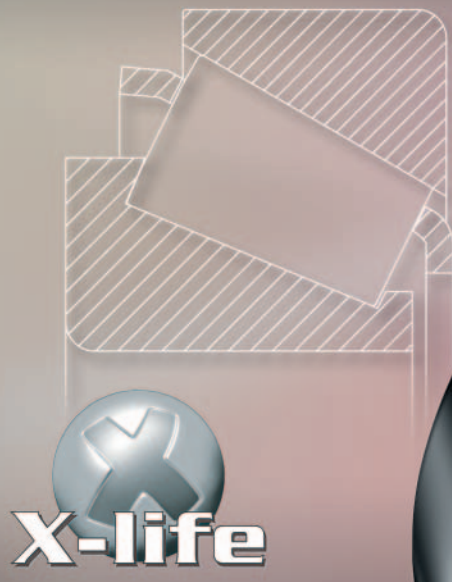




Single row tapered roller bearings

Series T7FC in X-life quality

Technical Product Information

Single row tapered roller bearings in X-life quality

Application · Advantages of X-life quality · Features · Design and safety guidelines · Accuracy

Application

High radial and axial load carrying capacity, high rigidity and ease of fitting are the essential characteristics of single row tapered roller bearings. They are used, for example, in static gear-boxes and in vehicle transmissions, in wheel bearing arrangements for road vehicles, in lifting gear and in conveying equipment. The bearing arrangement is always configured as an O or X arrangement. The axial clearance is adjustable.

Advantages of tapered roller bearings T7FC in X-life quality

- **Longer rating life:**
Basic rating life approx. 70 % longer due to improved surfaces, higher performance materials with special heat treatment and optimised contact geometry. For certain applications, this means that a smaller bearing arrangement can be designed.
- **Lower temperatures:**
Improved friction behaviour due to optimised surfaces and higher geometrical accuracy, considerably reduced mixed friction phase
- **Reduced noise:**
Due to improved geometry, optimised surfaces, higher geometrical accuracy

With tapered roller bearings of series T7FC in X-life quality, the customer has access to bearings with a bore diameter of 45 to 95 mm that show significant improvements in relation to operational reliability and cost-effectiveness.

Features

Tapered roller bearings of series T7FC comprise solid inner and outer rings with tapered raceways and tapered rollers with cages made from pressed sheet steel. The inner ring, together with the cage and rollers, can be fitted separately from the outer ring. Due to their large contact angle, bearings of series T7FC have a very high axial load carrying capacity. These open bearings can be lubricated with grease or oil. The bearings are self-aligning due to the modified line contact between the tapered rollers and the raceways. The tilting of the bearing rings in relation to each other must not exceed 4 angular minutes at a load ratio $P/C_r \leq 0,2$. Tapered roller bearings can be used at operating temperatures from -30 °C to $+120\text{ °C}$. For continuous operating temperatures $> +120\text{ °C}$, please contact us.

Design and safety guidelines

In order to calculate the equivalent bearing load, the internal axial force must be determined, see Catalogue HR 1, Rolling Bearings. This gives all the further formulae for dimensioning of tapered roller bearings.

In continuous operation, a minimum radial load of $P/C_r > 0,02$ is necessary.

The minimum distances C_a and C_b given in the dimension table must be observed when designing the adjacent construction in order to prevent grazing of the cage.

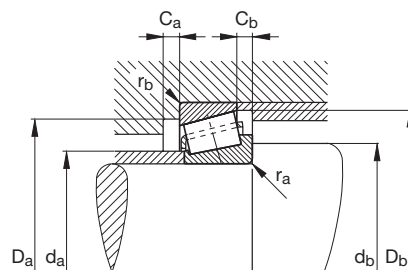
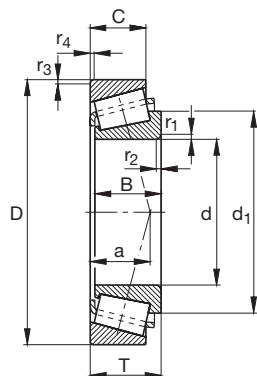
Accuracy

The main dimensions of tapered roller bearings of series T7FC correspond to DIN ISO 355. The dimensional and geometrical tolerances correspond to tolerance class PN in accordance with DIN 620-2. For table values, see Catalogue HR 1, Rolling Bearings.



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Mounting dimensions

Dimension table · Dimensions in mm

Designation	Mass	Dimensions									Mounting dimensions		
	m	d	D	B	C	T	r _{1,2}	r _{3,4}	a	d ₁	d _a	d _b	D _a
	≈ kg						min.	min.	≈	≈	max.	min.	min.
T7FC045	0,92	45	95	26,5	20	29	2,5	2,5	33	73,6	53	59	71
T7FC050	1,24	50	105	29	22	32	3	3	36	80,9	59	65	78
T7FC055	1,64	55	115	31	23,5	34	3	3	40	88,6	65	72	86
T7FC060	2,03	60	125	33,5	26	37	3	3	42	96,5	71	78	94
T7FC065	2,23	65	130	33,5	26	37	3	3	44,5	100,9	75	83	98
T7FC070	2,62	70	140	35,5	27	39	3	3	47	108,6	81	90	106
T7FC075	3,34	75	150	38	29	42	3	3	51	116,2	87	96	114
T7FC080	3,95	80	160	41	31	45	3	3	54	123,6	93	103	121
T7FC085	4,92	85	170	45	33	48	4	4	55	131,1	100	110	131
T7FC095	5,23	95	180	45	33	49	4	4	61	141,5	108	119	138

						Basic load ratings		e	Calculation factors		Fatigue limit load	Limiting speed	Reference speed
D _a	D _b	C _a	C _b	r _a	r _b	dyn. C _r	stat. C _{0r}		Y	Y ₀	C _{ur}	n _G	n _B
max.	min.	min.	min.	max.	max.	N	N				N	min ⁻¹	min ⁻¹
83	91	5	9	2,5	2,5	105 000	109 000	0,87	0,69	0,38	15 100	7 000	5 600
91	100	5	10	3	3	127 000	135 000	0,87	0,69	0,38	18 900	6 300	5 300
101	109	5	10,5	3	3	152 000	165 000	0,87	0,69	0,38	23 400	5 600	4 800
111	119	6	11	3	3	181 000	200 000	0,82	0,73	0,4	28 500	5 300	4 500
116	124	5	11	3	3	186 000	211 000	0,87	0,69	0,38	30 000	5 000	4 300
126	133	6	12	3	3	208 000	237 000	0,87	0,69	0,38	34 000	4 800	4 000
136	143	6	13	3	3	238 000	275 000	0,87	0,69	0,38	38 500	4 800	3 800
146	152	7	14	3	3	270 000	315 000	0,87	0,69	0,38	44 000	4 500	3 600
153	161	7	15	4	4	310 000	365 000	0,8	0,75	0,41	50 000	4 300	3 200
164	172	7	16	4	4	325 000	400 000	0,87	0,69	0,38	54 000	4 000	3 000



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Your X-life advantages at a glance:

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- optimum availability
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- reduced energy consumption
- the maximum possible cost-effectiveness
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