Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

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OPERATING INSTRUCTIONS

1.0

1.1 TOOL DESCRIPTION

SHURE STAKE® MECHANISM IS DESIGNED TO PROVIDE COMPLETE CLOSURE.

1.2 APPLICATIONS

1. This tool is suitable for installing Color-Keyed lugs and splices, #8 to 500 MCM copper and #10 to 350 MCM aluminum.
2. This tool is also suitable for installing C-Taps from catalog number 54705 to 54750.
3. Check label and connector for UL and/or CSA monogram and letters AL or AL9CU. Connectors marked AL are listed for use on aluminum conductors only. Connectors marked AL9CU are listed for aluminum and copper conductors. Use only a listed Thomas & Betts connector with this tool. Any other combination may result in a connection which does not meet established standards.

1.3 CHOOSING THE DIE NEST

Match color on connector to the color on the die. Reference chart below.

NOTE: A crimping nest with more than one color band may be used to crimp Color-Keyed connectors matching any of the nest color bands.

<table>
<thead>
<tr>
<th>DIE CAT. NO.</th>
<th>DIE GROOVE COLOR</th>
<th>EQUIV. HEX DIE CODE NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>13461</td>
<td>Red</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Blue</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Grey</td>
<td>29</td>
</tr>
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<td></td>
<td>Brown</td>
<td>33</td>
</tr>
<tr>
<td>13462</td>
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<td>37</td>
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<td>Pink</td>
<td>42</td>
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<td></td>
<td>Black</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Orange</td>
<td>50</td>
</tr>
<tr>
<td>13463</td>
<td>Purple</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Yellow</td>
<td>62</td>
</tr>
<tr>
<td>13464</td>
<td>Gold</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Tan</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Olive</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Ruby</td>
<td>60</td>
</tr>
<tr>
<td>13465</td>
<td>White-66</td>
<td>66</td>
</tr>
<tr>
<td>13466</td>
<td>Red-71</td>
<td>71</td>
</tr>
<tr>
<td>13467</td>
<td>Blue-76</td>
<td>76</td>
</tr>
<tr>
<td>13468</td>
<td>Brown-87</td>
<td>87</td>
</tr>
</tbody>
</table>

1.4 REMOVING & INSTALLING DIE

REMOVING DIE
Open handles of tool until fully extended. Loosen die locking screw, disengaging it from the die. Pull die out from the tool.

INSTALLING OR CHANGING DIE
Hold tool with die locking screw facing you and open handles of tool until they are fully extended. Hold the die with the desired crimping nest and color code in lower right corner. Tighten the die locking screw in the tool head.

WARNING
Keep fingers clear of die nests whenever handles are brought together.

SHURE STAKE® SAFETY RELEASE
The TBM8S compression tool is equipped with the Shure Stake® full stroke compelling mechanism. If it becomes necessary to release the Shure Stake® Mechanism before completion of the crimp cycle, disengage ratchet as follows. Slightly squeeze handles, and push the dowel pin, releasing the locking mechanism allowing the handles to open.

WARNING
Use only a listed (UL and/or CSA) Thomas & Betts connector with this tool. Any other combination may result in a connection which does not meet established standards.
1.5 PREPARING THE CONDUCTOR

1. Strip insulation properly without cutting or nicking the conductor strands. Refer to the instruction sheet supplied with the connectors regarding strip length.
2. For aluminum conductor, smear a thin layer of joint compound onto the cable and brush it in with a wire brush or emery cloth.

1.6 MAKING A COMPRESSION

1. Insert prepared conductor into connector.
2. Locate connector in die grooves of tool, so the die is between the color code marks for copper and on the color code marks for aluminum, see graphics below.
3. Some connectors require more than one compression. Refer to the instruction sheet supplied with the connectors regarding the number of compressions required. If more than one compression is indicated, the first compression should be in the indicated area nearest to the tongue of a terminal and nearest the center of a splice, and then working progressively toward the end of the barrel.
4. Close handles of tool completely for each compression.
2.0 INSTALLATION TEST PROCEDURE (TBM8S ONLY)

2.1 INSTALLATION TEST PROCEDURE

Using a tool that has passed the calibration requirements install a minimum of six (6) terminals for each die nest on the appropriate wire for which a performance check is required. In order to obtain valid and consistent results, perform installation procedure as follows:

1. Strip conductor approximately 1/4” longer than the connector barrel. (Strip length for test purposes only. For actual installation, refer to the instruction sheet supplied with the connectors.)

2. For aluminum conductor, smear a thin layer of joint compound onto the cable and brush it in with a wire brush or emery cloth.

3. Insert stripped conductor into connector barrel until it bottoms out.

4. Choose an installing die with the same color marking as the connector.

5. Locate connector in die grooves of tool, so that die is between the color code marks for copper and on the color code marks for aluminum, see graphics below.

6. Some Color Keyed® connectors require more than one compression. Refer to the instruction sheet supplied with the connectors regarding the number of compressions required. If more than one compression is indicated, the first compression should be in the indicated area nearest to the tongue of a terminal and nearest the center of a splice, and then working progressively toward the end of the barrel.

7. Squeeze handles fully closed until SHURE STAKE® mechanism releases.

2.2 TENSILE TEST PROCEDURE

1. Install test sample in a tension-testing machine or a suitable pull-test fixture.

   NOTE: The pull is to be exerted gradually. An abrupt pull is not a proper test method.

2. Subject each sample to an axial pull which is to be increased until failure of the connection occurs. See graphics below.

3. The pull force required to separate a terminal from its associated wire shall be no less than the minimum pullout (see table on the right).

   NOTE: On “C” tap and wire joints, only the smallest wire in each combination is to be tested for pullout.

EXAMPLES OF TENSILE TESTING MACHINES


2. John Chatillion & Sons, Kew Gardens, N.Y., N.Y. 11415. Gage Model No. DPPH-100 or DPPH-200, Testing Stand Model No. HTC.

   Conforms to UL and CSA requirements
**3.0 CALIBRATION VERIFICATION**

**NOTE:** Calibration verification of the tool should be performed whenever damage or suspected damage has occurred or as often as operating conditions warrant.

### 3.1 VISUAL INSPECTION

1. Tool must be free of cracks, sharp edges and other obvious imperfections that may affect performance of the tool. Nest area must be free of burrs, dents or scratches.

### 3.2 HANDLE SPREAD CHECK

To ensure the tool will produce a reliable compression, the tool must be properly adjusted.

**CHECKING TOOL ADJUSTMENT**

1. Insert die in place.
2. Lay tool on a flat surface. Open handle A and allow it to close under its own weight. The ram should be touching the die.
3. Measure distance between handle grips. If it is less than 11” or more than 14”, the tool needs adjustment. (See graphic below).

**ADJUSTING TOOL**

1. Loosen lock screw.
2. To increase distance between handles, turn adjusting screw clockwise.
3. To decrease distance between handles, turn adjusting screw counterclockwise.
4. Tighten lock screw.
5. Recheck handle distance. Adjust again, if necessary.

### 3.3 GAGING PROCEDURE

**NOTE:** Wipe dies before gaging.

1. Squeeze handles until jaws are fully closed.
2. Select gage pin which can be inserted into nest with minimal hand pressure. See graphic below.
3. Gage pin should fall between the limits shown on tables in section 3.4.

### 3.4 GAGING TABLE

<table>
<thead>
<tr>
<th>GROOVE</th>
<th>DIE CAT. NO.</th>
<th>GAGING MIN. - MAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED</td>
<td>13461</td>
<td>.165-.181</td>
</tr>
<tr>
<td>BLUE</td>
<td>.181-.210</td>
<td></td>
</tr>
<tr>
<td>GRAY</td>
<td>.230-.251</td>
<td></td>
</tr>
<tr>
<td>BROWN</td>
<td>.260-.281</td>
<td></td>
</tr>
<tr>
<td>GREEN</td>
<td>13462</td>
<td>.313-.335</td>
</tr>
<tr>
<td>PINK</td>
<td>.351-.371</td>
<td></td>
</tr>
<tr>
<td>BLACK</td>
<td>.383-.406</td>
<td></td>
</tr>
<tr>
<td>ORANGE</td>
<td>.429-.454</td>
<td></td>
</tr>
<tr>
<td>PURPLE</td>
<td>13463</td>
<td>.480-.503</td>
</tr>
<tr>
<td>YELLOW</td>
<td>.529-.562</td>
<td></td>
</tr>
<tr>
<td>GOLD</td>
<td>13464</td>
<td>.383-.406</td>
</tr>
<tr>
<td>TAN</td>
<td>.429-.454</td>
<td></td>
</tr>
<tr>
<td>OLIVE</td>
<td>.480-.503</td>
<td></td>
</tr>
<tr>
<td>RUBY</td>
<td>.533-.553</td>
<td></td>
</tr>
<tr>
<td>WHITE</td>
<td>13465</td>
<td>.609-.632</td>
</tr>
<tr>
<td>RED</td>
<td>13466</td>
<td>.653-.677</td>
</tr>
<tr>
<td>BLUE</td>
<td>13467</td>
<td>.696-.710</td>
</tr>
<tr>
<td>BROWN</td>
<td>13468</td>
<td>.855-.883</td>
</tr>
</tbody>
</table>
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