

# Channel Nuts & Hardware

## Channel Nuts

Channel nuts are one of the main components of our metal framing 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

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\*

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

\*Unless otherwise noted.

Note: Channel nuts are not available in HDG, Aluminum, or Stainless Steel Type 304

## Metric

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



# Channel Nuts & Hardware

## STANDARD CHANNEL NUTS

Numbering Example:

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

**Nut Type**  
 N = Standard Nut  
 TN = Twirl Nut  
 SN = Stud Nut  
 STN = Stud Twirl Nut  
 NW = Combo Nut Washer

**Channel Type**  
 7 = Tall Channels  
   B11  
   B12  
 2 = Medium Channels  
   B22  
   B24  
   B26  
   B32  
 5 = Short Channels  
   B42  
   B52  
   B54  
   B56

**Thread Size**  
 21 = #8-32  
 22 = #10-24  
 27 = #10-32  
 24 = 1/4-20  
 23 = 5/16-18  
 28 = 3/8-16  
 26 = 7/16-14  
 25 = 1/2-13  
 55 = 5/8-11  
 75 = 3/4-10  
 78 = 7/8-9

**Stud Length**  
 \* = Specify Length of stud below for Stud Nut or Twirl Stud Nuts  
 3/4 = 3/4"  
 1 = 1"  
 1 1/4 = 1 1/4"  
 1 1/2 = 1 1/2"

**Suffix**  
 WO = Without Spring  
 \*\* = Twirl Nuts or nuts with springs have blank suffix

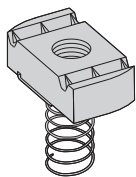
## METRIC CHANNEL NUTS

Numbering Example: **BMS 6 M**

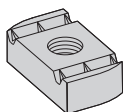
**Nut Type**  
 BMS = Spring Nut  
 BMS-D = Spring Nut (1/2" thick)  
 BMT = Twirl Nut  
 BMT-D = Twirl Nut (1/2" thick)  
 BMM = Spring Nut (Mini channel)

**Metric Thread Size**  
 3 = M3.5  
 4 = M4  
 5 = M5  
 6 = M6  
 8 = M8  
 10 = M10  
 12 = M12

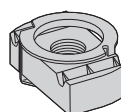
**Suffix**  
 S = Short Spring  
 M = Medium Spring  
 L = Long Spring  
 \* = Twirl Nuts and nuts without springs have blank suffix



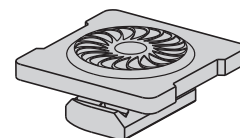
**SPRING NUT**



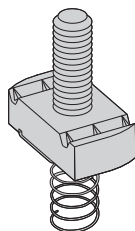
**NUT WITHOUT SPRING**



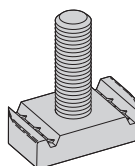
**TWIRL-NUT™**



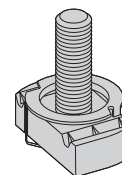
**COMBO NUT WASHER**



**STUD NUT WITH SPRING**



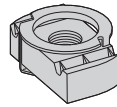
**STUD NUT WITHOUT SPRING**



**TWIRL STUD NUT**

Reference page 44 for general fitting and standard finish specifications.

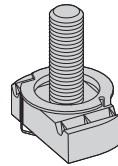
# Channel Nuts



Note: See page 50 for resistance to slip & page 51 for pull-out strength.

## TWIRL-NUT™

Part No.	Thread Size	Fits Channel Sizes	Nut Thickness		Wt./C		
					Lbs.	kg	
TN221	#8-32	All sizes except B62 & B72	1/4"	(6.3)	7.0	(3.17)	
TN227	#10-32	All sizes except B62 & B72	1/4"	(6.3)	7.0	(3.17)	
TN222	#10-24	All sizes except B62 & B72	1/4"	(6.3)	7.0	(3.17)	
TN224	1/4-20	All sizes except B62 & B72	1/4"	(6.3)	6.7	(3.04)	
TN223	5/16-18	All sizes except B62 & B72	1/4"	(6.3)	6.7	(3.04)	
TN228	3/8-16	All sizes except B62 & B72	3/8"	(9.5)	9.3	(4.22)	
TN226	7/16-14	All sizes except B62 & B72	3/8"	(9.5)	8.8	(3.99)	
TN225	1/2-13	B11, B12, B22, B24, B26, B32	1/2"	(12.7)	11.6	(5.26)	
TN525	1/2-13	B42, B52, B54, B56	3/8"	(9.5)	8.8	(3.99)	
TN255	5/8-11	B11, B12, B22, B24, B26, B32	1/2"	(12.7)	11.0	(4.99)	
Metric Threads	BMT-6	M6 x 1	All sizes except B62 & B72	1/4"	(6.3)	6.9	(3.13)
	BMT-8	M8 x 1.25	All sizes except B62 & B72	1/4"	(6.3)	6.7	(3.04)
	BMT-10	M10 x 1.5	All sizes except B62 & B72	3/8"	(9.5)	9.6	(4.35)
	BMT-12	M12 x 1.75	All sizes except B62 & B72	3/8"	(9.5)	9.2	(4.17)
	BMT-D-12	M12 x 1.75	B11, B12, B22, B24, B26, B32	1/2"	(12.7)	12.2	(5.53)



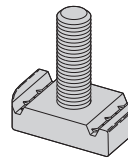
Note: See page 50 for resistance to slip & page 51 for pull-out strength.

## TWIRL STUD NUT

Part No.	Thread Size	Fits Channel Sizes	Nut Thickness		Wt./C	
					Lbs.	kg
STN224-*	1/4-20	All sizes except B62 & B72	1/4"	(6.3)	8.1	(3.66)
STN228-*	3/8-16	All sizes except B62 & B72	3/8"	(9.5)	12.9	(5.85)
STN225-*	1/2-13	B11, B12, B22, B24, B26, B32	1/2"	(12.7)	18.2	(8.23)
STN525-*	1/2-13	B42, B52, B54, B56	3/8"	(9.5)	15.4	(6.96)

\*Note: Add stud length in inches (3/4, 1, 1 1/4, 1 1/2)

Note: See page 50 for resistance to slip & page 51 for pull-out strength.



## STUD NUT WITHOUT SPRING

Part No.	Thread Size	Fits Channel Sizes	Nut Thickness		Wt./C	
					Lbs.	kg
SN224-*WO	1/4-20	All sizes except B62 & B72	1/4"	(6.3)	8.1	(3.66)
SN228-*WO	3/8-16	All sizes except B62 & B72	3/8"	(9.5)	12.9	(5.85)
SN225-*WO	1/2-13	B11, B12, B22, B24, B26, B32	1/2"	(12.7)	18.2	(8.23)
SN525-*WO	1/2-13	B42, B52, B54, B56	3/8"	(9.5)	15.4	(6.96)

\*Note: Add stud length in inches (3/4, 1, 1 1/4, 1 1/2)

Reference page 44 for general fitting and standard finish specifications.

# Reference Data

## General Notes for Strut-Type Channel Raceway

UL Category RIUU - B-Line, Inc., Highland, IL 62249 December 11, 1998 (C)  
 FLUORESCENT AND INCANDESCENT LIGHTING



Suitable for not more than the number of wires of the sizes and types indicated in the following tables. Intended to enclose circuits operating at potentials not exceeding 600 volts between conductors. In all cases, the B217-20 or B217P snap-in cover is required to complete raceway closure. When using B217-24 snap-in cover, the number of wires is limited to 7 or fewer conductors no larger than #12 AWG.

B-Line's strut-type channel raceways and fittings are manufactured and tested to comply with the UL Standard for Safety for Strut-Type Channel Raceways and Fittings (UL 5B) in accordance with Article 384 of the 2002 National Electrical Code, NFPA 70.

1. Support spans for strut-type channel raceway shall not exceed 10 foot intervals.
2. No conductor larger than that for which the raceway is listed shall be installed in strut-type channel raceways. No wires under 14AWG or over 6AWG are allowed in any of B-Line's strut-type channel raceway. See tables 1, 2 and 3 below for a listing of the approved conductors for B-Line's strut-type channel raceways.
3. The number of conductors permitted in strut-type channel raceway shall not exceed the percentage fill using Table 384-22 and the applicable outside diameter of specific types and sizes of wire given in the tables in chapter 9 of the National Electrical Code. Table 384-22 lists two different percent fill areas depending on the use of internal or external joiners. Use 40% area fill with external joiners and 25% area fill for internal joiners.
4. Items in the electrical section of the B-Line Strut Systems Catalog identified by the UL symbol provide for electrical continuity. Other items require the use of a separate grounding wire.
5. If strut-type channel raceway is connected to another wiring system, the raceway must be field-tapped adjacent to the wire entry point to accept a #10-32 or larger grounding screw. A plated or stainless steel screw may be used. A sheet metal screw is not acceptable. Drill and tap the grounding wire hole before installing wires in raceway or move installed wires out of the way to avoid damage. After drilling and tapping, remove metal chips and burrs before installing screw.

**TABLE 1: MAXIMUM NUMBER OF WIRES (Adjusted per NEC Table 384.22 for 40% fill)**

Use this table to determine the type and number of conductors for use with B-Line's strut-type channel raceway using external joiners. This table applies for all installations except for the support and supply of electric discharge type lighting fixtures. See table 2 and 3 for further information.

Insulation Type	Wire Size AWG.	B11 B11K06	B12 B12K06	B22 B22K06	B24 B24K06	B26 B26K06	B32 B32K06	B56 B56K06
FEP, FEPB	14	172	127	81	81	81	67	36
	12	126	92	59	59	59	49	26
	10	90	66	42	42	42	35	19
	8	51	38	24	24	24	20	11
	6	24	17	11	12	12	9	5
RH, RHH, RHW	14	52	38	24	26	27	20	12
	12	45	33	21	22	23	17	10
	10	37	27	17	18	19	14	8
	8	20	14	9	10	10	7	4
	6	14	10	6	7	7	5	3
T, TW	14	124	91	58	58	58	48	26
	12	95	70	45	45	45	37	20
	10	69	51	33	33	33	27	14
	8	36	26	17	18	19	14	8
	6	21	15	9	10	11	8	5
THHN, THWN	14	178	131	84	84	84	69	37
	12	130	95	61	61	61	50	27
	10	82	60	38	38	38	32	17
	8	46	34	21	22	22	17	10
	6	33	24	15	16	16	12	7
THW	14	82	61	39	39	39	32	17
	12	66	49	31	31	31	26	14
	10	52	38	24	24	24	20	11
	8	29	21	13	14	15	11	6
	6	21	15	10	10	11	8	5
XHHW	14	124	91	58	58	58	48	26
	12	95	70	45	45	45	37	20
	10	71	52	33	33	33	28	15
	8	37	27	17	19	19	14	8
	6	27	20	13	14	14	10	6