NIKO®

NIPPON KODO
AUTOMATION TECHNOLOGY

ROD

ENDS

Rod Ends

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AUTOMATION TECHNOLOGY

TECHNICAL TABLES

1. Bearing materials

Standard material for spherical bearing rod ends, stainless steel spherical bearing rod ends, winding shape ball joint rod ends, straight ball joint rod ends are mostly classified into balls, outer rings, races and bearing body structures. Details please refer to Table 1.1.

Table 1.1

Series / Classification	Lubricant type Series BNM/BNF	Maintenance free Series BM/BF	Maintenance free Series BNM..K/BNF..K	Maintenance free Series DMSS/DFSS	Maintenance free Series RBL/RBI
Balls	Chromium steel, 100Cr6 (HRc 58~64), hard chrome plated	Chromium steel, 100Cr6 (HRc 58~64), hard chrome plated	Chromium steel, 100Cr6 (HRc 58~64), hard chrome plated	Stainless steel 440, hardened	Chromium steel, 100Cr6 (HRc 58~64), hard chrome plated
Outer rings	—	—	Brass(H62)	Brass(H62)	—
Races	Brass(H62)	PTFE	PTFE	PTFE	Brass(H62)
Body	Low carbon steel, Nickel plated	Low carbon steel, Nickel plated	Low carbon steel, Nickel plated	Stainless steel 440, hardened	Low carbon steel, Nickel plated

2. Tolerances for spherical bearing rod ends

2.1 Thread of stretching rod

Metric thread: Female 6H and Male 6g.

2.2 Tolerances in details

Table 2.1 Inner ring for BNM, BNF, DM, DF, RBL, RBI, DMSS and DFSS series

(Unit : μm)

d mm		$\triangle dmp$		$\triangle Bs$	
over	incl.	max.	min.	max.	min.
-	6	+12	0	0	-100
6	10	+15	0	0	-100
10	18	+18	0	0	-100
18	30	+21	0	0	-100

Table 2.2 Inner ring for BNM..K and BNF..K series

(Unit : μm)

d mm		$\triangle dmp$		$\triangle Bs$	
over	incl.	max.	min.	max.	min.
-	6	+12	0	0	-150
6	10	+15	0	0	-150
10	12	+18	0	0	-150
12	18	+18	0	0	-200
18	30	+21	0	0	-200

Table 2.3 Outer ring for BNM, BNF, DM, DF, RBL, RBI, DMSS, DFSS, BNM..K and BNF..K series

(Unit : μm)

d mm		$\triangle dmp$		$\triangle Cs$	
over	incl.	max.	min.	max.	min.
10	18	0	-11	+100	-100
18	30	0	-13	+100	-100
30	50	0	-16	+100	-100
50	60	0	-19	+100	-100

Table 2.4 Center height deviation for BNM, BNF, DM, DF, RBL, RBI, DMSS, DFSS, BNM..K and BNF..K series

d mm		$\triangle hs$ mm		$\triangle his$ mm	
over	incl.	max.	min.	max.	min.
-	6	+1.20	+0.80	+0.65	-1.05
6	20	+0.80	-1.20	+0.80	-1.20
20	30	+1.00	-1.70	+1.00	-1.70
30	45	+1.40	-2.10	+1.40	-2.10
45	60	+1.80	-2.70	+1.80	-2.70
60	80	+2.25	-3.40	+2.25	-3.40

3. Fits of Spherical Bearing Rod Ends

Fitted with Rod Ends.

Table 3.1 For shaft

With indeterminate loads	Normal conditions
n6, p6	h6, h7

Table 3.2 For thread

Male thread	Female thread
6g	6h

Table 3.3 Roughness of fitting surface **(Unit : μm)**

Fitting surface Bearing bore diameter "d" or outer diameter "D" Nominal bore diameter (mm) over	incl.	Shaft surface Ra≤	Bore surface of housing Ra≤	Side of shaft shoulder, washer, housing bore shoulder Ra≤
-	80	1.25	1.60	2.00
80	150	2.00	2.50	2.50

To look into the table with "d " for shaft, to look into the table with "D " for housing.

Table 3.4 Shape and position tolerance of fitting surface **(Unit : μm)**

d or D mm over	incl.	Cylindricity Housing bore max.	Cylindricity Shaft diameter max.	Side beat of round circuity Housing bore shoulder max.	Side beat of round circuity Shaft shoulder max.	Parallelism of two sides of washer max.
-	6	4	-	8	-	12
6	10	4	4	9	9	15
10	18	5	5	10	10	18
18	30	6	6	11	11	21
30	50	7	7	13	13	25
50	80	8	8	16	16	30
80	120	10	10	19	19	35
120	150	12	12	22	22	40

4. Radial Internal Clearance for Spherical Bearing Rod Ends

4.1 Maintenance-free type

Table 4.1 Radial internal clearance for BNM..K, BNF..K, DM, DF, RBL, RBI, DMSS and DFSS series.

(Unit : μm)

d mm over	incl.	Group min.	Group max.
-	12	32	68
12	20	40	82
20	30	50	100

4.2 Lubricant type

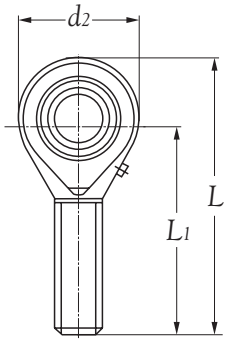
Table 4.2 Radial internal clearance for BNM and BNF series.

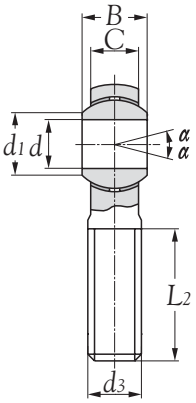
(Unit : μm)

d mm over	incl.	Group min.	Group max.
-	30	0	35

DIMENSION TABLES

Spherical Bearing Rod Ends (Lubricant Type)
series BNM.., BNML..





Boundary dimensions mm			Nominal dimensions mm						α° ≈	Load ratings N dynamic	static	Bearing numbers	Mass kg
d	d2	B	C1	d3	L1	L2	L	d1		Cd	Cs		(approx.)
5	16	8	6.00	M5 x 0.80	33	20	41	7.7	13	3300	3900	**BNM5**	0.0125
6	18	9	6.75	M6 x 1.00	36	22	45	9.0	13	4300	5300	**BNM6**	0.0190
8	22	12	9.00	M8 x 1.25	42	25	53	10.4	13	6800	8500	**BNM8**	0.0320
10	26	14	10.50	M10 x 1.50	48	29	61	12.9	13	10000	11000	**BNM10**	0.0540
12	30	16	12.00	M12 x 1.75	54	33	69	15.4	13	13000	14000	**BNM12**	0.0850
14	34	19	13.50	M14 x 2.00	60	36	77	16.9	13	17000	20000	**BNM14**	0.1260
16	38	21	15.00	M16 x 2.00	66	40	85	19.4	13	21000	25000	**BNM16**	0.1850
18	42	23	16.50	M18 x 1.50	72	44	93	21.9	13	26000	30000	**BNM18**	0.2600
20	46	25	18.00	M20 x 1.50	78	47	101	24.4	13	31000	35000	**BNM20**	0.3400
22	50	28	20.00	M22 x 1.50	84	51	109	25.8	13	38000	43000	**BNM22**	0.4350
25	60	31	22.00	M24 x 2.00	94	57	124	29.6	13	47000	65000	**BNM25**	0.6500
30	70	37	25.00	M30 x 2.00	110	66	145	34.8	13	63000	86000	**BNM30**	1.0700

Note: 1) Suffix "L" means with left hand thread.
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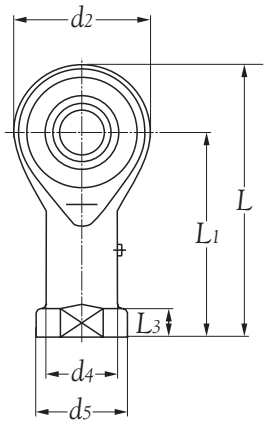
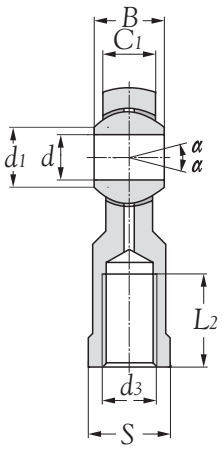
Spherical Bearing Rod Ends (Lubricant Type)
series BNF.., BNFL..





Boundary dimensions mm			Nominal dimensions mm										Load ratings N		Bearing numbers	Mass kg
d	d_2	B	C_1	S	d_3	d_4	d_5	L_1	L_2	L	L_3	d_1	α° ≈	dynamic C_d	static C_s		(approx.)
5	16	8	6.00	9	M5 x 0.80	9.0	11	27	14	35	4.0	7.7	13	3300	3900	**BNF5**	0.016
6	18	9	6.75	11	M6 x 1.00	10.0	13	30	14	39	5.0	9.0	13	4300	5300	**BNF6**	0.026
8	22	12	9.00	14	M8 x 1.25	12.5	16	36	17	47	5.0	10.4	13	6800	8500	**BNF8**	0.044
10	26	14	10.50	17	M10 x 1.50	15.0	19	43	21	56	6.5	12.9	13	10000	11000	**BNF10**	0.072
10	26	14	10.50	17	M10 x 1.25	15.0	19	43	21	56	6.5	12.9	13	10000	11000	**BNF10.1**	0.072
12	30	16	12.00	19	M12 x 1.75	17.5	22	50	24	65	6.5	15.4	13	13000	14000	**BNF12**	0.108
12	30	16	12.00	19	M12 x 1.25	17.5	22	50	24	65	6.5	15.4	13	13000	14000	**BNF12.1**	0.108
14	34	19	13.50	22	M14 x 2.00	20.0	25	57	27	74	8.0	16.9	13	17000	20000	**BNF14**	0.161
16	38	21	15.00	22	M16 x 2.00	22.0	27	64	33	83	8.0	19.4	13	21000	25000	**BNF16**	0.225
16	38	21	15.00	22	M16 x 1.50	22.0	27	64	33	83	8.0	19.4	13	21000	25000	**BNF16.1**	0.225
18	42	23	16.50	27	M18 x 1.50	25.0	31	71	36	92	10.0	21.9	13	26000	30000	**BNF18**	0.295
20	46	25	18.00	30	M20 x 1.50	27.5	34	77	40	100	10.0	24.4	13	31000	35000	**BNF20**	0.382
22	50	28	20.00	32	M22 x 1.50	30.0	37	84	43	109	12.0	25.8	13	38000	43000	**BNF22**	0.488
25	60	31	22.00	36	M24 x 2.00	33.5	42	94	48	124	12.0	29.6	13	47000	65000	**BNF25**	0.749
30	70	37	25.00	41	M30 x 2.00	40.0	50	110	56	145	15.0	34.8	13	63000	86000	**BNF30**	1.130
30	70	37	25.00	41	M27 x 2.00	40.0	50	110	56	145	15.0	34.8	13	63000	86000	**BNF30.1**	1.130

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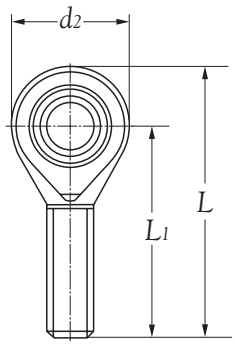
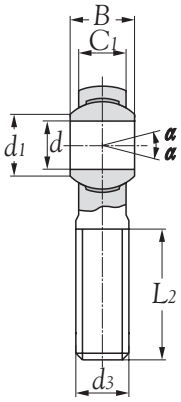
Spherical Bearing Rod Ends (Maintenance-Free Type)

series DM.., DML..





Boundary dimensions mm			Nominal dimensions mm						Load ratings dynamic static N		Bearing numbers	Mass kg
d	d_2	B	C_1	d_3	L_1	L_2	L	d_1	$\alpha^\circ \approx$	C_d	C_s		(approx.)
5	16	8	6.00	M5 x 0.80	33	20	41	7.7	13	3300	3900	**DM5**	0.013
6	18	9	6.75	M6 x 1.00	36	22	45	9.0	13	4300	5300	**DM6**	0.019
8	22	12	9.00	M8 x 1.25	42	25	53	10.4	13	6800	8500	**DM8**	0.032
10	26	14	10.50	M10 x 1.50	48	29	61	12.9	13	10000	11000	**DM10**	0.054
12	30	16	12.00	M12 x 1.75	54	33	69	15.4	13	13000	14000	**DM12**	0.085
14	34	19	13.50	M14 x 2.00	60	36	77	16.9	13	17000	20000	**DM14**	0.126
16	38	21	15.00	M16 x 2.00	66	40	85	19.4	13	21000	25000	**DM16**	0.185
18	42	23	16.50	M18 x 1.50	72	44	93	21.9	13	26000	30000	**DM18**	0.260
20	46	25	18.00	M20 x 1.50	78	47	101	24.4	13	31000	35000	**DM20**	0.340
22	50	28	20.00	M22 x 1.50	84	51	109	25.8	13	38000	43000	**DM22**	0.435
25	60	31	22.00	M24 x 2.00	94	57	124	29.6	13	47000	65000	**DM25**	0.650
30	70	37	25.00	M30 x 2.00	110	66	145	34.8	13	63000	86000	**DM30**	1.070

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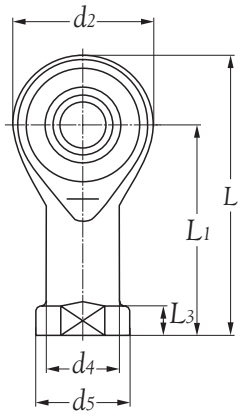
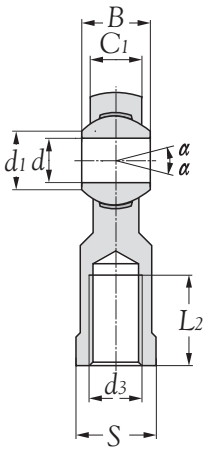
Spherical Bearing Rod Ends (Maintenance-Free Type)
series DF.., DFL..





Boundary dimensions mm			Nominal dimensions mm										Load ratings N		Bearing numbers	Mass kg
d	d_2	B	C_1	S	d_3	d_4	d_5	L_1	L_2	L	L_3	d_1	$\alpha^\circ \approx$	dynamic C_d	static C_s		(approx.)
5	16	8	6.00	9	M5 x 0.80	9.0	11	27	14	35	4.0	7.7	13	3300	3900	**DF5**	0.016
6	18	9	6.75	11	M6 x 1.00	10.0	13	30	14	39	5.0	9.0	13	4300	5300	**DF6**	0.026
8	22	12	9.00	14	M8 x 1.25	12.5	16	36	17	47	5.0	10.4	13	6800	8500	**DF8**	0.044
10	26	14	10.50	17	M10 x 1.50	15.0	19	43	21	56	6.5	12.9	13	10000	11000	**DF10**	0.072
10	26	14	10.50	17	M10 x 1.25	15.0	19	43	21	56	6.5	12.9	13	10000	11000	**DF10.1**	0.072
12	30	16	12.00	19	M12 x 1.75	17.5	22	50	24	65	6.5	15.4	13	13000	14000	**DF12**	0.108
12	30	16	12.00	19	M12 x 1.25	17.5	22	50	24	65	6.5	15.4	13	13000	14000	**DF12.1**	0.108
14	34	19	13.50	22	M14 x 2.00	20.0	25	57	27	74	8.0	16.9	13	17000	20000	**DF14**	0.161
16	38	21	15.00	22	M16 x 2.00	22.0	27	64	33	83	8.0	19.4	13	21000	25000	**DF16**	0.225
16	38	21	15.00	22	M16 x 1.50	22.0	27	64	33	83	8.0	19.4	13	21000	25000	**DF16.1**	0.225
18	42	23	16.50	27	M18 x 1.50	25.0	31	71	36	92	10.0	21.9	13	26000	30000	**DF18**	0.295
20	46	25	18.00	30	M20 x 1.50	27.5	34	77	40	100	10.0	24.4	13	31000	35000	**DF20**	0.382
22	50	28	20.00	32	M22 x 1.50	30.0	37	84	43	109	12.0	25.8	13	38000	43000	**DF22**	0.488
25	60	31	22.00	36	M24 x 2.00	33.5	42	94	48	124	12.0	29.6	13	47000	65000	**DF25**	0.749
30	70	37	25.00	41	M30 x 2.00	40.0	50	110	56	145	15.0	34.8	13	63000	86000	**DF30**	1.130

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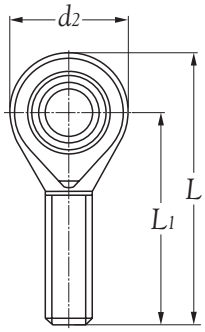
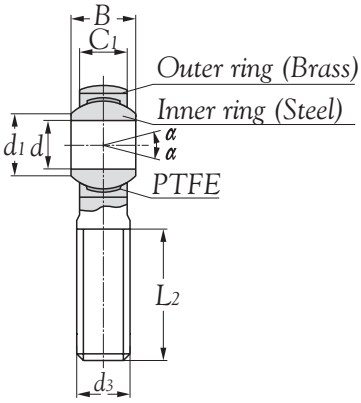
Spherical Bearing Rod Ends (Maintenance-Free Type)
series BNM..K, BNML..K





Boundary dimensions mm			Nominal dimensions mm						α° ≈	Load ratings dynamic static N		Bearing numbers	Mass kg
d	d2	B	C1	d3	L1	L2	L	d1		Cd	Cs		(approx.)
5	18	8	6.00	M5 x 0.80	33	19	42	7.7	4	4000	7500	**BNM5K**	0.013
6	20	9	6.75	M6 x 1.00	36	22	46	8.9	9	4400	9300	**BNM6K**	0.020
8	24	12	9.00	M8 x 1.25	42	25	54	10.4	13	8000	16700	**BNM8K**	0.033
10	28	14	10.50	M10 x 1.50	48	29	62	12.9	13	12900	23400	**BNM10K**	0.056
12	32	16	12.00	M12 x 1.75	54	33	70	15.4	13	17000	32000	**BNM12K**	0.087
14	36	19	13.50	M14 x 2.00	60	38	78	16.8	13	24000	41900	**BNM14K**	0.129
16	42	21	15.00	M16 x 2.00	66	40	87	19.3	13	28500	52700	**BNM16K**	0.189
18	46	23	16.50	M18 x 1.50	72	44	95	21.8	13	35000	63800	**BNM18K**	0.267
20	50	25	18.00	M20 x 1.50	78	47	103	24.3	13	40000	78100	**BNM20K**	0.348
22	54	28	20.00	M22 x 1.50	84	51	111	25.8	13	52000	97200	**BNM22K**	0.443
25	60	31	22.00	M24 x 2.00	94	58	124	29.6	13	60000	122100	**BNM25K**	0.600
30	70	37	25.00	M30 x 2.00	110	71	145	34.8	13	81000	168400	**BNM30K**	1.030

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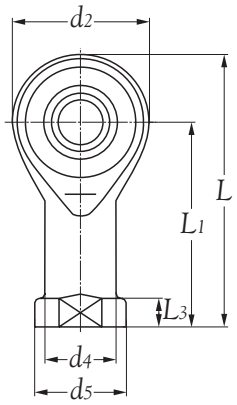
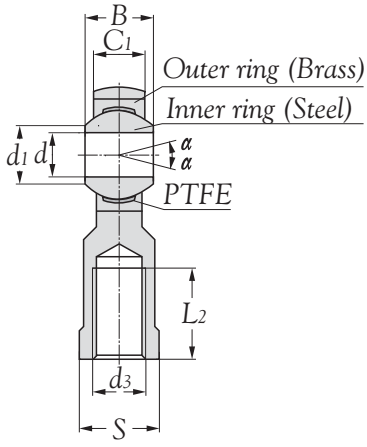
Spherical Bearing Rod Ends (Maintenance-Free Type)
series BNF..K, BNFL..K





Boundary dimensions mm			Nominal dimensions mm										Load ratings N		Bearing numbers	Mass kg
d	d2	B	C1	S	d3	d4	d5	L1	L2	L	L3	d1	α° ≈	Cd	Cs		(approx.)
5	18	8	6.00	9	M5 x 0.80	9.0	11	27	10	36	4.5	7.7	13	6000	7500	**BNF5K**	0.018
6	20	9	6.75	11	M6 x 1.00	10.0	13	30	12	40	5.0	8.9	13	7200	9300	**BNF6K**	0.027
8	24	12	9.00	13	M8 x 1.25	12.5	16	36	16	48	5.0	10.4	13	11600	16700	**BNF8K**	0.046
10	28	14	10.50	17	M10 x 1.50	15.0	19	43	20	57	6.5	12.9	13	14500	23400	**BNF10K**	0.076
10	28	14	10.50	17	M10 x 1.25	15.0	19	43	20	57	6.5	12.9	13	14500	23400	**BNF10.1K**	0.076
12	32	16	12.00	19	M12 x 1.75	17.5	22	50	22	66	6.5	15.4	13	17000	32000	**BNF12K**	0.115
12	32	16	12.00	19	M12 x 1.25	17.5	22	50	22	66	6.5	15.4	13	17000	32000	**BNF12.1K**	0.115
14	36	19	13.50	22	M14 x 2.00	20.0	25	57	25	75	8.0	16.8	13	24000	41900	**BNF14K**	0.170
16	42	21	15.00	22	M16 x 2.00	22.0	27	64	28	85	8.0	19.3	13	28500	52700	**BNF16K**	0.230
16	42	21	15.00	22	M16 x 1.50	22.0	27	64	28	85	8.0	19.3	13	28500	52700	**BNF16.1K**	0.230
18	46	23	16.50	27	M18 x 1.50	25.0	31	71	32	94	10.0	21.8	13	35000	63800	**BNF18K**	0.320
20	50	25	18.00	32	M20 x 1.50	27.5	34	77	33	102	10.0	24.3	13	40000	78100	**BNF20K**	0.415
22	54	28	20.00	32	M22 x 1.50	30.0	37	84	37	111	10.0	25.8	13	52000	97200	**BNF22K**	0.540
25	60	31	22.00	36	M24 x 2.00	33.5	42	94	42	124	12.0	29.6	13	60000	122100	**BNF25K**	0.750
30	70	37	25.00	41	M30 x 2.00	40.0	51	110	51	145	15.0	34.8	13	81000	168400	**BNF30K**	1.130

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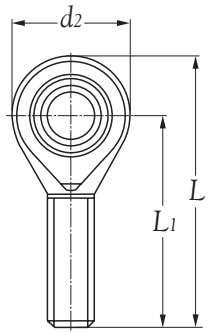
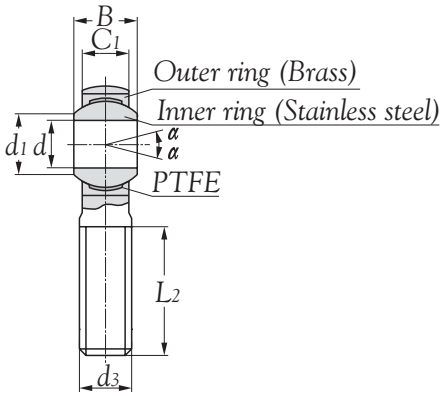
Stainless Steel Spherical Bearing Rod Ends (Maintenance-Free Type)
series DMSS.., DMSSL..





Boundary dimensions mm			Nominal dimensions mm						α° ≈	Load ratings dynamic N	static N	Bearing numbers	Mass kg
d	d2	B	C1	d3	L1	L2	L	d1		Cd	Cs		(approx.)
5	16	8	6.00	M5 x 0.80	33	20	41	7.7	13	3300	3900	**DMSS5**	0.013
6	18	9	6.75	M6 x 1.00	36	22	45	9.0	13	4300	5300	**DMSS6**	0.019
8	22	12	9.00	M8 x 1.25	42	25	53	10.4	13	6800	8500	**DMSS8**	0.032
10	26	14	10.50	M10 x 1.50	48	29	61	12.9	13	10000	11000	**DMSS10**	0.054
12	30	16	12.00	M12 x 1.75	54	33	69	15.4	13	13000	14000	**DMSS12**	0.085
14	34	19	13.50	M14 x 2.00	60	36	77	16.9	13	17000	20000	**DMSS14**	0.126
16	38	21	15.00	M16 x 2.00	66	40	85	19.4	13	21000	25000	**DMSS16**	0.185
18	42	23	16.50	M18 x 1.50	72	44	93	21.9	13	26000	30000	**DMSS18**	0.260
20	46	25	18.00	M20 x 1.50	78	47	101	24.4	13	31000	35000	**DMSS20**	0.340
22	50	28	20.00	M22 x 1.50	84	51	109	25.8	13	38000	43000	**DMSS22**	0.435
25	60	31	22.00	M24 x 2.00	94	57	124	29.6	13	47000	65000	**DMSS25**	0.650
30	70	37	25.00	M30 x 2.00	110	66	145	34.8	13	63000	86000	**DMSS30**	1.070

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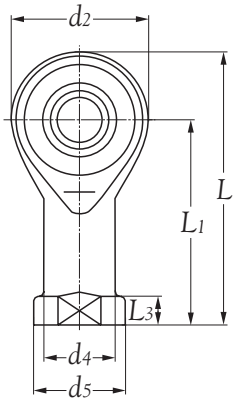
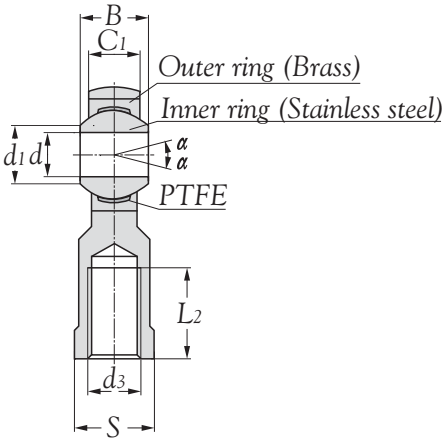
Stainless Steel Spherical Bearing Rod Ends (Maintenance-Free Type)
series DFSS.., DFSSL..





Boundary dimensions mm			Nominal dimensions mm										Load ratings dynamic static N		Bearing numbers	Mass kg
d	d2	B	C1	S	d3	d4	d5	L1	L2	L	L3	d1	α° ≈	Cd	Cs		(approx.)
5	16	8	6.00	9	M5 x 0.80	9.0	11	27	14	35	4.0	7.7	13	3300	3900	**DFSS5**	0.016
6	18	9	6.75	11	M6 x 1.00	10.0	13	30	14	39	5.0	9.0	13	4300	5300	**DFSS6**	0.026
8	22	12	9.00	14	M8 x 1.25	12.5	16	36	17	47	5.0	10.4	13	6800	8500	**DFSS8**	0.044
10	26	14	10.50	17	M10 x 1.50	15.0	19	43	21	56	6.5	12.9	13	10000	11000	**DFSS10**	0.072
10	26	14	10.50	17	M10 x 1.25	15.0	19	43	21	56	6.5	12.9	13	10000	11000	**DFSS10.1**	0.072
12	30	16	12.00	19	M12 x 1.75	17.5	22	50	24	65	6.5	15.4	13	13000	14000	**DFSS12**	0.108
12	30	16	12.00	19	M12 x 1.25	17.5	22	50	24	65	6.5	15.4	13	13000	14000	**DFSS12.1**	0.108
14	34	19	13.50	22	M14 x 2.00	20.0	25	57	27	74	8.0	16.9	13	17000	20000	**DFSS14**	0.161
16	38	21	15.00	22	M16 x 2.00	22.0	27	64	33	83	8.0	19.4	13	21000	25000	**DFSS16**	0.225
16	38	21	15.00	22	M16 x 1.50	22.0	27	64	33	83	8.0	19.4	13	21000	25000	**DFSS16.1**	0.225
18	42	23	16.50	27	M18 x 1.50	25.0	31	71	36	92	10.0	21.9	13	26000	30000	**DFSS18**	0.295
20	46	25	18.00	30	M20 x 1.50	27.5	34	77	40	100	10.0	24.4	13	31000	35000	**DFSS20**	0.382
22	50	28	20.00	32	M22 x 1.50	30.0	37	84	43	109	12.0	25.8	13	38000	43000	**DFSS22**	0.488
25	60	31	22.00	36	M24 x 2.00	33.5	42	94	48	124	12.0	29.6	13	47000	65000	**DFSS25**	0.749
30	70	37	25.00	41	M30 x 2.00	40.0	50	110	56	145	15.0	34.8	13	63000	86000	**DFSS30**	1.130

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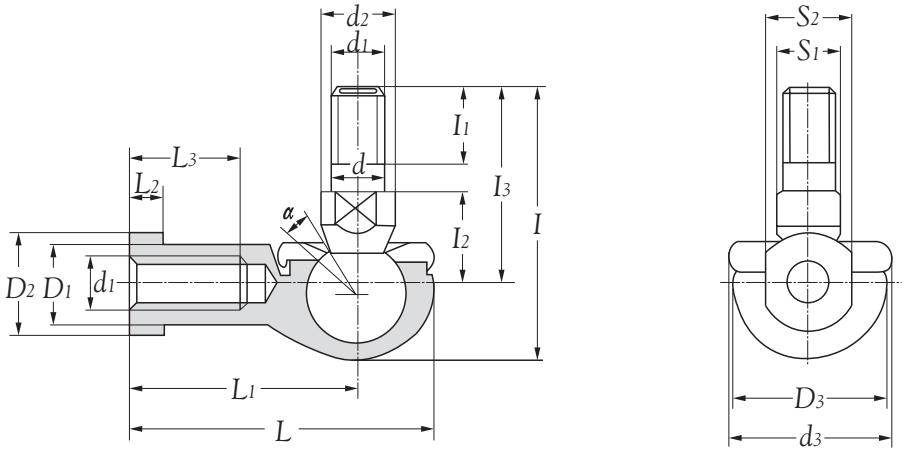
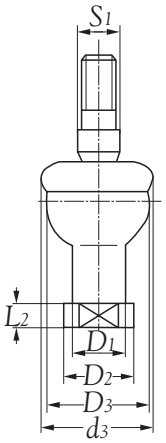
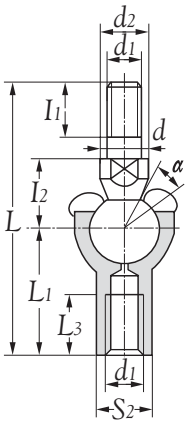
WINDING SHAPE BALL JOINT RODEND
SERIES RBL...



Nominal dimensions mm																	α° ≈	Load ratings dynamic N	Bearing numbers	Mass kg
d	d1	d2 min	d3 max	I min	I1 max	I2	I3 max	S1	L max	L1	L2 max	L3 min	D1 max	D2 max	D3 max	S2		Cd		(approx.)
5	M5x0.80	9	19	29.0	8	10.0	21	7	35	27	4.0	14	9.0	11	16	9	25	2200	**RBL5**	0.026
6	M6x1.00	10	20	35.5	11	11.0	26	8	40	30	5.0	14	10.0	13	19	11	25	3500	**RBL6**	0.039
8	M8x1.25	12	24	42.5	12	14.0	31	10	48	36	5.0	17	12.5	16	23	14	25	6600	**RBL8**	0.068
10	M10x1.25	14	30	50.5	15	17.0	37	11	57	43	6.5	21	15.0	19	27	17	25	10000	**RBL10**	0.112
10	M10x1.50	14	30	56.5	21	17.0	43	11	57	43	6.5	21	15.0	19	27	17	25	10000	**RBL10B**	0.112
12	M12x1.25	17	32	57.5	17	19.0	42	15	66	50	6.5	25	17.5	22	31	19	25	16000	**RBL12**	0.164
12	M12x1.75	17	32	64.5	24	19.0	49	15	66	50	6.5	25	17.5	22	31	19	25	16000	**RBL12B**	0.164
14	M14x1.50	19	38	73.5	22	21.5	56	17	75	57	8.0	26	20.0	25	35	22	25	19000	**RBL14**	0.254
14	M14x2.00	19	38	79.5	28	21.5	62	17	75	57	8.0	26	20.0	25	35	22	25	19000	**RBL14B**	0.254
16	M16x1.50	22	44	79.5	23	23.5	60	19	84	64	8.0	32	22.0	27	39	22	20	26000	**RBL16**	0.336
16	M16x2.00	22	44	85.5	29	23.5	66	19	84	64	8.0	32	22.0	27	39	22	20	26000	**RBL16B**	0.336
18	M18x1.50	23	45	90.0	25	26.5	68	20	93	71	10.0	34	25.0	31	44	27	20	33000	**RBL18**	0.464
20	M20x1.50	27	50	90.0	25	27.0	68	24	99	77	10.0	35	27.5	34	44	30	20	45000	**RBL20**	0.538
22	M22x1.50	27	52	95.0	26	28.0	70	24	100	84	12.0	41	30.0	37	50	32	16	48000	**RBL22**	0.713

Straight Ball Joint Rod Ends
series **RBI...**





Nominal dimensions mm															α° ≈	Load ratings dynamic N	Bearing numbers	Mass kg
d	d1	d2 min	d3 max	I1 min	I2	S1	L max	L1	L2 max	L3 min	D1 max	D2 max	D3 max	S2		Cd		(approx.)
5	M5 x 0.80	9	20	8	11.0	7	46.0	24	4.0	12	9.0	11	17	9	15.0	2800	**RBI5**	0.025
6	M6 x 1.00	10	20	11	12.2	8	55.2	28	5.0	15	10.0	13	20	11	15.0	3700	**RBI6**	0.041
8	M8 x 1.25	12	24	12	16.0	10	65.0	32	5.0	16	12.5	16	24	14	15.0	5800	**RBI8**	0.075
10	M10 x 1.25	14	30	15	19.5	11	74.5	35	6.5	18	15.0	19	28	17	15.0	8400	**RBI10**	0.120
10	M10 x 1.50	14	30	21	19.5	11	80.5	35	6.5	18	15.0	19	28	17	15.0	8400	**RBI10B**	0.120
12	M12 x 1.25	17	32	17	21.0	15	84.0	40	6.5	20	17.5	22	32	19	15.0	11000	**RBI12**	0.180
12	M12 x 1.75	17	32	24	21.0	15	91.0	40	6.5	20	17.5	22	32	19	15.0	11000	**RBI12B**	0.180
14	M14 x 1.50	19	38	22	23.5	17	103.0	45	8.0	25	20.0	25	36	22	11.0	15000	**RBI14**	0.270
14	M14 x 2.00	19	38	28	23.5	17	109.0	45	8.0	25	20.0	25	36	22	11.0	15000	**RBI14B**	0.270
16	M16 x 1.50	22	44	23	25.5	19	112.0	50	8.0	27	22.0	27	40	22	11.0	15000	**RBI16**	0.360
16	M16 x 2.00	22	44	29	25.5	19	118.0	50	8.0	27	22.0	27	40	22	11.0	15000	**RBI16B**	0.360
18	M18 x 1.50	23	45	25	31.0	20	130.0	58	10.0	31	25.0	31	45	27	11.0	19000	**RBI18**	0.540
20	M20 x 1.50	27	50	25	29.0	24	133.0	63	10.0	34	27.5	34	45	30	7.5	19000	**RBI20**	0.570
22	M22 x 1.50	27	52	26	33.0	24	145.0	70	12.0	37	30.0	37	50	32	7.5	23000	**RBI22**	0.760

NOTE

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