

## CONNECTING BLOCKS 66-TYPE TOOLS, TERMINATING, ADAPTERS, AND MAINTENANCE

### 1. GENERAL

1.01 This section contains information on the operation, maintenance, and testing of tools and adapters used with 66-type connecting blocks.

1.02 This section is reissued to:

- Add information on the D impact tool which replaces the B impact tool (MD)
- Remove information on the C impact tool which was never manufactured
- Provide information on the 15AA-25 and 15AB-25 terminal block
- Add new Fig. 21 to show the 15-type terminal block
- Provide information on the 31A indicator
- Add new Fig. 22 to show the 31A indicator.

### 2. TOOLS

2.01 The D impact tool (Fig. 1), the B impact tool (MD) (Fig. 2), and the 714B tool (Fig. 3) are used to make terminations on 66-type connecting blocks. The D impact tool is recommended for use in installations where numerous cutdowns are required. The 714B is intended for occasional or intermittent use.

#### ◆D Impact Tool

2.02 The D impact tool (Fig. 1) consists of a handle with a switchable dual force impact mechanism, a blade release switch, and a cavity for storing a spare blade. The handle is designed to accept three different type blades, one of which is the 8762D-66 blade designed for use with the 66-type connecting block.

2.03 The impact adjustment switch on the handle is labeled "HI" and "LO". In the "HI" position, the impact tool is set for 22 gauge or larger conductors. When set in the "LO" position, the impact tool is set for 24- or 26-gauge conductors.

2.04 One side of the plastic handle is labeled "CUT"; this identifies the cutting side of the tool.◆

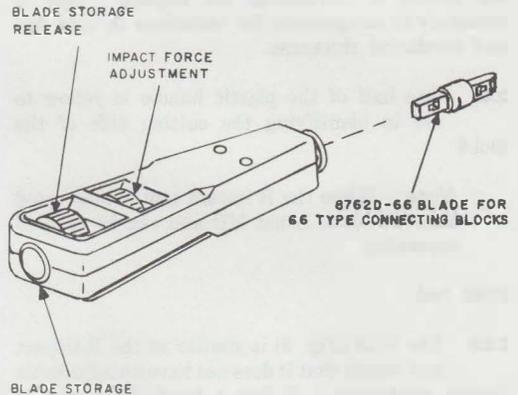


Fig. 1—D Impact Tool

#### B Impact Tool AT-8762 (MD)

2.05 ◆The tool (Fig. 2) consists of a reversible steel blade attached by a single screw to a plastic handle. One end of the blade is used for seating and cutting conductors while the other end is used for seating only. A spring mechanism inside the handle controls the amount of force the installer must exert to terminate and cut wires.

2.06 An adjustment screw (not shown) for varying the spring tension, combined with an indicator

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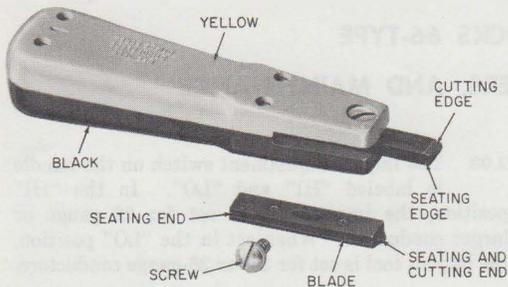


Fig. 2—B Impact Tool (MD)

pointer at the large end of the handle, provides the means of controlling the impact. This is necessary to compensate for variations in wire size and insulation thickness.

**2.07** One half of the plastic handle is yellow to aid in identifying the cutting side of the tool. ♦

**Note:** While the B impact tool is now rated MD, the blade is not MD and can be ordered separately.

#### 714B Tool

**2.08** The 714B (Fig. 3) is similar to the B impact tool except that it does not have an adjustable impact mechanism. It has a hand shield and is yellow and green instead of yellow and black.

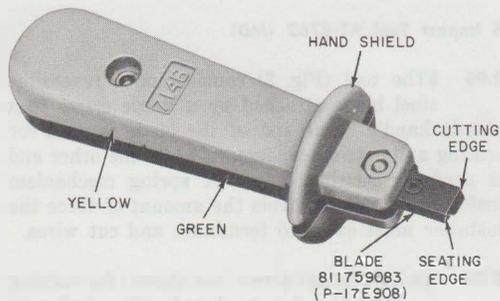


Fig. 3—714B Tool

#### Blade Reversal and Replacement

**Note:** The blades for the D impact tool, the B impact tool, and the 714B tool are not interchangeable.

**2.09** To reverse blades of the D or B impact tool or the 714B tool, perform the following steps:

- (1) Loosen single screw.
- (2) Slide blade out of handle approximately 1/4 to 1/2 inch.
- (3) Reverse blade.
- (4) Slide blade back into handle.
- (5) Tighten screw.

**2.10** To replace blade of the D or B impact tool or the 714B tool, perform the following steps:

- (1) Remove single screw.
- (2) Replace old blade with new. Place blade so that cutting edge will be on yellow side of handle. This is done for ease in identification of cutting side of tool.
- (3) Replace and tighten screw.



**Always carry the D or B impact tool or the 714B tool with the cutting edge protected or turned into handle.**

#### Spring Tension Adjustment (D or B Impact Tool)

**2.11** To adjust tension of the operating spring on the B impact tool, use the screw in the rear of the handle. Turning the screw clockwise reduces tension (indicator moves toward screw). Turning the screw counterclockwise increases tension (indicator moves toward blade). ♦ For spring tension adjustment on the D impact tool, refer to 2.03. ♦

#### 724A Tool

**2.12** The 724A tool (Fig. 4) is used to remove conductors from the terminals of 66-type connecting blocks. The tool consists of a 2-pronged

fork with an insulated handle. The fork is sized to fit around the beams of the terminal and underneath the seated conductor. Use of the 724A tool reduces the possibility of disturbing or degrading adjacent wire connections during removal of wire.

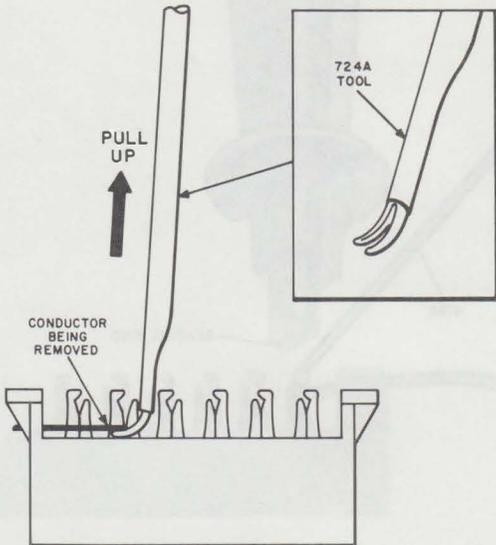


Fig. 4—Removing Conductor With 724A Tool

2.13 Place the 724A tool fingers astride the terminal and under the wire. Grasp the tool and pull the wire from the terminal in a direction perpendicular to the face of the block.

**Note:** Do not use adjacent terminals as leverage points.

2.14 Remove small pieces of insulation remaining around the terminals with an insulated tool.

2.15 To reterminate a wire which has been removed for testing or rearrangement (ended terminations only), perform the following steps.

- (1) Cut off old contact portion.
- (2) Place wire in hook of terminal, using long-nose pliers if necessary.

(3) Seat and cut with D impact tool or 714B tool.

### 3. TERMINATION

3.01 All terminations on 66-type connecting blocks should be made with a D impact tool or a 714B tool. The B impact tool (MD) can be used if available.

3.02 The 66-type connecting blocks will accept 20- to 24-gauge conductors; **do not use any 26-gauge wire since minimum movement of conductor will easily subject this gauge of wire to breakage.**

The following unskinned 20- to 24-gauge conductors may be terminated on 66-type blocks:

- B service wire\*
- D, F, and G cross-connecting wire
- D inside wiring cable
- D station wire
- E inside wiring cable
- SK station wire\*

\*Do not use the 714B tool or the D impact tool to cut these conductors. See 3.06.

**Note:** Terminate only one conductor per individual terminal.

3.03 Wire, other than that listed above, including 18- and 19-gauge and JKT (obsolete) station wire, may be terminated on 66-type connector blocks, but must be skinned and cleaned (if enameled) before terminating.



**Smaller gauge wire cannot be terminated on a terminal that has been used previously with 18- or 19-gauge wire or JKT (obsolete) station wire.**

3.04 The following two general types of terminations can be made on 66-type connecting blocks.

- (a) **Looping Termination**—The wire or cable continues to another terminal or connecting block.

(b) **Ended Termination**—The wire or cable does not continue to another terminal or connecting block.

**Note:** The terminating sequence for station wire and cable should follow normal color code sequence.

**3.05** To make a looping termination on a 66-type connecting block (Fig. 5 and 6), perform the following steps.

**Note:** Fig. 5, 6, 7, and 8 show a 714B tool; the D impact tool is used in the same way.

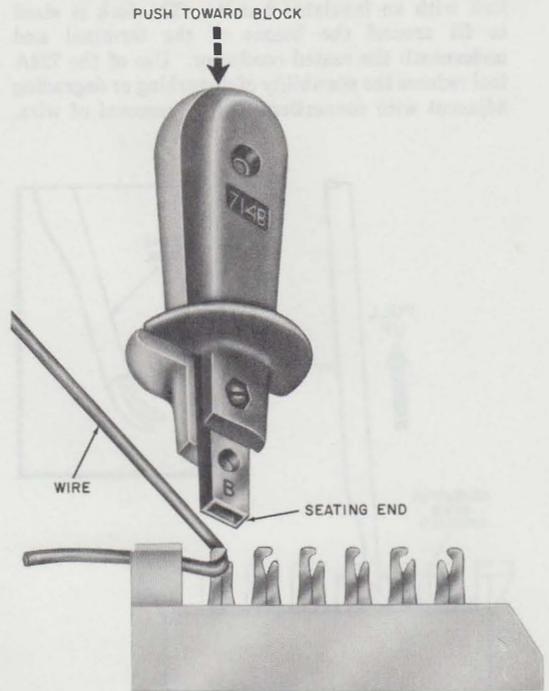
- (1) Select wire to be terminated.
- (2) Work wire into fanning strip.
- (3) Place wire in hook of terminal, using fingers or long-nose pliers.
- (4) Place seating end (cutting end of blade turned into handle) of 714B or D impact tool over terminal (Fig. 5).
- (5) Press tool toward block until wire is fully seated.

**Caution:** Do not use excessive force when seating wire in terminal; this could damage support members of some 66-type blocks. Push the tool straight over the terminal. (With D impact tool, spring will operate blade when enough pressure is applied). Avoid bending or twisting the terminal.

**3.06** To make an ended termination with SK station wire or B service wire, observe the following procedure.

- (a) Perform Steps (1), (2), and (3) of 3.05.
- (b) Cut the wire with diagonal pliers, allowing for approximately 1/16-inch of wire to protrude through terminal (Fig. 7).

**Caution:** Be careful not to disturb or short out adjacent terminals when using diagonal pliers to cut off wire ends.



**Fig. 5—Preparation for Looping Termination**

- (c) Place seating end of 714B or D impact tool over terminal (Fig. 8).
- (d) Press tool toward block until wire is fully seated.

**Note:** JKT (obsolete) and SK station wire, and B service wires have steel cores which will damage cutting edge of the tool.

**3.07** To make an ended termination (Fig. 9 and 10) using the 714B or D impact tool, observe the following procedure.

- (a) Perform Steps (1), (2), and (3) of 3.05.
- (b) Place cutting end of tool over terminal. Be sure cutting edge of blade is positioned over scrap end of wire.
- (c) Force tool toward block until wire has been severed against face of block.

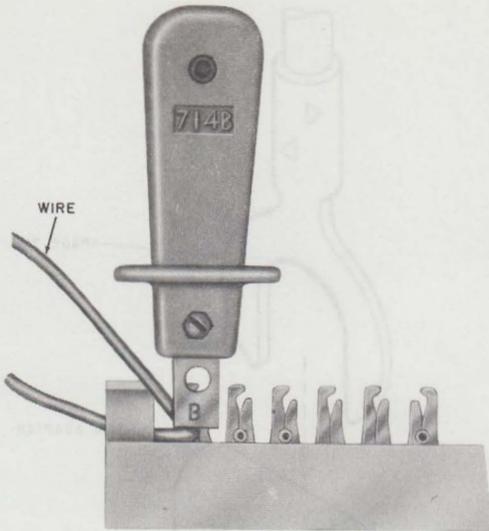


Fig. 6—Looping Termination Completed

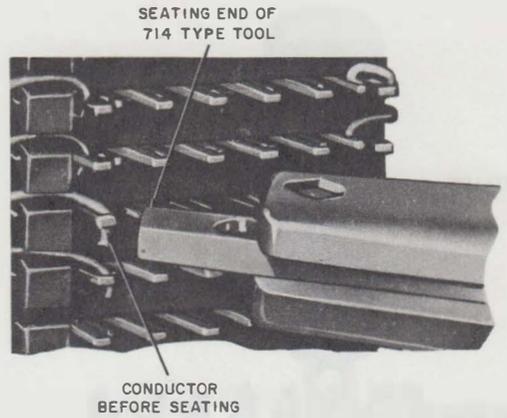


Fig. 8—Seating B Service or SK Station Wire

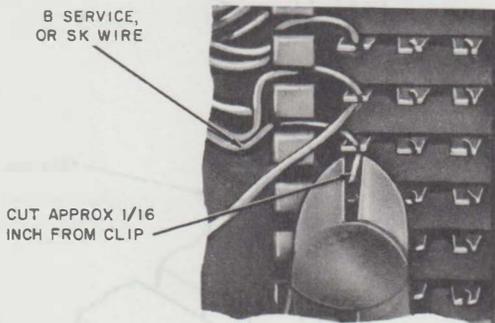


Fig. 7—Cutting B Service or SK Station Wire

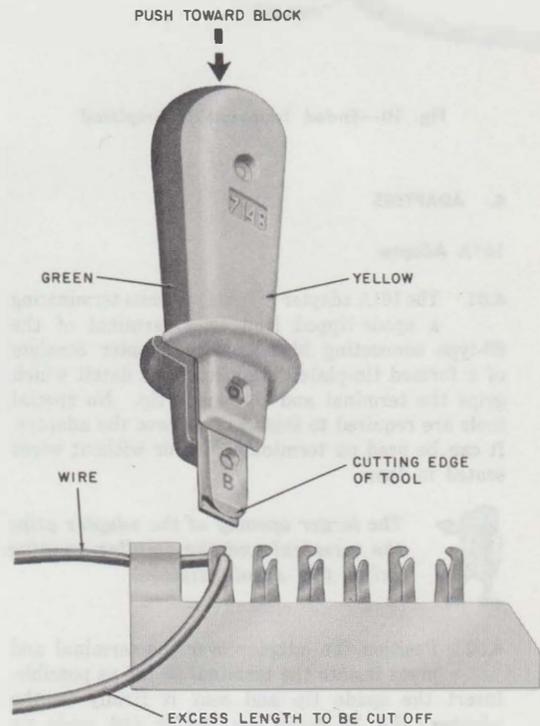


Fig. 9—Preparation for Making Ended Termination

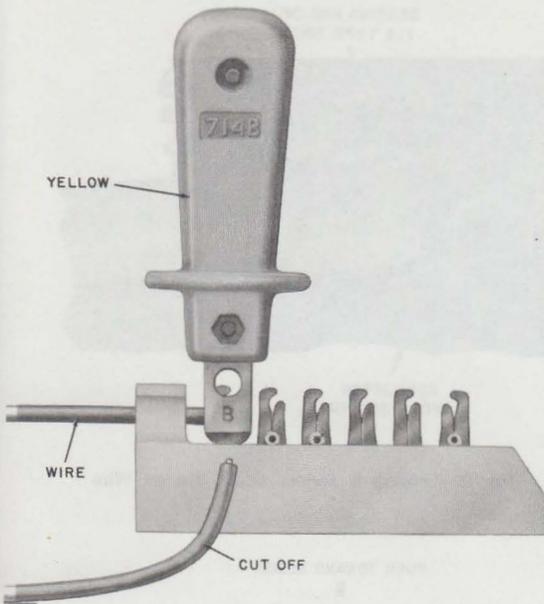


Fig. 10—Ended Termination Completed

#### 4. ADAPTERS

##### 161A Adapter

4.01 The 161A adapter (Fig. 11) permits terminating a spade-tipped lead to a terminal of the 66-type connecting blocks. The adapter consists of a formed tin-plated stainless steel detail which grips the terminal and the spade tip. No special tools are required to install or remove the adapter. It can be used on terminals with or without wires seated in them.



*The larger opening of the adapter grips the terminal and the smaller opening grips the spade tip.*

4.02 Position the adapter over the terminal and press it onto the terminal as far as possible. Insert the spade tip and seat it firmly in the adapter. Fig. 12 shows the adapter and spade tip installed.

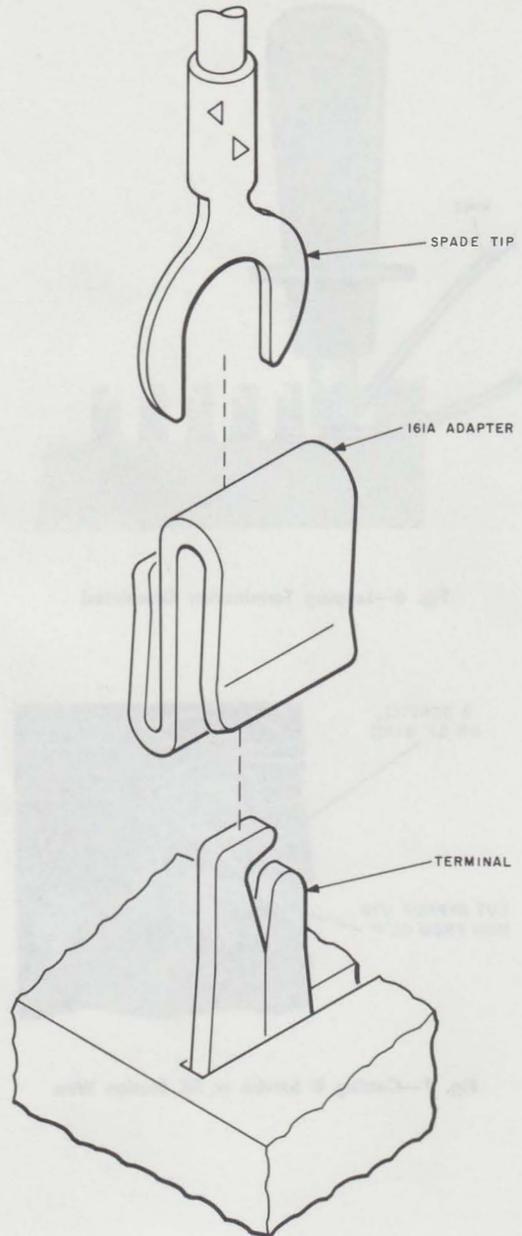
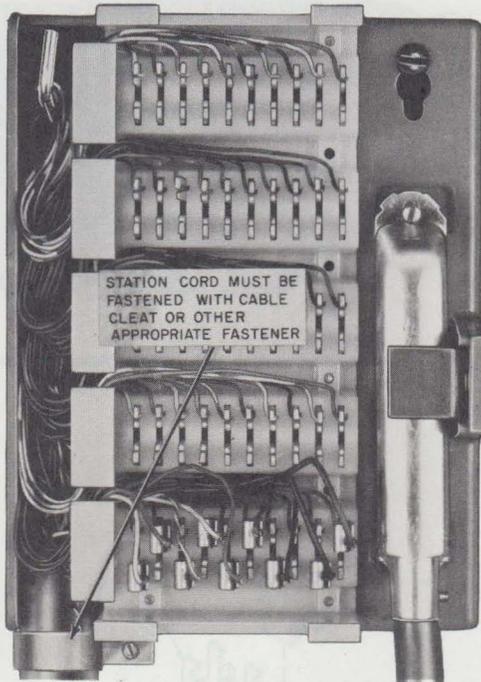


Fig. 11—161A Adapter, Installation Detail

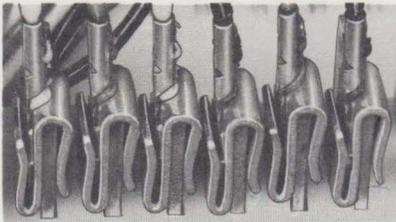


**Due to limited space between terminals in 66-type connecting blocks, care must be exercised in placement of the adapters.**



(ABOVE) PROPER ORIENTATION OF ADAPTERS

(BELOW) IMPROPER ORIENTATION OF ADAPTERS



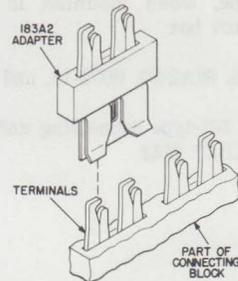
**Fig. 12—Typical Installation of 161A Adapter on 66E-Type Connecting Block**

**4.03** When 161A adapters are used on adjacent connectors, the adapters should be oriented so that possible shorting between connectors is avoided. Fig. 12 shows proper and improper orientation of the adapters. On the 66B connecting blocks with 3-terminal connectors, adapters should not be installed adjacent to each other on the middle two terminals due to the possibility of shorting the two individual 3-terminal sections of the row.

**Note:** Spade-tipped mounting cords must be fastened in or near the block to prevent movement of spade-tipped leads. Use appropriate fastening device (ie, clamp, clasp, tape) or tie to existing cables with twine.

### 183-Type Adapters

**4.04** The 183A2 adapter (Fig. 13) and 183B2 adapter (Fig. 15) provide additional multiplying capacity for horizontal and vertical terminals, respectively, on 66-type connecting blocks. If more than five adapters per block are needed, consider using additional blocks.



**Fig. 13—183A2 Adapter, Installation Detail**

**4.05** The adapter is a 2-terminal quick-clip connector with a spring clasp on one side which slips over two adjacent terminals of a 66-type connecting block. A plastic block is fitted around the middle to limit the distance a conductor can travel when connected.



**The 183A2 adapter will act as a strapping connector if placed between two connectors.**

**4.06** No special tools are required to install or remove either adapter. Fig. 14 shows the 183A2 adapter installed. Install as follows:

- (a) Position adapter over connecting block terminals with spring clasp toward connecting block.
- (b) Fit the spring clasp of the adapter over the connecting block terminals.
- (c) Press adapter toward connecting block until firmly seated.
- (d) Connect the inside wire or cable conductor to the adapter terminal using a 714B tool or a C impact tool.

**Note:** The installation of these adapters adds height to the connecting block. Due to insufficient clearance between the connecting block and the housing cover, the adapter cannot be used on the following connecting blocks:

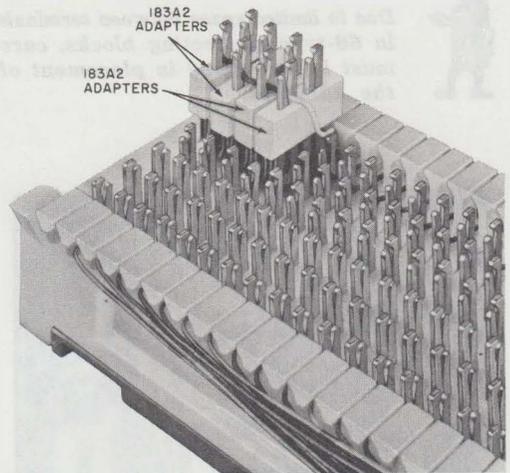
- 66B-type, when mounted in a 115-type apparatus box
- 66A2-25, 66A2-50, 66C2-16, and 66C2-32
- 100- or 101-type connecting units used with COM KEY\* 2152.

\*Trademark

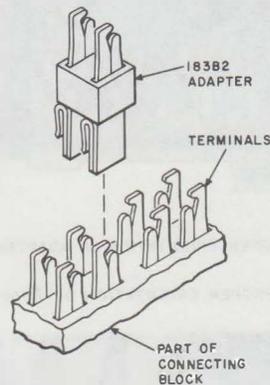
### 260A Adapter

**4.07** The 260A adapter (Fig. 16) consists of 50 clips wired together in a vertical column and protected with a plastic cover. It is used to strap together up to 50 adjacent terminals in a vertical column on a 66-type block.

**4.08** The adapter can be cut to any desired length with standard diagonal pliers. No special tools are required for installing the 260A adapter; press the clips onto the connecting block column, being careful not to short any terminal to one beside it. Put the plastic cover on the adapter. ♦The 260A adapter does not have to be removed to change strapping.♦



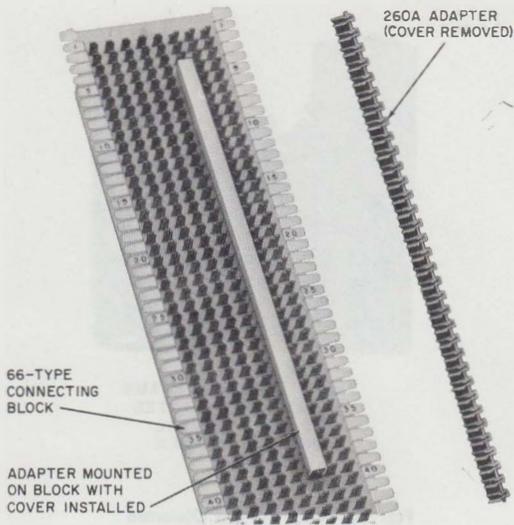
**Fig. 14—Typical Installation of 183A2 Adapters on 66B-Type Connecting Block**



**Fig. 15—183B2 Adapter, Installation Detail**

## 5. B BRIDGING CLIP

**5.01** The B bridging clip (Fig. 17) is a stainless steel spring clip used to electrically interconnect two adjacent terminals in the same row of 66-type connecting blocks, thereby increasing the multiplying capacity of the block.



**Fig. 16—260A Adapter Installed on 66-Type Connecting Block**

**5.02** No special tools are required to install or remove the clip.

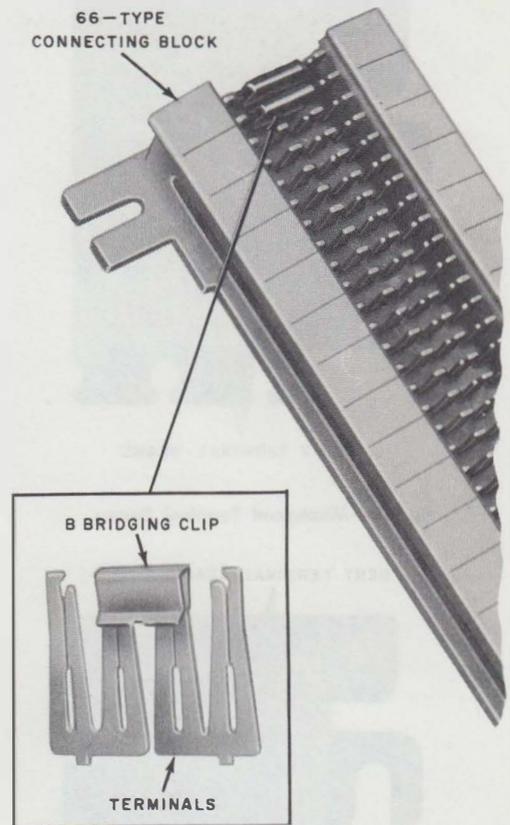
## 6. MAINTENANCE AND TESTING

**6.01** Terminal beams should not be bent, misaligned, or obviously deformed.

**6.02** Terminals which have been bent or misaligned, as shown in Fig. 18, may be corrected by using long-nose pliers (Fig. 19). The bent beam should be moved until it is aligned with its mate or with other terminals of the same row. Care should be taken not to move beams or terminals in a direction which would spring or open the contact surfaces between the two beams.

**6.03** Terminals which have been damaged or sprung, resulting in an obvious gap between the two contact surfaces (Fig. 20), should not be used. There is no prescribed method for correcting this condition; therefore, the connecting block should be replaced.

**6.04** Field replacement of connectors in 66-type connecting blocks is impractical. Replace connecting blocks having damaged terminals which cannot be repaired.



**Fig. 17—B Bridging Clip, Installation Detail**

**Note:** In some cases it may be desirable to use a 183-type adapter instead of replacing the connecting block.

**6.05** ♦The 15AA-25 and 15AB-25 (Fig. 21) terminal blocks are used to test system and station operations. These blocks are made up of cables which are terminated on one end with a 50-pin connector which will plug into a key telephone set cord. The other end is terminated on five 961A- or B-type connectors which can be plugged directly onto a 66-type block.

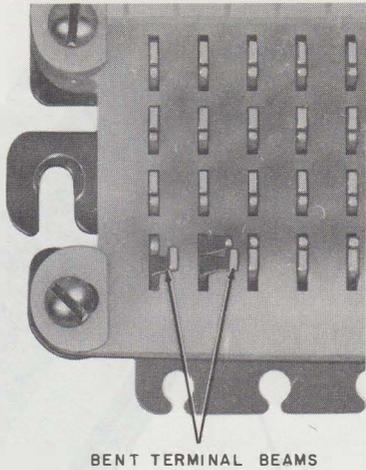


Fig. 18—Misaligned Terminal Beams

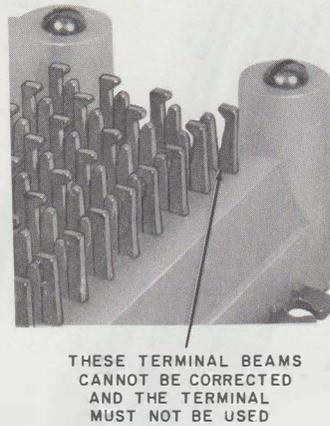


Fig. 20—Gap Spread Distorted

BENT TERMINAL BEAMS

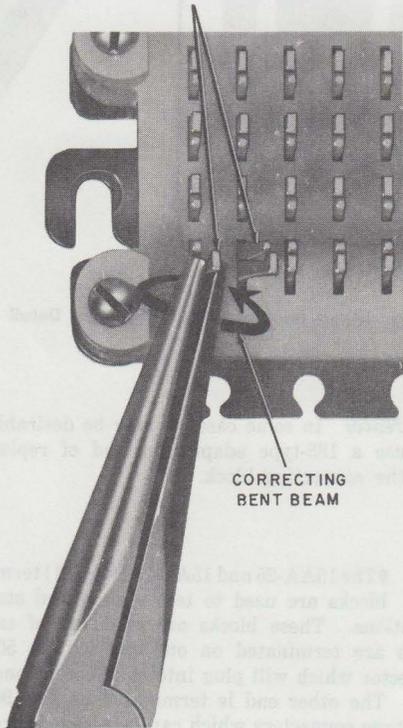


Fig. 19—Straightening Terminal Beam

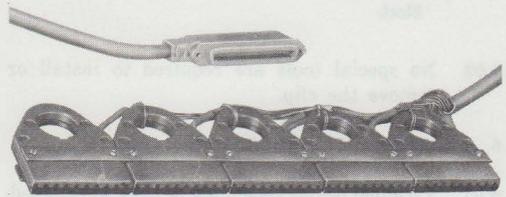


Fig. 21—15-Type Terminal Block

6.06 For test purposes, the 15AA-25 (for 66M blocks) or 15AB-25 (for 66B blocks) is plugged onto the row of terminals to be tested. The other end is connected to a key telephone set which allows the necessary tests to be performed.

6.07 The 31A indicator (Fig. 22) provides line status verification. This device consists of a 549L light emitting diode mounted in an encapsulated molded assembly. This assembly plugs onto the lamp (L) and lamp ground (LG) lugs displaying the visual status of the system. The indicator can be used on all codes of 66-type connecting blocks.



Fig. 22—31A Indicator