

R609 SERIES PRODUCTS FROM
MARYLAND METRICS



BALL JOINTS

R609 Series

products are available from

MARYLAND METRICS

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RFQ form: <http://mdmetric.com/rfq.htm>

How to order: Please prefix the R609 Series part number or description with 'R609-' example: R609-GML8LH

Please note that some of these products may not be stocked in the USA, so allow sufficient lead times for delivery from Europe, and for minimum order requirements.

BALL JOINTS

A - SERIES | AMG - AIG

PAGE 1

Description

A - Series is our 4-piece standard range of nylon lined ball joints suitable for light to medium industrial/mechanical load applications requiring smooth action and good wear resistance, available in both metric & imperial thread sizes. A-series ball joints are also available without the ball stud allowing for assembly on to a pre-positioned stud, please refer to compatible ball stud options in our miscellaneous product section. Neoprene gaiter helps resist dirt contamination, if gaiter is not required please remove the letter G from the part number.

Materials

Body: Steel 230M07PB Zinc plated white & blue passivate (silver/clear)
Ball stud: Steel 230M07PB Zinc plated white & blue passivate (silver/clear)
Liner: Nylon 6 white
Gaiter: Neoprene

Features

Metric & imperial thread sizes
Ultra smooth action
Can be assembled in situ
Good wear resistance
Lubricated

Possible Applications

Industrial equipment
Construction equipment
Agricultural equipment
Lawn & garden equipment

Temperature Range

-30°C to +120°C

Specification

ELV & RoHS compliant



BL - SERIES | BL

PAGE 2

Description

BL - Series is our 4-piece standard range of die cast Zinc alloy ball joints suitable for medium industrial/mechanical load applications requiring smooth action and good wear resistance. The Body is die cast around the ball giving an ultra smooth surface contact area, the ball stud is hardened and friction welded to the ball. The Neoprene gaiter helps resist dirt contamination.

Materials

Body: Die cast Zinc alloy
Ball: 100Cr6 bearing steel
Ball stud: Steel S35C case hardened Zinc plated white & blue passivate (silver/clear)
Gaiter: Neoprene

Features

Metric thread sizes
Ultra smooth action
Strong & cost effective
High pull out load axial & radial
Good wear resistance
Lubricated

Possible Applications

Industrial equipment
Construction equipment
Agricultural equipment
Lawn & garden equipment

Temperature Range

-30°C to +120°C

Specification

ELV & RoHS compliant



BMG - SERIES | BMG

PAGE 3

Description

BMG - Series is our 3-piece range of light weight nylon bodied ball joints suitable for light industrial/mechanical load applications requiring smooth action and good wear resistance. BMG series ball joints are also available without the ball stud allowing for assembly on to a pre-positioned stud, please refer to compatible ball stud options in our miscellaneous product section. BMG series ball joints can be moulded directly onto a linkage rod etc. Neoprene gaiter helps resist dirt contamination, if gaiter is not required please remove the letter G from the part number.

Materials

Body: Nylon 12 grey with graphite additive
Ball stud: Steel 230M07PB Zinc plated white & blue passivate (silver/clear)
Gaiter: Neoprene

Features

Metric thread sizes
Smooth action
Can be assembled in situ
Good wear resistance
Light weight
Economical
Lubricated

Possible Applications

Light Industrial equipment
Light agricultural equipment
Lawn & garden equipment
Engine controls

Temperature Range

-30°C to +120°C

Specification

ELV & RoHS compliant



BALL JOINTS

M - SERIES | M

PAGE 3

Description

M - Series is our 2-piece range of light weight nylon bodied lockable ball joints suitable for light industrial/mechanical load applications requiring smooth action and good wear resistance. M series ball joints are also available without the ball stud allowing for assembly on to a pre-positioned stud, please refer to compatible ball stud options in our miscellaneous product section. M series ball joints have a unique locking clip incorporated into the one piece body that when closed increases axial pull out and reduces backlash.

Materials

Body: Nylon PA 6.6 black with MoS2 additive
Ball stud: Steel 230M07PB Zinc plated white & blue passivate (silver/clear)

Features

Metric thread sizes
Smooth action
Can be assembled in situ
Economical
Light weight

Temperature Range

-40°C to +80°C

Possible Applications

Light Industrial equipment
Light agricultural equipment
Lawn & garden equipment
Engine controls

Specification

ELV & RoHS compliant



C - SERIES | CMG - CMG/1 - CMG/2

PAGE 4

Description

C - Series is our 5-piece range of spring retained & lockable ball joints suitable for medium industrial/mechanical load applications, inner ring retains the ball stud while the safety clip prevents the ball stud from being removed. C - Series ball joints are also available without the ball stud allowing for assembly on to a pre-positioned stud, please refer to compatible ball stud options in our miscellaneous product section. CMG ball joints have a pre-machined counter bore making them ideal for gas strut applications etc. Neoprene gaiter helps resist dirt contamination, if gaiter is not required please remove the letter G from the part number.

Materials

Body: Steel 230M07PB Zinc plated white & blue passivate (silver/clear)
Ball stud: Steel 212A42 case hardened and Zinc plated white & blue passivate (silver/clear)
Inner ring & safety clip: Spring steel to BS5216
Gaiter: Neoprene

Features

Metric thread sizes
Lubricated
Can be assembled in situ
Good wear resistance
Medium duty
Safety features

Temperature Range

-30°C to +90°C

Possible Applications

Industrial equipment
Construction equipment
Agricultural equipment
Lawn & garden equipment

Specification

ELV & RoHS compliant



D - SERIES | DMG - DIG

PAGE 6

Description

D - Series is our 3-piece range of swaged design ball joints suitable for medium industrial/mechanical load applications, the swaging of the body produces a permanent assembly with the ball stud. Available in both metric & imperial thread sizes. Neoprene gaiter helps resist dirt contamination, if gaiter is not required please remove the letter G from the part number.

Materials

Body: Steel 230M07PB Zinc plated white & blue passivate (silver/clear)
Ball stud: Steel 230M07PB case hardened & Zinc plated white & blue passivate (silver/clear)
Gaiter: Neoprene

Features

Metric & imperial thread sizes
Permanent assembly
High pull out load
Good wear resistance
Lubricated

Temperature Range

-30°C to +120°C

Possible Applications

Industrial equipment
Construction equipment
Agricultural equipment
Lawn & garden equipment

Specification

ELV & RoHS compliant



BALL JOINTS

F - SERIES | FMG - FIG

PAGE 7

Description

F - Series is our 4-piece range of spring retained ball joints suitable for medium industrial/mechanical load applications, available in both metric & imperial thread sizes. F-Series ball joints are ideal for severe wear conditions and are resistant to vibration and high shock loading. Neoprene gaiter helps resist dirt contamination, if gaiter is not required please remove the letter G from the part number.

Materials

Body: Steel 230M07PB case hardened & Zinc plated white & blue passivate (silver/clear)
 Ball stud: Steel 230M07PB case hardened & Zinc plated white & blue passivate (silver/clear)
 Inner ring: Hardened and tempered spring steel to BS5216
 Gaiter: Neoprene

Features

Metric & imperial thread sizes
 High pull out load
 High wear conditions
 High shock loads
 Resistant to vibration
 Lubricated

Temperature Range

-30°C to +120°C

Possible Applications

Industrial equipment
 Construction equipment
 Agricultural equipment
 Lawn & garden equipment

Specification

ELV & RoHS compliant



I - SERIES | ILMMG - ILIMG - ILMFG - ILIFG - IMG

PAGE 8

Description

I - Series is our 5-piece range of inline nylon lined ball joints suitable for medium industrial/mechanical load applications, IMG has an inner ring that retains the ball stud and has no nylon liner. Available in both metric & imperial thread sizes. Neoprene gaiter helps resist dirt contamination, if gaiter is not required please remove the letter G from the part number.

Materials

Body: Steel 230M07PB case hardened & Zinc plated white & blue passivate (silver/clear)
 IL - Ball stud: Steel 230M07PB Zinc plated white & blue passivate (silver/clear)
 IMG - Ball Stud: Steel 212A42 induction hardened
 Liner: Nylon 6 white (No liner in IMG range)
 Inner ring & safety clip: Spring steel to BS5216
 Gaiter: Neoprene

Features

Metric & imperial thread sizes
 Ultra smooth action
 High pull out loads
 Good wear resistance
 Push & pull applications
 Lubricated
 Male to Male option

Temperature Range

-40°C to +80°C

Possible Applications

Industrial equipment
 Construction equipment
 Agricultural equipment
 Lawn & garden equipment

Specification

ELV & RoHS compliant



P - SERIES | PM - PI

PAGE 11

Description

P - Series is our 3-piece range of quick release ball joints suitable for light industrial/mechanical load applications requiring good wear resistance, available in both metric & imperial thread sizes. Easily disconnected or re-assembled during installation. P-series ball joints are also available without the ball stud allowing for assembly on to a pre-positioned stud please refer to compatible ball stud options in our miscellaneous product section.

Materials

Body: Steel 230M07PB case hardened & Zinc plated white & blue passivate (silver/clear)
 Ball stud: Steel 230M07PB case hardened & Zinc plated white & blue passivate (silver/clear)
 Clip: CS70 carbon steel, hardened and tempered and Geomet finish

Features

Metric & imperial thread sizes
 Easily disconnected or re-assembled during installation
 Can be assembled in situ
 Good wear resistance
 Lubricated
 Light weight

Temperature Range

-30°C to +120°C

Possible Applications

Light industrial equipment
 Light construction equipment
 Light agricultural equipment
 Lawn & garden equipment
 Automotive

Specification

ELV & RoHS compliant



BALL JOINTS

Q - SERIES | QM - QI

PAGE 12

Description

Q - Series is our 4-piece range of quick release, spring loaded ball joints suitable for medium industrial/mechanical load applications, available in both metric & imperial thread sizes. Q-Series Ball joints are also available without the ball stud allowing for assembly on to a pre-positioned stud please refer to compatible ball stud options in our miscellaneous product section. Q-Series ball joints are ideal for severe wear conditions and are resistant to vibration and high shock loading.

Materials

Body: Steel 230M07PB case hardened & Zinc plated white & blue passivate (silver/clear)
Ball stud: Steel 230M07PB case hardened & Zinc plated white & blue passivate (silver/clear)
Shield: Steel 230M07PB Zinc plated white & blue passivate (silver/clear)
Spring: Stainless Steel

Features

Metric & imperial thread sizes
High pull out load
High wear conditions
High shock loads
Resistant to vibration
Lubricated
Knurl aids assembly

Possible Applications

Industrial equipment
Construction equipment
Agricultural equipment
Lawn & garden equipment

Temperature Range

-30°C to +120°C

Specification

ELV & RoHS compliant



T - SERIES | TM

PAGE 13

Description

T series is our 2-piece range of clip retained quick release ball joints suitable for light industrial/mechanical load applications requiring good wear resistance. T-series ball joints are supplied without the ball stud allowing for assembly on to a pre-positioned stud, please refer to compatible ball stud options in our miscellaneous product section.

Materials

Body: Steel 230M07PB case hardened & Zinc plated white & blue passivate (silver/clear)
Spring: CS70 spring steel hardened & austemper, Deltatone & Deltaseal black

Features

Quick release
Can be assembled in situ
Good wear resistance
Lubricated
High pull out load

Possible Applications

Light industrial equipment
Light construction equipment
Light agricultural equipment
Gas struts

Temperature Range

-30°C to +120°C

Specification

ELV & RoHS compliant



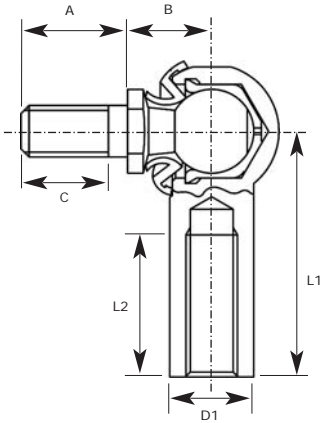
NOTES |

All Metric ball joints are based on DIN 71802 & DIN 71803 and all imperial ball joints are based on SAE J 490.

40% of our total production is purpose made to suit individual customer requirements, therefore please do not hesitate to contact us for any item not shown or if you have a specific application, our engineering team are available to help you.

All of the above catalogue ball joints are ELV & RoHS compliant, all bodies/studs are Zinc plated with white & blue passivate (Silver/Clear) specification suffix "F39" unless otherwise stated to give a surface protection of 96 hours salt spray, other platings options are available but may not be ELV & RoHS compliant, please refer to our "Plating Options" section for full details and availability.

Every care has been taken to ensure the accuracy of the information contained in the following pages of this publication. No liability can be accepted for any loss or damage whether direct or indirect or consequential arising out of the use of the information contained herein. The stated load rating and design options are provided as an indication only and customers should test the suitability of all products to their own satisfaction, applications vary immensely therefore samples are available for this purpose.



AMG - SERIES LINER RETAINED BALL JOINTS

Materials

Body: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Liner: Nylon 6.

Ball Stud: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Seal: Neoprene.

Specification

ELV & RoHS Compliant.



METRIC

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
AMG6	AMG6LH	M6X1.00	M6X1.00	10	25.0	11.5	8	12.5	11.0	10.0	10
AMG6/2	AMG6/2LH	M6X1.00	M8X1.25	10	25.0	11.5	8	12.5	11.0	10.0	10
AMG8	AMG8LH	M8X1.25	M8X1.25	13	30.0	14.0	11	16.5	13.0	13.5	13
AMG8/1	AMG8/1LH	M8X1.25	M8X1.25	13	41.0	25.0	11	16.5	13.0	13.5	13
AMG8/6	AMG8/6LH	M8X1.25	M8X1.25	13	41.0	25.0	11	20.0	13.0	17.5	13
AMG8/7	AMG8/7LH	M8X1.25	M8X1.25	13	30.0	14.0	11	20.0	13.0	17.5	13
AMG8/8	AMG8/8LHF	M6X1.00	M8X1.25	13	30.0	14.0	11	16.5	13.0	13.5	13
AMG8/10	AMG8/10LHF	M8X1.25	M8X1.25	13	30.0	14.0	11	18.5	13.0	15.5	13
AMG8/11	AMG8/11LHF	M6X1.00	M8X1.25	13	51.0	25.0	11	16.5	13.0	13.5	13
AMG8/13	AMG8/13LHF	M10X1.50	M8X1.25	13	30.0	15.0	11	16.5	13.0	13.5	13
AMG8/14	AMG8/14LHF	M8X1.0	M8X1.25	13	25.0	12.0	11	16.5	13.0	13.5	13
AMG10	AMG10LH	M10X1.50	M10X1.50	16	35.0	15.5	13	20.0	16.0	15.0	16
AMG10/1	AMG10/1LH	M12X1.75	M10X1.50	16	45.0	25.5	13	20.0	16.0	15.0	16
AMG10/2	AMG10/2LH	M6X1.00	M10X1.50	16	30.0	10.5	13	19.0	14.5	11.1	16
AMG10/3	AMG10/3LH	M10X1.50	M10X1.50	16	35.0	15.5	13	25.0	16.0	20.0	16
AMG10/5	AMG10/5LH	M10X1.50	M10X1.50	16	35.0	15.5	13	20.0	16.0	15.0	16
AMG12	AMG12LH	M12X1.75	M12X1.75	16	45.0	25.5	13	20.0	16.0	15.0	16
AMG12/1	AMG12/1LH	M16X2.00	M12X1.75	16	45.0	30.0	13	20.0	16.0	17.0	16

IMPERIAL

AIG - SERIES LINER RETAINED BALL JOINTS

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
AIG312	AIG312LH	5/16 UNF	5/16 UNF	0.512	1.181	0.555	0.433	0.650	0.512	1.181	0.512
AIG312/1	AIG312/1LH	5/16 UNF	5/16 UNF	0.512	1.181	0.555	0.433	0.827	0.512	1.181	0.512

BL - SERIES DIE CAST BALL JOINTS

Materials

Body: Die Cast Zinc alloy.

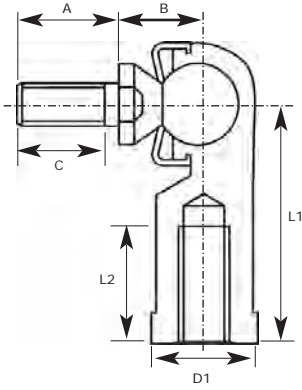
Ball: 100CR6 Bearing Steel.

Ball Stud: S35C, case hardened Zinc plated white & blue passivate (silver/clear).

Seal: Neoprene.

Specification

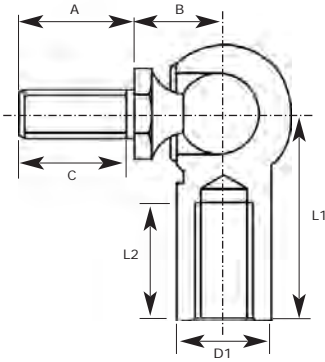
ELV & RoHS Compliant.



METRIC

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
BL6D	BL6DL	M6X1.00	M6X1.00	8	30	16	10	15.0	11.0	11.0	11
BL8D	BL8DL	M8X1.25	M8X1.25	8	36	19	12	17.0	14.0	12.0	14
BL10BD	BL10BDL	M10X1.50	M10X1.50	10	43	23	14	26.0	17.0	21.0	17
BL10D	BL10DL	M10X1.25	M10X1.25	13	43	23	14	20.0	17.0	15.0	17
BL12BD	BL12BDL	M12X1.75	M12X1.75	13	50	26	17	30.0	19.0	24.0	19
BL12D	BL12DL	M12X1.25	M12X1.25	13	50	26	17	23.0	19.0	17.0	19
BL14BD	BL14BDL	M14X2.00	M14X2.00	13	57	30	19	40.5	21.5	28.0	22
BL14D	BL14DL	M14X1.50	M14X1.50	13	57	30	19	34.5	21.5	22.0	22
BL16BD	BL16BDL	M16X2.00	M16X2.00	13	64	34	22	42.5	23.5	29.0	24
BL16D	BL16DL	M16X1.50	M16X1.50	13	64	34	22	36.5	23.5	23.0	24

BMG - SERIES NYLON BODY BALL JOINTS



Materials

Body: Nylon 12 with Graphite trace.

Ball Stud: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Seal: Neoprene.

Specification

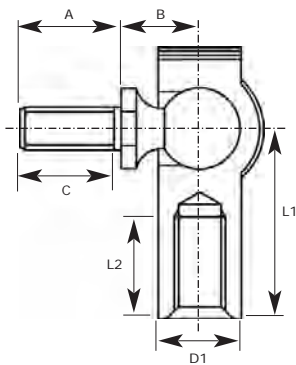
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METRIC

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
BMG5	BMG5LH	M5X0.80	M5X0.80	8	20	12	7	10.2	9.0	8.2	8.0
BMG5/6*	BMG5/6LH*	M5X0.80	M5X0.80	8	20	12	7	10.2	9.0	8.2	8.0
BMG6	BMG6LH	M6X1.00	M6X1.00	10	24	14	8	12.5	11.0	10.5	10.0
BMG8	BMG8LH	M8X1.25	M8X1.25	13	30	17	11	16.5	13.0	14.5	12.8

M - SERIES SELF RETAINED BALL JOINTS



Materials

Body: PA 6.6.

Ball Stud: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Specification

ELV & RoHS Compliant.

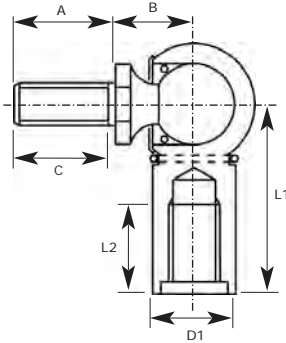


METRIC

PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
M6008	M4X0.70	M4X0.70	6	17	10	6	6.5	6.5	5.5	8.0
M6010	M5X0.80	M5X0.80	8	22	12	8	10.2	9.0	8.0	9.5
M6012	M6X1.00	M6X1.00	10	25	14	10	12.5	11.0	10.0	12.0
M6014	M8X1.25	M8X1.25	13	30	17	13	16.5	13.0	14.0	15.0

Note: BMG5/6* Cross hole for locking pin.

CMG - SERIES DIN STANDARD BALL JOINTS



Materials

Body: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Ball Stud: 212A42, Hardened Zinc plated white & blue passivate (silver/clear).

Inner Safety Clip: Spring Steel.

Outer Clip: Spring Steel.

Seal: Neoprene.

Specification

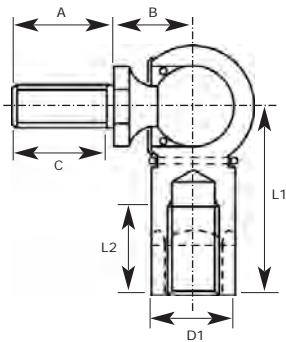
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METRIC

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	C'BORE DIA*	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
CMG5	CMG5LH	M5X0.80	M5X0.80	8	5.10	22	10	7	10.2	9.0	7.7	8.0
CMG6	CMG6LH	M6X1.00	M6X1.00	10	6.10	25	11	8	12.5	11.0	10.0	10.0
CMG8	CMG8LH	M8X1.25	M8X1.25	13	8.20	30	14	11	16.5	13.0	14.0	13.0
CMG10	CMG10LH	M10X1.50	M10X1.50	16	10.20	35	15	13	20.0	16.0	17.5	16.0
CMG14	CMG14LH	M14X2.00	M14X2.00	19	14.25	45	21	16	28.0	20.0	25.5	22.0
CMG14C	CMG14CLH	M14X1.50	M14X1.50	19	14.25	45	21	16	28.0	20.0	25.5	22.0
CMG16	CMG16LH	M16X2.00	M16X2.00	19	16.25	45	21	16	28.0	20.0	25.5	22.0

CMG / 1 - SERIES DIN STANDARD BALL JOINTS



Materials

Body: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Ball Stud: 212A42, Hardened Zinc plated white & blue passivate (silver/clear).

Inner Safety Clip: Spring Steel.

Outer Clip: Spring Steel.

Seal: Neoprene.

Specification

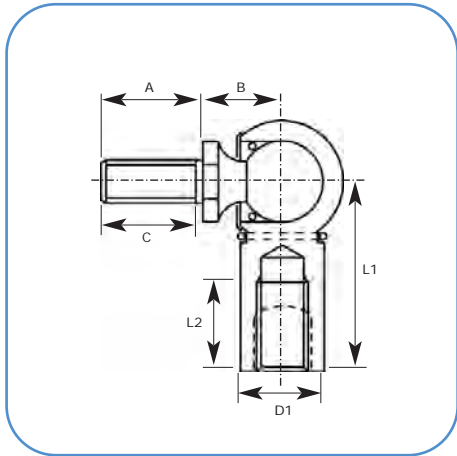
ELV & RoHS Compliant.



METRIC

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	BODY FLATS	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
CMG5/1	CMG5/1LH	M5X0.80	M5X0.80	8	7	22	10	7	10.2	9.0	7.7	8.0
CMG6/1	CMG6/1LH	M6X1.00	M6X1.00	10	9	25	11	8	12.5	11.0	10.0	10.0
CMG8/1	CMG8/1LH	M8X1.25	M8X1.25	13	11	30	14	11	16.5	13.0	14.0	13.0
CMG10/1	CMG10/1LH	M10X1.50	M10X1.50	16	13	35	15	13	20.0	16.0	17.5	16.0
CMG14/1	CMG14/1LH	M14X2.00	M14X2.00	19	19	45	21	16	28.0	20.0	25.5	22.0
CMG14C/1	CMG14C/1LH	M14X1.50	M14X1.50	19	19	45	21	16	28.0	20.0	25.5	22.0
CMG16/1	CMG16/1LH	M16X2.00	M16X2.00	19	-	45	21	16	28.0	20.0	25.5	22.0

Note: * Counter Bore depth is 2mm



CMG / 2 - SERIES DIN STANDARD BALL JOINTS

Materials

Body: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Ball Stud: 212A42, Hardened Zinc plated white & blue passivate (silver/clear).

Inner Safety Clip: Spring Steel.

Outer Clip: Spring Steel.

Seal: Neoprene.

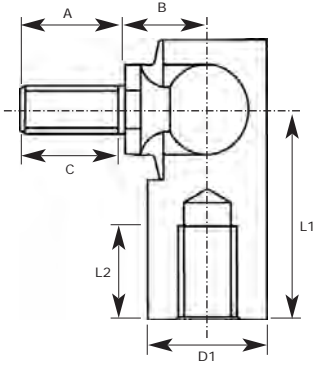
Specification

ELV & RoHS Compliant.



METRIC

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	BODY FLATS	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
CMG5/2	CMG5/2LH	M5X0.80	M5X0.80	8	7	22	10	7	10.2	9.0	7.7	8.0
CMG6/2	CMG6/2LH	M6X1.00	M6X1.00	10	9	25	11	8	12.5	11.0	10.0	10.0
CMG8/2	CMG8/2LH	M8X1.25	M8X1.25	13	11	30	14	11	16.5	13.0	14.0	13.0
CMG10/2	CMG10/2LH	M10X1.50	M10X1.50	16	13	35	15	13	20.0	16.0	17.5	16.0
CMG14/2	CMG14/2LH	M14X2.00	M14X2.00	19	19	45	21	16	28.0	20.0	25.5	22.0
CMG14C/2	CMG14C/2LH	M14X1.50	M14X1.50	19	19	45	21	16	28.0	20.0	25.5	22.0
CMG16/2	CMG16/2LH	M16X2.00	M16X2.00	19	-	45	21	16	28.0	20.0	25.5	22.0



DMG - SERIES SWAGED RETAINED BALL JOINTS

Materials

Body: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Ball Stud: 230M07PB, Case Hardened Zinc plated white & blue passivate (silver/clear).

Seal: Neoprene.

Specification

ELV & RoHS Compliant.



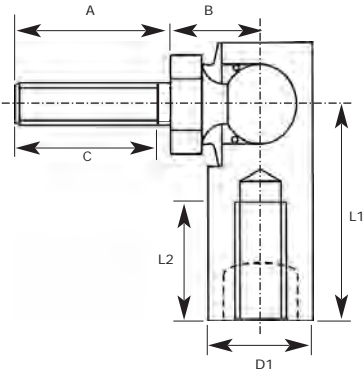
METRIC

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
DMG6	DMG6LH	M6X1.00	M6X1.00	8.8	24.6	13.5	10	14.0	11.8	11.9	11.0
DMG6/1	DMG6/1LH	M6X1.00	M6X1.00	8.8	30.7	14.0	10	14.3	12.5	11.9	11.0
DMG6/2	DMG6/2LH	Blank 6mm	M6X1.00	7.7	30.7	16.0	10	14.3	11.8	11.9	11.0
DMG8	DMG8LH	M8X1.25	M8X1.25	10.3	28.6	15.0	11	18.0	13.6	15.6	13.0
DMG8/1	DMG8/1LH	M8X1.25	M8X1.25	10.3	28.6	15.0	13	20.0	16.1	17.6	13.0
DMG10	DMG10LH	M10X1.50	M10X1.50	12.4	35.0	20.6	13	22.0	18.0	19.6	16.0

DIG - SERIES SWAGED RETAINED BALL JOINTS

IMPERIAL

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
DIG250	DIG250LH	1/4 UNF	1/4 UNF	0.347	0.969	0.531	0.375	0.562	0.466	0.468	0.437
DIG250/1	DIG250/1LH	1/4 BSF	M6x1.0	0.347	0.969	0.531	0.375	0.551	0.466	0.450	0.437
DIG250/2	DIG250/2LH	1/4 BSF	1/4 BSF	0.347	0.969	0.531	0.375	0.562	0.466	0.468	0.437
DIG312	DIG312LH	5/16 UNF	5/16 UNF	0.405	1.125	0.594	0.437	0.688	0.517	0.588	0.500
DIG312/1	DIG312/1LH	5/16 UNF	5/16 UNF	0.405	2.187	1.535	0.437	0.688	0.517	0.588	0.500
DIG375	DIG375LH	3/8 UNF	3/8 UNF	0.488	1.375	0.812	0.500	0.875	0.683	0.775	0.625
DIG375/1	DIG375/1LH	3/8 UNF	3/8 UNF	0.488	1.375	0.812	0.500	0.437	0.683	0.337	0.625
DIG375/2	DIG375/2LH	3/8 UNF	3/8 UNF	0.488	1.375	0.812	0.500	0.630	0.683	0.530	0.625
DIG375/3	DIG375/3LH	3/8 UNF	3/8 UNF	0.488	1.375	0.812	0.500	0.590	0.683	0.490	0.625



FMG - SERIES SPRING RETAINED BALL JOINTS

Materials

Body: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Ball Stud: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Seal: Neoprene.

Spring: Spring Steel.

Specification

ELV & RoHS Compliant.



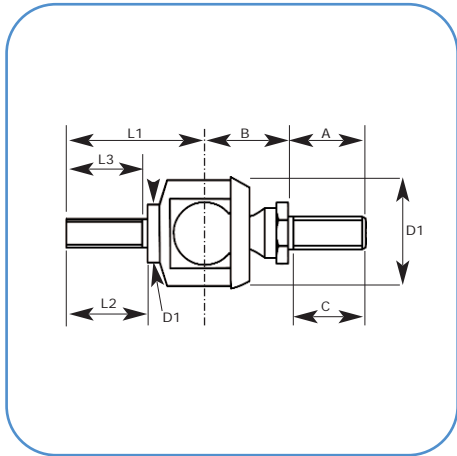
METRIC

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
FMG5	FMG5LH	M5X0.80	M5X0.80	7.75	24.6	12.7	10.00	14.30	11.90	12.0	11.11
FMG6	FMG6LH	M6X1.00	M6X1.00	7.75	24.6	12.7	10.00	14.30	11.90	12.0	11.11
FMG6/1	FMG6/1LH	M6X1.00	M6X1.00	7.75	19.2	7.3	10.00	14.30	11.90	12.0	11.11
FMG8	FMG8LH	M8X1.25	M8X1.25	8.74	28.4	14.2	13.00	17.45	13.50	15.0	12.70
FMG8/1	FMG8/1LH	M8X1.25	M8X1.25	8.74	41.0	25.0	13.00	17.45	13.50	15.0	12.70
FMG8/2	FMG8/2LH	M8X1.25	M8X1.25	8.74	28.4	14.2	13.00	11.50	13.50	9.0	12.70
FMG8/3	FMG8/3LH	M8X1.25	M6X1.00	8.74	28.4	14.2	10.00	12.70	13.50	10.0	12.70
FMG10	FMG10LH	M10X1.50	M10X1.50	10.59	35.0	19.0	13.00	22.23	17.45	20.0	15.88
FMG10/1	FMG10/1LH	M8X1.25	M10X1.50	10.59	35.0	19.0	13.00	22.23	17.45	20.0	15.88
FMG10/2	FMG10/2LH	M8X1.25	M10X1.50	10.59	35.0	19.0	13.00	12.00	17.45	9.5	15.88
FMG10/4	FMG10/4LH	M12X1.25	M10X1.50	10.59	35.0	19.0	15.88	18.00	17.45	15.5	15.88
FMG12	FMG12LH	M12X1.75	M12X1.75	14.10	49.2	25.4	17.00	28.60	22.20	26.0	19.05
FMG12/1	FMG12/1LH	M12X1.75	M10X1.50	14.10	49.2	25.4	17.00	28.60	22.20	26.0	19.05

FIG - SERIES SPRING RETAINED BALL JOINTS

IMPERIAL

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
FIG250	FIG250LH	1/4 UNF	1/4 UNF	0.306	0.969	0.500	0.375	0.562	0.469	0.370	0.437
FIG312	FIG312LH	5/16 UNF	5/16 UNF	0.344	1.125	0.562	0.437	0.687	0.531	0.580	0.500
FIG312/1	FIG312/1LH	BLANK 0.312	5/16 UNF	0.344	1.125	0.562	0.437	0.687	0.531	0.580	0.500
FIG312/2	FIG312/2LH	5/16 UNF	5/16 UNF	0.344	1.120	0.562	0.437	0.687	0.531	0.580	0.500
FIG375	FIG375LH	3/8 UNF	3/8 UNF	0.416	1.375	0.750	0.500	0.875	0.687	0.770	0.625
FIG375/1	FIG375/1LH	3/8 UNF	3/8 UNF	0.416	1.772	1.181	0.500	0.787	0.866	0.680	0.625
FIG375/2	FIG375/2LH	3/8 BSF	3/8 UNF	0.416	1.375	0.750	0.500	0.787	0.866	0.680	0.625
FIG375/3	FIG375/3LH	3/8 UNF	3/8 UNF	0.416	1.375	0.750	0.500	0.620	0.688	0.520	0.625
FIG375/4	FIG375/4LH	7/16 UNF	3/8 UNF	0.416	1.375	0.750	0.500	0.620	0.688	0.520	0.625
FIG437/1	FIG437/1LH	7/16-28UNEF	7/16-20UNF	0.416	1.125	0.750	0.625	0.875	0.687	0.770	0.625
FIG500	FIG500LH	1/2 UNF	1/2 UNF	0.555	1.937	1.000	0.625	1.125	0.875	1.000	0.750



ILMMG - SERIES INLINE MALE - MALE BALL JOINTS

Materials

Body: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Ball Stud: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Liner: Nylon 6.

Seal: Neoprene.

Specification

ELV & RoHS Compliant.



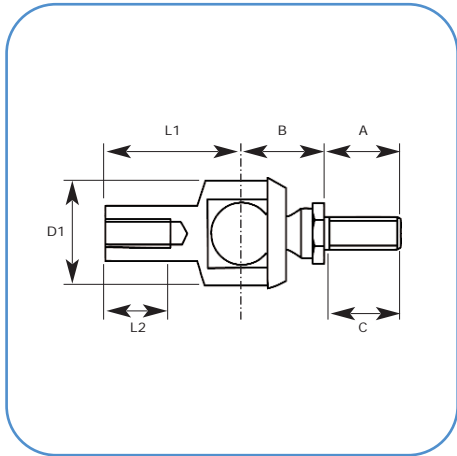
METRIC

PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	L3 MIN	STUD A/F	A	B	C MIN	D1
ILMMG6	M6X1.00	M6X1.00	10	26.5	12.5	8	5	12.5	11.0	10.0	14.8
ILMMG8	M8X1.25	M8X1.25	13	32.5	16.5	11	7	16.5	13.0	13.5	19.3
ILMMG10	M10X1.50	M10X1.50	16	39.0	20.0	13	8	20.0	16.0	15.0	24.0

ILIMG - SERIES INLINE MALE - MALE BALL JOINTS

IMPERIAL

PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2	L3 MIN	STUD A/F	A	B	C MIN	D1
ILIMG250	1/4 UNF	1/4 UNF	0.394	1.040	0.492	0.394	0.315	0.492	0.433	0.394	0.394
ILIMG312	5/16 UNF	5/16 UNF	0.512	1.280	0.650	0.531	0.433	0.650	0.513	0.531	0.513
ILIMG375	3/8 UNF	3/8 UNF	0.630	1.535	0.787	0.590	0.550	0.787	0.630	0.590	0.630



ILMFG - SERIES INLINE FEMALE - MALE BALL JOINTS

Materials

Body: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Ball Stud: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Liner: Nylon 6.

Seal: Neoprene.

Specification

ELV & RoHS Compliant.



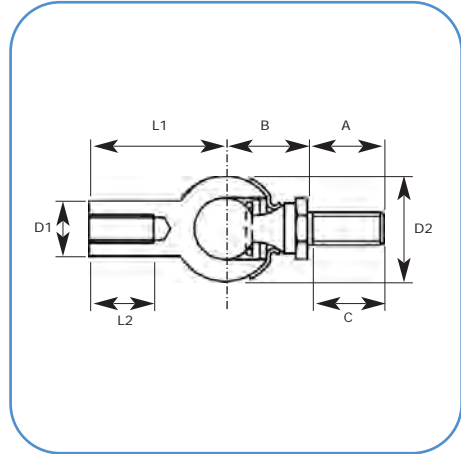
METRIC

PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
ILMFG6	M6X1.00	M6X1.00	10	25.0	11.5	8	12.5	11.0	10.0	14.8
ILMFG8	M8X1.25	M8X1.25	13	30.0	14.0	11	16.5	13.0	13.5	19.3
ILMFG8/1	M8X1.25	M8X1.25	13	30.0	14.0	11	33.0	13.0	30.0	19.3
ILMFG10	M10X1.25	M10X1.25	16	35.0	15.5	13	20.0	16.0	16.0	24.0

ILIFG - SERIES INLINE FEMALE - MALE BALL JOINTS

IMPERIAL

PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
ILIFG250	1/4 UNF	1/4 UNF	0.394	0.948	0.450	0.315	0.492	0.433	0.394	0.582
ILIFG312	5/16 UNF	5/16 UNF	0.512	1.180	0.550	0.433	0.650	0.513	0.512	0.760
ILIFG375	3/8 UNF	3/8 UNF	0.630	1.375	0.610	0.512	0.787	0.630	0.630	0.945



IMG SERIES INLINE FEMALE - MALE BALL JOINTS

Materials

Body: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Ball Stud: 212A42 induction hardened, Zinc plated white & blue passivate (silver/clear).

Clip: Spring Steel.

Seal: Neoprene.

Specification

ELV & RoHS Compliant.



METRIC

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1	D2
IMG5	IMG5LH	M5X0.80	M5X0.80	8	22	10.2	7	10.2	9.0	8.0	8.0	12.8
IMG6	IMG6LH	M6X1.00	M6X1.00	10	25	11.5	8	12.5	11.0	10.0	10.0	14.8
IMG8	IMG8LH	M8X1.25	M8X1.25	13	30	14.0	11	16.5	13.0	14.0	13.0	19.3
IMG10	IMG10LH	M10X1.50	M10X1.50	16	35	15.5	13	20.0	16.0	17.5	16.0	24.0
IMG12	IMG12LH	M12X1.75	M12X1.75	16	35	15.5	13	20.0	16.0	17.5	16.0	24.0
IMG14	IMG14LH	M14X1.50	M14X1.50	19	45	21.5	19	28.0	20.0	25.5	22.0	30.0
IMG14/1	IMG14/1LH	M14X2.00	M14X2.00	19	45	21.5	19	28.0	20.0	25.5	22.0	30.0

PM - SERIES
CLIP RETAINED
BALL JOINTS

Materials

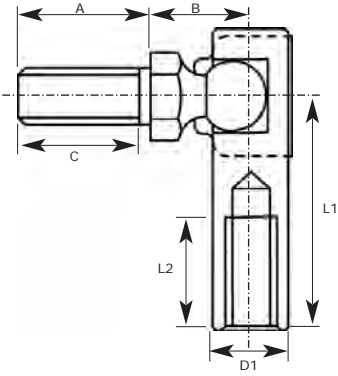
Body: 230M07PB hardened, Zinc plated white & blue passivate (silver/clear).

Ball Stud: 230M07PB hardened, Zinc plated white & blue passivate (silver/clear).

Clip: CS 70 Carbon Steel.

Specification

ELV & RoHS Compliant.



METRIC

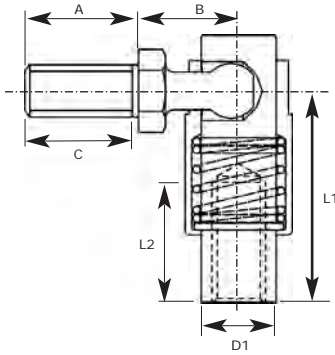
R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
PM4	PM4LH	M4X0.70	M4X0.70	4.75	17	10	7	8.0	7.25	6.0	6.0
PM5	PM5LH	M5X0.80	M5X0.80	6.35	22	12	8	11.0	10.63	9.0	8.0
PM5/1	PM5/1LH	M5X0.80	M5X0.80	6.35	22	12	8	14.0	10.63	12.0	8.0
PM6	PM6LH	M6X1.00	M6X1.00	6.35	25	14	8	14.0	10.63	12.0	8.0
PM6/1	PM6/1LH	M6X1.00	M6X1.00	6.35	25	14	8	11.0	10.63	9.0	8.0
PM8	PM8LH	M8X1.25	M8X1.25	8.00	22	12	11	14.0	13.35	12.0	10.0

PI - SERIES
CLIP RETAINED
BALL JOINTS

IMPERIAL

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
PI187	PI187LH	10-32 UNF	10-32 UNF	0.250	0.875	0.484	0.312	0.437	0.420	0.337	0.312
PI187/1	PI187/1LH	10-32 UNF	1/4 UNF	0.250	0.875	0.484	0.312	0.562	0.420	0.462	0.312
PI187/2	PI187/2LH	10-32 UNF	10-32 UNF	0.250	0.970	0.531	0.312	0.438	0.420	0.375	0.312
PI187/3	PI187/3LH	10-32 UNF	M6 X 1.0	0.250	0.875	0.484	0.312	0.551	0.420	0.489	0.312
PI187/4	PI187/4LH	0.080 dia	N/A	N/A	0.719	0.390	N/A	N/A	N/A	N/A	0.312
PI187/5	PI187/5LH	0.074 dia	N/A	N/A	0.875	0.250	N/A	N/A	N/A	N/A	0.312
PI250	PI250LH	1/4 UNF	1/4 UNF	0.250	0.970	0.531	0.312	0.562	0.420	0.460	0.312
PI250/1	PI250/1LH	1/4 UNF	10-32 UNF	0.250	0.970	0.531	0.312	0.437	0.420	0.330	0.312
PI250/2	PI250/2LH	0.228 dia	1/4 UNF	0.250	0.970	0.500	0.312	0.562	0.420	0.460	0.312
PI250/3	PI250/3LH	10-32 UNF	10-32 UNF	0.250	0.875	0.484	0.312	0.438	0.420	0.390	0.312
PI312	PI312LH	5/16 UNF	5/16 UNF	0.312	0.875	0.484	0.437	0.562	0.537	0.460	0.394

QM - SERIES QUICK RELEASE BALL JOINTS



Materials

Body: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Ball Stud: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Shield: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Spring: 302S 26 Stainless Steel.

Specification

ELV & RoHS Compliant.



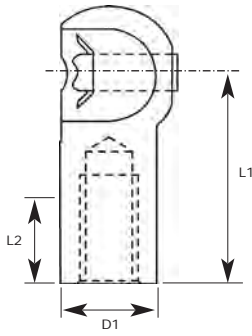
METRIC

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA.	LENGTH L1	LENGTH L2	STUD A/F	A	B	C	D1
QM5	QM5LH	M5X0.80	M5X0.80	6.4	23.0	11.1	8	11.1	11.9	9.0	7.9
QM6	QM6LH	M6X1.00	M6X1.00	7.9	24.6	13.0	10	14.3	12.6	12.8	9.4
QM6/1	QM6/1LH	M6X1.00	M6X1.00	7.9	24.6	13.0	10	14.3	12.7	12.8	9.4
QM6/2	QM6/2LH	M6X1.00	M6X1.00	7.9	24.6	13.0	10	11.0	12.7	9.5	9.4
QM6/3	QM6/3LH	10-32 UNF	M6X1.00	7.9	24.6	13.0	10	14.3	12.7	12.8	9.4
QM6/4SS	QM6/4SSLH	M6X1.00	M6X1.00	7.9	24.6	13.0	10	14.3	12.7	12.8	9.4
QM8	QM8LH	M8X1.25	M8X1.25	8.6	31.7	14.3	11	17.5	15.2	15.5	11.1
QM8/1	QM8/1LH	M8X1.25	M6X1.00	8.6	31.7	14.3	11	17.5	15.2	16.0	11.1
QM8/2	QM8/2LH	M8X1.25	M8X1.25	8.6	31.7	14.3	11	11.0	15.2	9.0	11.1
QM8/3	QM8/3LH	M8X1.25	M8X1.25	8.6	31.7	14.3	11	10.0	15.2	8.0	11.1
QM8/4SS	QM8/4SSLH	M8X1.25	M6X1.00	8.6	31.7	14.3	11	17.5	15.2	15.5	11.1
QM10	QM10LH	M10X1.50	M10X1.50	10.7	39.7	27.0	13	22.2	19.8	20.0	14.1

QI - SERIES QUICK RELEASE BALL JOINTS

IMPERIAL

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA	L1	L2 MIN	STUD A/F	A	B	C MIN	D1
QI187	QI187LH	10-32 UNF	10-32 UNF	0.250	0.906	0.437	0.312	0.437	0.468	0.330	0.310
QI187/2	QI187LH	10-32 UNF	1/4" UNF	0.250	0.906	0.437	0.312	0.562	0.417	0.500	0.310
QI187/3	QI187LH	10-32 UNF	M5 x 0.8	0.250	0.906	0.437	0.315	0.437	0.468	0.375	0.310
QI187/4	QI187LH	10-32 UNF	1/4" UNF	0.250	0.906	0.437	0.312	0.562	0.468	0.500	0.310
QI187/5	QI187LH	10-32 UNF	M6 x 1.0	0.250	0.906	0.437	0.315	0.551	0.421	0.490	0.310
QI250	QI250LH	1/4" UNF	1/4" UNF	0.311	0.969	0.500	0.375	0.562	0.500	0.490	0.370
QI250/1	QI250/1LH	10-32 UNF	1/4" UNF	0.311	0.969	0.500	0.375	0.562	0.500	0.500	0.370
QI250/2	QI250/2LH	1/4" UNF	M6 x 1.0	0.311	0.969	0.500	0.394	0.562	0.500	0.500	0.370
QI250/3	QI250/3LH	1/4" UNF	1/4" UNF	0.311	0.969	0.500	0.375	0.562	0.500	0.500	0.370
QI250/4	QI250/4LH	1/4" BSF	1/4" BSF	0.311	0.969	0.500	0.375	0.562	0.500	0.500	0.370
QI250/5	QI250/5LH	1/4" UNF	5/16" UNF	0.311	0.969	0.500	0.375	0.882	0.500	0.820	0.370
QI250/6	QI250/6LH	1/4" UNF	1/4" UNF	0.311	0.969	0.500	0.375	0.875	0.500	0.812	0.370
QI312	QI312LH	5/16" UNF	5/16" UNF	0.339	1.250	0.562	0.437	0.687	0.594	0.580	0.439
QI312/1	QI312/1LH	5/16" BSF	5/16" BSF	0.339	1.250	0.562	0.437	0.687	0.594	0.625	0.439
QI312/2	QI312/2LH	1/4" UNF	5/16" UNF	0.339	1.250	0.562	0.437	0.882	0.594	0.820	0.439
QI312/3	QI312/3LH	5/16" UNF	5/16" UNF	0.339	1.250	0.562	0.437	0.882	0.594	0.820	0.439
QI312/4	QI312/4LH	10-32 UNF	5/16" UNF	0.339	1.250	0.562	0.437	0.882	0.594	0.820	0.439
QI375	QI375LH	3/8" UNF	3/8" UNF	0.421	1.562	1.062	0.500	0.875	0.719	0.770	0.556



**TM - SERIES
 DIN STANDARD
 BALL JOINTS**

Materials

Body: 230M07PB, Zinc plated white & blue passivate (silver/clear).

Clip: CS70 Spring Steel harden & austemper RC 40-45 Deltatone & Deltaseal black.

Specification

ELV & RoHS Compliant.



METRIC

R/H PART NO.	L/H PART NO.	BODY THREAD	STUD THREAD	BALL DIA.	L1	L2	A/F	A	B	C	D1	D2
TM10-M6	TML10-M6	M6X1.00	M6X1.00	10.0	19.0	5.5	N/A	N/A	N/A	N/A	10.0	16.5
TM10-M6/1	TML10-M6/1	M6X1.00	M6X1.00	10.0	25.0	11.5	N/A	N/A	N/A	N/A	10.0	16.5
TM10-M8	TML10-M8	M8X1.25	M8X1.25	10.0	19.0	5.5	N/A	N/A	N/A	N/A	10.0	16.5
TM10-M8/1	TML10-M8/1	M8X1.25	M8X1.25	10.0	25.0	11.5	N/A	N/A	N/A	N/A	10.0	16.5
TM13-M6	TML13-M6	M6X1.00	M6X1.00	13.0	22.0	6.0	N/A	N/A	N/A	N/A	13.0	20.0
TM13-M6/1	TML13-M6/1	M6X1.00	M6X1.00	13.0	30.0	14.0	N/A	N/A	N/A	N/A	13.0	20.0
TM13-M8	TML13-M8	M8X1.25	M8X1.25	13.0	22.0	6.0	N/A	N/A	N/A	N/A	13.0	20.0
TM13-M8/1	TML13-M8/1	M8X1.25	M8X1.25	13.0	30.0	14.0	N/A	N/A	N/A	N/A	13.0	20.0

R609 Series

products are available from

MARYLAND METRICS

P.O. Box 261 Owings Mills, MD 21117 USA

ph: (410)358-3130 (800)638-1830

fx: (410)358-3142 (800)872-9329

web: <http://mdmetric.com>

email: sales@mdmetric.com

RFQ form: <http://mdmetric.com/rfq.htm>

How to order: Please prefix the R609 Series part number or description with 'R609-' example: R609-GML8LH