

## Radial load and radial deflection of ball bearings

Main Menu



Input (load unit: [N])

[TC010A.CSV](#) , [TC010GE.XLS](#) , [All data](#) , [browser](#)

When draw chart, click right button of mouse, save TC010A.CSV  
 ,TC010GE.XLS on C:\TEMP and then run C:\TEMP\TC010GE.XLS

BRG-NO = 6305	Bearing No.
TYPE = Single row	Bearing type
FR-MAX = 10800.00 [N]	Maximum radial load
R-PLAY = 0.020 [mm]	Radial clearance
DA = 10.319 [mm]	Ball diameter
Z = 8	Number of balls
SDM = 44.500 [mm]	Pitch circle diameter
SRI = 5.223 [mm]	Radius of inner ring groove
SRE = 5.495 [mm]	Radius of outer ring groove
EE = 207900.0 [MPa]	Young's modulus of outer ring
NUE = 0.3	Poisson's ratio of outer ring
EI = 207900.0 [MPa]	Young's modulus of inner ring
NUI = 0.3	Poisson's ratio of inner ring
ER = 207900.0 [MPa]	Young's modulus of ball
NUR = 0.3	Poisson's ratio of ball

## Output

DLTA-R [mm]	FR [N]	P-MAX [MPa]	Q-MAX [N]	JR	EPSILON	SAI [mm]	SAE [mm]	SBI [mm]	SBE [mm]
0.00100	11.859	448.147	11.859	0.12500	0.04498	0.520	0.261	0.027	0.048
0.00200	33.542	633.775	33.542	0.12500	0.08254	0.735	0.369	0.039	0.069
0.00300	61.621	776.213	61.621	0.12500	0.11437	0.900	0.452	0.048	0.084
0.00400	94.872	896.293	94.872	0.12500	0.14169	1.039	0.521	0.055	0.097
0.00500	139.861	1002.086	132.588	0.13186	0.16540	1.162	0.583	0.061	0.108
0.00600	198.579	1097.730	174.291	0.14242	0.18616	1.273	0.639	0.067	0.119
0.00700	266.611	1185.684	219.632	0.15174	0.20450	1.375	0.690	0.073	0.128
0.00800	342.507	1267.550	268.339	0.15955	0.22081	1.469	0.737	0.078	0.137
0.00900	425.400	1344.440	320.194	0.16607	0.23542	1.559	0.782	0.082	0.145
0.01000	514.678	1417.164	375.015	0.17155	0.24857	1.643	0.824	0.087	0.153
0.01100	609.880	1486.334	432.651	0.17620	0.26048	1.723	0.865	0.091	0.161
0.01200	710.635	1552.425	492.970	0.18019	0.27131	1.800	0.903	0.095	0.168
0.01300	816.637	1615.815	555.858	0.18364	0.28120	1.873	0.940	0.099	0.175
0.01400	927.629	1676.811	621.214	0.18666	0.29028	1.944	0.976	0.103	0.181
0.01500	1043.388	1735.664	688.947	0.18931	0.29863	2.012	1.010	0.106	0.188
0.01600	1163.720	1792.586	758.978	0.19166	0.30634	2.078	1.043	0.110	0.194
0.01700	1288.454	1847.755	831.232	0.19376	0.31348	2.142	1.075	0.113	0.200
0.01800	1417.436	1901.325	905.644	0.19564	0.32011	2.204	1.106	0.116	0.206
0.01900	1550.528	1953.425	982.153	0.19734	0.32629	2.265	1.136	0.120	0.211
0.02000	1687.604	2004.172	1060.703	0.19888	0.33206	2.323	1.166	0.123	0.217
0.02200	1973.264	2101.993	1223.723	0.20156	0.34252	2.437	1.223	0.129	0.227
0.02400	2273.608	2195.461	1394.331	0.20383	0.35175	2.545	1.277	0.134	0.237
0.02600	2587.943	2285.108	1572.204	0.20576	0.35996	2.649	1.329	0.140	0.247
0.02800	2915.667	2371.368	1757.058	0.20743	0.36731	2.749	1.380	0.145	0.256
0.03000	3256.250	2454.600	1948.636	0.20888	0.37392	2.846	1.428	0.150	0.265
0.03200	3609.221	2535.099	2146.713	0.21016	0.37991	2.939	1.475	0.155	0.274
0.03400	3974.158	2613.121	2351.080	0.21129	0.38536	3.029	1.520	0.160	0.283
0.03600	4350.679	2688.879	2561.549	0.21231	0.39033	3.117	1.564	0.165	0.291
0.03800	4738.435	2762.561	2777.949	0.21322	0.39489	3.203	1.607	0.169	0.299
0.04000	5137.111	2834.327	3000.122	0.21404	0.39908	3.286	1.649	0.174	0.306
0.04200	5546.412	2904.321	3227.921	0.21478	0.40296	3.367	1.690	0.178	0.314
0.04400	5966.071	2972.668	3461.210	0.21546	0.40654	3.446	1.729	0.182	0.321
0.04600	6395.835	3039.478	3699.863	0.21608	0.40987	3.524	1.768	0.186	0.329
0.04800	6835.474	3104.850	3943.763	0.21665	0.41297	3.599	1.806	0.190	0.336
0.05000	7284.768	3168.874	4192.798	0.21718	0.41587	3.674	1.844	0.194	0.343
0.05200	7743.515	3231.630	4446.865	0.21767	0.41858	3.746	1.880	0.198	0.349
0.05400	8211.523	3293.191	4705.866	0.21812	0.42112	3.818	1.916	0.202	0.356
0.05600	8688.612	3353.621	4969.709	0.21854	0.42350	3.888	1.951	0.205	0.363
0.05800	9174.612	3412.982	5238.307	0.21893	0.42575	3.957	1.986	0.209	0.369
0.06000	9669.363	3471.328	5511.576	0.21930	0.42787	4.024	2.020	0.213	0.375
0.06500	10943.543	3613.073	6214.683	0.22011	0.43267	4.189	2.102	0.221	0.391
0.06445	10800.000	3597.666	6135.519	0.22003	0.43217	4.171	2.093	0.220	0.389

DLTA-R : Radial deflection (except for radial clearance)  
FR : Radial load  
P-MAX : Maximum contact pressure  
Q-MAX : Maximum rolling element load  
JR : Radial integral  
EPSILON : Load factor  
SAI : Semi major of contact ellipse between ball and inner ring  
SAE : Semi major of contact ellipse between ball and outer ring  
SBI : Semi minor of contact ellipse between ball and inner ring  
SBE : Semi minor of contact ellipse between ball and outer ring