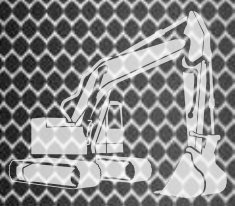
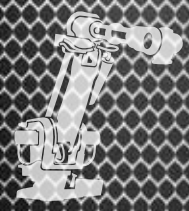
DUNLOP™

LINKAGES

Rod Ends and Spherical Plain Bearings





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USA

DUNLOP™

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European Distribution Centre, Ashford, Kent UK
MPT House, Brunswick Road
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"We are proud to be a European manufacturer; it is a privilege to supply our products to some of the world's most prestigious original equipment manufacturers in the Agricultural, Automotive, Construction, Industrial and Motor Sport sectors".

"Our distributor network is vital to the continued global growth of the DUNLOP brand and our valued distributor partners form the perfect link between manufacturer and end user".

"Our commitment to our staff, our customers and the environment is of paramount importance to our company, we will continue to develop our organisational skills to further enhance our company's potential, to engage in sustainable practices and anticipate the needs and expectations of our customers".

"At Dunlop BTL we love our products".

Ray Mifsud, *Managing Director.*

DUNLOP™

ENGINEERING DATA

English

Español

Italiano

Deutsch

Français

Nederlands

Polskie

Application

There are several factors that need to be addressed to ensure the maximum performance and safe working of all **DUNLOP** rod ends, spherical bearings, ball joints and clevises.

- Rod ends and ball joints should where possible be mounted vertically, i.e. the housing member to the top, this will give maximum efficiency and life of the product.
- Cyclic motion in contaminated conditions can lead to premature failure, every effort should be taken to keep the unit clean, nylon and PTFE raced products have self-cleaning tendencies which can prove beneficial in contaminated environments.
- When mounting ball studs the hex should be properly tightened and flush to its mating surface. Adequate countersinks, counter bores or washers may be necessary to achieve acceptable assembly.
- Self-locking nuts or washers should be used in applications involving vibration and shock loads.
- It is recommended that separate stops should be mounted into the assembly to eliminate the possibility of over articulation of the rod end or ball joint over a maximum cone angle of 55°.
- Clamping forces can cause distortion of the ball and lead to a loss in internal tolerance, maximum torque values are shown below.
- All applications vary and so will product life, samples can be supplied for testing to help determine the suitability in actual operating conditions.
- Products listed in this catalogue are made to commercial standards, if you have any questions concerning a particular product or application please consult with our sales and engineering staff.

Bore Size Metric (mm)	Bore Size Imperial (inches)	Clamping Torque (Newton Metres) Bronze	Clamping Torque (Newton Metres) Steel
3		N/A	1.5
	0.1250	N/A	1.5
	0.1900	1.6	5.6
5		1.6	5.6
6		2.2	19.6
	0.2500	2.5	22.5
	0.3125	6.8	28.0
8		6.8	28.0
	0.3750	9.5	56.4
10		10.6	65.0
	0.4375	13.5	79.0
12		14.0	93.0
	0.5000	14.7	104.0
14		15.8	167.0
	0.6250	18.0	203.0
16		18.0	203.0
18		19.0	234.0
	0.7500	20.3	259.0
20		21.0	272.0

Materials

DUNLOP rod ends, spherical bearings, ball joints and clevises are available in a wide range of materials, steel, stainless steel and aluminium housings, nylon, PTFE and bronze races and steel, stainless steel and Bronze balls. Please refer to table below.

Housings

- Steel 230M07PB is used for all general purpose applications and are zinc plated and white-blue passivate (silver/clear finish) that conforms with RoHS directives on banned substances and ELV 2000/53/EC and are trivalent. Other plating colours and options are available, please refer to our 'Plating options section on page 14.
- Alloy steel, gives extreme load carrying capacity, extended wear life and high shock load resistance.
- Stainless steel 303L offers excellent corrosion resistance, other stainless steel materials such as 304 and 316 are available to order, please discuss with our sales or engineering departments.
- Aluminium A6026 also has corrosion resistance and weight reduction for lighter applications.

Races

- Nylon races are glass fibre reinforced and are suitable for extended high cycling use in heavy applications, also excellent in damp or wet environments.
- PTFE races provide zero backlash, smooth movement and can withstand extreme temperature conditions -200˚C to + 260˚C, and are suitable for use in high cycling use in heavy applications.
- Bronze design races SAE660 are suitable for low speed high duty loading, general purpose applications.

Spherical balls

- Steel 100Cr6 spherical balls are produced from high quality bearing steel and are heat treated and hardened to HRC 58-62 and electroless nickel plated.
- Stainless steel 440C spherical balls offer excellent corrosion resistance.
- Alloy steel, gives extreme load carrying capacity, extended wear life and high shock load resistance.
- Bronze SAE660 spherical balls are suitable for applications that require the pin or shaft fitted through the bore to rotate.

We reserve the right to vary the materials shown in the interest of product replacement or improvement.

Product Series	Housing Material	Housing Plating	Race Material	Ball/Ball Stud material	Ball Plating
MP / FP	230M07PB	ZINC WHITE/BLUE PASSIVATE	GR-NYLON	100CR6	ELECTROLESS NICKEL
MP-SS / FP-SS	303L	NOT PLATED	GR-NYLON	440C	NOT PLATED
MB / FB	230M07PB	ZINC WHITE/BLUE PASSIVATE	SAE660	100CR6	ELECTROLESS NICKEL
MB-SS / FB-SS	303L	NOT PLATED	SAE660	440C	NOT PLATED
MH / FH	230M07PB	ZINC WHITE/BLUE PASSIVATE	POLYURETHANE	230M07PB	NITROTEC
MH-SS / FH-SS	303L	NOT PLATED	POLYURETHANE	440C	NOT PLATED
MS / FS	230M07PB	ZINC WHITE/BLUE PASSIVATE	230M07PB / PTFE FABRIC	100CR6	ELECTROLESS NICKEL
MS-SS / FS-SS	303L	NOT PLATED	304L / PTFE FABRIC	440C	NOT PLATED
MSX / FSX	708M40	ZINC WHITE/BLUE PASSIVATE	230M07PB / PTFE MESH	100Cr6	ELECTROLESS NICKEL
MSX-MS / FSX-MS	17-4PH	N/A	17-4PH	440C	N/A
MX / FX	817M40	PHOSPHATED	N/A	100Cr6	PHOSPHATED

Product Series	Housing Material	Housing Plating	Race Material	Ball/Ball Stud material	Ball Plating
RM	230M07PB	ZINC WHITE/BLUE PASSIVATE	NYLON 66	100CR6	ELECTROLESS NICKEL
RM-SS	303L	NOT PLATED	NYLON 66	440C	NOT PLATED
GAR / GIR	080M46	ZINC WHITE/BLUE PASSIVATE	080M46 / PTFE FABRIC	100CR6	ELECTROLESS NICKEL
DB	230M07PB	ZINC WHITE/BLUE PASSIVATE	GR-NYLON	100CR6	ELECTROLESS NICKEL
AL	A6026	BLACK ANODISED	GR-NYLON	100CR6	ELECTROLESS NICKEL
SP	230M07PB	CHEMI-BLACKED	GR-NYLON	100CR6	ELECTROLESS NICKEL
SPH	230M07PB	ZINC WHITE/BLUE PASSIVATE	GRILAMID	230M07PB	NITROTEC
GE-ES	100CR6	MANGANESE PHOSPHATED	N/A	100CR6	MANGANESE PHOSPHATED
GEZ-ES	100CR6	MANGANESE PHOSPHATED	N/A	100CR6	MANGANESE PHOSPHATED
GE-UK	100CR6	NOT PLATED	PTFE FABRIC	100CR6	ELECTROLESS NICKEL
GE-FW	100CR6	NOT PLATED	PTFE FABRIC	100CR6	ELECTROLESS NICKEL
COM	100CR6	NOT PLATED	PTFE FABRIC	100CR6	ELECTROLESS NICKEL
SX	100CR6	PHOSPHATED	N/A	100CR6	PHOSPHATED
A	230M07PB	ZINC WHITE/BLUE PASSIVATE	NYLON 6	230M07PB	ZINC WHITE/BLUE PASSIVATE
BL	DIE CAST ZINC ALLOY	NOT PLATED	N/A	100CR6 / 535C	ZINC WHITE/BLUE PASSIVATE
BM	NYLON 12	NOT PLATED	N/A	230M07PB	ZINC WHITE/BLUE PASSIVATE
C	230M07PB	ZINC WHITE/BLUE PASSIVATE	N/A	212A42	ZINC WHITE/BLUE PASSIVATE
D	230M07PB	ZINC WHITE/BLUE PASSIVATE	N/A	230M07PB	ZINC WHITE/BLUE PASSIVATE
F	230M07PB	ZINC WHITE/BLUE PASSIVATE	N/A	230M07PB	ZINC WHITE/BLUE PASSIVATE
I	230M07PB	ZINC WHITE/BLUE PASSIVATE	NYLON 6	230M07PB	ZINC WHITE/BLUE PASSIVATE
P	230M07PB	ZINC WHITE/BLUE PASSIVATE	N/A	230M07PB	ZINC WHITE/BLUE PASSIVATE
Q	230M07PB	ZINC WHITE/BLUE PASSIVATE	N/A	230M07PB	ZINC WHITE/BLUE PASSIVATE
M	NYLON PA6.6	NOT PLATED	N/A	230M07PB	ZINC WHITE/BLUE PASSIVATE
G	080M46	ZINC WHITE/BLUE PASSIVATE	N/A	N/A	N/A

Load Capacity

Rod ends and spherical bearings

- The static load ratings listed are based on the yield strength of the race material and define the maximum gradually applied load.
- Radial load which the rod end or spherical bearing assembly can withstand, without significant permanent deformation.

- The steel housing provides a backup so that the product can sustain loading in excess of the listed values without collapsing.
- For highly stressed cyclic applications or those involving impact loads a safety factor of two or three should be applied to arrive at a safe working load.
- Although rod ends and spherical bearings are not recommended for use in applications involving axial loads, the construction is such that they can sustain axial loads up to 15% of the actual applied radial static load ratings without distress, but should not exceed 25% of the listed values.
- For extended life the recommended normally applied loads should be 25% - 50% of the static load ratings.
- All load ratings listed are presented for design guidance only and do not imply or constitute a warranty claim of any type.
- All applications vary and so will product life, samples can be supplied for testing to help determine the suitability in actual operating conditions.

Studs

- In applications using studded rod ends or spherical bearings the capacity of the product is limited by that of the stud to withstand sheer loading.
- Table below lists the expected minimum load capacities based on the use of studs made from carbon steel, please consult our sales and engineering departments where the applied loads exceed 50% of the listed values.

Ball joints

- The capacities listed are based on either the maximum tensile strength of the female body or the maximum shear strength of the ball stud, whichever is the lower. Suitable safety factors should be applied depending on the nature of the loading. Pull out force is the minimum required, when applied axially along the stud to cause complete disengagement of the stud from the housing.

Bore Size Metric (mm)	Bore Size Imperial (inches)	Ultimate Radial Loads (Newton
	0.1900	1,200
5		1,200
6		1,930
	0.2500	1,930
	0.3125	3,190
8		3,190
	0.3750	4,240
10		4,240
	0.4375	5,720
12		5,720
	0.5000	7,200
14		7,200
	0.6250	9,000
16		9,000

Temperature ranges

- The operating temperature range of rod ends and spherical bearings with a GR-nylon or nylon 66 race is limited by the thermal characteristics of the race material, this is -35°C to +170°C and -30°C to +120°C respectively . However in temperatures in excess of 80°C there may be a loss of load carrying capacity, e.g at 170°C an applied load equal to 20% of the static load rating can result in a compression set of .025mm.
- For application requiring extreme temperature ranges we recommend our liner, rod ends and spherical bearings can safely operate within a temperature range of -200°C to +260°C.
- Ball joints are generally temperature limited by the type of lubricant employed.

Specification

- Metric rod ends and spherical bearings are based on DIN 648.
- Imperial rod ends and spherical bearings are based on SAEJ1120.
- Metric ball joints are based on DIN71802 and DIN 71803.
- Imperial ball joints are based on SAEJ490.
- Metric clevises are based on DIN71752
- Imperial clevises are based on DIN71802
- All items are manufactured to commercial standards and tolerances, these tolerances are shown below.

Dimension	Metric (mm)	Imperial (inches)
Rod end bearings:		
Bore (Steel)	+0.064 - 0.013	+0.0025 - 0.0005
Bore (Bronze)	+0.038 - 0.013	+0.0015 - 0.0005
W	+0.000 - 0.0150	+0.000 - 0.0050
H	+0.050 - 0.050	+0.0030 - 0.0030
D	+0.130 - 0.130	+0.0050 - 0.0050
L1	+0.000 - 1.000	+0.0000 - 0.0620
L2	+0.250 - 0.250	+0.0320 - 0.0320
0	+0.050 - 0.050	+0.0030 - 0.0030
A	+0.130 - 0.130	+0.0050 - 0.0050
B	+0.250 - 0.250	+0.0320 - 0.0320
C	+0.050 - 0.050	+0.0030 - 0.0030
K	+0.130 - 0.130	+0.0050 - 0.0050
Spherical bearings:		
Bore (Steel)	+0.064 - 0.013	+0.0025 - 0.0005
Bore (Bronze)	+0.038 - 0.013	+0.0015 - 0.0005
D	+0.000 - 0.130	+0.0000 - 0.0050
H	+0.000 - 0.100	+0.0050 - 0.0050
W	+0.000 - 0.150	+0.0050 - 0.0050
Ball joints:		
Ball Ø	+0.064 - 0.013	+0.0025 - 0.0005

Table continued from over page:

Dimension	Metric (mm)	Imperial (inches)
L1	+0.000 - 1.000	+0.0000 - 0.0620
L2	+0.250 - 0.250	+0.0320 - 0.0320
STUD A/F	+0.130 - 0.130	+0.0050 - 0.0050
A	+0.130 - 0.130	+0.0050 - 0.0050
B	+0.250 - 0.250	+0.0320 - 0.0320
C	+0.050 - 0.050	+0.0030 - 0.0030
D1	+0.050 - 0.050	+0.0030 - 0.0030
D2	+0.050 - 0.050	+0.0030 - 0.0030
bore	+0.060 - 0.000	+0.0020 - 0.0000
G	+0.300 - 0.300	+0.0118 - 0.0118
A1	+0.300 - 0.160	+0.0118 - 0.0062
A2	+0.300 - 0.160	+0.0118 - 0.0062
B1	+0.150 - 0.000	+0.0060 - 0.0000
D3	+0.130 - 0.130	+0.0050 - 0.0050
L1	+0.500 - 0.500	+0.0196 - 0.0196
L2	+0.300 - 0.300	+0.0118 - 0.0118
L3	+0.300 - 0.300	+0.0118 - 0.0118
Ball studs:		
BALL Ø	+0.064 - 0.013	+0.0025 - 0.0005
A	+0.130 - 0.130	+0.0050 - 0.0050
B	+0.250 - 0.250	+0.0320 - 0.0320
C	+0.050 - 0.050	+0.0030 - 0.0030
K	+0.130 - 0.130	+0.0050 - 0.0050
Threads:		
Male	ISO 6G	Class 2A
Female	ISO 6H	Class 2B

ISO 9001:2008

Our committment is to quality, to continuously improve in every aspect of the companies activities. In 2006, we successfully passed UKAS quality assurance inspection to ISO 9001:2008 for the manufacture and distribution of bearings, power transmission and motion transfer linkages.

ISO 14001:2004

As a responsible European manufacturer, we take our environmental responsibility extremely seriously. In 2012, we successfully passed UKAS quality assurance inspection to ISO14001:2004 for the manufacture and distribution of bearings, power transmission and motion transfer linkages.

Plating Options

DUNLOP rod ends, spherical bearings, ball joints and clevises are available in a wide range of plating options. Our standard catalogue and stock specification is trivalent F39, zinc and white/blue passivate, (zinc and clear), that conforms with RoHS directives on banned substances and is ELV 2000/S3/EC compliant.

Table below shows our suffix designations, other available plating options may not be RoHS and ELV compliant, please enquire for availability. For a full list of options, please refer to table below.

BRITISH PLATING STANDARDS

BS3382 – Zinc plating of all steel parts with external threads

Basic major diameter of thread	Average plating thickness
0.127"-0.250" (3-6mm)	5.0 to 6.4 µm
0.251"-0.500" (6-12mm)	6.4 to 7.6 µm
0.501"-0.750" (12-19mm)	7.6 to 8.9 µm
0.751" and over (19mm)	8.9 to 12.7 µm

Finish Code	Finish Description
F0	SELF COLOUR
F1	ZINC PLATE & YELLOW PASSIVATE (CONTAINS HEXAVALENT CHROMIUM)
F2	ZINC PLATE & CLEAR PASSIVATE (CONTAINS HEXAVALENT CHROMIUM)
F3	PHOSPHATE, DE-EMBRITTLE & OIL
F4	ZINC NICKEL ALLOY & BLACK PASSIVATE 8 microns (2000 hours salt spray resistance)
F5	CHEMI-BLACK
F6	AS SPECIFIED ON CUSTOMERS DRAWING
F7	ZINC PLATE & BLUE PASSIVATE
F8	ZINC PLATE & OLIVE DRAB PASSIVATE TO ACCO CABLES (TRIDENT) SPEC. FS.25
F9	COPPER PLATE 0.0127/0.0203mm THICK
F10	DACROMET (REPLACED BY GEOMET F54)
F11	ZINC PLATE, DE-EMBRITTLE & YELLOW PASSIVATE (CONTAINS HEXAVALENT CHROMIUM)
F12	ZINC PLATE, DE-EMBRITTLE & CLEAR PASSIVATE
F13	ZINC PLATE, DE-EMBRITTLE & BLUE PASSIVATE
F14	ZINC PLATE, DE-EMBRITTLE & OLIVE DRAB PASSIVATE
F15	PHOSPHATE & OIL
F16	MECHANICAL ZINC PLATE & YELLOW PASSIVATE
F17	CATHODIC BLACK
F18	XYLON XL BLACK
F19	PHOSPHATE, DE-EMBRITTLE & OIL DRY TO TOUCH
F20	PARKERISE
F21	ZINC PLATE & BLACK PASSIVATE (CONTAINS HEXAVALENT CHROMIUM)
F22	PAINT TO IRR NATO GREEN – DEF STD 80-41
F23	ZINC PLATE & BRONZE PASSIVATE FORD WSD-M1P85-A2+WSB-M10P10-A4

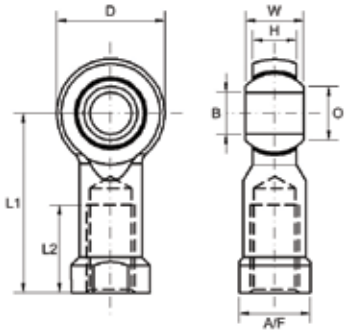
Table continued from over page:

Finish Code	Finish Description
F24	RED OXIDE PAINT AND SPRAY BLACK GLOSS TO S/A SPEC 1000-SEDDON
F25	BLACK FURALON B5514 FORD SPEC WSK-M2P153-A3
F26	BRIGHT NICKEL FLASH (PLATING DEPOSIT 0.0025/0.0051mm)
F27	POWDER COAT PAINT
F28	OIL
F29	ZINC PLATE, DE-EMBRITTLE & BLACK PASSIVATE (CONTAINS HEXAVALENT CHROMIUM)
F30	BLACKODIZE
F31	BLACK PAINT TO AULTRAFAST SPEC AF1
F32	NITROTEC TO SPECIFICATION NQ40
F33	NITROTEC TO SPECIFICATION NQ3
F34	ZINC PLATE TO JS 500 (NO COLOUR)
F35	FERRITIC NITROCARBURISE
F36	ZINC NICKEL ALLOY & CLEAR PASSIVATE
F37	ZINC NICKEL ALLOY & YELLOW PASSIVATE
F38	ZINC PLATE & YELLOW TRIVALENT PASSIVATE (COLOUR DIE)
F39	ZINC PLATE & CLEAR TRIVALENT PASSIVATE
F40	DELTATONE & DELTASEAL BLACK (FREE FROM HEXAVALENT CHROMIUM)
F41	ZINC NICKEL PLATE, DE-EMBRITTLE & BLACK TRIVALENT PASSIVATE
F42	ZINC NICKEL PLATE & BLACK TRIVALENT PASSIVATE
F43	ZINC IRON PLATE & BLACK TRIVALENT PASSIVATE
F44	ZINC PLATE & BLACK TRIVALENT PASSIVATE
F45	ZINC NICKEL PLATE & CLEAR TRIVALENT PASSIVATE (BRIGHT FINISH)
F46	ZINC NICKEL PLATE, DE-EMBRITTLE & CLEAR TRIVALENT PASSIVATE
F47	ZINC PLATE, DE-EMBRITTLE & CLEAR TRIVALENT PASSIVATE WITHOUT SEALER
F48	ZINC PLATE, CLEAR TRIVALENT PASSIVATE AND SEAL (ZINKLAD 250)
F49	ZINC PLATE, DE-EMBRITTLE, CLEAR TRIVALENT PASSIVATE & SEAL (ZINKLAD 250)
F50	ZINC PLATE, THICK FILM PASSIVATE AND ADDITIONALLY SEAL / SST
F51	ZINC PLATE, DE-EMBRITTLE & YELLOW TRIVALENT PASSIVATE
F52	ZINC PLATE & TRIPASS CORROBLUE ELV
F53	ZINC PLATE, DE-EMBRITTLE & TRIPASS CORROBLUE ELV
F54	GEOMET 500 (REPLACES DACROMET A) F10
F55	SALT BATH NITRIDE TO AMS 2753B COMPOUND DEPTH .0003/.0010" SURFACE FILE HARD TO RC58.
F56	ZINC IRON PLATE, DE-EMBRITTLE & BLACK TRIVALENT PASSIVATE
F57	GEOMET 321 PLUS 10 VW 137 50, T602
F58	ELECTROLESS NICKEL PLATE
F59	CADMIUM PLATE TO DEF 03-19 AND CHROMATE PASSIVATE TO DEF 130
F60	BLACK PHOSPHATE DEF STAN 3-11 ROHS AND ELV COMPLIANT
F61	BLACK ANODISE ROHS & ELV COMPLIANT
F62	ZINC FLAKE COATING TO VW SPEC T630 TL233 SILVER
F63	BRIGHT NICKEL PLATE
F64	MANGANESE PHOSPHATE AND OIL
F65	ZINC NICKEL PLATE, DE-EMBRITTLE & Cr3 PASSIVATE TO KA SPEC PS224500
F66	ZINC NICKEL PLATE AND Cr3 PASSIVATE.
F67	ZINC PLATE, DE-EMBRITTLE & THICK FILM PASSIVATE AND ADDITIONALLY SEAL
F68	BLACK ON STAINLESS STEEL, STAY BLACK.

FEMALE ROD ENDS

English
Español
Italiano
Deutsch
Français
Nederlands
Polskie

FEMALE ROD ENDS



FP SERIES: FP - FPS - FP SS

Description:
FP-Series is our 3-piece standard range of self-lubricating general purpose female rod ends, suitable for light to medium heavy industrial/mechanical load applications requiring low friction and good wear resistance, available in both metric and imperial bore and thread sizes. They have excellent moisture resistance and require no maintenance and have a wide operating temperature range.

Material Specifications:
Housing: Steel 230M07PB and forged 080M46, zinc plated and clear trivalent passivate and stainless steel 303L 304. Race: GR-nylon LV-3H. Ball: Bearing steel 100Cr6, hardened and electroless nickel plated and stainless steel 440C and *SAE660. Stud: Steel 230M07PB zinc plated and clear trivalent passivate and stainless steel 303L.

Features:
Metric & imperial thread & bore sizes
Low friction
Self-lubricating
Good wear resistance
Excellent moisture resistance
No maintenance
Studded option

Possible Applications:
Light to medium/heavy industrial/mechanical applications
Construction equipment
Agricultural equipment
Recreational vehicles
Precision equipment
Linear movement

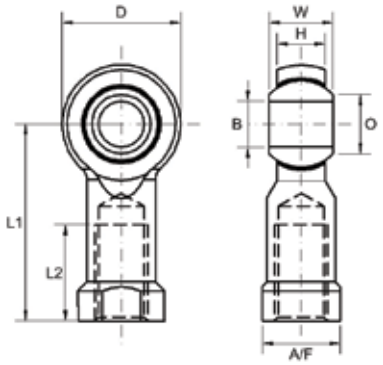
Temperature Range:
-30°C to +170°C

Specification:
ELV & RoHS compliant

Interchange table

Dunlop	Rose	Tuthill	Alinabal	IKO	SKF	Asahi
FP-M (metric)	MFP	FJ-M	MPF	PHS-EC	SIKB-F	JAF-EC
FP (imperial)	RFP-U	FJ	PF	PHSB-EC	-	-
Note: Manufacturers part numbers are used for descriptive purposes only and may not be direct equivalent products.						

FP SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (METRIC)



Housing: Steel 230M07Pb (Sizes M03 – M12)
Forged 080M46 (Sizes M14 – M25)
Zinc Plated and Clear Trivalent Passivate

Race: GR-Nylon, LV-3H

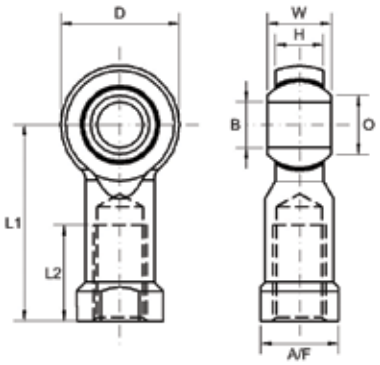
Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	O	AF	Static Load Rating Radial (Newtons)
FP-M03	FPL-M03	3	M3X0.50	6	4.50	12	21	10	5.20	6.5	3,040
FP-M04-3	FPL-M04-3	3	M4X0.70	7	5.00	14	24	12	6.30	8.0	4,060
FP-M04	FPL-M04	4	M4X0.70	7	5.00	14	24	12	6.30	8.0	4,060
FP-M05-4	FPL-M05-4	4	M5X0.80	8	6.00	16	27	14	7.50	9.0	5,340
FP-M05	FPL-M05	5	M5X0.80	8	6.00	16	27	14	7.50	9.0	5,340
FP-M06-5	FPL-M06-5	5	M6X1.00	9	6.75	18	30	14	9.30	11.0	7,720
FP-M06	FPL-M06	6	M6X1.00	9	6.75	18	30	14	9.30	11.0	7,720
FP-M08-6	FPL-M08-6	6	M8X1.25	12	9.00	22	36	17	10.40	14.0	12,775
FP-M08-6C	FPL-M08-6C	6	M8X1.00	12	9.00	22	36	17	10.40	14.0	12,775
FP-M08	FPL-M08	8	M8X1.25	12	9.00	22	36	17	10.40	14.0	12,775
FP-M08C	FPL-M08C	8	M8X1.00	12	9.00	22	36	17	10.40	14.0	12,775
FP-M10-8	FPL-M10-8	8	M10X1.50	14	10.50	26	43	21	12.90	17.0	16,960
FP-M10-8C	FPL-M10-8C	8	M10X1.25	14	10.50	26	43	21	12.90	17.0	16,960
FP-M10	FPL-M10	10	M10X1.50	14	10.50	26	43	21	12.90	17.0	16,960
FP-M10C	FPL-M10C	10	M10X1.25	14	10.50	26	43	21	12.90	17.0	16,960
FP-M12-10	FPL-M12-10	10	M12X1.75	16	12.00	30	50	24	15.40	19.0	22,900
FP-M12-10C	FPL-M12-10C	10	M12X1.25	16	12.00	30	50	24	15.40	19.0	22,900
FP-M12	FPL-M12	12	M12X1.75	16	12.00	30	50	24	15.40	19.0	22,900
FP-M12C	FPL-M12C	12	M12X1.25	16	12.00	30	50	24	15.40	19.0	22,900
FP-M14-12	FPL-M14-12	12	M14X2.00	19	13.50	34	57	27	16.80	22.0	28,950
FP-M14-12C	FPL-M14-12C	12	M14X1.50	19	13.50	34	57	27	16.80	22.0	28,950
FP-M14	FPL-M14	14	M14X2.00	19	13.50	34	57	27	16.80	22.0	28,950
FP-M14C	FPL-M14C	14	M14X1.50	19	13.50	34	57	27	16.80	22.0	28,950
FP-M16-14	FPL-M16-14	14	M16X2.00	21	15.00	38	64	33	19.30	22.0	37,130
FP-M16-14C	FPL-M16-14C	14	M16X1.50	21	15.00	38	64	33	19.30	22.0	37,130
FP-M16	FPL-M16	16	M16X2.00	21	15.00	38	64	33	19.30	22.0	37,130
FP-M16C	FPL-M16C	16	M16X1.50	21	15.00	38	64	33	19.30	22.0	37,130
FP-M18-16C	FPL-M18-16C	16	M18X1.50	23	16.50	46	71	36	21.80	27.0	45,730
FP-M18C	FPL-M18C	18	M18X1.50	23	16.50	46	71	36	21.80	27.0	45,730
FP-M20-18	FPL-M20-18	18	M20X2.50	25	18.00	50	77	40	24.50	32.0	55,240
FP-M20-18C	FPL-M20-18C	18	M20X1.50	25	18.00	50	77	40	24.50	32.0	55,240
FP-M20	FPL-M20	20	M20X2.50	25	18.00	50	77	40	24.50	32.0	55,240
FP-M20C	FPL-M20C	20	M20X1.50	25	18.00	50	77	40	24.50	32.0	55,240
FP-M22	FPL-M22	22	M22X1.50	28	20.00	54	84	43	25.80	32.0	57,420
FP-M25	FPL-M25	25	M24X2.00	31	22.00	60	94	48	29.60	36.0	67,140

For stainless steel add 'SS' to part no. For example 'FP-M03 SS'

FP SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (IMPERIAL)



Housing: Steel 230M07Pb (Sizes 03 - 07)
Forged 080M46 (Sizes 08 - 16)
Zinc Plated and Clear Trivalent Passivate

Race: GR-Nylon, LV-3H

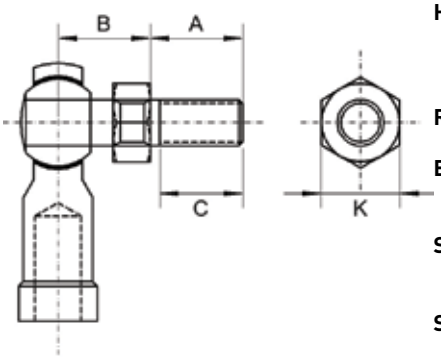
Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	O	AF	Static Load Rating Radial (Newtons)
FP-03	FPL-03	3/16	10-32 UNF	0.312	0.250	0.625	1.062	0.562	0.306	0.312	5,340
FP-04-3	FPL-04-3	3/16	1/4 UNF	0.375	0.281	0.750	1.312	0.750	0.354	0.375	8,450
FP-04-3F	FPL-04-3F	3/16	1/4 BSF	0.375	0.281	0.750	1.312	0.750	0.354	0.375	8,450
FP-04	FPL-04	1/4	1/4 UNF	0.375	0.281	0.750	1.312	0.750	0.354	0.375	8,450
FP-04F	FPL-04F	1/4	1/4 BSF	0.375	0.281	0.750	1.312	0.750	0.354	0.375	8,450
FP-05-4	FPL-05-4	1/4	5/16 UNF	0.437	0.344	0.875	1.375	0.750	0.447	0.437	12,010
FP-05-4F	FPL-05-4F	1/4	5/16 BSF	0.437	0.344	0.875	1.375	0.750	0.447	0.437	12,010
FP-05	FPL-05	5/16	5/16 UNF	0.437	0.344	0.875	1.375	0.750	0.447	0.437	12,010
FP-05F	FPL-05F	5/16	5/16 BSF	0.437	0.344	0.875	1.375	0.750	0.447	0.437	12,010
FP-06-5	FPL-06-5	5/16	3/8 UNF	0.500	0.406	1.000	1.625	0.932	0.516	0.562	16,900
FP-06-5F	FPL-06-5F	5/16	3/8 BSF	0.500	0.406	1.000	1.625	0.932	0.516	0.562	16,900
FP-06	FPL-06	3/8	3/8 UNF	0.500	0.406	1.000	1.625	0.932	0.516	0.562	16,900
FP-06F	FPL-06F	3/8	3/8 BSF	0.500	0.406	1.000	1.625	0.932	0.516	0.562	16,900
FP-07-6	FPL-07-6	3/8	7/16 UNF	0.562	0.437	1.125	1.812	1.062	0.586	0.625	19,750
FP-07-6F	FPL-07-6F	3/8	7/16 BSF	0.562	0.437	1.125	1.812	1.062	0.586	0.625	19,750
FP-07	FPL-07	7/16	7/16 UNF	0.562	0.437	1.125	1.812	1.062	0.586	0.625	19,750
FP-07F	FPL-07F	7/16	7/16 BSF	0.562	0.437	1.125	1.812	1.062	0.586	0.625	19,750
FP-08-7	FPL-08-7	7/16	1/2 UNF	0.625	0.500	1.312	2.125	1.187	0.700	0.750	28,900
FP-08-7F	FPL-08-7F	7/16	1/2 BSF	0.625	0.500	1.312	2.125	1.187	0.700	0.750	28,900
FP-08	FPL-08	1/2	1/2 UNF	0.625	0.500	1.312	2.125	1.187	0.700	0.750	28,900
FP-08F	FPL-08F	1/2	1/2 BSF	0.625	0.500	1.312	2.125	1.187	0.700	0.750	28,900
FP-10-8	FPL-10-8	1/2	5/8 UNF	0.750	0.562	1.500	2.500	1.500	0.811	0.875	32,000
FP-10-8F	FPL-10-8F	1/2	5/8 BSF	0.750	0.562	1.500	2.500	1.500	0.811	0.875	32,000
FP-10	FPL-10	5/8	5/8 UNF	0.750	0.562	1.500	2.500	1.500	0.811	0.875	32,000
FP-10F	FPL-10F	5/8	5/8 BSF	0.750	0.562	1.500	2.500	1.500	0.811	0.875	32,000
FP-12-10	FPL-12-10	5/8	3/4 UNF	0.875	0.687	1.750	2.875	1.562	0.978	1.000	52,400
FP-12-10F	FPL-12-10F	5/8	3/4 BSF	0.875	0.687	1.750	2.875	1.562	0.978	1.000	52,400
FP-12	FPL-12	3/4	3/4 UNF	0.875	0.687	1.750	2.875	1.562	0.978	1.000	52,400
FP-12F	FPL-12F	3/4	3/4 BSF	0.875	0.687	1.750	2.875	1.562	0.978	1.000	52,400
FP-16-12	FPL-16-12	3/4	1" UNF	1.375	1.000	2.500	4.125	2.125	1.486	1.500	65,200
FP-16-12F	FPL-16-12F	3/4	1" BSF	1.375	1.000	2.500	4.125	2.125	1.486	1.500	65,200
FP-16	FPL-16	1	1" UNF	1.375	1.000	2.500	4.125	4.125	1.486	1.500	65,200
FP-16F	FPL-16F	1	1" BSF	1.375	1.000	2.500	4.125	2.125	1.486	1.500	65,200

For stainless steel add 'SS' to part no. For example 'FP-03 SS'

FPS SERIES: STUDDED FEMALE ROD ENDS (METRIC)



Housing: Steel 230M07Pb (Sizes M05 – M12 & 03 – 07)
Forged 080M46 (Sizes M14 – M16 & 08 - 10)
Zinc Plated and Clear Trivalent Passivate

Race: GR-Nylon, LV-3H

Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

Stud: Steel 230M07Pb, Zinc Plated and Clear Trivalent Passivate

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Stud Size	Housing Thread	A	B	C	K	Static Load Rating (Newtons) Radial
FP-M05S	FPL-M05S	M5X0.80	M5X0.80	10	10	8	9	1,200
FP-M06-5S	FPL-M06-5S	M5X0.80	M6X1.00	12	12	10	10	1,200
FP-M06S	FPL-M06S	M6X1.00	M6X1.00	12	12	10	10	1,930
FP-M08-6S	FPL-M08-6S	M6X1.00	M8X1.25	16	16	14	13	1,930
FP-M08S	FPL-M08S	M8X1.25	M8X1.25	16	16	14	13	3,140
FP-M10-8S	FPL-M10-8S	M8X1.25	M10X1.50	20	20	18	17	3,140
FP-M10S	FPL-M10S	M10X1.50	M10X1.50	20	20	18	17	4,240
FP-M12-10S	FPL-M12-10S	M10X1.50	M12X1.75	24	24	21	19	4,240
FP-M12S	FPL-M12S	M12X1.75	M12X1.75	24	24	21	19	5,720
FP-M14-12S	FPL-M14-12S	M12X1.75	M14X2.00	28	28	25	22	5,720
FP-M14S	FPL-M14S	M14X2.00	M14X2.00	28	28	25	22	7,200
FP-M16-14S	FPL-M16-14S	M14X2.00	M16X2.00	29	29	24	24	7,200
FP-M16S	FPL-M16S	M16X2.00	M16X2.00	29	29	24	24	9,000

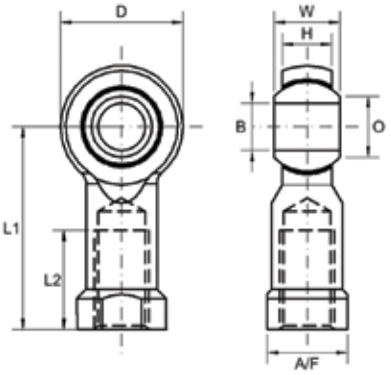
FPS SERIES: STUDDED FEMALE ROD ENDS (IMPERIAL)

Part No. Right Hand	Part No. Left Hand	Stud Size	Housing Thread	A	B	C	K	Static Load Rating (Newtons) Radial
FP-03S	FPL-03S	3/16 UNF	3/16 UNF	0.500	0.516	0.437	0.312	1,200
FP-04-3S	FPL-04-3S	3/16 UNF	1/4 UNF	0.562	0.485	0.500	0.375	1,200
FP-04S	FPL-04S	1/4 UNF	1/4 UNF	0.562	0.485	0.500	0.375	1,930
FP-05-4S	FPL-05-4S	1/4 UNF	5/16 UNF	0.687	0.547	0.594	0.437	1,930
FP-05S	FPL-05S	5/16 UNF	5/16 UNF	0.687	0.547	0.594	0.437	3,140
FP-06-5S	FPL-06-5S	5/16 UNF	3/8 UNF	0.906	0.562	0.812	0.500	3,140
FP-06S	FPL-06S	3/8 UNF	3/8 UNF	0.906	0.562	0.812	0.500	4,240
FP-07-6S	FPL-07-6S	3/8 UNF	7/16 UNF	1.125	0.843	1.000	0.625	4,240
FP-07S	FPL-07S	7/16 UNF	7/16 UNF	1.125	0.843	1.000	0.625	5,720
FP-08-7S	FPL-08-7S	7/16 UNF	1/2 UNF	1.125	0.875	1.000	0.625	5,720
FP-08S	FPL-08S	1/2 UNF	1/2 UNF	1.125	0.875	1.000	0.625	7,200
FP-10-8S	FPL-10-8S	1/2 UNF	5/8 UNF	1.125	1.000	1.000	0.750	7,200
FP-10S	FPL-10S	5/8 UNF	5/8 UNF	1.125	1.000	1.000	0.750	9,000

For stainless steel add 'SS' to part no. For example 'FP-M05S SS'

B.S.F. threads are available from size FP-04S, (FPL-04S), and above by adding suffix "F" to the part number e.g. FP-08FS, (FPL-08FS). Stainless steel, Grade 303L, rod ends are available by adding suffix "SS" to the part number e.g. FP-M10S-SS, (FPL-M10S-SS).

FEMALE ROD ENDS



FH SERIES: FH - FHS - FH SS

Description:
FH-Series is our 3-piece unique internationally patented range of female rod ends, incorporating a polyurethane bearing race that provides ultra smooth operation. A nitrotec surface protected ball with a PTFE lubricant provide superior shock load and extended wear properties, combined with excellent chemical and corrosion resistance. The unique innovative captive body design prevents detachment through excessive axial loads. For optimum performance, ensure that the rod end is mounted with the moulded lettering facing away from the direction of pull.

Material Specifications:
Housing: Steel 230M07PB zinc plated and clear trivalent passivate and stainless steel 303C. Race: Polyurethane. Ball: 230M07PB nitrotec finish and stainless steel 440C. Stud: Steel 230M07PB zinc plated and clear trivalent passivate and stainless steel 303C. Lubricant: Uniflor oil.

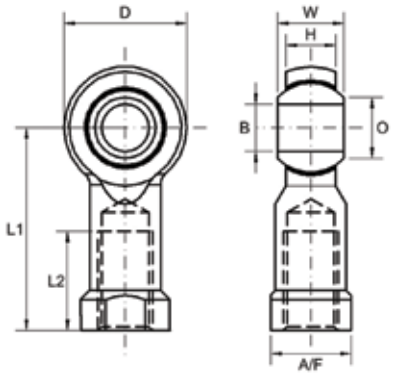
Features:
Metric & imperial sizes
Ultra low friction
High shock loads
Extended wear life
No maintenance
Studded option
Safety featuresStudded option

Possible Applications:
Metric & imperial sizes
Ultra low friction
High shock loads
Extended wear life
No maintenance
Studded option
Safety features

Temperature Range:
-30°C to +170°C

Specification:
ELV & RoHS compliant

FH SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (METRIC)



Housing: Steel 230M07Pb, Zinc Plated and Clear Trivalent Passivate

Race: Polyurethane

Ball: Steel 230M07Pb – Nitrotec Surface Protection

Lubricant: Uniflor Oil

Specification: ELV and RoHS Compliant

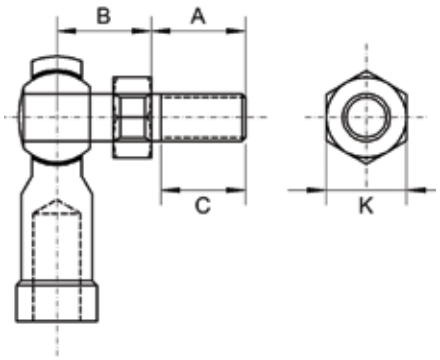
Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	O	Static Load Rating (Newtons) Radial
FH-M06	FHL-M06	6	M6X1.00	9	6.75	20	30	14.0	8.90	9,506
FH-M08	FHL-M08	8	M8X1.25	12	9.00	24	36	17.0	10.35	17,652
FH-M08C	FHL-M08C	8	M8X1.00	12	9.00	24	36	17.0	10.35	17,652
FH-M10	FHL-M10	10	M10X1.50	14	10.50	28	43	21.0	12.85	21,575
FH-M10C	FHL-M10C	10	M10X1.25	14	10.50	28	43	21.0	12.85	21,575
FH-M12	FHL-M12	12	M12X1.75	16	12.00	32	50	25.0	15.46	25,890
FH-M12C	FHL-M12C	12	M12X1.25	16	12.00	32	50	25.0	15.46	25,890

FH SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (IMPERIAL)

Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	O	Static Load Rating (Newtons) Radial
FH-04	FHL-04	1/4	1/4 UNF	0.354	0.266	0.787	1.181	0.551	0.350	9,806
FH-04F	FHL-04F	1/4	1/4 BSF	0.354	0.266	0.787	1.181	0.551	0.350	9,806
FH-05	FHL-05	5/16	5/16 UNF	0.472	0.354	0.945	1.417	0.670	0.406	17,652
FH-05F	FHL-05F	5/16	5/16 BSF	0.472	0.354	0.945	1.417	0.670	0.406	17,652
FH-06	FHL-06	3/8	3/8 UNF	0.551	0.413	1.102	1.693	0.827	0.508	21,575
FH-06F	FHL-06F	3/8	3/8 BSF	0.551	0.413	1.102	1.693	0.827	0.508	21,575
FH-07	FHL-07	7/16	7/16 UNF	0.561	0.440	1.200	1.810	0.905	0.585	23,540
FH-07F	FHL-07F	7/16	7/16 BSF	0.561	0.440	1.200	1.810	0.905	0.585	23,540
FH-08	FHL-08	1/2	1/2 UNF	0.623	0.472	1.250	1.968	0.984	0.700	25,890
FH-08F	FHL-08F	1/2	1/2 BSF	0.623	0.472	1.250	1.968	0.984	0.700	25,890
FH-10	FHL-10	5/8	5/8 UNF	0.750	0.562	1.503	2.520	1.300	0.811	34,520
FH-10F	FHL-10F	5/8	5/8 BSF	0.750	0.562	1.503	2.520	1.300	0.811	34,520
FH-12	FHL-12	3/4	3/4 UNF	0.875	0.687	1.750	2.875	1.575	0.978	43,150
FH-12F	FHL-12F	3/4	3/4 BSF	0.875	0.687	1.750	2.875	1.575	0.978	43,150

For stainless steel add 'SS' to part no. For example 'FH-M06 SS'

FHS SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (METRIC)



Housing: Steel 230M07Pb, Zinc Plated and Clear Trivalent Passivate

Race: Polyurethane

Ball: Steel 230M07Pb – Nitrotec Surface Protection

Lubricant: Uniflor Oil

Stud: Steel 230M07Pb, Zinc Plated and Clear Trivalent Passivate

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Stud Size	Housing Thread	A	B	C	K	Static Load Rating (Newtons) Radial
FH-M06S	FHL-M06S	M6X1.00	M6X1.00	12.5	11.0	10.5	8	1,930
FH-M08S	FHL-M08S	M8X1.25	M8X1.25	16.5	13.0	14.5	11	3,190
FH-M08/1S	FHL-M08/1S	M8X1.25	M6X1.00	16.5	13.0	14.5	9	3,190
FH-M08/2S	FHL-M08/2S	M8X1.25	M10X1.50	16.5	13.0	14.5	9	3,190
FH-M10S	FHL-M10S	M10X1.50	M10X1.50	20.0	16.0	18.0	13	4,240
FH-M10CS	FHL-M10CS	M10X1.50	M10X1.25	20.0	16.0	18.0	13	4,240
FH-M10/1S	FHL-M10/1S	M10X1.50	M10X1.50	28.1	15.3	13.5*	13	4,240
FH-M10/2S	FHL-M10/2S	M10X1.50	M10X1.50	23.0	16.0	20.0	11	4,240
FH-M12S	FHL-M12S	M12X1.75	M12X1.75	20.0	13.0	18.0	16	5,720

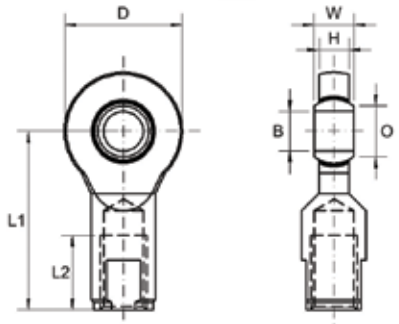
FHS SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (IMPERIAL)

Part No. Right Hand	Part No. Left Hand	Stud Size	Housing Thread	A	B	C	K	Static Load Rating (Newtons) Radial
FH-04S	FHL-04S	1/4 UNF	1/4 UNF	0.492	0.433	0.412	5/16	1,930
FH-04FS	FHL-04FS	1/4 UNF	1/4 BSF	0.492	0.433	0.412	5/16	1,930
FH-05S	FHL-05S	5/16 UNF	5/16 UNF	0.650	0.512	0.570	7/16	3,190
FH-05FS	FHL-05FS	5/16 UNF	5/16 BSF	0.650	0.512	0.570	7/16	3,190
FH-06S	FHL-06S	3/8 UNF	3/8 UNF	0.787	0.630	0.707	1/2	4,240
FH-06FS	FHL-06FS	3/8 UNF	3/8 BSF	0.787	0.630	0.707	1/2	4,240
FH-07S	FHL-07S	7/16 UNF	7/16 UNF	0.945	0.750	0.865	1/2	5,720
FH-07FS	FHL-07FS	7/16 UNF	7/16 BSF	0.945	0.750	0.865	1/2	5,720
FH-08S	FHL-08S	1/2 UNF	1/2 UNF	1.100	0.866	0.945	9/16	7,200
FH-08FS	FHL-08FS	1/2 UNF	1/2 BSF	1.100	0.866	0.945	9/16	7,200

For stainless steel add 'SS' to part no. For example 'FH-M06S SS'

DUNLOP

FEMALE ROD ENDS



RF SERIES: RF - RFS

Description:
RF-Series is our 3-piece thin series range of female rod ends that have been specifically designed for use with other linkage components such as clevises etc. The RM-Series design allows the rod ends head and ball to neatly slide inside of its mating clevises fork end, ideal for fitting to pre-assembled linkages. Metric and imperial bore and thread sizes are available. Standard product is supplied with a frictional load on the bearing ball, recommended for applications where misalignment may arise in an assembly.

Material Specifications:
Housing: Steel 230M07Pb, zinc plated and clear trivalent passivate and stainless steel 303L. Race: Nylon 66 glass filled with molybdenum disulphide. Ball: Bearing steel 100Cr6, hardened and electroless nickel plated and stainless steel 440C. Stud: Steel 230M07PB zinc plated and clear trivalent passivate and stainless steel 303L.

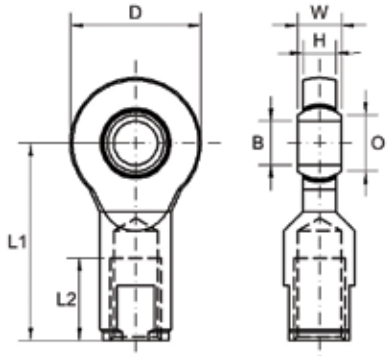
Features
Metric thread & bore sizes
Friction load applications
High shock loads
Thin section
No maintenance
Studded option

Possible Applications
Light to medium industrial/mechanical
Construction equipment
Agricultural equipment
Recreational vehicles

Temperature Range
-30 °C to +120 °C

Specification
ELV & RoHS compliant

RF SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (METRIC)



Housing: Steel 230M07Pb, Zinc Plated and Clear Trivalent Passivate

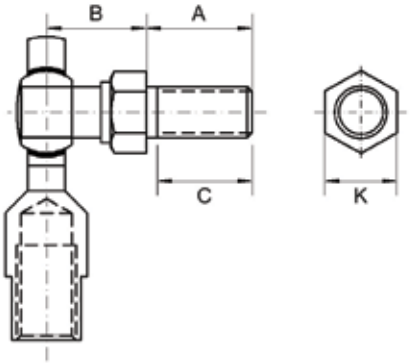
Race: Nylon 66

Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	O	Static Load Rating (Newtons) Radial
RMF6	RMF6LH	6	M6X1.00	6	4.0	21	30	15	8.00	7,500
RMF6/2	RMF6/2LH	6	M8X1.25	6	4.0	20.7	30	15	8.00	7,500
RMF8	RMF8LH	8	M8X1.25	8	6.0	24	36	15	10.25	12,850
RMF8C	RMF8CLH	8	M8X1.00	8	6.0	24	36	15	10.25	12,850
RMF8/2	RMF8/2LH	8	M8X1.25	8	6.0	24	36	15	10.25	12,850
RMF8/3	RMF8/3LH	8	M10X1.50	8	6.0	24	36	15	10.25	12,850
RMF8/4	RMF8/4LH	8	M6X1.00	8	6.0	24	36	15	10.25	12,850
RMF8/6	RMF8/6LH	8	M10X1.50	8	6.0	24	56	35	10.25	12,850
RMF8/7	RMF8/7LH	8	M8X1.25	8	5.2	24	46	26	10.25	12,850
RMF10	RMF10LH	10	M10X1.50	9	7.0	29	43	19	13.23	17,125
RMF10C	RMF10CLH	10	M10X1.25	9	7.0	29	43	19	13.23	17,125
RMF10/4	RMF0/4LH	12	M10X1.50	9	7.0	29	43	19	13.23	17,125

RFS SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (METRIC)



Housing: Steel 230M07Pb, Zinc Plated and Clear Trivalent Passivate

Race: Nylon 66

Ball: Bearing Steel 100Cr6, Case Hardened and Electro-less Nickel Plated

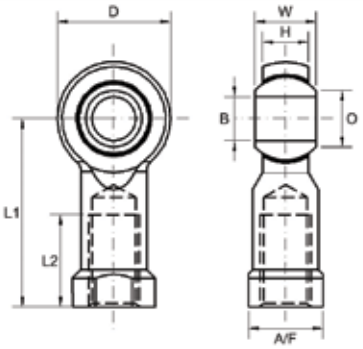
Stud: Steel 230M07Pb, Zinc Plated and Clear Trivalent Passivate

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Stud Size	Housing Thread	A	B	C	K	Static Load Rating (Newtons) Radial
RMFS6	RMFS6LH	M6X1.00	M6X1.00	12.5	11.0	8.00	9	1,930
RMFS6/1	RMFS6/1LH	M6X1.00	1/4 UNF	0.492"	0.453"	0.470"	5/16"	1,930
RMFS6/2	RMFS6/2LH	M6X1.00	M6X1.00	12.5	11.0	11.00	8	1,930
RMFS8	RMFS8LH	M8X1.25	M8X1.25	16.5	13.0	10.00	10	3,190
RMFS8C	RMFS8CLH	M8X1.25	M8X1.00	16.5	13.0	10.00	10	3,190
RMFS8/1	RMFS8/1LH	M8X1.25	M8X1.25	19.8	10.0	18.00	11	3,190
RMFS8/2	RMFS8/2LH	M8X1.25	M6X1.00	15.2	10.2	13.25	11	3,190
RMFS8/4	RMFS8/4LH	M8X1.25	M8X1.25	19.8	10.0	14.20	11	3,190
RMFS8/5	RMFS8/5LH	M8X1.25	M8X1.25	16.5	13.0	15.00	11	3,190
RMFS10	RMFS10LH	M10X1.50	M10X1.50	20.0	13.0	18.00	13	4,240
RMFS10C	RMFS10CLH	M10X1.50	M10X1.25	20.0	13.0	18.00	13	4,240
RMFS10/2	RMFS10/2LH	M10X1.50	M10X1.50	20.0	16.0	18.00	13	4,240
RMFS10/3	RMFS10/3LH	M10X1.50	M10X1.25	20.0	16.0	18.00	13	4,240

For stainless steel add 'SS' to part no. For example 'RMF6 SS' and RMF6S SS

FEMALE ROD ENDS



FB SERIES: FB - FBS

Description:
FB-Series is our 4-piece standard range of maintenance required general purpose female rod ends suitable for medium heavy industrial/mechanical load applications requiring low friction and good wear resistance, available in both metric and imperial bore and thread sizes. An oil impregnated sintered bronze race is also available for some sizes or if quantity justifies production, suitable for high precision motion transfer applications and extended wear life.

Material Specifications:
Housing: Steel 230M07PB and forged 080M46, zinc plated and clear trivalent passivate Race: Bronze SAE660. Ball: Bearing steel 100Cr6, hardened and electroless nickel plated. Stud: Steel 230M07PB zinc plated and clear trivalent passivate.

Features
Metric & imperial thread & bore sizes
Low friction
Self-lubricating option
Extended wear life
Maintenance required
Studded option

Possible Applications
Medium/heavy industrial/ mechanical applications
Construction equipment
Agricultural equipment
Recreational vehicles
Precision equipment

Temperature Range
-34 °C to +149 °C

Specification
ELV & RoHS compliant

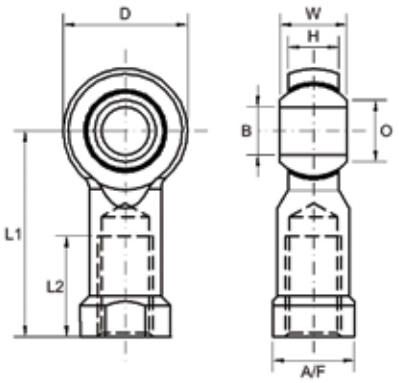
Interchange table

Dunlop	Rose	Tuthill	Alinabal	SKF	Asahi	IKO	Fluro
FB-M (metric)	MF	FB-M	MVF-M	SIKAC-M	JAF	PHS	GIS
FB (imperial)	RF-U	FB	VF-G	-	-	PHSB	-
Note: Manufacturers part numbers are used for descriptive purposes only and may not be direct equivalent products.							

An oil impregnated Sintered Bronze race is also available for many sizes or if quantity justifies production. This will offer extended life without the need for routine maintenance i.e. maintenance free, add suffix "SPB" to part number for example FB-M10SPB. Please enquire for availability

For stainless steel add 'SS' to part no. For example 'FB-M03 SS'

FB SERIES: MAINTENANCE REQUIRED ROD ENDS WITH FEMALE THREAD (METRIC)



Housing: Steel 230M07Pb (Sizes M03 – M12),
Forged 080M46 (Sizes M14 – M25),
Zinc Plated and Clear Trivalent Passivate

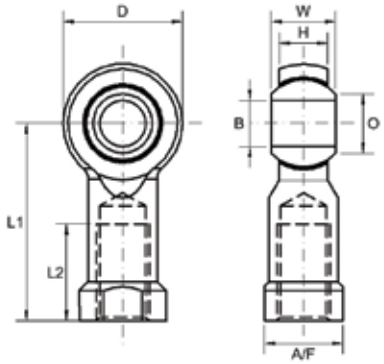
Race: Bronze SAE660

Ball: Bearing Steel 100Cr6, Hardened
Electro-less Nickel Plated

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	O	AF	Static Load Rating Radial (Newtons)
FB-M03	FBL-M03	3	M3X0.50	6	4.50	12	21	10	5.20	6.5	3,648
FB-M04	FBL-M04	4	M4X0.70	7	5.00	14	24	12	6.30	8.0	4,960
FB-M05	FBL-M05	5	M5X0.80	8	6.00	16	27	14	7.50	9.0	6,360
FB-M06	FBL-M06	6	M6X1.00	9	6.75	18	30	14	9.30	11.0	6,820
FB-M08	FBL-M08	8	M8X1.25	12	9.00	22	36	17	10.40	14.0	10,450
FB-M10	FBL-M10	10	M10X1.50	14	10.50	26	43	21	12.90	17.0	14,000
FB-M12	FBL-M12	12	M12X1.75	16	12.00	30	50	24	15.40	19.0	18,745
FB-M14	FBL-M14	14	M14X2.00	19	13.50	34	57	27	16.80	22.0	22,125
FB-M16	FBL-M16	16	M16X2.00	21	15.00	38	64	33	19.30	22.0	23,700
FB-M20	FBL-M20	20	M20X2.50	25	18.00	50	77	40	24.50	32.0	28,640
FB-M22	FBL-M22	22	M22X1.50	28	20.00	54	84	43	25.80	32.0	34,200
FB-M25	FBL-M25	25	M24X2.00	31	22.00	60	94	48	29.60	36.0	47,750

FB SERIES: MAINTENANCE REQUIRED ROD ENDS WITH FEMALE THREAD (IMPERIAL)



Housing: Steel 230M07Pb (Sizes 03 - 07),
Forged 080M46 (Sizes 08 - 16),
Zinc Plated and Clear Trivalent Passivate

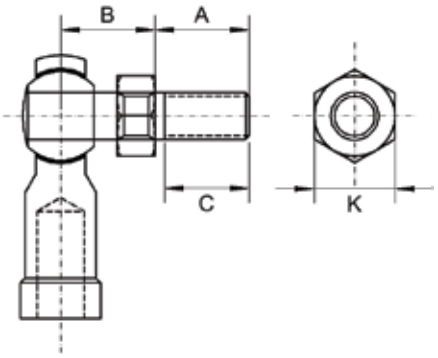
Race: Bronze SAE660

Ball: Bearing Steel 100Cr6, Hardened
and Electro-less Nickel Plated

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	O	AF	Static Load Rating Radial (Newtons)
FB-03	FBL-03	3/16	10-32	0.312	0.250	0.625	1.062	0.562	0.306	0.312	6,360
FB-04	FBL-04	1/4	1/4 UNF	0.375	0.281	0.750	1.312	0.750	0.354	0.375	6,820
FB-05	FBL-05	5/16	5/16 UNF	0.437	0.344	0.875	1.375	0.750	0.447	0.437	10,450
FB-06	FBL-06	3/8	3/8 UNF	0.500	0.406	1.000	1.625	0.932	0.516	0.562	13,640
FB-07	FBL-07	7/16	7/16 UNF	0.562	0.437	1.125	1.812	1.062	0.586	0.625	16,360
FB-08	FBL-08	1/2	1/2 UNF	0.625	0.500	1.312	2.125	1.187	0.700	0.750	19,545
FB-10	FBL-10	5/8	5/8 UNF	0.750	0.562	1.500	2.500	1.500	0.811	0.875	22,500
FB-12	FBL-12	3/4	3/4 UNF	0.875	0.687	1.750	2.875	1.562	0.978	1.000	28,640
FB-16	FBL-16	1	1" UNF	1.375	1.000	2.500	4.125	2.125	1.486	1.500	47,500

FBS SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (METRIC)



Housing: Steel 230M07Pb (Sizes M05 – M12)
Forged 080M46 (Sizes M14 – M16)
Zinc Plated and Clear Trivalent Passivate

Race: Bronze SAE660

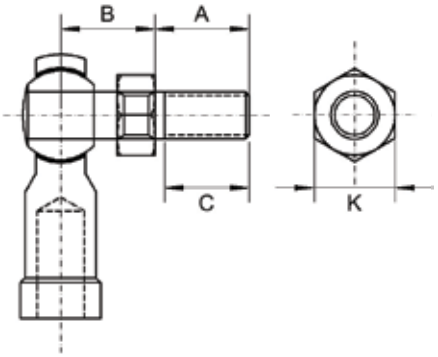
Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

Stud: Steel 230M07Pb, Zinc Plated and Clear Trivalent Passivate

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Stud Size	Housing Thread	A	B	C	K	Static Load Rating (Newtons) Radial
FB-M05S	FBL-M05S	M5X0.80	M5X0.80	10	10	8	9	1,200
FB-M06S	FBL-M06S	M6X1.00	M6X1.00	12	12	10	10	1,930
FB-M08S	FBL-M08S	M8X1.25	M8X1.25	16	16	14	13	3,190
FB-M10S	FBL-M10S	M10X1.50	M10X1.50	20	20	18	17	4,240
FB-M12S	FBL-M12S	M12X1.75	M12X1.75	24	24	21	19	5,720
FB-M14S	FBL-M14S	M14X2.00	M14X2.00	28	28	25	22	7,200
FB-M16S	FBL-M16S	M16X2.00	M16X2.00	29	29	24	24	9,000

FBS SERIES: STUDDED FEMALE ROD ENDS (IMPERIAL)



Housing: Steel 230M07Pb (Sizes 03 – 07)
Forged 080M46 (Sizes 08 - 10)
Zinc Plated and Clear Trivalent Passivate

Race: Bronze SAE660

Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

Stud: Steel 230M07Pb, Zinc Plated and Clear Trivalent Passivate

Specification: ELV and RoHS Compliant

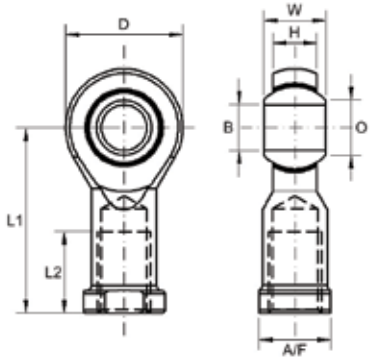
Part No. Right Hand	Part No. Left Hand	Stud Size	Housing Thread	A	B	C	K	Static Load Rating (Newtons) Radial
FB-03S	FBL-03S	3/16 UNF	3/16 UNF	0.500	0.516	0.437	0.312	1,200
FB-04S	FBL-04S	1/4 UNF	1/4 UNF	0.562	0.485	0.500	0.375	1,930
FB-05S	FBL-05S	5/16 UNF	5/16 UNF	0.687	0.547	0.594	0.437	3,190
FB-06S	FBL-06S	3/8 UNF	3/8 UNF	0.906	0.562	0.812	0.500	4,240
FB-07S	FBL-07S	7/16 UNF	7/16 UNF	1.125	0.843	1.000	0.625	5,720
FB-08S	FBL-08S	1/2 UNF	1/2 UNF	1.125	0.875	1.000	0.625	7,200
FB-10S	FBL-10S	5/8 UNF	5/8 UNF	1.125	1.000	1.000	0.750	9,000

B.S.F. threads are available from size FB-04S, (FBL-04S), and above by adding suffix "F" to the part number e.g. FB-08FS, (FBL-08FS). Stainless steel, Grade 303L, rod ends are available by adding suffix "SS" to the part number e.g. FB-M10S-SS, (FBL-M10S-SS).

For stainless steel add 'SS' to part no. For example 'FB-M05S SS'

DUNLOP

FEMALE ROD ENDS



FS SERIES: FS - FSS - FS SS

Description:
FS Series is our 3-piece steel on steel range of male rod ends incorporating a high strength PTFE bronze mesh between the ball and the liner material, suitable for high shock loads and medium to heavy mechanical load applications requiring low friction, available in both metric and imperial bore thread sizes, they do not require maintenance.

Material Specifications:
Housing: Steel 230M07Pb and forged 080M46, zinc plated and clear trivalent passivate and stainless steel 303L and forged 304. Inner Ring: Steel 070M20 zinc plated and clear trivalent passivate. Liner. High strength PTFE bronze mesh composite. Ball: Bearing steel 100Cr6, heat treated, polished & electroless nickel plated and stainless steel 440C

Features:
Metric & imperial thread & bore sizes, low friction, high shock loads.
Extended wear life
No maintenance
Studded and stainless steel options.

Possible Applications:
Medium/heavy industrial/ mechanical applications
Construction equipment
Agricultural equipment
Motor sport and recreational vehicles requiring high precision motion control.

Temperature Range:
-200°C to + 260°C

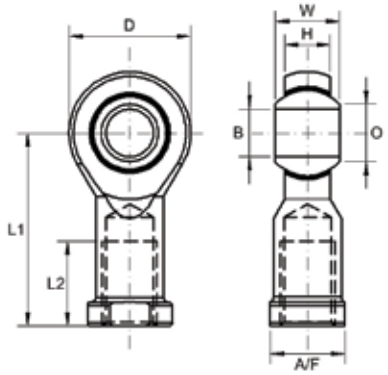
Specification:
ELV & RoHS compliant

Interchange table

Dunlop	Rose	Aurora	Askubal	SKF	Asahi	IKO	Fluro
FS-M (metric)	MFC	MW-M-T and MG-M-T	KI-P	SIKB-F	JAF-EC	PHS-EC	GISW
FS (imperial)	RFC	MW-T and MG-T	-	-	PHSB-EC	-	

Note: Manufacturers part numbers are used for descriptive purposes only and may not be direct equivalent products.

FS SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (METRIC)



Housing: Steel 230M07Pb (Sizes M05 – M12)
Forged 080M46 (Sizes M14 – M25)
Zinc Plated and Clear Trivalent Passivate

Inner Ring: Steel 070M20, Zinc Plated and Clear Trivalent Passivate

Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

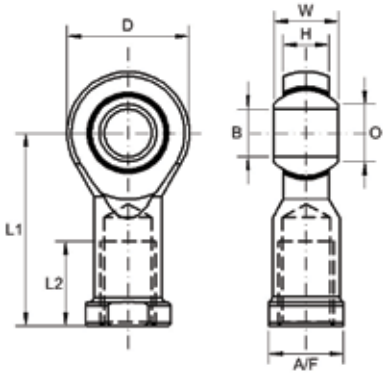
Liner: High strength PTFE composite

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	O	AF	Static Load Rating (Newtons) Radial
FS-M05	FSL-M05	5	M8X0.80	8	6.00	18	27	10	7.70	9	8000
FS-M06-5	FSL-M06-5	5	M6X1.00	9	6.75	20	30	12	8.90	11	8900
FS-M06	FSL-M06	6	M6X1.00	9	6.75	20	30	12	8.90	11	8900
FS-M08-6	FSL-M08-6	6	M8X1.25	12	9.00	24	36	16	10.40	13	14,100
FS-M08-6C	FSL-M08-6C	6	M8X1.00	12	9.00	24	36	16	10.40	13	14,100
FS-M08	FSL-M08	8	M8X1.25	12	9.00	24	36	16	10.40	13	14,100
FS-M08C	FSL-M08C	8	M8X1.00	12	9.00	24	36	16	10.40	13	14,100
FS-M10-8	FSL-M10-8	8	M10X1.50	14	10.50	28	43	20	12.90	17	19,300
FS-M10-8C	FSL-M10-8C	8	M10X1.25	14	10.50	28	43	20	12.90	17	19,300
FS-M10	FSL-M10	10	M10X1.50	14	10.50	28	43	20	12.90	17	19,300
FS-M10C	FSL-M10C	10	M10X1.25	14	10.50	28	43	20	12.90	17	19,300
FS-M12-10	FSL-M12-10	10	M12X1.75	16	12.00	32	50	22	15.40	19	23,600
FS-M12-10C	FSL-M12-10C	10	M12X1.25	16	12.00	32	50	22	15.40	19	23,600
FS-M12	FSL-M12	12	M12X1.75	16	12.00	32	50	22	15.40	19	23,600
FS-M12C	FSL-M12C	12	M12X1.25	16	12.00	32	50	22	15.40	19	23,600
FS-M14-12	FSL-M14-12	12	M14X2.00	19	13.50	36	57	25	16.80	22	29,200
FS-M14-12C	FSL-M14-12C	12	M14X1.50	19	13.50	36	57	25	16.80	22	29,200
FS-M14	FSL-M14	14	M14X2.00	19	13.50	36	57	25	16.80	22	29,200
FS-M14C	FSL-M14C	14	M14X1.50	19	13.50	36	57	25	16.80	22	29,200
FS-M16-14	FSL-M16-14	14	M16X2.00	21	15.00	42	64	28	19.30	22	32,100
FS-M16-14C	FSL-M16-14C	14	M16X1.50	21	15.00	42	64	28	19.30	22	32,100
FS-M16	FSL-M16	16	M16X2.00	21	15.00	42	64	28	19.30	22	32,100
FS-M16C	FSL-M16C	16	M16X1.50	21	15.00	42	64	28	19.30	22	32,100
FS-M18-16C	FSL-M18-16C	16	M18X1.50	23	16.50	46	71	32	21.80	27	38,400
FS-M18C	FSL-M18C	18	M18X1.50	23	16.50	46	71	32	21.80	27	38,400
FS-M20-18	FSL-M20-18	18	M20X2.50	25	18.00	50	77	33	24.30	32	45,000
FS-M20-18C	FSL-M20-18 C	18	M20X1.50	25	18.00	50	77	33	24.30	32	45,000
FS-M20	FSL-M20	20	M20X2.50	25	18.00	50	77	33	24.30	32	45,000
FS-M20C	FSL-M20C	20	M20X1.50	25	18.00	50	77	33	24.30	32	45,000
FS-M22-20	FSL-M22-20	20	M22X1.50	28	20.00	54	84	37	25.80	32	52,750
FS-M22	FSL-M22	22	M22X1.50	28	20.00	54	84	37	25.80	32	52,750
FS-M25-20	FSL-M25-20	20	M24X2.00	31	22.00	60	94	42	29.60	36	62,000
FS-M25	FSL-M25	25	M24X2.00	31	22.00	60	94	42	29.60	36	62,000

For stainless steel add 'SS' to part no. For example 'FS-M05 SS'

FS SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (IMPERIAL)



Housing: Steel 230M07Pb (Sizes 04 - 07)
Forged 080M46 (Sizes 08 - 12)
Zinc Plated and Clear Trivalent Passivate

Inner Ring: Steel 070M20, Zinc Plated and Clear Trivalent Passivate

Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

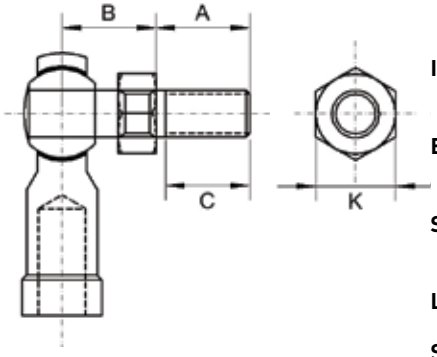
Liner: High Strength PTFE Composite

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	O	AF	Static Load Rating (Newtons) Radial
FS-04	FSL-04	1/4	1/4 UNF	0.375	0.281	0.812	1.312	0.750	8.40	0.375	8,500
FS-04F	FSL-04F	1/4	1/4 BSF	0.375	0.281	0.812	1.312	0.750	8.40	0.375	8,500
FS-05-4	FSL-05-4	1/4	5/16 UNF	0.437	0.344	1.000	1.375	0.750	11.35	0.437	14,100
FS-05-4F	FSL-05-4F	1/4	5/16 BSF	0.437	0.344	1.000	1.375	0.750	11.35	0.437	14,100
FS-05	FSL-05	5/16	5/16 UNF	0.437	0.344	1.000	1.375	0.750	11.35	0.437	14,100
FS-05F	FSL-05F	5/16	5/16 BSF	0.437	0.344	1.000	1.375	0.750	11.35	0.437	14,100
FS-06-5	FSL-06-5	5/16	3/8 UNF	0.500	0.406	1.125	1.625	0.937	13.10	0.562	19,300
FS-06-5F	FSL-06-5F	5/16	3/8BSF	0.500	0.406	1.125	1.625	0.937	13.10	0.562	19,300
FS-06	FSL-06	3/8	3/8 UNF	0.500	0.406	1.125	1.625	0.937	13.10	0.562	19,300
FS-06F	FSL-06F	3/8	3/8 BSF	0.500	0.406	1.125	1.625	0.937	13.10	0.562	19,300
FS-07-6	FSL-07-6	3/8	7/16 UNF	0.562	0.437	1.250	1.812	1.062	14.90	0.625	21,000
FS-07-6F	FSL-07-6F	3/8	7/16 BSF	0.562	0.437	1.250	1.812	1.062	14.90	0.625	21,000
FS-07	FSL-07	7/16	7/16 UNF	0.562	0.437	1.250	1.812	1.062	14.90	0.625	21,000
FS-07F	FSL-07F	7/16	7/16 BSF	0.562	0.437	1.250	1.812	1.062	14.90	0.625	21,000
FS-08-7	FSL-08-7	7/16	1/2 UNF	0.625	0.500	1.375	2.125	1.187	17.75	0.750	23,600
FS-08-7F	FSL-08-7F	7/16	1/2 BSF	0.625	0.500	1.375	2.125	1.187	17.75	0.750	23,600
FS-08	FSL-08	1/2	1/2 UNF	0.625	0.500	1.375	2.125	1.187	17.75	0.750	23,600
FS-08F	FSL-08F	1/2	1/2 BSF	0.625	0.500	1.375	2.125	1.187	17.75	0.750	23,600
FS-10-8F	FSL-10-8F	1/2	5/8 UNF	0.750	0.562	1.750	2.500	1.500	21.30	0.875	32,100
FS-10-8F	FSL-10-8F	1/2	5/8 BSF	0.750	0.562	1.750	2.500	1.500	21.30	0.875	32,100
FS-10	FSL-10	5/8	5/8 UNF	0.750	0.562	1.750	2.500	1.500	21.30	0.875	32,100
FS-10F	FSL-10F	5/8	5/8 BSF	0.750	0.562	1.750	2.500	1.500	21.30	0.875	32,100
FS-12-10	FSL-12-10	5/8	3/4 UNF	0.875	0.687	2.000	2.875	1.750	24.80	1.000	45,000
FS-12-10F	FSL-12-10F	5/8	3/4 BSF	0.875	0.687	2.000	2.875	1.750	24.80	1.000	45,000
FS-12	FSL-12	3/4	3/4 UNF	0.875	0.687	2.000	2.875	1.750	24.80	1.000	45,000
FS-12F	FSL-12F	3/4	3/4 BSF	0.875	0.687	2.000	2.875	1.750	24.80	1.000	45,000

For stainless steel add 'SS' to part no. For example 'FS-04 SS'

FSS SERIES: STUDDED FEMALE ROD ENDS (METRIC)



Housing: Steel 230M07Pb (Sizes M05 – M12)
Forged 080M46 (Sizes M14 – M16)
Zinc Plated and Clear Trivalent Passivate

Inner Ring: Steel 070M20, Zinc Plated and Clear Trivalent Passivate

Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

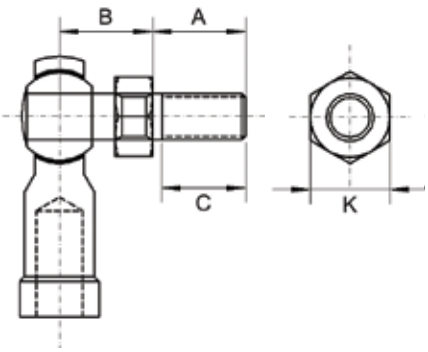
Stud: Steel 230M07Pb, Zinc Plated and Clear Trivalent Passivate

Liner: High Strength PTFE Composite

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Stud Size	Housing Thread	A	B	C	K	Static Load Rating (Newtons) Radial
FS-M05S	FSL-M05S	M5X0.80	M5x0.80	10	10	8	9	1,200
FS-M06S	FSL-M06S	M6X1.00	M6X1.00	12	12	10	10	1,930
FS-M08S	FSL-M08S	M8X1.25	M8X1.25	16	16	14	13	3,190
FS-M10S	FSL-M10S	M10X1.50	M10X1.50	20	20	18	17	4,240
FS-M12S	FSL-M12S	M12X1.75	M12X1.75	24	24	21	19	5,720
FS-M14S	FSL-M14S	M14X2.00	M14X2.00	28	28	25	22	7,200
FS-M16S	FSL-M16S	M16X2.00	M16X2.00	29	29	24	24	9,000

FSS SERIES: STUDDED FEMALE ROD ENDS (IMPERIAL)



Housing: Steel 230M07Pb (Sizes 04 - 07)
Forged 080M46 (Sizes 08 - 10)
Zinc Plated and Clear Trivalent Passiv

Inner Ring: Steel 070M20, Zinc Plated and Clear Trivalent Passivate

Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

Stud: Steel 230M07Pb, Zinc Plated and Clea Trivalent Passivate

Liner: High Strength PTFE Composite

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Stud Size	Housing Thread	A	B	C	K	Static Load Rating (Newtons) Radial
FS-04S	FSL-04S	1/4 UNF	1/4 UNF	0.562	0.485	0.500	0.375	1,500
FS-05S	FSL-05S	5/16 UNF	5/16 UNF	0.687	0.547	0.594	0.437	3,190
FS-06S	FSL-06S	3/8 UNF	3/8 UNF	0.906	0.562	0.812	0.500	4,240
FS-07S	FSL-07S	7/16 UNF	7/16 UNF	1.125	0.843	1.000	0.625	5,720
FS-08S	FSL-08S	1/2 UNF	1/2 UNF	1.125	0.875	1.000	0.625	7,200
FS-10S	FSL-10S	5/8 UNF	5/8 UNF	1.125	1.000	1.000	0.750	9,000

For stainless steel add 'SS' to part no. For example 'FS-M05S SS'

DUNLOP

FEMALE ROD ENDS

FSX SERIES

Description:
FSX series is our 3-piece steel on steel high strength range of female rod ends designed for motorsport and heavy industrial mechanical load applications. Incorporating a high strength PTFE bronze mesh between the ball and the liner material, suitable for high shock loads and heavy mechanical load applications requiring low friction, available in both metric and imperial bore and thread sizes, they do not require maintenance.

Material Specifications:
Housing: Steel 708M40, heat treated, zinc plated and clear trivalent passivate. Inner Ring: Steel 070M20, zinc plated and clear trivalent passivate and stainless steel 304C. Liner High strength PTFE bronze mesh composite. Ball: 100Cr6 heat treated, polished and electroless Nickel plated and stainless steel 440C

Features:
Metric & imperial thread & bore sizes, low friction, heavy duty, high shock loads, extended wear life, no maintenance, studded option

Possible Applications:
Motorsport and heavy industrial mechanical applications.

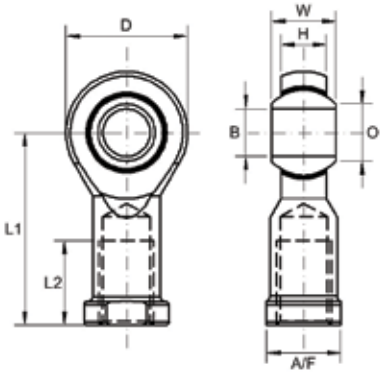
Temperature Range:
-200°C to + 260°C

Specification:
ELV & RoHS compliant

Interchange table

Dunlop	Aurora	Fluro
FSX-M (metric)	AW-M-T and AG-M-T	GIXSW
FSX (imperial)	AW-T and AG-T	
Note: Manufacturers part numbers are used for descriptive purposes only and may not be direct equivalent products.		

FSX SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (METRIC)



Housing: Steel 708M40, Heat Treated, Zinc Plated and Clear Trivalent Passivate

Inner Ring: Steel 070M20, Zinc Plated and Clear Trivalent Passivate

Ball: Bearing Steel 100Cr6, Case Hardened and Electro-less Nickel Plated

Liner: High Strength PTFE Composite

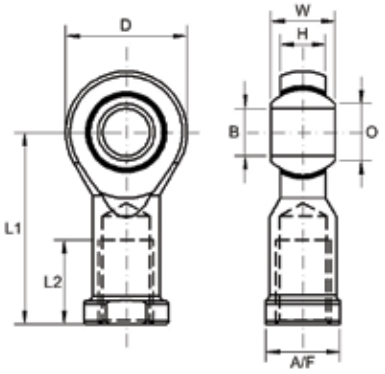
Temp Range: -200°C to +260°C

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	AF	Static Load Rating (Newtons) Radial
FSX-M05	FSLX-M05	5	M5x0.80	8	6.00	18	27	10	9	15000
FSX-M06-5	FSLX-M06-5	5	M6x1.00	9	6.75	20	30	12	11	16700
FSX-M06	FSLX-M06	6	M6x1.00	9	6.75	20	30	12	11	16700
FSX-M08-6	FSLX-M08-6	6	M8x1.25	12	9.00	24	36	16	13	25500
FSX-M08	FSLX-M08	8	M8x1.25	12	9.00	24	36	16	13	25500
FSX-M10-8	FSLX-M10-8	8	M10x1.50	14	10.50	28	43	20	17	34800
FSX-M10-8C	FSLX-M10-8C	8	M10x1.25	14	10.50	28	43	20	17	34800
FSX-M10	FSLX-M10	10	M10x1.50	14	10.50	28	43	20	17	34800
FSX-M10C	FSLX-M10C	10	M10x1.25	14	10.50	28	43	20	17	34800
FSX-M12-10	FSLX-M12-10	10	M12x1.75	16	12.00	32	50	22	19	42000

FSX-M12-10C	FSLX-M12-10C	10	M12x1.25	16	12.00	32	50	22	19	42000
FSX-M12	FSLX-M12	12	M12x1.75	16	12.00	32	50	22	19	42000
FSX-M12C	FSLX-M12C	12	M12x1.25	16	12.00	32	50	22	19	42000
FSX-M14	FSLX-M14	14	M14x2.00	19	13.50	36	57	25	22	57000
FSX-M14C	FSLX-M14C	14	M14x1.50	19	13.50	36	57	25	22	57000
FSX-M16-14	FSLX-M16-14	14	M16x2.00	21	15.00	42	64	28	22	67500
FSX-M16-14C	FSLX-M16-14C	14	M16x1.50	21	15.00	42	64	28	22	67500
FSX-M16	FSLX-M16	16	M16x2.00	21	15.00	42	64	28	22	67500
FSX-M16C	FSLX-M16C	16	M16x1.50	21	15.00	42	64	28	22	67500
FSX-M20-16	FSLX-M20-16	16	M20x2.50	25	18.00	50	77	33	32	93500
FSX-M20-16C	FSLX-M20-16C	16	M20x1.50	25	18.00	50	77	33	32	93500
FSX-M20	FSLX-M20	20	M20x2.50	25	18.00	50	77	33	32	93500
FSX-M20C	FSLX-M20C	20	M20x1.50	25	18.00	50	77	33	32	93500

FSX SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (IMPERIAL)



Housing: Steel 708M40, Heat Treated, Zinc Plated and Clear Trivalent Passivate

Inner Ring: Steel 070M20, Zinc Plated and Clear Trivalent Passivate

Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

Liner: High Strength PTFE Composite

Temp Range: -200°C to +260°C

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	AF	Static Load Rating (Newtons) Radial
FSX-04-3	FSLX-04-3	3/16	1/4 UNF	0.375	0.281	0.812	1.312	0.750	0.375	16700
FSX-04	FSLX-04	1/4	1/4 UNF	0.375	0.281	0.812	1.312	0.750	0.375	16700
FSX-05-4	FSLX-05-4	1/4	5/16 UNF	0.437	0.344	1.000	1.375	0.750	0.437	25500
FSX-05	FSLX-05	5/16	5/16 UNF	0.437	0.344	1.000	1.375	0.750	0.437	25500
FSX-06-5	FSLX-06-5	5/16	3/8 UNF	0.500	0.406	1.125	1.625	0.937	0.562	34800
FSX-06	FSLX-06	3/8	3/8 UNF	0.500	0.406	1.125	1.625	0.937	0.562	34800
FSX-07-6	FSLX-07-6	3/8	7/16 UNF	0.562	0.437	1.250	1.812	1.062	0.625	38000
FSX-07	FSLX-07	7/16	7/16 UNF	0.562	0.437	1.250	1.812	1.062	0.625	38000
FSX-08-7	FSLX-08-7	7/16	1/2 UNF	0.625	0.500	1.375	2.125	1.187	0.750	42000
FSX-08	FSLX-08	1/2	1/2 UNF	0.625	0.500	1.375	2.125	1.187	0.750	42000
FSX-10-8	FSLX-10-8	1/2	5/8 UNF	0.750	0.562	1.750	2.500	1.500	0.875	67500
FSX-10	FSLX-10	5/8	5/8 UNF	0.750	0.562	1.750	2.500	1.500	0.875	67500
FSX-12-10	FSLX-12-10	5/8	3/4 UNF	0.875	0.687	2.000	2.875	1.750	1.000	93500
FSX-12	FSLX-12	3/4	3/4 UNF	0.875	0.687	2.000	2.875	1.750	1.000	93500

For stainless steel add 'SS' to part no. For example 'FSX-04 SS'

DUNLOP

FEMALE ROD ENDS

FX SERIES

Description:
FX series Rod Ends have been developed for use in General Engineering applications where medium to high loads are encountered. Within their load carrying capacity they will withstand shock loading and high frequency oscillation.

Material Specifications:
Housing: 817M 40, heat treated to 80/90 tons/in² tensile, Phosphated all over. Ball: 100Cr 6, heat treated, Phosphated all over.

Features
Metric and Imperial sizes available
Can be used in application involving shock loading and high frequency oscillation.

Possible Applications
Medium / heavy industrial/mechanical applications
Construction equipment
Agricultural equipment and motor sport.

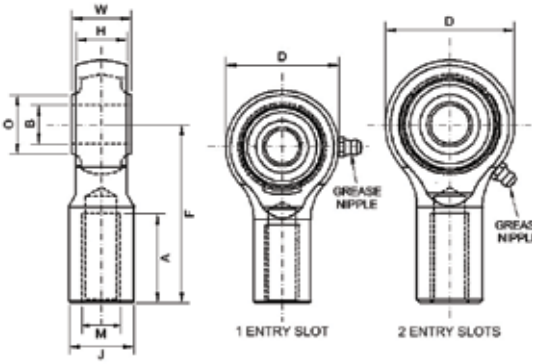
Temperature Range
-40°C to +150°C

Specification
ELV & RoHS compliant

Interchange table

Dunlop	Rose	NMB
FX-M (metric)	RBJ-M	RBJ-M
FX (imperial)	RBJ	RBJ
Note: Manufacturers part numbers are used for descriptive purposes only and may not be direct equivalent products.		

FX SERIES: MAINTENANCE REQUIRED ROD ENDS WITH FEMALE THREAD (METRIC)



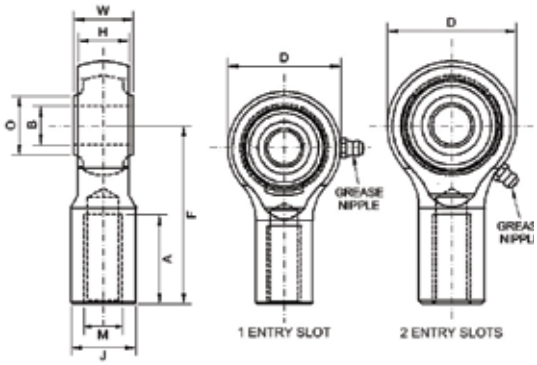
Housing: Forged 817M40, Heat Treated to 80/90 tons/in² tensile and Phosphate all over

Ball: Bearing Steel 100Cr6, Heat Treated and Phosphate all over

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	B	W	H	O	D	F	A	J	M	X	Static Load Rating (Newtons) Radial
FX-M06	FXL-M06	6	9,5	8,1	9,5	20,6	28,7	14.0	10,1	M6 x 1.00	22	11770
FX-M08C	FXL-M08C	8	11,0	9,5	11,0	23,8	33,2	17.0	11,1	M8 x 1.00	21	19610
FX-M08	FXL-M08	8	11,0	9,5	11,0	23,8	33,2	17.0	11,1	M8 x 1.25	21	19610
FX-M10C	FXL-M10C	10	14,2	12,2	14,2	31,0	41,2	21.0	15,2	M10 x 1.25	22	27460
FX-M10	FXL-M10	10	14,2	12,2	14,2	31,0	41,2	21.0	15,2	M10 x 1.50	22	27460
FX-M12CG	FXL-M12CG	12	19,0	16,2	19,0	41,2	54,2	28.0	20,3	M12 x 1.25	22	49030
FX-M12G	FXL-M12G	12	19,0	16,2	19,0	41,2	54,2	28.0	20,3	M12 x 1.75	22	49030
FX-M16CG	FXL-M16CG	16	22,2	19,0	22,2	49,2	66,7	34,0	25,4	M16 x 1.50	21	77470
FX-M16G	FXL-M16G	16	22,2	19,0	22,2	49,2	66,7	34,0	25,4	M16 x 2.00	21	77470
FX-M20CG	FXL-M20CG	20	22,2	20,6	25,4	54,0	79,2	44,0	28,5	M20 x 1.50	16	110810
FX-M20G	FXL-M20G	20	22,2	20,6	25,4	54,0	79,2	44,0	28,5	M20 x 2.50	16	110810

FX SERIES: MAINTENANCE REQUIRED ROD ENDS WITH FEMALE THREAD (IMPERIAL)



Housing: Forged 817M40, Heat Treated to 80/90 tons/in² tensile and Phosphate all over

Ball: Bearing Steel 100Cr6, Heat Treated and Phosphate all over

Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	B	W	H	O	D	F	A	J	M	X	Static Load Rating (Newtons) Radial
FX-04	FXL -04	.2500	.375	.320	.375	.812	1.125	.562	.400	1/4 UNF	22	11770
FX-05	FXL-05	.3125	.437	.375	.437	.937	1.312	.687	.437	5/16 UNF	21	19610
FX-05F	FXL-05F	.3125	.437	.375	.437	.937	1.312	.687	.437	5/16 BSF	21	19610
FX-06	FXL-06	.3750	.562	.480	.562	1.218	1.625	.875	.600	3/8 UNF	22	27460
FX-06F	FXL-06F	.3750	.562	.480	.562	1.218	1.625	.875	.600	3/8 BSF	22	27460
FX-08G	FXL-08G	.5000	.750	.640	.750	1.625	2.125	1.125	.800	1/2 UNF	22	49030
FX-08FG	FXL-08FG	.5000	.750	.640	.750	1.625	2.125	1.125	.800	1/2 BSF	22	49030
FX-10G	FXL-10G	.6250	.875	.750	.875	1.937	2.625	1.375	1.000	5/8 UNF	21	77470
FX-10FG	FXL-10FG	.6250	.875	.750	.875	1.937	2.625	1.375	1.000	5/8 BSF	21	77470
FX-12G	FXL-12G	.7500	.875	.812	1.000	2.125	3.125	1.750	1.125	3/4 UNF	16	110810
FX-12G	FXL-12FG	.7500	.875	.812	1.000	2.125	3.125	1.750	1.125	3/4 BSF	16	110810
FX-16G	FXL-16G	1.0000	1.375	1.0000	1.375	3.000	4.125	2.125	1.625	1 1/4 UNF	24	150250
FX-16FG	FXL-16FG	1.0000	1.375	1.0000	1.375	3.000	4.125	2.125	1.625	1 1/4 BSF	24	150250

'G' in part number denotes grease nipple fitted.

FEMALE ROD ENDS

AL SERIES

Description:
AL-Series is our 3-piece aluminium light weight range of self-lubricating general purpose female rod ends suitable for light industrial/mechanical load applications requiring low friction, with good wear resistance and available in metric bore and thread sizes. They have excellent moisture resistance and require no maintenance.

Material Specifications:
Housing: Aluminium A6026, black anodised. Race: GR-nylon LV-3H.
Ball: Bearing steel 100Cr6, hardened and electroless nickel plated.

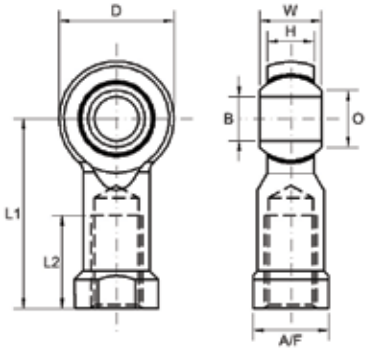
Features
Metric bore & thread sizes Low friction
Self-lubricating
Good wear resistance
Excellent moisture resistance
No maintenance
Light weight

Possible Applications
Light industrial/ mechanical applications
Weight restricted applications
Linear movement sensors

Temperature Range
-30°C to +170°C

Specification
ELV & RoHS compliant

AL SERIES: MAINTENANCE FREE ROD ENDS WITH FEMALE THREAD (METRIC)



Housing: Aluminium A6026, Black Anodised

Race GR-Nylon, LV-3H

Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

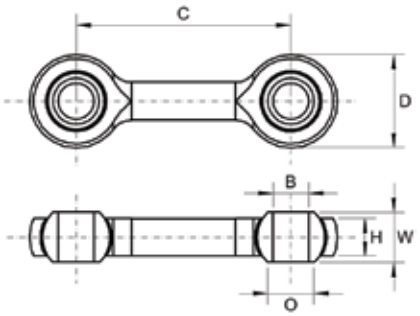
Specification: ELV and RoHS Compliant

Part No. Right Hand	Part No. Left Hand	Bore Size	Thread	W	H	D	L1	L2	O	AF	Static Load Rating Radial (Newtons)
AL-SA-116	AL-SA-116LH	3	M3X0.50	6	4.50	12	13.5	6.0	5.2	6.0	3,040
AL-SA-176	AL-SA-176LH	3	M3X0.50	6	4.50	12	13.5	6.0	5.2	7.0	3,040
AL-SA-106	AL-SA-106LH	3	M3X0.50	6	4.50	12	18.5	7.0	5.2	6.5	3,040
AL-SA-032	AL-SA-032LH	3	M3X0.50	6	4.50	12	18.5	7.0	5.2	6.5	3,040
AL-SA-033	AL-SA-033LH	3	M3X0.50	6	4.50	12	21.0	9.0	5.2	6.5	3,040
AL-SA-127	AL-SA-127LH	3	M4X0.70	6	4.50	12	13.5	6.0	5.2	7.0	3,040
AL-SA-091	AL-SA-091LH	3	M4X0.70	6	4.50	12	13.5	6.0	5.2	6.0	3,040
AL-SA-090	AL-SA-090LH	3	M4X0.70	6	4.50	12	19.5	6.0	5.2	6.0	3,040
AL-SA-009	AL-SA-009LH	5	M4X0.70	8	6.00	16	27.0	14.0	9.0	9.0	5,340
AL-SA-178	AL-SA-178LH	5	M4X0.70	8	6.00	16	16.2	8.0	9.0		5,340
AL-SA-135	AL-SA-135LH	5	M4X0.70	8	6.00	16	18.0	6.0	9.0	9.0	5,340
AL-SA-111	AL-SA-111LH	5	M4X0.70	8	6.00	16	25.0	11.5	9.0	9.0	5,340
AL-SA-177	AL-SA-177LH	5	M4X0.70	8	6.00	16	27.0	17.5	9.0	9.0	5,340
AL-SA-010	AL-SA-010LH	5	M5X0.80	8	6.00	16	27.0	14.0	9.0	9.0	5,340
AL-SA-019	AL-SA-019LH	5	M5X0.80	8	6.00	16	18.0	6.5	9.0	9.0	5,340
AL-SA-201	AL-SA-201LH	5	M6X1.00	8	6.00	16	27.0	13.5	9.0	9.0	5,340
AL-SA-080		6	M6X1.00	9	6.75	18	30.0	13.5	9.3	11.0	7,720
AL-SA-081		6	M6X1.00	9	6.75	18	30.0	13.5	9.3	11.0	7,720
AL-SA-082	AL-SA-082LH	8	M8X1.25	12	9.00	22	36.0	16.5	10.4	14.0	7,720

C
D
B
H
O

DUNLOP

MALE ROD ENDS



DB SERIES: DBM - DBI

Description:
DB-Series is our 3-piece 'dog bone' range of rod ends primarily based on our MP-Series with regards to function and structure. A wide range of preset centre distances are available. Suitable for light to medium industrial/ mechanical load applications requiring low friction, with good wear resistance and available in both metric and imperial bore sizes. They have excellent moisture resistance and require no maintenance.

Material Specifications:
Housing: Steel 230M07PB zinc plated and clear trivalent passivate.
Race: GR-nylon LV-3H. Ball: Bearing steel 100Cr6, hardened and electroless nickel plated.

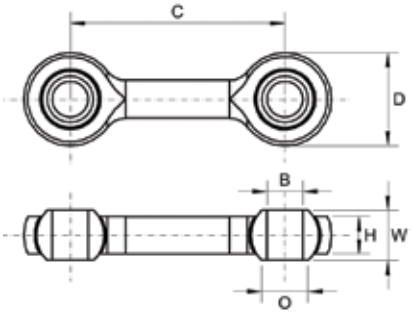
Features:
Metric & imperial thread & bore sizes Low friction
Self-lubricating
Good wear resistance
Excellent moisture resistance
No maintenance

Possible Applications:
Light to medium/heavy industrial/mechanical applications
Construction equipment
Agricultural equipment
Recreational vehicles

Temperature Range:
-30°C to +170°C

Specification:
ELV & RoHS compliant

DB SERIES: MAINTENANCE FREE DOG BONE ROD ENDS (IMPERIAL)



Housing: Steel 230M07Pb, Zinc Plated and Clear Trivalent Passivate

Race GR-Nylon, LV-3H

Ball: Bearing Steel 100Cr6, Hardened and Electro-less Nickel Plated

Part No.	Bore Size	C	W	H	D	O	Liner	Static Load Rating (Newtons) Radial
DB-SA-076	5/16	60.0	0.437	0.344	0.875	0.447	GR-NYLON	6,880
DB-SA-158	5/16	75.0	0.437	0.344	0.875	0.447	GR-NYLON	12,010
DB-SA-067	5/16	80.0	0.437	0.344	0.875	0.447	GR-NYLON	12,010
DB-SA-128	5/16	82.5	0.437	0.344	0.875	0.447	GR-NYLON	12,010
DB-SA-162	3/8	50.0	0.500	0.406	1.000	0.516	GR-NYLON	12,830
DB-SA-156	3/8	60.0	0.500	0.406	1.000	0.516	GR-NYLON	12,830
DB-SA-205	3/8	60.0	0.500	0.415	1.000	0.516	SINTERED BRONZE	13,640
DB-SA-159	3/8	65.0	0.500	0.406	1.000	0.516	GR-NYLON	16,900
DB-SA-195	3/8	70.0	0.500	0.406	1.000	0.516	GR-NYLON	16,900
DB-SA-206	3/8	85.0	0.500	0.406	1.000	0.516	GR-NYLON	16,900
DB-SA-155	3/8	100.0	0.500	0.406	1.000	0.516	GR-NYLON	16,900
DB-SA-168	3/8	120.0	0.500	0.406	1.000	0.516	GR-NYLON	16,900
DB-SA-157	3/8	124.0	0.500	0.406	1.000	0.516	GR-NYLON	16,900
DB-SA-207	3/8	175.0	0.500	0.406	1.000	0.516	GR-NYLON	16,900

DB SERIES: MAINTENANCE FREE DOG BONE ROD ENDS (METRIC)

Part No.	Bore Size	C	W	H	D	O	Liner	Static Load Rating (Newtons) Radial
DB-SA-074	8	60.0	12	9.0	22	10.4	GR-NYLON	12,775
DB-SA-173	8	75.0	12	9.0	22	10.4	GR-NYLON	12,775
DB-SA-169	8	80.0	12	9.0	22	10.4	GR-NYLON	12,775
DB-SA-170	8	82.5	12	9.0	22	10.4	GR-NYLON	12,775
DB-SA-175	10	50.0	14	10.5	26	12.9	GR-NYLON	16,960
DB-SA-060	10	60.0	14	10.5	26	12.9	GR-NYLON	16,960
DB-SA-200	10	60.0	14	10.5	26	12.9	SINTERED BRONZE	16,960
DB-SA-174	10	65.0	14	10.5	26	12.9	GR-NYLON	16,960
DB-SA-196	10	70.0	14	10.5	26	12.9	GR-NYLON	16,960
DB-SA-160	10	85.0	14	10.5	26	12.9	GR-NYLON	16,960
DB-SA-171	10	100.0	14	10.5	26	12.9	GR-NYLON	16,960
DB-SA-059	10	120.0	14	10.5	26	12.9	GR-NYLON	16,960
DB-SA-172	10	124.0	14	10.5	26	12.9	GR-NYLON	16,960
DB-SA-180	10	175.0	14	10.5	26	12.9	GR-NYLON	16,960
DB-SA-355	12	151.0	16	12.0	30	15.4	SINTERED BRONZE	22,900

The above list shows our current production programme of Dog Bone rod ends. Please enquire for any item not shown.

www.dunlopbtl.com

"We are proud to be a European manufacturer; it is a privilege to supply our products to some of the world's most prestigious original equipment manufacturers in the Agricultural, Automotive, Construction, Industrial and Motor Sport sectors".

"Our distributor network is vital to the continued global growth of the DUNLOP brand and our valued distributor partners form the perfect link between manufacturer and end user".

"Our commitment to our staff, our customers and the environment is of paramount importance to our company, we will continue to develop our organisational skills to further enhance our company's potential, to engage in sustainable practices and anticipate the needs and expectations of our customers".

"We love our products".

Ray Mifsud, *Managing Director.*

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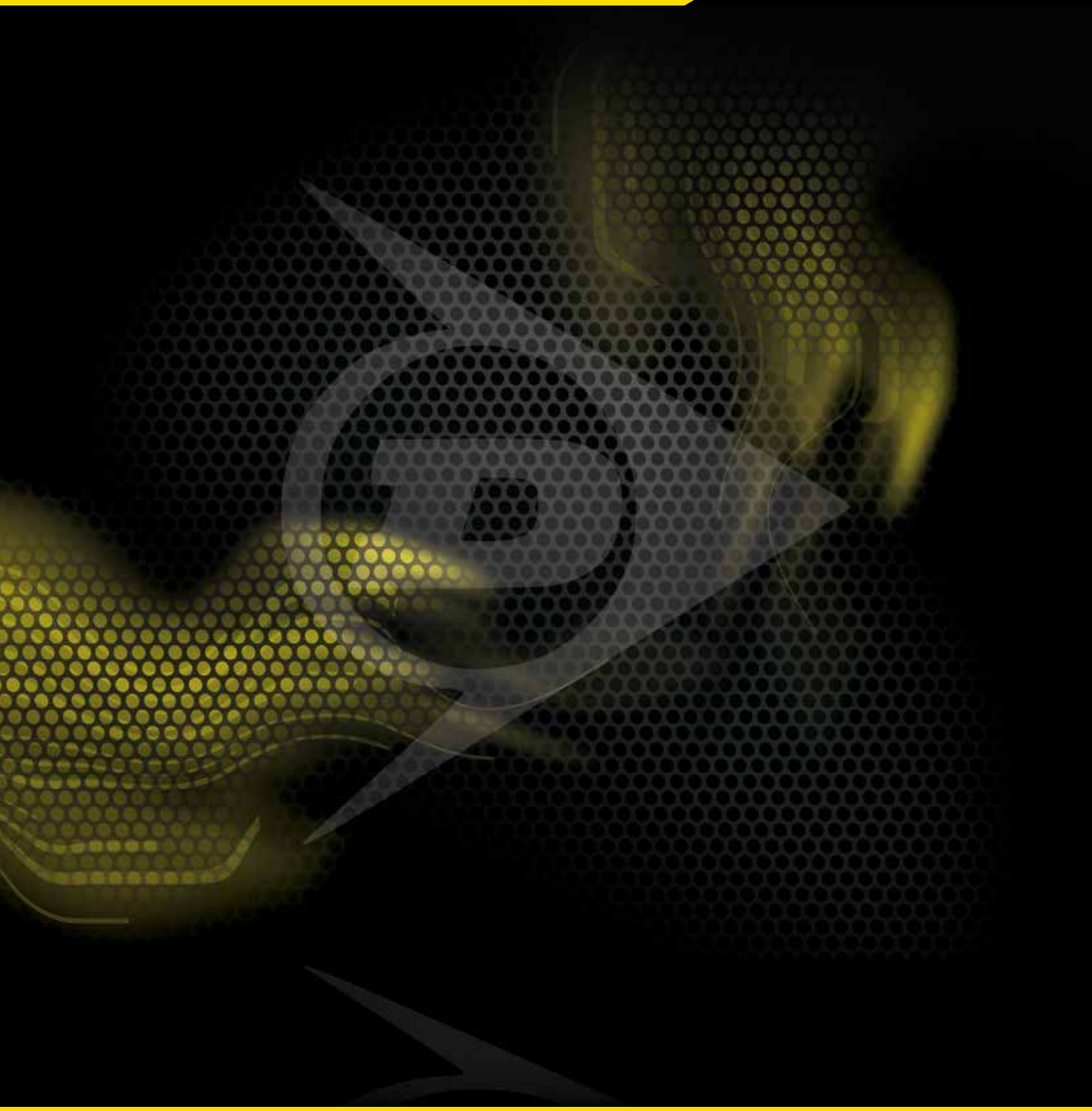
LINKAGES



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