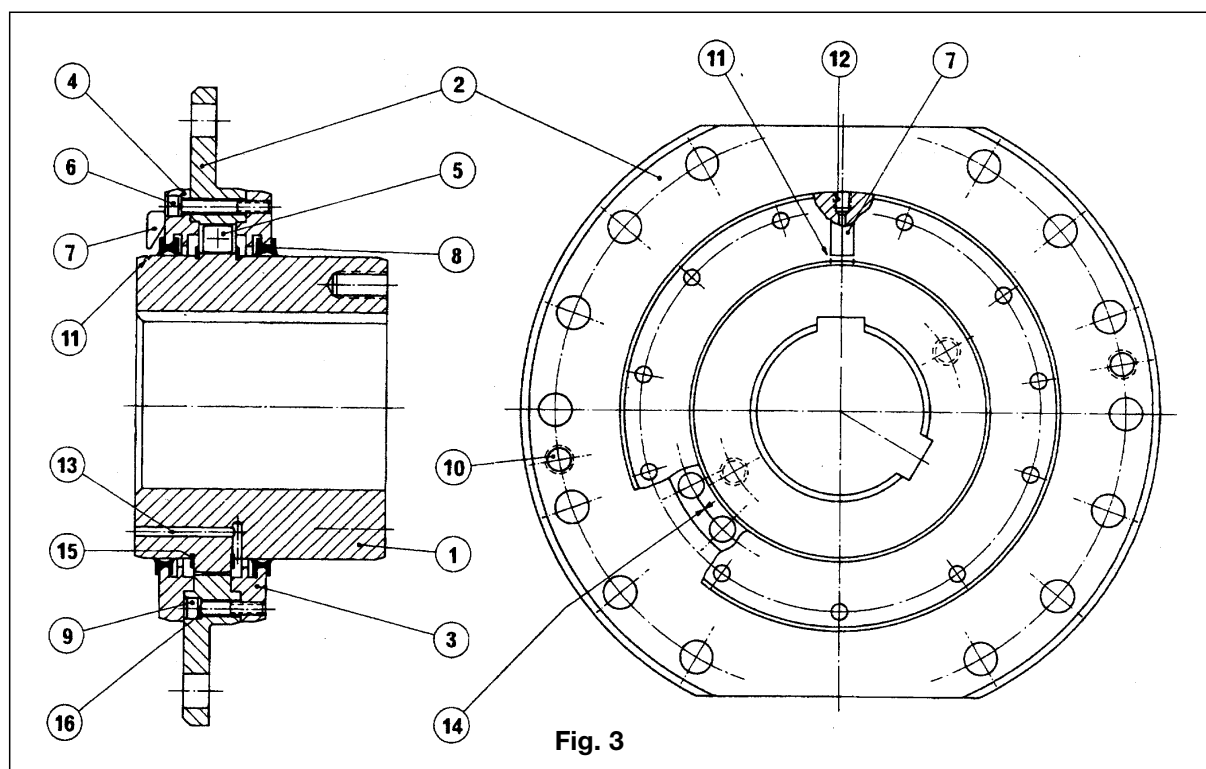


TCB BARREL COUPLINGS

INSTALLATION AND OPERATING INSTRUCTIONS

EXPLODED DRAWING



- | | |
|--|------------------------------------|
| 1. Hub | 9. Allen screw |
| 2. Sleeve | 10. Threaded holes for disassembly |
| 3. Inner cover | 11. Wear limit grooves |
| 4. Outer cover | 12. Grease connection |
| 5. Barrel | 13. Grease overflow |
| 6. Allen screw | 14. Assembly reference |
| 7. Wear and axial adjustment indicator | 15. Barrel guide rings |
| 8. Special seal | 16. Grover washer |

DIAMETERS AND PARAMETERS.

STANDARD TCB

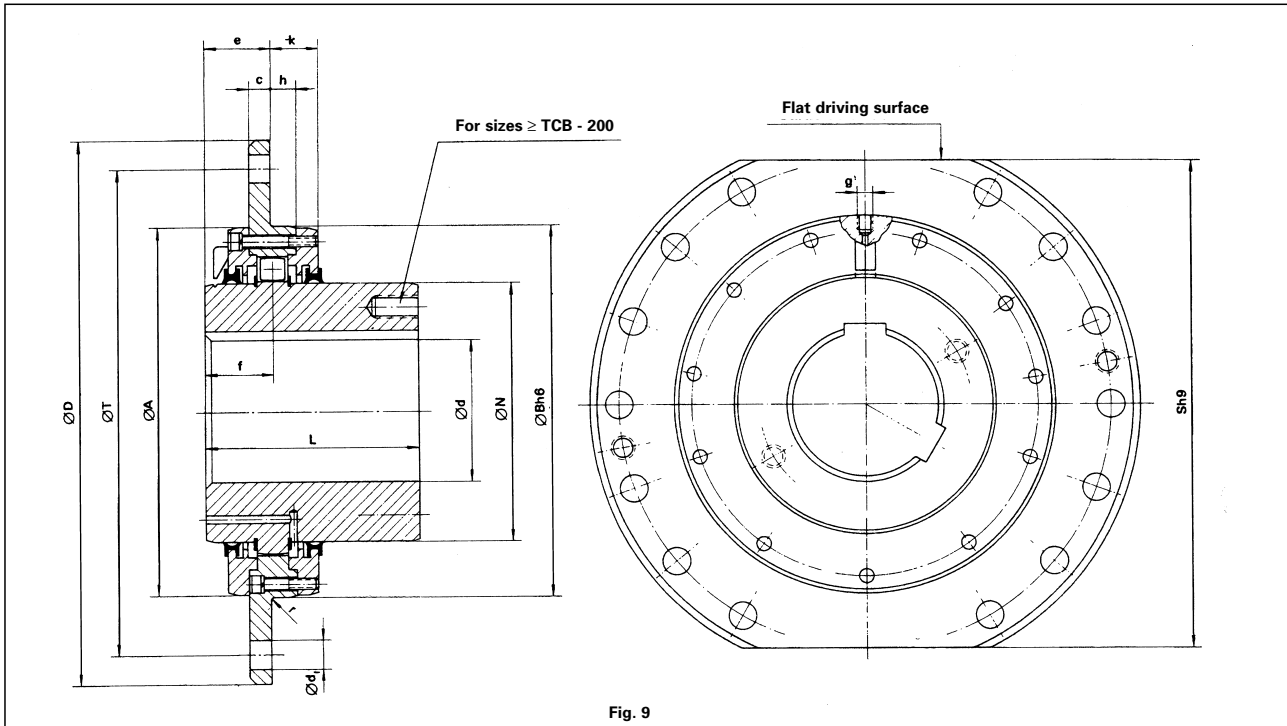
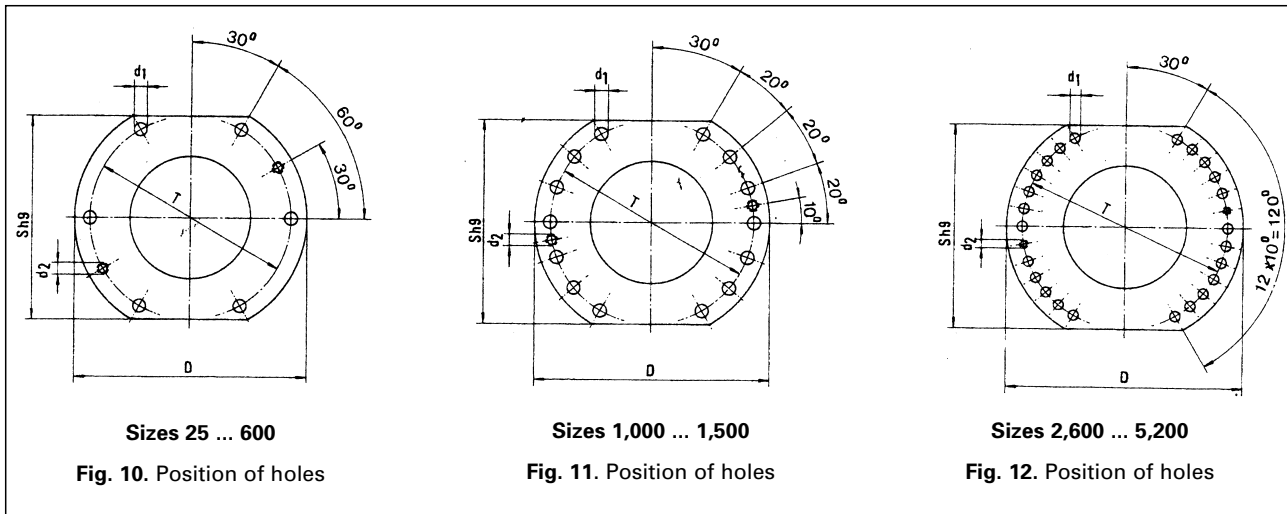


Table 4. Technical data and general dimensions of the standard TCB.

TCB TYPE Size	1) TN (Nm)	Fr Adm. Radial load (N)	Fr																max. axial disp. ± mm	Wt Kg.	J Kgm²	
			max d ²⁾	min d	D	L	min. L	N	A	B	S	e	f	c	r	h	k	T				d ₁
25	4.500	14.500	65	38	250	95	85	95	159	160	220	42	44	12	2,5	16	31	220	15	3	12	0,06
50	6.000	16.500	75	48	280	100	85	110	179	180	250	42	44	12	2,5	16	31	250	15	3	19	0,13
75	7.500	18.500	85	58	320	110	95	125	199	200	280	45	46	15	2,5	17	32	280	19	4	23	0,17
100	9.000	20.000	95	58	340	125	95	140	219	220	300	45	46	15	2,5	17	32	300	19	4	27	0,28
130	15.500	31.000	105	78	360	130	95	160	239	240	320	45	47	15	2,5	19	34	320	19	4	33	0,36
160	19.500	35.000	120	78	380	145	95	180	259	250	340	45	47	15	2,5	19	34	340	19	4	42	0,48
200	24.000	38.500	135	98	400	170	95	200	279	280	360	45	47	15	2,5	19	34	360	19	4	54	0,66
300	28.000	42.000	145	98	420	175	95	220	309	310	380	45	47	15	2,5	19	34	380	19	4	70	0,93
400	38.000	49.000	175	98	450	185	120	260	339	340	400	60	61	20	2,5	22	40	400	24	4	95	1,45
500	61.400	92.000	195	98	510	220	125	290	399	400	460	60	61	20	2,5	22	42	460	24	6	146	2,86
600	70.000	115.000	205	118	550	240	125	310	419	420	500	60	61	20	2,5	22	42	500	24	6	162	3,93
1.000	120.000	125.000	230	138	580	260	130	350	449	450	530	60	61	20	2,5	22	42	530	24	6	195	5,63
1.500	180.000	150.000	280	158	650	315	140	415	529	530	580	65	66	25	2,5	27	47	600	24	6	305	11,0
2.600	310.000	250.000	300	168	680	350	145	445	559	560	600	65	70	25	4	34	54	630	24	9	360	16,0
3.400	400.000	300.000	315	198	710	380	165	475	599	600	640	81	85	35	4	34	56	660	28	8	408	20,0
4.200	500.000	340.000	355	228	780	410	165	535	669	670	700	81	85	35	4	34	56	730	28	8	580	34,5
6.200	685.000	380.000	400	258	850	450	165	600	729	730	760	81	85	35	4	34	59	800	28	8	715	52,0

- 1) During start-up, couplings can admit 200 % of nominal torque capacity.
 - 2) Max. holes for execution with keyways according to DIN 6885/1. For other types of joints consult our Technical Department.
- Maximum angular displacement of axes: $\pm 1^\circ 30'$
 g= lubrication point
 Up to size 160: R. 1/8" Gas, after size 200: R. 1/4" Gas.

FLANGE HOLES



CABLE DRUM FLANGE, COUPLING SIDE

The machining of the cable drum flange will be made according to Figs. 10, 11 or 12. The rest of dimensions according to Table 5.

The quality of the flange material will be St 52 - 3.

Table 5

TYPE TCB	D	T	S F8	a mín	d ₁	Thread d ₂	d ₃ F8	p	Min. n				
25	250	220	220	25	15	M12	160	3	10				
50	280	250	250				180						
75	320	280	280				200						
100	340	300	300				220						
130	360	320	320				240						
160	380	340	340				260						
200	400	360	360	30	19	M16	280	3	10				
300	420	380	380				310						
400	450	400	400				340						
500	510	460	460				400						
600	550	500	500				420						
1.000	580	530	530				40			24	M20	450	3
1.500	650	600	580	50	530								
2.600	680	630	600	60	28	M24	560	5	25				
3.400	710	660	640				600						
4.200	780	730	700				670						
6.200	850	800	760				730						

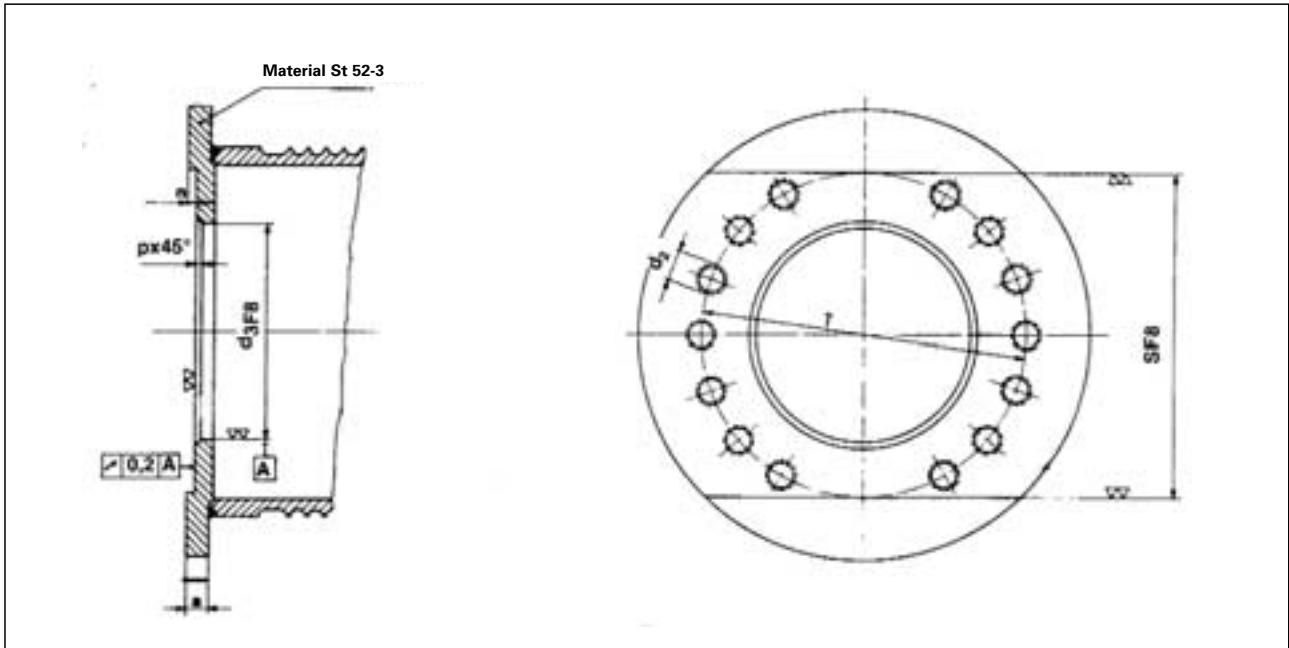


Fig. 13 Coupling side flange for cable drum.

MOUNTING AND MAINTENANCE INSTRUCTIONS

- The TCB barrel coupling is supplied fully assembled. The lubricant with which the coupling is supplied serves to facilitate the assembly of the different components, but a suitable lubricant is necessary for the correct functioning of the coupling.
- Axial forces, as a consequence of component resulting from the inclination of the cables, must be absorbed by the drum support bearing on the opposite the coupling (Pos. a, Fig. 4 in the catalogue) and the cart structure. The deformations that may exist during operation at full load must not be greater than the maximum axial displacement indicated in Table 4.
- **Important:** If the coupling is supplied without machining, it will be necessary to dismount it in order to carry out the corresponding machining. Once machined, during mounting the hub and sleeve must be connected lining up the mark on the hub with the mark on the hub with that on the sleeve (See mounting reference Pos. 14, Fig. 3 on Page 1). After machining, apply an antioxidant.
- The screws for fixing the coupling to the drum and those for the covers must be at least of quality 8.8. For the corresponding tightening torque values, see Table 7.

Table 7. Tightening torques

Thread	M8	M10	M12	M16	M20	M24
Max. tightening torque (Nm)	26	51	89	215	420	725

in quality 8.8.

- Use the threaded holes to handle the parts, avoiding causing blows to the parts.
- The coupling must be greased since it is supplied without the grease necessary for its correct operation.

1. ASSEMBLY OF COUPLING ON GEARBOX SHAFT

a) By means of keyways:

- Both the shaft and the interior of the hub must be free from soiling.
- To ease the assembly and in order to avoid the damage of seals, the complete coupling may be heated in an oil bath to a maximum temperature of 80 °C.
- Set the hub on the shaft, with care.
- The sleeve must allow axial displacement.

b) Joint by mean of interference, without keyway:

- It is necessary to previously disassemble the outer cover, sleeve, guide ring and barrels.
- Prior to the assembly of the coupling, its component parts must be carefully cleaned.
- Position the outer cover, with its seal, previously on the shaft.
- If it is envisaged that there will not be space to mount the fixing screws, these may be previously introduced in their housings. Check the distance Y (Fig. 15); for this purpose, see Table 8.

Table 8. Y distance.

Coupling size	25-75	75-300	400-1.000	1.500	2.600-6.200
Min Y (mm)	50	55	70	80	90

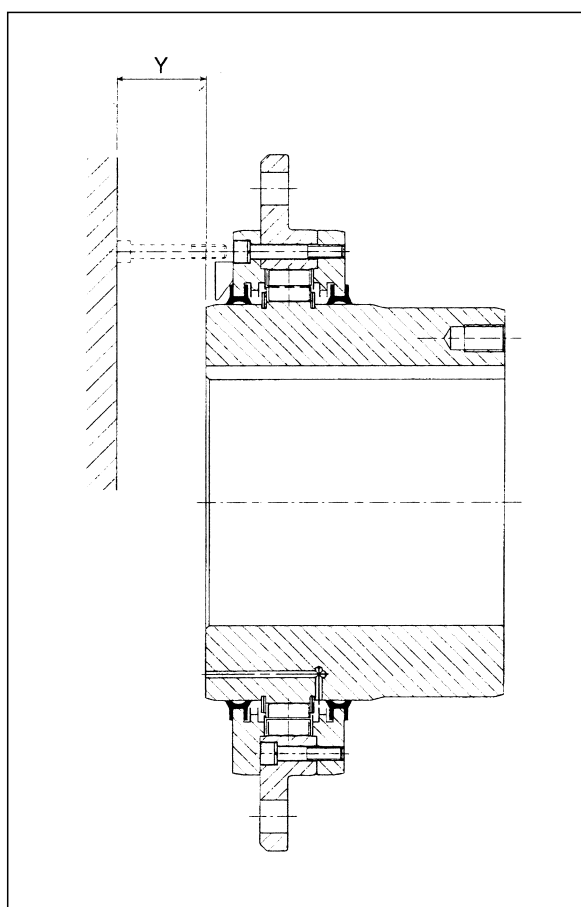


Fig. 15.

Distance necessary screw removal..

b) Connection by means of interference, without a keyway (contd.):

- Heat the coupling hub progressively to the required temperature (depending on the interference). By way of guidance, a temperature of 200 - 250 °C is usually sufficient. This temperature should not be exceeded, even locally, taking care to prevent contact between the cover seals and the hot hub, as the seals may be damaged by the high temperature.
- Set the hub on the shaft until it reaches its designated position. The hub must not come into contact with any seal as this could be damaged due to the high temperature. Continue with the assembly after allowing the hub to cool.
- Mount the sleeve on the hub respecting the mounting mark Pos.14, according to Fig. 3.
- Introduce the barrels, fixing them by means of the guide ring.
- Mount the cover, lining the indicator up with the respective mark on the hub.
- The sleeve must allow axial displacement.

In the case of dismantling by oil injection, consult our Technical Department.

2. AXIAL TRIMMING OF COUPLING. ANGULAR ALIGNMENT OF DRUM.

Prior to drilling the holes for the fastening of support Pos.a, Fig. 4, axially fix the position of the drum with respect to the coupling's hub. To this end, axially line up the indicator fixed on the cover with the groove on the hub, according to Fig. 16. During assembly, axial displacement must not exceed 10 % of the maximum nominal value admitted by the coupling, according to Table 4.

After this, the alignment of the rolling drum with respect to the gearbox output shaft will be made, checking the distance "X" by measurement with a ruler, positioning it at four pour points at 90°, according to Fig. 17. The difference between the maximum and minimum values of "X" must be less than the value shown in Table 9.

The distance from the hub side to the coupling sleeve side must coincide with: $(e - c) \pm 10\%$ max. axial displacement, according to Fig. 9.

In the same way it is possible to align both axially and angularly by means of the use of a laser, placing the bases on the drum bearing support and on the gear reducer. (The values e, c are shown in table 4).

Table 9. Difference in distance X (mm)

Drum size	Distance between max. and min. X
< 1 metre	< 0,5 mm
> 1 metre	> 0,8 mm

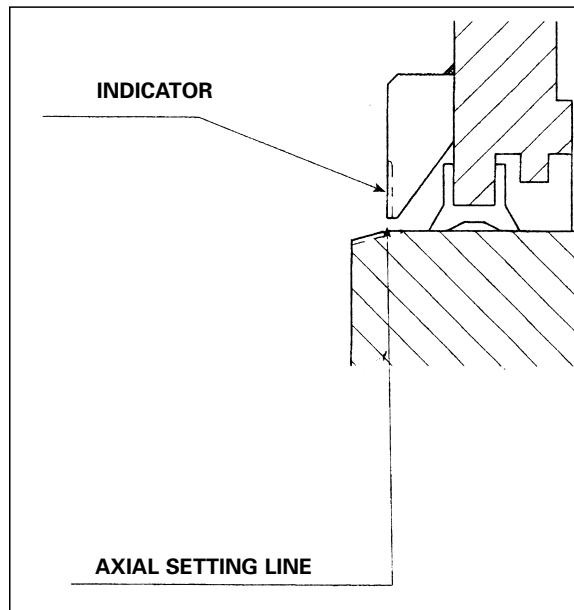


Fig. 16 Axial positioning

3. GREASING.

Once the assembly is finished, ensure that the coupling is greasing before coming into service. Use must be made of a lubricant of the following characteristics (for temperatures between -20 °C and + 80 °C, consult Jaure for temperatures outside this range):

Reference	Manufacturer
Klüberlub BE 401 - 1501	Klüber
Atlanta	Verkol
Mobilux EP-2	Mobil
Energrease LS-EP2	BP
Alvania EP-2	Shell
Norva HT2	Esso
Renolit H443-HD88	Fuchs DEA

Lubrication will be carried out using a prolongation of the greasing tube inserted in the corresponding orifice of the outer cover. Grease must be inserted until it comes out of the overflow aperture, situated at the opposite end of the hub, Pos. 13, Fig. 3.

For the quantities of grease to be used in each size, see Table 10:

Table 10 Quantity of grease per coupling.

Size of coupling	25	50	75	100	130	160	200	300	400
Quantity kg	0,08	0,10	0,12	0,14	0,15	0,17	0,19	0,23	0,45
Size of coupling	500	600	1000	1500	2600	3400	4200	6200	
Quantity kg	0,54	0,57	0,65	0,72	0,9	1,0	1,3	2,0	

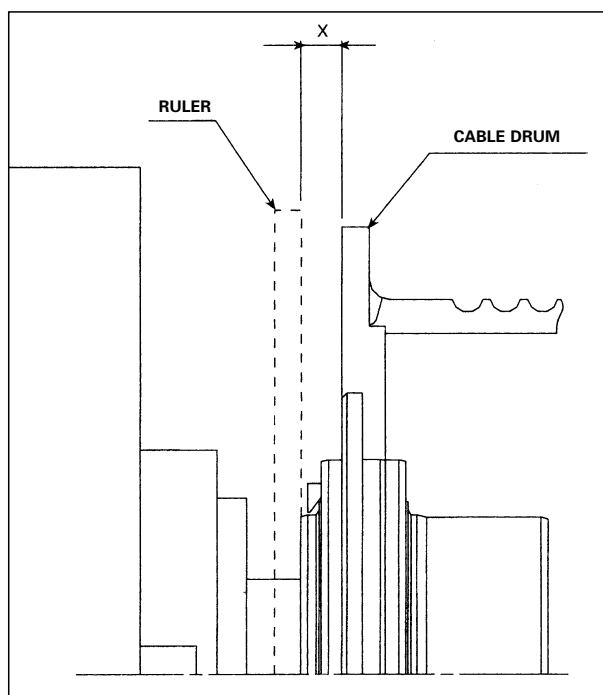


Fig. 17 Coupling alignment

4. MAINTENANCE

Greasing: The grease will be completely renewed each 2000 or 3000 hours of operation, depending on service conditions, or at least once a year. To this end, introduce new grease through the input orifice, expelling the used grease through the overflow outlet.

Periodic inspections, check the following at least once a year:

- a) The tightening torque of the screws must be as indicated. If any screw is observed to be in a bad state, it is recommended to replace all the screws.
- b) Internal wear of the toothing. Wear may be checked by means of the position of the indicator mark over the marks on the hub (Fig. 18). The relative position of the two marks reveals the wear of the flanks.

The coupling is originally supplied with the indicator centred on the hub marks (Pos. a).

When the limit is reached (Pos. b), it is necessary to replace the complete coupling.

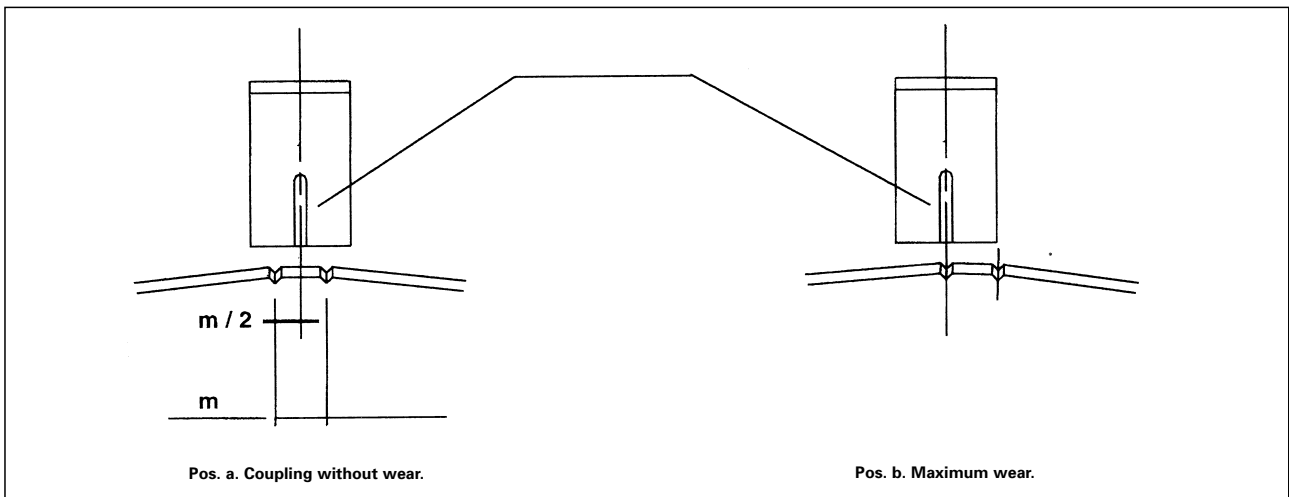


Fig 18 Wear of the coupling.

Table 11 shows the maximum wear values permissible for reversible load applications typical in the translation of a container crane. For single load direction applications, the amplitude between marks must be multiplied by two. Except where expressly requested, the marks supplied are those to be used in reversible applications.

Table 11. Control of coupling wear

Coupling size	25	50	75	100	130	160	200	300	400	500	600	1.000	1.500	2.600	3.400	4.200	6.200
Max. wear $m / 2$ (mm)	4	4	4	4	6	6	6	6	6	8	8	8	8	8	8	8	8

c) Axial setting: Checks the distance "X" according to Fig. 13. If this distance is greater than 10 % of that shown in Table 4, the position of seating of the support-bearing must be reset.

d) Control of seals: Replace the seals if any deterioration is observed in their lips.