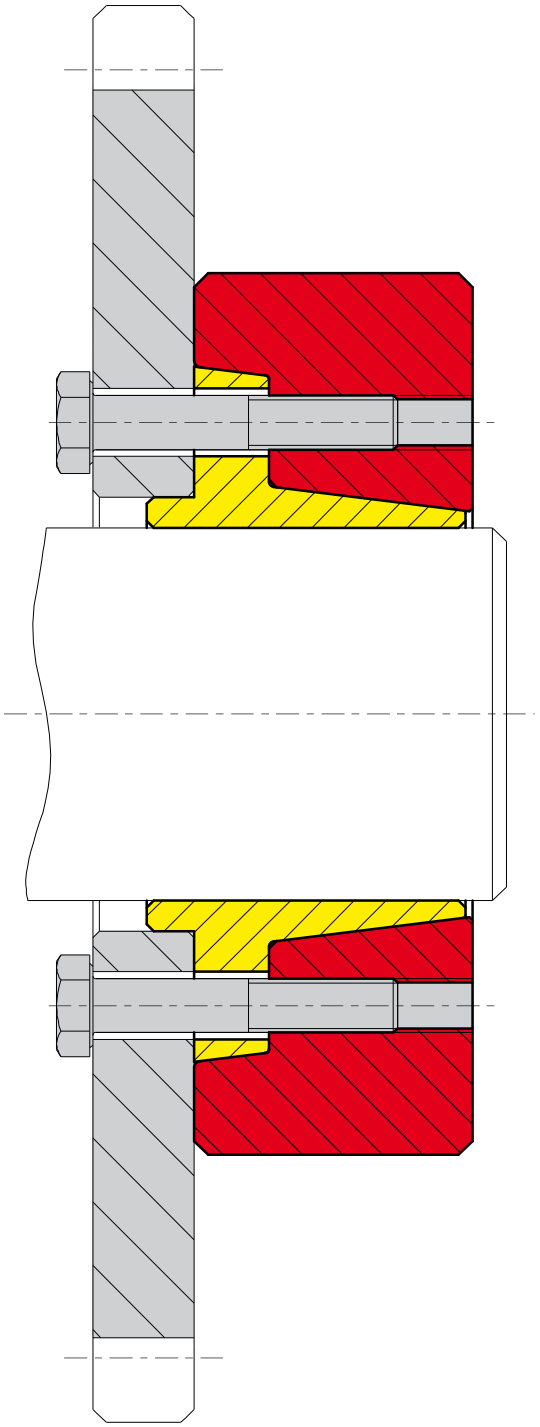
Locking Unit Type AS

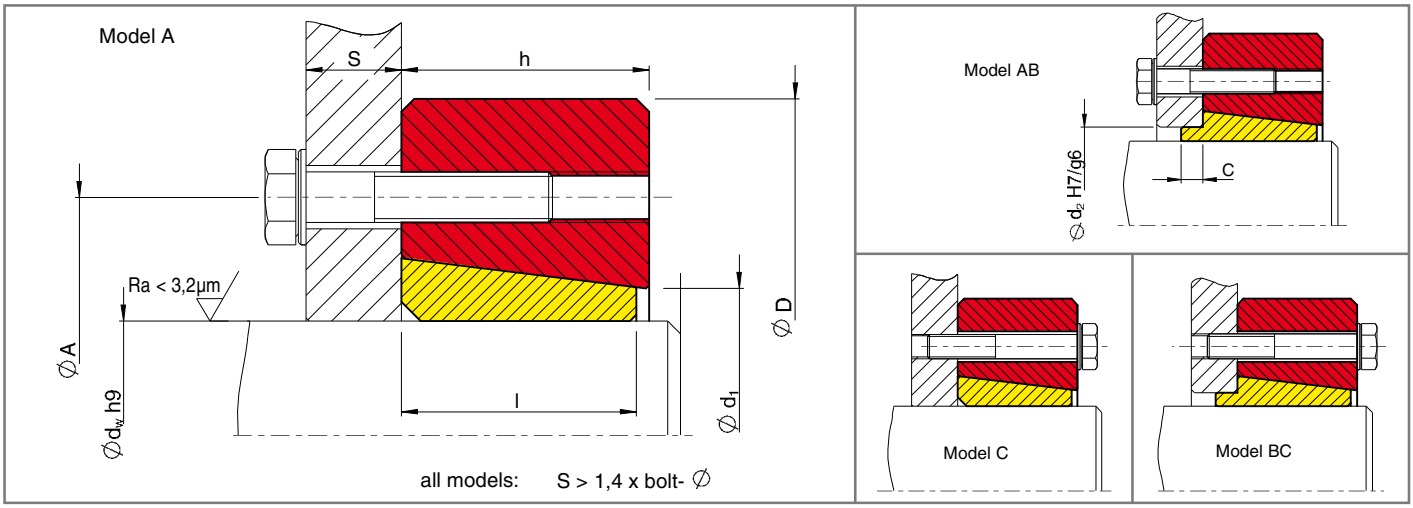
Series 12, 22 and 23



Locking Unit Type AS

Series 12

For the transmission of torque only. For the transmission of both torque and bending moments select series 22 or 23.



Type	d_w	M_t	B*	M_a	A	D	l	h	C	d_1	d_2	kg
	mm	kNm	Grade 10.9	Nm	mm	mm	mm	mm	mm	mm	mm	
AS 10 - 12	11	0,02	3 x M6 x 18	12	25	39	9	10	1,5	13	12	0,1
	10	0,02										
	9	0,02										
AS 12 - 12	13	0,05	3 x M6 x 20	12	28	44	12	13	1,5	16	14	0,1
	12	0,05										
	11	0,05										
AS 15 - 12	16	0,13	3 x M6 x 25	29	36	52	14	15	2	21	18	0,2
	15	0,13										
	14	0,13										
AS 20 - 12	20	0,20	3 x M8 x 30	29	42	60	16	17	2	26	22	0,3
	18	0,20										
	16	0,20										
AS 25 - 12	25	0,34	5 x M8 x 30	29	48	66	18	19	2	32	27	0,4
	22	0,34										
	20	0,34										
AS 30 - 12	30	0,55	6 x M8 x 35	29	56	76	20	21	2	38	32	0,6
	28	0,55										
	25	0,55										
AS 40 - 12	40	1,06	6 x M10 x 35	58	70	96	24	25	3	47	43	1,2
	35	1,06										
	30	1,06										
AS 50 - 12	50	2,20	7 x M12 x 45	100	84	112	29	30	3	58	53	1,8
	45	1,80										
	40	1,00										
AS 60 - 12	60	3,23	9 x M12 x 50	100	94	120	32	34	3	66	63	2,2
	55	3,23										
	50	2,30										
AS 70 - 12	70	5,80	8 x M16 x 60	240	112	148	38	40	4	79	74	4,2
	65	5,80										
	60	4,50										
AS 80 - 12	80	8,64	9 x M16 x 65	240	130	170	42	44	4	94	84	6,1
	75	8,64										
	70	6,90										
AS 90 - 12	90	12,00	12 x M16 x 70	240	144	185	48	50	4	104	94	8,0
	85	12,00										
	80	10,70										
AS 100 - 12	100	15,80	14 x M16 x 75	240	156	197	52	54	4	114	104	9,5
	95	15,80										
	90	15,80										

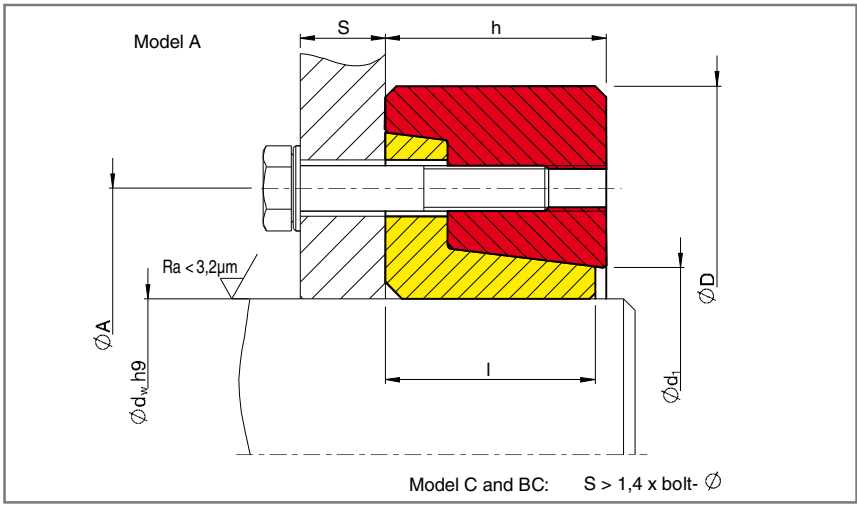
Further sizes on request. Technical changes to be reserved without notice.

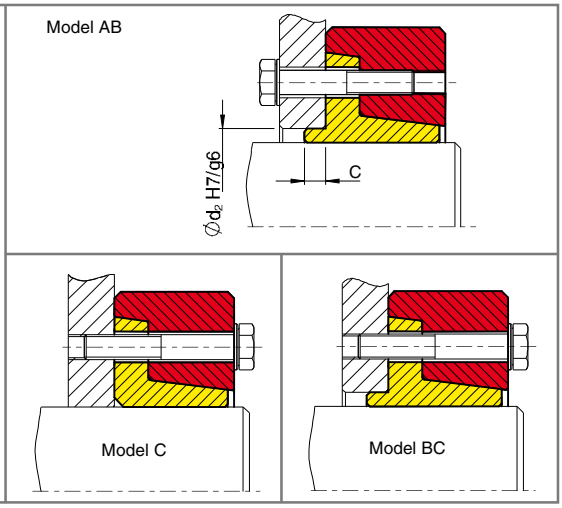
*Tightening bolts: standard DIN EN ISO 4017/4014: length for model C and BC, alternative DIN EN ISO 4762
M16 and upwards with washers: DIN EN ISO 7416

When ordering please state : e.g. AS 70 - 12 x 65 x C (Type x Ø d_w x desired model) flange width for model A and AB

Locking Unit Type AS

Series 22





Type	d_w	M_t	B*	M_a	A	D	l	h	C	d_1	d_2	kg
	mm	kNm	Grade 10.9	Nm	mm	mm	mm	mm	mm	mm	mm	
AS 12 - 22	12	0,05	3 x M6 x 20	12	24	35	10	11	1,5	13	14	0,1
	11	0,05										
AS 14 - 22	14	0,07	3 x M6 x 20	12	26	38	11	12	1,5	15	16	0,1
	13	0,07										
AS 16 - 22	16	0,08	3 x M6 x 25	12	28	41	14	15	2	17	18	0,1
	15	0,08										
AS 18 - 22	18	0,13	4 x M6 x 25	12	30	44	14	15	2	19	20	0,1
	17	0,13										
AS 20 - 22	20	0,14	4 x M6 x 25	12	32	47	14	15	2	21	22	0,2
	19	0,14										
AS 25 - 22	25	0,20	5 x M6 x 30	12	36	50	17	18	2	26	27	0,2
	24	0,20										
	22	0,20										
AS 30 - 22	30	0,30	6 x M6 x 30	12	44	60	18	19	3	32	32	0,3
	28	0,30										
	26	0,30										
AS 35 - 22	36	0,50	5 x M8 x 35	29	52	72	20	21	3	38	38	0,5
	35	0,50										
	32	0,45										
AS 40 - 22	44	0,75	6 x M8 x 35	29	61	80	22	23	3	47	46	0,6
	40	0,75										
	38	0,72										
AS 50 - 22	50	1,3	8 x M8 x 40	29	68	90	24	25	3	53	53	0,9
	45	1,3										
	42	1,0										
AS 55 - 22	55	1,6	8 x M8 x 40	29	72	100	26	27	3	58	58	1,2
	52	1,6										
	45	1,6										
AS 60 - 22	62	2,0	9 x M8 x 40	29	80	110	26	27	3	66	63	1,4
	60	2,0										
	50	2,0										
AS 70 - 22	70	2,1	9 x M8 x 40	29	86	115	26	27	4	72	74	1,4
	65	2,1										
	60	2,1										
AS 80 - 22	80	4,0	10 x M10 x 45	58	100	138	28	29	4	84	84	2,2
	75	4,0										
	70	4,0										

*Tightening bolts: standard DIN EN ISO 4017/4014: length for model C and BC, alternative DIN EN ISO 4762
M16 and upwards with washers: DIN EN ISO 7416

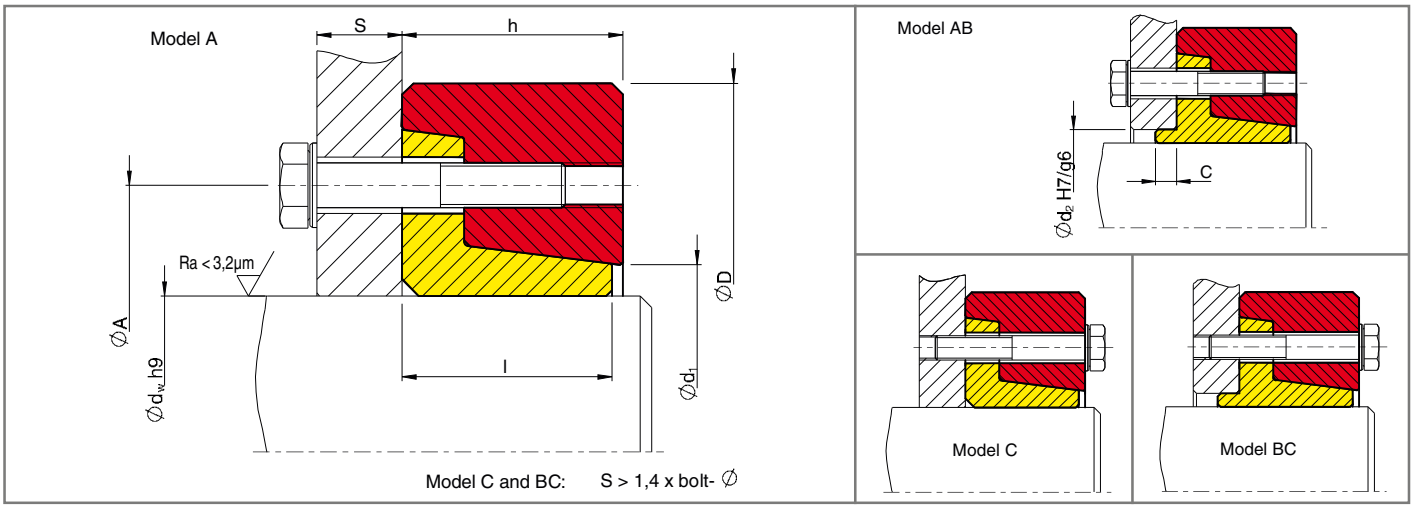
When ordering please state : e.g. AS 60 - 22 x 62 x C (Type x Ø d_w x desired model) flange width for model A and AB

Type	d_w	M_t	B*	M_a	A	D	l	h	C	d_1	d_2	kg
	mm	kNm	Grade 10.9	Nm	mm	mm	mm	mm	mm	mm	mm	
AS 90 - 22	90	5,7	12 x M10 x 50	58	114	155	34	35	4	94	94	3,4
	85	5,7										
	80	5,7										
AS 100 - 22	100	8,4	12 x M12 x 60	100	124	170	39	40	4	104	104	5
	95	8,4										
	90	8,4										
AS 110 - 22	110	9,2	12 x M12 x 70	100	136	185	45	46	5	114	116	6
	105	9,2										
	100	9,2										
AS 125 - 22	125	21	12 x M12 x 75	240	160	215	47	49	5	134	126	9
	120	21										
	115	21										
AS 140 - 22	140	26	14 x M16 x 80	240	172	230	52	53	5	145	146	11
	135	26										
	130	26										
AS 155 - 22	160	31	15 x M16 x 80	240	192	263	54	55	5	162	166	15
	155	31										
	150	31										
AS 170 - 22	170	36	16 x M16 x 90	240	204	290	61	62	5	175	176	21
	165	36										
	160	36										
AS 180 - 22	180	43	18 x M16 x 90	240	218	300	61	62	5	185	186	22
	175	43										
	170	43										
AS 190 - 22	190	60	15 x M20 x 110	470	232	320	77	78	5	195	196	32
	185	60										
	180	60										
AS 200 - 22	200	67	16 x M20 x 110	470	246	340	75	78	5	210	206	37
	195	67										
	190	67										
AS 220 - 22	220	93	14 x M24 x 130	820	270	370	95	96	5	230	226	53
	210	93										
	200	93										
AS 240 - 22	240	117	16 x M24 x 140	820	296	405	98	100	5	248	246	66
	230	117										
	220	117										
AS 260 - 22	260	126	16 x M24 x 150	820	318	430	106	107	5	268	266	80
	250	126										
	240	126										
AS 280 - 22	280	151	18 x M24 x 160	820	340	460	118	120	5	288	286	103
	270	151										
	260	151										
AS 300 - 22	300	178	20 x M24 x 170	820	360	485	125	126	5	309	306	116
	290	178										
	280	178										
AS 320 - 22	320	248	20 x M27 x 170	1210	380	520	125	126	5	328	330	134
	300	248										
	280	248										
AS 340 - 22	340	275	21 x M27 x 180	1210	402	570	134	136	5	351	350	185
	320	275										
	300	275										
AS 360 - 22	360	290	21 x M27 x 180	1210	424	590	142	144	8	368	370	172
	340	290										
	320	290										
AS 390 - 22	390	363	20 x M30 x 190	1640	458	630	146	148	8	398	400	222
	370	363										
	350	363										
AS 420 - 22	420	407	21 x M30 x 210	1640	490	650	166	168	8	424	430	253
	400	407										
	380	407										
AS 440 - 22	440	426	21 x M30 x 220	1640	512	670	174	176	8	448	450	275
	420	426										
	400	426										

Further sizes on request. Technical changes to be reserved without notice.
*Tightening bolts: standard DIN EN ISO 4017/4014: length for model C and BC, alternative DIN EN ISO 4762
M16 and upwards with washers: DIN EN ISO 7416
When ordering please state : e. g. AS 280 - 22 x 270 x C (Type x Ø d_w x desired model) flange width for model A and AB

Locking Unit Type AS

Series 23



Type	d_w	M_t	B*	M_a	A	D	l	h	C	d_1	d_2	kg
	mm	kNm	Grade 10.9	Nm	mm	mm	mm	mm	mm	mm	mm	
AS 50 - 23	50	3,3	7 x M12 x 45	100	84	115	29	30	3	58	53	2,0
	45	2,2										
	40	1,4										
AS 60 - 23	60	4,7	9 x M12 x 50	100	94	120	32	34	3	66	63	2,2
	55	3,5										
	50	2,3										
AS 70 - 23	70	9,4	8 x M16 x 60	240	112	148	38	40	4	79	74	4,7
	65	7,6										
	60	5,8										
AS 80 - 23	80	12	9 x M16 x 65	240	130	167	42	44	4	94	84	6,1
	75	10										
	70	8										
AS 90 - 23	90	18	12 x M16 x 70	240	144	185	48	50	4	104	94	8,0
	85	15										
	80	12										
AS 100 - 23	100	23	12 x M16 x 75	240	156	197	52	54	4	114	104	9,5
	95	19										
	90	16										
AS 110 - 23	110	27	10 x M20 x 90	470	166	215	56	58	5	124	116	12,1
	105	26										
	100	22										
AS 120 - 23	120	43	14 x M20 x 90	470	186	230	62	65	5	134	126	15,3
	115	38										
	110	33										

*Tightening bolts: standard DIN EN ISO 4017/4014: length for model C and BC, alternative DIN EN ISO 4762
M16 and upwards with washers: DIN EN ISO 7416

When ordering please state : e. g. AS 110 - 23 x 105 x C (Type x Ø d_w x desired model) flange width for model A and AB

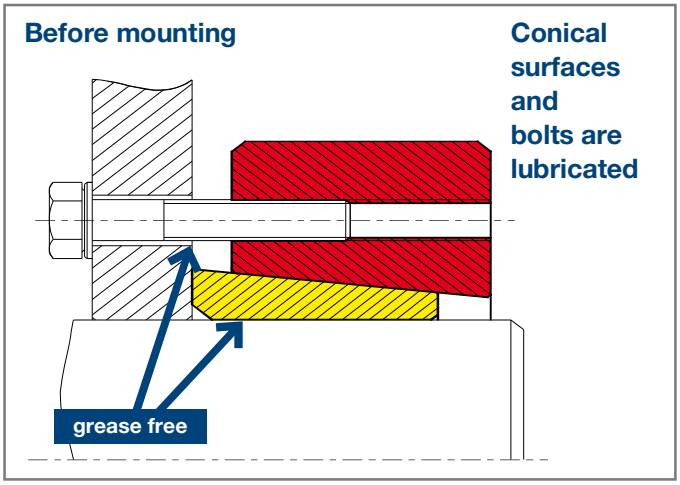
Type	d_w	M_t	B*	M_a	A	D	l	h	C	d_1	d_2	kg
	mm	kNm	Grade 10.9	Nm	mm	mm	mm	mm	mm	mm	mm	
AS 140 - 23	140	56	16 x M20 x 100	470	216	290	73	76	5	160	146	30,0
	130	50										
	120	39										
AS 160 - 23	160	77	14 x M24 x 110	820	234	320	80	80	5	185	166	39,1
	150	77										
	140	64										
AS 180 - 23	180	104	16 x M24 x 130	820	276	340	91	94	5	205	186	47,9
	170	101										
	160	85										
AS 200 - 23	200	144	16 x M27 x 140	1210	290	370	95	96	5	226	206	57,0
	190	133										
	180	114										
AS 220 - 23	220	178	18 x M27 x 140	1210	320	405	96	97	5	246	226	70,8
	210	178										
	200	159										
AS 240 - 23	240	211	20 x M27 x 150	1210	340	430	109	110	5	267	246	85,8
	230	211										
	220	211										
AS 260 - 23	260	232	21 x M27 x 160	1210	356	460	118	119	5	288	286	109,4
	250	234										
	240	234										
AS 280 - 23	280	234	21 x M27 x 180	1210	360	485	124	125	5	304	306	125,0
	270	234										
	260	234										
AS 300 - 23	300	247	21 x M27 x 180	1210	380	520	128	130	5	315	330	144,0
	290	247										
	280	247										
AS 320 - 23	320	299	24 x M27 x 180	1210	402	550	134	136	8	336	350	167,0
	310	299										
	300	299										
AS 340 - 23	340	315	24 x M27 x 180	1210	424	570	140	142	8	355	370	183,0
	330	315										
	320	315										
AS 360 - 23	360	410	24 x M30 x 190	1640	454	610	144	147	8	383	400	218,0
	350	410										
	340	410										
AS 390 - 23	390	439	24 x M30 x 200	1640	486	630	164	167	8	428	430	250,0
	380	439										
	360	439										
AS 420 - 23	420	457	24 x M30 x 220	1640	506	670	172	175	10	448	450	292,0
	410	457										
	390	457										
AS 440 - 23	440	562	28 x M30 x 220	1640	534	700	172	175	10	468	470	318,0
	420	562										
	400	562										

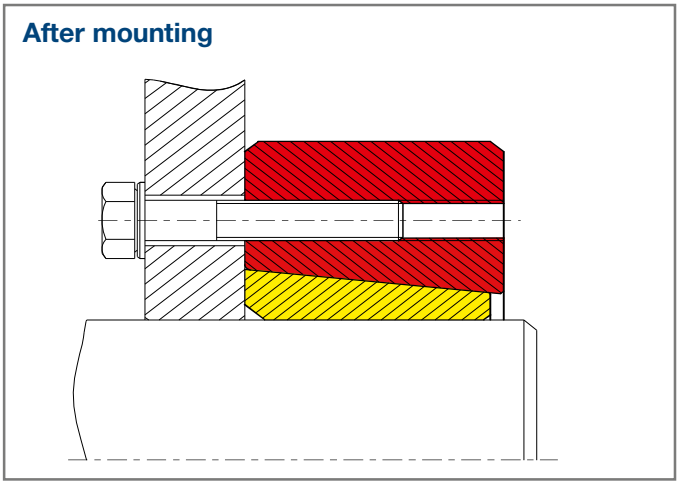
Further sizes on request.
Technical changes to be reserved without notice.

*Tightening bolts: standard DIN EN ISO 4017/4014: length for model C and BC, alternative DIN EN ISO 4762
M16 and upwards with washers: DIN EN ISO 7416
When ordering please state : e. g. AS 320 - 23 x 320 x C (Type x Ø d_w x desired model)
flange width for model A and AB

Mounting and Removal Instructions for

Locking Unit AS





Mounting

The STÜWE® locking units AS are supplied ready to be mounted. Therefore they should not be dismantled prior to employing the unit for the first time.

1. Using a solvent, degrease the shaft, bores and faces of the inner ring and the pressure contact faces of the component. Safe torque transmission substantially depends on this procedure. Dirty solvent or cleaning clothes should not be used for degreasing.
2. Lubricate the threads and the heads of the tightening bolts with a suitable bolt lubricant.
3. Bolt component and locking unit together easily and push locking unit onto the shaft.

   Do not tighten the tightening bolts before the shaft is mounted.

4. Tighten four bolts evenly distributed over the circumference by reduced torque (approx. 50 to 70 % of maximum tightening torque).
5. Afterwards tighten all tightening bolts uniformly, one by one, over several revolutions with the maximum torque.
   - Series 12: Tighten all tightening bolts until the side surfaces of the outer ring and inner ring abut against the component. This indicates that the full transmissible torque is achieved.
   - Series 22/23: Tighten all tightening bolts until the outer ring hits the inner ring and until the bolts can not be tightened with the max. torque anymore. A gap between outer ring and component can remain.
6. Check each tightening bolt twice for the required tightening torque.

Dismounting

1. Loosen all locking bolts uniformly one by one, initially not more than a quarter turn per bolt, until it is observed that the outer ring has released from the inner ring.

   Under no circumstances should the locking bolts be completely removed as this could be dangerous and result in injury.

2. Should the outer ring not-self release from the inner ring, this can be assisted in the series 22 and 23 by removing those locking bolts adjacent to the tapped holes provided for jacking purposes and screwing them into these tapped holes. The jacking procedure must continue until release of the outer ring is achieved.
3. Remove component from locking unit and locking unit from shaft. Remove rust which may have formed on the shaft.

Cleaning and greasing

Dismantled locking unit does not have to be taken apart and regreased before remounting.

The locking unit has to be cleaned and regreased only if employed in dirty environment.

Use a solid containing lubricant with a high content of MoS_2 and a coefficient of friction of $\mu = 0{,}04$ for the **conical surfaces**.
Usually a combination of bonded coating and paste is chosen.

Examples:

Lubricant	Source
Molykote D 321 R (bonded coating)	Dow Corning
Aema-Sol MO 84-K (bonding coating)	A.C. Matthes
Molykote G Rapid + (paste)	Dow Corning
Aema-Sol M 19 P (paste)	A.C. Matthes

The bolts have to be renewed if possible.
The bolts are lubricated with commercially availabe bolt lubricants ($\mu = 0{,}1$).

Locking Unit Type AS

Fixing a brake disc