STUDBOLT SCOTLAND LIMITED

PETROCHEMICAL & INDUSTRIAL GRADE FASTENERS & SUPPLIES

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INDEX

SECTION 1 - INTRODUCTION	
2	Index
6	About Us
SECTION 2 - PETROCHEMICAL	
8	Studbolts - Chemical Composition
9	Studbolts (Imperial) - ASME B16.5
10	Studbolts (Metric) - DIN976
11	Heavy Hex Bolts - ASME B18.2.1
12	Socket Head Capscrews (1960 Series) - ASME 18.3
13	Heavy Hex Nuts (Imperial) - ASME B18.2.2
14	Heavy Hex Nuts (Metric) - DIN934 H=D
15	Petrochemical Materials
16	Flange Bolting Chart - 150# Flanges
17	Flange Bolting Chart - 300# Flanges
18	Flange Bolting Chart - 600# Flanges
19	Flange Bolting Chart - 900# Flanges
20	Flange Bolting Chart - DIN Flanges
21	Studbolt Weight Chart (Imperial)
23	Studbolt Weight Chart (Metric)
SECTION 3 - FASTENERS	
26	Hex Bolts (Metric) - DIN931/ISO4014
27	Hex Setscrews (Metric) - DIN933/ISO4017
28	Hex Bolts (Imperial) - BS1768/ASME B18.2.1
29	Hex Setscrews (Imperial) - BS1768/ASME B18.2.1
30	Hex Bolts (Imperial) - BS1769
31	Socket Head Capscrews (Metric) - DIN912/ISO4762
32	Low Head Socket Capscrews (Metric) - DIN7984
33	Socket Countersunk Screws (Metric) - DIN7991/ISO10642
34	Socket Button Heads (Metric) - ISO7380
35	Socket Setscrews (Metric) - ISO4026/4027/4028/4029

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37	Socket Head Capscrews (Imperial - 1960 Series) - ASME B18.3
38	Socket Countersunk Screws (Imperial) - ASME B18.3
39	Socket Button Heads (Imperial) - ASME B18.3
40	Socket Setscrews (Imperial) - ASME B18.3
41	Hex Full Nuts (Metric) - DIN934/ISO4032
42	Hex Lock Nuts (Metric) - DIN439-2/ISO4035
43	Nylon Insert Nuts (Metric) - DIN982 High Type P
44	Nylon Insert Nuts (Metric) - DIN982 Thin Type T
45	Hex Full Nuts (Imperial) - ASME B18.2.2/BS1768
46	Hex Lock Nuts (Imperial) - ASME B18.2.2/BS1768
47	Nylon Insert Nuts (Imperial) - DIN982 NE Type P
48	Dome Nuts (Metric) - DIN1857
49	Flange Nuts (Metric) - DIN6923
50	Binx ® Nut - All Metal Self Locking Nut
51	Philidas ® Nut - Industrial Self Locking Nut
52	Philidas ® Nut - Turret Self Locking Nut
53	Plain Washers (Metric) - BS4320 Form A, B , C & D
54	Plain Washers (Metric) - BS4320 Form A, B , C & D
55	Spring Washers Square Section (Metric) - DIN7890
56	Plain Washers (Imperial) - BS3410 Table 3
57	Plain Washers (Imperial) - BS3410 Table 7
58	Spring Washers Square Section (Imperial) - BS1802
59	Internal Serrated Lock Washers - DIN6798 (Fan Disc)
60	External Serrated Lock Washers - DIN6798J (Fan Disc)
61	Internal Toothed Lock Washers - DIN6797J (Fan Disc)
62	External Toothed Lock Washers - DIN6797A (Fan Disc)
63	Repair (Penny) Washers - DIN9021
64	Square Plate (Round Hole) Washers - DIN1587
SECTION 4 - GASKETS	
66	Spiral Wound Gaskets
68	Spiral Wound Gasket Dimensions - Class 150

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69	Spiral Wound Gasket Dimensions - Class 300
70	Spiral Wound Gasket Dimensions - Class 600
71	Spiral Wound Gasket Dimensions - Class 900
72	Ring Type Joints
74	Oval Ring Type Joints - Dimensions
76	Octagonal Ring Type Joints - Dimensions
79	Type RX Ring Type Joints - Dimensions
81	Type BX Ring Type Joints - Dimensions
82	Soft Cut Gaskets - Materials
83	Soft Cut Gasket Dimensions - Class 150
85	Soft Cut Gasket Dimensions - Class 300
87	Soft Cut Gasket Dimensions - Class 600
89	Soft Cut Gasket Dimensions - PN10
91	Soft Cut Gasket Dimensions - PN16
93	Soft Cut Gasket Dimensions - PN25
95	Soft Cut Gasket Dimensions - PN40
96	Insulation Kits
97	Insulation Kit Dimensions - Class 150
99	Insulation Kit Dimensions - Class 300
101	Insulation Kit Dimensions - PN10
103	Insulation Kit Dimensions - PN16
105	Insulation Kit Dimensions - PN25
107	Insulation Kit Dimensions - PN40
SECTION 5 - PIPE SUPPORTS	
110	Grip Type U-Bolts - BS3974
111	Non-Grip U-Bolts - BS3974
112	Standard U-Bolts
113	Extended Leg U-Bolts
114	Insulated Grip Type U-Bolts
115	Insulated Non-Grip U-Bolts
116	2 Bolt Pipe Clips (Heavy Series) - BS3794

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117	3 Bolt Pipe Clips (Heavy Series) - BS3794
118	Sling Rod Eyebolt (Integral Forged Eye) - BS3974
119	Palm Eyebolt (Straight Sides)
120	DIN580 Eyebolt
121	Weldless Eyenut (Bownut)
122	DIN582 Eyenut
123	Standard Eyenut
124	Hemispherical Washer & Cup
125	Hex Connecting Nut

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ABOUT US

Studbolt (Scotland) Limited was formed in 2001 to meet the requirements of the contractors around the Grangemouth petrochemical complex. In that time we have built up a reputation for being able to supply, on demand, items commonly used within this industry. Based just off the M9 motorway, we are ideally situated to service sites in and around central Scotland on a daily basis using our own transport. Our customer base has grown significantly over the years and we now have daily shipments throughout the United Kingdom and Europe.

The products and service that we provide are maintained by a quality and management system accreditation to BS EN ISO 9001:2008. Our computer-controlled system ensures that all our certifiable stock is fully traceable and complete with relevant material test certificates. Further testing and certification, including independent testing, can be carried out when required.

Our wide range of products enables us to offer a 'One Stop Shop' for any pipework or mechanical engineering projects. On the petrochemical side, we hold a comprehensive stock of ASTM A193 B7 & B16 and ASTM A320 L7 & L7M finished studbolts and we are able to supply many other material grades on a next day basis.

We keep high tensile fasteners in grades 8.8, 10.9 and 12.9 in imperial and metric threads and in a range of different finishes. Any standard fasteners we do not have in stock we can normally supply on a next day basis. Non-standard fasteners, in various different materials, can be made to drawings or manufactured to suit your needs.

We also hold in stock a wide range of the most popular gaskets and pipe supports including spiral wound gaskets, u-bolts and pipe clips. For more information on the items we supply please visit our website via the link below.

www.studboltscotland.co.uk

Alternatively for enquiries, quotes or to place an order you can contact us via the following methods:

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STUDBOLTS

Studbolts are widely used in the Petrochemical industry and are covered in the ASTM standards A193, for high temperature or high pressure service, and A320 for low temperature service. Finished studbolts and studbolt assemblies are available from stock in both Imperial and Metric threads and in a range of different finishes.

CHEMICAL COMPOSITION

	ASTM A193 B7/B7M		ASTM A320 L7/L7M		ASTM A193 B16	
	Range	Variation Over/Under	Range	Variation Over/Under	Range	Variation Over/Under
Carbon	0.37 - 0.49	0.02	0.38 - 0.48	0.02	0.36 - 0.47	0.02
Manganese	0.65 - 1.10	0.04	0.75 - 1.00	0.04	0.45 - 0.70	0.03
Phosphorus	0.035 max	0.005 over	0.035 max	0.005 over	0.035 max	0.005 over
Sulfur	0.040 max	0.005 over	0.040 max	0.005 over	0.040 max	0.005 over
Silicon	0.15 - 0.35	0.02	0.15 - 0.35	0.02	0.15 - 0.35	0.02
Chromium	0.75 - 1.20	0.05	0.80 - 1.10	0.05	0.80 - 1.15	0.05
Molybdenum	0.15 - 0.25	0.02	0.15 - 0.25	0.02	0.50 - 0.65	0.03
Vanadium	-	-	-	-	0.25 - 0.35	0.03
Aluminium	-	-	-	-	0.015 max	-
Nickel	-	-	-	-	-	-
	ASTM A193 B6		**ASTM A193 B8 CL1 & CL2**		**ASTM A193 B8M CL1 & CL2**	
	Range	Variation Over/Under	Range	Variation Over/Under	Range	Variation Over/Under
Carbon	0.15 max	0.01 over	0.08 max	0.01 over	0.08 max	0.01 over
Manganese	1.00 max	0.03 over	2.00 max	0.04 over	2.00 max	0.04 over
Phosphorus	0.040 max	0.005 over	0.045 max	0.010 over	0.045 max	0.010 over
Sulfur	0.030 max	0.005 over	0.030 max	0.005 over	0.030 max	0.005 over
Silicon	1.00 max	0.05 over	1.00 max	0.05 over	1.00 max	0.05 over
Chromium	11.5 - 13.5	0.15	18.0 - 20.0	0.20	16.0 - 18.0	0.20
Molybdenum	-	-	-	-	2.00 - 3.00	0.10
Vanadium	-	-	-	-	-	-
Aluminium	-	-	-	-	-	-
Nickel	-	-	8.0 - 11.0	0.15	10.0 - 14.0	0.15

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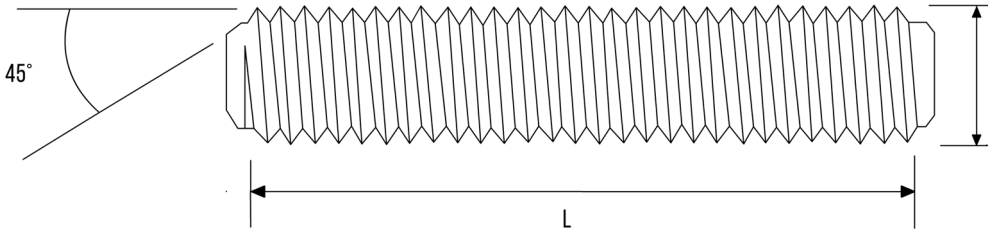
STUDBOLTS (IMPERIAL) – ASME B16.5



DIA (D)		TPI (UNC)	TPI (UNS)	DIA (D)		TPI (UNC)	TPI (UNS)
1/4"	0.25	20	-	1.1/2"	1.50	6	8
5/16"	0.3125	18	-	1.5/8"	1.625	-	8
3/8"	0.375	16	-	1.3/4"	1.75	5	8
7/16"	0.4375	14	-	1.7/8"	1.875	-	8
1/2"	0.50	13	-	2"	2.00	4.5	8
9/16"	0.5625	12	-	2.1/4"	2.25	4.5	8
5/8"	0.625	11	-	2.1/2"	2.50	4	8
3/4"	0.75	10	-	2.3/4"	2.75	4	8
7/8"	0.875	9	-	3"	3.00	4	8
1"	1.00	8	8	3.1/4"	3.25	4	8
1.1/8"	1.125	7	8	3.1/2"	3.50	4	8
1.1/4"	1.25	7	8	3.3/4"	3.75	4	8
1.3/8"	1.375	6	8	4"	4.00	4	8

- The length (L), measured parallel to the axis, is the distance from first thread to first thread
- End points are flat and chamfered both ends
- Length of point on studbolts shall be not less than one nor more than two complete threads as measured from the extreme end parallel to the axis
- Threads are UNC for all studbolt diameters 1” and smaller
- Threads are UNS for all studbolt diameters 1.1/8” and above. These can be supplied as UNC but are non-standard.
- Threads are Class 2A for all studbolts in accordance with ASME B1.1

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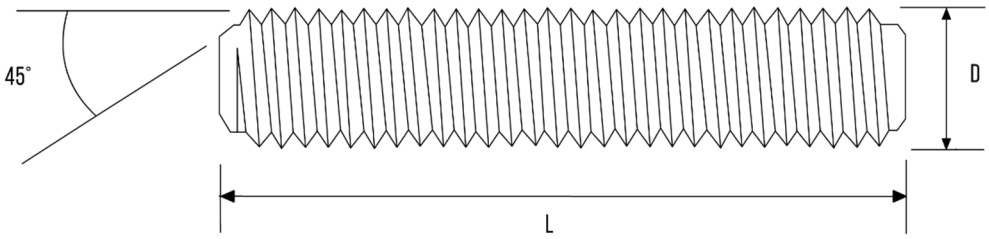
STUDBOLTS (METRIC) – DIN976



DIAMETER (D)	PITCH THREAD	DIAMETER (D)	PITCH THREAD
M6	1	M36	4
M8	1.25	M39	4
M10	1.5	M42	4.5
M12	1.75	M45	4.5
M14	2	M48	5
M16	2	M52	5
M18	2.5	M56	5.5
M20	2.5	M64	6
M22	2.5	M72	6
M24	3	M76	6
M27	3	M80	6
M30	3.5	M90	6
M33	3.5	M100	6

- The length (L), measured parallel to the axis, is the distance from end to end
- End points are flat and chamfered both ends
- Length of point on studbolts shall be not less than one nor more than two complete threads as measured from the extreme end parallel to the axis
- Threads are accordance with ISO 261

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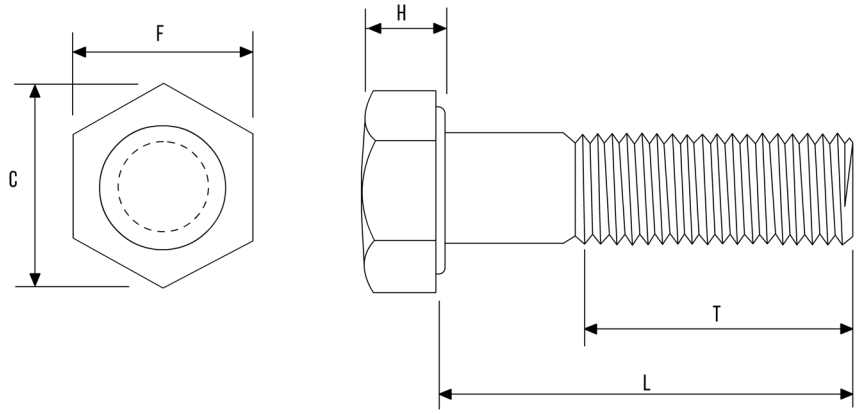
HEAVY HEX BOLTS - ASME B18.2.1

Heavy Hex Bolts and Setscrews have a larger head than standard Hex Head Bolts are available off the shelf in grades B7, L7 & B8M. These are available in Imperial and Metric threads and can be coated or plated to suit customer requirements as requested.



DIA (D)	A/F (F)			A/C (C)		HEIGHT (H)			THREAD (T)	
	BASIC	MAX	MIN	MAX	MIN	BASIC	MAX	MIN	L ≤ 6”	L > 6”
1/2	7/8	0.875	0.850	1.010	0.969	11/32	0.364	0.302	1.25	1.50
5/8	1.1/6	1.062	1.031	1.227	1.175	27/64	0.444	0.378	1.50	1.75
3/4	1.1/4	1.250	1.212	1.443	1.383	1/2	0.524	0.455	1.75	2.00
7/8	1.7/16	1.438	1.394	1.660	1.589	37/64	0.604	0.531	2.00	2.25
1	1.5/8	1.625	1.575	1.876	1.796	43/64	0.700	0.591	2.25	2.50
1.1/8	1.13/16	1.812	1.756	2.093	2.002	3/4	0.780	0.658	2.50	2.75
1.1/4	2	2.000	1.938	2.309	2.209	27/32	0.876	0.749	2.75	3.00
1.3/8	2.3/16	2.188	2.119	2.526	2.416	29/32	0.940	0.810	3.00	3.25
1.1/2	2.3/8	2.375	2.300	2.742	2.622	1	1.036	0.902	3.25	3.50
1.5/8	2.9/16	2.562	2.481	2.959	2.829	1.3/32	1.116	0.978	3.50	3.75
1.3/4	2.3/4	2.750	2.662	3.175	3.035	1.5/32	1.196	1.054	3.75	4.00
1.7/8	2.15/16	2.938	2.844	3.392	3.242	1.1/4	1.276	1.130	4.00	4.25
2	3.1/8	3.125	3.025	3.608	3.449	1.11/32	1.388	1.175	4.25	4.50
2.1/4	3.1/2	3.500	3.388	4.041	3.862	1.1/2	1.548	1.327	4.75	5.00
2.1/2	3.7/8	3.875	3.750	4.474	4.275	1.21/32	1.708	1.479	5.25	5.50
2.3/4	4.1/4	4.250	4.112	4.907	4.688	1.13/16	1.869	1.632	5.75	6.00
3	4.5/8	4.625	4.475	5.340	5.102	2	2.060	1.815	6.25	6.50

- All dimensions are in inches
- Thread lengths apply to bolts only. Setscrews are fully threaded.

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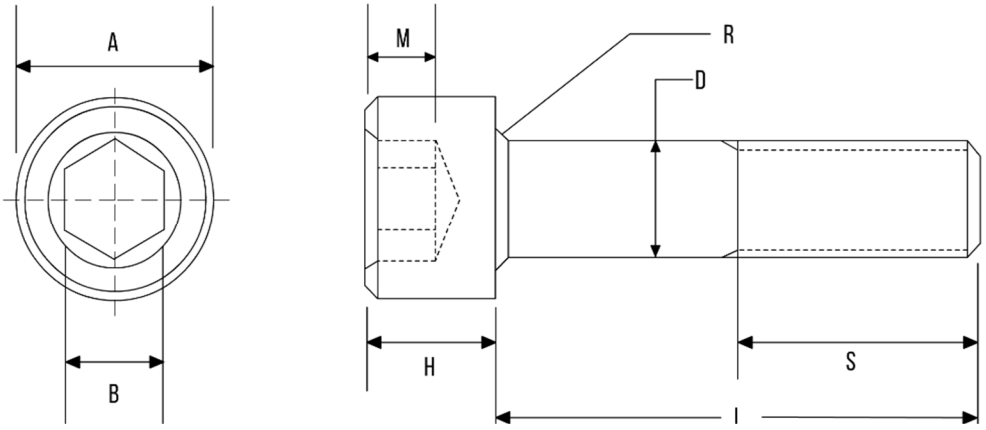
SOCKET HEAD CAPSCREWS (1960 SERIES) - ASME B18.3

Socket Capscrews are available off the shelf in B7 & L7. These are available in Imperial and Metric threads and can be coated or plated to suit customer requirements as requested. Other grades of material are manufactured to order.



DIA	A	H	B (NOM)	M (MIN)	R (MIN)	S (MIN)
1/4	0.365 - 0.375	0.244 - 0.250	3/16 (0.188)	0.120	0.007	1.000
5/16	0.457 - 0.469	0.306 - 0.312	1/4 (0.250)	1.151	0.009	1.120
3/8	0.550 - 0.562	0.368 - 0.375	5/16 (0.312)	0.182	0.012	1.250
7/16	0.642 - 0.656	0.430 - 0.438	3/8 (0.375)	0.213	0.014	1.380
1/2	0.735 - 0.750	0.492 - 0.500	3/8 (0.375)	0.245	0.016	1.500
9/16	0.827 - 0.843	0.554 - 0.562	7/16 (0.438)	0.276	0.021	1.630
5/8	0.921 - 0.938	0.616 - 0.625	1/2 (0.500)	0.307	0.021	1.750
3/4	1.107 - 1.125	0.740 - 0.750	5/8 (0.625)	0.370	0.025	2.000
7/8	1.293 - 1.312	0.864 - 0.875	3/4 (0.750)	0.432	0.031	2.250
1	1.479 - 1.500	0.988 - 1.000	3/4 (0.750)	0.495	0.034	2.500
1-1/8	1.665 - 1.688	1.111 - 1.125	7/8 (0.875)	0.557	0.039	2.810
1-1/4	1.852 - 1.875	1.236 - 1.250	7/8 (0.875)	0.620	0.044	3.120
1-3/8	2.038 - 2.062	1.360 - 1.375	1 (1.000)	0.682	0.048	3.440
1-1/2	2.224 - 2.250	1.485 - 1.500	1 (1.000)	0.745	0.052	3.750

- All dimensions are in inches

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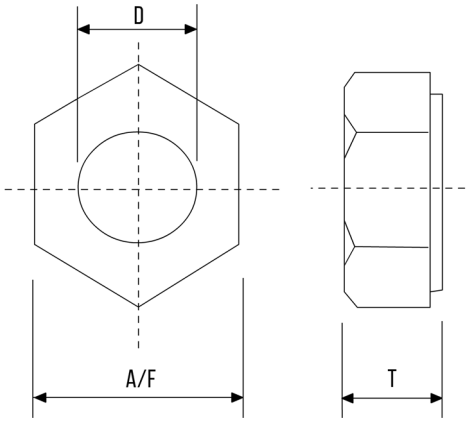
HEAVY HEX NUTS – IMPERIAL

- Dimensions in accordance with ANSI B18.2.2
- Dimensions in Inches
- Single Chamfer and Washer Face
- Sizes from 1/4" up to 4"
- Self-Colour, Zinc & Galvanised finish from stock
- Other coatings available on request



DIAMETER (D)	TPI (UNC)	TPI (UNS)	A/F	THICKNESS (T)	WEIGHT (KG/100)
1/4	20	-	1/2	1/4	0.3
5/16	18	-	9/16	5/16	0.4
3/8	16	-	11/16	3/8	1.4
7/16	14	-	3/4	7/16	1.9
1/2	13	-	7/8	1/2	3.0
9/16	12	-	15/16	9/16	3.7
5/8	11	-	1.1/6	5/8	5.4
3/4	10	-	1.1/4	3/4	8.8
7/8	9	-	1.7/16	7/8	13.5
1	8	8	1.5/8	1	19.3
1.1/8	7	8	1.13/16	1.1/8	26.9
1.1/4	7	8	2	1.1/4	35.7
1.3/8	6	8	2.3/16	1.3/8	46.3
1.1/2	6	8	2.3/8	1.1/2	59.5
1.5/8	-	8	2.9/16	1.5/8	73.6
1.3/4	5	8	2.3/4	1.3/4	92.7
1.7/8	-	8	2.15/16	1.7/8	109.5
2	4.5	8	3.1/8	2	135.8
2.1/4	4.5	8	3.1/2	2.1/4	190.3
2.1/2	4	8	3.7/8	2.1/2	256.0
2.3/4	4	8	4.1/4	2.3/4	335.0
3	4	8	4.5/8	3	432.0
3.1/4	4	8	5	3.1/4	543.0
3.1/2	4	8	5.3/8	3.1/2	694.0

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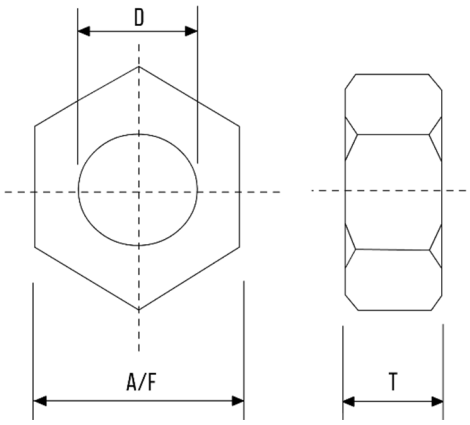
HEAVY HEX NUTS – METRIC

- Dimensions in accordance with DIN934 (H=D)
- Dimensions in millimetres
- Double Chamfer no washer face
- Sizes from M8 up to M76
- Self-Colour, Zinc & Galvanised finish from stock
- Other coatings available on request



DIAMETER (D)	THREAD PITCH	A/F	THICKNESS (T)	WEIGHT (KG/100)
M8	1.25	13	8	0.65
M10	1.50	17	10	1.45
M12	1.75	19	12	2.17
M14	2.00	22	14	3.13
M16	2.00	24	16	4.16
M18	2.50	27	18	6.20
M20	2.50	30	20	8.05
M22	2.50	32	22	9.85
M24	3.00	36	24	13.80
M27	3.00	41	27	20.65
M30	3.50	46	30	27.90
M33	3.50	50	33	36.00
M36	4.00	55	36	49.15
M39	4.00	60	39	62.75
M42	4.50	65	42	81.50
M45	4.50	70	45	100.00
M48	5.00	75	48	122.00
M52	5.00	80	52	152.50
M56	5.50	85	56	177.50
M64	6.00	95	64	247.50
M72	6.00	105	72	334.00
M76	6.00	110	76	380.00

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MATERIALS – BOLTING GRADES

ASTM	MATERIAL GRADE	DESCRIPTION
A193	B5	Type 501 Stainless Steel, 4-6% Chromium
A193	B6	Type 410 Stainless Steel, 12% Chromium
A193	B7	Chromium-Molybdenum, AISI 4140
A193	B7M	Chromium-Molybdenum, AISI 4140
A193	B8	Type 304 Stainless Steel
A193	B8 Class 2	Type 304 Stainless Steel, Strain Hardened
A193	B8M	Type 316 Stainless Steel
A193	B8M Class 2	Type 316 Stainless Steel, Strain Hardened
A193	B8C	Type 347 Stainless Steel
A193	B8T	Type 321 Stainless Steel
A193	B16	Chromium-Molybdenum-Vanadium
A320	L7 / L7M / L43	Chromium-Molybdenum, AISI 4140, Low Temp Service
A453	660 A, B & D	Heat Resistant, Precipitation Hardening Steel

MATERIALS – NUT GRADES

ASTM	MATERIAL GRADE	DESCRIPTION
A194	2H	Carbon Steel
A194	2HM	Carbon Steel
A194	3	Type 501 Stainless Steel
A194	4	Carbon-Molybdenum
A194	6	Type 410 Stainless Steel
A194	7	Type 4140 / 4142 / 4145
A194	7M	Type 4140H / 4142H / 4145H
A194	8	Type 304 Stainless Steel
A194	8A	Type 304 Stainless Steel
A194	8C	Type 347 Stainless Steel
A194	8T	Type 321 Stainless Steel
A194	8M	Type 316 Stainless Steel
A194	8MA	Type 316 Stainless Steel

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FLANGE BOLTING CHARTS

CLASS 150

	No. of Bolts	Dia.	Length		No. of Bolts	Dia.	Length		No. of Bolts	Dia.	Length
1/2"	4	1/2"	2.1/2"	26" A	24	1.1/4"	8.3/4"	26" B	36	3/4"	5.3/4"
3/4"	4	1/2"	2.3/4"	28" A	28	1.1/4"	9"	28" B	40	3/4"	6"
1"	4	1/2"	2.3/4"	30" A	28	1.1/4"	9.1/4"	30" B	44	3/4"	6"
1 1/4"	4	1/2"	3"	32" A	28	1.1/2"	10.1/4"	32" B	48	3/4"	6"
1 1/2"	4	1/2"	3"	34" A	32	1.1/2"	10.1/2"	34" B	40	7/8"	6.1/2"
2"	4	5/8"	3.1/2"	36" A	32	1.1/2"	11"	36" B	44	7/8"	6.3/4"
2 1/2"	4	5/8"	3.3/4"	38" A	32	1.1/2"	10.3/4"	38" B	40	1"	7.1/4"
3"	4	5/8"	3.3/4"	40" A	36	1.1/2"	11"	40" B	44	1"	7.1/2"
3 1/2"	8	5/8"	3.3/4"	42" A	36	1.1/2"	11.1/2"	42" B	48	1"	7.1/2"
4"	8	5/8"	3.3/4"	44" A	40	1.1/2"	12"	44" B	52	1"	7.3/4"
5"	8	3/4"	4"	46" A	40	1.1/2"	12"	46" B	40	1.1/8"	8"
6"	8	3/4"	4.1/4"	48" A	44	1.1/2"	12.1/2"	48" B	44	1.1/8"	8.1/4"
8"	8	3/4"	4.1/2"	50" A	44	1.3/4"	13.1/4"	50" B	48	1.1/8"	8.1/2"
10"	12	7/8"	5"	52" A	44	1.3/4"	13.1/2"	52" B	52	1.1/8"	8.3/4"
12"	12	7/8"	5"	54" A	44	1.3/4"	14"	54" B	56	1.1/8"	8.3/4"
14"	12	1"	5.3/4"	56" A	48	1.3/4"	14.1/4"	56" B	60	1.1/8"	9"
16"	16	1"	5.3/4"	58" A	48	1.3/4"	14.1/2"	58" B	48	1.1/4"	9.1/4"
18"	16	1.1/8"	6.1/4"	60" A	52	1.3/4"	15"	60" B	52	1.1/4"	9.1/2"
20"	20	1.1/8"	6.3/4"								
22"	20	1.1/4"	7.1/4"								
24"	20	1.1/4"	7.1/2"								

- Studbolt sizes are approximate and to be used for guide purposes only
- Lengths are based on raised face weld neck flanges
- Blind flanges or RTJ flanges may need longer studs

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FLANGE BOLTING CHARTS

CLASS 300

	No. of Bolts	Dia.	Length		No. of Bolts	Dia.	Length		No. of Bolts	Dia.	Length
1/2"	4	1/2"	2.3/4"	26" A	28	1.5/8"	10.1/2"	26" B	32	1.1/4"	10.1/2"
3/4"	4	5/8"	3.1/4"	28" A	28	1.5/8"	11"	28" B	36	1.1/4"	10.1/2"
1"	4	5/8"	3.1/4"	30" A	28	1.3/4"	11.3/4"	30" B	36	1.3/8"	11"
1 1/4"	4	5/8"	3.1/2"	32" A	28	1.7/8"	12.1/2"	32" B	32	1.1/2"	12"
1 1/2"	4	5/8"	3.3/4"	34" A	28	1.7/8"	12.3/4"	34" B	36	1.1/2"	12"
2"	8	5/8"	3.3/4"	36" A	32	2"	13.1/4"	36" B	32	1.5/8"	12.1/4"
2 1/2"	8	3/4"	4.1/4"	38" A	32	1.1/2"	12.1/2"	38" B	36	1.5/8"	13"
3"	8	3/4"	4.1/4"	40" A	32	1.5/8"	13.1/4"	40" B	40	1.5/8"	13.1/4"
3 1/2"	8	3/4"	4.1/2"	42" A	32	1.5/8"	13.3/4"	42" B	36	1.3/4"	13.3/4"
4"	8	3/4"	4.3/4"	44" A	32	1.3/4"	14.1/4"	44" B	40	1.3/4"	14.1/2"
5"	8	3/4"	5"	46" A	28	1.7/8"	14.3/4"	46" B	36	1.7/8"	14.3/4"
6"	12	3/4"	5"	48" A	32	1.7/8"	15.1/4"	48" B	40	1.7/8"	14.3/4"
8"	12	7/8"	5.3/4"	50" A	32	2"	16"	50" B	44	1.7/8"	15.1/2"
10"	16	1"	6.3/4"	52" A	32	2"	16.1/4"	52" B	48	1.7/8"	16"
12"	16	1.1/8"	7.1/2"	54" A	28	2.1/4"	17.1/2"	54" B	48	1.7/8"	15.1/2"
14"	20	1.1/8"	7.1/2"	56" A	28	2.1/4"	17.1/2"	56" B	36	2.1/4"	17.1/2"
16"	20	1.1/4"	8"	58" A	32	2.1/4"	18"	58" B	40	2.1/4"	17.1/2"
18"	24	1.1/4"	8.1/4"	60" A	32	2.1/4"	18.1/4"	60" B	40	2.1/4"	17.1/4"
20"	24	1.1/4"	8.3/4"								
22"	24	1.1/4"	9.1/2"								
24"	24	1.1/2"	9.3/4"								

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FLANGE BOLTING CHARTS

CLASS 600

	No. of Bolts	Dia.	Length		No. of Bolts	Dia.	Length		No. of Bolts	Dia.	Length
1/2"	4	1/2"	3.1/4"	26" A	28	1.7/8"	13.1/2"	26" B	28	1.5/8"	13.1/4"
3/4"	4	5/8"	3.3/4"	28" A	28	2"	14"	28" B	28	1.3/4"	14"
1"	4	5/8"	3.3/4"	30" A	28	2"	14.1/4"	30" B	28	1.7/8"	15"
1 1/4"	4	5/8"	4"	32" A	28	2.1/4"	15"	32" B	28	2"	15.1/2"
1 1/2"	4	3/4"	4.1/2"	34" A	28	2.1/4"	15.1/4"	34" B	24	2.1/4"	17"
2"	8	5/8"	4.1/2"	36" A	28	2.1/2"	16"	36" B	28	2.1/4"	17.1/4"
2 1/2"	8	3/4"	5"	38" A	28	2.1/4"	17.3/4"	38" B	28	2.1/4"	17.3/4"
3"	8	3/4"	5.1/4"	40" A	32	2.1/4"	18.1/4"	40" B	32	2.1/4"	18.1/4"
3 1/2"	8	7/8"	5.3/4"	42" A	28	2.1/2"	19.1/2"	42" B	28	2.1/2"	19.1/2"
4"	8	7/8"	6"	44" A	32	2.1/2"	20"	44" B	32	2.1/2"	20"
5"	8	1"	7"	46" A	32	2.1/2"	20.1/2"	46" B	32	2.1/2"	20.1/2"
6"	12	1"	7.1/4"	48" A	32	2.3/4"	21.3/4"	48" B	32	2.3/4"	21.3/4"
8"	12	1.1/8"	8"	50" A	28	3"	22.3/4"	50" B	28	3"	22.3/4"
10"	16	1.1/4"	9"	52" A	32	3"	23.1/4"	52" B	32	3"	23.1/4"
12"	20	1.1/4"	9.1/4"	54" A	32	3"	23.3/4"	54" B	32	3"	23.3/4"
14"	20	1.3/8"	9.3/4"	56" A	32	3.1/4"	25"	56" B	32	3.1/4"	25"
16"	20	1.1/2"	10.1/2"	58" A	32	3.1/4"	25.1/4"	58" B	32	3.1/4"	25.1/4"
18"	20	1.5/8"	11.1/4"	60" A	28	3.1/2"	26.3/4"	60" B	28	3.1/2"	26.3/4"
20"	24	1.5/8"	12"								
22"	24	1.3/4"	12.3/4"								
24"	24	1.7/8"	13.1/2"								

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FLANGE BOLTING CHARTS

CLASS 900

	No. of Bolts	Dia.	Length		No. of Bolts	Dia.	Length		No. of Bolts	Dia.	Length
1/2"	4	3/4"	4.1/4"	26" A	20	2.3/4"	17.3/4"	26" B	20	2.1/2"	17"
3/4"	4	3/4"	4.3/4"	28" A	20	3"	18.1/2"	28" B	20	2.3/4"	18.1/2"
1"	4	7/8"	5.1/4"	30" A	20	3"	19"	30" B	20	3"	19.1/2"
1 1/4"	4	7/8"	5.1/4"	32" A	20	3.1/4"	20.1/4"	32" B	20	3"	20"
1 1/2"	4	1"	6"	34" A	20	3.1/2"	21.1/4"	34" B	20	3.1/4"	21.1/4"
2"	8	7/8"	6"	36" A	20	3.1/2"	21.3/4"	36" B	24	3"	21"
2 1/2"	8	1"	6.3/4"	38" A	20	3.1/2"	23.1/4"	38" B	20	3.1/2"	23.1/4"
3"	8	7/8"	6"	40" A	24	3.1/2"	23.3/4"	40" B	24	3.1/2"	23.3/4"
4"	8	1.1/8"	7.1/4"	42" A	24	3.1/2"	24.1/2"	42" B	24	3.1/2"	24.1/2"
5"	8	1.1/4"	8"	44" A	24	3.3/4"	25.3/4"	44" B	24	3.3/4"	25.3/4"
6"	12	1.1/8"	8"	46" A	24	4"	27"	46" B	24	4"	27"
8"	12	1.3/8"	9.1/4"	48" A	24	4"	27.3/4"	48" B	24	4"	27.3/4"
10"	16	1.3/8"	9.3/4"								
12"	20	1.3/8"	10.1/2"								
14"	20	1.1/2"	11.1/4"								
16"	20	1.5/8"	11.3/4"								
18"	20	1.7/8"	13.1/2"								
20"	20	2"	14.1/2"								
24"	20	2.1/2"	18"								

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FLANGE BOLTING CHARTS – DIN FLANGES

DN	No of Bolts	PN10		No of Bolts	PN16		No of Bolts	PN25		No of Bolts	PN25	
		Dia.	Length		Dia.	Length		Dia.	Length		Dia.	Length
10	4	1/2"	65	4	1/2"	65	4	1/2"	65	4	1/2"	65
15	4	1/2"	65	4	1/2"	65	4	1/2"	65	4	1/2"	65
20	4	1/2"	70	4	1/2"	70	4	1/2"	70	4	1/2"	70
25	4	1/2"	70	4	1/2"	70	4	1/2"	70	4	1/2"	70
32	4	5/8"	80	4	5/8"	80	4	5/8"	80	4	5/8"	80
40	4	5/8"	80	4	5/8"	80	4	5/8"	80	4	5/8"	80
50	4	5/8"	80	4	5/8"	80	4	5/8"	80	4	5/8"	80
65	8	5/8"	80	8	5/8"	80	8	5/8"	85	8	5/8"	85
80	8	5/8"	80	8	5/8"	80	8	5/8"	90	8	5/8"	90
100	8	5/8"	80	8	5/8"	80	8	3/4"	95	8	3/4"	95
125	8	5/8"	85	8	5/8"	85	8	7/8"	110	8	7/8"	110
150	8	3/4"	95	8	3/4"	95	8	7/8"	115	8	7/8"	115
200	8	3/4"	95	12	3/4"	95	12	7/8"	115	12	1"	130
250	12	3/4"	100	12	7/8"	110	12	1"	130	12	1.1/8"	145
300	12	3/4"	100	12	7/8"	110	16	1"	130	16	1.1/8"	155
350	16	3/4"	100	16	7/8"	115	16	1.1/8"	145	16	1.1/4"	170
400	16	7/8"	110	16	1"	130	16	1.1/4"	160	16	1.3/8"	185
450	20	7/8"	110	20	1"	130	20	1.1/4"	170	20	1.3/8"	200
500	20	7/8"	110	20	1.1/8"	145	20	1.1/4"	175	20	1.1/2"	205
600	20	1"	125	20	1.1/4"	160	20	1.3/8"	180	20	1.3/4"	250
700	24	1"	135	24	1.1/4"	160	24	1.1/2"	195			
800	24	1.1/8"	145	24	1.3/8"	210	24	1.3/4"	215			
900	28	1.1/8"	145	28	1.3/8"	215	28	1.3/4"	220			
1000	28	1.1/4"	165	28	1.1/2"	230	28	2"	250			
1200	32	1.3/8"	195	32	1.3/4"	265						
1400	36	1.1/2"	225	36	1.3/4"	275						
1600	40	1.3/4"	260	40	2"	325						
1800	44	1.3/4"	280	44	2"	345						
2000	48	1.3/4"	290	48	2.1/4"	385						

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STUDBOLT WEIGHT CHART – IMPERIAL

	3/8”	7/16”	1/2”	9/16”	5/8”	3/4”	7/8”	1"	1-1/8”	1-1/4”
2 1/2"	5.5	7.6	10.8	13.5						
2 3/4”	5.9	8.2	11.6	14.5	19.8					
3 1/4”	6.3	8.8	12.4	15.5	21	32.4				
3 1/2”	6.7	9.4	13.2	16.5	22.2	34.3	50			
4”	7.1	10.0	14.0	17.5	23.4	36.2	52.6	71.8		
4 1/2”	7.5	10.6	14.8	18.5	24.6	38.1	55.5	75.2	102	
4 3/4”	7.9	11.2	15.6	19.5	25.8	40	57.8	78.6	106	137
5”	8.5	11.8	16.4	20.5	27	41.9	60.4	82.0	111	142
5 1/2”	8.9	12.2	17.2	21.5	28.2	43.8	63	85.4	115	147
6”	9.4	12.8	18.0	22.5	29.4	45.7	65.6	88.8	119	153
6 1/4”		13.4	18.8	23.5	30.6	47.6	68.2	92.2	123	158
6 1/2”		14.0	19.6	24.5	31.3	49.5	70.8	95.6	128	164
7”		14.7	20.4	25.5	33.5	50.8	73.4	99.0	132	169
7 1/2”			21.2	26.5	34.8	52.7	75.5	103.0	136	174
8”				27.6	36.1	54.5	78	106.0	141	180
8 1/4”				28.6	37.3	56.3	80.5	108.0	145	185
8 3/4”				29.6	38.6	58.1	83.1	112.0	149	191
9”				30.6	39.8	60.0	85.6	115.0	153	196
9 1/2”					41.1	61.8	88.2	118.0	158	201
10”						63.7	90.7	122.0	162	206
10 1/4”							93.3	125.0	166	212
10 1/2”								128.0	171	217
11”								132.0	175	223
11 1/2”								135.0	179	228
12”								138.0	184	233
12 3/4”									192	244
13 1/4”									201	255
14”									210	266
14 3/4”										277
15 3/4”										288

- All weights in kilos per 100 pieces with 2 assembled nuts

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	1-3/8”	1-1/2”	1-5/8”	1-3/4”	1-7/8”	2”	2-1/4”	2-1/2”	2-3/4”	3”
6”	193	242	289							
6 1/4”	200	250	298	363						
6 1/2”	206	258	308	374	437					
7”	213	266	317	385	449					
7 1/2”	220	275	326	396	462					
8”	226	23	336	407	475					
8 1/4”	233	291	345	418	488					
8 3/4”	240	299	354	429	500	593				
9”	246	307	364	440	513	607	811			
9 1/2”	253	316	373	451	526	622	830			
10”	260	324	382	463	538	637	849			
10 1/2”	273	340	401	485	564	666	887			
11”	279	345	410	496	576	680	906			
11 1/2”	285	350	419	507	589	695	925			
12”	292	358	429	518	602	710	944			
12 3/4”	305	374	449	540	627	739	982	1255		
13 1/4”	319	390	468	562	653	768	1020	1301	1629	
14”	332	406	487	583	678	797	1058	1347	1685	
14 3/4”	345	422	506	605	703	826	1096	1394	1742	2147
15 3/4”	359	437	524	627	731	856	1126	1440	1798	2214
16 1/2”	372	453	543	649	756	884	1164	1487	1854	2282
17 1/2”	385	469	562	672	781	913	1201	1533	1911	2350
18”	399	485	581	690	801	942	1239	1579	1967	2417
19”		501	600	716	832	971	1276	1626	2024	2484
19 1/2”		517	619	738	858	1000	1313	172	2080	2552
20 1/2”			638	760	884	1029	1350	1719	2136	2620
21 1/4”			656	782	909	1058	1388	1765	2193	2687
22”			675	804	935	1088	1425	1811	2249	2755
23”					960	1117	1462	1859	2306	2822
24 1/2”					986	1146	1500	1904	2362	2860
25”					1010	1176	1537	1951	2419	2957
26”						1205	1574	1997	2475	3025
27”						1233	1611	2043	2531	3092
27 1/2”							1649	2090	2588	3160

- All weights in kilos per 100 pieces with 2 assembled nuts

8 Abbotsinch Road,
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STUDBOLT WEIGHT CHART – METRIC

	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30
60	5.6	8.1	12.0	15.6						
70	6.1	8.9	13.0	16.9	23.7					
80	6.6	9.6	14.0	18.2	25.4	32.5				
90	7.1	10.3	15.0	19.6	27.1	34.5	45.5			
100	7.6	11.0	16.0	21.0	28.8	36.7	47.2	54.2		
110	8.1	11.7	17.0	22.2	30.4	38.7	48.3	58.2	80.0	
120	8.6	12.4	18.0	23.6	32.1	40.7	50.9	60.2	84.7	107
130	9.1	13.2	19.0	24.9	33.7	42.8	53.4	63.2	88.6	111
140	9.6	14.2	20.0	26.2	35.4	44.9	55.9	66.2	92.4	116
150	10.1	14.9	20.8	27.5	36.9	46.9	58.5	69.2	96.3	119
160	10.6	15.6	21.8	29.1	38.6	49.0	61.0	72.2	100.0	126
170		16.4	22.8	30.4	40.2	51.1	63.5	75.2	104.0	130
180			23.8	31.8	41.9	52.3	66.1	78.1	108.0	135
190				33.1	43.5	54.4	68.4	81.1	112.0	140
200				34.5	45.2	56.5	71.0	84.0	116.0	144
210				35.8	46.8	58.5	73.5	88.4	120.0	149
220				37.1	48.4	60.6	76.1	91.4	124.0	154
230				38.5	50.1	62.6	78.6	94.4	127.0	159
240				39.8	51.7	64.7	81.2	97.4	130.0	164
250				41.1	53.4	66.8	83.7	100.0	134.0	172
260					55.0	68.8	86.3	103.0	138.0	177
270					56.6	70.9	88.8	106.0	142.0	182
280					58.3	73.0	91.4	109.0	146.0	187
290						75.0	93.9	112.0	150.0	192
300						77.1	96.5	115.0	154.0	196
320							101.0	121.0	161.0	206
340								127.0	169.0	215
360								133.0	177.0	224
380									184.0	231
400									192.0	243
420										252
440										262

- All weights in kilos per 100 pieces with 2 assembled nuts

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	M33	M36	M39	M42	M45	M48	M52	M56	M60	M64
140	147	185								
150	153	192	237							
160	159	199	245	302						
170	165	206	253	312	378					
180	171	213	261	322	389	467				
190	176	219	269	332	400	480	566			
200	182	226	278	342	411	493	581			
210	188	233	286	352	423	506	596	692		
220	194	240	294	362	434	519	612	709	830	
230	201	247	302	372	446	532	627	726	850	981
240	208	253	310	382	457	545	643	743	869	1003
250	214	260	319	391	468	558	658	760	889	1025
260	220	267	327	401	480	571	674	777	908	1047
270	224	274	335	411	492	584	689	794	929	1069
280	230	281	343	421	505	597	705	811	947	1092
290	236	291	360	431	517	610	720	828	967	1114
300	241	298	368	441	530	623	736	845	987	1136
320	253	312	380	461	553	649	767	878	1026	1180
340	265	326	395	480	570	676	795	912	1065	1225
360	276	340	411	495	592	702	826	946	1104	1269
380	288	353	428	510	615	728	857	980	1143	1314
400	299	367	444	529	630	754	888	1014	1182	1358
420	311	381	430	548	650	780	900	1047	1221	1402
440	322	394	477	566	670	806	930	1081	1260	1447
460	334	408	493	585	690	832	960	1115	1299	1491
480	345	422	509	604	710	858	990	1149	1338	1536
500	357	436	526	623	730	884	1020	1183	1378	1580
520									1417	1624
540									1456	1669
560									1495	1713
580									1534	1758
600									1573	1802
640									1651	1891
680										1980

- All weights in kilos per 100 pieces with 2 assembled nuts

STUDBOLT SCOTLAND LIMITED

PETROCHEMICAL & INDUSTRIAL GRADE FASTENERS & SUPPLIES

FASTENER BROCHURE

FASTENERS, FIXINGS, STUDDING, NUTS, & WASHERS

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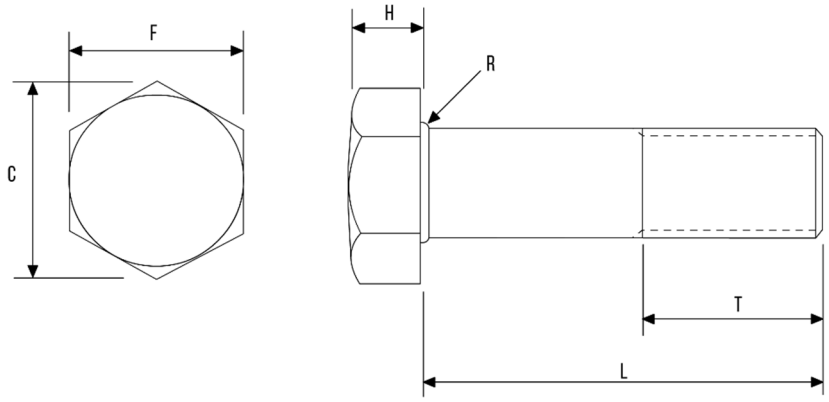
HEX BOLTS (METRIC) - DIN 931 / ISO 4014



DIA	A/F	A/C	HEIGHT	RADIUS	THREAD (T)		
	F	C (MIN)	H (NOM)	R (MIN)	L ≤ 125	L=125-200	L ≥ 200
M6	9.78 - 10.00	11.05	4.00	0.25	18	-	-
M8	12.73 - 13.00	14.38	5.30	0.40	22	-	-
M10	15.73 - 16.00	17.77	6.40	0.40	26	32	45
M12	17.73 - 18.00	20.03	7.50	0.60	30	36	49
M14	20.67 - 21.00	23.36	8.80	0.60	34	40	53
M16	23.67 - 24.00	26.75	10.00	0.60	38	44	57
M18	26.67 - 27.00	30.14	11.50	0.60	42	48	61
M20	29.67 - 30.00	33.53	12.50	0.80	46	52	65
M22	33.38 - 34.00	37.72	14.00	0.80	50	56	59
M24	35.38 - 34.00	39.98	15.00	0.80	54	60	73
M27	40.00 - 41.00	45.20	17.00	1.00	60	66	79
M30	45.00 - 46.00	50.85	18.70	1.00	66	72	85
M33	49.00 - 50.00	55.37	21.00	1.00	-	78	91
M36	53.80 - 55.00	60.79	22.50	1.00	-	84	97
M39	58.80 - 60.00	66.44	25.00	1.00	-	90	103
M42	63.10 - 65.00	71.30	26.00	1.20	-	95	109
M45	68.10 - 70.00	76.95	28.00	1.20	-	102	115
M48	73.10 - 75.00	82.60	30.00	1.60	-	108	12
M52	78.10 - 80.00	88.25	33.00	1.60	-	116	129
M56	82.80 - 85.00	93.56	35.00	2.00	-	-	137
M60	87.00 - 90.00	99.21	38.00	2.00	-	-	145
M64	92.80 - 96.00	104.86	40.00	2.00	-	-	153

- Dimensions in millimetres
- Available in Grade 8.8, 10.9, 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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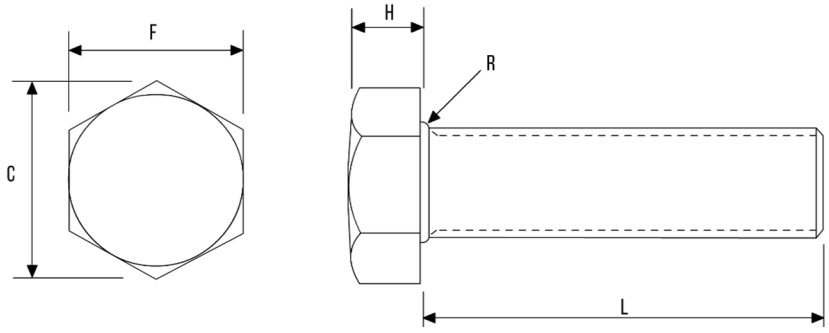
HEX SETSCREWS (METRIC) - DIN 933 / ISO 4017



DIA	A/F	A/C	HEIGHT	RADIUS
M5	7.78 - 8.00	8.79	3.50	0.20
M6	9.78 - 10.00	11.05	4.00	0.25
M8	12.73 - 13.00	14.38	5.30	0.40
M10	15.73 - 16.00	17.77	6.40	0.40
M12	17.73 - 18.00	20.03	7.50	0.60
M14	20.67 - 21.00	23.36	8.80	0.60
M16	23.67 - 24.00	26.75	10.00	0.60
M18	26.67 - 27.00	30.14	11.50	0.60
M20	29.67 - 30.00	33.53	12.50	0.80
M22	33.38 - 34.00	37.72	14.00	0.80
M24	35.38 - 34.00	39.98	15.00	0.80
M27	40.00 - 41.00	45.20	17.00	1.00
M30	45.00 - 46.00	50.85	18.70	1.00
M33	49.00 - 50.00	55.37	21.00	1.00
M36	53.80 - 55.00	60.79	22.50	1.00
M39	58.80 - 60.00	66.44	25.00	1.00
M42	63.10 - 65.00	71.30	26.00	1.20
M45	68.10 - 70.00	76.95	28.00	1.20
M48	73.10 - 75.00	82.60	30.00	1.60
M52	78.10 - 80.00	88.25	33.00	1.60
M56	82.80 - 85.00	93.56	35.00	2.00
M60	87.00 - 90.00	99.21	38.00	2.00
M64	92.80 - 96.00	104.86	40.00	2.00

- Dimensions in millimetres
- Available in Grade 8.8, 10.9, 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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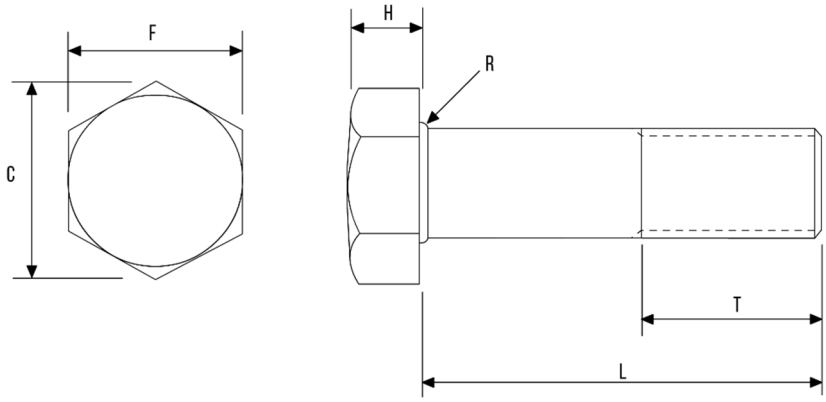
HEX BOLTS (IMPERIAL) – BS1768 / ASME B18.2.1



DIA	TPI		A/F	A/C	HEIGHT	RADIUS	THREAD (T)	
	UNC	UNF	(F)	(C)	(H)	(R)	L ≤ 6”	L > 6”
1/4	20	28	0.428 - 0.438	0.488 - 0.505	0.150 - 0.163	0.015 - 0.025	0.750	1.000
5/16	18	24	0.489 - 0.500	0.557 - 0.577	0.195 - 0.211	0.015 - 0.025	0.875	1.125
3/8	16	24	0.551 - 0.562	0.628 - 0.650	0.226 - 0.243	0.015 - 0.025	1.000	1.250
7/16	14	20	0.612 - 0.625	0.698 - 0.722	0.272 - 0.291	0.015 - 0.025	1.125	1.375
1/2	13	20	0.736 - 0.750	0.302 - 0.323	0.302 - 0.323	0.015 - 0.025	1.250	1.500
9/16	12	18	0.798 - 0.812	0.348 - 0.371	0.348 - 0.371	0.020 - 0.045	1.375	1.625
5/8	11	18	0.922 - 0.938	0.378 - 0.403	0.378 - 0.403	0.020 - 0.045	1.500	1.750
3/4	10	16	1.100 - 1.125	0.455 - 0.483	0.455 - 0.483	0.020 - 0.045	1.750	2.000
7/8	9	14	1.285 - 1.312	0.531 - 0.563	0.531 - 0.563	0.040 - 0.065	2.000	2.250
1	8	12	1.469 - 1.500	0.591 - 0.627	0.591 - 0.627	0.060 - 0.095	2.250	2.500
1-1/8	7	8	1.631 - 1.688	0.658 - 0.718	0.658 - 0.718	0.060 - 0.095	2.500	2.750
1-1/4	7	8	1.812 - 1.875	0.749 - 0.813	0.749 - 0.813	0.060 - 0.095	2.750	3.000
1-3/8	6	8	1.994 - 2.062	0.810 - 0.878	0.810 - 0.878	0.060 - 0.095	3.000	3.250
1-1/2	6	8	2.175 - 2.250	0.902 - 0.974	0.902 - 0.974	0.060 - 0.095	3.250	3.500

- Dimensions in inches
- Available in SAE Grade 5 & Grade 8 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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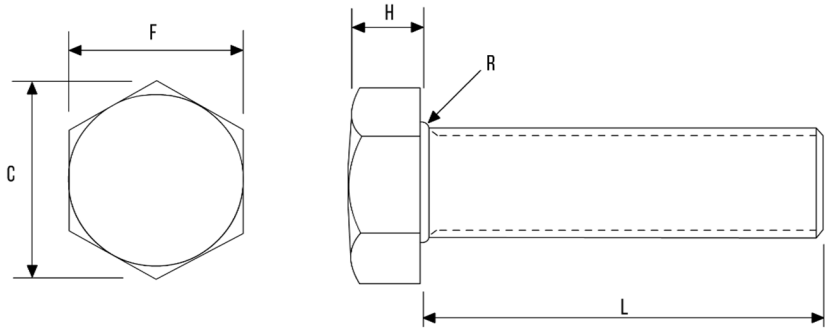
HEX SETSCREWS (IMPERIAL) – BS1768 / ASME B18.2.1



DIA	TPI		A/F	A/C	HEIGHT	RADIUS
	UNC	UNF	(F)	(C)	(H)	(R)
1/4	20	28	0.428 - 0.438	0.488 - 0.505	0.150 - 0.163	0.015 - 0.025
5/16	18	24	0.489 - 0.500	0.557 - 0.577	0.195 - 0.211	0.015 - 0.025
3/8	16	24	0.551 - 0.562	0.628 - 0.650	0.226 - 0.243	0.015 - 0.025
7/16	14	20	0.612 - 0.625	0.698 - 0.722	0.272 - 0.291	0.015 - 0.025
1/2	13	20	0.736 - 0.750	0.302 - 0.323	0.302 - 0.323	0.015 - 0.025
9/16	12	18	0.798 - 0.812	0.348 - 0.371	0.348 - 0.371	0.020 - 0.045
5/8	11	18	0.922 - 0.938	0.378 - 0.403	0.378 - 0.403	0.020 - 0.045
3/4	10	16	1.100 - 1.125	0.455 - 0.483	0.455 - 0.483	0.020 - 0.045
7/8	9	14	1.285 - 1.312	0.531 - 0.563	0.531 - 0.563	0.040 - 0.065
1	8	12	1.469 - 1.500	0.591 - 0.627	0.591 - 0.627	0.060 - 0.095
1-1/8	7	8	1.631 - 1.688	0.658 - 0.718	0.658 - 0.718	0.060 - 0.095
1-1/4	7	8	1.812 - 1.875	0.749 - 0.813	0.749 - 0.813	0.060 - 0.095
1-3/8	6	8	1.994 - 2.062	0.810 - 0.878	0.810 - 0.878	0.060 - 0.095
1-1/2	6	8	2.175 - 2.250	0.902 - 0.974	0.902 - 0.974	0.060 - 0.095

- Dimensions in inches
- Available in SAE Grade 5 & Grade 8 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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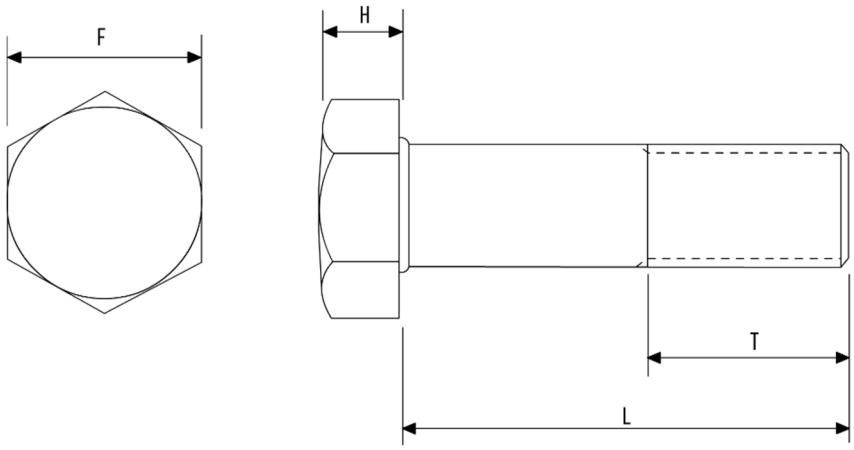
HEX BOLTS (IMPERIAL) – BS1769



DIA	TPI	HEIGHT	A/F	THREAD (T)	THREAD (T)
	UNC	(H)	(F)	L ≤ 6”	L > 6"
1/2	13	0.386 - 0.426	0.855 - 0.875	1.250	1.500
5/8	11	0.478 - 0.522	1.038 - 1.063	1.500	1.750
3/4	10	0.570 - 0.618	1.225 - 1.250	1.750	2.000
7/8	9	0.662 - 0.714	1.408 - 1.438	2.000	2.250
1	8	0.722 - 0.778	1.595 - 1.625	2.250	2.500
1-1/8	7	0.814 - 0.874	1.783 - 1.813	2.500	2.750
1-1/4	7	0.906 - 0.970	1.955 - 2.000	2.750	3.000
1-3/8	6	0.997 - 1.065	2.143 - 2.188	3.000	3.250
1-1/2	6	1.089 - 1.161	2.330 - 2.375	3.250	3.500
1-3/4	5	1.272 - 1.352	2.690 - 2.750	3.750	4.000
2	4.5	1.394 - 1.482	3.065 - 3.125	4.250	4.500

- Dimensions in inches
- Available in mild steel from stock.
- Other materials manufactured on request

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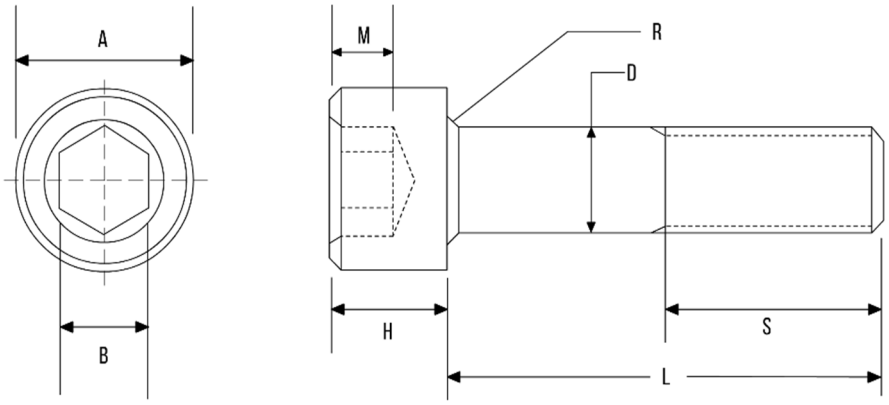
SOCKET HEAD CAPSCREWS (METRIC) - DIN 912 / ISO 4762



DIA	A	H	B	M (MIN)	S (MIN)	R (MIN)
M3	5.32 - 5.68	2.86 - 3.00	2.520 - 2.580	1.30	18.00	0.10
M4	6.78 - 7.22	3.82 - 4.00	3.020 - 3.080	2.00	20.00	0.20
M5	8.28 - 8.72	4.82 - 5.00	4.020 - 4.095	2.50	22.00	0.20
M6	9.78 - 10.22	5.70 - 6.00	5.020 - 5.140	3.00	24.00	0.25
M8	12.73 - 13.27	7.64 - 8.00	6.020 - 6.140	4.00	28.00	0.40
M10	15.73 - 16.27	9.64 - 10.00	8.025 - 8.175	5.00	32.00	0.40
M12	17.73 - 18.27	11.57 - 12.00	10.025 - 10.175	6.00	36.00	0.60
M14	20.67 - 21.33	13.57 - 14.00	12.032 - 12.212	7.00	40.00	0.60
M16	23.67 - 24.33	15.57 - 16.00	14.032 - 14.212	8.00	44.00	0.60
M18	26.67 - 27.33	17.57 - 18.00	14.032 - 14.212	9.00	48.00	0.60
M20	29.67 - 30.33	19.48 - 20.00	17.050 - 17.230	10.00	52.00	0.80
M22	32.61 - 33.39	21.48 - 22.00	17.050 - 17.230	11.00	56.00	0.80
M24	35.61 - 33.39	23.48 - 24.00	19.065 - 19.275	12.00	60.00	0.80
M27	39.61 - 40.39	26.48 - 27.00	19.065 - 19.275	13.50	66.00	1.00
M30	44.61 - 45.39	29.48 - 30.00	22.065 - 22.275	15.50	72.00	1.00
M33	49.61 - 50.39	32.38 - 33.00	24.065 - 24.275	18.00	76.00	1.00
M36	53.54 - 54.46	35.38 - 36.00	27.065 - 27.275	19.00	84.00	1.00
M39	57.54 - 58.46	38.38 - 39.00	27.065 - 27.275	21.00	90.00	1.00

- Dimensions in millimetres
- Available in Grades 8.8, 10.9 & 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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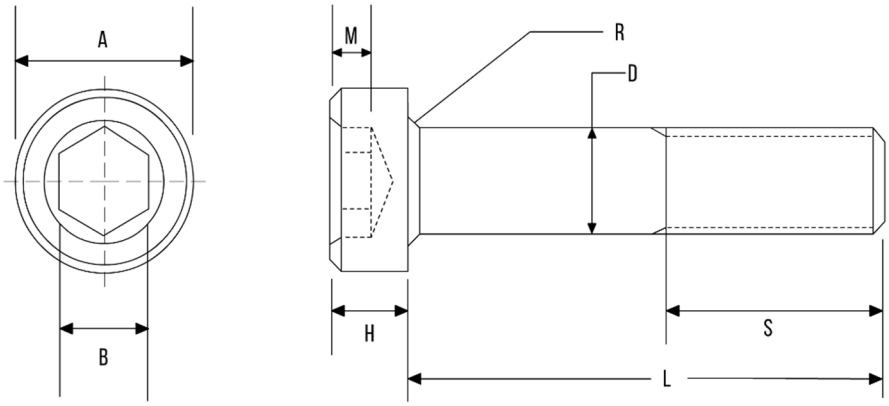
SOCKET LOW HEAD CAPSCREWS (METRIC) - DIN 7984



DIA	A	H	B	M	S (MIN)	R (MIN)
M3	5.32 - 5.50	1.86 - 2.00	2.020 - 2.080	1.38 - 1.62	12	0.10
M4	6.78 - 7.00	2.66 - 2.80	2.520 - 2.580	2.18 - 2.42	14	0.20
M5	8.28 - 8.50	3.32 - 3.50	3.020 - 3.080	2.58 - 2.82	16	0.20
M6	9.78 - 10.00	3.82 - 4.00	4.020 - 4.095	2.88 - 3.12	18	0.25
M8	12.73 - 13.00	4.82 - 5.00	5.020 - 5.140	3.65 - 3.95	22	0.40
M10	15.73 - 16.00	5.82 - 6.00	7.025 - 7.175	4.35 - 4.65	26	0.40
M12	17.73 - 18.00	6.78 - 7.00	8.025 - 8.175	4.85 - 5.15	30	0.60
M14	20.67 - 21.00	7.78 - 8.00	10.025 - 10.175	5.15 - 5.45	34	0.60
M16	23.67 - 24.00	8.78 - 9.00	12.032 - 12.212	5.35 - 5.65	38	0.60
M18	26.67 - 27.00	9.78 - 10.00	12.032 - 12.212	6.32 - 6.68	42	0.60
M20	29.67 - 30.00	10.73 - 11.00	14.032 - 14.212	7.32 - 7.68	46	0.80

- Dimensions in millimetres
- Available in Grades 10.9 Steel
- Other materials manufactured on request

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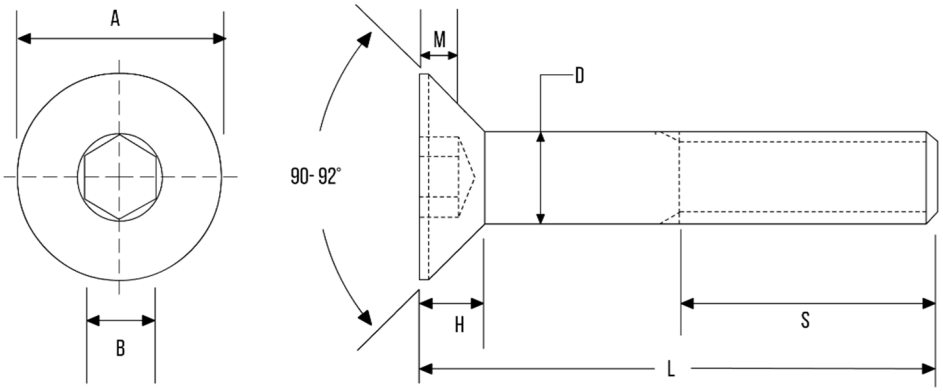
SOCKET COUNTERSUNKS SCREWS (METRIC) - DIN 7991 / ISO 10642



DIA	A	B	M (MIN)	S (MIN)	H (MIN)
M3	5.54 - 6.72	2.020 - 2.080	1.1	18	1.86
M4	7.53 - 8.96	2.520 - 2.580	1.5	20	2.48
M5	9.43 - 11.20	3.020 - 3.080	1.9	22	3.10
M6	11.34 - 13.44	4.020 - 4.095	2.2	24	3.72
M8	15.24 - 17.92	5.020 - 5.140	3.0	28	4.96
M10	19.22 - 22.40	6.020 - 6.140	3.6	32	6.20
M12	23.12 - 26.88	8.025 - 8.175	4.3	36	7.44
M14	26.52 - 30.80	10.025 - 10.175	4.5	40	8.40
M16	29.01 - 33.60	10.025 - 10.175	4.8	44	8.80
M20	36.05 - 40.32	12.032 - 12.212	5.6	52	10.16

- Dimensions in millimetres
- Available in Grades 10.9 & 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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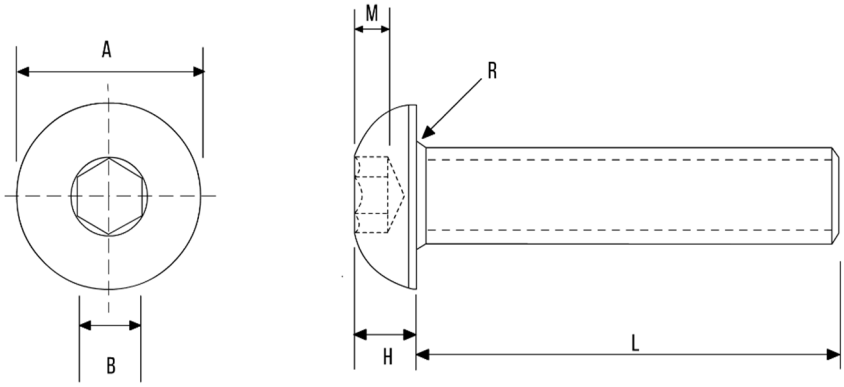
SOCKET BUTTON HEAD SCREWS (METRIC) - ISO 7380



DIA	A	H	B	M (MIN)	R (MIN)
M3	5.40 - 5.70	1.40 - 1.65	2.020 - 2.080	1.04	0.10
M4	7.24 - 7.60	1.95 - 2.20	2.520 - 2.580	1.30	0.20
M5	9.14 - 9.50	2.50 - 2.75	3.020 - 3.080	1.56	0.20
M6	10.07 - 10.50	3.00 - 3.30	4.020 - 4.095	2.08	0.25
M8	13.57 - 14.00	4.10 - 4.40	5.020 - 5.140	2.60	0.40
M10	17.07 - 17.50	5.20 - 5.50	6.020 - 6.140	3.12	0.40
M12	20.48 - 21.00	6.24 - 6.60	8.025 - 8.175	4.16	0.60
M16	27.48 - 28.00	8.44 - 8.80	10.025 - 10.175	5.20	0.60

- Dimensions in millimetres
- Available in Grades 10.9 & 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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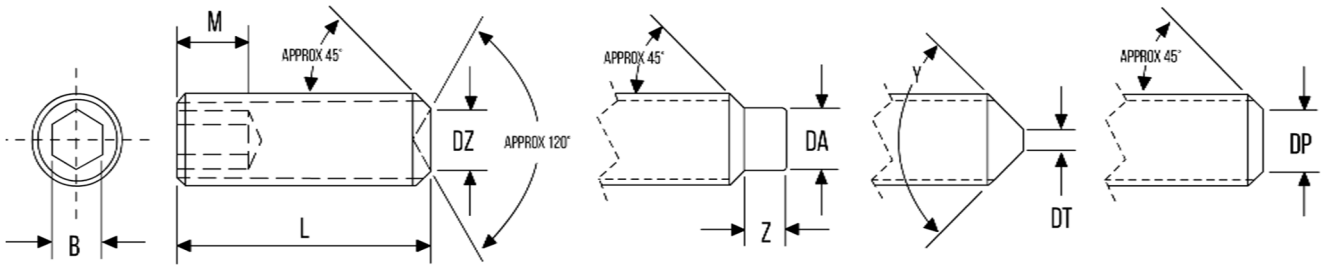
SOCKET SETSCREWS (METRIC) - ISO 4026 / 4027 / 4028 / 4029



DIA	CUP POINT (M)		DOG POINT (M)			CONE POINT (M)		FLAT POINT (M)	
	LENGTH	MIN	LENGTH	MIN	Z	LENGTH	MIN	LENGTH	MIN
M3	L ≤ 4	1.20	L ≤ 5	1.20	0.75 - 1.00	L ≤ 4	1.20	L ≤ 3	1.20
	L>4	2.00	L>5	2.00	1.50 - 1.75	L>4	2.00	L > 3	2.00
M4	L ≤ 5	1.50	L ≤ 6	1.50	1.00 -1.25	L ≤ 5	1.50	L ≤ 4	1.50
	L>5	2.50	L>6	2.50	2.00 - 2.25	L>5	2.50	L>4	2.50
M5	L ≤ 5	2.00	L ≤ 6	2.00	1.25 - 1.50	L ≤ 6	2.00	L ≤ 5	2.00
	L>5	3.00	L>6	3.00	2.50 - 2.75	L>6	3.00	L>5	3.00
M6	L ≤ 6	2.00	L ≤ 8	2.00	1.50 - 1.75	L ≤ 6	2.00	L ≤ 6	2.00
	L>6	3.50	L>8	3.50	3.00 - 3.25	L>6	3.50	L>6	3.50
M8	L ≤ 8	3.00	L ≤ 10	3.00	2.00 - 2.25	L ≤ 8	3.00	L ≤ 8	3.00
	L>8	5.00	L>10	5.00	4.00 - 4.30	L>8	5.00	L>8	5.00
M10	L ≤ 10	4.00	L ≤ 12	4.00	2.50 - 2.75	L ≤ 10	4.00	L ≤ 10	4.00
	L>10	6.00	L<12	6.00	5.00 - 5.30	L>10	6.00	L>10	6.00
M12	L ≤ 12	4.80	L ≤ 16	4.80	3.00 - 3.25	L ≤ 12	4.80	L ≤ 12	4.80
	L>12	8.00	L>16	8.00	6.00 - 6.30	L>12	8.00	L>12	8.00
M14	L ≤ 14	5.60	L ≤ 20	5.60	3.50 - 3.80	L ≤ 14	5.60	L ≤ 14	5.60
	L>14	9.00	L>20	9.00	7.00 - 7.36	L>14	9.00	L>14	9.00
M16	L ≤ 16	6.40	L ≤ 20	6.40	4.00 - 4.30	L ≤ 16	6.40	L ≤ 16	6.40
	L>16	10.00	L>20	10.00	8.00 - 8.36	L>16	10.00	L>16	10.00
M18	L ≤ 18	7.20	L ≤ 25	7.20	4.50 - 4.80	L ≤ 18	7.20	L ≤ 18	7.20
	L>18	11.00	L<25	11.00	9.00 - 9.86	L>18	11.00	L>18	11.00
M20	L ≤ 20	8.00	L ≤ 25	8.00	5.00 - 5.30	L ≤ 20	8.00	L ≤ 20	8.00
	L>20	12.00	L>25	12.00	10.00-10.36	L>20	12.00	L>20	12.00

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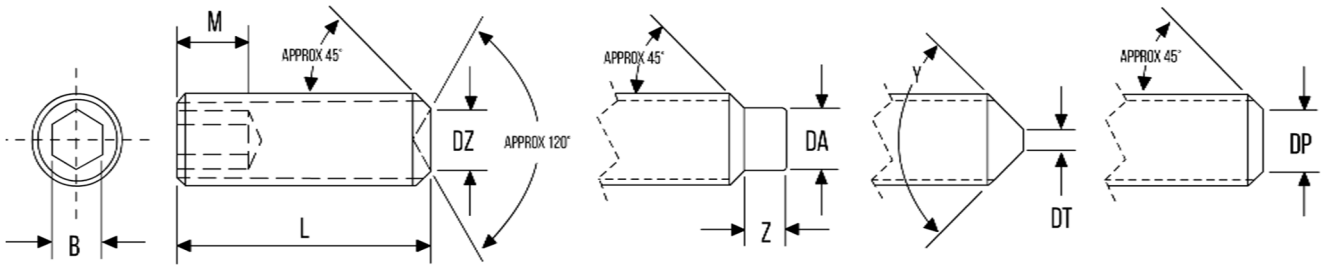
SOCKET SETSCREWS (METRIC) - ISO 4026 / 4027 / 4028 / 4029 - CONTINUED



DIA	DP	DZ	DT (MAX)	DA	B
M3	1.75 - 2.00	1.15 - 1.40	0.75	1.75 - 2.00	1.152 - 1.580
M4	2.25 - 2.50	1.75 - 2.00	1.00	2.25 - 2.50	2.020 - 2.080
M5	3.20 - 3.50	2.25 - 2.50	1.25	3.20 - 3.50	2.520 - 2.580
M6	3.70 - 4.00	2.75 - 3.00	1.50	3.70 - 4.00	3.020 - 3.080
M8	5.20 - 5.50	4.70 - 5.00	2.00	5.20 - 5.50	4.020 - 4.095
M10	6.64 - 7.00	5.70 - 6.00	2.50	6.64 - 7.00	5.020 - 5.140
M12	8.14 - 8.50	7.64 - 8.00	3.00	8.14 - 8.50	6.020 - 6.140
M14	9.64 - 10.00	8.64 - 9.00	4.00	9.64 - 10.00	6.020 - 6.140
M16	11.57 - 12.00	9.64 - 10.00	4.00	11.57 - 12.00	8.025 - 8.175
M18	12.57 - 13.00	11.57 - 12.00	5.00	12.57 - 13.00	10.025 - 10.175
M20	14.57 - 15.00	13.57 - 14.00	5.00	14.57 - 15.00	10.025 - 10.175

- Dimensions in millimetres
- Available in Grades 14.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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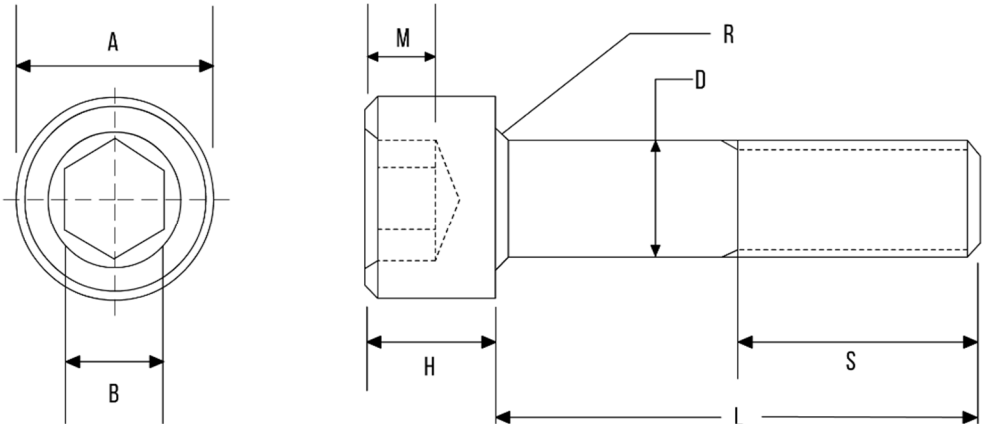
SOCKET HEAD CAPSCREWS - ASME B18.3 (1960 SERIES)



DIA	A	H	B (NOM)	M (MIN)	R (MIN)	S (MIN)
1/4	0.365 - 0.375	0.244 - 0.250	3/16 (0.188)	0.120	0.007	1.000
5/16	0.457 - 0.469	0.306 - 0.312	1/4 (0.250)	1.151	0.009	1.120
3/8	0.550 - 0.562	0.368 - 0.375	5/16 (0.312)	0.182	0.012	1.250
7/16	0.642 - 0.656	0.430 - 0.438	3/8 (0.375)	0.213	0.014	1.380
1/2	0.735 - 0.750	0.492 - 0.500	3/8 (0.375)	0.245	0.016	1.500
9/16	0.827 - 0.843	0.554 - 0.562	7/16 (0.438)	0.276	0.021	1.630
5/8	0.921 - 0.938	0.616 - 0.625	1/2 (0.500)	0.307	0.021	1.750
3/4	1.107 - 1.125	0.740 - 0.750	5/8 (0.625)	0.370	0.025	2.000
7/8	1.293 - 1.312	0.864 - 0.875	3/4 (0.750)	0.432	0.031	2.250
1	1.479 - 1.500	0.988 - 1.000	3/4 (0.750)	0.495	0.034	2.500
1-1/8	1.665 - 1.688	1.111 - 1.125	7/8 (0.875)	0.557	0.039	2.810
1-1/4	1.852 - 1.875	1.236 - 1.250	7/8 (0.875)	0.620	0.044	3.120
1-3/8	2.038 - 2.062	1.360 - 1.375	1 (1.000)	0.682	0.048	3.440
1-1/2	2.224 - 2.250	1.485 - 1.500	1 (1.000)	0.745	0.052	3.750

- All dimensions are in inches
- Available in Grade 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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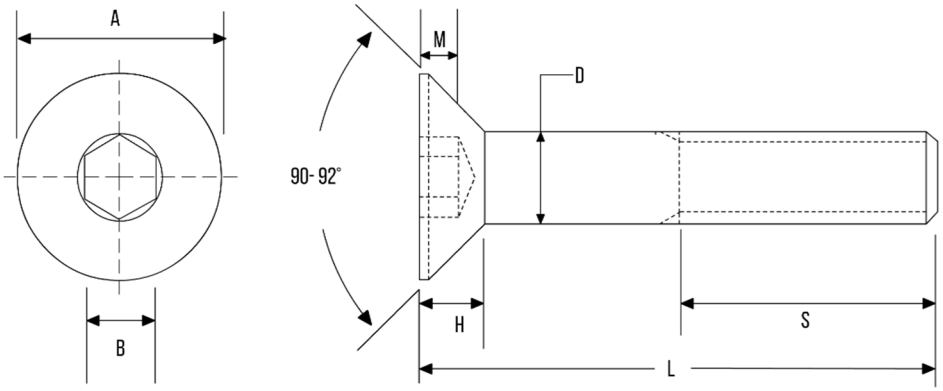
SOCKET COUNTERSUNKS SCREWS (IMPERIAL) – ASME 18.3



DIA	A	B	M (MIN)	S (MIN)
1/4	0480 - 0.531	5/32 (0.156)	0.111	1.00
5/16	0.600 - 0.656	3/16 (0.188)	0.135	1.12
3/8	0.720 - 0.781	7/32 (0.219)	0.159	1.25
7/16	0.781 - 0.844	1/4 (0.250)	0.159	1.38
1/2	0.872 - 0.938	5/16 (0.312)	0.172	1.50
5/8	1.112 - 1.188	3/8 (0.375)	0.220	1.75
3/4	1.355 - 1.438	1/2 (0.500)	0.220	2.00
7/8	1.604 - 1.688	9/16 (0.562)	0.248	2.25
1	1.841 - 1.938	5/8 (0.625)	0.297	2.50
1-1/8	2.079 - 2.188	3/4 (0.750)	0.325	2.81
1-1/4	2.316 - 2.438	7/8 (0.875)	0.358	3.12
1-3/8	2.553 - 2.688	7/8 (0.875)	0.402	3.44
1-1/2	2.791 - 2.938	1 (1.000)	0.435	3.75

- Dimensions in inches
- Available in High Tensile Steel and A2 Stainless Steel
- Other materials manufactured on request

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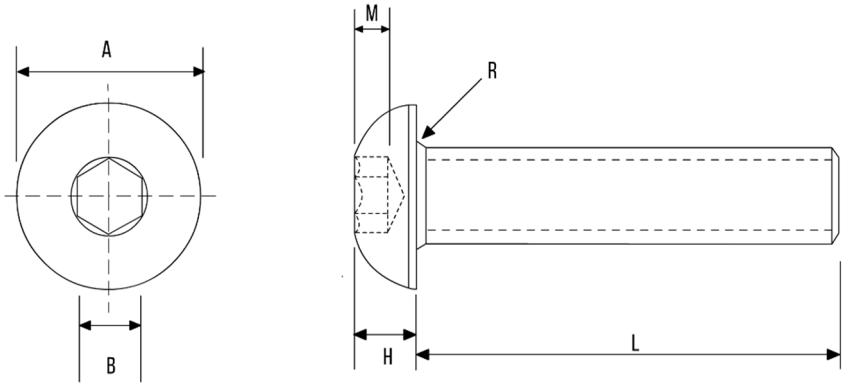
SOCKET BUTTON HEAD SCREWS (IMPERIAL) – ASME B18.3



DIA	A	H	B	M (MIN)	S (MIN)
1/4	0.419 - 0.437	0.122 - 0.132	5/32 (0.156)	0.087	0.007
5/16	0.527 - 0.547	0.152 - 0.166	3/16 (0.188)	0.105	0.009
3/8	0.636 - 0.656	0.185 - 0.199	7/32 (0.219)	0.122	0.012
1/2	0.851 - 0.875	0.245 - 2.265	5/16 (0.312)	0.175	0.016
5/8	0.970 - 1.000	0.311 - 0.331	3/8 (0.375)	0.210	0.021

- Dimensions in inches
- Available in High Tensile Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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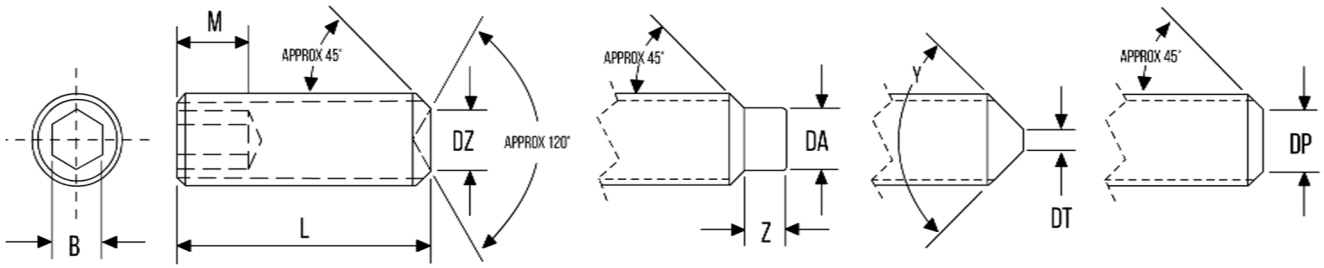
SOCKET SETSCREWS (IMPERIAL) – ASME B18.3



DIA	CUP POINT (M)		DOG POINT (M)			CONE POINT (M)		FLAT POINT (M)	
	LENGTH	MIN	LENGTH	MIN	Z	LENGTH	MIN	LENGTH	MIN
1/4	L ≥ 0.25	0.125	L ≥ 0.31	0.125	0.059 - 0.067	L ≥ 0.31	0.125	L ≥ 0.25	0.125
5/16	L ≥ 0.31	0.156	L ≥ 0.38	0.156	0.074 - 0.082	L ≥ 0.44	0.156	L ≥ 0.31	0.156
3/8	L ≥ 0.38	0.188	L ≥ 0.44	0.188	0.089 - 0.099	L ≥ 0.44	0.188	L ≥ 0.38	0.188
7/16	L ≥ 0.44	0.219	L ≥ 0.50	0.219	0.104 - 0.114	L ≥ 0.63	0.219	L ≥ 0.44	0.219
1/2	L ≥ 0.50	0.250	L ≥ 0.63	0.250	0.120 - 0.130	L ≥ 0.63	0.250	L ≥ 0.50	0.250
5/8	L ≥ 0.63	0.312	L ≥ 0.88	0.312	0.148 - 0.164	L ≥ 0.88	0.312	L ≥ 0.63	0.312
3/4	L ≥ 0.75	0.375	L ≥ 1.00	0.375	0.480 - 0.196	L ≥ 1.00	0.375	L ≥ 0.75	0.375
7/8	L ≥ 0.88	0.500	L ≥ 1.00	0.500	0.211 - 0.227	L ≥ 1.00	0.500	L ≥ 0.88	0.500
1	L ≥ 1.00	0.562	L ≥ 1.25	0.562	0.240 - 0.260	L ≥ 1.25	0.562	L ≥ 1.00	0.562

DIA	DP	DZ	DF (MAX)	DA	B
1/4	0.118 - 0.132	0.118 - 0.132	0.0250	0.149 - 0.156	1/8 (0.125)
5/16	0.156 - 0.132	0.156 - 0.132	0.0312	0.195 - 0.203	5/32 (0.156)
3/8	0.194 - 0.212	0.194 - 0.212	0.0375	0.241 - 0.250	3/16 (0.188)
7/16	0.232 - 0.252	0.232 - 0.252	0.4370	0.287 - 0.297	7/32 (0.219)
1/2	0.270 - 0.291	0.270 - 0.291	0.0500	0.334 - 0.344	1/4 (0.250)
5/8	0.347 - 0.371	0.347 - 0.371	0.0625	0.456 - 0.469	5/16 (0.312)
3/4	0.425 - 0.450	0.425 - 0.450	0.7500	0.549 - 0.562	3/8 (0.375)
7/8	0.502 - 0.530	0.502 - 0.530	0.8750	0.642 - 0.656	1/2 (0.500)
1	0.579 - 0.609	0.579 - 0.609	0.1000	0.734 - 0.750	9/16 (0.562)

- Dimensions in inches
- Available in High Tensile Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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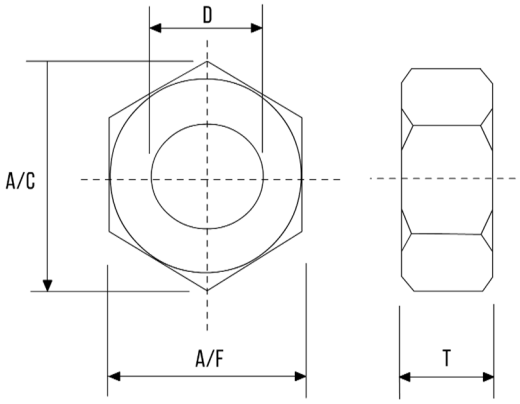
HEX FULL NUT (METRIC) – DIN 934 / ISO 4032



DIA	TPI	A/C	THICKNESS (T)		A/F	
	(COARSE)	MIN	MIN	MAX	MIN	MAX
M6	1.00	10.89	4.90	5.20	9.78	10.00
M8	1.25	14.20	6.44	6.80	12.73	13.00
M10	1.50	17.77	8.04	8.40	15.73	16.00
M12	1.75	20.03	10.37	10.80	17.73	18.00
M14	2.00	23.36	12.10	12.80	20.67	21.00
M16	2.00	26.75	14.10	14.80	23.67	24.00
M18	2.50	29.56	15.10	15.80	26.16	27.00
M20	2.50	32.95	16.90	18.00	29.16	30.00
M22	2.50	37.29	18.10	19.40	33.00	34.00
M24	3.00	39.55	20.20	21.50	35.00	36.00
M27	3.00	45.20	22.50	23.80	40.00	41.00
M30	3.50	50.85	24.30	25.60	45.00	46.00
M33	3.50	55.37	27.40	28.70	49.00	50.00
M36	4.00	60.79	29.40	31.00	53.80	55.00
M39	4.00	66.44	31.80	33.40	58.80	60.00
M42	4.50	71.30	32.40	34.00	63.10	65.00
M45	4.50	76.95	34.40	36.00	68.10	70.00
M48	5.00	82.60	36.40	38.00	73.10	75.00
M52	5.00	88.25	40.40	42.00	78.10	80.00
M56	5.50	93.56	43.40	45.00	82.80	85.00
M60	5.50	99.21	46.40	48.00	87.80	90.00
M64	6.00	104.86	49.10	51.00	92.80	95.00

- Dimensions in millimetres
- Available in Grades 6, 8, 10, 12 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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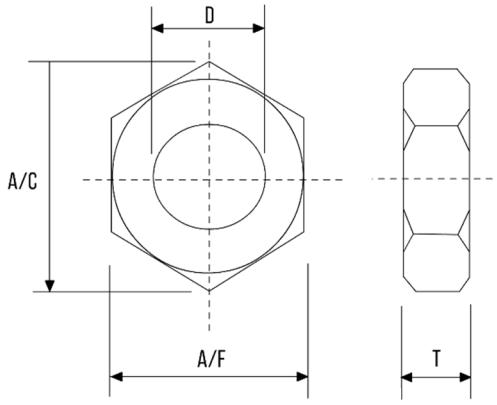
HEX LOCK NUT (METRIC) - DIN 439-2 / ISO 4035



DIA	TPI	A/C	THICKNESS (T)		A/F	
	(COARSE)	MIN	MIN	MAX	MIN	MAX
M6	1.00	10.89	2.90	3.20	9.78	10.00
M8	1.25	14.20	3.70	4.00	12.73	13.00
M10	1.50	18.90	4.70	5.00	16.73	17.00
M12	1.75	21.10	5.70	6.00	18.67	19.00
M14	2.00	24.49	6.42	7.00	20.67	21.0
M16	2.00	26.75	7.42	8.00	23.67	24.00
M18	2.50	29.56	8.42	9.00	26.16	27.00
M20	2.50	32.95	9.10	10.00	29.16	30.00
M22	2.50	35.03	9.90	11.00	31.00	32.00
M24	3.00	39.55	10.90	12.00	35.00	36.00
M27	3.00	45.20	12.40	13.50	40.00	41.00
M30	3.50	50.85	13.90	15.00	45.00	46.00
M33	3.50	55.37	15.40	16.50	49.00	50.00
M36	4.00	60.79	16.90	18.00	53.80	55.00
M39	4.00	66.44	18.20	19.50	58.80	60.00
M42	4.50	71.30	19.70	21.00	63.10	65.00
M45	4.50	76.95	21.20	22.50	68.10	70.00
M48	5.00	82.60	22.70	24.00	73.10	75.00
M52	5.00	88.25	24.70	26.00	78.10	80.00
M56	5.50	18.90	4.70	5.00	16.73	17.00

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

8 Abbotsinch Road,
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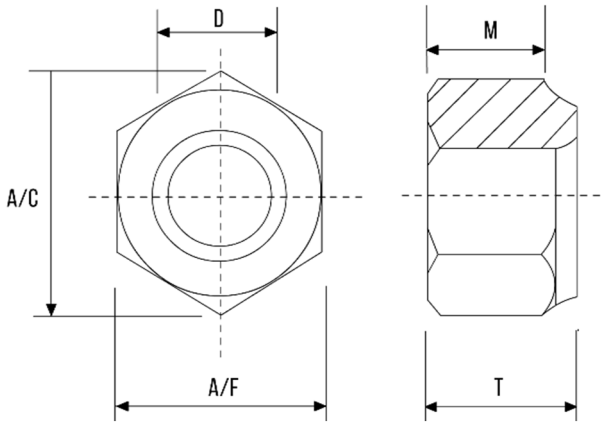
NYLON INSERT NUT (METRIC) - DIN 982 HIGH TYPE (P)



DIA.	TPI	A/C	T		M	A/F	
	COARSE	MIN	MIN	NOM	MIN	MIN	MAX
M5	0.80	8.79	6.00	6.30	4.40	7.78	8.00
M6	1.00	11.05	7.70	8.00	4.90	9.78	10.00
M7	1.00	12.12	8.20	8.50	6.14	10.73	11.00
M8	1.25	14.38	9.14	9.50	6.44	12.73	13.00
M10	1.50	18.90	11.14	11.50	8.04	16.73	17.00
M12	1.75	21.10	13.64	14.00	10.37	18.67	19.00
M14	2.00	24.49	15.30	16.00	12.10	21.67	22.00
M16	2.00	26.75	17.30	18.00	14.10	23.67	24.00
M18	2.50	29.56	19.16	20.00	15.10	26.18	27.00
M20	2.50	32.95	20.70	22.00	16.90	29.16	30.00
M22	2.50	35.03	23.70	25.00	18.10	31.00	32.00
M24	3.30	39.55	26.70	28.00	20.20	35.00	36.00

- Dimensions in millimetres
- Available in Grade 8 & 10 and A2 & A4 Stainless Steel
- Other materials manufactured on request

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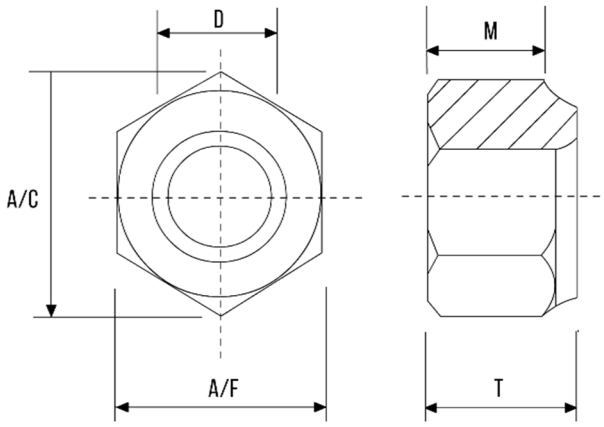
NYLON INSERT NUT (METRIC) - DIN 985 THIN TYPE (T)



DIA	TPI	A/C	T		M	A/F	
	COARSE	MIN	MIN	NOM	MIN	MIN	MAX
M10	1.50	18.90	9.64	10.00	6.50	15.73	16.00
M12	1.75	21.10	11.57	12.00	8.00	17.73	18.00
M14	2.00	24.49	13.30	14.00	9.50	20.67	21.00
M16	2.00	26.75	15.30	16.00	10.50	23.67	24.00
M18	2.50	29.56	17.66	18.50	13.00	26.16	27.00
M20	2.50	32.95	18.70	20.00	14.00	29.16	30.00
M22	2.50	35.03	20.70	22.00	15.00	33.00	34.00
M24	3.00	39.55	22.70	24.00	15.00	35.00	36.00
M27	3.00	45.20	25.70	27.00	17.00	40.00	41.00
M30	3.50	50.85	28.70	30.00	19.00	45.00	46.00
M33	3.50	55.37	31.40	33.00	22.00	49.00	50.00
M36	4.00	60.79	34.40	36.00	25.00	53.80	55.00
M39	4.00	66.44	37.40	39.00	27.00	58.80	60.00
M42	4.50	72.09	40.40	42.00	29.00	63.10	65.00
M45	4.50	76.95	43.40	45.00	32.00	68.10	70.00
M48	5.00	82.60	46.40	48.00	36.00	73.10	75.00

- Dimensions in millimetres
- Available in Grade 8 & 10 and A2 & A4 Stainless Steel
- Other materials manufactured on request

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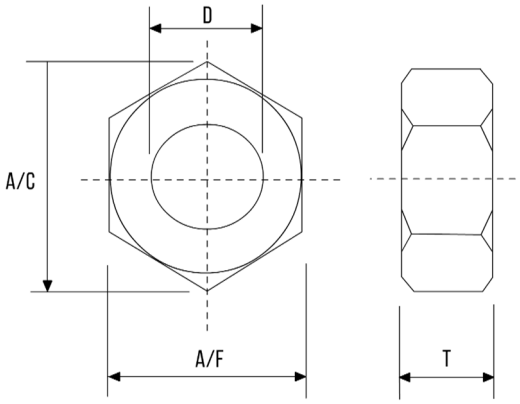
HEX FULL NUT (IMPERIAL) – ANSI B18.2.2 / BS1768



DIA	A/F			A/C		T		
	BASIC	MAX	MIN	MAX	MIN	BASIC	MAX	MIN
1/4	7/16	0.438	0.428	0.505	0.488	7/32	0.226	0.212
5/16	1/2	0.500	0.489	0.577	0.557	17/64	0.273	0.258
3/8	9/16	0.562	0.551	0.650	0.628	21/64	0.337	0.320
7/16	11/16	0.688	0.675	0.794	0.768	3/8	0.385	0.365
1/2	3/4	0.750	0.736	0.866	0.840	7/16	0.448	0.427
9/16	7/8	0.875	0.861	1.010	0.982	31/64	0.496	0.473
5/8	1.5/16	0.938	0.922	1.083	1.051	35/64	0.559	0.535
3/4	1.1/8	1.125	1.088	1.299	1.240	41/64	0.665	0.617
7/8	1.5/16	1.312	1.269	1.516	1.447	3/4	0.776	0.724
1	1.1/2	1.500	1.450	1.732	1.653	55/64	0.887	0.831
1.1/8	1.11/16	1.688	1.631	1.949	1.859	31/32	0.999	0.939
1.1/4	1.7/8	1.875	1.812	2.165	2.066	1.1/6	1.094	1.030
1.3/8	2.1/16	2.062	1.994	2.382	2.273	1.11/64	1.206	1.138
1.1/2	2.1/4	2.250	2.175	2.598	2.480	1.9/32	1.317	1.245
1.5/8	2.7/16	2.438	2.356	2.185	2.686	1.25/64	1.429	1.353
1.3/4	2.5/8	2.625	2.558	3.031	2.893	1.1/2	1.540	1.460
2	3	3.000	2.900	3.464	3.306	1.23/32	1.763	1.675
2.1/4	3.3/8	3.375	3.236	3.897	3.719	1.15/16	1.986	1.890
2.1/2	3.3/4	3.750	3.625	4.330	4.133	2.5/32	2.209	2.105
2.3/4	4.1/8	4.125	3.988	4.763	4.546	2.3/8	2.431	2.319

- Dimensions in inches
- Available in SAE Grades 2, 5, 8 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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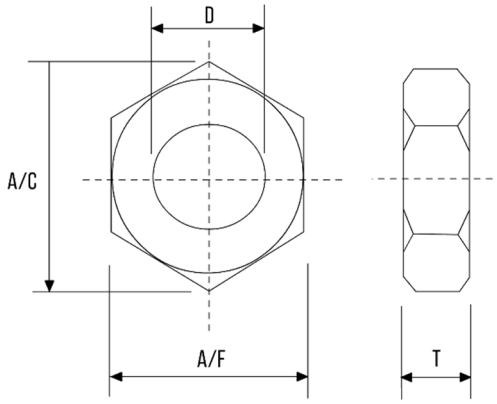
HEX LOCK NUT (IMPERIAL) – ANSI B18.2.2 / BS1768



DIA	A/F			A/C		T		
	BASIC	MAX	MIN	MAX	MIN	BASIC	MAX	MIN
1/4	7/16	0.438	0.428	0.505	0.488	5/32	0.164	0.150
5/16	1/2	0.500	0.489	0.577	0.557	3/16	0.195	1.180
3/8	9/16	0.562	0.551	0.650	0.628	7/32	0.227	1.210
7/16	11/16	0.688	0.675	0.794	0.768	1/4	0.260	0.240
1/2	3/4	0.750	0.736	0.866	0.840	5/16	0.323	0.302
9/16	7/8	0.875	0.861	1.010	0.982	5/16	0.324	0.301
5/8	1.5/16	0.938	0.922	1.083	1.051	3/8	0.387	0.363
3/4	1.1/8	1.125	1.088	1.299	1.240	27/64	0.446	0.398
7/8	1.5/16	1.312	1.269	1.516	1.447	31/64	0.510	0.458
1	1.1/2	1.500	1.450	1.732	1.653	35/64	0.575	0.519
1.1/8	1.11/16	1.688	1.631	1.949	1.859	39/64	0.639	0.579
1.1/4	1.7/8	1.875	1.812	2.165	2.066	23/32	0.751	0.687
1.3/8	2.1/16	2.062	1.994	2.382	2.273	25/32	0.815	0.747
1.1/2	2.1/4	2.250	2.175	2.598	2.480	27/32	0.880	0.808
1.5/8	2.7/16	2.438	2.356	2.185	2.686	29/32	0.945	0.869
1.3/4	2.5/8	2.625	2.558	3.031	2.893	31/32	1.009	0.929
2	3	3.000	2.900	3.464	3.306	1.3/32	1.138	1.050
2.1/4	3.3/8	3.375	3.236	3.897	3.719	1.7/32	1.267	1.171
2.1/2	3.3/4	3.750	3.625	4.330	4.133	1.11/32	1.396	1.292
2.3/4	4.1/8	4.125	3.988	4.763	4.546	1.15/32	1.525	1.413

- Dimensions in inches
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on requested

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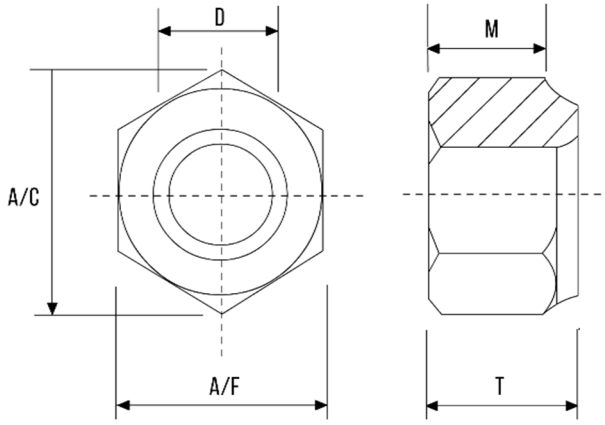
NYLON INSERT NUT (IMPERIAL) - DIN 982 NE (TYPE P)



DIA	TPI		A/C	T	M	A/F	
	UNC	UNF	MIN	NOM	MIN	MIN	MAX
1/4	20	28	0.482	0.328	0.225	0.430	0.439
5/16	18	24	0.552	0.359	0.250	0.492	0.502
3/8	16	24	0.622	0.468	0.335	0.553	0.564
7/16	14	20	0.698	0.468	0.324	0.615	0.627
1/2	13	20	0.837	0.609	0.464	0.741	0.752
9/16	12	18	0.978	0.656	0.469	0.865	0.877
5/8	11	18	1.051	0.765	0.593	0.928	0.940
3/4	10	16	1.191	0.890	0.742	1.052	1.064
7/8	9	14	1.403	0.999	0.790	1.269	1.252
1	8	12	1.615	1.078	0.825	1.450	1.440
1-1/8	7	12	1.826	1.203	0.930	1.631	1.627
1-1/4	7	12	2.038	1.422	1.125	1.812	1.815
1-3/8	6	12	2.232	1.609	1.282	1.994	2.008
1-1/2	6	12	2.444	1.640	1.313	2.175	2.197

- Dimensions in inches
- Available in SAE Grade 5 & 8 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on requested

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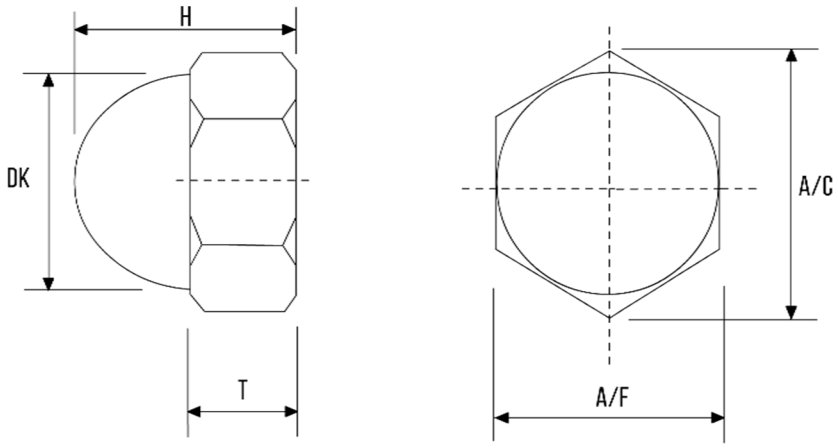
DOME NUT (METRIC) - DIN 1857



DIA	PITCH	A/F	A/C	T	H	DK
M3	0.50	5.5	6.01	2.4	7.0	5.5
M4	0.70	7.0	7.66	3.2	8.0	6.5
M5	0.80	8.0	8.79	4.0	10.0	7.5
M6	1.00	10.0	11.05	5.0	12.0	9.5
M8	1.25	13.0	14.38	6.5	15.0	12.5
M10	1.50	17.0	18.90	8.0	18.0	16.0
M12	1.75	19.0	21.10	10.0	22.0	18.0
M14	2.00	22.0	24.49	11.0	25.0	21.0
M16	2.00	24.0	26.75	13.0	28.0	23.0
M18	2.50	27.0	30.14	15.0	32.0	26.0
M20	2.50	30.0	33.53	16.0	34.0	28.0
M22	2.50	34.0	37.72	18.0	39.0	33.0
M24	3.00	36.0	39.98	19.0	42.0	34.0
M27	3.00	41.0	47.30	20.0	47.0	40.0
M30	3.50	46.0	52.00	24.0	52.0	42.0

- Dimensions in millimetres
- Available in Grade 6 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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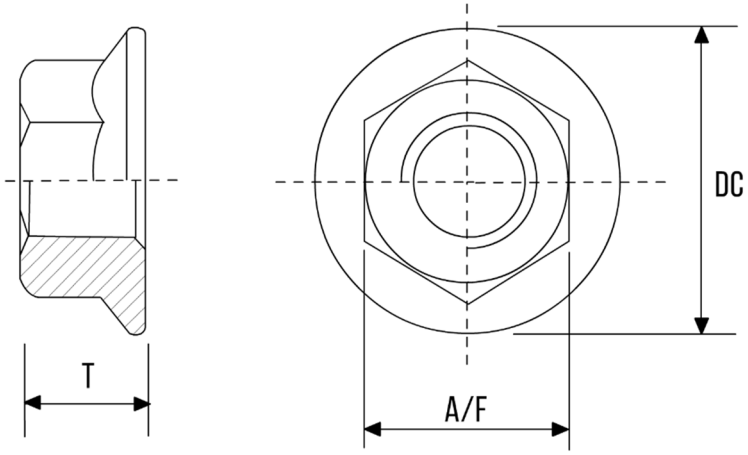
FLANGE NUT (METRIC) - DIN 6923



DIA	PITCH	DC	T		A/F	
			MAX	MIN	MAX	MIN
M5	0.80	11.80	5.00	4.70	8.00	7.78
M6	1.00	14.20	6.00	5.70	10.00	9.78
M8	1.25	17.90	8.00	7.60	13.00	12.73
M10	1.50	21.80	10.00	9.60	15.00	14.73
M12	1.75	26.00	12.00	11.60	18.00	17.73
M14	2.00	29.90	14.00	13.30	21.00	20.67
M16	2.00	34.50	16.00	15.30	24.00	23.67
M20	2.50	42.80	20.00	18.90	30.00	29.67

- Dimensions in millimetres
- Available Serrated and Unserrated
- Available in Grade 6 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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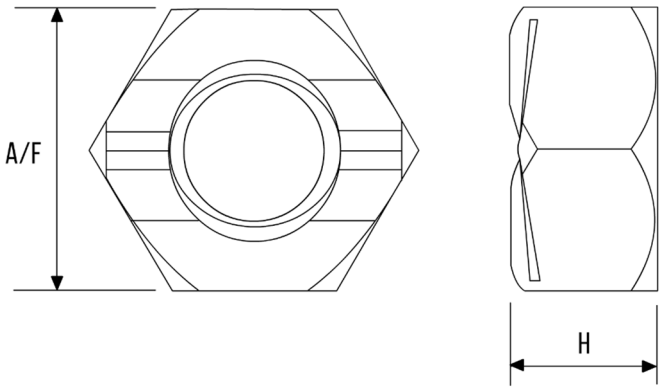
BINX ® NUT – ALL METAL SELF LOCKING NUT



SIZE	PITCH	A/F	HEIGHT
M3	0.50	5.5	3.2
M4	0.70	7.0	3.2
M5	0.80	8.0	4.1
M6	1.00	10.0	6.1
M8	1.25	13.0	6.4
M10	1.50	17.0	7.9
M12	1.75	19.0	9.9
M14	2.00	22.0	11.0
M16	2.00	24.0	13.0
M18	2.50	27.0	15.0
M20	2.50	30.0	16.0
M22	2.50	32.0	17.8
M24	3.00	36.0	28.8
M27	3.00	41.0	22.2
M30	3.50	46.0	23.9
M36	4.00	55.0	32.0

- Dimensions in millimetres
- Available in Mild Steel, Brass and 300 & 316 Type Stainless Steel
- Other materials manufactured on request

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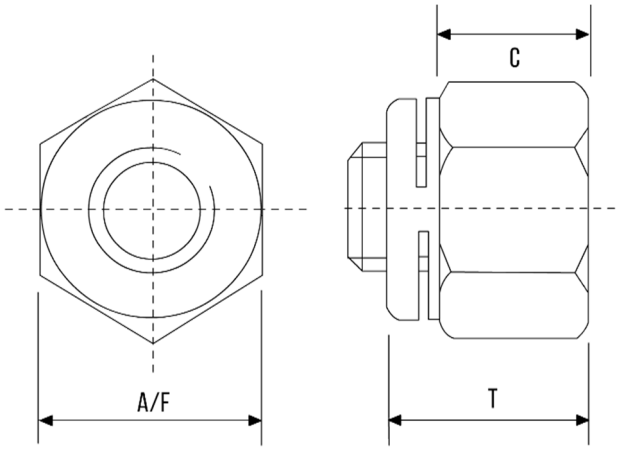
PHILIDAS ® NUT – INDUSTRIAL SELF LOCKING NUT



DIA	PITCH	A/F	T (NOM)	C (NOM)
M5	0.80	8.00	6.50	4.30
M6	1.00	10.00	7.50	5.00
M8	1.25	13.00	8.50	5.70
M10	1.50	17.00	11.00	8.00
M12	1.75	19.00	13.00	9.50
M14	2.00	22.00	15.00	11.00
M16	2.00	24.00	17.00	12.80
M18	2.50	27.00	20.00	15.50
M20	2.50	30.00	22.00	17.50
M22	2.50	32.00	23.00	18.00
M24	3.00	36.00	25.00	19.50
M27	3.00	41.00	28.00	22.00
M30	3.50	46.00	31.00	24.50
M33	3.50	50.00	33.00	26.20
M36	4.00	55.00	36.00	28.60
M39	4.00	60.00	39.00	31.10
M42	4.50	65.00	42.00	33.50
M45	4.50	70.00	45.00	36.00
M48	5.00	75.00	48.00	38.00
M52	5.00	80.00	52.00	41.50

- Dimensions in millimetres
- Available in Grade 8 & 10 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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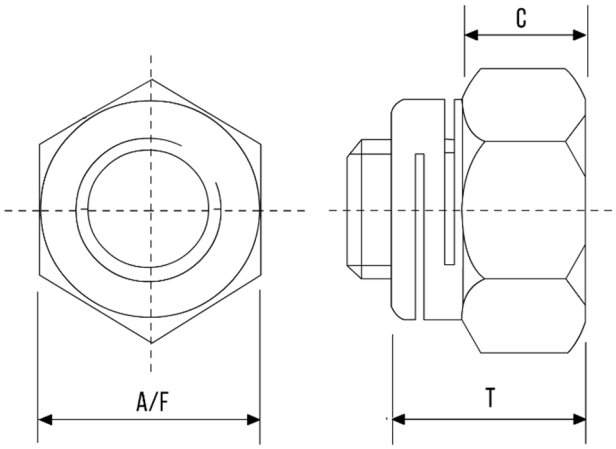
PHILIDAS ® NUT – TURRET SELF LOCKING NUT



DIA	PITCH	A/F	T (NOM)	C (NOM)
M5	0.80	8.00	6.80	3.90
M6	1.00	10.00	8.50	5.00
M8	1.25	13.00	10.50	6.00
M10	1.50	17.00	13.00	7.60
M12	1.75	19.00	15.00	8.50
M14	2.00	22.00	17.00	10.00
M16	2.00	24.00	19.50	12.00
M18	2.50	27.00	22.00	14.00
M20	2.50	30.00	24.00	15.50
M22	2.50	32.00	26.50	17.50
M24	3.00	36.00	29.00	19.00
M27	3.00	41.00	33.00	22.00
M30	3.50	46.00	39.00	26.00
M33	3.50	50.00	43.00	30.00
M36	4.00	55.00	47.00	32.50
M39	4.00	60.00	50.00	35.00
M42	4.50	65.00	54.00	37.50
M45	4.50	70.00	58.00	41.00
M48	5.00	75.00	62.00	42.50
M52	5.00	80.00	67.00	46.50

- Dimensions in millimetres
- Available in Grade 8 & 10 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

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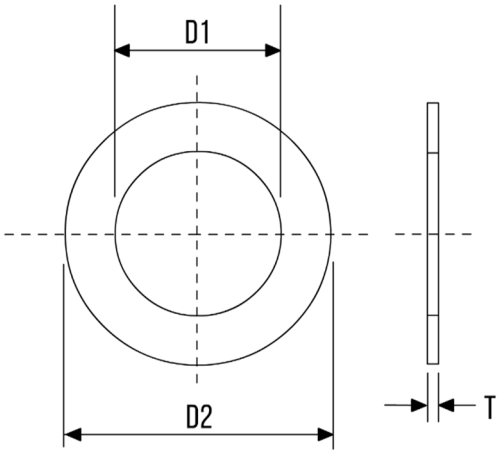
PLAIN WASHERS (METRIC) – BS4320 FORM A, B, C & D



DIA	D1 (NOM)	FORM A		FORM B		FORM C		FORM D	
		D2 (NOM)	T (NOM)	D2 (NOM)	T (NOM)	D2 (NOM)	T (NOM)	D2 (NOM)	T (NOM)
M3	3.2	7.0	0.5	7.0	-	-	-	-	-
M4	4.3	9.0	0.8	9.0	-	10.0	0.8	10.0	-
M5	5.3	10.0	1.0	10.0	-	12.5	1.0	12.5	-
M6	6.4	12.5	1.6	12.5	0.8	14.0	1.6	14.0	0.8
M8	8.4	17.0	1.6	17.0	1.0	21.0	1.6	21.0	1.0
M10	10.5	21.0	2.0	21.0	1.25	24.0	2.0	24.0	1.25
M12	13.0	24.0	2.5	24.0	1.6	28.0	2.5	28.0	1.6
M14	15.0	28.0	2.5	28.0	1.6	30.0	2.5	30.0	1.6
M16	17.0	30.0	3.0	30.0	2.0	34.0	3.0	34.0	2.0
M18	19.0	34.0	3.0	34.0	2.0	37.0	3.0	37.0	2.0
M20	21.0	37.0	3.0	37.0	2.0	39.0	3.0	39.0	2.0
M22	23.0	39.0	3.0	39.0	2.0	44.0	3.0	44.0	2.0
M24	25.0	44.0	4.0	44.0	2.5	50.0	4.0	50.0	2.5
M27	28.0	50.0	4.0	50.0	2.5	56.0	4.0	56.0	2.5
M30	31.0	56.0	4.0	56.0	2.5	60.0	4.0	60.0	2.5
M33	34.0	60.0	5.0	60.0	3.0	66.0	5.0	66.0	3.0
M36	37.0	66.0	5.0	66.0	3.0	72.0	5.0	72.0	3.0
M39	40.0	72.0	6.0	72.0	3.0	77.0	6.0	77.0	3.0

- Dimensions in millimetres
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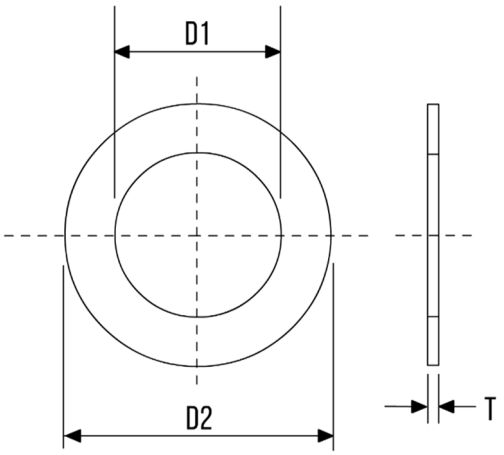
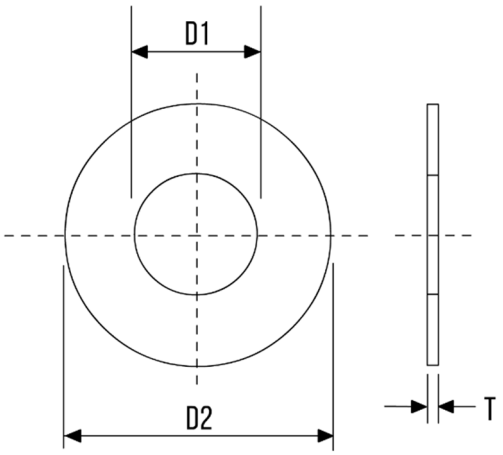
PLAIN WASHERS (METRIC) – BS4320 FORM E, F & G



FORM E & F



FORM G

DIA	D1 (NOM)	FORM E		FORM F		FORM G	
		D2 (NOM)	T (NOM)	D2 (NOM)	T (NOM)	D2 (NOM)	T (NOM)
M5	5.5	10.0	1.0	-	-	15.0	1.6
M6	6.6	12.5	1.6	-	-	18.0	2.0
M8	9.0	17.0	1.6	21.0	1.6	24.0	2.0
M10	11.0	21.0	2.0	24.0	2.0	30.0	2.5
M12	14.0	24.0	2.5	28.0	2.5	36.0	3.0
M14	16.0	28.0	2.5	30.0	2.5	42.0	3.0
M16	18.0	30.0	3.0	34.0	3.0	48.0	4.0
M18	20.0	34.0	3.0	37.0	3.0	54.0	4.0
M20	22.0	37.0	3.0	39.0	3.0	60.0	5.0
M22	24.0	39.0	3.0	44.0	3.0	66.0	5.0
M24	26.0	44.0	4.0	50.0	4.0	72.0	6.0
M27	30.0	50.0	4.0	56.0	4.0	81.0	6.0
M30	33.0	56.0	4.0	60.0	4.0	90.0	8.0
M33	36.0	60.0	5.0	66.0	5.0	99.0	8.0
M36	39.0	66.0	5.0	72.0	5.0	108.0	10.0
M39	42.0	72.0	6.0	77.0	6.0	117.0	10.0

- Dimensions in millimetres
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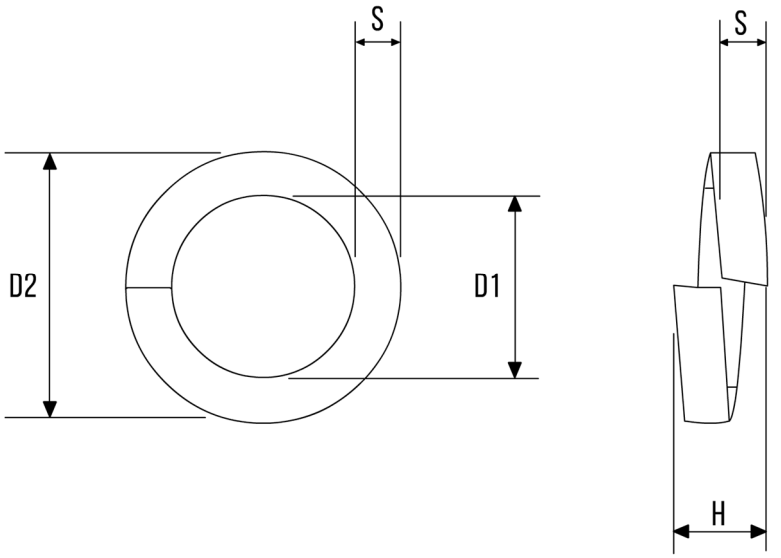
SPRING WASHERS (METRIC) – SQUARE SECTION DIN 7980



DIA	D1 (MIN)	D1 (MAX)	D2 (NOM)	S (MIN)	H (MIN)	H (MAX)
M3	3.1	3.4	5.6	1.0	2.00	2.36
M4	4.1	4.4	7.0	1.2	2.40	2.83
M5	5.1	5.4	8.8	1.6	3.20	3.78
M6	6.1	6.5	9.9	1.6	3.20	3.78
M8	8.1	8.5	12.7	2.0	4.00	4.72
M10	10.2	10.7	16.0	2.5	5.00	5.90
M12	12.2	12.7	16.0	2.5	5.00	5.90
M14	14.2	14.7	21.1	3.0	6.00	7.10
M16	16.2	17.0	24.4	3.5	7.00	8.25
M18	18.2	19.0	26.4	3.5	7.00	8.25
M20	20.2	21.2	30.6	4.5	9.00	10.60
M22	22.5	23.5	32.9	4.5	9.00	10.60
M24	24.5	25.5	35.9	5.0	10.00	11.80
M27	27.5	28.5	38.9	5.0	10.00	11.80
M30	30.5	31.7	44.1	6.0	12.00	24.20
M33	33.5	34.7	47.1	6.0	12.00	14.20
M36	36.5	37.7	52.2	7.0	14.00	26.50
M42	42.5	43.7	60.2	8.0	16.00	18.90
M48	49.0	50.5	67.0	8.0	16.00	18.90

- Dimensions in millimetres
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- Other materials manufactured on request

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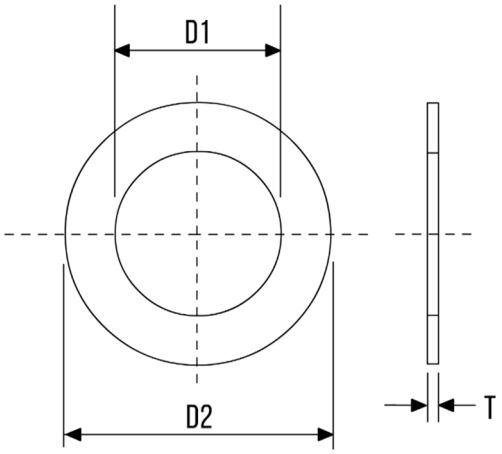
PLAIN WASHERS (IMPERIAL) – BS3410 TABLE 3



DIA	D1 (MAX)	D2 (MAX)	HEAVY PATTERN		LIGHT PATTERN	
			T (SWG)	T	T (SWG)	T
1/4	0.27	0.56	17.00	0.06	20	0.036
5/16	0.33	0.63	15.00	0.07	19	0.040
3/8	0.40	0.75	15.00	0.07	18	0.048
7/16	0.46	0.88	13.00	0.09	18	0.048
1/2	0.52	1.00	13.00	0.09	17	0.056
9/16	0.59	1.13	12.00	0.10	17	0.056
5/8	0.66	1.25	11.00	0.12	15	0.072
3/4	0.78	1.50	10.00	0.13	15	0.072
7/8	0.91	1.63	9.00	0.14	15	0.072
1	1.03	1.88	8.00	0.16	15	0.072
1.1/8	1.16	2.13	7.00	0.18	13	0.092
1.1/4	1.28	2.38	7.00	0.18	11	0.116
1.3/8	1.41	2.63	6.00	0.19	-	-
1.1/2	1.53	2.88	6.00	0.19	-	-
1.3/4	1.78	3.38	5.00	0.21	-	-
2	2.03	3.63	5.00	0.21	-	-

- Dimensions in inches
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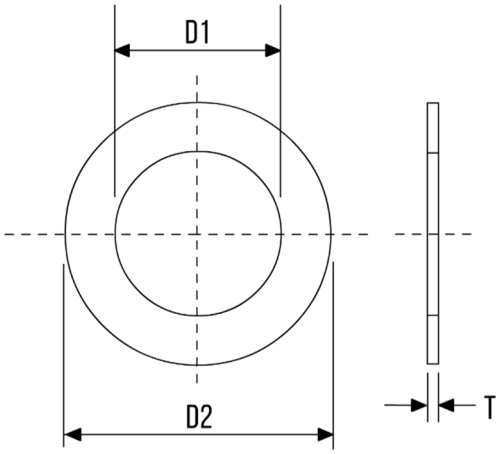
PLAIN WASHERS (IMPERIAL) – BS3410 TABLE 7



DIA	D1	D2	T (SWG)	T
1/4	0.28	0.63	16.00	0.06
5/16	0.34	0.75	14.00	0.08
3/8	0.42	0.88	14.00	0.08
7/16	0.47	1.00	12.00	0.10
1/2	0.56	1.13	12.00	0.10
9/16	0.63	1.25	10.00	0.13
5/8	0.69	1.38	10.00	0.13
3/4	0.81	1.63	9.00	0.14
7/8	0.94	1.88	8.00	0.16
1	1.06	2.13	7.00	0.18
1.1/8	1.19	2.38	7.00	0.18
1.1/4	1.38	2.63	6.00	0.19
1.3/8	1.50	2.88	6.00	0.19
1.1/2	1.63	3.13	6.00	0.19
1.5/8	1.75	3.38	5.00	0.21
1.3/4	1.88	3.63	5.00	0.21
1.7/8	2.00	3.88	5.00	0.21
2	2.13	4.13	5.00	0.21

- Dimensions in inches
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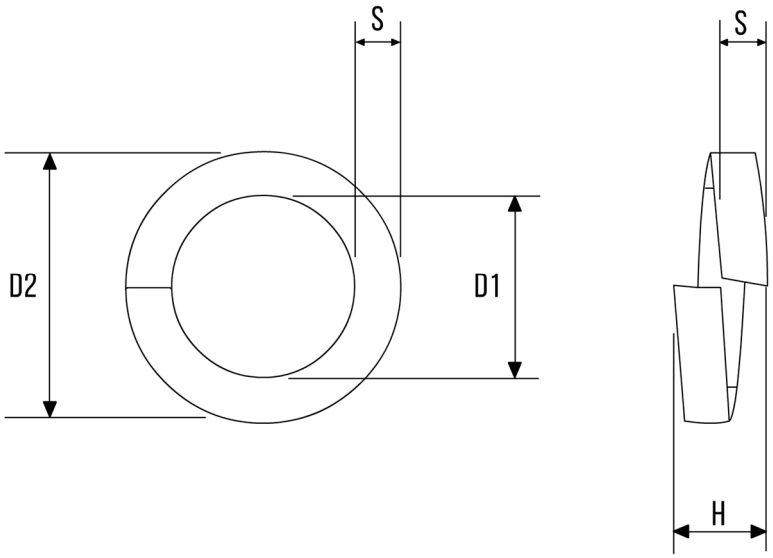
SPRING WASHERS (IMPERIAL) – SQUARE SECTION BS1802



DIA	D1 (MAX)	D1 (MIN)	D2 (MAX)	S	SWG
1/8	0.137	0.129	0.205	0.032	21.00
5/32	0.170	0.160	0.252	0.040	19.00
3/16	0.202	0.192	0.330	0.064	16.00
1/4	0.267	0.255	0.425	0.072	15.00
5/16	0.334	0.320	0.503	0.800	14.00
3/8	0.399	0.383	0.590	0.920	13.00
7/16	0.461	0.445	0.677	0.104	12.00
1/2	0.524	0.508	0.763	0.116	11.00
9/16	0.590	0.570	0.880	0.128	10.00
5/8	0.660	0.636	0.976	0.144	9.00
3/4	0.790	0.762	1.165	0.176	7.00
7/8	9.250	0.890	1.360	0.212	5.00
1	1.052	1.016	1.526	0.232	4.00
1.1/8	1.184	1.145	1.690	0.252	3.00

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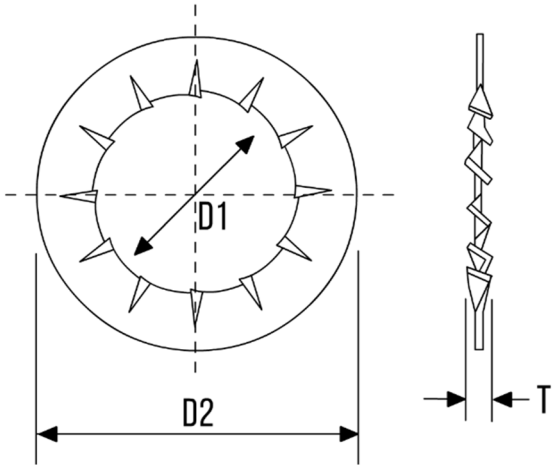
INTERNAL SERRATED LOCK WASHERS – DIN6798 (FAN DISC)



DIA	D1	D2	T
M3	3.20	6.00	0.40
M4	4.30	8.00	0.50
M5	5.30	9.00	0.50
M6	6.40	11.00	0.70
M8	8.40	15.00	0.80
M10	10.50	18.00	0.90
M12	12.50	20.50	1.00
M14	14.50	24.00	1.00
M16	16.50	26.00	1.20
M18	19.00	30.00	1.40
M20	21.00	33.00	1.40
M22	23.00	36.00	1.50
M24	25.00	38.00	1.50

- Dimensions in millimetres
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- Other materials manufactured on request

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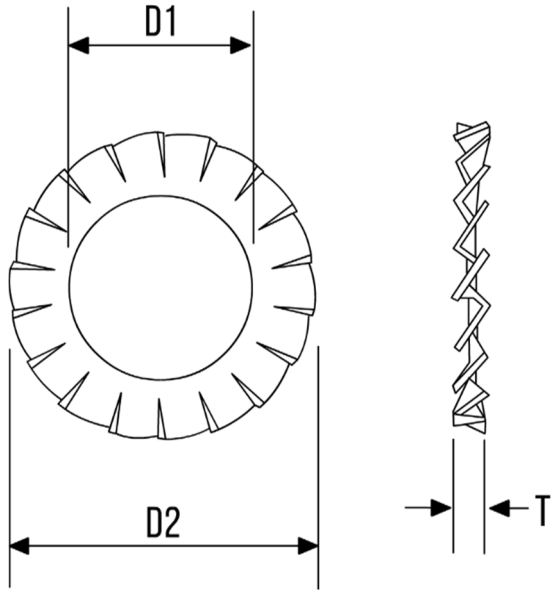
EXTERNAL SERRATED LOCK WASHERS – DIN6798J (FAN DISC)



DIA	D1	D2	T
M3	3.20	6.00	0.40
M4	4.30	8.00	0.50
M5	5.30	9.00	0.50
M6	6.40	11.00	0.70
M8	8.40	15.00	0.80
M10	10.50	18.00	0.90
M12	12.50	20.50	1.00
M14	14.50	24.00	1.00
M16	16.50	26.00	1.20
M18	19.00	30.00	1.40
M20	21.00	33.00	1.40
M22	23.00	36.00	1.50
M24	25.00	38.00	1.50

- Dimensions in millimetres
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- Other materials manufactured on request

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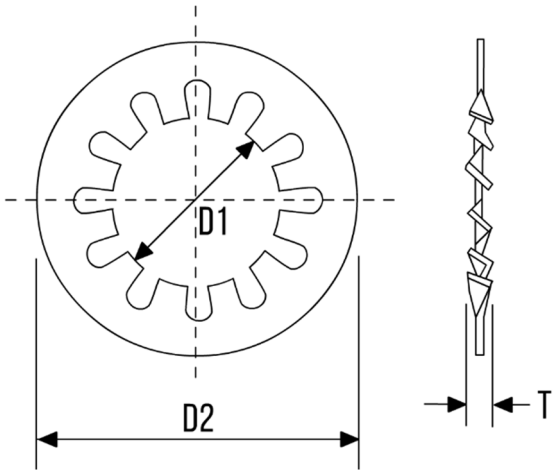
INTERNAL TOOTHED LOCK WASHERS – DIN6797J



DIA	D1	D2	T
M3	3.20	6.00	0.40
M4	4.30	8.00	0.50
M5	5.30	9.00	0.50
M6	6.40	11.00	0.70
M8	8.40	15.00	0.80
M10	10.50	18.00	0.90
M12	12.50	20.50	1.00
M14	14.50	24.00	1.00
M16	16.50	26.00	1.20
M18	19.00	30.00	1.40
M20	21.00	33.00	1.40

- Dimensions in millimetres
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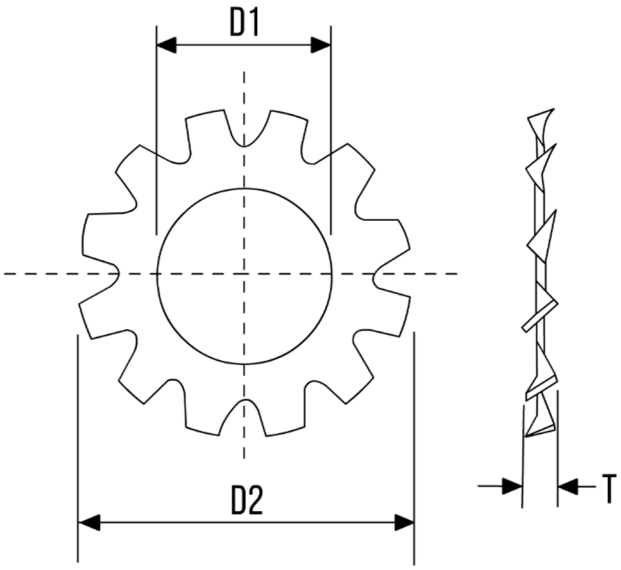
EXTERNAL TOOTHED LOCK WASHERS – DIN6797A



DIA	D1	D2	T
M3	3.20	6.00	0.40
M4	4.30	8.00	0.50
M5	5.30	9.00	0.50
M6	6.40	11.00	0.70
M8	8.40	15.00	0.80
M10	10.50	18.00	0.90
M12	12.50	20.50	1.00
M14	14.50	24.00	1.00
M16	16.50	26.00	1.20
M18	19.00	30.00	1.40
M20	21.00	33.00	1.40

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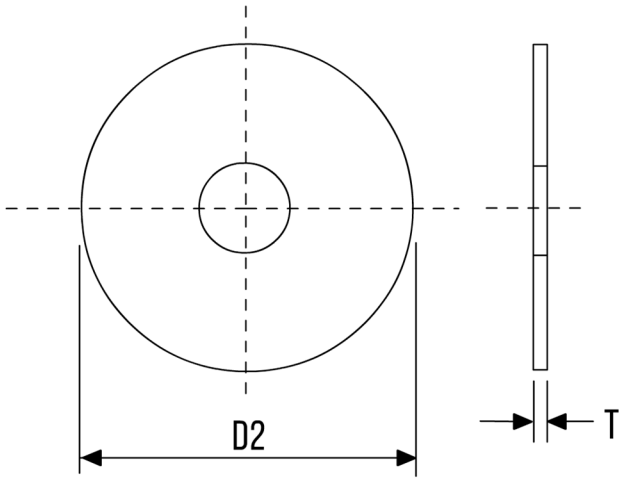
REPAIR (PENNY) WASHERS – DIN9021



DIA	D2	T
M5	20	1.50
M5	25	1.50
M5	30	1.50
M6	20	1.50
M6	25	1.50
M6	30	1.50
M6	40	1.50
M6	50	1.50
M8	25	1.50
M8	30	1.50
M8	40	1.50
M8	50	1.50
M10	25	1.50
M10	30	1.50
M10	40	1.50
M10	50	1.50
M12	38	1.50
M12	50	1.50

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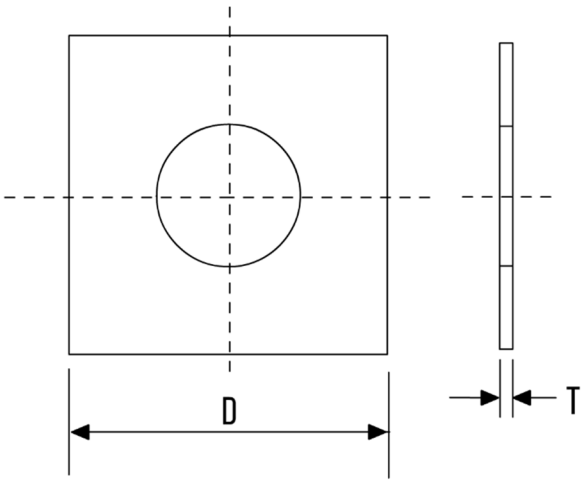
SQUARE PLATE WASHERS (ROUND HOLE) – DIN1587

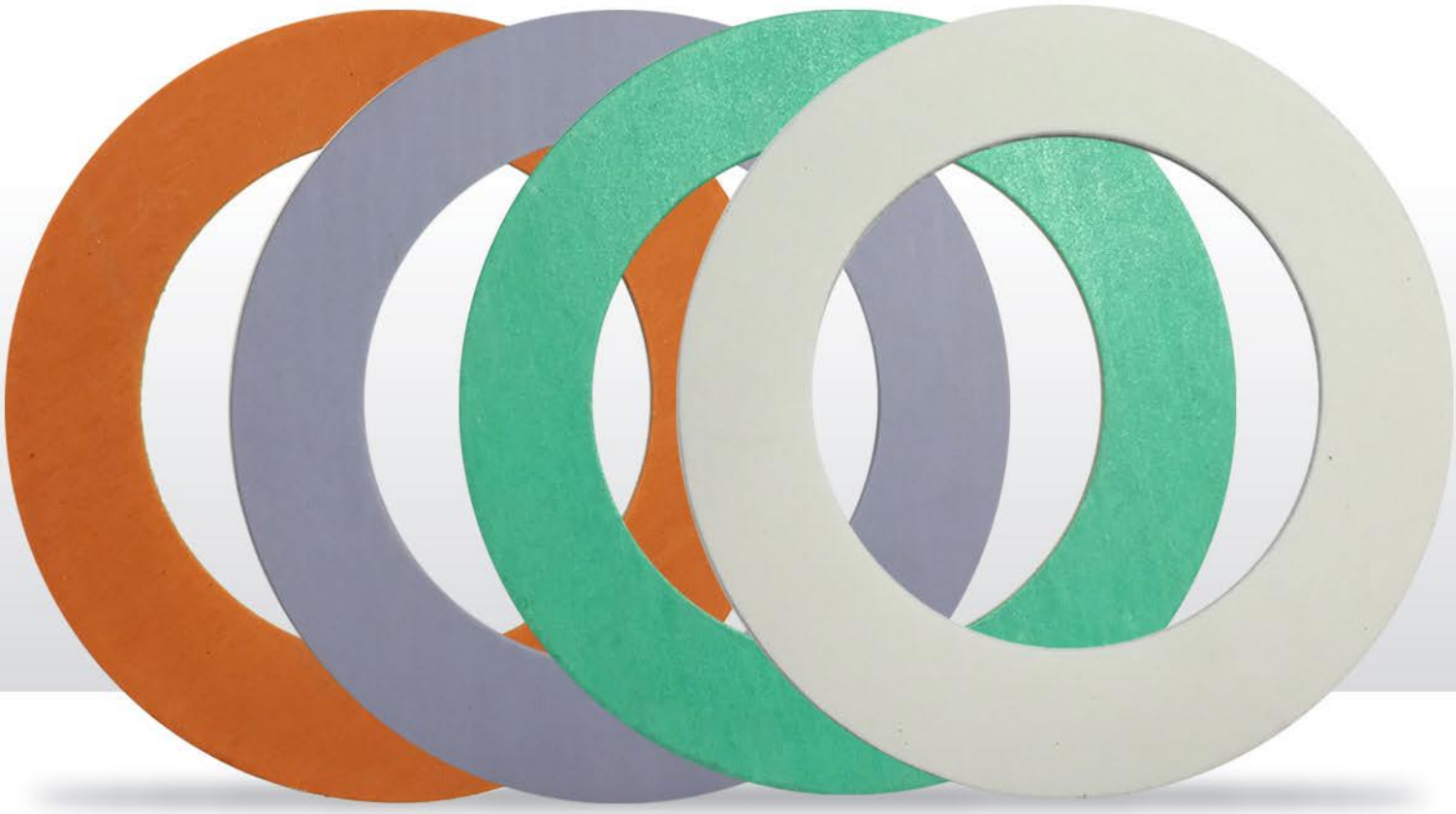


DIA	D	T
M8	40x40	3
M10	40x40	3
M10	50x50	3
M12	40x40	3
M12	50x50	3
M12	65x65	6
M16	50x50	3
M16	75x75	6
M20	50x50	3
M20	75x75	6

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

STUDBOLT
SCOTLAND LIMITED

PETROCHEMICAL AND INDUSTRIAL GRADE FASTENERS AND SUPPLIES



GASKET BROCHURE

METALLIC, SEMI METALLIC & SOFT CUT GASKETS

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SPIRAL WOUND GASKETS

Spiral wound gaskets are available in various different forms and materials all designed around the sealing element. The spiral wound sealing element consists of a metallic winding strip with layers of a softer, more compressible material. The most common type of spiral wound gasket consists of solid metal inner & outer rings and the spiral wound sealing element. The winding, filler and metal rings are available in a range of different materials which are all listed below along with the different types of spiral wound gaskets that we supply.

FILLER MATERIAL	MAX TEMPERATURE	ASME B16.20 COLOUR CODING
Graphite	550°C	Grey Stripe
PTFE	260°C	White Stripe
Mica	1000°C	Light Green Stripe
Mica and Graphite	900°C	-

WINDING/INNER/OUTER MATERIAL	MAX TEMPERATURE	ASME B16.20 COLOUR CODING
Carbon Steel	500°C	Silver
304 Stainless Steel	650°C	Yellow
316 Stainless Steel	800°C	Green
Duplex UN S31803	800°C	N/A
347 Stainless Steel	870°C	Blue
321 Stainless Steel	870°C	Turquoise
Monel 400	800°C	Orange
Nickel 200	600°C	Red
Titanium	500°C	Purple
Hastelloy B-2	700°C	Brown
Hastelloy C-276	700°C	Beige
Inconel 600	1000°C	Gold
Inconel 625	1000°C	Gold
Inconel X-750	1000°C	N/A
Inconel 825	600°C	N/A
Zirconium	500°C	N/A

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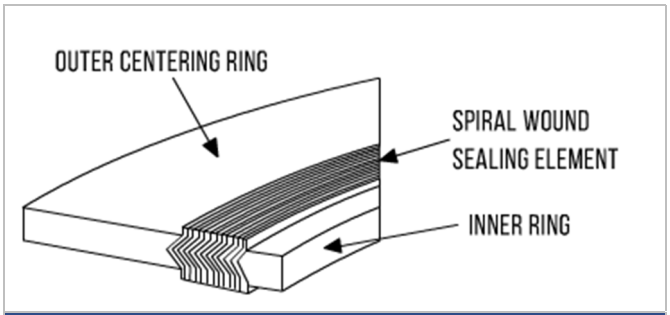
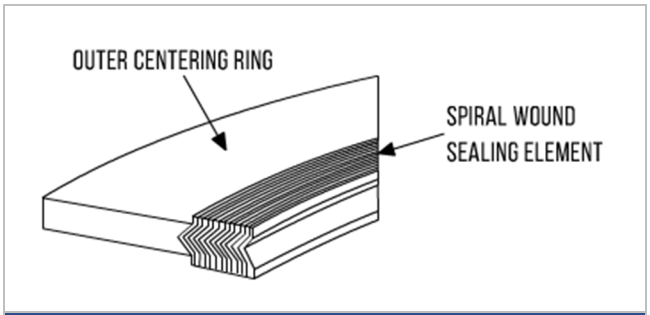
SPIRAL WOUND GASKETS



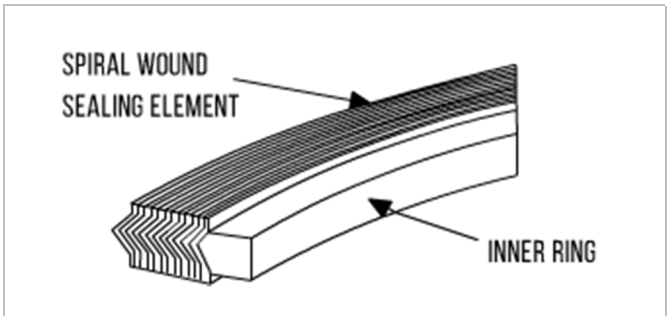
TYPE CRIR

- Spiral wound sealing element
- Solid metal inner & outer ring
- Suitable for high pressure & temperature applications
- Raised face of flat flanges
- Prevents turbulence & erosion damage to flange
- Prevents damage to gasket bore & inner windings
- Inner ring acts as heat shield & corrosion barrier
- General & critical duties



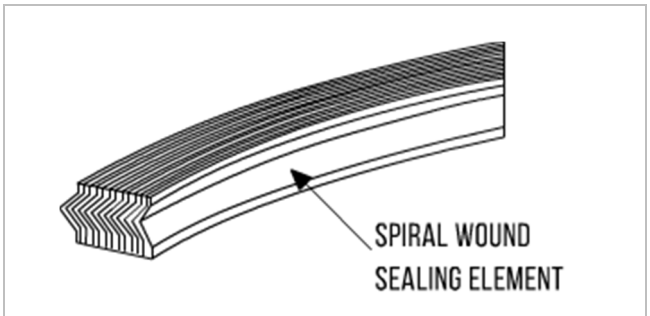
TYPE CR

- Spiral wound sealing element
- Solid metal outer ring used as a centering device & compression stop
- Used mainly on raised face and flat face flanges
- General duties



TYPE RIR

- Spiral wound sealing element
- Solid metal inner ring
- High pressure temperature capability
- Male to female flanges
- General & critical duties



TYPE R

- Spiral wound sealing element
- Suitable for high pressure/high temp applications
- Tongue & groove, male to female and flat face to recess flanges.
- General & critical duties

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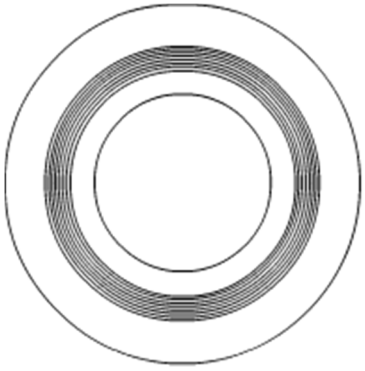
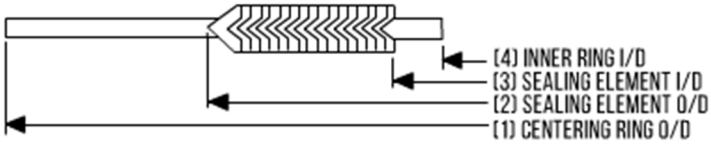
SPIRAL WOUND GASKETS – CLASS 150 DIMENSIONS





SIZE	ASME B16.20	SIZE	ASME B16.47	SIZE	ASME B16.47
1/2"	48 x 32 x 19 x 14	26" A	775 x 705 x 673 x 654	26" B	725 x 699 x 673 x 654
3/4"	57 x 40 x 25 x 21	28" A	832 x 756 x 724 x 705	28" B	776 x 749 x 724 x 705
1"	67 x 48 x 32 x 27	30" A	883 x 806 x 775 x 756	30" B	827 x 800 x 775 x 756
1-1/4"	76 x 60 x 48 x 38	32" A	940 x 861 x 826 x 806	32" B	881 x 851 x 826 x 806
1-1/2"	86 x 70 x 54 x 44	34" A	991 x 911 x 876 x 857	34" B	935 x 908 x 876 x 857
2"	105 x 86 x 70 x 56	36" A	1048 x 969 x 927 x 908	36" B	988 x 959 x 927 x 908
2-1/2"	124 x 99 x 83 x 67	38" A	1111 x 1019 x 978 x 959	38" B	1045 x 1010 x 975 x 959
3"	137 x 121 x 102 x 81	40" A	1162 x 1070 x 1029 x 1010	40" B	1096 x 1064 x 1022 x 1010
4"	175 x 149 x 127 x 106	42" A	1219 x 1124 x 1080 x 1060	42" B	1146 x 1115 x 1080 x 1060
5"	197 x 178 x 156 x 132	44" A	1276 x 1178 x 1130 x 1111	44" B	1197 x 1165 x 1124 x 1111
6"	222 x 210 x 183 x 157	46" A	1327 x 1229 x 1181 x 1162	46" B	1256 x 1224 x 1181 x 1162
8"	279 x 264 x 233 x 216	48" A	1384 x 1280 x 1232 x 1213	48" B	1307 x 1270 x 1232 x 1213
10"	340 x 318 x 287 x 268	50" A	1435 x 1334 x 1283 x 1264	50" B	1357 x 1326 x 1283 x 1264
12"	410 x 375 x 340 x 318	52" A	1492 x 1384 x 1334 x 1314	52" B	1408 x 1376 x 1334 x 1314
14"	451 x 406 x 372 x 349	54" A	1549 x 1435 x 1384 x 1359	54" B	1464 x 1422 x 1384 x 1365
16"	514 x 464 x 422 x 400	56" A	1607 x 1486 x 1435 x 1410	56" B	1515 x 1478 x 1445 x 1422
18"	549 x 527 x 475 x 449	58" A	1664 x 1537 x 1486 x 1461	58" B	1580 x 1529 x 1500 x 1478
20"	607 x 578 x 526 x 500	60" A	1715 x 1588 x 1537 x 1511	60" B	1630 x 1586 x 1557 x 1535
24"	718 x 686 x 629 x 603	-	-	-	-

- Dimensions in millimetres (unless otherwise shown)

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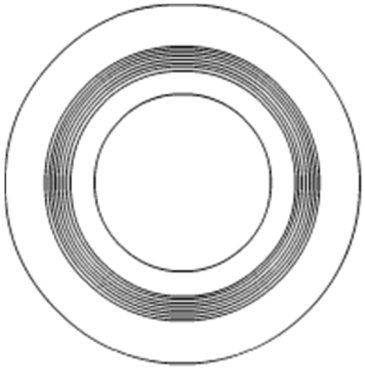
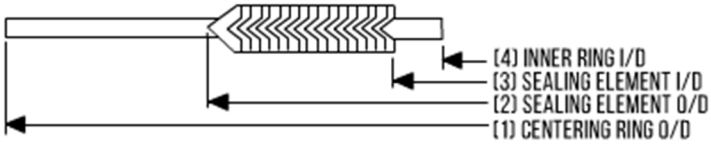
SPIRAL WOUND GASKETS – CLASS 300 DIMENSIONS





SIZE	ASME B16.20	SIZE	ASME B16.47	SIZE	ASME B16.47
1/2"	54 x 32 x 19 x 14	26" A	835 x 737 x 686 x 654	26" B	772 x 711 x 673 x 654
3/4"	67 x 40 x 25 x 21	28" A	899 x 787 x 737 x 705	28" B	826 x 762 x 724 x 705
1"	73 x 48 x 32 x 27	30" A	953 x 845 x 794 x 765	30" B	886 x 813 x 775 x 756
1-1/4"	83 x 60 x 48 x 38	32" A	1007 x 902 x 851 x 806	32" B	940 x 864 x 826 x 806
1-1/2"	95 x 70 x 54 x 44	34" A	1057 x 953 x 902 x 857	34" B	994 x 914 x 876 x 857
2"	111 x 86 x 70 x 56	36" A	1118 x 1007 x 956 x 908	36" B	1048 x 965 x 927 x 908
2-1/2"	130 x 99 x 83 x 67	38" A	1054 x 1016 x 978 x 953	38" B	1099 x 1048 x 1010 x 972
3"	149 x 121 x 102 x 81	40" A	1115 x 1070 x 1022 x 1003	40" B	1149 x 1099 x 1060 x 1022
4"	181 x 149 x 127 x 106	42" A	1165 x 1121 x 1073 x 1054	42" B	1200 x 1149 x 1111 x 1086
5"	216 x 178 x 156 x 132	44" A	1219 x 1181 x 1130 x 1105	44" B	1251 x 1200 x 1162 x 1124
6"	251 x 210 x 183 x 157	46" A	1273 x 1229 x 1178 x 1153	46" B	1318 x 1311 x 1264 x 1232
8"	308 x 264 x 233 x 216	48" A	1324 x 1286 x 1264 x 1232	48" B	1369 x 1311 x 1264 x 1232
10"	362 x 318 x 287 x 268	50" A	1378 x 1346 x 1295 x 1245	50" B	1419 x 1356 x 1318 x 1267
12"	422 x 375 x 340 x 318	52" A	1429 x 1403 x 1346 x 1321	52" B	1470 x 1407 x 1369 x 1318
14"	486 x 406 x 372 x 349	54" A	1492 x 1454 x 1397 x 1353	54" B	1530 x 1454 x 1403 x 1365
16"	540 x 464 x 422 x 400	56" A	1543 x 1505 x 1454 x 1403	56" B	1594 x 1524 x 1480 x 1429
18"	597 x 527 x 475 x 449	58" A	1594 x 1562 x 1511 x 1448	58" B	1656 x 1573 x 1535 x 1484
20"	654 x 578 x 526 x 500	60" A	1645 x 1613 x 1562 x 1524	60" B	1707 x 1630 x 1589 x 1557
24"	775 x 686 x 629 x 603	-	-	-	-

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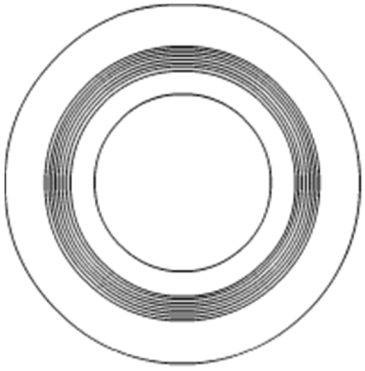
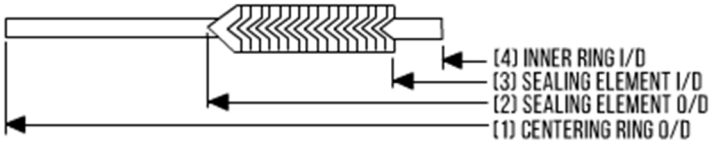
SPIRAL WOUND GASKETS – CLASS 600 DIMENSIONS





SIZE	ASME B16.20	SIZE	ASME B16.47	SIZE	ASME B16.47
1/2"	54 x 32 x 19 x 14	26" A	867 x 737 x 686 x 648	26" B	765 x 715 x 664 x 645
3/4"	67 x 40 x 25 x 21	28" A	914 x 787 x 737 x 699	28" B	819 x 756 x 705 x 699
1"	73 x 48 x 32 x 27	30" A	972 x 845 x 794 x 756	30" B	880 x 829 x 778 x 753
1-1/4"	83 x 60 x 48 x 38	32" A	1022 x 902 x 851 x 813	32" B	933 x 883 x 832 x 794
1-1/2"	95 x 70 x 54 x 44	34" A	1073 x 953 x 902 x 864	34" B	997 x 940 x 889 x 851
2"	111 x 86 x 70 x 56	36" A	1130 x 1007 x 956 x 918	36" B	1048 x 991 x 940 x 902
2-1/2"	130 x 99 x 83 x 67	38" A	1105 x 1041 x 991 x 953	38" B	1105 x 1041 x 991 x 953
3"	149 x 121 x 102 x 81	40" A	1156 x 1099 x 1048 x 1010	40" B	1156 x 1099 x 1048 x 1010
4"	194 x 149 x 121 x 103	42" A	1219 x 1156 x 1105 x 1067	42" B	1219 x 1156 x 1105 x 1067
5"	241 x 178 x 148 x 128	44" A	1270 x 1213 x 1162 x 1111	44" B	1270 x 1213 x 1162 x 1111
6"	267 x 210 x 175 x 155	46" A	1327 x 1264 x 1213 x 1162	46" B	1327 x 1264 x 1213 x 1162
8"	321 x 264 x 226 x 206	48" A	1391 x 1321 x 1270 x 1219	48" B	1391 x 1321 x 1270 x 1219
10"	400 x 318 x 275 x 255	50" A	1448 x 1372 x 1321 x 1270	50" B	1448 x 1372 x 1321 x 1270
12"	457 x 375 x 327 x 307	52" A	1499 x 1422 x 1372 x 1321	52" B	1499 x 1422 x 1372 x 1321
14"	492 x 406 x 362 x 343	54" A	1556 x 1480 x 1429 x 1378	54" B	130 x 1454 x 1403 x 1365
16"	565 x 464 x 413 x 390	56" A	1613 x 1530 x 1480 x 1429	56" B	1594 x 1524 x 1480 x 1429
18"	613 x 527 x 470 x 438	58" A	1664 x 1588 x 1537 x 1473	58" B	1656 x 1573 x 1535 x 1484
20"	683 x 578 x 521 x 489	60" A	1734 x 1645 x 1594 x 1530	60" B	1707 x 1630 x 1589 x 1557
24"	791 x 686 x 629 x 591	-	-	-	-

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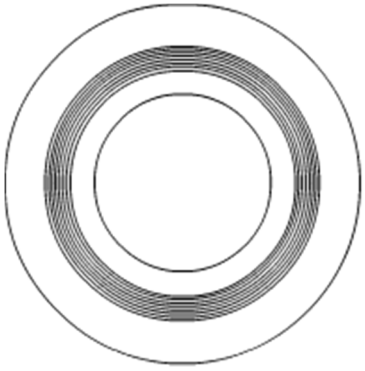
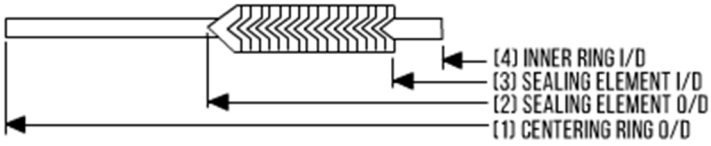
SPIRAL WOUND GASKETS – CLASS 900 DIMENSIONS





SIZE	ASME B16.20	SIZE	ASME B16.47	SIZE	ASME B16.47
1/2"	64 x 32 x 19 x 14	26" A	883 x 737 x 686 x 660	26" B	838 x749 x 705 x 667
3/4"	70 x 40 x 25 x 21	28" A	946 x 787 x 737 x 711	28" B	902 x 800 x 743 x 718
1"	80 x 48 x 32 x 27	30" A	1010 x 845 x 794 x 768	30" B	959 x 857 x 806 x 781
1-1/4"	89 x 60 x 40 x 33	32" A	1073 x 902 x 851 x 813	32" B	1016 x 914 x 864 x 838
1-1/2"	99 x 70 x 48 x 41	34" A	1137 x 953 x 902 x 864	34" B	1073 x 971 x 921 x 895
2"	143 x 86 x 59 x 52	36" A	1200 x 1010 x 959 x 921	36" B	1124 x 997 x 946 x 921
2-1/2"	165 x 99 x 70 x 64	38" A	1200 x 1086 x 1035 x 1010	38" B	1200 x 1086 x 1035 x 1010
3"	149 x 121 x 102 x 81	40" A	1251 x 1149 x 1099 x 1060	40" B	1251 x 1149 x 1099 x 1060
4"	194 x 149 x 121 x 103	42" A	1302 x 1200 x 1149 x 1111	42" B	1302 x 1200 x 1149 x 1111
5"	241 x 178 x 148 x 128	44" A	1369 x 1257 x 1207 x 1156	44" B	1369 x 1257 x 1207 x 1156
6"	267 x 210 x 175 x 155	46" A	1435 x 1321 x 1270 x 1219	46" B	1435 x 1321 x 1270 x 1219
8"	321 x 264 x 226 x 206	48" A	1486 x 1372 x 1321 x 1270	48" B	1486 x 1372 x 1321 x 1270
10"	400 x 318 x 275 x 255	-	-	-	-
12"	457 x 375 x 327 x 307	-	-	-	-
14"	492 x 406 x 362 x 343	-	-	-	-
16"	565 x 464 x 413 x 390	-	-	-	-
18"	613 x 527 x 470 x 438	-	-	-	-
20"	683 x 587 x 521 x 489	-	-	-	-
24"	791 x 686 x 629 x 591	-	-	-	-

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RING TYPE JOINTS

Ring type joints are heavy duty, high pressure gaskets largely used in offshore petrochemical applications. All ring type joints are manufactured according to ASM B16.20 and are available in various different styles and materials which are listed below.

A number of ring type joints are available designed for specific flange types, these are:

TYPE	NOMINAL PIPE SIZE	CLASS RATINGS
Oval & Octagonal	1/2" to 24"	300 to 900 ASME B16.20 Series A
	26" to 36"	150 to 2500 ASME B16.20
	1.1/2" to 20"	API 6A
Type RX	1.1/2" to 24"	720 to 5000 ASME B16.20
	26" to 36"	300 to 900 ASME B16.20 Series A
	1.1/2" to 20"	API 6A
Type BX	1.11/16" to 21.1/4"	5000 to 20000 ASME B16.20

COMMON MATERIALS

MATERIAL TYPE	HARDNESS	TEMPERATURE LIMITATION	IDENTIFICATION
Soft Iron	90	-60 to +400°C	D
Low Carbon Steel	120	-40 to +500°C	S
4%-6% Cr 1/2% Mo: F5	130	-125 to +500°C	F5
Stainless Steel 304	160	-250 to +650°C	S304
Stainless Steel 316	160	-110 to +800°C	S316
Stainless Steel 321	160	-250 to +870°C	S321
Stainless Steel 347	160	-250 to +870°C	S347
Stainless Steel 410	170	-20 to +500°C	S410
Inconel 625	-	1000°C	625
Inconel 825	-	1000°C	825
Hastelloy C-276	-	1000°C	C-276
Duplex	-	800°C	S31803
Titanium	-	540°C	TI

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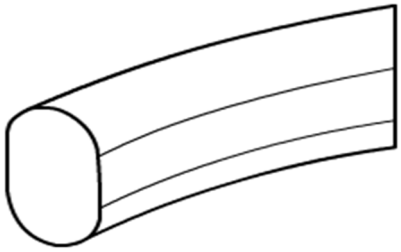
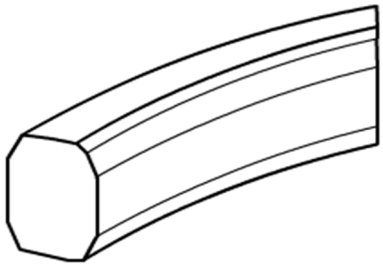
RING TYPE JOINTS



OVAL RING JOINT

- Used for high pressure applications
- High integrity seal at high pressures
- Suitable for flat and round bottom groove flanges
- Max pressure - Up to class 2500

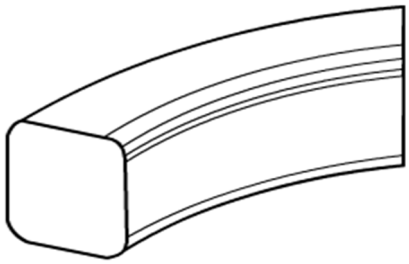


OCTAGONAL RING JOINT

- Used for high pressure applications
- High integrity seal at high pressures
- Suitable for flat bottom groove flanges
- Max pressure - Up to class 2500

TYPE RX RING TYPE JOINT

- Used for high pressure applications
- High integrity seal at high pressures
- Suitable for flat bottom groove flanges
- Max pressure - Up to class 5000



TYPE BX RING TYPE JOINT

- Used for high pressure API applications
- Efficiency of seal improves with increasing internal pressure
- Suitable for API 6BX Flanges
- Max pressure – Up to class 20,000

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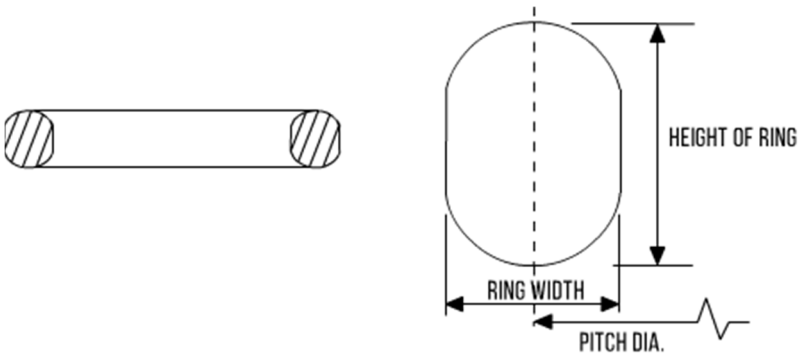
OVAL RING TYPE JOINT DIMENSIONS – ASME B16.20



RING No.	SIZE	CLASS	PITCH	WIDTH	HEIGHT
R-11	1/2"	300, 600	1.344	0.250	0.440
R-12	1/2"	900, 1500	1.563	0.313	0.560
R-13	3/4"	300, 600	1.688	0.313	0.560
R-13	1/2"	2500	1.688	0.313	0.560
R-14	3/4"	900, 1500	1.750	0.313	0.560
R-15	1"	150	1.875	0.313	0.560
R-16	1"	300, 600, 900, 1500	2.000	0.313	0.560
R-16	3/4"	2500	2.000	0.313	0.560
R-17	1.1/4"	150	2.250	0.313	0.560
R-18	1.1/4"	300, 600, 900, 1500	2.375	0.313	0.560
R-18	1"	2500	2.375	0.313	0.560
R-19	1.1/2"	150	2.563	0.313	0.560
R-20	1.1/2"	300, 600, 900, 1500	2.688	0.313	0.560
R-21	1.1/4"	2500	2.844	0.438	0.690
R-22	2"	150	3.250	0.313	0.560
R-23	2"	300, 600	3.250	0.438	0.690
R-23	1.1/2"	2500	3.250	0.438	0.690
R-24	2"	900, 1500	3.750	0.438	0.690
R-25	2.1/2"	150	4.000	0.313	0.560
R-26	2.1/2"	300, 600	4.000	0.438	0.690
R-26	2"	2500	4.000	0.438	0.690
R-27	2,1/2"	900, 1500	4.250	0.438	0.690
R-28	2.1/2"	2500	4.375	0.500	0.750
R-29	3"	150	4.500	0.313	0.560
R-30	3" (1)	300	4.625	0.438	0.690
R-31	3"	300, 600, 900	4.875	0.438	0.690
R-32	3"	2500	5.000	0.500	0.750
R-33	3.1/2"	150	5.188	0.313	0.560
R-34	3.1/2"	300, 600	5.188	0.438	0.690
R-35	3"	1500	5.375	0.438	0.690
R-36	4"	150	5.875	0.313	0.560
R-37	4"	300, 600, 900	5.875	0.438	0.690

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R-38	4"	2500	6.188	0.625	0.880
R-39	4"	1500	6.375	0.438	0.690
R-40	5"	150	6.750	0.313	0.560
R-41	5"	300, 600, 900	7.125	0.438	0.690
R-42	5"	2500	7.500	0.750	0.750
R-43	6"	150	7.625	0.313	0.560
R-44	5"	1500	7.625	0.438	0.690
R-45	6"	300, 600, 900	8.313	0.438	0.690
R-46	6"	1500	8.313	0.500	0.750
R-47	6"	2500	9.000	0.750	1.000
R-48	8"	150	9.750	0.313	0.560
R-49	8"	300, 600, 900	10.625	0.438	0.690
R-50	8"	1500	10.625	0.625	0.880
R-51	8"	2500	11.000	0.875	1.130
R-52	10"	150	12.000	0.313	0.560
R-53	10"	300, 600, 900	12.750	0.438	0.690
R-54	10"	1500	12.750	0.625	0.880
R-55	10"	2500	13.500	1.125	1.440
R-56	12"	1500	15.000	0.313	0.560
R-57	12"	300, 600, 900	15.000	0.438	0.690
R-58	12"	1500	15.000	0.875	1.130
R-59	14"	150	15.625	0.313	0.560
R-60	12"	2500	16.000	1.250	1.560
R-61	14"	300, 600	16.500	0.438	0.690
R-62	14"	900	16.500	0.625	0.880
R-63	14"	1500	16.500	1.000	1.310
R-64	16"	150	17.875	0.313	0.560
R-65	16"	300, 600	18.500	0.438	0.690
R-66	16"	900	18.500	0.625	0.880
R-67	16"	1500	18.500	1.125	1.440
R-68	18"	150	20.375	0.313	0.560
R-69	18"	300, 600	21.000	0.438	0.690
R-70	18"	900	21.000	0.750	1.000
R-71	18"	1500	21.000	1.125	1.440
R-72	20"	150	22.000	0.313	0.560
R-73	20"	300, 600	23.000	0.500	0.750
R-74	20"	900	23.000	0.750	1.000
R-75	20"	1500	23.000	1.250	1.560
R-76	24"	150	26.500	0.313	0.560
R-77	24"	300, 600	27.250	0.625	0.880
R-78	24"	900	27.250	1.000	1.131
R-79	24"	1500	27.250	1.375	1.750

- (1) R-30 for lapped joints only
- All dimensions in inches

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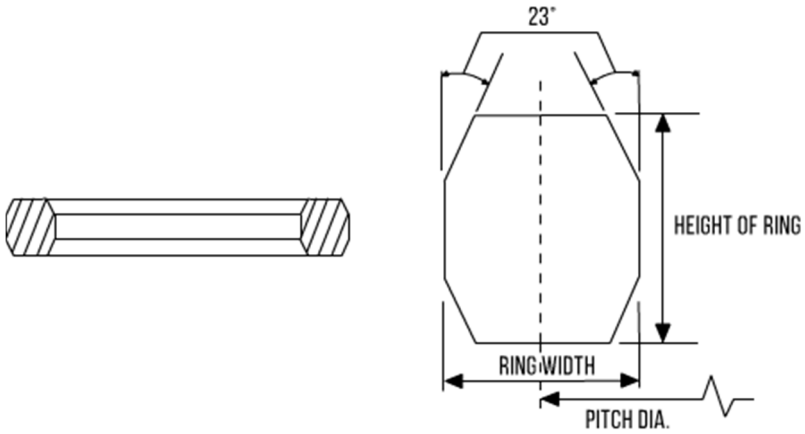
OCTAGONAL RING TYPE JOINT DIMENSIONS – ASME B16.20



RING No.	SIZE	CLASS	PITCH DIA.	WIDTH	HEIGHT	FLAT	RADIUS
R-11	1/2"	300, 600	1.344	0.250	0.380	0.170	0.06
R-12	1/2"	900, 1500	1.563	0.313	0.500	0.206	0.06
R-13	3/4"	300, 600	1.688	0.313	0.500	0.206	0.06
R-13	1/2"	2500	1.688	0.313	0.500	0.206	0.06
R-14	3/4"	900, 1500	1.750	0.313	0.500	0.206	0.06
R-15	1"	150	1.875	0.313	0.500	0.206	0.06
R-16	1"	300, 600, 900, 1500	2.000	0.313	0.500	0.206	0.06
R-16	3/4"	2500	2.000	0.313	0.500	0.206	0.06
R-17	1.1/4"	150	2.250	0.313	0.500	0.206	0.06
R-18	1.1/4"	300, 600, 900, 1500	2.375	0.313	0.500	0.206	0.06
R-18	1"	2500	2.375	0.313	0.500	0.206	0.06
R19	1.1/2"	150	2.563	0.313	0.500	0.206	0.06
R-20	1.1/2"	300, 600, 900, 1500	2.688	0.313	0.500	0.206	0.06
R-21	1.1/4"	2500	2.844	0.438	0.630	0.305	0.06
R-22	2"	150	3.250	0.313	0.500	0.206	0.06
R-23	2"	300, 600	3.250	0.438	0.630	0.305	0.06
R-23	1.1/2"	2500	3.250	0.438	0.630	0.305	0.06
R-24	2"	900, 1500	3.750	0.438	0.630	0.305	0.06
R-25	2.1/2"	150	4.000	0.313	0.500	0.206	0.06
R-26	2.1/2"	300, 600	4.000	0.438	0.630	0.305	0.06
R-26	2"	2500	4.000	0.438	0.630	0.305	0.06
R-27	2.1/2"	900, 1500	4.250	0.438	0.630	0.305	0.06
R-28	2.1/2"	2500	4.375	0.500	0.690	0.341	0.06
R-29	3"	150	4.500	0.313	0.500	0.206	0.06
R-30	3" (1)	300	4.625	0.438	0.630	0.305	0.06
R-31	3"	300, 600, 900	4.875	0.475	0.630	0.305	0.06
R-32	3"	2500	5.000	0.500	0.690	0.341	0.06
R-33	3.1/2"	150	5.188	0.313	0.500	0.206	0.06

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R-34	3.1/2"	300, 600	5.188	0.438	0.630	0.305	0.06
R-35	3"	1500	5.375	0.438	0.630	0.305	0.06
R-36	4"	150	5.875	0.313	0.500	0.206	0.06
R-37	4"	300, 600, 900	5.875	0.438	0.630	0.305	0.06
R-38	4"	2500	6.188	0.625	0.810	0.413	0.06
R-39	4"	1500	6.375	0.438	0.630	0.305	0.06
R-40	5"	150	6.750	0.313	0.500	0.206	0.06
R-41	5"	300, 600, 900	7.125	0.438	0.630	0.305	0.06
R-42	5"	2500	7.500	0.75	0.940	0.485	0.06
R-43	6"	150	7.625	0.313	0.500	0.206	0.06
R-44	5"	1500	7.625	0.438	0.630	0.305	0.06
R-45	6"	300, 600, 900	8.313	0.438	0.630	0.305	0.06
R-46	6"	1500	8.313	0.500	0.690	0.341	0.06
R-47	6"	2500	9.000	0.750	0.940	0.485	0.06
R-48	8"	150	9.750	0.313	0.500	0.206	0.06
R-49	8"	300, 600, 900	10.625	0.438	0.630	0.305	0.06
R-50	8"	1500	10.625	0.625	0.810	0.413	0.06
R-51	8"	2500	11.000	0.875	1.060	0.583	0.06
R-52	10"	150	12.000	0.313	0.500	0.206	0.06
R-53	10"	300, 600, 900	12.750	0.438	0.630	0.305	0.06
R-54	10"	1500	12.750	0.625	0.880	0.413	0.06
R-55	10"	2500	13.500	1.125	1.380	0.78	0.09
R-56	12"	1500	15.000	0.313	0.500	0.206	0.06
R-57	12"	300, 600, 900	15.000	0.438	0.630	0.305	0.06
R-58	12"	1500	15.000	0.875	1.060	0.583	0.06
R-59	14"	150	15.625	0.313	0.500	0.206	0.06
R-60	12"	2500	16.000	1.250	1.500	0.879	0.09
R-61	14"	300, 600	16.500	0.438	0.630	0.305	0.06
R-62	14"	900	16.500	0.625	0.810	0.413	0.06
R-63	14"	1500	16.500	1.000	1.250	0.681	0.06
R-64	16"	150	17.875	0.313	0.500	0.206	0.09
R-65	16"	300, 600	18.500	0.438	0.630	0.305	0.06
R-66	16"	900	18.500	0.625	0.810	0.413	0.06
R-67	16"	1500	18.500	1.125	1.380	0.780	0.09
R-68	18"	150	20.375	0.313	0.500	0.206	0.06
R-69	18"	300, 600	21.000	0.438	0.630	0.305	0.06
R-70	18"	900	21.000	0.750	0.940	0.485	0.06
R-71	18"	1500	21.000	1.125	1.380	0.780	0.09
R-72	20"	150	22.000	0.313	0.50	0.206	0.06
R-73	20"	300, 600	23.000	0.500	0.690	0.341	0.06
R-74	20"	900	23.000	0.750	0.940	0.485	0.06
R-75	20"	1500	23.000	1.125	1.500	0.879	0.09
R-76	24"	150	26.500	0.313	0.500	0.206	0.06

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R-77	24"	300, 600	27.250	0.625	0.810	0.413	0.06
R-78	24"	900	27.250	1.000	1.250	0.681	0.09
R-79	24"	1500	27.250	1.375	1.630	0.977	0.09
R-80	22"	150	24.250	0.313	0.500	0.206	0.06
R-81	22"	300, 600	25.000	0.563	0.750	0.377	0.06
R-82	1"	10000	2.250	0.438	0.630	0.305	0.06
R-84	1.1/2"	10000	2.500	0.438	0.630	0.305	0.06
R-85	2"	10000	3.125	0.500	0.690	0.341	0.06
R-86	2.1/2"	10000	3.563	0.625	0.810	0.413	0.06
R-87	3"	10000	3.938	0.625	0.810	0.413	0.06
R-88	4"	10000	4.875	0.750	0.940	0.485	0.06
R-89	3.1/2"	10000	4.500	0.750	0.940	0.485	0.06
R-90	5"	10000	6.125	0.875	1.060	0.583	0.06
R-91	10"	10000	10.250	1.250	1.500	0.879	0.06
R-92	-	-	9.000	0.438	0.630	0.305	0.06
R-93	26"	300, 600	29.500	0.750	0.940	0.485	0.06
R-94	28"	300, 600	31.500	0.750	0.940	0.485	0.06
R-95	30"	300, 600	33.750	0.750	0.940	0.485	0.06
R-96	32"	300, 600	36.000	0.875	1.060	0.583	0.06
R-97	34"	300, 600	38.000	0.875	1.060	0.583	0.06
R-98	36"	300, 600	40.250	0.875	1.060	0.583	0.06
R-99	8"	2000, 3000	9.250	0.438	0.630	0.305	0.06
R-100	26"	900	29.500	1.125	1.380	0.780	0.09
R-101	28"	900	31.500	1.250	1.500	0.879	0.09
R102	30"	900	33.750	1.250	1.500	0.879	0.09
R-103	32"	900	36.000	1.250	1.500	0.879	0.09
R-104	34"	900	38.000	1.375	1.630	0.977	0.09
R-105	36"	900	40.250	1.375	1.630	0.977	0.09

- (1) R-30 for lapped joints only
- All dimensions in inches

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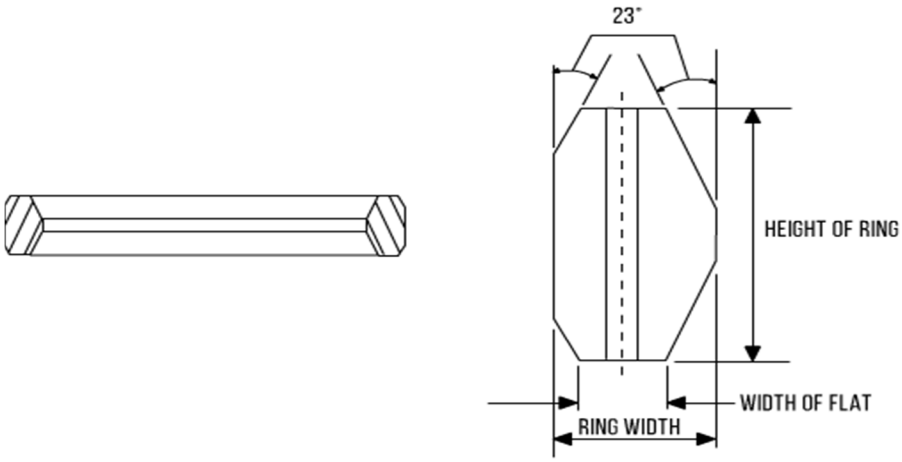
TYPE RX RING TYPE JOINT DIMENSIONS – ASME B16.20



RING No.	SIZE	CLASS	O/D	WIDTH	WIDTH OF FLAT	HEIGHT OUTSIDE BEVEL	HEIGHT OF RING	RADIUS
RX-20	1.1/2"	2000, 3000, 5000	3.000	0.344	0.182	0.125	0.750	0.06
RX-23	2"	2000	3.672	0.469	0.254	0.167	1.000	0.06
RX-24	2"	3000, 5000	4.172	0.469	0.254	0.167	1.000	0.06
RX-25	3.1/8"	5000	4.313	0.344	0.182	0.167	0.750	0.06
RX-26	2.1/2"	2000	4.406	0.469	0.254	0.125	1.000	0.06
RX-27	2.1/2"	3000, 5000	4.656	0.469	0.254	0.167	1.000	0.06
RX-31	3"	2000, 3000	5.297	0.469	0.254	0.167	1.000	0.06
RX-35	3"	5000	5.797	0.469	0.254	0.167	1.000	0.06
RX-37	4"	2000, 3000	6.297	0.469	0.254	0.167	1.000	0.06
RX-39	4"	5000	6.797	0.469	0.254	0.167	1.000	0.06
RX-41	5"	2000, 3000	7.547	0.469	0.254	0.167	1.000	0.06
RX-44	5"	5000	8.047	0.469	0.254	0.167	1.000	0.06
RX-45	6"	2000, 3000	8.734	0.469	0.254	0.167	1.000	0.06
RX-46	6"	5000	8.750	0.531	0.263	0.188	1.125	0.06
RX-47	8" (1)	5000	9.656	0.781	0.407	0.271	1.625	0.06
RX-49	8"	2000, 3000	11.047	0.469	0.254	9,167	1.000	0.06
RX-50	8"	5000	11.156	0.656	0.335	0.208	1.250	0.06
RX-53	10"	2000, 3000	13.172	0.469	0.254	0.167	1.000	0.06
RX-54	10"	5000	13.281	0.656	0.335	0.208	1.250	0.06
RX-57	12"	2000, 3000	13.281	0.469	0.254	0.167	1.000	0.06

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RX-63	14"	5000	17.391	1.063	0.582	0.333	2.000	0.09
RX-65	16"	2000	18.922	0.469	0.254	0.167	1.000	0.06
RX-66	16"	3000	18.031	0.656	0.335	0.208	1.250	0.06
RX-69	18"	2000	21.422	0.469	0.254	0.167	1.000	0.06
RX-70	18"	3000	21.656	0.781	0.407	0.271	1.625	0.09
RX-73	20"	2000	23.469	0.531	0.263	0.208	1.250	0.06
RX-74	20"	3000	23.656	0.781	0.407	0.271	1.625	0.09
RX-99	8" (1)	2000, 3000	9.672	0.469	0.254	0.167	1.000	0.06
RX-201	1.3/8"	5000	2.026	0.226	0.126	0.057	0.445	0.02
RX-205	1.13/16"	5000	2.453	0.219	0.12	0.072	0.437	0.02
RX-210	2.9/16"	5000	3.844	0.375	0.213	0.125	0.750	0.03
RX-215	4.1/16"	5000	5.547	0.469	0.21	0.167	1.000	0.06

- (1) Crossover flange connection
- All dimensions in inches

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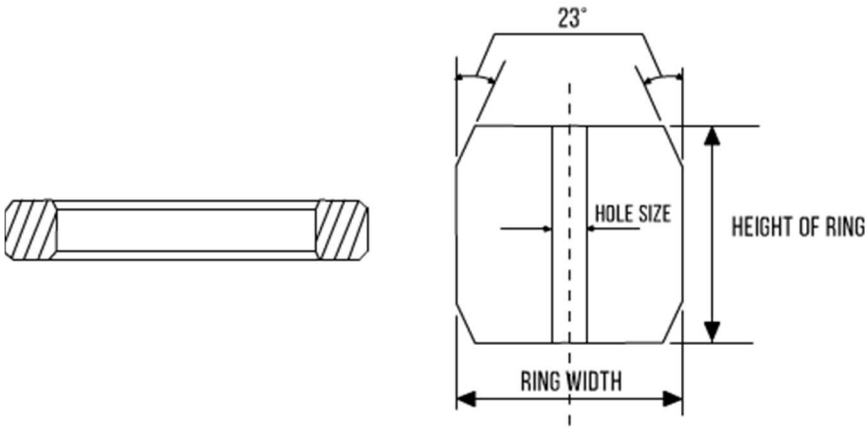
TYPE BX RING TYPE JOINT DIMENSIONS – ASME B16.20



RING No.	SIZE	CLASS	O/D	RING HEIGHT	RING WIDTH	O/D FLAT	FLAT WIDTH	HOLE
BX-150	1.11/16"	10000, 15000	2.842	0.366	0.366	2.790	0.314	0.06
BX-151	1.13/16"	10000, 15000, 20000	3.008	0.379	0.379	2.954	0.325	0.06
BX-152	2.1/16"	10000, 15000, 20000	3.334	0.403	0.403	3.277	0.346	0.06
BX-153	2.9/16"	10000, 15000, 20000	3.974	0.448	0.448	3.910	0.385	0.06
BX-154	3.1/16"	10000, 15000, 20000	4.600	0.488	0.488	4.531	0.419	0.06
BX-155	4.1/16"	10000, 15000, 20000	5.825	0.560	0.560	5.746	0.481	0.06
BX-156	7.1/16"	10000, 15000, 20000	9.367	0.733	0.733	9.263	0.629	0.12
BX-157	9"	10000, 15000, 20000	11.593	0.826	0.826	11.476	0.709	0.12
BX-158	11"	10000, 15000, 20000	13.860	0.911	0.911	13.371	0.782	0.12
BX-159	13.5/8"	10000, 20000	16.800	1.012	1.012	16.657	0.869	0.12
BX-160	13.5/8"	3000	15.850	0.938	0.541	15.717	0.408	0.12
BX-161	16.3/4"	5000	19.347	1.105	0.638	19.191	0.482	0.12
BX-162	16.3/4"	5000, 10000, 15000	18.720	0.560	0.560	18.461	0.481	0.06
BX-163	18.3/4"	5000	21.896	1.185	0.684	21.728	0.516	0.12
BX-164	18.3/4"	10000, 15000	22.463	1.185	0.968	21.728	0.800	0.12
BX-165	21.1/4"	5000	24.595	1.261	0.728	24.417	0.550	0.12
BX-166	21.1/4"	10000	25.198	1.261	1.029	25.020	0.851	0.12
BX-167	26.3/4"	2000	29.896	1.412	0.516	29.696	0.316	0.06
BX-168	26.3/4"	3000	30.128	1.412	0.632	0.928	0.432	0.06
BX-169	5.1/8"	10000	6.831	0.624	0.509	6.743	0.421	0.06
BX-170	6.5/8"	10000, 15000	8.584	0.560	0.560	8.505	0.481	0.06
BX-171	8.9/16"	10000, 15000	10.529	0.560	0.560	10.450	0.481	0.06
BX-172	11.5/32"	10000, 15000	13.113	0.560	0.560	13.034	0.481	0.06

- All dimensions in inches

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SOFT CUT GASKETS - MATERIALS

RUBBER MATERIALS			
MATERIAL	SHORE HARDNESS	TEMPERATURE	THICKNESS (MM)
Neoprene Rubber	60 ± 5°	-10°C to +90°C	1.0 - 25.0
Nitrile Rubber	60 ± 5°	-40°C to +100°C	1.0 - 12.0
EPDM Rubber	60 ± 5°	-40°C to +140°C	1.0 - 6.0
Hypalon Rubber	65 ± 5°	-20°C to +120°C	1.0 - 6.0
Viton Rubber	72 ± 5°	-20°C to +200°C	0.5 - 20.0
Butyl Rubber	65 ± 5°	-40°C to +120°C	1.0 - 6.0
Natural Rubber	65 ± 5°	-40°C to +80°C	1.0 - 10.0
Silicone Rubber	60 ± 5°	-60°C to +200°C	0.5 - 12.0
Commercial Rubber	65 ± 5°	-30°C to +70°C	1.0 - 25.0
Insertion Rubber	65 ± 5°	-30°C to +70°C	1.5 - 12.0

PTFE MATERIALS		
MATERIAL	TEMPERATURE	THICKNESS (MM)
PTFE	-200°C to +260°C	0.5 - 100
Glass Filled PTFE	-260°C to +250°C	1.5 - 3.0
Expanded PTFE	-200°C to +250°C	1.0 - 3.0
PTFE Tape	-200°C to +250°C	1.5 - 8.0

BRANDED MATERIALS				
BRANDED MATERIAL	MAX PRESSURE	TEMPERATURE	CONTINUOS TEMP.	THICKNESS (MM)
Klingersil C4430	100 Bar	400°C Max	200°C Max	0.25 - 4.0
Klingersil C4324	50 Bar	350°C Max	180°C Max	0.4 - 3.0
Klingersil C4500	100 Bar	400°C Max	220°C Max	0.4 - 3.0
Klingersil C4400	100 Bar	400°C Max	200°C Max	0.25 - 3.0
Klingersil C8200	60 Bar	200°C Max	150°C Max	0.5 - 3.0
Klingersil C6307	65 Bar	350°C Max	150°C Max	0.4 - 3.0
Klinger Top-Graph 2000	100 Bar	400°C Max	220°C Max	0.5 - 3.0
Klinger Quantum	100 Bar	400°C Max	350°C Max	0.8 - 3.0
Klinger Graphite SLS	140 Bar	400°C Max	460°C Max	0.45 - 3.0
Klinger Graphite PSM	150 Bar	460°C Max	460°C Max	0.8 - 3.0
Klinger Top-Chem 2000	150 Bar	260°C Max	260°C Max	1.0 - 3.0
Klinger Top-Chem 2003	100 Bar	260°C Max	200°C Max	1.0 - 3.0
Klinger Soft-Chem 2003	60 Bar	250°C Max	200°C Max	1.0 - 3.0

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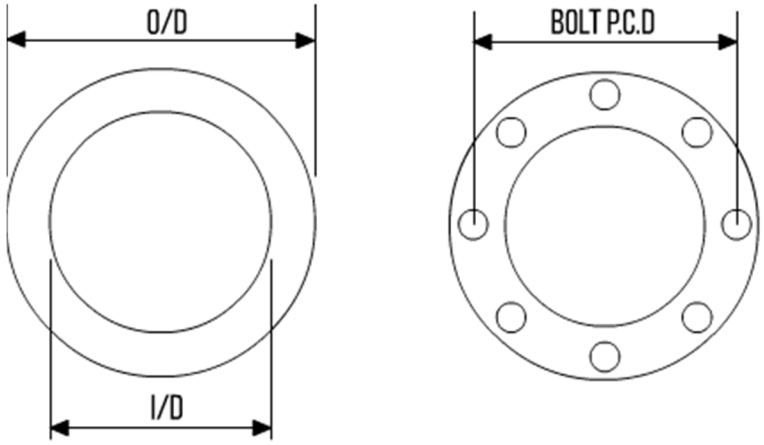
SOFT CUT GASKETS – CLASS 150 DIMENSIONS
ASME B16.20 / ASME B16.47



NOMINAL BORE	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
1/2"	48 x 21	89 x 21	4	16	60
3/4"	57 x 27	95 x 27	4	16	70
1"	67 x 33	108 x 33	4	16	79
1.1/4"	76 x 42	117 x 42	4	16	89
1.1/2"	86 x 48	127 x 48	4	16	98
2"	105 x 60	152 x 60	4	19	121
2.1/2"	124 x 73	178 x 73	4	19	140
3"	137 x 89	191 x 89	4	19	152
31/2"	162 x 102	216 x 102	8	19	178
4"	175 x 114	229 x 114	8	19	191
5"	197 x 141	254 x 141	8	22	216
6"	222 x 168	279 x 168	8	22	241
8"	279 x 219	343 x 219	8	25	298
10"	340 x 273	406 x 273	12	25	362
12"	410 x 324	483 x 324	12	29	432
14"	451 x 356	533 x 356	12	29	476
16"	514 x 406	597 x 406	16	32	540
18"	549 x 457	635 x 457	16	32	578
20"	606 x 508	699 x 508	20	32	635
24"	718 x 610	813 x 610	20	35	749

- All dimensions in millimetres (unless otherwise shown)
- Above table – Dimensions are in accordance with ASME B16.20
- Series A & B – Dimensions are in accordance with ASME B16.47

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NOMINAL BORE SERIES A	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
22" (550)	660 x 559	749 x 559	20	35	692
26" (650)	775 x 660	870 x 660	24	35	806
28" (700)	832 x 711	927 x 711	28	35	864
30" (750)	883 x 762	984 x 762	28	35	914
32" (800)	940 x 813	1060 x 813	28	41	978
34" (850)	991 x 864	1111 x 864	32	41	1029
36" (900)	1048 x 914	1168 x 914	32	41	1086
38" (950)	1111 x 965	1238 x 965	32	41	1149
40" (1000)	1162 x 1016	1289 x 1016	36	41	1200
42" (1050)	1219 x 1067	1346 x 1067	36	41	1257
44" (1100)	1276 x 1118	1403 x 1118	40	41	1314
46" (1150)	1327 x 1168	1454 x 1168	40	41	1365
48" (1200)	1384 x 1219	1511 x 1219	44	48	1422
50" (1250)	1435 x 1270	1568 x 1270	44	48	1480
52" (1300)	1492 x 1321	1626 x 1321	44	48	1537
54" (1350)	1549 x 1372	1683 x 1372	44	48	1594
56" (1400)	1607 x 1422	1746 x 1422	48	48	1651
58" (1450)	1664 x 1473	1803 x 1473	48	48	1708
60" (1500)	1715 x 1524	1854 x 1524	52	48	1759

NOMINAL BORE SERIES B	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
26" (650)	725 x 660	768 x 660	36	22	745
28" (700)	776 x 711	837 x 711	40	22	795
30" (750)	827 x 762	887 x 762	44	22	846
32" (800)	881 x 813	941 x 813	48	22	900
34" (850)	935 x 864	1005 x 864	40	25	957
36" (900)	987 x 914	1057 x 914	44	25	1010
38" (950)	1045 x 965	1124 x 965	40	29	1070
40" (1000)	1095 x 1016	1175 x 1016	44	29	1121
42" (1050)	1146 x 1067	1226 x 1067	48	29	1172
44" (1100)	1197 x 1118	1276 x 1118	52	29	1222
46" (1150)	1256 x 1168	1341 x 1168	40	32	1284
48" (1200)	1307 x 1219	1392 x 1219	44	32	1335
50" (1250)	1357 x 1270	1443 x 1270	48	32	1386
52" (1300)	1408 x 1321	1494 x 1321	52	32	1437
54" (1350)	1464 x 1372	1549 x 1372	56	32	1492
56" (1400)	1514 x 1422	1600 x 1422	60	32	1543
58" (1450)	1580 x 1473	1675 x 1473	48	35	1611
60" (1500)	1630 x 1524	1726 x 1524	52	35	1662

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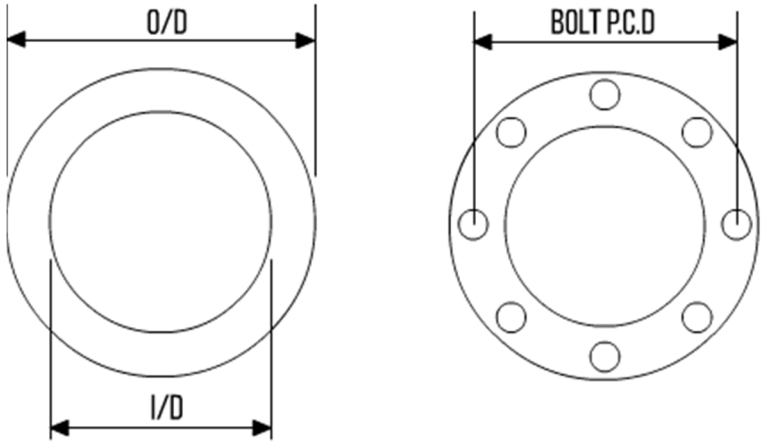
SOFT CUT GASKETS – CLASS 300 DIMENSIONS
ASME B16.20 / ASME B16.47



NOMINAL BORE	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
1/2"	54 x 21	95 x 21	4	16	67
3/4"	67 x 27	117 x 27	4	19	83
1"	71 x 33	124 x 33	4	19	89
1.1/4"	83 x 42	133 x 42	4	19	98
1.1/2"	95 x 48	156 x 48	4	22	114
2"	111 x 60	165 x 60	8	19	127
2.1/2"	130 x 73	191 x 73	8	22	149
3"	149 x 89	210 x 89	8	22	168
31/2"	165 x 102	229 x 102	8	22	184
4"	181 x 114	254 x 114	8	22	200
5"	216 x 141	279 x 141	8	22	235
6"	251 x 168	318 x 168	12	22	270
8"	308 x 219	381 x 219	2	29	330
10"	362 x 273	445 x 273	16	29	387
12"	422 x 324	521 x 324	16	25	451
14"	486 x 356	584 x 356	20	32	514
16"	540 x 406	648 x 406	20	35	572
18"	597 x 457	711 x 457	24	35	629
20"	654 x 508	775 x 508	24	35	686
24"	775 x 610	914 x 610	24	41	813

- All dimensions in millimetres (unless otherwise shown)
- Above table – Dimensions are in accordance with ASME B16.20
- Series A & B – Dimensions are in accordance with ASME B16.47

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NOMINAL BORE SERIES A	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
22" (550)	705 x 559	838 x 559	24	41	743
26" (650)	835 x 660	972 x 660	28	44	876
28" (700)	899 x 711	1035 x 711	28	44	940
30" (750)	953 x 762	1092 x 762	28	48	997
32" (800)	1007 x 813	1149 x 813	28	51	1054
34" (850)	1057 x 864	1207 x 864	28	51	1105
36" (900)	1118 x 914	1270 x 914	32	54	1168
38" (950)	1054 x 965	1168 x 965	32	41	1092
40" (1000)	1115 x 1016	1207 x 1016	32	44	1156
42" (1050)	1165 x 1067	1289 x 1067	32	44	1207
44" (1100)	1219 x 1118	1365 x 1118	32	48	1264
46" (1150)	1273 x 1168	1416 x 1168	28	51	1321
48" (1200)	1324 x 1219	1467 x 1219	32	521	1372
50" (1250)	1378 x 1270	1581 x 1321	32	54	1429
52" (1300)	1429 x 1321	1657 x 1372	32	54	1480
54" (1350)	1492 x 1372	1683 x 1372	28	60	1579
56" (1400)	1543 x 1422	1708 x 1422	28	60	1600
58" (1450)	1594 x 1473	1759 x 1473	32	60	1651
60" (1500)	1645 x 1524	1810 x 1524	32	60	1702

NOMINAL BORE SERIES B	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
26" (650)	772 x 660	867 x 660	32	35	803
28" (700)	826 x 711	921 x 711	36	35	857
30" (750)	886 x 762	991 x 762	36	38	921
32" (800)	940 x 813	1054 x 813	32	41	978
34" (850)	994 x 813	1108 864	36	41	1032
36" (900)	1048 x 914	1172 x 914	32	44	1089
38" (950)	1099 x 965	1222 x 965	36	44	1140
40" (1000)	1149 x 1016	1273 x 1016	40	44	1191
42" (1050)	1200 x 1067	1334 x 1067	36	48	1245
44" (1100)	1251 x 1118	1384 x 1118	40	48	1295
46" (1150)	1318 x 1168	1461 x 1168	36	51	1365
48" (1200)	1368 x 1219	1511 x 1219	40	51	1416
50" (1250)	1419 x 1270	1562 x 1270	44	51	1467
52" (1300)	1470 x 1321	1613 x 1372	48	51	1518
54" (1350)	1556 x 1372	1673 x 1372	48	51	1578
56" (1400)	1594 x 1422	1765 x 1422	36	60	1651
58" (1450)	1673 x 1473	1827 x 1473	40	60	1713
60" (1500)	1705 x 1524	1878 x 1524	40	60	1764

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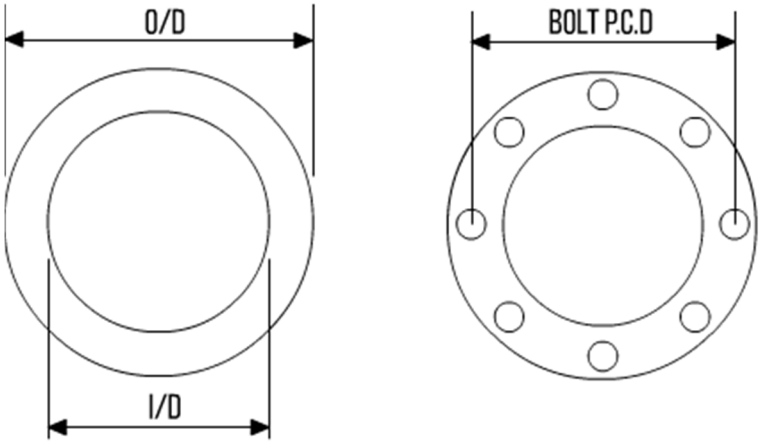
SOFT CUT GASKETS – CLASS 600 DIMENSIONS
ASME B16.20 / ASME B16.47



NOMINAL BORE	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
1/2"	54 x 21	95 x 21	4	16	67
3/4"	67 x 27	117 x 27	4	19	83
1"	71 x 33	124 x 33	4	19	89
1.1/4"	83 x 42	133 x 42	4	19	98
1.1/2"	95 x 48	156 x 48	4	22	114
2"	111 x 60	165 x 60	8	19	127
2.1/2"	130 x 73	191 x 73	8	22	149
3"	149 x 89	210 x 89	8	22	168
31/2"	162 x 102	229 x 102	8	25	184
4"	194 x 114	273 x 114	8	25	216
5"	241 x 141	330 x 141	8	29	267
6"	267 x 168	356 x 168	12	29	292
8"	321 x 219	419 x 219	12	32	349
10"	400 x 273	508 x 273	16	35	432
12"	457 x 324	559 x 324	20	35	489
14"	492 x 356	603 x 356	20	38	527
16"	565 x 406	686 x 406	20	41	603
18"	613 x 457	743 x 457	20	44	654
20"	683 x 508	813 x 508	24	44	724
24"	791 x 610	940 x 610	24	51	838

- All dimensions in millimetres (unless otherwise shown)
- Above table – Dimensions are in accordance with ASME B16.20
- Series A & B – Dimensions are in accordance with ASME B16.47

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NOMINAL BORE SERIES A	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
22" (550)	733 x 559	870 x 559	24	48	778
26" (650)	867 x 660	1016 x 660	28	51	914
28" (700)	914 x 711	1073 x 711	28	54	965
30" (750)	972 x 762	1130 x 711	28	54	1022
32" (800)	1022 x 813	1130 x 762	28	60	1080
34" (850)	1073 x 864	1194 x 813	28	60	1130
36" (900)	1130 x 914	1245 x 864	32	67	1194
38" (950)	1105 x 965	1314 x 914	32	60	1162
40" (1000)	1156 x 1016	1270 x 965	32	60	1213
42" (1050)	1219 x 1067	1321 x 1016	32	67	1283
44" (1100)	1270 x 1118	1403 x 1067	32	67	1334
46" (1150)	1327 x 1168	1454 x 1118	28	67	1391
48" (1200)	1391 x 1219	1594 x 1219	32	73	1461
50" (1250)	1448 x 1270	1670 x 1270	32	79	1524
52" (1300)	1499 x 1321	1721 x 1321	32	79	1575
54" (1350)	1556 x 1372	1778 x 1372	28	79	1632
56" (1400)	1613 x 1422	1854 x 1422	28	86	1695
58" (1450)	1664 x 1473	1905 x 1473	32	86	1746
60" (1500)	1721 x 1524	1994 x 1524	32	92	1810

NOMINAL BORE SERIES B	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
26" (650)	765 x 660	889 x 660	28	44	806
28" (700)	819 x 711	953 x 711	28	48	864
30" (750)	879 x 762	1022 x 762	28	51	927
32" (800)	933 x 813	1086 x 813	28	54	984
34" (850)	997 x 864	1162 x 864	24	60	1054
36" (900)	1048 x 914	1213 x 914	28	60	1105

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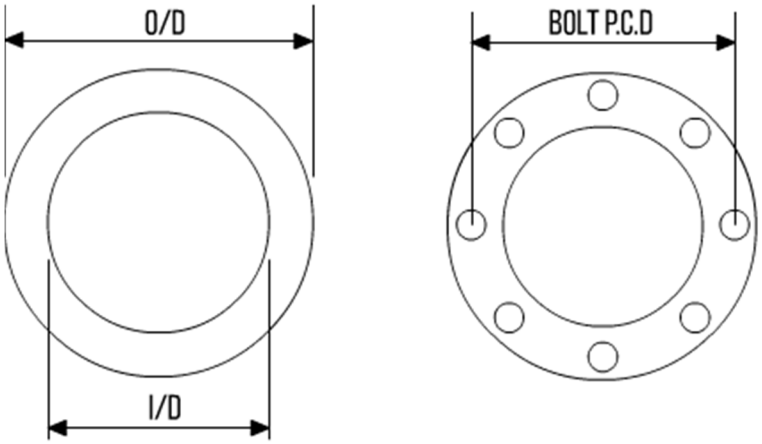
SOFT CUT GASKETS – PN10 DIMENSIONS



NOMINAL BORE	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
10	45 x 18	90 x 18	4	14	60
15	50 x 22	95 x 22	4	14	65
20	60 x 28	105 x 28	4	14	75
25	70 x 35	115 x 35	4	14	85
32	82 x 43	140 x 43	4	18	100
40	92 x 49	150 x 49	4	18	110
50	107 x 61	165 x 61	4	18	125
65	127 x 77	185 x 77	8	18	145
80	142 x 90	200 x 90	8	18	160
100	162 x 115	220 x 115	8	18	180
125	192 x 141	250 x 141	8	18	210
150	218 x 169	285 x 169	8	22	240
200	273 x 220	340 x 220	12	22	295
250	328 x 274	395 x 274	12	22	350
300	378 x 325	445 x 325	12	22	400
350	438 x 356	505 x 356	16	22	460
400	489 x 407	565 x 407	16	26	515
450	539 x 458	615 x 458	20	26	565
500	594 x 508	670 x 508	20	26	620
600	695 x 610	780 x 610	20	30	725
700	810 x 712	895 x 712	24	30	840
800	917 x 813	1015 x 813	24	33	950

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900	1071 x 915	1115 x 915	28	33	1050
1000	1124 x 1016	1230 x 1016	28	36	1160
1100	1231 x 1120	1340 x 1120	32	39	1270
1200	1341 x 1220	1455 x 1220	32	39	1380
1400	1548 x 1420	1675 x 1420	36	42	1590
1500	1658 x 1520	1785 x 1520	36	42	1700
1600	1772 x 1620	1915 x 1620	40	48	1820
1800	1972 x 1820	2115 x 1820	44	48	2020
2000	2182 x 2020	2325 x 2020	48	48	2230

- All dimensions in millimetres

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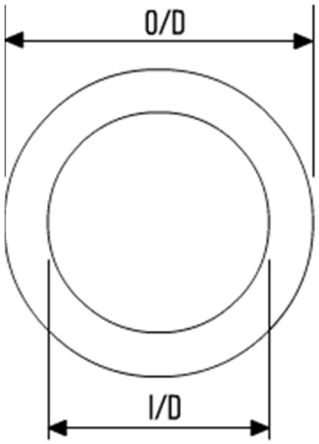
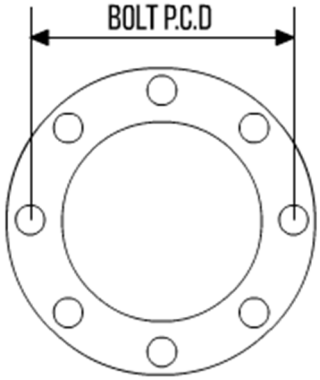
SOFT CUT GASKETS – PN16 DIMENSIONS





NOMINAL BORE	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
10	45 x 18	90 x 18	4	14	60
15	50 x 22	95 x 22	4	14	65
20	60 x 28	105 x 28	4	14	75
25	70 x 35	115 x 35	4	14	85
32	82 x 43	140 x 43	4	18	100
40	92 x 49	150 x 49	4	18	110
50	107 x 61	165 x 61	4	18	125
65	127 x 77	185 x 77	8	18	145
80	142 x 90	200 x 90	8	18	160
100	162 x 115	220 x 115	8	18	180
125	192 x 141	250 x 141	8	18	210
150	218 x 169	285 x 169	12	22	240
200	273 x 220	340 x 220	12	22	295
250	329 x 274	405 x 274	12	26	355
300	384 x 325	460 x 325	16	26	410
350	444 x 356	520 x 356	16	26	470
400	495 x 407	580 x 407	16	30	525
450	555 x 458	640 x 458	20	30	585
500	617 x 508	715 x 508	20	33	650
600	734 x 610	840 x 610	20	36	770
700	804 x 712	910 x 712	24	36	840
800	911 x 813	1025 x 813	24	39	950

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900	1011 x 915	1125 x 915	28	39	1050
1000	1128 x 1120	1255 x 1016	28	42	1170
1100	1228 x 1120	1355 x 1120	32	42	1270
1200	1342 x 1420	1485 x 1220	32	48	1390
1400	1542 x 1420	1685 x 1420	36	48	1590
1500	1654 x 1520	1820 x 1520	36	56	1700
1600	1764 x 1620	1930 x 1620	40	56	1820
1800	1964 x 1820	2130 x 1820	44	56	2020
2000	2168 x 2020	2345 x 2020	48	62	2230

- All dimensions in millimetres

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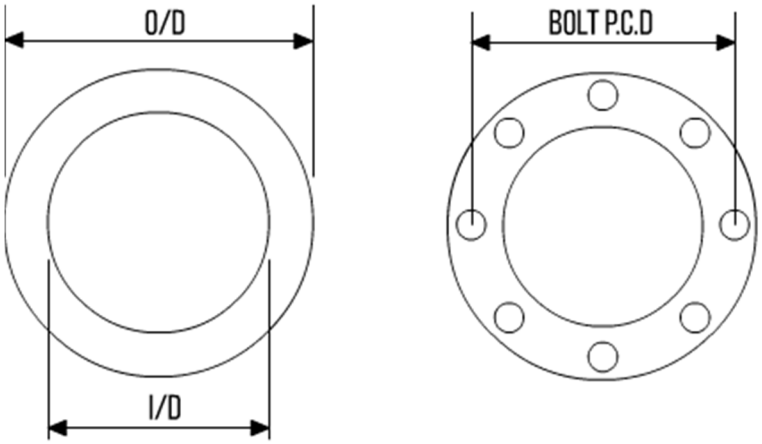
SOFT CUT GASKETS – PN25 DIMENSIONS



NOMINAL BORE	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
10	45 x 18	90 x 18	4	14	60
15	50 x 22	95 x 22	4	14	65
20	60 x 28	105 x 28	4	14	75
25	70 x 35	115 x 35	4	14	85
32	82 x 43	140 x 43	4	18	100
40	92 x 49	150 x 49	4	18	110
50	107 x 61	165 x 61	4	18	125
65	127 x 77	185 x 77	8	18	145
80	142 x 90	200 x 90	8	18	160
100	162 x 115	220 x 115	8	18	180
125	192 x 141	250 x 141	8	18	210
150	218 x 169	285 x 169	12	22	240
200	273 x 220	340 x 220	12	22	295
250	329 x 274	405 x 274	12	26	355
300	384 x 325	460 x 325	16	26	410
350	444 x 356	520 x 356	16	26	470
400	514 x 407	620 x 407	16	36	550
450	564 x 458	670 x 458	20	36	600
500	624 x 508	730 x 508	20	36	660
600	731 x 610	845 x 610	20	39	770
700	833 x 712	960 x 712	24	42	875
800	942 x 813	1085 x 813	24	48	990

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900	1042 x 915	1185 x 915	28	48	1090
1000	1154 x 1016	1320 x 1016	28	56	1210
1100	1254 x 1120	1420 x 1120	32	56	1310
1200	1364 x 1220	1530 x 1220	32	56	1420
1400	1578 x 1420	1755 x 1420	36	62	1640
1500	1688 x 1520	1865 x 1520	36	62	1750
1600	1798 x 1620	1975 x 1620	40	62	1860
1800	2000 x 1820	2195 x 1820	44	70	2070
2000	2230 x 2020	2425 x 2020	48	70	2300

- All dimensions in millimetres

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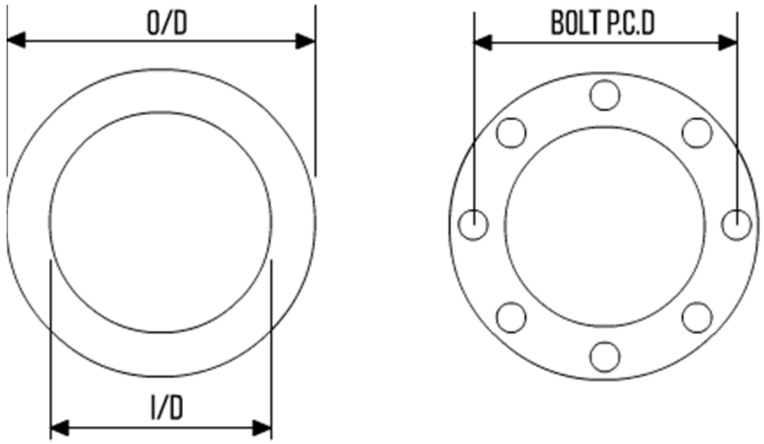
SOFT CUT GASKETS – PN40 DIMENSIONS



NOMINAL BORE	IBC GASKET	FULL FACE GASKET			
	OD x ID	OD x ID	NO. OF HOLES	HOLE DIA.	P.C.D
10	45 x 18	90 x 18	4	14	60
15	50 x 22	95 x 22	4	14	65
20	60 x 28	105 x 28	4	14	75
25	70 x 35	115 x 35	4	14	85
32	82 x 43	140 x 43	4	18	100
40	92 x 49	150 x 49	4	18	110
50	107 x 61	165 x 61	4	18	125
65	127 x 77	185 x 77	8	18	145
80	142 x 90	200 x 90	8	18	160
100	168 x 115	235 x 115	8	22	190
125	194 x 141	270 x 141	8	26	220
150	224 x 169	300 x 169	8	26	250
200	290 x 220	375 x 220	12	30	320
250	352 x 274	450 x 274	12	33	385
300	417 x 325	515 x 325	16	33	450
350	474 x 356	580 x 356	16	36	510
400	546 x 407	660 x 407	16	39	585
450	571 x 458	685 x 458	20	39	610
500	628 x 508	755 x 508	20	42	670
600	747 x 610	890 x 610	20	48	795
700	852 x 710	995 x 710	24	48	900
800	974 x 820	1140 x 820	24	56	1030
900	1084 x 910	1250 x 910	28	56	1140
1000	1194 x 1010	1360 x 1010	28	56	1210

- All dimensions in millimetres

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INSULATION KITS

Insulation kits are used to limit corrosion in pipeline systems. The kits remove the possibility of the system acting as a galvanic cell and reduces the risk of galvanic corrosion when dissimilar metals are present. They are also used to isolate cathodically protected piping systems where they prevent the flow of electro-static charge.

Each insulation kit comprises one central insulating gasket, one insulating sleeve, two insulating washers and two steel washers. The gasket, sleeves and insulating washers come in various different materials with the most popular shown below.

COMMON MATERIALS

	NEOPRENE FACED PHENOLIC*	REINFORCED PHENOLIC*	PHENOLIC	MYLAR*	GLASS REINFORCED EPOXY RESIN G-10
Component	Gasket	Insulating Washer	Insulating Sleeve	Insulating Sleeve	Gasket, Washer, Sleeve
Dielectric Strength (V/mm)	500	200	140	4000	750-800
Compressive Strength (N/mm2)	270	270	-	-	450
Flexural Strength (N/mm2)	155	155	-	-	450
Water Absorption (%)	1.60	1.00	1.00	0.80	0.05
Maximum Operating Temperature (°C)	107	107	107	145	150

* Denotes standard materials

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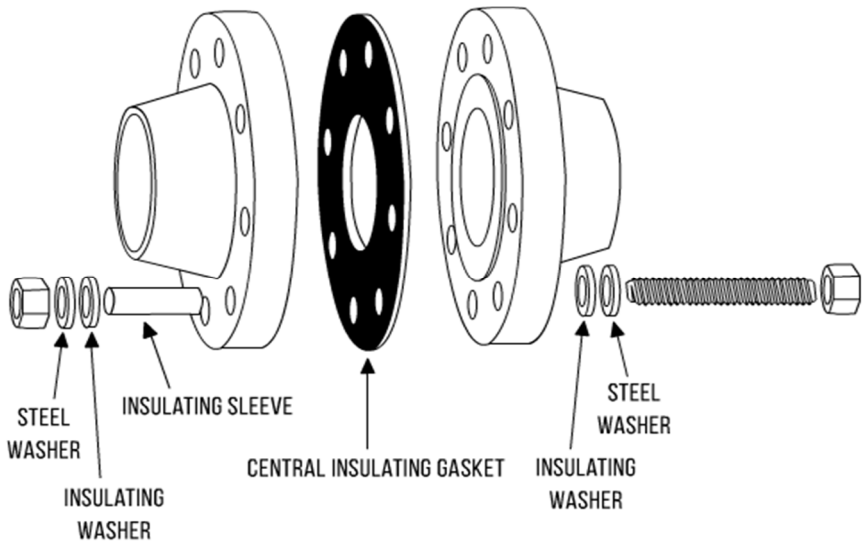
INSULATION KITS – CLASS 150 DIMENSIONS (TYPE E – FULL FACE)



NOMINAL BORE	INSULATING GASKET				INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID	HOLE DIA.	NO. OF HOLES	BOLT P.C.D	OD x ID	OD x ID	LENGTH
1/2"	89 x 16	16	4	60	29 x 16	15.0 x 13.1	32
3/4"	98 x 22	16	4	70	29 x 16	15.0 x 13.1	35
1"	108 x 25	16	4	79	29 x 16	15.0 x 13.1	34
1.1/4"	117 x 32	16	4	89	29 x 16	15.0 x 13.1	37
1.1/2"	127 x 38	16	4	98	29 x 16	15.0 x 13.1	40
2"	152 x 51	19	4	121	33 x 19	17.6 x 16.1	43
2.1/2"	178 x 64	19	4	140	33 x 19	17.6 x 16.1	50
3"	191 x 76	19	4	152	33 x 19	17.6 x 16.1	53
4"	229 x 102	19	8	191	33 x 19	17.6 x 16.1	53
5"	254 x 127	22	8	216	38 x 22	21.7 x 20.5	53
6"	279 x 152	22	8	241	38 x 22	21.7 x 20.5	56
8"	343 x 203	22	8	298	38 x 22	21.7 x 20.5	62
10"	406 x 254	25	12	362	44 x 25	23.5 x 22.5	65
12"	483 x 305	25	12	432	44 x 25	23.5 x 22.5	68
14"	533 x 337	29	12	476	51 x 29	27.5 x 26.0	75
16"	597 x 387	29	16	540	51 x 29	27.5 x 26.0	78
18"	635 x 438	32	16	578	56 x 32	30.0 x 28.5	84
20"	699 x 489	32	20	635	56 x 32	30.0 x 28.5	94
24"	813 x 591	35	20	749	60 x 35	33.5 x 32.1	100

- All dimensions in millimetres (unless shown)

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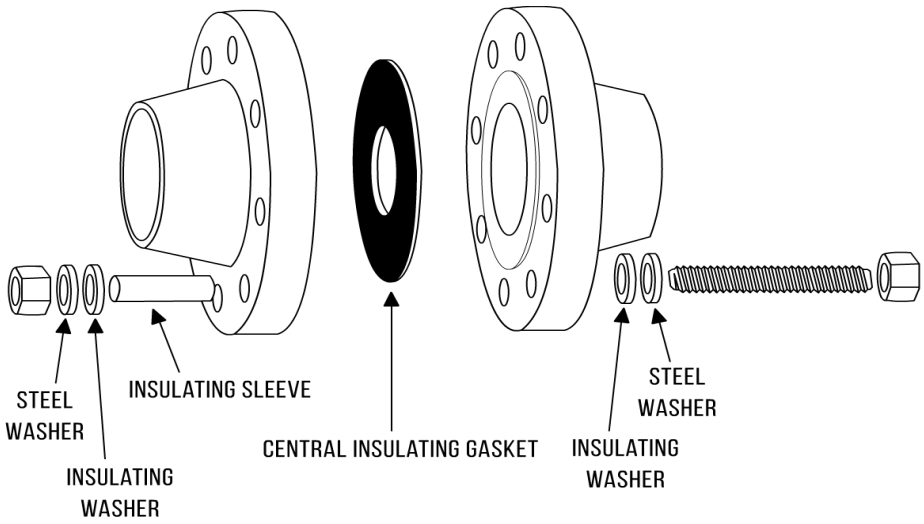
INSULATION KITS – CLASS 150 DIMENSIONS (TYPE F – IBC)



NOMINAL BORE	INSULATING GASKET	NO. OF HOLES	INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID		OD x ID	OD x ID	LENGTH
1/2"	43 x 16	4	29 x 16	15.0 x 13.1	32
3/4"	52 x 22	4	29 x 16	15.0 x 13.1	35
1"	62 x 25	4	29 x 16	15.0 x 13.1	34
1.1/4	71 x 32	4	29 x 16	15.0 x 13.1	37
1.1/2	81 x 38	4	29 x 16	15.0 x 13.1	40
2"	100 x 51	4	33 x 19	17.6 x 16.1	43
2.1/2	119 x 64	4	33 x 19	17.6 x 16.1	50
3"	132 x 76	4	33 x 19	17.6 x 16.1	53
4"	170 x 102	8	33 x 19	17.6 x 16.1	53
5"	192 x 127	8	38 x 22	21.7 x 20.5	53
6"	217 x 152	8	38 x 22	21.7 x 20.5	56
8"	275 x 203	8	38 x 22	21.7 x 20.5	62
10"	335 x 254	12	44 x 25	23.5 x 22.5	65
12"	405 x 305	12	44 x 25	23.5 x 22.5	68
14"	446 x 337	12	51 x 29	27.5 x 26.0	75
16"	510 x 387	16	51 x 29	27.5 x 26.0	78
18"	545 x 438	16	56 x 32	30.0 x 28.5	84
20"	602 x 489	20	56 x 32	30.0 x 28.5	94
24"	713 x 591	20	60 x 35	33.5 x 32.1	100

- All dimensions in millimetres (unless shown)

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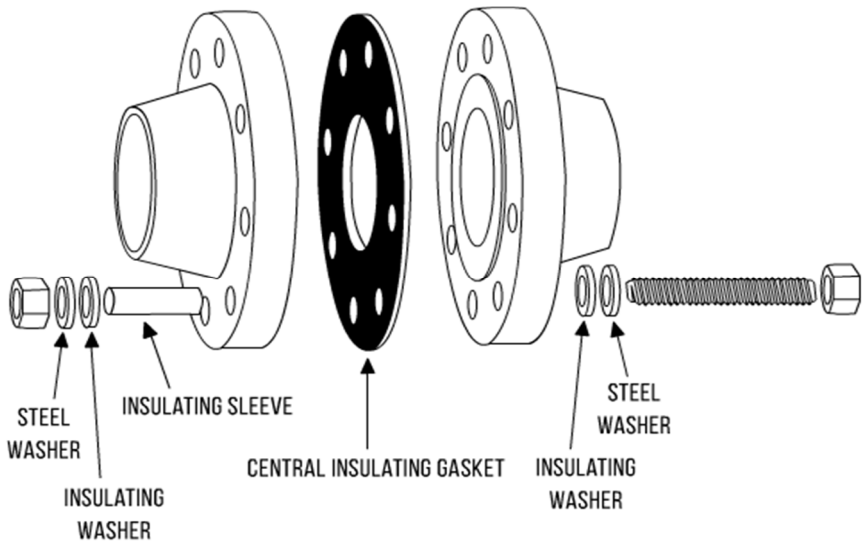
INSULATION KITS – CLASS 300 DIMENSIONS (TYPE E – FULL FACE)



NOMINAL BORE	INSULATING GASKET				INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID	HOLE DIA.	NO. OF HOLES	BOLT P.C.D	OD x ID	OD x ID	LENGTH
1/2"	95 x 16	16	4	66	29 x 16	15.0 x 13.1	38
3/4"	117 x 22	16	4	83	33 x 19	17.6 x 16.1	41
1"	124 x 25	16	4	89	33 x 19	17.6 x 16.1	40
1.1/4"	133 x 32	16	4	98	33 x 19	17.6 x 16.1	43
1.1/2"	156 x 38	16	4	114	38 x 22	21.7 x 20.5	46
2"	165 x 51	19	8	127	33 x 19	17.6 x 16.1	50
2.1/2"	191 x 64	19	8	149	38 x 22	21.7 x 20.5	56
3"	210 x 76	19	8	168	38 x 22	21.7 x 20.5	62
4"	254 x 102	19	8	200	38 x 22	21.7 x 20.5	69
5"	279 x 127	22	8	235	38 x 22	21.7 x 20.5	75
6"	318 x 152	22	12	270	38 x 22	21.7 x 20.5	78
8"	381 x 203	22	12	330	44 x 25	23.5 x 22.5	88
10"	445 x 254	25	16	387	51 x 29	27.5 x 26.0	100
12"	521 x 305	25	16	451	56 x 32	30.0 x 28.5	107
14"	584 x 337	29	20	514	56 x 32	30.0 x 28.5	113
16"	648 x 387	29	20	572	60 x 35	33.5 x 32.1	119
18"	711 x 438	32	24	629	60 x 35	33.5 x 32.1	126
20"	775 x 489	32	24	686	60 x 35	33.5 x 32.1	129
24"	914 x 591	35	24	813	71 x 41	40.0 x 38.5	145

- All dimensions in millimetres (unless shown)

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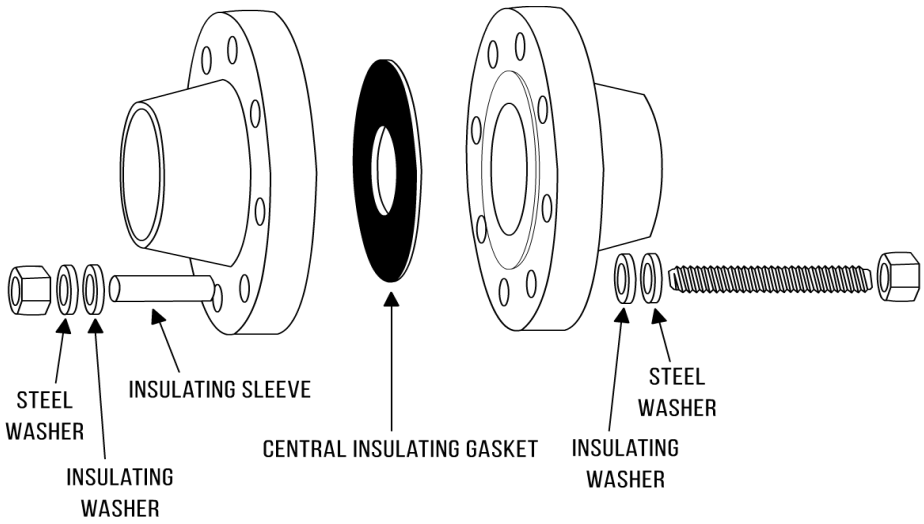
INSULATION KITS – CLASS 300 DIMENSIONS (TYPE F – IBC)



NOMINAL BORE	INSULATING GASKET	NO. OF HOLES	INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID		OD x ID	OD x ID	LENGTH
1/2"	49 x 16	4	29 x 16	15.0 x 13.1	38
3/4"	62 x 22	4	33 x 19	17.6 x 16.1	41
1"	68 x 25	4	33 x 19	17.6 x 16.1	40
1.1/4	78 x 32	4	33 x 19	17.6 x 16.1	43
1.1/2	90 x 38	4	38 x 22	21.7 x 20.5	46
2"	106 x 51	8	33 x 19	17.6 x 16.1	50
2.1/2	125 x 64	8	38 x 22	21.7 x 20.5	56
3"	144 x 76	8	38 x 22	21.7 x 20.5	62
4"	176 x 102	8	38 x 22	21.7 x 20.5	69
5"	211 x 127	8	38 x 22	21.7 x 20.5	75
6"	246 x 152	12	38 x 22	21.7 x 20.5	78
8"	303 x 203	12	44 x 25	23.5 x 22.5	88
10"	357 x 254	16	51 x 29	27.5 x 26.0	100
12"	418 x 305	16	56 x 32	30.0 x 28.5	107
14"	481 x 337	20	56 x 32	30.0 x 28.5	113
16"	535 x 387	20	60 x 35	33.5 x 32.1	119
18"	592 x 438	24	60 x 35	33.5 x 32.1	126
20"	649 x 489	24	60 x 35	33.5 x 32.1	129
24"	770 x 591	24	71 x 41	40.0 x 38.5	145

- All dimensions in millimetres (unless shown)

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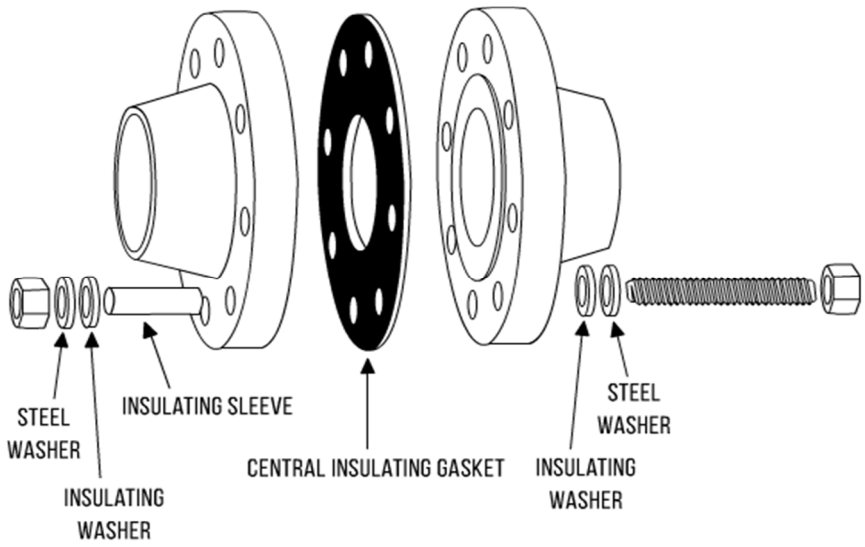
INSULATION KITS – PN10 DIMENSIONS (TYPE E – FULL FACE)



NOMINAL BORE	INSULATING GASKET				INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID	HOLE DIA.	NO. OF HOLES	BOLT P.C.D	OD x ID	OD x ID	LENGTH
15	95 x 17	14	4	65	29 x 16	13.2 x 12.2	41
20	105 x 22	14	4	75	29 x 16	13.2 x 12.2	45
25	115 x 28	14	4	85	29 x 16	13.2 x 12.2	45
32	140 x 37	18	4	100	33 x 19	17.2 x 16.2	45
40	150 x 43	18	4	110	33 x 19	17.2 x 16.2	45
50	165 x 55	18	4	125	33 x 19	17.2 x 16.2	49
65	185 x 70	18	8	145	33 x 19	17.2 x 16.2	49
80	200 x 83	18	8	160	33 x 19	17.2 x 16.2	53
100	220 x 107	18	8	180	33 x 19	17.2 x 16.2	53
125	250 x 131	18	8	210	33 x 19	17.2 x 16.2	57
150	285 x 159	22	8	240	38 x 22	21.2 x 20.2	57
200	340 x 208	22	8	295	38 x 22	21.2 x 20.2	61
250	395 x 260	22	12	350	38 x 22	21.2 x 20.2	65
300	445 x 310	22	12	400	38 x 22	21.2 x 20.2	65
350	505 x 341	22	16	460	38 x 22	21.2 x 20.2	65
400	565 x 392	26	16	515	51 x 29	25.2 x 24.2	65
450	615 x 443	26	20	565	51 x 29	25.2 x 24.2	69
500	670 x 494	26	20	620	51 x 29	25.2 x 24.2	69
600	780 x 596	30	20	725	56 x 32	28.2 x 27.2	69

- All dimensions in millimetres

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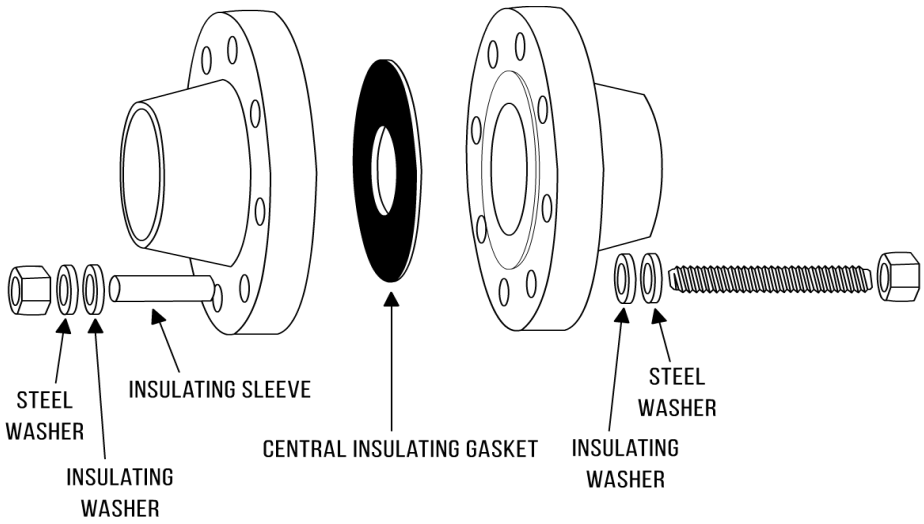
INSULATION KITS – PN10 DIMENSIONS (TYPE F – IBC)



NOMINAL BORE	INSULATING GASKET	NO. OF HOLES	INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID		OD x ID	OD x ID	LENGTH
15	50 x 17	4	29 x 16	13.2 x 12.2	41
20	60 x 22	4	29 x 16	13.2 x 12.2	45
25	70 x 28	4	29 x 16	13.2 x 12.2	45
32	80 x 37	4	33 x 19	17.2 x 16.2	45
40	90 x 43	4	33 x 19	17.2 x 16.2	45
50	105 x 55	4	33 x 19	17.2 x 16.2	49
65	125 x 70	8	33 x 19	17.2 x 16.2	49
80	140 x 83	8	33 x 19	17.2 x 16.2	53
100	160 x 107	8	33 x 19	17.2 x 16.2	53
125	190 x 131	8	33 x 19	17.2 x 16.2	57
150	216 x 159	8	38 x 22	21.2 x 20.2	57
200	271 x 208	8	38 x 22	21.2 x 20.2	61
250	326 x 260	12	38 x 22	21.2 x 20.2	65
300	376 x 310	12	38 x 22	21.2 x 20.2	65
350	436 x 341	16	38 x 22	21.2 x 20.2	65
400	487 x 392	16	51 x 29	25.2 x 24.2	65
450	537 x 443	20	51 x 29	25.2 x 24.2	69
500	592 x 494	20	51 x 29	25.2 x 24.2	69
600	693 x 596	20	56 x 32	28.2 x 27.2	69

- All dimensions in millimetres

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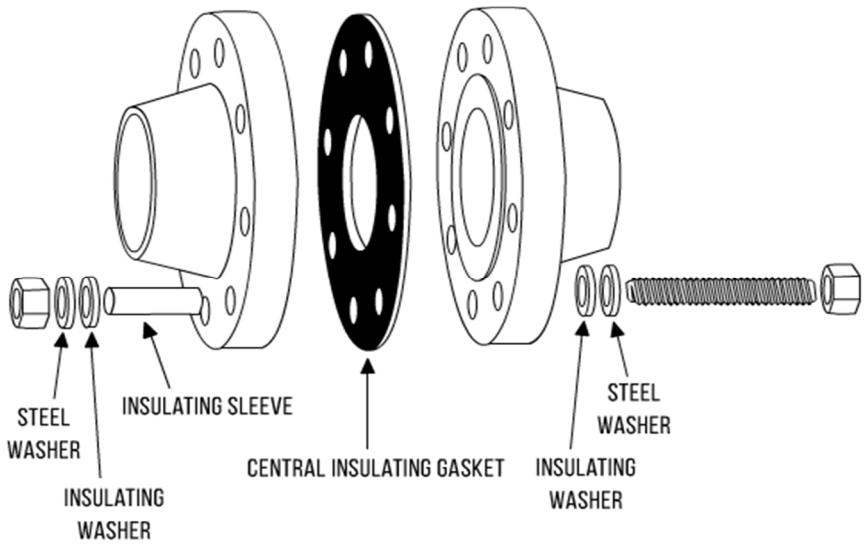
INSULATION KITS – PN16 DIMENSIONS (TYPE E – FULL FACE)



NOMINAL BORE	INSULATING GASKET				INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID	HOLE DIA.	NO. OF HOLES	BOLT P.C.D	OD x ID	OD x ID	LENGTH
15	95 x 17	14	4	65	29 x 16	13.2 x 12.2	41
20	105 x 22	14	4	75	29 x 16	13.2 x 12.2	45
25	115 x 28	14	4	85	29 x 16	13.2 x 12.2	45
32	140 x 37	18	4	100	33 x 19	17.2 x 16.2	45
40	150 x 43	18	4	110	33 x 19	17.2 x 16.2	45
50	165 x 55	18	4	125	33 x 19	17.2 x 16.2	49
65	185 x 70	18	8	145	33 x 19	17.2 x 16.2	49
80	200 x 83	18	8	160	33 x 19	17.2 x 16.2	53
100	220 x 107	18	8	180	33 x 19	17.2 x 16.2	53
125	250 x 131	18	8	210	33 x 19	17.2 x 16.2	57
150	285 x 159	22	8	240	38 x 22	21.2 x 20.2	57
200	340 x 208	22	12	295	38 x 22	25.2 x 24.2	61
250	405 x 260	26	12	355	51 x 29	25.2 x 24.2	65
300	460 x 310	26	16	410	51 x 29	25.2 x 24.2	69
350	520 x 340	26	16	470	51 x 29	25.2 x 24.2	73
400	580 x 390	30	16	525	56 x 32	28.2 x 27.2	77
450	640 x 441	30	20	585	56 x 32	28.2 x 27.2	81
500	715 x 492	33	20	650	60 x 35	31.2 x 30.2	81
600	840 x 592	36	20	770	67 x 38	34.2 x 33.2	85

- All dimensions in millimetres

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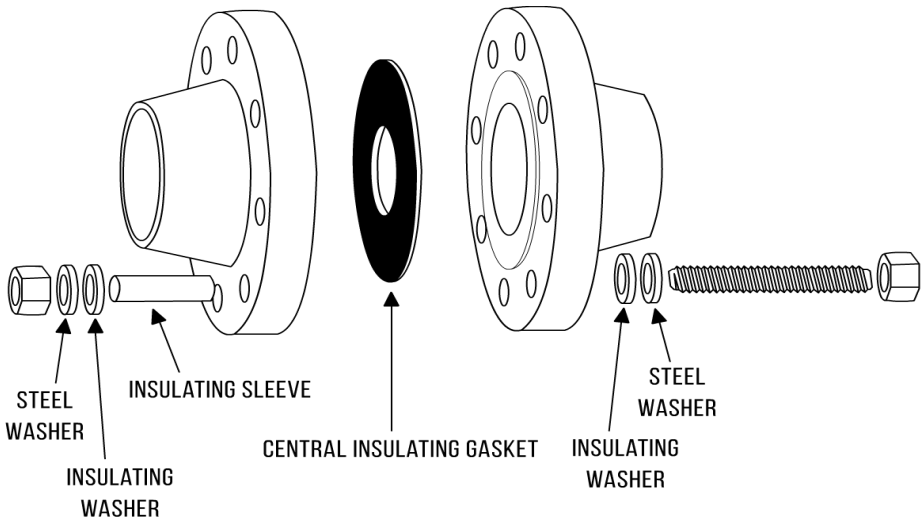
INSULATION KITS – PN16 DIMENSIONS (TYPE F – IBC)



NOMINAL BORE	INSULATING GASKET	NO. OF HOLES	INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID		OD x ID	OD x ID	LENGTH
15	50 x 17	4	29 x 16	13.2 x 12.2	41
20	60 x 22	4	29 x 16	13.2 x 12.2	45
25	70 x 28	4	29 x 16	13.2 x 12.2	45
32	80 x 37	4	33 x 19	17.2 x 16.2	45
40	90 x 43	4	33 x 19	17.2 x 16.2	45
50	105 x 55	4	33 x 19	17.2 x 16.2	49
65	125 x 70	8	33 x 19	17.2 x 16.2	49
80	140 x 83	8	33 x 19	17.2 x 16.2	53
100	160 x 107	8	33 x 19	17.2 x 16.2	53
125	190 x 131	8	33 x 19	17.2 x 16.2	57
150	216 x 159	8	38 x 22	21.2 x 20.2	57
200	271 x 208	12	38 x 22	21.2 x 20.2	61
250	327 x 260	12	51 x 29	25.2 x 24.2	65
300	382 x 310	12	51 x 29	25.2 x 24.2	69
350	442 x 340	16	51 x 29	25.2 x 24.2	73
400	493 x 390	16	56 x 32	28.2 x 27.2	77
450	553 x 441	20	56 x 32	28.2 x 27.2	81
500	615 x 492	20	60 x 35	31.2 x 30.2	81
600	732 x 592	20	67 x 38	34.2 x 33.2	85

- All dimensions in millimetres

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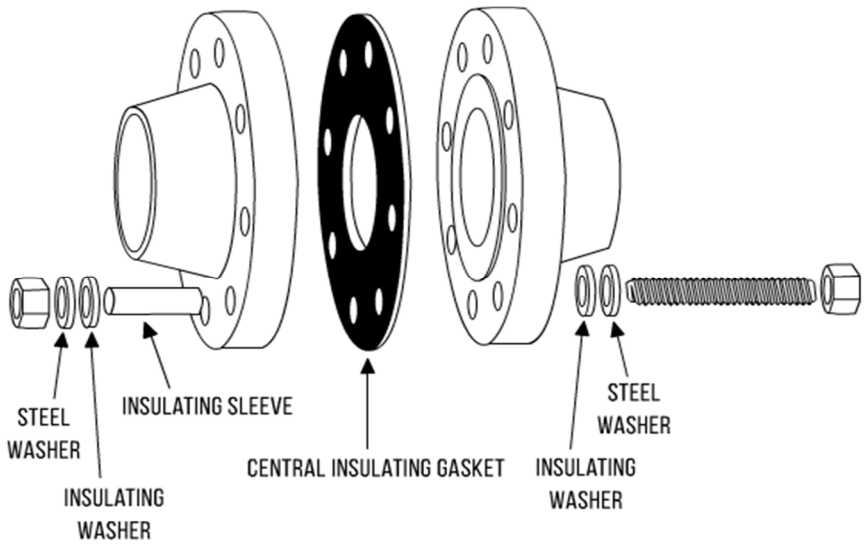
INSULATION KITS – PN25 DIMENSIONS (TYPE E – FULL FACE)



NOMINAL BORE	INSULATING GASKET				INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID	HOLE DIA.	NO. OF HOLES	BOLT P.C.D	OD x ID	OD x ID	LENGTH
15	95 x 17	14	4	65	29 x 16	13.2 x 12.2	45
20	105 x 22	14	4	75	29 x 16	13.2 x 12.2	49
25	115 x 28	14	4	85	29 x 16	13.2 x 12.2	49
32	140 x 37	18	4	100	33 x 19	17.2 x 16.2	49
40	150 x 43	18	4	110	33 x 19	17.2 x 16.2	49
50	165 x 55	18	4	125	33 x 19	17.2 x 16.2	53
65	185 x 70	18	8	145	33 x 19	17.2 x 16.2	57
80	200 x 83	18	8	160	33 x 19	17.2 x 16.2	61
100	235 x 107	22	8	190	38 x 22	21.2 x 20.2	61
125	270 x 131	26	8	220	51 x 29	25.2 x 24.2	65
150	300 x 159	26	8	250	51 x 29	25.2 x 24.2	69
200	360 x 207	26	12	310	51 x 29	25.2 x 24.2	73
250	425 x 259	30	12	370	56 x 32	28.2 x 27.2	77
300	485 x 308	30	16	430	56 x 32	28.2 x 27.2	81
350	555 x 340	33	16	490	60 x 35	31.2 x 30.2	89
400	620 x 389	36	16	550	67 x 38	34.2 x 33.2	93
450	670 x 439	36	20	600	67 x 38	34.2 x 33.2	97
500	730 x 488	36	20	660	67 x 38	34.2 x 33.2	101
600	845 x 588	39	20	770	71 x 41	37.2 x 36.2	105

- All dimensions in millimetres

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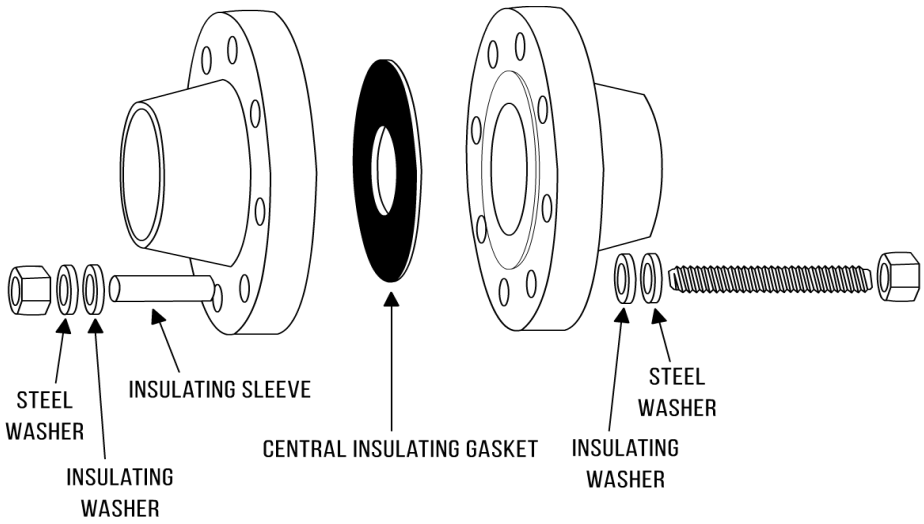
INSULATION KITS – PN25 DIMENSIONS (TYPE F – IBC)



NOMINAL BORE	INSULATING GASKET	NO. OF HOLES	INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID		OD x ID	OD x ID	LENGTH
15	50 x 17	4	29 x 16	13.2 x 12.2	45
20	60 x 22	4	29 x 16	13.2 x 12.2	49
25	70 x 28	4	29 x 16	13.2 x 12.2	49
32	80 x 37	4	33 x 19	17.2 x 16.2	49
40	90 x 43	4	33 x 19	17.2 x 16.2	49
50	105 x 55	4	33 x 19	17.2 x 16.2	53
65	125 x 70	8	33 x 19	17.2 x 16.2	57
80	140 x 83	8	33 x 19	17.2 x 16.2	61
100	166 x 107	8	38 x 22	21.2 x 20.2	61
125	192 x 131	8	51 x 29	25.2 x 24.2	65
150	222 x 159	8	51 x 29	25.2 x 24.2	69
200	282 x 207	12	51 x 29	25.2 x 24.2	73
250	338 x 259	12	56 x 32	28.2 x 27.2	77
300	388 x 308	16	56 x 32	28.2 x 27.2	81
350	455 x 340	16	60 x 35	31.2 x 30.2	89
400	512 x 389	16	67 x 38	34.2 x 33.2	93
450	563 x 439	20	67 x 38	34.2 x 33.2	97
500	622 x 488	20	67 x 38	34.2 x 33.2	101
600	729 x 588	20	71 x 41	37.2 x 36.2	105

- All dimensions in millimetres

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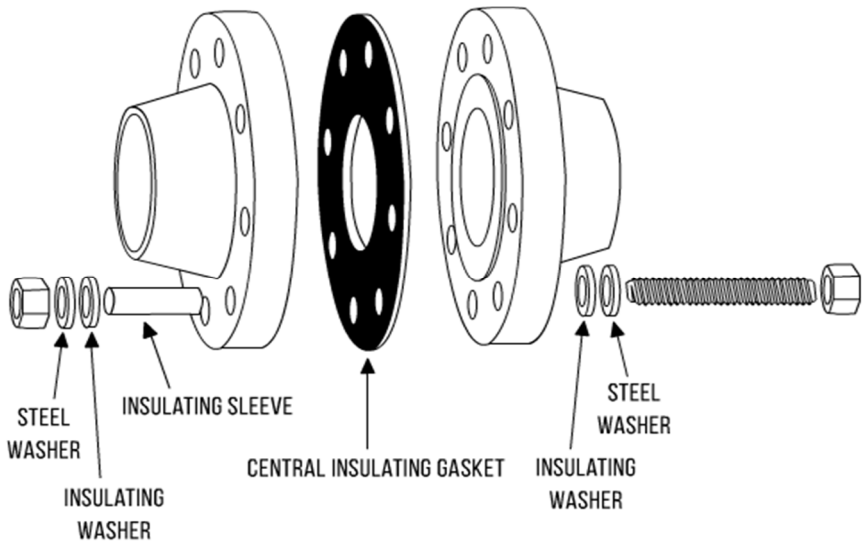
INSULATION KITS – PN40 DIMENSIONS (TYPE E – FULL FACE)



NOMINAL BORE	INSULATING GASKET				INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID	HOLE DIA.	NO. OF HOLES	BOLT P.C.D	OD x ID	OD x ID	LENGTH
15	95 x 17	14	4	65	29 x 16	13.2 x 12.2	45
20	105 x 22	14	4	75	29 x 16	13.2 x 12.2	49
25	115 x 28	14	4	85	29 x 16	13.2 x 12.2	49
32	140 x 37	18	4	100	33 x 19	17.2 x 16.2	49
40	150 x 43	18	4	110	33 x 19	17.2 x 16.2	49
50	165 x 55	18	4	125	33 x 19	17.2 x 16.2	53
65	185 x 70	18	8	145	33 x 19	17.2 x 16.2	57
80	200 x 83	18	8	160	33 x 19	17.2 x 16.2	61
100	235 x 107	22	8	190	38 x 22	21.2 x 20.2	61
125	270 x 131	26	8	220	51 x 29	25.2 x 24.2	65
150	300 x 159	26	8	250	51 x 29	25.2 x 24.2	69
200	375 x 207	30	12	320	56 x 32	28.2 x 27.2	81
250	450 x 259	33	12	385	60 x 35	31.2 x 30.2	89
300	515 x 308	33	16	450	60 x 35	31.2 x 30.2	97
350	580 x 338	36	16	510	67 x 38	34.2 x 33.2	105
400	660 x 384	39	16	585	71 x 41	37.2 x 36.2	103
450	685 x 432	39	20	610	71 x 41	37.2 x 36.2	113
500	755 x 480	42	20	670	71 x 41	40.2 x 39.2	117
600	890 x 578	48	20	795	83 x 48	46.2 x 45.2	133

- All dimensions in millimetres

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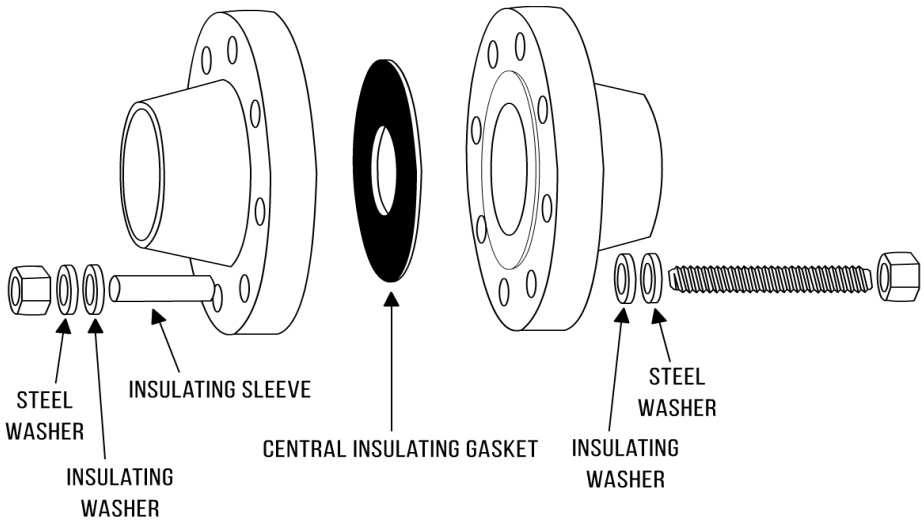
INSULATION KITS – PN40 DIMENSIONS (TYPE F – IBC)



NOMINAL BORE	INSULATING GASKET	NO. OF HOLES	INSULATING WASHERS	INSULATING SLEEVES	
	OD x ID		OD x ID	OD x ID	LENGTH
15	50 x 17	4	29 x 16	13.2 x 12.2	45
20	60 x 22	4	29 x 16	13.2 x 12.2	49
25	70 x 28	4	29 x 16	13.2 x 12.2	49
32	80 x 37	4	33 x 19	17.2 x 16.2	49
40	90 x 43	4	33 x 19	17.2 x 16.2	49
50	105 x 55	4	33 x 19	17.2 x 16.2	53
65	125 x 70	8	33 x 19	17.2 x 16.2	57
80	140 x 83	8	33 x 19	17.2 x 16.2	61
100	166 x 107	8	38 x 22	21.2 x 20.2	61
125	192 x 131	8	51 x 29	25.2 x 24.2	65
150	222 x 159	8	51 x 29	25.2 x 24.2	69
200	288 x 207	12	56 x 32	28.2 x 27.2	81
250	350 x 259	12	60 x 35	31.2 x 30.2	89
300	415 x 308	16	60 x 35	31.2 x 30.2	97
350	472 x 338	16	67 x 38	34.2 x 33.2	105
400	544 x 384	16	71 x 41	37.2 x 36.2	103
450	570 x 432	20	71 x 41	37.2 x 36.2	113
500	626 x 480	20	71 x 41	40.2 x 39.2	117
600	745 x 578	20	83 x 48	46.2 x 45.2	133

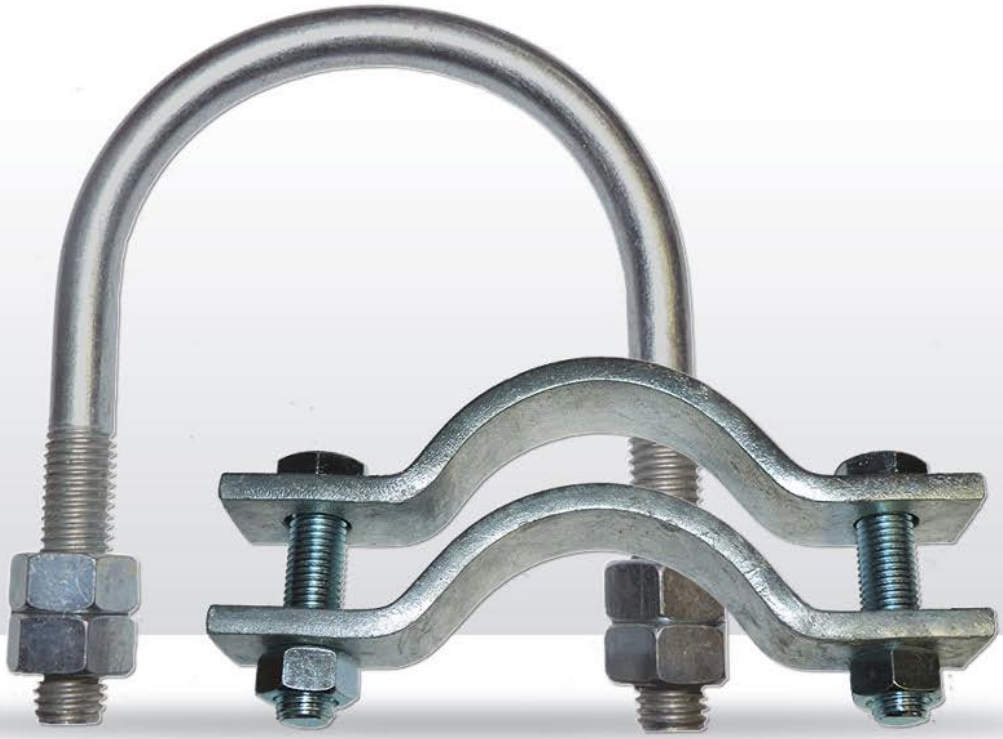
- All dimensions in millimetres

STUDBOLT
SCOTLAND LIMITED

PETROCHEMICAL AND INDUSTRIAL GRADE FASTENERS AND SUPPLIES

PIPE SUPPORT BROCHURE

U-BOLTS, PIPE CLIPS, & ACCESSORIES



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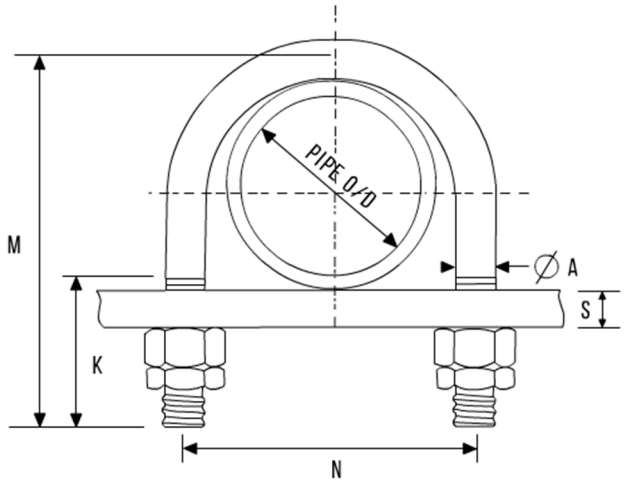
GRIP TYPE U-BOLTS – BS3974



NOM SIZE	PIPE O/D	A (DIA)	N	M	K	S (MAX)
15	21.3	8	30	50	25	7
20	26.9	8	35	60	25	10
25	33.7	8	45	65	25	10
32	42.4	8	55	75	25	10
40	48.3	10	60	90	35	16
50	60.3	10	75	100	35	16
65	76.1	12	90	130	45	19
80	88.9	16	105	150	50	19
100	114.3	16	135	175	50	19
125	139.7	16	160	200	50	19
150	168.3	20	190	235	55	19
175	193.7	20	215	260	55	19
200	219.1	20	245	295	55	19
225	244.5	20	270	310	55	19
250	273.0	20	300	350	60	22
300	323.9	20	350	400	60	22
350	355.6	24	385	440	65	22
400	406.4	24	435	500	65	22
450	457.0	24	485	540	70	22
500	508.0	24	540	600	70	22
550	559.0	24	590	650	70	22
600	610.0	24	640	700	70	22

- All dimensions in millimetres
- Finish – Bright Zinc Plated (Also available in Galvanised and Stainless Steel on request)

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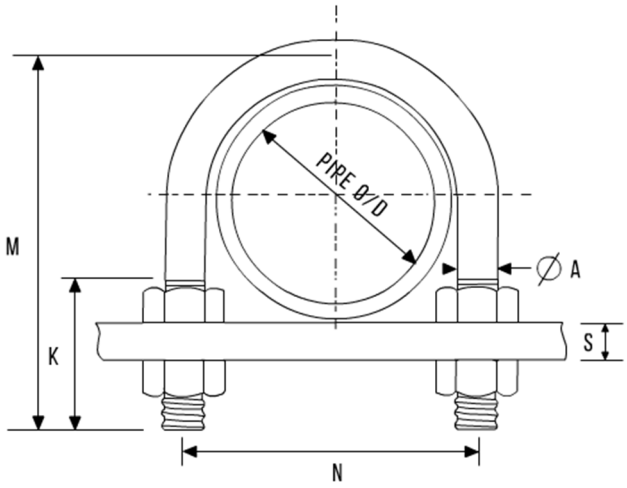
NON-GRIP TYPE U-BOLTS – BS3974



NOM SIZE	PIPE O/D	A (DIA)	N	M	K	S (MAX)
15	21.3	8	40	45	25	10
20	26.9	8	45	55	30	10
25	33.7	8	50	60	30	10
32	42.4	8	60	70	30	10
40	48.3	10	65	85	40	16
50	60.3	10	80	100	40	16
65	76.1	12	95	120	50	19
80	88.9	16	110	140	55	19
100	114.3	16	140	165	55	19
125	139.7	16	165	190	55	19
150	168.3	20	195	225	65	19
175	193.7	20	220	250	65	19
200	219.1	20	250	275	65	19
225	244.5	20	275	300	65	19
250	273.0	20	305	335	75	22
300	323.9	20	355	385	75	22
350	355.6	24	390	425	80	22
400	406.4	24	440	475	80	22
450	457.0	24	495	525	80	22
500	508.0	24	545	575	80	22
550	559.0	24	595	625	80	22
600	610.0	24	645	675	80	22

- All dimensions in millimetres
- Finish – Bright Zinc Plated (Also available in Galvanised and Stainless Steel on request)

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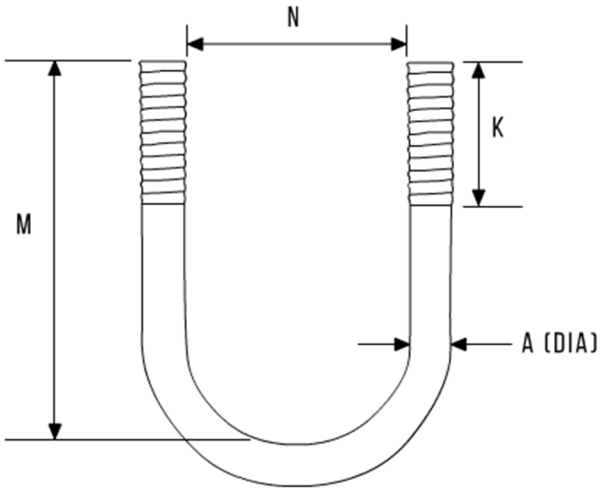
STANDARD U-BOLTS



NOM SIZE	A (DIA)	M	N	K
15	6	48	21	30
20	6	53	27	30
25	6	60	34	30
32	10	70	45	40
40	10	75	51	40
50	10	85	60	40
65	10	100	76	40
80	12	115	90	40
100	12	140	114	40
125	12	165	140	40
150	12	200	170	50
200	16	260	225	50
250	16	315	277	50
300	16	360	324	50
350	16	395	365	75
400	16	495	415	85
450	16	535	465	85
500	16	595	520	85
550	20	645	570	90
600	20	695	620	90

- All dimensions in millimetres
- Finish – Bright Zinc Plated, Galvanised & Stainless Steel

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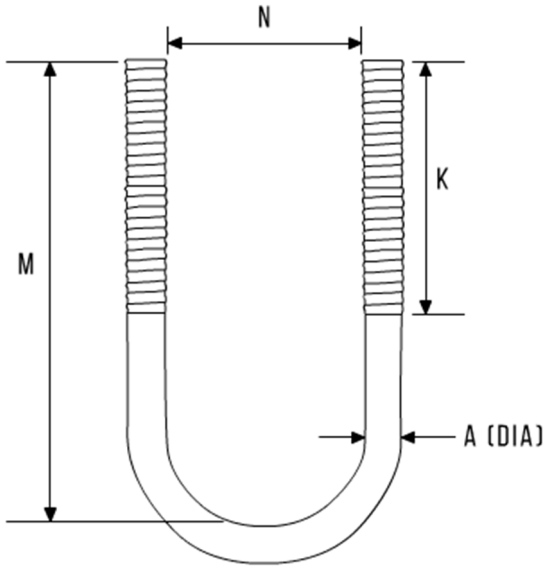
EXTENDED LEG U-BOLTS



NOM SIZE	A (DIA)	M	N	K
15	6	97	21	75
20	6	103	27	75
25	6	111	34	75
32	10	122	45	85
40	10	127	51	85
50	10	140	60	85
65	10	152	76	85
80	12	168	90	90
100	12	193	114	90
125	12	213	140	90
150	12	240	170	90
200	16	298	225	95
250	16	349	277	95
300	16	387	324	95

- All dimensions in millimetres
- Finish – Bright Zinc Plated (Also available in Galvanised and Stainless Steel on request)

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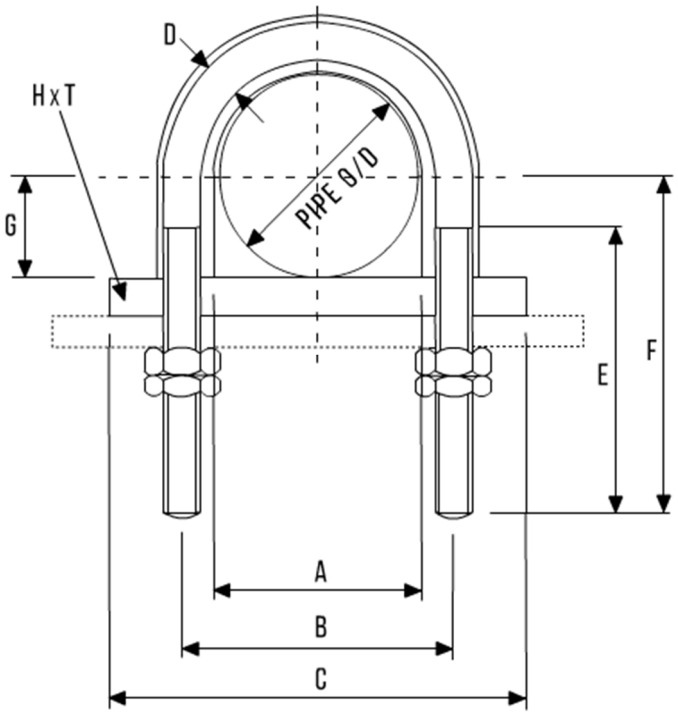
INSULATED GRIP TYPE U-BOLTS



N/B	A	B	C	D	E	F	G	H x T	L
15	21	37	60	M6	60	60	10.5	25 x 10	220
20	27	43	70	M6	60	65	13.5	25 x 10	220
25	34	50	75	M6	60	65	17	25 x 10	220
32	43	69	95	M10	70	80	21	25 x 10	545
40	49	75	100	M10	70	80	24.5	25 x 10	545
50	61	87	110	M10	75	90	30.5	25 x 10	545
65	76	102	135	M12	75	95	38	30 x 10	1000
80	89	115	140	M12	75	100	44.5	30 x 10	1000
100	115	141	170	M12	75	110	57.5	30 x 10	1000
150	168	210	250	M16	120	180	84	50 x 10	1635
200	219	262	315	M16	120	200	109.5	50 x 10	1635
250	273	324	375	M20	120	235	136.5	50 x 10	3405
300	324	375	425	M20	120	265	162	50 x 10	3405

- All dimensions in millimetres
- U-Bolt & Nuts: Carbon Steel - Bright Zinc Plated Finish
- Isolator: HT/FR Silicone Rubber Elastomer (-70° to 300°C) / Extruded 70/80 FR Neoprene (-30° to 100°C)

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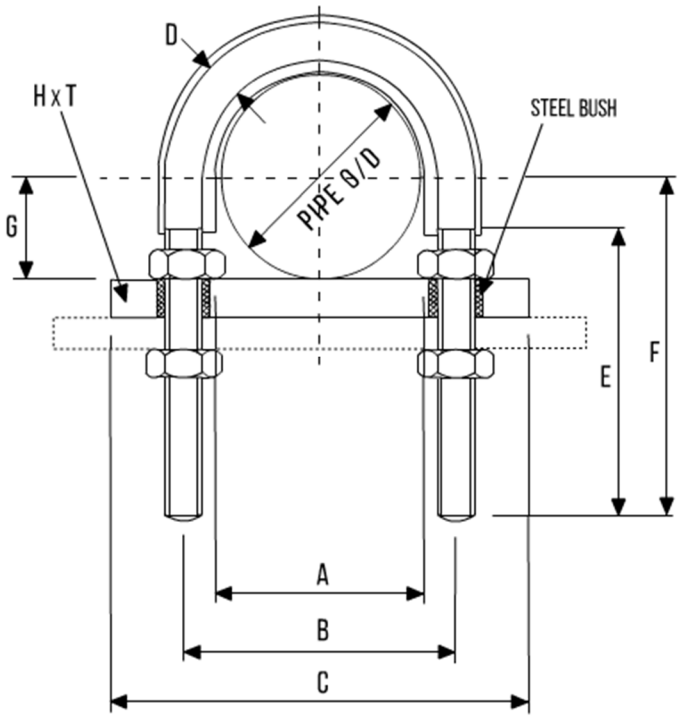
INSULATED NON-GRIP U-BOLTS



N/B	A	B	C	D	E	F	G	H x T	L
15	23	37	60	M6	60	60	11.5	25 x 10	220
20	29	43	70	M6	60	65	14.5	25 x 10	220
25	36	50	75	M6	60	65	18.0	25 x 10	220
32	45	69	95	M10	70	80	22.5	25 x 10	545
40	52	75	100	M10	70	80	26.0	25 x 10	545
50	64	87	110	M10	75	90	32.0	25 x 10	545
65	79	102	135	M12	75	95	39.5	30 x 10	1000
80	92	115	140	M12	75	100	46.0	30 x 10	1000
100	118	141	170	M12	75	110	59.0	30 x 10	1000
150	172	210	250	M16	120	180	86.0	50 x 10	1635
200	224	262	315	M16	120	200	112.0	50 x 10	1635
250	278	324	375	M20	130	235	139.0	50 x 10	3405
300	329	375	425	M20	130	265	164.5	50 x 10	3405

- All dimensions in millimetres
- U-Bolt & Nuts: Carbon Steel - Bright Zinc Plated Finish
- Isolator: HT/FR Silicone Rubber Elastomer (-70° to 300°C) / Extruded 70/80 FR Neoprene (-30° to 100°C)

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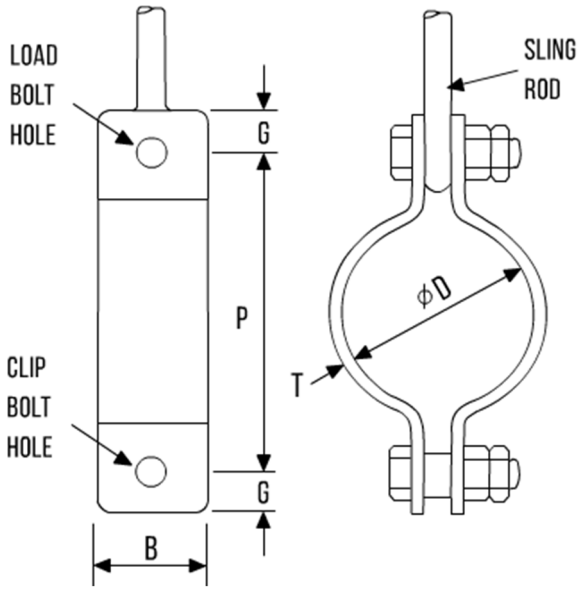
2 BOLT PIPE CLIPS – HEAVY SERIES (BS3974)



NOM	PIPE O/C	ROD DIA	D (DIA)	CLIP B x T	P	BOLT	HOLE DIA	G (MIN)	SWL
15	21.3	10	23	35 x 5	65	M10	12	15	280 KGF
20	26.9	10	28	35 x 5	70	M10	12	15	280 KGF
25	33.7	10	36	35 x 5	75	M10	12	15	280 KGF
32	42.4	12	44	35 x 5	90	M12	15	18	280 KGF
40	48.3	12	50	35 x 5	95	M12	15	18	280 KGF
50	60.3	12	62	35 x 5	105	M12	15	18	280 KGF
65	76.1	16	80	35 x 8	155	M12	19	24	450 KGF
80	88.9	16	92	35 x 8	165	M16	19	24	450 KGF
100	114.3	16	118	35 x 8	190	M16	19	24	450 KGF
125	139.7	16	144	35 x 8	215	M16	19	24	450 KGF
150	168.3	16	172	35 x 8	245	M16	19	24	450 KGF
175	193.7	16	198	45 x 10	280	M16	19	24	900 KGF
200	219.1	16	224	45 x 10	305	M16	19	24	900 KGF
225	244.5	20	248	60 x 10	340	M20	24	30	1350 KGF
250	273.0	20	278	60 x 10	365	M20	24	30	1350 KGF
300	323.9	24	330	60 x 15	455	M24	28	36	1800 KGF
350	355.6	30	362	60 x 15	500	M30	35	45	2250 KGF
400	406.4	30	412	65 x 20	575	M30	35	45	2700 KGF
450	457.0	36	464	80 x 20	635	M36	42	54	3600 KGF
500	508.0	36	516	90 x 25	715	M36	42	54	4500 KGF
550	559.0	36	566	90 x 25	765	M36	42	54	4500 KGF
600	610.0	42	618	110 x 25	830	M42	48	63	5900 KGF

- All dimensions in millimetres
- Finish – Galvanised (Also available Self Colour and in Stainless Steel on request)

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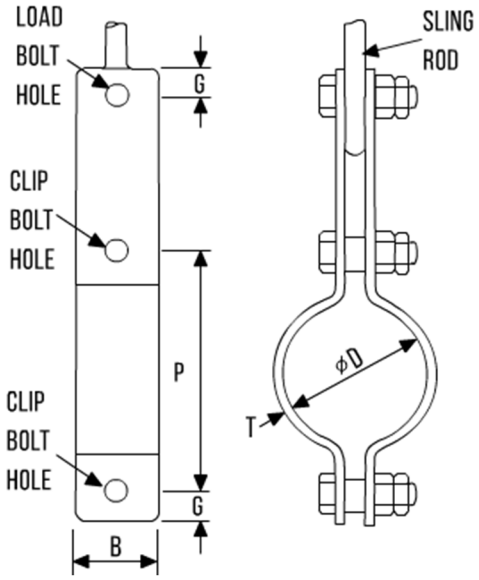
3 BOLT PIPE CLIPS – HEAVY SERIES (BS3974)



NOM	PIPE O/C	ROD DIA	D (DIA)	CLIP B x T	P	BOLT	HOLE DIA	G (MIN)	SWL
15	21.3	10	23	35 x 5	65	M10	12	15	280 KGF
20	26.9	10	28	35 x 5	70	M10	12	15	280 KGF
25	33.7	10	36	35 x 5	75	M10	12	15	280 KGF
32	42.4	12	44	35 x 5	90	M12	15	18	280 KGF
40	48.3	12	50	35 x 5	95	M12	15	18	280 KGF
50	60.3	12	62	35 x 5	105	M12	15	18	280 KGF
65	76.1	16	80	35 x 8	155	M12	19	24	450 KGF
80	88.9	16	92	35 x 8	165	M16	19	24	450 KGF
100	114.3	16	118	35 x 8	190	M16	19	24	450 KGF
125	139.7	16	144	35 x 8	215	M16	19	24	450 KGF
150	168.3	16	172	35 x 8	245	M16	19	24	450 KGF
175	193.7	16	198	45 x 10	288	M20	24	30	900 KGF
200	219.1	16	224	45 x 10	315	M20	24	30	900 KGF
225	244.5	20	248	60 x 15	365	M20	24	30	1350 KGF
250	273.0	20	278	60 x 15	390	M20	24	30	1350 KGF
300	323.9	24	330	65 x 20	475	M24	28	36	1800 KGF
350	355.6	30	362	65 x 20	525	M30	35	45	2250 KGF
400	406.4	30	412	90 x 25	600	M30	35	45	2700 KGF
450	457.0	36	464	90 x 25	660	M36	42	54	3600 KGF
500	508.0	36	516	100 x 30	740	M36	42	54	4500 KGF
550	559.0	36	566	100 x 30	790	M36	42	54	4500 KGF
600	610.0	42	618	100 x 35	880	M42	48	63	5900 KGF

- All dimensions in millimetres
- Finish – Galvanised (Also available Self Colour and in Stainless Steel on request)

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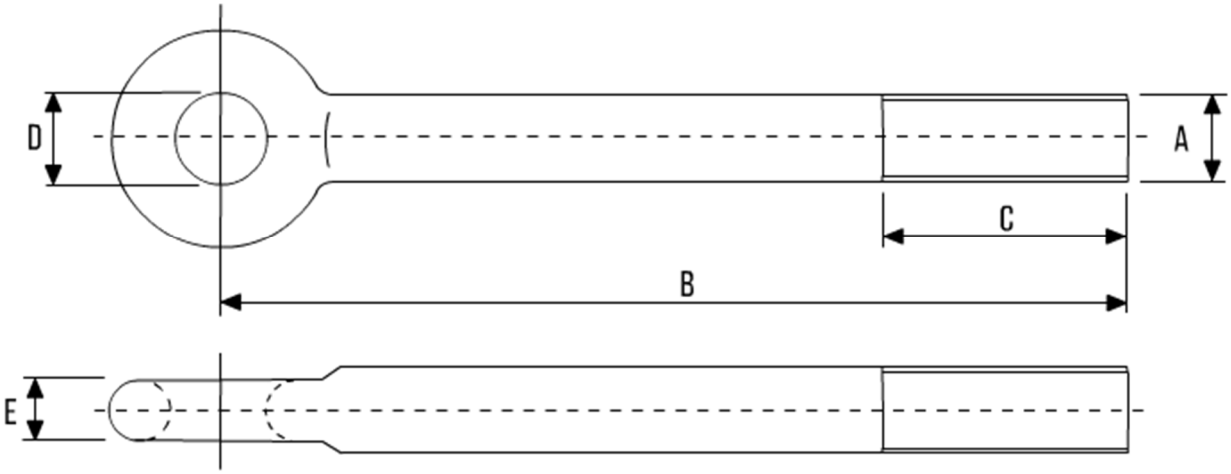
SLING ROD EYEBOLT – INTEGRAL FORGED EYE BS3974



A	B*	C*	D	E	SWL
M8	300	200	14	6	230 KG
M10	300	200	16	7	360 KG
M12	300	200	18	9	530 KG
M16	300	200	22	12	1010 KG
M20	300	200	26	14	1580 KG
M24	300	200	30	17	2280 KG
M30	300	200	36	21	3650 KG
M36	300	200	42	26	5340 KG
M42	300	200	48	30	7400 KG

*Denotes standard sizes. Shorter lengths available. Longer shanks up to 3000mm also available.

- All dimensions in millimetres
- Available in Carbon, Alloy & Stainless Steels
- Full range of different finishes available

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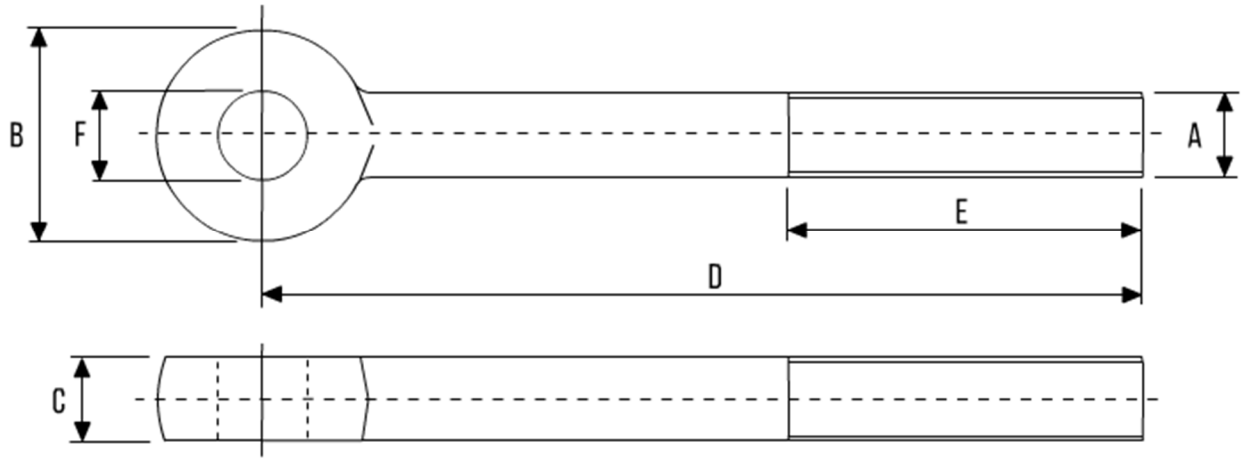
PALM EYEBOLT – STRAIGHT SIDES



A (MM)	A (INCH)	B	C	D (MIN)	D (MAX)	E (MIN)	E (MAX)	F
M8	5/16”	16	8	30	3000	15	1500	8
M10	3/8”	25	10	35	3000	15	1500	10
M12	1/2”	26	13	38	3000	18	1500	13
M12	---	34	12	45	3000	18	1500	12
M16	5/8”	32	16	45	5500	20	2000	16
M16	5/8”	38	16	45	5500	20	2000	16
M20	3/4”	42	20	55	5500	25	2000	20
M20	3/4”	50	20	60	5500	25	2000	20
M24	1”	51	26	65	5500	30	2000	26
M24	---	51	24	65	5500	30	2000	24
M30	1.1/8”	60	30	70	5500	35	2000	30
M33	1.1/4”	70	33	90	5500	40	2000	33
M39	1.1/2”	80	39	95	5500	45	2000	39
M56	2.1/4”	115	56	120	1000	50	800	56
M64	2.1/2”	130	64	140	1000	60	800	64
M72	2.3/4”	150	72	165	1000	75	800	72
M76	3”	150	76	170	1000	85	800	76

*Denotes standard sizes. Shorter lengths available. Longer shanks up to 3000mm also available.

- Dimensions in millimetres (unless stated)
- Available in Carbon, Alloy & Stainless Steels
- Full range of different finishes available

8 Abbotsinch Road,
Grangemouth, FK3 9UX
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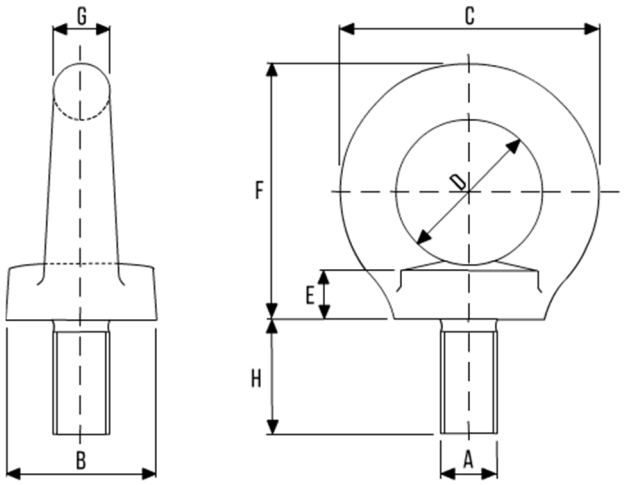
DIN580 EYEBOLT



A	B	C	D	E	F	G	H	SWL
M6	17	28	16	6	31	6	13	70 KG
M8	20	36	20	6	36	8	15	140 KG
M10	25	45	25	8	45	10	18	230 KG
M12	30	54	30	10	53	12	22	340 KG
M14	35	63	35	12	62	14	28	490 KG
M16	35	63	35	12	62	16	28	700 KG
M20	40	72	40	14	71	18	30	1200 KG
M22	45	81	45	16	80	20	35	1500 KG
M24	50	90	50	16	90	20	38	1800 KG
M27	50	90	50	18	90	24	38	2500 KG
M30	65	108	60	18	109	24	45	3200 KG
M33	65	108	60	22	109	28	45	4300 KG
M36	75	126	70	22	128	28	55	4600 KG
M39	75	126	70	26	128	32	55	6100 KG
M42	85	144	80	30	147	32	65	7000 KG
M45	85	144	90	30	147	36	65	8000 KG
M48	100	166	90	35	168	36	70	8600 KG
M52	100	166	90	35	168	36	70	9900 KG
M56	110	184	100	38	187	42	80	11500 KG
M64	120	206	110	42	208	48	90	16000 KG

- Dimensions in millimetres
- SWL shown for vertical lift
- Available in Carbon, Alloy & Stainless Steels
- Full range of different finishes available

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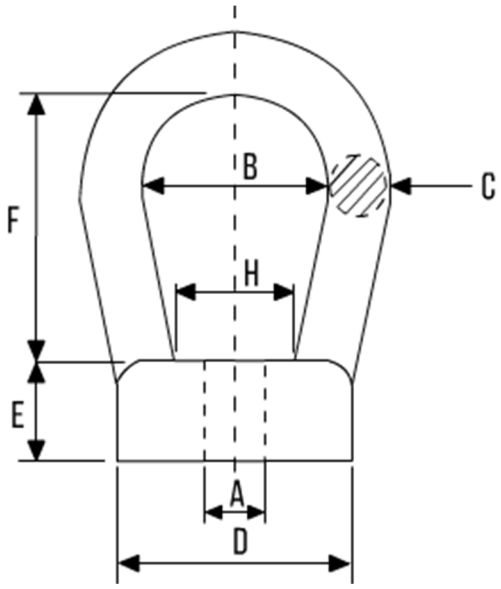
WELDLESS EYENUT (BOWNUT)



A (MM)	A (INCH)	B	C	D	E	F	H	SWL
M8	1/4"	25	10	32	16	41	18	230 KG
M10	3/8"	25	10	32	16	41	18	360 KG
M12	1/2"	30	12	38	18	43	20	530 KG
M16	5/8"	30	12	38	18	43	20	1010 KG
M18	3/4"	40	14	45	25	63	25	1290 KG
M20	3/4"	40	14	45	25	63	25	1580 KG
M22	7/8"	50	17	50	28	79	30	1930 KG
M24	1"	50	17	50	28	79	30	2280 KG
M30	1.1/8"	75	26	70	38	82	46	3650 KG
M33	1.1/4"	75	26	70	38	82	46	4490 KG
M36	1.1/2"	75	26	70	38	82	46	5340 KG
M42	1.3/4"	100	30	80	45	105	59	7400 KG

- Dimensions in millimetres (unless stated)
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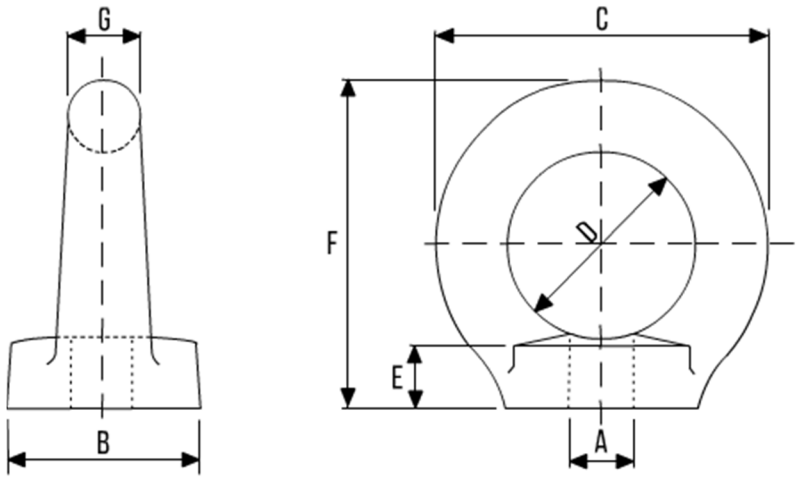
DIN582 EYENUT



A	B	C	D	E	F	G	SWL
M6	20	36	20	8.5	36	8	70 KG
M8	20	36	20	8.5	36	8	140 KG
M10	25	45	25	10	45	10	230 KG
M12	30	54	30	11	53	12	340 KG
M14	35	63	35	13	62	14	490 KG
M16	35	63	35	13	62	14	700 KG
M20	40	72	40	16	71	16	1200 KG
M22	45	81	45	18	81	18	1500 KG
M24	50	90	50	20	90	20	1800 KG
M27	50	90	50	20	90	20	2500 KG
M30	65	108	60	25	109	24	3200 KG
M33	65	108	60	25	109	24	4300 KG
M36	75	126	70	30	128	28	4600 KG
M39	75	126	70	30	128	28	6100 KG
M42	85	144	80	35	147	32	6300 KG
M45	85	144	80	35	147	32	8000 KG
M48	100	166	90	40	168	38	8600 KG
M52	100	166	90	40	168	38	9900 KG
M56	110	184	100	45	187	42	11500 KG
M64	120	206	110	50	208	48	16000 KG

- Dimensions in millimetres
- SWL shown for vertical lift
- Available in Carbon, Alloy & Stainless Steels
- Full range of different finishes available

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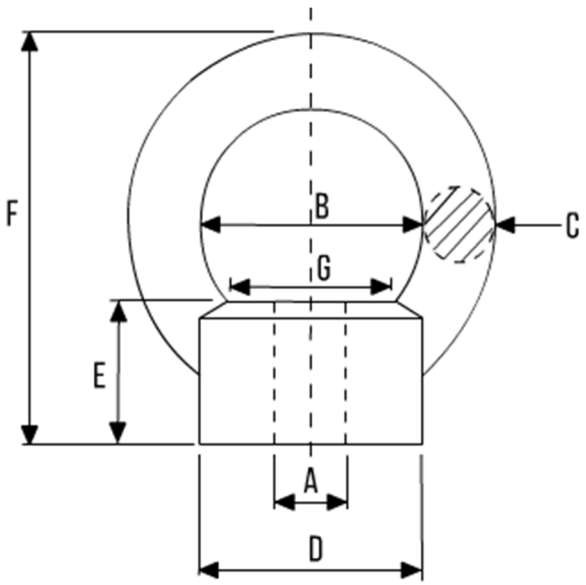
STANDARD EYENUT



A	A	B	C	D	E	F	H	SWL
M6	1/4"	25	9	22	14	47	16	60 KG
M8	5/16"	25	9	22	14	47	16	95 KG
M10	3/8"	25	9	22	14	47	16	160 KG
M12	1/2"	44	13	29	22	78	23	320 KG
M16	5/8"	44	13	29	22	78	23	630 KG
M18	---	47	16	39	26	84	31	1000 KG
M20	3/4"	47	6	39	26	84	31	1250 KG
M22	7/8"	47	16	39	26	84	31	1600 KG
M24	1"	52	21	44	38	105	36	2000 KG

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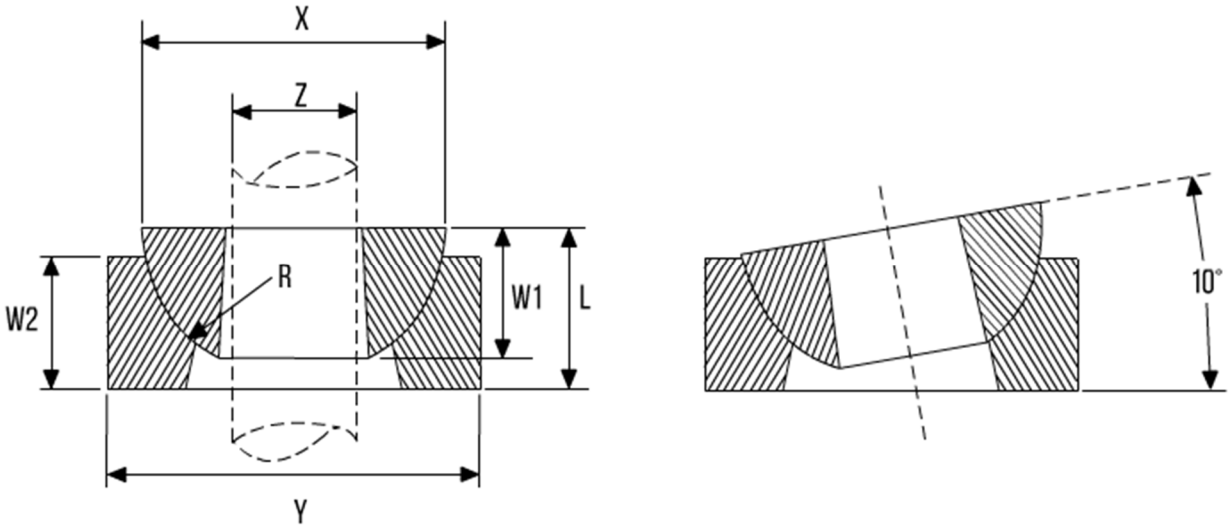
HEMISPHERICAL WASHER & CUP



Z	X	W1	Y	W2	R	L
M8	22	10	-	-	-	-
M10	25	12	32	12	13	14
M12	29	12	35	12	14	16
M16	34	16	41	16	17	19
M20	44	19	54	19	22	24
M24	57	25	67	25	29	32

- Dimensions in millimetres
- Material - Malleable Iron
- Available bright zinc plated or hot dipped galvanised.
- For vertical suspension on angled surface of up to 10° swing either side of the vertical.
- The hemispherical washer can be used without the cup.

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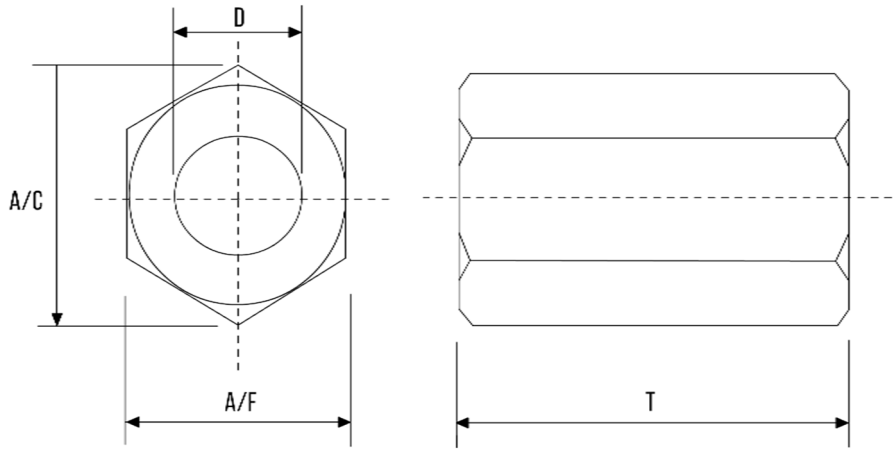
HEX CONNECTING NUT



DIA (D)	PITCH (COARSE)	A/F	A/C	T
M6	1.00	10.00	11.05	18
M8	1.25	13.00	14.38	24
M10	1.50	17.00	18.90	30
M12	1.75	19.00	21.10	36
M14	2.00	22.00	24.49	42
M16	2.00	24.00	26.75	48
M18	2.50	27.00	29.56	54
M20	2.50	30.00	33.53	60
M22	2.50	32.00	35.03	66
M24	3.00	36.00	41.60	72
M27	3.00	41.00	45.20	81
M30	3.50	46.00	50.85	90
M33	3.50	50.00	55.37	99
M36	4.00	55.00	60.79	108

- Dimensions in millimetres (unless stated)
- Available in Self Colour, Zinc Plated & Galvanised
- Other materials manufactured on request

STUDBOLT SCOTLAND LIMITED

PETROCHEMICAL AND INDUSTRIAL GRADE FASTENERS AND SUPPLIES

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