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We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



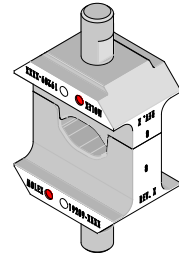
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HHL Tooling Kit

## Application Tooling Specification Sheet

Order No. 19290-0007  
Eng. No. HHL-F-130

### SCOPE

**Tooling:** HHL Tooling Kits are used with Hydraulic Head Crimper with Air/Hydraulic Pump (19286-0117) or Hydraulic Head Crimper with Electric Hydraulic Pump (19286-1300). Refer to the appropriate tool instruction manual for installation and operation information.

**Products:** BCL and VersaKrimp™ Ring Tongue Terminals and Splices 4 AWG. Refer to the Product part number charts on this sheet for terminals with the barrel and tongue styles listed above.

### Testing

#### Mechanical

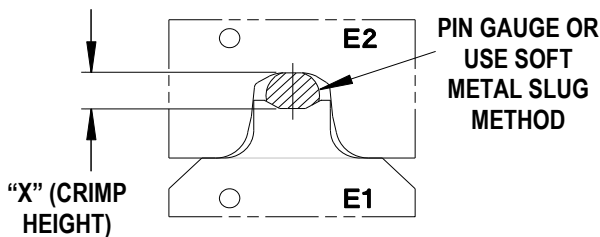
The tensile test or pull test is a means of evaluating the mechanical properties of the crimped connections. The following charts show the UL Specifications for various wire sizes. The tensile strength is shown in pounds and indicates the minimum acceptable force to break or separate terminal from the conductor.

| Color Code | Wire Size (AWG) | *UL - 486 A | *UL - 486 C | **MIL-T-7928 |
|------------|-----------------|-------------|-------------|--------------|
| Yellow     | 4               | 140         | ---         | 400          |

\*UL - 486 A - Terminals (Copper Conductors only)

\*UL - 486 C – Butt Splices, Parallel Splices, and Closed end Connectors. Use 486 A values.

\*\*MIL-T-7928 - Military Approved Terminals only as listed



**CRIMP PROFILE**

Use gauge pins or soft metal slug (solder) method to measure the "X" dimension. Verify tooling crimp height calibration by referring to the Go/No Go dimensions shown in the chart below.

Molex does not sell gauge pins contact your local industrial supplier.

| Wire Range |                 | "X" Dimension Conductor Crimp |      |      |      |       |      | Crimp Inspection Marking |
|------------|-----------------|-------------------------------|------|------|------|-------|------|--------------------------|
|            |                 | Mean                          |      | Go   |      | No Go |      |                          |
| AWG        | mm <sup>2</sup> | In                            | mm   | In   | mm   | In    | mm   |                          |
| 4          | 16.8-26.6       | .239                          | 6.07 | .233 | 5.91 | .245  | 6.22 | 4                        |

The following is a Partial List of the Product Part Numbers and their specifications that this tooling is designed to crimp. We will be adding to this list and an up to date copy is available on [www.molex.com](http://www.molex.com).

| Wire Size: 4 AWG 16.8-26.6mm <sup>2</sup> CMA 33,100-52,600 |                        |                   |       |
|---|------------------------|-------------------|-------|
| Terminal No.  | Terminal Eng No. (REF) | Wire Strip Length |       |
|   |                        | In                | mm    |
| 19107-4600  | F-370-14UPML           | .531              | 13.49 |
| 19107-4601  | F-370-56UPML           | .531              | 13.49 |
| 19107-4602  | F-370-38UPML           | .531              | 13.49 |
| 19107-4603  | F-370-76UPML           | .531              | 13.49 |
| 19107-4604  | F-370-12UPML           | .531              | 13.49 |
| 19107-4605  | F-370-58UPML           | .531              | 13.49 |
| 19107-4606  | F-370-34UPML           | .531              | 13.49 |
| 19193-0254  | F-366-10               | .531              | 13.49 |
| 19193-0258  | F-366-12               | .531              | 13.49 |
| 19193-0261  | F-366-14               | .531              | 13.49 |
| 19193-0270  | F-366-76               | .531              | 13.49 |
| 19193-0276  | F-367-14R90            | .531              | 13.49 |
| 19193-0278  | F-367-56               | .531              | 13.49 |
| 19193-0282  | F-369-14               | .531              | 13.49 |
| 19193-0283  | F-369-38               | .531              | 13.49 |
| 19193-0284  | F-369-56               | .531              | 13.49 |
| 19193-0285  | F-369-58               | .531              | 13.49 |
| 19193-0286  | F-369-76               | .531              | 13.49 |
| 19193-0287  | F-370-12               | .531              | 13.49 |
| 19193-0288  | F-370-14               | .531              | 13.49 |
| 19193-0289  | F-370-34               | .531              | 13.49 |
| 19193-0291  | F-370-38               | .531              | 13.49 |
| 19193-0292  | F-370-56               | .531              | 13.49 |
| 19193-0293  | F-370-58               | .531              | 13.49 |
| 19193-0294  | F-370-76               | .531              | 13.49 |
| 19193-0507  | F-366-38R90            | .531              | 13.49 |
| 19205-0007  | F-365                  | .453              | 11.51 |
| 19215-0045  | F-364                  | .531              | 13.49 |
| 19215-0061  | BCL-4                  | .500              | 12.70 |

| Wire Size: 4 AWG 16.8-26.6mm <sup>2</sup> CMA 33,100-52,600 |                        |                   |       |
|---|------------------------|-------------------|-------|
| Terminal No.  | Terminal Eng No. (REF) | Wire Strip Length |       |
|   |                        | In                | mm    |
| 19221-0230  | BCL-414-PL             | .500              | 12.70 |
| 19221-0231  | BCL-4516-PL            | .500              | 12.70 |
| 19221-0232  | BCL-438-PL             | .500              | 12.70 |
| 19221-0383  | BCL-438                | .500              | 12.70 |
| 19221-0404  | BCL-414                | .500              | 12.70 |
| 19221-0405  | BCL-4516               | .500              | 12.70 |
| 19221-0451  | BCL-410                | .500              | 12.70 |
| 19221-0452  | BCL-410-PL             | .500              | 12.70 |
| 19221-0453  | BCL-412                | .500              | 12.70 |
| 19221-0454  | BCL-412-PL             | .500              | 12.70 |
| 19221-0456  | BCL-438-WP-PL          | .500              | 12.70 |
| 19221-0457  | BCL-438-XWP-PL         | .500              | 12.70 |
| 19221-0458  | BCL-438-WP             | .500              | 12.70 |
| 19221-0459  | BCL-438-XWP            | .500              | 12.70 |
| 19221-0460  | BCL-4516-WP-PL         | .500              | 12.70 |
| 19221-0461  | BCL-4516-WP            | .500              | 12.70 |
| 19231-0021  | BCL-4516-SH            | .500              | 12.70 |
| 19231-0022  | BCL-4516-SH-PL         | .500              | 12.70 |

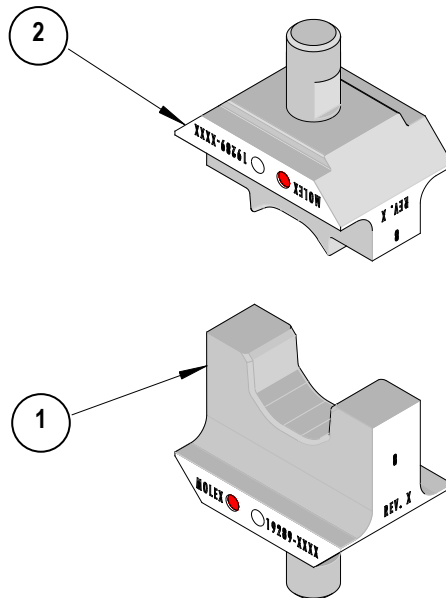
| MILITARY  |                        |                   |       |
|---|------------------------|-------------------|-------|
| Wire Size: 4 AWG 16.8-26.6mm <sup>2</sup> CMA 33,100-52,600 |                        |                   |       |
| Terminal No.  | Terminal Eng No. (REF) | Wire Strip Length |       |
|   |                        | In                | mm    |
| 19193-0264  | F-366-38               | .531              | 13.49 |
| 19193-0267  | F-366-56               | .531              | 13.49 |
| 19193-0273  | F-367-10               | .531              | 13.49 |
| 19193-0275  | F-367-14               | .531              | 13.49 |
| 19193-0281  | F-369-12               | .531              | 13.49 |

**CAUTION:** Molex crimp specifications are valid only when used with Molex terminals and tooling.



## Parts List

| Item | Order No.  | Engineering No. | Description     | Qty |
|------|------------|-----------------|-----------------|-----|
|      | 19290-0007 | HHL-F-130       | HHL Tooling Kit | REF |
| 1    | 19290-0009 | HHL-F-130-E2    | Conductor Punch | 1   |
| 2    | 19290-0008 | HHL-F-130-E1    | Conductor Anvil | 1   |



Visit our Web site at <http://www.molex.com>