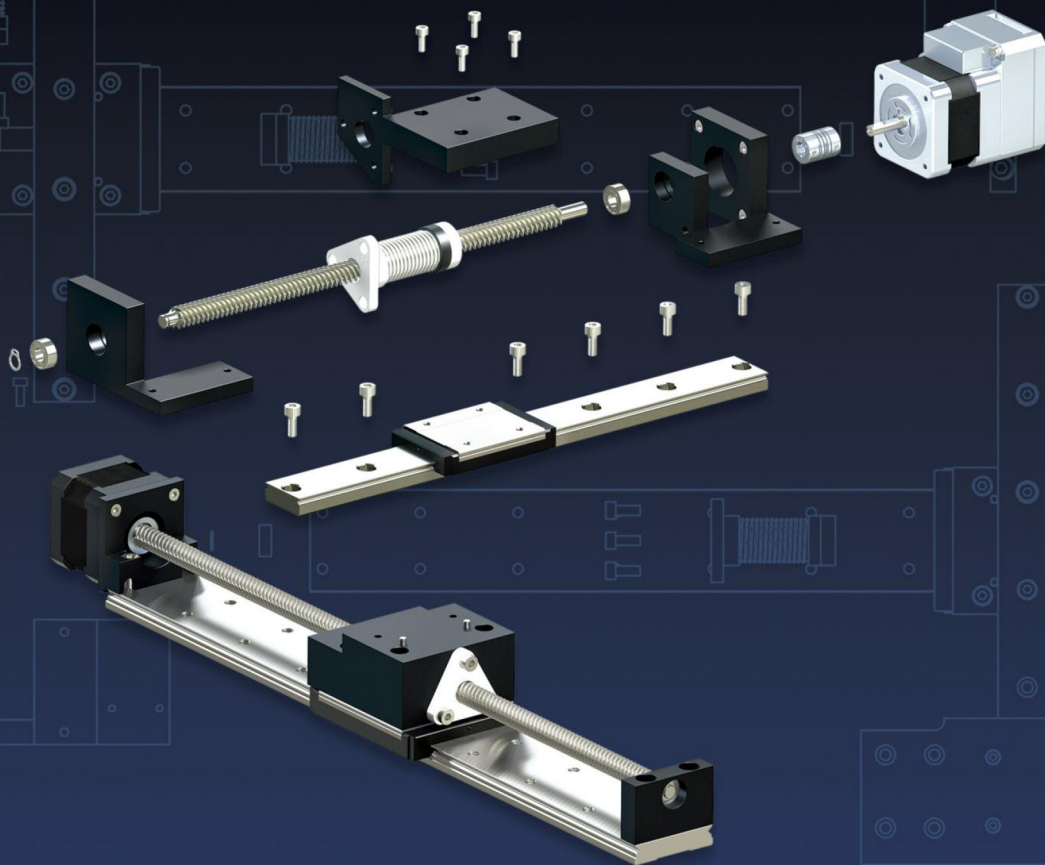




RELIANCETM

P R E C I S I O N



Precise Motion Control Solutions
Bearings and Spacers

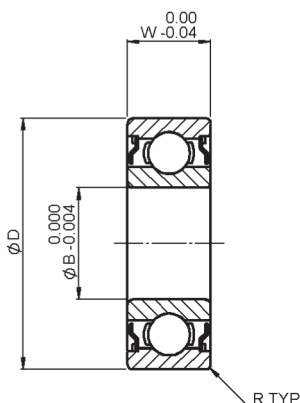
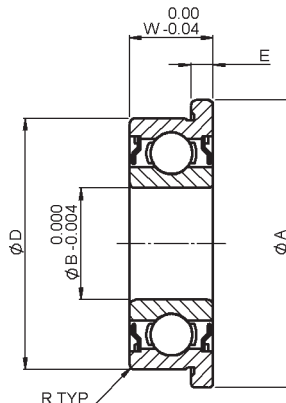


Section Contents

Ball Bearings - P4	Page 12-2
Bronze Bearings	Page 12-3
Moulded Bearings.....	Page 12-4
Bearing Pre-load Washers	Page 12-5
Bearing Spacers	Page 12-6
Technical Information.....	Page T12-1



All dimensions in mm
Generally in accordance with ISO 492,
tolerance class 4
Material: X65Cr13 stainless steel

Associated ProductsShafts: [page 11-2](#)Bearing pre-load washers: [page 12-5](#)Bearing spacers: [page 12-6](#)**Plain****Flanged****Part number selection table**

Part Number		Dimensions								Specification		
Plain	Flanged	Bore Dia ØB	O/D ØD		Width W	Radii R (min)	Flange Dia ØA		Flange Width E		Load Ratings N	
			Max	Min			Max	Min	Max	Min	Dynamic C	Static Co
B1-102-S-P4	B2-102-S-P4	2	5	4.996	2.3	0.08	6.15	6.05	0.6	0.56	192	59
B1-103-S-P4	B2-103-S-P4	3	7	6.996	3.0	0.10	8.15	8.05	0.8	0.76	432	149
B1-104-S-P4	B2-104-S-P4	4	9	8.996	4.0	0.10	10.35	10.25	1.0	0.96	658	226
B1-105-S-P4	B2-105-S-P4	5	11	10.996	5.0	0.15	12.55	12.45	1.0	0.92	734	282
B1-106-S-P4	B2-106-S-P4	6	13	12.996	5.0	0.15	15.05	14.95	1.1	1.02	1096	437
B1-108-S-P4	B2-108-S-P4	8	16	15.996	6.0	0.20	18.05	17.95	1.3	1.22	1795	776
B1-110-S-P4	B2-110-S-P4	10	19	18.995	7.0	0.30	21.05	20.95	1.5	1.38	1922	915

i Features and options

- Operating temperature range: -73°C to +121°C
- Lubricant: grease to MIL-G-21164 and MIL-G-23827
- Double shielded
- Imperial sizes available

? Technical support

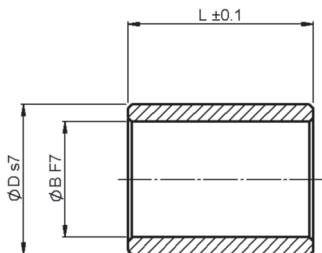
- Spur gear and bearing load calculation - see [page T12-1](#)
- Bearing force sharing - see [page T12-3](#)
- Bearing installation and housing considerations - see [page T12-4](#)



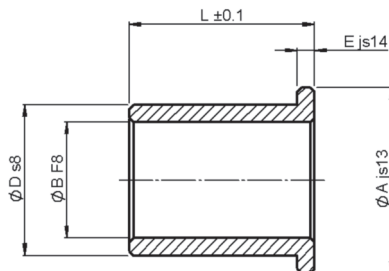


Associated Products
Shafts: [page 11-2](#)

All dimensions in mm
General tolerances ± 0.13 mm
Material: Bronze ASTM B 438
Type 2, Grade 1



Plain



Flanged

Part number selection table

Part Number		Bore ØB ¹	O/D ØD	Length L	Flange Dia ØA	Flange Width E
Plain	Flanged					
BBM1-3	BBM2-3	3	6	6	9	1.5
BBM1-4	BBM2-4	4	8	12	12	2.0
BBM1-5	BBM2-5	5	8	12	--	--
BBM1-6	BBM2-6	6	10	12	14	2.0
BBM1-8	BBM2-8	8	12	12	16	2.0
BBM1-10	BBM2-10	10	13	16	16	1.5

¹ Bearing bore tolerances after assembly are: plain bearings H7, flanged bearings H8.
Recommended housing bore H7

i Features and options

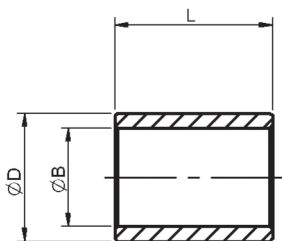
- Operating temperature range: -20°C to +100°C
- Oil impregnated
- Max speed 30,000 rpm
- p.v (@0.5 m/s) = 1.75 N/mm².m/s
- p_{max} = 13.8 N/mm
- v_{max} = 6.1 m/s (rotational)
- Imperial sizes available



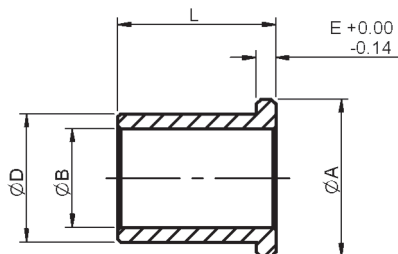


All dimensions in mm
General tolerances ± 0.13 mm
Material: Self lubricating moulded
thermo-plastic

Associated Products
Shafts: [page 11-2](#)
Leadscrews: [page 7-1](#)
Bearing spacers: [page 12-6](#)



Plain



Flanged

Part number selection table

Part Number		Bore ØB #	O/D ØD	Length L	Flange Dia ØA	Flange Width E
Plain	Flanged					
BM8-2	-----	2.054 2.014	3.5	3.00 2.86	-----	-----
BM8-3	BM9-3	3.054 3.014	4.5	3.00 2.86	7.46 7.24	0.75
BM8-4	BM9-4	4.068 4.020	5.5	4.00 3.82	9.46 9.24	0.75
BM8-5	-----	5.040 5.010	7.0	5.00 4.82	-----	-----
-----	BM9-5	5.068 5.020	7.0	5.00 4.82	10.95 10.68	1.00
BM8-6	BM9-6	6.068 6.020	8.0	6.00 5.82	11.95 11.68	1.00
BM8-8	-----	8.083 8.025	10.0	8.00 7.78	-----	-----
-----	BM9-8	8.083 8.025	10.0	9.50 9.28	14.95 14.68	1.00
BM8-10	BM9-10	10.083 10.025	12.0	10.00 9.78	17.95 17.68	1.00
BM8-12	BM9-12	12.102 12.032	14.0	12.00 11.73	19.93 19.61	1.00

Tolerance for ØB is after press fitting into a housing bore of tolerance H7

i Features and options

- Operating temperature range: -40°C to $+130^{\circ}\text{C}$
- $(p.v)_{\text{max}} = 1.0 \text{ N/mm}^2.\text{m/s}$
- $p_{\text{max}} = 80 \text{ N/mm}^2$
- $v_{\text{max}} = 1.0 \text{ m/s}$ (rotational) or 4.0 m/s (linear)
- Imperial sizes available



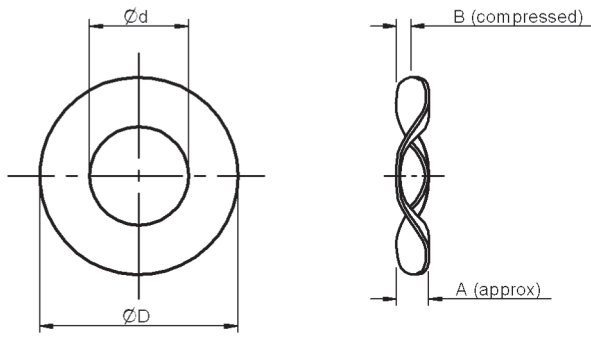


Associated Products

Internal circlips: [page 13-21](#)

Bearings: [page 12-2](#)

All dimensions in mm
General tolerances ± 0.13 mm
Material: Stainless steel 300 series
Treatment: Spring tempered



Part number selection table

Part Number	Housing Bore (nominal)	O/D ØD	Bore Ød	Free Height A	Compressed Height B	Load in N to Deflect to B
EPL-1	10	9.5	4.5	1.2	1.0	15
EPL-2	13	12.5	7.5	1.5		19
EPL-4	16	15.5	10.5	1.5		19
EPL-8	19	18.5	13.0	1.5		29
EPL-10	21	20.5	15.0	1.8		29

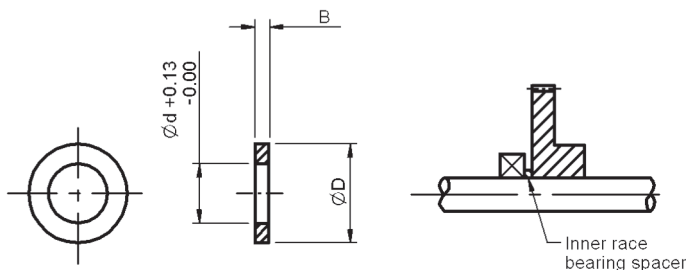
i Features and options

- Imperial bearing pre-load washers
- Available in spring steel, add **-ST** to part number eg [EPL-4-ST](#)



All dimensions in mm
General tolerances ± 0.13 mm
Material: Stainless steel 300 series

Associated Products
Shafts: page 11-2
Leadscrews: page 7-1
Bearings: page 12-2



Dimensions

Shaft Nominal	Spacer Bore Ød	Spacer O/D ØD
2	2	3.0
3	3	4.1
4	4	5.3
5	5	6.7
6	6	7.9
8	8	10.2
10	10	12.3

Part number selection table

Nominal Shaft Dia Ød	Thickness B							
	± 0.025							
	0.05	0.10	0.15	0.20	0.25	0.30	0.40	0.50
2	SS1-117	SS1-118	SS1-119	SS1-120	SS1-121	SS1-122	SS1-123	SS1-124
3	SS1-125	SS1-126	SS1-127	SS1-128	SS1-129	SS1-130	SS1-131	SS1-132
4	SS1-133	SS1-101	SS1-102	SS1-134	SS1-103	SS1-135	SS1-104	SS1-136
5	SS1-137	SS1-138	SS1-139	SS1-140	SS1-141	SS1-142	SS1-143	SS1-144
6	SS1-145	SS1-105	SS1-106	SS1-146	SS1-107	SS1-147	SS1-108	SS1-148
8	SS1-149	SS1-109	SS1-110	SS1-150	SS1-111	SS1-151	SS1-112	SS1-152
10	SS1-153	SS1-113	SS1-114	SS1-154	SS1-115	SS1-155	SS1-116	SS1-156

Product options

- Imperial sizes available



Associated Products

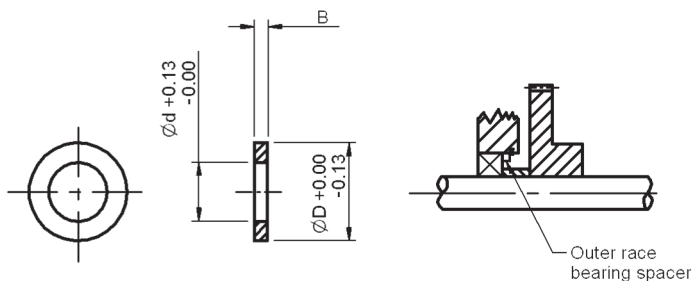
Internal circlips: page 13-21

Bearings: page 12-2

All dimensions in mm

General tolerances ± 0.13 mm

Material: Stainless steel 300 series



Dimensions

Bearing OD Nominal	Spacer O/D ØD	Spacer Bore Ød
5	5	4.2
7	7	5.7
9	9	7.8
11	11	9.7
13	13	11.1
16	16	13.8
19	19	16.6

Part number selection table

Bearing ¹		Thickness B							
Bore (nom)	OD (nom)	± 0.025							
		0.05	0.10	0.15	0.20	0.25	0.30	0.40	0.50
2	5	SS3-113	SS3-114	SS3-115	SS3-116	SS3-117	SS3-118	SS3-119	SS3-120
3	7	SS3-121	SS3-122	SS3-123	SS3-124	SS3-125	SS3-126	SS3-127	SS3-128
4	9	SS3-129	SS3-130	SS3-101	SS3-131	SS3-102	SS3-132	SS3-103	SS3-133
5	11	SS3-134	SS3-135	SS3-136	SS3-137	SS3-138	SS3-139	SS3-140	SS3-141
6	13	SS3-142	SS3-143	SS3-104	SS3-144	SS3-105	SS3-145	SS3-106	SS3-146
8	16	SS3-147	SS3-148	SS3-107	SS3-149	SS3-108	SS3-150	SS3-109	SS3-151
10	19	SS3-152	SS3-153	SS3-110	SS3-154	SS3-111	SS3-155	SS3-112	SS3-157

¹ Applies to standard Reliance bearing sizes

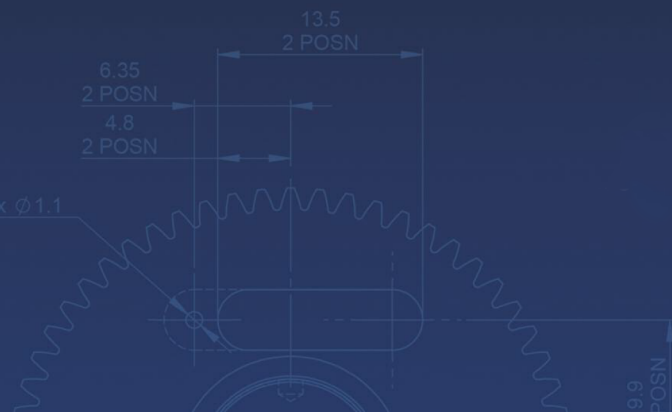
Product options

- Imperial sizes available



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