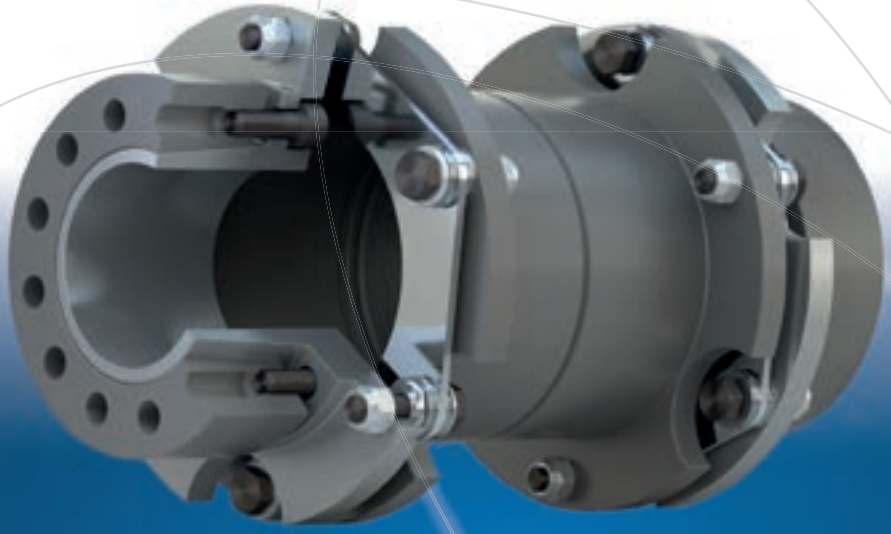
mayr®

your reliable partner



ROBA®-DS

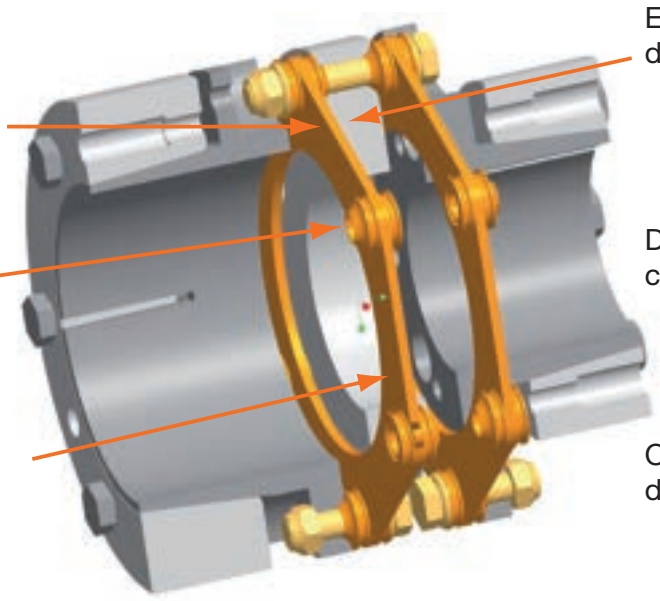
K.950.V17.EN

www.mayr®.com

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.

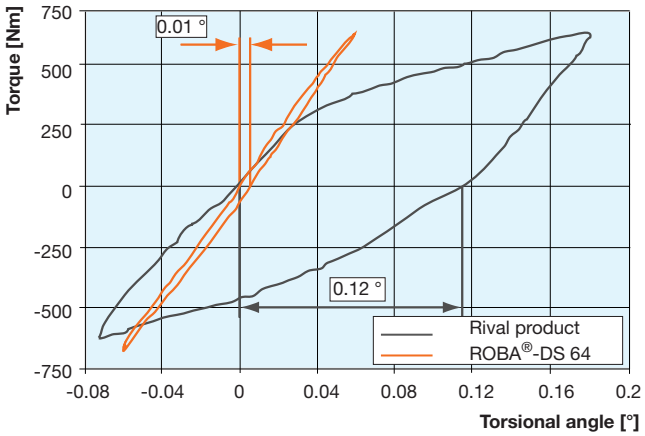


Diagram: A ROBA®-DS coupling rigidity characteristic curve in comparison to a typical rival product with frictionally-locking/positively-locking torque transmission.

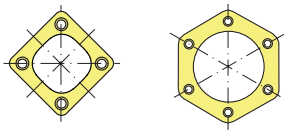
ROBA®-DS couplings are also available in ATEX design according to the directive 2014/34/EU.

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

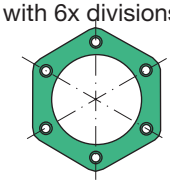


Page 8

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

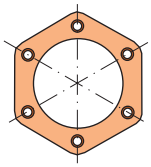


Shaft connection

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

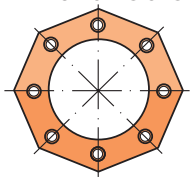


Shaft connection

Page 28

Sizes 180 to 2200
Nominal torques
2100 to 24000 Nm
Bores
40 to 170
Angular misalignment 0.5°

Disk pack
with 8x divisions



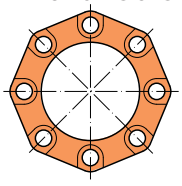
Shaft connection

Page 46

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

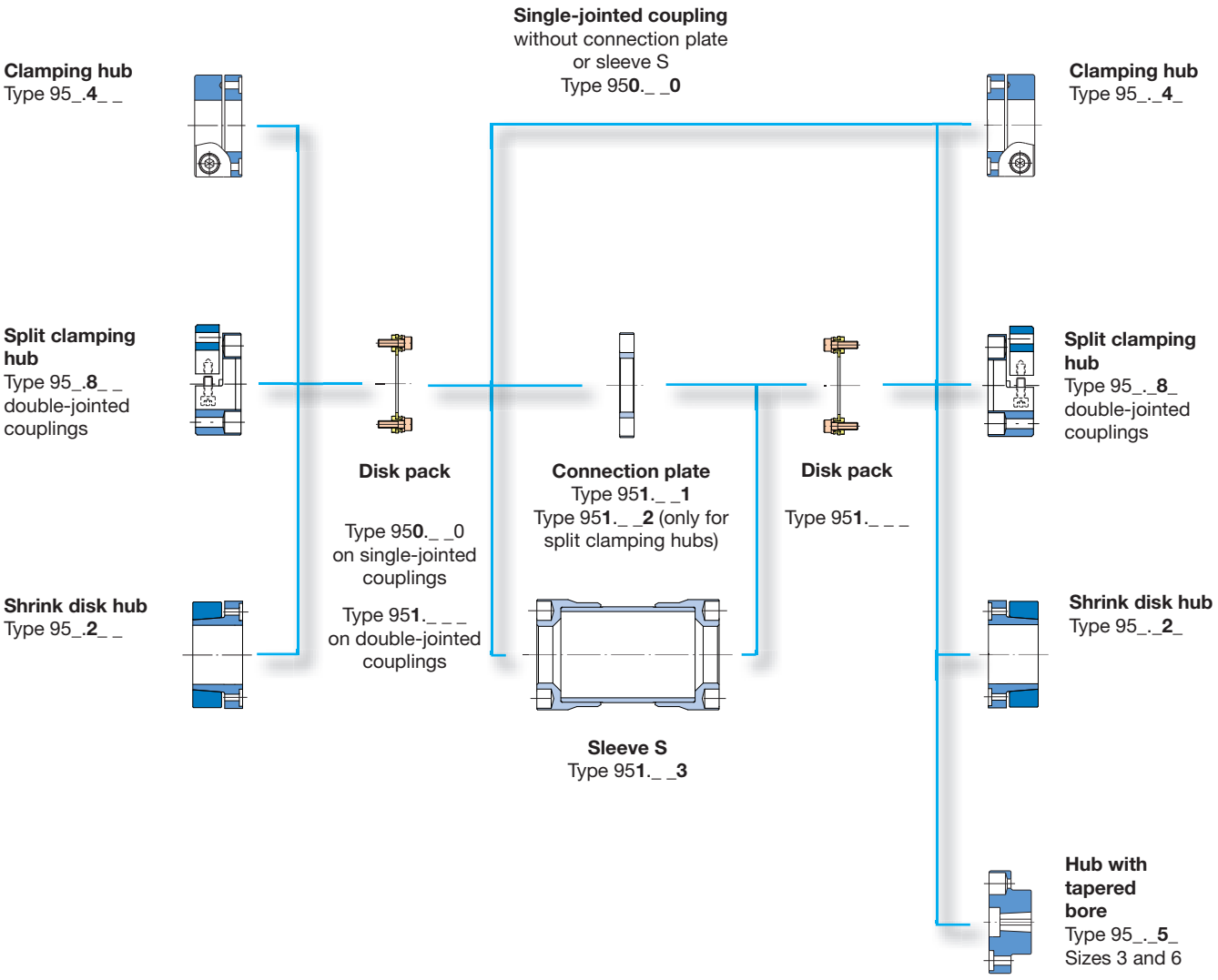


Shaft connection
Customer-specific adaptations
e. g.:
key hub, shrink disk hub, flange

Page 54

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

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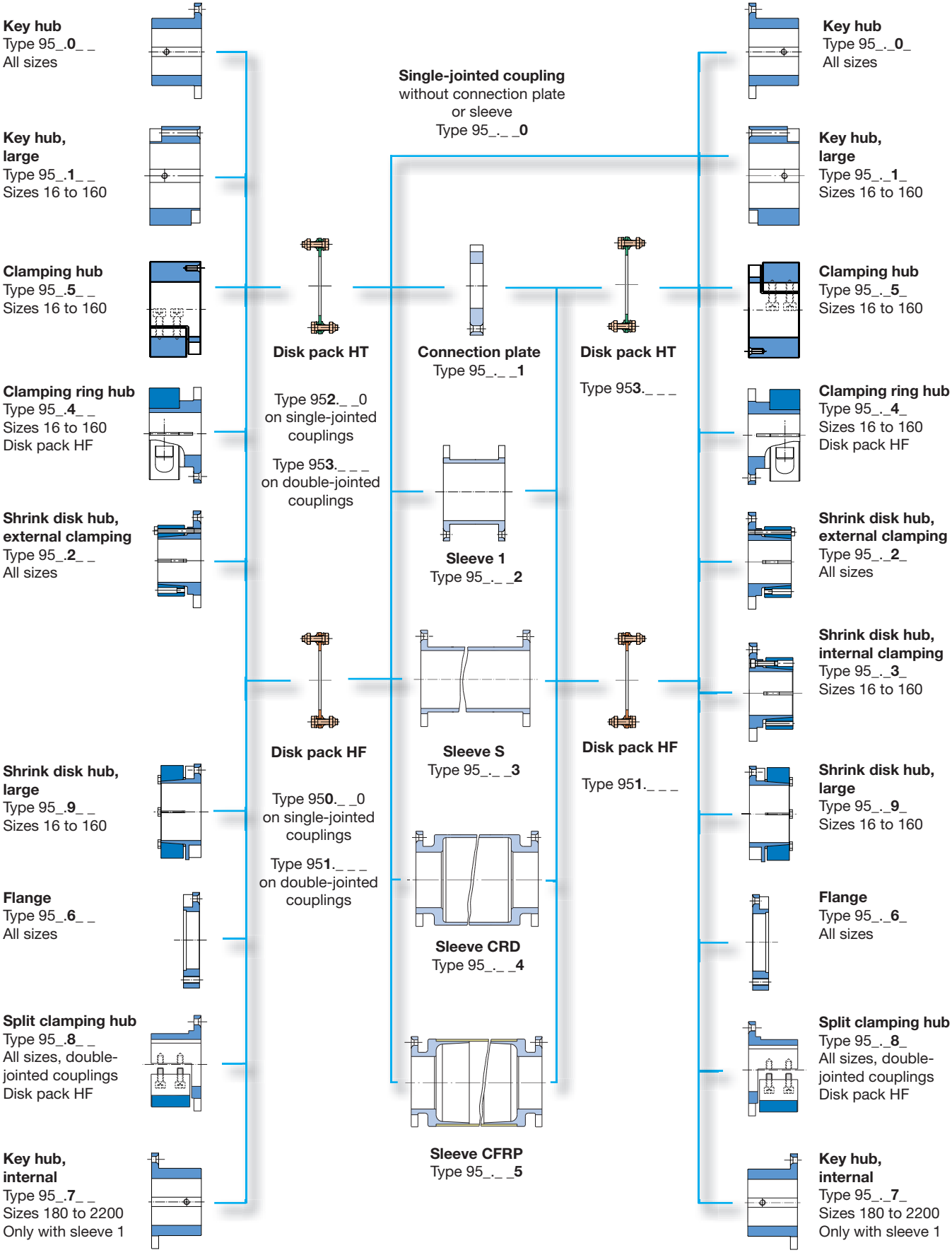
Size				Bore Hub 1 ø	Bore Hub 2 ø	Operating speed [rpm]
3	Single-jointed coupling	0	Single-jointed coupling	0		
6						
10	Double-jointed coupling	1	Double-jointed coupling			for sleeve S
15			Connection plate	1		
			Connection plate HSK	2		
			Sleeve S	3		

ROBA®-DS Backlash-free All-steel Couplings

Configuration Possibilities/Standard Designs



ROBA®-DS Backlash-free All-steel Couplings

Type Key/Order Number

Sizes 16 to 160

Type Key/Order Number

	Hub 1	Hub 2	
Key hub, standard	0	0	Key hub, standard
Key hub, large	1	1	Key hub, large
Shrink disk hub, external clamping	2	2	Shrink disk hub, external clamping
		3	Shrink disk hub, internal camping
Clamping ring hub	4	4	Clamping ring hub
Clamping hub	5	5	Clamping hub
Flange	6	6	Flange
Split clamping hub	8	8	Split clamping hub
Shrink disk hub, large	9	9	Shrink disk hub, large

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Size						Operating speed
16	**Single-jointed coupling**		**Single-jointed coupling**	0	**Bore Hub 1 ø**	**Bore Hub 2 ø**	[rpm]
25	**Double-jointed coupling**						
40	Disk pack **HF**	0	**Double-jointed coupling**				for
64			Connection plate	1			Sleeve S
100	**Single-jointed coupling**		Sleeve 1	2			Sleeve CRD
160	Disk pack **HT**	1	Sleeve S	3			Sleeve CFRP
	Double-jointed coupling		Sleeve CRD	4			
	Disk pack **HT**	2	Sleeve CFRP	5			

Sizes 180 to 2200

Type Key/Order Number

	Hub 1	Hub 2	
Key hub, standard	0	0	Key hub, standard
Shrink disk hub, external clamping	2	2	Shrink disk hub, external clamping
Flange	6	6	Flange
Key hub, internal	7	7	Key hub, internal
Split clamping hub	8	8	Split clamping hub

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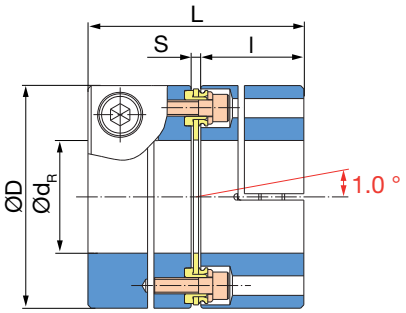
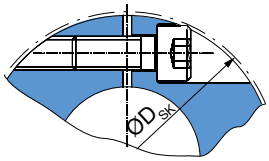
Size						Operating speed
180	**Single-jointed coupling**	0	**Single-jointed coupling**	0	**Bore Hub 1 ø**	**Bore Hub 2 ø**	[rpm]
300							
500	**Double-jointed coupling**	1	**Double-jointed coupling**				for
850			Connection plate	1			Sleeve S
1400			Sleeve 1	2			Sleeve CRD
2200			Sleeve S	3			Sleeve CFRP
			Sleeve CRD	4			
			Sleeve CFRP	5			

ROBA®-DS Sizes 3 to 15

Single-jointed coupling with clamping hubs





Rotation circle-diameter $ØD_{SK}$ of the clamping screws

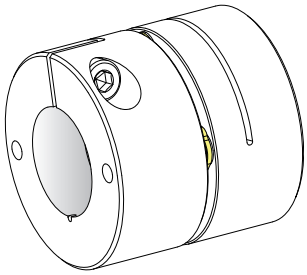


Fig. 1: Type 950.440

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]	with connection plate	ΔK_r	[mm]	0.15	0.15	0.2	0.2
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.0174$			
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	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			
l	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} kgm²]

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 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 mm	1.009	1.361	1.678	2.079
Sleeve S per 1000 mm tube	0.938	1.231	1.443	1.762

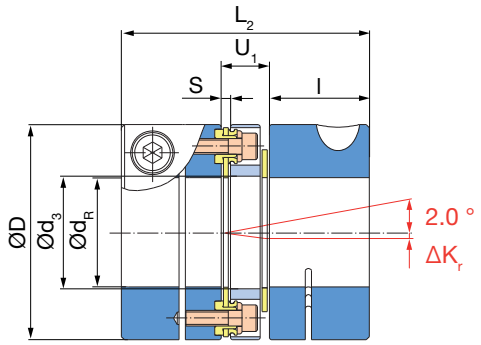
1) Valid for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Recommended hub / shaft tolerance: H7 / k6
4) Preferred bores and transmittable torques dependent on bore see page 76.
5) Not valid for coupling with sleeve S.
6) The permitted misalignments 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_T-value of a double-jointed coupling can be roughly calculated as follows:

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

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



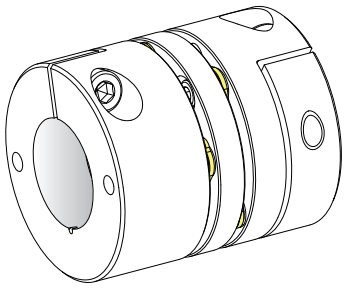
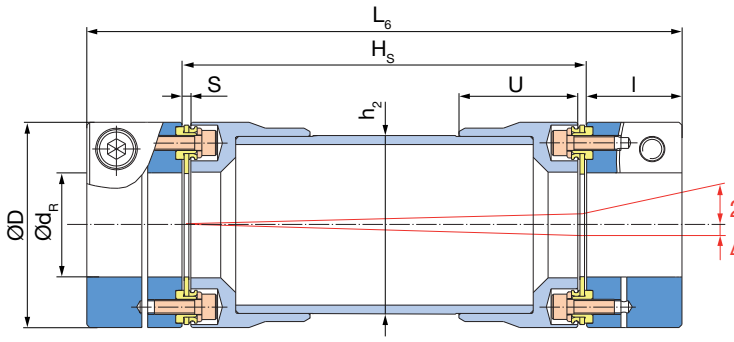


Fig. 2: Type 951.441

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



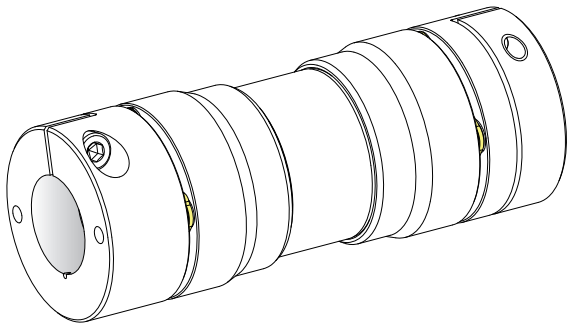


Fig. 3: Type 951.443 (sleeve S: H_S, L_6)

Order Number

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

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

Backlash-free All-steel Couplings Page 14
Heavy Load Couplings Page 54
Safe Against Overload Page 67
Installation Examples Page 68
Dimensioning, Size Selection Page 70
Technical Explanations Page 71
Transmittable Torques on Clamping Hubs Page 76

ROBA®-DS Sizes 3 to 15

Double-jointed coupling with connection plate and split clamping hubs

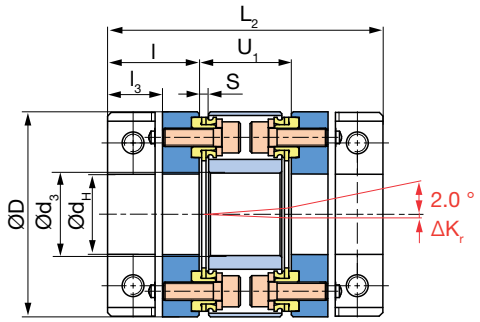
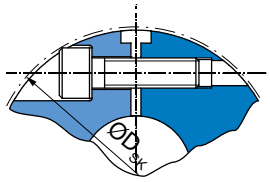
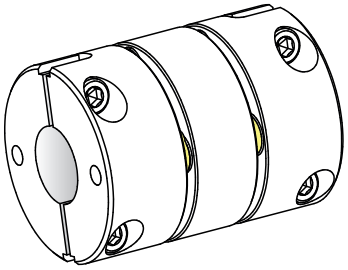


Fig. 4: Type 951.882



Rotation circle-diameter $ØD_{SK}$ of the clamping screws



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	$\Delta K_{r\,HSK}$	[mm]	0.35	0.4	0.45	0.5
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.0174$			
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			
l	23	25	32	33.5
l_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

1) 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.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Recommended hub / shaft tolerance: H7/g6
4) Preferred bores and transmittable torques dependent on bore see page 75.
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_T-value of a double-jointed coupling can be roughly calculated as follows:

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

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 sleeve S (special length) and split clamping hubs

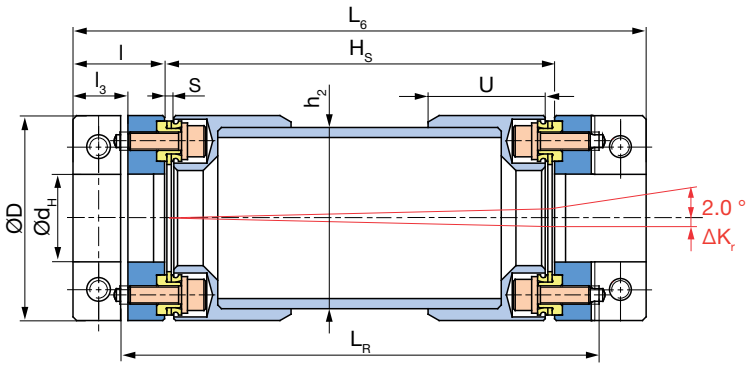
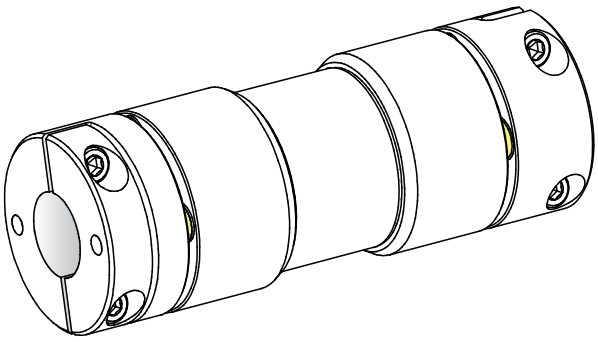


Fig. 5: Type 951.883 (sleeve S: H_S, L_6)



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

__ / 9 5 1 . 8 8	__	/ __	/ __	/ __	/ __
Sizes 3 to 15	Connection plate HSK Sleeve S: **2** **3**	**Bore* Hub 1 ø** (Dim. page 10)	**Bore* Hub 2 ø** (Dim. page 10)	**Shaft distance L_R** [mm]	**Operating speed n_S** [rpm] for special sleeve S

Example: 10 / 951.882 / Hub 1 – ø 25 H7 / Hub 2 – ø 25 H7

* Standard H7, other tolerances possible

Backlash-free All-steel Couplings Page 14
Heavy Load Couplings Page 54
Safe Against Overload Page 67
Installation Examples Page 68
Dimensioning, Size Selection Page 70
Technical Explanations Page 71
Transmittable Torques on Split Clamping Hubs Page 75

ROBA®-DS Sizes 3 to 15

Single-jointed coupling with shrink disk hubs

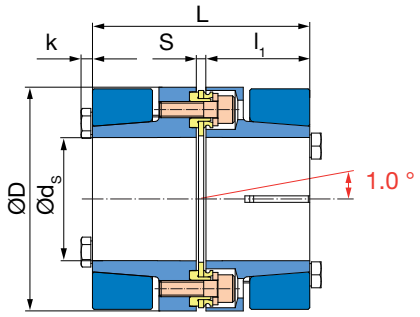
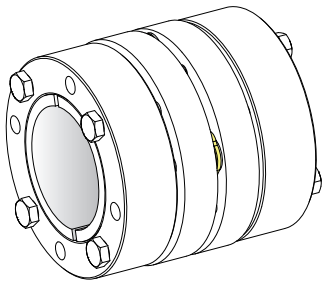


Fig. 6: Type 950.220



Alternative shaft connection

Hub with tapered bore

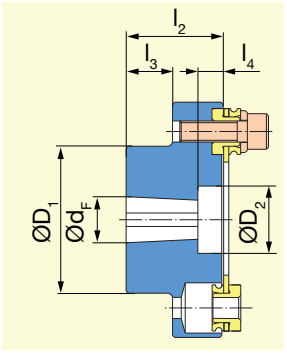


Fig. 7: Type 95_._5_ (only Sizes 3 and 6)
e.g. for Fanuc motors

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]			$d_S{}^{H7}{}_{min}$	[mm]	10	14	19	25
Maximum hub bore [3] [4]			$d_S{}^{H7}{}_{max}$	[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]	with connection plate	ΔK_r	[mm]	0.15	0.15	0.2	0.2
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.0174$			
Spring rigidity	torsion [10]	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 [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 ± 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	-	-

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

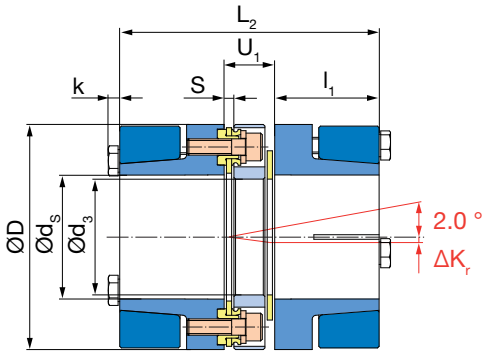
1) Valid for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Recommended hub / shaft tolerance: H7 / g6
4) On shrink disk hubs, the preferred bores are identical to the preferred bores on the clamping hubs (see preferred bores clamping hubs page 76).
5) Ø10: frictionally locking transmittable torque = 80 % of T_{KS}
6) Not valid for coupling with sleeve S.
7) The permitted misalignments may not simultaneously reach their 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-value of a double-jointed coupling can be roughly calculated as follows:

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

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



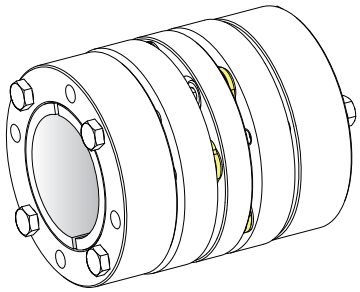
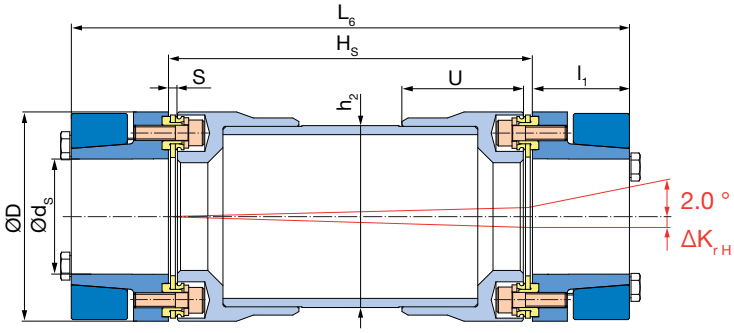


Fig. 8: Type 951.221

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



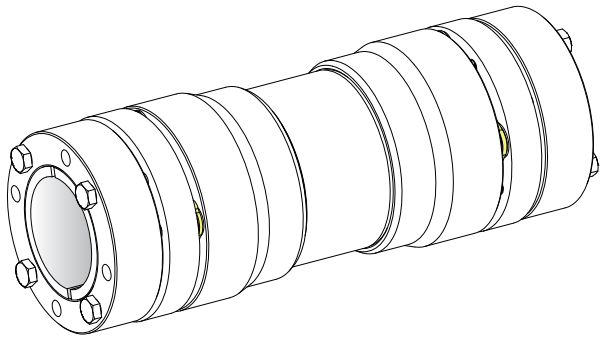


Fig. 9: Type 951.223 (sleeve S: H_S, L_6)

Order Number

Hub 2

2	Shrink disk hub
5	Hub with tapered bore**

__ / 9 5 __ . 2 __ __ / __ / __ / __ / __						
Sizes **3** **to** **15**	Single-jointed coupling / Double-jointed coupling	**0** / **1**	Single-jointed coupling / Connection plate / Sleeve S	**0** / **1** / **3**	**Bore* Hub 1 ø** (Dim. page 12)	**Bore* Hub 2 ø** (Dim. page 12)	**Sleeve length H_S** [mm] for special sleeve S	**Operating speed n_S** [rpm]

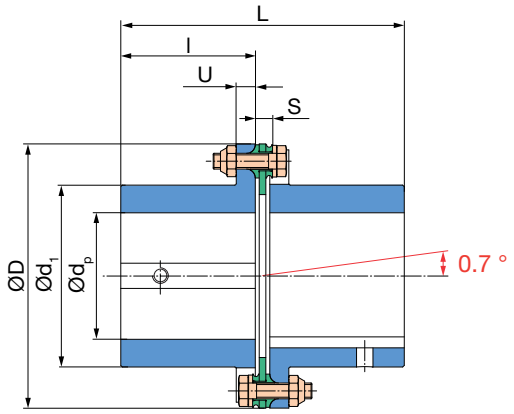
Example: 10 / 951.221 / Hub 1 – ø 25 H7 / Hub 2 – ø 25 H7

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

Backlash-free All-steel Couplings Page 14
Heavy Load Couplings Page 54
Safe Against Overload Page 67
Installation Examples Page 68
Dimensioning, Size Selection Page 70
Technical Explanations Page 71

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

Single-jointed coupling with key hubs



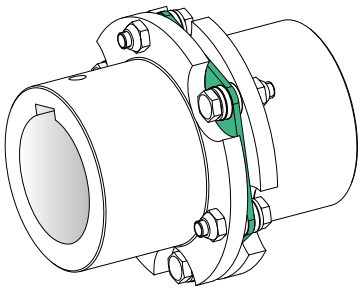


Fig. 10: Type 952.000

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	[mm]	0.2	0.2	0.25	0.3	0.3	0.35
		with sleeve 1	$\Delta K_{r\,H}$	[mm]	0.7	0.8	1	1.25	1.45	1.5
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.0122$					
Spring rigidity	torsion [8]	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 [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					
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

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

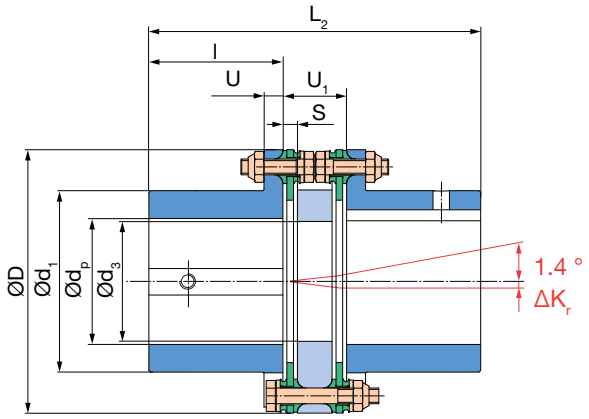
1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Transmittable torques dependent on bore, see table page 76.
4) Not valid for coupling with sleeve S.
5) The permitted misalignments may not simultaneously 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 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.

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

Double-jointed coupling with connection plate and key hubs



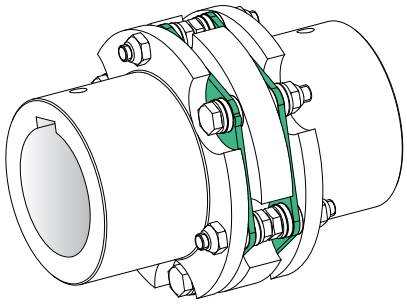
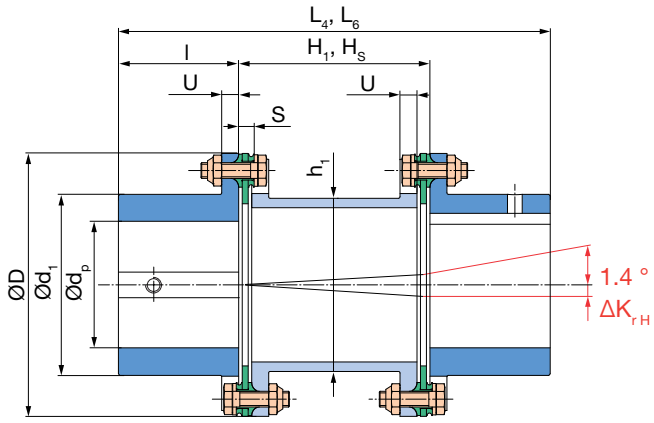


Fig. 11: Type 953.001

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



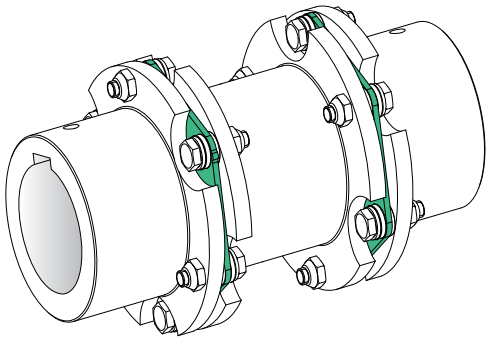


Fig. 12: Type 953.002 (sleeve 1: H_1, L_4), Type 953.003 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 0 0 __ / __ / __ / __ / __

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 14)	**Bore* Hub 2 ø** (Dim. page 14)	**Sleeve length H_S** [mm] for special sleeve S / CRD / CFRP	**Operating speed n_S** [rpm]

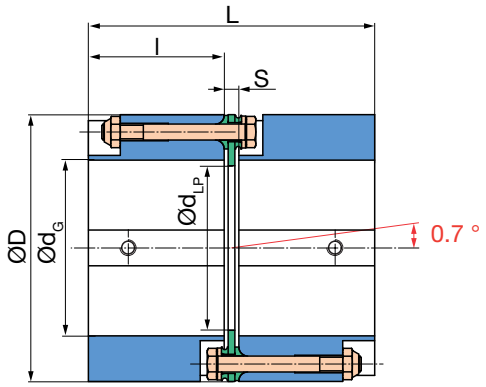
Example: 100 / 952.000 / Hub 1– ø 50 H7 / Hub 2 – ø 60 H7

*Standard H7, other tolerances possible

Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
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
Transmittable Torques on Key Hubs Page 75
Backlash-free Servo Couplings Page 8

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

Single-jointed coupling with key hubs, large



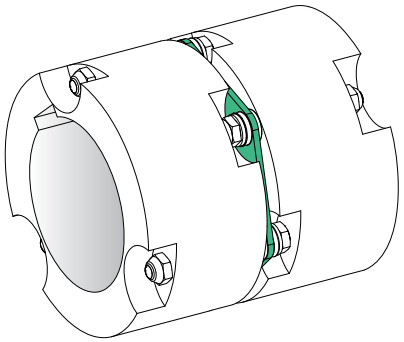


Fig. 13: Type 952.110

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	$\Delta K_{r\,H}$	[mm]	0.7	0.8	1	1.25	1.45	1.5
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.0122$					
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

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

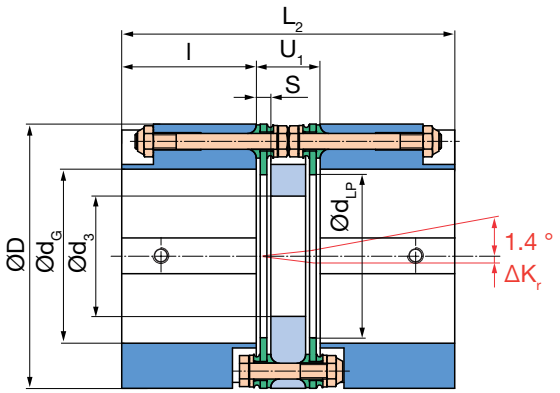
1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Not valid for coupling with sleeve S.
4) The permitted misalignments may not simultaneously reach their maximum values.
5) The values refer to couplings 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:

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

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

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



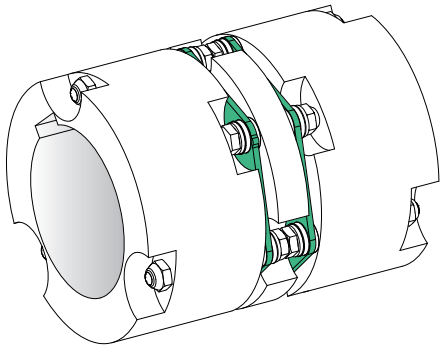
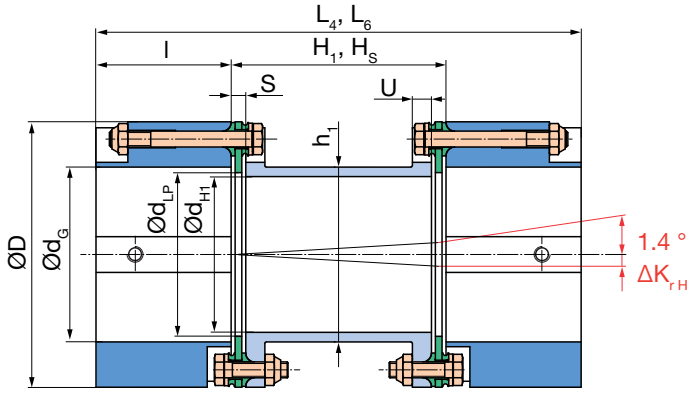


Fig. 14: Type 953.111

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



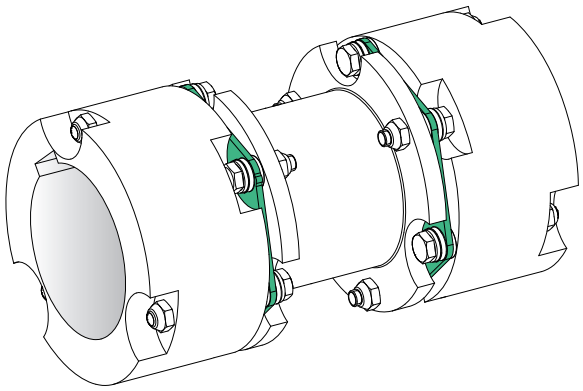


Fig. 15: Type 953.112 (sleeve 1: H_1, L_4), Type 953.113 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 1 1 __ / __ / __ / __ / __								
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 16)	**Bore* Hub 2 ø** (Dim. page 16)	**Sleeve length H_S** [mm] for special sleeve S / CRD / CFRP	**Operating speed n_S** [rpm]

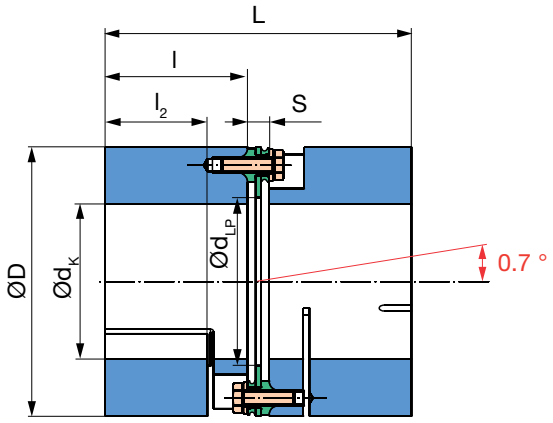
Example: 100 / 952.110 / Hub 1– ø 70 H7 / Hub 2 – ø 80 H7

*Standard H7, other tolerances possible

Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
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
Backlash-free Servo Couplings Page 8

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

Single-jointed coupling with clamping hubs



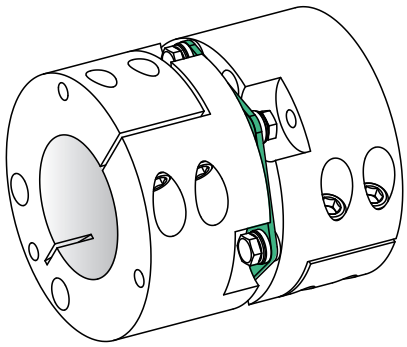


Fig. 16: Type 952.550

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	$\Delta K_{r\,H}$	[mm]	0.7	0.8	1	1.25	1.45	1.5
		with sleeve S	$\Delta K_{r\,H}$	[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_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
l_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 ≤ 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:

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

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

Double-jointed coupling with connection plate and clamping hubs

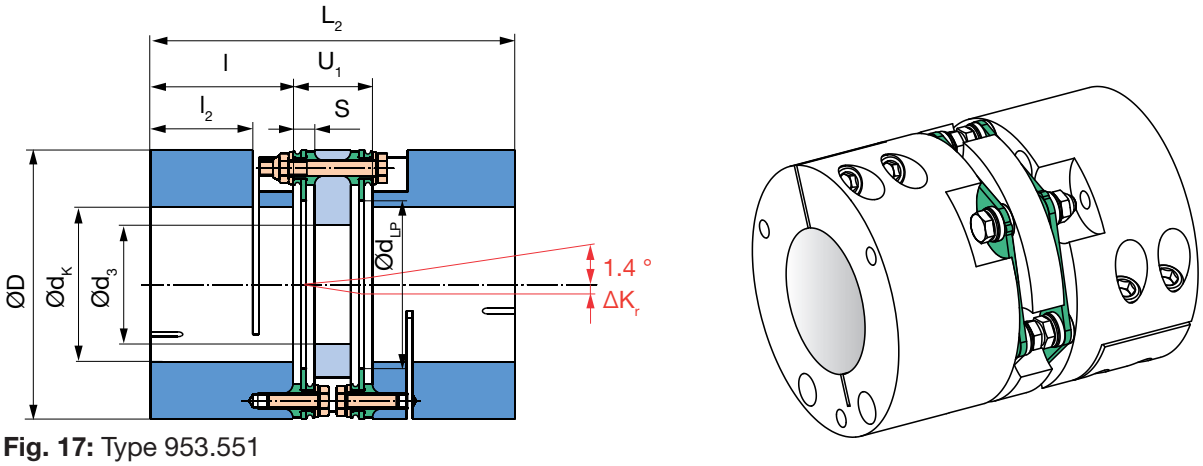


Fig. 17: Type 953.551

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

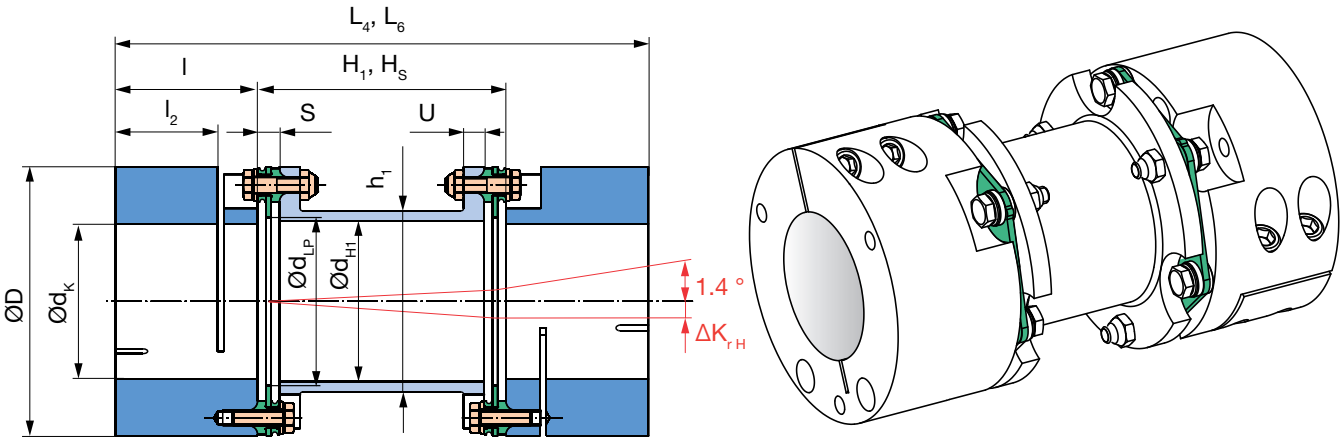


Fig. 18: Type 953.552 (sleeve 1: H_1, L_4), Type 953.553 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 5 5 __ / __ / __ / __ / __

Sizes 16 to 160								
	Single-jointed coupling	2	Single-jointed coupling	0	**Bore* Hub 1 ø** (Dim. page 18)	**Bore* Hub 2 ø** (Dim. page 18)	**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	

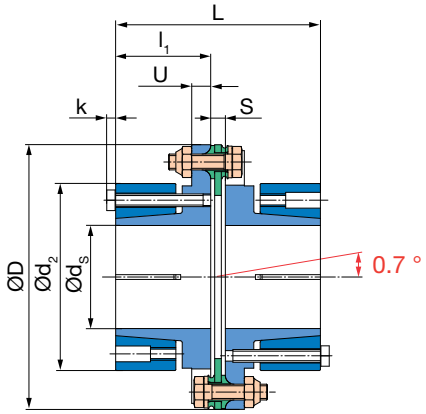
Example: 100 / 952.550 / Hub 1– ø 75 H7 / Hub 2 – ø 90 H7

*Standard H7, other tolerances possible

Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
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
Transmittable Torques on Clamping Hubs Page 76
Backlash-free Servo Couplings Page 8

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

Single-jointed coupling with shrink disk hubs, external clamping



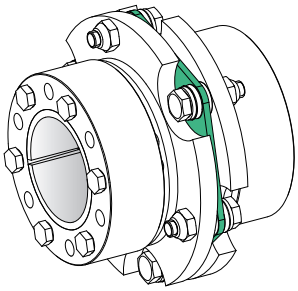


Fig. 19: Type 952.220

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	$\Delta K_{r\,H}$	[mm]	0.7	0.8	1	1.25	1.45	1.5
		with sleeve S	$\Delta K_{r\,H}$	[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

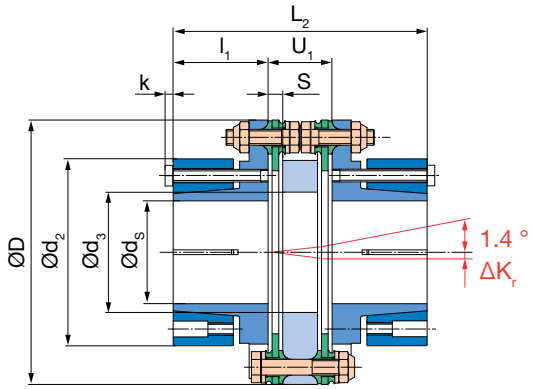
1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Transmittable torques dependent on bore, see page 75.
4) Not valid for coupling with sleeve S.
5) The permitted misalignments may not simultaneously 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



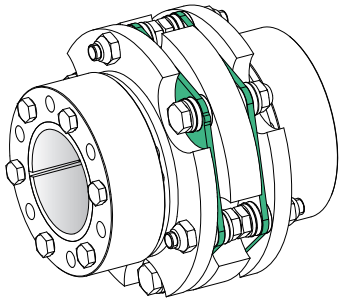
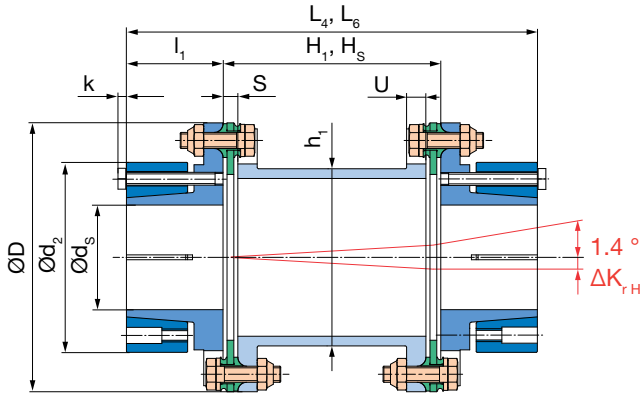


Fig. 20: Type 953.221

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



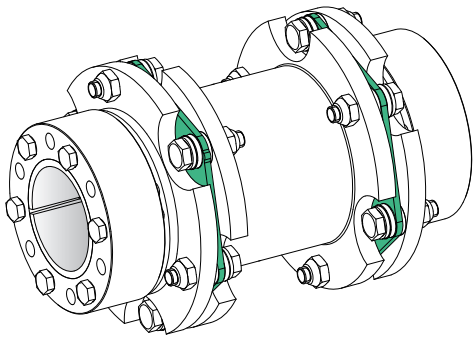


Fig. 21: Type 953.222 (sleeve 1: H_1, L_4), Type 953.223 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 2 2 __ / __ / __ / __ / __

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

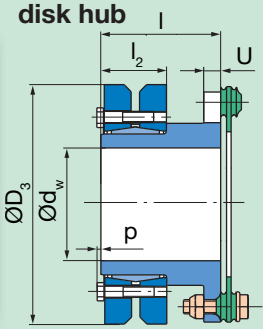
Example: 40 / 953.221 / Hub 1 – ø 30 H7 / Hub 2 – ø 30 H7

*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	-

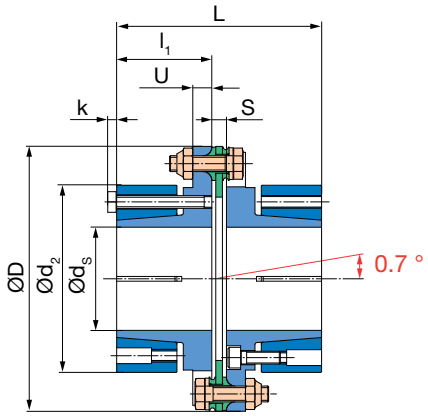
External shrink disk hub



Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
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
Transmittable Torques on Shrink Disk Hubs Page 75
Backlash-free Servo Couplings Page 8

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

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



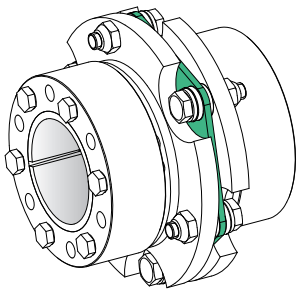


Fig. 22: Type 952.230

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 misalignment [6]	with connection plate	ΔK_r	[mm]	0.2	0.2	0.25	0.3	0.3	0.35
		with sleeve 1	$\Delta K_{r\,H}$	[mm]	0.7	0.8	1	1.25	1.45	1.5
		with sleeve S	$\Delta K_{r\,H}$	[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]

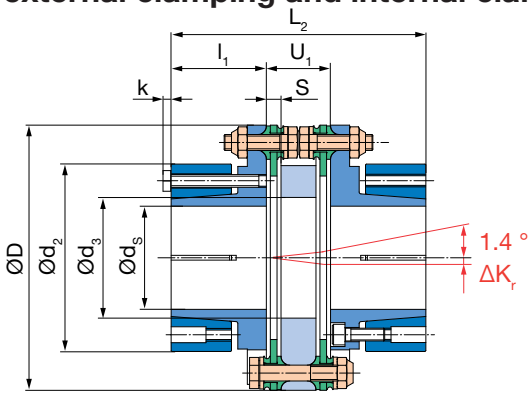
Size	16	25	40	64	100	160
Disk pack [9]	0.08	0.09	0.16	0.32	0.39	0.71
Hub [10]	0.49	0.71	1.03	1.71	2.73	3.99
Connection plate	0.31	0.43	0.68	1.19	1.96	2.96
Sleeve 1	0.39	0.54	0.93	1.46	2.04	3.38
Sleeve S with H_S = 1000 mm	3.63	4.42	6.82	8.09	10.22	16.83
Sleeve S per 1000 mm tube	3.48	4.22	6.51	7.50	9.47	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 ≤ 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



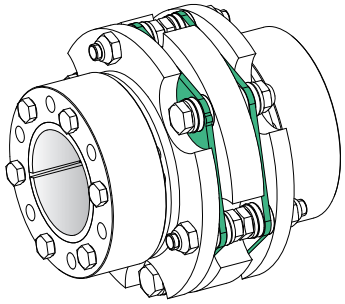
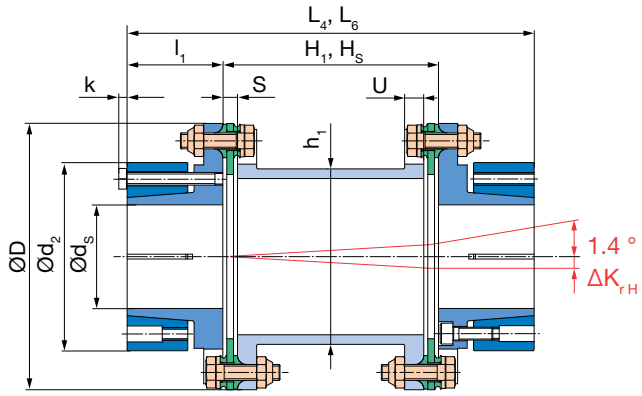


Fig. 23: Type 953.231

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



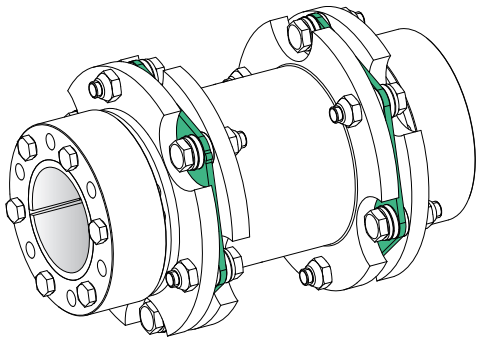


Fig. 24: Type 953.232 (sleeve 1: H_1, L_4), Type 953.233 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 2 3 __ / __ / __ / __ / __

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

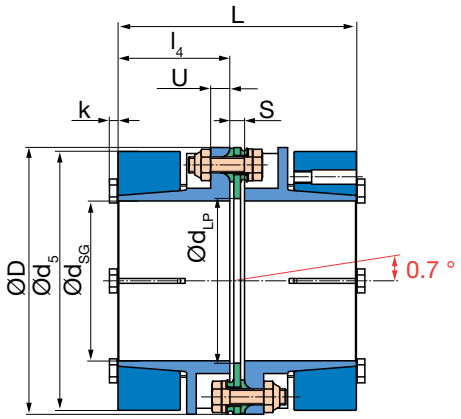
Example: 64 / 953.231 / Hub 1 – ø 35 H7 / Hub 2 – ø 40 H7

*Standard H7, other tolerances possible

Heavy Load Couplings	Page 54
Integrated Torque Measurement	Page 60
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
Transmittable Torques on Shrink Disk Hubs	Page 75
Backlash-free Servo Couplings	Page 8

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

Single-jointed coupling with shrink disk hubs, large



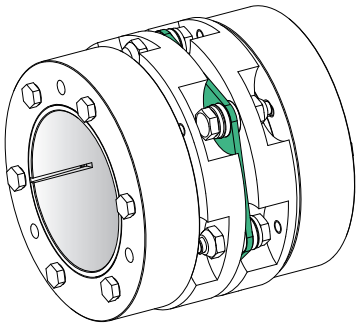


Fig. 25: Type 952.990

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	$\Delta K_{r\,H}$	[mm]	0.7	0.8	1	1.25	1.45	1.5
		with sleeve S	$\Delta K_{r\,H}$	[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_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

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

1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 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, large

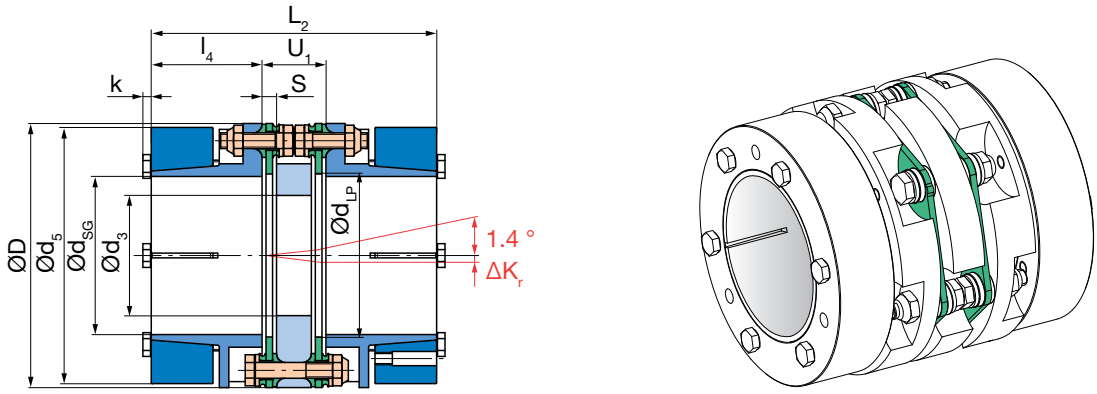


Fig. 26: Type 953.991

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

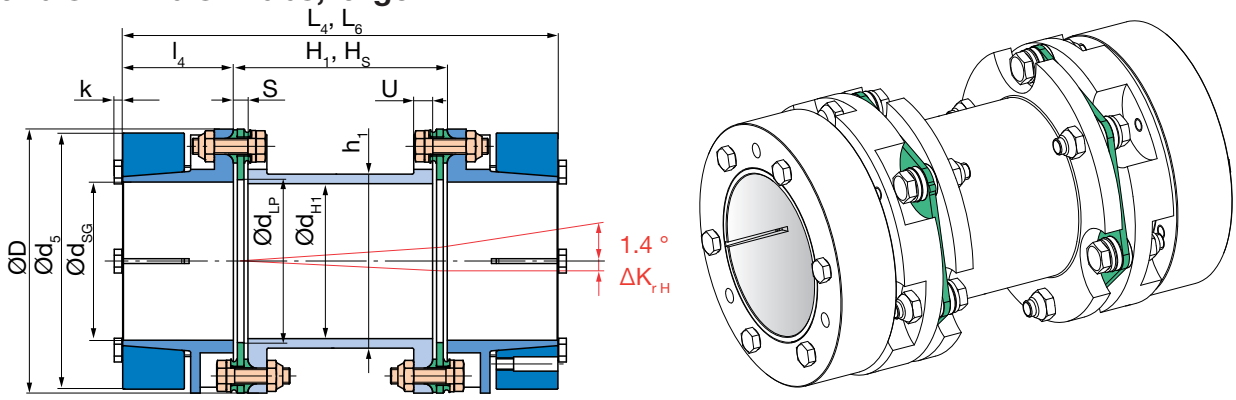


Fig. 27: Type 953.992 (sleeve 1: H_1, L_4), Type 953.993 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 9 9 __ / __ / __ / __ / __

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 24)	**Bore* Hub 2 ø** (Dim. page 24)	**Sleeve length H_S** [mm] for special sleeve S / CRD / CFRP	**Operating speed n_S** [rpm]

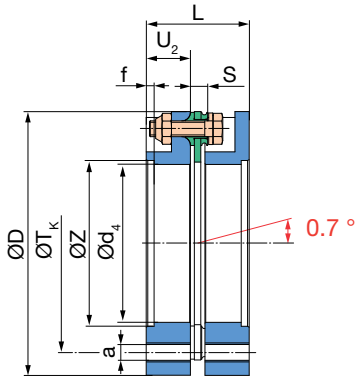
Example: 16 / 953.991 / Hub 1 – ø 35 H7 / Hub 2 – ø 35 H7

*Standard H7, other tolerances possible

Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
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
Transmittable Torques on Shrink Disk Hubs Page 75
Backlash-free Servo Couplings Page 8

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

Single-jointed coupling with flanges



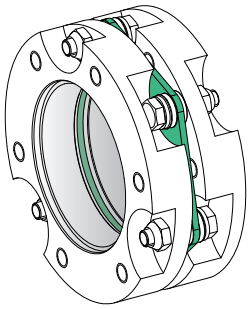


Fig. 28: Type 952.660

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	$\Delta K_{r\,H}$	[mm]	0.7	0.8	1	1.25	1.45	1.5
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.0122$					
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

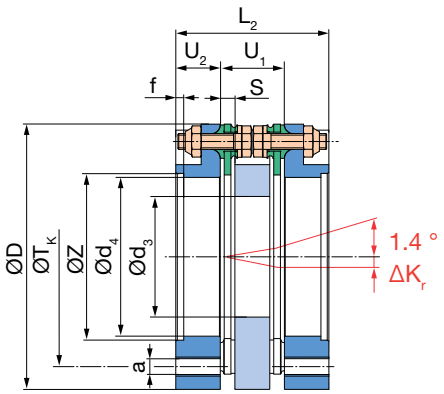
1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Not valid for coupling with sleeve S.
4) The permitted misalignments may not simultaneously reach their maximum values.
5) The values refer to couplings 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:

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

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



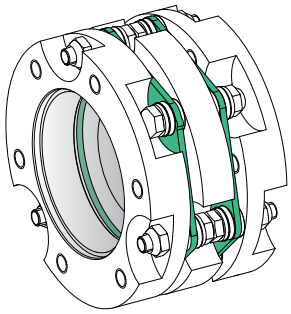
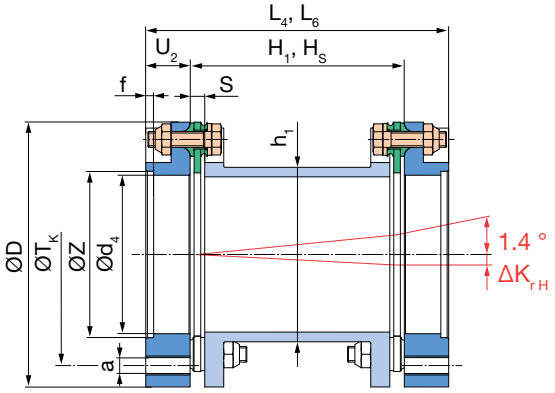


Fig. 29: Type 953.661

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



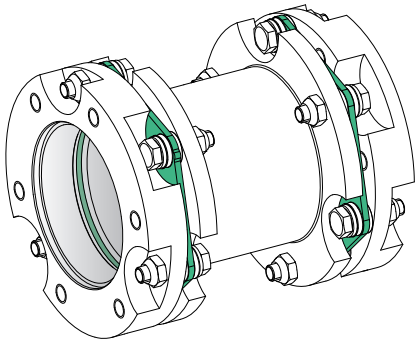


Fig. 30: Type 953.662 (sleeve 1: H_1, L_4), Type 953.663 (sleeve S: H_S, L_6)

Order Number

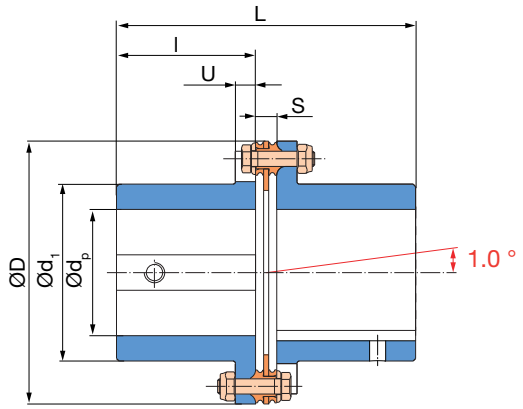
__ / 9 5 __ . 6 6 __ / __ / __					
Sizes 16 to 160	Single-jointed coupling Double-jointed coupling	**2** **3**	Single-jointed coupling Connection plate Sleeve 1 Sleeve S Sleeve CRD (page 64) Sleeve CFRP (page 64)	**0** **1** **2** **3** **4** **5**	**Sleeve length H_S** [mm] for special sleeve S / CRD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

Example: 40 / 953.661

Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
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
Backlash-free Servo Couplings Page 8

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

Single-jointed coupling with key hubs



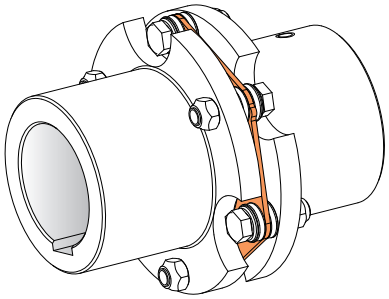


Fig. 31: Type 950.000

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	[mm]	0.3	0.3	0.4	0.45	0.45	0.55
		with sleeve 1	$\Delta K_{r\,H}$	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.0174$					
Spring rigidity	torsion [8]	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 [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					
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 [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

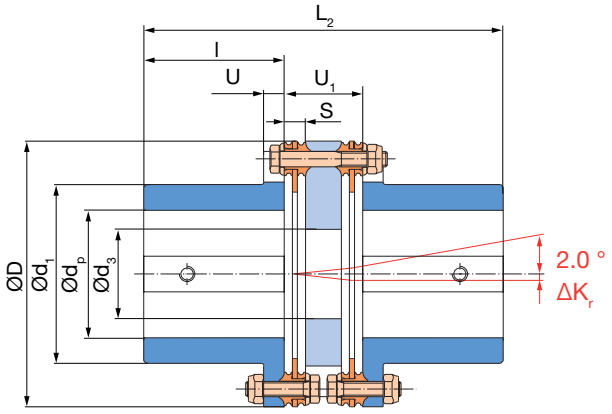
1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Transmittable torques dependent on bore, see table page 76.
4) Not valid for coupling with sleeve S.
5) The permitted misalignments may not simultaneously 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 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.

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

Double-jointed coupling with connection plate and key hubs



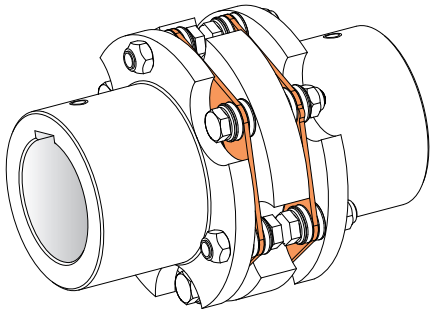
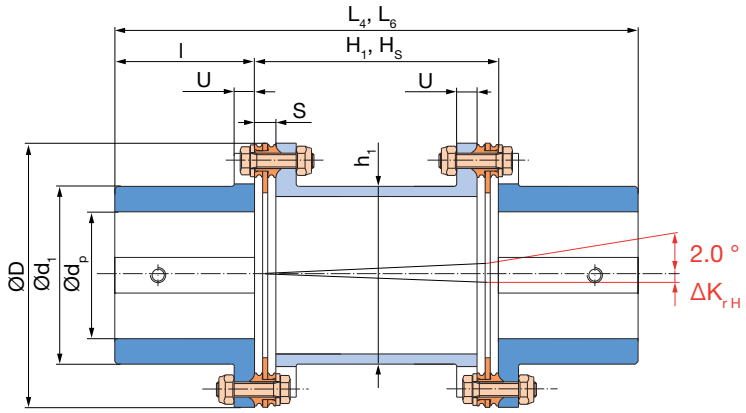


Fig. 32: Type 951.001

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



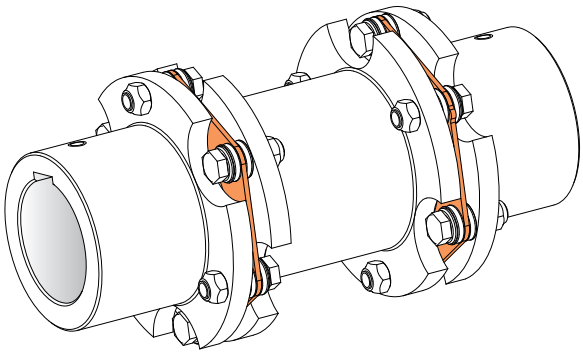


Fig. 33: Type 951.002 (sleeve 1: H_1, L_4), Type 951.003 (sleeve S: H_S, L_6)

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)	**Sleeve length H_S** [mm]	**Operating speed n_s** [rpm]
	Double-jointed coupling	1	Connection plate	1			for special sleeve S / CRD / CFRP	
			Sleeve 1	2				
			Sleeve S	3				
			Sleeve CRD (page 64)	4				
			Sleeve CFRP (page 64)	5				

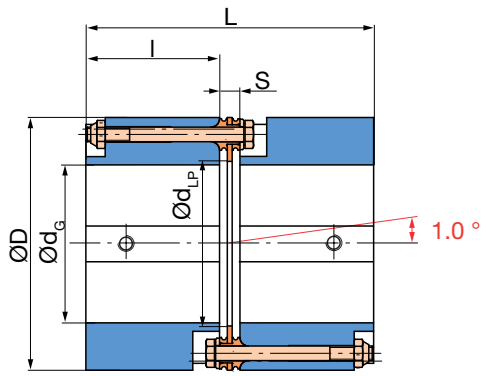
Example: 16 / 951.001 / Hub 1 – ø 25 H7 / Hub 2 – ø 25 H7

*Standard H7, other tolerances possible

Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
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
Transmittable Torques on Key Hubs Page 76
Backlash-free Servo Couplings Page 8

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

Single-jointed coupling with key hubs, large



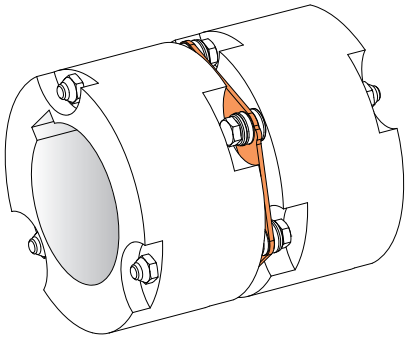


Fig. 34: Type 950.110

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	$\Delta K_{r\,H}$	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.0174$					
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

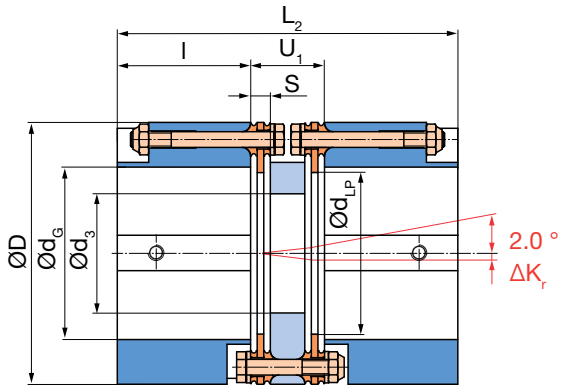
1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Not valid for coupling with sleeve S.
4) The permitted misalignments may not simultaneously reach their maximum values.
5) The values refer to couplings 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:

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

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

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



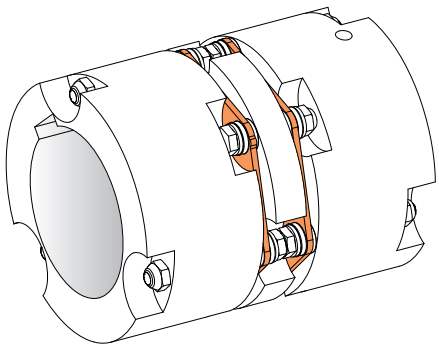
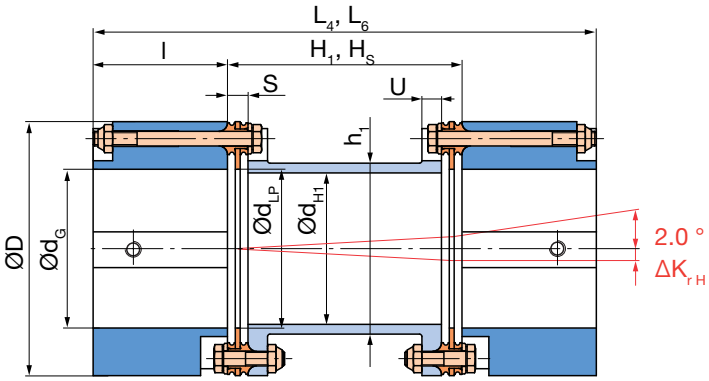


Fig. 35: Type 951.111

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



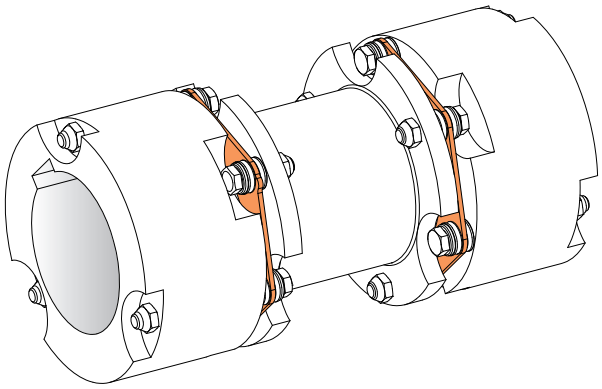


Fig. 36: Type 951.112 (sleeve 1: H_1, L_4), Type 951.113 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 1 1 __ / __ / __ / __ / __

Sizes 16 to 160	Single-jointed coupling / 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 30)	**Bore* Hub 2 ø** (Dim. page 30)	**Sleeve length H_S** [mm] for special sleeve S / CRD / CFRP	**Operating speed n_S** [rpm]

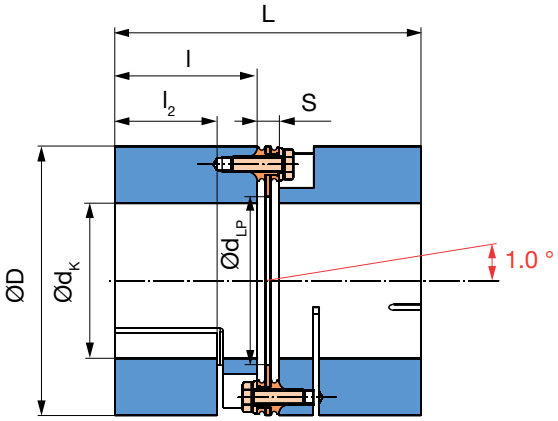
Example: 25 / 950.110 / Hub 1 – ø 45 H7 / Hub 2 – ø 45 H7

*Standard H7, other tolerances possible

Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
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
Backlash-free Servo Couplings Page 8

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

Single-jointed coupling with clamping hubs



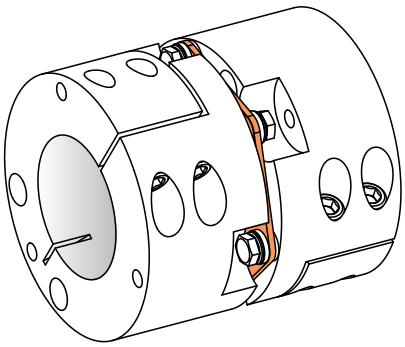


Fig. 37: Type 950.550

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	$\Delta K_{r\,H}$	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	$\Delta K_{r\,H}$	[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_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

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

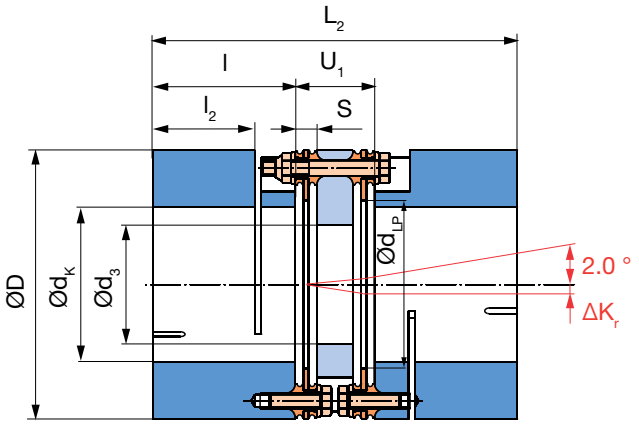
1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Transmittable torques dependent on bore, see table page 76.
4) Not valid for coupling with sleeve S.
5) The permitted misalignments may not simultaneously 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:

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

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

Double-jointed coupling with connection plate and clamping hubs



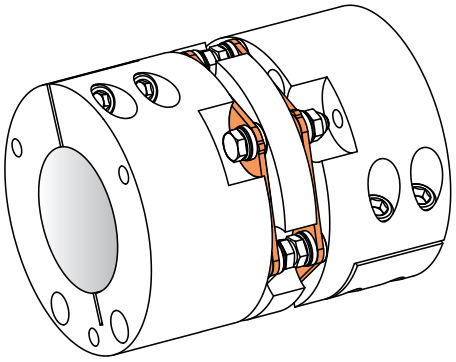
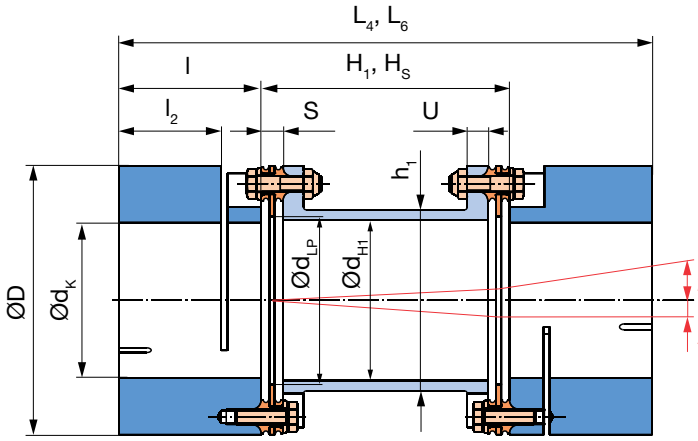


Fig. 38: Type 951.551

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



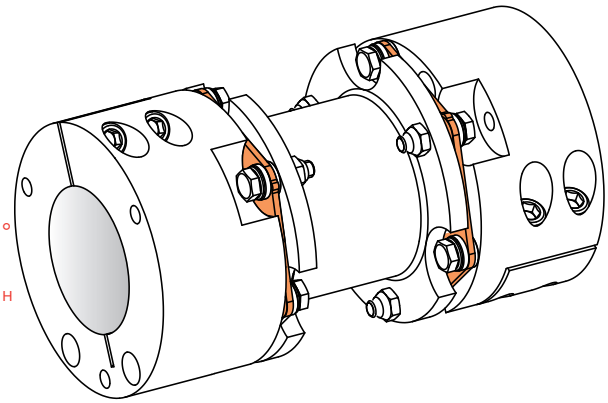


Fig. 39: Type 951.552 (sleeve 1: H_1, L_4), Type 951.553 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 5 5 __ / __ / __ / __ / __

Sizes 16 to 160			Single-jointed coupling	0	Bore* Hub 1 ø (Dim. page 32)	Bore* Hub 2 ø (Dim. page 32)	Sleeve length H_S [mm] for special sleeve S / CRD / CFRP	Operating speed n_S [rpm]
	Single-jointed coupling	0	Connection plate	1				
	Double-jointed coupling	1	Sleeve 1	2				
			Sleeve S	3				
			Sleeve CRD (page 64)	4				
			Sleeve CFRP (page 64)	5				

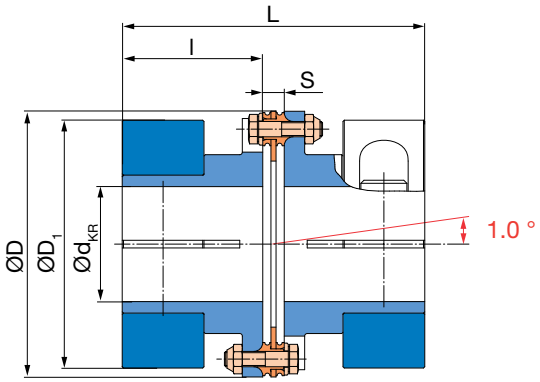
Example: 16 / 951.551 / Hub 1 – ø 45 H7 / Hub 2 – ø 45 H7

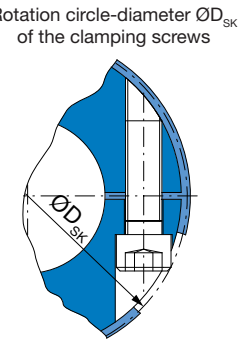
*Standard H7, other tolerances possible

Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
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
Transmittable Torques on Clamping Hubs Page 76
Backlash-free Servo Couplings Page 8

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

Single-jointed coupling with clamping ring hubs





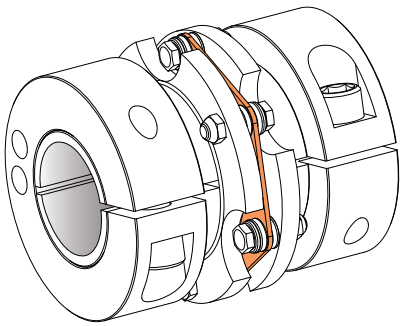


Fig. 40: Type 950.440

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	$\Delta K_{r\,H}$	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	$\Delta K_{r\,H}$	[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_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					
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 [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

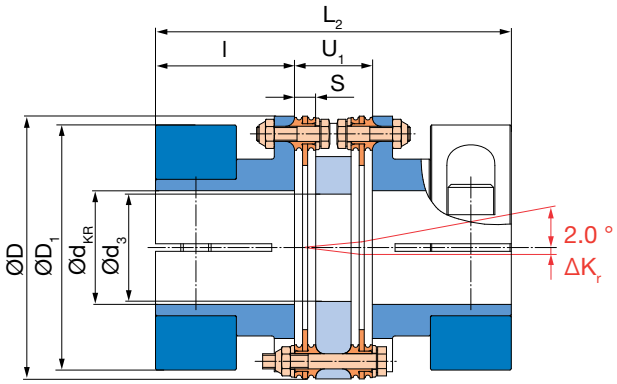
1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Transmittable torques dependent on bore, see page 75.
4) Not valid for coupling with sleeve S.
5) The permitted misalignments may not simultaneously 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 clamping ring hubs



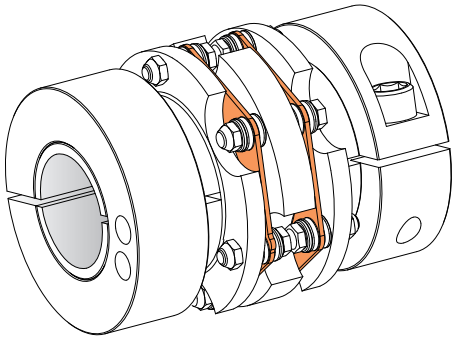
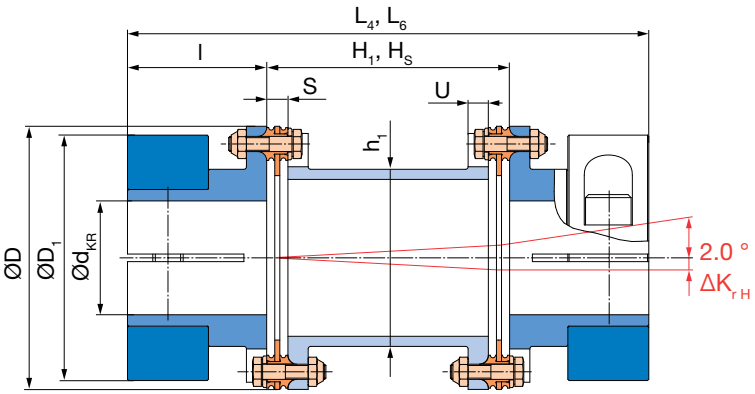


Fig. 41: Type 951.441

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



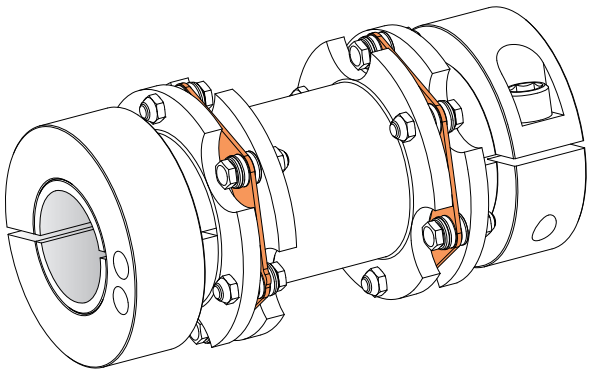


Fig. 42: Type 951.442 (sleeve 1: H_1, L_4), Type 951.443 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 4 4 __ / __ / __ / __ / __								
Sizes 16 to 160	Single-jointed coupling 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 34)	**Bore* Hub 2 ø** (Dim. page 34)	**Sleeve length H_S** [mm] for special sleeve S / CRD / CFRP	**Operating speed n_S** [rpm]

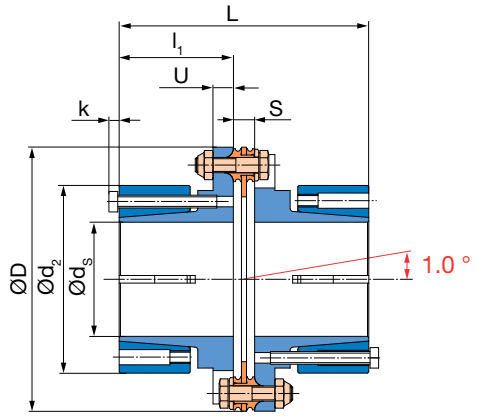
Example: 16 / 951.441 / Hub 1 – ø 25 H7 / Hub 2 – ø 25 H7

*Standard H7, other tolerances possible

Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
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
Transmittable Torques on Clamping Ring Hubs Page 75
Backlash-free Servo Couplings Page 8

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

Single-jointed coupling with shrink disk hubs, external clamping



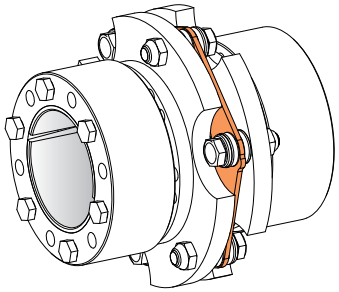


Fig. 43: Type 950.220

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	[mm]	0.3	0.3	0.4	0.45	0.45	0.55
		with sleeve 1	$\Delta K_{r\,H}$	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	$\Delta K_{r\,H}$	[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					
l_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 ≤ 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

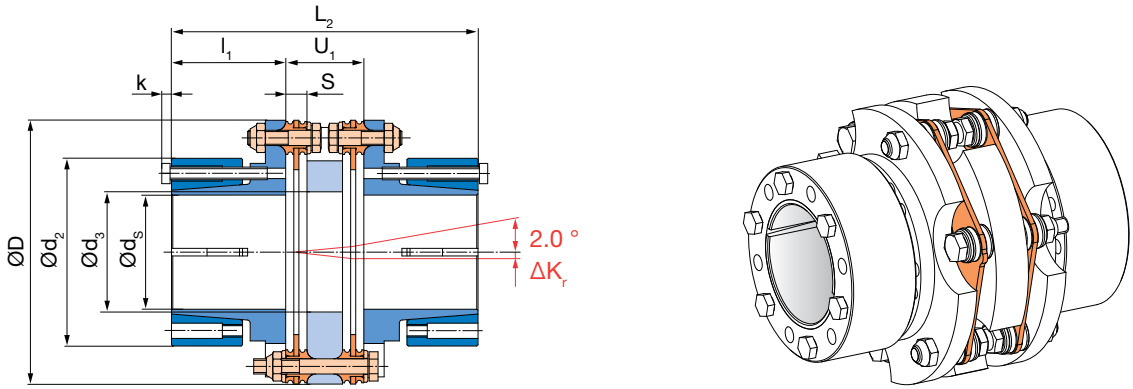


Fig. 44: Type 951.221

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

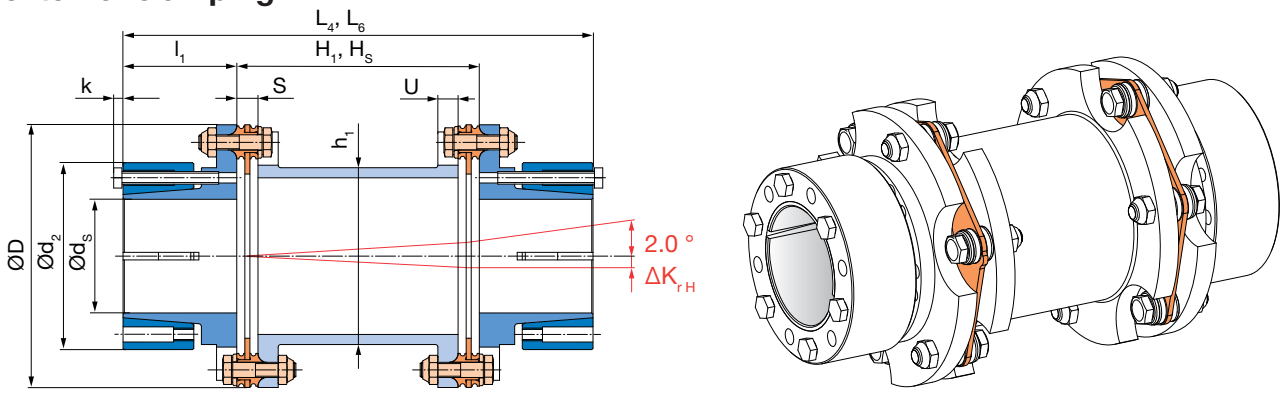


Fig. 45: Type 951.222 (sleeve 1: H_1, L_4), Type 951.223 (sleeve S: H_S, L_6)

Order Number

__	/	9	5	__	.	2	2	__	/	__	/	__	/	__	/	__
△				△				△		△		△		△		△

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

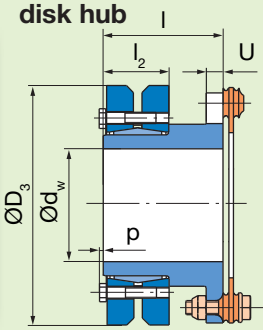
Example: 100 / 951.221 / Hub 1– ø 45 H7 / Hub 2 – ø 45 H7

*Standard H7, other tolerances possible

Additional Option:

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	-

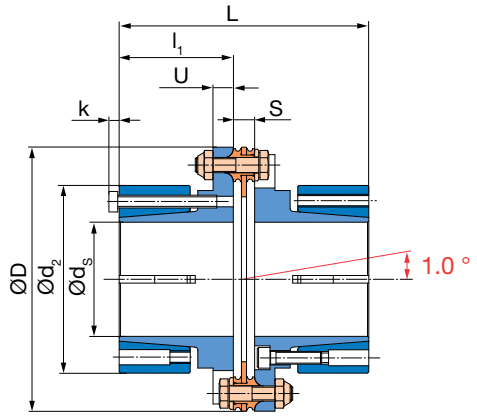
External shrink disk hub



Heavy Load Couplings	Page 54
Integrated Torque Measurement	Page 60
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
Transmittable Torques on Shrink Disk Hubs	Page 75
Backlash-free Servo Couplings	Page 8

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

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



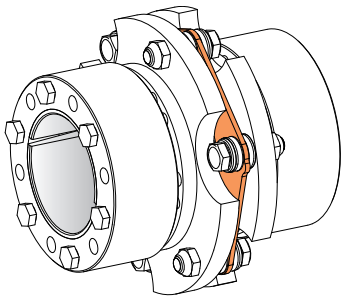


Fig. 46: Type 950.230

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	$\Delta K_{r\,H}$	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	$\Delta K_{r\,H}$	[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					
l_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

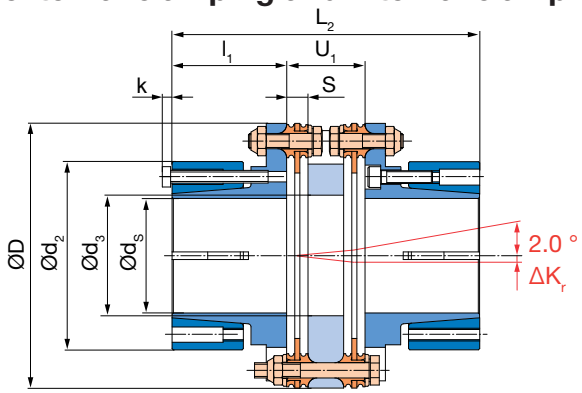
1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Transmittable torques dependent on bore, see page 75.
4) Not valid for coupling with sleeve S.
5) The permitted misalignments may not simultaneously 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



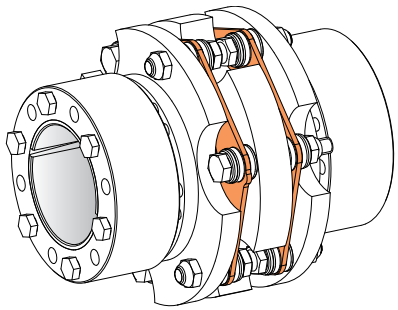
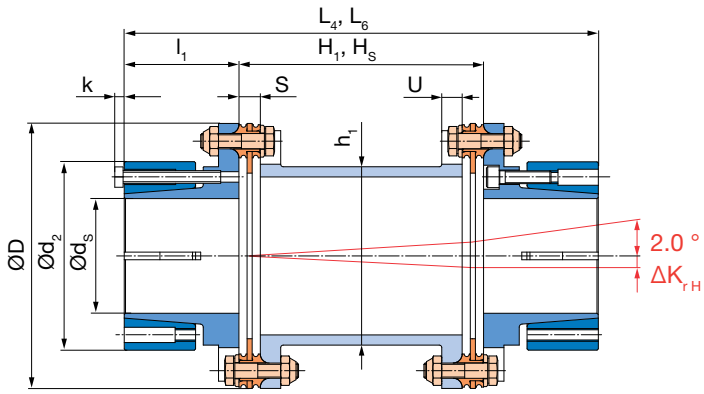


Fig. 47: Type 951.231

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



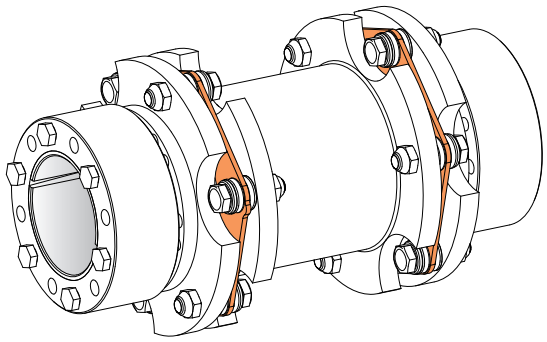


Fig. 48: Type 951.232 (sleeve 1: H_1, L_4), Type 951.233 (sleeve S: H_S, L_6)

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)	**Sleeve length H_S** [mm]	**Operating speed n_S** [rpm]
	Double-jointed coupling	1	Connection plate	1			for special sleeve S / CRD / CFRP	
			Sleeve 1	2				
			Sleeve S	3				
			Sleeve CRD (page 64)	4				
			Sleeve CFRP (page 64)	5				

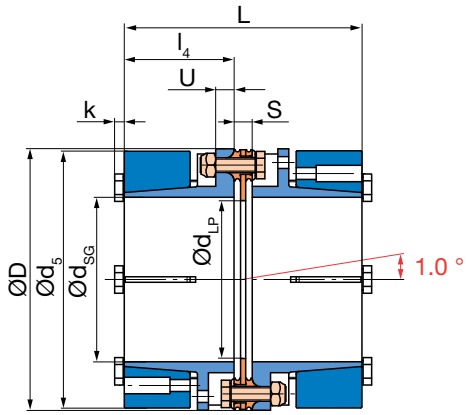
Example: 64 / 951.231 / Hub 1 – ø 35 H7 / Hub 2 – ø 40 H7

*Standard H7, other tolerances possible

Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
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
Transmittable Torques on Shrink Disk Hubs Page 75
Backlash-free Servo Couplings Page 8

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

Single-jointed coupling with shrink disk hubs, large



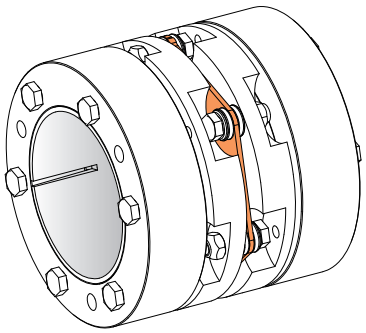


Fig. 49: Type 950.990

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	[mm]	0.3	0.3	0.4	0.45	0.45	0.55
		with sleeve 1	$\Delta K_{r\,H}$	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.0174$					
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_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]

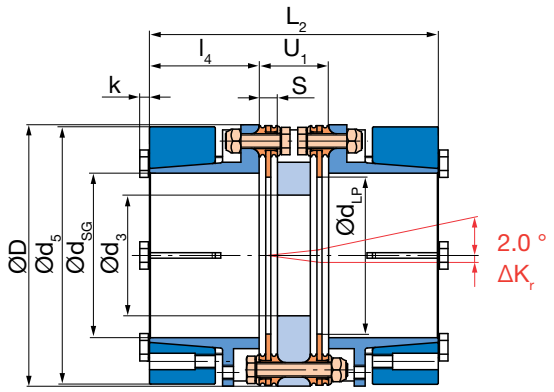
Size	16	25	40	64	100	160
Disk pack [8]	0.08	0.09	0.15	0.29	0.35	0.67
Hub [9]	0.79	1.02	1.71	2.53	3.92	6.08
Connection plate	0.31	0.43	0.68	1.19	1.96	2.96
Sleeve 1	0.39	0.54	0.93	1.46	2.04	3.38
Sleeve S with H_S = 1000 mm	3.63	4.42	6.82	8.09	10.22	16.83
Sleeve S per 1000 mm tube	3.48	4.22	6.51	7.50	9.47	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 ≤ 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:

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

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

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



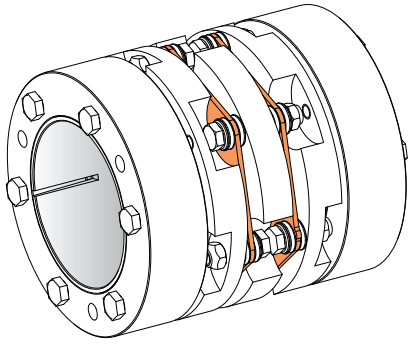
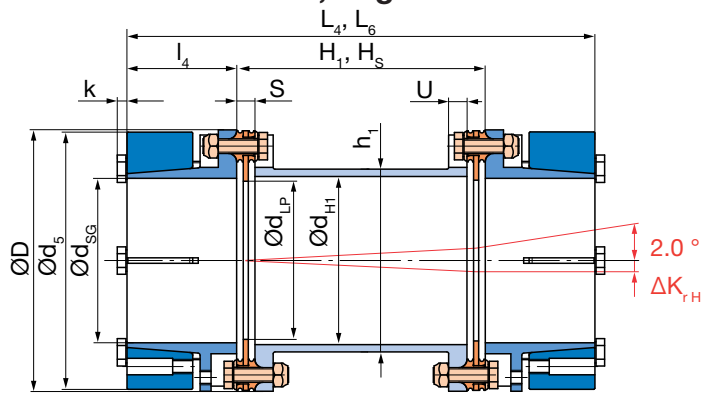


Fig. 50: Type 951.991

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



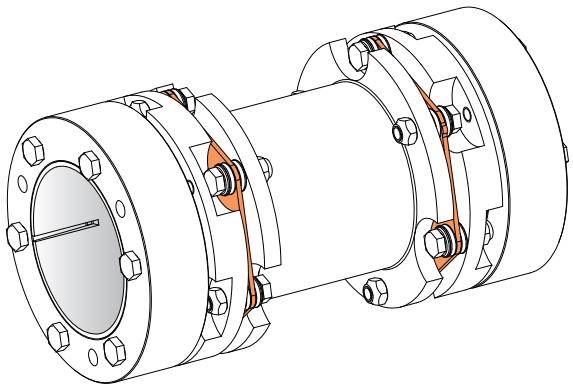


Fig. 51: Type 951.992 (sleeve 1: H_1, L_4), Type 951.993 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 9 9 __ / __ / __ / __ / __

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

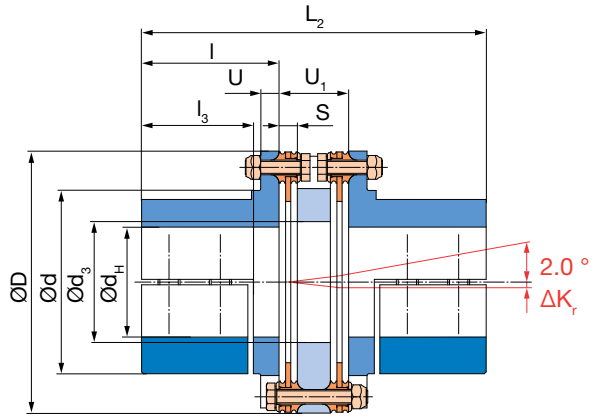
Example: 16 / 951.991 / Hub 1 – ø 35 H7 / Hub 2 – ø 35 H7

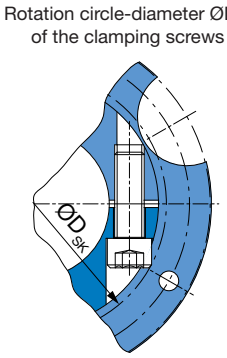
*Standard H7, other tolerances possible

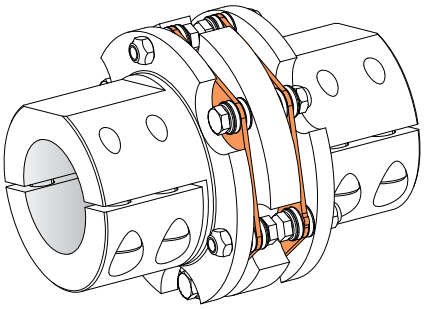
Heavy Load Couplings Page 54
Integrated Torque Measurement Page 60
Variable Length Sleeve S / Sleeve CFRP / Options Page 64
Safe Against Overload Page 67
Installation Examples Page 68
Dimensioning, Size Selection Page 70
Technical Explanations Page 71
Backlash-free Servo Couplings Page 8

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

Double-jointed coupling with connection plate and split clamping hubs







Optional keyway design
according to DIN 6885 possible

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	$\Delta K_{r\,H}$	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	$\Delta K_{r\,H}$	[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_{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					
l	40	45	55	65	75	85
l_3	31	35	43	51	61	69
l_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

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

1) 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.
2) Valid for unchanging load direction, max. load cycles ≤ 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 sleeve 1 or sleeve S (special length) and split clamping hubs

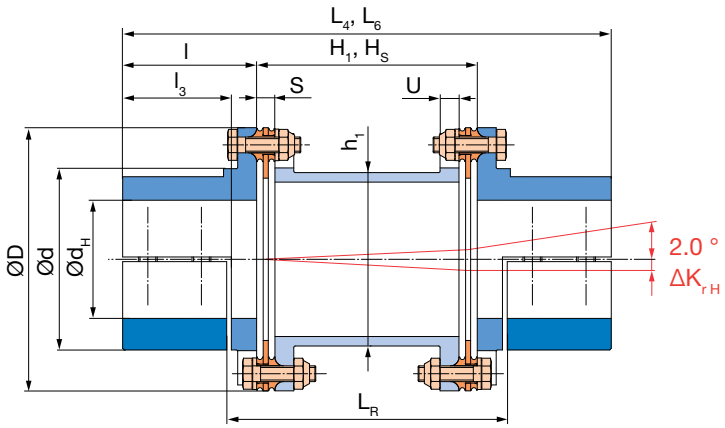
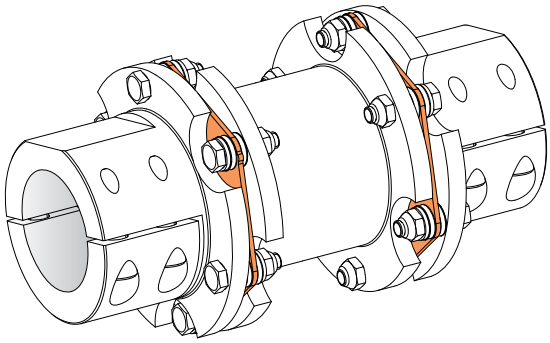


Fig. 53: Type 951.882 (sleeve 1: H_1, L_4), Type 951.883 (sleeve S: H_S, L_6)



Optional keyway design according to DIN 6885 possible

1. Installation coupling with split clamping hubs

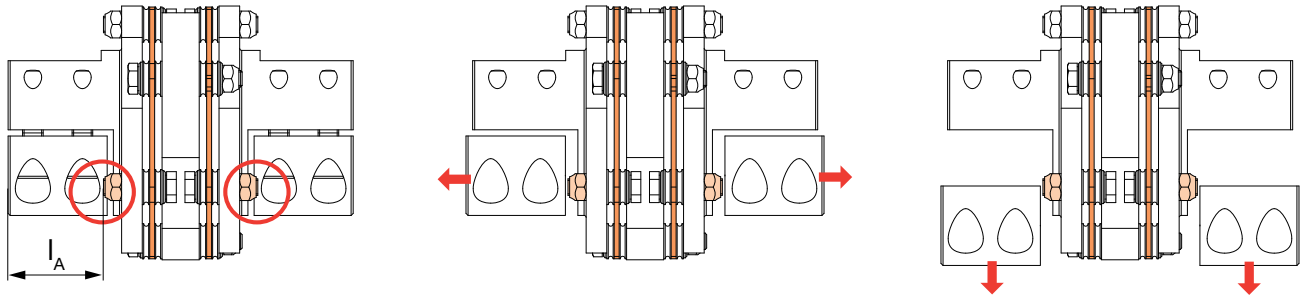


Fig. 54: Axial displacement of the half-shells during radial assembly/disassembly (only necessary on Type 951.881)

Order Number

__ / 9 5 1 . 8 8 __ / __ / __ / __ / __

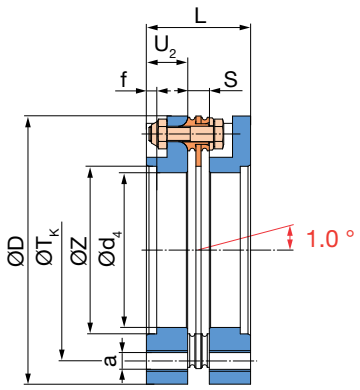
Sizes 16 to 160					
	Connection plate Sleeve 1 Sleeve S Sleeve CRD (page 64) Sleeve CFRP (page 64)	1 2 3 4 5	**Bore* Hub 1 ø** (Dim. page 42)	**Bore* Hub 2 ø** (Dim. page 42)	**Shaft distance L_R** [mm]	**Operating speed n_s** [rpm] for special sleeve S / CRD / CFRP

Example: 100 / 951.881 / Hub 1– ø 50 H7 / Hub 2 – ø 50 H7

*Standard H7, other tolerances possible

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

Single-jointed coupling with flanges



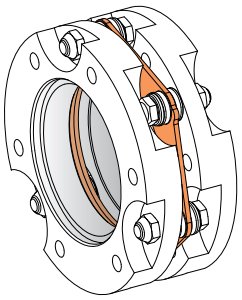


Fig. 55: Type 950.660

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	$\Delta K_{r\,H}$	[mm]	1.0	1.2	1.5	1.8	2.1	2.2
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.0174$					
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

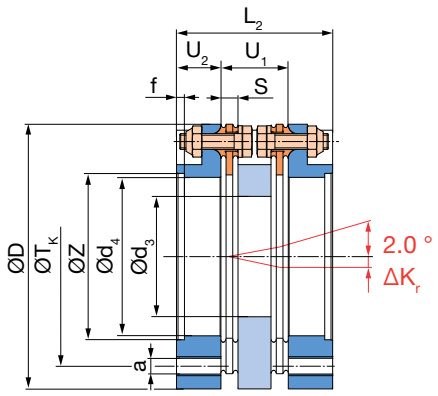
1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Not valid for coupling with sleeve S.
4) The permitted misalignments may not simultaneously reach their maximum values.
5) The values refer to couplings 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:

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

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



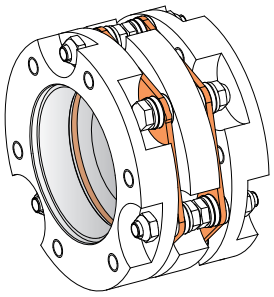
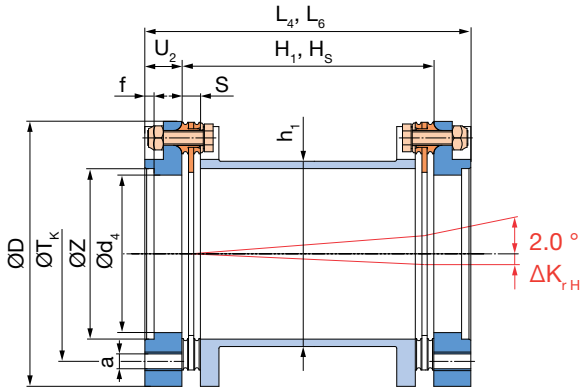


Fig. 56: Type 951.661

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



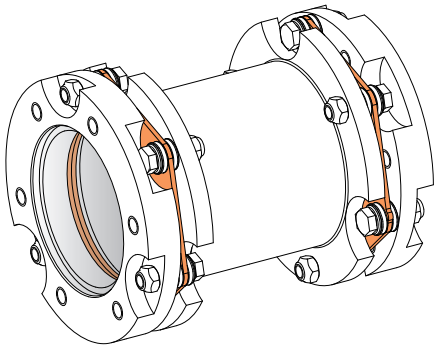


Fig. 57: Type 951.662 (sleeve 1: H_1, L_4), Type 951.663 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 6 6 __ / __ / __

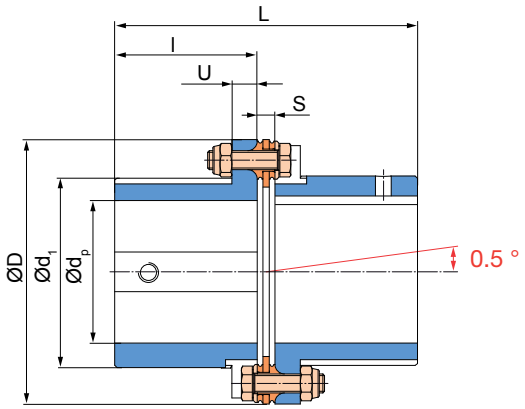
Sizes 16 to 160	Single-jointed coupling / Double-jointed coupling		Single-jointed coupling Connection plate Sleeve 1 Sleeve S Sleeve CRD (page 64) Sleeve CFRP (page 64)	0 1 2 3 4 5	**Sleeve length H_S** [mm] for special sleeve S / CRD / CFRP	**Operating speed n_S** [rpm]
	Single-jointed coupling	0				
	Double-jointed coupling	1				

Example: 40 / 951.661

Heavy Load Couplings	Page 54
Integrated Torque Measurement	Page 60
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
Backlash-free Servo Couplings	Page 8

ROBA®-DS Sizes 180 to 2200

Single-jointed coupling with key hubs



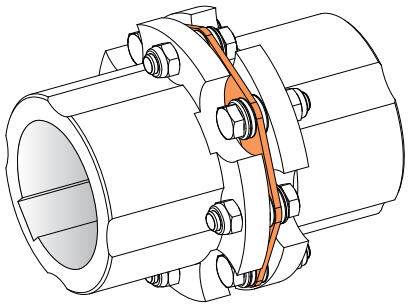


Fig. 58: Type 950.000

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	$\Delta K_{r\,H}$	[mm]	1.2	1.25	1.35	1.7	2	2.6
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.00873$					
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					
l	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

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]

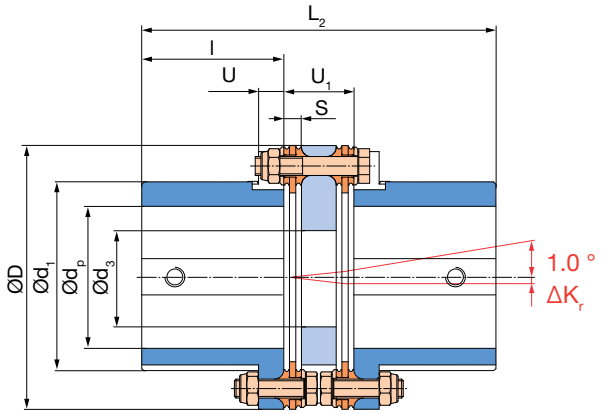
Size	180	300	500	850	1400	2200
Disk pack [9]	0.73	1.15	2.14	3.92	6.52	7.51
Hub key [10]	2.80	4.01	6.25	10.51	16.62	28.46
Hub key internal [10]	2.38	3.32	5.36	9.00	14.44	23.26
Connection plate	1.53	2.44	4.48	8.04	12.64	19.55
Sleeve 1	2.61	3.66	5.38	9.32	15.62	26.98
Sleeve S with H_S = 1000 mm	14.37	17.45	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

1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 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:

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

ROBA®-DS Sizes 180 to 2200

Double-jointed coupling with connection plate and key hubs



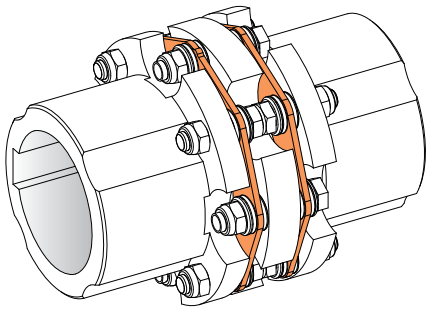


Fig. 59: Type 951.001

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

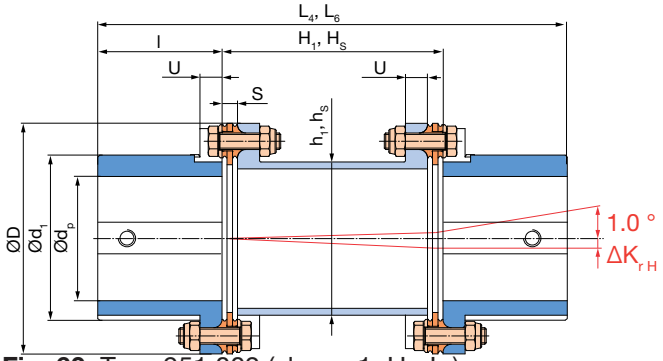


Fig. 60: Type 951.002 (sleeve 1: H_1, L_4),
Type 951.003 (sleeve S: H_S, L_6)

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

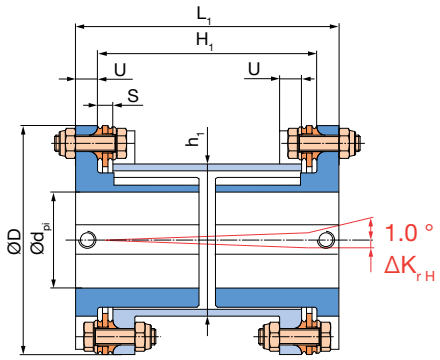


Fig. 61: Type 951.772 (sleeve 1: H_1, L_1)

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)

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Sizes 180 to 2200	Single-jointed coupling 0 Double-jointed coupling 1	Single-jointed coupling 0 Connection plate 1 Sleeve 1 2 Sleeve S 3 Sleeve CRD (page 64) 4 Sleeve CFRP (page 64) 5	Bore* Hub 1 ø (Dim. page 46)	Bore* Hub 2 ø (Dim. page 46)	Sleeve length H_S [mm] for special sleeve S / CRD / CFRP	Operating speed n_S [rpm]

Example: 300 / 951.001 / Hub 1– ø 50 H7 / Hub 2 – ø 60 H7

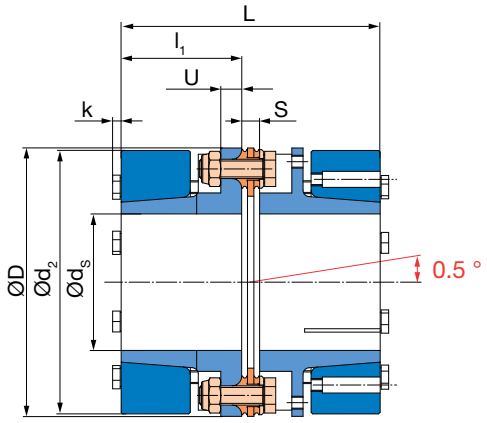
*Standard H7, other tolerances possible

Integrated Torque Measurement Page 60
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
Transmittable Torques on Key Hubs Page 76

Backlash-free Servo Couplings Page 8
Heavy Load Couplings Page 54

ROBA®-DS Sizes 180 to 2200

Single-jointed coupling with shrink disk hubs, external clamping



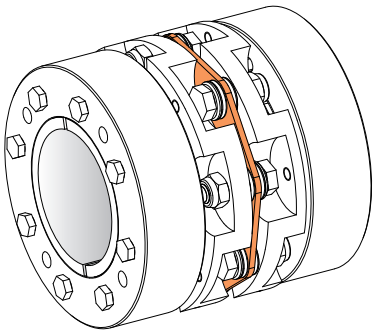


Fig. 62: Type 950.220

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	$\Delta K_{r\,H}$	[mm]	1.2	1.25	1.35	1.7	2	2.6
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.00873$					
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 ≤ 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 180 to 2200

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

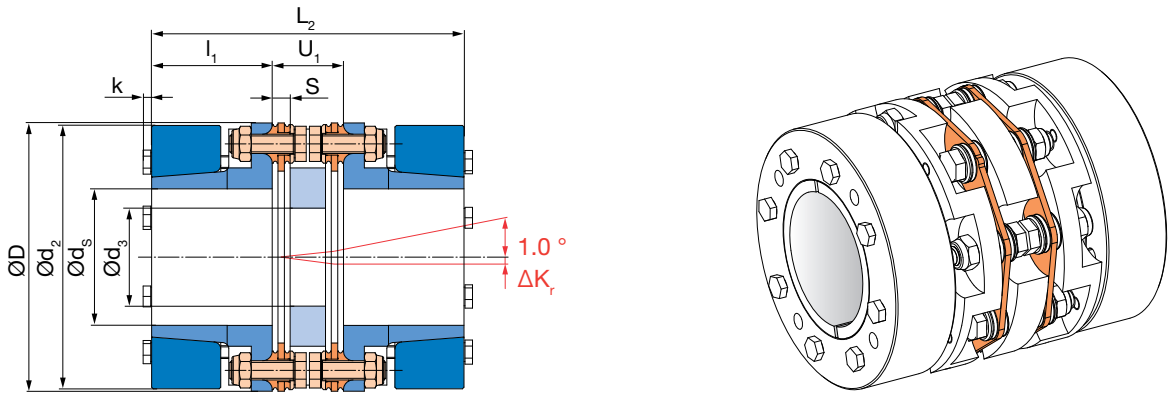


Fig. 63: Type 951.221

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

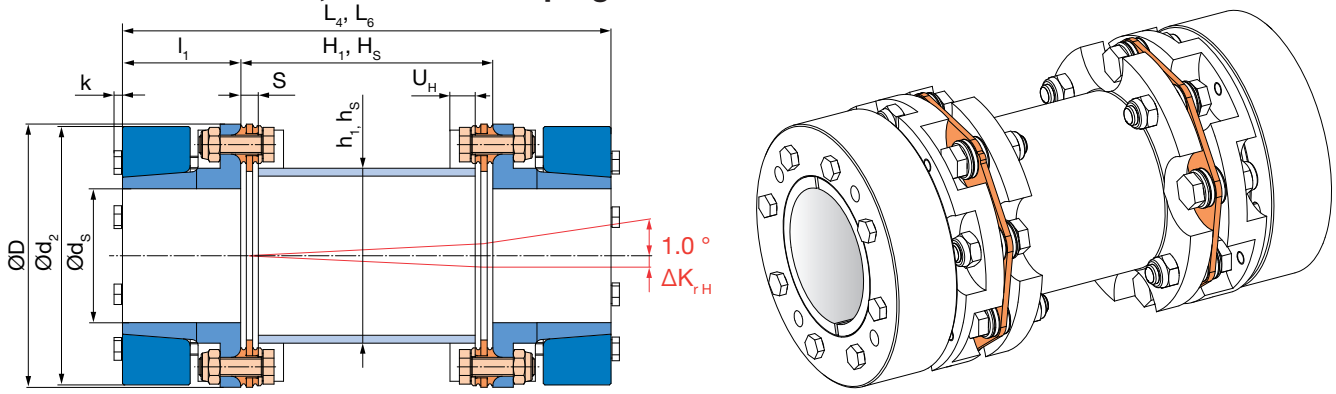


Fig. 64: Type 951.222 (sleeve 1: H_1, L_4), Type 951.223 (sleeve S: H_S, L_6)

Order Number

__	/	9	5	__	.	2	2	__	/	__	/	__	/	__	/	__
△				△				△		△		△		△		△

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

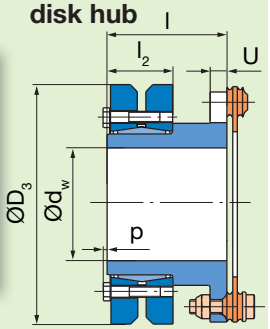
Example: 100 / 951.221 / Hub 1– ø 45 H7 / Hub 2 – ø 45 H7

*Standard H7, other tolerances possible

Additional Option:

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	-

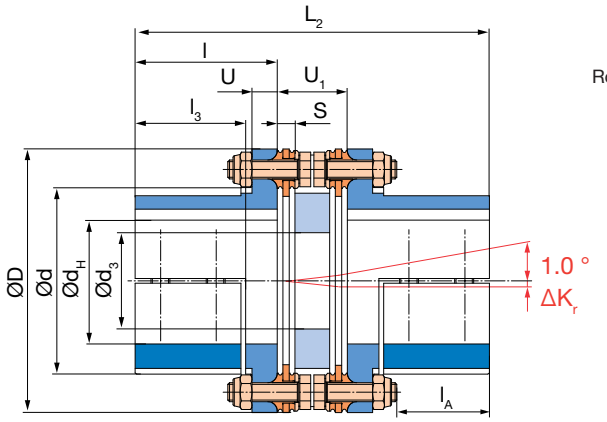
External shrink disk hub

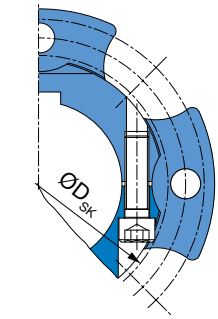


Heavy Load Couplings	Page 54
Integrated Torque Measurement	Page 60
Variable Length Sleeve S / Sleeve CFRP / Options	Page 64
Safe Against Overload	Page 67
Installation Examples	Page 68
Dimensioning, Size Selection	Page 70
Technical Explanations	Page 71
Transmittable Torques on Shrink Disk Hubs	Page 75
Backlash-free Servo Couplings	Page 8

ROBA®-DS Sizes 180 to 2200

Double-jointed coupling with connection plate and split clamping hubs





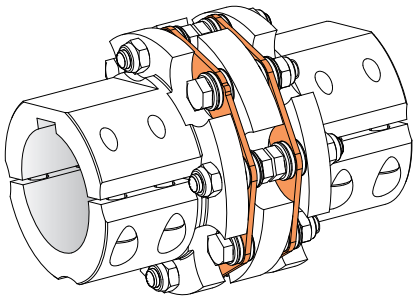


Fig. 65: Type 951.881

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	$\Delta K_{r\,H}$	[mm]	1.2	1.25	1.35	1.7	2	2.6
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.00873$					
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					
l	85	90	100	125	150	180
l_3	68	70	77	97	117	147
l_A	58.7	58.7	65.1	83.2	100.6	127.3
l_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

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

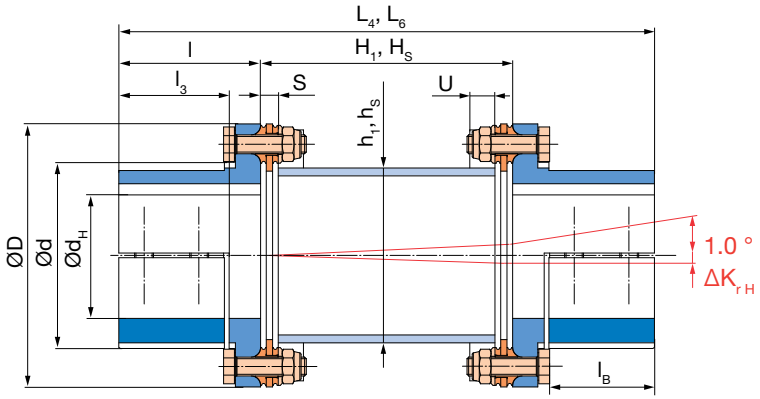
1) Valid for unchanging load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Not valid for coupling with sleeve S.
4) The permitted misalignments may not simultaneously reach their maximum values.
5) The C_T-value of a double-jointed coupling can be roughly calculated as follows:

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

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



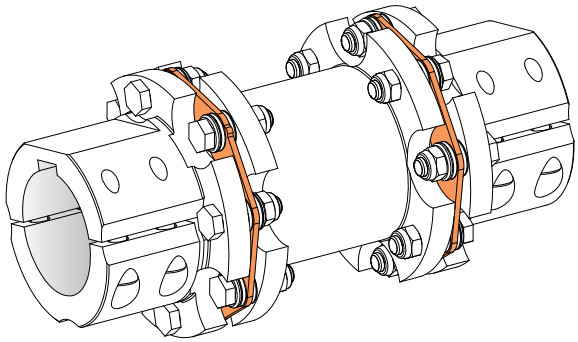


Fig. 66: Type 951.882 (sleeve 1: H_1, L_4)
Type 951.883 (sleeve S: H_S, L_6)

Only available with keyway acc. DIN 6885!

2. Installation coupling with split clamping hubs

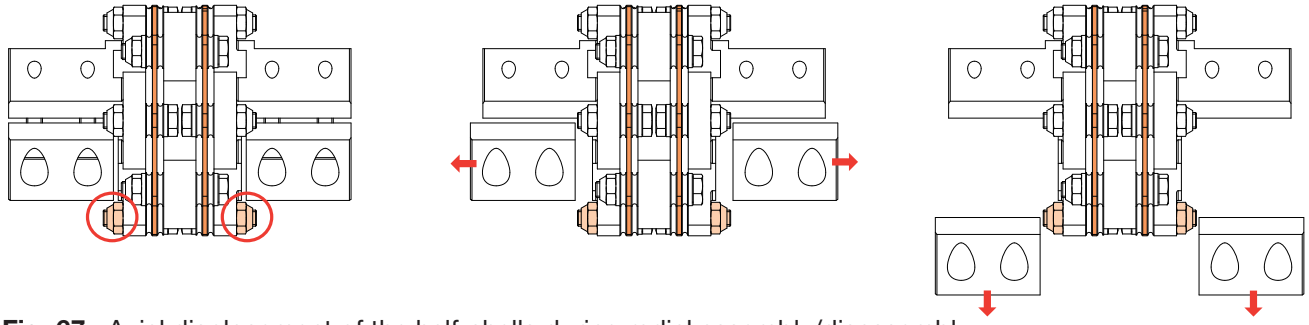


Fig. 67: Axial displacement of the half-shells during radial assembly/disassembly
Please observe dimensions l_A and l_B!

Order Number

__ / 9 5 1 . 8 8 __ / __ / __ / __ / __

Sizes 180 to 2200	Connection plate 1 / Sleeve 1 2 / Sleeve S 3 / Sleeve CRD (page 64) 4 / Sleeve CFRP (page 64) 5	Bore* Hub 1 ø (Dim. page 50)	Bore* Hub 2 ø (Dim. page 50)	Sleeve length H_s [mm] for special sleeve S / CRD / CFRP	Operating speed n_s [rpm]

Example: 100 / 951.881 / Hub 1– ø 50 H7 / Hub 2 – ø 50 H7

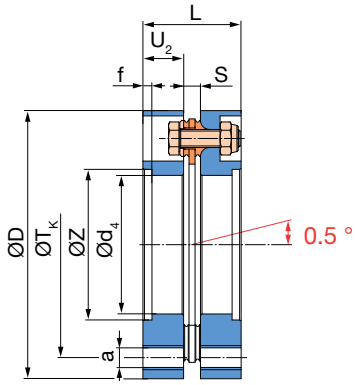
*Standard H7, other tolerances possible

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.

Integrated Torque Measurement Page 60
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
Backlash-free Servo Couplings Page 8
Heavy Load Couplings Page 54

ROBA®-DS Sizes 180 to 2200

Single-jointed coupling with flanges



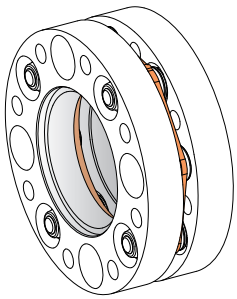


Fig. 68: Type 950.660

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	$\Delta K_{r\,H}$	[mm]	1.2	1.25	1.35	1.7	2	2.6
		with sleeve S	$\Delta K_{r\,H}$	[mm]	$(H_S - S) \times 0.00873$					
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

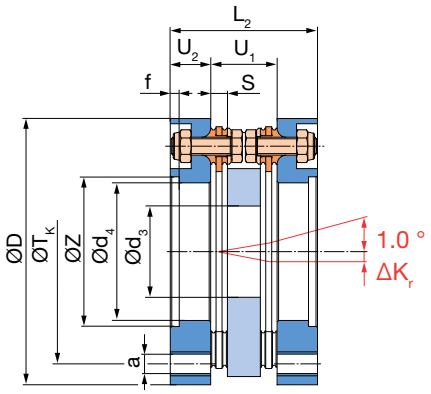
1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Not valid for coupling with sleeve S.
4) The permitted misalignments may not simultaneously reach their maximum values.
5) The values refer to couplings 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:

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

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



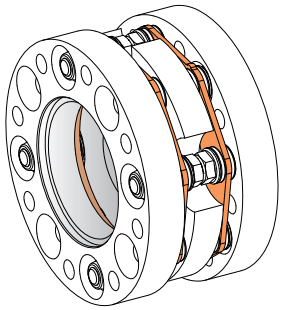
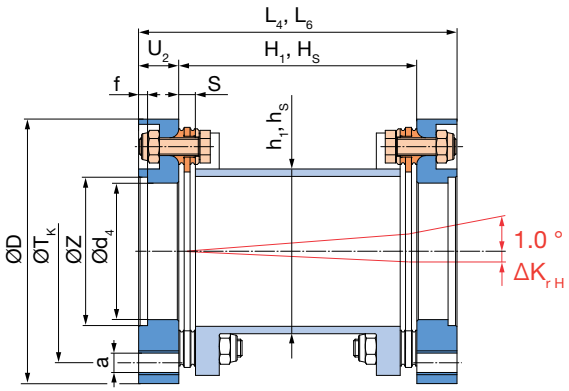


Fig. 69: Type 951.661

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



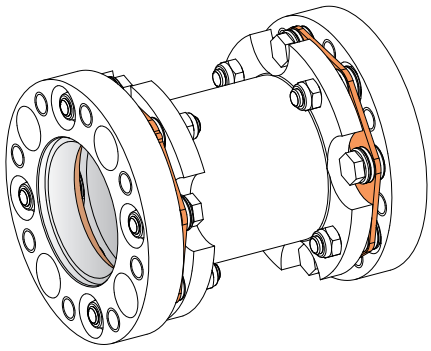


Fig. 70: Type 951.662 (sleeve 1: H_1, L_4), Type 951.663 (sleeve S: H_S, L_6)

Order Number

__ / 9 5 __ . 6 6 __ / __ / __					
Sizes 180 to 2200	Single-jointed coupling 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] for special sleeve S / CRD / CFRP	**Operating speed n_S** [rpm]

Example: 40 / 950.661

Integrated Torque Measurement Page 60
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

Backlash-free Servo Couplings Page 8
Heavy Load Couplings Page 54

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.

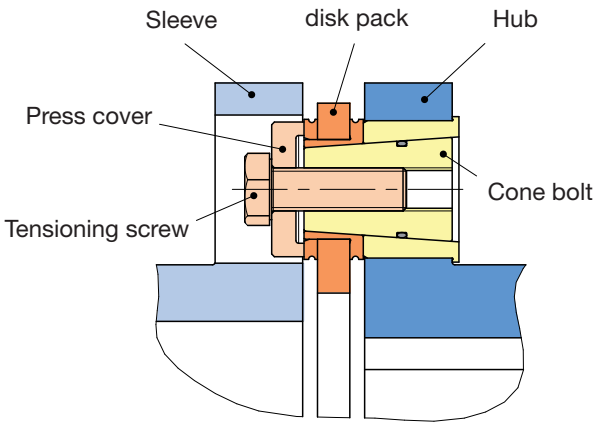
For this backlash-free, positive locking connection, far lower screw tightening torques are required in comparison to standard frictionally locking connections. This makes installation substantially easier.

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

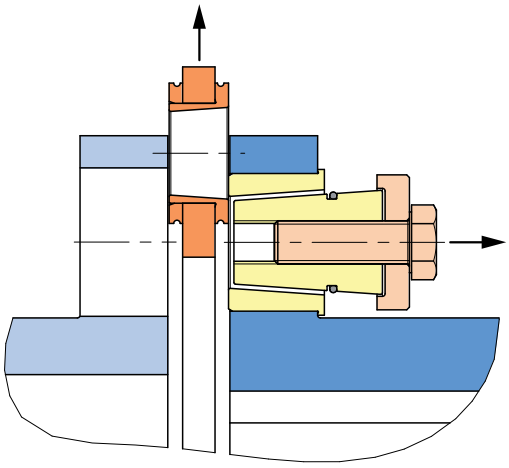
Easy installation and de-installation

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

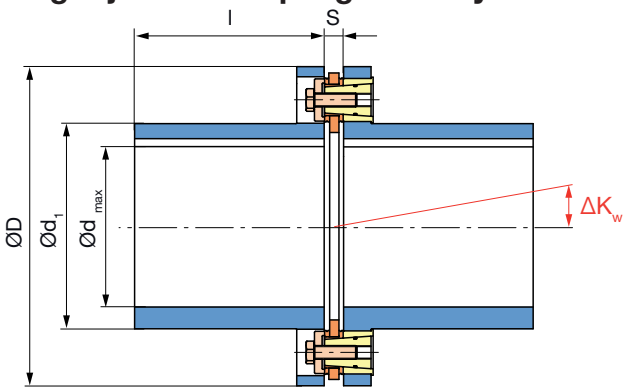
The ROBA®-DS disk pack couplings by *mayr*® power transmission are robust, reliable and temperature-resistant. They are therefore particularly suitable for use in extreme ambient conditions. In addition, the ROBA®-DS couplings are wear-free, meaning that they reduce the required maintenance effort to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



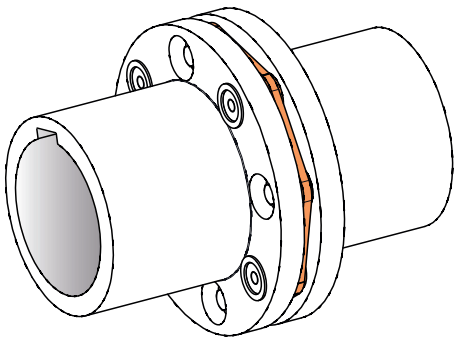
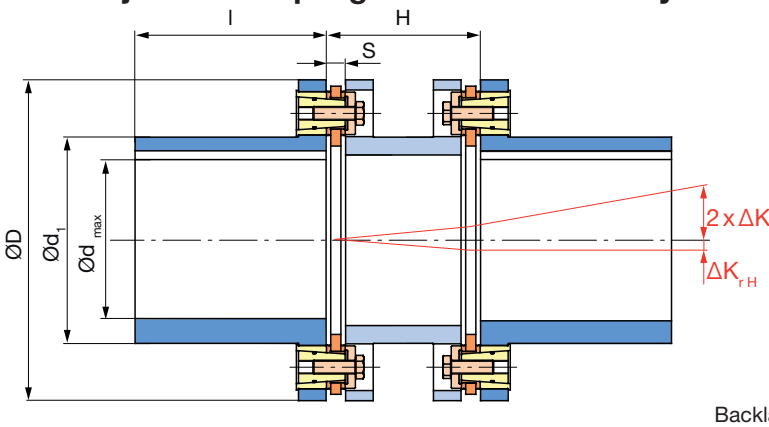


Fig. 71

Double-jointed coupling with sleeve and key hubs



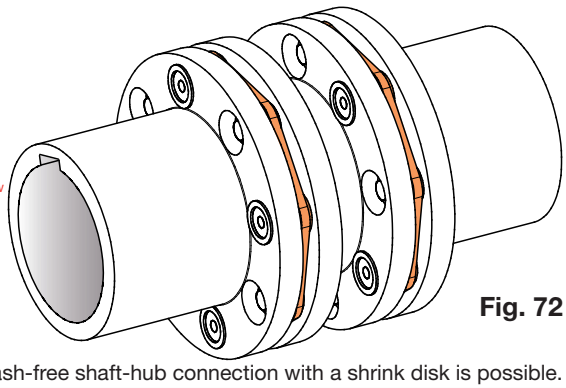


Fig. 72

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	$\Delta K_{r\,H}$	[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 ≤ 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

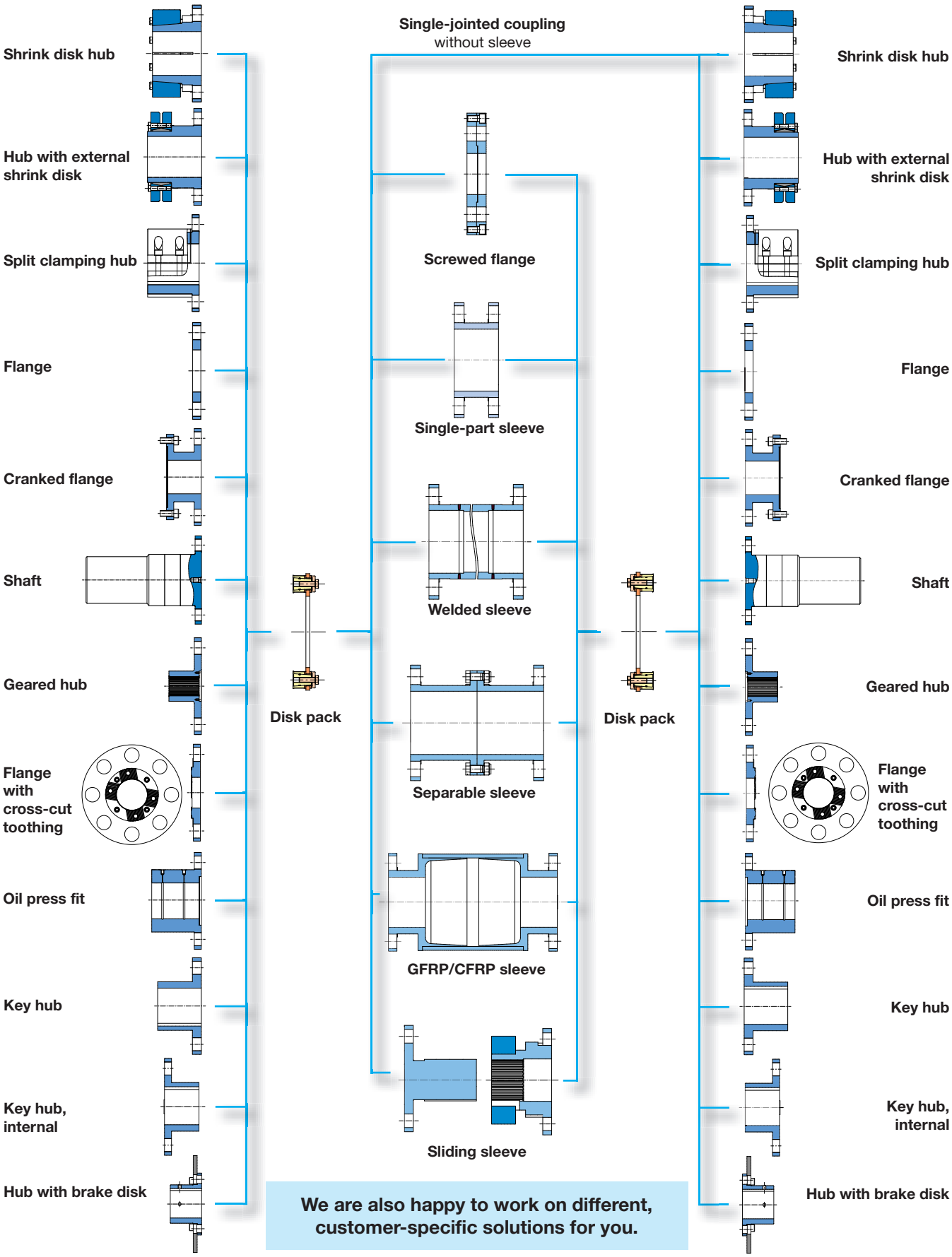
__ / 9 5 6 . _____

△ △

Sizes 2200 to 11000	The design of the hubs and sleeves is carried out according to the customers requirements. Please contact the manufacturer.

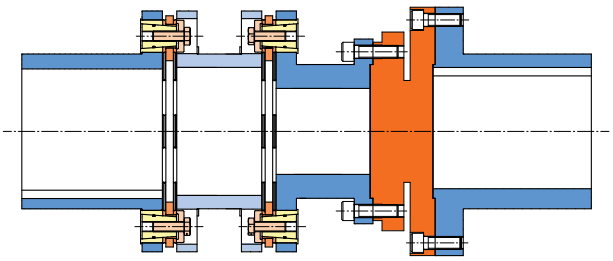
ROBA®-DS – Heavy Load Couplings

Configuration possibilities



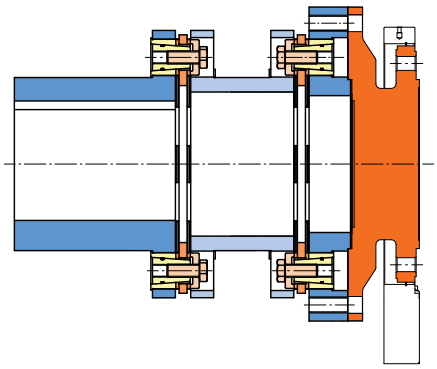
We are also happy to work on different, customer-specific solutions for you.

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



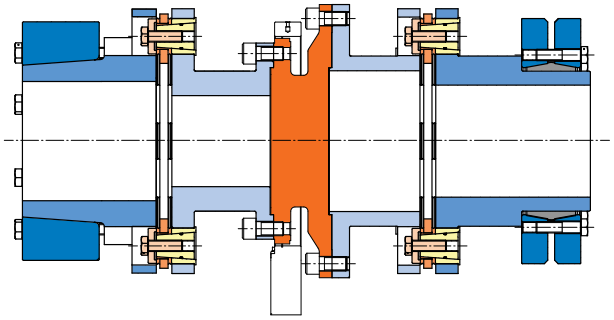
Classic design for applications with measurement flange. The screw connection on the measurement flange is accessible from the outside. The measurement flange is tied rigidly to the hub.

Fig. 73



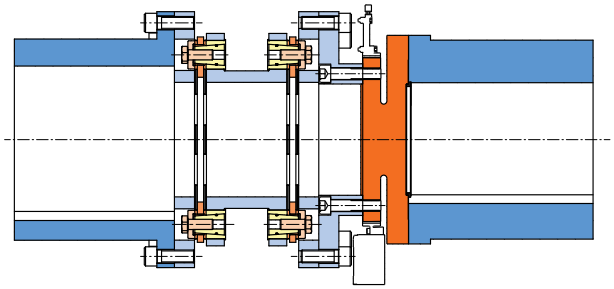
Direct installation of the measurement flange onto the input or output. This produces a very rigid connection.

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.

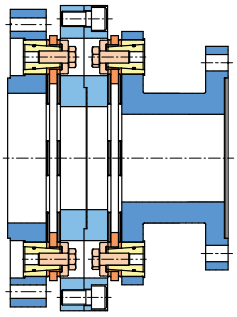
Fig. 75



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.

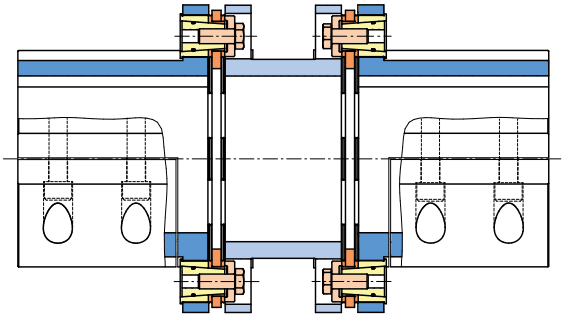
Fig. 76

ROBA®-DS – Heavy Load Couplings, Application Examples



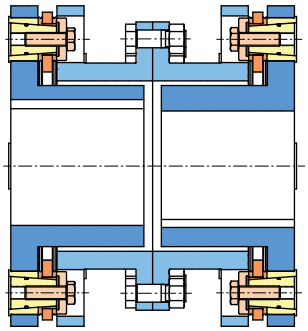
By using two flanges which are screwed together as an intermediate element, very short double-jointed designs can be realized. In contrast to the single-jointed coupling, this design can be used to compensate for radial misalignment.

Fig. 77



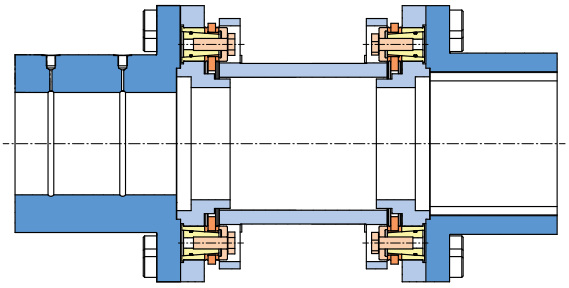
Split clamping hubs make it possible to assemble and disassemble the coupling radially without axial displacement of input and output. This is an advantage when the aggregates cannot be moved axially. Very fast assembly possible.

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 values [1]. 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

Fig. 81

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

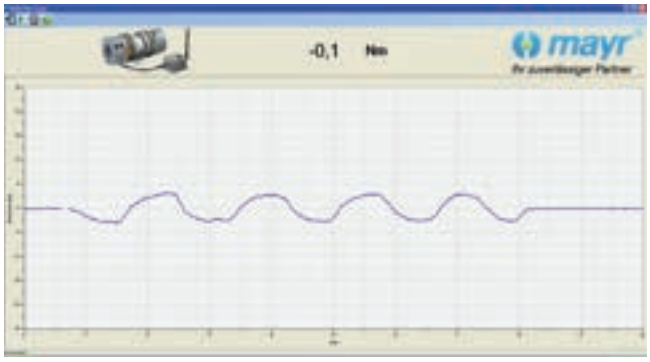


Fig. 82

Order Number

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

__ / 9 7 1 . __ __ 5 / __ / __

Sizes 16 to 160

Bore [2] Hub 1 ø (See Dimensions sheets pages 28 – 44)

Bore [2] 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

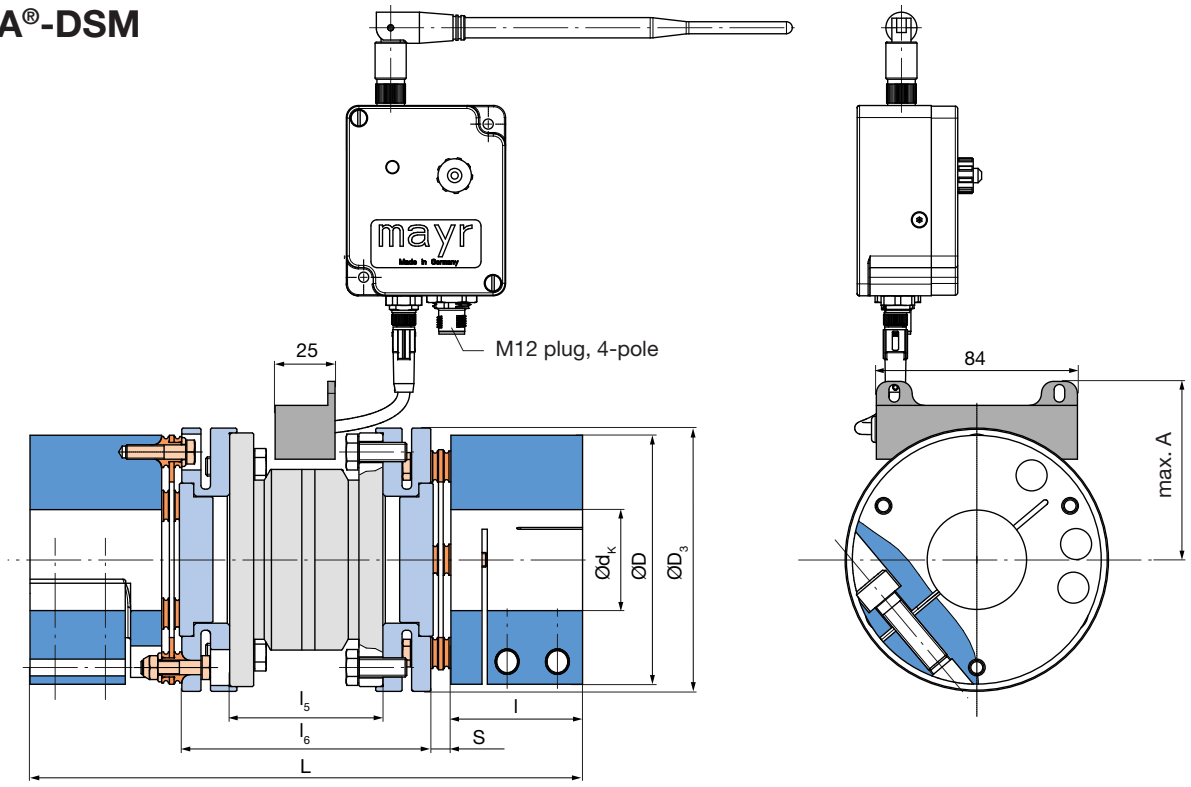


Fig. 83: Type 971.555 (for other mounting variants, see pages 28 – 44)

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	l [5)]	l_5	l_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 ≤ 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 (±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 ±10 % and
  Pin 3 = GND.
- ❑ The output signal is provided to
  Pin 4 = Ua 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.

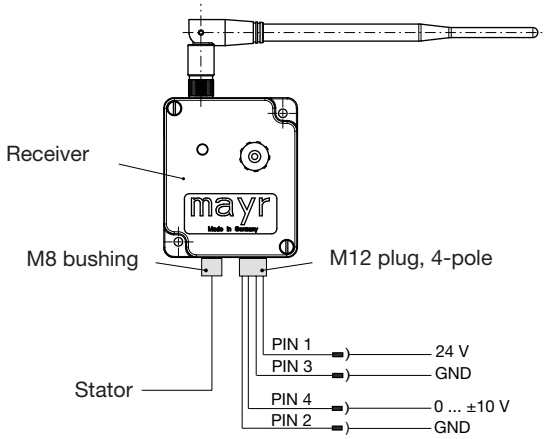


Fig. 84

Detail drawing

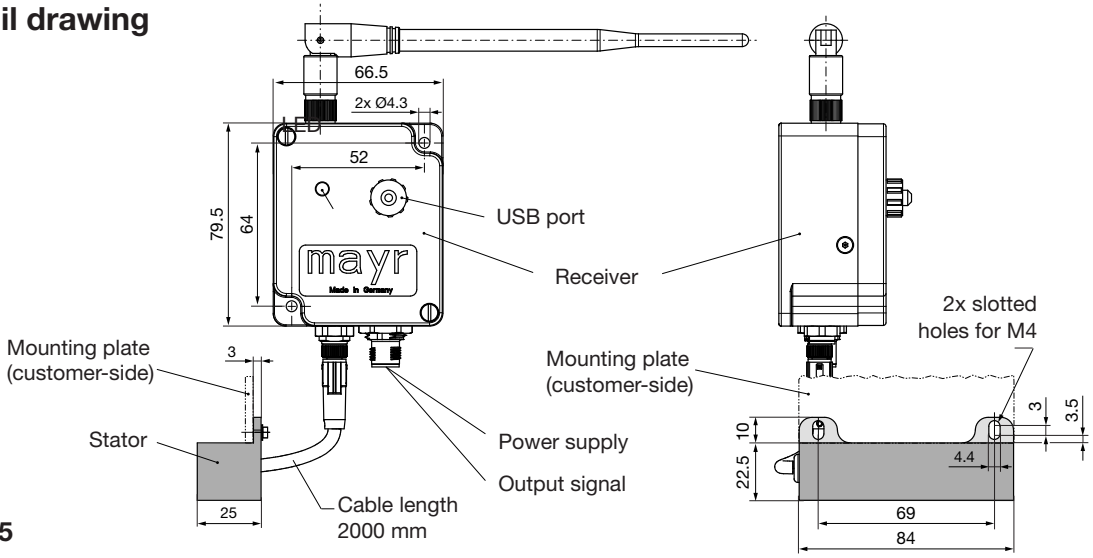


Fig. 85

ROBA®-DSM Configuration Possibilities/Standard Designs

Key hub
Type 971.0_5

Key hub, large
Type 971.1_5

Shrink disk hub, external clamping
Type 971.2_5

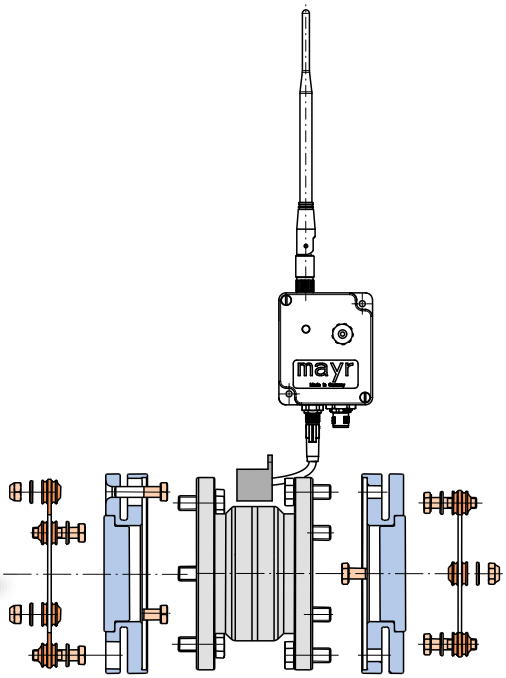
Clamping ring hub
Type 971.4_5

Clamping hub
Type 971.5_5

Flange
Type 971.6_5

Split clamping hub
Type 971.8_5

Shrink disk hub, large
Type 971.9_5



Key hub
Type 971._05

Key hub, large
Type 971._15

Shrink disk hub, external clamping
Type 971._25

Clamping ring hub
Type 971._45

Clamping hub
Type 971._55

Flange
Type 971._65

Split clamping hub
Type 971._85

Shrink disk hub, large
Type 971._95

EAS®-HSC torque limiter
available as an option

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

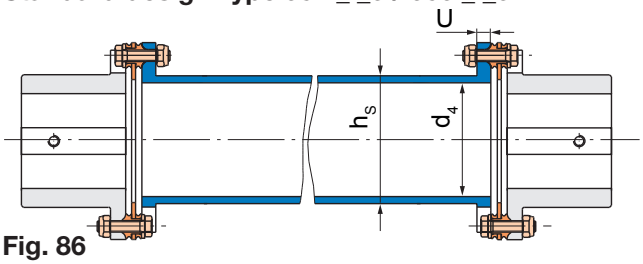


Fig. 86

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

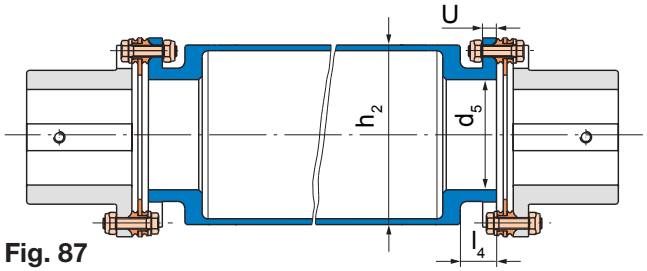


Fig. 87

CFRP sleeve Type 951._ _5 / 953._ _5

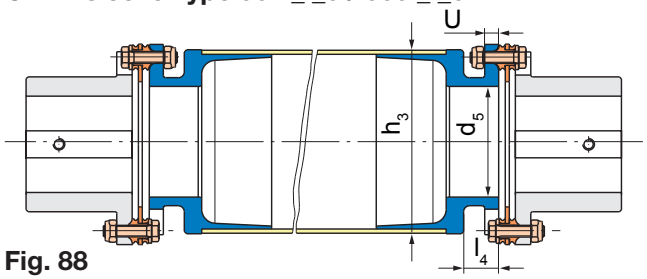


Fig. 88

Selection Aid: Variable Length Sleeves

Type	95_._ _3	95_._ _4	95_._ _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.

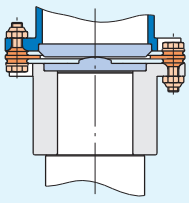


Fig. 89

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**

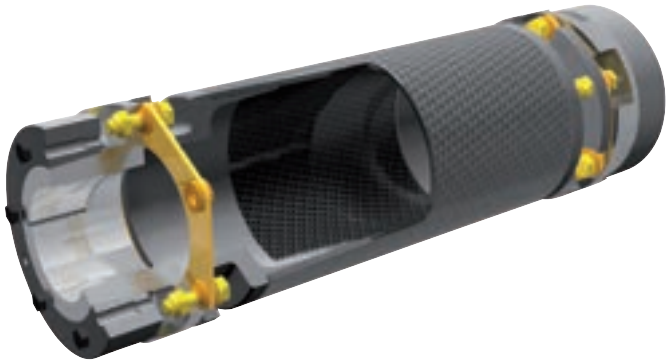


Fig. 90

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 inimises 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

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®-DS Options

Options and Variants on Intermediate Shafts

Intermediate shafts

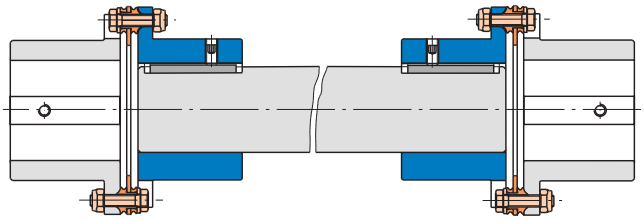


Fig. 91

Variable bridges over any shaft distances via adapted steel solid shafts, mounted between two standard hubs.

Please observe the critical bending speeds!

GFRP sleeve

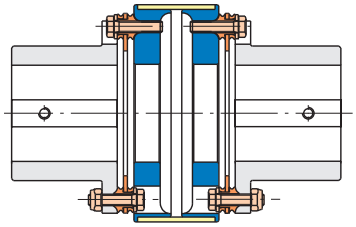


Fig. 92

Glass-fibre reinforced plastic sleeves for couplings in leakage current-isolated design.

Fulfils the highest demands on insulation quality (CTI 600).

Axially separable sleeve

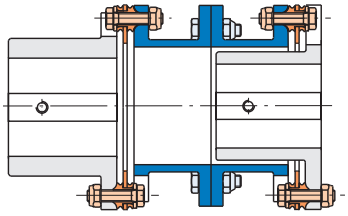


Fig. 93

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

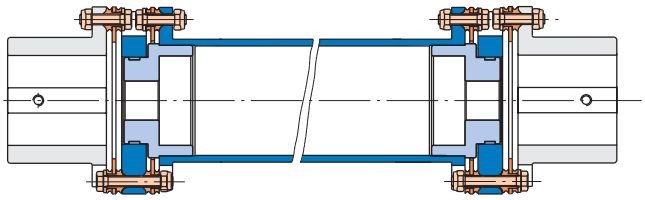


Fig. 94

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®

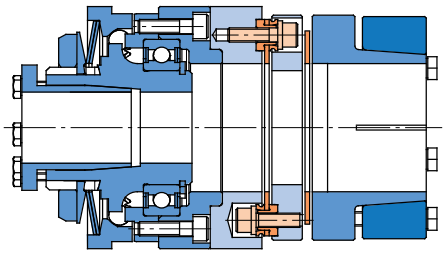


Fig. 95

- 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 – 3000 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

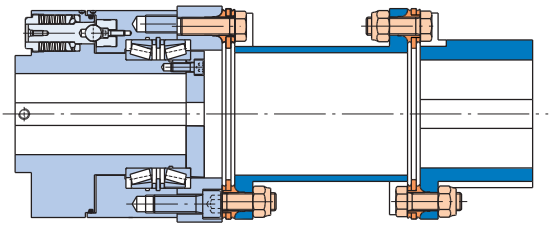


Fig. 96

- 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 – 110000 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

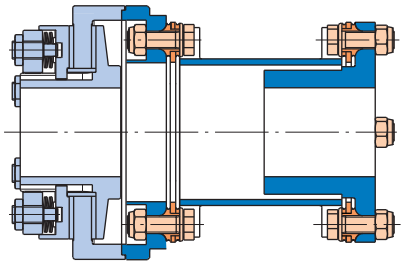


Fig. 97

- 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 – 110000 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

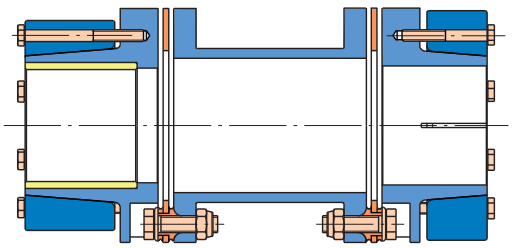


Fig. 98

- 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 – 110000 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.

◁ Backlash-free Servo Couplings Page 8
◁ Backlash-free All-steel Couplings Page 14
◁ Heavy Load Couplings Page 54
◁ Variable Length Sleeve S / Sleeve CFRP / Options Page 64

◁ Integrated Torque Measurement Page 60
Installation Examples Page 68 ▷
Dimensioning, Size Selection Page 70 ▷
Technical Explanations Page 71 ▷

ROBA®-DS Installation Examples

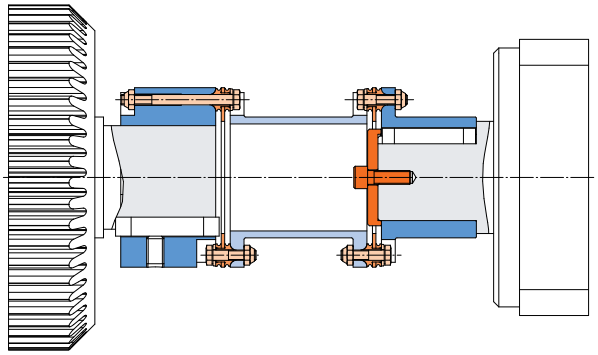


Fig. 99

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.

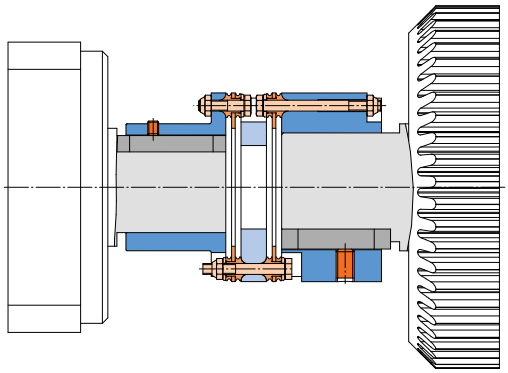


Fig. 100

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.

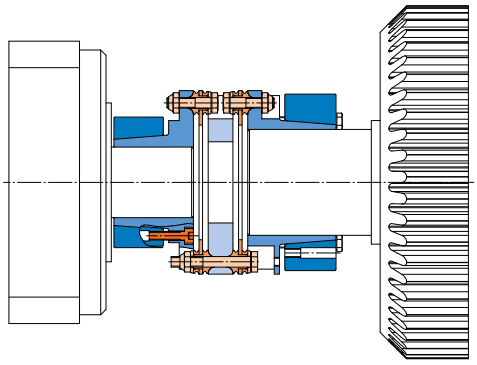


Fig. 101

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.

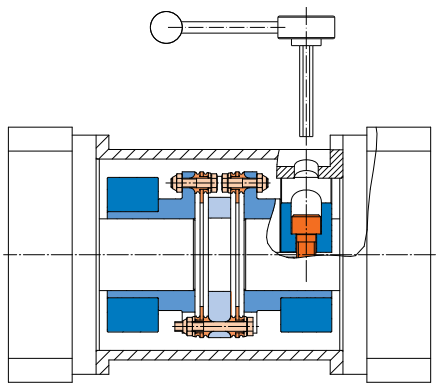


Fig. 102

Coupling installation in closed housing

By using clamping ring hubs, ROBA®-DS couplings an 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

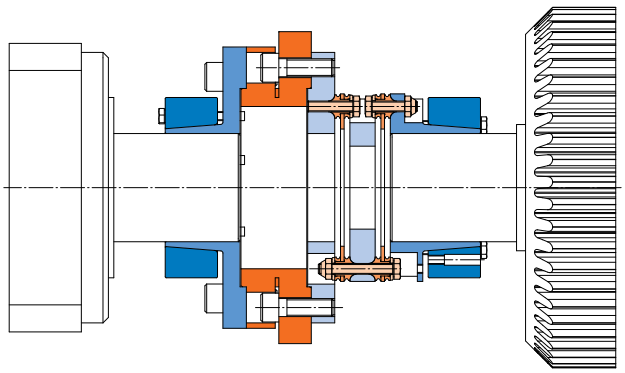


Fig. 103

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.

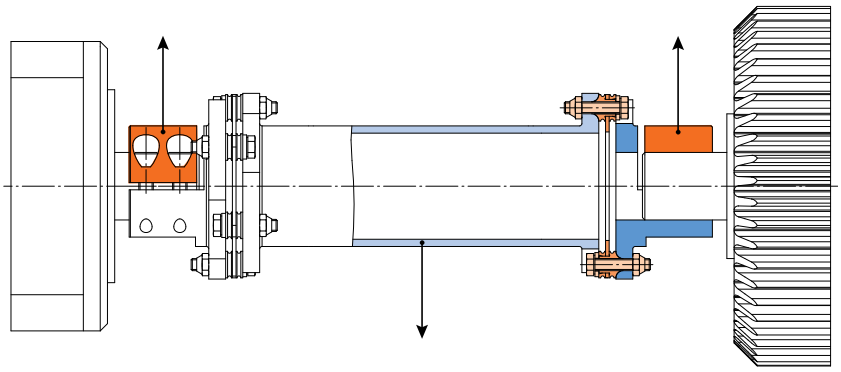


Fig. 104

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.

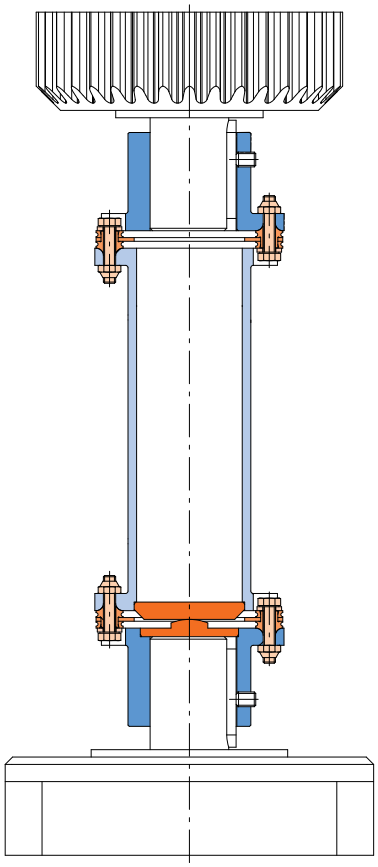


Fig. 105

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.

◁ Integrated Torque Measurement	Page 60
◁ Variable Length Sleeve S / Sleeve CFRP / Options	Page 64
◁ Safe Against Overload	Page 67
Dimensioning, Size Selection	Page 70 ▷
Technical Explanations	Page 71 ▷
◁ Backlash-free Servo Couplings	Page 8
◁ Backlash-free All-steel Couplings	Page 14

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 remained 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

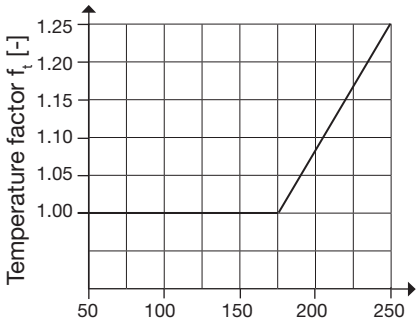


Fig. 106: Temperature factor f_t

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 kW
Nominal speed	n = 1450 rpm
Max. start-up torque	T_{Amax} = 2.5 x the motor nominal torque
Working machine:	**Piston pump**
Maximum ambient temperature 60 °C	

= > Required coupling nominal torque T_{KN}:

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

T_{KN} ≥ 162.7 Nm

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

= > Required coupling peak torque T_{KS}:

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

T_{Nenn} = 85.6 Nm

T_{Amax} = 2.5 × T_{Nenn} — *Max. start-up torque: T_{Amax} = 2.5 x the motor nominal torque*

T_{KS} ≥ T_{Amax} ≥ **214.1 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 / convertors	
- 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	II
- 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
Drive machine	**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: ΔK_a = 0.6 mm equals **40 %** of the permitted maximum value ΔK_a = 1.5 mm

= > **Angular misalignment** occurrence in the disk pack: ΔK_w = 0.3° equals **30 %** of the permitted maximum value ΔK_w = 1.0°

= > **Permitted radial misalignment**: ΔK_r = **30 %** of the permitted maximum value ΔK_r = 1.5 mm => ΔK_r = 0.45 mm

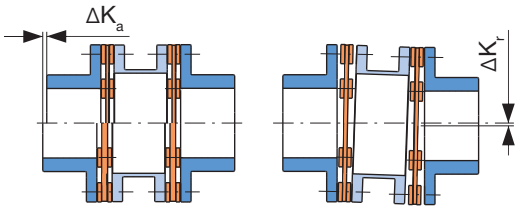


Fig. 107

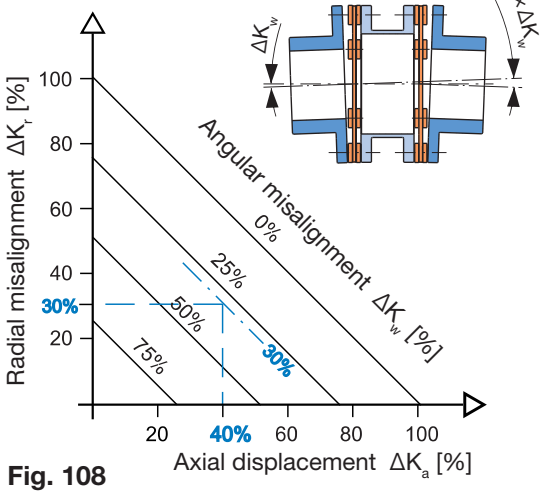


Fig. 108

Integrated Torque Measurement	Page 60
Variable Length Sleeve S / Sleeve CFRP / Options	Page 64
Safe Against Overload	Page 67
Installation Examples	Page 68
Dimensioning, Size Selection	Page 70
Backlash-free Servo Couplings	Page 8
Backlash-free All-steel Couplings	Page 14
Heavy Load Couplings	Page 54

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)

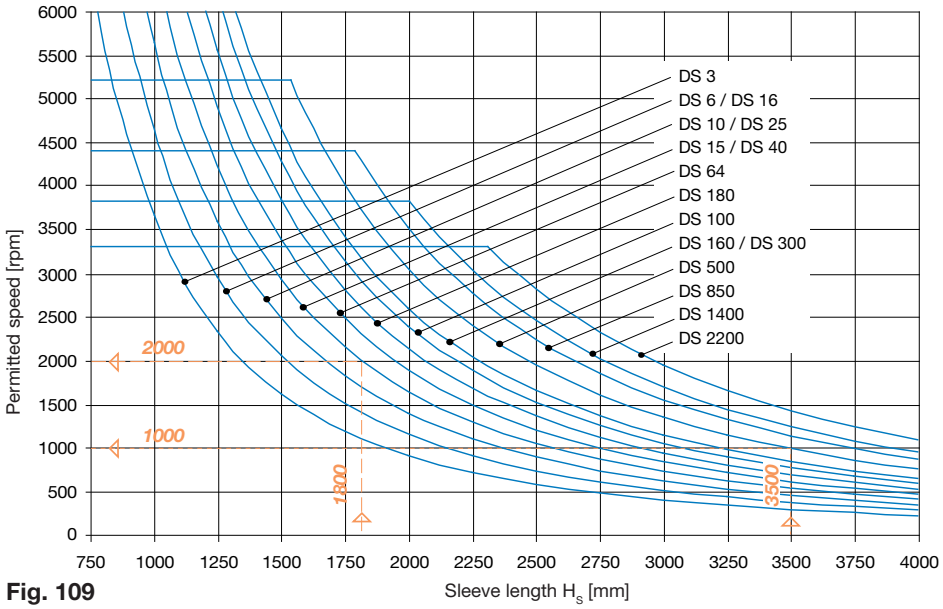


Fig. 109

Examples (Fig. 109)

- ROBA®-DS, Size 40:

Sleeve length: **H_s = 1800 mm**
= > permitted speed:
2000 rpm

- ROBA®-DS, Size 500:

Sleeve length: **H_s = 3500 mm**
= > permitted speed:
1000 rpm

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

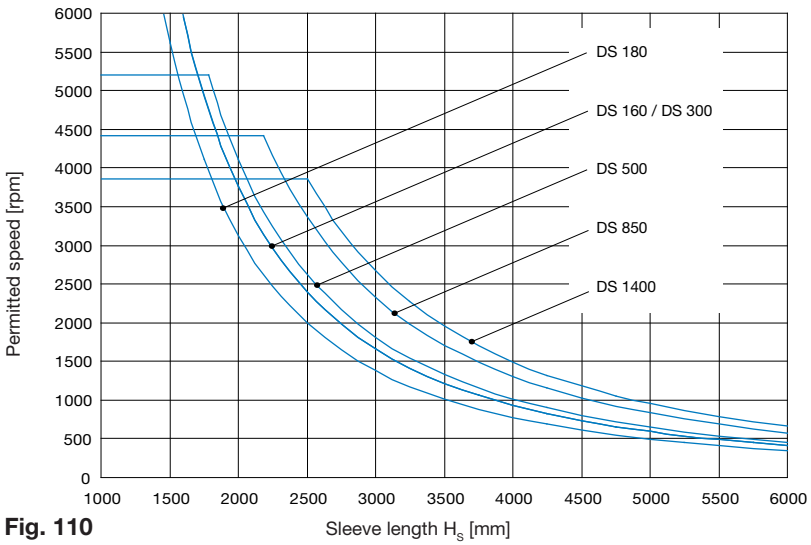


Fig. 110

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

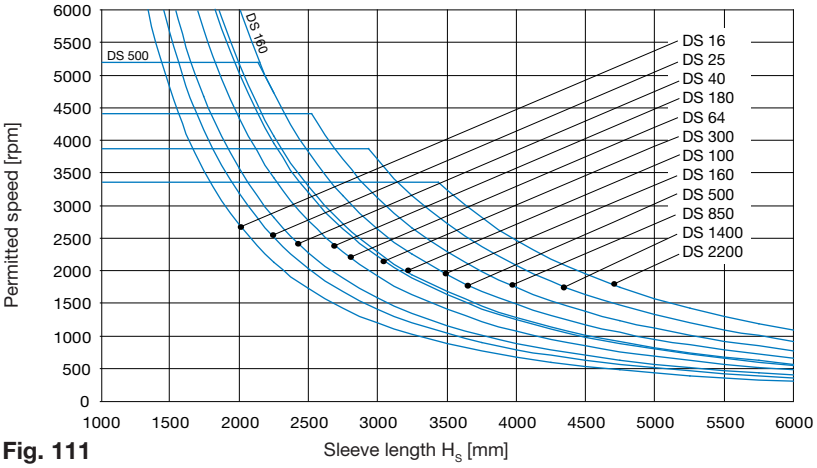


Fig. 111

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

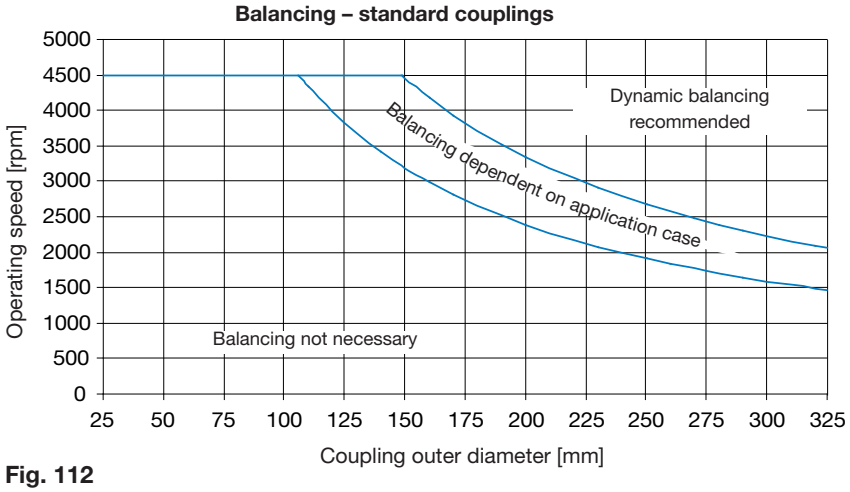


Fig. 112

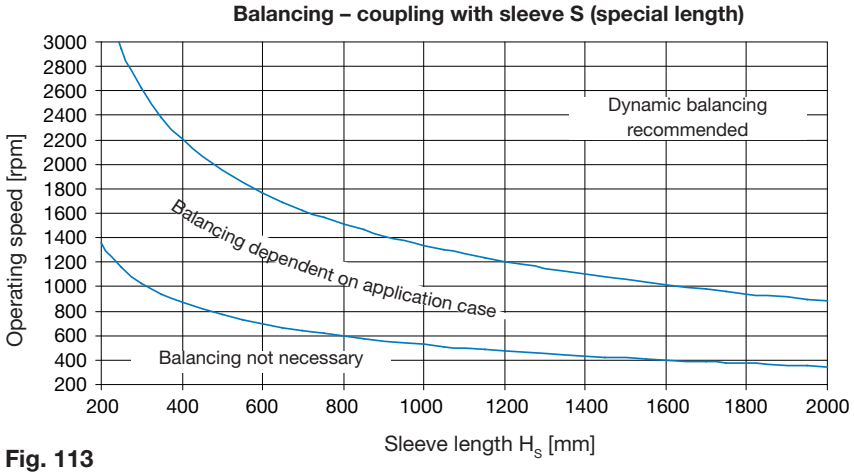


Fig. 113

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.

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.

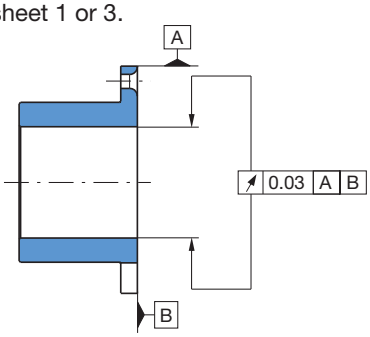


Fig. 114

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.

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.

Integrated Torque Measurement	Page 60
Variable Length Sleeve S / Sleeve CFRP / Options	Page 64
Safe Against Overload	Page 67
Installation Examples	Page 68
Dimensioning, Size Selection	Page 70
Backlash-free Servo Couplings	Page 8
Backlash-free All-steel Couplings	Page 14
Heavy Load Couplings	Page 54

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

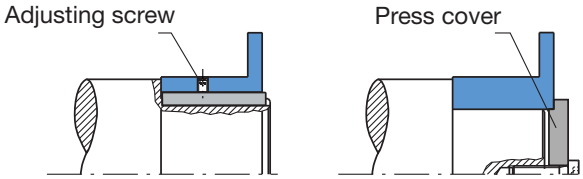


Fig. 115

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 (Ra = 0.8 µm).
- Shaft material: yield point at least 350 N/mm², e.g. St60, St70, C45, C60
- Recommanded 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).

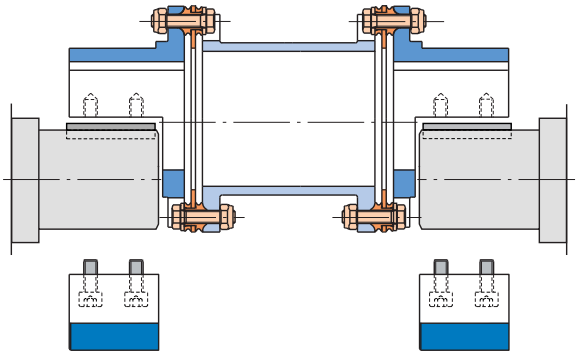


Fig. 116

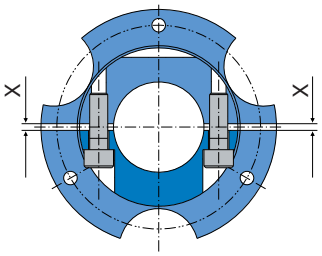


Fig. 117

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.

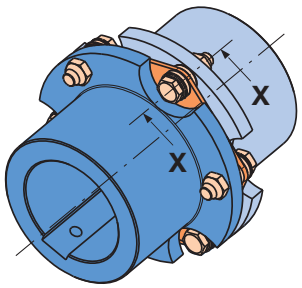


Fig. 118

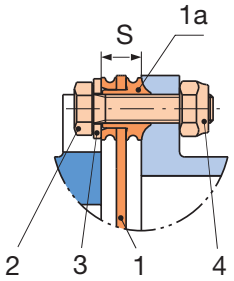


Fig. 119 Detail “X”

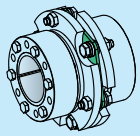
- Screw the disk packs (1, Fig. 119) over lightly-oiled hexagon head screws (2), washers (3) and hexagon nuts (4) alternately with the sleeve and the hubs.
- The generation of pre-tension force on the disk pack (1) generally takes place* via the hexagon nut (4). The disk pack (1) must not be distorted 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).

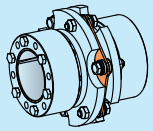
Transmittable Torques

Shrink disk hubs



Frictionally-locking transmittable torques **Shrink disk hubs**

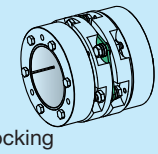
Suitable for H7 / g6



T_R [Nm]

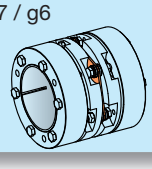
Bore	Size 16	25	40	64	100	160	180	300	500	850	1400	2200
Ø14	158	-	-	-	-	-	-	-	-	-	-	-
Ø16	186	-	-	-	-	-	-	-	-	-	-	-
Ø20	240	283	-	-	-	-	-	-	-	-	-	-
Ø22	269	320	-	-	-	-	-	-	-	-	-	-
Ø25	312	375	429	-	-	-	-	-	-	-	-	-
Ø28	-	428	495	-	-	-	-	-	-	-	-	-
Ø30	-	468	546	704	-	-	-	-	-	-	-	-
Ø32	-	509	600	769	-	-	-	-	-	-	-	-
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	29036
Ø110	-	-	-	-	-	-	-	-	-	18607	26442	32418
Ø120	-	-	-	-	-	-	-	-	-	20603	29279	35896
Ø130	**Attention!**	-	-	-	-	-	-	-	-	-	32195	39471
Ø140	Please observe permitted peak torques	-	-	-	-	-	-	-	-	-	35191	43144
Ø150	for selected coupling size and Type.	-	-	-	-	-	-	-	-	-	-	46920
Ø160		-	-	-	-	-	-	-	-	-	-	50798
Ø170	-	-	-	-	-	-	-	-	-	-	-	54783

Shrink disk hubs, large



Frictionally-locking transmittable torques **Shrink disk hubs, large**

Suitable for H7 / g6



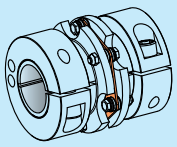
T_R [Nm]

Bore	Size 16	25	40	64	100	160
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	2074	-
Ø60	-	-	1454	1890	2366	-
Ø65	-	-	-	2065	2658	3246
Ø70	-	-	-	2204	2943	3618
Ø75	**Attention!**	-	-	-	3213	3991
Ø80	Please observe permitted peak torques			-	3458	4353
Ø 85	for selected coupling size and Type.			-	3666	4695
Ø 90					3828	5007
Ø100	-	-	-	-	-	5497

Clamping ring hubs

Frictionally-locking transmittable torques **Clamping ring hubs**

Suitable for H7 / h6



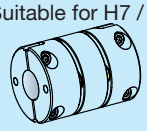
T_R [Nm]

Bore	Size 16	25	40	64	100	160
Ø20	126	-	-	-	-	-
Ø22	138	199	-	-	-	-
Ø25	168	226	327	-	-	-
Ø28	201	253	366	523	-	-
Ø30	216	290	420	561	-	-
Ø32	230	325	470	598	785	-
Ø35	251	355	515	700	859	-
Ø38	-	386	559	798	932	-
Ø40	-	406	588	840	1050	1256
Ø45	-	-	661	945	1240	1413
Ø50	-	-	-	1050	1378	1680
Ø55	-	-	-	1155	1516	1940
Ø60	**Attention!**	-	-	-	1654	2117
Ø65	Please observe permitted peak torques			-	1792	2293
Ø68	for selected coupling size and Type.			-	1874	2399
Ø70					-	2470
Ø80	-	-	-	-	-	2822

Split clamping hubs (Sizes 3 – 15)

Frictionally-locking transmittable torques **Split clamping hubs**

Suitable for H7 / g6



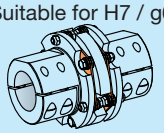
T_R [Nm]

Bore	Size 3	6	10	15
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	151
Ø28	-	88	169	169
Ø30	**Attention!**		181	181
Ø32	Please observe		193	193
Ø35	permitted peak		211	211
Ø38	torques for selected		-	230
Ø40	coupling size and Type.		-	242
Ø42			-	254

Split clamping hubs (Sizes 16 – 160)

Frictionally-locking transmittable torques **Split clamping hubs**

Suitable for H7 / g6



T_R [Nm]

Bore	Size 16	25	40	64	100	160
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	1218
Ø42			-	873	1076	1279
Ø45			-	935	1153	1370
Ø50			-	-	1281	1522
Ø55	**Attention!**			-	1409	1675
Ø60	Please observe			-	1537	1827
Ø65	permitted peak			-	-	1979
Ø68	torques for selected			-	-	2071
Ø70	coupling size and Type.				-	2131
Ø75					-	2284

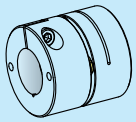
Transmittable Torques

Clamping hubs (Sizes 3 – 15)

Frictionally-locking transmittable torques
Clamping hubs

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.

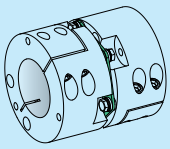
Suitable for H7 / k6



T_R [Nm]

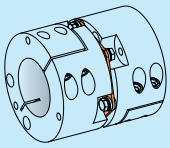
Bore	Size 3	6	10	15
Ø10	27	-	-	-
Ø12	32	-	-	-
Ø14	37	46	-	-
Ø15	39	51	-	-
Ø16	42	56	-	-
Ø18	47	65	-	-
Ø19	49	70	99	-
Ø20	52	74	105	-
Ø22	-	84	116	-
Ø24	-	92	128	-
Ø25	-	95	135	143
Ø28	-	107	151	163
Ø30	-	-	162	177
Ø32	**Attention!**	-	173	191
Ø35	-	-	189	211
Ø38	Please observe permitted peak torques		-	229
Ø40	for selected coupling size and Type.			241
Ø42	-	-	-	253

Clamping hubs (Sizes 16 – 160)



Frictionally-locking transmittable torques
Clamping hubs

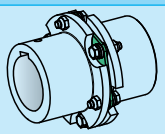
Suitable for H7 / h6



T_R [Nm]

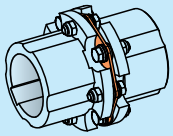
Bore	Size 16	25	40	64	100	160
Ø20	183	-	-	-	-	-
Ø22	202	354	-	-	-	-
Ø25	229	402	604	-	-	-
Ø28	257	450	677	821	-	-
Ø30	275	483	725	880	-	-
Ø32	293	515	773	938	1102	-
Ø35	321	563	846	1026	1205	-
Ø38	348	611	918	1114	1309	-
Ø40	367	643	967	1173	1378	1839
Ø42	385	676	1015	1232	1447	1931
Ø45	412	724	1087	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
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

Key hubs (Sizes 16 – 2200)



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}

T_{PN} [Nm]

Bore	Size 16	25	40	64	100	160	180	300	500	850	1400	2200
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	**Attention!**	-	-	-	-	-	-	-	-	-	22262	24737
Ø140	-	-	-	-	-	-	-	-	-	-	26883	29669
Ø150	Please observe permitted nominal torques and peak torques									-	-	31889
Ø160	for selected coupling size and Type.								-	-	-	40667
Ø170	-	-	-	-	-	-	-	-	-	-	-	43557

Key hubs (Sizes 2200 – 11000)

Transmittable torques
Key hubs Type 956._

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

The transmittable peak torque of the key hubs T_{PS} is valid for max. 10^5 load cycles.

[Nm]

Bore	Size 2200	3300	5000	7300	11000	2200	3300	5000	7300	11000
	transmittable nominal torque T_{PN}					transmittable peak torque T_{PS}				
Ø 110	17558	-	-	-	-	21758	-	-	-	-
Ø120	25337	-	-	-	-	31397	-	-	-	-
Ø130	29353	28523	-	-	-	36374	35346	-	-	-
Ø140	36455	36098	-	-	-	45175	44732	-	-	-
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	Please observe permitted			113853	110599
Ø 220	nominal torques for selected			120749	122742	peak torques for selected			149630	152100
Ø 240	coupling size and Type.			-	149904	coupling size and Type.			-	185759
Ø 250				-	157602				-	195298

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.

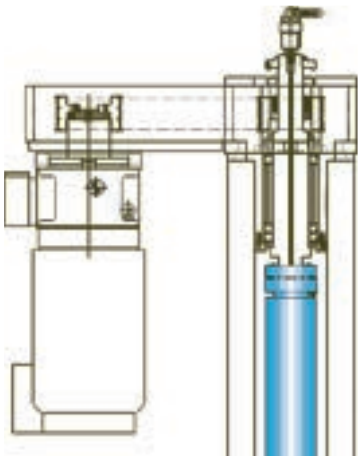
ROBA®-DS spindle couplings have proved their worth for years in manifold ways in large machining centres. They impress in particular with their high performance density, which allows the application of both high torques and high speeds. Complex constructions with multiple bearing-supported intermediate 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.

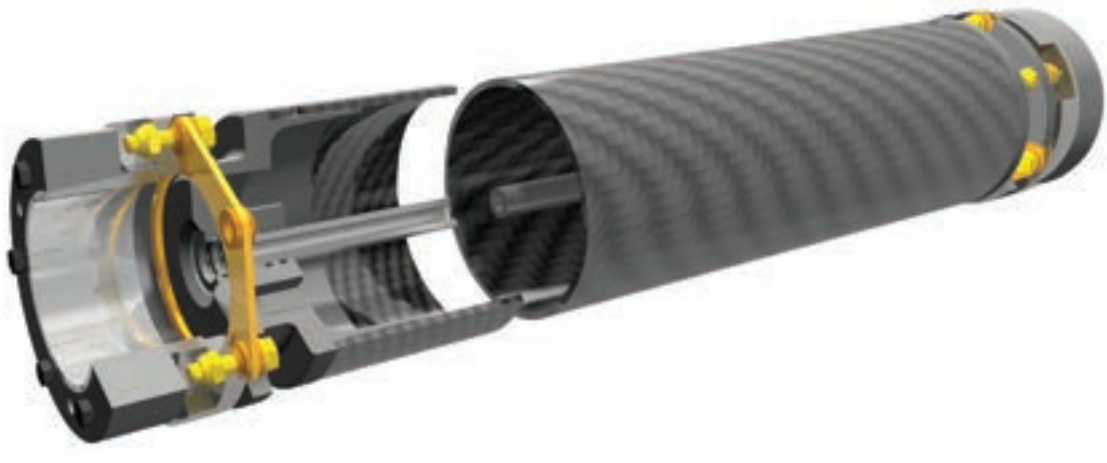
The integrated cooling lubricant feedthrough consists of an inner tube with multiple supports, and only needs to be plugged into the shaft-side adaptor on the upper and lower ends.

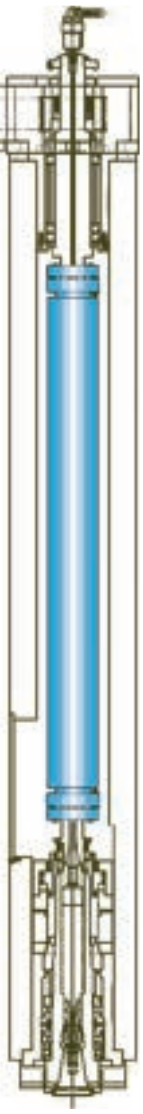
It is possible to pump cooling lubricant through the entire spindle into the tool using high pressure. It cools the blade directly, supports chip breaking and removes the chips. The machining times are shortened, the tool lifetime is extended.

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

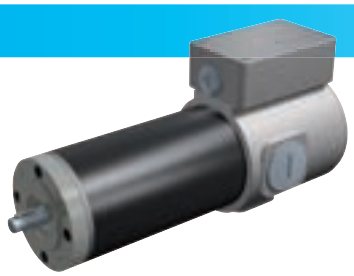
Shaft Couplings

- **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
- **ROBA®-duplostop®/ROBA®-twinstop®/ROBA-stop®-silenzio®**
  Doubly safe elevator brakes
- **ROBA®-diskstop®**
  Compact, very quiet disk brakes
- **ROBA®-topstop®**
  Brake systems for gravity loaded axes
- **ROBA®-linearstop**
  Backlash-free brake systems for linear motor axes
- **ROBA®-guidestop**
  Backlash-free holding brake for profiled rail guides
- **ROBATIC®/ROBA®-quick/ROBA®-takt**
  Electromagnetic clutches and brakes, clutch brake units

DC Drives



- **tendo®-PM**
  Permanent magnet-excited DC motors

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You can find the complete contact details for the representative responsible for your area in the Contact section at www.mayr.com

30/06/2021 GC