Tapered Roller Bearings

Single Row Tapered Roller Bearings

A design with a great number of tapered rollers in one row enables these bearings to reach high load ratings both in radial and axial directions. Axial load can be applied only in one direction and its magnitude depends on the contact angle magnitude.

The single row tapered roller bearing arrangement is usually created by a pair of bearings because of bidirectional accommodation of axial load.

Bearings are produced in inch dimensions.

Boundary Dimensions

Boundary dimensions of single row tapered roller bearings in inch dimensions are according to the ANSI/AFBMA Standard 19.2 (USA) from 1994.

Designation

The bearing designation of standard design is given in the table part of this publication.

The designation of bearings in inch dimensions corresponds to a usual way of designation of most producers of these bearings. The number preceding the slash indicates the cone with tapered rollers and a cage, the number after the slash indicates the cup.

Cage

The single row tapered roller bearings are equipped with a pressed steel cage which is not designated.

Tolerances

The bearings are commonly produced in normal tolerance class P0 which is not indicated.

Internal Clearance

The single row tapered roller bearings are usually mounted in pairs, in which required clearance, or preload are adjusted at mounting. Clearance or preload magnitude is determined according to the requirements on arrangements .

Misalignment

The seating surfaces for single row tapered roller bearings must be co-axial, aligned only with small deviations because the admissible ring misalignment is very small. Under common operating conditions the misalignment is

– under small load ($F_r < 0.1C_{or}$) 1′ to 1.5′

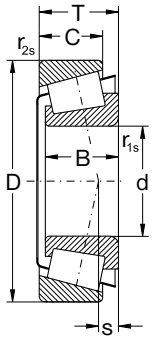
– under great load ($F_r \geqq 0.1C_{or}$) 2′ to 4′

Radial Equivalent Dynamic and Static Load

The methods of calculation are determined according to STN ISO 281 (dynamic load) and STN ISO 76 (static load)

Identification symbol of the producer: S

Single Row Tapered Roller Bearings in Inch Dimensions

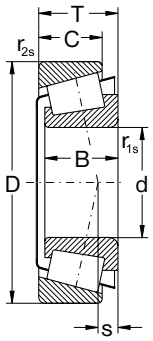


Dimensions							Basic load rating dynamic	static	Bearing designation		Mass
d	D	B	C	T	r_{1s}	r_{2s}	C_r	C_{or}			
mm/inch							kN/lbs				kg/lbs
17,469	39,891	14,605	10,680	13,950	1,27	1,27	22,9	23,4	S1	LM11749/LM11710	0,081
0.68775	1.5705	0.575	0.420	0.549	0.05	0.05	5 160	5 260			0.18
19,055	45,250	16,637	12,065	15,60	1,27	1,27	30,6	32,0	S2	LM11949/LM11910	0,124
0.75025	1.7815	0.655	0.475	0.6140	0.05	0.05	6 870	7 200			0.26
21,436	50,018	18,288	13,97	17,630	1,27	1,27	40,8	43,5	S3	M12649/M12610	0,167
0.84395	1.9692	0.720	0.550	0.6940	0.05	0.05	9 170	9 780			0.35
26,994	50,305	14,732	10,668	14,330	3,68	1,27	27,8	32,9	S4	L44649/L44610	0,115
1.06275	1.9805	0.580	0.420	0.564	0.14	0.05	6 260	7 400			0.24
34,933	65,093	18,237	13,970	18,140	spec.	1,27	50,5	63,1	S5	LM48548/LM48510	0,249
1.37525	2.5630	0.718	0.550	0.714	spec.	0.05	11 300	14 200			0.57
31,756	59,144	16,713	11,811	15,98	spec.	1,27	36,5	44,6	S6	LM67048/LM67010	0,179
1.25025	2.3285	0.658	0.465	0.6290	spec.	0.05	8 210	10 000			0.37
21,993	45,250	16,637	12,065	15,60	1,27	1,27	30,2	35,3	S12	LM12749/LM12710	0,116
0.86585	1.7815	0.655	0.475	0.6140	0.05	0.05	6 780	7 920			0.26
34,995	59,144	16,764	11,938	15,98	spec.	1,27	35,5	49,3	S13	L68149/L68110	0,167
1.3778	2.3285	0.660	0.470	0.629	spec.	0.05	7 990	11 100			0.40
25,406	50,305	14,732	10,668	14,33	1,32	1,27	27,8	32,9	S14	L44643/L44610	0,125
1.00025	1.9805	0.580	0.420	0.564	0.05	0.05	6 260	7 400			0.26
29,006	50,305	14,732	10,668	14,33	3,56	1,52	27,7	36,2	S15	L45449/L45410	0,114
1.1420	1.9805	0.580	0.420	0.564	0.14	0.06	6 230	8 130			0.24

Dimension deviations

$\Delta d = \pm 0{,}006$ mm/$\pm 0{,}00025$ inch
$\Delta D = \pm 0{,}013$ mm/$\pm 0{,}0005$ inch
$\Delta T = \pm 0{,}1$mm/$\pm 0{,}004$ inch

Single Row Tapered Roller Bearings in Inch Dimensions



Dimensions							Basic load rating dynamic	static	Bearing designation		Mass
d	D	B	C	T	r_{1s}	r_{2s}	C_r	C_{or}			
mm/inch							kN/lbs				kg/lbs
21,993	45,987	16,637	12,065	15,60	1,32	1,27	30,2	35,3	S16	LM12749/LM12711	0,120
0.86585	1.8105	0.655	0.475	0.614	0.05	0.05	6 780	7 920			0.26
34,996	59,987	16,764	11,938	15,98	spec.	1,27	35,5	49,3	S17	L68149/L68111	0,174
1.37780	2.3617	0.660	0.470	0.629	spec.	0.05	7 990	11 100			0.40
37,993	62,992	16,993	13,513	17,10	spec.	1,27	38,9	55,0	S18	JL69349/JL69310	0,196
1.49585	2.4800	0.669	0.532	0.6733	spec.	0.05	8 960	12 400			0,42
21,436	45,250	16,637	12,065	15,60	1,27	1,27	30,2	35,3	S34	LM12748/LM12710	0,112
0.84395	1.7815	0.655	0.475	0.6140	0.05	0.05	6 780	7 920			0.26
31,756	69,024	19,880	15,875	19,94	spec,	2,5	50,6	61,7	SK50	14125A/14276	0,356
1.2502	2.7175	0.7827	0.625	0.7850	spec.	0.1	11 400	13 900			0.75
31,756	62,012	19,050	14,287	18,620	spec.	2,5	46,8	53,9	SK51	15123/15245	0,243
1.2502	2.4414	0.7500	0.5625	0.7189	spec.	0.1	10 500	12 100			0.51
44,456	82,943	25,400	19,050	23,91	5,23	2,6	83,8	111,0	SK52	25580/25520	0,572
1.7502	3.2654	1.0000	0.7500	0.9413	0.20	0.1	18 800	24 900			1.21
44,456	83,070	25,400	19,050	23,91	5,23	2,6	83,8	111,0	SK53	25580/25521	0,580
1.7502	3.2705	1.0000	0.7500	0.9413	0.20	0.1	18 800	24 900			1.21
31,756	61,925	19,050	14,287	18,260	spec.	2,5	46,8	53,9	SK54	15123/15243	0,240
1.2502	2.4379	0.7500	0.5625	0.7189	spec.	0.1	10 500	12 100			0.51
25,994	57,142	17,50	13,850	17,56	4,30	2,5	35,5	42,2	SK7805	SK78052/SK78051	0,216
1.0234	2.2497	0.6890	0.5453	0.6913	0.17	0.1	7 990	9 500			0.48

Dimension deviations

$\Delta d = \pm 0{,}006$ mm/$\pm 0{,}00025$ inch
$\Delta D = \pm 0{,}013$ mm/$\pm 0{,}0005$ inch
$\Delta T = \pm 0{,}1$mm/$\pm 0{,}004$ inch