GTW BEARINGS s.r.o.

Journal Bearings

Types W131, W132, W133, W134, W135, W136 and W137
Diameter Range 90...710 mm

Bearings type W131, W132, W133, W134, W135, W136 and W137 are general purpose journal bearings with or without thrust capability and with different bore geometries.
They are applied in various rotating machines, mostly in naval, mill and turbo gearboxes.

Journal Bearing Types W131-W137
Diameter Range 90...710 mm

Applications
Journal bearings types W131-W137 are successfully applied in various applications such as:

- Naval gearboxes,
- Mill gearboxes and
- Turbo gearboxes.

Materials
The bearing shells are made of a steel body, lined with a babbitt layer. Standard material for the steel body is C10/C15, for the babbitt it is GTW89, a tin-based material able to sustain high bearing temperatures.

Bore Geometry
Standard bearings of types W131-W137 are machined with a cylindrical bore. For special applications, they can be implemented with a two-lobe-bore, four-lobe-bore or offset-halves profile based on GTW standard. Special bore geometries are available on request.

Machine Interface
Clearance between shaft and bearing is determined by machining of the shaft. Angular position of bearings types W131-W137 is determined by a pin usually connecting to a groove in the machine housing split line. The position of this pin depends upon the application-specific load angles.

Special Designs
Modifications to the bearings of the W131-W137 series are available to optimally suit your machine design and application. The majority of W131-W137 bearings is specially adapted to the customers' specifications.

Oil supply
Oil lubrication and cooling has to be achieved through an external oil circulation system. Usually, this is part of the machine oil lubrication system.

Heat dissipation
The friction heat is dissipated by convection via the external oil circulation system.

Temperature control
Usually, bearing temperature measurements are taken on the external surface of the bearing body. Provision for bearing temperature measurement can be made on request. Temperature readings may help in determining bearing failure when evaluating transient temperature changes.

Bearing selection
Calculation software based on E DIN 31652 and DIN 31653 for bearing pre-selection is available on request. Specified load cases will be calculated by GTW with specialized calculation software able to model bearing behaviour more precisely.

Designation of Bearing Types

1.) Manufacturer

W	GTW

2.) Type

131	Non-locating
132	Non-locating loss-reduced
133	Double-sided thrust capability with low thrust shoulders
134	Double-sided thrust capability with high thrust shoulders
135	Double-sided thrust capability with medium thrust shoulders
136	Single-sided thrust capability with low thrust shoulder
137	Single-sided thrust capability with high thrust shoulder

3.) Width

050	Overall width is 50% of nominal bearing diameter
075	Overall width is 75% of nominal bearing diameter
100	Overall width is 100% of nominal bearing diameter

4.) Nominal bearing diameter

5.) Bore Geometry

C	Cylindrical bore
Y	Two-lobe bore
V	Four-lobe bore
O	Offset-halves

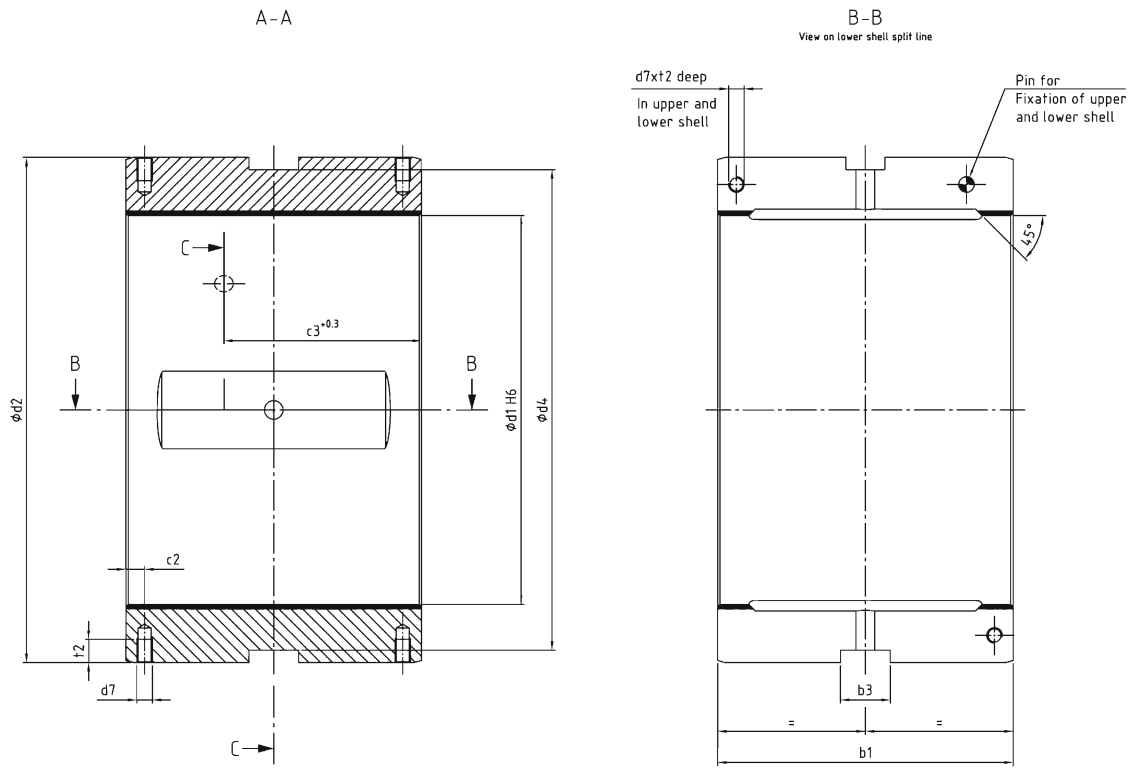
6.) Direction of rotation

L	Left when looking at the thrust surface
R	Right when looking at the thrust surface
B	Both

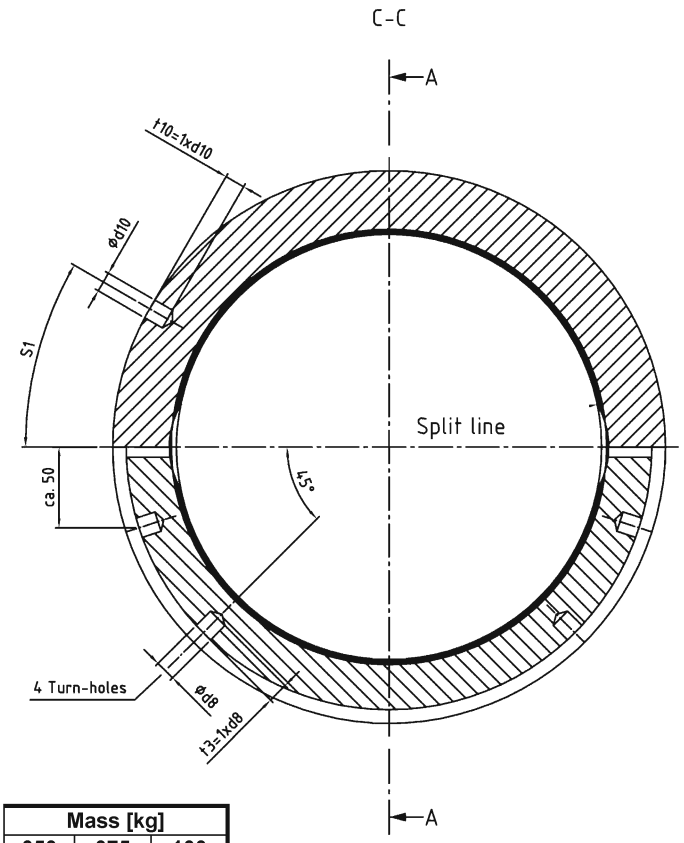
Example **Locating bearing with high thrust shoulder and single-sided thrust capability with nominal diameter 300 mm, overall width 75% of nominal diameter, cylindrical bore and for both directions of rotation.**

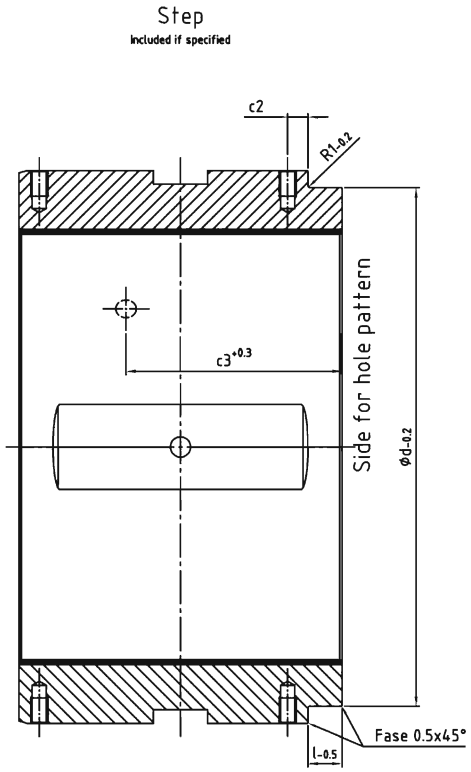
Slide bearing W137-075-300-CB

Dimensions of Bearings Type W131



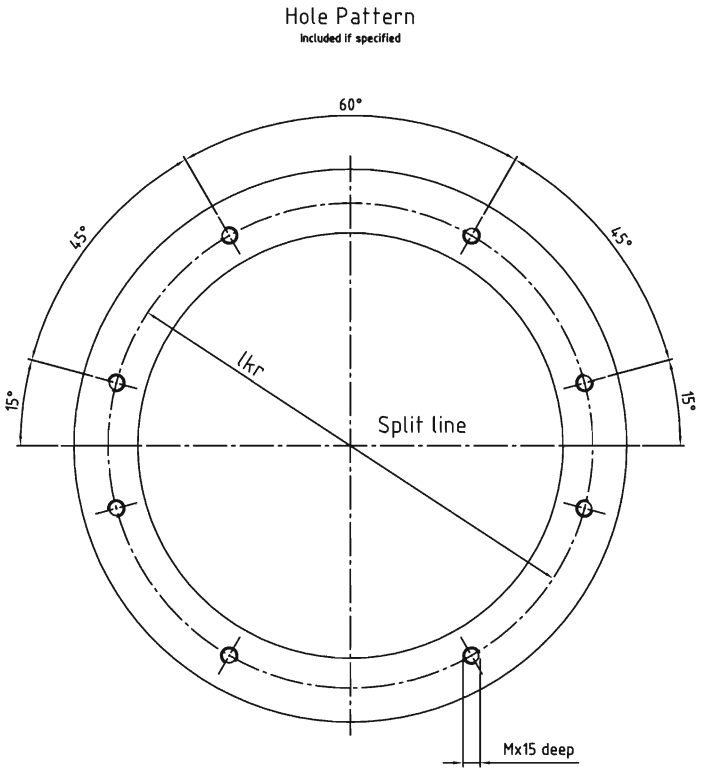
d1	Wall thickness	d2	d4	d7	d8	d10	b1			b3			c2	c3			t2
							050	075	100	050	075	100		050	075	100	
90	12.51 -0.020	115 m6	107	-	4	-	45	65	90	12	15	15	-	-	-	-	-
100	15.02 -0.020	130 m6	122	-	5	-	50	75	100	12	15	15	-	-	-	-	-
110	15.01 -0.020	140 k6	130	-	5	-	55	80	110	15	20	20	-	-	-	-	-
125	17.51 -0.020	160 k6	150	-	6	-	65	95	125	15	20	20	-	-	-	81.0	-
140	20.01 -0.020	180 k6	170	M8	8	8	70	105	140	15	20	20	10	53.5	71.0	88.5	10
160	22.51 -0.020	205 k6	193	M8	8	8	80	120	160	20	25	25	10	61.0	81.0	101	12
180	25.01 -0.025	230 k6	218	M8	10	8	90	135	180	20	25	25	10	68.5	91.0	114	12
200	30.01 -0.025	260 k6	248	M8	12	10	100	150	200	20	25	25	10	76.0	101	126	12
225	32.51 -0.025	290 k6	274	M10	12	10	110	170	225	25	32	32	12	84.0	114	142	15
235	35.01 -0.025	305 k6	290	M10	12	12	120	175	235	25	32	32	12	91.0	118	148	15
250	37.51 -0.025	325 k6	309	M10	12	12	125	190	250	25	32	32	12	94.5	127	157	15
265	40.00 -0.025	345 j6	329	M10	15	12	130	200	265	25	32	32	12	99.0	134	166	15
280	40.00 -0.025	360 k6	344	M10	15	12	140	210	280	25	32	32	12	95.0	140	175	15
300	45.00 -0.025	390 j6	370	M12	15	16	150	225	300	25	32	32	15	113	151	188	20
315	47.50 -0.030	410 j6	390	M12	15	16	160	235	315	32	40	40	15	120	158	198	20
335	50.00 -0.030	435 j6	415	M12	15	16	170	250	335	32	40	40	15	127	167	209	20
355	52.50 -0.030	460 j6	440	M16	15	16	180	265	355	32	40	40	18	135	177	222	30
375	55.00 -0.030	485 j6	465	M16	20	20	190	280	375	32	40	40	18	142	187	235	30
400	57.50 -0.030	515 js6	495	M16	20	20	200	300	400	32	40	40	18	150	200	250	30
425	62.50 -0.030	550 js6	524	M20	20	20	210	320	425	40	50	50	22	158	213	266	33
450	65.00 -0.030	580 js6	554	M20	20	20	225	340	450	40	50	50	22	169	226	281	33
475	67.50 -0.030	610 js6	584	M20	20	25	235	355	475	40	50	50	22	177	237	297	33
500	72.50 -0.030	645 js6	619	M20	20	25	250	375	500	40	50	50	22	187	250	312	33
530	77.50 -0.030	685 js6	659	M24	20	25	265	400	530	50	60	60	25	198	265	330	39
560	80.00 -0.030	720 js6	690	M24	26	25	280	420	560	50	60	60	25	210	280	350	39
600	85.00 -0.030	770 js6	740	M24	26	30	300	450	600	50	60	60	25	228	303	378	39
630	90.00 -0.030	810 js6	780	M30	28	30	315	470	630	60	70	70	33	236	313	393	48
670	95.00 -0.030	860 js6	825	M30	28	30	335	500	670	60	70	70	33	251	333	418	48
710	100.00 -0.030	910 js6	875	M30	28	30	355	530	710	60	70	70	33	266	333	443	48





Body:	C10/C15
Babbitt:	GTW89

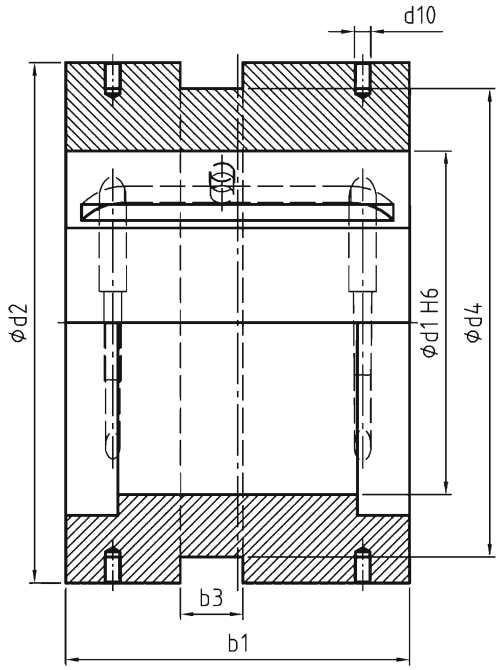
Mass [kg]		
050	075	100
1.4	2.0	2.8
2.0	3.1	4.2
2.4	3.5	4.9
3.8	5.6	7.5
5.6	8.1	10.9
7.7	11.7	15.8
11.0	16.5	22.4
17.0	25.0	33.4
21.0	33.6	45.0
26.0	39.0	54.1
32.0	49.5	65.0
38.0	58.5	78.5
46.0	65.2	87.5
55.0	84.0	113
65.0	97.0	131
76.0	114	153
91.0	136	184
112	163	218
126	191	257
165	239	318
180	275	366
207	315	423
250	377	506
304	456	608
344	520	700
421	636	854
493	740	998
585	884	1190
675	1045	1410

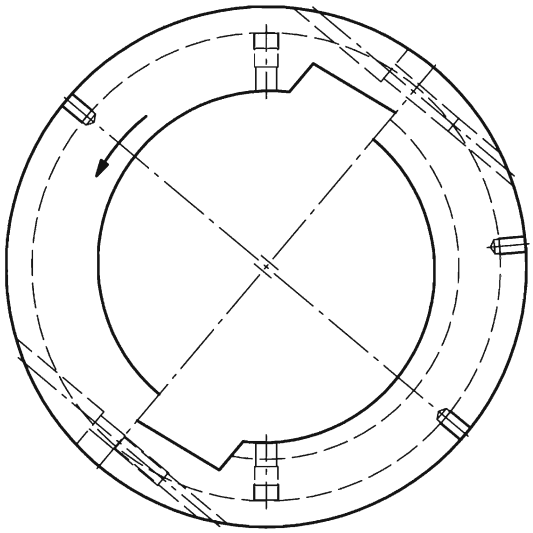


All dimensions in mm

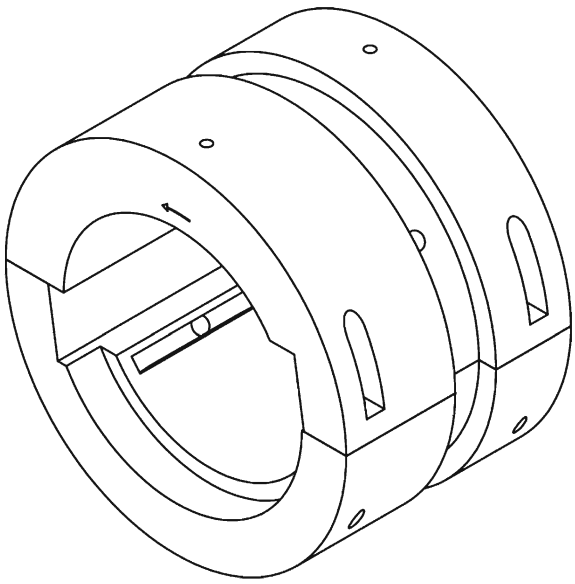
We reserve the right to introduce modifications

Dimensions of Bearings Type W132

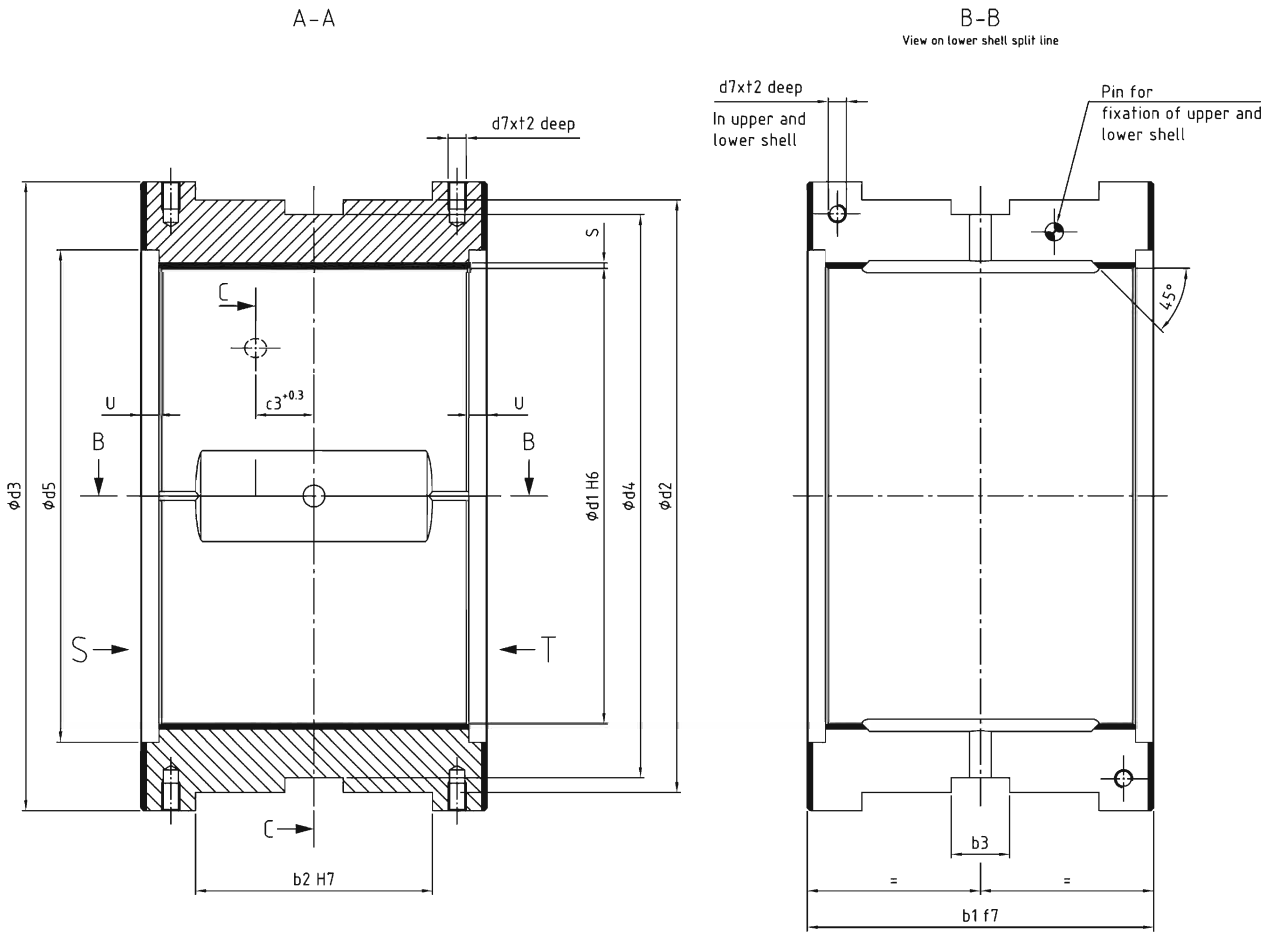




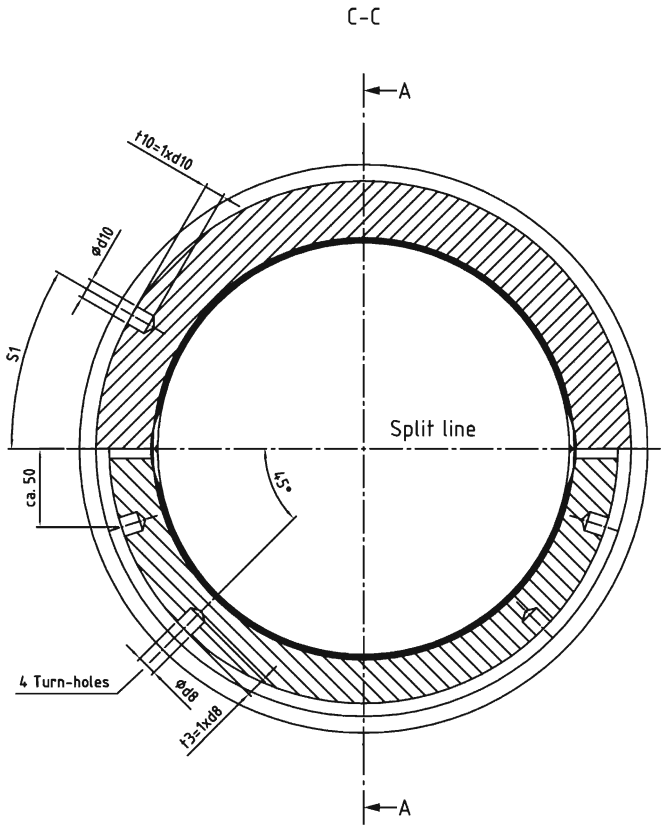
d1	d2	d4	d10	b1	b3
				100	100
90	150 m6	140	10	90	25
100	160 m6	150	10	100	25
110	175 k6	160	10	110	32
125	200 k6	185	10	125	32
140	225 k6	210	10	140	32
160	250 k6	230	12	160	32
180	290 k6	270	12	180	40
200	315 k6	290	12	200	40
225	355 k6	325	12	225	40
235	375 k6	345	12	235	40
250	375 k6	345	12	250	50
265	400 j6	360	16	265	50
280	415 k6	375	16	280	50
300	450 j6	420	16	300	60
315	475 j6	425	16	315	60
335	500 j6	450	16	335	60
355	535 j6	490	16	355	70
375	560 j6	505	20	375	70
400	600 j6	545	20	400	70

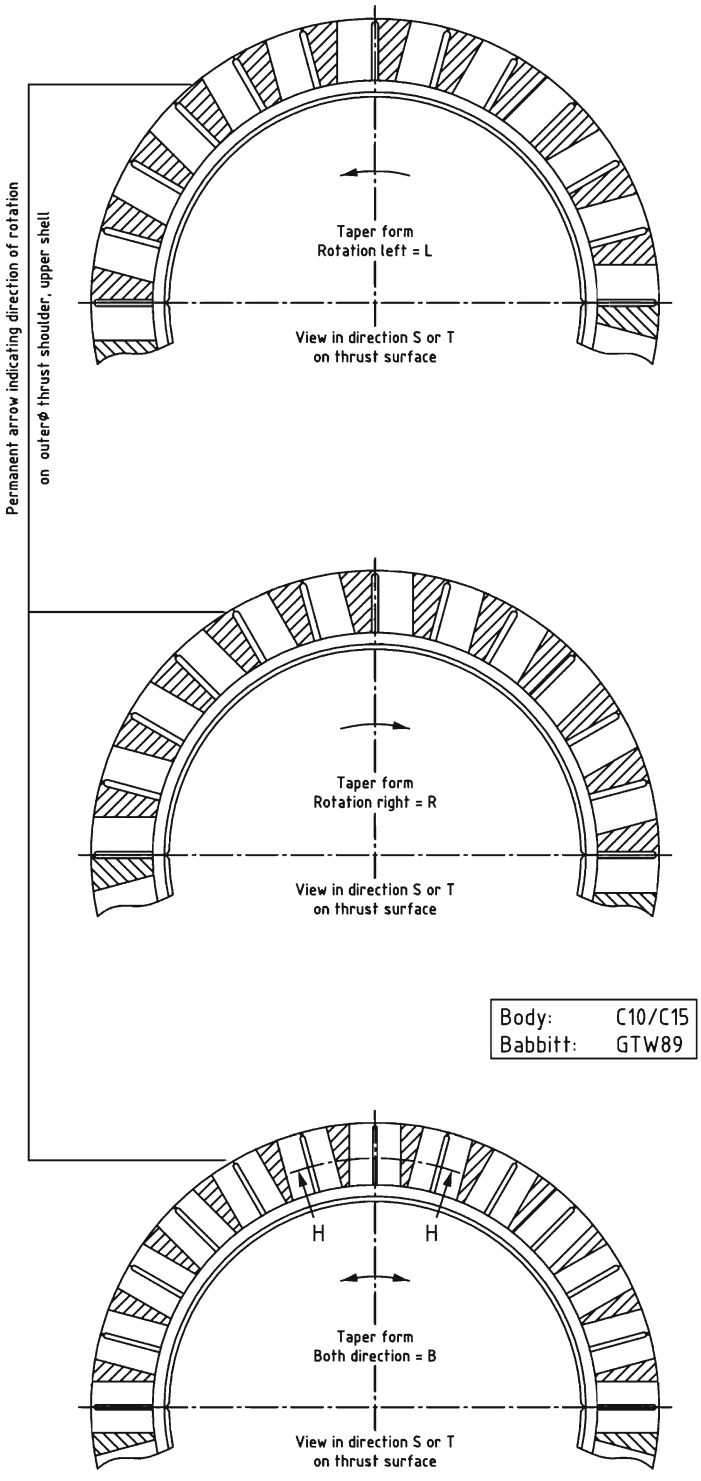


Dimensions of Bearings Type W133



d1	Wall thickness	d2	d3	d4	d5	d7		d8	d10	b1		b2		b3		c3	t2	U
						050	075			050	075	050	075	050	075			
90	12.51 -0.020	115 m6	123	107	99	-	-	4	-	45	65	30	45	12	15	-	-	-
100	15.02 -0.020	130 m6	138	122	110	-	-	5	-	50	75	35	50	12	15	-	-	-
110	15.01 -0.020	140 k6	150	130	121	-	-	5	-	55	80	35	55	15	20	-	-	-
125	17.51 -0.020	160 k6	170	150	137	-	-	6	-	65	95	45	65	15	20	-	-	-
140	20.01 -0.020	180 k6	190	170	152	M6	M8	8	8	70	105	45	75	15	20	10	71	10
160	22.51 -0.020	205 k6	215	193	174	M6	M8	8	8	80	120	55	85	20	25	10	81	12
180	25.01 -0.025	230 k6	245	218	196	M6	M8	10	8	90	135	60	95	20	25	10	91	12
200	30.01 -0.025	260 k6	275	248	216	M6	M8	12	10	100	150	70	105	20	25	10	101	12
225	32.51 -0.025	290 k6	305	274	243	M8	M10	12	10	110	170	70	120	25	32	12	114	15
235	35.01 -0.025	305 k6	315	290	253	M8	M10	12	12	120	175	80	120	25	32	12	118	15
250	37.51 -0.025	325 k6	345	309	270	M8	M10	12	12	125	190	85	130	25	32	12	127	15
265	40.00 -0.025	345 j6	365	329	285	M8	M10	15	12	130	200	80	140	25	32	12	134	15
280	40.00 -0.025	360 k6	380	344	300	M8	M10	15	12	140	210	90	145	25	32	12	140	15
300	45.00 -0.025	390 j6	415	370	320	M10	M12	15	16	150	225	100	155	25	32	15	151	20
315	47.50 -0.030	410 j6	435	390	337	M10	M12	15	16	160	235	110	165	32	40	15	158	20
335	50.00 -0.030	435 j6	460	415	357	M10	M12	15	16	170	250	120	175	32	40	15	167	20
355	52.50 -0.030	460 j6	485	440	379	M12	M16	15	16	180	265	120	185	32	40	18	177	30
375	55.00 -0.030	485 j6	510	465	399	M12	M16	20	20	190	280	130	195	32	40	18	187	30
400	57.50 -0.030	515 js6	545	495	428	M12	M16	20	20	200	300	140	210	32	40	18	200	30
425	62.50 -0.030	550 js6	575	524	449	M16	M20	20	20	210	320	150	220	40	50	22	213	33
450	65.00 -0.030	580 js6	610	554	480	M16	M20	20	20	225	340	155	235	40	50	22	226	33
475	67.50 -0.030	610 js6	645	584	505	M16	M20	20	25	235	355	165	245	40	50	22	237	33
500	72.50 -0.030	645 js6	680	619	532	M16	M20	20	25	250	375	170	260	40	50	22	250	33



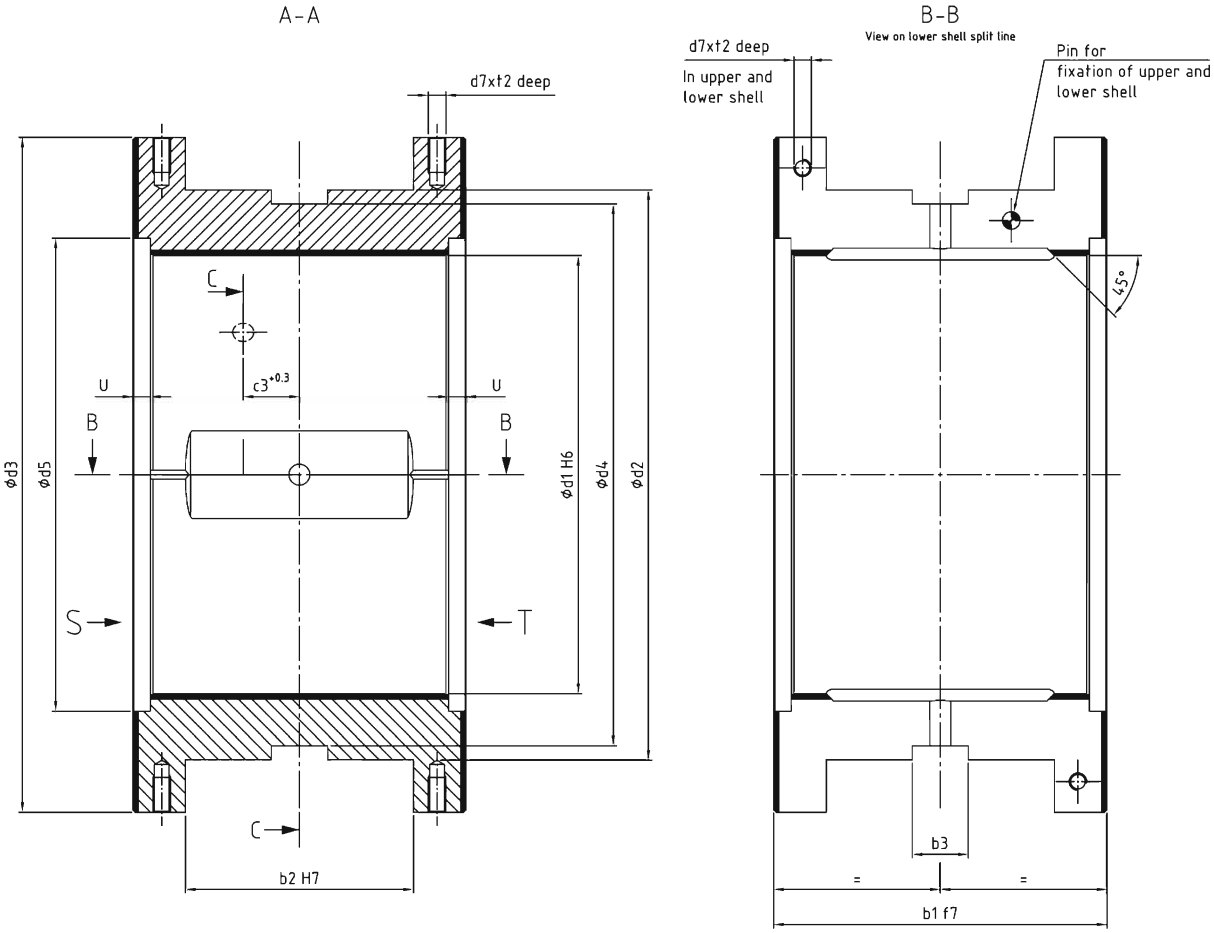


m [kg]	
050	075
1.7	2.4
2.3	3.4
2.8	4.0
4.4	6.5
7.1	10.0
8.0	12.5
12.3	18.5
18.0	27.0
24.0	37.0
30.0	45.0
35.0	55.0
43.0	65.0
49.0	72.0
63.0	95.0
71.0	107
87.0	130
100	151
118	175
145	215
185	265
199	290
228	340
265	400

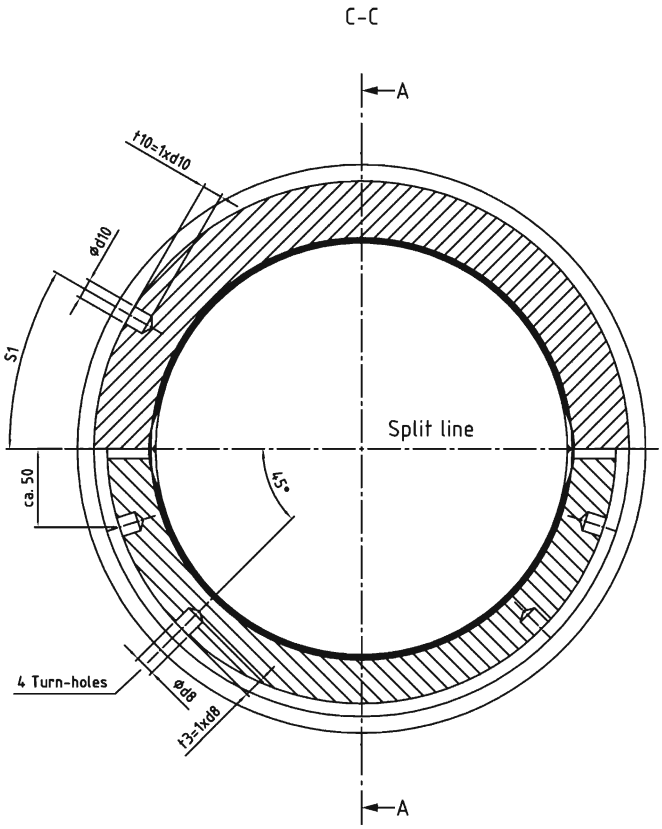
All dimensions in mm

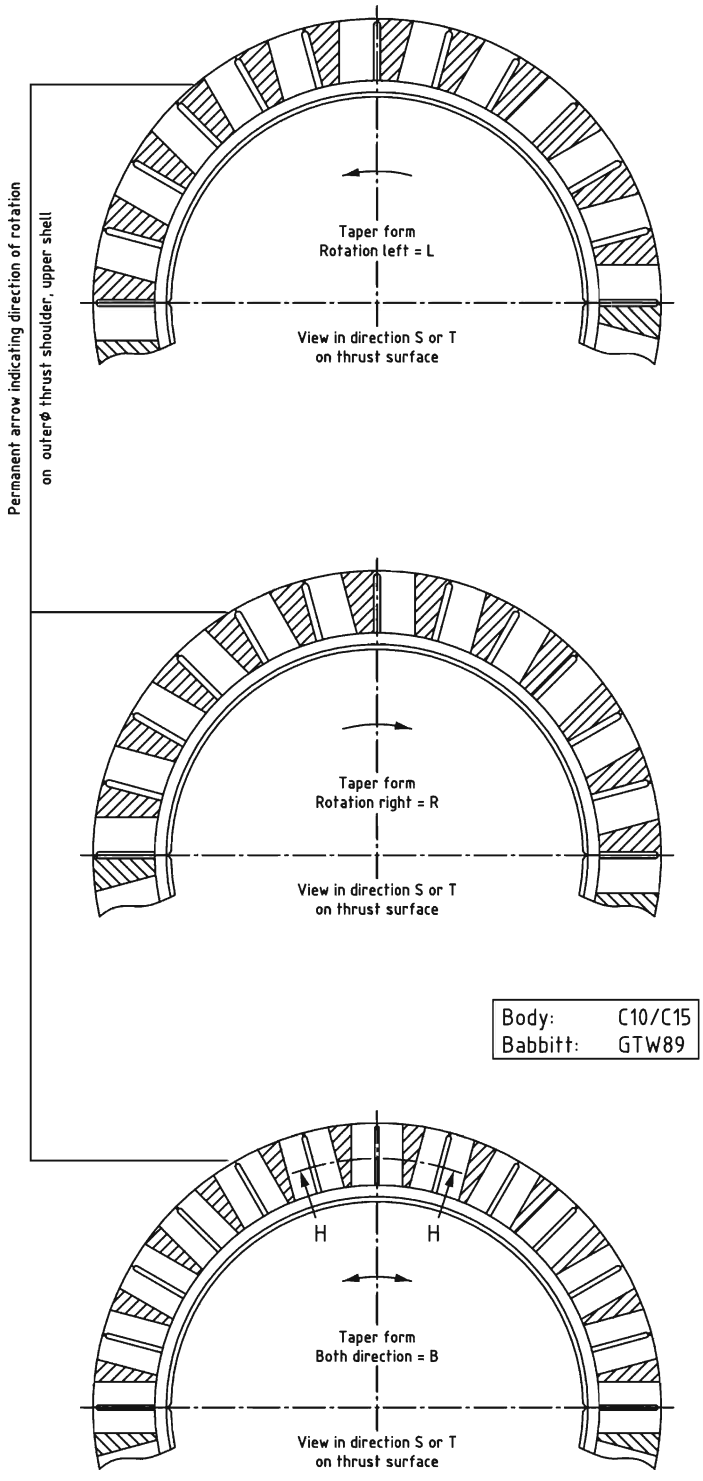
We reserve the right to introduce modifications

Dimensions of Bearings Type W134



d1	Wall thickness	d2	d3	d4	d5	d7	d8	d10	b1		b2		b3	c3	t2	U
									075	100	075	100				
90	12.51 -0.020	115 m6	140	107	99	-	4	-	65	90	45	70	15	-	-	4.5
100	15.02 -0.020	130 m6	155	122	110	-	5	-	75	100	50	75	15	-	-	5.0
110	15.01 -0.020	140 k6	172	130	121	-	5	-	80	110	55	85	20	-	-	5.5
125	17.51 -0.020	160 k6	195	150	137	-	6	-	95	125	65	95	20	-	-	6.0
140	20.01 -0.020	180 k6	215	170	152	M8	8	8	105	140	75	110	20	18.5	10	6.0
160	22.51 -0.020	205 k6	245	193	174	M8	8	8	120	160	85	125	25	21.0	12	7.0
180	25.01 -0.025	230 k6	280	218	196	M8	10	8	135	180	95	140	25	23.5	12	8.0
200	30.01 -0.025	260 k6	305	248	216	M8	12	10	150	200	105	155	25	26.0	12	8.0
225	32.51 -0.025	290 k6	345	274	243	M10	12	10	170	225	120	175	32	29.0	15	9.0
235	35.01 -0.025	305 k6	360	290	253	M10	12	12	175	235	120	180	32	30.5	15	9.0
250	37.51 -0.025	325 k6	385	309	270	M10	12	12	190	250	130	190	32	32.0	15	10.0
265	40.00 -0.025	345 j6	405	329	285	M10	15	12	200	265	140	205	32	33.5	15	10.0
280	40.00 -0.025	360 k6	430	344	300	M10	15	12	210	280	145	215	32	35.0	15	10.0
300	45.00 -0.025	390 j6	460	370	320	M12	15	16	225	300	155	230	32	38.0	20	10.0
315	47.50 -0.030	410 j6	480	390	337	M12	15	16	235	315	165	245	40	40.0	20	11.0
335	50.00 -0.030	435 j6	515	415	357	M12	15	16	250	335	175	260	40	41.5	20	11.0
355	52.50 -0.030	460 j6	540	440	379	M16	15	16	265	355	185	275	40	44.5	30	12.0
375	55.00 -0.030	485 j6	570	465	399	M16	20	20	280	375	195	290	40	47.0	30	12.0
400	57.50 -0.030	515 js6	610	495	428	M16	20	20	300	400	210	310	40	50.0	30	14.0
425	62.50 -0.030	550 js6	650	524	449	M20	20	20	320	425	220	325	50	53.0	33	14.0
450	65.00 -0.030	580 js6	685	554	480	M20	20	20	340	450	235	345	50	56.0	33	15.0
475	67.50 -0.030	610 js6	720	584	505	M20	20	25	355	475	245	365	50	59.0	33	15.0
500	72.50 -0.030	645 js6	760	619	532	M20	20	25	375	500	260	385	50	62.0	33	16.0



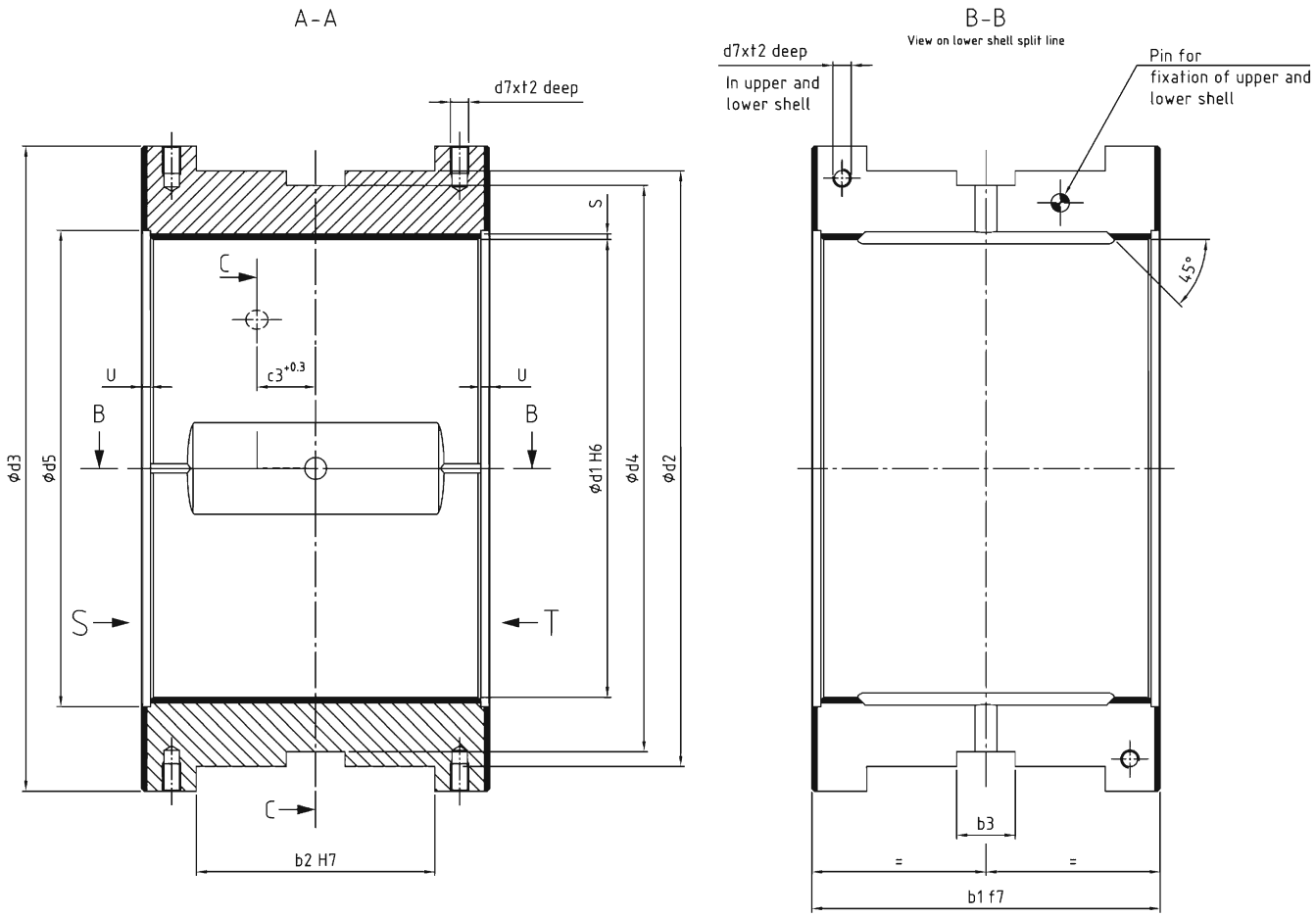


m [kg]	
075	100
2.4	3.4
3.4	4.7
4.0	5.9
6.5	8.9
10.0	13.6
12.5	17.9
18.5	25.8
27.0	38.0
37.0	51.5
45.0	63.0
55.0	75.0
65.0	90.0
72.0	101
95.0	132
107	147
130	180
151	210
175	248
215	297
265	367
290	423
350	490
400	583

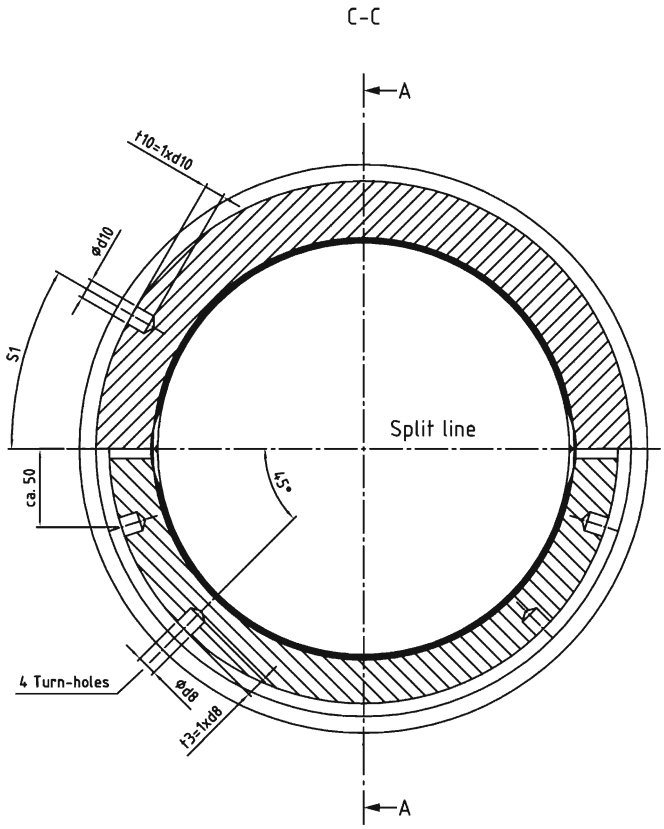
All dimensions in mm

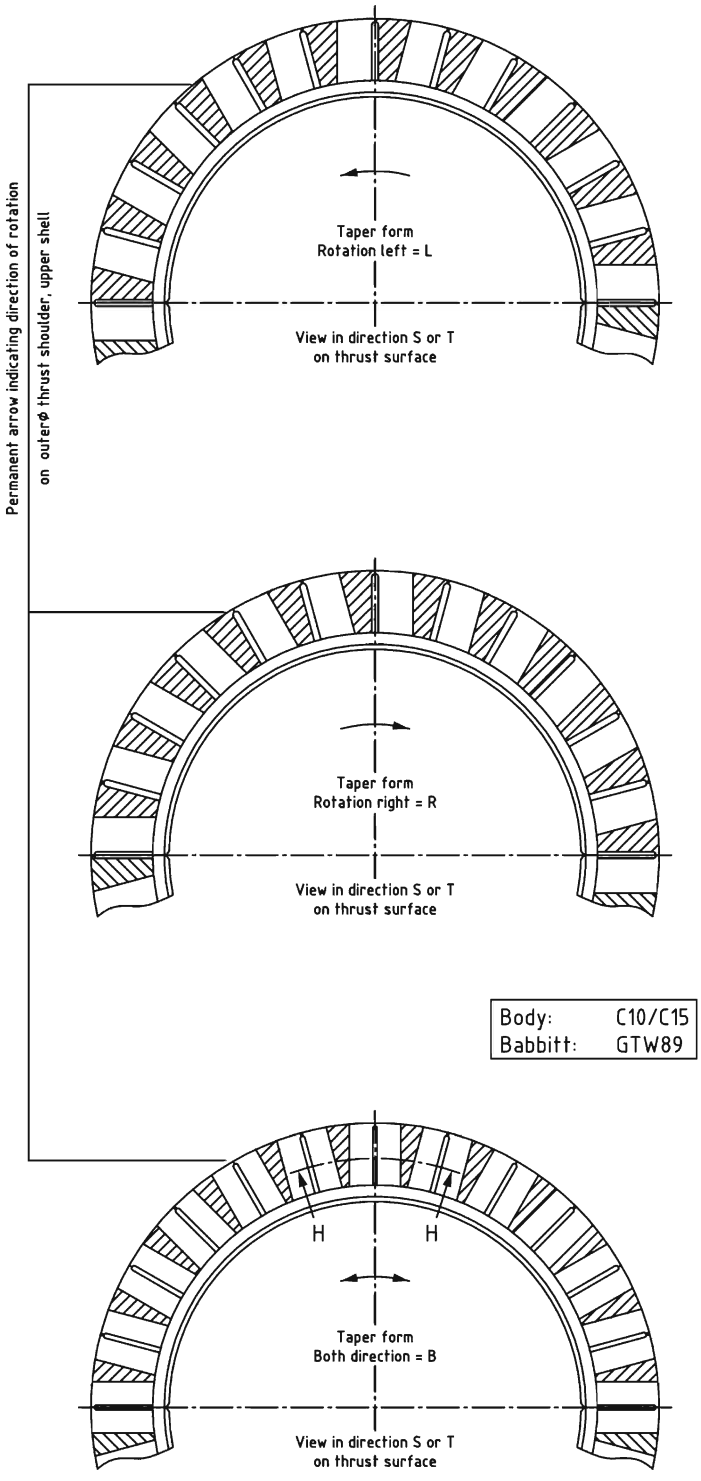
We reserve the right to introduce modifications

Dimensions of Bearings Type W135



d1	Wall thickness	d2	d3	d4	d5	d7			d8	d10	b1			b2			b3	
						050	075	100			050	075	100	050	075	100	050	075
90	12.51 -0.020	115 m6	125	107	95	-	-	-	4	-	45	65	90	30	45	70	12	15
100	15.02 -0.020	130 m6	142	122	105	-	-	-	5	-	50	75	100	35	50	75	12	15
110	15.01 -0.020	140 k6	156	130	115	-	-	-	5	-	55	80	110	35	55	85	15	20
125	17.51 -0.020	160 k6	180	150	133	-	-	-	6	-	65	95	125	45	65	95	15	20
140	20.01 -0.020	180 k6	200	170	148	M6	M8	M8	8	8	70	105	140	45	75	110	15	20
160	22.51 -0.020	205 k6	227	193	168	M6	M8	M8	8	8	80	120	160	55	85	125	20	25
180	25.01 -0.025	230 k6	254	218	188	M6	M8	M8	10	8	90	135	180	60	95	140	20	25
200	30.01 -0.025	260 k6	283	248	210	M6	M8	M8	12	10	100	150	200	70	105	155	20	25
225	32.51 -0.025	290 k6	318	274	235	M8	M10	M10	12	10	110	170	225	70	120	175	25	32
235	35.01 -0.025	305 k6	332	290	245	M8	M10	M10	12	12	120	175	235	80	120	180	25	32
250	37.51 -0.025	325 k6	352	309	260	M8	M10	M10	12	12	125	190	250	85	130	190	25	32
265	40.00 -0.025	345 j6	372	329	275	M8	M10	M10	15	12	130	200	265	80	140	205	25	32
280	40.00 -0.025	360 k6	396	344	295	M8	M10	M10	15	12	140	210	280	90	145	215	25	32
300	45.00 -0.025	390 j6	422	370	315	M10	M12	M12	15	16	150	225	300	100	155	230	25	32
315	47.50 -0.030	410 j6	444	390	330	M10	M12	M12	15	16	160	235	315	110	165	245	32	40
335	50.00 -0.030	435 j6	472	415	350	M10	M12	M12	15	16	170	250	335	120	175	260	32	40
355	52.50 -0.030	460 j6	498	440	370	M12	M16	M16	15	16	180	265	355	130	185	275	32	40
375	55.00 -0.030	485 j6	524	465	395	M12	M16	M16	20	20	190	280	375	130	195	290	32	40
400	57.50 -0.030	515 js6	564	495	420	M12	M16	M16	20	20	200	300	400	140	210	310	32	40
425	62.50 -0.030	550 js6	598	524	445	M16	M20	M20	20	20	210	320	425	150	220	325	40	50
450	65.00 -0.030	580 js6	633	554	470	M16	M20	M20	20	20	225	340	450	155	235	345	40	50
475	67.50 -0.030	610 js6	664	584	495	M16	M20	M20	20	25	235	355	475	165	245	365	40	50
500	72.50 -0.030	645 js6	700	619	520	M16	M20	M20	20	25	250	375	500	170	260	385	40	50



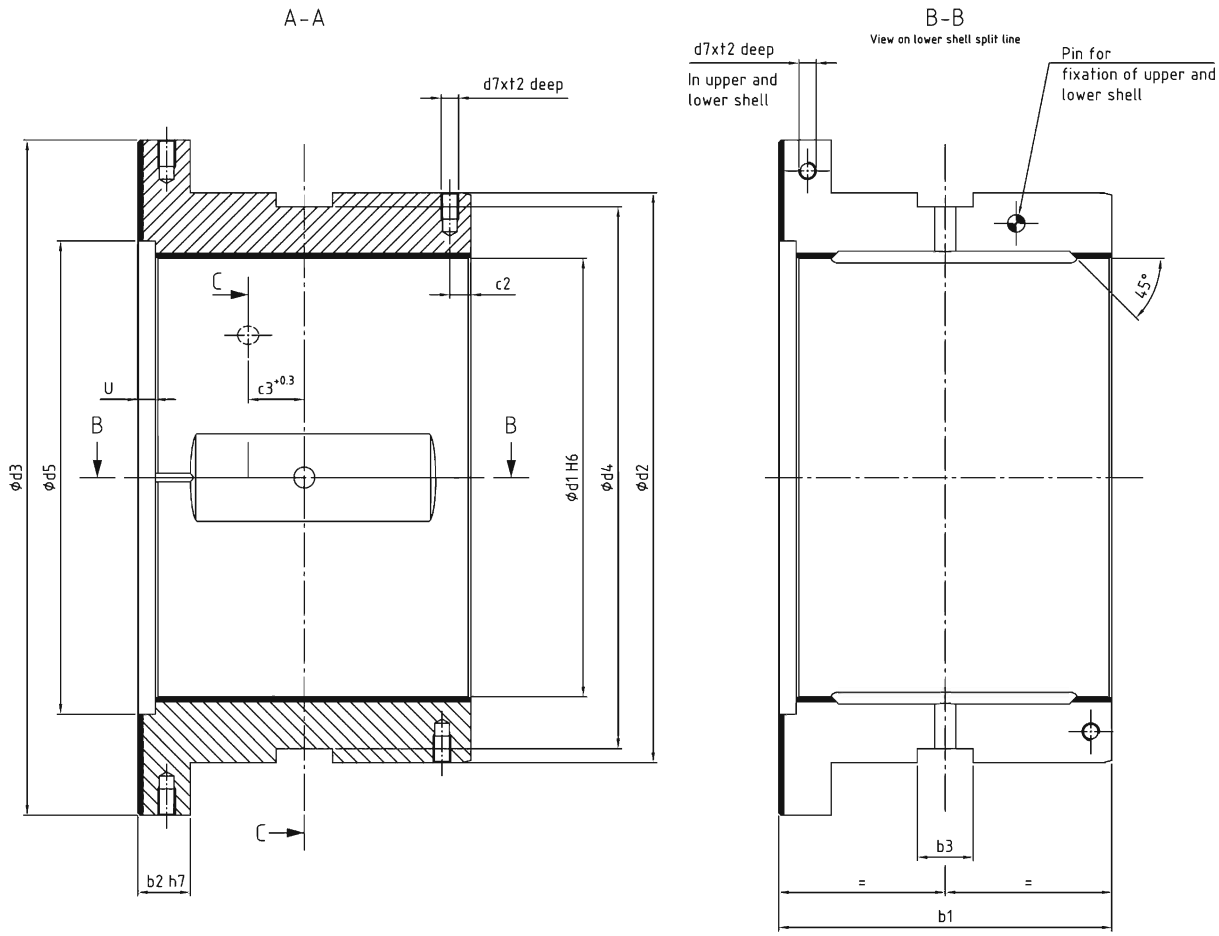


b3	c3	t2	U	m [kg]		
100				050	075	100
15	-	-	4.5	1.8	2.4	3.0
15	-	-	5.0	2.4	3.4	4.2
20	-	-	5.5	3.0	4.0	5.1
20	-	-	6.0	4.7	6.5	7.8
20	18.5	10	6.0	7.5	10.0	12.3
25	21.0	12	7.0	8.5	12.5	16.0
25	23.5	12	8.0	13.0	18.5	22.7
25	26.0	12	8.0	19.0	27.0	34.5
32	29.0	15	9.0	25.0	37.0	46.0
32	30.5	15	9.0	32.0	45.0	57.0
32	32.0	15	10.0	37.0	55.0	67.0
32	33.5	15	10.0	45.0	65.0	82.0
32	35.0	15	10.0	52.0	72.0	90.0
32	38.0	20	10.0	67.0	95.0	119
40	40.0	20	11.0	75.0	107	134
40	41.5	20	11.0	92.0	130	162
40	44.5	30	12.0	106	151	190
40	47.0	30	12.0	125	175	225
40	50.0	30	14.0	153	215	267
50	53.0	33	14.0	195	265	330
50	56.0	33	15.0	210	290	380
50	59.0	33	15.0	240	340	440
50	62.0	33	16.0	280	400	525

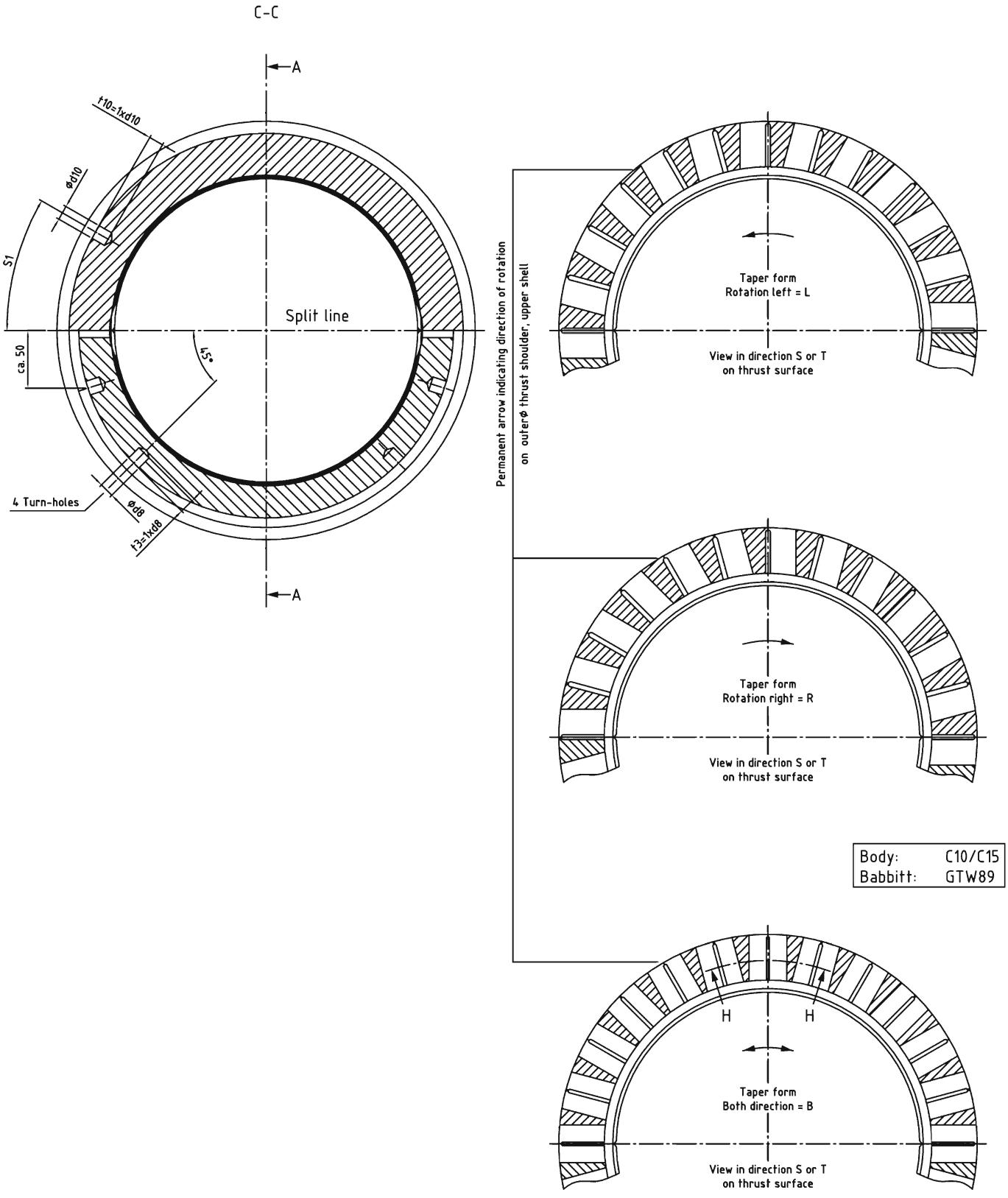
All dimensions in mm

We reserve the right to introduce modifications

Dimensions of Bearings Type W136



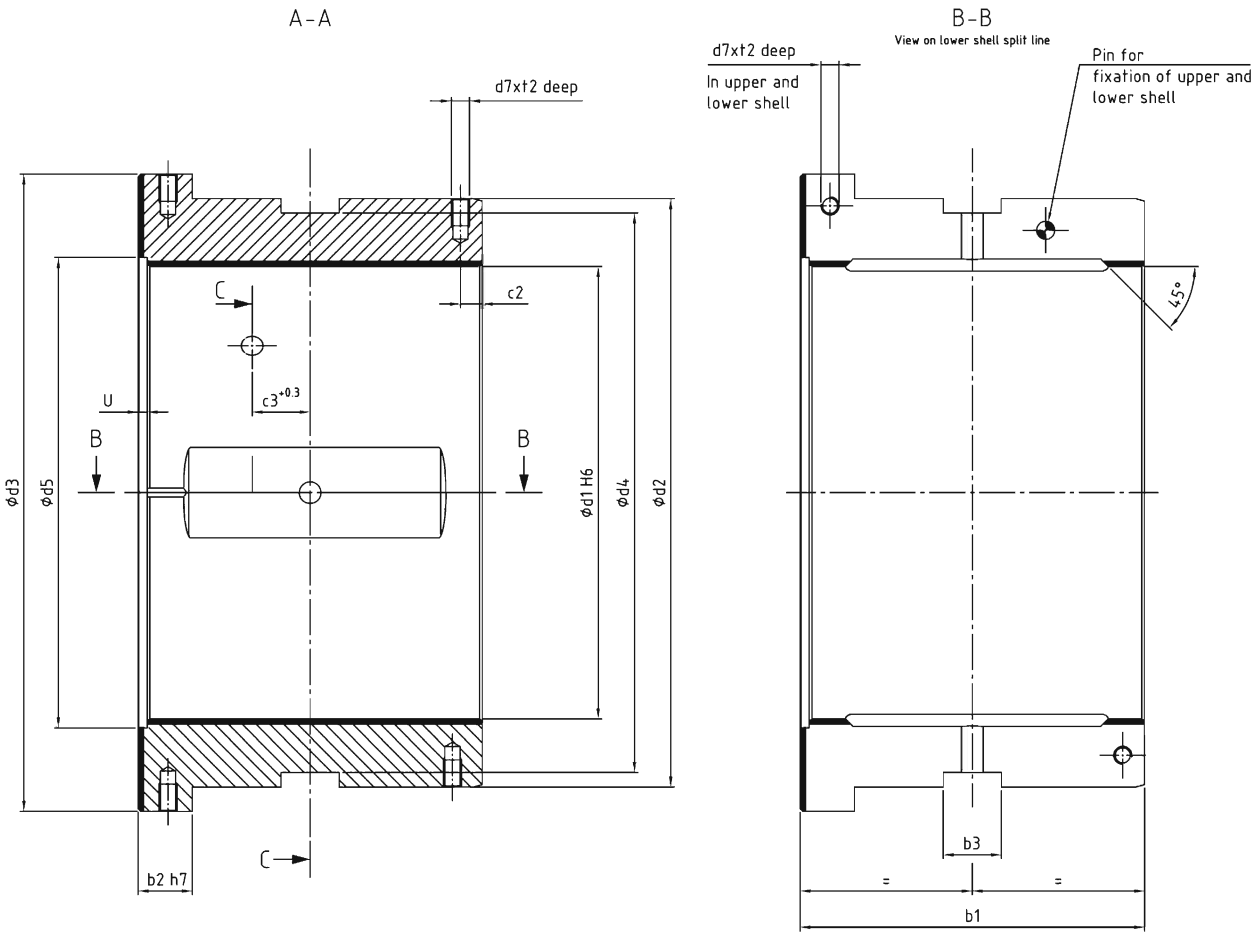
d1	Wall thickness	d2	d3	d4	d5	d7	d8	d10	b1		b2	b3	c2	c3	t2	U	m [kg]	
									075	100							075	100
90	12.51 -0.020	115 m6	140	107	99	-	4	-	65	90	10.0	15	-	-	-	4.0	2.2	3.0
100	15.02 -0.020	130 m6	155	122	110	-	5	-	75	100	12.5	15	-	-	-	5.0	3.2	4.2
110	15.01 -0.020	140 k6	172	130	121	-	5	-	80	110	12.5	20	-	-	-	5.5	3.7	5.1
125	17.51 -0.020	160 k6	195	150	137	-	6	-	95	125	15.0	20	-	-	-	6.0	6.0	7.8
140	20.01 -0.020	180 k6	215	170	152	M8	8	8	105	140	15.0	20	10	18.5	10	6.0	9.5	12.3
160	22.51 -0.020	205 k6	245	193	174	M8	8	8	120	160	17.5	25	10	21.0	12	7.0	12.0	16.0
180	25.01 -0.025	230 k6	280	218	196	M8	10	8	135	180	20.0	25	10	23.5	12	8.0	17.0	22.7
200	30.01 -0.025	260 k6	305	248	216	M8	12	10	150	200	22.5	25	10	26.0	12	8.0	26.0	34.5
225	32.51 -0.025	290 k6	345	274	243	M10	12	10	170	225	25.0	32	12	29.0	15	9.0	35.0	46.0
235	35.01 -0.025	305 k6	360	290	253	M10	12	12	175	235	27.5	32	12	30.5	15	9.0	43.0	57.0
250	37.51 -0.025	325 k6	385	309	270	M10	12	12	190	250	30.0	32	12	32.0	15	10.0	51.0	67.0
265	40.00 -0.025	345 j6	405	329	285	M10	15	12	200	265	30.0	32	12	33.5	15	10.0	62.0	82.0
280	40.00 -0.025	360 k6	430	344	300	M10	15	12	210	280	32.5	32	12	35.0	15	10.0	68.0	90.0
300	45.00 -0.025	390 j6	460	370	320	M12	15	16	225	300	35.0	32	15	38.0	20	10.0	90.0	119
315	47.50 -0.030	410 j6	480	390	337	M12	15	16	235	315	35.0	40	15	40.0	20	11.0	100	134
335	50.00 -0.030	435 j6	515	415	357	M12	15	16	250	335	37.5	40	15	41.5	20	11.0	122	162
355	52.50 -0.030	460 j6	540	440	379	M16	15	16	265	355	40.0	40	18	44.5	30	12.0	142	190
375	55.00 -0.030	485 j6	570	465	399	M16	20	20	280	375	42.5	40	18	47.0	30	12.0	175	225
400	57.50 -0.030	515 js6	610	495	428	M16	20	20	300	400	45.0	40	18	50.0	30	14.0	202	267
425	62.50 -0.030	550 js6	650	524	449	M20	20	20	320	425	50.0	50	22	53.0	33	14.0	250	330
450	65.00 -0.030	580 js6	685	554	480	M20	20	20	340	450	52.5	50	22	56.0	33	15.0	290	380
475	67.50 -0.030	610 js6	720	584	505	M20	20	25	355	475	55.0	50	22	59.0	33	15.0	340	440
500	72.50 -0.030	645 js6	760	619	532	M20	20	25	375	500	57.5	50	22	62.0	33	16.0	397	525



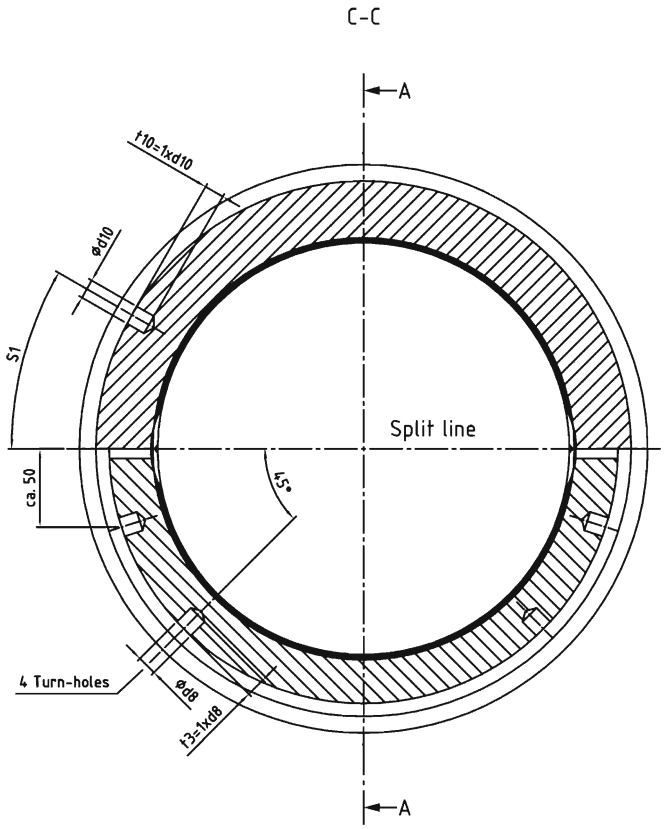
All dimensions in mm

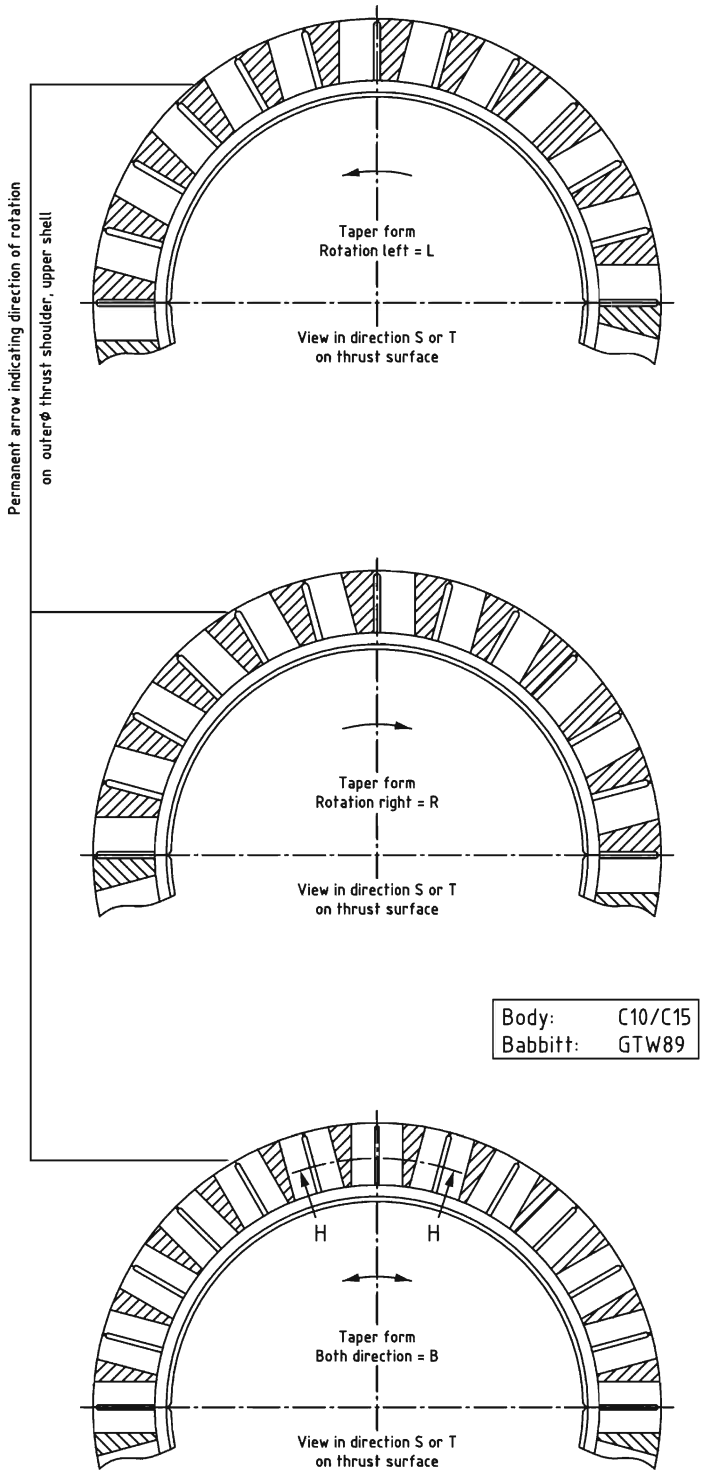
We reserve the right to introduce modifications

Dimensions of Bearings Type W137



d1	Wall thickness	d2	d3	d4	d5	d7			d8	d10	b1			b2			b3	
						050	075	100			050	075	100	050	075	100	050	075
90	12.51 -0.020	115 m6	125	107	95	-	-	-	4	-	45	65	90	7.5	10.0	10.0	12	15
100	15.02 -0.020	130 m6	142	122	105	-	-	-	5	-	50	75	100	7.5	12.5	12.5	12	15
110	15.01 -0.020	140 k6	156	130	115	-	-	-	5	-	55	80	110	10.0	12.5	12.5	15	20
125	17.51 -0.020	160 k6	180	150	133	-	-	-	6	-	65	95	125	10.0	15.0	15.0	15	20
140	20.01 -0.020	180 k6	200	170	148	M8	M8	M8	8	8	70	105	140	12.5	15.0	15.0	15	20
160	22.51 -0.020	205 k6	227	193	168	M8	M8	M8	8	8	80	120	160	12.5	17.5	17.5	20	25
180	25.01 -0.025	230 k6	254	218	188	M8	M8	M8	10	8	90	135	180	15.0	20.0	20.0	20	25
200	30.01 -0.025	260 k6	283	248	210	M8	M8	M8	12	10	100	150	200	15.0	22.5	22.5	20	25
225	32.51 -0.025	290 k6	318	274	235	M10	M10	M10	12	10	110	170	225	20.0	25.0	25.0	25	32
235	35.01 -0.025	305 k6	332	290	245	M10	M10	M10	12	12	120	175	235	20.0	27.5	27.5	25	32
250	37.51 -0.025	325 k6	352	309	260	M10	M10	M10	12	12	125	190	250	20.0	30.0	30.0	25	32
265	40.00 -0.025	345 j6	372	329	275	M10	M10	M10	15	12	130	200	265	25.0	30.0	30.0	25	32
280	40.00 -0.025	360 k6	396	344	295	M10	M10	M10	15	12	140	210	280	25.0	32.5	32.5	25	32
300	45.00 -0.025	390 j6	422	370	315	M12	M12	M12	15	16	150	225	300	25.0	35.0	35.0	25	32
315	47.50 -0.030	410 j6	444	390	330	M12	M12	M12	15	16	160	235	315	25.0	35.0	35.0	32	40
335	50.00 -0.030	435 j6	472	415	350	M12	M12	M12	15	16	170	250	335	25.0	37.5	37.5	32	40
355	52.50 -0.030	460 j6	498	440	370	M16	M16	M16	15	16	180	265	355	30.0	40.0	40.0	32	40
375	55.00 -0.030	485 j6	524	465	395	M16	M16	M16	20	20	190	280	375	30.0	42.5	42.5	32	40
400	57.50 -0.030	515 js6	564	495	420	M16	M16	M16	20	20	200	300	400	30.0	45.0	45.0	32	40
425	62.50 -0.030	550 js6	598	524	445	M20	M20	M20	20	20	210	320	425	30.0	50.0	50.0	40	50
450	65.00 -0.030	580 js6	633	554	470	M20	M20	M20	20	20	225	340	450	35.0	52.5	52.5	40	50
475	67.50 -0.030	610 js6	664	584	495	M20	M20	M20	20	25	235	355	475	35.0	55.0	55.0	40	50
500	72.50 -0.030	645 js6	700	619	520	M20	M20	M20	20	25	250	375	500	40.0	57.5	57.5	40	50





b3	c2	c3	t2			U	m [kg]		
100			050	075	100		050	075	100
15	-	-	-	-	-	2.5	1.6	2.2	3.0
15	-	-	-	-	-	2.5	2.2	3.2	4.2
20	-	-	-	-	-	2.5	2.7	3.7	5.1
20	-	-	-	-	-	4.0	4.2	6.0	7.8
20	10	18.5	10	10	10	4.0	7.0	9.5	12.3
25	10	21.0	10	12	12	4.0	8.0	12.0	16.0
25	10	23.5	10	12	12	4.0	11.5	17.0	22.7
25	10	26.0	10	12	12	5.0	18.0	26.0	34.5
32	12	29.0	15	15	15	5.0	23.0	35.0	46.0
32	12	30.5	15	15	15	5.0	30.0	43.0	57.0
32	12	32.0	15	15	15	5.0	34.0	51.0	67.0
32	12	33.5	15	15	15	5.0	42.0	62.0	82.0
32	12	35.0	15	15	15	8.0	48.0	68.0	90.0
32	15	38.0	20	20	20	8.0	62.0	90.0	119
40	15	40.0	20	20	20	8.0	68.0	100	134
40	15	41.5	20	20	20	8.0	84.0	122	162
40	18	44.5	23	30	30	8.0	97.0	142	190
40	18	47.0	23	30	30	10.0	120	175	225
40	18	50.0	23	30	30	10.0	140	202	267
50	22	53.0	30	33	33	10.0	180	250	330
50	22	56.0	30	33	33	10.0	200	290	380
50	22	59.0	30	33	33	10.0	230	340	440
50	22	62.0	30	33	33	10.0	270	397	525

All dimensions in mm

We reserve the right to introduce modifications