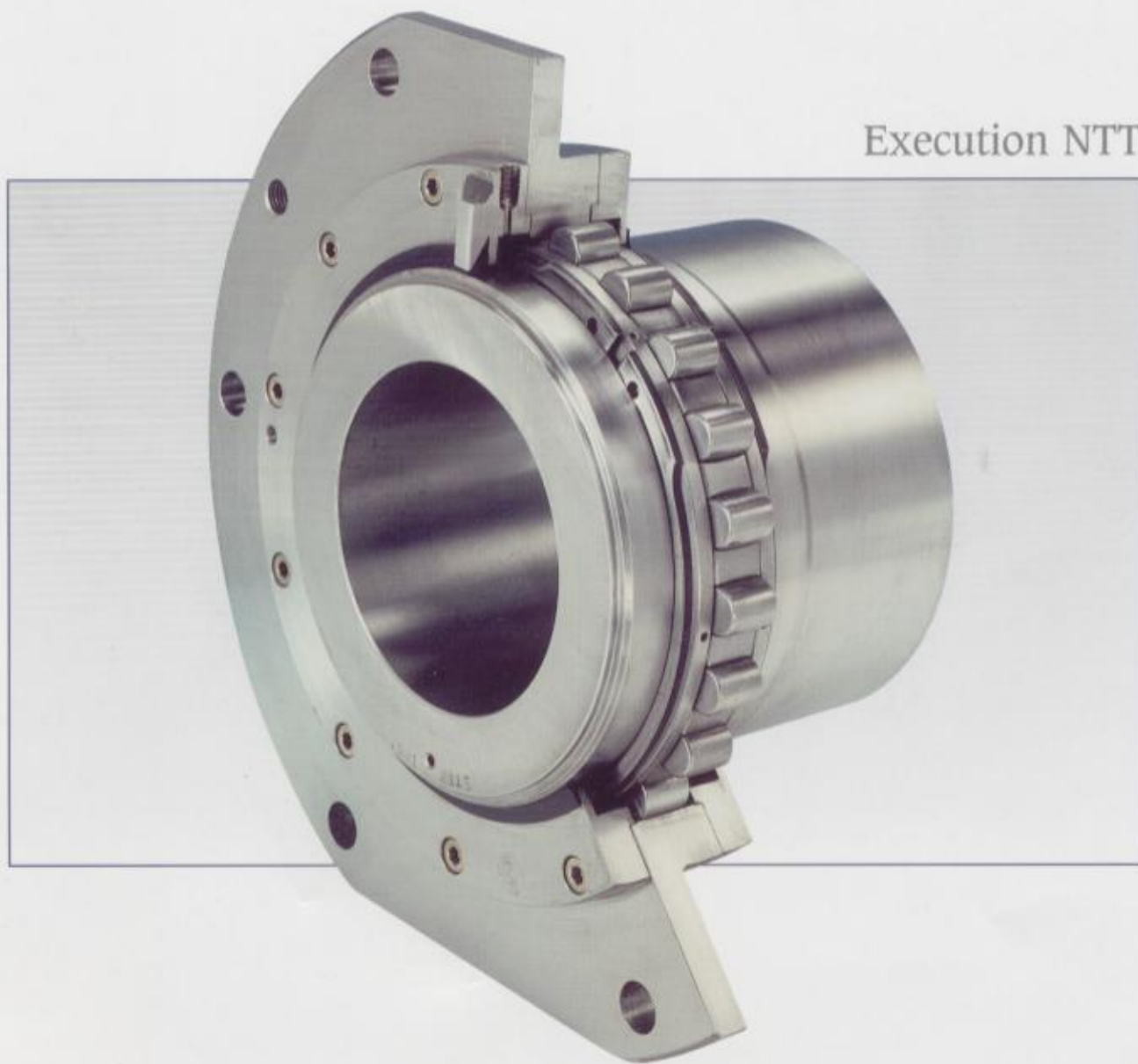


tonoflex®

Barrel drum coupling

Execution NTT



CMD

TONOFLEX® barrel drum coupling

The TONOFLEX® drum coupling has an unmatched reputation in Engineering Departments specialised in the hoisting and handling; this coupling has specially been designed to eliminate the needs for considerable adjustment normally associated with rigid transmissions.

DESCRIPTION

The hardened steel barrels are used as power transmission elements, which are located between the hub and the ring.

From size 2, the NTT design provides great safety when the TONOFLEX® is used at the limits of its misalignment capacity. This is achieved by axially locating the barrels by means of heat treatment steel rings and circlips.

ADVANTAGES

- Acceptance of large radial forces.
- Possible angular misalignment up to $\pm 1^{\circ}30'$ max.
- Axial displacement from ± 3 mm to ± 8 mm can be absorbed according to the sizes.
- Minimum movement of slipping the teeth, thanks to the barrel being balanced.
- High safety against the overloads.
- High wear resistance.
- The design excludes the risk of tooth breakage due to the bending stress.
- External control of wear is permitted thanks to an index fixed on the outer cover without coupling dismantling. Thanks to this index and appropriate marks on the coupling hub, the axial positioning of the cover into the hub is easier.

DESIGN

NTT basic design for fitting with parallel or taper keyway (see table 2).

ANTT special construction with deviating dimensions to the table (e.g. modified hub length, for mounting on splined or conical shaft).

SNNT identical to NTT, but designed for shrink fit without keyway.

ASNTT identical to ANTT, but designed for shrink fit without keyway.

SELECTION

1) From the motor power N_{Tr} in kW and the rope drum speed n_{Tr} in Rpm.

K_{erf} = required factor for the selection of the coupling size

N_{Tr} = required power

C_{erf} = service factor for the different drive groups depending to the running time and load (see table 1).

$$\text{Calculate } K_{erf} = \frac{N_{Tr} \times C_{erf}}{n_{Tr}} \leq K_{zul}$$

K_{zul} = admissible value, please refer to the table 2.

2) From the nominal torque on the drum M_{Tr} in Nm:

M_{derf} = corrected torque with the service factor coefficient (C_{erf})

$$\text{Calculate } M_{derf} = M_{Tr} \times C_{erf}$$

TABLE 1: SERVICE FACTOR

Category of the drive Groups according to DIN 15 020 FEM 1001	I _{Bm} M3	I _{Am} M4	2 _m M5	3 _m M6	4 _m M7	5 _m M8
C_{erf}	1.12	1.25	1.4	1.6	1.8	2.0

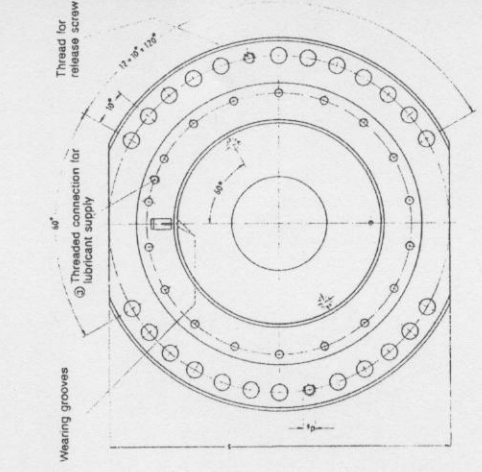
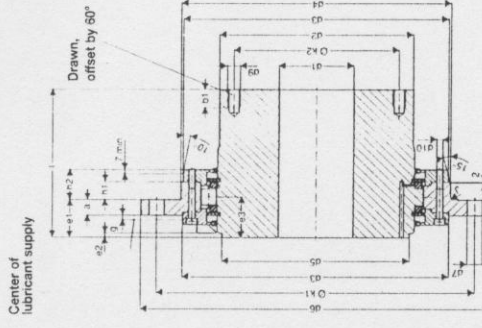
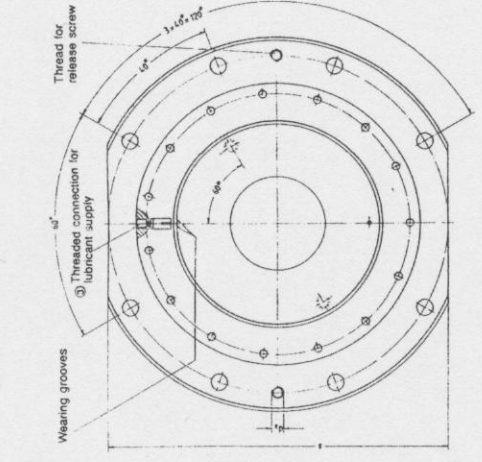
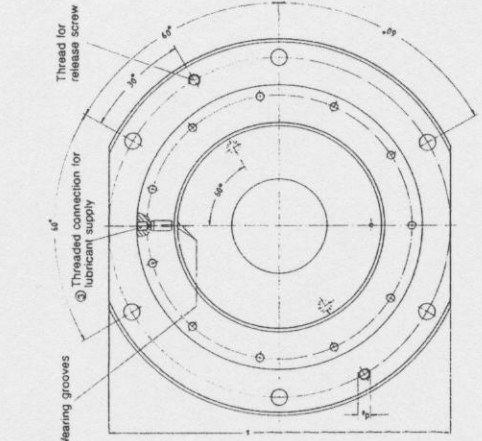
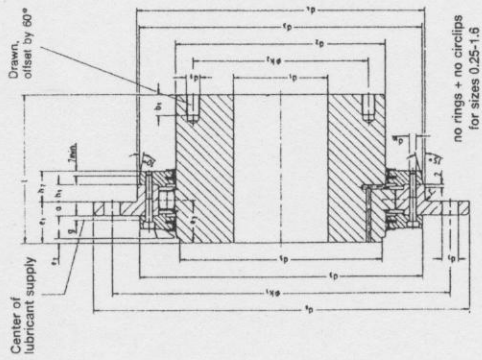
Select

- the coupling with an admissible value (K_{zul}) or the torque M noted on the table 2 is above than K_{erf} or M_{derf}

Check

- the radial F_r load capacity, noted on the table is superior to the radial effective load in the middle of the barrel.
- the selected coupling allows the bore corresponding to the shaft.

Barrel drum coupling - TONOFLEX® - NTT design - Table 2



Sizes 0.25-26

Sizes 0.25-6

Sizes 10+15

Sizes 34-62

Sizes 26+62

SIZE	SERIE SEB	Kzul [N _{Kw}] max.	M [N _m] max.	F [N] max.	d _i min. H7	d _i max.	a	b _i	d _i	d _h	d _s	d _r	Boring Thread	Quantity	d _k	e _t	e _t	g	h	h _t	k _t	k _s	l	r	s	h _v	Max. clearance	Weight kg	Inertia moment Mkg ²	Sizes
0.25		0.46	4 500	14 500	40	65	12	-	95	159	160	92	M12	6	250	15	M12	44	7.5	31	220	-	95	2.5	220	3	11	0.06	0.25	
0.50		0.62	6 000	16 500	50	75	12	-	110	179	180	107	M12	6	280	15	M12	44	7.5	31	250	-	100	2.5	250	3	18	0.13	0.50	
0.75		0.77	7 500	18 500	60	85	15	-	125	199	200	121	M16	6	320	19	M16	46	7.5	32	280	-	110	2.5	280	4	22	0.17	0.75	
1		0.92	9 000	20 000	60	95	15	-	140	219	220	136	M16	6	340	19	M16	46	7.5	32	300	-	125	2.5	300	4	25	0.28	1	
1.3		1.60	15 500	31 000	80	105	15	-	160	239	240	156	M16	6	360	19	M16	47	7.5	34	320	-	130	2.5	320	4	31	0.35	1.3	
1.6		2.00	19 500	35 000	80	120	15	-	180	259	260	174	M16	6	380	19	M16	47	7.5	34	340	-	145	2.5	340	4	38	0.46	1.6	
2	SG 130	2.47	24 000	38 500	100	135	15	24	200	279	280	190	M16	6	400	19	M16	48	8	20.5	37	360	165	170	2.5	360	4	45	0.62	2
3		2.88	28 000	42 000	100	145	15	24	220	309	310	210	M16	6	420	19	M16	50	8	25	40	380	180	175	2.5	380	4	56	0.86	3
4	SG 140	3.90	38 000	49 000	100	175	20	30	260	339	340	250	M20	6	450	24	M20	60.5	9	21	39	400	215	185	2.5	400	4	73	1.4	4
6	SG 185	7.20	70 000	115 000	120	205	20	30	310	419	420	295	M20	6	550	24	M20	64.5	10	29	49	500	260	240	2.5	500	6	138	3.7	6
10	SG 200	12.3	120 000	175 000	140	230	20	36	350	449	450	335	M20	8	580	24	M20	64.5	10	29.5	530	290	260	2.5	530	6	168	5.3	10	
15	SG 240	18.5	180 000	250 000	160	280	25	36	410	529	530	400	M20	8	650	24	M20	68.8	10	31.5	600	350	315	2.5	580	6	256	10.5	15	
26	SG 270	32.0	310 000	400 000	170	300	25	45	440	559	560	430	M20	24	680	24	M20	77.5	10	50	70	630	375	350	4	600	6	323	15.0	26
34	SG 315	41.0	400 000	500 000	200	315	35	45	470	599	600	450	M24	24	710	28	M24	87.5	10	38	68	660	395	380	4	640	8	410	22.0	34
42	SG 355	51.5	500 000	600 000	230	355	35	45	530	669	670	510	M24	24	780	28	M24	89.5	10	40	72	730	445	410	4	700	8	543	35.5	42
62	SG 400	70.5	685 000	880 000	260	400	35	45	580	729	730	580	M24	24	850	28	M24	89.5	10	42	800	500	450	4	760	8	716	56.5	62	

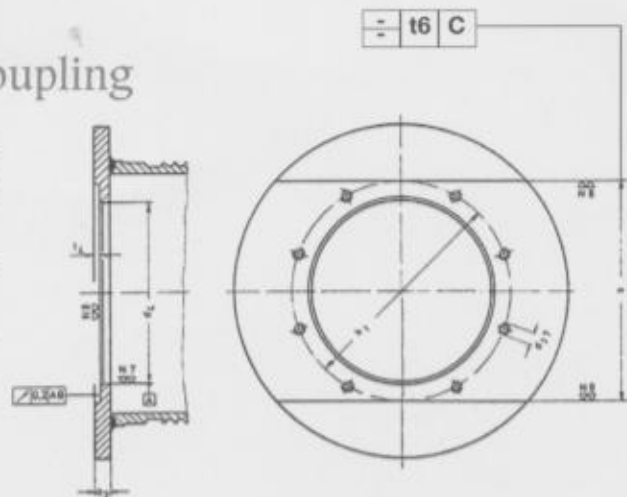
Dimensions in mm
 * Up to size 1.6 - R = 1/8" from size
 2 R = 1/4", the lubricator is not included in
 the scope of supply.

Bore and keyway dimensions to be specified at the order
 Δ For maximum bore
 + For size 26, the tapped holes for release screws are
 machined symmetrically to the drawing
 Technical modifications reserved

APPLICATION

1) Drum assembly with a TONOFLEX® Coupling

- The torque is transmitted to the rope drum through the flat machined sides on the coupling flanges and the drum. Consequently we recommend to make an adjustment as accurate as possible with a maximum clearance equals to the ones mentioned in the table 3.
- The drum flange is in accordance with drawing 1 and the dimensions of the table 3. The steel tensile strength is 550/650 N/mm².
- To remove the clearance it is recommended to use taper wedges welded onto the drum (leaflet supplied on request).
- Bolt quality is according to class 8.8.

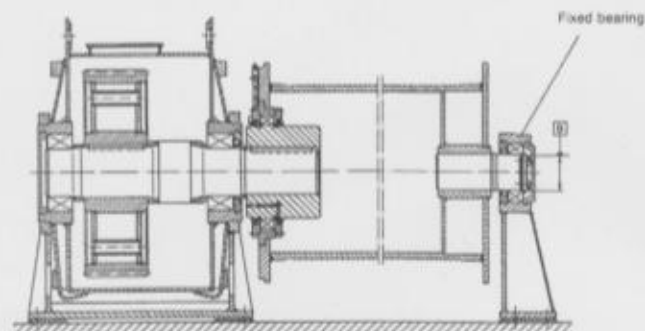


Drawing 1

TABLE 3

Sizes	Serie SEB	a2 min	d4 F 8	d17		kl	s F 8	t4 min	t6
				Thread n	Quantity				
0,25		25	160	M 12	6	220	220	10	0,08
0,5		25	180	M 12	6	250	250	10	0,08
0,75		25	200	M 16	6	280	280	10	0,08
1		25	220	M 16	6	300	300	10	0,08
1,3		25	240	M 16	6	320	320	10	0,10
1,6		25	260	M 16	6	340	340	10	0,10
2	SG 130	25	280	M 16	6	360	360	10	0,10
3		25	310	M 16	6	380	380	10	0,10
4	SG 140	30	340	M 20	6	400	400	10	0,10
6	SG 185	30	420	M 20	6	500	500	10	0,15
10	SG 200	40	450	M 20	8	530	530	20	0,15
15	SG 240	50	530	M 20	8	600	580	25	0,20
26	SG 270	50	560	M 20	24	630	600	25	0,20
34	SG 315	60	600	M 24	24	660	640	35	0,20
42	SG 355	60	670	M 24	24	730	700	35	0,20
62	SG 400	60	730	M 24	24	800	760	35	0,20

ASSEMBLY PRINCIPLE

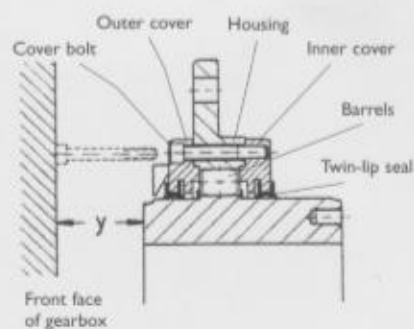


2) Mounting and dismounting of cover bolts

If there is not enough space (Y) (table 4, drawing 2) available to insert the bolts then the bolts should be positioning in the holes of the outer cover before assembly.

TABLE 4

Sizes	0,25/0,5	0,75-1,6	2-3	4-10	15	26-62
Y Spaces	50	55	60	70	80	95



Drawing 2

3) Drum bearing

IMPORTANT: TONOFLEX® couplings are not suitable for the absorption and the transmission of axial loads. Consequently the axial loads resulting from the system must be taken up by the opposite bearing.