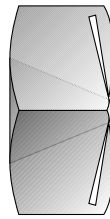
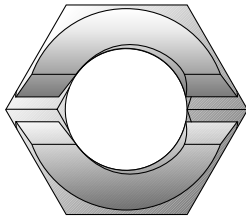




## Binx Nuts



### Dimensional Data

Metric			Imperial					
SIZE mm	Mild Steel, Stainless Steel 303, 316 Et Brass		SIZE	Mild Steel, Stainless Steel 303, 316 Et Brass		SIZE	UNF/UNC	
	A/F Max mm	HEIGHT Max mm		BA/BSF/BSW	HEIGHT Max		A/F Max	HEIGHT Max
M3x0.50	5.5	3.2	4BA	.248	.135	-	-	-
M4X0.70	7.0	3.2	2BA-3/16	.324	.167	No.8	.3125	.167
M5X0.80	8.0	4.1	0BA	.413	.213	No.10	.3125	.167
M6X1.00	10.0	6.1	1/4	.445	.240	1/4	.4375	.240
M8x1.25	13.0	6.4	5/16	.525	.250	5/16	.5000	.270
M10x1.50	17.0	7.9	3/8	.600	.312	3/8	.5625	.330
M12x1.75	19.0	9.9	7/16	.710	.375	7/16	.6875	.380
M14x2.00	22.0	11.0	1/2	.820	.437	1/2	.7500	.440
M16X2.00	24.0	13.0	9/16	.920	.500	9/16	.8750	.490
M18X2.50	27.0	15.0	5/8	1.010	.562	5/8	.9375	.550
M20X2.50	30.0	16.0	3/4	1.200	.687	3/4	1.1250	.660
M22X2.50	32.0	17.8	7/8	1.300	.750	7/8	1.3125	.770
M24X3.00	36.0	18.8	1	1.480	.875	1	1.5000	.880
M27X3.00	41.0	22.2	1 1/8	1.670	1.000	1 1/8	1.6875	.1000
M30X3.50	46.0	23.9	1 1/4	1.860	1.125	1 1/4	1.8750	1.090
M36X4.00	55.0	32.0	-	-	-	-	-	-

### How it works

<p>A standard threaded fastener about to be applied to a Binx nut, which incorporates two opposing cantilevers. These cantilevers are deflected inwards and downwards to engage on the effective diameter and flank of the bolt thread.</p>	<p>Initial installation, with cantilever action reaching the applications' torque requirement. The cantilevers then flex to accommodate and grip the male thread.</p>	<p>The completed assembly, showing the final protrusion of the threads. The cantilever has locked securely within the height of a normal nut.</p>
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All products are tested to ISO 2320 3rd Edition - 1997 on relevant cold forged bolts.  
Application of Binx Nuts on anything other than cold forged bolts must be tested and approved by Binx Technical Support. Phone 00 44 (0)1825 761444 Fax 00 44 (0)1825 761342

- Strong**

The Binx's locking mechanism acts on both the effective diameter and the pitch of the thread, countering the threat posed by vibration or stress

- Compact**

The Binx locking mechanism is incorporated into a nut head of no greater height than that of a standard nut and is ideal for use in restricted places without any need for lengthy bolts.

- Versatile**

The Binx is all-metal and can be confidently used in environments containing oil, grease and other contaminants.

- Reusable**

The Binx's torque resistance is maintained after many applications.

- Convenient**

The Binx is readily available in a wide range of sizes and in a variety of materials, ranging from mild steel to stainless steel.

### Materials

#### Mild Steel

BS970 Pt.3 1991 230M07 Pb (EN1A Pb)

#### Stainless Steel

300 and 316 TYPE

#### Brass

CZ 121

*Other materials on application*

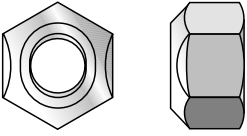
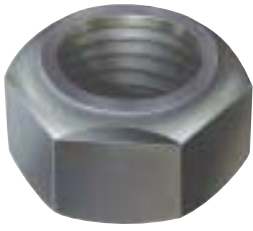
### Tolerances

#### Height of Nut

+0.000 -0.005

AF Hexagon as per relevant standard

## Binx Tri-5 Self Locking Nuts



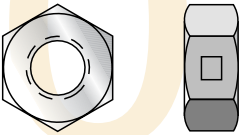
- Easy installation
- Low maintenance application
- Industry standard torque resistance
- Zinc-plated as standard

Tri-5 offers a simple, cost-effective method of permanent fastening on commercial assemblies. Threads are deflected by a controlled method to deform the profile into an oval shape, creating an interference of high consistency. Application examples of Tri-5, which comes in steel grades 8 and 10, include medical equipment, metal furniture and exhaust systems.

### Technical Data – Din 980v

Thread Dia. mm	Pitch	Height Max. mm	A/F Max. mm
6	1	6	10
8	1.25	8	13
10	1.5	10	17
12	1.75	12	19
16	2	16	24
20	2.5	20	30
24	3	24	36

## Binx Tri-6 Self Locking Nuts



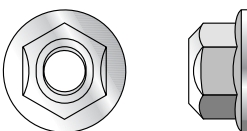
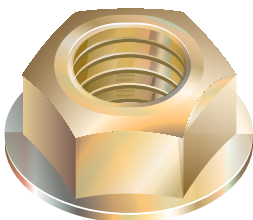
- Ideal for high volume automated assembly
- Consistent high torque removal
- Maintenance free applications
- Zinc-plated as standard

Tri-6 has been added to the TR range to meet specific needs of automatic assembly in maintenance-free applications where cost efficiency is at a premium. Threads are deflected in three equally spaced centrally located areas. This allows the fastening to be positioned and applied with either face up, unlike conventional self-locking components that can be applied from one side only. Application examples include trolley castors and protective cabs.

### Technical Data – Din 934

Thread Dia. mm	Pitch	Height Max. mm	A/F Max. mm
5	0.8	4	8
6	1	5	10
8	1.25	6.5	13
10	1.5	8	17
12	1.75	10	19
16	2	13	24

## Binx Flange Nuts



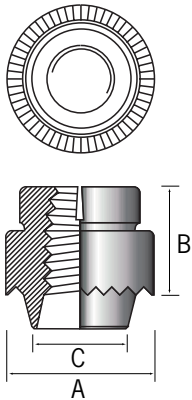
- Integrates locking mechanism and washer face
- High speed assembly
- Efficient load distribution
- Cost effective

Flange nuts incorporate both a locking mechanism and a washer face in a single-piece fastener. In addition to the advantages of a locking mechanism, this ultra-efficient combination lends to the twin benefits of high speed assembly - through eliminating the need for installation of a separate washer - and efficient distribution of load over the bearing face. Flange nuts are available in Grade 8 and 10 steels, with zinc plating as standard.

### Technical Data – Din 980v

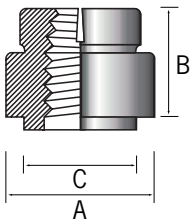
Thread Dia. mm	Pitch	Height Max. mm	A/F Max. mm	Flange Max. dia mm
5	0.8	6.2	8	11.8
6	1	7.3	10	14.2
8	1.25	9.4	13	17.9
10	1.5	11.4	15	21.8
12	1.75	13.8	18	26
14	2	15.9	21	29.9
16	2	18.3	24	34.5
20	2.5	22.4	30	42.8

Also available with a Nylon Insert or Serrated Face locking actions, and in a non locking form.



### Technical Data – Rivet Version

	METRIC	M3	M4	M5	M6	M8	M10	M12
Diameter of spigot C	METRIC	5.5	6.4	7.9	9.2	12.3	15.0	18.9
	IMPERIAL	.217	.253	.312	.364	.486	.590	.746
Diameter of body A	METRIC	7.9	9.5	11.1	12.7	15.9	19.0	25.4
	IMPERIAL	.312	.375	.437	.500	.625	.750	1.00
Body height B	METRIC	4.7	6.0	6.8	9.1	10.9	12.6	16.3
	IMPERIAL	.186	.235	.268	.360	.430	.495	.643
Recommended hole size	METRIC	5.60	6.50	8.0	9.3	12.7	15.1	19.1
	IMPERIAL	.221	.257	.316	.368	.500	.594	.750
Max Panel Thickness	METRIC	1.2	1.2	1.2	1.6	2.0	2.5	2.7
	IMPERIAL	18g	18g	18g	16g	14g	12g	11g



### Technical Data – Weld Version

	METRIC	M4	M5	M6	M8	M10	M12
Diameter of spigot C	METRIC	6.4	7.9	9.5	12.7	15.25	19.2
	IMPERIAL						
Diameter of body A	METRIC	10.0	11.0	12.7	15.9	19.05	25.4
	IMPERIAL						
Body height B	METRIC	6.0	6.8	9.6	11.6	12.7	16.3
	IMPERIAL						
Length of spigot	METRIC	2.05	2.05	2.05	2.05	2.05	2.05
	IMPERIAL						
Recommended hole size	METRIC	6.5	8.0	9.6	12.8	15.35	19.3
	IMPERIAL						

### Materials

#### Mild Steel

BS970 Pt.3 1991 230M07 Pb  
(EN1A Pb)

#### Stainless Steel

300 & 316 TYPE

# 21

### Materials

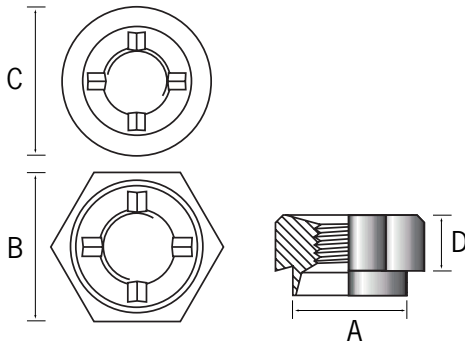
#### Mild Steel

BS970 Pt.3 1991 230M07  
EN1A

#### Stainless Steel

300 & 316 TYPE

## Hankloc



### Materials

**Mild Steel**  
BS970 Pt.3 1991 230M07 Pb  
(EN1A Pb)

**Stainless Steel**  
300 & 316 TYPE

### Technical Data

Thread Form Range	METRIC	M2.5	M3	M3.5	M4	M5	M6	M8	M10	M12
	BSW/F	-	1/8"	-	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"
	BA	8	6,5	4	3	2	0	-	-	-
	UNC	2	4	6	8	10	1/4"	5/16"	3/8"	1/2"
	UNF	2	4	6	8	10	1/4"	5/16"	3/8"	1/2"
Diameter of Spigot A	METRIC	5.54	5.54	6.73	6.73	7.92	9.52	12.70	15.87	19.05
	IMPERIAL	.218	.218	.265	.265	.312	.375	.500	.625	.750
Width across Flats (Hex) B	METRIC	7.92	7.92	7.92	7.92	9.52	11.10	14.27	19.05	22.22
	IMPERIAL	.312	.312	.312	.312	.375	.437	.562	.750	.875
Diameter of Body (RND) C	METRIC	7.92	7.92	9.52	9.52	11.10	12.70	15.87	19.05	25.40
	IMPERIAL	.312	.312	.375	.375	.437	.500	.625	.750	1.000
Depth of Body D	METRIC	3.17	3.17	3.17	3.17	3.81	5.08	6.35	7.62	10.16
	IMPERIAL	.125	.125	.125	.125	.150	.200	.250	.300	.400
Recommended Hole sizes	METRIC	5.54	5.54	6.73	6.73	7.92	9.52	12.70	15.87	19.05
	IMPERIAL	.218	.218	.265	.265	.312	.375	.500	.625	.750

## Specials



Sometimes no off-the-shelf fastener will provide the right answer for a particularly specialised application. In these cases TR has the flexibility and the engineering expertise to provide commercial solutions through the development of threadlocking specials.

In some cases, standard TR threadlocking fasteners can be adapted. In others, standard or adapted fasteners can be integrated with other TR propriety fasteners and/or other components.

For example, components of the Metalstik anti-vibration vehicle mounting pictured above have been adapted and assembled by TR for its customer, BTR Automotive. TR provides and assembles the protruding stud, a Binx nut, a nylon insert nut and a lock nut. TR also provides an

inner metal boss. BTR Automotive then completes the part by incorporating the stud assembly and an inner metal boss – also provide by TR – with the outer housing and rubber mounting.

TR persistently strives to examine this sort of challenge from its customers' point of view and to provide the solution that will suit them best. By developing this sort of partnership philosophy, TR believes it can offer an unrivalled level of service.

- High level engineering support
- Manufacture of associated components
- In-house development and testing
- In-depth knowledge of applications
- Quick turn round time
- 500-1000 minimum order quantities (depending upon size and type)



# Binx Nut Technical Information

## Recommended Tightening Torques

The tables below show the recommended tightening torques for standard thickness unplated nuts with various bolt grades. These figures were obtained from the following formula:

Tightening torque = 0.2 x Bolt tension x normal diameter

Where bolt tension = Minimum yield stress x Minimum core area

1NM = 107 dyn/cm\* N/mm<sup>2</sup> = 1MN/m<sup>2</sup> (Mega N)

Formula provided by the National Engineering Laboratory



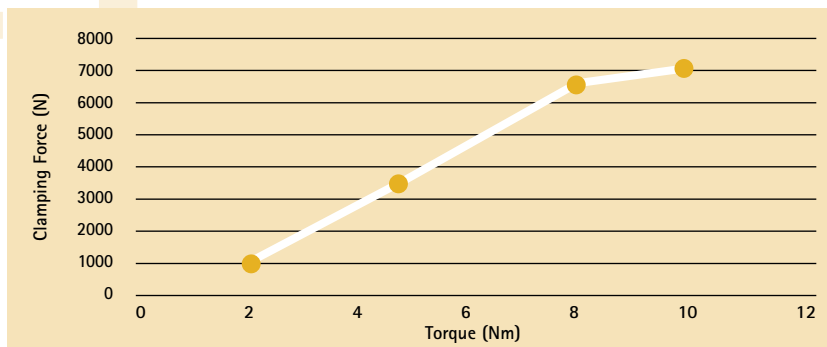
## Metric Series

Metric grade ISO			-	4.6	4.8	5.5	5.8	6.6	6.8	-	8.8	10.9	12.9
Metric grade DIN267			4A	4D/4P	4S	5D	6S	6D	6S	6G	8G	10K	12K
Yield stress kg/mm <sup>2</sup>			20	21	32	28	40	36	48	54	64	90	103
Dia mm	Pitch mm	Core area mm <sup>2</sup>	All tightening torques stated are in Nm										
			4.0	0.50	9.0	1.01	1.06	1.61	1.41	2.01	1.81	2.42	2.72
	0.70	7.8	0.87	0.91	1.39	1.21	1.73	1.56	2.08	2.34	2.77	3.90	4.69
5.0	0.50	15.1	2.11	2.21	3.38	2.96	4.23	3.80	5.07	5.71	6.76	9.52	11.40
	0.80	12.7	1.76	1.86	2.84	2.48	3.55	3.19	4.26	4.80	5.68	7.99	9.58
6.0	0.75	20.3	3.41	3.58	5.46	4.78	6.82	6.14	8.18	9.20	10.90	15.35	18.42
	1.00	17.9	3.00	3.15	4.81	4.21	6.01	5.41	7.21	8.12	9.62	14.46	16.25
8.0	0.75	39.4	8.82	9.26	14.10	12.35	17.85	15.88	21.16	23.83	28.25	39.70	47.60
	1.00	36.0	8.06	8.46	12.90	11.28	18.12	14.50	18.35	21.75	25.80	36.25	43.60
	1.25	32.8	7.34	7.71	11.75	10.28	14.70	13.21	17.62	19.82	23.50	33.05	39.65
10.0	0.75	54.8	18.14	19.04	29.00	25.40	36.30	32.16	43.60	49.00	58.10	81.60	98.00
	1.00	60.5	16.93	17.78	27.10	23.70	33.90	30.50	40.60	45.70	54.20	76.20	91.50
	1.25	56.3	15.75	16.59	25.20	22.20	31.50	28.35	37.80	42.50	50.40	70.90	86.00
	1.50	52.3	14.62	15.35	23.40	20.46	29.23	26.30	35.10	39.48	46.80	65.80	79.00
12.0	1.00	91.2	32.80	34.45	52.50	45.90	66.60	59.00	79.50	88.60	105.00	147.50	177.20
	1.25	86.0	30.92	32.40	48.40	43.30	61.80	55.60	74.10	83.50	99.00	139.00	167.00
	1.50	81.1	29.15	30.60	46.65	40.80	59.30	52.40	70.00	78.75	93.20	131.00	157.50
	1.75	76.2	27.40	28.80	43.80	38.35	54.70	49.30	65.70	73.90	87.70	122.20	147.80
14.0	1.00	128.0	50.10	52.65	80.10	70.10	100.00	90.10	120.00	135.00	160.20	225.00	270.20
	1.25	122.0	47.70	50.10	76.30	66.80	95.40	86.80	114.60	128.80	152.70	215.00	257.80
	1.50	116.0	45.40	47.70	72.50	63.60	90.80	81.80	109.20	123.70	145.50	204.50	245.50
	2.00	105.0	41.10	43.20	66.80	57.60	82.20	74.00	97.60	111.00	131.50	185.00	222.00
16.0	1.00	171.0	76.60	80.40	122.50	107.20	153.00	137.80	183.60	206.50	245.00	344.20	413.00
	1.50	157.0	70.30	73.80	112.40	98.40	140.50	126.50	168.80	188.70	225.00	316.00	379.50
	2.00	144.0	64.50	67.80	103.00	90/30	129.00	116.20	154.70	174.20	206.30	290.00	348.30
18.0	1.00	221.0	111.20	116.90	178.00	157.00	222.20	200.00	267.00	300.50	356.00	501.00	600.00
	1.50	205.0	103.20	108.60	165.00	144.50	206.30	185.70	247.50	278.50	330.00	451.00	557.00
	2.00	190.0	95.60	100.30	153.00	133.80	191.40	172.00	229.50	258.00	306.00	430.00	516.00
	2.50	175.0	79.00	83.00	126.50	110.70	158.00	142.20	189.50	213.50	253.00	355.00	426.50
20.0	1.00	277.0	154.90	162.50	248.00	217.00	288.60	278.50	371.50	416.00	495.00	696.00	836.00
	1.50	259.0	144.80	152.00	231.50	203.00	289.50	260.50	347.50	391.00	464.00	651.00	782.00
	2.00	242.0	135.20	142.00	216.50	189.30	270.50	243.50	324.50	365.00	433.00	608.00	730.00
	2.50	225.0	125.80	132.00	201.00	176.00	251.50	226.00	301.50	339.30	402.00	566.00	678.00

## Metric Coarse Thread ISO 2320 3rd Edition 1997

		Prevailing torque, in Nm		
		Property class		
		Steel-Grades 4 & 6    Stainless - 303 & 316		
Thread Size	Thread Pitch mm	First Installation Max	First Removal Min	Fifth Removal Min
M3	0.5	0.43	0.12	0.08
M4	0.7	0.9	0.18	0.12
M5	0.8	1.6	0.29	0.2
M6	1	3	0.45	0.3
M8	1.25	6	0.85	0.6
M10	1.5	10.5	1.5	1
M12	1.75	15.5	2.3	1.6
M16	2	32	4.5	3
M20	2.5	54	7.5	5.3
M24	3	80	11.5	8
M30	3.5	108	16	12
M38	4	136	21	16

## Tightening torque against Clamp load for M6 Binx Nut (BX202)

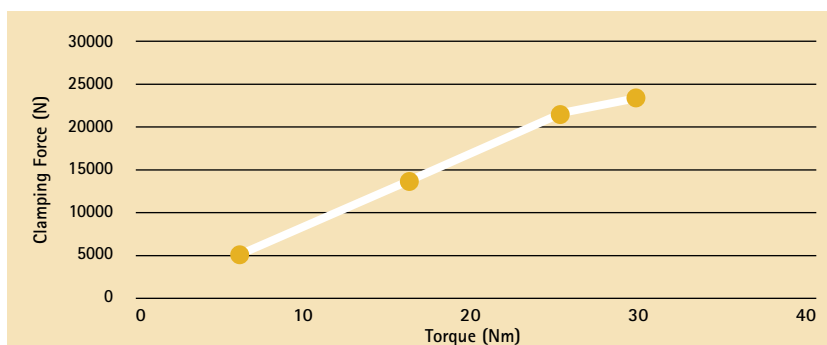


## Torque/Clamp Load Ratio

M6 Mild Steel	
Torque (Nm)	Clamp Load (N)
2	1000
4.75	3500
8.1	6500
10	7200

*Independent tests carried out at Sheffield Hallam University.*

## Tightening torque against Clamp load for M8 Binx Nut (BX202)



## Torque/Clamp Load Ratio

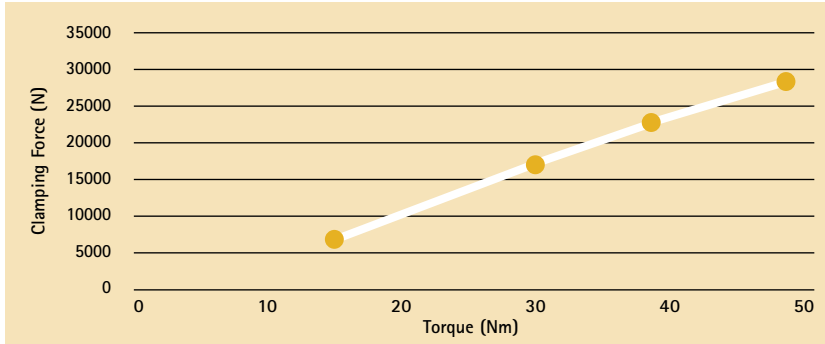
M8 Mild Steel	
Torque (Nm)	Clamp Load (N)
2	1000
4.75	3500
8.1	6500
10	7200

*Independent tests carried out at Sheffield Hallam University.*



# Binx Technical Information

Tightening torque against Clamp load for M10 Binx Nut (BX202)

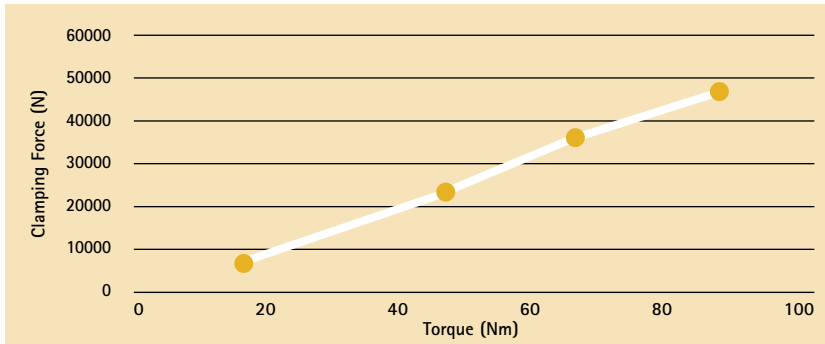


Torque/Clamp Load Ratio

M10 Mild Steel	
Torque (Nm)	Clamp Load (N)
15	7000
29.5	17000
38.5	22500
47.5	29000

Independent tests carried out at Sheffield Hallam University.

Tightening torque against Clamp load for M12 Binx Nut (BX202)

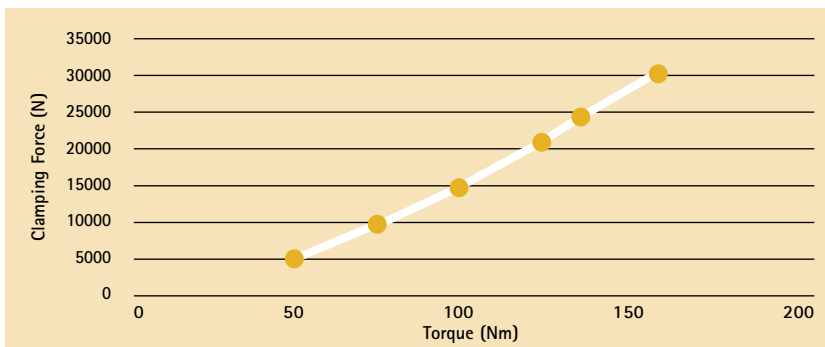


Torque/Clamp Load Ratio

M12 Mild Steel	
Torque (Nm)	Clamp Load (N)
18	7000
45	23000
65	36000
88	49000

Independent tests carried out at Sheffield Hallam University.

Tightening torque against Clamp load for M16 Binx Nut (BX202)

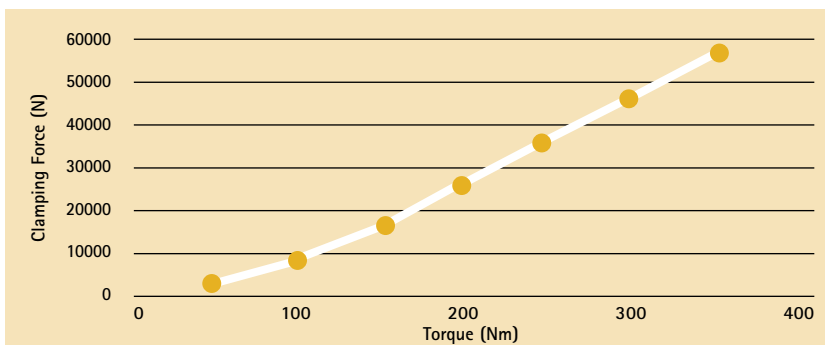


Torque/Clamp Load Ratio

M16 Mild Steel	
Torque (Nm)	Clamp Load (N)
50	5000
75	10200
100	16000
120	21000
132	24700
155	30500

Independent tests carried out at Sheffield Hallam University.

Tightening torque against Clamp load for M20 Binx Nut (BX202)



Torque/Clamp Load Ratio

M20 Mild Steel	
Torque (Nm)	Clamp Load (N)
47	2700
100	9000
150	16500
200	26500
250	36000
300	46000
350	56000

Independent tests carried out at Sheffield Hallam University.

# Notes

