



# ENGINEERING

## BEARING INTERNAL CLEARANCE

### Radial internal clearance of deep groove ball bearings

Under zero measuring load Unit :  $\mu\text{m}$

bore diameter d (mm)		C2		Normal		C3		C4		C5	
over	incl.	min	max	min	max	min	max	min	max	min	max
2.5	10	0	7	2	13	8	23	14	29	20	37
10	18	0	9	3	18	11	25	18	33	25	45
18	24	0	10	5	20	13	28	20	36	28	48
24	30	1	11	5	20	13	28	23	41	30	53
30	40	1	11	6	20	15	33	28	46	40	64
40	50	1	11	6	23	18	36	30	51	45	73
50	65	1	15	8	28	23	43	38	61	55	90
65	80	1	15	10	30	25	51	46	71	65	105
80	100	1	18	12	36	30	58	53	84	75	120
100	120	2	20	15	41	36	66	61	97	90	140
120	140	2	23	18	48	41	81	71	114	105	160
140	160	2	23	18	53	46	91	81	130	120	180
160	180	2	25	20	61	53	102	91	147	135	200
180	200	2	30	25	71	63	117	107	163	150	230
200	225	4	32	28	82	73	132	120	187	175	255

### Radial internal clearance of deep groove ball bearings based on measure load

Bore diameter d (mm)		Measuring load N (kg)	Radial clearance increase ( $\mu\text{m}$ )		
over	incl.		C2	C0	C3, C4, C5
10	18	24.5(2.5)	3-4	4	4
18	50	49 (5)	4-5	5	6
50	200	147 (15)	6-8	8	9

### Radial internal clearance of bearings for electric motor

Unit :  $\mu\text{m}$

Bore diameter d (mm)		Radial internal clearance CM			
		Deep groove ball bearings		Cylindrical roller bearing	
over	incl.	min	max	min	max
10	18	4	11	-	-
18	24	5	12	-	-
24	30	5	12	15	30
30	40	9	13	15	30
40	50	9	17	20	35
50	65	12	22	25	40
65	80	12	22	30	45
80	100	18	30	35	55
100	120	18	30	35	60

### Radial internal clearance of self-aligning ball bearings

Unit :  $\mu\text{m}$

Bore diameter d (mm)		C2		Normal		C3		C4	
over	incl.	min	max	min	max	min	max	min	max
Bearings with cylindrical bore									
2.5	6	1	8	5	15	10	20	15	25
6	10	2	9	6	17	12	25	19	33
10	14	2	10	6	19	13	26	21	35
14	18	3	12	8	21	15	20	23	37
18	24	4	14	10	23	17	30	25	39
24	30	5	16	11	24	19	35	29	46
30	40	6	18	13	29	23	40	34	53
40	50	6	19	14	31	25	44	37	57
50	65	7	21	16	36	30	50	45	69
65	80	8	24	18	40	35	60	54	83
80	100	9	27	22	48	42	70	64	96
Bearings with tapered bore									
18	24	7	17	13	26	20	33	28	42
24	30	9	20	15	28	23	39	33	50
30	40	12	24	19	35	29	46	40	59
40	50	14	27	22	39	33	52	45	65
50	65	18	32	27	47	41	61	56	80
65	80	23	39	35	57	50	75	69	98
80	100	29	47	42	68	62	90	84	116

### Radial internal clearance of magneto ball bearing

Unit :  $\mu\text{m}$

Bore diameter d (mm)		C2		Normal	
over	incl.	min	max	min	max
2.5	10	10	40	20	50
10	30	20	50	30	60

### Radial internal clearance of miniature ball bearing

Unit :  $\mu\text{m}$

Clearance symbols	Radial clearance	
	min	max
M1	0	5
M2	3	8
M3	5	10
M4	8	13
M5	13	20
M6	20	28