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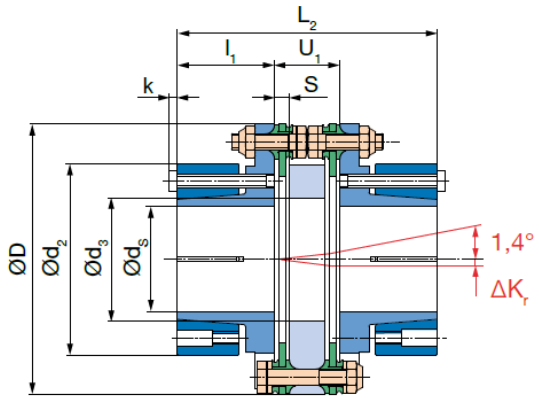
ROBA®-DS Sizes 16 to 160 – disk pack-HT

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



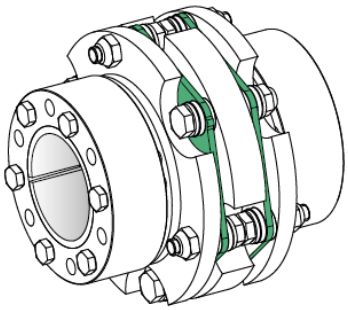


Fig. 20: Type 953.221

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]	permitted axial displacement [6] [7]		ΔK_a	[mm]	0,8	0,9	1,1	1,3	1,5	1,7
	permitted 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	320	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

Weight [kg]

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

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 60.
4) Not valid for coupling with sleeve S.
5) The permitted misalignments may not simultaneously reach their maximum values.
6) The values refer to couplings with 2 disk packs.
7) Only permitted as a static or virtually static value.
8) The values refer to 1 disk pack.
9) Mass moments of inertia and weights are valid for 1 disk pack.
10) Mass moments of inertia and weights are valid for maximum bore.

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

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