

# DRUM-COUPPLINGS

THE ORIGINAL • SERIES TTXL



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# Drum-Couplings


## Application



Developed by MALMEDIE in the 1950s, the Drum-Coupling is especially suitable for installation in drum drives of cranes and conveying systems.

More than 60 years experience of operating Drum-Couplings under the rough conditions of steelworks, reclaimers, ship unloaders and container cranes has left its mark in many of our customers' internal standard sheets. The MALMEDIE Drum-Coupling satisfies, for example, the technical requirements prescribed by the German Steel and Iron Operating Sheet (Stahl-Eisen-Betriebsblatt) SEB 666212, issued in Jan. 1991, and the Norme Sidérurgie Française.

A rigid connection between the gear shaft and the rope drum results, in a single or twin drum drive, in a statically indetermined three or four-point support.

- ▶ higher load capacity
- ▶ up to 25% higher permissible torque compared to TTXs
- ▶ larger permissible radial load
- ▶ larger permissible finish bore
- ▶ longer service life
- ▶ interchangeable with preceding series
- ▶ optionally with automatic wear indicator
- ▶ suitable for use in potentially explosive hazardous areas according to EU directive RL 2014/34/EU 

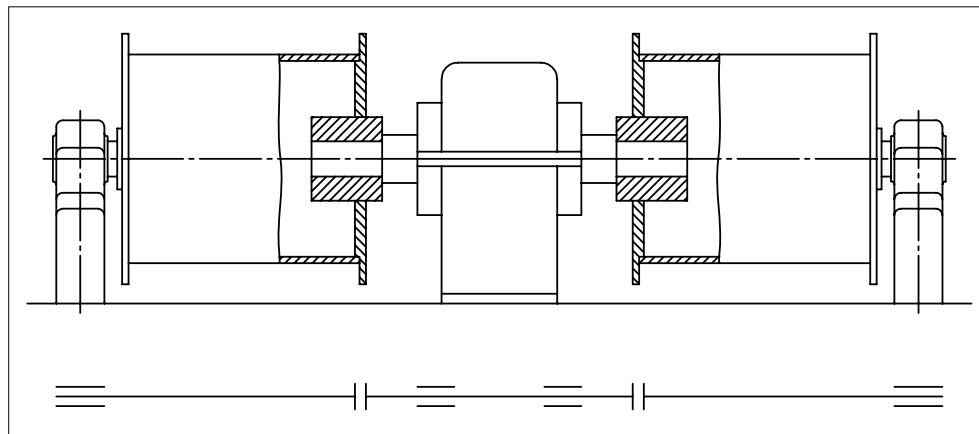


Fig. 1 Layout of a twin drum drive with four-point beared rigid shaft without a Drum-Coupling.

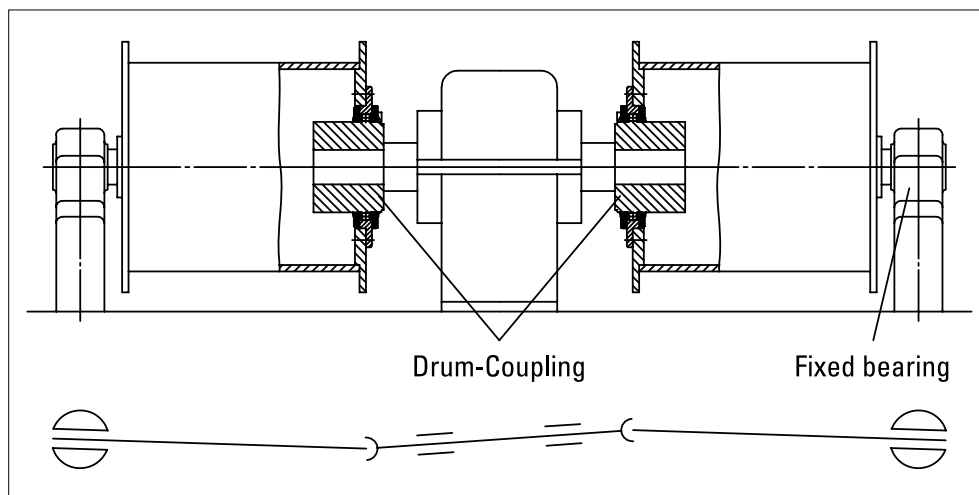


Fig. 2 Layout of a twin drum drive with a Drum-Coupling.

The two illustrations on this page are showing the arrangement of twin-drum drives for a crane unit.

This kind of connection requires a considerable amount of alignment work.

In case of misalignment due to inaccurate assembly, bending of the beams, or high wear at a roller bearing, considerable additional forces affect the shaft.

Alternating bending stresses arise on the gear shaft during rotation, and these can lead to fatigue fractures and to damage to bearings and to gear teeth.

The calculation for a single-drum drive with rigid connection between gear shaft and rope drum (Fig. 3) yields, for given load  $F$  and with bending or alignment error, a maximum bending moment on the gear shaft end of  $M$ . To achieve a statically determined bearing, the rigid connection must be replaced by a joint. The maximum bending moment which can occur at the gear shaft under the same load  $F$  then falls to only about 25% of  $M$  (Fig. 4).

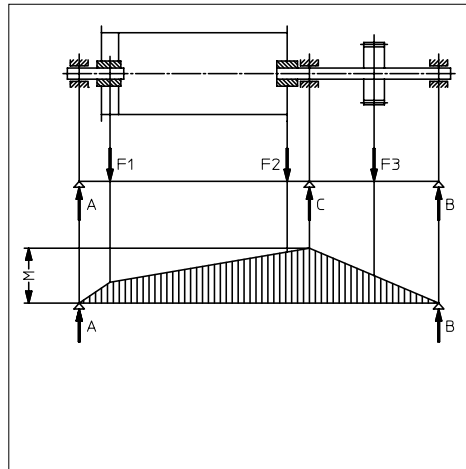


Fig. 3

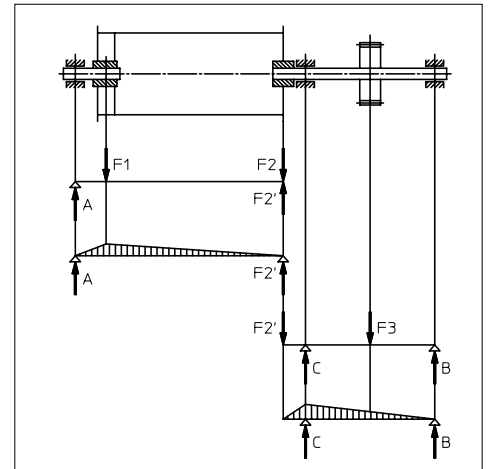


Fig. 4

Fig. 5 shows a Drum-Coupling in a single-drum drive. The Drum-Coupling's hub sits on the end of the gear shaft in the rope drum. The rope drum's pillow block is to be constructed as a fixed bearing.

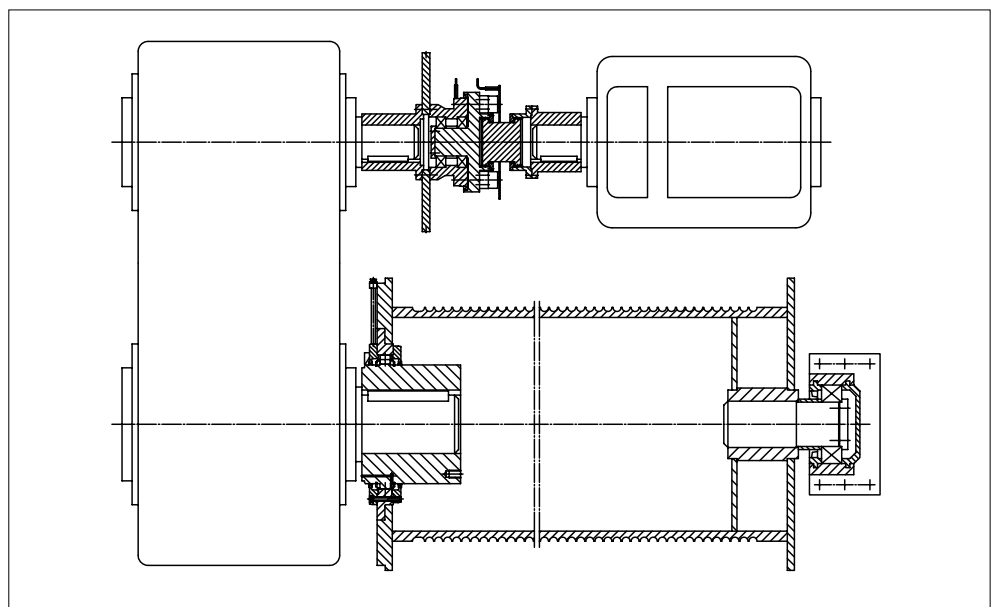


Fig. 5

# Drum-Couplings

## Design and Characteristics



The MALMEDIE TTXL Drum-Coupling is a further development of the RTT, NTT and TTX/TTXs series, which have been proven over many years. The new development brings an increase in capacity, accompanied by significantly improved operating safety and fulfils customers' demands for continually higher performances with lower weights and small installation spaces. Modern CNC manufacturing technology ensures that the connection dimensions permit the devices to be exchanged. The TTXL Drum-Coupling consists of: coupling hub, coupling housing, outer cover, barrel rollers, pointer, seals, cover screws, circlip and thrust collar (fastening bolts are not scope of supply).

The MALMEDIE Drum-Coupling should be considered as a complete exchange part. For warranty reasons, the coupling hubs and housings cannot be supplied separately. The Drum-Couplings are supplied ready assembled, but not filled with lubricant. They are provided with a corrosion protection adequate for normal storage conditions.

The transmission of force within the Drum-Coupling takes place through positive locking. Hardened barrel rollers, placed in the holes formed by the two circular gearings, are used as the force transmitting elements. The cover, housing and seals prevent both the ingress of external particles and the leakage of lubricant. The torque is transmitted to the rope drum via the "flats" on the outside diameter of the coupling housing and via the friction between the coupling housing and the rope drum flange. The connecting bolts (HSFG bolts, class 10.9) between the coupling housing and the rope drum flange generate the necessary friction whilst, at the same time, providing fastening. A pointer fixed to the outer cover, and a corresponding mark on the coupling hub, allow external control of the wear and the axial position of the coupling housing in relation to the coupling hub. It is not necessary to dismantle the coupling for this purpose.

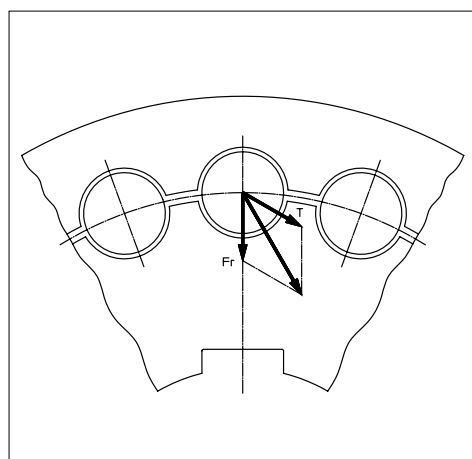


Fig. 6

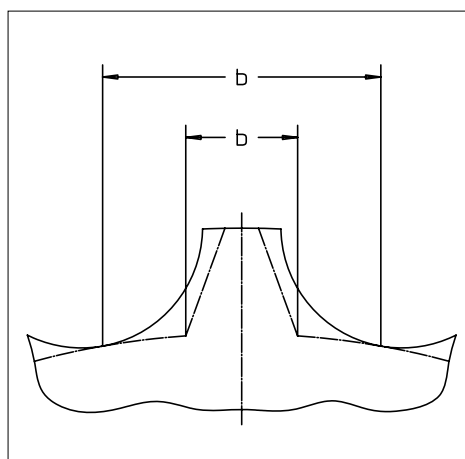


Fig. 7

*With its compact design, the MALMEDIE Drum-Coupling type TTXL, which must transmit not only torque but also large radial loads in the gearings, has the following characteristics:*

- ▶ *safe absorption of large radial forces with low bending load on the tooth ground, even circumferential and radial play in the gearing, compensation of angular misalignments of up to  $\pm 1^\circ$ .*
- ▶ *depending on the size of the coupling, axial displacements of max. 4 mm up to max. 15 mm can be accepted in operation (see table of dimensions).*

*MALMEDIE Drum-Couplings are not suitable for the absorption and transmission of axial forces (exception: special design).*

- ▶ *sliding movement in the gearing is kept to a minimum during compensation of angular misalignment. The wear intensifying relative movement between inner and outer gearing is reduced by the barrel roller itself.*
- ▶ *high safety factor against overloads.*
- ▶ *the force transmission results in work hardening of the tooth flanks, thus bringing high wear resistance.*

*The barrel rollers accept the compressive strains caused by the torque and the radial load over a large area. This design means that the risk of a tooth fracture resulting from bending stress is excluded. (Fig. 6)*

*A comparison of the bending stress on the tooth base occurring with involute toothings and circular toothings yields a significant lower value for the circular toothings. (Fig. 7)*

The required size of a coupling depends on the following factors:

1. max. torque  $T_{max}$
2. max. radial load  $F_{max}$  [lbf]
3. Dimensions of the gear shaft

$$T_{max} = \frac{P \cdot 5252}{n} \cdot C_{erf}$$

## 1. max. torque $T_{max}$ [lbf]

The determined torque  $T_{max}$  to be transmitted on the basis of the installed or required capacity of the coupling must be smaller than the max. permissible torque  $T_{kmax}$  of the Drum-Coupling in accordance with dimension sheet 709-08.

- $P$  = max. motor power [hp]  
 $n$  = speed of the rope drum [rpm]  
 $C_{erf}$  = necessary service factor for drive groups

Drive group according to			$C_{erf}$
CMAA	DIN15020	F.E.M. 1.001	
A, B	1Bm/1Am	M3/M4	1.25
C	2m	M5	1.40
D	3m	M6	1.60
E	4m	M7	1.80
F	5m	M8	2.00

## 2. max. radial load $F_{max}$ [lbf]

The radial load is the portion of the load that must be covered by the Drum-Coupling due to the payload and the weight of the cable hoist. Since the Drum-Coupling forms one of the drum bearings, it must bear part of the total load. The static load  $G_{Tr}$  [lbf] on the rope drum must be determined first before calculating the radial load  $F_{max}$ .

- $Q$  = max. payload under hook [lbf]  
 $G$  = load of tackle and ropes [lbf]  
 $i_F$  = transmission ratio of tackle  
 $\eta_F$  = efficiency of the rope drum and tackle

$$G_{Tr} = \frac{(Q + G)}{i_F \cdot \eta_F}$$

$i_F$	Efficiency $\eta_F$	
	Slide bearing	Roller bearing
2	0,92	0,97
3	0,90	0,96
4	0,88	0,95
5	0,86	0,94
6	0,84	0,93
7	0,83	0,92
8	0,81	0,91



## Calculation of the radial load $F_{\max}$ with multiple rope lines to the drum

- $G_{Tr}$  = static load on the rope drum [lbf]  
 $W$  = dead weight of the rope drum [lbf]

## Calculation of the radial load $F_{\max}$ with a single rope line to the drum

- $G_{Tr}$  = static load on the rope drum [lbf]  
 $W$  = dead weight of the rope drum [lbf]  
 $b$  = smallest distance from the rope to the middle of the barrel roller [mm]  
 $l$  = distance between the bearings [mm]

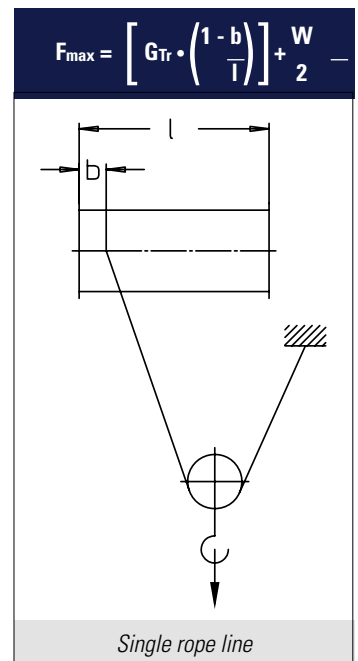
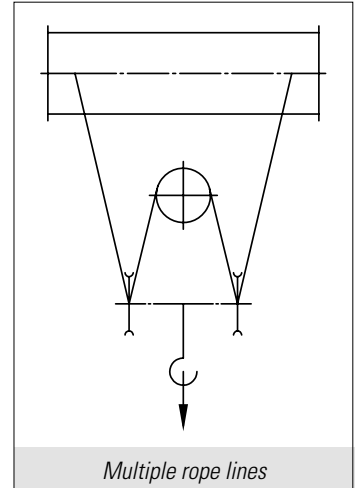
The determined radial load  $F_{\max}$  must be smaller than the max. permissible radial load  $F_{r_{\max}}$  of the Drum-Coupling in accordance with dimension sheet 709-08.

## Option for corrected radial load $F_{r_{\text{korr}}}$ [lbf]

If the max. torque  $T_{\max}$  is smaller than the max. permissible torque  $T_{k_{\max}}$  of the pre-selected Drum-Coupling, the max. permissible radial load  $F_{r_{\max}}$  can be corrected or increased. The unused torque can be converted for the purpose of increasing the max. permissible radial load  $F_{r_{\max}}$  as follows:

- $T_{\max}$  = max. torque [lb-ft]  
 $T_{k_{\max}}$  = max. permissible torque [lb-ft] according to dimension sheet 709-08  
 $C_{\text{erf}}$  = necessary service factor for drive groups according to DIN 15020, F.E.M. 1.001 or CMAA  
 $F_{r_{\max}}$  = max. permissible radial force [lbf] according to dimension sheet 709-08

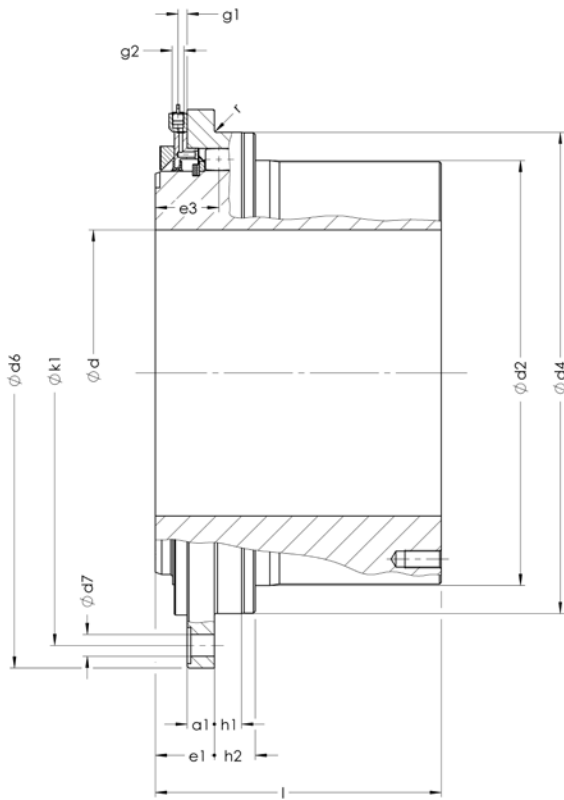
The reverse procedure, i.e. to increase the max. permissible torque if the radial load is not fully exploited, is not allowed.



$$F_{r_{\text{korr}}} = \frac{T_{k_{\max}} - T_{\max}}{C_{\text{erf}}} + F_{r_{\max}}$$

## 3. Check the geometric dimensions of the hub-shaft connection

It must also be checked whether or not the diameter of the gear shaft is smaller than the max. permissible bore diameter in the Drum-Coupling according to dimension sheet 709-08. In addition, the torque of the hub-shaft connection to be transmitted must be checked for all types of connections.



Size	Torque TK <sub>max</sub> [lb-ft]	Radial load Fr <sub>max</sub> [lbf]	Weight* [lb]	Mass moment of inertia* [lb-ft <sup>2</sup> ]
0,15	4,056	4,047	18	1
0,25	5,531	4,496	22	1
0,5	7,006	5,058	29	2
0,75	9,220	5,620	44	4
1	12,907	6,969	53	6
1,3	18,439	9,554	64	8
1,6	22,864	10,566	77	10
2	26,552	11,690	97	14
3	33,928	13,713	121	21
4	47,942	19,333	163	36
5	77,444	30,349	260	74
6	106,946	33,721	300	97
10	137,186	38,779	368	133
15	191,766	46,535	595	294
21	283,961	65,194	661	328
26	346,654	77,559	732	380
34	420,410	89,924	904	546
42	516,293	98,916	1,213	925
62	619,552	116,901	1,587	1,424
82	700,684	129,265	2,039	2,183
92	885,075	140,506	2,469	3,132
102	1,106,343	151,746	2,976	4,627
112	1,327,612	168,807	3,527	6,478

\*with max. finish bore

Size	d min. [mm]	d max. [mm]	a1 [mm]	d2 [mm]	d4 h6 [mm]	d6 [mm]	d7 [mm]	e1 [mm]	e3 [mm]	g1 [mm]	g2* [mm]	h1 [mm]	h2 [mm]	k1 [mm]	l [mm]	r [mm]	Axial play max. ± [mm]
0,15	30	55	12	99	140	230	15	42	45	10	G1/4	16	29	200	90	2,5	4
0,25	40	70	12	119	160	250	15	42	45	10	G1/4	16	29	220	95	2,5	4
0,5	50	85	12	139	180	280	15	42	45	10	G1/4	16	29	250	100	2,5	4
0,75	60	90	15	149	200	320	19	45	49	10	G1/4	20	33	280	110	2,5	5
1	60	105	15	169	220	340	19	45	49	10	G1/4	20	33	300	125	2,5	5
1,3	80	120	15	189	240	360	19	45	49	10	G1/4	20	33	320	130	2,5	5
1,6	80	135	15	209	260	380	19	45	49	10	G1/4	20	33	340	145	2,5	5
2	100	150	15	229	280	400	19	45	49	10	G1/4	20	33	360	170	2,5	5
3	100	170	15	259	310	420	19	45	49	10	G1/4	20	33	380	175	2,5	5
4	100	185	25	278	340	450	24	60	70	10	G1/4	30	50	400	185	2,5	8
5	120	220	25	338	400	510	24	60	70	10	G1/4	30	50	460	220	2,5	8
6	120	240	25	358	420	550	24	60	70	10	G1/4	30	50	500	240	2,5	8
10	140	260	25	388	450	580	24	60	70	10	G1/4	30	50	530	260	2,5	8
15	160	300	30	468	530	650	24	65	70	10	G1/4	30	45	600	315	2,5	8
21	170	305	30	462	545	665	24	65	78	10	G1/4	35	65	615	330	4	8
26	170	315	30	477	560	680	24	65	78	10	G1/4	35	65	630	350	4	8
34	230	345	40	517	600	710	28	81	90	10	G1/4	35	65	660	380	4	10
42	270	395	40	587	670	780	28	81	90	10	G1/4	40	65	730	410	4	10
62	290	435	40	647	730	850	28	81	90	10	G1/4	40	65	800	450	4	10
82	320	475	45	697	800	940	28	86	92	10	G1/4	45	65	875	500	4	12
92	350	510	45	756	860	1025	34	100	110	12,5	G1/4	50	85	945	500	4	15
102	350	570	45	836	950	1120	34	100	110	12,5	G1/4	50	85	1040	500	4	15
112	400	625	45	916	1030	1200	34	100	110	12,5	G1/4	50	85	1120	500	4	15

other dimensions on request

\* Rc1/4, M10x1 or other connections possible via adaptor



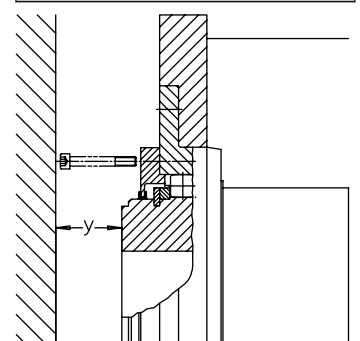
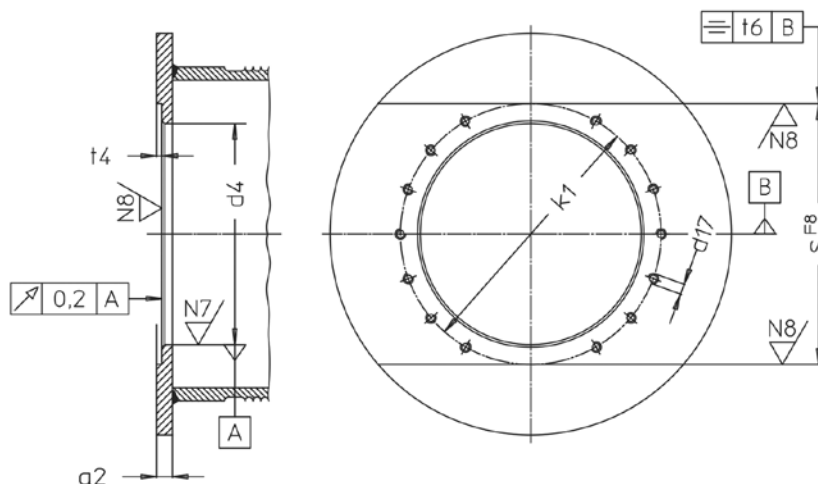
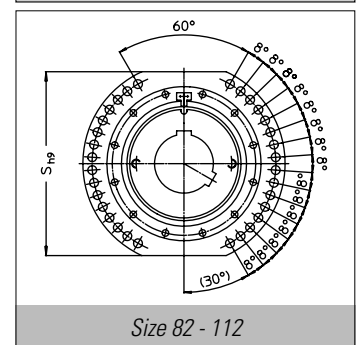
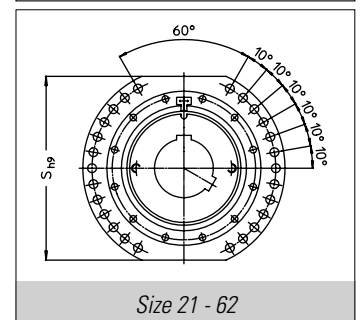
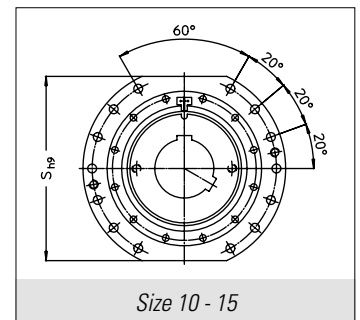
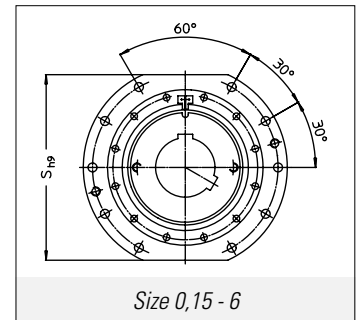
# Drum-Couplings

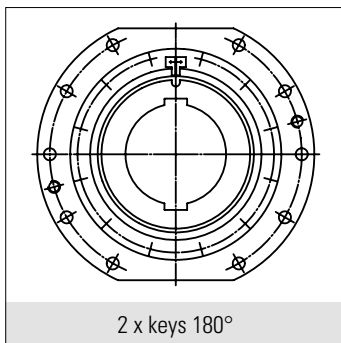
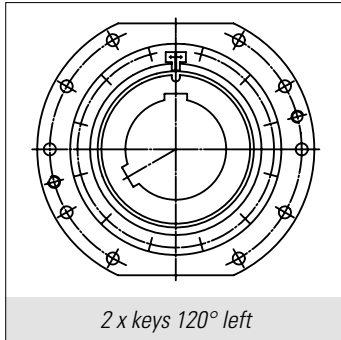
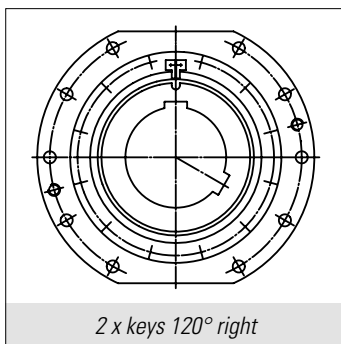
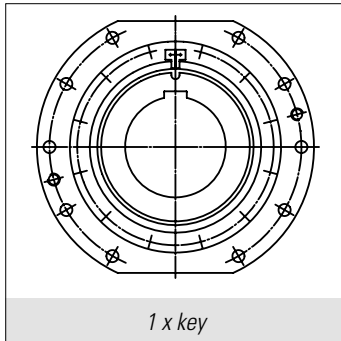
## Coupling/rope drum connection



- ▶ The material for the rope drum flange should have a minimum yield strength of 355 MPa [e.g. S355M – DIN EN 10025-4].
- ▶ Bolts according to DIN931, DIN933 or DIN6914 of strength class 10.9 and washers according to DIN6916 are to be used to fasten the MALMEDIE Drum-Coupling onto the rope drum.

Size	S [mm]	a2 [mm]	d4 F8 [mm]	Thread	d17 Qty	k1 [mm]	t4 min. [mm]	t6 [mm]	γ min. [mm]
0,15	200	27	140	M12	10	200	12	0,08	50
0,25	220	27	160	M12	10	220	12	0,08	50
0,5	250	27	180	M12	10	250	12	0,08	50
0,75	280	30	200	M16	10	280	15	0,08	50
1	300	30	220	M16	10	300	15	0,08	50
1,3	320	30	240	M16	10	320	15	0,1	50
1,6	340	30	260	M16	10	340	15	0,1	50
2	360	30	280	M16	10	360	15	0,1	50
3	380	30	310	M16	10	380	15	0,1	50
4	400	45	340	M20	10	400	25	0,1	60
5	460	45	400	M20	10	460	25	0,1	60
6	500	45	420	M20	10	500	25	0,15	60
10	530	45	450	M20	14	530	25	0,15	60
15	580	55	530	M20	14	600	30	0,2	60
21	590	55	545	M20	26	615	30	0,2	60
26	600	55	560	M20	26	630	30	0,2	60
34	640	65	600	M24	26	660	40	0,2	60
42	700	65	670	M24	26	730	40	0,2	60
62	760	65	730	M24	26	800	40	0,2	60
82	830	75	800	M24	32	875	45	0,2	60
92	900	75	860	M30	32	945	45	0,2	80
102	1000	75	950	M30	32	1040	45	0,2	80
112	1080	75	1030	M30	32	1120	45	0,2	80





The given values for the bores are valid according to ANSI B17. Standard. As a matter of principle, every key connection must be checked with regard to the surface pressure. Keyways according to BS 46, DIN6885-1 or other standards are also possible. For other types of connection, e.g. spline connections according to DIN 5480 or multiple splined shaft connections, please contact us. For shrink-fit connections, see the page 11.

### Key sizes ANSI B17.1 Standard

*All dimensions in inch*

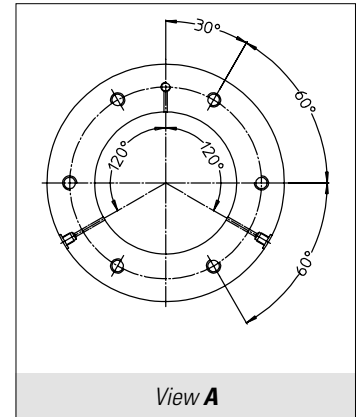
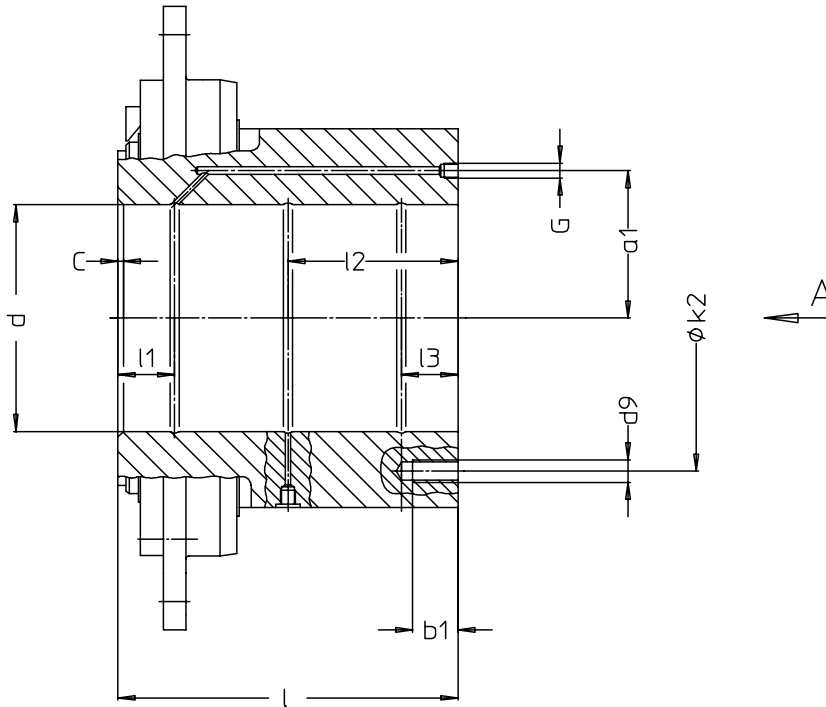
<b>Bore d1</b>	over	1.375	1.750	2.250	2.750	3.250	3.750
	to	1.750	2.250	2.750	3.250	3.750	4.500
<b>Square key</b>	width	0.375	0.500	0.625	0.750	0.875	1.000
	height	0.375	0.500	0.625	0.750	0.875	1.000
<b>Rect. key</b>	width	0.375	0.500	0.625	0.750	0.875	1.000
	height	0.250	0.375	0.4375	0.500	0.625	0.750

<b>Bore d1</b>	over	4.500	5.500	6.500	7.500	9.000	11.000
	to	5.500	6.500	7.500	9.000	11.000	13.000
<b>Square key</b>	width	1.250	1.500	1.750	2.000	2.500	3.000
	height	1.250	1.500	1.750	2.000	2.500	3.000
<b>Rect. key</b>	width	1.250	1.500	1.750	2.000	2.500	3.000
	height	0.875	1.000	1.500	1.500	1.750	2.000

<b>Bore d1</b>	over	13.000	15.000	18.000	22.000	26.000	30.000
	to	15.000	18.000	22.000	26.000	30.000	34.000
<b>Square key</b>	width	3.500	4.000	5.000	6.000	7.000	8.000
	height	3.500	4.000	5.000	6.000	7.000	8.000
<b>Rect. key</b>	width	3.500	4.000	5.000	6.000	7.000	8.000
	height	2.500	3.000	3.500	4.000	5.000	5.500

# Drum-Couplings

## Shrink-fit connections



The Drum-Coupling's hub must be heated to the required shrinking temperature  $T$  before assembly.

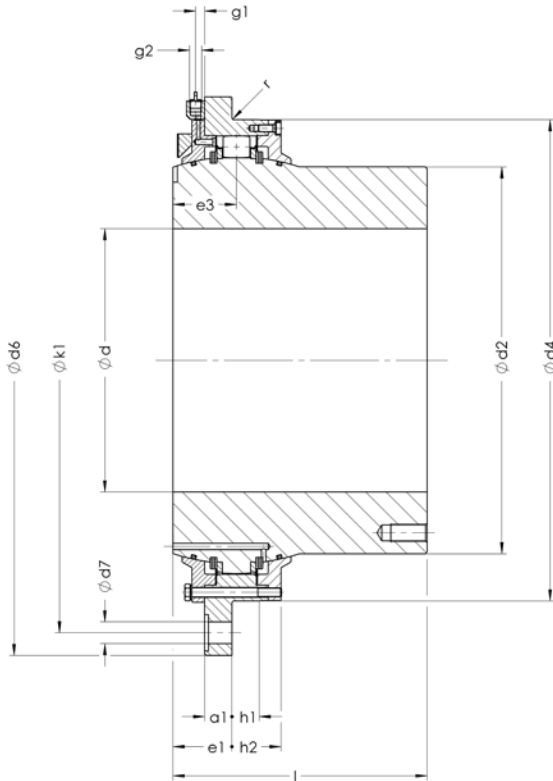
$T$  = required shrinking temperature [°F]

$O$  = max. oversize [ $\mu$ m]

$d$  = bore diameter [mm]

Size	d min. [mm]	d max. [mm]	l [mm]	l1 [mm]	l2 [mm]	l3 [mm]	k2 [mm]	d9	Qty.	b1 [mm]	G	a1 [mm]
0,15	30	55	90	15	35	-	75	M8	6	16	G1/8	37,5
0,25	40	70	95	15	40	-	95	M8	8	16	G1/8	47,5
0,5	50	85	100	20	40	-	110	M10	6	20	G1/8	55
0,75	60	90	110	20	45	-	120	M10	8	20	G1/8	60
1	60	105	125	25	50	-	140	M10	10	20	G1/8	70
1,3	80	120	130	30	50	-	150	M12	8	24	G1/8	75
1,6	80	135	145	30	60	-	170	M12	10	24	G1/8	85
2	100	150	170	30	70	-	190	M16	6	32	G1/8	95
3	100	170	175	30	75	-	220	M16	8	32	G1/8	110
4	100	185	185	30	80	-	220	M20	6	40	G1/4	110
5	120	220	220	30	110	30	280	M20	6	40	G1/4	280
6	120	240	240	30	120	30	300	M20	8	40	G1/4	150
10	140	260	260	35	130	35	330	M24	6	48	G1/4	165
15	160	300	315	40	157,5	40	410	M24	8	48	G1/4	205
21	170	305	330	45	165	45	385	M30	6	60	G1/4	192,5
26	170	315	350	50	175	50	400	M30	6	60	G1/4	200
34	230	345	380	50	190	50	440	M30	8	60	G1/4	220
42	270	395	410	60	205	60	510	M30	8	60	G1/4	255
62	290	435	450	60	225	60	570	M30	10	60	G1/4	285
82	320	475	500	60	250	60	630	M36	8	72	G1/4	315
92	350	510	500	60	250	60	640	M36	8	72	G3/4	320
102	350	570	500	60	250	60	720	M36	10	72	G3/4	360
112	400	625	500	60	250	60	800	M36	10	72	G3/4	400

$$T = \frac{180 \cdot O}{1,2 \cdot d} + 248$$



Size	Torque Tk <sub>max</sub> [lb-ft]	Radial load Fr <sub>max</sub> [lbf]	Weight* [lb]	Mass moment of inertia* [lb-ft <sup>2</sup> ]
0,75	9,220	5,620	45	4
1	12,907	6,969	55	6
1,3	18,439	9,554	65	8
1,6	22,864	10,566	78	10
2	26,552	11,690	96	14
3	33,928	13,713	119	20
4	47,942	19,333	173	36
5	77,444	30,349	256	71
6	106,946	33,721	302	93
10	137,186	38,779	362	123
15	191,766	46,535	582	268
21	283,961	65,194	642	297
26	346,654	77,559	701	344
34	420,410	89,924	882	498
42	516,293	98,916	1,168	830
62	619,552	116,901	1,477	1,258
82	700,684	129,265	2,183	1,969
92	885,075	140,506	2,403	2,824
102	1,106,343	151,746	2,954	4,271
112	1,327,612	168,807	3,494	6,004

\* with max. finish bore

Size	d min. [mm]	d max. [mm]	a1 [mm]	d2 [mm]	d4 h6 [mm]	d6 [mm]	d7 [mm]	e1 [mm]	e3 [mm]	g1 [mm]	g2* [mm]	h1 [mm]	h2 [mm]	k1 [mm]	l [mm]	r [mm]
0,75	60	70	15	102	200	320	19	45	49	10	G1/4	20	37	280	110	2,5
1	60	85	15	127	220	340	19	45	49	10	G1/4	20	37	300	125	2,5
1,3	80	100	15	149	240	360	19	45	49	10	G1/4	20	37	320	130	2,5
1,6	80	115	15	171	260	380	19	45	49	10	G1/4	20	37	340	145	2,5
2	100	130	15	192	280	400	19	45	49	10	G1/4	20	37	360	170	2,5
3	100	150	15	224	310	420	19	45	49	10	G1/4	20	37	380	175	2,5
4	100	150	25	226	340	450	24	60	70	10	G1/4	30	59	400	185	2,5
5	120	200	25	291	400	510	24	60	70	10	G1/4	30	59	460	220	2,5
6	120	210	25	313	420	550	24	60	70	10	G1/4	30	59	500	240	2,5
10	140	235	25	343	450	580	24	60	70	10	G1/4	30	59	530	260	2,5
15	160	290	30	426	530	650	24	65	70	10	G1/4	30	54	600	315	2,5
21	170	270	30	410	545	665	24	65	80	10	G1/4	30	71	615	330	4
26	170	280	30	425	560	680	24	65	80	10	G1/4	30	71	630	350	4
34	230	310	40	460	600	710	28	81	90	10	G1/4	40	73	660	380	4
42	270	360	40	532	670	780	28	81	90	10	G1/4	40	73	730	410	4
62	290	410	40	594	730	850	28	81	90	10	G1/4	40	73	800	450	4
82	320	435	45	645	800	940	28	86	92	10	G1/4	45	73	875	500	4
92	350	465	45	692	860	1025	34	100	110	12,5	G1/4	50	89	945	500	4
102	350	520	45	773	950	1120	34	100	110	12,5	G1/4	50	89	1040	500	4
112	400	575	45	854	1030	1200	34	100	110	12,5	G1/4	50	89	1120	500	4

Other dimensions on request

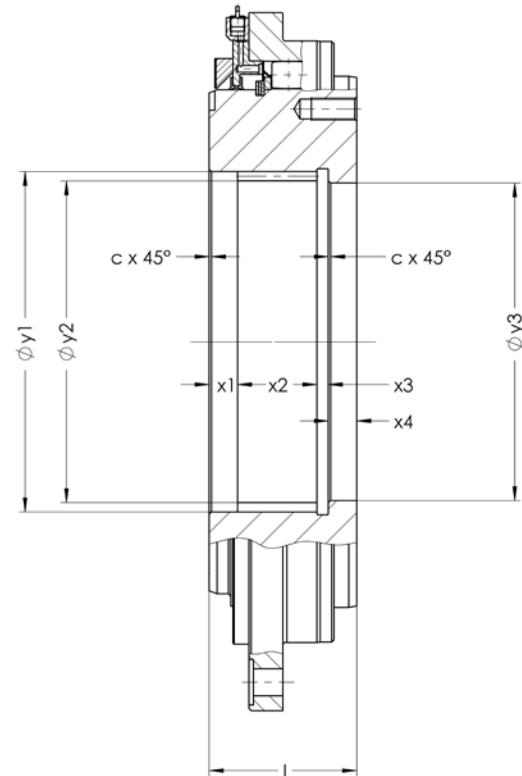
\* Rc1/4, M10x1 or other connections possible via adaptor

# Drum-Couplings

## Dimension sheet 709-10 / MTTXL Standard



Size	Weight* [lb]	Mass moment of inertia* [lb-ft <sup>2</sup> ]	Gearing DIN5480
0,75	43	4	N90x3x28x9H
1	52	6	N100x3x32x9H
1,3	61	8	N110x3x35x9H
1,6	68	10	N130x5x24x9H
2	75	12	N150x5x28x9H
3	88	17	N170x5x32x9H
4	146	33	N180x8x21x9H
5	209	59	N200x8x24x9H
6	214	76	N240x8x28x9H
10	243	95	N260x8x31x9H
15	342	180	N300x8x36x9H
21	441	236	N300x8x36x9H
26	452	261	N320x8x38x9H
34	538	356	N340x8x41x9H
42	672	546	N380x8x46x9H
62	836	783	N400x8x48x9H
82	1,142	1,281	N440x10x42x9H
92	1,371	1,851	N480x10x46x9H
102	1,753	2,776	N500x10x48x9H
112	2,178	3,916	N500x10x48x9H

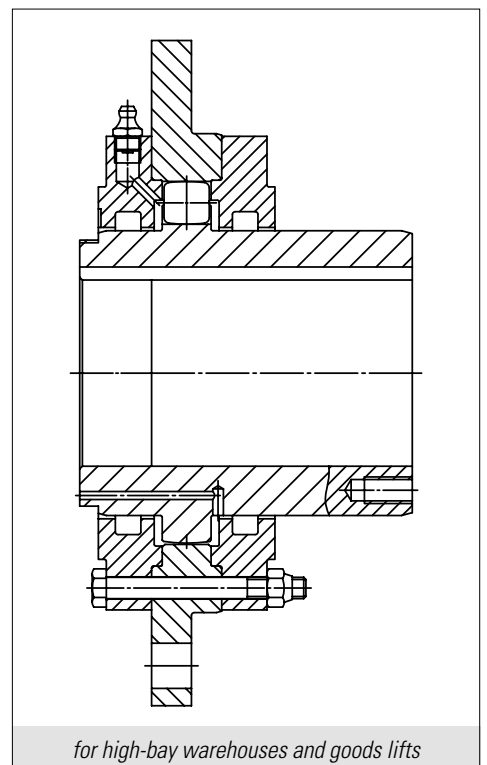
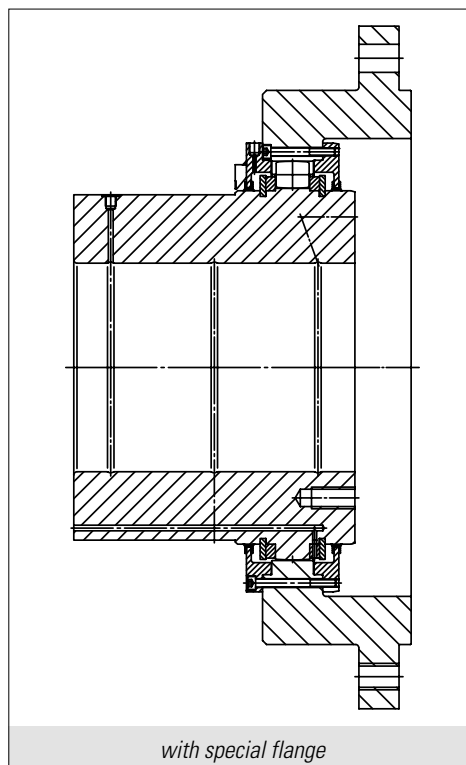
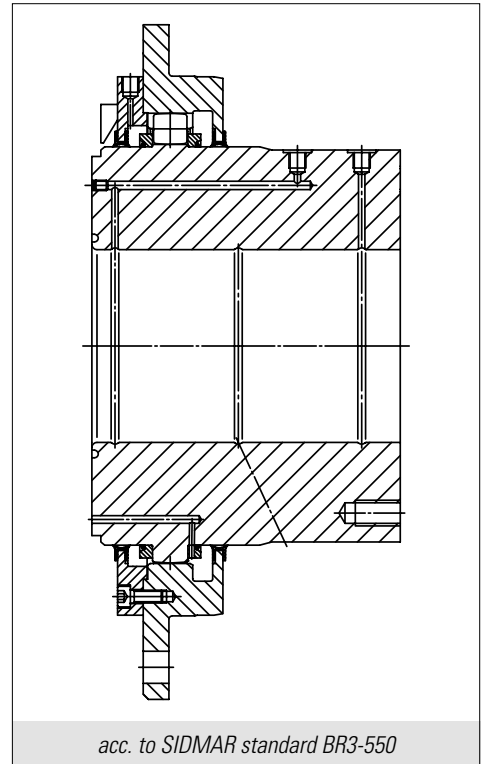
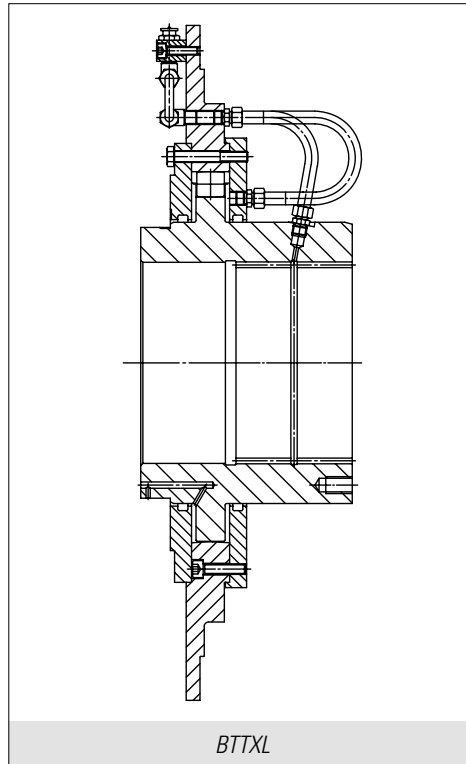


See dimension sheet 709-08 (pages 8&9) for all other dimensions and values

Size	y1* H7 [mm]	y2 H11 [mm]	y3 H7 [mm]	c [mm]	x1 [mm]	x2 [mm]	x3 [mm]	x4 [mm]	l [mm]
0,75	90	84	80	1	20	50	10	20	100
1	100	94	90	1	20	50	10	20	100
1,3	110	104	100	1	20	50	10	20	100
1,6	130	120	115	1	20	50	10	20	100
2	150	140	135	1	20	50	10	20	100
3	170	160	155	1	20	50	10	20	100
4	180	164	160	2	25	70	10	25	130
5	200	184	180	2	25	70	10	25	130
6	240	224	220	2	25	70	10	25	130
10	260	244	240	2	25	70	10	25	130
15	300	284	280	2	25	70	10	25	130
21	300	284	280	2	30	100	10	30	170
26	320	304	300	2	30	100	10	30	170
34	340	324	320	2	30	100	10	30	170
42	380	364	360	2	30	100	10	30	170
62	400	384	380	2	30	100	10	30	170
82	440	420	410	2	35	120	10	35	200
92	480	460	450	2	35	120	10	35	200
102	500	480	470	2	35	120	10	35	200
112	500	480	470	2	35	120	10	35	200

Other dimensions and sizes on request

\* with gearing traces





# Drum-Couplings

## Wear indicator



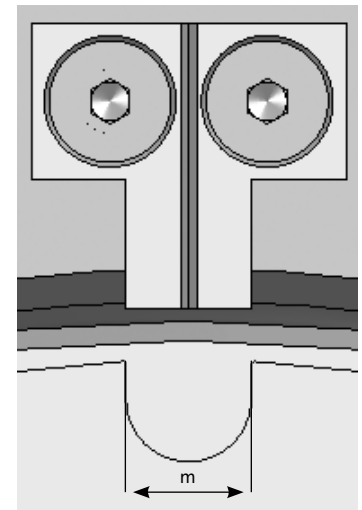
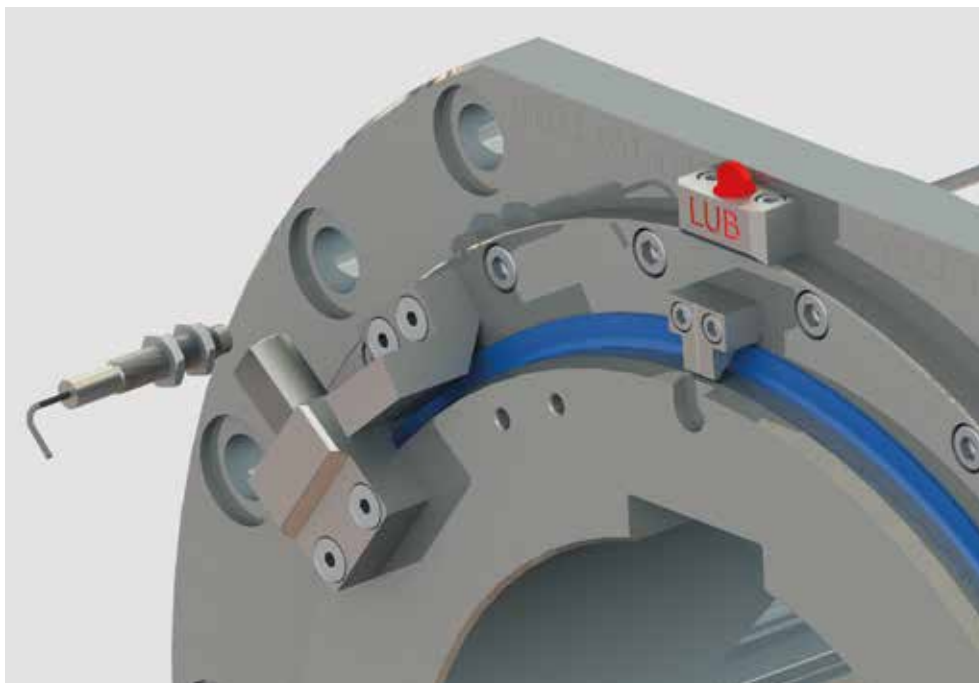
Wear which has occurred in the Drum-Coupling can be read from the displacement of the pointer in relation to the wear notch. The maximum permissible wear values  $\frac{m}{2}$  are given in the table.

The Drum-Coupling must be replaced once the limit value is exceeded.

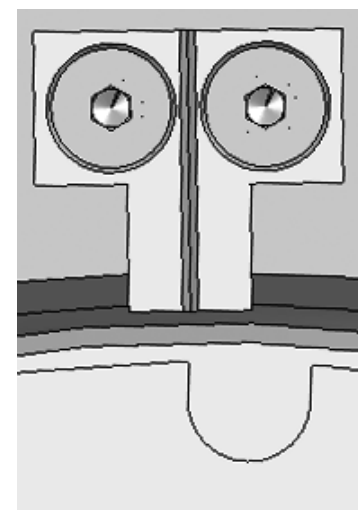
In cases where there are two load directions, the maximum permissible wear values  $\frac{m}{2}$  must be halved.

Coupling size	max. permissible wear $\frac{m}{2}$
0,15 - 0,5	4
0,75 - 3	6
4 - 82	8
92 - 112	10

An automatic wear indicator is also optionally available for coupling sizes from 6 to 62. However, this does not release from the duty to check the wear indicator regularly.



*without wear*



*with max. wear*

TTXL            ATTXL  
 ASTTXL MTTXL BTTXL  
 TTXL            ATTXL  
 ASTTXL MTTXL BTTXL  
 TTXL            ATTXL  
 ASTTXL        MTTXL  
 BTTXL    TTXL    ATTXL  
 ASTTXL        MTTXL  
 BTTXL    TTXL    ATTXL  
 ASTTXL        MTTXL  
 BTTXL        TTXL  
 ATTXL        ASTTXL  
 MTTXL BTTXL    TTXL  
 ATTXL        ASTTXL  
 MTTXL        BTTXL  
 TTXL            ATTXL  
 ASTTXL MTTXL BTTXL  
 TTXL    ATTXL    ASTTXL  
 MTTXL        BTTXL  
 ATTXL    ASTTXL    MTTXL  
 BTTXL        TTXL  
 ATTXL        ASTTXL  
 MTTXL BTTXL    TTXL  
 ATTXL        ASTTXL  
 MTTXL        BTTXL  
 TTXL    ATTXL    ASTTXL  
 MTTXL        BTTXL  
 TTXL            ATTXL  
 ASTTXL        MTTXL  
 BTTXL        TTXL  
 ATTXL        ASTTXL  
 MTTXL BTTXL    TTXL



Container cranes



Steelwork cranes

# Drum-Couplings Application examples



Mining / conveying systems



Oil drilling towers (including low temperature applications)





# Drum-Couplings Inquiry form

Company

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Mr / Ms

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Street

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Postcode/Town

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Country

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Fax

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

eMail

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Application

Hoisting winch                     
  Rope winch                     
  Grab winch boom  
 \_\_\_\_\_                     
  retracting winch

## Technical data

Drive group \_\_\_\_\_  acc. to DIN15020                     
  acc. to F.E.M. 1.001  
 acc. to CMMA  
 Rope drum diameter \_\_\_\_\_ mm  
 Rope force on the drum \_\_\_\_\_ kN  
 Drum speed \_\_\_\_\_ rpm  
 Nominal torque \_\_\_\_\_ kNm  without service factor                     
  with service factor  
 max. torque \_\_\_\_\_ kNm  without service factor                     
  with service factor  
 max. radial load \_\_\_\_\_ kN (referred to the Drum-Coupling)  
 Motor power \_\_\_\_\_ kW  
 Motor speed \_\_\_\_\_ rpm  
 Used motor power \_\_\_\_\_ kW  
 Gearbox ratio \_\_\_\_\_  
 Gearbox efficiency \_\_\_\_\_

## Operation

Type of operation  even                     
  swelling                     
  intermittent and heavy  
 Direction of force  constant                     
  alternating  
 Operations per hour \_\_\_\_\_ / h  
 Operating time per day \_\_\_\_\_ h/d  
 Ambient temperature \_\_\_\_\_ °C

## Version

Coupling type \_\_\_\_\_ Coupling size \_\_\_\_\_ (pre-selection)

## Hub/shaft connection

Key                      Bore \_\_\_\_\_                      Keyway width \_\_\_\_\_                      Keyway depth \_\_\_\_\_  
    Qty \_\_\_\_\_                      Angle \_\_\_\_\_                      Chamfer \_\_\_\_\_  
 DIN5480 gearing                      \_\_\_\_\_                      Length \_\_\_\_\_                      Bore \_\_\_\_\_  
 Shrink-fit connection                      Bore \_\_\_\_\_                      Chamfer \_\_\_\_\_                      Shaft \_\_\_\_\_  
 Other \_\_\_\_\_

## Remarks

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## CONTACT

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