POWER TRANSMISSION

RIGID COUPLINGS

MINI

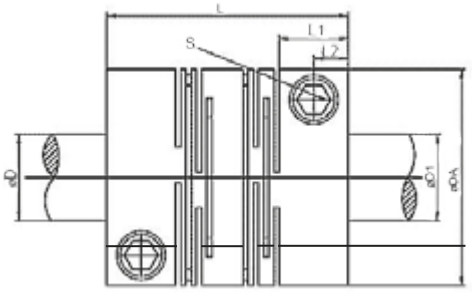
MINI

FEATURES

The Mini coupling is a backlash-free, torsion proof, bending elastic and, above all, maintenance-free steel coupling made in one piece. It is ideally suited for drive systems that control and manage highly dynamical processes in confined spaces. This situation can be found in the whole machine construction sector. Transfer lines, robots, medical technology and model making also count among the fields of application.The slot structure design results in positive cushioning effects and accounts for the desired vibrancy stability, but these are only some of the advantages of the Mini coupling. Another of its strengths is a very good axial, radial and angular flexibility when adjusting misalignments with low reset forces. The Mini coupling is easy to install – there are mounting possibilities on the shafts via clamping hubs or removable clamping hubs. Furthermore, a variety of hub designs is available, taking into account all sorts of applications and mounting situations.

The Mini coupling is made of high quality aluminium (Al), stainless steel (VA) or machining steel (St).
It is unreservedly suitable for operations at temperatures ranging from –55 °C to +150 °C. A deployment at higher temperatures is possible after clearance with our technical department.

TYPE MWK

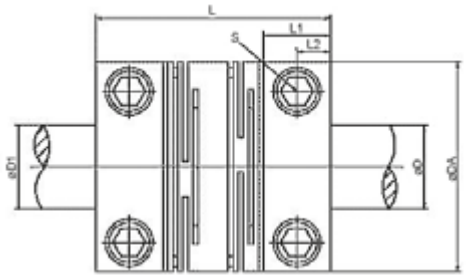


Dimensions in mm							
Size	L	L1	L2	D	D1	DA	S DIN 912
16	23	7	3.5	3-6	3-6	16	M2.5 x 6
18	16.6	5.5	2.75	3-6	3-6	18	M2.5 x 8
20	28	8	4	3-8	3-8	20	M2.5 x 8
22	20	5.5	2.75	3-10	3-10	22	M2.5 x 8
25	28	8	4	6-12	6-12	25	M3 x 10
30	40	11	5.5	6-14	6-14	30	M4 x 10
40	48	11	5.5	6-19	6-19	40	M5 x 14
50	65	19	9.5	10-26	10-26	50	M6 x 16
60	80	25	12.5	10-30	10-30	60	M8 x 18
70	95	25	12.5	15-35	15-35	70	M8 x 25
80	100	25	12.5	20-40	20-40	80	M8 x 25

Technical data													
Size	Torque T_{KN} Nm			Rotational speed rpm	Misalignment[2]			Torsional stiffness 10^3 Nm/Rad			Weight[3] g		
	Al[1]	VA[1]	St[1]		angle °	axial mm	radial mm	Al[1]	VA[1]	St[1]	Al[1]	VA[1]	St[1]
16	3	–	–	10000	1	±0.3	±0.2	0.3	–	–	10	28	–
18	3	6	–	10000	1	±0.3	±0.2	0.4	0.7	–	5	18	–
20	5	12	–	9500	1	±0.3	±0.2	0.5	0.8	–	15	45	–
22	3	6	–	9500	1	±0.3	±0.2	0.6	0.9	–	12	40	–
25	7	16	–	8000	1	±0.3	±0.2	3.5	5	–	25	75	–
30	10	25	–	6000	1	±0.4	±0.3	5	8.5	–	50	160	–
40	19	36	–	5000	1	±0.4	±0.3	11.5	20	–	115	340	–
50	35	73	–	5000	1	±0.5	±0.3	35	55	–	250	650	–
60	70	–	125	4500	1	±0.5	±0.3	70	–	95	500	–	1350
70	130	–	170	4000	1	±0.5	±0.3	95	–	120	750	–	1890
80	180	–	220	3500	1	±0.5	±0.3	100	–	135	1040	–	3080

1) to 3) for explanation see page 4

TYPE MWH



Dimensions in mm							
Size	L	L1	L2	D	D1	DA	S DIN 912
30	40	11	5.5	6-14	6-14	30	M4 x 10
40	48	11	5.5	6-19	6-19	40	M5 x 14
50	65	19	9.5	10-26	10-26	50	M6 x 16
60	80	25	12.5	10-30	10-30	60	M8 x 18
70	95	25	12.5	15-35	15-35	70	M8 x 25
80	100	25	12.5	20-40	20-40	80	M8 x 25

Technical data													
Size	Torque T_{KN} Nm			Rot. speed	Misalignment[2]			Torsional stiffness 10^3 Nm/Rad			Weight[3] g		
	Al[1]	VA[1]	St[1]	rpm	angle °	axial mm	radial mm	Al[1]	VA[1]	St[1]	Al[1]	VA[1]	St[1]
30	10	25	–	6000	1	±0.4	±0.3	5	8.5	–	50	160	–
40	19	36	–	5000	1	±0.4	±0.3	11.5	20	–	115	340	–
50	35	73	–	5000	1	±0.5	±0.3	35	55	–	250	650	–
60	70	–	125	4500	1	±0.5	±0.3	70	–	95	500	–	1350
70	130	–	170	4000	1	±0.5	±0.3	95	–	120	750	–	1890
80	180	–	220	3500	1	±0.5	±0.3	100	–	135	1040	–	3080

1) Material: aluminium alloy (Al) or stainless steel (VA), as of size 60: machining steel (St)
2) The maximum permissible parameters are as stated above and they may only appear individually.
If multiple misalignments occur, a reduction has to be made.
3) Concerns unbored couplings

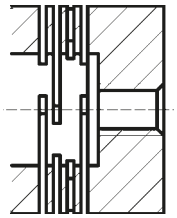
> Bore with groove according to DIN 6885 possible on demand!

SPECIAL TYPES

> This coupling system is available with many various hub versions, since it is used in various coupling applications with very different installation circumstances.

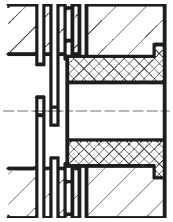
The difference among the versions is only the form.
The characteristics of couplings, like torque transmission capacity, compensation of the shaft misalignment and suchlike, are of course guaranteed.

Design for threaded shaft Type MWM



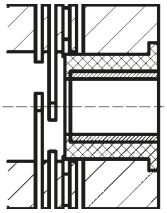
- Control systems
- Positioning systems
- Rotating tables, agitator systems
- Medical equipment

Design with hollow shaft Type MWT



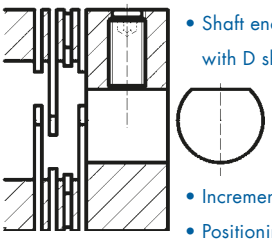
- Shaft encoder
- Gearings with hollow shafts

Design with hollow shaft (isolating) Type MWTI



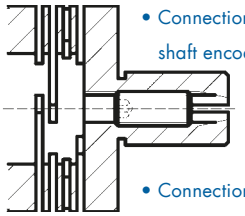
- Shaft encoder
- Solar power stations

Design for flatted shaft (D shafts) Type MWD



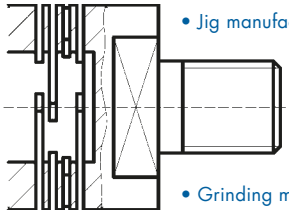
- Shaft encoder and engines with D shaft
- Incremental transmitter
- Positioning systems

Design with spreader shaft Type MWS



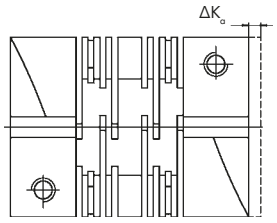
- Connections with planet gear, shaft encoder
- Connection with hollow shafts
- Tunnel mounting

Design with threaded end Type MWZ

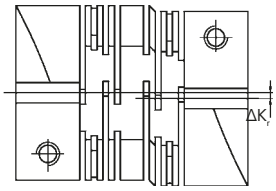


- Jig manufacturing
- Grinding machines
- Conveyors systems
- Small, grinding and boring machines

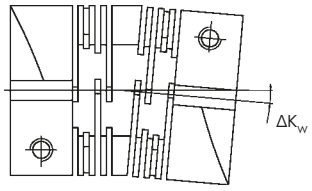
ALLOWABLE MISALIGNMENTS



Axial misalignment



Radial misalignment



Angular misalignment

> Reduction of the allowable values of misalignment of the shafts when the combination of misalignments occurs or at other rotational speeds: $\frac{\Delta W_r}{\Delta K_r} + \frac{\Delta W_a}{\Delta K_a} + \frac{\Delta W_w}{\Delta K_w} \leqq 1$

$\Delta K_{r/a/w}$ = allowable radial, axial or angular misalignment of the shafts resp. of the coupling halves

$\Delta W_{r/a/w}$ = measured radial, axial or angular misalignment of the shafts resp. of the coupling halves

SELECTION

> The torque of the machine T_{AN} is determined by:

$$T_{AN}\ [Nm] = 9550 \times \frac{P_{Motor}\ [kW]}{n\ [rpm]}$$

> This torque T_{AN} multiplied by a safety factor S depending on the application gives the required nominal coupling torque T_{KN}.

Result: $T_{KN} \geqq S \times T_{AN}$

Operating factor S	
Uniform load	**1**
Irregular load	**1.5**
Heavy shock	**2**

> In case that bigger shock or changing loads occur we recommend a revision according to DIN 740.

An adequate calculation program is available. For such a revision the following information is required:

1. Kind of the driving machine
2. Kind of the driven machine
3. Power of driving and driven machines
4. Rotational speed of operation
5. Shock loads
6. Exciting loads
7. Moments of inertia of load- and driving sides
8. Starts per hour
9. Ambient temperature