

# Grounding and Bonding Product Guide



# The Bonding Network

## Standards



### ANSI/TIA-607-C; November 2015

- Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises
- Standards and Publications are adopted by TIA in accordance with the American National Standards Institute (ANSI) patent policy



### ANSI/NECA/BICSI 607-2011; 2011

- Standard for telecommunications bonding and grounding planning and installation methods for commercial buildings
- National Electrical Installation Standards (NEIS™) are designed to improve communication among specifiers, purchasers, and suppliers of electrical construction services. This standard has been prepared by BICSI®/NECA® under joint jurisdiction of BICSI and NECA, and approved by consensus ballot in accordance with the requirements of ANSI. This publication is intended to comply with the edition of the National Electrical Code (NEC®) in effect at the time of publication.



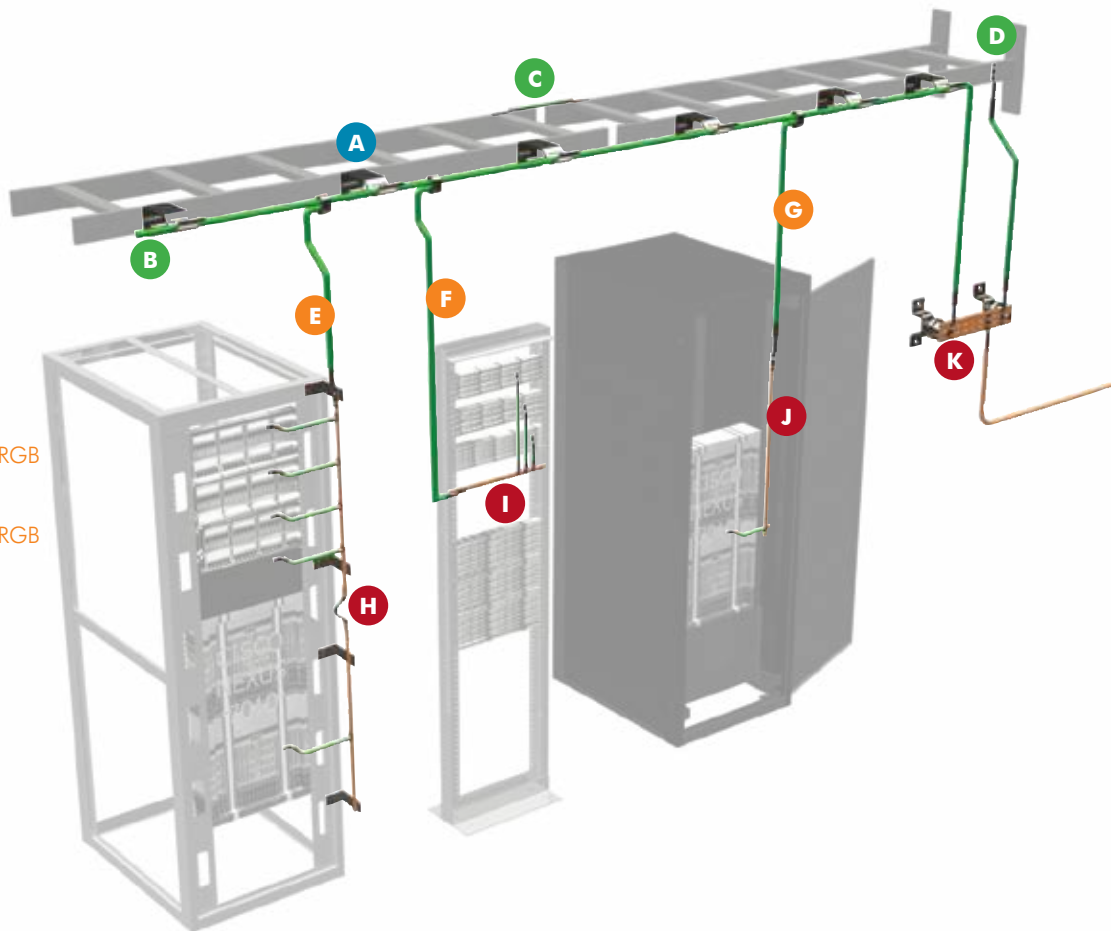
### NEC Article 250

- This article covers general grounding and bonding requirements and practices within electrical installations

The above standards differ; refer to the specified standard to ensure compliance for product selection and installation.

## Room Scenario

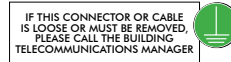
- A** TEBC Bracket for Ladder  
HGBTEBCBRKL10
- B** TEBC 12ft with double lug  
HGRKTD144DB
- C** Ladder tray jumper  
HGRKTD9D
- D** Ladder to TGB Conductor  
HGRKTD60DB
- E** Conductor with C-Tap to 76" RGB  
HGRKTD60C46
- F** Conductor with C-Tap to 19" RGB  
HGRKTD60C46
- G** Conductor with C-Tap to 36" RGB  
HGRKTD60C46
- H** 76" x 3/4" RGB Busbar  
HBBBVR76KT
- I** 19" Horizontal RGB  
HBBBHR19KT
- J** 36" x 3/4" RGB Busbar  
HBBBVR36KT
- K** 10" x 2" TGB Busbar  
HBBB14210A



# Grounding Kits

## All Ground Conductor Kits Include:

| Lug and Tap                                                              | Accessories                                                                    |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| LUG<br>Traceable, crimped, die indexed 7, long barrel, inspection window | LABELS<br>Caution label applied at both ends; circle ground reflective sticker |
| TAP<br>C-tap, H-tap                                                      | ANTIOXIDANT<br>0.5oz tube Penetrox                                             |



## Lug Hole Mounting Dimensions

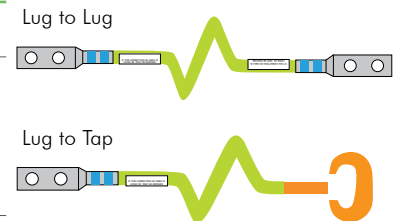
| Lug Style | Hole Diameter | Hole Spacing |
|-----------|---------------|--------------|
| S         | 0.25"         | —            |
| D/DN      | 0.25"         | 0.625"       |
| DA        | 0.25"         | 0.75"        |
| DB        | 0.25"         | 1.0"         |

## Standard Ground Conductor Kit Applications

| Application                    | Lug      | Length (in) | Lug      | Tap    | Catalog No.         |
|--------------------------------|----------|-------------|----------|--------|---------------------|
| Rack busbar suppressor to rail | HGBL06D  | 30"         | HGBL06S  |        | <b>HGRKTD30S</b>    |
| Front to rear rail jumper      | HGBL06D  | 30"         | HGBL06DN |        | <b>HGRKTD30DN</b>   |
| Front to rear rail jumper      | HGBL06D  | 45"         | HGBL06DN |        | <b>HGRKTD45DN</b>   |
| Rack busbar to wall busbar     | HGBL06DA | 144"        | HGBL06D  |        | <b>HGRKTD45DN</b>   |
| Fiber armor bond               | HGBL06D  | 30"         | HGBKS25  |        | <b>HGRKTD30KS25</b> |
| Horizontal busbar to conductor | HGBL06DA | 60"         |          | HYC4C6 | <b>HGRKTD45DN</b>   |
| Rack rail to conductor         | HGBL06D  | 60"         |          | HYC4C6 | <b>HGRKTD45DN</b>   |

## Custom Ground Conductor Kits

| Kit Base     | Lugs                                                                                     | Lengths (in)                                                        | Taps                                                                |
|--------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>HGRKT</b> | <b>S</b> = HGBL06S<br><b>D</b> = HGBL06D<br><b>DA</b> = HGBL06DA<br><b>DB</b> = HGBL06DB | <b>30"</b><br><b>45"</b><br><b>60"</b><br><b>90"</b><br><b>144"</b> | <b>YH6</b> = HYH6C6C<br><b>C46</b> = HYC4C6<br><b>YC4</b> = HYC4L12 |



Contact Customer Service for available configurations.

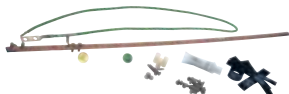
## Jumper Kits

| Type        | Contents                                                                                                       | Material | Catalog No.        |
|-------------|----------------------------------------------------------------------------------------------------------------|----------|--------------------|
| Ladder Tray | (1) 9" #6 conductor with long barrel lugs crimped on both ends, stainless steel hardware, labeled, antioxidant | Copper   | <b>HGRKTD9D</b>    |
| Ladder Tray | (10) mechanical lay-in terminals, (5) 9" #6 conductors, stainless steel hardware, labels                       | Aluminum | <b>HGRKTKA9KA5</b> |
| Wire Basket | (10) copper split bolts, (5) 9" #6 conductors, stainless steel hardware, labels                                | Copper   | <b>HGRKTWB5</b>    |



## Busbar Kits

| Type           | Contents                                                                                                      | Material   | Catalog No.         |
|----------------|---------------------------------------------------------------------------------------------------------------|------------|---------------------|
| Horizontal 19" | Busbar, insulators, stainless steel hardware, 60" #6 AWG conductor, ESD Port, Antioxidant                     | Copper     | <b>HGRKTHC</b>      |
|                |                                                                                                               | Tin-plated | <b>HGRKTHT</b>      |
| Vertical 36"   | Busbar, insulators, stainless steel hardware, 60" #6 AWG conductor, ESD Port, Antioxidant                     | Copper     | <b>HGRKTV C</b>     |
|                |                                                                                                               | Tin-plated | <b>HGRKTV T</b>     |
| SBB/TGB        | 2" x 10", insulators, stainless steel hardware, (1) #6 lug, (1) #2 lug, (2) 2/0 lug, (1) 4/0 lug, Antioxidant | Copper     | <b>HGRKTTGB10A</b>  |
| MBB/TMGB       | 4" x 16", insulators, stainless steel hardware, (1) #6 lug, (1) #2 lug, (2) 2/0 lug, (1) 4/0 lug, Antioxidant | Copper     | <b>HGRKTTMGB16H</b> |



# Compression Lugs

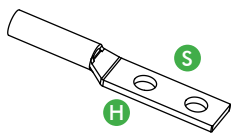
- Solid copper construction and tin plated
- UL Listed 90° C, 600V to 35kV
- Die Index Traceable
- UL and CSA Listed



## Lug Reference

Hole Diameter: Lug Number 38 =  $3/8" = 0.375"$   
 Window: Inspect Wire  
 Barrel Length: Long Series  
 Die Index: Match with Traceable Die

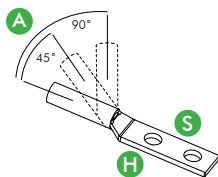
## Standard Lugs



| Style     | Single |        | Double |       |        |       |
|-----------|--------|--------|--------|-------|--------|-------|
| H Hole    | 0.25"  | 0.375" | 0.25"  | 0.25" | 0.375" | 0.25" |
| S Spacing |        |        | 0.625" | 0.75" | 1"     | 1.5"  |

| Gauge    | Qty | Color  | Die Index |         |          |         |          |           |          |
|----------|-----|--------|-----------|---------|----------|---------|----------|-----------|----------|
| #6       | 50  | Blue   | 7         | HGBL06S |          | HGBL06D | HGBL06DA | HGBL06DB  | HGBL06DK |
| #4       | 50  | Gray   | 8         | HGBL04S |          | HGBL04D | HGBL04DA | HGBL04DB  |          |
| #2       | 25  | Brown  | 10        | HGBL02S | HGBL02SA | HGBL02D | HGBL02DA | HGBL02DB  |          |
| #1       | 25  | Green  | 11        | HGBL01S | HGBL01SA | HGBL01D | HGBL01DA | HGBL01DB  |          |
| 1/0      | 10  | Pink   | 12        | HGBL10S | HGBL10SA | HGBL10D | HGBL10DA | HGBL10DB  |          |
| 2/0      | 10  | Black  | 13        |         | HGBL20SA | HGBL20D | HGBL20DA | HGBL20DB  |          |
| 3/0      | 10  | Orange | 14        |         | HGBL30SA |         | HGBL30DA | HGBL30DB  |          |
| 4/0      | 10  | Purple | 15        |         |          |         |          | HGBL40DB  |          |
| 250kcmil | 5   | Yellow | 16        |         |          |         |          | HGBL250DB |          |
| 300kcmil | 5   | White  | 17        |         |          |         |          | HGBL300DB |          |
| 350kcmil | 5   | Red    | 18        |         |          |         |          | HGBL350DB |          |
| 500kcmil | 5   | Brown  | 20        |         |          |         |          | HGBL500DB |          |
| 600kcmil | 5   | Green  | 22        |         |          |         |          | HGBL600DB |          |
| 750kcmil | 5   | Black  | 24        |         |          |         |          | HGBL750DB |          |

## Angled Lugs



| Style     | Single |       | Double |        |        |       |
|-----------|--------|-------|--------|--------|--------|-------|
| H Hole    | 0.25"  | 0.25" | 0.25"  | 0.25"  | 0.375" | 0.25" |
| S Spacing |        |       | 0.625" | 0.625" | 1"     | 1.5"  |
| A Angle   | 45°    | 90°   | 45°    | 90°    | 90°    | 90°   |

| Gauge | Qty | Color | Die Index |          |          |           |           |            |           |
|-------|-----|-------|-----------|----------|----------|-----------|-----------|------------|-----------|
| #6    | 50  | Blue  | 7         | HGBL06SF | HGBL06SN | HGBL06D45 | HGBL06D90 | HGBL06DB90 | HGBL06DKN |
| #4    | 50  | Gray  | 8         | HGBL04SF |          | HGBL04D45 | HGBL04D90 | HGBL04DB90 |           |
| #2    | 25  | Brown | 10        | HGBL02SF |          | HGBL02D45 | HGBL02D90 | HGBL02DB90 |           |
| 1/0   | 10  | Pink  | 12        |          |          | HGBL10D45 | HGBL10D90 | HGBL10DB90 |           |

# Busbars

- For all connections to busbars, oxidation must be scrubbed away and the application of an antioxidant is required.
- Add "TP" to the end of any busbar Catalog Number for 99% Copper Tin Plated.

## Busbars

| Includes                                                                            | Height | Length | Thickness | Hole Size  | 0.25"  | 0.25" | 0.375" | Catalog No. |
|-------------------------------------------------------------------------------------|--------|--------|-----------|------------|--------|-------|--------|-------------|
|                                                                                     |        |        |           | Hole Space | 0.625" | 0.75" | 1"     |             |
| Insulators, mounting hardware                                                       | 0.75"  | 19"    | 0.25"     |            | 5      | 2     |        | HBBBHR19KT  |
|    |        |        |           |            |        |       |        |             |
| Insulators, mounting hardware                                                       | .75"   | 36"    | 0.25"     |            | 8      |       | 2      | HBBBVR36KT  |
|    |        |        |           |            |        |       |        |             |
| Insulators, mounting hardware, 8" braid                                             | .75"   | 76"    | 0.25"     |            | 16     |       |        | HBBBVR76KT  |
|    |        |        |           |            |        |       |        |             |
| Insulators, bracket                                                                 | 2"     | 10"    | 0.25"     |            | 8      |       |        | HBBB14210A  |
|   |        |        |           |            |        |       |        |             |
| Insulators, bracket                                                                 | 2"     | 24"    | 0.25"     |            | 9      | 9     |        | HBBB14224B  |
|  |        |        |           |            |        |       |        |             |
| Insulators, bracket                                                                 | 4"     | 16"    | 0.25"     |            |        |       | 8      | HBBB14416G  |
|  |        |        |           |            |        |       |        |             |
| Insulators, bracket                                                                 | 4"     | 16"    | 0.25"     |            |        | 8     | 8      | HBBB14416H  |
|  |        |        |           |            |        |       |        |             |
| Insulators, bracket                                                                 | 4"     | 20"    | 0.25"     |            |        | 17    | 17     | HBBB14420J  |
|  |        |        |           |            |        |       |        |             |

Note: Lug mounting dimensions are color coded to assist in pairing lugs to busbars.

# Compression Taps



## Thin Wall C-Taps

| Qty | Run-Tap Stranded | Run-Tap Stranded | Run-Tap Stranded | Length | Color Code | No. Ribs | Die Index | HW Series (No. of crimps) | HU Series (No. of crimps) | Catalog No.     |
|-----|------------------|------------------|------------------|--------|------------|----------|-----------|---------------------------|---------------------------|-----------------|
| 25  | 6-6              | –                | –                | 1.18"  | Brown      | 1        | 10        | HW2CVT(2)                 | HUC4                      | <b>HYC4L12</b>  |
| 25  | 4-4              | 2-6              | –                | 1.18"  | Pink       | 1        | 12        | HW25VT (2)                | HUC2                      | <b>HYC2L12</b>  |
| 10  | 2-4              | 1-6              | –                | 1.75"  | Black      | 2        | 13        | HW26VT (2)                | HUC1                      | <b>HYC1L12</b>  |
| 10  | 2-2              | 1-4              | 1/0-4            | 1.75"  | Orange     | 2        | 14        | HW27VT(3)                 | HU25                      | <b>HYC25L12</b> |
| 5   | 1-1              | 1/0-2            | 2/0-2            | 1.75"  | Purple     | 2        | 15        | HW28VT(3)                 | HU26                      | <b>HYC26L12</b> |
| 5   | 1/0-1/0          | 2/0-2            | 3/0-2            | 1.75"  | Yellow     | 2        | 16        | HW29VT(3)                 | –                         | <b>HYC27L12</b> |

## Direct Burial C-Taps

| Qty | Run-Tap Stranded | Run-Tap Stranded | Run-Tap Stranded | Length | Die Index | HW Series (No. of crimps) | HU Series (No. of crimps) | Catalog No.     |
|-----|------------------|------------------|------------------|--------|-----------|---------------------------|---------------------------|-----------------|
| 10  | 6-6              | 4-6              | –                | 0.625" | BG        | HWBG (2)                  | HUBG (2)                  | <b>HYC4C6</b>   |
| 10  | 4-4              | 4-6              | –                | 0.625" | BG        | HWBG (2)                  | HUBG (2)                  | <b>HYC4C4</b>   |
| 10  | 2-4              | 2-6              | –                | 0.75"  | C         | HWCC (2)                  | HUC (2)                   | <b>HYC2C4</b>   |
| 10  | 2-2              | –                | –                | 0.75"  | C         | HWCC (2)                  | HUC (2)                   | <b>HYC2C2</b>   |
| 5   | 2/0-6            | 2/0-4            | 2/0-2            | 0.875" | 0         | –                         | HU0                       | <b>HYC26C2</b>  |
| 5   | 2/0-2/0          | –                | –                | 0.875" | 0         | –                         | HU0                       | <b>HYC26C26</b> |
| 1   | 4/0-6            | 4/0-4            | 4/0-2            | 1.07"  | D3        | –                         | HUD3                      | <b>HYC28C2</b>  |
| 1   | 4/0-2/0          | –                | –                | 1.07"  | D3        | –                         | HUD3                      | <b>HYC28C26</b> |
| 1   | 4/0-4/0          | –                | –                | 1.07"  | D3        | –                         | HUD3                      | <b>HYC28C28</b> |

## H-Taps

| Qty | Run-Tap Stranded | Run-Tap Stranded | Run-Tap Stranded | Length | Color Code | Die Index | HW Series | HU Series | Catalog No.    |
|-----|------------------|------------------|------------------|--------|------------|-----------|-----------|-----------|----------------|
| 1   | 6-6              | –                | –                | 0.6"   | Orange     | BG        | HWBG      | HUBG      | <b>HYH6C6C</b> |
| 1   | 2-2,4,6          | 4-4,6            | –                | 0.75"  | Brown      | C         | HWCC      | HUC       | <b>HYH2C2C</b> |
| 1   | 4/0-2,6          | 2/0-2,6          | 1/0-2,6          | 0.9"   | Purple     | 654       | –         | HU654     | <b>HYH292C</b> |
| 1   | 4/0-4/0,2        | 3/0-3/0,2        | 2/0-2/0,2        | 0.9"   | Purple     | 654       | –         | HU654     | <b>HYH2929</b> |
| 1   | 500-250,1/0      | 350-250,1/0      | 4/0-1/0          | 1.0    | Brown      | 1104      | –         | HU1104    | <b>HYH3429</b> |
| 1   | 500-500,4/0      | 350-350,4/0      | –                | 1.0    | Brown      | 1104      | –         | HU1104    | <b>HYH3434</b> |
| 1   | 750-4/0,1/0      | 650-4/0,1/0      | 500-4/0,1/0      | 0.95   | Yellow     | K-R       | –         | HUKR      | <b>HYH3931</b> |
| 1   | 750-750,350      | 650-650,350      | 500-350          | 1.25   | Yellow     | K-R       | –         | HUKR      | <b>HYH3939</b> |

## H-Taps with Covers

| Qty | Run-Tap Stranded | Run-Tap Stranded | Run-Tap Stranded | Length | Color Code | Die Index | HW Series | HU Series | Catalog No.      |
|-----|------------------|------------------|------------------|--------|------------|-----------|-----------|-----------|------------------|
| 1   | 2-2,4,6          | 4-4,6            | –                | 0.75"  | Brown      | C         | HWCC      | HUC       | <b>HYH2CWC</b>   |
| 1   | 4/0-2,6          | 2/0-2,6          | 1/0-2,6          | 0.9"   | Purple     | 654       | –         | HU654     | <b>HYH29WC</b>   |
| 1   | 4/0-4/0,2        | 3/0-3/0,2        | 2/0-2/0,2        | 0.9"   | Purple     | 654       | –         | HU654     | <b>HYH2929WC</b> |

## Covers for H-Taps

| Qty | H-Tap Size | Color Code | Clear Cover     | Black Cover    |
|-----|------------|------------|-----------------|----------------|
| 1   | HYH6C      | Orange     | <b>HCCFBGFR</b> | <b>HCFBGFR</b> |
| 1   | HYH2C      | Brown      | <b>HCCF0FR</b>  | <b>HCF0FR</b>  |
| 1   | HYH29      | Purple     | <b>HCCFDFR</b>  | <b>HCFDFR</b>  |
| 1   | HYH34      | Brown      | <b>HCCFN</b>    | <b>HCFN</b>    |
| 1   | HYH39      | Yellow     | <b>HCCFR</b>    | <b>HCFR</b>    |

## Tools

|                                                                                   | Compression | Contents                                                                               | Die Type   | Catalog No.       |
|-----------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------|------------|-------------------|
|  | 6 ton       | Automatic compression tool, (2) 18V lithium batteries, charging station, carrying case | HW Series  | <b>HPAT600LI</b>  |
|  | 9,000lb     | Manual compression tool, built in BG die, 24" handles                                  | HW Series  | <b>HMD7</b>       |
|  | 8,000lb     | Manual compression tool, metal carrying case with die holders                          | HX Series  | <b>HOVR840</b>    |
|  | 12 ton      | Automatic compression tool, (2) 18V lithium batteries, charging station, carrying case | HU Series  | <b>HPAT750LI</b>  |
|  | 12 ton      | Manual compression tool, 24" handles, carrying case                                    | HU Series  | <b>HY750CHSXT</b> |
|  | 6,000lb     | Manual compression tool, #6 to 4/0 lug dies integrated in tool head, 26" handles       | Integrated | <b>HMRC840</b>    |

## Tool Dies

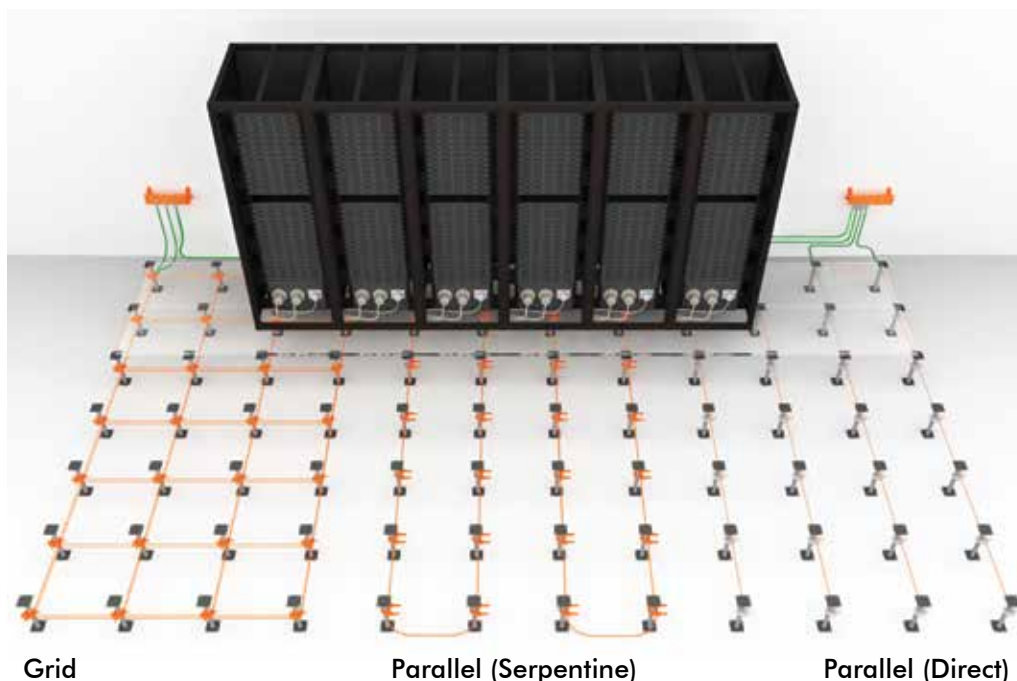
| HW Series                                                                          |          |               |        | HX Series                                                                          |     |             |     | HU Series                                                                            |          |               |      |
|------------------------------------------------------------------------------------|----------|---------------|--------|------------------------------------------------------------------------------------|-----|-------------|-----|--------------------------------------------------------------------------------------|----------|---------------|------|
| 9 pt. font size                                                                    |          |               |        | 9 pt. font size                                                                    |     |             |     | 9 pt. font size                                                                      |          |               |      |
|  |          |               |        |  |     |             |     |  |          |               |      |
| Lugs                                                                               | Die      | Taps          | Die    | Lugs                                                                               | Die | Taps        | Die | Lugs                                                                                 | Die      | Taps          | Die  |
| <b>HW5CRT</b>                                                                      | #6       | <b>HWCC</b>   | C      | <b>HX5CRT</b>                                                                      | #6  | <b>HXBG</b> | BG  | <b>HU5CRT</b>                                                                        | #6       | <b>HU1105</b> | 1105 |
| <b>HW4CRT</b>                                                                      | #4       | <b>HW0</b>    | 0      | <b>HX4CRT</b>                                                                      | #4  |             |     | <b>HU4CRT</b>                                                                        | #4       | <b>HU1104</b> | 1104 |
| <b>HW2CRT</b>                                                                      | #2       | <b>HW28K</b>  | CUTOFF | <b>HX2CRT</b>                                                                      | #2  |             |     | <b>HU2CRT</b>                                                                        | #2       | <b>HU654</b>  | 654  |
| <b>HW1CRT</b>                                                                      | #1       | <b>HWBG</b>   | BG     | <b>HX1CRT</b>                                                                      | #1  |             |     | <b>HU1CRT</b>                                                                        | #1       | <b>HU997</b>  | 997  |
| <b>HW25RT</b>                                                                      | 1/0      | <b>HW2CVT</b> | 10     | <b>HX25RT</b>                                                                      | 1/0 |             |     | <b>HU25RT</b>                                                                        | 1/0      | <b>HUC4</b>   | C4   |
| <b>HW26RT</b>                                                                      | 2/0      | <b>HW25VT</b> | 12     | <b>HX26RT</b>                                                                      | 2/0 |             |     | <b>HU26RT</b>                                                                        | 2/0      | <b>HUC2</b>   | C2   |
| <b>HW27RT</b>                                                                      | 3/0      | <b>HW26VT</b> | 13     | <b>HX27RT</b>                                                                      | 3/0 |             |     | <b>HU27RT</b>                                                                        | 3/0      | <b>HUC1</b>   | C1   |
| <b>HW28VT</b>                                                                      | 4/0      | <b>HW27VT</b> | 14     |                                                                                    |     |             |     | <b>HU28RT</b>                                                                        | 4/0      | <b>HUC25</b>  | C25  |
| <b>HW29VT</b>                                                                      | 250kcmil | <b>HW28VT</b> | 15     |                                                                                    |     |             |     | <b>HU29RT</b>                                                                        | 250kcmil | <b>HUC</b>    | C    |
| <b>HW30VT</b>                                                                      | 300kcmil | <b>HW29VT</b> | 16     |                                                                                    |     |             |     | <b>HU30RT</b>                                                                        | 300kcmil | <b>HU0</b>    | 0    |
| <b>HW31VT</b>                                                                      | 350kcmil |               |        |                                                                                    |     |             |     | <b>HU31RT</b>                                                                        | 350kcmil | <b>HUBG</b>   | BG   |
| <b>HW34VT</b>                                                                      | 400kcmil |               |        |                                                                                    |     |             |     | <b>HU34RT</b>                                                                        | 400kcmil | <b>HUC25</b>  | 26   |
|                                                                                    |          |               |        |                                                                                    |     |             |     | <b>HU36RT</b>                                                                        | 500kcmil |               |      |
|                                                                                    |          |               |        |                                                                                    |     |             |     | <b>HU39RT</b>                                                                        | 750kcmil |               |      |

## Tool Accessories

|                                                                                     | Description   | Contents                                                    | Catalog No.      |
|-------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------|------------------|
|  | Torque Wrench | 30–150 in-lb, carrying case and certificate of calibration  | <b>HBT30150</b>  |
|                                                                                     |               | 150–750 in-lb, carrying case and certificate of calibration | <b>HBT150750</b> |
|  | Case          | Die tree for use with HW and HX series dies, holds 6 sets*  | <b>HWDIETREE</b> |
|  |               | Die case for use with HW and HX series dies, holds 12 sets* | <b>HWIECASE</b>  |
|                                                                                     |               | Die case for use with HU series dies, holds 15 sets*        | <b>HUIECASE</b>  |

\*Dies not included

# Clamps



## Raised Floor Pedestal Clamps

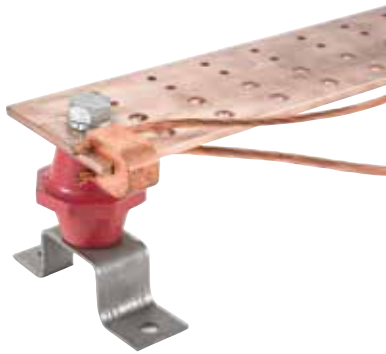
|                                                                                     | Pedestal                                      | Wire Range  | Configuration    | Hardware                | Install Torque                       | Catalog No.         |
|-------------------------------------------------------------------------------------|-----------------------------------------------|-------------|------------------|-------------------------|--------------------------------------|---------------------|
|   | 0.75"-1.5"<br>Square<br>0.75"-1.875"<br>Round | #6 – 4/0AWG | Grid or Parallel | Stainless Steel<br>1/2" | 120in-lb Conductor<br>180in-lb Clamp | <b>HGBGXP1828RF</b> |
|  | 1.0"-1.25"<br>Round                           | #4 – 2/0AWG | Parallel         | Silicon Bronze<br>9/16" | 240in-lb                             | <b>HGBGP1526G1</b>  |
|  | 0.75"-1.0"<br>Round or<br>Square              | #8 – 2AWG   | Parallel         | Silicon Bronze<br>9/16" | 240in-lb                             | <b>HGBGRF4C3</b>    |

Note: Torque values may differ based on the Grounding and Bonding Standard selected.  
The Mesh Bonding Network shall have a support attached at a maximum of 3' (36") intervals.

## Pipe Clamps

|                                                                                     | I.P.S. Pipe Diameter | Height   | Width  | Conductor Range | U-Bolt Size | Nut Size | Catalog No.       |
|-------------------------------------------------------------------------------------|----------------------|----------|--------|-----------------|-------------|----------|-------------------|
|  | 1.0"                 | 2-7/8"   | 2-5/8" | #4-2/0          | 3/8"        | 9/16"    | <b>HGBGAR1526</b> |
|                                                                                     | 1.5"                 | 3-1/2"   | 3"     | #4-2/0          | 3/8"        | 9/16"    | <b>HGBGAR1726</b> |
|                                                                                     | 2.0"                 | 4"       | 3-1/4" | #4-2/0          | 3/8"        | 9/16"    | <b>HGBGAR1826</b> |
|                                                                                     | 2.5"                 | 4-1/4"   | 3-3/4" | #4-2/0          | 3/8"        | 9/16"    | <b>HGBGAR1926</b> |
|                                                                                     | 3.0"                 | 5"       | 4-1/4" | #4-2/0          | 3/8"        | 9/16"    | <b>HGBGAR2026</b> |
|                                                                                     | 3.5"                 | 5-5/8"   | 4-3/4" | #4-2/0          | 3/8"        | 9/16"    | <b>HGBGAR2126</b> |
|                                                                                     | 4.0"                 | 6-1/4"   | 5-3/8" | #4-2/0          | 3/8"        | 9/16"    | <b>HGBGAR2226</b> |
|                                                                                     | 5.0"                 | 6-3/8"   | 5-7/8" | #4-2/0          | 3/8"        | 9/16"    | <b>HGBGAR2426</b> |
|                                                                                     | 6.0"                 | 8-13/16" | 8-3/8" | 2-250kcmil      | 1/2"        | 3/4"     | <b>HGBGAR8629</b> |

Note: All pipe clamps secure the grounding conductor to the pipe in a parallel or perpendicular manner.



## Irreversible Connectors

Irreversible Busbar and I-Beam Connectors provide a high level of bonding security and are as permanent as welding.

### Typical Busbar Connector Applications

- TGB to GE
- TGB to TBB
- TGB to beam steel
- TGB to TGB
- TGB to mesh BN

### Busbar Connectors

|                                                                                   | Quantity | Dimensions           | Wire 1  | Wire 2 | Die    | Catalog No.          |
|-----------------------------------------------------------------------------------|----------|----------------------|---------|--------|--------|----------------------|
|  | 1        | 1.5" x 1.37" x 0.81" | #2      | #6     | HU1105 | <b>HYG14B2TC2C6C</b> |
|                                                                                   | 1        | 1.5" x 1.37" x 0.81" | #2      | #2     | HU1105 | <b>HYG14B2TC2C2C</b> |
|  | 1        | 1.5" x 1.37" x 0.81" | 1/0-4/0 | –      | HU1105 | <b>HYG14BTC28</b>    |
|                                                                                   | 1        | 1.5" x 1.37" x 0.81" | #2-2/0  | –      | HU1105 | <b>HYG14BTC26</b>    |

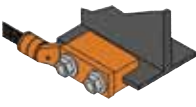
Note: Individually packaged, Penetrox applied, compatible with 0.25" thick busbars.

### Typical I-Beam Connector Applications

- Steel beam to TBB
- Steel beam to TGB
- Steel beam to TMGB



### I-Beam Connectors

|                                                                                     | Quantity | Steel Flange                                                                                                                  | Flange I Range  | Die    | Catalog No.      |
|-------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------|-----------------|--------|------------------|
|  | 1        | <br>STANDARD BEAMS<br>(FLANGE ANGLED)      | 0.250" – 0.338" | HU1105 | <b>HYGIBS338</b> |
|                                                                                     | 1        |                                                                                                                               | 0.338" – 0.400" | HU1105 | <b>HYGIBS400</b> |
|                                                                                     | 1        |                                                                                                                               | 0.400" – 0.462" | HU1105 | <b>HYGIBS462</b> |
|                                                                                     | 1        |                                                                                                                               | 0.462" – 0.500" | HU1105 | <b>HYGIBS550</b> |
|  | 1        | <br>WIDE FLANGE BEAMS<br>(FLANGE PARALLEL) | 0.250" – 0.338" | HU1105 | <b>HYGIBW338</b> |
|                                                                                     | 1        |                                                                                                                               | 0.338" – 0.400" | HU1105 | <b>HYGIBW400</b> |
|                                                                                     | 1        |                                                                                                                               | 0.400" – 0.462" | HU1105 | <b>HYGIBW462</b> |
|                                                                                     | 1        |                                                                                                                               | 0.462" – 0.500" | HU1105 | <b>HYGIBW550</b> |

Note: Includes heavy duty lug mounting hardware: (2) 0.42" threaded studs, (2) flat washers, (2) lock washers, (2) hex nuts.  
Hole spacing for heavy duty HYGHA lugs.

### Heavy Duty Lugs

|                                                                                     | Quantity | Conductor Size | Hole Size | Spacing | Die Index | Die        | Catalog No.    |
|-------------------------------------------------------------------------------------|----------|----------------|-----------|---------|-----------|------------|----------------|
|  | 1        | #2             | 0.56"     | 1.75"   | 11        | HU1CRT     | <b>HYGHA02</b> |
|                                                                                     | 1        | 1/0            | 0.56"     | 1.75"   | 14        | HU27RT     | <b>HYGHA25</b> |
|                                                                                     | 1        | 2/0            | 0.56"     | 1.75"   | 15        | HU28RT     | <b>HYGHA26</b> |
|                                                                                     | 1        | 3/0            | 0.56"     | 1.75"   | 16        | HU29RT (2) | <b>HYGHA27</b> |

Note: Individually packaged, Penetrox filled, compatible with HYGIB I-beam connectors.

# Mechanical Connectors

## Terminals

|  | Qty | Minimum | Maximum | Material | Mount Hole Diameter | Torque (in lb) | Catalog No.     |
|-----------------------------------------------------------------------------------|-----|---------|---------|----------|---------------------|----------------|-----------------|
|                                                                                   | 100 | #14     | #6      | Aluminum | 0.25"               | 45             | <b>HGBKA6U</b>  |
|                                                                                   | 100 | #14     | #4      | Aluminum | 0.22"               | 35             | <b>HGBBGBL4</b> |
|                                                                                   | 100 | #14     | #6      | Copper   | 0.19"               | 45             | <b>HGBKLU35</b> |
|  | 100 | #14     | #4      | Copper   | 0.22"               | 35             | <b>HGBCL501</b> |

## On-Rail Terminal

|  | Qty | Minimum | Maximum | Material | Mount Hole Diameter | Hole Spacing | Catalog No.    |
|-----------------------------------------------------------------------------------|-----|---------|---------|----------|---------------------|--------------|----------------|
|                                                                                   | 1   | #14     | 2/0     | Aluminum | 0.31"               | 0.625"       | <b>HGBKARB</b> |

## Split Bolt Connectors

|  | Qty | STR Min Run and Tap | STR Max Run and Tap | SOL Max Run and Tap | Material | Bolt Size | Length | Torque (in lb) | Catalog No.    |
|-------------------------------------------------------------------------------------|-----|---------------------|---------------------|---------------------|----------|-----------|--------|----------------|----------------|
|                                                                                     | 50  | #8                  | #6                  | #6                  | Copper   | 7/16"     | 1.14"  | 165            | <b>HGBKS17</b> |
|                                                                                     | 50  | #8                  | #4                  | #4                  | Copper   | 1/2"      | 1.20"  | 165            | <b>HGBKS20</b> |
|                                                                                     | 50  | #6                  | #3                  | #2                  | Copper   | 19/32"    | 1.50"  | 275            | <b>HGBKS22</b> |
|                                                                                     | 25  | #6                  | #2                  | #1                  | Copper   | 5/8"      | 1.54"  | 275            | <b>HGBKS23</b> |
|                                                                                     | 25  | #4                  | 1/0                 | 2/0                 | Copper   | 3/4"      | 1.77"  | 385            | <b>HGBKS25</b> |
|                                                                                     | 10  | #2                  | 2/0                 | 3/0                 | Copper   | 7/8"      | 1.94"  | 385            | <b>HGBKS26</b> |
|                                                                                     | 10  | #1                  | 3/0                 | 4/0                 | Copper   | 1 1/8"    | 1.86"  | 500            | <b>HGBKS27</b> |
|                                                                                     | 5   | #1                  | 250kcmil            | 4/0                 | Copper   | 1 1/8"    | 2.07"  | 650            | <b>HGBKS29</b> |

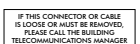
## Split Bolt Covers

|  | Qty | Size Minimum | Size Maximum | Color | Catalog No.    |
|-------------------------------------------------------------------------------------|-----|--------------|--------------|-------|----------------|
|                                                                                     | 1   | HGBKS17      | HGBKS20      | Black | <b>HGBSC4</b>  |
|                                                                                     | 1   | HGBKS22      | HGBKS23      | Black | <b>HGBSC2</b>  |
|                                                                                     | 1   | HGBKS25      | HGBKS26      | Black | <b>HGBSC20</b> |

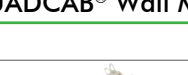
## ShieldBond Connector

|  | Qty | Description                                                                                                                                     | Catalog No.       |
|-------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
|                                                                                     | 100 | ShieldBond connector kits for cable jackets. Each kit includes brass screw and nut, (2) retaining washers, (1) gripping. Install tool included. | <b>BC285SB100</b> |

## Installation Accessories

| Description                                                                                                                                                                     | Qty | Catalog No.       | Description                                                                                                                                        | Qty | Catalog No.       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------------------|
|  ESD port for 4mm banana plug; 0.5oz Penetrox; ESD Label; (2) #12-24 TFS; (2) M6 stainless TFS | 10  | <b>HGBESDKT10</b> |  ESD cloth bracelet; 6ft cord; 4mm banana plug                    | 1   | <b>HGBESDBC</b>   |
|  1/4" belleville washer                                                                        | 50  | <b>HGB25CNWH</b>  |  ESD metal bracelet; 6ft cord; 4mm banana plug                    | 1   | <b>HGBESDBM</b>   |
|  3/8" belleville washer                                                                        | 50  | <b>HGB38CNWH</b>  |  3/16" drill bit for steel material and 1/4" thread forming screw | 1   | <b>HGB025DBS</b>  |
|  #12-24 x 3/4" stainless steel screws                                                           | 50  | <b>HGB1224ST</b>  |  Wire brush for power drill                                       | 1   | <b>HGBCWB2</b>    |
|  M6 x 16mm stainless steel screws                                                               | 50  | <b>HGBM6ST</b>    |  2" x 4" abrasive pad                                             | 6   | <b>HGB24AP</b>    |
|  ESD label                                                                                     | 25  | <b>HGBESDLBL</b>  |  8oz bottle Penetrox                                              | 1   | <b>HGBP8A</b>     |
|  Ground label                                                                                  | 25  | <b>HGBGNDLBL</b>  |  0.5oz tube Penetrox                                              | 50  | <b>HPENEA0550</b> |
|  Ground wire label                                                                              | 25  | <b>HGRKTLBL</b>   |  Serrated paint piercing washer                                   | 50  | <b>HGB25PPW</b>   |

## Braided Jumper

|                                                                                     | Qty | Length | Width | Hole Size | Hole Spacing | Catalog No.      |
|-------------------------------------------------------------------------------------|-----|--------|-------|-----------|--------------|------------------|
|  | 10  | 6"     | 0.5"  | 1/4"      | —            | <b>HGBBD6S10</b> |
|  | 10  | 9"     | 0.5"  | 1/4"      | —            | <b>HGBBD9S10</b> |
|  | 1   | 12"    | 0.94" | 3/8"      | 1.25"        | <b>HGBBD12</b>   |
|  | 1   | 18"    | 0.94" | 3/8"      | 1.25"        | <b>HGBBD18</b>   |
|  | 1   | 24"    | 0.94" | 3/8"      | 1.25"        | <b>HGBBD24</b>   |

## QUADCAB® Wall Mount Cabinet Ground Kit

| Description                                                                                                                                                                                                                                | Catalog No.  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|  Ground bar with (6) 1/4"-20 male studs<br>(2) 1/4"-20 carriage bolts and isolating hardware<br>(2) ground straps<br>(6) 1/4"-20 nuts with star washers | <b>REKGB</b> |

## Conductor Brackets

| Description                                                                                                                                        | Qty | Catalog No.          |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------|
|  TEBC bracket for ladder rack, aluminum painted black           | 10  | <b>HGBTEBCBRKL10</b> |
|  TEBC bracket for wire tray, aluminum painted black             | 10  | <b>HGBTEBCBRKW10</b> |
|  Insulated TEBC bracket for extruded AL ladder, stainless steel | 1   | <b>HGBTEBCBRKR</b>   |

## Insulated Halo Bracket

| Description                                                                                                                                                                                                        | Qty | Catalog No.    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------|
|  Stainless steel bracket, insulator, UV Rated cable holding clips for 0.25", 0.31", 0.38", 0.50", 0.56", 0.75" and 0.88" cables | 1   | <b>HGBSETH</b> |

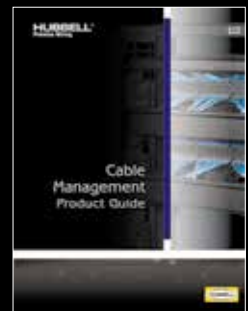
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