

T&B Conduit Fittings

Nonmetallic Sheathed Cable Fittings

Specifications—Nonmetallic (NM) Sheathed Cable

Ref. CEC Rule 12-500

Canadian Electrical Code 2009 Part I, defines Nonmetallic Sheathed Cable as, “A factory assembly of two or more insulated conductors having an outer sheath of moisture resistant, flame retardant, nonmetallic material.”

Nonmetallic sheathed cable is constructed of insulated conductors (14 to 2 AWG copper), and an outer nonmetallic sheath classified as Types NMD90, NMW and NMWU.

Nonmetallic sheathed cable is provided with bare bonding conductor. Nonmetallic sheathed cable is rated for 90°C service with voltage limitation of 300 volts.

Type NMW and NMWU have a flame retardant, moisture resistant sheath.

Type NMD90, NMW and NMWU applications are described in Table 19 of CEC 2009 Part I.

Nonmetallic sheathed cable is permitted by code to be used exposed or concealed in one, two or multifamily dwellings or other structures not exceeding three floors. Use of Type NMD90 cable is restricted to dry locations.

Nonmetallic sheathed cables are not permitted to be used as a service conductor. Nonmetallic sheathed cables are also prohibited in hazardous locations.

NM cables need to be secured in place by suitable means so as not to injure the cable. Adequate protection for cable is also required when run is exposed, through joists or rafters, through floors, in unfinished basements and accessible attics.

NM cables shall be protected from physical damage when it passes through factory or field punched, cut or drilled holes in metal members. A bushing or grommet firmly secured in place is recommended (CEC Rule 12-516).

Please refer to the following for further details and complete information:

1. U.L. 719, ANSI C33.56Safety Standards for Nonmetallic Sheathed Cable
2. U.L. 514.....Safety Standards for Outlet Boxes and Fittings
3. NEMA FB-1... ..Standards Publication: Fittings and Supports for Conduit and Cable Assemblies
4. CEC Section 12-500.....Wiring methods (Nonmetallic Sheathed Cable)
5. CSA C22.2 No. 48... ..Safety Standards for Nonmetallic Sheathed Cable
6. CSA C22.2 No. 18... ..Safety Standards for Outlet Boxes, Conduit Boxes and Fittings

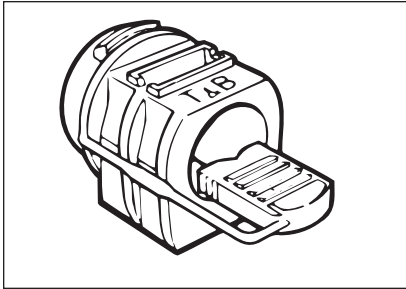
Please Note

The excerpts and other material herein, whether relating to the Canadian Electrical Code 2009 Part I, the Underwriters Laboratories, Inc. listing, to industry practice or otherwise, is not intended to provide all relevant information required for use and installation. Reference to original or primary source material and data is mandatory before any application or use is made of the product.

T&B Conduit Fittings

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Suggested Specifications for Nonmetallic Sheathed Cable



Series 3300
Nonmetallic Sheathed Cable
and Flexible Cord Fittings
(All Plastic)



Series 3302M
Nonmetallic Sheathed Cable
and Flexible Cord Fittings
(Steel)



Series 3210
Knockout Bushings



Series 1942
Insulated Nipples

- Where nonmetallic sheathed cable or flexible cord terminates into a threaded or threadless opening, terminating fittings used shall be approved for the purpose by nationally recognized laboratory, inspection agency or product evaluation organization.

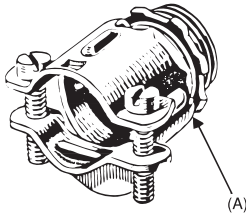
- Terminating fittings shall be of malleable iron, steel, or thermoplastic construction designed to provide adequate strain relief and positively prevent damage to jacket or conductor insulation such as series 3300 or 3302M manufactured by Thomas & Betts. Ferrous metal fittings shall be electro-zinc plated inside and outside including threads and bushed with a nylon insulated throat.

Thermoplastic material used for fitting construction shall be of high impact strength suitable for 105°C/221°F service with a U.L. flammability rating of 94V-1.

- Where nonmetallic sheathed cable passes through either factory or field punched, cut or drilled holes in metallic members, the cable shall be protected by thermoplastic bushing such as series 3210 manufactured by Thomas & Betts. Bushing shall be firmly secured in opening. Nylon bushed metallic fittings such as Thomas & Betts series 1942 may be substituted as required.

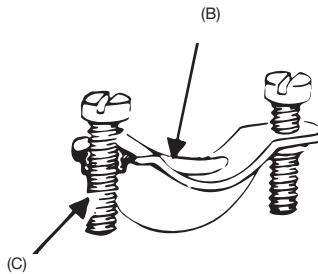
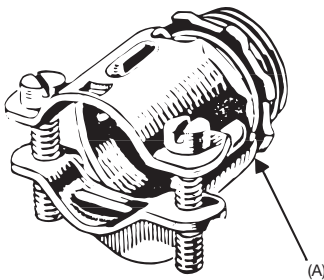
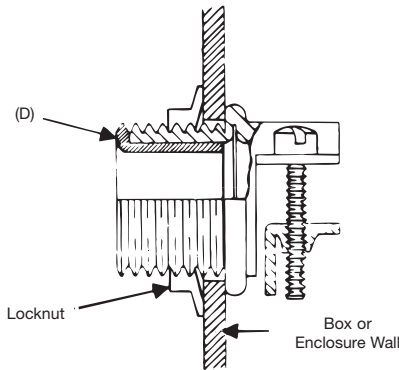
T&B Conduit Fittings

Nonmetallic Sheathed Cable Fittings



**3302M Series
Nonmetallic Sheathed
Cable Fitting**

Typical Installation



Nonmetallic Sheathed Cable & Flexible Cord Fittings (Steel)

Application

- To connect nonmetallic sheathed cable and flexible cord to a box or an enclosure.

Features

- Rugged all steel/malleable iron construction (A).
- Rounded cable clamp grip provides superior mechanical holding power without damaging conductor insulation or outer jacket (B).
- Clamp designed to cover body opening for a neat and safe installation.
- Screws thread into clamp and not body; screw heads are snug with body and ends of screws do not project beyond the body (C).
- Insulator firmly secured in place protects conductors and reduces wire pulling effort; protects threads from damage during handling (D).
- Locknut designed to secure fitting to a box or enclosure; will not vibrate loose.

Standard Material

| | |
|-----------|---|
| Body | 1/2" thru 1" Steel; 1-1/4" thru 2" Malleable Iron |
| Clamp | 1/2" thru 1-1/4" Steel; 1-1/4" thru 2" Malleable Iron |
| Locknut | All Steel |
| Insulator | Thermoplastic |

Standard Finish

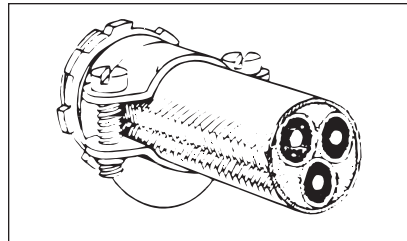
All steel and malleable iron parts—
Electro Zinc Plated & Chromate Coated

Range

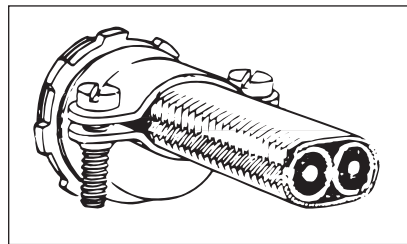
- Hub Size 1/2" thru 2" Hubs provided with straight pipe threads (NPS.)
- Cable 2 #14 thru 4 #4 Type NM
- Cable Outside Diameter 0.250" to 1.150"

Conformity

U.L. 514B
CSA C22.2 No. 18.3
NFPA 70-2008 (ANSI)
NEMA FB-1
Federal Standard H-28 (Threads)



**Typical Installation
(Flexible Cord)**



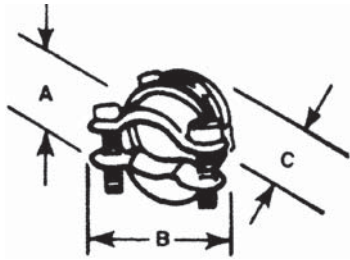
**Typical Installation
(NM-Sheathed Cable)**

T&B Conduit Fittings

Nonmetallic Sheathed Cable Fittings



Two-Screw Fittings



Steel or malleable iron.

Rounded cable grip and smooth bushing protect the cable sheath and wire insulation. Since saddle is threaded, screws do not travel or extend beyond the fitting body as it is clamped to the cable. An extra lip on the saddle closes the unused part of the fitting opening.

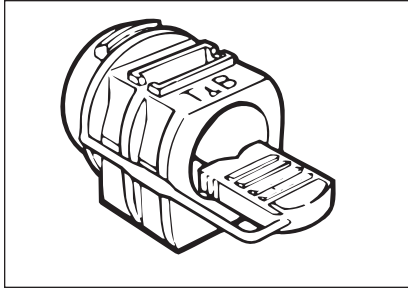
| Cat. No. | | K.O. Size | U.L. Listed & CSA Certified for the following Single (1) and Pairs of (2) NM & NMC Cable | U.L. Listed & CSA Certified for the following Service Entrance Cables | Dimensions (in.) | | | Cable Opening | |
|---------------|----------------|-----------|--|---|------------------|----------|----------|---------------|-------|
| Noninsulated | Insulated | | | | A | B | C | max. | min. |
| 3302* | 3302M-C | 1/2" | (1) 2#14, 2#12, 2#10, 3#14, 3#12, 3#10, (2) 2#14, 2#12 | 2#12 thru 2#4, 3#12, 3#10 | 31/32" | 1-3/8" | 1" | .590 | .250 |
| 3303-C | 3303M | 3/4" | (1) 2#8, 2#6, 3#8 (2) 2#12, 2#10, 2#8, 3#14 | 2#8 thru 2#1/0, 3#8, 3#6, 2#6 + #8 GND | 1-1/4" | 1-5/8" | 1-3/16" | .750 | .530 |
| 3304 | 3304M | 1" | (1) 3#8, 3#6, 3#4 (2) 2#8, 3#10 | 2#1, 2#1/0, 3#6 thru 3#2, 2#4 + #6 GND, 2#3 + #5 GND, 2#2 + #4 GND | 1-15/32" | 1-7/8" | 1-1/4" | .990 | .690 |
| 3305 | 3305M | 1-1/4" | (1) 3#8, 3#6, 3#4 (2) 2#8, 2#6, 2#4, 3#8 | 3#2 thru 3#2/0, 2#1 + #3 GND, 2#1/0 + #2 GND, 2#2/0 + #1 GND | 1-15/16" | 2-7/32" | 1-9/32" | 1.320 | .850 |
| 3306 | 3306M | 1-1/2" | (1) 3#4 | 3#3/0, 3#4/0, 2#3/0 + #1/0 GND, 2#4/0 + #2/0 GND | 2-5/32" | 2-21/32" | 1-5/8" | 1.515 | .930 |
| 3307 | 3307M | 2" | Max. 1.98", Min. 1.15" | | | | | | |
| 3308† | — | 2-1/2" | Max. 2.38", Min. 1.5" | | | | | | |
| 3309† | — | 3" | Max. 2.88", Min. 1.75" | | | | | | |
| 3310† | — | 3-1/2" | Max. 3.38", Min. 2.25" | | 2-25/32" | 3-5/16" | 1-29/32" | 1.980 | 1.150 |
| 3311† | — | 4" | Max. 3.88", Min. 2.5" | | | | | | |

* U.L. Listed for use with rubber and thermoplastic flexible cords (both single and multiple cords and 2 oval cables).
 † U.L. Listed for multiple cords and cables.

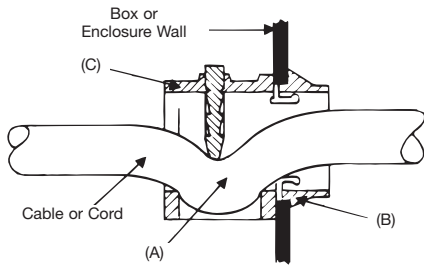
T&B Conduit Fittings

Nonmetallic Sheathed Cable Fittings

Nonmetallic Sheathed Cable and Flexible Cord Fittings (All Plastic)



3300 Series



Application

- To connect nonmetallic sheathed cable and flexible cord to a box or an enclosure.

Features

- Provides strain relief by partially deflecting cable (A); therefore:
 - Fitting will not damage outer covering or jacket of cable, or conductor insulation; designed to give safe trouble-free installation.
 - Holding power and cable strain relief are not effected by surface finish of outer covering or cable jacket.
 - Fitting provides superior holding power far in excess of listing agency requirements.
- Snap-in one piece design; accommodates variation in knockout dimensions, saves installation time (B).

- All high impact thermoplastic construction provides:
 - Insulated throat; conductors are protected from abrasion.
 - Improved dielectric strength, and elimination of potential shorts.
 - Corrosion resistance.

- Wide range—reduces inventories

- Fitting may be pre-installed in box K.O., or on cable.

Standard Material

All high impact thermoplastic—U.L. Class 94V-1 suitable for 105°C application.

Standard Finish

As Molded

Listing/Certification

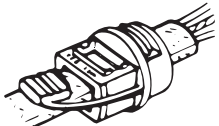
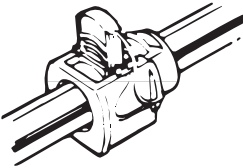



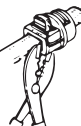
Cat. No. 3201, 3350 for factory installation

Conformity

U.L. 514B
CSA C22.2 No.18.3
NFPA 70-2008 (ANSI)



Typical Installation

| | | |
|--|--|--|
|  <p>1. Remove sheath from end of cable (4" or more as required). Insert cable through fitting as shown (Cable under button).</p> |  <p>2. Insert button into cavity.</p> |  <p>3. With grooved pliers, or parallel jaw type pliers (commercially available) squeeze button into cord or wires as far into fitting body as possible.</p> <p>Note: It may be necessary to re-adjust pliers to insure button is properly installed.</p> |
|  <p>4. Snap fitting into knockout box. If desired this step can be done prior to Step 1.</p> |  <p>5. To remove from knockout box depress ears.</p> |  <p>6. To remove from cable cut fitting as shown</p> |

Range

| Cat. No. | Knockout Size | Cable/ Cord Range |
|-------------|---------------|--|
| 3300 | 1/2" | 10-2, 12-2 & 14-2 type NM Cable .125" to .300" outside diameter cord |
| 3201 & 3350 | 1/2" | 10-3, 12-3, 14-3, 10-2, 12-2, 14-2 Type NM Cable; also multiple (2) 12-2 and 14-2 Type NM Cable; .300" to .600" outside diameter cord 8-3 and 6-3 type |
| 3202 | 3/4" | NM cables; also Multiple (2) 14-3 and 10-2 Type NM Cable; .500" to .850" outside diameter cord |

T&B Conduit Fittings

Nonmetallic Sheathed Cable Fittings



All Plastic Fitting for NM Cable and Flexible Cord

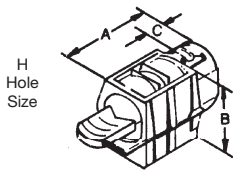


Figure 1

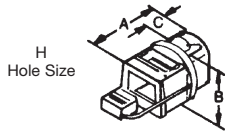
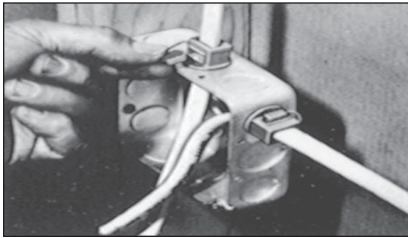


Figure 2

High impact thermoplastic. U.L. 94-V1.

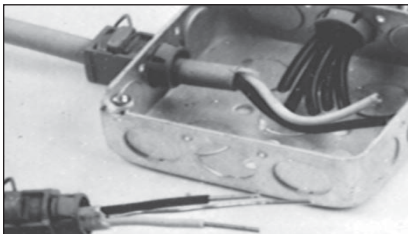
Features push-in design. Captive locking wedge secures cable with single squeeze of standard electrician's pliers. Provides excellent insulation, strain-relief and high pull-out value.



Snap captive locking wedge into fitting's cavity.



Press locking wedge into cavity which locks onto cable.



Cat. No. 3201 is ideal for multiple flexible cords and cable.

| Cat. No. | Size Range | K.O. Size | Fig. | Dimensions (in.) | | | | | F Max. Thk. Enclosure | H |
|----------|--|-----------|------|------------------|--------|------|-------|-------|-----------------------|-------------|
| | | | | A | B | C | D | E | | |
| 3300 | For use with 10-2, 12-2 and 14-2 NM cables; 18-2 and 18-3 SJ and SJO cords and 18-2 SV, SVO, SJT and SJTO cords, single or multiple; cord capacity .125-.300 diameter | 1/2" | 2 | 1-1/32 | 15/16 | 3/8 | .880 | .795 | .080 | 5/16 x 9/16 |
| 3350 | For use with 10-3, 12-3, 14-3, 10-2, 12-2, 4-2 NM cables; multiple (2) 12-2 and 14-2 N M cables; single and multiple flexible cords in wire range .300 in. to .600 in. | 1/2" | 1 | 1-11/32 | 1 | 7/16 | .880 | .795 | .080 | 21/32 dia. |
| 3202 | For use with 8-3 and 6-3 NM cables; (2) 14-3, 14-2, 12-2 and 10-2 NM cables; single and multiple flexible cords in wire range .500 in. to .850 in. | 3/4" | 1 | 1-1/2 | 1-5/16 | 7/16 | 1.100 | 1.005 | .090 | 7/8 dia. |

Temperature Rating: 105°C

T&B Conduit Fittings

Nonmetallic Sheathed Cable Fittings



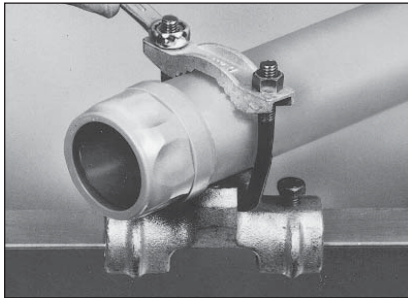
No locknut required. No special tools required.
High impact thermoplastic with steel insert.

Snap-in Fitting for Flexible Metal Conduit



| Cat. No. | Conduit Size | K.O. Size | A | B | C |
|----------|--------------|-----------|-------|---------|---------|
| 100TB | 3/8" | 1/2" | 27/32 | 1-13/32 | 1-31/32 |
| 100BP | 3/8" | 1/2" | 27/32 | 1-13/32 | 1-31/32 |

Temperature Rating: 105°C
U.L. 94-V1



Swivel cable tray clamps for aluminum and steel trays with regular or reinforced flanges.

- Serrations and biting teeth on clamping saddle provides a high quality bond between conduit and clamp
- 1/2" to 6" sizes that can be clamped to any position in a 90° arc
- Hardened steel screws bite into tray and provide positive bond
- Malleable iron hub and steel u-bolt accepts conduit from any angle

Swivel Tray Clamp



| Cat. No. | Conduit Size |
|----------|--------------|
| 6209 | 1/2"-3/4" |
| 6211 | 1"-1-1/4" |
| 6214 | 1-1/2"-2" |
| 6216 | 2-1/2"-3" |
| 6218 | 3-1/2"-4" |



Cable Tray Clamp



| Cat. No. | Conduit Size |
|----------|--------------|
| 6210 | 1/2"-3/4" |
| 6212 | 1"-1-1/4" |