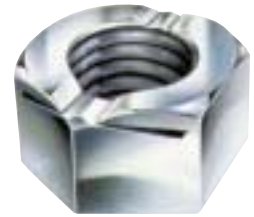
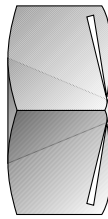
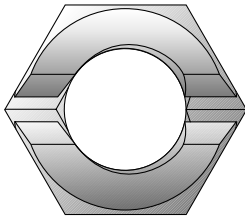




## Binx Nuts



### Dimensional Data

| Metric   |                                                     |                  | Imperial |                                               |               |       |            |               |
|----------|-----------------------------------------------------|------------------|----------|-----------------------------------------------|---------------|-------|------------|---------------|
| SIZE mm  | Mild Steel,<br>Stainless Steel<br>303, 316 Et Brass |                  | SIZE     | Mild Steel, Stainless Steel 303, 316 Et Brass |               | SIZE  | UNF/UNC    |               |
|          | A/F Max<br>mm                                       | HEIGHT<br>Max mm |          | BA/BSF/BSW                                    | HEIGHT<br>Max |       | A/F<br>Max | HEIGHT<br>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             | -        | -                                             | -             | -     | -          | -             |

- 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*

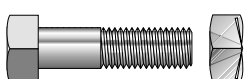
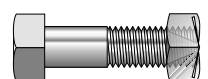
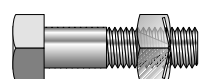
### Tolerances

#### Height of Nut

+0.000 -0.005

AF Hexagon as per relevant standard

### 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> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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 nuts are available from [www.nutsandbolts.co.uk](http://www.nutsandbolts.co.uk)**



## 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

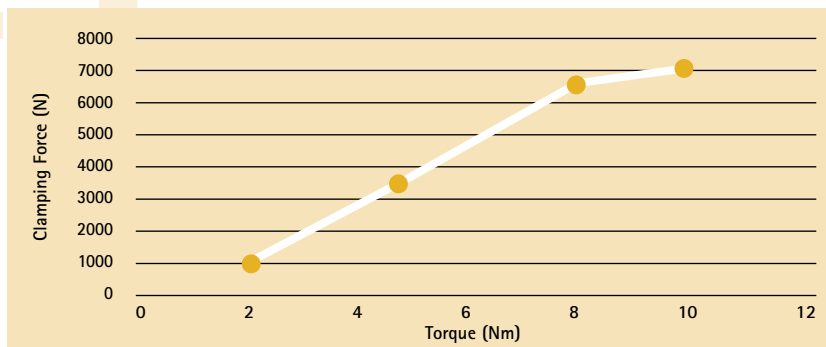
| Metric grade ISO                |             |                              | -                                       | 4.6    | 4.8    | 5.5    | 5.8    | 6.6    | 6.8    | -      | 8.8    | 10.9   | 12.9   |
|---------------------------------|-------------|------------------------------|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 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<br>mm                       | Pitch<br>mm | Core area<br>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 |

**Binx nuts are available from [www.nutsandbolts.co.uk](http://www.nutsandbolts.co.uk)**

## 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)

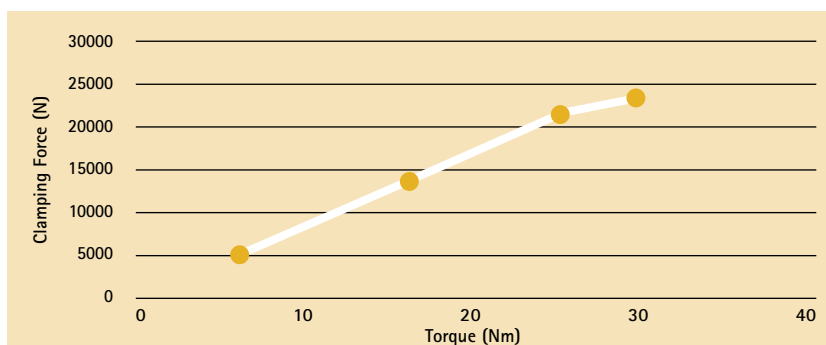


## Torque/Clamp Load Ratio

| 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           |

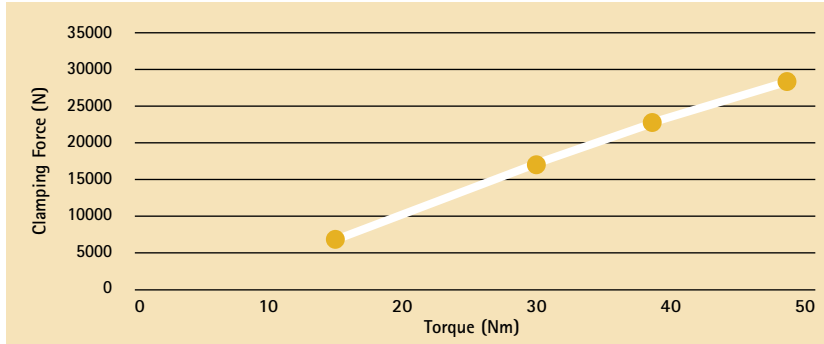
*Independent tests carried out at Sheffield Hallam University.*

**Binx nuts are available from [www.nutsandbolts.co.uk](http://www.nutsandbolts.co.uk)**



# Binx Technical Information

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

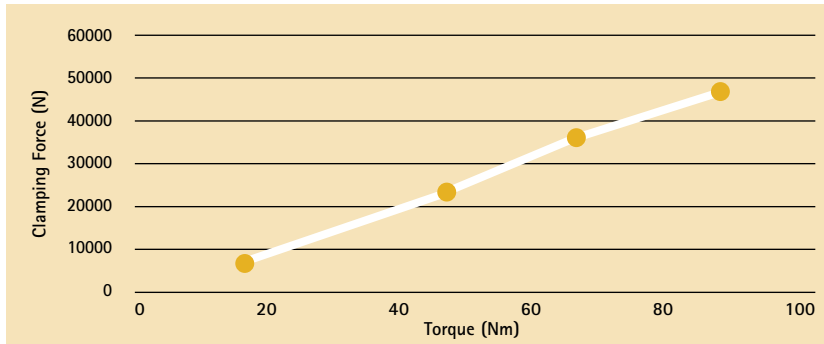


Torque/Clamp Load Ratio

| 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)

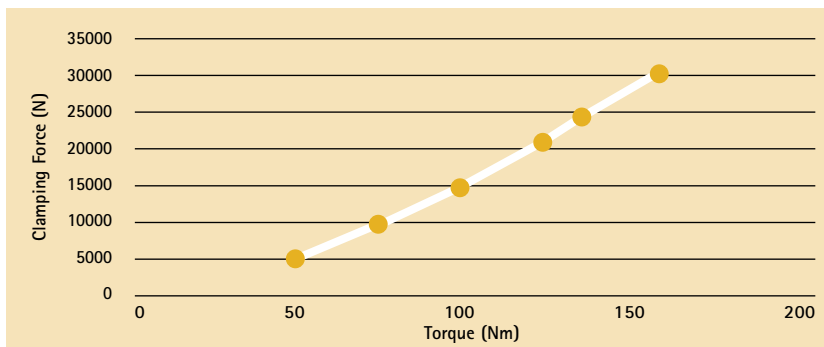


Torque/Clamp Load Ratio

| 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)

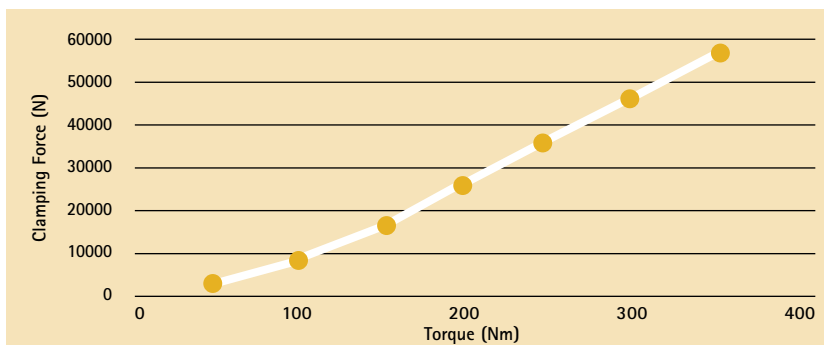


Torque/Clamp Load Ratio

| 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.

**Binx nuts are available from [www.nutsandbolts.co.uk](http://www.nutsandbolts.co.uk)**

# Notes

