

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

## Single-jointed coupling with shrink disk hubs, external clamping

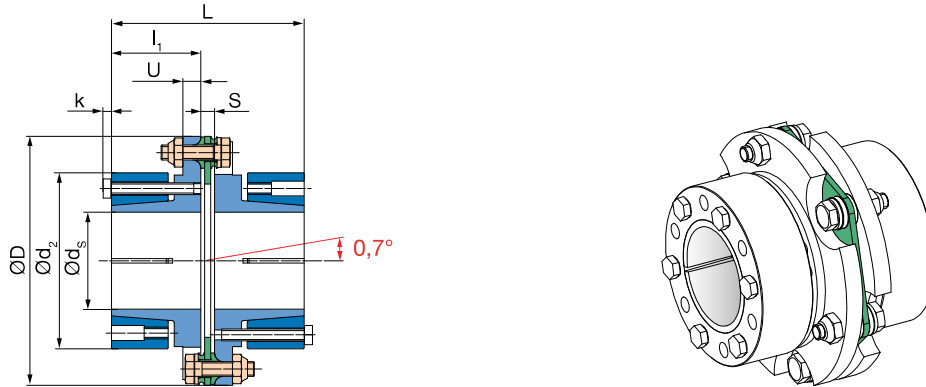


Fig. 19: Type 952.220

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

### Dimensions [mm]

Size	16	25	40	64	100	160
$d_2$	53	64	74	84	104	118
$d_3$	33	41	46	51	66	76
$H_1$	65	75,6	91,4	112,8	133,2	135,2
$H_s$	acc. customer specifications					
$h_1$	50	60	70	80	100	110
k	3,5	3,5	3,5	4	5,5	5,5
L	74,6	85	96,1	108	118,6	129,2
$L_2$	91,2	102	116,2	134	145,2	160,4
$L_4$	135	155,6	181,4	212,8	243,2	255,2
$L_6$	dependent on $H_s$					
$I_1$	35	40	45	50	55	60
S	4,6	5	6,1	8	8,6	9,2
U	7	7	8	10	10	12
$U_1$	21,2	22	26,2	34	35,2	40,4

### Mass Moments of Inertia J [10<sup>-3</sup> kgm<sup>2</sup>]

Size	16	25	40	64	100	160
Disk pack <sup>9)</sup>	0,08	0,13	0,30	0,81	1,36	3,43
Hub <sup>10)</sup>	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 <sup>9)</sup>	0,08	0,09	0,16	0,32	0,39	0,71
Hub <sup>10)</sup>	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

- Valid for changing load direction as well as for max. permitted shaft misalignment.
- Valid for unchanging load direction, max. load cycles  $\leq 10^5$ .
- Transmittable torques dependent on bore, see page 60.
- Not valid for coupling with sleeve S.
- The permitted misalignments may not simultaneously reach their maximum values.
- The values refer to couplings with 2 disk packs.
- Only permitted as a static or virtually static value.
- The values refer to 1 disk pack.
- Mass moments of inertia and weights are valid for 1 disk pack.
- Mass moments of inertia and weights are valid for maximum bore.

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

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