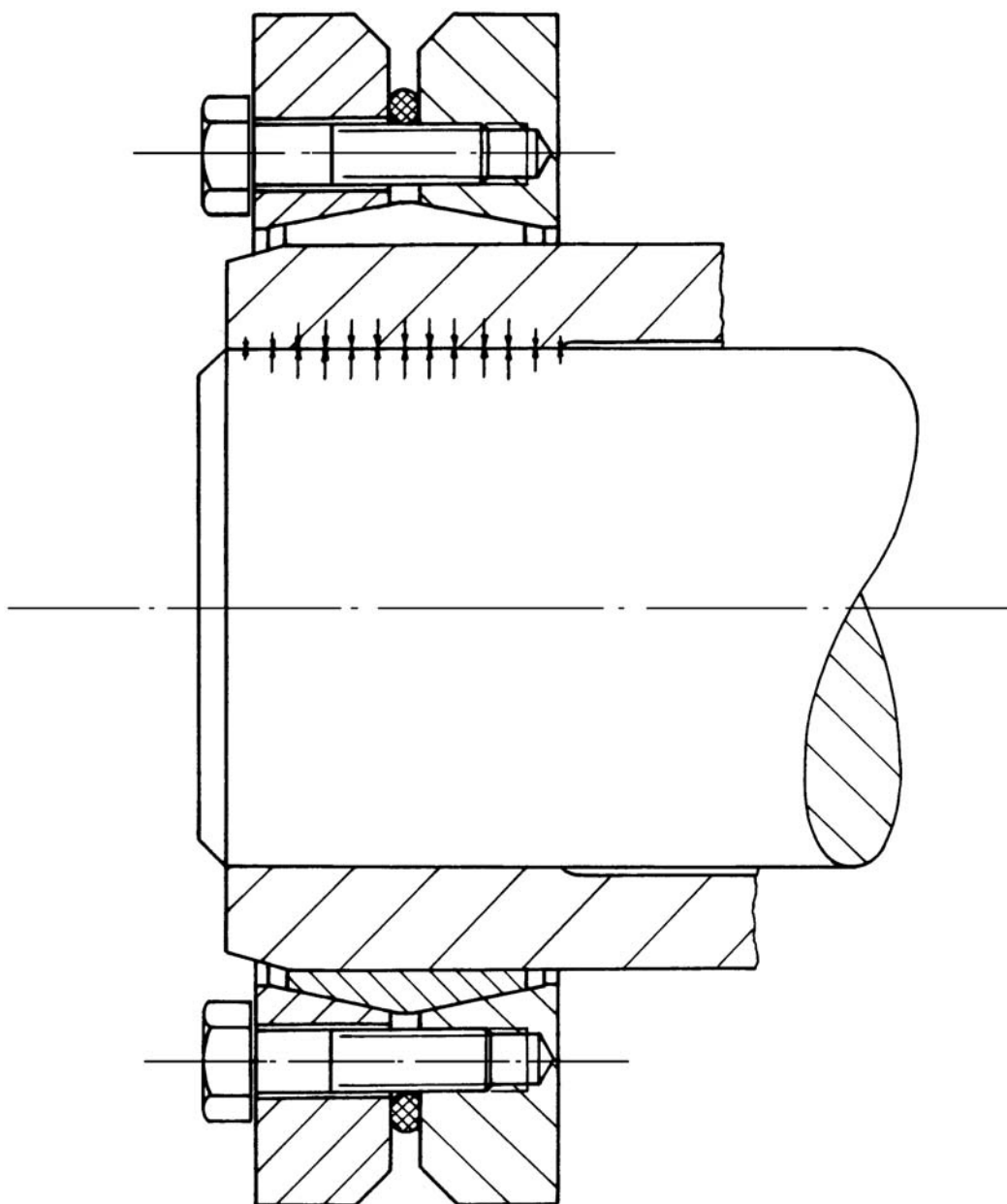


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Locking Devices

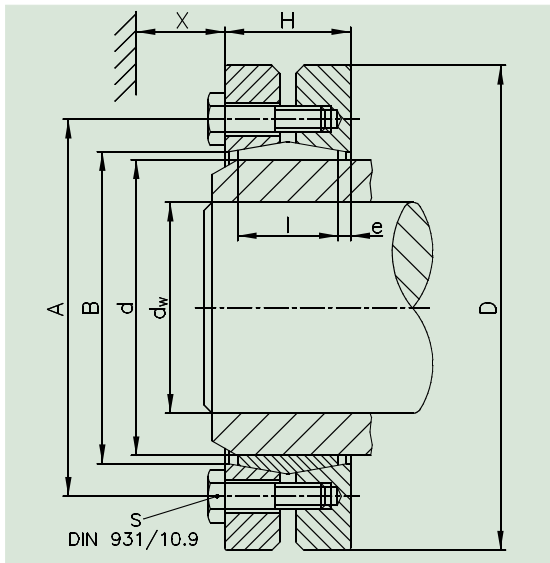




Tolerances: Shaft up to $\varnothing 150$ h 6
 from $\varnothing 155$ g 6
 Hub inner diameter H 7
 Hub outer diameter f 7

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3071 (Standard-Range)



H and e in unlocked position

M_t = Transmissible torque per shrink disc

M_A = Tightening torque per bolt

X - min. space required for standard torque wrench

Z - Number of bolts

d_w mm	d mm	M_t Nm	D mm	I mm	H mm	A mm	B mm	e mm	M_A Nm	Z	S	Weight kg
10	14	18	37	9	12	24	15	1,5	2	3	M 4x10	0,1
11	14	27	37	9	12	24	15	1,5	2	3	M 4x10	0,1
12	14	35	37	9	12	24	15	1,5	2	3	M 4x10	0,1
12	16	45	41	12	15	27	17	1,5	4	3	M 5x12	0,1
13	16	60	41	12	15	27	17	1,5	4	3	M 5x12	0,1
14	16	80	41	12	15	27	17	1,5	4	3	M 5x12	0,1
14	18	85	44	12	15	29	19	1,5	4	4	M 5x12	0,1
15	18	100	44	12	15	29	19	1,5	4	4	M 5x12	0,1
16	18	130	44	12	15	29	19	1,5	4	4	M 5x12	0,1
16	20	130	48	14	19	34	24	2,5	4	5	M 5x18	0,2
17	20	150	48	14	19	34	24	2,5	4	5	M 5x18	0,2
18	20	180	48	14	19	34	24	2,5	4	5	M 5x18	0,2
18	22	170	48	14	19	36	26	2,5	4	5	M 5x18	0,2
19	22	200	48	14	19	36	26	2,5	4	5	M 5x18	0,2
20	22	230	48	14	19	36	26	2,5	4	5	M 5x18	0,2
19	24	170	50	14	19	36	26	2,5	4	6	M 5x18	0,2
20	24	210	50	14	19	36	26	2,5	4	6	M 5x18	0,2
21	24	250	50	14	19	36	26	2,5	4	6	M 5x18	0,2
24	30	300	60	16	21	44	32	2,5	4	6	M 5x18	0,3
25	30	340	60	16	21	44	32	2,5	4	6	M 5x18	0,3
26	30	380	60	16	21	44	32	2,5	4	6	M 5x18	0,3
28	36	440	72	18	23	52	38	2,5	12	5	M 6x20	0,5
30	36	570	72	18	23	52	38	2,5	12	5	M 6x20	0,5
31	36	630	72	18	23	52	38	2,5	12	5	M 6x20	0,5
30	40	560	75	19	24	57	42	2,5	12	6	M 6x20	0,5
32	40	670	75	19	24	57	42	2,5	12	6	M 6x20	0,5
34	40	800	75	19	24	57	42	2,5	12	6	M 6x20	0,5
34	44	710	80	20	25	61	47	2,5	12	7	M 6x20	0,6
35	44	780	80	20	25	61	47	2,5	12	7	M 6x20	0,6
36	44	860	80	20	25	61	47	2,5	12	7	M 6x20	0,6
38	50	940	90	22	27	70	53	2,5	12	8	M 6x25	0,8
40	50	1160	90	22	27	70	53	2,5	12	8	M 6x25	0,8
42	50	1380	90	22	27	70	53	2,5	12	8	M 6x25	0,8
42	55	1160	100	23	30	75	58	3,5	12	8	M 6x25	1,1
45	55	1520	100	23	30	75	58	3,5	12	8	M 6x25	1,1
48	55	1880	100	23	30	75	58	3,5	12	8	M 6x25	1,1
48	62	1750	110	23	30	86	66	3,5	12	10	M 6x25	1,3
50	62	2000	110	23	30	86	66	3,5	12	10	M 6x25	1,3
52	62	2250	110	23	30	86	66	3,5	12	10	M 6x25	1,3
50	68	1850	115	23	30	86	72	3,5	12	10	M 6x25	1,4
55	68	2500	115	23	30	86	72	3,5	12	10	M 6x25	1,4
60	68	3150	115	23	30	86	72	3,5	12	10	M 6x25	1,4

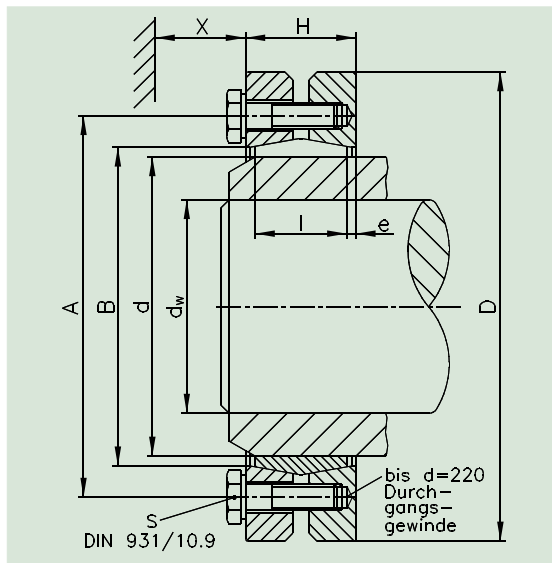
3071 (Standard-Range)

d _w mm	d mm	M _t Nm	D mm	l mm	H mm	A mm	B mm	e mm	M _A Nm	Z	S	Weight kg
55	75	2400	138	25	32	100	79	3,5	30	7	M 8x30	2,4
60	75	3200	138	25	32	100	79	3,5	30	7	M 8x30	2,4
65	75	3950	138	25	32	100	79	3,5	30	7	M 8x30	2,4
60	80	3200	145	25	32	100	84	3,5	30	7	M 8x30	2,5
65	80	3900	145	25	32	100	84	3,5	30	7	M 8x30	2,5
70	80	4600	145	25	32	100	84	3,5	30	7	M 8x30	2,5
65	90	4750	155	30	39	114	94	4,5	30	10	M 8x35	3,3
70	90	6000	155	30	39	114	94	4,5	30	10	M 8x35	3,3
75	90	7250	155	30	39	114	94	4,5	30	10	M 8x35	3,3
70	100	6000	170	34	44	124	104	5	30	12	M 8x35	4,3
75	100	7500	170	34	44	124	104	5	30	12	M 8x35	4,3
80	100	9000	170	34	44	124	104	5	30	12	M 8x35	4,3
75	110	7200	185	39	50	136	114	5,5	59	9	M 10x40	5,9
80	110	9000	185	39	50	136	114	5,5	59	9	M 10x40	5,9
85	110	10800	185	39	50	136	114	5,5	59	9	M 10x40	5,9
85	125	11000	215	42	54	160	134	6	59	12	M 10x40	8,6
90	125	13000	215	42	54	160	134	6	59	12	M 10x40	8,6
95	125	15000	215	42	54	160	134	6	59	12	M 10x40	8,6
95	140	15100	230	46	60	175	146	7	100	10	M 12x45	10
100	140	17600	230	46	60	175	146	7	100	10	M 12x45	10
105	140	20100	230	46	60	175	146	7	100	10	M 12x45	10
105	155	22000	265	50	64	192	165	7	100	12	M 12x50	15
110	155	25000	265	50	64	192	165	7	100	12	M 12x50	15
115	155	28000	265	50	64	192	165	7	100	12	M 12x50	15
115	165	31000	290	56	71	210	175	7,5	250	8	M 16x55	22
120	165	35000	290	56	71	210	175	7,5	250	8	M 16x55	22
125	165	39000	290	56	71	210	175	7,5	250	8	M 16x55	22
125	175	40000	300	56	71	220	185	7,5	250	8	M 16x55	22
130	175	44000	300	56	71	220	185	7,5	250	8	M 16x55	22
135	175	48000	300	56	71	220	185	7,5	250	8	M 16x55	22
135	185	55000	330	71	86	236	195	7,5	250	10	M 16x65	37
140	185	60000	330	71	86	236	195	7,5	250	10	M 16x65	37
145	185	65000	330	71	86	236	195	7,5	250	10	M 16x65	37
140	195	65000	350	71	86	246	210	7,5	250	12	M 16x65	41
150	195	76000	350	71	86	246	210	7,5	250	12	M 16x65	41
155	195	81500	350	71	86	246	210	7,5	250	12	M 16x65	41
150	200	78000	350	71	86	246	210	7,5	250	12	M 16x65	41
155	200	84000	350	71	86	246	210	7,5	250	12	M 16x65	41
160	200	90000	350	71	86	246	210	7,5	250	12	M 16x65	41
160	220	100000	370	88	104	270	230	8	250	15	M 16x80	54
165	220	108000	370	88	104	270	230	8	250	15	M 16x80	54
170	220	116000	370	88	104	270	230	8	250	15	M 16x80	54
170	240	120000	405	92	109	295	248	8,5	490	12	M 20x80	67
180	240	138000	405	92	109	295	248	8,5	490	12	M 20x80	67
190	240	156000	405	92	109	295	248	8,5	490	12	M 20x80	67
190	260	164000	440	103	120	321	268	8,5	490	14	M 20x90	82
200	260	184000	440	103	120	321	268	8,5	490	14	M 20x90	82
210	260	204000	440	103	120	321	268	8,5	490	14	M 20x90	82
210	280	217000	460	114	134	346	288	10	490	16	M 20x100	102
220	280	245000	460	114	134	346	288	10	490	16	M 20x100	102
230	280	273000	460	114	134	346	288	10	490	16	M 20x100	102
230	300	262000	485	122	142	364	308	10	490	18	M 20x100	118
240	300	293000	485	122	142	364	308	10	490	18	M 20x100	118
245	300	308000	485	122	142	364	308	10	490	18	M 20x100	118
240	320	306000	520	122	142	386	328	10	490	20	M 20x100	131
250	320	340000	520	122	142	386	328	10	490	20	M 20x100	131
260	320	374000	520	122	142	386	328	10	490	20	M 20x100	131
250	340	394000	570	134	156	408	348	11	490	24	M 20x110	186
260	340	430000	570	134	156	408	348	11	490	24	M 20x110	186
270	340	466000	570	134	156	408	348	11	490	24	M 20x110	186

3071 (Standard-Range)

d _w mm	d mm	M _t Nm	D mm	l mm	H mm	A mm	B mm	e mm	M _A Nm	Z	S	Weight kg
270	350	458000	580	140	162	432	358	11	490	24	M 20x110	195
280	350	500000	580	140	162	432	358	11	490	24	M 20x110	195
285	350	521000	580	140	162	432	358	11	490	24	M 20x110	195
280	360	507000	590	140	162	432	368	11	490	24	M 20x110	204
290	360	550000	590	140	162	432	368	11	490	24	M 20x110	204
295	360	572000	590	140	162	432	368	11	490	24	M 20x110	204
290	380	590000	645	144	168	458	387	12	840	20	M 24x120	239
300	380	640000	645	144	168	458	387	12	840	20	M 24x120	239
310	380	690000	645	144	168	458	387	12	840	20	M 24x120	239
300	390	660000	660	144	168	468	397	12	840	21	M 24x120	260
310	390	710000	660	144	168	468	397	12	840	21	M 24x120	260
320	390	760000	660	144	168	468	397	12	840	21	M 24x120	260
315	400	715000	680	144	168	480	407	12	840	21	M 24x120	280
320	400	735000	680	144	168	480	407	12	840	21	M 24x120	280
330	400	790000	680	144	168	480	407	12	840	21	M 24x120	280
330	420	780000	690	164	188	504	427	12	840	24	M 24x130	316
340	420	840000	690	164	188	504	427	12	840	24	M 24x130	316
350	420	900000	690	164	188	504	427	12	840	24	M 24x130	316
340	440	890000	750	177	202	527	447	12,5	840	24	M 24x140	408
350	440	960000	750	177	202	527	447	12,5	840	24	M 24x140	408
360	440	1030000	750	177	202	527	447	12,5	840	24	M 24x140	408
360	460	1000000	770	177	202	547	468	12,5	840	28	M 24x140	420
370	460	1070000	770	177	202	547	468	12,5	840	28	M 24x140	420
380	460	1140000	770	177	202	547	468	12,5	840	28	M 24x140	420
380	480	1200000	800	188	213	570	488	12,5	840	30	M 24x140	505
390	480	1270000	800	188	213	570	488	12,5	840	30	M 24x140	505
400	480	1340000	800	188	213	570	488	12,5	840	30	M 24x140	505
400	500	1440000	850	188	213	590	508	12,5	1250	24	M 27x150	575
410	500	1520000	850	188	213	590	508	12,5	1250	24	M 27x150	575
420	500	1600000	850	188	213	590	508	12,5	1250	24	M 27x150	575
430	530	1820000	900	215	240	620	538	12,5	1250	30	M 27x180	705
440	530	1940000	900	215	240	620	538	12,5	1250	30	M 27x180	705
450	530	2060000	900	215	240	620	538	12,5	1250	30	M 27x180	705
450	560	2000000	950	215	240	650	568	12,5	1250	32	M 27x180	780
460	560	2130000	950	215	240	650	568	12,5	1250	32	M 27x180	780
470	560	2260000	950	215	240	650	568	12,5	1250	32	M 27x180	780
470	590	2250000	980	235	265	685	600	15	1250	36	M 27x180	890
480	590	2400000	980	235	265	685	600	15	1250	36	M 27x180	890
490	590	2550000	980	235	265	685	600	15	1250	36	M 27x180	890
500	620	2700000	1020	235	265	715	630	15	1250	38	M 27x180	950
510	620	2860000	1020	235	265	715	630	15	1250	38	M 27x180	950
520	620	3020000	1020	235	265	715	630	15	1250	38	M 27x180	950

3051 (Light-Range)



H and e are in unlocked position

M_t = Transmissible torque per shrink disc

M_A = Tightening torque per bolt

X – min. space required for standard torque wrench

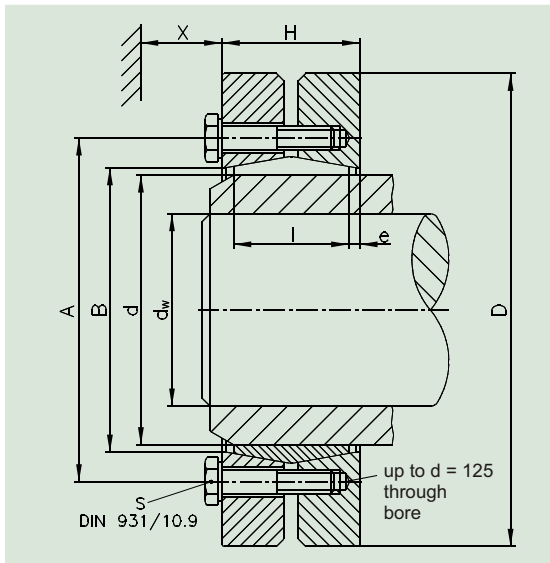
Z – Number of bolts

d_w mm	d mm	M_t Nm	D mm	I mm	H mm	A mm	B mm	e mm	M_A Nm	Z	S	Weight kg
95	125	11500	185	39	52	158	129	6	59	8	M 10x 40	6
100	125	13000	185	39	52	158	129	6	59	8	M 10x 40	6
105	125	14500	185	39	52	158	129	6	59	8	M 10x 40	6
110	140	16000	220	39	52	175	144	6	59	9	M 10x 40	8
120	140	20000	220	39	52	175	144	6	59	9	M 10x 40	8
125	140	22000	220	39	52	175	144	6	59	9	M 10x 40	8
130	155	25000	245	39	52	192	159	6	59	11	M 10x 40	10
135	155	28800	245	39	52	192	159	6	59	11	M 10x 40	10
140	155	32500	245	39	52	192	159	6	59	11	M 10x 40	10
135	165	32000	260	46	62	210	169	8	100	10	M 12x 50	14
140	165	35500	260	46	62	210	169	8	100	10	M 12x 50	14
145	165	39000	260	46	62	210	169	8	100	10	M 12x 50	14
145	175	39000	275	46	62	220	179	8	100	11	M 12x 50	16
150	175	43000	275	46	62	220	179	8	100	11	M 12x 50	16
155	175	47000	275	46	62	220	179	8	100	11	M 12x 50	16
155	185	49000	295	46	62	225	189	8	100	12	M 12x 50	20
160	185	53000	295	46	62	225	189	8	100	12	M 12x 50	20
165	185	57000	295	46	62	225	189	8	100	12	M 12x 50	20
165	195	66000	315	56	72	237	199	8	100	15	M 12x 55	27
170	195	71000	315	56	72	237	199	8	100	15	M 12x 55	27
175	195	76000	315	56	72	237	199	8	100	15	M 12x 55	27
180	220	88000	345	66	84	265	224	9	250	10	M 16x 65	35
190	220	101000	345	66	84	265	224	9	250	10	M 16x 65	35
200	220	114000	345	66	84	265	224	9	250	10	M 16x 65	35
200	240	120000	370	66	84	290	244	9	250	12	M 16x 65	44
210	240	134000	370	66	84	290	244	9	250	12	M 16x 65	44
215	240	141000	370	66	84	290	244	9	250	12	M 16x 65	44
220	260	144000	395	72	92	310	265	10	250	14	M 16x 70	48
230	260	159000	395	72	92	310	265	10	250	14	M 16x 70	48
235	260	167000	395	72	92	310	265	10	250	14	M 16x 70	48
230	280	170000	425	84	104	333	285	10	250	16	M 16x 75	60
240	280	190000	425	84	104	333	285	10	250	16	M 16x 75	60
250	280	210000	425	84	104	333	285	10	250	16	M 16x 75	60
250	300	213000	460	84	104	358	305	10	250	18	M 16x 75	75
260	300	234000	460	84	104	358	305	10	250	18	M 16x 75	75
270	300	255000	460	84	104	358	305	10	250	18	M 16x 75	75
270	320	264000	495	84	106	378	325	11	250	20	M 16x 75	84
280	320	285000	495	84	106	378	325	11	250	20	M 16x 75	84
290	320	301000	495	84	106	378	325	11	250	20	M 16x 75	84

3051 (Light-Range)

d _w mm	d mm	M _t Nm	D mm	I mm	H mm	A mm	B mm	e mm	M _A Nm	Z	S	Weight kg
290	340	318000	535	84	106	402	345	11	250	21	M 16x 75	100
300	340	345000	535	84	106	402	345	11	250	21	M 16x 75	100
305	340	359000	535	84	106	402	345	11	250	21	M 16x 75	100
300	360	382000	555	100	122	423	365	11	490	16	M 20x 90	125
310	360	410000	555	100	122	423	365	11	490	16	M 20x 90	125
320	360	438000	555	100	122	423	365	11	490	16	M 20x 90	125
330	390	510000	595	112	136	452	397	12	490	20	M 20x100	156
340	390	543000	595	112	136	452	397	12	490	20	M 20x100	156
350	390	576000	595	112	136	452	397	12	490	20	M 20x100	156
350	420	590000	630	120	144	485	427	12	490	22	M 20x100	185
360	420	630000	630	120	144	485	427	12	490	22	M 20x100	185
370	420	670000	630	120	144	485	427	12	490	22	M 20x100	185
390	460	770000	685	132	158	527	468	13	490	28	M 20x110	235
400	460	860000	685	132	158	527	468	13	490	28	M 20x110	235
410	460	950000	685	132	158	527	468	13	490	28	M 20x110	235

3091 (Heavy-Range)



H and e are in unlocked position

M_t = Transmissible torque per shrink disc

M_A = Tightening torque per bolt

X – min. space required for standard torque wrench

Z – Number of bolts

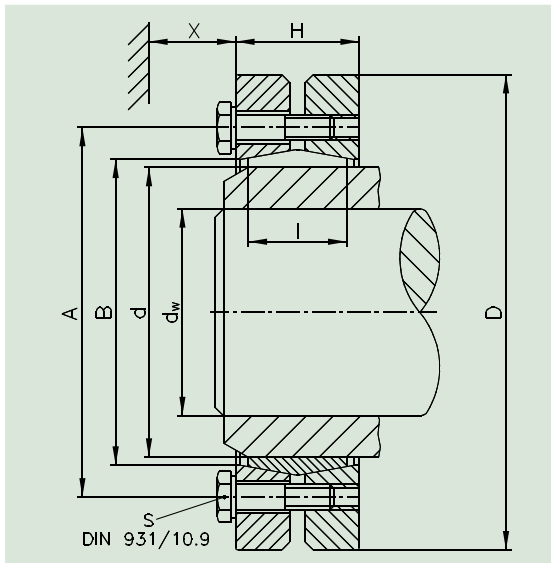
d_w mm	d mm	M_t Nm	D mm	I mm	H mm	A mm	B mm	e mm	M_A Nm	Z	S	Weight kg
38	50	1800	95	30	39	73	54	4,5	24	7	M 8x 35	1,4
40	50	2100	95	30	39	73	54	4,5	24	7	M 8x 35	1,4
42	50	2400	95	30	39	73	54	4,5	24	7	M 8x 35	1,4
42	55	2200	105	30	39	78	59	4,5	27	7	M 8x 35	1,7
45	55	2700	105	30	39	78	59	4,5	27	7	M 8x 35	1,7
48	55	3200	105	30	39	78	59	4,5	27	7	M 8x 35	1,7
48	62	2950	115	30	39	85	66	4,5	30	7	M 8x 35	2
50	62	3300	115	30	39	85	66	4,5	30	7	M 8x 35	2
52	62	3600	115	30	39	85	66	4,5	30	7	M 8x 35	2
50	68	3200	120	30	39	92	72	4,5	30	8	M 8x 35	2,1
55	68	4100	120	30	39	92	72	4,5	30	8	M 8x 35	2,1
60	68	5200	120	30	39	92	72	4,5	30	8	M 8x 35	2,1
55	75	4500	145	36	46	105	84	5	59	7	M 10x 40	3,8
60	75	5700	145	36	46	105	84	5	59	7	M 10x 40	3,8
65	75	7000	145	36	46	105	84	5	59	7	M 10x 40	3,8
60	80	5700	145	36	46	105	84	5	59	7	M 10x 40	3,6
65	80	7000	145	36	46	105	84	5	59	7	M 10x 40	3,6
70	80	8400	145	36	46	105	84	5	59	7	M 10x 40	3,6
65	90	6700	160	40	50	116	94	5	59	8	M 10x 40	4,8
70	90	8100	160	40	50	116	94	5	59	8	M 10x 40	4,8
75	90	9600	160	40	50	116	94	5	59	8	M 10x 40	4,8
70	100	8800	170	44	54	126	104	5	59	10	M 10x 45	5,6
75	100	10000	170	44	54	126	104	5	59	10	M 10x 45	5,6
80	100	12200	170	44	54	126	104	5	59	10	M 10x 45	5,6
75	110	11000	185	50	60	138	114	5	59	12	M 10x 45	7,6
80	110	12900	185	50	60	138	114	5	59	12	M 10x 45	7,6
85	110	14700	185	50	60	138	114	5	59	12	M 10x 45	7,6
85	125	15000	215	55	65	160	129	5	100	10	M 12x 50	11
90	125	17500	215	55	65	160	129	5	100	10	M 12x 50	11
95	125	20000	215	55	65	160	129	5	100	10	M 12x 50	11
95	140	20700	230	60	74	175	144	7	100	12	M 12x 55	13
100	140	24000	230	60	74	175	144	7	100	12	M 12x 55	13
105	140	27200	230	60	74	175	144	7	100	12	M 12x 55	13
105	155	28600	265	66	80	198	164	7	100	15	M 12x 60	20
110	155	32500	265	66	80	198	164	7	100	15	M 12x 60	20
115	155	36400	265	66	80	198	164	7	100	15	M 12x 60	20
115	165	40300	290	72	88	210	174	8	250	10	M 16x 65	26
120	165	45500	290	72	88	210	174	8	250	10	M 16x 65	26
125	165	50700	290	72	88	210	174	8	250	10	M 16x 65	26

3091 (Heavy Range)

d _w mm	d mm	M _t Nm	D mm	l mm	H mm	A mm	B mm	e mm	M _A Nm	Z	S	Weight kg
125	175	52000	300	72	88	220	184	8	250	10	M 16x 65	29
130	175	57200	300	72	88	220	184	8	250	10	M 16x 65	29
135	175	62400	300	72	88	220	184	8	250	10	M 16x 65	29
135	185	70000	330	92	112	236	194	10	250	14	M 16x 80	47
140	185	77000	330	92	112	236	194	10	250	14	M 16x 80	47
145	185	84000	330	92	112	236	194	10	250	14	M 16x 80	47
145	200	93600	350	92	112	246	204	10	250	15	M 16x 80	50
150	200	101500	350	92	112	246	204	10	250	15	M 16x 80	50
155	200	109200	350	92	112	246	204	10	250	15	M 16x 80	50
160	220	130000	370	114	134	270	224	10	250	20	M 16x 90	65
165	220	140500	370	114	134	270	224	10	250	20	M 16x 90	65
170	220	151000	370	114	134	270	224	10	250	20	M 16x 90	65
170	240	156000	405	120	144	295	244	12	490	15	M 20x100	87
180	240	179500	405	120	144	295	244	12	490	15	M 20x100	87
190	240	203000	405	120	144	295	244	12	490	15	M 20x100	87
190	260	213000	430	136	160	321	265	12	490	18	M 20x110	100
200	260	239000	430	136	160	321	265	12	490	18	M 20x110	100
210	260	265000	430	136	160	321	265	12	490	18	M 20x110	100
210	280	282000	460	148	172	346	285	12	490	21	M 20x120	132
220	280	319000	460	148	172	346	285	12	490	21	M 20x120	132
230	280	355000	460	148	172	346	285	12	490	21	M 20x120	132
230	300	341000	485	152	176	364	305	12	490	22	M 20x120	140
240	300	381000	485	152	176	364	305	12	490	22	M 20x120	140
245	300	401000	485	152	176	364	305	12	490	22	M 20x120	140
240	320	386000	520	160	184	386	325	12	490	24	M 20x130	165
250	320	442000	520	160	184	386	325	12	490	24	M 20x130	165
260	320	486000	520	160	184	386	325	12	490	24	M 20x130	165
250	340	510000	570	176	200	420	345	12	840	21	M 24x130	240
260	340	560000	570	176	200	420	345	12	840	21	M 24x130	240
270	340	610000	570	176	200	420	345	12	840	21	M 24x130	240
270	350	590000	580	176	200	425	355	12	840	21	M 24x130	247
280	350	635000	580	176	200	425	355	12	840	21	M 24x130	247
285	350	660000	580	176	200	425	355	12	840	21	M 24x130	247
280	360	659000	590	180	204	432	365	12	840	22	M 24x140	250
290	360	715000	590	180	204	432	365	12	840	22	M 24x140	250
295	360	744000	590	180	204	432	365	12	840	22	M 24x140	250
300	390	860000	660	188	212	468	397	12	840	24	M 24x140	350
310	390	915000	660	188	212	468	397	12	840	24	M 24x140	350
320	390	970000	660	188	212	468	397	12	840	24	M 24x140	350
330	420	1020000	690	214	238	504	427	12	840	30	M 24x150	410
340	420	1100000	690	214	238	504	427	12	840	30	M 24x150	410
350	420	1180000	690	214	238	504	427	12	840	30	M 24x150	410
340	440	1100000	750	224	252	527	448	14	1250	24	M 27x170	525
350	440	1180000	750	224	252	527	448	14	1250	24	M 27x170	525
360	440	1260000	750	224	252	527	448	14	1250	24	M 27x170	525
360	460	1300000	770	224	252	547	468	14	1250	28	M 27x170	540
370	460	1390000	770	224	252	547	468	14	1250	28	M 27x170	540
380	460	1480000	770	224	252	547	468	14	1250	28	M 27x170	540
380	480	1600000	800	246	274	580	488	14	1250	30	M 27x180	650
390	480	1700000	800	246	274	580	488	14	1250	30	M 27x180	650
400	480	1800000	800	246	274	580	488	14	1250	30	M 27x180	650
400	500	1880000	850	246	274	600	508	14	1250	32	M 27x180	750
410	500	1980000	850	246	274	600	508	14	1250	32	M 27x180	750
420	500	2080000	850	246	274	600	508	14	1250	32	M 27x180	750
430	530	2100000	910	275	303	630	538	14	1250	34	M 27x200	940
440	530	2200000	910	275	303	630	538	14	1250	34	M 27x200	940
450	530	2315000	910	275	303	630	538	14	1250	34	M 27x200	940

When ordering, show: TAS 3091 – d · Further sizes on request.

Shrink Discs matching Bauer – shaft-mounted reducers 3061



H is in unlocked position

M_t = Transmissible torque per
shrink disc

M_A = Tightening torque per bolt

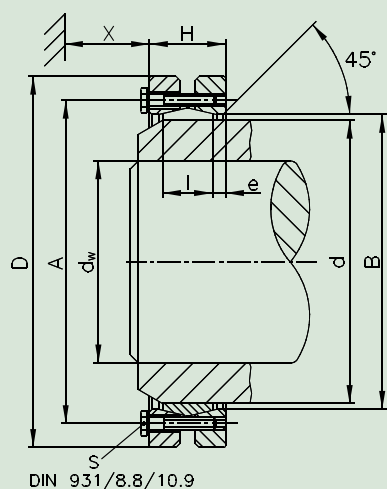
X - min. space required for standard
torque wrench

Z - Number of bolts

Getriebetyp		d_w	d	M_t	D	I	H	M_A	Weight		
FG	AG	mm	mm	Nm	mm	mm	mm	Nm	Z	S	kg
-	02/03	30	36	570	72	18	23	12	5	M 6x20	0.5
-	12/13	35	44	780	80	20	25	12	7	M 6x20	0.6
0	-	36	44	860	80	20	25	12	7	M 6x20	0.6
-	22/ 23	40	50	1160	90	22	27	12	8	M 6x25	0.8
0/ 1	-	42	50	1380	90	22	27	12	8	M 6x25	0.8
-	32/ 33	50	60	2130	110	23	30	12	10	M 6x25	1.3
3	-	52	62	2250	110	23	30	12	10	M 6x25	1.3
-	42/ 43	60	68	3150	115	23	30	12	10	M 6x25	1.4
5/7	52/ 53	70	80	4600	138	25	32	30	7	M 8x30	2.3
9	62/ 63	80	95	7400	150	30	38	30	9	M 8x35	2.8
11	-	85	105	10200	185	39	50	59	9	M 10x40	6.1
-	72/ 73	90	105	11400	185	39	50	59	9	M 10x40	6.1
13	82/ 83	100	120	18000	215	42	54	59	12	M 10x40	8.8
-	92/ 93	110	130	25500	230	46	60	100	10	M 12x45	11
15	-	110	135	24000	230	46	60	100	10	M 12x45	10.6
-	102/ 103	120	135	29000	230	46	60	100	10	M 12x45	10.6
-	112/ 113	130	150	42000	265	50	64	100	12	M 12x50	14.6
17	-	125	155	36000	265	50	64	100	12	M 12x50	15

Shrink-discs d = 36 mm up to d = 68 mm are range 3071.

3073 (Mini-Range)



H and e are in unlocked position

M_t = Transmissible torque per
shrink disc

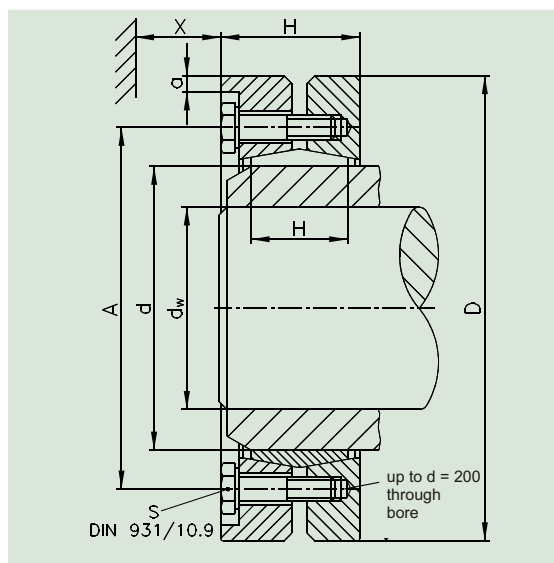
M_A = Tightening torque per bolt

X – min. space required for standard
torque wrench

Z – Number of bolts

d_w mm	d mm	M_t Nm	D mm	I mm	H mm	A mm	B mm	e mm	M_A Nm	Z	S	Weight kg
20	24	88	52	10	15	39	26	2,5	3	5	M 5x14	0,2
25	29	123	58	10	15	44,5	31,5	2,5	3	5	M 5x14	0,2
30	35	182	64	10	15	50	36,5	2,5	3	6	M 5x14	0,2
35	40	300	68	10	15	55	41,5	2,5	4	6	M 5x14	0,2
40	46	450	80	14	19	63	49	2,5	4	8	M 5x16	0,5
45	51	525	86	14	19	68,5	53,5	2,5	4	8	M 5x16	0,5
50	56	680	91	14	19	73	59	2,5	4	9	M 5x16	0,5
55	61	750	96	14	19	77	63	2,5	4	10	M 5x16	0,6
60	66	900	100	14	19	82	68	2,5	4	10	M 5x16	0,6
70	78	1800	120	18	24	101	86	3	6	12	M 5x20	1,1
80	88	2300	130	22	28	108	91,5	3	12	8	M 6x25	1,4
90	98	2600	140	22	28	119	102,5	3	12	8	M 6x25	1,6
100	108	3500	150	22	28	128	111,5	3	12	9	M 6x25	1,7
110	120	4000	164	25	32	141	123,5	3,5	12	10	M 6x25	2,2
125	135	5600	179	25	32	156	138,5	3,5	12	12	M 6x25	2,4
130	140	6200	182	25	32	161	143,5	3,5	12	12	M 6x25	2,5
140	150	6700	194	25	32	171	153,5	3,5	12	12	M 6x25	2,7
150	160	7500	204	25	32	181	163,5	3,5	12	12	M 6x25	2,8
160	170	9000	214	25	32	191	173,5	3,5	12	14	M 6x25	3
180	192	11000	240	28	35	220	200,5	3,5	12	15	M 6x30	4
190	202	12500	250	28	35	225	206	3,5	12	16	M 6x30	4,2
200	212	13000	260	28	35	235	216	3,5	12	16	M 6x30	4,4
220	232	16000	280	28	35	255	236	3,5	12	18	M 6x30	4,8

Shrink Discs matching Stiebel – helical-bevel gears



H and e are in unlocked position

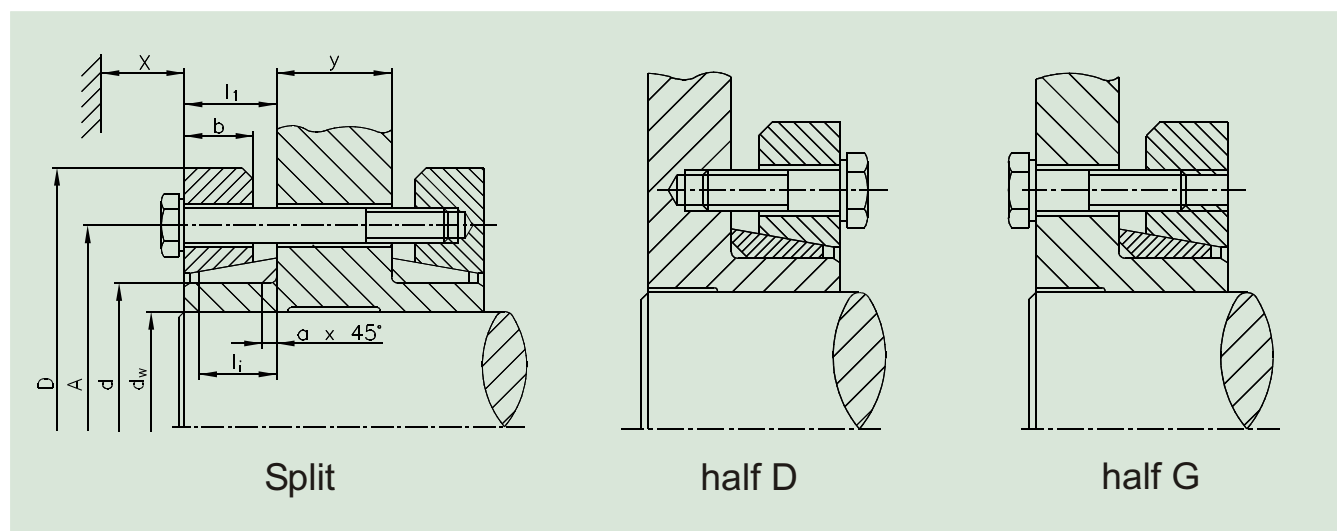
M_t = Transmissible torque per
shrink disc

M_A = Tightening torque per bolt

X – min. space required for standard
torque wrench

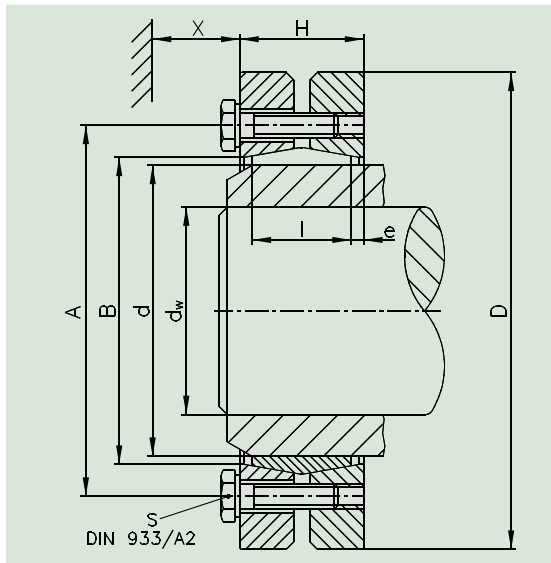
Z – Number of bolts

Ty p	d_w	d	M_t	D	A	I	H	a	M_A	Z	S	Weight
52	mm	mm	Nm	mm	mm	mm	mm	mm	Nm			kg
.. 06 / ..	40	50	1700	90	70	22	31,5	2	12	8	M 6	1
.. 08 / ..	50	62	2800	110	86	23	34,5	3	12	10	M 6	1,5
.. 10 / ..	60	75	4400	138	100	25	38	8	30	7	M 8	3
.. 12 / ..	70	88	6000	155	114	30	44,5	7,5	30	10	M 8	4
.. 14 / ..	75	90	7700	155	114	30	44,5	7,5	30	10	M 8	4
.. 16 / ..	85	110	10800	185	136	39	57	9,5	59	9	M 10	6,5
.. 18 / ..	100	138	17000	230	175	46	68,5	10	100	10	M 12	11
.. 20 / ..	120	155	33000	265	192	50	72,5	19	100	12	M 12	17,5
.. 22 / ..	120	165	39000	290	210	56	81	20	265	8	M 16	24
.. 24 / ..	135	175	62400	300	220	72	98	20	250	10	M 16	30,5
.. 26 / ..	150	200	115500	350	246	92	122	30	250	15	M 16	52
.. 28 / ..	170	220	162900	370	270	114	144	27,5	225	20	M 16	67



d_w	d	M_t	D	l_i	l_1	b	A	$a \times 45^\circ$	M_A	Z	S
mm	mm	Nm	mm	mm	mm	mm	mm	mm	Nm		
20	24	210	50	9	11,5	8	36	1,5	4	6	M 5
25	30	340	60	10	12,5	9	44	1,5	4	6	M 5
30	36	570	72	11	13,5	10	52	1,5	12	5	M 6
35	44	780	80	12,5	15	11	61	2,5	12	7	M 6
40	50	1160	90	13,5	16	12	70	2,5	12	8	M 6
45	55	1520	100	14	17,5	13	75	2,5	12	8	M 6
50	62	2000	110	14	17,5	13	86	2,5	12	10	M 6
55	68	2500	115	14	17,5	13	86	2,5	12	10	M 6
60	75	3200	138	16	19,5	14	100	3	30	7	M 8
65	80	3900	145	16	19,5	14	100	3	30	7	M 8
70	90	6000	155	18,5	23	17	114	3,5	30	10	M 8
75	100	7500	170	20,5	25,5	19	124	3,5	30	12	M 8
80	110	9000	185	23	28,5	22	136	3,5	59	9	M 10
90	125	13000	215	26	32	23	160	5	59	12	M 10
100	140	17600	230	28	35	26	175	5	100	10	M 12
110	155	25000	265	30	37	28	192	5	100	12	M 12
120	165	35000	290	33	40,5	31	210	5	250	8	M 16
130	175	44000	300	33	40,5	31	220	5	250	8	M 16
140	185	60000	330	40,5	48	38	236	5	250	10	M 16
150	195	76000	350	40,5	48	38	246	5	250	12	M 16
155	200	84000	350	40,5	48	38	246	5	250	12	M 16
165	220	108000	370	51,5	59,5	47	270	7,5	250	15	M 16
180	240	138000	405	53,5	62	49	295	7,5	490	12	M 20
200	260	184000	430	59	67,5	54	321	7,5	490	14	M 20
220	280	245000	460	65,5	75,5	60	346	8,5	490	16	M 20
240	300	293000	485	69,5	79,5	64	364	8,5	490	18	M 20
250	320	340000	520	69,5	79,5	64	386	8,5	490	20	M 20
260	340	430000	570	75,5	86,5	71	408	8,5	490	24	M 20
280	350	500000	580	78,5	89,5	73	432	8,5	490	24	M 20
290	360	550000	590	78,5	89,5	73	432	8,5	490	24	M 20
300	380	640000	645	80,5	92,5	76	458	8,5	840	20	M 24
310	390	710000	660	80,5	92,5	76	468	8,5	840	21	M 24
320	400	735000	680	80,5	92,5	76	480	8,5	840	21	M 24
340	420	840000	690	94,5	106,5	86	504	10	840	24	M 24
350	440	960000	750	101	113,5	91	527	10	840	24	M 24
370	460	1070000	770	101	113,5	91	547	10	840	28	M 24
390	480	1270000	800	106,5	119	96	570	10	840	30	M 24
410	500	1520000	850	106,5	119	96	590	10	1250	24	M 27

3071 (stainless steel)



H and e are in unlocked position

M_t = Transmissible torque per shrink disc

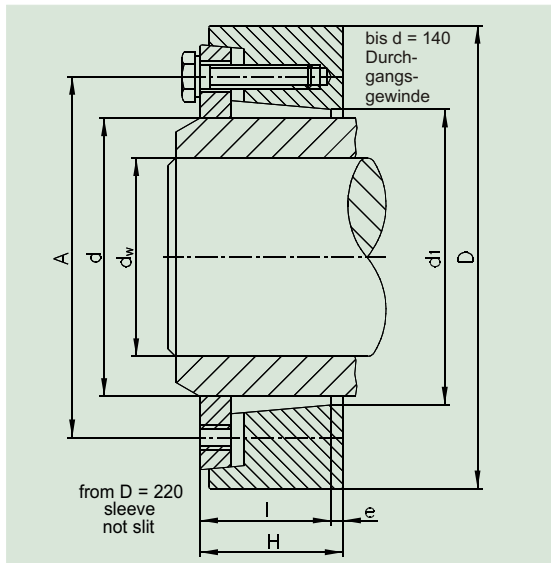
M_A = Tightening torque per bolt

X - min. space required for standard torque wrench

Z - Number of bolts

d_w mm	d mm	M_t Nm	D mm	I mm	H mm	A mm	B mm	e mm	M_A Nm	Z	S	Weight kg
19	24	110	50	14	19	36	26	2.5	3	6	M 5x18	0.2
20	24	140	50	14	19	36	26	2.5	3	6	M 5x18	0.2
21	24	170	50	14	19	36	26	2.5	3	6	M 5x18	0.2
24	30	170	60	16	21	44	32	2.5	3	7	M 5x18	0.3
25	30	200	60	16	21	44	32	2.5	3	7	M 5x18	0.3
26	30	240	60	16	21	44	32	2.5	3	7	M 5x18	0.3
28	36	230	72	18	23	52	38	2.5	6	5	M 6x20	0.5
30	36	300	72	18	23	52	38	2.5	6	5	M 6x20	0.5
31	36	325	72	18	23	52	38	2.5	6	5	M 6x20	0.5
34	44	395	80	20	25	61	47	2.5	6	7	M 6x20	0.6
35	44	440	80	20	25	61	47	2.5	6	7	M 6x20	0.6
36	44	490	80	20	25	61	47	2.5	6	7	M 6x20	0.6
38	50	480	90	22	27	70	53	2.5	6	8	M 6x25	0.8
40	50	590	90	22	27	70	53	2.5	6	8	M 6x25	0.8
42	50	700	90	22	27	70	53	2.5	6	8	M 6x25	0.8
42	55	540	100	23	30	75	58	3.5	6	8	M 6x25	1.1
45	55	700	100	23	30	75	58	3.5	6	8	M 6x25	1.1
48	55	890	100	23	30	75	58	3.5	6	8	M 6x25	1.1
48	62	875	110	23	30	86	66	3.5	6	10	M 6x25	1.3
50	62	1000	110	23	30	86	66	3.5	6	10	M 6x25	1.3
52	62	1100	110	23	30	86	66	3.5	6	10	M 6x25	1.3
50	68	725	115	23	30	86	72	3.5	6	10	M 6x25	1.4
55	68	1050	115	23	30	86	72	3.5	6	10	M 6x25	1.4
60	68	1450	115	23	30	86	72	3.5	6	10	M 6x25	1.4
55	75	1080	138	25	32	100	79	3.5	14	7	M 8x30	2.4
60	75	1470	138	25	32	100	79	3.5	14	7	M 8x30	2.4
65	75	1925	138	25	32	100	79	3.5	14	7	M 8x30	2.4
60	80	1250	145	25	32	100	84	3.5	14	7	M 8x30	2.5
65	80	1650	145	25	32	100	84	3.5	14	7	M 8x30	2.5
70	80	2125	145	25	32	100	84	3.5	14	7	M 8x30	2.5
65	90	1900	155	30	39	114	94	4.5	14	10	M 8x35	3.3
70	90	2425	155	30	39	114	94	4.5	14	10	M 8x35	3.3
75	90	3000	155	30	39	114	94	4.5	14	10	M 8x35	3.3
70	100	2350	170	34	44	124	104	5	14	12	M 8x35	4.3
75	100	2925	170	34	44	124	104	5	14	12	M 8x35	4.3
80	100	3580	170	34	44	124	104	5	14	12	M 8x35	4.3
75	110	2850	185	39	50	136	114	5.5	28	9	M 10x40	5.9
80	110	3520	185	39	50	136	114	5.5	28	9	M 10x40	5.9
85	110	4060	185	39	50	136	114	5.5	28	9	M 10x40	5.9
85	125	4450	215	42	54	160	134	6	28	12	M 10x40	8.6
90	125	5325	215	42	54	160	134	6	28	12	M 10x40	8.6
95	125	6275	215	42	54	160	134	6	28	12	M 10x40	8.6

2-Part Shrink Disc, Type 3171



H and e are in unlocked position

M_t = Transmissible torque per shrink disc

M_A = Tightening torque per bolt

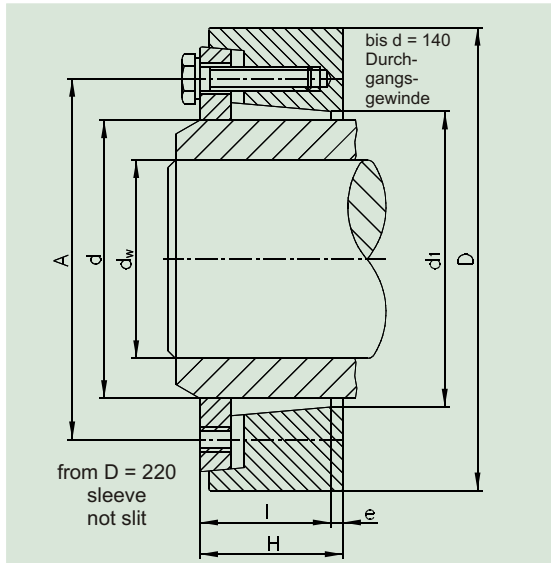
Z – Number of bolts

d_w mm	d mm	M_t Nm	D mm	H mm	I mm	e mm	d_1 mm	A mm	M_A Nm	Z	DIN 933-10.9	Weight kg
19	24	185	50	18	16	2	26	36	12	4	M 6x16	0,2
20	24	214	50	18	16	2	26	36	12	4	M 6x16	0,2
21	24	244	50	18	16	2	26	36	12	4	M 6x16	0,2
24	30	390	60	20	18	2	32	44	12	6	M 6x16	0,3
25	30	430	60	20	18	2	32	44	12	6	M 6x16	0,3
26	30	479	60	20	18	2	32	44	12	6	M 6x16	0,3
28	36	655	72	22	20	2	38	52	30	5	M 8x20	0,5
30	36	742	72	22	20	2	38	52	30	5	M 8x20	0,5
31	36	792	72	22	20	2	38	52	30	5	M 8x20	0,5
34	44	726	80	24	22	2	47	61	30	5	M 8x20	0,6
35	44	790	80	24	22	2	47	61	30	5	M 8x20	0,6
36	44	859	80	24	22	2	47	61	30	5	M 8x20	0,6
38	50	1230	90	27	24	3	53	68	30	7	M 8x20	0,8
40	50	1370	90	27	24	3	53	68	30	7	M 8x20	0,8
42	50	1600	90	27	24	3	53	68	30	7	M 8x20	0,8
42	55	1524	100	29	26	3	58	72	30	8	M 8x20	1,1
45	55	1825	100	29	26	3	58	72	30	8	M 8x20	1,1
48	55	2174	100	29	26	3	58	72	30	8	M 8x20	1,1
48	62	1783	110	29	26	3	66	80	30	8	M 8x20	1,3
50	62	1990	110	29	26	3	66	80	30	8	M 8x20	1,3
52	62	2162	110	29	26	3	66	80	30	8	M 8x20	1,3
50	68	1962	115	29	26	3	72	86	30	9	M 8x20	1,4
55	68	2458	115	29	26	3	72	86	30	9	M 8x20	1,4
60	68	3100	115	29	26	3	72	86	30	9	M 8x20	1,4
55	75	3075	138	31	27	4	84	100	59	8	M 10x25	2,4
60	75	3826	138	31	27	4	84	100	59	8	M 10x25	2,4
65	75	4660	138	31	27	4	84	100	59	8	M 10x25	2,4
60	80	3472	138	31	27	4	84	104	59	8	M 10x25	2,3
65	80	4240	138	31	27	4	84	104	59	8	M 10x25	2,3
70	80	5090	138	31	27	4	84	104	59	8	M 10x25	2,3
65	90	4845	155	38	34	4	94	114	59	10	M 10x30	3,3
70	90	5830	155	38	34	4	94	114	59	10	M 10x30	3,3
75	90	6930	155	38	34	4	94	114	59	10	M 10x30	3,3
70	100	6230	170	43	39	4	104	124	59	12	M 10x30	4,5
75	100	7400	170	43	39	4	104	124	59	12	M 10x30	4,5
80	100	8700	170	43	39	4	104	124	59	12	M 10x30	4,5
80	110	10000	185	49	44	5	114	136	100	10	M 12x30	6,1
85	110	11700	185	49	44	5	114	136	100	10	M 12x30	6,1
90	110	13600	185	49	44	5	114	136	100	10	M 12x30	6,1
90	125	13000	215	54	48	6	134	160	100	12	M 12x35	9
95	125	14900	215	54	48	6	134	160	100	12	M 12x35	9
100	125	17000	215	54	48	6	134	160	100	12	M 12x35	9

2-Part Shrink Disc, Type 3171

d _w mm	d mm	M _t Nm	D mm	H mm	l mm	e mm	d ₁ mm	A mm	M _A Nm	Z	DIN 933-10.9	Weight kg
100	140	16700	230	58	52	6	145	173	160	10	M 14x40	11
105	140	19000	230	58	52	6	145	173	160	10	M 14x40	11
110	140	24000	230	58	52	6	145	173	160	10	M 14x40	11
110	155	24400	263	62	56	6	165	190	160	12	M 14x40	15,6
115	155	27200	263	62	56	6	165	190	160	12	M 14x40	15,6
120	155	30200	263	62	56	6	165	190	160	12	M 14x40	15,6
120	165	34600	290	68	61	7	175	204	250	10	M 16x45	22
125	165	38200	290	68	61	7	175	204	250	10	M 16x45	22
130	165	42000	290	68	61	7	175	204	250	10	M 16x45	22
130	175	42000	300	68	60	8	185	214	250	12	M 16x50	23
135	175	46000	300	68	60	8	185	214	250	12	M 16x50	23
140	175	50200	300	68	60	8	185	214	250	12	M 16x50	23
140	185	61400	330	85	77	8	195	224	250	14	M 16x50	36
145	185	66700	330	85	77	8	195	224	250	14	M 16x50	36
150	185	72300	330	85	77	8	195	224	250	14	M 16x50	36
150	200	77500	350	85	77	8	205	240	250	16	M 16x50	40
155	200	83600	350	85	77	8	205	240	250	16	M 16x50	40
160	200	90000	350	85	77	8	205	240	250	16	M 16x50	40
160	220	101000	370	103	94	9	226	270	490	16	M 20x60	53
165	220	109000	370	103	94	9	226	270	490	16	M 20x60	53
170	220	117000	370	103	94	9	226	270	490	16	M 20x60	53
170	240	122000	405	107	97	10	246	296	490	18	M 20x60	66
180	240	140000	405	107	97	10	246	296	490	18	M 20x60	66
190	240	159000	405	107	97	10	246	296	490	18	M 20x60	66
190	260	163000	430	119	109	10	266	318	490	21	M 20x60	81
200	260	184000	430	119	109	10	266	318	490	21	M 20x60	81
210	260	207000	430	119	109	10	266	318	490	21	M 20x60	81
210	280	215000	460	132	122	10	287	340	490	22	M 20x60	102
220	280	240000	460	132	122	10	287	340	490	22	M 20x60	102
230	280	267000	460	132	122	10	287	340	490	22	M 20x60	102
220	300	271000	485	140	130	10	307	360	840	20	M 24x70	118
230	300	300000	485	140	130	10	307	360	840	20	M 24x70	118
240	300	331000	485	140	130	10	307	360	840	20	M 24x70	118
240	320	301000	520	140	130	10	327	380	840	21	M 24x70	137
250	320	332000	520	140	130	10	327	380	840	21	M 24x70	137
260	320	364000	520	140	130	10	327	380	840	21	M 24x70	137
250	340	390000	570	155	143	12	348	402	840	22	M 24x80	189
260	340	427000	570	155	143	12	348	402	840	22	M 24x80	189
270	340	466000	570	155	143	12	348	402	840	22	M 24x80	189
270	360	496000	590	159	147	12	368	424	840	24	M 24x80	202
280	360	539000	590	159	147	12	368	424	840	24	M 24x80	202
290	360	584000	590	159	147	12	368	424	840	24	M 24x80	202
290	390	640000	650	163	149	14	398	458	1250	18	M 27x80	250
300	390	691000	650	163	149	14	398	458	1250	18	M 27x80	250
310	390	744000	650	163	149	14	398	458	1250	18	M 27x80	250
320	420	742000	690	183	168	15	430	495	1250	21	M 27x80	314
330	420	797000	690	183	168	15	430	495	1250	21	M 27x80	314
340	420	853000	690	183	168	15	430	495	1250	21	M 27x80	314
340	440	945000	740	193	178	15	450	512	1250	24	M 27x80	389
350	440	1009000	740	193	178	15	450	512	1250	24	M 27x80	389
360	440	1075000	740	193	178	15	450	512	1250	24	M 27x80	389
360	460	1104000	770	193	178	15	470	536	1250	25	M 27x80	430
370	460	1174000	770	193	178	15	470	536	1250	25	M 27x80	430
380	460	1246000	770	193	178	15	470	536	1250	25	M 27x80	430
380	480	1300000	800	213	198	15	490	556	1250	27	M 27x80	514
390	480	1378000	800	213	198	15	490	556	1250	27	M 27x80	514
400	480	1458000	800	213	198	15	490	556	1250	27	M 27x80	514
400	500	1496000	850	213	198	15	510	580	1250	28	M 27x80	590
410	500	1581000	850	213	198	15	510	580	1250	28	M 27x80	590
420	500	1668000	850	213	198	15	510	580	1250	28	M 27x80	590

2-Part Shrink Disc, Type 3181



H and e are in unlocked position

M_t = Transmissible torque per
shrink disc

M_A = Tightening torque per bolt

Z - Number of bolts

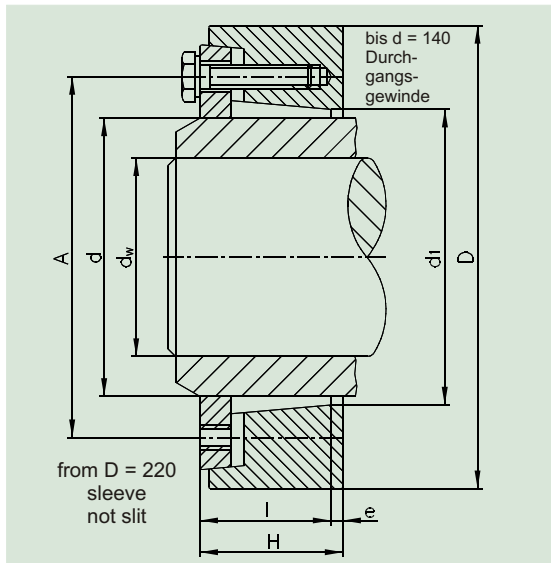
d_w mm	d mm	M_t Nm	D mm	H mm	I mm	e mm	d_1 mm	A mm	M_A Nm	Z	DIN 933-12.9	Weight kg
38	50	1500	90	27	24	3	53	68	35	7	M 8x20	0,8
40	50	1700	90	27	24	3	53	68	35	7	M 8x20	0,8
42	50	1900	90	27	24	3	53	68	35	7	M 8x20	0,8
42	55	1600	100	29	26	3	58	72	35	8	M 8x20	1,1
45	55	2000	100	29	26	3	58	72	35	8	M 8x20	1,1
48	55	2400	100	29	26	3	58	72	35	8	M 8x20	1,1
48	62	2200	110	29	26	3	66	80	35	8	M 8x20	1,3
50	62	2400	110	29	26	3	66	80	35	8	M 8x20	1,3
52	62	2700	110	29	26	3	66	80	35	8	M 8x20	1,3
50	68	2300	115	29	26	3	72	86	35	9	M 8x20	1,4
55	68	3000	115	29	26	3	72	86	35	9	M 8x20	1,4
60	68	3700	115	29	26	3	72	86	35	9	M 8x20	1,4
55	75	3700	138	31	27	4	84	100	70	8	M 10x25	2,4
60	75	4600	138	31	27	4	84	100	70	8	M 10x25	2,4
65	75	5500	138	31	27	4	84	100	70	8	M 10x25	2,4
60	80	4200	138	31	27	4	84	100	70	8	M 10x25	2,3
65	80	5200	138	31	27	4	84	100	70	8	M 10x25	2,3
70	80	6300	138	31	27	4	84	100	70	8	M 10x25	2,3
65	90	5900	155	38	34	4	94	114	70	10	M 10x30	3,3
70	90	7100	155	38	34	4	94	114	70	10	M 10x30	3,3
75	90	8400	155	38	34	4	94	114	70	10	M 10x30	3,3
70	100	7400	170	43	39	4	104	124	70	12	M 10x30	4,5
75	100	8800	170	43	39	4	104	124	70	12	M 10x30	4,5
80	100	10300	170	43	39	4	104	124	70	12	M 10x30	4,5
80	110	12600	185	49	44	5	114	136	120	10	M 12x30	6,1
85	110	14600	185	49	44	5	114	136	120	10	M 12x30	6,1
90	110	16900	185	49	44	5	114	136	120	10	M 12x30	6,1
90	125	16300	215	54	48	6	134	160	120	12	M 12x35	9
95	125	18700	215	54	48	6	134	160	120	12	M 12x35	9
100	125	21200	215	54	48	6	134	160	120	12	M 12x35	9
100	140	20500	230	58	52	6	145	173	190	10	M 14x40	11
105	140	23500	230	58	52	6	145	173	190	10	M 14x40	11
110	140	29500	230	58	52	6	145	173	190	10	M 14x40	11
110	155	30800	263	62	56	6	165	190	190	12	M 14x40	15,6
115	155	34200	263	62	56	6	165	190	190	12	M 14x40	15,6
120	155	37800	263	62	56	6	165	190	190	12	M 14x40	15,6
120	165	43900	290	68	61	7	175	204	290	10	M 16x45	22
125	165	48300	290	68	61	7	175	204	290	10	M 16x45	22
130	165	52900	290	68	61	7	175	204	290	10	M 16x45	22

2-Part Shrink Disc, Type 3181

d _w mm	d mm	M _t Nm	D mm	H mm	l mm	e mm	d ₁ mm	A mm	M _A Nm	Z	DIN 933-12.9	Weight kg
130	175	53400	300	68	60	8	185	214	290	12	M 16x50	23
135	175	58200	300	68	60	8	185	214	290	12	M 16x50	23
140	175	63300	300	68	60	8	185	214	290	12	M 16x50	23
140	185	75500	330	85	77	8	195	224	290	14	M 16x50	36
145	185	82000	330	85	77	8	195	224	290	14	M 16x50	36
150	185	89000	330	85	77	8	195	224	290	14	M 16x50	36
150	200	95500	350	85	77	8	205	240	290	16	M 16x50	40
155	200	102000	350	85	77	8	205	240	290	16	M 16x50	40
160	200	110000	350	85	77	8	205	240	290	16	M 16x50	40
160	220	125000	370	103	94	9	226	270	570	16	M 20x60	53
165	220	134000	370	103	94	9	226	270	570	16	M 20x60	53
170	220	145000	370	103	94	9	226	270	570	16	M 20x60	53
170	240	151000	405	107	97	10	246	296	570	18	M 20x60	66
180	240	172000	405	107	97	10	246	296	570	18	M 20x60	66
190	240	194000	405	107	97	10	246	296	570	18	M 20x60	66
190	260	200000	430	119	109	10	266	318	570	21	M 20x60	81
200	260	226000	430	119	109	10	266	318	570	21	M 20x60	81
210	260	255000	430	119	109	10	266	318	570	21	M 20x60	81
210	280	265000	460	134	124	10	287	340	570	22	M 20x60	102
220	280	295000	460	134	124	10	287	340	570	22	M 20x60	102
230	280	328000	460	134	124	10	287	340	570	22	M 20x60	102
220	300	332000	485	142	132	10	307	360	980	20	M 24x70	118
230	300	367000	485	142	132	10	307	360	980	20	M 24x70	118
240	300	405000	485	142	132	10	307	360	980	20	M 24x70	118
240	320	370000	520	143	133	10	327	380	980	21	M 24x70	137
250	320	410000	520	143	133	10	327	380	980	21	M 24x70	137
260	320	445000	520	143	133	10	327	380	980	21	M 24x70	137
250	340	480000	570	158	146	12	348	402	980	22	M 24x80	189
260	340	525000	570	158	146	12	348	402	980	22	M 24x80	189
270	340	575000	570	158	146	12	348	402	980	22	M 24x80	189
270	360	610000	590	162	150	12	368	424	980	21	M 24x80	202
280	360	663000	590	162	150	12	368	424	980	21	M 24x80	202
290	360	720000	590	162	150	12	368	424	980	21	M 24x80	202
290	390	781000	650	166	152	14	398	458	1450	18	M 27x80	250
300	390	842000	650	166	152	14	398	458	1450	18	M 27x80	250
310	390	906000	650	166	152	14	398	458	1450	18	M 27x80	250
320	420	912000	690	186	171	15	430	495	1450	21	M 27x80	314
330	420	980000	690	186	171	15	430	495	1450	21	M 27x80	314
340	420	1050000	690	186	171	15	430	495	1450	21	M 27x80	314
340	440	1160000	740	193	181	15	450	518	1450	24	M 27x80	389
350	440	1240000	740	193	181	15	450	518	1450	24	M 27x80	389
360	440	1320000	740	193	181	15	450	518	1450	24	M 27x80	389
360	460	1360000	770	196	181	15	470	536	1450	25	M 27x80	430
370	460	1445000	770	196	181	15	470	536	1450	25	M 27x80	430
380	460	1530000	770	196	181	15	470	536	1450	25	M 27x80	430
380	480	1600000	800	216	201	15	490	558	1450	27	M 27x80	514
390	480	1700000	800	216	201	15	490	558	1450	27	M 27x80	514
400	480	1800000	800	216	201	15	490	558	1450	27	M 27x80	514
400	500	1840000	850	216	201	15	510	580	1450	28	M 27x80	590
410	500	1950000	850	216	201	15	510	580	1450	28	M 27x80	590
420	500	2050000	850	216	201	15	510	580	1450	28	M 27x80	590

When ordering, show: TAS 3181 – d · Further sizes on request.

2-Part Shrink Disc, Type 3191



H and e are in unlocked position

M_t = Transmissible torque per
shrink disc

M_A = Tightening torque per bolt

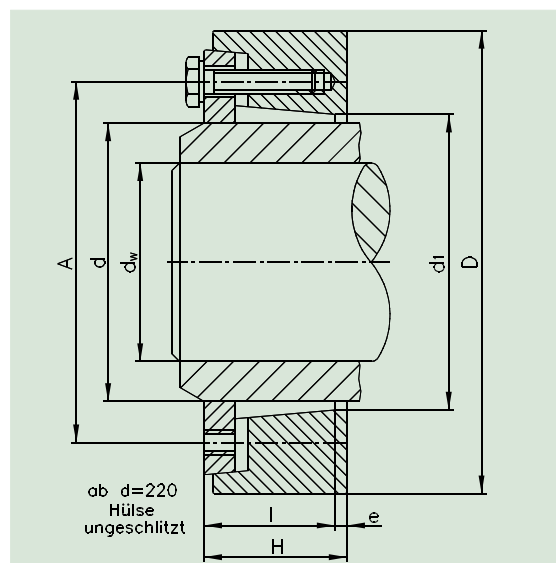
Z - Number of bolts

d_w mm	d mm	M_t Nm	D mm	H mm	I mm	e mm	d_1 mm	A mm	M_A Nm	Z	DIN 933-10.9	Gewicht kg
100	140	26000	230	74	68	6	144	178	250	10	M 16x45	13
105	140	30000	230	74	68	6	144	178	250	10	M 16x45	13
110	140	33000	230	74	68	6	144	178	250	10	M 16x45	13
110	155	33000	263	80	73	7	162	196	250	12	M 16x45	19
115	155	37000	263	80	73	7	162	196	250	12	M 16x45	19
120	155	41000	263	80	73	7	162	196	250	12	M 16x45	19
120	165	47000	290	88	80	8	173	204	250	15	M 16x45	26
125	165	52000	290	88	80	8	173	204	250	15	M 16x45	26
130	165	57000	290	88	80	8	173	204	250	15	M 16x45	26
130	175	58000	300	88	80	8	183	214	250	15	M 16x45	30
135	175	63000	300	88	80	8	183	214	250	15	M 16x45	30
140	175	69000	300	88	80	8	183	214	250	15	M 16x45	30
140	185	84000	330	112	102	10	194	236	490	12	M 20x60	49
145	185	91000	330	112	102	10	194	236	490	12	M 20x60	49
150	185	99000	330	112	102	10	194	236	490	12	M 20x60	49
150	200	104000	350	112	102	10	205	246	490	14	M 20x60	54
155	200	113000	350	112	102	10	205	246	490	14	M 20x60	54
160	200	121000	350	112	102	10	205	246	490	14	M 20x60	54
160	220	127000	370	134	124	10	225	270	490	20	M 20x60	70
165	220	137000	370	134	124	10	225	270	490	20	M 20x60	70
170	220	147000	370	134	124	10	225	270	490	20	M 20x60	70
170	240	157000	405	144	132	12	248	298	490	20	M 20x60	91
180	240	180000	405	144	132	12	248	298	840	20	M 20x60	91
190	240	204000	405	144	132	12	248	298	840	20	M 20x60	91
190	260	230000	430	160	148	12	266	326	840	22	M 20x60	110
200	260	260000	430	160	148	12	266	326	840	22	M 20x60	110
210	260	292000	430	160	148	12	266	326	840	22	M 20x60	110
210	280	284000	460	172	160	12	289	346	840	18	M 24x70	136
220	280	317000	460	172	160	12	289	346	840	18	M 24x70	136
230	280	352000	460	172	160	12	289	346	840	18	M 24x70	136
230	300	360000	485	176	164	12	305	366	840	21	M 24x70	156
240	300	398000	485	176	164	12	305	366	840	21	M 24x70	156
245	300	417000	485	176	164	12	305	366	840	21	M 24x70	156
240	320	430000	520	184	170	14	325	380	840	22	M 24x70	183
250	320	473000	520	184	170	14	325	380	840	22	M 24x70	183
260	320	518000	520	184	170	14	325	380	840	22	M 24x70	183
250	340	551000	570	200	186	14	348	414	1250	18	M 27x80	248
260	340	603000	570	200	186	14	348	414	1250	18	M 27x80	248
270	340	657000	570	200	186	14	348	414	1250	18	M 27x80	248

2-Part Shrink Disc, Type 3191

d _w mm	d mm	M _t Nm	D mm	H mm	l mm	e mm	d ₁ mm	A mm	M _A Nm	Z	DIN 933-10.9	Weight kg
270	360	671000	590	210	195	22	368	434	1250	20	M 27x80	270
280	360	729000	590	210	195	22	368	434	1250	20	M 27x80	270
290	360	789000	590	210	195	22	368	434	1250	20	M 27x80	270
290	390	850000	650	220	205	15	398	470	1250	21	M 27x90	350
300	390	917000	650	220	205	15	398	470	1250	21	M 27x90	350
310	390	988000	650	220	205	15	398	470	1250	21	M 27x90	350

2-Part Shrink Disc Type 3193



H and e are in unlocked position

M_t = Transmissible torque per
shrink disc

M_A = Tightening torque per bolt

Z - Number of bolts

d_w mm	d mm	M_t Nm	D mm	H mm	I mm	e mm	d_1 mm	A mm	M_A Nm	Z	DIN 933-12.9	Weight kg
100	140	30000	230	74	68	6	144	178	290	10	M16x45	13
105	140	34000	230	74	68	6	144	178	290	10	M16x45	13
110	140	38000	230	74	68	6	144	178	290	10	M16x45	13
110	155	42000	263	80	73	7	162	196	290	12	M16x45	19
115	155	47000	263	80	73	7	162	196	290	12	M16x45	19
120	155	51000	263	80	73	7	162	196	290	12	M16x45	19
120	165	60000	290	88	80	8	173	204	290	15	M16x45	26
125	165	65000	290	88	80	8	173	204	290	15	M16x45	26
130	165	72000	290	88	80	8	173	204	290	15	M16x45	26
130	175	69000	300	88	80	8	183	214	290	15	M16x45	30
135	175	76000	300	88	80	8	183	214	290	15	M16x45	30
140	175	82000	300	88	80	8	183	214	290	15	M16x45	30
140	185	101000	330	112	100	10	194	236	570	12	M20x60	49
145	185	109000	330	112	100	10	194	236	570	12	M20x60	49
150	185	118000	330	112	100	10	194	236	570	12	M20x60	49
150	200	126000	350	113	102	11	205	246	570	14	M20x60	54
155	200	136000	350	113	102	11	205	246	570	14	M20x60	54
160	200	146000	350	113	102	11	205	246	570	14	M20x60	54
160	220	162000	390	134	124	12	225	270	570	18	M20x60	70
165	220	174000	390	134	124	12	225	270	570	18	M20x60	70
170	220	187000	390	134	124	12	225	270	570	18	M20x60	70
170	240	206000	405	144	132	12	248	298	570	20	M20x60	91
180	240	235000	405	144	132	12	248	298	570	20	M20x60	91
190	240	265000	405	144	132	12	248	298	570	20	M20x60	91
190	260	285000	430	160	148	12	266	326	570	22	M20x60	110
200	260	321000	430	160	148	12	266	326	570	22	M20x60	110
210	260	358000	430	160	148	12	266	326	570	22	M20x60	110
210	280	36100	460	174	162	12	289	346	980	18	M24x70	136
220	280	401000	460	174	162	12	289	346	980	18	M24x70	136
230	280	444000	460	174	162	12	289	346	980	18	M24x70	136
230	300	461000	485	178	162	16	305	366	980	21	M24x70	156
240	300	508000	485	178	162	16	305	366	980	21	M24x70	156
245	300	532000	485	178	162	16	305	366	980	21	M24x70	156
240	320	512000	520	187	173	14	325	388	980	22	M24x70	183
250	320	562000	520	187	173	14	325	388	980	22	M24x70	183
260	320	615000	520	187	173	14	325	388	980	22	M24x70	183
250	340	661000	570	203	189	14	348	414	1450	18	M27x80	248
260	340	722000	570	203	189	14	348	414	1450	18	M27x80	248
270	340	785000	570	203	189	14	348	414	1450	18	M27x80	248

2-Part Shrink Disc Type 3193

d _w mm	d mm	M _t Nm	D mm	H mm	l mm	e mm	d ₁ mm	A mm	M _A Nm	Z	DIN 933-12.9	Weight kg
270	360	763000	590	213	198	15	368	434	1450	20	M27x80	270
280	360	828000	590	213	198	15	368	434	1450	20	M27x80	270
290	360	895000	590	213	198	15	368	434	1450	20	M27x80	270
290	390	978000	650	223	208	15	398	470	1450	21	M27x90	350
300	390	1054000	650	223	208	15	398	470	1450	21	M27x90	350
310	390	1134000	650	223	208	15	398	470	1450	21	M27x90	350
320	420	1297000	690	249	228	15	428	508	1450	22	M27x90	412
330	420	1389000	690	249	228	15	428	508	1450	22	M27x90	412
340	420	1484000	690	249	228	15	428	508	1450	22	M27x90	412
340	440	1583000	750	261	238	15	448	528	1950	22	M30x90	528
350	440	1687000	750	261	238	15	448	528	1950	22	M30x90	528
360	440	1795000	750	261	238	15	448	528	1950	22	M30x90	528
360	460	1734000	770	261	236	25	468	548	1950	23	M30x90	593
370	460	1841000	770	261	236	25	468	548	1950	23	M30x90	593
380	460	1952000	770	261	236	25	468	548	1950	23	M30x90	593
380	480	2076000	800	301	273	28	488	572	1950	24	M30x90	725
390	480	2198000	800	301	273	28	488	572	1950	24	M30x90	725
400	480	2323000	800	301	273	28	488	572	1950	24	M30x90	725
400	500	2529000	850	303	273	28	508	592	1950	25	M30x90	843
410	500	2669000	850	303	273	28	508	592	1950	25	M30x90	843
420	500	2814000	850	303	273	28	508	592	1950	25	M30x90	843

Principles of calculation

Symbols used and terms:

M_t	=	maximum transmissible torque
M_{red}	=	reduced maximum torque with simultaneous axial force
F_{ax}	=	maximum transmissible axial force
σ_{r_N}	=	radial stress in hub
σ_{t_N}	=	tangential stress in hub
σ_{B_N}	=	bending stress in hub
τ_N	=	torsion stress in hub
σ_v	=	reference stress
p_w	=	contact pressure between shaft and hub
p_{ges}	=	contact pressure between outer disc and inner ring of shrink disc
Δp_w	=	contact pressure for by passing play between hub and shaft
d_w	=	shaft diameter
d	=	external diameter of hub (= internal diameter of shrink disc)
μ_w	=	coefficient of friction between shaft and hub
l	=	width of inner ring of shrink disc

The calculation of the values given in the catalogue is based on the following assumptions and simplifications:

Axial stresses are disregarded – two-dimensional problem.

Surface contact pressure is distributed evenly over the length of the inner ring.

For ungreased surfaces 0.15 is taken as the coefficient of friction between shaft and hub.

Maximum play in the fit is allowed for.

The peak-to-valley surface finish may be a maximum of 16 μm .

The tapers of the Shrink Discs are greased ($\mu = 0.05$).

Bolt threads and heat seats are likewise coated with a grease containing MoS2 ($\mu_{\text{total}} = 0.1$).

Modulus of elasticity is assumed to be 210 000 N/mm².

Subject to these assumptions, the maximum torque is arrived at as follows (static operation):

$$M_t = \frac{\pi \cdot \mu_w \cdot 10^{-3} \cdot p_w \cdot d_w^2 \cdot l}{2} \quad [\text{Nm}]$$

d_w and l in mm

The transmissible torque can be varied by changing the coefficient of friction μ_w .

The maximum axial force: $F_{ax} = M_t \cdot \frac{2}{d_w}$ d_w in mm and F_{ax} in kN

With the simultaneous transmission torque and axial force, the torque is reduced according to the following formula:

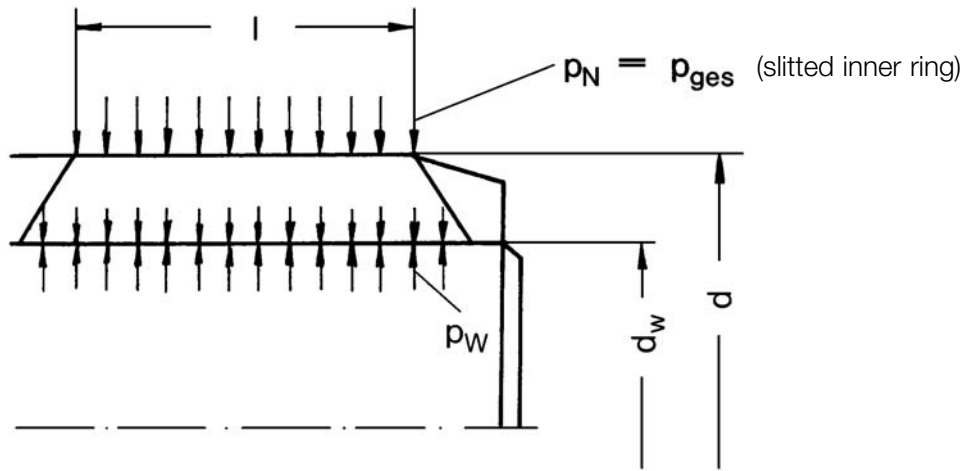
$$M_{\text{red}} = \sqrt{M_t^2 - \left(F_{ax} \cdot \frac{d_w}{2}\right)^2}$$

The calculations are based on the following maximum clearances

d_w from	to	Tolerance	max. Clearance mm
9	18		0.020
18	30	H 7 / h 6	0.034
30	50	H 7 / h 6	0.041
50	80	H 7 / h 6	0.049
80	120	H 7 / h 6	0.057
120	150	H 7 / h 6	0.065
150	180	H 7 / g 6	0.079
180	250	H 7 / g 6	0.090
250	315	H 7 / g 6	0.101
315	400	H 7 / g 6	0.111
400	500	H 7 / g 6	0.123

Calculation of hubs

Equations for thick-walled tubes are taken as the basis, for which axial stresses are disregarded.



Maximum stresses occur at the internal face of the hub. The following apply:

$$\sigma_{r_N} = -p_w \frac{l}{1 + (d - d_w)}$$

$$\sigma_{t_N} = \frac{p_w (Q^2 + 1) - 2 \cdot p_{ges.} \cdot Q^2}{Q^2 - 1} \quad \text{with } Q = \frac{d}{d_w}$$

$$\tau_N = \frac{16 \cdot M_t \cdot d_w \cdot 10^3}{\pi (d^4 - d_w^4)} \quad M_t \text{ in Nm}$$

Based on the deformation hypothesis, these stresses may be expressed by a reference stress:

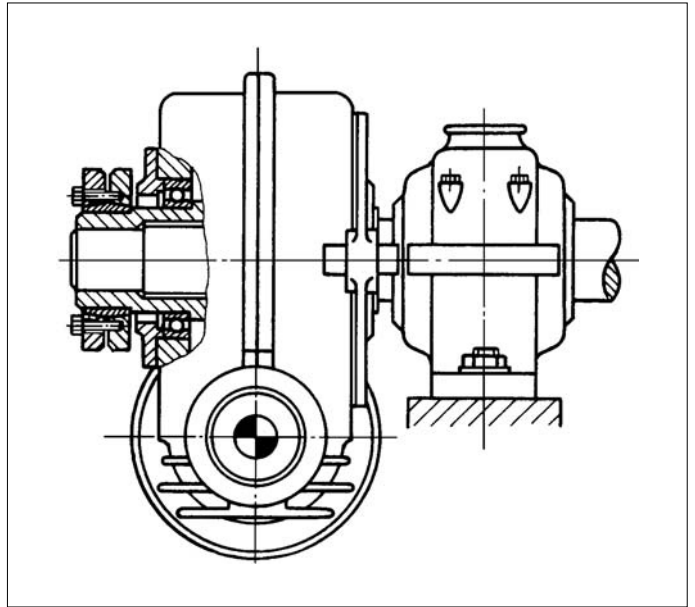
$$\sigma_V = \sqrt{\frac{1}{2} [(\sigma_{t_N} - \delta r_N)^2 + (\delta r_N - \delta B_N)^2 + (\delta B_N - \delta t_N)^2] + 3 \tau_N^2}$$

The reference stress must always be lower than the 0.2 yield strength limit of the hub material.

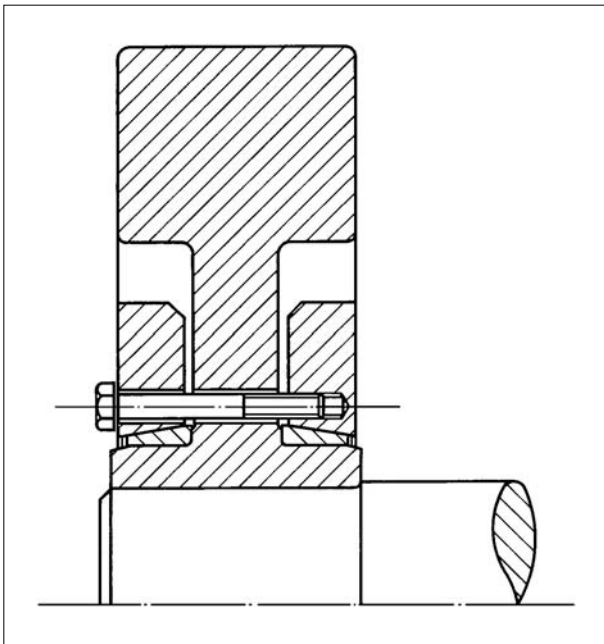
Examples of application



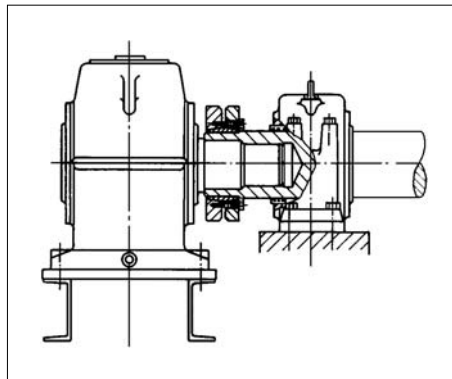
Attachment of sprocket wheel with shrink disc
Works photo: Henkenjohann



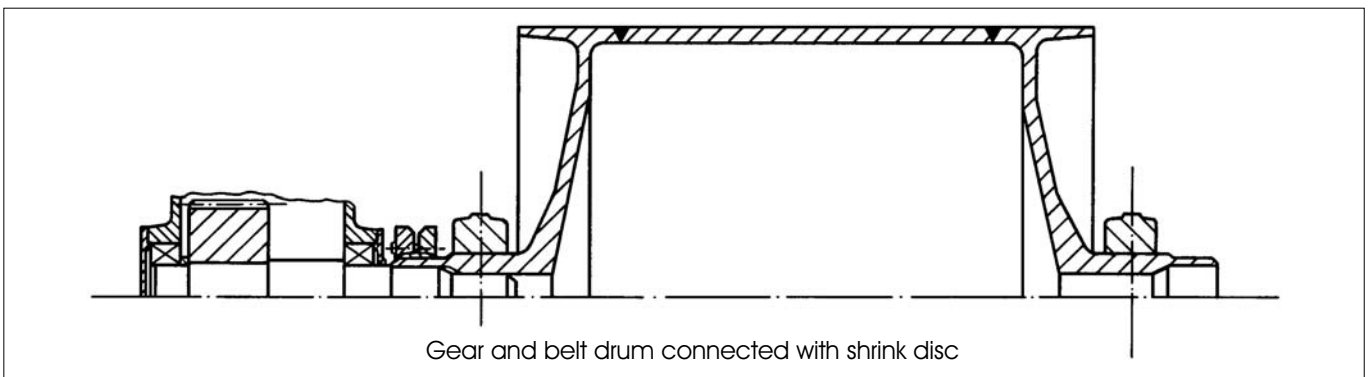
Hollow shaft worm gear mounted on shaft by means of shrink disc



Attachment of flywheel with divided shrink disc

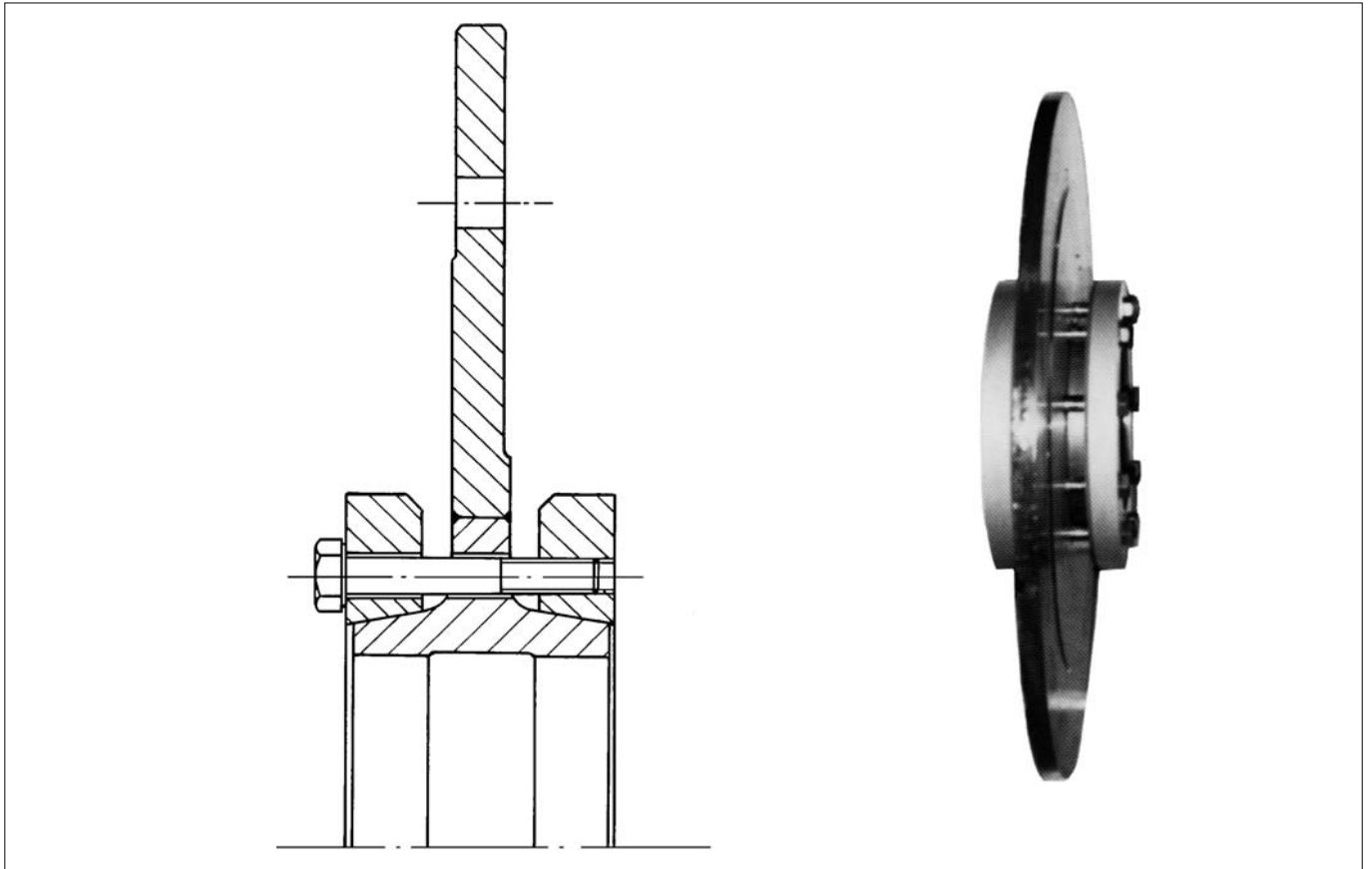


Solid shaft gear mounted on shaft by means of shrink disc

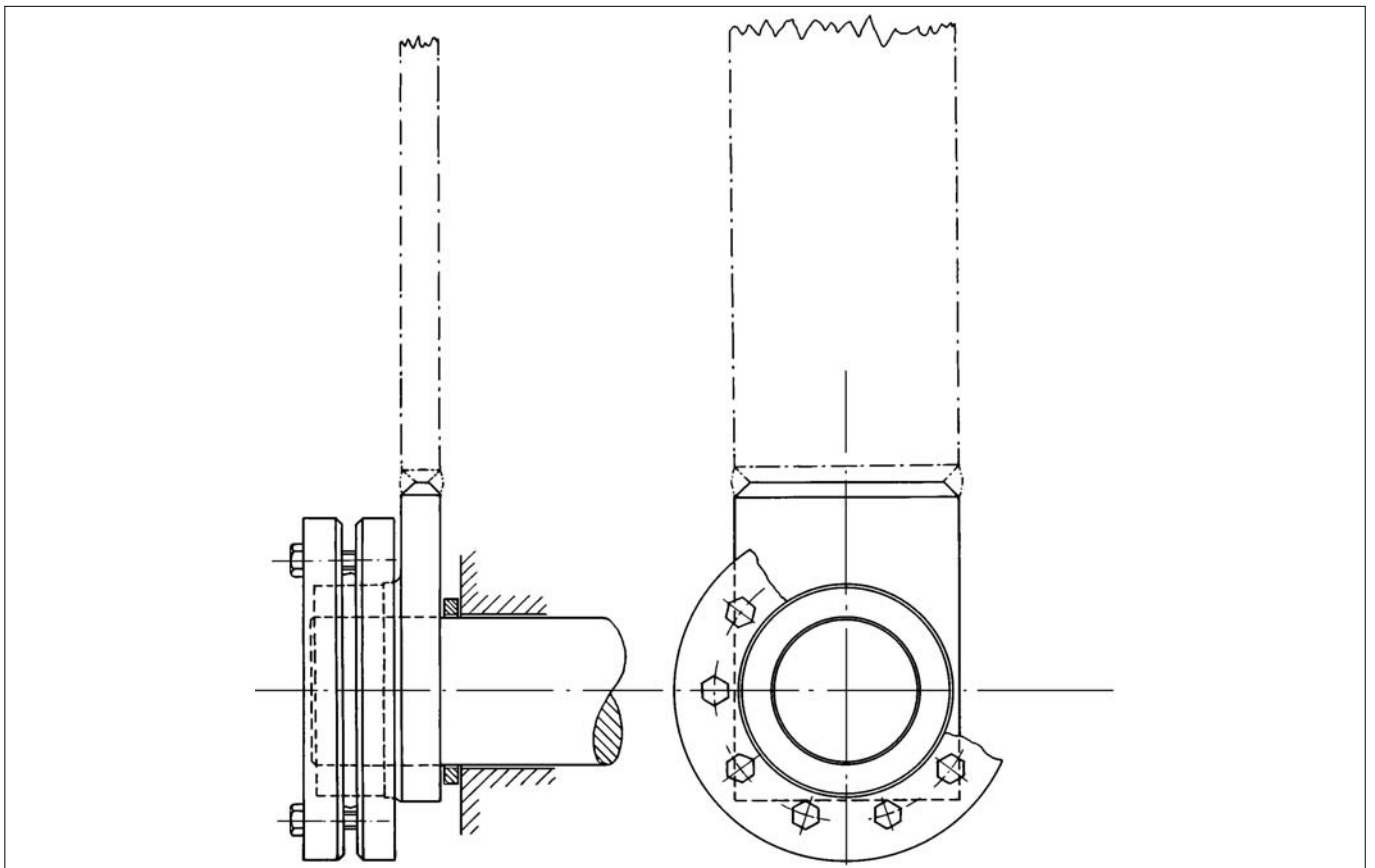


Gear and belt drum connected with shrink disc

Examples of application



Brake disc



Lever fixture

Mounting instructions for 3071–3051 – 3091–3073 – 3061

Notes

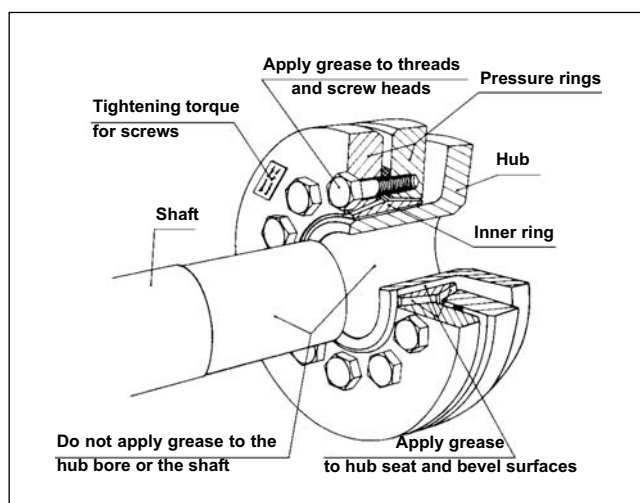
The shrink rings are supplied assembled and ready to mount. Only the larger units, where the weights involved make handling difficult, should be disassembled to facilitate mounting.

Mounting instructions

1. Remove any spacers which may have been arranged between the pressure rings as protection during transport.
2. The screws should only be tightened to such a degree that the inner ring can still be turned freely.
3. Apply grease to the surface of the hub on which the shrink ring seats.
4. Push the shrink ring onto the hub.
Attention: Do not begin tightening the screws before the shaft is in place in the hub bore, otherwise permanent deformation will result.
5. Push the hub onto the shaft, both contact surfaces being ungreaased.
6. Make sure the shrink ring is aligned, i. e. the pressure rings are in parallel planes, by tightening the screws with a short wrench.

7. Tighten the ring by tensioning the screws evenly one after the other in clockwise direction (not in a "crosswise" fashion). It will be necessary to go round several times before all the screws are torqued down to the recommended value. (For torque values and required wrench lengths see below). Check with a torque wrench. The tightening torque is either punched into the material with smaller units, or is indicated on a plate.

Screws (Grade 10.9)	Wrench length in cm	Tightening torque
M10	24	59 Nm
M12	34	100 Nm
M16	73	250 Nm
M20	125	490 Nm
M24	200	840 Nm



Disassembly

1. Loosen the screws evenly one after the other, again going round several times to avoid canting of the plates on the inner ring.

Under no circumstances whatsoever should the screws be totally disengaged, since this could lead to a ring jumping off (Think Safety).
2. Before the shaft is dismantled or the hub pulled off, any rust on the hub or shaft should be removed.
3. Remove the shrink ring from the hub.

Cleaning and regreasing

Shrink rings which have been in service should be totally dismantled and cleaned. The bevel surfaces are factory lubricated with a solid lubricant (e. g. Weicon „Anti-Size“).

Undamaged bevel surfaces should be regreased only with Weicon „Anti-Size“, which should likewise be applied to the threads and screw-head bearing surfaces.

Mounting instructions for 2-Part Shrink-Disc Type 3171, 3181, 3191, 3193

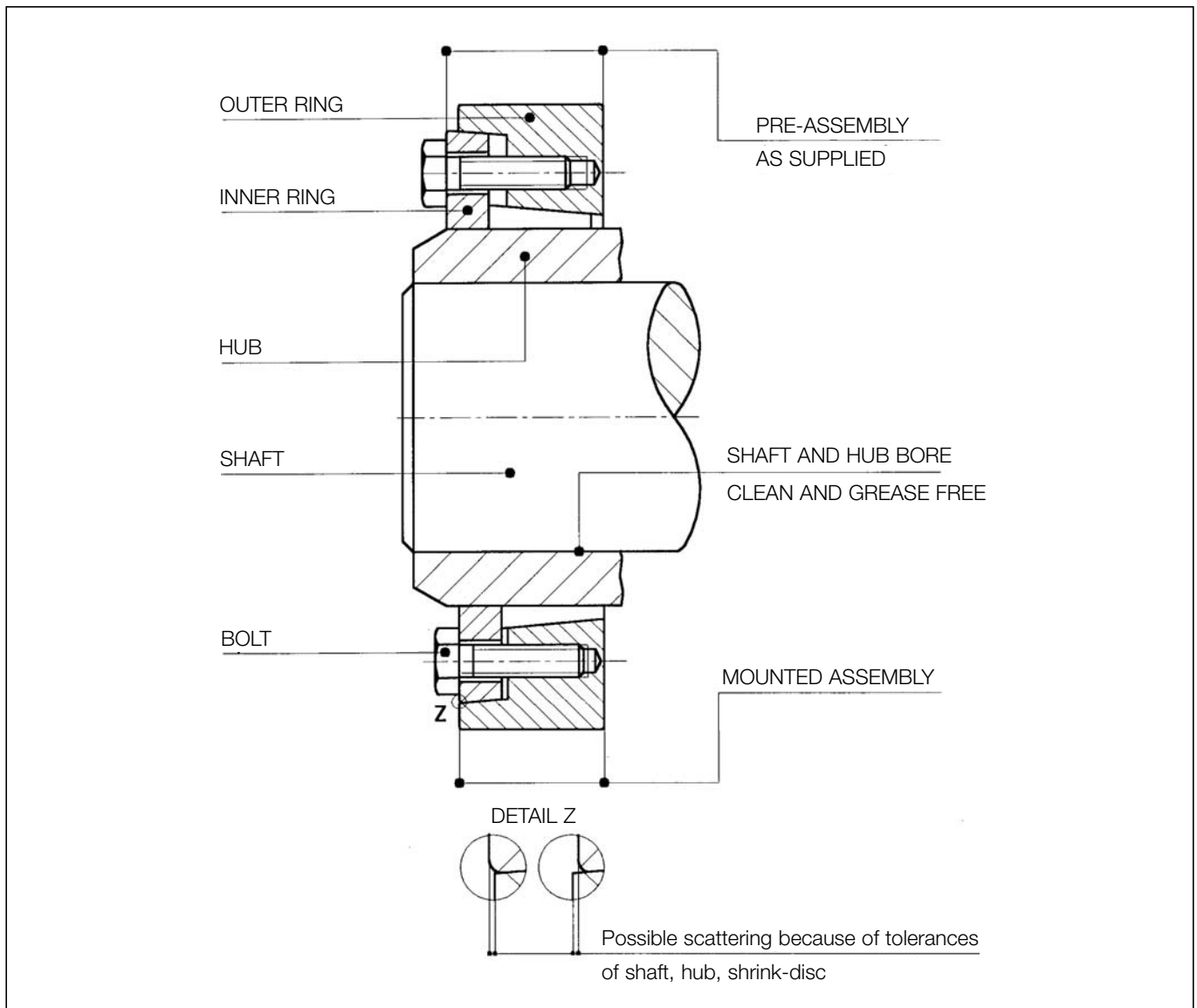
Assembly

Shrink Discs are supplied pre-assembled and ready for mounting.

Hub bores and shafts must be clean and free of grease before mounting. The bolts should not be tightened until the Shrink Disc has been positioned on the shaft assembly.

Tightening of the bolts should be in sequence, that is one after the other in a circular pattern.

The approximately alignment of outer and inner ring faces can be an optical indication of correct installation. However, a torque wrench must be used to ensure that the transmissible torque nominated in the catalogue is attained.



Disassembly

Loosen bolts in sequence. If required, bolts can be used to disengage inner and outer rings by means of tapped jacking holes. Contaminants (rust etc.) should be cleaned off the hub before removal of the Shrink Disc. Never disengage the bolt threads completely. (Danger of Accident)

Cleaning and Regreasing

Shrink Discs which have been in service should be completely disassembled and cleaned. The tapered surfaces are factory coated with a solid lubricant (e. g. Weicon „Anti-Size“). Regrease undamaged tapers with Weicon „Anti-Size“. Also coat threads and bearing part of bolt heads with Weicon „Anti-Size“.

The following Locking Assemblies are produced and marketed by TAS:

TAS 3003

Locking Assembly, consisting of internally slotted bush and externally slotted ring. These are clamped together by locking screws thus mating the shaft with the bore of the hub. High degree of concentricity. Removal by means of jacking screws.



TAS 3006

As for TAS 3003. The difference is the larger flange of the internal bush, preventing axial movements of shaft and hub.



TAS 3012, TAS 3015

Higher torque transmission values than for TAS 3003 and 3006. Additionally collar on the inner face of the external bush results in shorter fitting and removal time.

TAS RB

Especially for conveyor pulleys (with low surface pressure).



TAS 3020

Two tapered rings are locked together by screws forcing one slotted internal and one slotted external ring against the respective shaft and hub surfaces. Machining tolerances need to be too close.

Removal is simple as the cone angles prevent binding. For the transmission of higher torque values several locking assemblies can be used in series.



TAS Shaft Coupling

Special Locking Assemblies on request – Short Delivery time.



FURTHER PRODUCTS TAS SCHÄFER GMBH:

- Internal Locking Devices (locking assemblies)
- External Locking Devices (shrink discs)

