

# Channel Nuts & Hardware



## Channel Nuts

Channel nuts are one of the main components of our strut system. It is designed to provide essential gripping power and ease during installation. Channel nuts are press formed, machined and hardened from steel which meets the requirements of ASTM A108 or ASTM A36 for our larger sizes.

## Bolts, Screws, and Nuts

All bolts, screws and nuts meet the physical and chemical requirements of ASTM A307, SAE J429 or ASTM A563, and have unified inch screw threads (coarse, UNC). ISO metric threads are also available on special request.

## Recommended Torque

Special Note:  
For recommended torque  
on 4Dimension trapeze hangers  
using B200 series square washers,  
see page 4D08.

| Bolt Size | 1/4"-20 | 5/16"-18 | 3/8"-16 | 1/2"-13 |
|-----------|---------|----------|---------|---------|
| Foot/Lbs. | 6       | 11       | 19      | 50      |
| Nm        | 8       | 15       | 26      | 68      |

| Bolt Size | M6x1 | M8 x1.25 | M10 x 1.5 | M12x1.75 |
|-----------|------|----------|-----------|----------|
| Nm        | 12   | 17       | 36        | 62       |
| Foot/Lbs. | 9    | 13       | 27        | 46       |

## Materials & Finishes\*

\*Unless otherwise noted.  
Note: Channel nuts are not available  
in HDG, Aluminum, or Stainless Steel  
Type 304

| Finish Code | Finish                   | Specification                             |
|-------------|--------------------------|-------------------------------------------|
| PLN         | Plain                    | ASTM A108/A307 Gr. A, ASTM A563, SAE J429 |
| ZN          | Electro-Plated Zinc      | ASTM B633 SC1 Type III                    |
| CZ          | Chromium Zinc            | ASTM F1136 Gr. 3                          |
| HDG         | Hot-Dipped Galvanized    | ASTM A153                                 |
| SS6         | Stainless Steel Type 316 | MPIF 35/ASTM F593                         |
| AL          | Aluminum                 | ASTM F468 S4                              |

## Metric

Metric dimensions are shown in parentheses. Unless noted, all metric dimensions are in millimeters.

## Standard Channel Nuts

Numbering Example:

**N 7 25 - (\*) WO**

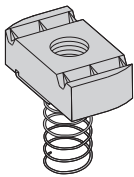
| Nut Type              | Channel Type        | Thread Size              | Stud Length                                                      | Suffix                                                  |
|-----------------------|---------------------|--------------------------|------------------------------------------------------------------|---------------------------------------------------------|
| N = Standard Nut      | 7 = Tall Channels   | 21 = #8-32               | * = Specify Length of stud below for Stud Nut or Twirl Stud Nuts | WO = Without Spring                                     |
| TN = Twirl-Nut™       | B11                 | 22 = #10-24              | $\frac{3}{4}$ = $\frac{3}{4}$ "                                  | ___ = Twirl-Nut™ or nuts with springs have blank suffix |
| SN = Stud Nut         | B12                 | 27 = #10-32              | 1 = 1"                                                           |                                                         |
| STN = Stud Twirl-Nut™ | 2 = Medium Channels | 24 = $\frac{1}{4}$ "-20  | $1\frac{1}{4}$ = $1\frac{1}{4}$ "                                |                                                         |
| NW = Combo Nut Washer | B22                 | 23 = $\frac{5}{16}$ "-18 | $1\frac{1}{2}$ = $1\frac{1}{2}$ "                                |                                                         |
|                       | B24                 | 28 = $\frac{3}{8}$ "-16  |                                                                  |                                                         |
|                       | B26                 | 26 = $\frac{7}{16}$ "-14 |                                                                  |                                                         |
|                       | B32                 | 25 = $\frac{1}{2}$ "-13  |                                                                  |                                                         |
|                       | 5 = Short Channels  | 55 = $\frac{5}{8}$ "-11  |                                                                  |                                                         |
|                       | B42                 | 75 = $\frac{3}{4}$ "-10  |                                                                  |                                                         |
|                       | B52                 | 78 = $\frac{7}{8}$ "-9   |                                                                  |                                                         |
|                       | B54                 |                          |                                                                  |                                                         |
|                       | B56                 |                          |                                                                  |                                                         |

## Metric Channel Nuts

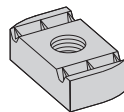
Numbering Example:

**BMS - 6 M**

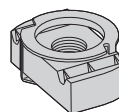
| Nut Type                                    | Metric Thread Size | Suffix                                                      |
|---------------------------------------------|--------------------|-------------------------------------------------------------|
| BMS = Spring Nut                            | 3 = M3.5           | S = Short Spring                                            |
| BMS-D = Spring Nut ( $\frac{1}{2}$ " thick) | 4 = M4             | M = Medium Spring                                           |
| BMT = Twirl-Nut™                            | 5 = M5             | L = Long Spring                                             |
| BMT-D = Twirl-Nut™ ( $\frac{1}{2}$ " thick) | 6 = M6             | ___ = Twirl-Nut™ and nuts without springs have blank suffix |
| BMM = Spring Nut (Mini channel)             | 8 = M8             |                                                             |
|                                             | 10 = M10           |                                                             |
|                                             | 12 = M12           |                                                             |



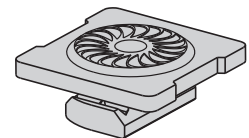
**Spring Nut**



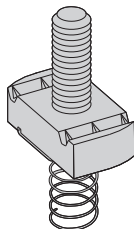
**Nut without Spring**



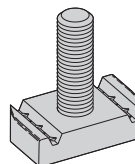
**Twirl-Nut™**



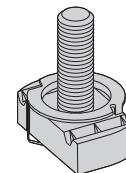
**Combo Nut Washer**



**Stud Nut with Spring**

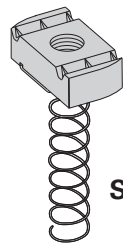


**Stud Nut without Spring**

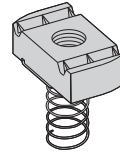


**Twirl Stud Nut**

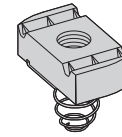
Note: See page 51 for resistance to slip & page 52 for pull-out strength.



**700 Series**



**200 Series**



**500 Series**

## Spring Nut

| Part No. | Thread Size | Fits Channel Sizes | Nut Thickness |        | Wt./C |        |
|----------|-------------|--------------------|---------------|--------|-------|--------|
|          |             |                    | In.           | mm     | Lbs.  | kg     |
| N721     | #8-32       | B11 & B12          | 1/4"          | (6.3)  | 7.0   | (3.17) |
| N221     | #8-32       | B22, B24, B26, B32 | 1/4"          | (6.3)  | 7.0   | (3.17) |
| N521     | #8-32       | B42, B52, B54, B56 | 1/4"          | (6.3)  | 7.0   | (3.17) |
| N727     | #10-32      | B11 & B12          | 1/4"          | (6.3)  | 7.0   | (3.17) |
| N227     | #10-32      | B22, B24, B26, B32 | 1/4"          | (6.3)  | 7.0   | (3.17) |
| N527     | #10-32      | B42, B52, B54, B56 | 1/4"          | (6.3)  | 7.0   | (3.17) |
| N722     | #10-24      | B11 & B12          | 1/4"          | (6.3)  | 7.0   | (3.17) |
| N222     | #10-24      | B22, B24, B26, B32 | 1/4"          | (6.3)  | 7.0   | (3.17) |
| N522     | #10-24      | B42, B52, B54, B56 | 1/4"          | (6.3)  | 7.0   | (3.17) |
| N724     | 1/4-20      | B11 & B12          | 1/4"          | (6.3)  | 6.7   | (3.04) |
| N224     | 1/4-20      | B22, B24, B26, B32 | 1/4"          | (6.3)  | 6.7   | (3.04) |
| N524     | 1/4-20      | B42, B52, B54, B56 | 1/4"          | (6.3)  | 6.7   | (3.04) |
| N723     | 5/16-18     | B11 & B12          | 1/4"          | (6.3)  | 6.7   | (3.04) |
| N223     | 5/16-18     | B22, B24, B26, B32 | 1/4"          | (6.3)  | 6.7   | (3.04) |
| N523     | 5/16-18     | B42, B52, B54, B56 | 1/4"          | (6.3)  | 6.7   | (3.04) |
| N728     | 3/8-16      | B11 & B12          | 3/8"          | (9.5)  | 9.3   | (4.22) |
| N228     | 3/8-16      | B22, B24, B26, B32 | 3/8"          | (9.5)  | 9.3   | (4.22) |
| N528     | 3/8-16      | B42, B52, B54, B56 | 3/8"          | (9.5)  | 9.3   | (4.22) |
| N726     | 7/16-14     | B11 & B12          | 3/8"          | (9.5)  | 8.8   | (3.99) |
| N226     | 7/16-14     | B22, B24, B26, B32 | 3/8"          | (9.5)  | 8.8   | (3.99) |
| N526     | 7/16-14     | B42, B52, B54, B56 | 3/8"          | (9.5)  | 8.8   | (3.99) |
| N725     | 1/2-13      | B11 & B12          | 1/2"          | (12.7) | 11.6  | (5.26) |
| N225     | 1/2-13      | B22, B24, B26, B32 | 1/2"          | (12.7) | 11.6  | (5.26) |
| N525     | 1/2-13      | B42, B52, B54, B56 | 3/8"          | (9.5)  | 8.8   | (3.99) |
| N755     | 5/8-11      | B11 & B12          | 1/2"          | (12.7) | 16.4  | (7.44) |
| N255     | 5/8-11      | B22, B24, B26, B32 | 1/2"          | (12.7) | 16.4  | (7.44) |
| N555     | 5/8-11      | B42, B52, B54, B56 | 3/8"          | (9.5)  | 10.2  | (4.62) |
| N775     | 3/4-10      | B11 & B12          | 1/2"          | (12.7) | 14.5  | (6.58) |
| N275     | 3/4-10      | B22, B24, B26, B32 | 1/2"          | (12.7) | 14.5  | (6.58) |
| N575     | 3/4-10      | B42, B52, B54, B56 | 3/8"          | (9.5)  | 8.8   | (3.99) |
| N778     | 7/8-9       | B11 & B12          | 1/2"          | (12.7) | 12.5  | (5.67) |
| N278     | 7/8-9       | B22, B24, B26, B32 | 1/2"          | (12.7) | 12.5  | (5.67) |

## Metric Threads

|           |            |                    |      |        |      |        |
|-----------|------------|--------------------|------|--------|------|--------|
| BMS-6L    | M6 x 1     | B11 & B12          | 1/4" | (6.3)  | 6.9  | (3.13) |
| BMS-6M    | M6 x 1     | B22, B24, B26, B32 | 1/4" | (6.3)  | 6.9  | (3.13) |
| BMS-6S    | M6 x 1     | B42, B52, B54, B56 | 1/4" | (6.3)  | 6.9  | (3.13) |
| BMS-8L    | M8 x 1.25  | B11 & B12          | 1/4" | (6.3)  | 6.7  | (3.04) |
| BMS-8M    | M8 x 1.25  | B22, B24, B26, B32 | 1/4" | (6.3)  | 6.7  | (3.04) |
| BMS-8S    | M8 x 1.25  | B42, B52, B54, B56 | 1/4" | (6.3)  | 6.7  | (3.04) |
| BMS-10L   | M10 x 1.5  | B11 & B12          | 3/8" | (9.5)  | 9.6  | (4.35) |
| BMS-10M   | M10 x 1.5  | B22, B24, B26, B32 | 3/8" | (9.5)  | 9.6  | (4.35) |
| BMS-10S   | M10 x 1.5  | B42, B52, B54, B56 | 3/8" | (9.5)  | 9.6  | (4.35) |
| BMS-12M   | M12 x 1.75 | B22, B24, B26, B32 | 3/8" | (9.5)  | 9.2  | (4.17) |
| BMS-12S   | M12 x 1.75 | B42, B52, B54, B56 | 3/8" | (9.5)  | 9.2  | (4.17) |
| BMS-D-12L | M12 x 1.75 | B11 & B12          | 1/2" | (12.7) | 12.2 | (5.53) |
| BMS-D-12M | M12 x 1.75 | B22, B24, B26, B32 | 1/2" | (12.7) | 12.2 | (5.53) |

Note: For mini channel nut information see page 204.

# Channel Nuts

## Resistance To Slip

- With Safety Factor of 3

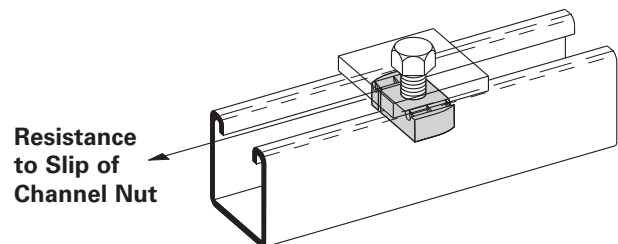
| Thread Size | Nut Part Numbers                                                              | Resistance to Slip |      |                |      |                |      |
|-------------|-------------------------------------------------------------------------------|--------------------|------|----------------|------|----------------|------|
|             |                                                                               | 12 ga. Channel     |      | 14 ga. Channel |      | 16 ga. Channel |      |
|             |                                                                               | Lbs.               | N    | Lbs.           | N    | Lbs.           | N    |
| #8-32       | N221, N221WO, N521, N721, TN221                                               | 50                 | 220  | 50             | 220  | 50             | 220  |
| #10-24      | N222, N222WO, N522, N722, TN222                                               | 100                | 440  | 100            | 440  | 100            | 440  |
| #10-32      | N227, N227WO, N527, N727, TN227                                               | 100                | 440  | 100            | 440  | 100            | 440  |
| 1/4"-20     | NW524*, N224, N224WO, N524, N724, TN224, STN224, SN224WO, SN224, SN524, SN724 | 300                | 1330 | 300            | 1330 | 300            | 1330 |
| 5/16"-18    | N223, N223WO, N523, N723, TN223                                               | 450                | 2000 | 450            | 2000 | 450            | 2000 |
| 3/8"-16     | NW528*, N228, N228WO, N528, N728, TN228, STN228, SN228WO, SN228, SN528, SN728 | 800                | 3560 | 600            | 2670 | 600            | 2670 |
| 7/16"-14    | N226, N226WO, N526, N726, TN226                                               | 1000               | 4450 | 800            | 3560 | 800            | 3560 |
| 1/2"-13     | N225, N225WO, N725, TN225, STN225, SN225WO, SN225, SN725                      | 1500               | 6670 | 1000           | 4450 | 1000           | 4450 |
|             | NW525*, N525, N525WO, TN525, STN525, SN525WO, SN525                           | 1500               | 6670 | 1000           | 4450 | 1000           | 4450 |
| 5/8"-11     | N255, N255WO, N755, TN255                                                     | 1500               | 6670 | 1000           | 4450 | 1000           | 4450 |
|             | N555, N555WO                                                                  | 1500               | 6670 | 1000           | 4450 | 1000           | 4450 |
| 3/4"-10     | N275, N275WO, N775                                                            | 1500               | 6670 | 1000           | 4450 | 1000           | 4450 |
|             | N575, N575WO                                                                  | 1500               | 6670 | 1000           | 4450 | 1000           | 4450 |
| 7/8"-9      | N278, N278WO, N778                                                            | 1500               | 6670 | 1000           | 4450 | 1000           | 4450 |
| M6 x 1      | BMS-6, BMS-6L, BMS-6M, BMS-6S, BMT-6                                          | 300                | 1330 | 300            | 1330 | 300            | 1330 |
| M8 x 1.25   | BMS-8, BMS-8L, BMS-8M, BMS-8S, BMT-8                                          | 450                | 2000 | 450            | 2000 | 450            | 2000 |
| M10 x 1.50  | BMS-10, BMS-10L, BMS-10M, BMS-10S, BMT-10                                     | 800                | 3560 | 600            | 2760 | 600            | 2760 |
| M12 x 1.75  | BMS-D-12, BMS-D-12L, BMS-D-12M, BMT-D-12                                      | 1500               | 6670 | 1000           | 4450 | 1000           | 4450 |
|             | BMS-12, BMS-12M, BMS-12S, BMT-12                                              | 1500               | 6670 | 1000           | 4450 | 1000           | 4450 |

\* Combo Nut Washer (see page 50)

Note:

Using stainless steel channel nuts in stainless steel channel, reduce slip loads by 50% due to hardness of material.

Using stainless steel channel nuts in aluminum channel, reduce slip loads by 70% due to hardness of material.



**Note:** For mini channel nut information see page 204.

## Pull-Out Strength

- With Safety Factor of 3
- Maximum pullout strength for B11 & B12 channels is limited to 1500 lbs. (6670 N).

| Thread Size | Nut Part Numbers                                                              | Pull-Out Strength |      |                |      |                |      |
|-------------|-------------------------------------------------------------------------------|-------------------|------|----------------|------|----------------|------|
|             |                                                                               | 12 ga. Channel    |      | 14 ga. Channel |      | 16 ga. Channel |      |
|             |                                                                               | Lbs.              | N    | Lbs.           | N    | Lbs.           | N    |
| #8-32       | N221, N221WO, N521, N721, TN221                                               | 200               | 890  | 200            | 890  | 200            | 890  |
| #10-24      | N222, N222WO, N522, N722, TN222                                               | 250               | 1110 | 250            | 1110 | 250            | 1110 |
| #10-32      | N227, N227WO, N527, N727, TN227                                               | 250               | 1110 | 250            | 1110 | 250            | 1110 |
| 1/4"-20     | NW524*, N224, N224WO, N524, N724, TN224, STN224, SN224WO, SN224, SN524, SN724 | 450               | 2000 | 450            | 2000 | 450            | 2000 |
| 5/16"-18    | N223, N223WO, N523, N723, TN223                                               | 750               | 3330 | 750            | 3330 | 750            | 3330 |
| 3/8"-16     | NW528*, N228, N228WO, N528, N728, TN228, STN228, SN228WO, SN228, SN528, SN728 | 1100              | 4890 | 1000           | 4450 | 1000           | 4450 |
| 7/16"-14    | N226, N226WO, N526, N726, TN226                                               | 1500              | 6670 | 1200           | 5340 | 1000           | 4450 |
| 1/2"-13     | N225, N225WO, N725, TN225, STN225, SN225WO, SN225, SN725                      | 2000              | 8900 | 1400           | 6230 | 1000           | 4450 |
|             | NW525*, N525, N525WO, TN525, STN525, SN525WO, SN525                           | 1500              | 6670 | 1400           | 6230 | 1000           | 4450 |
| 5/8"-11     | N255, N255WO, N755, TN255                                                     | 2000              | 8900 | 1400           | 6230 | 1000           | 4450 |
|             | N555, N555WO                                                                  | 1500              | 6670 | 1400           | 6230 | 1000           | 4450 |
| 3/4"-10     | N275, N275WO, N775                                                            | 2000              | 8900 | 1400           | 6230 | 1000           | 4450 |
|             | N575, N575WO                                                                  | 1500              | 6670 | 1400           | 6230 | 1000           | 4450 |
| 7/8"-9      | N278, N278WO, N778                                                            | 1500              | 6670 | 1400           | 6230 | 1000           | 4450 |
| M6 x 1      | BMS-6, BMS-6L, BMS-6M, BMS-6S, BMT-6                                          | 450               | 2000 | 450            | 2000 | 450            | 2000 |
| M8 x 1.25   | BMS-8, BMS-8L, BMS-8M, BMS-8S, BMT-8                                          | 750               | 3330 | 750            | 3330 | 750            | 3330 |
| M10 x 1.50  | BMS-10, BMS-10L, BMS-10M, BMS-10S, BMT-10                                     | 1100              | 4890 | 1000           | 4450 | 1000           | 4450 |
| M12 x 1.75  | BMS-D-12, BMS-D-12L, BMS-D-12M, BMT-D-12                                      | 2000              | 8900 | 1400           | 6230 | 1000           | 4450 |
|             | BMS-12, BMS-12M, BMS-12S, BMT-12                                              | 1500              | 6670 | 1400           | 6230 | 1000           | 4450 |

Channel Nuts & Hardware  
Metric Threads

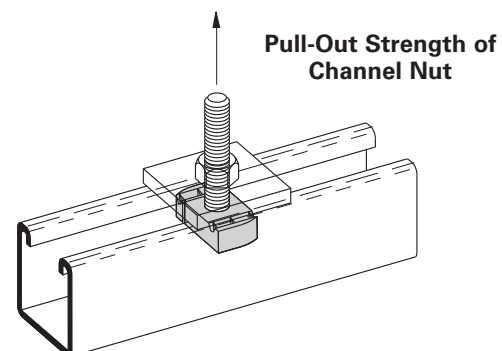
\* Combo Nut Washer (see page 50)

Note:

Using stainless steel channel nuts in stainless steel channel, use pull-out loads as shown above.

Using stainless steel channel nuts in aluminum channel, reduce pull-out loads by 70% due to hardness of material.

**Note:** For mini channel nut information see page 204.



Reference page 45 for general fitting and standard finish specifications.