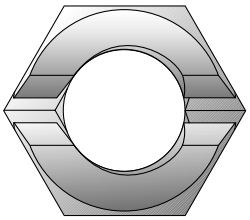
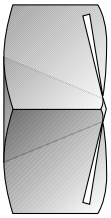
Binx Nuts

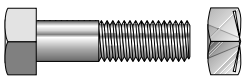




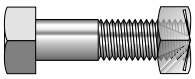
Dimensional Data

Metric			Imperial					
	Mild Steel, Stainless Steel 303, 316 & Brass			Mild Steel, Stainless Steel 303, 316 & Brass				
				BA/BSF/BSW			UNF/UNC	
SIZE mm	A/F Max mm	HEIGHT Max mm	SIZE	A/F Max	HEIGHT Max	SIZE	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	-	-	-	-	-	-

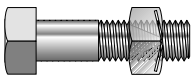
How it works



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.



Initial installation, with cantilever action reaching the applications' torque requirement. The cantilevers then flex to accommodate and grip the male thread.



The completed assembly, showing the final protrusion of the threads. the cantilever has locked securely within the height of a normal nut.

- **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 contaminents.
- **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

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

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/mm2 = 1MN/m2 (Mega N)

Formula provided by the National Engineering Laboratory

Metric Series

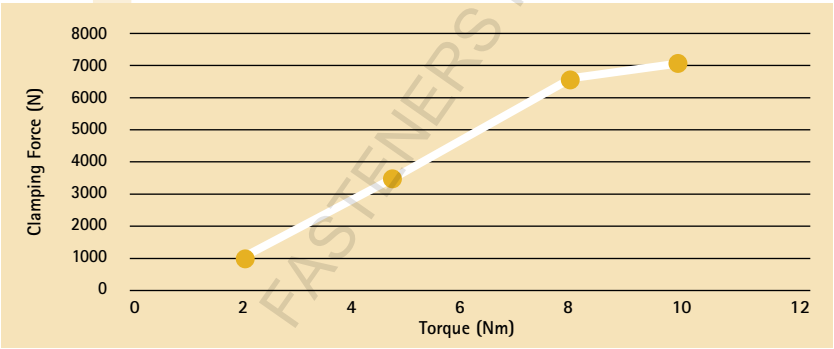
Metric grade ISO			–	4.6	4.8	5.5	5.8	6.6	6.8	–	8.8	10.9	12.9
Metric grade DIN267			4A	4D/4P	4S	5D	6S	6D	6S	6G	8G	10K	12K
Yield stress kg/mm²			20	21	32	28	40	36	48	54	64	90	103
Dia mm	Pitch mm	Core area mm²	All tightening torques stated are in Nm										
4.0	0.50	9.0	1.01	1.06	1.61	1.41	2.01	1.81	2.42	2.72	3.22	4.54	5.44
	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	67.70	132.20	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	61.80	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	208.60	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

Binx Technical Information

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)

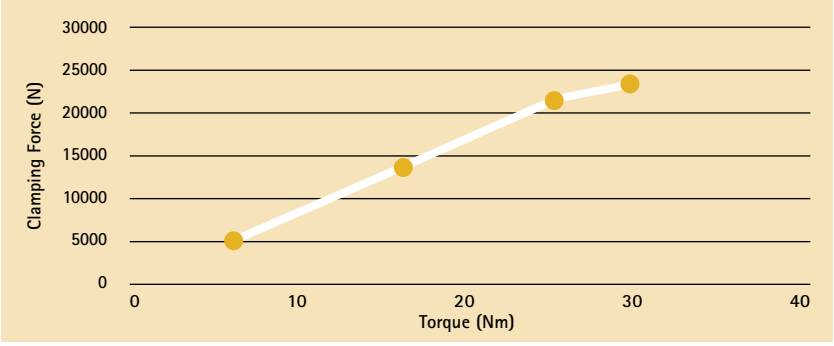


Torque/Clamp Load Ratio

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)

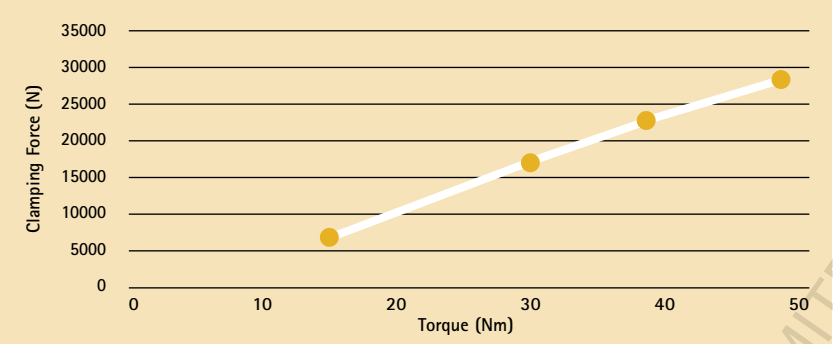


Torque/Clamp Load Ratio

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.

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

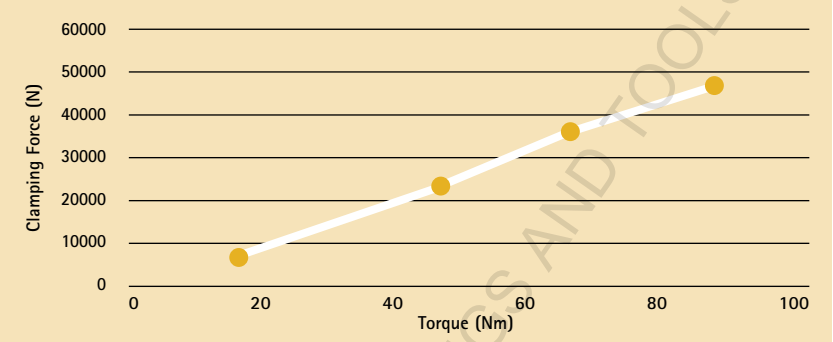


Torque/Clamp Load Ratio

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)

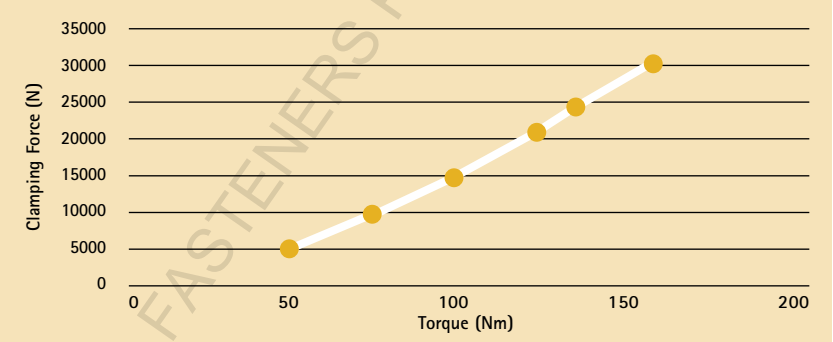


Torque/Clamp Load Ratio

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)

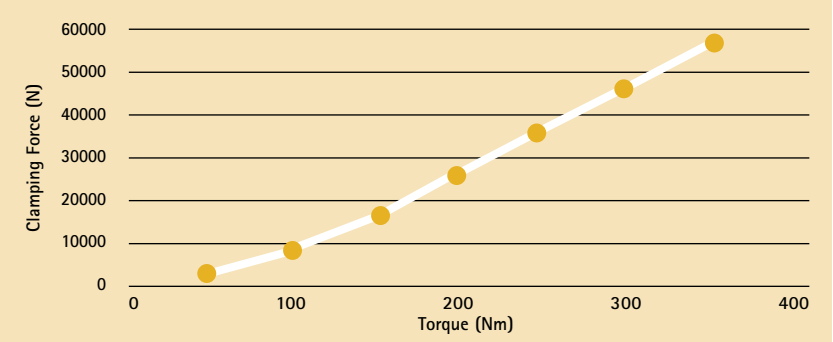


Torque/Clamp Load Ratio

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