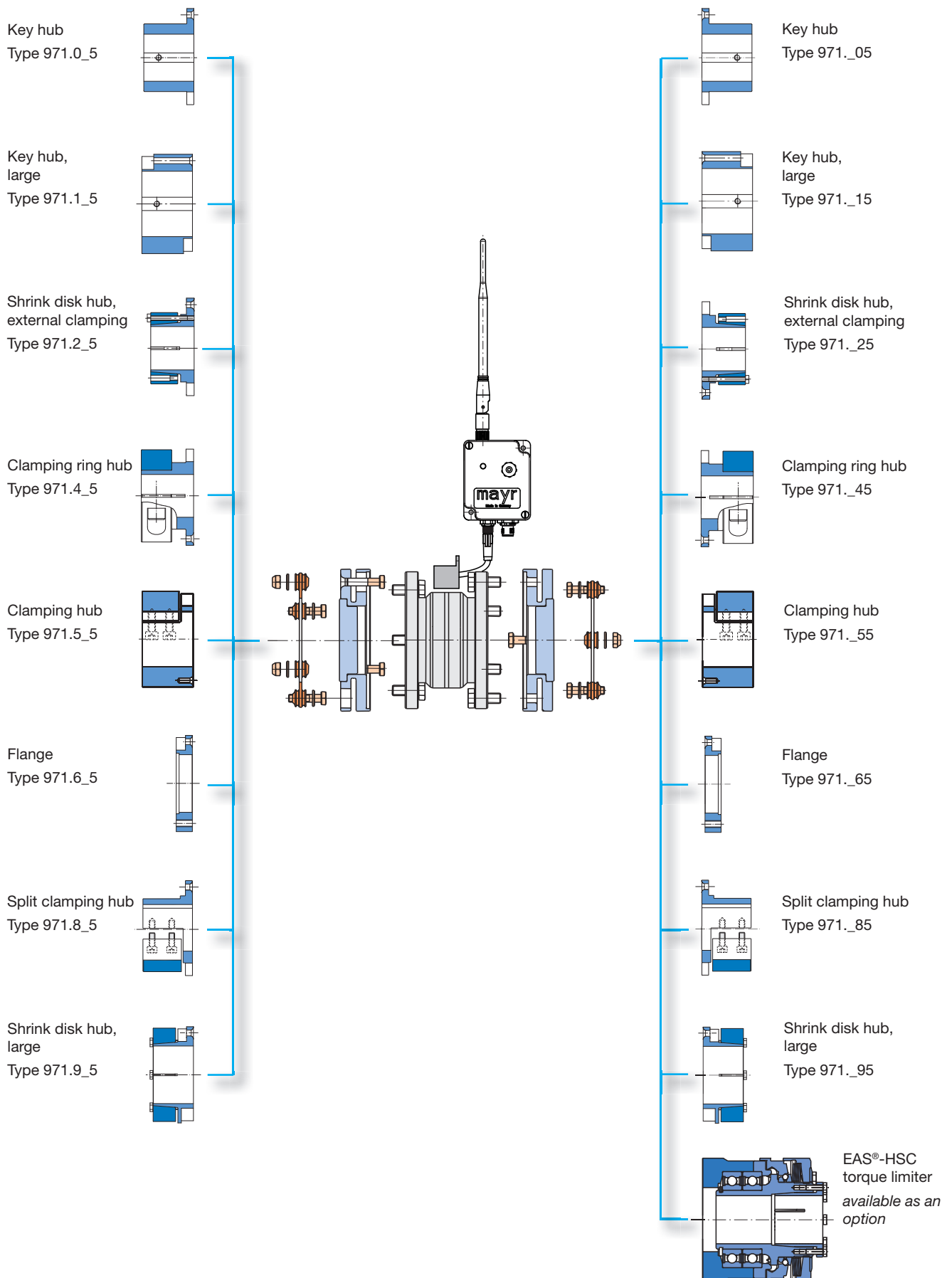


Fig. 85

ROBA[®]-DSM Configuration Possibilities/Standard Designs



Variable length Sleeve S

Variable Length Sleeves (Cardan Shaft Replacement)

The operational demands on variable length sleeves vary greatly. Using various sleeve construction shapes, the shaft coupling ROBA®-DS can offer the optimum solution for any problem.

The product is able to fulfil the usual demands placed upon

conventional cardan shafts. At the same time, the constructional shape all-steel coupling presents decided advantages:

- Backlash-free function
- Absolutely maintenance-free
- Suitable for high speeds

By replacing conventional disk packs, the coupling misalignment capability can be enlarged by 2 – 3° / compensating level (please contact the manufacturers about availability and Technical Data).

Type Identification and Technical Comparison – Variable Length Sleeves

Standard design Type 951._3 / 953._3

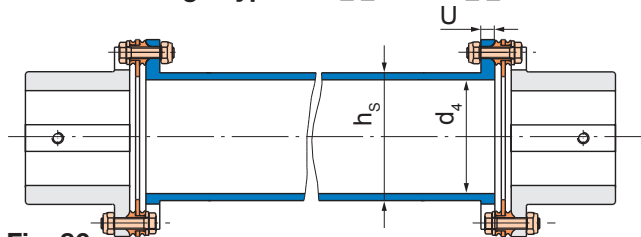


Fig. 86

Cranked tube (CRD) Type 951._4 / 953._4

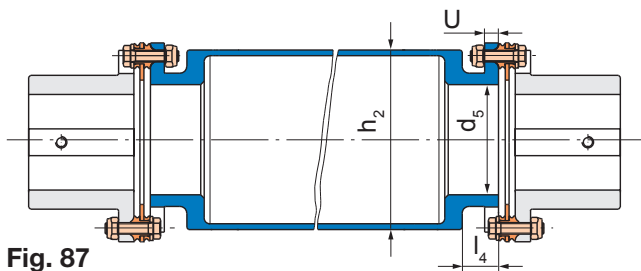


Fig. 87

CFRP sleeve Type 951._5 / 953._5

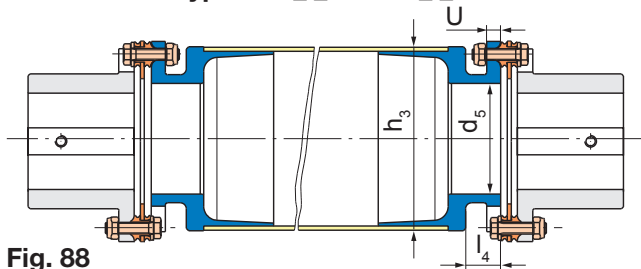


Fig. 88

Selection Aid: Variable Length Sleeves			
Type	951._3	951._4	951._5
Speed	+	++	+++
Shaft misalignment	+++	+ ¹⁾	+ ¹⁾
Torsional rigidity	++	+++	+
Weight	++	+++	+
Mass moment of inertia	++	+++	+
Corrosion resistance	++	++	+++
Changes in length due to temperature	+++	+++	+
Costs	+	++	+++
Operational focuses	• conventional applications	• medium speeds • high torsional rigidity	• high speeds • low mass

+ = low, ++ = medium, +++ = high

1) The permitted shaft misalignments are reduced to one-third of the catalogue values.

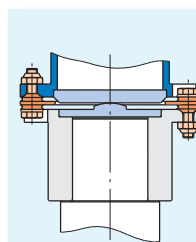


Fig. 89

Vertical support for special sleeve

Attention!

On vertically installed ROBA®-DS couplings with long sleeves, it is necessary to provide a vertical support for absorbing the sleeve's own weight.

Dimensions [mm]

Size	16	25	40	64	100	160	180	300	500	850	1400	2200
d ₄	43	54	62	71	92	98	79	95	111	127	137	157
d ₅	45	48	58	68	88	95	75	90	110	123	144	167
h _s	50	60	70	80	100	110	92	110	130	150	165	190
h ₂	x	x	x	x	x	155	130	155	170	220	250	x
h ₃	73	86	96	118	138	160	138	160	192	224	266	315
l ₄	15.5	15.5	20	24	24	30	32	36	40	48	54	61
U	7	7	8	10	10	12	14	16	18	20	22	25

x = Technical Data available on demand

CFRP Sleeve

ROBA[®]-DS with CFRP sleeves

(Carbon-fibre reinforced plastic)

Sleeves made of CFRP offer unique advantages and open up new application possibilities for torsionally rigid disk pack couplings.

- Up to 80% lower own weight
- Reduced mass inertia
- High speeds
- Wide bearing distances
- Low thermal expansion
- Corrosion resistance
- Low vibration
- Temperature Resistance

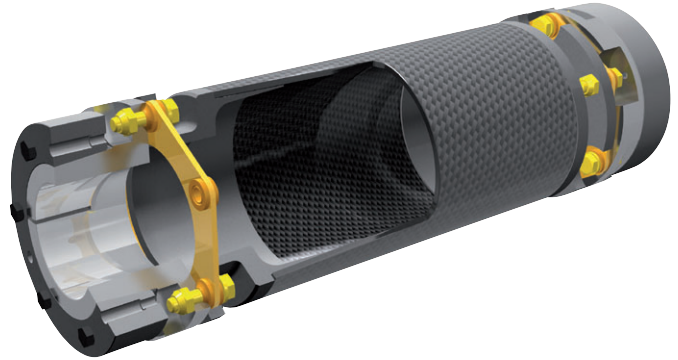


Fig. 90

Low weight

The lower own weight (up to 80 %) of CFRP material in comparison to steel makes handling and installation much easier and safer.

Reduced mass inertia

The reduction in weight is combined with a large reduction in mass inertia. Braking and accelerating procedures are quicker or require lower drive performance.

Higher speeds

The optimum rigidity / weight ratio sets the critical bending speed far higher than with conventional sleeves.

Wide bearing distances

Due to the high critical bending speed, large bearing distances can be bridged without further intermediate bearings being necessary.

Low thermal expansion

CFRP sleeves expand approx. 90 % less than steel in response to temperature fluctuations. The disk packs are therefore placed under far less strain, especially when using long sleeves.

Corrosion resistance

Additional corrosion protection for hubs and sleeve parts ensure a very high corrosion resistance for the entire coupling.

Low vibration

The far higher self-damping capacity of CFRP material minimises production of vibrations and damps existing vibrations more effectively.

Temperature resistance

Couplings with CFRP sleeves can be used at temperatures of -20 °C up to +80 °C

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ROBA[®]-DS Options

Options and Variants on Intermediate Shafts

Intermediate shafts

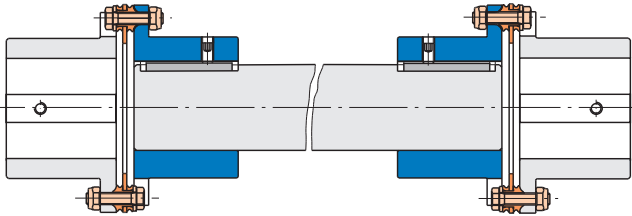


Fig. 91

Variable bridges over any shaft distances via adapted steel solid shafts, mounted between two standard hubs.
Please observe the critical bending speeds!

GFRP sleeve

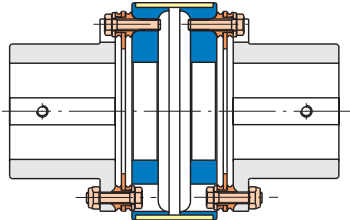


Fig. 92

Glass-fibre reinforced plastic sleeves for couplings in leakage current-isolated design.
Fulfills the highest demands on insulation quality (CTI 600).

Axially separable sleeve

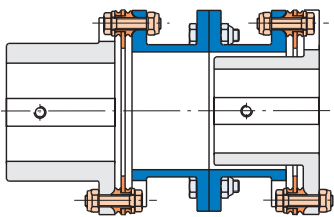


Fig. 93

This design allows radial disassembling of input and output without axial displacement.
Preferred solution on large coupling in connection with inner key hubs

Poly-cardanic design

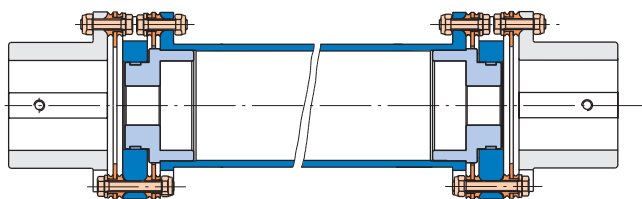


Fig. 94

For applications with large axial displacement, e.g. caused by:

- Normal load or overload on the connected system parts
- Ground changes between the foundations
- Temperature differences
- Axial backlash due to wear on the bearing

Safe Against Overload

Safe Against Overload Damage

Combination with EAS®-compact®

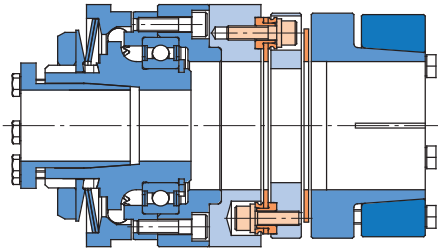


Fig. 95

- Torque limiter in the construction Types Ratchetting, Synchronous or Overload
- Flexible adaptation of construction length for connection of shafts with different shaft distances
- Perfectly suited for demands of high torsional rigidity or high speeds

Torque range	5 – 3 000 Nm
Switch-off accuracy	± 5 %
Load disconnecting	
Number of overload occurrences	high
Time demand for repeat operation start-up	0
Danger of drive shaft damage	no

Combination with EAS®-element clutch

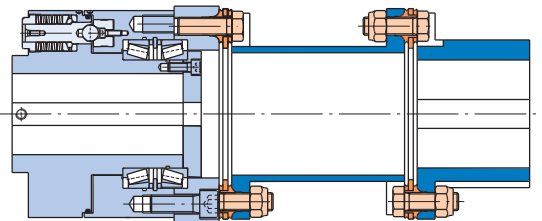


Fig. 96

- Complete separation of input and output on overload
- Particularly suitable for heavy, fast-running drives with large rotating masses
- Maximum torsional rigidity at highest performance density

Torque range	250 – 110 000 Nm
Switch-off accuracy	± 5 %
Load disconnecting	
Number of overload occurrences	high
Time demand for repeat operation start-up	1 minute
Danger of drive shaft damage	no

Combination with ROBA®-slip hub

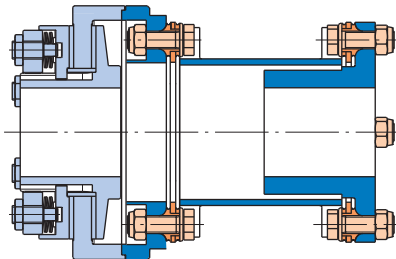


Fig. 97

- Overload protection with load holding function
- Compensation of individual dynamic peaks (resonances, start-up peaks) without operational interruptions
- Slip control recommended for protection against thermic overload

Torque range	2 – 110 000 Nm
Switch-off accuracy	± 20 %
Load holding	
Number of overload occurrences	very high
Time demand for repeat operation start-up	0
Danger of drive shaft damage	no

Shrink disk hub with integrated overload protection

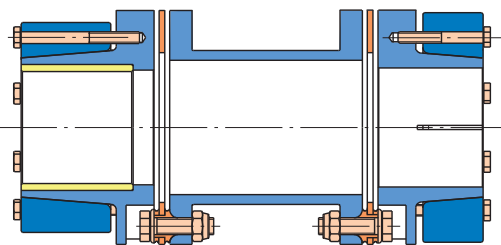


Fig. 98

- Modified shrink disk hub with integrated slip bushing
- Suitable for protection against individual, very short dynamic torque peaks
- Not suitable for longer slipping times / high slipping speeds

Torque range	190 – 110 000 Nm
Switch-off accuracy	± 20 % ¹⁾
Load holding	
Number of overload occurrences	very low
Time demand for repeat operation start-up	de-installation and installation of coupling
Danger of drive shaft damage	yes

¹⁾ Tolerance only in limited application conditions – please contact the manufacturer.

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ROBA[®]-DS Installation Examples

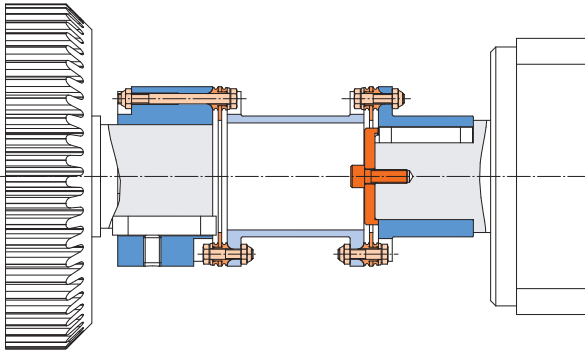


Fig. 99

Axial securement of key hubs via press cover

When using key hubs with transition fit and clearance fit, additional securement of the hubs is necessary. A positive-locking, extremely robust securement is achieved via press cover and clamping screw.

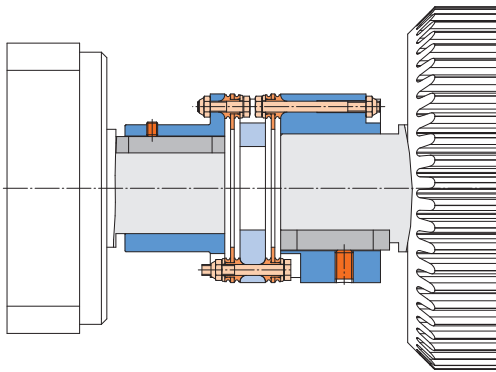


Fig. 100

Axial securement of key hubs via adjusting screw

When using adjusting screws, radial force is achieved on the key via positive locking. This securement is of advantage in particular for pre-assembled couplings and limited space conditions.

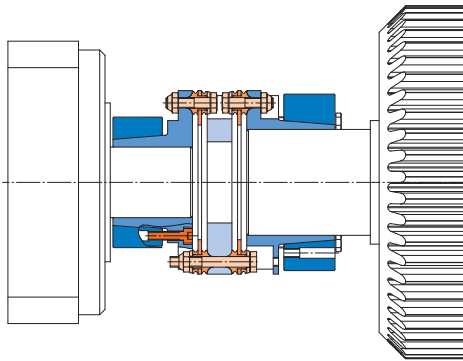


Fig. 101

Hub installation directly next to the housing wall with internally-clamping shrink disk hub

The ROBA[®]-DS coupling can be installed directly next to the housing wall by using an internally-clamping shrink disk hub. For this, a backlash-free shaft/hub connection is achieved in very limited space conditions.

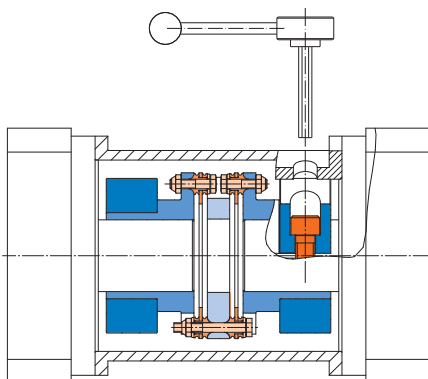


Fig. 102

Coupling installation in closed housing

By using clamping ring hubs, ROBA[®]-DS couplings can even be installed in areas very difficult to reach. A frictionally-locking connection to the shaft is achieved via a radial clamping screw. An opening in the gear bell housing is to be designed for the Allen wrench.

ROBA[®]-DS Installation Examples

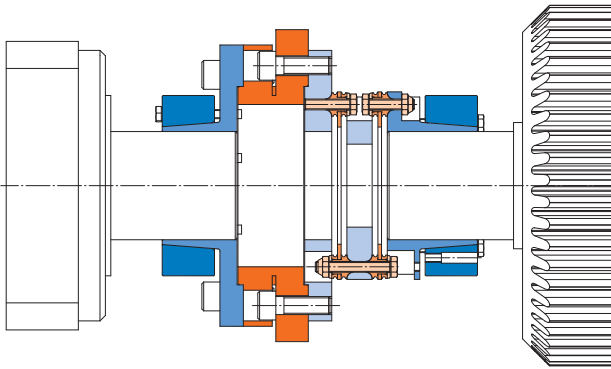


Fig. 103

Integration of measurement flange with adaptor flanges

By using special adaptor flanges, different measurement flanges (for torque measurement) can be integrated into ROBA[®]-DS couplings.

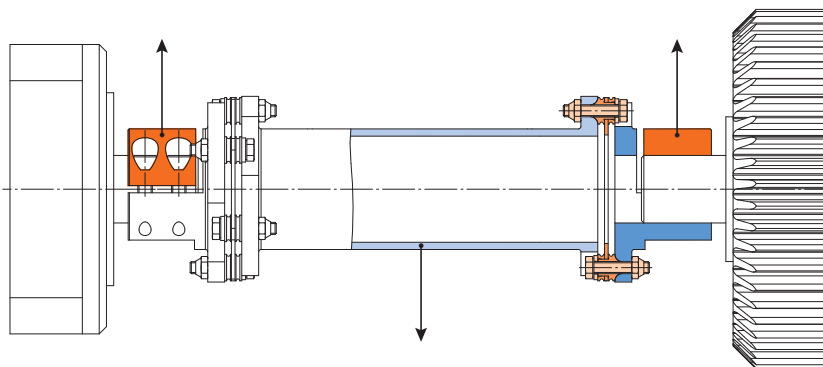


Fig. 104

Radial assembly/disassembly with split clamping hubs

By using split clamping hubs, it is possible to assemble or disassemble ROBA[®]-DS couplings radially without misaligning the motor or gear box.

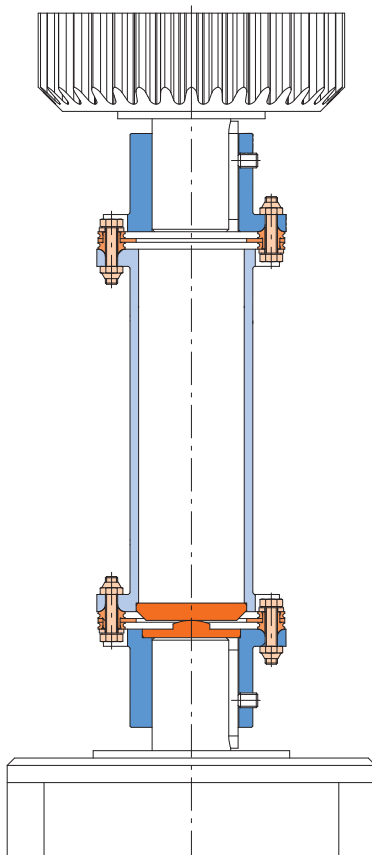


Fig. 105

Vertical support for special sleeve

For vertical or sloping installation of ROBA[®]-DS couplings with long intermediate sleeves, a “vertical support” is required. Using this device, the sleeve weight load is transferred directly from the sleeve onto the hub instead of via the disk packs onto the hub.

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Dimensioning, Size Selection

Coupling Size Selection

1. Direct coupling selection

If the user knows all the torques affecting the coupling during operation and if temperatures do not rise above 175 °C (100 °C on sizes 3 to 15), a coupling should be selected whose nominal torque lies above the maximum in-operation torques according to the catalogue.

If shaft misalignment is present, no further limitations are necessary.

For ROBA®-DS couplings from size 16 onwards, no further limitations are necessary if alternating torques are present.

Please observe the alternating torques shown on page 8 for coupling sizes 3 to 15 (Type 950.____ and Type 951.____). Please observe the alternating torques shown on page 56 for coupling sizes 2200 to 11000 (Type 956.____).

Please also observe the level and torsional direction of the start-up torque. This may be maximum 1.5 x the permitted coupling nominal torque. The torsional direction should remain unchanged, the maximum permitted amount of load cycles must be smaller than 1×10^5 .

2. Calculation for coupling selection using drive performance and service factor f_B

If the user knows the application data of his drive line, we recommend dimensioning using performance and speed of the main engine as well as the service and temperature factors.

$$T_{KN} \geq \frac{9550 \times P \times f_B \times f_t}{n}$$

Term definitions:

T_{KN} [Nm]	Coupling nominal torque
P [kW]	Drive machine nominal power
f_B	Service factor according to Table 2, page 69
f_t	Temperature factor according to Fig. 100, page 68
n [rpm]	Drive machine nominal speed

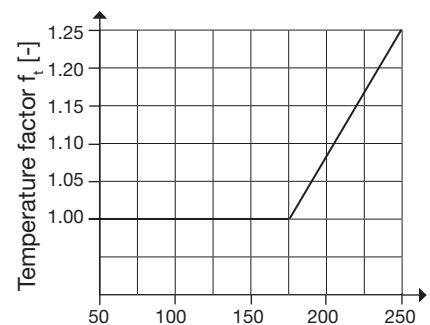


Fig. 106: Temperature factor f_t

Calculation Example

The ROBA®-DS coupling is to be dimensioned for a piston pump drive run via an electromotor.

The following application data is available:

Drive machine	Electromotor
Nominal power	$P = 13 \text{ kW}$
Nominal speed	$n = 1450 \text{ rpm}$
Max. start-up torque	$T_{Amax} = 2.5 \times \text{the motor nominal torque}$
Working machine:	Piston pump
Maximum ambient temperature	60 °C

=> Required coupling nominal torque T_{KN} :

$$T_{KN} \geq \frac{9550 \times 13 \times 1.9 \times 1.0}{1450}$$

Load class from Table 1, page 71: III
Service factor f_B from Table 2, page 71: 1.9
Temperature factor f_t from Fig. 106, page 70: 1.0

$$T_{KN} \geq 162.7 \text{ Nm}$$

=> Required coupling peak torque T_{KS} :

$$T_{Nenn} = \frac{9550 \times 13}{1450}$$

$$T_{Nenn} = 85.6 \text{ Nm}$$

$$T_{Amax} = 2.5 \times T_{Nenn}$$

Max. start-up torque: $T_{Amax} = 2.5 \times \text{the motor nominal torque}$

$$T_{KS} \geq T_{Amax} \geq 214.1 \text{ Nm}$$

=> Selected coupling size:

ROBA®-DS 16 with a nominal torque T_{KN} of **190 Nm** and a peak torque T_{KS} of **285 Nm**.

Classification of Work Machines into Load Classes

Construction machinery

- Concrete blenders	II
- Chain conveyors	III
- Chain carriages	III
- Crushers	III

Chemical industry

- Mixers (thick fluids)	II
- Mixers (thin fluids)	I
- Centrifuges	II
- Blenders	II

Fans / vents

II

Generators / converters

- Frequency converters	I
- Generators	II

Foodstuffs machines

- Kneading machines	II
- Mills	III
- Packaging machines	II

Paper machines

III

Compressors

II

Conveyor systems

- Conveyor belts	II
- Sloping elevators	III
- Goods elevators	III
- Passenger elevators	II

Wood / plastic processing

- Planing machines	II
- Reciprocating saws	III
- Extruders	II
- Blenders	II

Crane systems

II

Metal processing

- Punching / pressing	III
- Machine tools	II

Pumps

- Centrifugal pump (thin fluids)	I
- Centrifugal pump (thick fluids)	II
- Pistons / plunger pumps	III

Textile machines

II

Washing machines

II

Table 1: Load Classes

Service factor f_B	Work Machine Load Class		
	I	II	III
Electromotor, turbine, hydraulic motor	1.1	1.4	1.9
Piston machine			
with more than 3 cylinders	1.4	1.7	2.2
Piston machine			
with up to 3 cylinders	1.7	2.0	2.5

Table 2: Service factor f_B

Technical Explanations

Permitted Shaft Misalignments

- ROBA®-DS single-jointed couplings (Type 950._ _ _ and Type 952._ _ _) compensate for angular and axial shaft misalignments.
- ROBA®-DS double-jointed couplings (Type 951._ _ _ and Type 953._ _ _) compensate for angular, axial and radial shaft misalignments (Fig. 107).
- If more than one kind of misalignment takes place simultaneously, they influence each other. The permitted misalignment values are dependent on one another, see Fig. 108. The sum total of the actual misalignments – in percent of the maximum value – must not exceed 100 %.

Example (see Table on page 28 and Fig. 108):

ROBA®-DS, Size 40, Type 951.002

= > **Axial displacement** occurrence: $\Delta K_a = 0.6$ mm equals **40 %** of the permitted maximum value $\Delta K_a = 1.5$ mm

= > **Angular misalignment** occurrence in the disk pack: $\Delta K_w = 0.3^\circ$ equals **30 %** of the permitted maximum value $\Delta K_w = 1.0^\circ$

= > **Permitted radial misalignment:**

$\Delta K_r = 30$ % of the permitted maximum value

$\Delta K_r = 1.5$ mm => $\Delta K_r = 0.45$ mm

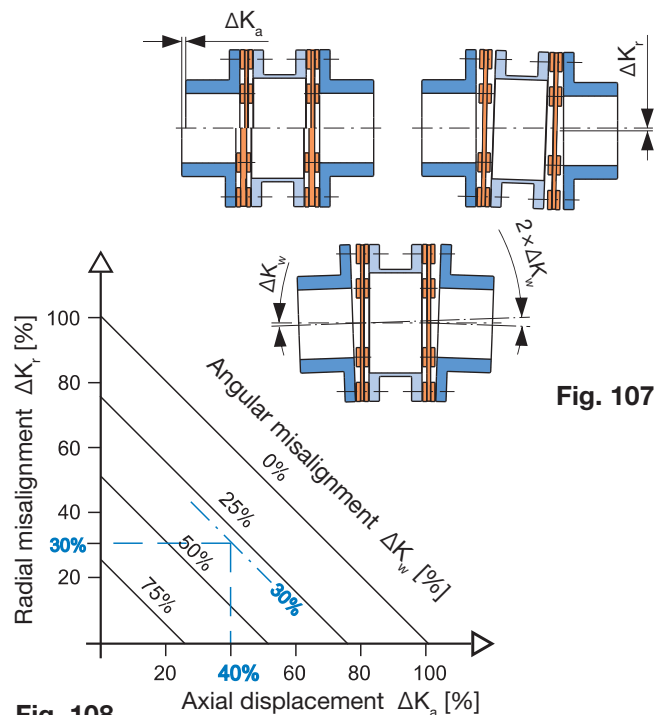


Fig. 107

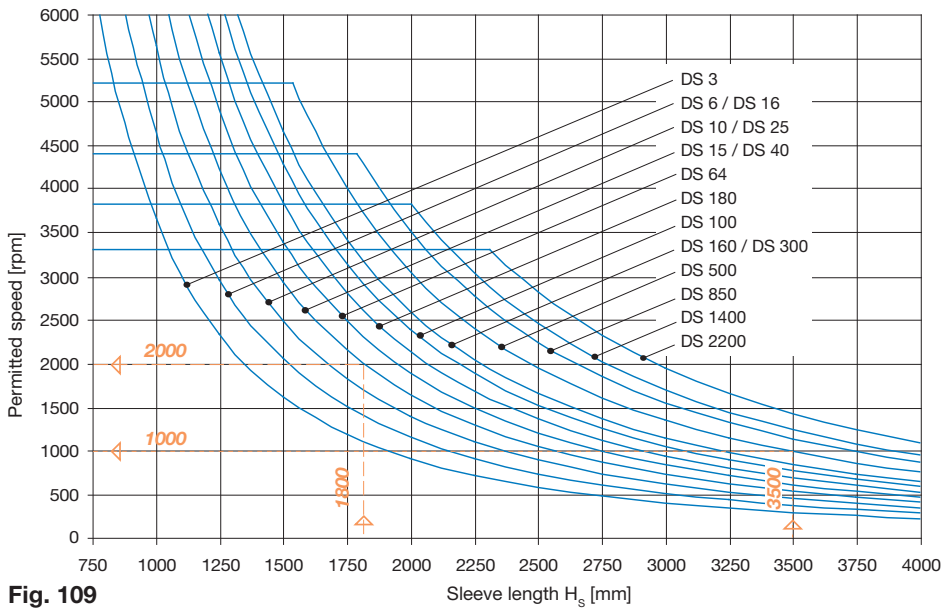
Fig. 108

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Technical Explanations

Permitted Speeds (Critical Bending Speeds) on Sleeve S, CRD Sleeve, CFRP Sleeve (Figs. 109, 110, 111)

Permitted speed on special sleeve ROBA®-DS Type 95_ _ 3 (Sleeve S)



Examples (Fig. 109)

- ROBA®-DS, Size 40:

Sleeve length: $H_s = 1800 \text{ mm}$
=> permitted speed:
2000 rpm

- ROBA®-DS, Size 500:

Sleeve length: $H_s = 3500 \text{ mm}$
=> permitted speed:
1000 rpm

Fig. 109

Permitted speed on special sleeve ROBA®-DS Type 95_ _ 4 (Sleeve CRD)

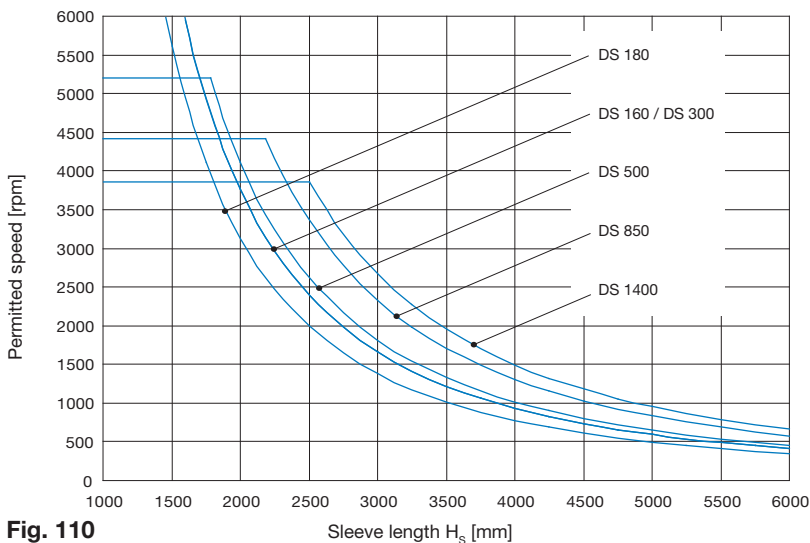


Fig. 110

Permitted speed on special sleeve ROBA®-DS Type 95_ _ 5 (Sleeve CFRP)

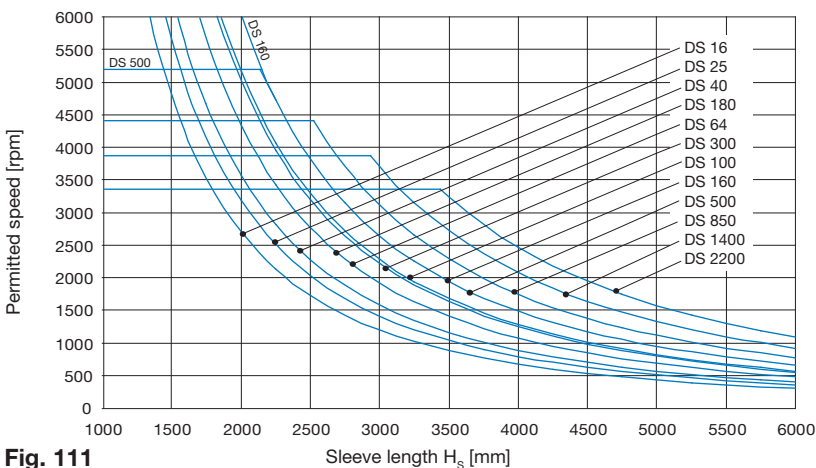


Fig. 111

Using the Coupling at High Speeds

- Please keep to the maximum speeds defined in the catalogue. Higher speeds are only permitted after contacting the manufacturers.
- Please operate designs with sleeve S, CRD sleeves and CFRP sleeves at subcritical levels (see Figs. 109, 110 and 111).
- Both hub variants clamping hub/clamping ring hub and split clamping hub may only be used within a limited speed range. At very high speeds, shrink disk hubs and key hubs (press fit) should be used.
- We recommend balancing the coupling in individual parts or complete.
- Shaft misalignments should be kept as low as possible to increase the smooth running of a system.
- When using double cardanic shafts, axial animation of the middle coupling part is possible due to operating speed and misalignment. In order to avoid this animation, please minimise the shaft misalignment.
- When connecting very high mass inertias via ROBA®-DS couplings (in particular double-jointed couplings with long sleeves), the torsion-critical natural frequency and speeds must be observed.

Technical Explanations

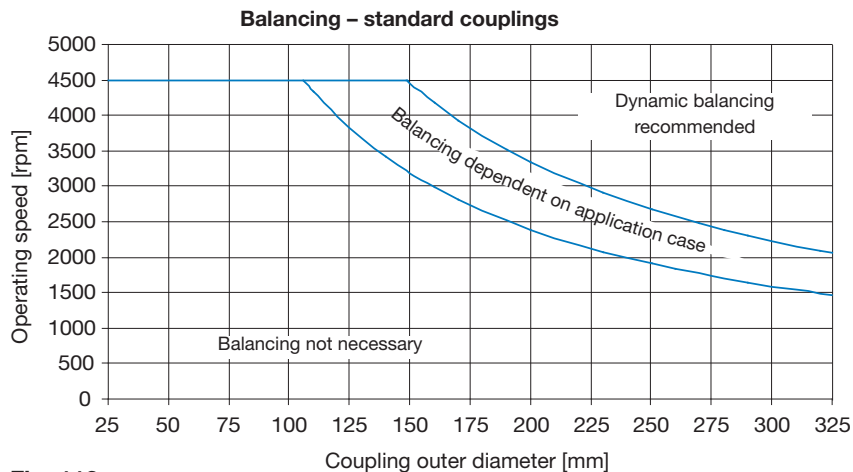


Fig. 112

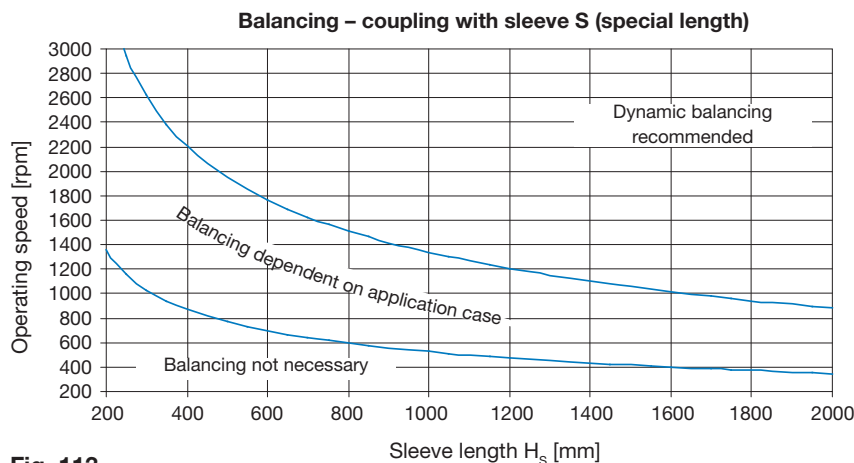


Fig. 113

State of Delivery

- Delivery in partly assembled parts and /or individual parts.
- Corrosion protection: phosphation, disk pack made of stainless steel.
- Hub designs: pilot bored or finish bored.
- Bore: tolerance H7 (other tolerances possible).
- Shaft run-out and axial run-out tolerances: 0.03 mm (Fig. 114).
- Key hub: keyway according to DIN 6885 sheet 1 or 3.

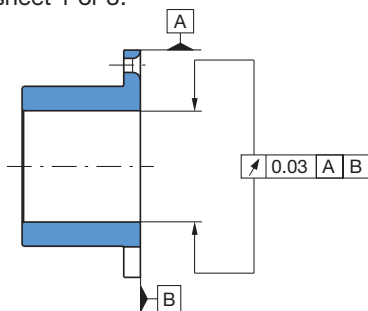


Fig. 114

Temperature Resistance

- Temperature resistant in range - 40 °C up to + 250 °C (- 20 °C up to + 100 °C for sizes 3 to 15).
- At temperatures above +120 °C, the self-locking hexagon nuts should be replaced by self-locking all-steel nuts according to EN ISO 7042.
- Couplings with CFRP sleeves can be used at temperatures of -20 °C up to +80 °C.

Balancing the Coupling

- Not necessary for most applications.
 - The following points are crucial when deciding whether the coupling needs balancing:
 - coupling circumferential speed (Fig. 112)
 - length of special sleeve (Fig. 113)
 - required balance quality
 - The smooth running of the machine is not only ensured by the coupling balance quality, but is influenced, to at least the same extent, by parameters such as:
 - rigidity and distance to the adjacent bearing,
 - sensitivity and mass of the entire construction
- Figs. 112 or 113 only show reference values as recommendations for balancing.
- All parts of the ROBA®-DS couplings, except for the sleeve S are machined on all sides. They are therefore in the range G 6.3 according to ISO DIN 1940 at medium speeds.
 - When ordering the coupling with a special sleeve, please always state the coupling operating speed.
 - If higher demands are placed on the balance quality, it is possible to balance individual parts or the entire installed coupling. The hubs should be designed with a finish bore.

Installation Position

- Horizontal installation
- On vertical or sloping installations and when using long sleeves, we recommend using vertical supports (Fig. 105, page 69).
- The vertical support and the hub centerings in the hub and the sleeve are produced manufacturer-side.

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Technical Explanations

Short Description – Hub Installation

For a detailed installation description, please see the Installation and Operational Instructions corresponding to the product.

Hub installation Types 95_0_ or 95_1_ (hubs with keyway, Fig. 115)

- Mount the hubs onto the shafts using a suitable device.
- Axial securement:
 - a set screw (adjusting screw) presses radially onto the key,
 - a press cover and screw are screwed into the shaft threaded center hole.
- The shaft tolerance should be adapted to the application:
 - alternating rotational direction: press fit,
 - operation in one direction: transition fit or clearance fit

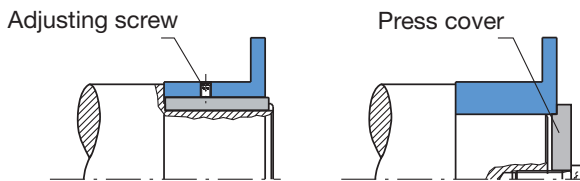


Fig. 115

Hub installation Types 95_2_ / 95_3_ / 95_9_ (hubs with shrink disk) / 95_4_ (hubs with clamping ring) / 95_5_ (clamping hubs)

- Mount the hubs onto the shafts using a suitable device and bring them into the correct position.
- **Types 95_2_ / 95_3_ / 95_9_ :**
Tighten the tensioning screws one after the other in 3 to max. 6 tightening sequences using a torque wrench.
- **Types 95_4_ / 95_5_ :**
Tighten the clamping screws using a torque wrench.



- The contact surfaces between the shrink disk and the hub and the clamping ring and hub have been greased manufacturer-side.
- The hub bores and shaft ends are grease-free.
- Greasy or oily bores or shafts do not transmit the maximum coupling torque.
- The shaft must not have a keyway.
- Shaft surface: finely turned or ground ($R_a = 0.8 \mu m$).
- Shaft material: yield point at least $350 N/mm^2$, e.g. St60, St70, C45, C60
- Recommended shaft tolerance: dependent on application and hub Type. See Table of frictionally-locking transmittable torques on pages 75/76.

Hub or coupling installation Type 95_8_ (split clamping hubs)

- Partly assemble the coupling, observing the Point "Coupling Installation" (page 74).
- Loosen the partly assembled half-shells from the hub.
- Place the coupling from above onto the shafts and pre-assemble it with the respective half-shells (Fig. 116).
- Tighten the tensioning screws crosswise in several procedures. Please ensure that the gap "X" on both sides of the hub is the same (Fig. 117).

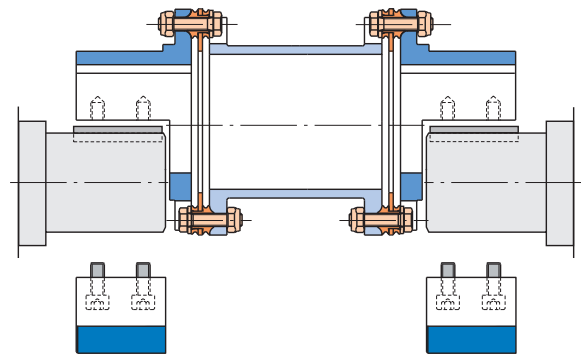


Fig. 116

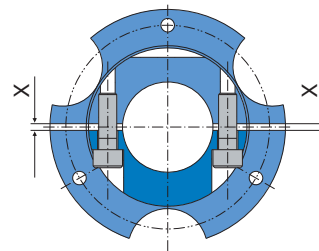


Fig. 117

Short Description – Coupling Installation

For a detailed installation description, please see the Installation and Operational Instructions corresponding to the product. The following installation description is for the ROBA®-DS couplings from size 16 up to size 2200.

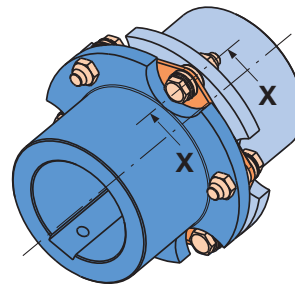


Fig. 118

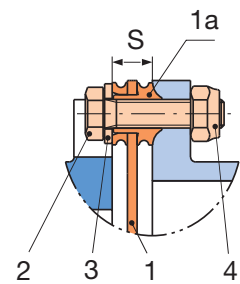


Fig. 119 Detail "X"

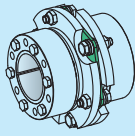
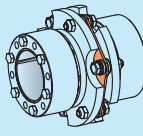
- Screw the disk packs (1, Fig. 119) over lightly-oiled hexagon head screws (2), washers (3) and hexagon nuts (4) alternately with the sleeve and the hubs.
- The generation of pre-tension force on the disk pack (1) generally takes place* via the hexagon nut (4). The disk pack (1) must not be distorted when applying the pre-tension force (secure screw (2) against turning).
- The hexagon nuts (4) or hexagon head screws (2) must be tightened crosswise and in several sequences to the full tightening torque M_a . For the appropriate tightening torques for each sequence, please see the appropriate Installation and Operational Instructions.

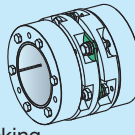
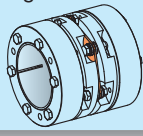


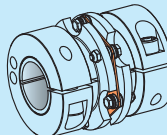
The radius of the collar bushings (Part 1a, Fig. 119, Detail "X") must lie in the grooves of the hubs and sleeves.

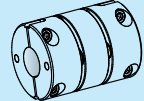
*The head of the hexagon head screw (2) with the washer (3) must always lie against the disk pack (1).

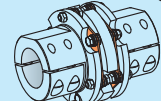
Transmittable Torques

Shrink disk hubs		Bore	Size											
			16	25	40	64	100	160	180	300	500	850	1400	2200
 Frictionally-locking transmittable torques Shrink disk hubs Suitable for H7 / g6 	T_R	[Nm]	Ø14	158	-	-	-	-	-	-	-	-	-	-
			Ø16	186	-	-	-	-	-	-	-	-	-	-
			Ø20	240	283	-	-	-	-	-	-	-	-	-
			Ø22	269	320	-	-	-	-	-	-	-	-	-
			Ø25	312	375	429	-	-	-	-	-	-	-	-
			Ø28	-	428	495	-	-	-	-	-	-	-	-
			Ø30	-	468	546	704	-	-	-	-	-	-	-
			Ø32	-	509	600	769	-	-	-	-	-	-	-
			Ø35	-	568	669	863	1057	-	-	-	-	-	-
			Ø38	-	-	741	960	1176	-	-	-	-	-	-
			Ø40	-	-	796	1031	1269	1783	-	-	-	-	-
			Ø42	-	-	852	1104	1366	1919	2234	-	-	-	-
			Ø45	-	-	932	1206	1500	2107	2453	-	-	-	-
			Ø50	-	-	-	-	1692	2400	2794	3569	-	-	-
			Ø55	-	-	-	-	1889	2680	3150	4024	-	-	-
			Ø60	-	-	-	-	-	2967	3488	4500	5970	-	-
			Ø65	-	-	-	-	-	3263	3835	5177	6629	-	-
			Ø68	-	-	-	-	-	-	4072	5658	7108	-	-
			Ø70	-	-	-	-	-	-	4255	6334	7500	10723	-
			Ø75	-	-	-	-	-	-	4627	7348	8156	11719	-
			Ø80	-	-	-	-	-	-	-	8453	8830	12750	17942
			Ø 85	-	-	-	-	-	-	-	9652	9523	13750	19444
			Ø 90	-	-	-	-	-	-	-	-	10234	14777	21000
			Ø 95	-	-	-	-	-	-	-	-	10888	15721	22341
			Ø100	-	-	-	-	-	-	-	-	11542	16665	23683
			Ø110	-	-	-	-	-	-	-	-	-	18607	26442
			Ø120	-	-	-	-	-	-	-	-	-	20603	29279
			Ø130	-	-	-	-	-	-	-	-	-	-	32195
			Ø140	-	-	-	-	-	-	-	-	-	-	35191
			Ø150	-	-	-	-	-	-	-	-	-	-	46920
			Ø160	-	-	-	-	-	-	-	-	-	-	50798
			Ø170	-	-	-	-	-	-	-	-	-	-	54783

Shrink disk hubs, large		Bore	Size				
			16	25	40	64	100
 Frictionally-locking transmittable torques Shrink disk hubs, large Suitable for H7 / g6 	T_R	[Nm]	Ø25	339	-	-	-
			Ø28	404	-	-	-
			Ø30	448	-	-	-
			Ø32	492	526	-	-
			Ø35	558	602	-	-
			Ø38	620	679	-	-
			Ø40	659	730	873	-
			Ø42	694	780	937	-
			Ø45	738	851	1036	1268
			Ø48	-	913	1132	1394
			Ø50	-	948	1195	1480
			Ø52	-	978	1255	1565
			Ø55	-	-	1338	1691
			Ø60	-	-	1454	1890
			Ø65	-	-	-	2065
			Ø70	-	-	-	2204
			Ø75	-	-	-	-
			Ø80	-	-	-	-
			Ø 85	-	-	-	-
			Ø 90	-	-	-	-
			Ø100	-	-	-	-

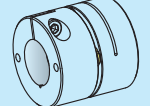
Clamping ring hubs		Bore	Size				
			16	25	40	64	100
 Frictionally-locking transmittable torques Clamping ring hubs Suitable for H7 / h6	T_R	[Nm]	Ø20	126	-	-	-
			Ø22	138	-	-	-
			Ø25	168	199	-	-
			Ø28	201	253	366	523
			Ø30	216	290	420	561
			Ø32	230	325	470	598
			Ø35	251	355	515	700
			Ø38	-	386	559	798
			Ø40	-	406	588	840
			Ø45	-	-	661	945
			Ø50	-	-	-	1050
			Ø55	-	-	-	1155
			Ø60	-	-	-	-
			Ø65	-	-	-	-
			Ø68	-	-	-	-
			Ø70	-	-	-	-
			Ø80	-	-	-	-

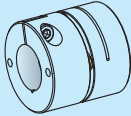
Split clamping hubs		Bore	Size			
			3	6	10	15
Frictionally-locking transmittable torques Split clamping hubs Suitable for H7 / g6 	T_R	[Nm]	Ø10	31	-	-
			Ø12	38	-	-
			Ø14	44	44	-
			Ø15	47	47	-
			Ø16	50	50	-
			Ø18	57	57	-
			Ø19	60	60	115
			Ø20	63	63	121
			Ø22	-	69	133
			Ø24	-	75	145
			Ø25	-	79	151
			Ø28	-	88	169
			Ø30	-	-	181
			Ø32	-	-	193
			Ø35	-	-	211
			Ø38	-	-	230
			Ø40	-	-	242
			Ø42	-	-	254

Split clamping hubs		Bore	Size					
			16	25	40	64	100	160
Frictionally-locking transmittable torques Split clamping hubs Suitable for H7 / g6 	T_R	[Nm]	Ø18	130	-	-	-	-
			Ø20	144	-	-	-	-
			Ø22	158	198	-	-	-
			Ø25	180	225	326	-	-
			Ø28	202	252	365	-	-
			Ø30	-	270	391	623	-
			Ø32	-	288	418	665	-
			Ø35	-	-	457	727	897
			Ø38	-	-	496	790	973
			Ø40	-	-	522	831	1025
			Ø42	-	-	-	873	1076
			Ø45	-	-	-	935	1153
			Ø50	-	-	-	-	1281
			Ø55	-	-	-	-	1409
			Ø60	-	-	-	-	1537
			Ø65	-	-	-	-	1675
			Ø68	-	-	-	-	1827
			Ø70	-	-	-	-	1979
			Ø75	-	-	-	-	2071
			Ø80	-	-	-	-	2131
			Ø85	-	-	-	-	2284

Transmittable Torques

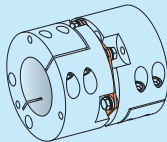
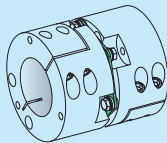
Clamping hubs (Sizes 3 – 15)		Bore	Size			
Frictionally-locking transmittable torques	T _R		3	6	10	15
		Ø10	27	-	-	-
Clamping hubs		Ø12	32	-	-	-
		Ø14	37	46	-	-
Suitable for a temperature range of -20 °C to +40 °C, at temperatures over 40 °C, reduce frictionally-locking transmittable torques by 10 %/10 °C.	[Nm]	Ø15	39	51	-	-
		Ø16	42	56	-	-
		Ø18	47	65	-	-
		Ø19	49	70	99	-
		Ø20	52	74	105	-
		Ø22	-	84	116	-
		Ø24	-	92	128	-
		Ø25	-	95	135	143
		Ø28	-	107	151	163
		Ø30	-	-	162	177
		Ø32	-	-	173	191
		Ø35	-	-	189	211
		Ø38	-	-	-	229
		Ø40	-	-	-	241
Suitable for H7 / k6		Ø42	-	-	-	253



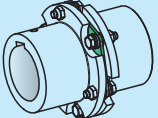


Attention!
Please observe permitted peak torques for selected coupling size and Type.

Clamping hubs (Sizes 16 – 160)		Bore	Size					
			16	25	40	64	100	160
 Frictionally-locking transmittable torques Clamping hubs	T_R [Nm]	Ø20	183	-	-	-	-	-
		Ø22	202	354	-	-	-	-
		Ø25	229	402	604	-	-	-
		Ø28	257	450	677	821	-	-
		Ø30	275	483	725	880	-	-
		Ø32	293	515	773	938	1102	-
		Ø35	321	563	846	1026	1205	-
		Ø38	348	611	918	1114	1309	-
		Ø40	367	643	967	1173	1378	1839
		Ø42	385	676	1015	1232	1447	1931
Ø45		412	724	1087	1319	1550	2069	
Ø48		-	772	1160	1407	1653	2207	
Ø50		-	804	1208	1466	1722	2299	
Ø52		-	836	1257	1525	1791	2391	
Ø55		-	-	1329	1613	1894	2529	
Ø60		-	-	1450	1759	2066	2759	
Ø65		-	-	-	1906	2239	2989	
Ø68		-	-	-	1994	2342	3127	
Ø70		-	-	-	2053	2411	3219	
 Suitable for H7 / h6		Ø75	-	-	-	-	2583	3449
	Ø80	Attention!	-	-	-	2755	3679	
	Ø85	Please observe permitted peak torques	-	-	-	2927	3909	
	Ø90	for selected coupling size and Type.	-	-	-	3100	4139	
	Ø95	-	-	-	-	-	4369	
	Ø100	-	-	-	-	-	4599	



Attention!
Please observe permitted peak torques for selected coupling size and Type.

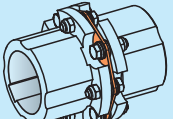
Key hubs (Sizes 16 – 2200)			Bore	Size												
				16	25	40	64	100	160	180	300	500	850	1400	2200	
	T_{PN}	[Nm]	Ø16	121	-	-	-	-	-	-	-	-	-	-	-	
			Ø19	225	-	-	-	-	-	-	-	-	-	-	-	
			Ø20	247	243	-	-	-	-	-	-	-	-	-	-	-
			Ø22	279	289	-	-	-	-	-	-	-	-	-	-	-
			Ø24	425	446	-	-	-	-	-	-	-	-	-	-	-
			Ø25	446	469	487	-	-	-	-	-	-	-	-	-	-
			Ø28	510	540	590	-	-	-	-	-	-	-	-	-	-
			Ø30	551	588	645	663	-	-	-	-	-	-	-	-	-
			Ø32	595	637	705	749	-	-	-	-	-	-	-	-	-
			Ø35	-	697	781	840	858	-	-	-	-	-	-	-	-
Ø38			-	757	857	926	983	-	-	-	-	-	-	-	-	
Ø40			-	893	1005	1095	1165	1181	1202	-	-	-	-	-	-	
Ø42			-	-	1054	1157	1233	1282	1304	-	-	-	-	-	-	
Ø45			-	-	1447	1595	1708	1794	1823	1842	-	-	-	-	-	
Ø48			-	-	1549	1701	1835	1935	1963	1989	-	-	-	-	-	
Ø50			-	-	1618	1772	1923	2028	2057	2088	-	-	-	-	-	
Ø55			-	-	-	2411	2609	2777	2825	2865	2979	-	-	-	-	
Ø60			-	-	-	-	3061	3281	3332	3401	3548	-	-	-	-	
Ø65			-	-	-	-	3316	3553	3609	3691	3880	4159	-	-	-	
Ø70			-	-	-	-	3971	4234	4325	4401	4648	5193	-	-	-	
Ø75	-	-	-	-	-	4533	4657	4705	4979	5611	6059	-	-			
Ø80	-	-	-	-	-	5694	-	5899	6229	7085	7685	-	-			
Ø85	-	-	-	-	-	-	-	6287	6611	7583	8246	-	-			
Ø90	-	-	-	-	-	-	-	-	7253	7589	8719	9549	10343			
Ø95	-	-	-	-	-	-	-	-	-	9142	10483	11591	12585			
Ø100	-	-	-	-	-	-	-	-	-	10695	12247	13634	14827			
Ø110	-	-	-	-	-	-	-	-	-	-	13519	15023	16547			
Ø120	-	-	-	-	-	-	-	-	-	-	18457	20392	22746			
Ø130	-	-	-	-	-	-	-	-	-	-	-	22262	24737			
Ø140	-	-	-	-	-	-	-	-	-	-	-	26883	29669			
Ø150	-	-	-	-	-	-	-	-	-	-	-	-	31889			
Ø160	-	-	-	-	-	-	-	-	-	-	-	-	40667			
Ø170	-	-	-	-	-	-	-	-	-	-	-	-	43557			

Transmittable torques

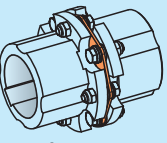
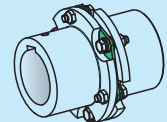
Key hubs

Suitable for:

- unchanging load direction
- supported key length
= entire length of the hub



transmittable peak torque of the key hubs T_{ps}
(valid for max. 10^5 load cycles)
= 1.5 x transmittable nominal torque of the key hubs T_{PN}



Attention!
Please observe permitted nominal torques and peak torques for selected coupling size and Type.

Key hubs (Sizes 2200 – 11000)			Bore	Size											
				2200	3300	5000	7300	11000	2200	3300	5000	7300	11000		
			[Nm]	transmittable nominal torque T_{PN}					transmittable peak torque T_{PS}						
Transmittable torques				Ø 110	17558	-	-	-	-	21758	-	-	-	-	
Key hubs Type 956_				Ø120	25337	-	-	-	-	31397	-	-	-	-	
				Ø130	29353	28523	-	-	-	-	36374	35346	-	-	-
Suitable for:				Ø140	36455	36098	-	-	-	45175	44732	-	-	-	
• unchanging load direction • supported key length = entire length of the hub				Ø 150	39572	40912	39949	-	-	49037	50697	49505	-	-	
				Ø 160	-	53337	53203	-	-	-	66094	65929	-	-	-
				Ø 170	-	57373	59457	58021	-	-	71095	73679	71899	-	-
				Ø 180	-	-	75822	75519	-	-	-	93958	93582	-	-
				Ø 190	Attention!	-	80941	83439	-	Attention!	-	100303	103396	-	-
				Ø 200	Please observe, permitted		91877	89251	Attention!	Please observe, permitted		113853	110599		
The transmittable peak torque of the key hubs T_{PS} is valid for max. 10 ⁶ load cycles.				Ø 220	nominal torques for selected coupling size and Type.		120749	122742	peak torques for selected coupling size and Type.		149630	152100			
				Ø 240			-	149904			-	185759			
				Ø 250			-	157602			-	195298			
				Ø 260			-	-			-	-			

Attention!
Please observe permitted nominal torques and peak torques for selected coupling size and Type.

System Solution for Machine Tools

ROBA[®]-DS spindle coupling *with integrated cooling lubricant feedthrough*

A new development on the ROBA[®]-DS allows cooling lubricant to be fed directly into the tool, even over long distances, thereby increasing the lifetime, the cutting speed as well as the cutting performance.

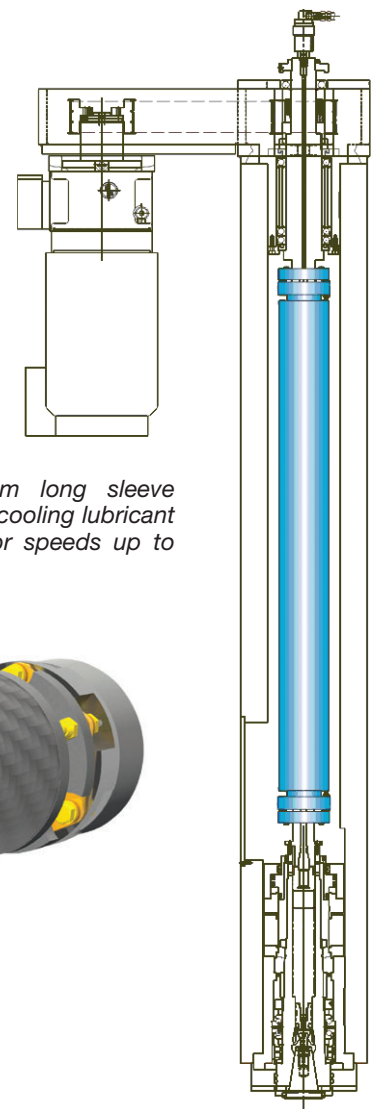
ROBA[®]-DS spindle couplings have proved their worth for years in manifold ways in large machining centres. They impress in particular with their high performance density, which allows the application of both high torques and high speeds. Complex constructions with multiple bearing-supported intermediate shafts are often replaced by the substantially more torsionally-rigid, but nevertheless lighter sleeves, resulting in easier installation and increased running smoothness.

Due to the long spindle construction on these machines, the cooling lubricant is in most cases applied to the tool from the outside. In particular in deep drilling applications, this limits the cutting speed and the lifetime of the tool. A new development on the ROBA[®]-DS allows cooling lubricant to be fed into the spindle and therefore into the tool, even over long distances.

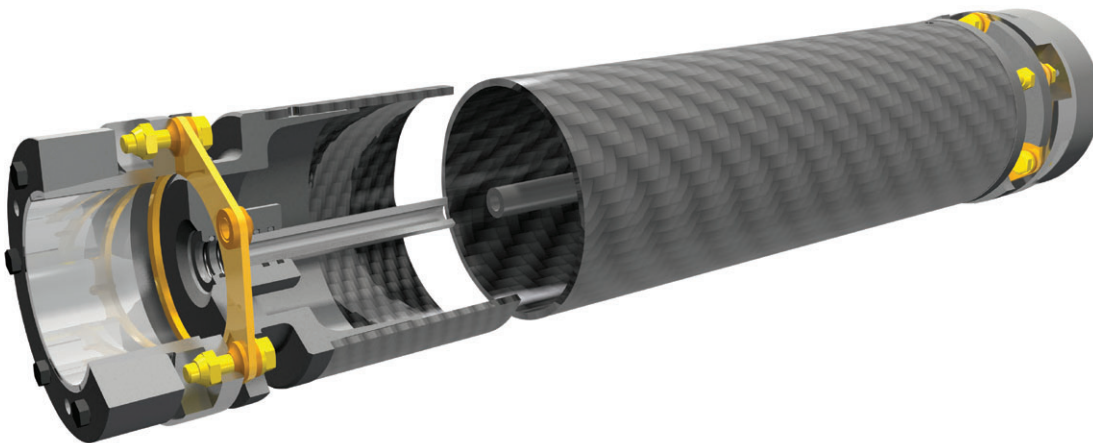
The integrated cooling lubricant feedthrough consists of an inner tube with multiple supports, and only needs to be plugged into the shaft-side adaptor on the upper and lower ends.

It is possible to pump cooling lubricant through the entire spindle into the tool using high pressure. It cools the blade directly, supports chip breaking and removes the chips. The machining times are shortened, the tool lifetime is extended.

This design has proved its worth already in numerous applications. Due to the reduced weight of the carbon fibre reinforced sleeves, even high speeds are not problematic. The new ROBA[®]-DS spindle coupling therefore opens up new possibilities in the race for technology leadership.



ROBA[®]-DS with 2.5 m long sleeve (CFRP), with integrated cooling lubricant feedthrough, suitable for speeds up to 10.000 rpm.



System Solution for Wind Power Plants

ROBA[®]-DS Wind power module

The *mayr*[®] company's decades of experience in shaft couplings and overload systems for all areas of mechanical engineering forms a strong basis for our wind power module.

The wind power module has the following characteristics:

- **Safe overload protection**

An integrated ROBA[®]-slip bushing produced from a specially-developed bushing material ensures reliable overload protection against short-circuit torques due to its minimal torque tolerance.

- **Electrical insulation**

The electrical insulation through the sleeve made of glass fibre-reinforced plastic prevents damage to bearings and toothing.

- **Compensation of shaft misalignments**

Specially-developed rustproof steel disks allow compensation of extremely high axial, radial and angular shaft misalignments.

This means that only low restoring forces are generated.

- **Integrated brake disk**

A brake disk can be integrated into the wind power module according to customer-specific requirements.

- **Ease of installation**

The disk packs and the intermediate sleeve can be mounted and de-installed radially without axial displacement of the hub being required.

It is possible to install the disk packs with low tightening torques by using special clamping nuts.



Product Summary

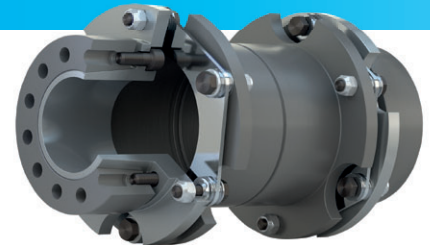
Torque Limiters/Overload Clutches

- **EAS[®]-compact[®]/EAS[®]-NC**
Positive locking and completely backlash-free torque limiting clutches
- **EAS[®]-smartic[®]**
Cost-effective torque limiting clutches, quick installation
- **EAS[®]-element clutch/EAS[®]-elements**
Load-disconnecting protection against high torques
- **EAS[®]-axial**
Exact limitation of tensile and compressive forces
- **EAS[®]-Sp/EAS[®]-Sm/EAS[®]-Zr**
Load-disconnecting torque limiting clutches with switching function
- **ROBA[®]-slip hubs**
Load-holding, frictionally locked torque limiting clutches
- **ROBA[®]-contitorque**
Magnetic continuous slip clutches
- **EAS[®]-HSC/EAS[®]-HSE**
High-speed torque limiters for high-speed applications



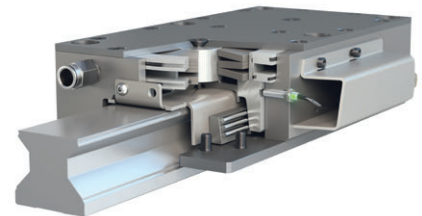
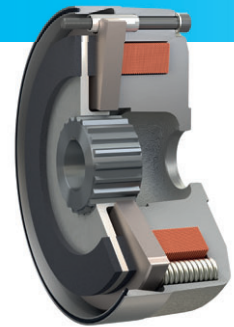
Shaft Couplings

- **smartflex[®]/primeflex[®]**
Perfect precision couplings for servo and stepping motors
- **ROBA[®]-ES**
Backlash-free and damping for vibration-sensitive drives
- **ROBA[®]-DS/ROBA[®]-D**
Backlash-free, torsionally rigid all-steel couplings
- **ROBA[®]-DSM**
Cost-effective torque-measuring couplings



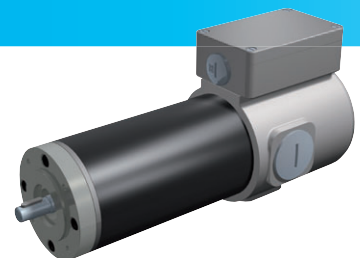
Electromagnetic Brakes/Clutches

- **ROBA-stop[®] standard**
Multifunctional all-round safety brakes
- **ROBA-stop[®]-M motor brakes**
Robust, cost-effective motor brakes
- **ROBA-stop[®]-S**
Water-proof, robust monoblock brakes
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Headquarters

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten
Tel.: +49 83 41/8 04-0, Fax: +49 83 41/80 44 21
www.mayr.com, E-Mail: public.mayr@mayr.com



Service Germany/Austria

Baden-Württemberg
Esslinger Straße 7
70771 Leinfelden-Echterdingen
Tel.: 07 11/78 26 26 40
Fax: 07 11/78 26 26 39

Bavaria
Industriestraße 51
82194 Gröbenzell
Tel.: 0 81 42/50 19 808

Chemnitz
Bornaer Straße 205
09114 Chemnitz
Tel.: 03 71/4 74 18 96
Fax: 03 71/4 74 18 95

Franken
Unterer Markt 9
91217 Hersbruck
Tel.: 0 91 51/81 48 64
Fax: 0 91 51/81 62 45

Kamen
Herbert-Wehner-Straße 2
59174 Kamen
Tel.: 0 23 07/24 26 79
Fax: 0 23 07/24 26 74

North
Schiefer Brink 8
32699 Extertal
Tel.: 0 57 54/9 20 77
Fax: 0 57 54/9 20 78

Rhine-Main
Kohlhäuser Str. 3-5
36043 Fulda
Tel.: 06 61/96 21 02 15

Austria
Pummerinplatz 1, TIZ I, A27
4490 St. Florian, Austria
Tel.: 0 72 24/2 20 81-12
Fax: 0 72 24/2 20 81 89

Branch office

China
Mayr Zhangjiagang
Power Transmission Co., Ltd.
Fuxin Road No.1298, Yangshe Town
215637 Zhangjiagang
Tel.: 05 12/58 91-75 67
Fax: 05 12/58 91-75 66
info@mayr-ptc.cn

France
Mayr France S.A.S.
Z.A.L. du Minopole
Rue Nungesser et Coli
62160 Bully-Les-Mines
Tel.: 03.21.72.91.91
Fax: 03.21.29.71.77
contact@mayr.fr

Great Britain
Mayr Transmissions Ltd.
Valley Road, Business Park
Keighley, BD21 4LZ
West Yorkshire
Tel.: 0 15 35/66 39 00
Fax: 0 15 35/66 32 61
sales@mayr.co.uk

Italy
Mayr Italia S.r.l.
Viale Veneto, 3
35020 Saonara (PD)
Tel.: 049/879 10 20
Fax: 049/879 10 22
info@mayr-italia.it

Japan
Mayr Japan LLC
Higano Nihonbashi Building 2F,
1-1-9 Nihonbashi Kakigara-cho,
Chuo-ku Tokyo, 103-0014 Japan
Tel.: 03/35 27-29 00
Fax: 03/35 27-26 61
public.mayr@mayr.co.jp

Singapore
Mayr Transmission (S) PTE Ltd.
No. 8 Boon Lay Way Unit 03-06,
TradeHub 21
Singapore 609964
Tel.: 00 65/65 60 12 30
Fax: 00 65/65 60 10 00
info@mayr.com.sg

Switzerland
Mayr Kupplungen AG
Tobelackerstraße 11
8212 Neuhausen am Rheinfall
Tel.: 0 52/6 74 08 70
Fax: 0 52/6 74 08 75
info@mayr.ch

USA
Mayr Corporation
10 Industrial Avenue
Mahwah
NJ 07430
Tel.: 2 01/4 45-72 10
Fax: 2 01/4 45-80 19
info@mayrcorp.com

Representatives

Australia
Drive Systems Pty Ltd.
8/32 Melverton Drive
Hallam, Victoria 3803
Australien
Tel.: 0 3/97 96 48 00
info@drivesystems.com.au

India
National Engineering
Company (NENCO)
J-225, M.I.D.C.
Bhosari Pune 411026
Tel.: 0 20/27 13 00 29
Fax: 0 20/27 13 02 29
nenco@nenco.org

Netherlands
Groneman BV
Amarilstraat 11
7554 TV Hengelo OV
Tel.: 074/2 55 11 40
Fax: 074/2 55 11 09
aandrijftechniek@groneman.nl

Poland
Wamex Sp. z o.o.
ul. Pozaryskiego, 28
04-703 Warszawa
Tel.: 0 22/6 15 90 80
Fax: 0 22/8 15 61 80
wamex@wamex.com.pl

South Korea
Mayr Korea Co. Ltd.
15, Yeondeok-ro 9beon-gil
Seongsan-gu
51571 Changwon-si
Gyeongsangnam-do. Korea
Tel.: 0 55/2 62-40 24
Fax: 0 55/2 62-40 25
info@mayrkorea.com

Taiwan
German Tech
Component Co., Ltd.
No.10-3, Ln. 358, Sec. 1,
Hemu Rd., Shengang Dist.,
429012 Taichung City
Tel.: +886 (4) 25150566
Fax: +886 (4) 25152413
abby@zfgta.com.tw

Czech Republic
BMC - TECH s.r.o.
Hviezdoslavova 29 b
62700 Brno
Tel.: 05/45 22 60 47
Fax: 05/45 22 60 48
info@bmc-tech.cz

Turkey
Representative Office Turkey
Kucukbakkalkoy Mah.
Brandium Residence R2
Blok D:254
34750 Atasehir - Istanbul, Turkey
Tel.: 02 16/2 32 20 44
Fax: 02 16/5 04 41 72
info@mayr.com.tr

More representatives:

Belgium, Brazil, Canada, Colombia, Croatia, Denmark, Finland, Greece, Hongkong, Hungary, Indonesia, Israel, Luxembourg, Malaysia, Mexico, New Zealand, Norway, Philippines, Portugal, Romania, Russia, Slovakia, Slovenia, South Africa, Spain, Sweden, Thailand

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