



Spherical Plain Bearing Internal Clearance

Bearing Internal Clearance

Bearing internal clearance is defined as the total distance through which one ring can be moved radially (radial internal clearance) or axially (axial internal clearance) in relation to the other ring under a defined measuring load.

It is necessary to distinguish between the internal clearance of a bearing before it is mounted and the internal clearance of a mounted bearing when in operation (operational clearance). The initial clearance will always be greater than the operational clearance because the rings are expanded or compressed by interferences fits and as a result of the differences in thermal expansion of the bearing rings and mating components.

The bearing internal clearance shall be selected so that when bearings are mounted with recommended fits, and operate under normal conditions a suitable operational clearance will be obtained. For other conditions, e.g. where both rings are mounted with an interference fit or where unusual temperatures prevail, bearings with greater or smaller internal clearance than normal may be required.

Radial Internal Clearance Of Radial Spherical Plain Bearings Supplied by AST Bearings

The following data is provided by AST Bearings and is specific to the series of Spherical Plain Bearing Series as indicated by each table. The data is presented by construction/material types: Steel-on-Steel, Steel-on-PTFE-Composite, and Steel-on-Fabric and Steel-on-Copper-Alloy.

Radial Internal Clearance Of Steel On Steel Radial Spherical Plain Bearings

Series GE—E, GE—ES, GE—ES-2RS, GEEW—ES, GEEM—ES-2RS

d (mm)		Group C2 (µm)		Group normal (µm)		Group C3 (µm)	
over	incl.	min	max	min	max	min	max
—	12	8	32	32	68	68	104
12	20	10	40	40	82	82	124
20	35	12	50	50	100	100	150
35	60	15	60	60	120	120	180
60	90	18	72	72	142	142	212
90	140	18	85	85	165	165	245
140	240	18	100	100	192	192	284
240	300	18	110	110	214	214	318
300	320	18	135	135	261	261	387



TECHNICAL INFORMATION



Series GEG—E, GEG—ES, GEG—ES-2RS

d (mm)		Group C2 (μm)		Group normal (μm)		Group C3 (μm)	
over	incl.	min	max	min	max	min	max
—	10	8	32	32	68	68	104
10	17	10	40	40	82	82	124
17	30	12	50	50	100	100	150
30	50	15	60	60	120	120	180
50	80	18	72	72	142	142	212
80	120	18	85	85	165	165	245
120	160	18	100	100	192	192	284
160	220	18	100	100	192	192	284
220	280	18	110	110	214	214	318

Series GEF—ES

d (mm)		Group normal (μm)	
over	incl.	min	max
—	12	32	68
12	20	40	82
20	35	50	100
35	55	60	120
55	80	72	142
80	120	85	165
120	150	100	192

Series GEBJ—S, GEFZ—S

d (mm)		Group normal (μm)	
over	incl.	min	max
—	8	20	60
8	14	40	90
14	20	50	110
20	35	60	120

Series GEBK—S

d (mm)		Group normal (μm)	
over	RI incl.	min	max
—	30	0	35

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TECHNICAL INFORMATION



Series GE—XS/K

d (mm)		Group normal (µm)	
over	RI incl.	min	max
—	15	70	125
15	30	75	140
30	50	85	150
50	65	90	160
65	80	95	170
80	100	100	185
100	120	110	200
120	150	120	215

Series GEZ—ES, GEZ—ES-2RS, GEWZ—ES, GEWZ—ES-2RS

d (mm)		Group C2 (µm)		Group normal (µm)		Group C3 (µm)	
over	RI incl.	min	max	min	max	min	max
—	15.875	10	50	50	150	150	220
15.875	50.8	10	80	80	180	180	250
50.8	76.2	30	100	100	200	200	270
76.2	152.4	60	130	130	230	230	300
152.4	203.2	80	180	180	300	300	380
203.2	254	100	200	200	330	330	410
254	304.8	120	230	230	350	350	430

Series GEGZ—ES, GEGZ—ES-2RS

d (mm)		Group C2 (µm)		Group normal (µm)		Group C3 (µm)	
over	RI incl.	min	max	min	max	min	max
12.7	44.45	10	80	80	180	180	250
44.45	69.85	30	100	100	200	200	270
69.85	139.7	60	130	130	230	230	300

Series GEC—XS, GEC—XS-2RS

d (mm)		Group C2 (µm)		Group normal (µm)		Group C3 (µm)	
over	RI incl.	min	max	min	max	min	max
300	340	18	125	125	239	239	353
340	420	18	135	135	261	261	387
420	530	18	145	145	285	285	425

Series GEK—XS-2RS

d (mm)		Group normal (µm)	
over	RI incl.	min	max
20	35	100	200
35	60	120	250

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Radial Internal Clearance Of Steel On PTFE Composite Material Radial Spherical Plain Bearings

Series GEH—HC

d (mm)		Group normal (µm)	
over	incl.	min	max
90	120	85	285
120	180	100	335
180	220	100	355
220	240	110	356
240	280	110	380
280	300	135	415
300	320	135	490
320	360	135	490
360	380	135	490
380	400	135	510
400	480	145	550
480	500	145	570
500	600	145	610
600	630	160	640

Series GE—C, GEG—C, GEBJ—C, GEFZ—C

d (mm)		Group C2 (µm)		Group normal (µm)		Group C3 (µm)	
over	incl.	min	max	min	max	min	max
—	12	2	20	4	28	20	55
12	20	3	25	5	35	25	60
20	30	4	30	6	44	30	75
30	50	5	35	7	53	35	80

Radial Internal Clearance Of Steel –On-Fabric And Steel-On-Copper Alloy Radial Spherical Plain Bearings

Series GE— ET-2RS, GE— XT-2RS, GE—ET/X, GE— ET-2RS/X, GE—XT/X, GE—XT-2RS/X, GEZ —ET-2RS, GEC —XT, GEC— XT-2RS, GEC— HT, GEFZ— T, GE—N

d (mm)		Group C2 (µm)		Group normal (µm)		Group C3 (µm)	
over	incl.	min	max	min	max	min	max
—	20	0	30	0	40	30	60
20	35	0	35	0	50	35	65
35	60	0	40	0	60	40	80
60	90	0	50	0	72	50	90
90	140	0	60	50	130	95	145
140	180	0	70	50	140	110	160
180	300	0	80	80	190	160	220
300	340	18	125	125	239	239	353
340	420	18	135	135	261	261	387
420	600	18	145	145	285	285	425

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Series GEG —2RS, GEG —XT-2RS

d (mm)		Group normal (µm)	
over	inch	min	max
—	30	0	50
30	50	0	60
50	80	0	72
80	120	0	85
120	220	0	100
220	280	0	110

Series GEH— XT GEH— XT-2RS GEH—HT GE— XF/Q GEC—XF/Q GEH— XF/Q GEH—HF/Q

d (mm)		Group normal (µm)	
over	incl.	min	max
90	120	85	165
120	180	100	192
180	240	110	214
240	300	125	239
300	380	135	261
380	480	145	285
480	600	160	320
600	750	170	350

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