

Couplings and connecting shafts

Highly flexible connecting shafts

Features and processing

Highly flexible connecting shafts connect individual drive elements to form complete lifting systems with a central drive.

They dampen vibrations and shocks, compensate for axial, radial and angular displacements and can be used up to the critical speed without pillow blocks (see speed-length diagram).

The fitting of pillow blocks allows the shaft length L to be doubled or quadrupled. However, in a one-piece configuration, it is limited to a length of 6 m due to the standard lengths of tube normally available.

Four different versions are available for different speed ranges and requirements



A

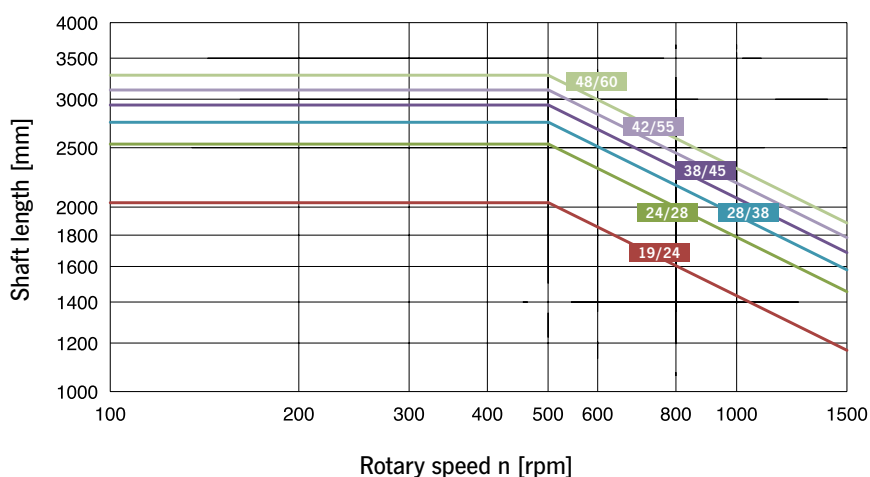
Technical information: ZR range

Size ZR	Nominal torque $T_N^{1)}$ [Nm]	Locking screw		Max. angle displacement [°]	Axial displacement [mm]	Mass moments of inertia		Suitable pillow blocks	Weight	
		Starting torque ²⁾ [Nm]	M1			for 2 hubs [kgm ²]	for 1 m tube length [kgm ²]		for 2 hubs [kg]	for 1 m tube length [kg]
19/24	17	14	M6	0,9	1,2	$0,8278 \times 10^{-4}$	$0,932 \times 10^{-4}$	SN 505	0,3	1,3
24/28	30	14	M6	0,9	1,4	$8,830 \times 10^{-4}$	$4,414 \times 10^{-4}$	SN 507	1,5	2
28/38	70	35	M8	0,9	1,5	$20,05 \times 10^{-4}$	$7,431 \times 10^{-4}$	SN 508	2,7	3,1
38/45	130	35	M10	1,0	1,8	$20,15 \times 10^{-4}$	$11,59 \times 10^{-4}$	SN 509	3	3,6
42/55	150	69	M10	1,0	2	$47,86 \times 10^{-4}$	$17,07 \times 10^{-4}$	SN 510	5	4,1
48/60	245	120	M12	1,1	2,1	$74,68 \times 10^{-4}$	$24,06 \times 10^{-4}$	SN 511	6,5	4,6

¹⁾ These nominal torque settings are suitable for operation with light impacts. If impacts are heavy, an impact factor S of 1.4 must be taken into account.

²⁾ Values valid for St hubs

Speed-length diagram: ZR range



Rotary speed range:

- $n = 1500$ rpm

Operating temperature:

- -40° bis $+90^\circ$ °C
(up to 120° °C for brief periods)

Dimensioning:

The nominal torque (T_N) of the ZR shaft – with **impact factor S** ¹⁾ taken into account – must be at least equal to the system torque (T_{ANL}) to be transferred.

$$T_N \geq T_{ANL} \times S$$

B

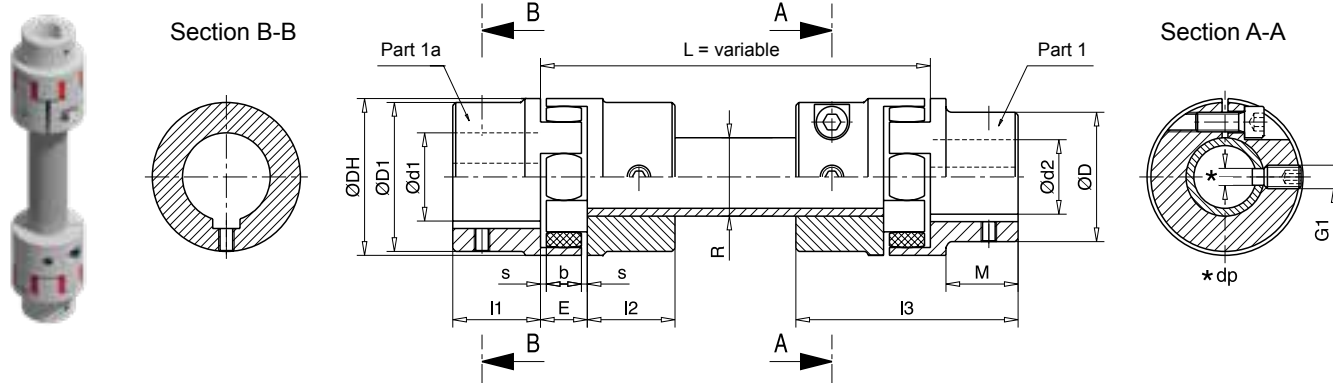
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D

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Connecting shafts

Technical drawings: ZR range



Dimensions: ZR range

Size ZR	Ready-drilled holes ØdH7 ¹⁾				ØDH	ØD	ØD1	ØdH	l1 l2	M	s	b	E	l3	ØR	G1	dp ¹⁾
	Part 1		Part 1a														
	min Ød2	max Ød2	min Ød1	max Ød1													
19/24	6	19	19	24	40	32	41	18	25	20	2	12	16	66	20x3	M6	4
24/28	8	24	24	28	55	40	55	27	30	24	2	14	18	78	30x4	M8	5,5
28/38	10	28	28	38	65	48	65	30	35	28	2,5	15	20	90	35x4	M10	7
38/45	12	38	38	45	80	66	77	38	45	37	3	18	24	114	40x4	M12	8,5
42/55	28	42	42	55	95	75	94	46	50	40	3	20	26	126	45x4	M12	8,5
48/60	28	48	48	60	105	85	102	51	56	45	3,5	21	28	140	50x4	M16	12

¹⁾ Feather key groove conforming to DIN 6885/1



Assembly area Pfaff-silberblau: Special design screw jack SHE 200.1 with 8 m long screw and protection boot. Design for a static load of 400 tons.

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Connecting shafts

Technical information: G / GX / GZ range

	G range	GX range	GZ range
Rotary speed range	n = 750 rpm	n = 1500 rpm	n = 3000 rpm
Operating temperature	-40 to +90 °C (up to 120 °C for brief periods)	max. 150 °C ²⁾	max. 80 °C



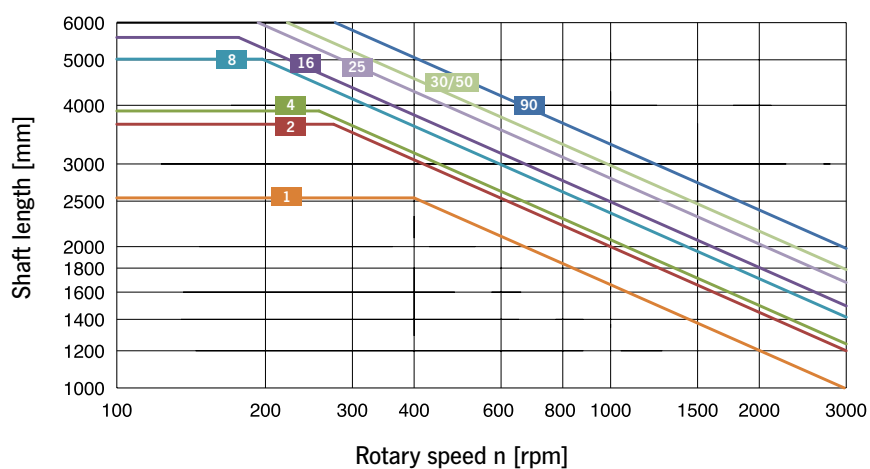
Dimensions: G / GX / GZ range

Size	Nominal torque T_N ^{1), 2)} range			Max. angle displacement		Mass moments of inertia [kgm ²]	Suitable pillow blocks	Weight	
	G [Nm]	GX [Nm]	GZ [Nm]	G+GZ [°]	GX [°]			for 2 hubs [kg]	for 1 m tube length [kg]
1	10	10	10	3	1	0,00021	SN 507	1,0	1,1
2	20	30	20	3	1	0,00052	SN 509	2,2	1,4
4	40	60	40	3	1	0,00076	SN 510	3,4	1,6
8	80	120	80	3	1	0,00185	SN 513	7,3	2,2
16	160	240	160	3	1	0,00297	SN 516	12,4	2,5
25	250	370	250	3	1	0,00538	SN 519	19,1	3,1
30	400	550	400	3	1	0,0116	SN 522	31,1	4,8
50	600	-	600	3	1	0,0116	SN 522	32,1	4,8
90	900	1500	900	3	1	0,0283	SN 528	58,7	7,6

¹⁾ These nominal torque settings are suitable for operation with light impacts. If impacts are heavy, an impact factor S of 1.4 must be taken into account.

²⁾ From +80 °C onwards, the nominal torque is considerably reduced.

Speed-length diagram: G / GX / GZ range



Dimensioning:

The nominal torque (T_N) of the G / GX / GZ shaft – with **impact factor S**¹⁾ taken into account – must be at least equal to the system torque (T_{ANL}) to be transferred.

$$T_N \geq T_{ANL} \times S$$

A



B

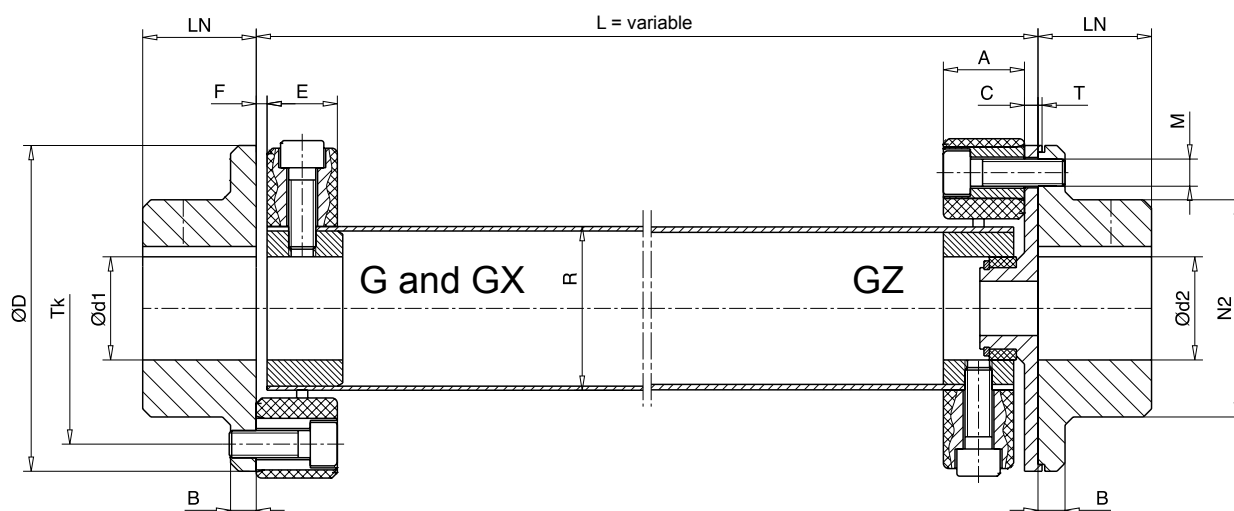
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Technical drawings: G / GX / GZ range



Dimensions: G / GX / GZ range

Size	A	B	C	ØD	Ready-drilled holes ØdH7 ¹⁾ max. Ød1/d2	E	F	L _N	ØN ₂	ØR	T	T _k /M
1	24	7	5	56	25	22	2	24	36	30	1,5	Ø44/2xM6
2	24	8	5	85	38	20	4	28	55	40	1,5	Ø68/2xM8
4	28	8	5	100	45	24	4	30	65	45	1,5	Ø80/3xM8
8	32	10	5	120	55	28	4	42	80	60	1,5	Ø100/3xM10
16	42	12	5	150	70	36	6	50	100	70	1,5	Ø125/3xM12
25	46	14	5	170	85	40	6	55	115	85	1,5	Ø140/3xM14
30	58	16	5	200	100	50	8	66	140	100	1,5	Ø165/3xM16
50	58	16	5	200	100	50	8	66	140	100	1,5	Ø165/3xM16
90	70	19	5	260	110	62	8	80	160	125	2	Ø215/3xM20

¹⁾ Feather key groove conforming to DIN 6885/1

Couplings and connecting shafts

Ordering details

Ordering details couplings

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1 2 3 4 5

No.	Description
1	Range R MKR
2	Size
3	Torque (only for MKR ranges)
4	Hub drill-hole d1
5	Hub drill-hole d2

Ordering details high flexible connecting shafts

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1 2 3 4 5

No.	Description
1	Range ZR G GX GZ
2	Size
3	Length
4	Hub drill-hole d1
5	Hub drill-hole d2

