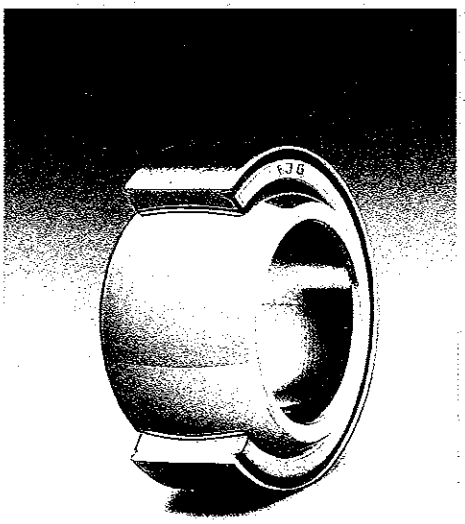


Dimensions in millimetres

U	S min.	α	Static Limit Load Rating in kN Radial	Axial	Oscillating Radial Load Rating in kN	No Load Rotational Staring Torque in Nm	Suffix X	Suffix X µm max.radial play	max. axial play	Mass g	Bearing Number
0,076	0,254	15°	11,12	7,87	21,80	0,03 to 0,56	0,06 max.	18	53	14	FMGB 3.4 M
		15°	24,46	7,87	21,80					14	FMGB 4.4 M
		14°	41,81	7,30	26,91					16	FMGB 5.4 M
		8°	60,94	11,70	36,96					27	FMGB 6.4 M
		10°	92,07	16,24	52,26					36	FMGB 7.4 M
		10°	87,63	16,24	52,26	0,03 to 0,90	0,11 max.			36	FMGB7A.4M
		9°	95,19	22,11	66,50					45	FMGB 8.4 M
0,127	0,508	10°	118,32	23,89	80,51					61	FMGB 9.4 M
		12°	128,99	27,27	90,07					73	FMGB 10.4 M
		13°	164,58	34,38	116,54					109	FMGB 12.4 M
		6°	290,01	48,04	149,45	0,03 to 1,36	0,23 max.	25	76	159	FMGB 14.4 M
		12°	462,59	85,85	250,20					440	FMGB 16.4 M
		12,5°	568,40	115,90	295,50	0,04 to 2,00				500	FMGB 20.4 M
		13°	706,00	137,70	367,10		-	-	-	700	FMGB 24.4 M
		12,5°	859,40	161,70	445,50	0,06 to 2,70				900	FMGB 28.4 M
		12,5°	996,10	180,00	518,00					1050	FMGB 32.4 M

Surface finish

Outer ring: Plating, when specified, shall be cadmium plating per QQ-P-416, Type II, Class 2
Plate on the outside diameter surface and on the flat between the outsid diameter on the groove

Ball: Passivate per QQ-P-35

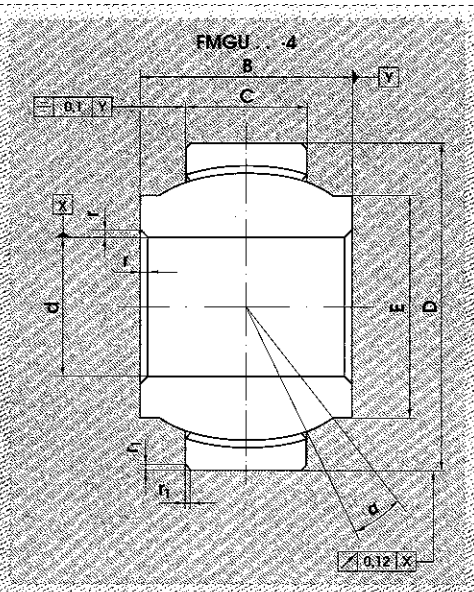
SPHERICAL BEARINGS

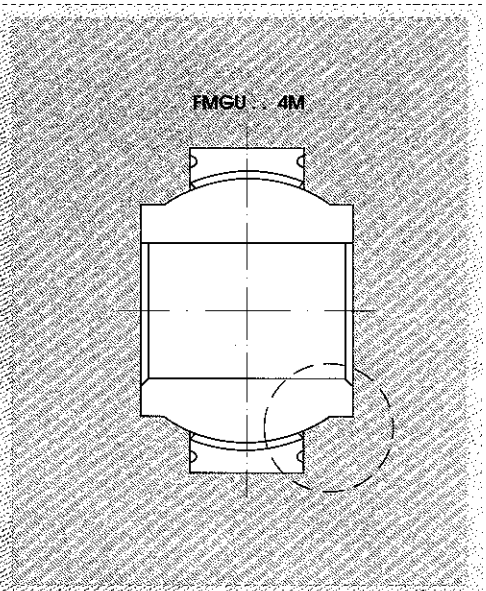
FRASLIP lined.

Series: **FMGU...-4**
Material
Outer ring: EN 2539 (1.4548.3)
Inner ring: EN 2030 (1.3544.9)
Liner: FRASLIP

Series: **FMGU...-4M**
with mounting grooves
Material
Outer ring: EN 2539 (1.4548.3)
Inner ring: EN 2030 (1.3544.9)
Liner: FRASLIP

Series: **ABS 0685...B(60-3517...B)**
with mounting grooves
Material
Outer ring: EN 2539 (1.4548.3)
Inner ring: EN 2030 (1.3544.9)
Liner: FRASLIP





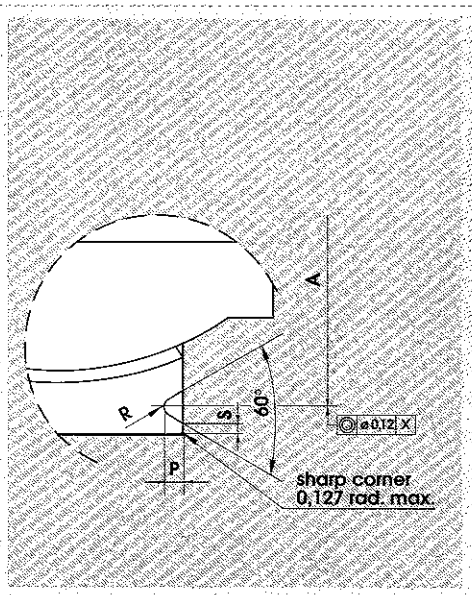
Bearing Number		d	Δdmp µm	D	ΔDmp µm	B	ΔBmp µm	C	ΔCmp µm	E min.	r	r_1 x 45°	Δr1mp µm	A	ΔAmp µm
FMGU 4.4 A	FMGU 4.4 MA	6,350		16,667		15,06		6,48		9,22		0,25		15,04	
FMGU 4.4	FMGU 4.4 M	6,350		18,796		15,06		6,48		9,71		0,30		17,14	
FMGU 5.4	FMGU 5.4 M	7,937		17,462		15,88		6,48		10,45		0,56		16,21	
FMGU 6.4 A	FMGU 6.4 MA	9,525		23,012		20,65		8,76		12,85		0,56		21,21	
FMGU 6.4	FMGU 6.4 M	9,525	0	23,012	0	20,65	0	7,87	±127	12,85	0,10 to 0,40	0,56	+250	21,08	±127
FMGU 8.4	FMGU 8.4 M	12,700	-12	25,400	-12	17,78	-51	9,91		15,10		0,25		22,22	
FMGU 10.4	FMGU 10.4 M	15,875		34,925		30,48		14,40		21,55		0,56		32,33	
FMGU 10.4 A	FMGU 10.4 MA	15,875		44,450		38,10		16,26		21,61		0,51		41,28	
FMGU 12.4	FMGU 12.4 M	19,050		39,688		32,51		15,75		23,80		0,86		36,53	
FMGU 16.4	FMGU 16.4 M	25,400		53,975		47,62		21,21		32,05		0,86		50,80	

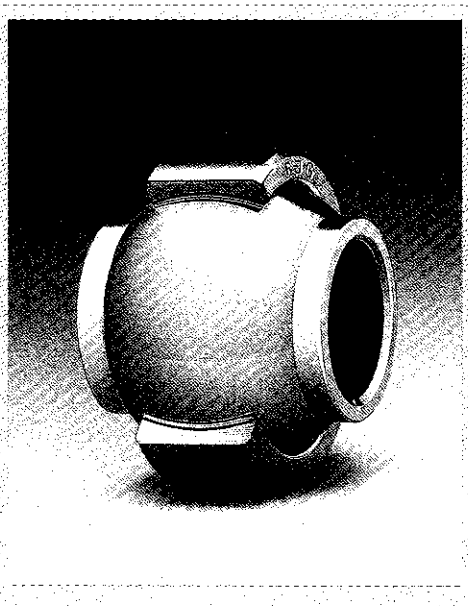
Procurement Specification MIL-B-81 820

Designation

Each bearing is designated as in the following example:

Bearing number — **FMGU 5 · 4 M P**
P = absence of letter indicates no plating, letter P indicates cadmium plating
M = with mounting grooves





Dimensions in millimetres

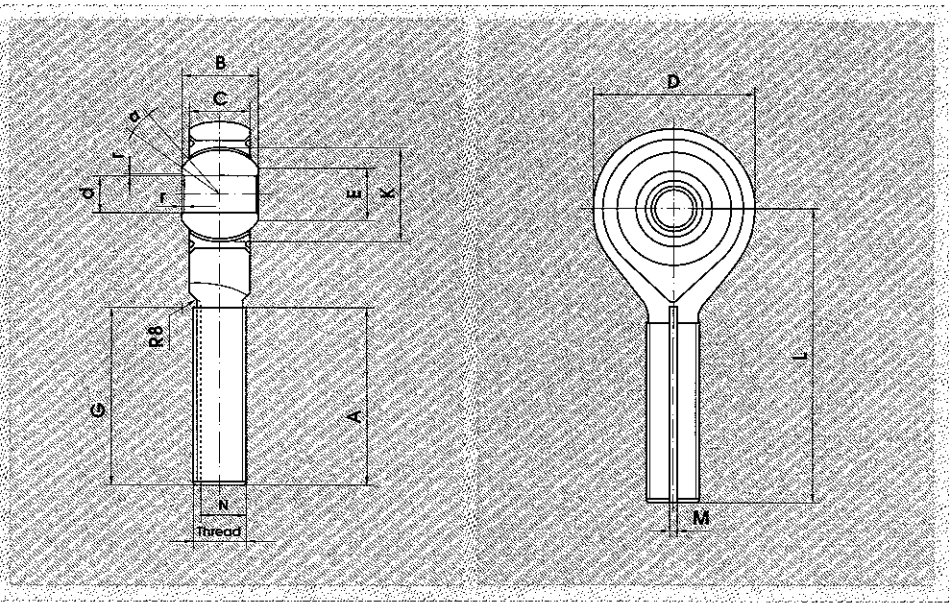
P		R		S	α	Static Limit Load Rating in kN		Oscillating Radial Load Rating inkN	No Load Rotational Starting Torque in Nm	Mass g	Bearing Number	
	ΔPmp µm		ΔRmp µm	min.		Radial	Axial					
				038	12°	23,6	1,96	17,0		14	FMGU 4.4 A	FMGU 4.4 MA
0,38		0,12		0,38	24°	29,0	2,45	19,3		18	FMGU 4.4	FMGU 4.4 M
				0,26	20°	29,0	2,45	19,3		14	FMGU 5.4	FMGU 5.4 M
				0,31	22°	56,0	6,00	33,5		27	FMGU 6.4 A	FMGU 6.4 MA
	+250		+250	0,38	25°	50,0	5,60	30,0	0,11 to 0,56	27	FMGU 6.4	FMGU 6.4 M
0,63	0		0	0,63	10°	73,5	9,30	43,0		50	FMGU 8.4	FMGU 8.4 M
		0,25		0,63	20°	173,0	33,50	85,0		113	FMGU 10.4	FMGU 10.4 M
				0,63	30°	236,0	54,00	108,0		254	FMGU 10.4 A	FMGU 10.4 MA
				0,63	20°	208,0	44,00	98,0		191	FMGU 12.4	FMGU 12.4 M
1,14				0,63	21°	380,0	112,00	160,0	0,23 to 0,68	358	FMGU 16.4	FMGU 16.4 M

ROD ENDS

FRASLIP lined, male type.

Series: **FMW 3 E..-4**
Material
Rod end: EN 2539 (1.4548.4)
Outer ring: EN 2539 (1.4548.3)
Inner ring: EN 2030 (1.3544.9)
Liner: FRASLIP

Series: **NSA 8143...**
Material
Rod end: EN 2539 (1.4548.4)
Outer ring: EN 2539 (1.4548.3)
Inner ring: EN 2030 (1.3544.9)
Liner: FRASLIP



Bearing Number	d	ΔdmpD µm	D	ΔDmp µm	B	ΔBmp µm	C	ΔCmp µm	E min.	K	L	ΔLmp µm	A	ΔAmp µm	Threads UNJF-3A MIL-S-8879	r
FMW 3 E 3·4	4,826		20,472		11,100		8,560		7,660	13,487	39,675		25,400		.3125-24	
FMW 3 E 4·4	6,350		20,472		11,100		8,560		7,660	13,487	39,675		25,400		.3125-24	
FMW 3 E 5·4	7,937		22,860		11,100		8,306		10,181	15,062	47,625		26,975		.3125-24	
FMW 3 E 6·4	9,525		26,035		12,700		10,566		11,967	17,450	49,225		31,750		.3750-24	
FMW 3 E 7·4	11,112	0	29,210	±250	14,275	0	11,481	±127	13,774	19,837	53,975	±254	34,925	±1520	.4375-20	0,1
FMW 3 E 8·4	12,700	-13	33,960		15,875	-127	13,081		15,554	22,225	61,925		38,100	-760	.5000-20	to
FMW 3 E 10·4	15,875		38,735		19,050		14,656		19,098	26,975	66,675		41,275		.6250-18	0,4
FMW 3 E 12·4	19,050		45,085		22,225		16,256		22,674	31,750	73,025		44,450		.7500-16	
FMW 3 E 14·4	22,225		51,435		22,225		19,431		26,941	34,925	85,725		47,625		.8750-14	
FMW 3 E 16·4	25,400		70,485		34,925		25,781		32,378	47,625	104,775		53,975		1.2500-12	

(1) When specified, Keyway shall be according to NAS 559 except length as tabulated

K = Keyway in shank

L = Lefthand thread

X = Reduced no load rotational starting torque

Low wear -54°C to +121°C

Procurement Specification MIL-B-8948

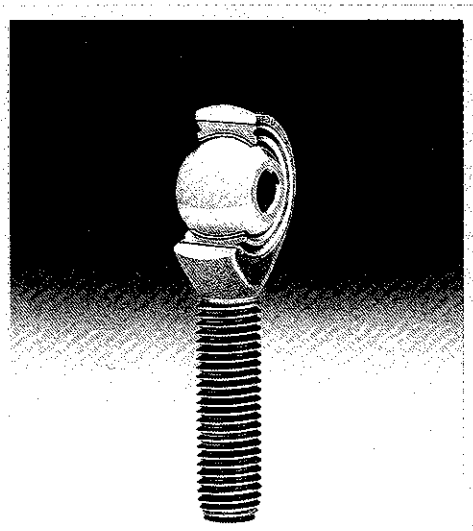
Designation

Each bearing is designated as in the following example:

FMW 3 E 5·4 L K X

Series designation
Dash No.
Material-Code

Reduced no load rotational starting torque
Keyway in shank
Lefthand thread



Dimensions in millimetres

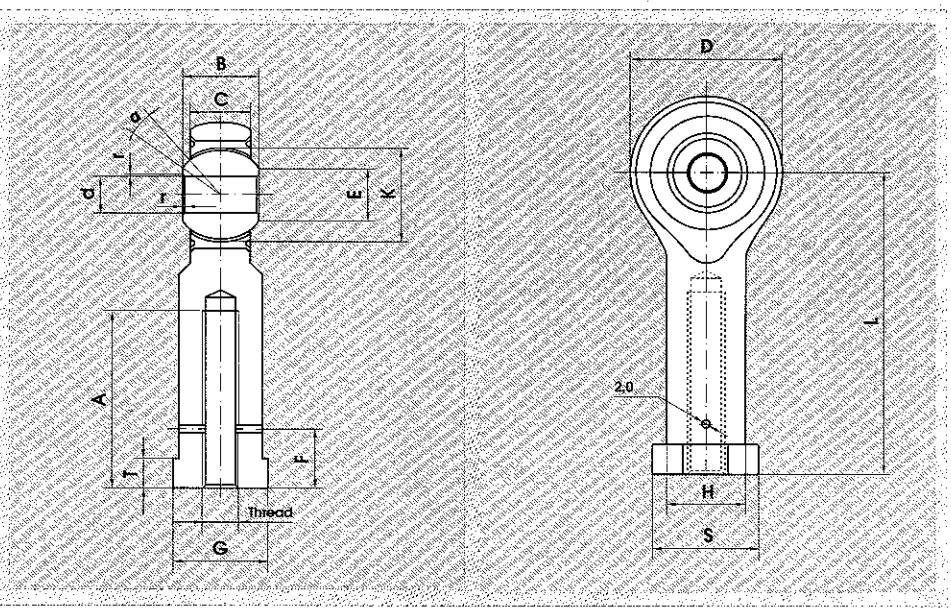
G (1)	ΔGmp µm	M	ΔMmp µm	N	ΔNmp µm	α	No Load Rotational Starting Torque in Nm	Suffix X	Ultimate Static Load in kN	Fatigue Load in kN	Axial Proof Load in kN	Mass g	Bearing Number
24,892		1,57		6,60		15°	0,06 to 0,68	0,03 to 0,06	10,5	6,5	4,4	27	FMW 3 E 3·4
24,892		1,57		6,60		15°			21,6	10,6	4,4	27	FMW 3 E 4·4
32,258		1,57		6,60		14°			31,9	12,3	4,9	31	FMW 3 E 5·4
31,369		2,36		7,90		8°			38,0	15,9	7,4	50	FMW 3 E 6·4
35,610	0	2,36	+127	9,40	0	10°	0,11 to 1,13		53,4	21,4	8,2	68	FMW 3 E 7·4
40,208	-508	2,36	0	11,07	-127	9°		0,06 to 1,12	86,7	34,2	9,1	113	FMW 3 E 8·4
42,748		3,18		13,74		12°			97,4	40,8	10,8	167	FMW 3 E 10·4
45,923		3,18		16,84		13°			130,3	51,6	12,5	263	FMW 3 E 12·4
53,873		3,96		19,74		6°	0,23 to 1,80	0,11 to 0,22	153,5	58,3	14,8	358	FMW 3 E 14·4
62,585		4,75		28,86		12°			357,2	135,2	19,3	1043	FMW 3 E 16·4

ROD ENDS

FRASLIP lined, female type.

Series:	**FMW 3 F...·4**
Material	
Rod end:	EN 2539 (1.4548.4)
Outer ring:	EN 2539 (1.4548.3)
Inner ring:	EN 2030 (1.3544.9)
Liner:	FRASLIP

Series:	**NSA 8149...**
Material	
Rod end:	EN 2539 (1.4548.4)
Outer ring:	EN 2539 (1.4548.3)
Inner ring:	EN 2030 (1.3544.9)
Liner:	FRASLIP



Bearing Number	d	Δdmp µm	D	ΔDmp µm	B	ΔBmp µm	C	ΔCmp µm	E min.	K	L	ΔLmp µm	A (1) min.	Threads UNJF-3B MIL-S-8879	r
FMW 3 F 3·4	4,826		20,472		11,100		8,560		7,660	13,487	34,925		19,050	.3125-24	
FMW 3 F 4·4	6,350		20,472		11,100		8,560		7,660	13,487	37,312		19,050	.3125-24	
FMW 3 F 5·4	7,937		22,860		11,100		8,306		10,181	15,062	34,925		19,050	.3125-24	
FMW 3 F 6·4	9,525		26,035		12,700		10,566		11,967	17,450	41,275		23,799	.3750-24	
FMW 3 F 7·4	11,112	0	29,210	±254	14,275	0	11,481	±127	13,774	19,837	46,024	±254	26,975	.4375-20	0,1
FMW 3 F 8·4	12,700	-13	33,960		15,875	-51	13,081		15,554	22,225	53,975		28,575	.5000-20	to
FMW 3 F 10·4	15,875		38,735		19,050		14,656		19,098	26,975	66,675		38,100	.6250-18	0,4
FMW 3 F 12·4	19,050		45,085		22,225		16,256		22,674	31,750	73,025		41,148	.7500-16	
FMW 3 F 14·4	22,225		51,435		22,225		19,431		26,941	34,925	85,725		47,625	.8750-14	
FMW 3 F 16·4	25,400		70,485		34,925		25,781		32,378	47,625	104,775		53,975	1.0000-12	

(1) Completed thread

(2) Measured across corners or diameter

(3) Measured across flats

L = Lefthand thread

X = Reduced no load rotational starting torque

Low wear -54°C to +121°C

Procurement Specification MIL-B-8948

Designation

Each bearing is designated as in the following example:

FMW 3 F 5 · 4 L X

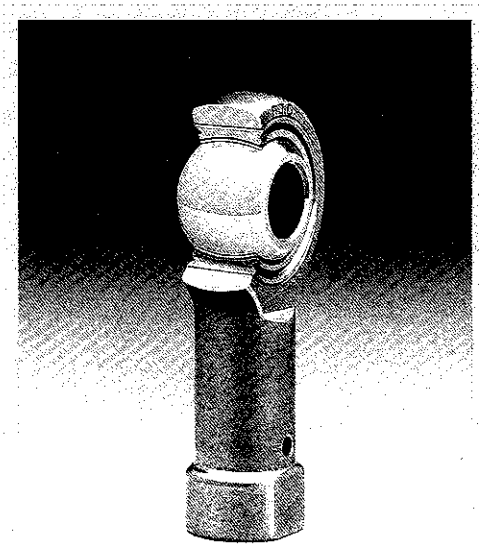
Series designation — FMW 3 F

Dash No. — 5 · 4

Material-Code — L

X — Reduced no load rotational starting torque

L — Lefthand thread



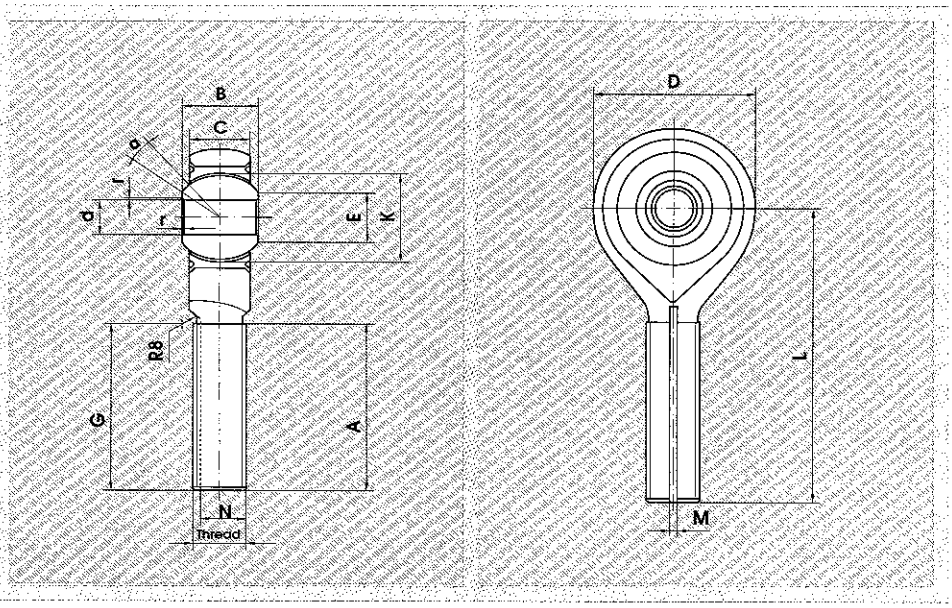
Dimensions in millimetres

H	ΔHmp µm	S (2)	T	ΔTmp µm	G (3)	ΔGmp µm	F	ΔFmp µm	α	No Load Rotational Starting Torque in Nm	Suffix X	Ultimate Static Load in kN	Fatigue Load in kN	Axial Proof Load in kN	Mass g	Bearing Number
10,719		12,70			11,100		9,652		15°	0,06 to		10,5	6,5	4,4	27	FMW 3 E 3·4
10,719		12,70			11,100		9,652		15°	0,68	0,03 to	21,6	10,6	4,4	27	FMW 3 E 4·4
10,719		12,70			11,100		9,652		14°		0,06	31,9	13,4	4,9	31	FMW 3 E 5·4
14,402		15,875			14,783		11,176		8°			38,0	15,9	7,4	49	FMW 3 E 6·4
15,494	0	17,449	6,350	+254	15,875	±254	12,700	±381	10°	0,11 to		53,4	21,4	8,2	81	FMW 3 E 7·4
18,669	±381	20,624		-1575	19,050		14,224		9°	1,13	0,06 to	86,7	34,2	9,1	127	FMW 3 E 8·4
21,844		25,400			22,225		17,526		12°		0,12	97,4	40,8	10,8	190	FMW 3 E 10·4
25,019		26,924			25,400		20,828		13°			130,3	51,6	12,5	231	FMW 3 E 12·4
28,194		30,150			28,575		23,876		6°	0,23 to	0,11 to	153,5	58,3	14,8	426	FMW 3 E 14·4
31,369		33,325			31,750		27,178		12°	1,80	0,22	357,2	135,2	19,3	612	FMW 3 E 16·4

ROD ENDS

FRASLIP lined, male type, according to MIL-B-81 935 / M 81 935/1.

Series: **REM...**
Material
Rod end: MIL-S-5000
Cadmium plated
yellow passivated
Outer ring: EN 2539 (1.4548.3)
Inner ring: EN 2030 (1.3544.9)
Liner: FRASLIP



Bearing Number	d		D		B		C		E	K	L		A		Threads UNJF-3A	r
		Δdmp µm		ΔDmp µm		ΔBmp µm		ΔCmp µm	min.			ΔLmp µm		ΔAmp µm	MIL-B-8879	
REM 6 W 10 M	4,826		20,472		11,100		8,560		7,660	13,487	39,675		24,587		.3125-24	
REM 8 W 10 M	6,350		20,472		11,100		8,560		7,660	13,487	39,675		24,587		.3125-24	
REM 10 W 10 M	7,937		22,860		11,100		8,306		10,181	15,062	47,625		30,149		.3125-24	
REM 12 W 12 M	9,525		26,035		12,700		10,566		11,967	17,450	49,225		30,149		.3750-24	
REM 14 W 14 M	11,112	0	29,210	±254	14,275	0	11,481	±127	13,774	19,837	53,975	±254	32,537	±787	.4375-20	0,1
REM 16 W 16 M	12,700	-13	33,960		15,875	-51	13,081		15,554	22,225	61,925		37,287		.5000-20	to
REM 20 W 20 M	15,875		38,735		19,050		14,656		19,098	26,975	66,675		39,675		.6250-18	0,4
REM 24 W 24 M	19,050		45,085		22,225		16,256		22,674	31,750	73,025		42,849		.7500-16	
REM 28 W 28 M	22,225		51,435		22,225		19,431		26,941	34,925	85,725		50,800		.8750-14	
REM 32 W 40 M	25,400		70,485		34,925		25,781		32,378	47,625	104,775		59,512		1.2500-12	

(1) Keyway, when specified, is compatible with locking devices, MIL-B-81 935/3 for Bearing-Number REMS 6 W 10 M to REMS 16 W 16 M, and NAS 513 for REMS 20 W 20 M to REMS 32 W 40 M. Keyway tolerances not specified shall be in accordance with MIL-B-81 935/3 or NAS 513 as applicable.

S = Keyway in shank

L = Lefthand thread

Low wear -54°C to +163°C

Procurement Specification MIL-B-81 935

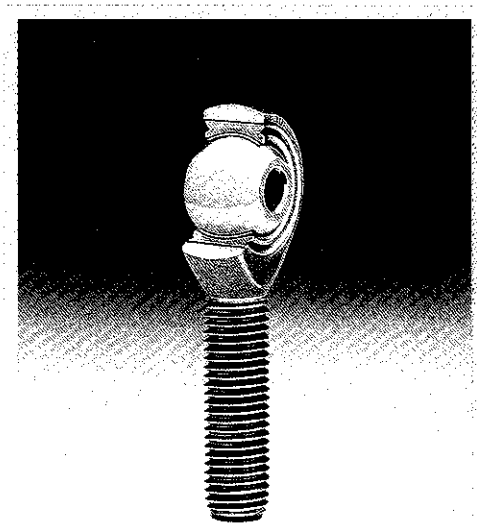
Designation

Each bearing is designated as in the following example:

REM S L 8 W 10 M

Series designation — Bearing designation

Keyway in shank — Lefthand thread



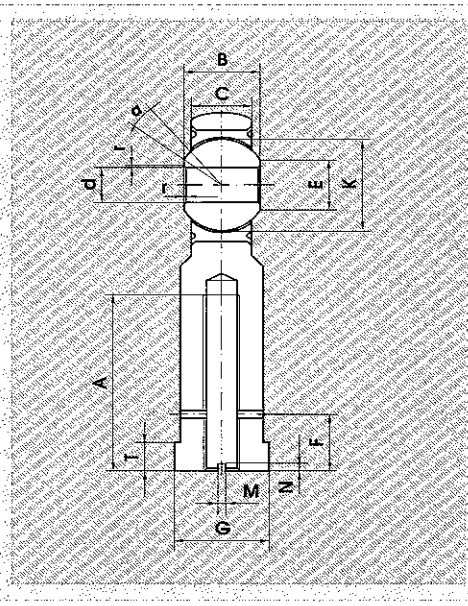
Dimensions in millimetres

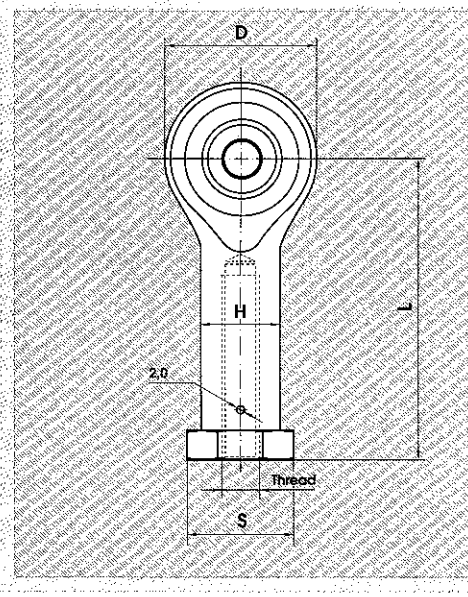
G	ΔGmp µm	M (1)	ΔMmp µm	N (1)	ΔNmp µm	α	No Load Rotational Starting Torque in Nm	Ultimate Static Load in kN	Fatigue Load in kN	Axial Proof Load in kN	Mass g	Bearing Number
24,892		1,57		6,81		15°	0,06 to 0,68	10,5	6,5	4,4	33	REM 6 W 10 M
24,892		1,57		6,81		15°		21,6	10,6	4,4	33	REM 8 W 10 M
32,258		1,57		6,81		14°		31,9	12,3	4,9	39	REM 10 W 10 M
31,369		2,36		8,10		8°		38,0	15,9	7,4	62	REM 12 W 12 M
35,610	0	2,36	+127	9,73	0	10°	0,11 to 1,70	53,4	21,4	8,2	83	REM 14 W 14 M
40,360	-508	2,36	0	11,30	-127	9°		86,7	34,2	9,1	126	REM 16 W 16 M
42,748		3,18		13,74		12°		97,4	40,8	10,8	192	REM 20 W 20 M
45,923		3,18		16,84		13°		130,3	51,6	12,5	290	REM 24 W 24 M
53,873		3,96		19,74		6°	0,11 to 2,71	153,5	58,3	14,8	437	REM 28 W 28 M
62,585		4,75		28,86		12°		357,2	135,2	19,3	1155	REM 32 W 40 M

ROD ENDS

FRASLIP lined, female type, according to MIL-B-81 935 / M 81 935/2.

Series: **REF...**
Material
Rod end: MIL-S-5000 Cadmium plated yellow passivated
Outer ring: EN 2539 (1.4548.3)
Inner ring: EN 2030 (1.3544.9)
Liner: FRASLIP





Bearing Number	d	Δdmp µm	D	ΔDmp µm	B	ΔBmp µm	C	ΔCmp µm	E min.	K	L	ΔLmp µm	A (1)	Threads UNJF-3B MIL-B-8879	r	H	ΔHmp µm
REF 6 W 10 M	4,826		20,472		11,100		8,560		7,660	13,487	34,925		19,050	.3125-24		10,718	
REF 8 W 10 M	6,350		20,472		11,100		8,560		7,660	13,487	37,312		19,050	.3125-24		10,718	
REF 10 W 12 M	7,937		22,860		11,100		8,306		10,181	15,062	41,275		22,225	.3750-24	0,1	12,319	
REF 12 W 12 M	9,525	0 -13	26,035	±254	12,700	0 -51	10,566	±127	11,967	17,450	46,024	±254	25,400	.3750-24	to	13,893	±254
REF 14 W 14 M	11,112		29,210		14,275		11,481		13,774	19,837	50,800		28,575	.4375-20	0,4	15,494	
REF 16 W 16 M	12,700		33,960		15,875		13,081		15,554	22,225	57,150		31,750	.5000-20		18,669	
REF 20 W 20 M	15,875		38,735		19,050		14,656		19,098	26,975	63,500		34,925	.6250-18		21,844	

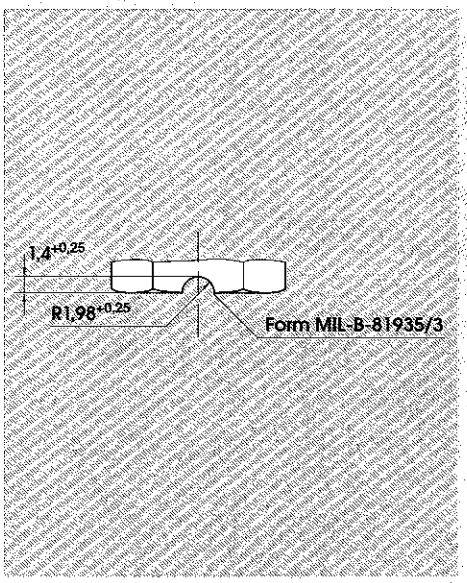
(1) Completed thread
(2) Measured across corners or diameter
(3) Measured across flats
L = Lefthand thread
2 = Keyslot in end of shank
Low wear -54°C to +163°C
Procurement Specification MIL-B-81 935

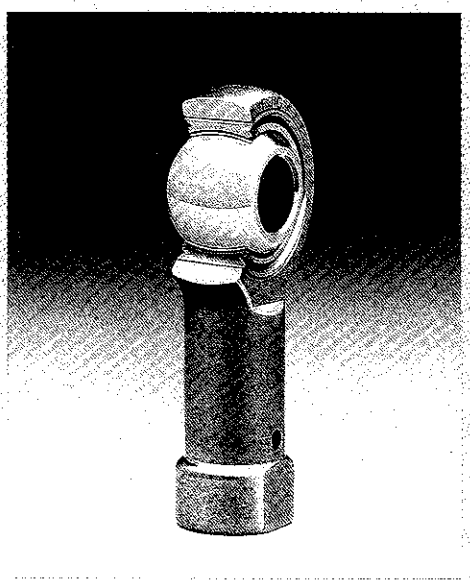
Designation

Each bearing is designated as in the following example:

REF L 8 W 10 2 M

Series designation — REF
Lefthand thread — L
Bearing designation — 8 W 10
Keyslot in end of shank — 2 M



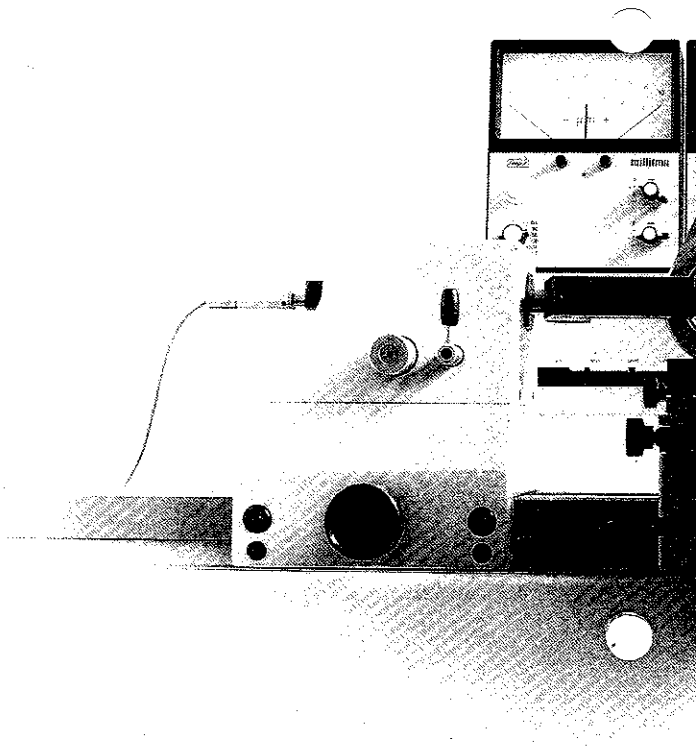


Keyslot - Form MIL-B-81 935/3, 2 slots Type REF 6W102M to REF 12W122M
4 slots Type REF 14W142M to REF 16W162M
Form NAS 513, 4 slots Type REF 20W202M

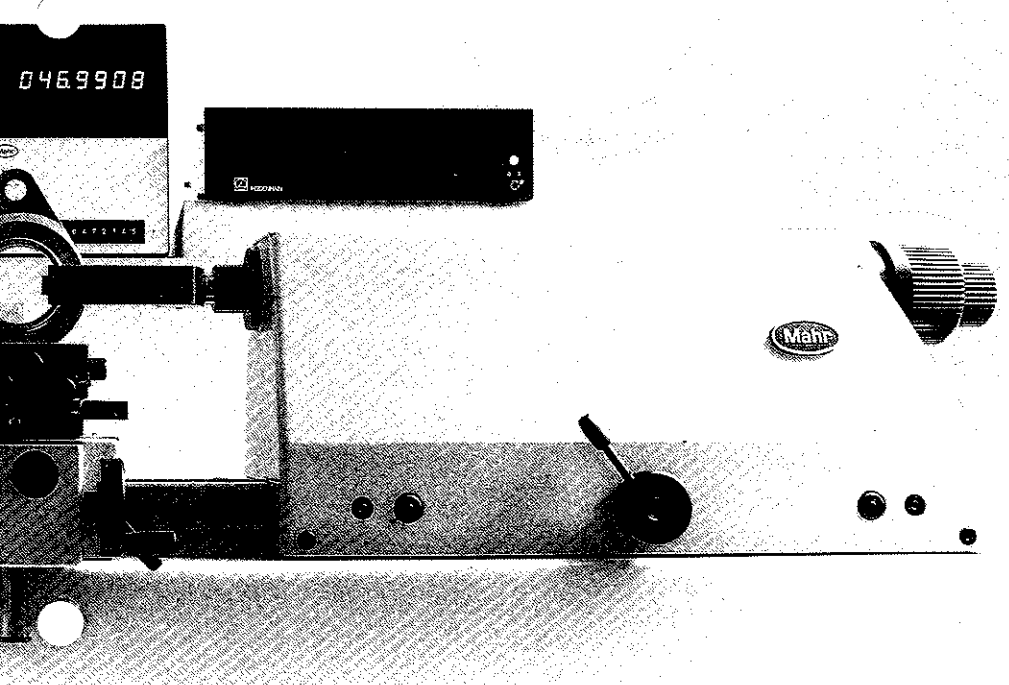
Dimensions in millimetres

S (2)	T	ΔTmp µm	G (3)	ΔGmp µm	F ±254 µm	M	ΔMmp µm	N	ΔNmp µm	α	No Load Rotational Starting Torque in Nm	Ultimate Static Load in kN	Fatigue Load in kN	Axial Proof Load in kN	Mass g	Bearing Number
12,70	4,775	+254 -1575	11,100	+51 -254	9,52	-	+127 0	-	+127 0	15°	0,06 to 0,68	10,5	6,5	4,4	36	REF 6W10M
12,70			11,100		9,52					15°		21,6	10,6	4,4	38	REF 8W10M
14,73	6,350		12,700		11,10					14°		31,9	13,4	4,9	46	REF 10W12M
16,76			14,275		11,10					8°		38,0	15,9	7,4	73	REF 12W12M
18,29			15,875		12,70					10°	0,11 to 1,70	53,4	21,4	8,2	96	REF 14W14M
22,35			19,050		14,27					9°		86,7	36,7	9,1	147	REF 16W16M
25,91	9,525		22,225		17,47	3,175		1,95		12°		97,4	40,8	10,8	218	REF 20W20M

QUALITY CANNOT BE COMPROMIS

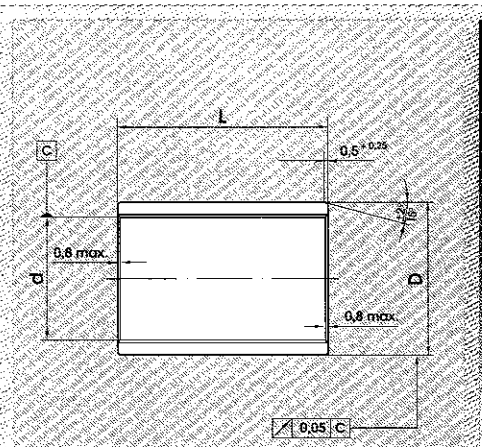


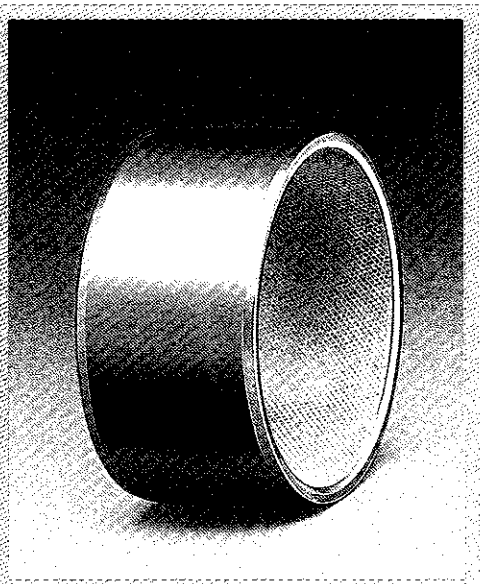
JOURNAL BEARINGS



FRASLIP lined, according to Specification EN 2311.

Series: **EN 2285**
Material: EN 2086, EN 2701 or EN 2704 anodised
Liner: FRASLIP





Dimensions in millimetres

Dash No.	d	Δdmp µm	D	ΔDmp µm	Lenght L -0,1 -0,4															
					6	8	10	12	15	16	18	20	22	25	28	30	32	35	40	45	50
					Mass in kg/ 1000 pieces																
06	6,0	+22 +4	10,0	+24 +15	0,9 *																
08	8,0	+27	12,0	+29	1,1	1,4 *															
10	10,0	+5	14,0	+18	1,3	1,7	2,1 *														
12	12,0		16,0		1,5	2,0 *	2,5	3,0 *													
15	15,0	+33	19,0			2,4	3,0 *	3,6	4,6 *												
16	16,0	+6	20,0			2,6	3,2	3,8	4,8	5,1											
18	18,0		22,0	+35			3,6	4,3	5,5		6,6										
20	20,0		25,0	+22			5,0	6,0 *	7,5			10,0 *									
22	22,0	+40	26,0					5,1	6,4 *			8,5	9,4 *								
25	25,0	+7	30,0					7,4	9,2 *			12,5	13,5	15,3 *							
28	28,0		34,0						12,4			16,6	18,2	20,7	23,2						
30	30,0		36,0						13,3			17,7 *	19,5	22,1		26,5 *					
32	32,0		38,0	+42 +26					14,0			18,7	20,5	23,5		28,0	29,9				
35	35,0	+48	42,0									24,0 *	26,5	30,1		36,0		42,2 *			
40	40,0	+9	48,0									31,0		39,0		46,9 *		54,9	62,8 *		
45	45,0		52,0	+51										38,0		45,6		53,1 *	60,7	68,2 *	
50	50,0		58,0	+32										48,7		58,2		67,7	77,3 *	86,8	96,4 *

Only bushes whose masses lie within the bold ars standard.
The recommended sizes are indicated by * .

d mm	L mm	Permissible radial load Static Cs^1 in kN	Dynamic $C_{25}{}^2$ in kN
6	6	4,9	4,1
8	6	6,6	5,5
	8	9,9	8,3
10	6	8,2	6,8
	8	12,4	10,3
	10	16,5	13,8
12	6	9,9	8,3
	8	14,8	12,3
	10	19,8	16,5
	12	24,7	20,6
15	8	18,5	15,4
	10	24,7	20,6
	12	30,9	25,8
	15	40,2	33,5
16	8	19,8	16,5
	10	26,4	22,0
	12	33,0	27,5
	15	42,5	35,7
	16	45,1	38,4
18	10	29,7	24,8
	12	37,1	30,9
	15	48,2	40,2
	18	59,3	49,4
20	10	33,0	27,5
	12	41,2	34,3
	15	53,6	44,7
	20	74,2	61,8
22	12	45,3	37,7
	15	58,9	49,1
	20	81,6	68,0
	22	90,6	75,5
25	12	51,5	42,9
	15	67,0	55,8
	20	92,7	77,3
	22	103,0	85,8
	25	118,5	98,8
28	15	75,0	62,5
	20	103,8	86,5
	22	115,4	96,2
	25	132,7	110,6
	28	150,0	125,0
30	15	80,3	66,9
	20	111,2	92,7
	22	123,6	103,0
	25	142,1	118,4
	30	173,0	144,2
32	15	85,7	71,4
	20	118,7	98,9
	22	131,8	109,8
	25	151,6	126,3
	30	184,6	153,8
	32	197,8	164,8
35	20	129,8	108,2
	22	144,2	120,2
	25	165,8	138,2
	30	201,9	168,3
	35	237,9	198,3
40	20	148,3	123,6
	25	189,5	157,9
	30	230,7	192,3
	35	271,9	226,6
	40	313,1	260,9
45	25	213,2	177,7
	30	259,6	216,3
	35	305,9	254,9
	40	352,3	293,6
	45	398,5	332,1
50	25	236,9	197,4
	30	288,4	240,3
	35	339,9	283,3
	40	391,4	326,2
	45	442,9	369,1
	50	494,4	412,0

[1] Cs = 0,206 d (I-2) (kN) - Based on a unit pressure of 206 MPa. $C_{25} = \frac{Cs}{1,2}$ (kN)

[2] Definitions of all loads are given in EN 2311.

Designation

Each Journal bearing is designated as in the following example:

EN 2285 - 12 08 A

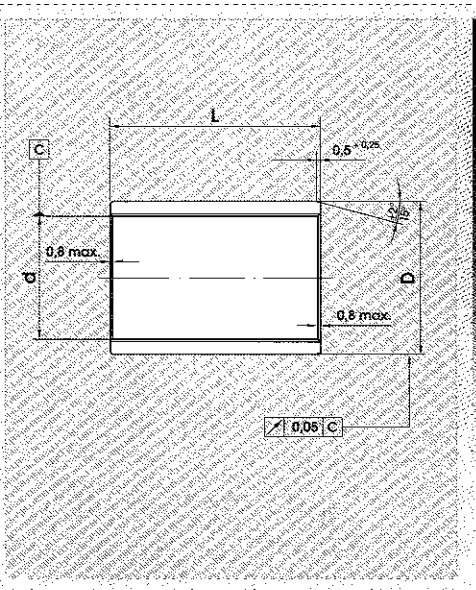
- EN 2285 - 12: Number of EN Standard, Dash No.
- 08: Length
- A = bonded liner technology

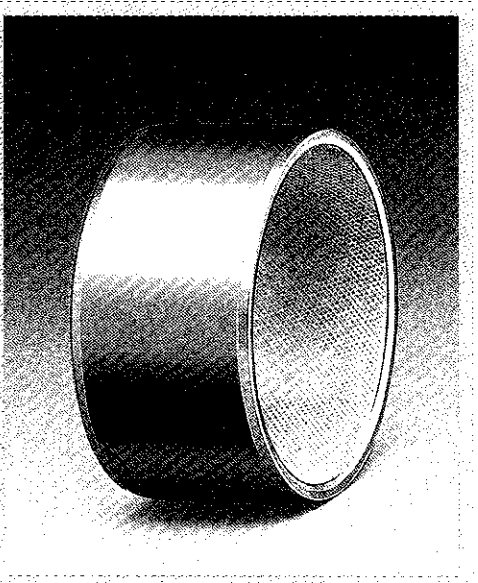
Procurement Specification EN 2311

JOURNAL BEARINGS

FRASLIP lined, according to Specification EN 2311.

Series: **EN 2287**
Material EN 2136 (1.4044.6) or EN 2539 (1.4548.3)
Liner: FRASLIP





Dimensions in millimetres

Dash No.	d	Δdmp µm	D	ΔDmp µm	Lenght L -0,1 -0,4																
					6	8	10	12	15	16	18	20	22	25	28	30	32	35	40	45	50
					Mass in kg/ 1000 pieces																
06	6,0	+22 +4	10,0	+24 +15	2,4 *																
08	8,0	+27	12,0		3,0	4,0 *															
10	10,0	+5	14,0	+29	3,5	4,7	5,9 *														
12	12,0		16,0	+18	4,1	5,5 *	6,9	8,3 *													
15	15,0	+33	19,0			6,7	8,4 *	10,1	12,6 *												
16	16,0	+6	20,0			7,1	8,9	10,7	13,4	14,3											
18	18,0		22,0	+35			9,9	11,8	14,8		17,8										
20	20,0		25,0	+22			13,9	16,7 *	20,9			27,8 *									
22	22,0		26,0					14,2	17,8 *			23,7	26,1*								
25	25,0	+40 +7	30,0					20,4	25,5 *			34,0	37,4	42,5 *							
28	28,0		34,0						34,5			46,0 *	50,6	57,5	64,4						
30	30,0		36,0						36,7			49,0	53,8	61,2		73,4*					
32	32,0		38,0	+42 +26					39,0			51,9	57,1	64,9		77,9	83,1				
35	35,0		42,0									66,6 *	73,5	83,6		100,3		117,0*			
40	40,0	+48 +9	48,0									87,0		103,8		130,3*		152,2	174,0*		
45	45,0		52,0	+51										105,0		126,0		147,0*	168,0	189,0*	
50	50,0		58,0	+32										133,5		160,2		186,9	214,0*	240,3	267,0*

Only bushes whose masses lie within the bold ars standard.
The recommended sizes are indicated by * .

d mm	L mm	Permissible radial load Static Cs^1 in kN	Dynamic $C_{25}{}^2$ in kN
6	6	10,3	4,1
8	6	13,8	5,5
	8	20,6	8,3
10	6	17,2	6,8
	8	25,8	10,3
	10	34,4	13,8
12	6	20,6	8,3
	8	31,0	12,3
	10	41,3	16,5
	12	51,6	20,6
15	8	38,7	15,4
	10	51,6	20,6
	12	64,5	25,8
	15	83,9	33,5
16	8	41,3	16,5
	10	55,0	22,0
	12	68,8	27,5
	15	89,4	35,7
	16	96,3	38,4
18	10	61,9	24,8
	12	77,4	30,9
	15	100,6	40,2
	18	123,8	49,4
20	10	68,8	27,5
	12	86,0	34,3
	15	11,8	44,7
	20	154,8	61,8
22	12	94,6	37,7
	15	123,0	49,1
	20	170,3	68,0
	22	189,2	75,5
25	12	107,5	42,9
	15	139,8	55,8
	20	193,5	77,3
	22	215,0	85,8
	25	247,3	98,8
28	15	156,5	62,5
	20	216,7	86,5
	22	240,8	96,2
	25	276,9	110,6
	28	313,0	125,0
30	15	167,7	66,9
	20	232,2	92,7
	22	258,0	103,0
	25	296,7	118,4
	30	361,2	144,2
32	15	178,9	71,4
	20	247,7	98,9
	22	275,2	109,8
	25	315,48	126,3
	30	385,3	153,8
	32	412,8	164,8
35	20	270,9	108,2
	22	301,0	120,2
	25	346,0	138,2
	30	421,4	168,3
	35	496,7	198,3
40	20	309,6	123,6
	25	395,6	157,9
	30	481,6	192,3
	35	567,6	226,6
	40	653,6	260,9
45	25	445,1	177,7
	30	541,8	216,3
	35	637,6	254,9
	40	735,3	293,6
	45	832,1	332,1
50	25	494,5	197,4
	30	602,0	240,3
	35	709,5	283,3
	40	817,0	326,2
	45	924,5	369,1
	50	1032,0	412,0

[1] Cs = 0,43 d (L-2) (kN) - Based on a unit pressure of 430 MPa. $C_{25} = \frac{Cs}{2,5}$ (kN)

[2] Definitions of all loads are given in EN 2311.

Designation

Each Journal bearing is designated as in the following example:

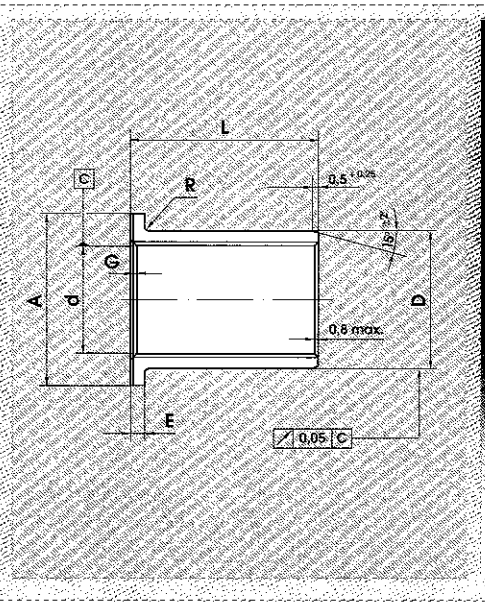
EN 2287 - 12 08 A

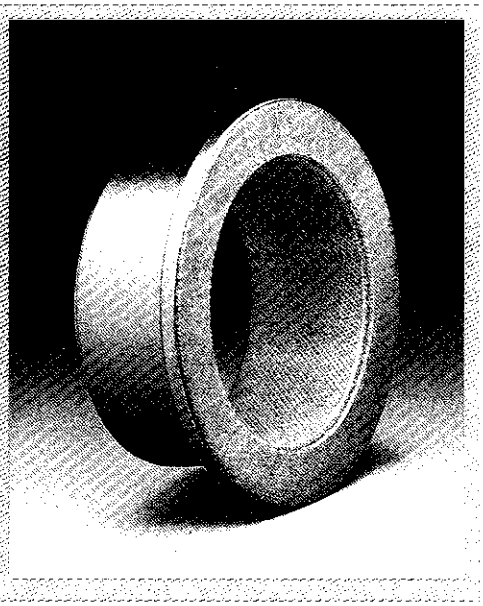
- EN 2287 - Number of EN Standard
- 12 - Dash No.
- 08 - Length
- A = bonded liner technology

Procurement Specification EN 2311

FRASLIP lined, flanged type, according to Specification EN 2311.

Series: **EN 2286**
Material: EN 2086, EN 2701 or EN 2704 anodised
Liner: FRASLIP





Dimensions in millimetres

Dash No.	d	Δdmp µm	D	ΔDmp µm	A 0 -250 µm	E 0 -150 µm	G	R	Lenght -0,1 -0,4														
									6	8	10	12	15	16	18	20	22	25	28	30	32	35	40	45	50
									Mass in kg/ 1000 pieces														
06	6,0	+22 +4	10,0	+24 +15	12,0			0,1	1,0*																
08	8,0	+27	12,0		14,0			to	1,3	1,6*															
10	10,0	+5	14,0	+29 +18	16,0		0,65	0,4	1,5	1,9	2,3*														
12	12,0		16,0		22,0		to		2,3	2,7*	3,2	3,7*													
15	15,0	+33	19,0		25,0	1,5	0,90			3,3	3,8*	4,5	5,0*												
16	16,0	+6	20,0		26,0					3,4	4,1	4,7	5,7	6,0											
18	18,0		22,0	+35	28,0						4,6	5,3	6,3		7,4										
20	20,0		25,0	+22	30,0						5,9	6,9*	8,4			11,0*									
22	22,0	+40	26,0		32,0							6,3	7,6*			9,7	10,6*								
25	25,0	+7	30,0		35,0			0,5 to 0,8				8,4	10,3*			13,3	14,5	16,4*							
28	28,0		34,0		40,0		0,95						14,9			19,0	20,6	23,1	25,4						
30	30,0		36,0		42,0		to						15,8			20,3	*22,0	24,6		29,1*					
32	32,0		38,0	+42 +26	44,0		1,20						16,7			21,4	23,3	26,1		30,8	32,6				
35	35,0	+48	42,0		47,0	2,5										26,5	*28,9	32,5		38,5		44,5*			
40	40,0	+9	48,0		52,0											33,6		41,4		49,0*		57,1	64,0*		
45	45,0		52,0	+51	57,0													40,8		48,3		56,0*	63,5	71,0*	
50	50,0		58,0	+32	62,0													50,7		60,3		69,9	79,6*	89,2	98,9*

Only bushes whose masses lie within the bold ars standard.
The recommended sizes are indicated by *

d mm	L mm	Permissible radial load Static C_s[1] in kN	Permissible radial load Dynamic C_{25}[2] in kN	Permissible axial static load C_a[3]
6	6	3,6	3,0	6,1
8	6	4,8	4,0	7,4
	8	8,1	6,8	
10	6	6,0	5,0	8,6
	8	10,1	8,4	
	10	14,2	11,9	
12	6	6,2	5,2	33,6
	8	11,1	9,3	
	10	16,1	13,4	
	12	21,0	17,6	
15	8	13,9	11,6	39,4
	10	20,1	16,8	
	12	26,3	21,9	
	15	35,5	29,7	
16	8	14,8	12,4	41,3
	10	21,4	17,9	
	12	28,0	23,4	
	15	37,9	31,6	
	16	41,2	34,3	
18	10	24,1	20,1	45,1
	12	31,5	26,3	
	15	42,6	35,5	
	18	53,8	44,8	
20	10	26,8	22,4	49
	12	35,0	29,2	
	15	47,4	39,6	
	20	68,0	56,8	
22	12	38,5	32,2	52,8
	15	52,1	43,5	
	20	74,8	62,4	
	22	83,8	70,0	
25	12	43,8	28,0	58,6
	15	59,2	49,4	
	20	85,0	71,0	
	22	95,3	79,6	
	25	110,7	92,4	
28	15	60,6	50,6	88,3
	20	89,4	74,6	
	22	100,9	84,3	
	25	118,2	98,5	
	28	135,6	113,0	
30	15	64,9	54,2	93,4
	20	95,8	80,0	
	22	108,2	90,3	
	25	126,7	105,8	
	30	157,6	131,6	
32	15	69,2	57,8	98,6
	20	102,2	85,3	
	22	115,4	96,3	
	25	135,1	112,8	
	30	168,1	140,1	
	32	181,3	151,1	
35	20	111,8	93,3	106,2
	22	126,2	105,4	
	25	147,8	123,4	
	30	183,9	153,5	
	35	219,9	183,6	
40	20	127,7	106,6	119
	25	168,9	141,0	
	30	210,1	175,4	
	35	251,3	209,8	
	40	292,5	244,2	
45	25	190,0	158,7	131,8
	30	236,4	197,4	
	35	282,7	236,1	
	40	329,1	274,8	
	45	375,4	313,5	
50	25	211,2	176,3	144,6
	30	262,7	219,3	
	35	314,2	262,3	
	40	365,7	305,3	
	45	417,2	347,6	
	50	468,7	390,5	

[1] C_s = 0,206 d (L-1,2-R max. -E max.) kN-based on a unit pressure of 206 MPa.

[2] $C_{25} = \frac{C_{25}}{1,2}$ (kN)

[3] $C_a = 0.16\ ((A-1.5)^2 - (d+2.5)^2)$ kN

Designation

Each Journal bearing is designated as in the following example:

EN 2286 - 12 08 A

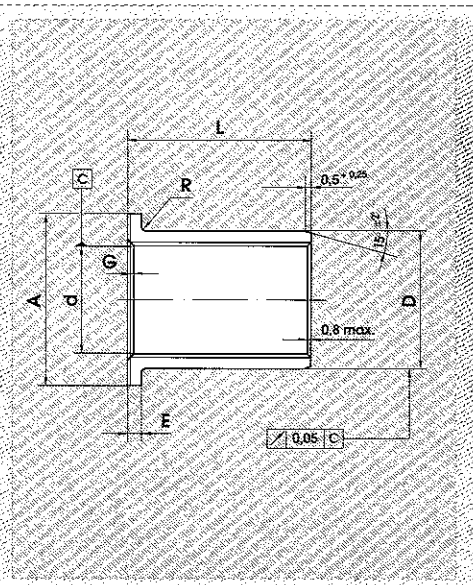
Number of EN Standard
Dash No.
Length
A = bonded liner technology

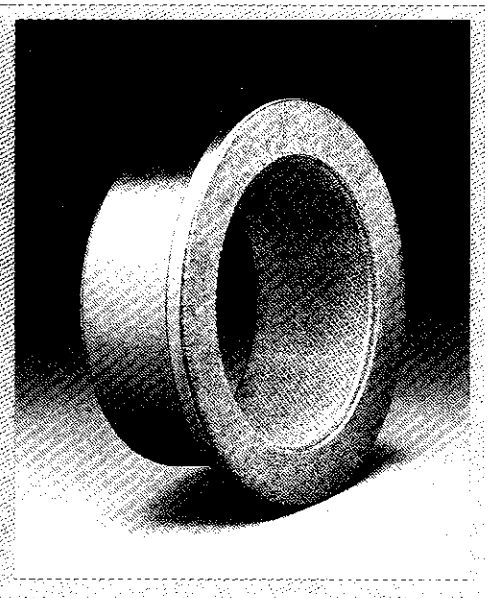
Procurement Specification EN 2311

JOURNAL BEARINGS

FRASLIP lined, flanged type, according to Specification EN 2311.

Series: **EN 2288**
Material EN 2136 (1.4044.6) or EN 2539 (1.4548.3)
Liner: FRASLIP





Dimensions in millimetres

Dash No.	d	Δdmp µm	D	ΔDmp µm	A 0 -250 µm	E 0 -150 µm	G	R	Lenght L -0,1 -0,4																
									6	8	10	12	15	16	18	20	22	25	28	30	32	35	40	45	50
									Mass in kg/ 1000 pieces																
06	6,0	+22 +4	10,0	+24 +15	12,0			0,1	2,8 *																
08	8,0	+27	12,0		14,0			to	3,5	4,4 *															
10	10,0	+5	14,0	+29 +18	16,0		0,65	0,4	4,1	5,3	6,5 *														
12	12,0		16,0		22,0		to		6,3	7,6 *	9,0	10,4*													
15	15,0	+33	19,0		25,0		0,90			9,2	10,8 *	12,5	15,6*												
16	16,0	+6	20,0		26,0	1,5				9,7	11,5	13,2	15,9	16,8											
18	18,0		22,0	+35	28,0						12,7	14,7	17,6		20,8										
20	20,0		25,0	+22	30,0						16,5	19,2 *	23,4			30,4 *									
22	22,0	+40	26,0		32,0			0,5				17,5	21,0*			27,0	29,3*								
25	25,0	+7	30,0		35,0			to				23,4	28,5 *			37,0	40,4	45,5 *							
28	28,0		34,0		40,0		0,95	0,8					41,4			52,8	57,4	64,3	71,2						
30	30,0		36,0		42,0		to						43,9			56,2*	61,1	68,4		80,7*					
32	32,0		38,0	+42 +26	44,0		1,20						46,5			59,5	64,7	72,5		85,5	90,7				
35	35,0	+48	42,0		47,0	2,5										73,5*	80,2	90,2		106,8		123,5*			
40	40,0	+9	48,0		52,0											93,2		115,0		136,0*		158,5	180,0*		
45	45,0		52,0	+51	57,0													113,3		138,3		155,3*	176,3	197,3*	
50	50,0		58,0	+32	62,0													140,9		167,6		194,3	221,0*	247,7	274,4*

Only bushes whose masses lie within the bold ars standard.
The recommended sizes are indicated by *