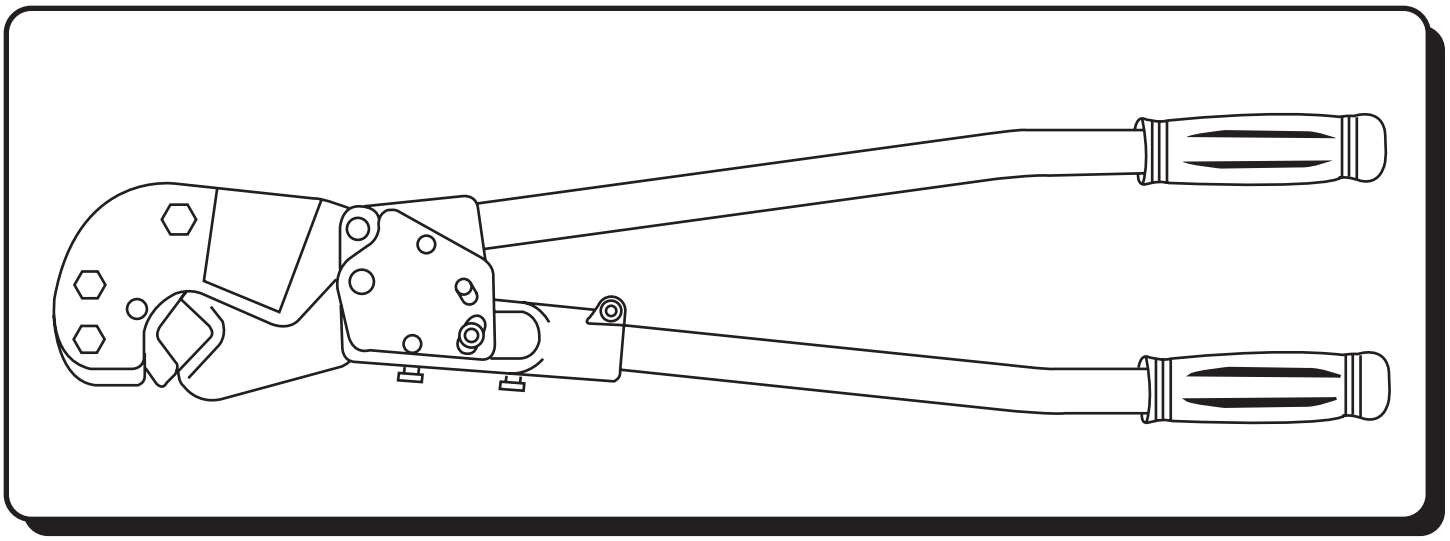
Thomas&Betts

TBM8 and TBM8S
Compression Tool Instructions



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

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1.0 OPERATING INSTRUCTIONS

⚠ WARNING ⚠

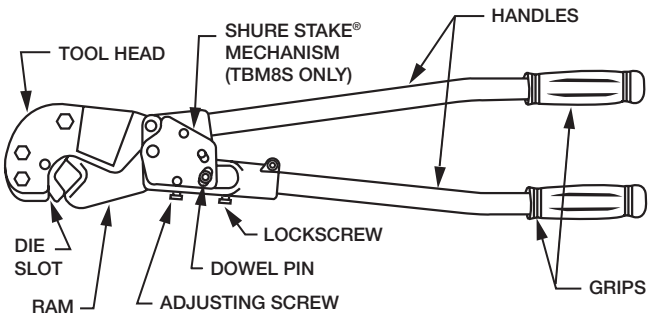
Keep fingers clear of die nests whenever handles are brought together.

⚠ WARNING ⚠

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.

1.1 TOOL DESCRIPTION



SHURE STAKE® MECHANISM IS DESIGNED TO PROVIDE COMPLETE CLOSURE.

1.2 APPLICATIONS

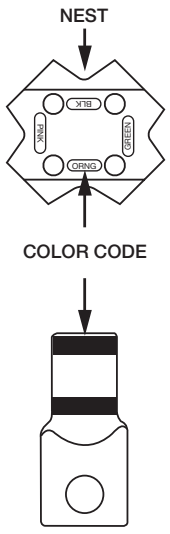
1. This tool is suitable for installing Color-Keyed lugs and splices, #8 to 500 MCM copper and #10 to 350 MCM aluminum.
2. This tool is also suitable for installing C-Taps from catalog number 54705 to 54750.
3. Check label and connector for UL and/or CSA monogram and letters AL or AL9CU. Connectors marked 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.

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



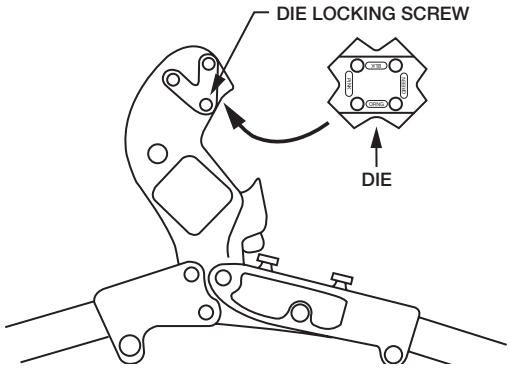
1.4 REMOVING & INSTALLING DIE

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.



⚠ CAUTION ⚠

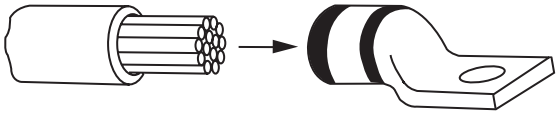
Use only a listed (UL and/or CSA) Thomas & Betts connector with this tool.
Any other combination may result in a connection which does not meet established standards.

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

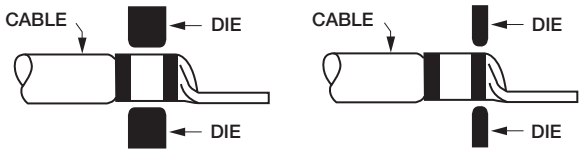
1. Insert prepared conductor into connector.
2. Locate connector in die grooves of tool, so the die is between the color code marks for copper and on the color code marks for aluminium, see graphics below.
3. Some connectors require more than one compression. Refer to the instruction sheet supplied with 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.

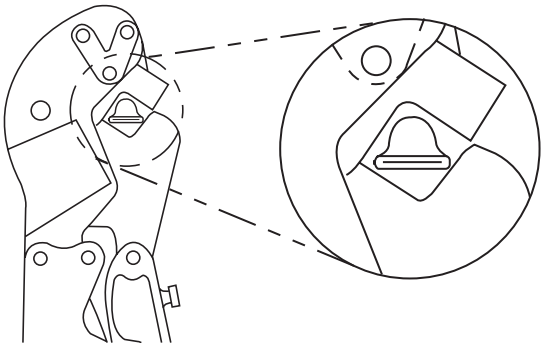


STEP 1

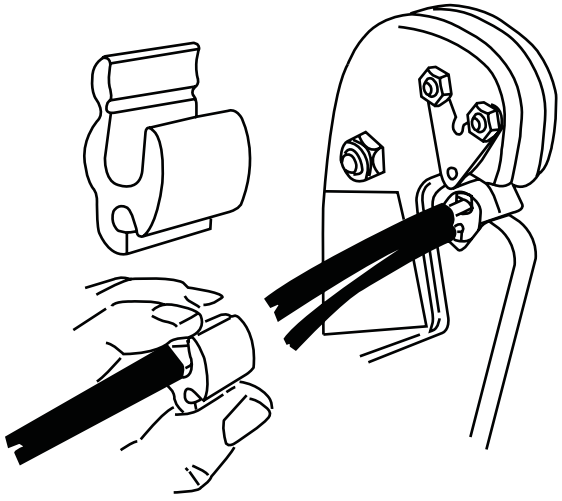
TYPICAL COPPER INSTALLATION

TYPICAL ALUMINUM INSTALLATION





STEP 2



STEP 3

2.0 INSTALLATION TEST PROCEDURE (TBM8S ONLY)

⚠ WARNING ⚠

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.**

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:

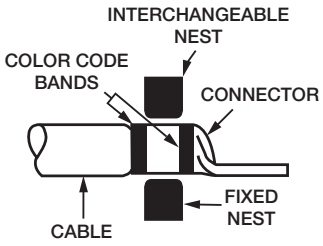
1. Strip conductor approximately 1/4" longer than the connector barrel. (Strip length for test purposes only. For actual installation, refer to the instruction sheet supplied with the connectors.)

⚠ CAUTION ⚠

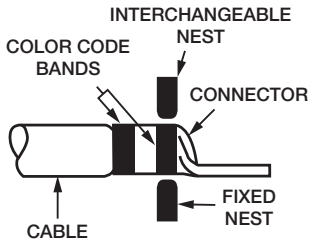
Care should be taken to strip the insulation of the conductor without cutting or nicking the conductor strands, as this condition will result in premature pull-test failures.

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 aluminium, 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.

TYPICAL COPPER INSTALLATION



TYPICAL ALUMINUM INSTALLATION



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).

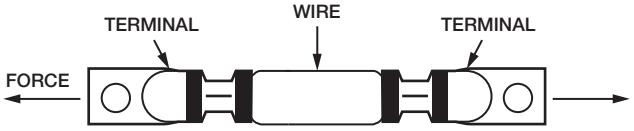
   NOTE: On "C" tap and wire joints, only the smallest wire in each combination is to be tested for pullout.

EXAMPLES OF TENSILE TESTING MACHINES

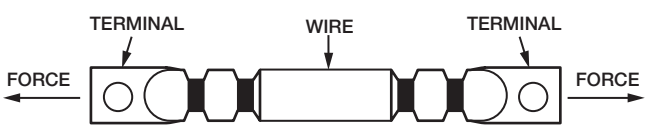
1. Ametek Testing Equipment Systems, E. Moline, IL 61244. Mechanical Force Gage Model No. D-150M, Testing Stand Model No. CTM.
2. John Chatillion & Sons, Kew Gardens, N.Y., N.Y. 11415. Gage Model No. DPPH-100 or DPPH-200, Testing Stand Model No. HTC.

CABLE SIZE	MIN. PULL-OUT (lbs.*)	
	COPPER	ALUMINUM
12	70	35
10	80	40
8	90	45
6	100	50
4	140	70
2	180	90
1	200	100
1/0	250	125
2/0	300	150
3/0	350	175
4/0	450	225
250	500	250
300	550	275
350	600	300
400	650	325
500	800	400

*Conforms to UL and CSA requirements



TYPICAL COPPER TEST SAMPLE



TYPICAL ALUMINUM TEST SAMPLE

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.

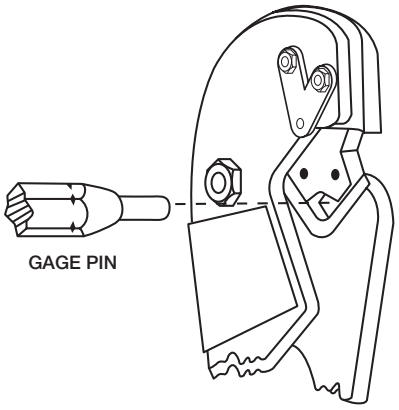
3.1 VISUAL INSPECTION

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.

3.3 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

GROOVE COLOR	DIE CAT. NO.	GAGING MIN. - MAX.
RED BLUE GRAY BROWN	13461	.165-.181 .181-.210 .230-.251 .260-.281
GREEN PINK BLACK ORANGE	13462	.313-.335 .351-.371 .383-.406 .429-.454
PURPLE YELLOW	13463	.480-.503 .529-.562
GOLD TAN OLIVE RUBY	13464	.383-.406 .429-.454 .480-.503 .533-.553
WHITE	13465	.609-.632
RED	13466	.653-.677
BLUE	13467	.686-.710
BROWN	13468	.855-.883

3.2 HANDLE SPREAD CHECK

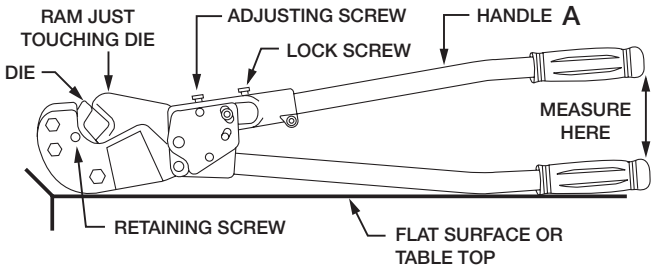
To ensure the tool will produce a reliable compression, the tool must be properly adjusted.

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. In a properly adjusted tool, the distance should be between 11” and 14”. If it is less than 11” or more than 14”, the tool needs adjustment. (See graphic below).

ADJUSTING TOOL

1. Loosen lockscrew.
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.



WARRANTY: Thomas & Betts sells this product with the understanding that the user will perform all necessary tests to determine the suitability of this product for the user's intended application. Thomas & Betts warrants that this product will be free from defects in materials and workmanship for the period stated on the enclosed warranty card. Upon prompt notification of any warranted defect, Thomas & Betts will, at its option, repair or replace the defective product or refund the purchase price. Proof of purchase is required. Misuse or unauthorized modification of the product voids all warranties.

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