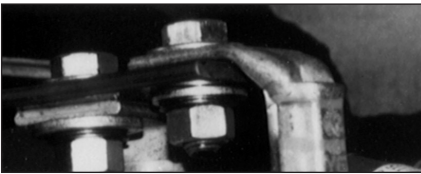
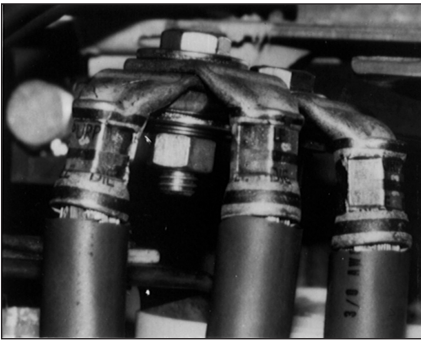
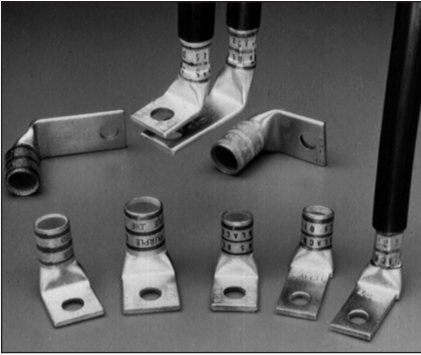


# Color-Keyed®

## Color-Keyed® Connectors



### **Color-Keyed® Special Lugs for Special Problems – Angled, Shaped and Trimmed the Way You Often Need Them**

Thomas & Betts can solve your difficult wire bending and terminating problems in confined power distribution panels, switchgear and motor control enclosures.

We have the design and production capability to deliver exactly the type lug you need, shaped the way you need.

- Straight, 45° and 90° angle
- Stacking or non-stacking
- Narrow tongue or standard
- Tin, silver, lead, nickel

Thomas & Betts offers an extensive line of copper Color-Keyed® lugs for #8 AWG through 1000 kcmil flex and code cables. The lug tongues are modified in several different configurations to meet your exact needs: 45° and 90° bend angles, narrow tongues to fit into circuit breakers, offset tongues to stack two cables, and special stud hole drilling. These special configurations let you:

- (1) run cable directly to the bus bar with no bending,
- (2) terminate into very narrow spaces, and
- (3) utilize minimal bus bar space.

The specially designed lugs help you “clean up” your cabling in crowded enclosures.

The photographs show some examples of how and where the lugs can be used.

### **Customized Color-Keyed® Connectors for Copper Cables**

- Standard and special tongue angles, stacking and non-stacking, bolt holes sizes and centers, protective platings.
- Specially modified one and two hole copper Color-Keyed® compression lugs, Series 54100, 54200, 54850BE and 54930BE for flex and code copper stranded cables. Material high conductivity wrought copper.
- Minimum order quantity: Standard package quantity by cable size. Consult factory for price and delivery. All customized lugs are made to order. A.R.O. Non-cancellable.

# Color-Keyed®

## Color-Keyed® Connectors

### Order From

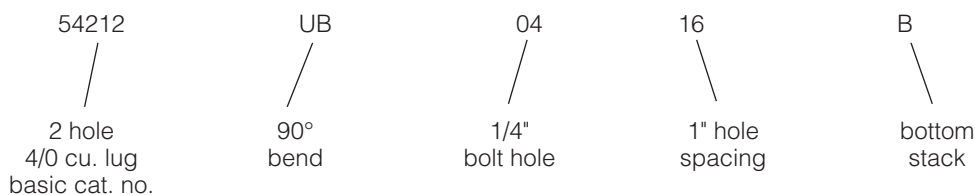
Catalog No. \_\_\_\_\_ Qty. \_\_\_\_\_  
 (For 54100, 54200, 54800 & 54900 Series Copper Lugs Only)

### Design Controls and Requirements

All "MADE-UP" catalog numbers start with a standard or basic catalog number and are followed by the customer required extra features: tongue shape, bolt hole size, distance between bolt holes, stacking, plating and inspection hole (peep hole). A code letter or a number has been assigned to each extra feature. See CODE TABLE.

- NOTES: 1) Lack of any of the extra features on the "MADE-UP" catalog number means that the standard Cat. No. features are prevalent.  
 2) If either bolt hole size or distance between bolt holes needs to be changed from standard Cat. No., both code numbers will appear on the "MADE-UP" Cat. No. (See example below)

Cat. No. 54212UB0416BSP



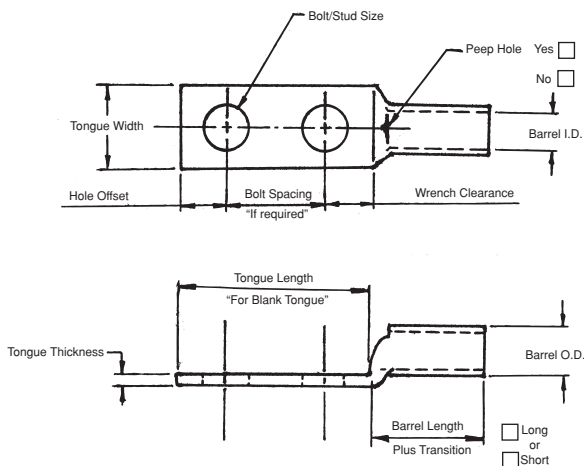
### CODE TABLE

| Tongue Shape   |      | Bolt Holes |       | Bolt Hole Centers |         | Stacking |        | Finish (Plating) |              | Inspection Hole (Long Barrel) |           | Inspection Hole (Short Barrel) |           |    |
|----------------|------|------------|-------|-------------------|---------|----------|--------|------------------|--------------|-------------------------------|-----------|--------------------------------|-----------|----|
| Type           | Code | Size .020  | Code  | Distance .015     | Code    | Type     | Code   | Type 1           | Code         | I.D.                          | Code      | I.D.                           | Code      |    |
| 45°            | UF   | #8         | .173  | 02                | 1/2"    | 08       | Top    | T**              | Silver Plate | SP                            | Peep Hole | PH                             | Blind End | BE |
| 90°            | UB   | #10        | .204  | 03                | 5/8"    | 10       | Bottom | B                | Lead Plate   | LP                            |           |                                |           |    |
| Blank          | BT   | 1/4"       | .281  | 04                | 3/4"    | 12       |        |                  | Nickel Plate | NP                            |           |                                |           |    |
| (No Bolt Hole) |      | 5/16"      | .344  | 05                | 7/8"    | 14       |        |                  | Plain Finish | PF                            |           |                                |           |    |
|                |      | 3/8"       | .406  | 06                | 1"      | 16       |        |                  | Not QTP if   |                               |           |                                |           |    |
|                |      | 1/2"       | .531  | 08                | 1 1/8"  | 18       |        |                  | suffix other |                               |           |                                |           |    |
|                |      | 5/8"       | .656  | 10                | 1 1/4"  | 20       |        |                  | than - PF or |                               |           |                                |           |    |
|                |      | 3/4"       | .812  | 12                | 1 3/8"  | 22       |        |                  | standard     |                               |           |                                |           |    |
|                |      | 7/8"       | .937  | 14                | 1 1/2"  | 24       |        |                  | tin plate    |                               |           |                                |           |    |
|                |      | 1"         | 1.062 | 16                | 1 5/8"  | 26       |        |                  |              |                               |           |                                |           |    |
|                |      |            |       |                   | 1 3/4"  | 28       |        |                  |              |                               |           |                                |           |    |
|                |      |            |       |                   | *1 7/8" | 30       |        |                  |              |                               |           |                                |           |    |
|                |      |            |       |                   | *2"     | 32       |        |                  |              |                               |           |                                |           |    |

\* These bolt centers not available for bolt holes larger than 1 3/16".

\*\* Not required for 45° & 90° Top Stacking.

|                              |   |
|------------------------------|---|
| Cable                        | Code <input type="checkbox"/>                       |
|                              | Weld <input type="checkbox"/>                       |
| <input type="checkbox"/> #8  | <input type="checkbox"/> #6                         |
| <input type="checkbox"/> #2  | <input type="checkbox"/> #1                         |
| <input type="checkbox"/> 2/0 | <input type="checkbox"/> 3/0                        |
| <input type="checkbox"/> 4/0 | <input type="checkbox"/> 250 kcmil & up (Code Only) |



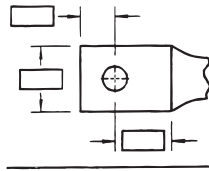
# Color-Keyed®

## Color-Keyed® Connectors

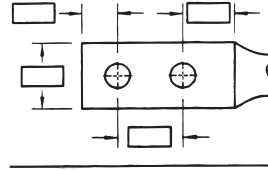
### Tongue Specifications – See Chart “A” For Dimensions

#### Stud Sizes

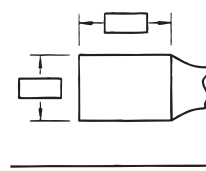
- #8       1/2
- #10     5/8
- 1/4       3/4
- 5/16     7/8
- 3/8       1



Single Hole



Double Hole



Blank

### Chart A

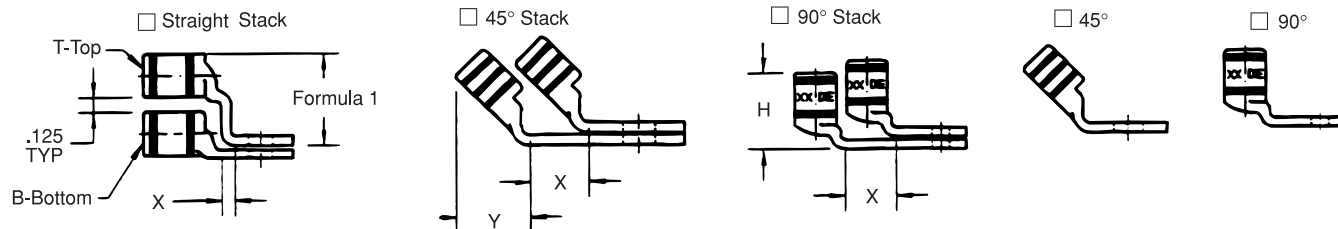
| Nominal Bolt Hole Size .015 | Hole Offset .030 | Wrench Clearance Min. | Tongue Width Cable Size |                 |                 |                 |                 |                   |                   |                   |                   |          |       |
|-----------------------------|------------------|-----------------------|-------------------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|----------|-------|
|                             |                  |                       | #8 Code #8 Weld         | #6 Code #6 Weld | #4 Code #4 Weld | #2 Code #2 Weld | #1 Code #1 Weld | 1/0 Code 1/0 Weld | 2/0 Code 2/0 Weld | 3/0 Code 3/0 Weld | 4/0 Code 4/0 Weld | 250 Code |       |
| #8                          | .173             | .200                  | .240                    | .406            | .437            | .562            | .593            | .672              | .750              | .825              | .937              | 1.030    | 1.125 |
| #10                         | .204             | .218                  | .250                    | .406            | .437            | .562            | .593            | .672              | .750              | .825              | .937              | 1.030    | 1.125 |
| 1/4                         | .281             | .250                  | .312                    | .469            | .500            | .562            | .593            | .672              | .750              | .825              | .937              | 1.030    | 1.125 |
| 5/16                        | .344             | .375                  | .406                    | .562            | .562            | .562            | .675            | .672              | .750              | .825              | .937              | 1.030    | 1.125 |
| 3/8                         | .406             | .375                  | .440                    | .578            | .578            | .594            | .675            | .672              | .750              | .825              | .937              | 1.030    | 1.125 |
| 1/2                         | .531             | .500                  | .562                    | –               | –               | –               | .750            | .750              | .750              | .825              | .937              | 1.030    | 1.125 |
| 5/8                         | .656             | .812                  | .875                    | –               | –               | –               | –               | –                 | –                 | –                 | .937              | 1.030    | 1.125 |
| 3/4                         | .812             | .750                  | .770                    | –               | –               | –               | –               | –                 | –                 | –                 | –                 | –        | –     |
| *7/8                        | .937             | .875                  | .890                    | –               | –               | –               | –               | –                 | –                 | –                 | –                 | –        | –     |
| *1                          | 1.062            | .937                  | 1.000                   | –               | –               | –               | –               | –                 | –                 | –                 | –                 | –        | –     |

\* These bolt holes available in one hole lug only.

### Chart B

| Cable Size | Tongue Thickness | Straight Lug Barrel Length Plus Transition |       | Barrel |       | Dim “X” Stacked Lugs |       |       | Dim “Y” |       | Dim “H” |       |
|------------|------------------|--|-------|--------|-------|----------------------|-------|-------|---------|-------|---------|-------|
|            |                  | Short                                      | Long  | O.D.   | I.D.  | Straight             | 45°   | 90°   | Short   | Long  | Short   | Long  |
|            |                  | #8   | .080  | .635   | .935  | .260                 | .180  | .158  | .478    | .394  | .595    | .808  |
| #6         | .081             | .675                                       | .975  | .296   | .215  | .134                 | .544  | .432  | .587    | .799  | .767    | 1.067 |
| #4         | .099             | .685                                       | .985  | .365   | .266  | .175                 | .622  | .502  | .637    | .849  | .838    | 1.138 |
| #2         | .108             | .815                                       | 1.115 | .410   | .302  | .216                 | .649  | .535  | .711    | .923  | .958    | 1.258 |
| #1         | .106             | .825                                       | 1.275 | .467   | .361  | .212                 | .731  | .592  | .710    | 1.028 | .956    | 1.406 |
| 1/0        | .125             | .975                                       | 1.325 | .571   | .396  | .250                 | .789  | .646  | .794    | 1.042 | 1.075   | 1.425 |
| 2/0        | .125             | .965                                       | 1.315 | .571   | .446  | .250                 | .859  | .696  | .829    | 1.077 | 1.125   | 1.475 |
| 3/0        | .125             | 1.085                                      | 1.435 | .632   | .507  | .250                 | .946  | .757  | .900    | 1.148 | 1.225   | 1.575 |
| 4/0        | .137             | 1.255                                      | 1.705 | .701   | .564  | .274                 | 1.031 | .826  | 1.015   | 1.333 | 1.387   | 1.837 |
| 250        | .137             | 1.375                                      | 1.925 | .766   | .629  | .274                 | 1.123 | .891  | 1.085   | 1.474 | 1.487   | 2.037 |
| 300        | .153             | 1.900                                      | 2.675 | .850   | .660  | .459                 | 1.226 | .975  | 1.180   | 1.726 | 1.924   | 2.679 |
| 350        | .177             | 2.090                                      | 2.896 | .926   | .720  | .531                 | 1.333 | 1.103 | 1.267   | 1.830 | 2.096   | 2.896 |
| 400        | .173             | 2.460                                      | 2.980 | .960   | .757  | .519                 | 1.370 | 1.085 | 1.551   | 1.913 | 2.484   | 2.984 |
| 500        | .218             | 2.670                                      | 3.610 | 1.100  | .852  | .654                 | 1.514 | 1.225 | 1.629   | 2.266 | 2.669   | 3.619 |
| 600        | .244             | 2.900                                      | 3.490 | 1.200  | .926  | .732                 | 1.630 | 1.325 | 1.762   | 2.147 | 2.897   | 3.497 |
| 700        | .228             | 2.784                                      | –     | 1.255  | .997  | .684                 | 1.662 | 1.375 | 1.780   | –     | 3.011   | –     |
| 750        | .270             | 3.050                                      | 3.925 | 1.330  | 1.030 | .810                 | 1.745 | 1.455 | 1.827   | 2.434 | 3.050   | 3.925 |
| 800        | .266             | 3.213                                      | –     | 1.375  | 1.079 | .800                 | 1.728 | 1.625 | 1.952   | 2.787 | 3.213   | 4.554 |
| 900        | .313             | 3.450                                      | 4.550 | 1.500  | 1.145 | .940                 | 1.900 | 1.650 | 2.065   | –     | 1.387   | –     |
| 1000       | .297             | 3.356                                      | 4.500 | 1.550  | 1.203 | .890                 | 2.070 | 1.675 | 2.031   | 2.787 | 1.487   | 4.506 |

Note: Stacking lugs are available for one bolt only.  
 Consult Factory: Straight: 700 kcmil & up  
 45°: 400 kcmil & up  
 90°: 500 kcmil & up



Formula 1 = (.125 + 2 (OD) + .037 – Tongue Thickness)

### Chart C

| Bolt Hole Size | Tongue Width .030<br>Code Cable Size |           |           |                       |                       |         |           |           |           |           |            |
|----------------|--------------------------------------|-----------|-----------|-----------------------|-----------------------|---------|-----------|-----------|-----------|-----------|------------|
|                | 300 kcmil<br>4/0 Weld                | 350 kcmil | 400 kcmil | 500 kcmil<br>4/0 Weld | 600 kcmil<br>5/0 Weld | 1325/24 | 700 kcmil | 750 kcmil | 800 kcmil | 900 kcmil | 1000 kcmil |
| #8             | –                                    | –         | –         | –                     | –                     | –       | –         | –         | –         | –         | –          |
| #10            | –                                    | –         | –         | –                     | –                     | –       | –         | –         | –         | –         | –          |
| 1/4            | 1.250                                | 1.355     | 1.410     | 1.605                 | 1.745                 | 1.805   | 1.840     | 1.935     | 2.010     | 2.180     | 2.265      |
| 5/16           | 1.250                                | 1.355     | 1.410     | 1.605                 | 1.745                 | 1.805   | 1.840     | 1.935     | 2.010     | 2.180     | 2.265      |
| 3/8            | 1.250                                | 1.355     | 1.410     | 1.605                 | 1.745                 | 1.805   | 1.840     | 1.935     | 2.010     | 2.180     | 2.265      |
| 1/2            | 1.250                                | 1.355     | 1.410     | 1.605                 | 1.745                 | 1.805   | 1.840     | 1.935     | 2.010     | 2.180     | 2.265      |
| 5/8            | 1.250                                | 1.355     | 1.410     | 1.605                 | 1.745                 | 1.805   | 1.840     | 1.935     | 2.010     | 2.180     | 2.265      |
| 3/4            | 1.250                                | 1.355     | 1.410     | 1.605                 | 1.745                 | 1.805   | 1.840     | 1.935     | 2.010     | 2.180     | 2.265      |
| *7/8           | –                                    | –         | –         | 1.605                 | 1.745                 | 1.805   | 1.840     | 1.935     | 2.010     | 2.180     | 2.265      |
| *1             | –                                    | –         | –         | –                     | 1.745                 | 1.805   | 1.840     | 1.935     | 2.010     | 2.180     | 2.265      |

# Color-Keyed®

## Connectors for Copper Conductor

### Standard Barrel – Belled End Lugs



COMPRESSION

### Bell Shaped Barrel

| Cat. No.   | Wire Size* |       |             | Class G | Class H | Class I | Class K | Class M | Bolt Size (in.) | Dimensions (in.) |         |         |        |        | Die Color | Die Code |
|------------|------------|-------|-------------|---------|---------|---------|---------|---------|-----------------|------------------|---------|---------|--------|--------|-----------|----------|
|            | Code       | Navy  | Flex        |         |         |         |         |         |                 | A                | B       | C       | D      | F      |           |          |
| 541048BS   | 8          | 23    | 37/24       | 8       | 8       | —       | 8       | 8       | #10             | 1 1/16           | 1 5/32  | 1 3/32  | 5/64   | 7/32   | Red       | 21       |
| 541056BS   | 6          | 30    | 61/24       | 5       | 5       | 5       | 5       | 5       | 1/4             | 1 3/16           | 9/16    | 7/16    | 7/64   | 1/4    | Blue      | 24       |
| 541065BS   | 4          | 40-50 | 91/24       | 5       | 5       | 5       | 5       | 5       | 1/4             | 1 9/32           | 9/16    | 9/16    | 7/64   | 1/4    | Grey      | 29       |
| 541394BS   | 3 & 4      | 40-50 | 91/24       | 4       | 4       | 4       | 4       | 4       | 5/16            | 1 7/16           | 2 5/32  | 1 9/32  | 5/64   | 1 1/32 | Grey      | 29       |
| 541423BS   | 2          | 60    | 125/24      | 3       | 3       | 3       | 3       | 3       | 5/16            | 1 17/32          | 2 3/32  | 2 1/32  | 5/64   | 1 1/32 | Brown     | 33       |
| 541472BS   | 1          | 75    | 150, 175/24 | 2       | 2       | 2       | 2       | 2       | 5/16            | 1 21/32          | 2 3/32  | 4 9/64  | 1/8    | 3/8    | Green     | 37       |
| 541531BS   | 1/0        | 100   | 225/24      | 1       | 1       | 1       | 1       | 1       | 5/16            | 1 5/8            | 2 3/32  | 3/4     | !      | 3/8    | Pink      | 42       |
| 5411010BS  | 2/0        | 125   | 275/24      | 1/0     | 1/0     | 1/0     | 1/0     | 1/0     | 3/8             | 1 7/8            | 1 3/16  | 1 3/16  | !      | 3/8    | Black     | 45       |
| 5416520BS  | 3/0        | 150   | 325/24      | 2/0     | 2/0     | 2/0     | 2/0     | 2/0     | 1/2             | 2 7/32           | 1 1/16  | 1 9/16  | !      | 1/2    | Orange    | 50       |
| 5417030BS  | 4/0        | 200   | 450/24      | 3/0     | 3/0     | 3/0     | 3/0     | 3/0     | 1/2             | 2 5/16           | 1 1/16  | 1 1/32  | 5/32   | 1/2    | Purple    | 54       |
| 5816540BS  | 250        | —     | 550/24      | 4/0     | 4/0     | —       | —       | —       | 1/2             | 2 15/32          | 1 1/8   | 1 1/4   | 3/16   | 1/2    | Yellow    | 62       |
| 54114262BS | 300        | 300   | 650/24      | 250     | 250     | 250     | 250     | —       | 1/2             | 2 15/32          | 1 1/8   | 1 1/4   | 3/16   | 1/2    | White     | 66       |
| 5411440BS  | 300        | 300   | —           | 250     | 250     | 4/0     | 4/0     | 4/0     | 1/2             | 2 3/8            | 1 1/8   | 1 1/4   | 3/16   | 1/2    | White     | 66       |
| 54115260BS | 350        | 350   | 650/24      | —       | —       | 250     | 250     | 250     | 1/2             | 2 5/8            | 1 3/16  | 1 3/8   | \$     | 9/16   | White     | 66       |
| 54185313BS | 400        | 400   | 775/24      | 300     | 300     | 300     | 300     | 300     | 5/8             | 3 7/16           | 1 11/16 | 1 13/32 | 7/32   | 1 3/16 | Blue      | 76       |
| 58177350BS | 500        | —     | 925/24      | 400     | 400     | 400     | 350     | 350     | 5/8             | 3                | 1 5/16  | 1 5/8   | 1/4    | 1 3/16 | N/A       | 80       |
| 58180444BS | 600        | —     | 1100/24     | —       | —       | 450     | 450     | 450     | 5/8             | 3 3/8            | 1 11/16 | 1 25/32 | 1 7/64 | 1 3/16 | Green     | 94       |
| 54122535BS | 700        | —     | 1325/24     | 500     | 500     | 500     | 500     | 500     | 5/8             | 3 5/8            | 1 11/16 | 1 25/32 | 9/32   | 1 3/16 | Pink      | 99       |
| 54123560BS | 750        | —     | —           | 600     | —       | —       | —       | 550     | 5/8             | 3 5/8            | 1 11/16 | 1 15/16 | 5/16   | 1 3/16 | Black     | 106      |
| 54124620BS | 800        | 800   | —           | —       | —       | —       | 600     | —       | 3 7/8           | 1 13/16          | 1 31/32 | 5/16    | 7/8    | 7/8    | Orange    | 107      |
| 54126777BS | 900        | —     | 1925/24     | —       | —       | —       | —       | —       | 5/8             | 4 1/8            | 1 13/16 | 2 3/16  | 1 1/32 | 7/8    | Yellow    | 115      |

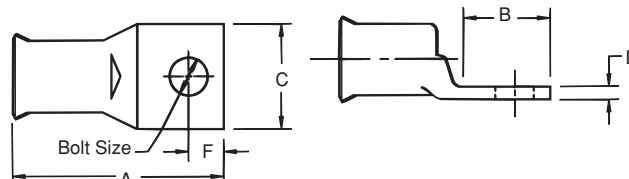
| Existing Cat. Nos. | Existing Connectors Are UL486A Listed For: |       |             | New Series** (Same Tubing As Existing Cat. Nos.) | Class G | Class H | Class I | Class K | Class M | Code |
|--------------------|--|-------|-------------|--|---------|---------|---------|---------|---------|------|
|                    | Code                                       | Navy  | Flex        |  |         |         |         |         |         |      |
| 54104              | 8  | 23    | 37/24       | 541048BS   | 8       | 8       | —       | 8       | 8       | —    |
| 54105              | 6  | 30    | 61/24       | 541056BS   | 5       | 5       | 5       | 5       | 5       | —    |
| 54106              | 4  | 40-50 | 91/24       | 541065BS   | 5       | 5       | 5       | 5       | 5       | —    |
| 54139              | 4  | 40-50 | 91/24       | 541394BS   | 4       | 4       | 4       | 4       | 4       | 3    |
| 54142              | 2  | 60    | 125/24      | 541423BS   | 3       | 3       | 3       | 3       | 3       | —    |
| 54147              | 1  | 75    | 150, 175/24 | 541472BS   | 2       | 2       | 2       | 2       | 2       | —    |
| 54153              | 1/0  | 100   | 225/24      | 541531BS   | 1       | 1       | 1       | 1       | 1       | —    |
| 54110              | 2/0  | 125   | 275/24      | 5411010BS  | 1/0     | 1/0     | 1/0     | 1/0     | 1/0     | —    |
| 54165              | 3/0  | 150   | 325/24      | 5416520BS  | 2/0     | 2/0     | 2/0     | 2/0     | 2/0     | —    |
| 54170              | 4/0  | 200   | 450/24      | 5417030BS  | 3/0     | 3/0     | 3/0     | 3/0     | 3/0     | —    |
| 58165              | —  | —     | 550/24      | 5816540BS  | 4/0     | 4/0     | —       | —       | —       | 250  |
| 54114              | 300  | 300   | —           | 5411440BS  | 250     | 250     | 4/0     | 4/0     | 4/0     | —    |
| 54115              | 350  | 350   | 650/24      | 54115260BS                                       | —       | —       | 250     | 250     | 250     | —    |
| 54185              | 400  | 400   | 775/24      | 54185313BS                                       | 300     | 300     | 300     | 300     | 300     | —    |
| 58177              | —  | —     | 925/24      | 58177350BS                                       | 400     | 400     | 400     | 350     | 350     | 500  |
| 58180*             | —  | —     | 1100/24     | 58180444BS                                       | —       | —       | 450     | 450     | 450     | 600  |
| 54122              | 700  | —     | 1325/24     | 54122535BS                                       | 500     | 500     | 500     | 500     | 500     | —    |
| 54123              | 750  | —     | —           | 54123560BS                                       | 600     | —       | —       | —       | 550     | —    |
| 54124              | 800  | 800   | —           | 54124620BS                                       | —       | —       | —       | —       | 600     | —    |
| 54126              | 900  | —     | 1925/24     | 54126777BS                                       | —       | —       | —       | —       | —       | —    |

\* = Cat 58180 is made of the same tubing as cat. 54120. Cat. 54120 is listed for 600 mcm.

\*\* = To be installed with the same installing tools as the existing line of connectors.

Tooling: Pg. 79-100

Die Selector Chart: Pg. 105-109



**Thomas & Betts**