



The **ROTEX® BTAN / SBAN** is a failsafe torsionally flexible jaw type coupling with brake drum or brake disk. It is able to compensate for shaft displacements caused by, for example, inaccuracies in production, heat expansion etc.

General Hints

Please read through these mounting instructions carefully before you set the coupling into operation. Please pay special attention to the safety instructions!

The mounting instructions are part of your product. Please keep them carefully and close to the coupling.

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Safety and Advice Hints



DANGER !

Danger of injury to persons.



CAUTION !

Damages on the machine possible.



ATTENTION !

Pointing to important items.

General Hints to Danger



DANGER !

With assembly, operation and maintenance of the coupling it has to be made sure that the entire drive train is protected against unintentional engagement. You can be seriously hurt by rotating parts. Please make absolutely sure to read through and observe the following safety instructions.

- All operations on and with the coupling have to be performed taking into account "safety first".
- Please make sure to disengage the power pack before you perform your work.
- Protect the power pack against unintentional engagement, e. g. by providing hints at the place of engagement or removing the fuse for current supply.
- Do not touch the operation area of the coupling as long as it is in operation.
- Please protect the coupling against unintentional touch. Please provide for the necessary protection devices and caps.

Proper Use

You may only assemble, operate and maintain the coupling if you

- have carefully read through the mounting instructions and understood them
- and if you are authorized and have proper skills

The coupling may only be used in accordance with the technical data (see **ROTEX®** catalogue). Unauthorized modifications on the coupling design are not admissible. We do not take any warranty for resulting damages. To further develop the product we reserve the right for technical modifications. The **ROTEX® BTAN / SBAN** described in here corresponds to the technical status at the time of printing of these mounting instructions.

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KTR Kupplungstechnik
GmbH
D-48407 Rheine

ROTEX®
mounting instructions
design BTAN and SBAN

KTR-N 40221 E
sheet: 2
edition: 2

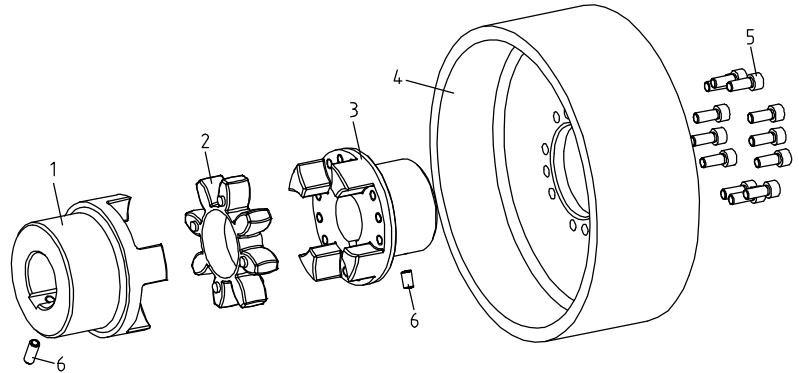
Basically the coupling is supplied in individual parts. Before assembly the coupling has to be controlled for completeness.

Components of ROTEX® BTAN

Component	Quantity	Designation	Component	Quantity	Designation
1	1	standard hub	4	1	brake drum
2	1	spider	5	see table 1	cap screws DIN 912
3	1	FN hub	6	2	grup screws DIN 916

standard - spiders

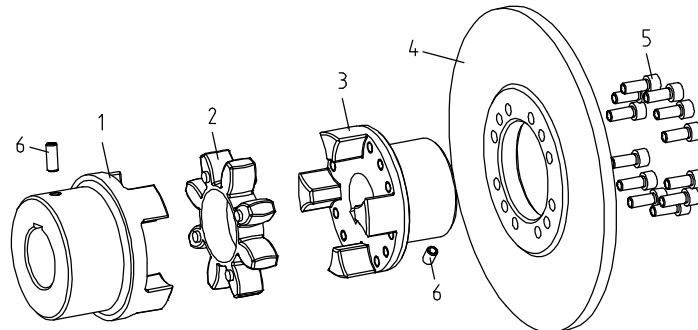
spider hardness (shore)	marking (colour)
92 ShA	yellow
95/98 ShA	red
64 ShD-F	natural white with green marking of teeth



picture 1: ROTEX® BTAN

Components of ROTEX® SBAN

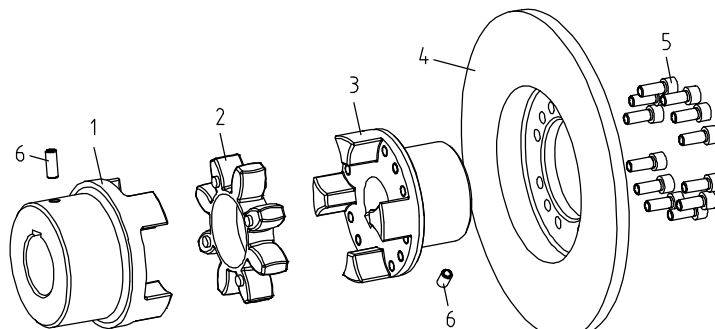
Component	Quantity	Designation	Component	Quantity	Designation
1	1	standard hub	4	1	brake disk
2	1	spider	5	see table 1	cap screws DIN 912
3	1	FN hub	6	2	grup screws DIN 916



picture 2: ROTEX® SBAN

Components of ROTEX® SBAN with cranked brake disk

Component	Quantity	Designation	Component	Quantity	Designation
1	1	standard hub	4	1	cranked brake disk
2	1	spider	5	see table 1	cap screws DIN 912
3	1	FN hub	6	2	grup screws DIN 916



picture 3: ROTEX® SBAN with cranked brake disk

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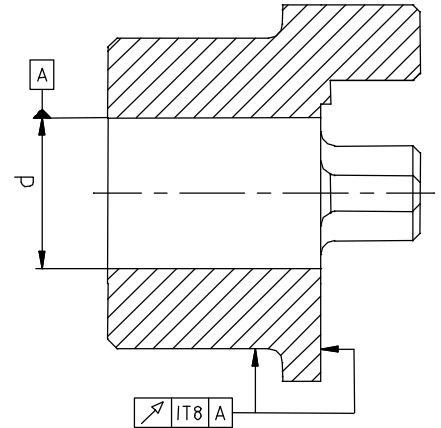
Mounting Hint



DANGER !

The maximum permissible bore diameters d_{1max} and d_{2max} (see ROTEX® catalogue) must not be exceeded. If these figures are disregarded, the coupling may tear. Rotating parts may cause serious danger.

- Hub bores machined by the customer have to observe concentric running or axial running, respectively (see picture 4).
- Please make absolutely sure to observe the figures for d_{1max} and d_{2max} .
- Carefully align the hubs when the finish bore is brought in.
- Please provide for a setscrew or an end plate for the axial fastening of the hubs.



picture 4: concentric and axial running

Assembly of the hubs



ATTENTION !

We recommend to check bores, shaft, keyway and feather key for dimensional accuracy before assembly.

Heating the hubs slightly (approx. 80° C) allows for an easier installation onto the shaft.



DANGER !

Touching the heated hubs may cause burns. We would recommend to wear safety gloves.

Assembly of the coupling



CAUTION !

For the assembly please make sure that the distance dimension E (table 2) is kept to ensure that the spider can be moved axially when in operation. Disregarding this hint may cause damage on the coupling.

- Assemble the FN hub with the brake drum / brake disk. Tighten the screws with a suitable torque wrench to the tightening torques T_A (see picture 5).



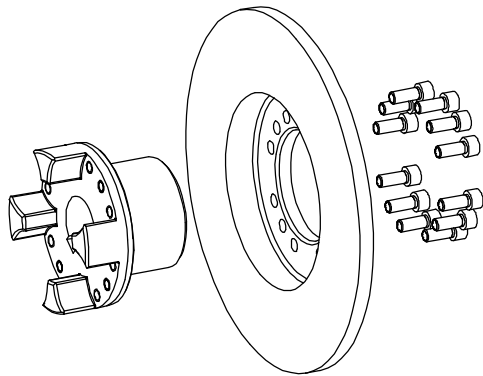
ATTENTION !

Before tightening the screws please put Loctite 243 on the threads.

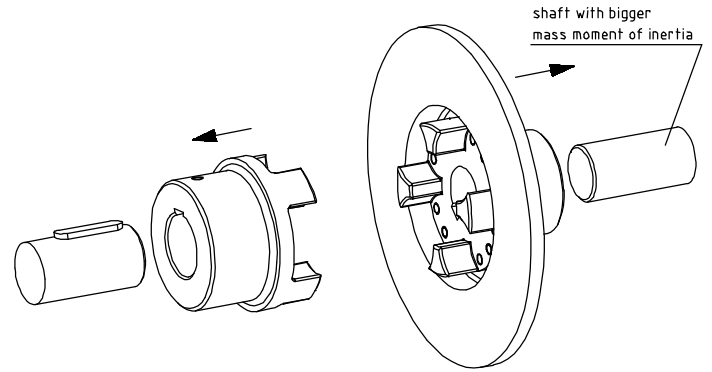
- Assemble the hub and the FN hub with the brake drum / brake disk onto the shaft of the driving side and the driven side. Put the FN hub onto the shaft end where the bigger mass moment of inertia becomes effective. The max. braking torque must not be bigger than the max. torque (T_{kmax}) of the coupling (see picture 6).
- Secure the hubs by fastening the grub screws DIN 916 with splined cup point or by an end plate.
- Install the spider inside the cams of the hub (see picture 7).
- Push the machines to be connected together until the distance dimension E is achieved.



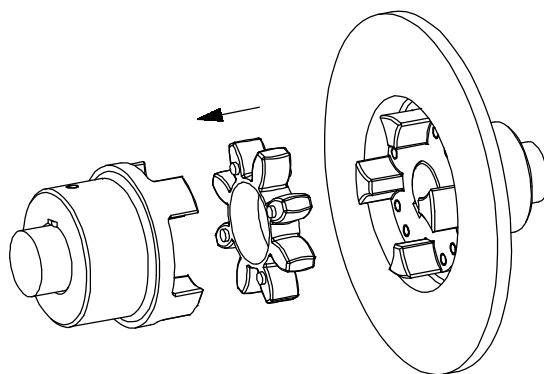
Assembly of the coupling



picture 5



picture 6



picture 7

Example: Assembly of the SBAN
with cranked brake disk.



CAUTION !

Having set the coupling into operation, the tightening torque of the screws and wear of spider have to be inspected in usual maintenance intervals and exchanged, if necessary.

Table 1:

coupling size	28	38	42	48	55	65	75	90	100	110	125	140	160	180
screw size M	M6	M8	M8	M8	M10	M10	M12	M16	M16	M20	M20	M20	M24	M24
quantity z	8	8	12	12	8	12	15	15	15	15	15	15	15	18
tightening torque T_A [Nm]	17	41	41	41	83	83	120	295	295	580	580	580	1000	1000

Displacements

The displacement figures shown in table 2 offer sufficient safety to compensate for environmental influences like, for example, heat expansion or lowering of foundation.



CAUTION !

In order to ensure a long lifetime of the coupling, the shaft ends have to be aligned accurately. Please absolutely observe the displacement figures indicated (see table 2). If the figures are exceeded, the coupling will be damaged.

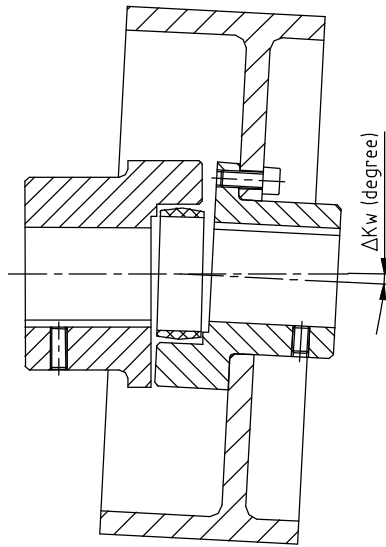
Please note:

- The displacement figures mentioned in table 2 are maximum figures which must not arise in parallel. If radial and angular displacement arises at the same time, the permissible displacement values may only be used in part.
- Please check with a dial gauge, ruler or feeler whether the permissible displacement figures of table 2 can be observed.

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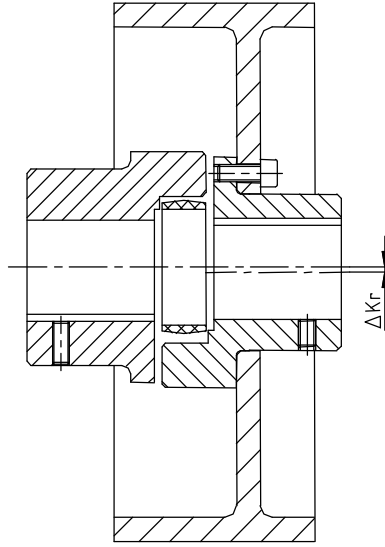


Displacements

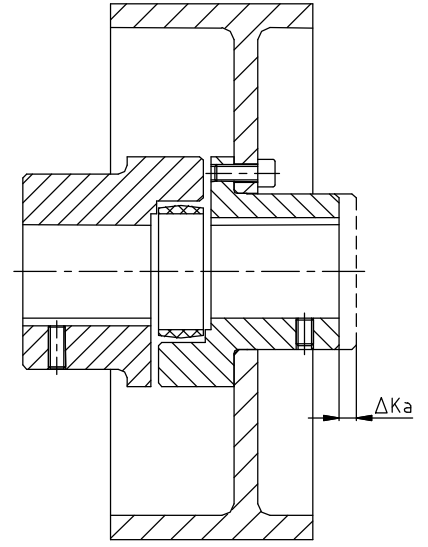


angular displacements

$$\Delta K_W \text{ [mm]} = L_{1 \text{ max.}} - L_{1 \text{ min.}}$$



radial displacements



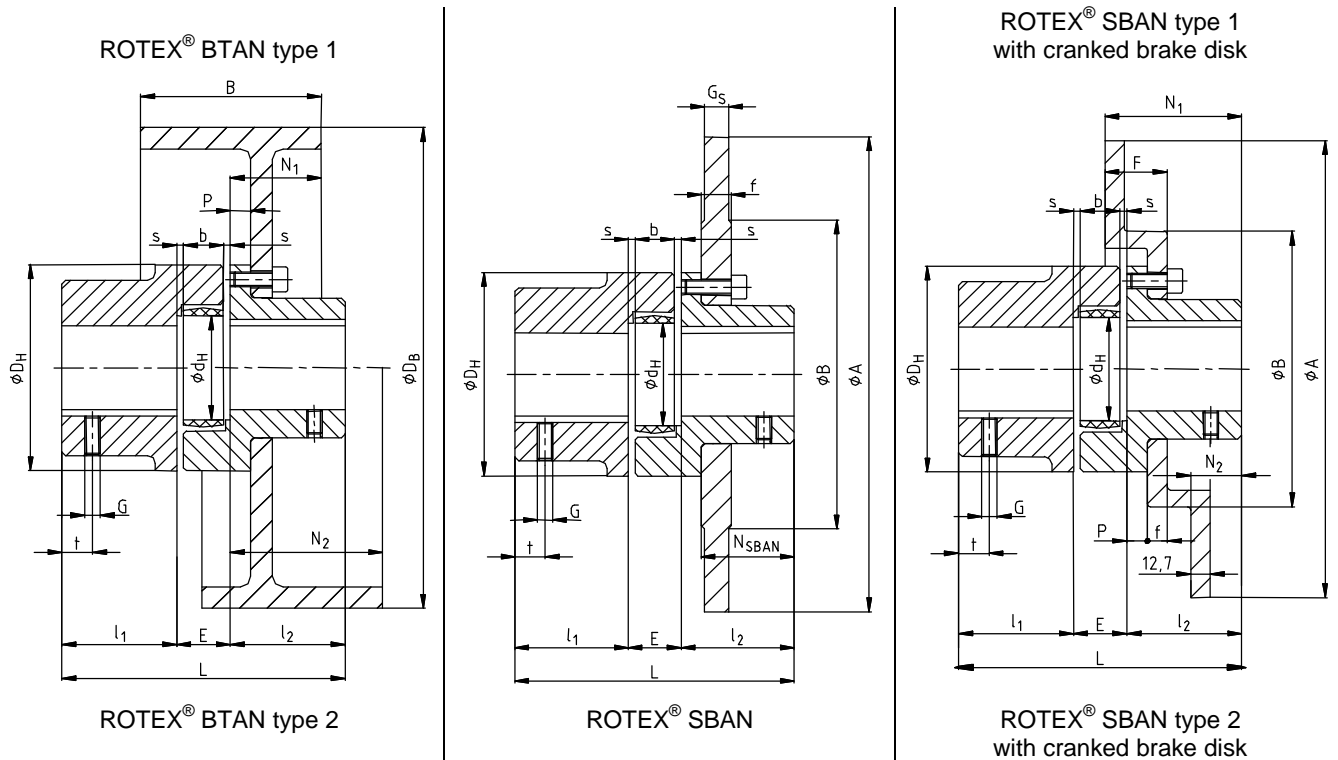
axial displacements

$$L_{\text{max.}} \text{ [mm]} = L + \Delta K_A$$

picture 8: displacements

Example: displacements at the BTAN

Technical Data



picture 9: dimensions

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Technical Data

Table 2:

coupling size	28	38	42	48	55	65	75	90	100	110	125	140	160	180
Installation dimensions														
distance dimension E	20	24	26	28	30	35	40	45	50	55	60	65	75	85
dimension s	2,5	3	3	3,5	4	4,5	5	5,5	6	6,5	7	7,5	9	10,5
dimension b	15	18	20	21	22	26	30	34	38	42	46	50	57	64
dimension d _H	30	38	46	51	60	68	80	100	113	127	147	165	190	220
dimension D _H	65	80	95	105	120	135	160	200	225	255	290	320	370	420
dimension L	90	114	126	140	160	185	210	245	270	295	340	375	425	475
dimension l ₁ / l ₂	35	45	50	56	65	75	85	100	110	120	140	155	175	195
Threads for setscrews (until size 110 incl., larger sizes on request)														
dimension G	M6	M8	M8	M8	M10	M10	M10	M12	M12	M16	M16	M20	M20	M20
dimension t	15	15	20	20	20	20	25	30	30	35	40	45	50	50
tightening torque T _A	4,8	10	10	10	17	17	17	40	40	80	80	140	140	140
Displacements														
max. axial displacement ΔKa [mm]	1,5	1,8	2,0	2,1	2,2	2,6	3,0	3,4	3,8	4,2	4,6	5,0	5,7	6,4
max. radial displacement at n=1500 1/min. ΔKr [mm]	0,25	0,28	0,32	0,36	0,38	0,42	0,48	0,50	0,52	0,55	0,60	0,62	0,64	0,68
max. radial displacement at n=3000 1/min. ΔKr [mm]	0,17	0,19	0,21	0,25	0,26	0,28	0,32	0,34	0,36	0,38	-	-	-	-
ΔKw [degree] max. angular displacement at n=1500 1/min. ΔKw [mm]	0,9	1,0	1,0	1,1	1,1	1,2	1,2	1,2	1,2	1,3	1,3	1,2	1,2	1,2
	1,05	1,35	1,70	2,00	2,30	2,70	3,30	4,30	4,80	5,60	6,50	6,60	7,60	9,00
ΔKw [degree] max. angular displacement at n=3000 1/min. ΔKw [mm]	0,8	0,8	0,8	0,9	1,0	1,0	1,0	1,1	1,1	1,1	-	-	-	-
	0,84	1,10	1,40	1,60	2,00	2,30	2,90	3,80	4,20	5,00	-	-	-	-

Table 3: Dimensions of BTAN

coupling size ¹⁾	28	38	42	48	55	65	75	90	100	110	125	140	160	180	
Installation dimensions															
dimension P	6,5	7,5	9,5	10,5	12,5	13,5	15,5	18,5	20,5	23,5	27,5	30,5	34,5	38,5	
dimension N ₁ at brake drum ØD _B x B ²⁾	160 x 60	30	31												
	200 x 75	35	36	38	39	41									
	250 x 95	43	44	46	47	49	50	52							
	315 x 118			55	56	58	59	61	64						
	400 x 150			68	69	71	72	74	77	79	82				
	500 x 190						87	89	92	94	97	101	104		
	630 x 236							107	110	112	115	119	122	126	130
	710 x 265									123	126	130	133	137	141
800 x 300											144	147	151	155	
dimension N ₂ at brake drum ØD _B x B ²⁾	160 x 60	52	53												
	200 x 75	62	63	65	66	68									
	250 x 95	76	77	79	80	82	83	85							
	315 x 118			95	96	98	99	101	104						
	400 x 150			118	119	121	122	124	127	129	132				
	500 x 190						151	153	156	158	161	165	168		
	630 x 236							185	188	190	193	197	200	204	208
	710 x 265									212	215	219	222	226	230
800 x 300											244	247	251	255	

1) from size 100 on request

2) The dimensions N₁ and N₂ in the table are rounded off by 0,5 mm.



Technical Data

Table 4: Dimensions of SBAN

coupling size ¹⁾	28	38	42	48	55	65	75	90	100	110	125	140	160	180
Installation dimensions														
dimension N _{SBAN}	28,5	37,5	40,5	45,5	52,5	61,5	69,5	81,5	89,5	96,5	112,5	124,5	140,5	156,5
Classification of ROTEX® SBAN - coupling / size of brake disk														
A x G _S	B x f													
200 x 12,5	90 x 15		x	x										
250 x 12,5	140 x 15		x	x	x	x								
315 x 16	205 x 20				x	x	x	x						
400 x 16	290 x 20					x	x	x	x	x	x			
500 x 16	390 x 20					x	x	x	x	x	x	x	x	
630 x 20	520 x 25						x	x	x	x	x	x	x	x
710 x 20	600 x 25							x	x	x	x	x	x	x
800 x 25	690 x 30								x	x	x	x	x	x
900 x 25	790 x 30									x	x	x	x	x
1000 x 25	890 x 30										x	x	x	x

1) form size 100 on request

Table 5: Dimensions of SBAN with cranked brake disk

coupling size ¹⁾	28	38	42	48	55	65	75	90	100	110	125	140	160	180	
Installation dimensions															
dimension P	6,5	7,5	9,5	10,5	12,5	13,5	15,5	18,5	20,5	23,5	27,5	30,5	34,5	38,5	
dimension N ₁ at nominal Ø of the brake disk ²⁾	250	58	67	70	75										
	300			68	73	80	90	97							
	350				83	90	99	107							
	400							110	122	130					
	460							107	119	127	134				
	515							107	119	127	134	150	162		
	610							107	119	127	134	150	162	178	194
	710							104	116	124	131	147	159	175	191
	810								110	118	125	141	153	169	185
915													169	185	
dimension N ₂ at nominal Ø of the brake disk ²⁾	250	5	14	17	22										
	300			12	17	24	33	41							
	350				4	11	20	28							
	400							28	40	48					
	460							28	40	48	55				
	515							28	40	48	55	71	83		
	610							28	40	48	55	71	83	99	115
	710							28	40	48	55	71	83	99	115
	810								40	48	55	71	83	99	115
915													99	115	

1) from size 100 on request

2) In the table the N₁ dimensions are rounded off by 0,5 mm and the N₂ dimensions are rounded off by 0,2 mm.

Table 6: Dimensions of SBAN with cranked brake disk

nominal Ø brake disk	250	300	350	400	460	515	610	710	810	915
dimension A	250	300	356	406	457	514	610	711	812	915
dimension B	128	181	210	260	311	368	464	565	660	760
dimension f	6	13	16	13	16	16	16	19	25	25
dimension F	36	41	54	54	54	54	54	54	54	54