Tools and Aids
Distributing and Protector Frames

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1. Overview

1.01 This practice describes the tools and aids used with connecting apparatus for conventional distributing frames and ***COSMIC***® distributing frames and associated protector frames. It does not cover test connectors, cords, insulators, etc. See AT&T 201-208-106 for information on these items.

1.02 This practice is reissued for the reasons listed below:

(a) To add metrics

(b) To add new operation decals

(c) To add metal tool bit information on the 756C5 and 950C insertion tools.

(d) To update tool descriptions and add block removal procedures.

1.03 This practice does not contain admonishments (DANGERS, WARNINGS, and CAUTIONS).

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2. Wiring Tools

2.01 Table A is a guide for selecting wiring tools for apparatus equipped either with Insulation Displacement Clips (IDCs) (also called "Quick Clips"), or solderless wire-wrap terminals.

Table A. Wiring Tools Selection Guide

Terminal	Function	Apparatus	Tool
IDC	Insertion	78-, 89-, 112-Type Connecting Blocks, and 310-/310M-Type Connectors	950 Type or 756 Type
		93-Type Connecting Blocks	833A, 834B
		66-Type Connecting Blocks	714E2
	Removal	All Above	950 Type, 980A
Wire wrap	Insulation Stripping	All Wire-Wrap Apparatus	KS-16902, L1 KS-20620
	Wire wrapping		KS-16363, L3 KS-21232, L1
	Wire removal		KS-20827, L1

Wiring Insertion/Removal

756C5/C6 and 950C/C1 Quick-Clip Wire Insertion Tools

2.02 The 756C5/C6 and 950C/C1 multipurpose wire insertion tools may be used with both "3-beam" type insulation displacement clips (IDCs) and the older "4-beam" IDCs. The "3-beam" IDCs are used for cross-connect wire terminations on 89TB-type and 112-type connecting blocks and 310TB/310MTB-type connectors. "Four-beam" IDCs are used on 78C-type connecting blocks. Because the same tool bit of the 756C5/C6 and/or 950C/C1 tools is used for both "3-beam" and "4-beam" IDCs, high-density 112-type connecting blocks with "3-beam" terminals may be mixed with 78-type connecting blocks with "4-beam" terminals on ***COSMIC*** distributing frames. This allows additional terminating capacity to be added to vintage frames without sacrificing efficient jumper cross-connect operations. Increased frame termination capacity also avoids the costly need to add new framework. Note, when considering mixing 112- and 78-type connecting blocks, that the 112-type have a blue and white checkerboard and the 78-type have a red and white checkerboard.

2.03 The 756C- and 950-type tools are available with either plastic or metal insertion bits, as listed in Table B.

Table B. Wire Insertion Tools and Bits

Apparatus Code	Ordering Comcode	Description
950C Tool	105 564 835	Multipurpose tool equipped with a plastic bit and 5 replacement bits
950C-1 Tool Spare Parts	105 611 537	Replacement plastic bits (Qty 5)
950C-1 Tool Spare Parts	106 435 365	Replacement plastic bits (Qty 50)
950C-1 Tool	106 230 543	Multipurpose tool equipped with a metal bit
950C1-1 Tool Spare Parts	106 230 568	Replacement metal bit (Qty 1)
756C5 Tool	105 564 827	Tool equipped with a plastic bit and 5 replacement bits
756C5-1 Tool Spare Parts	105 611 545	Replacement Plastic bits (Qty 5)
756C5-1 Tool Spare Parts	106 435 183	Replacement plastic bits (Qty 50)
756C6 Tool	106 230 527	Tool equipped with a metal bit
756C6-1 Tool Spare Parts	106 230 535	Replacement metal bit (Qty 1)

2.04 The 756C-type tools (Figure 1) and insertion bits (Figure 2) provide wire insertion only.

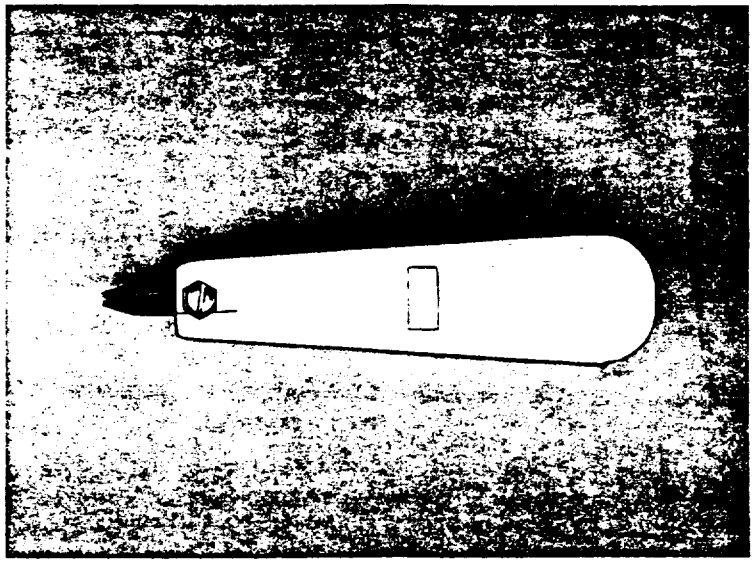

Figure 1. 756C-Type Wire Insertion Tool

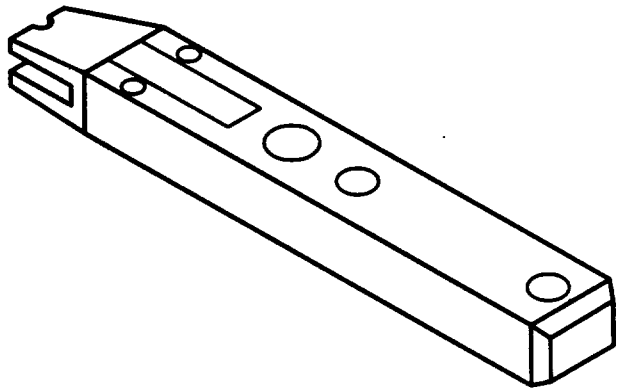

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Figure 2. Insertion Bit for 756C-Type Tool

2.05 The 950C-type tool (Figure 3) is a multipurpose tool that is equipped with a wire cutter, a wire removal tool, and a wire insertion bit (Figure 4).

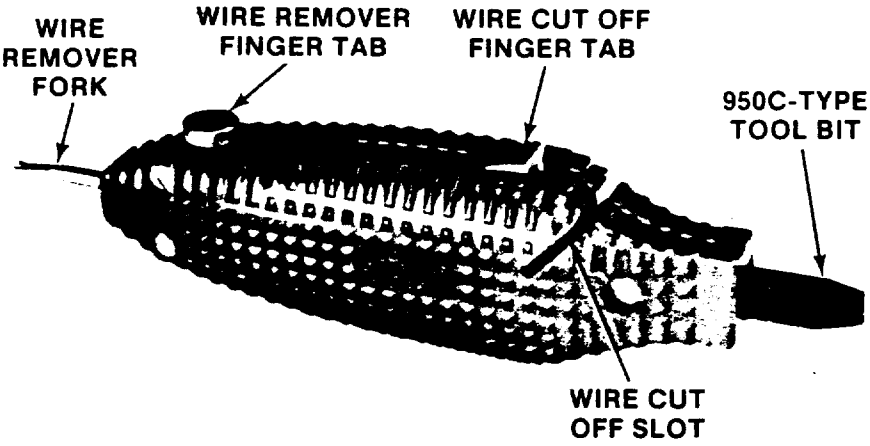

Figure 3. 950C-Type Wire Insertion/Removal/Cutter Tool

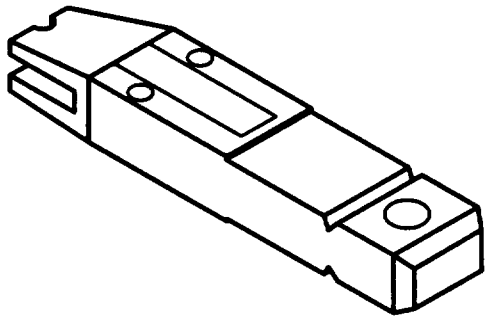

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Figure 4. Insertion Bit for 950C-Type Tool

2.06 Wire insertion tool bits are available in either high-impact nylon plastic or stainless steel. The plastic bits are low cost and disposable; they wear out after several thousand insertion operations. Worn insertion bits will exhibit enlarged or split wire dress holes at the insertion end of the bit and will not provide sufficient retention of the jumper wire. Replacement bits are available in bags of 5 or 50. The bits have a channel to dress the wire perpendicularly to the terminal to ensure a smooth, reliable connection. The long angular shape allows easier alignment of the tool and terminal.

2.07 The same tool can be used for inserting 24- or 22-gauge (0.5 or 0.6 mm) cross-connect wire into 3- and 4-beam IDCs. Jumper running operations are quick and reliable with the plastic or stainless steel wire insertion bits. These tools replace the older 950A, 950B, 756C3, and 756C4 tools.

756C3 (DA) and 756C4 (DA) Wire Insertion Tools

2.08 The 756C3 and 756C4 wire insertion tools are used for inserting wires into 3-beam (112-type blocks) and 4-beam (78-type blocks) terminals in ***COSMIC*** and ***COSMIC*** II distributing frames. These tools are also used on the 3-beam terminals in 89TB-type connecting blocks and on the 310TB/310MTB-type connectors.

2.09 Each 756C3/C4-type insertion tool consists of a beige plastic handle, an insulated blade, and associated hardware. The blade is provided with wire retention holes and wire guides.

2.10 The 756C3 tool (Figure 5) is used when terminating 24-gauge (0.5 mm) jumper wire and the 756C4 tool is used for terminating 22-gauge (0.6 mm) jumper wire. All 756C-type tools can be equipped with new "multipurpose" wire insertion bits (756C5-1, Comcode 105611545). The 756C3 and the 756C4 tools are Discontinued Availability (DA), and are replaced by the 756C5/C6 tools.

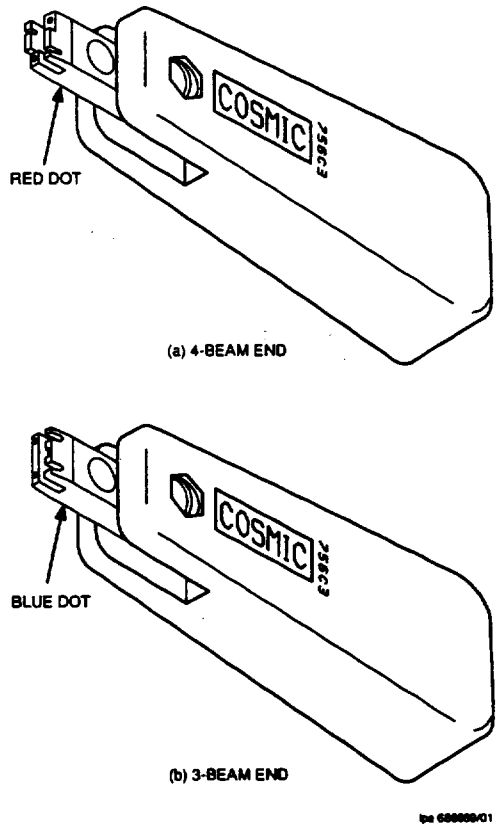

Figure 5. 756C3 Wire Insertion Tool (DA)

950A (DA) and 950B (DA) Cutoff/Insertion/Removal Tool

2.11 The 950-type tools are a wire cut-off, insertion, and removal tools. These tools can be used to cut DT22 and DT24 [22 and 24 gauge (0.6 and 0.5 mm)] cross-connect wires. The 950A tool (Figure 6) is used with 24-gauge (0.6 mm) jumper wire, and the 950B tool is used with 22-gauge (0.5 mm) jumper wire. All 950-type tools can be equipped with new "multipurpose" wire insertion bits (950C-1, Comcode 105611537). The 950A and the 950B tools are Discontinued Availability (DA), and are replaced by the 950C/C1 tools.

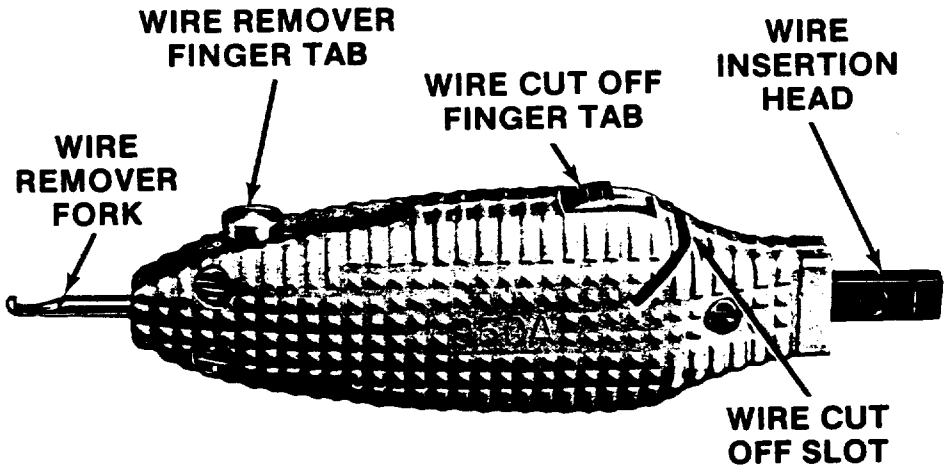

Figure 6. 950A Cutoff/Insertion/Removal Tool (DA)

714E2 Wire Insertion Tool

2.12 The 714E2 wire insertion tool is used for inserting wires into terminals on 66G- and 66H-type connecting blocks used on ***ESS***™ switch modular distributing frames.

2.13 The 714E2 insertion tool (Comcode 101285344, Figure 7) consists of a plastic handle containing a metal insertion blade. The blade is reversible, using a screwdriver for terminations on either twin or single quick-clip terminals.

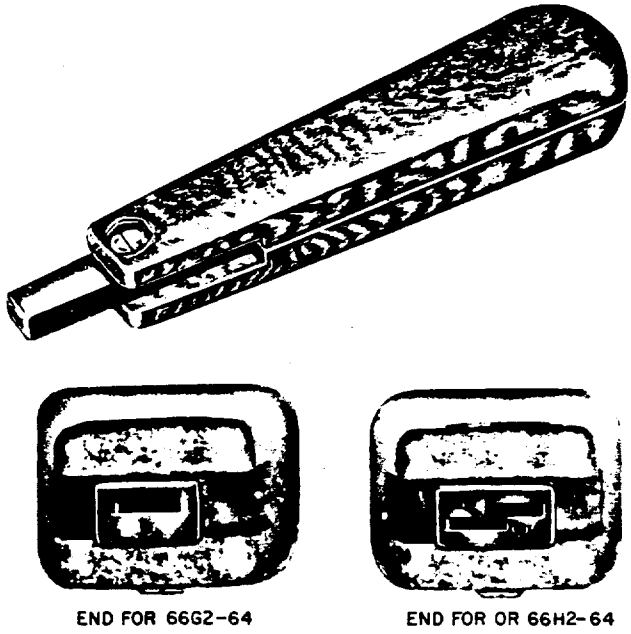

Figure 7. 714E2 Tool

833A Insertion Tool

2.14 The 833A insertion tool (Comcode 102962255, Figure 8) is used for seating and cutting individual 22-gauge (0.6 mm) irradiated polyvinyl chloride (IPVC) cross-connect wire on the 93-type connecting block.

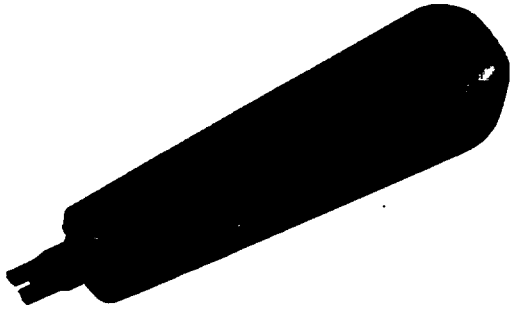

Figure 8. 833A Insertion Tool

834B Multipair Impact Tool (DA)

2.15 The 834B multipair impact tool (DA, Figure 9) seats and cuts up to ten 22- through 26-gauge (0.6 - 0.3 mm) IPVC wires on the index strip of the 93-type connecting block. It is also used to seat the 109-type connector on the index strip.

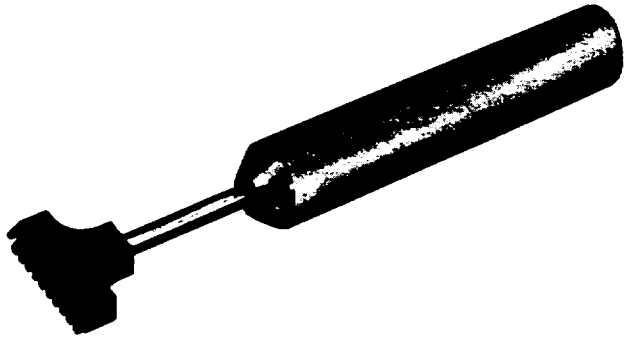

Figure 9. 834B Multipair Impact Tool

Wire Stripping

KS-16902, L1 Stripper

2.16 The KS-16902, L1 stripper (Comcode 996780607, Figure 10) is a pistol-grip tool used for cutting and stripping 22- and 24-gauge (0.6 and 0.5 mm) PVC-, IPVC-, BU-, or U-type wire for wire-wrap operations.

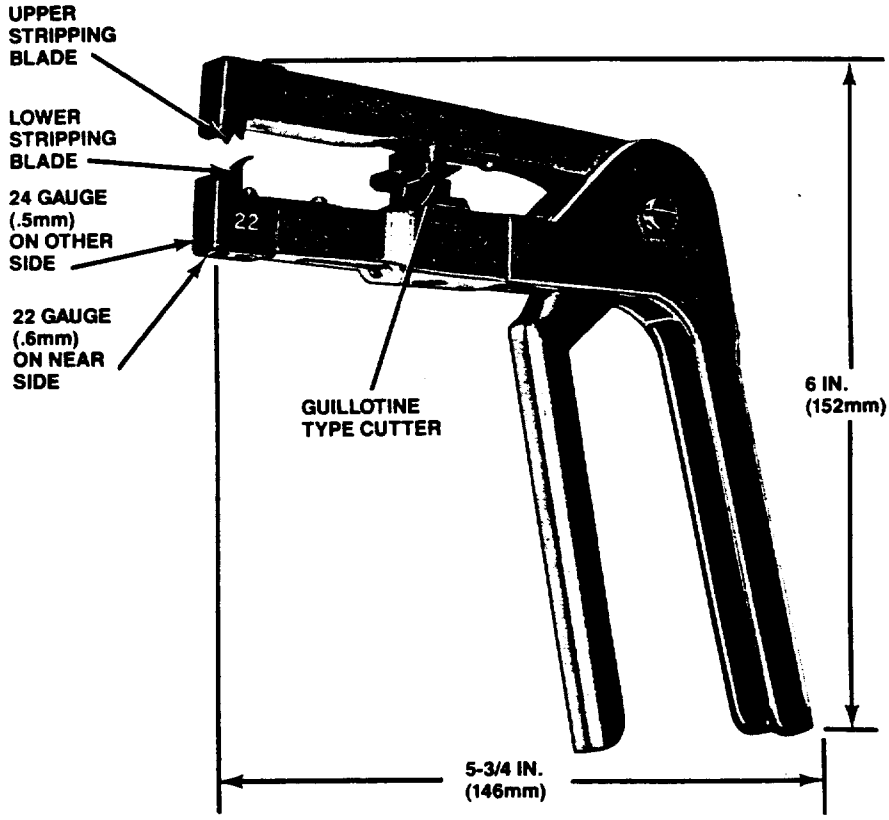

Figure 10. KS-16902, L1 Stripper

KS-20620 Wire Strippers

2.17 The KS-20620 strippers (Figures 11 and 12) are convenient, small, lightweight tools with sharp- edged grooves for removing insulation from distributing frame wire. List 1 is the basic insulation removal tool. Lists 2 and 3 have a thumb-operated shear, mounted on the stripper handle, that provides a stripped length of 1-5/8 inches (41 mm). List 4 has two (paired) strippers mounted back to back. Lists 5 and 6 provide stripping slots for two wire gauges plus a thumb- operated shear for 1-5/8 inch (41 mm) stripped length. List 7 is used for stripping and cutoff of DT22P wire. (See Table C.)

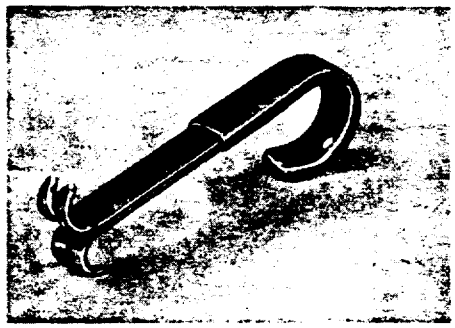

Figure 11. KS-20620, L4 Stripper

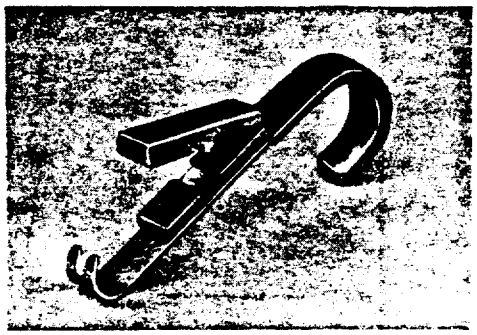

Figure 12. KS-20620, L7 Stripper

Table C. KS-20620 Wire Stripper Specifications

Function	Wire Gauge	Color of Plastic Handle	Code	Comcode
Stripper Only	22 (0.6 mm)	Red	KS-20620, L1	400890596
Stripper and Cutoff	22 (0.6 mm)	Red	KS-20620, L2	400890604
Stripper and Cutoff	24 (0.5 mm)	Black	KS-20620, L3	400890612
Dual Stripper and Cutoff	20 & 22 (0.8 and 0.6 mm)	Red	KS-20620, L4	400893111
Dual Stripper and Cutoff	22 & 24 (0.6 and 0.5 mm)	Red	KS-20620, L5	400890547
Dual Stripper and Cutoff	24 & 26 (0.5 and 0.4 mm)	Black	KS-20620, L6	400893129
DT-22P Stripper and Cutoff	22 (0.6 mm)	Red	KS-20620, L7	401346291

Wire-Wrapping

KS-16363, L3 Wire-Wrapping Tool

2.18 The KS-16363, L3 wire-wrapping tool (Comcode 402168090, Figure 13) is manually operated by a hand grip and is used for 22-, 24-, and 26-gauge (0.6, 0.5, and 0.4 mm) solderless wire-wrapped connections. A finger operated chuck is compatible with KS-20963 sleeves. Wrapping bits (KS-16734 and KS-16903) and sleeves (KS-20963) are ordered separately.

2.19 The KS-16363, L3 replaces the KS-16363, L1 and L2 wire-wrapping tools rated Discontinued Availability (DA).

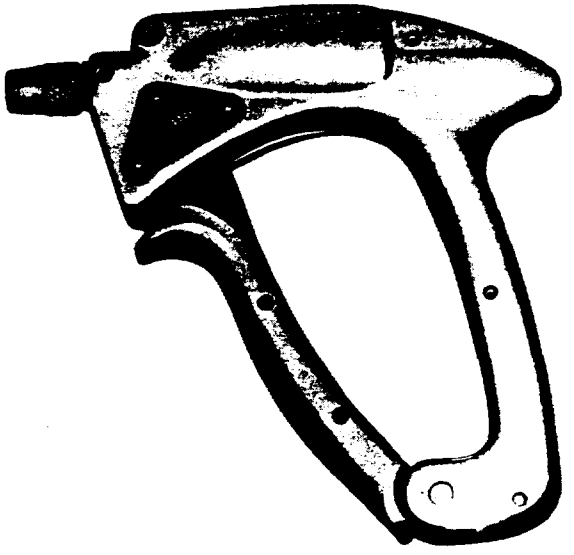

Figure 13. KS-16363, L3 Wire-Wrapping Tool

KS-21232, L1 Electric Wire-Wrapping Gun

2.20 The KS-21232, L1 wire-wrapping gun (Comcode 401849609, Figure 14) is a pistol-shaped, double-insulated electric powered tool used for 22-, 24-, and 26-gauge (0.6, 0.5, and 0.4 mm) solderless wire-wrapped connections. Wrapping bits (KS-16734 and KS-16903) and sleeves (KS-20963) are ordered separately.

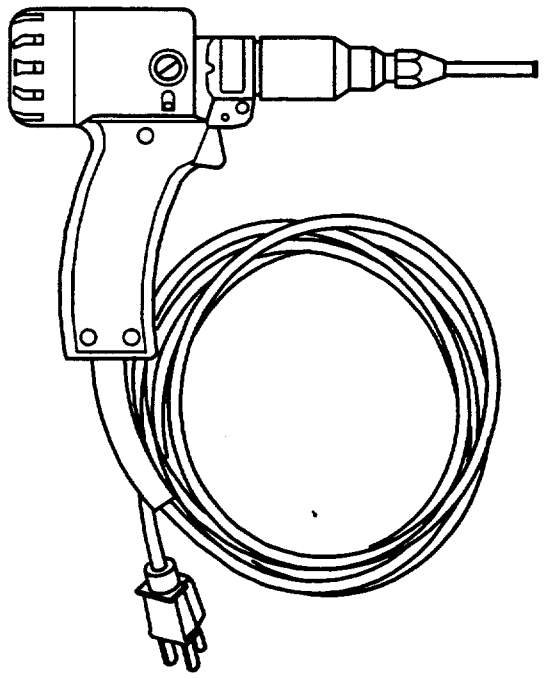

Figure 14. KS-21232, L1 Electric Wire-Wrapping Gun

Wire-Wrapping Bits and Sleeves

2.21 The KS-16734, L1 wrapping bit is intended for use with the KS-20963, L2 wire-wrapping sleeve and driver tools such as the KS-16363, L3 wire- wrapping tool and KS-21232 wire-wrapping gun.

2.22 The KS-16903, L1 wrapping bit is intended for use with the KS-20963, L3 wire-wrapping sleeve and driver tools such as the KS-16363, L3 wire- wrapping tool and KS-21232 wire-wrapping gun (see Figures 15, 16, and Table D).

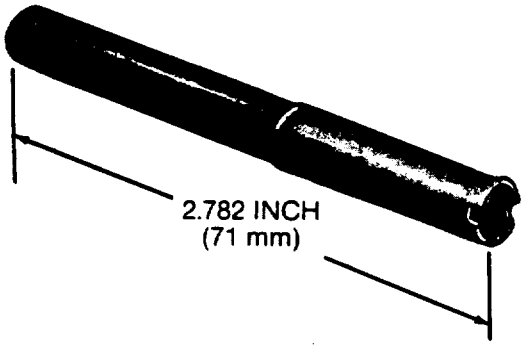

Figure 15. KS-20963 Sleeve

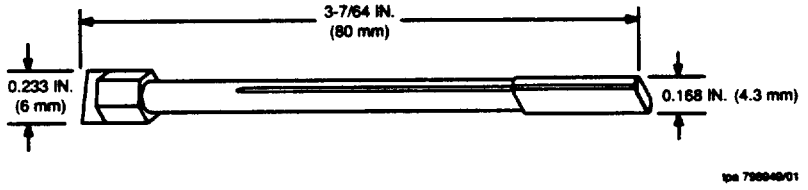

Figure 16. KS-16734 and KS-16903 Wrapping Bit

Table D. Wire-Wrapping Tool Sleeves and Bits Specifications

Wire Gauge	Sleeve			Bit		
	Color			ID		
22, 24 (.6, .5mm)	Red	KS-20963, L2	400897781	Red Band	KS-16734, L1	996811378
24, 26 (.6, .5mm)	Yellow	KS-20963, L3	400897799	Green or Yellow Band	KS-16903, L1	400011334

Wire Removal

980A Wire Removal Tool

2.23 The 980A wire removal tool (Comcode 103809125, Figure 17) is designed to remove terminated conductors without leaving debris in the clip. It consists of a 2-prong fork with an insulated handle. The prongs of the fork are sized to fit around the clip beneath the seated conductor. Use of the tool reduces the possibility of disturbing or degrading adjacent wire connections during the removal of wire.

Figure 17. 980A Wire Removal Tool

2.24 The multipurpose 950C-type tool is equipped with a wire removal tool (see Figure 3).

KS-20827, L1 Wire Unwrapping Tool

2.25 The KS-20827, L1 wire unwrapping tool (Comcode 400751376, Figure 18) is a manually operated tool used for unwrapping and removing 22-, 24-, and 26-gauge (0.6, 0.5, and 0.4 mm) wire from terminals having solderless wrapped connections.

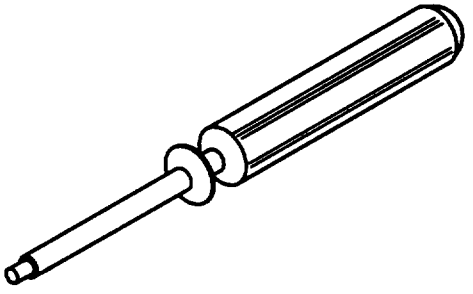

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Figure 18. KS-20827, L1 Wire Unwrapping Tool

KS-22035, L2 Spudger

2.26 The KS-22035, L2 plastic spudger (Comcode 405423260, Figure 19) is a narrow 6-21/32 inch (169 mm) long nylon hand tool. One end is tapered to a 1/16- inch (1.6 mm) diameter point with an L-shaped wire hook extension, while the other end tapers to a flat, 3/16- inch (4.8 mm) wide and 1/16-inch (1.6 mm) thick notched extension. The spudger is used in a variety of wiring operations such as testing solder connections, dressing wires, and removing pieces of wire and insulation from terminals.

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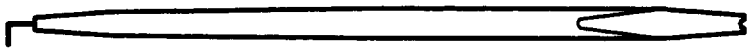

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Figure 19. KS-22035, L2 Spudger

Wire Pliers

KS-21257 Pliers

2.27 The KS-21257 pliers (Figure 20 and Table E) are used for cutting wire and for crushing and stripping insulation on 22-gauge (0.6 mm) IPVC insulated wire. They are primarily intended for preparing the ends of jumper wire prior to wire wrapping or soldering. The tips are knurled to facilitate wire handling. An etched mark 1-5/8 inches (41 mm) from the end indicates the correct stripping length for 22-gauge (0.6 mm) wrapped connections. Handles are covered with yellow plastic cushion grips. Pliers are available with short or long jaws and aluminum oxide coating for insulation purposes.

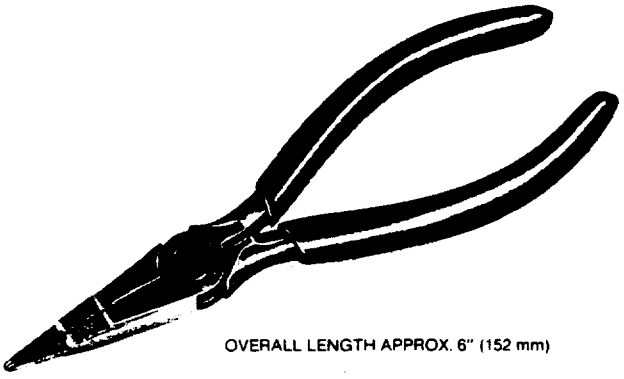


Figure 20. KS-21257 Pliers

Table E. KS-21257 Plier Specifications

Description	Length	Code	Comcode
Plain jaws	6-5/8" (168 mm)	KS-21257, L1	401229448
Aluminum oxide coated jaws	6-5/8" (168 mm)	KS-21257, L2	401229455
Plain jaws	5-3/4" (146 mm)	KS-21257, L3	402048870
Aluminum oxide coated jaws	5-3/4" (146 mm)	KS-21257, L4	402048888

3. Apparatus Maintenance Tools

112/78-Type Block Removal Tools for *COSMIC*-Type Frames

KS-21345, L2 Block Removal Tool

3.01 The KS-21345, L2 block removal tool (Comcode 403205008, Figure 21) is a hand tool used to remove the 78C-type and 112-type connecting blocks, and the KS-21316, KS-21317, KS-21318, and KS-21325 test talk panels from ***COSMIC*** frames. One end of the tool has three sets of offset wedge blocks which are spaced approximately 2-1/2 inches (64 mm) apart and mate with the retaining tabs on the connector blocks. The other end of the tool is equipped with a wooden handle. This tool is used to remove blocks from the rear of the frame.

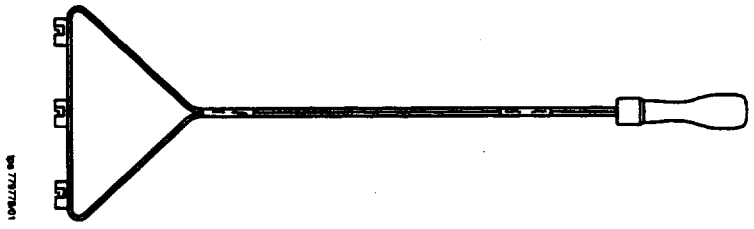


Figure 21. KS-21345, L2 Block Removal Tool

3.02 The connecting block removal procedure using the KS-21345, L2 tool is as follows:

(1) Standing at the rear of the frame, align the inclined projections on the prongs of the KS-21345, L2 tool with the snap-in tabs on the top rear of the block. These tabs should be projecting through the mounting holes in the sheet metal shelf.

(2) Press the tool toward the front of the frame. This action releases the top of the block allowing it to tip forward.

(3) Lift the connecting block off the frame by disengaging the groove in the lower fanning strip from the edge of the shelf.

KS-22616, L1 Removal Tool

3.03 The KS-22616, L1 removal tool (Comcode 402757173, Figure 22) is used for removing the 78-type and 112-type, 100-pair and 128-pair connecting blocks on the ***COSMIC*** mini distributing frame.

3.04 This removal tool consists of a T-shaped wire- formed end and a wooden handle. The T-shaped end of the tool has tines that facilitate the removal of the connectors from the front side of the frame.

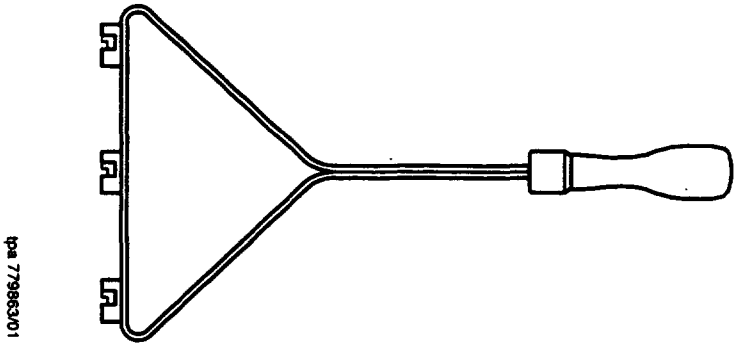


Figure 22. KS-22616, L1 Block Removal Tool

3.05 The connecting block removal procedure using the KS-22616,L1 tool is as follows:

(1) Standing at the front side of the frame, insert the prongs of the tool into the three slots on the top of the fanning strip. There are three groups of three slots. Use the rightmost slot of each group.

(2) Press down until the three prongs of the tool are seated properly in the slots.

(3) Rotate the handle upward until the three tangs on the fanning strip disengage from the shelf of the frame. Now block may be rotated forward away from the frame.

307-Type Connector Removal Tool for *COSMIC* and AT-9049 Frames

KS-22271, L1 Connector Removal Tool

3.06 The KS-22271, L1 connector removal tool (Comcode 402470553, Figure 23) is used to remove 307-type connectors from ***COSMIC*** II/IIA-type, including ***COSMIC*** Mini and AT-9049 frames.

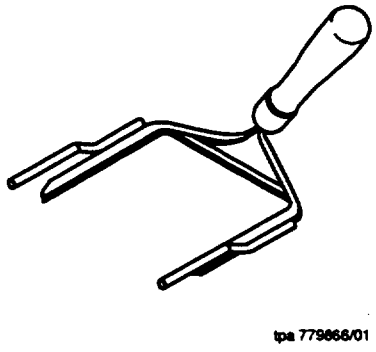
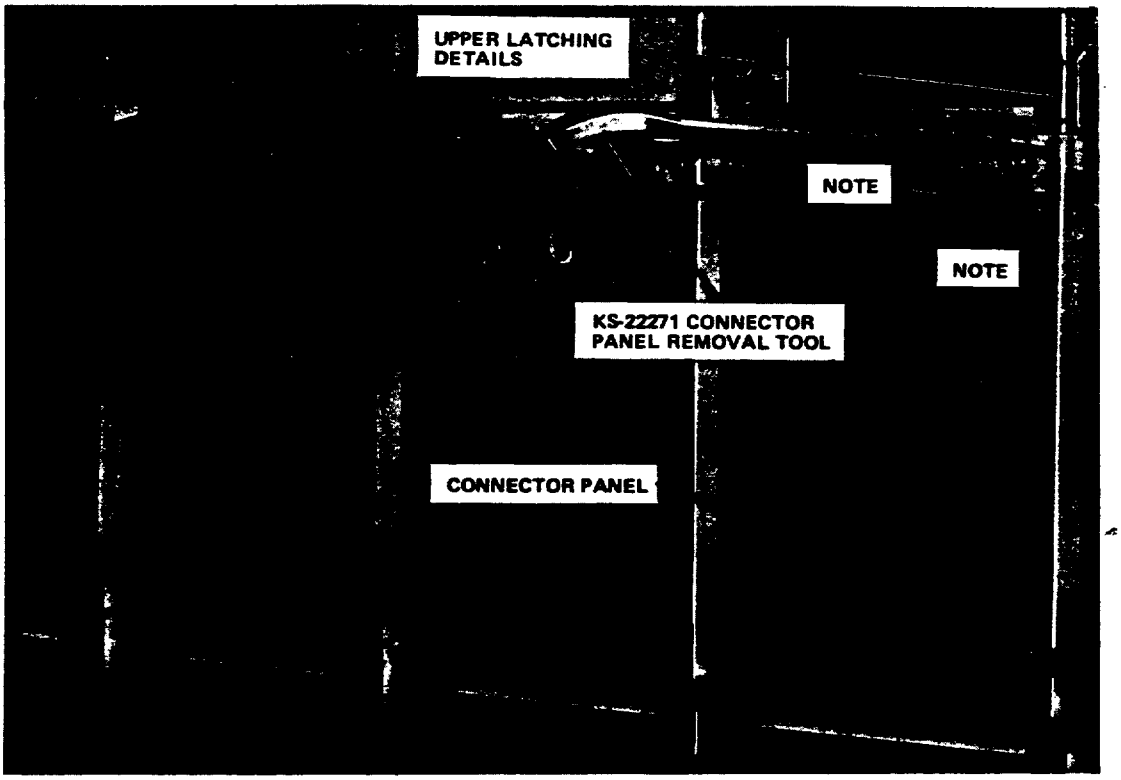


Figure 23. KS-22271, L1 Connector Removal Tool

3.07 The connector panel removal procedure using the KS-22271,L1 tool is as follows:

(1) Insert the connector panel removal tool into the connector panel (Figure 24).



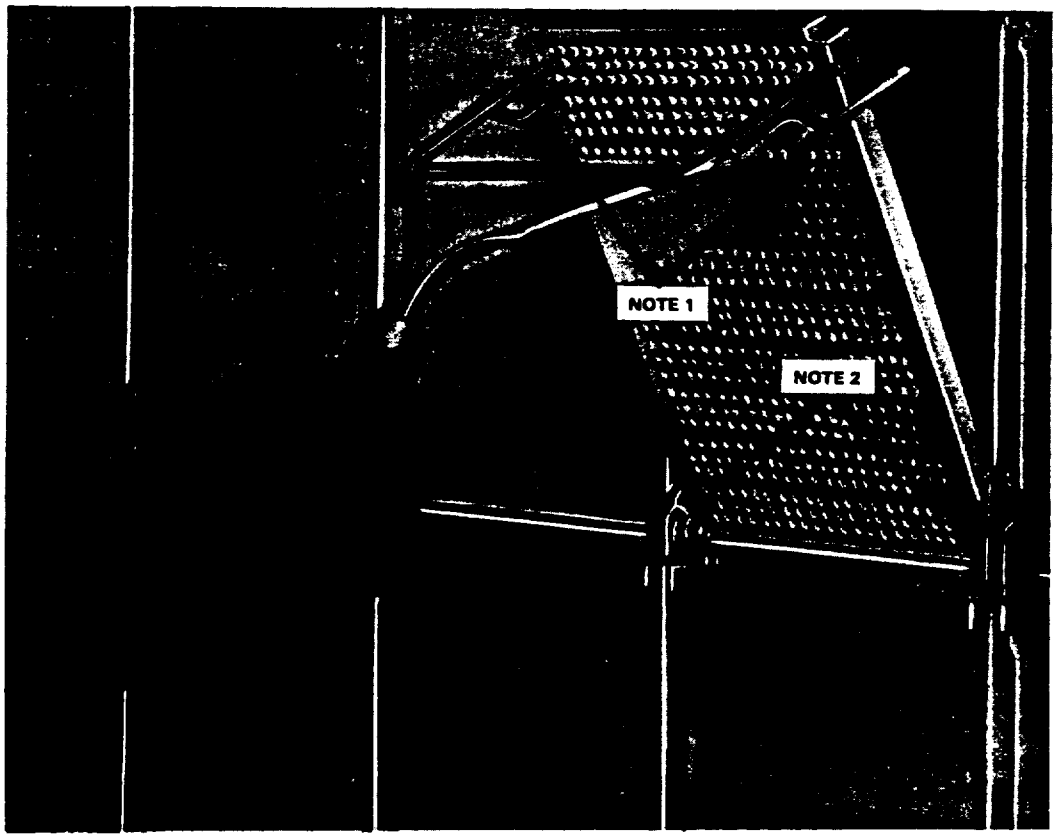
NOTE:
INSERT UPPER PRONGS OF 307 PANEL REMOVAL TOOL INTO SLOTS IN 307-TYPE PANEL. LOWER PRONGS WILL BE PROPERLY ENGAGED AT THE SAME TIME.

Figure 24. Insert Connector Panel Removal Tool into Panel

(2) Apply a downward pressure on the handle to release the latching details.

(3) Tilt the top of the connector panel outward and downward (Figure 25).

(4) Lift the connector panel off the bottom pivot pins.



NOTES:
1. PUSH TOOL IN TO DISENGAGE UPPER LATCHING DETAILS AND TILT 307-TYPE PANEL WITH TOOL DOWN AND OUTWARD.

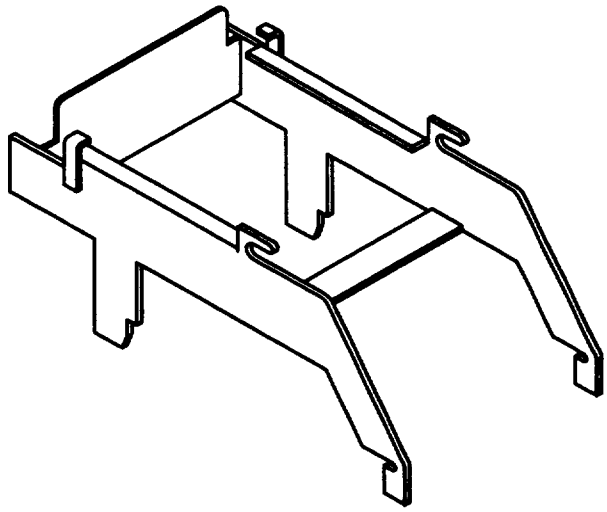
2. MANUALLY RELEASE LOWER PIVOT PINS AND REMOVE 307-TYPE PANEL.

Figure 25. Remove Connector Panel

Service Bracket for 307-Type Connector

KS-22325, L1 Service Bracket

3.08 The KS-22325, L1 bracket (Comcode 402446504, Figure 26) is used to temporarily hold a 307- type connector away from the framework for installation and wiring work within the frameworks. It is used for ***COSMIC*** II/IIA, ***COSMIC*** Mini distributing frames, and the AT-9049 protector frame.



tpa 779868/01

Figure 26. KS-22325, L1 Service Bracket

3DIF LNI Protector Unit Removal Tool

3.09 The 3DIF protector removal tool (Comcode 843824194, Figure 27) is used to remove 3D-type protector units from ***COSMIC*** DF 112-type and conventional DF 128-type Line Network Interface (LNI) blocks.

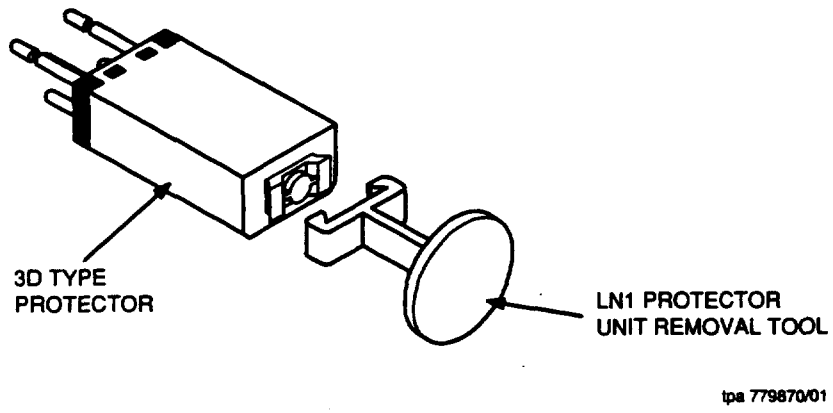


Figure 27. 3DIF Protector Unit Removal Tool

300-Type Connector IA Protector Unit Wrench

KS-16587 Protector Unit Wrench for 300-Type Connectors

3.10 The KS-16567 protector unit wrench (Comcode 400280087, Figure 28) is used for insertion and removal of 1A-type protector units on the 300-type connectors. The wrench is cylindrical shaped aluminum, approximately 4-1/2 inches (114 mm) long, with a knurled handle.

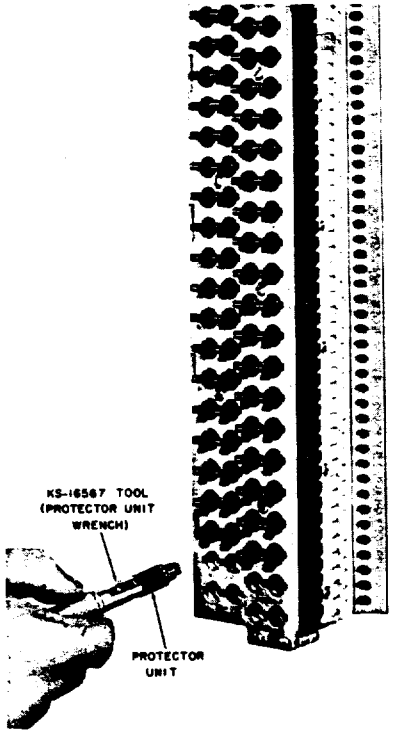


Figure 28. KS-16567 Protector Unit Wrench

4. Operating Aids

Rolling Platform Ladders

KS-21415 Rolling Platform Ladders

4.01 The KS-21415 personnel ladder provides access to 8-foot (2438 mm) high ***COSMIC*** or ***ESS*** switch modular distributing and protector frames, and low profile distributing frames.

4.02 The ladder is available in a basic configuration or equipped with wire reel and wire guide. It has a fold down upper step to provide a convenient work surface on higher elevations, and retractable swivel casters to provide a secure work surface.

4.03 ***KS-21415, L1:*** The rolling platform ladder (Comcode 401384300, Figure 29) provides a 3-step ladder, equipped with retractable swivel casters that allow the unoccupied ladder to be moved horizontally in any direction. Rubber shoes attached to legs secure the ladder in position when occupied by personnel. The platform ladder is approximately 1 foot 9 inches (533 mm) wide, 4 feet 3 inches (1295 mm) long, and 4 feet 4 inches (1321 mm) high.

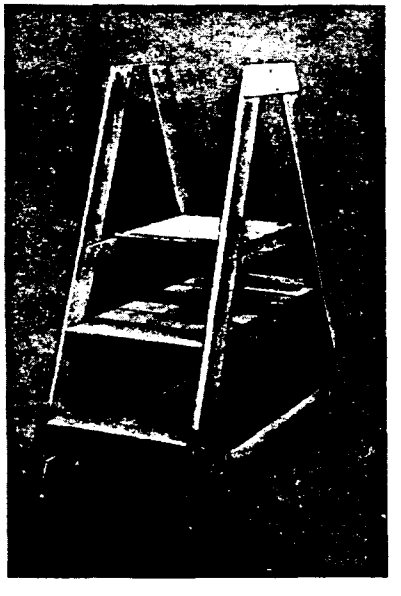


Figure 29. KS-21415, L1 Ladder

4.04 ***KS-21415, L2:*** In addition to the basic ladder configuration, List 2 is equipped with a wire reel, wire guide, and a jumper running tool (Comcode 401384318, Figure 30). The modified KS-21955, L9 wire reel, mounted on a sliding shelf, has an automatic brake assembly that is released by pulling tension on wire. A flexible spring wire guide located at the top of the side rail allows the ladder to remain stationary during remote jumper running operations. A jumper running stick, stored on the ladder with a magnetic latch, facilitates placement of wire jumpers in frame shelves or express troughs as wire is dispensed.

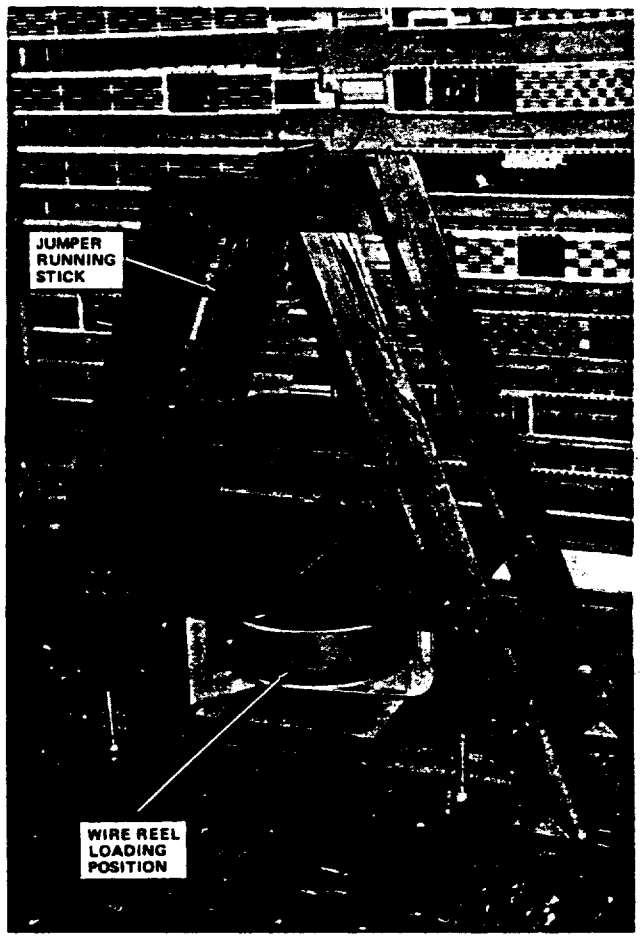


Figure 30. KS-21415, L2 Ladder

Wire Reel

KS-21955, L1 Wire Reel

4.05 The KS-21955, L1 wire reel is used to dispense distributing frame wire in telephone central offices.

4.06 The KS-21955, L1 wire reel (Comcode 401977335, Figure 31) is a lightweight molded polycarbonate reel and support arm. The 3-3/8 by 16-inch (86 by 406 mm) diameter reel has an inner and outer flange that adjusts to the wire coil width. This reel makes wire dispensing easy and tangle free. Automatic braking prevents wire overrun. A support arm and U-shaped base allows either portable or distributing frame-mounted usages.

4.07 The KS-21955, L9 (Comcode 402714687) provides the wire reel without a base and brake assembly for use on the KS-21415, L2 rolling platform ladder.

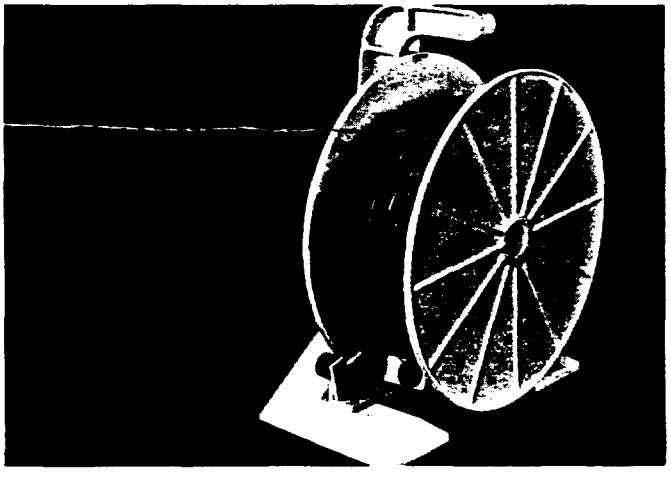


Figure 31. KS-21955, L1 Wire Reel

Jumper Running Tool

KS-21415, L3 Jumper Running Tool

4.08 The KS-21415, L3 jumper running tool (Comcode 401445077, Figure 32) is used to place wire jumpers in frame shelves and express troughs in telephone central offices.

4.09 The jumper-running tool is made of hardwood with a clear protective finish. The tool is 44-3/4 inches (1137 mm) long with V notches on each end to guide the wire.

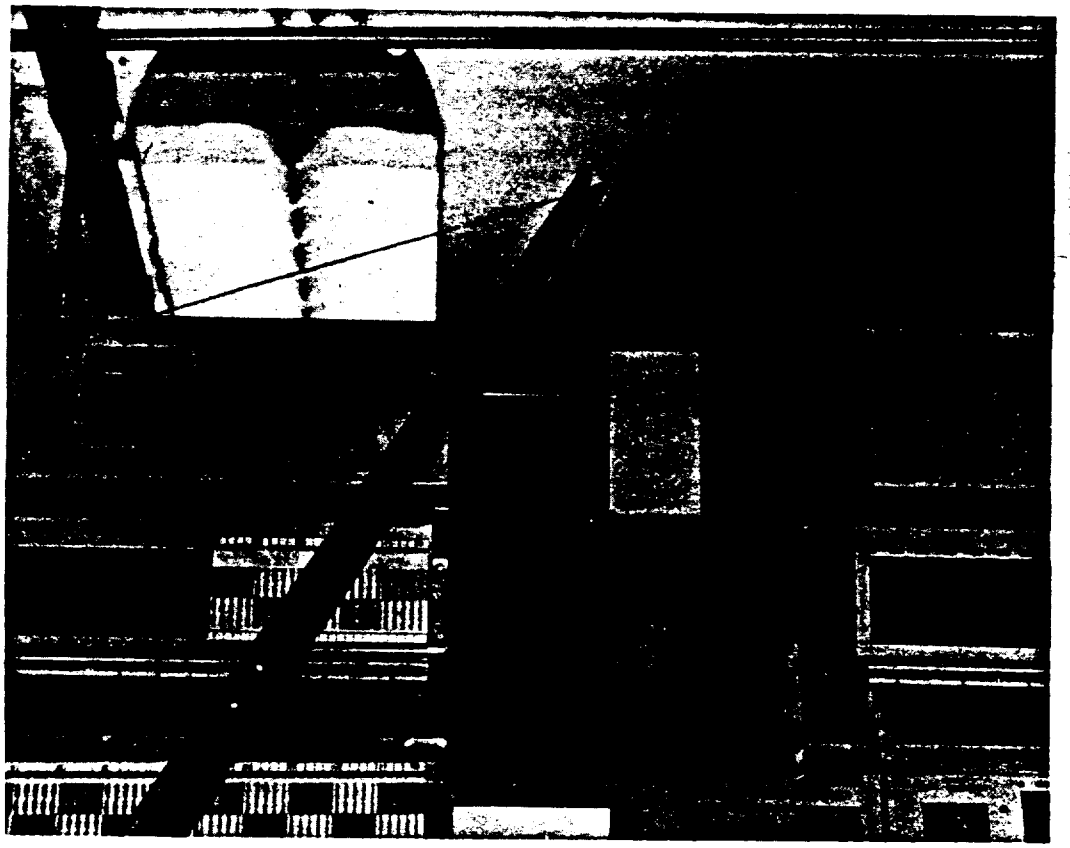


Figure 32. Placing Jumper Wire in Trough Using Jumper Running Tool

Jumper Wire Needle

KS-20096, L1 Wiring Needle (Jumper)

4.10 The KS-20096, L1 wiring needle is used to run jumpers in an upper wiring trough on ESS type modular distributing frames.

4.11 The KS-20096 wiring needle (Comcode 400558268, Figure 33) is constructed with a 5-inch (127 mm) handle, 26-inch (660 mm) curved insulated metal rod, and an insulated needle eye that will accommodate up to four 22-gauge (0.6 mm) insulated wires. The KS-20096, L10 needle eye (Comcode 401476858) may be ordered separately for field replacements.

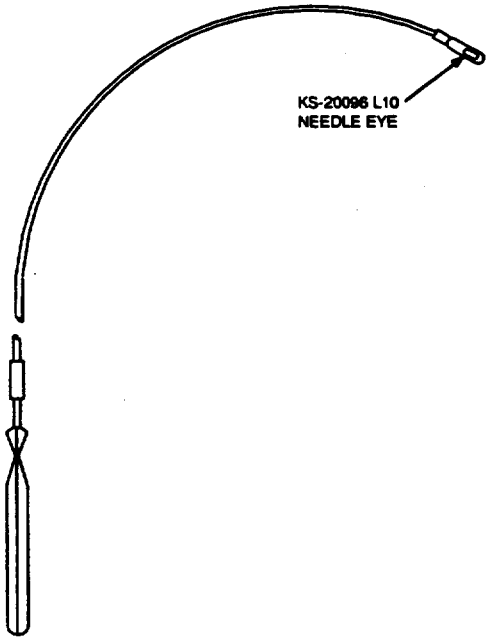


Figure 33. KS-20096, L1 Wiring Needle

Clipping Bag

KS-20962, L2 Bag (Wire Clippings)

4.12 The KS-20962, L2 bag (Comcode 401716006, Figure 34) is a 10-1/4 inch (260 mm) high by 16-1/2 inch (419 mm) wide canvas bag used during wiring operations for collecting wire clippings and solder. The bag is constructed with a stiffened flap and plastic hook. List 2 replaces List 1 originally supplied with a weighted flap and two straps.

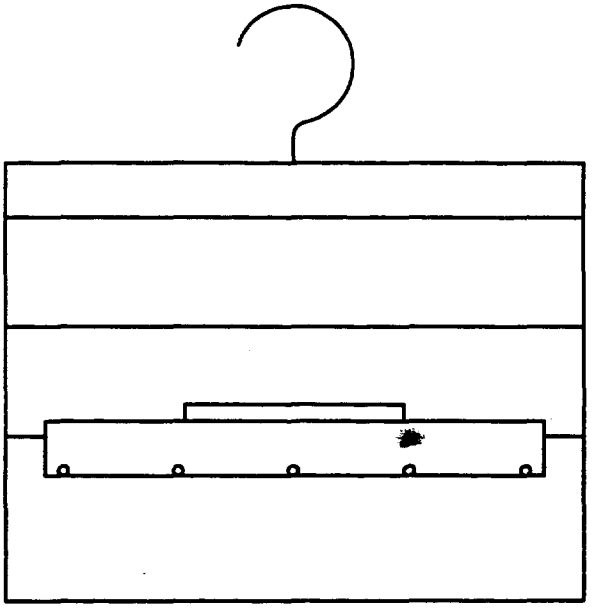


Figure 34. KS-20962, L2 Bag

COSMIC Frame Operations Decals

4.13 Frame operations decals (ED-6C129-50) show pictorial information for the operations on the cross-connect and protector sides of the frame. These decals are normally mounted in the field on the frame lineup end guards or on the inside of walk-through modules (see Table F).

Table F. *COSMIC* Frame Operations Decals

Description	*COSMIC* Frame	Piece Part Comcode	Ordering Code
Cross-Connect Side (78 & 112 Blocks)	I,IA,IIA	844691733	ED-6C129-50 Group 4
Instructions (Back of Decal)		845376870	
Protector Side	IIA	843284043	ED-6C129-50, Group 5
Instructions (Back of Decal)		845376870	

4.14 The cross-connect operation decal (Figure 35) describes the tools and procedures used for placing, removing, and tracing cross-connections. The decal is generally placed on the door nearer the front side of the frame lineup.

4.15 The protector side decal (Figure 36) for ***COSMIC*** IIA DFs depicts the test cords and equipment arrangement and includes a cable directory.

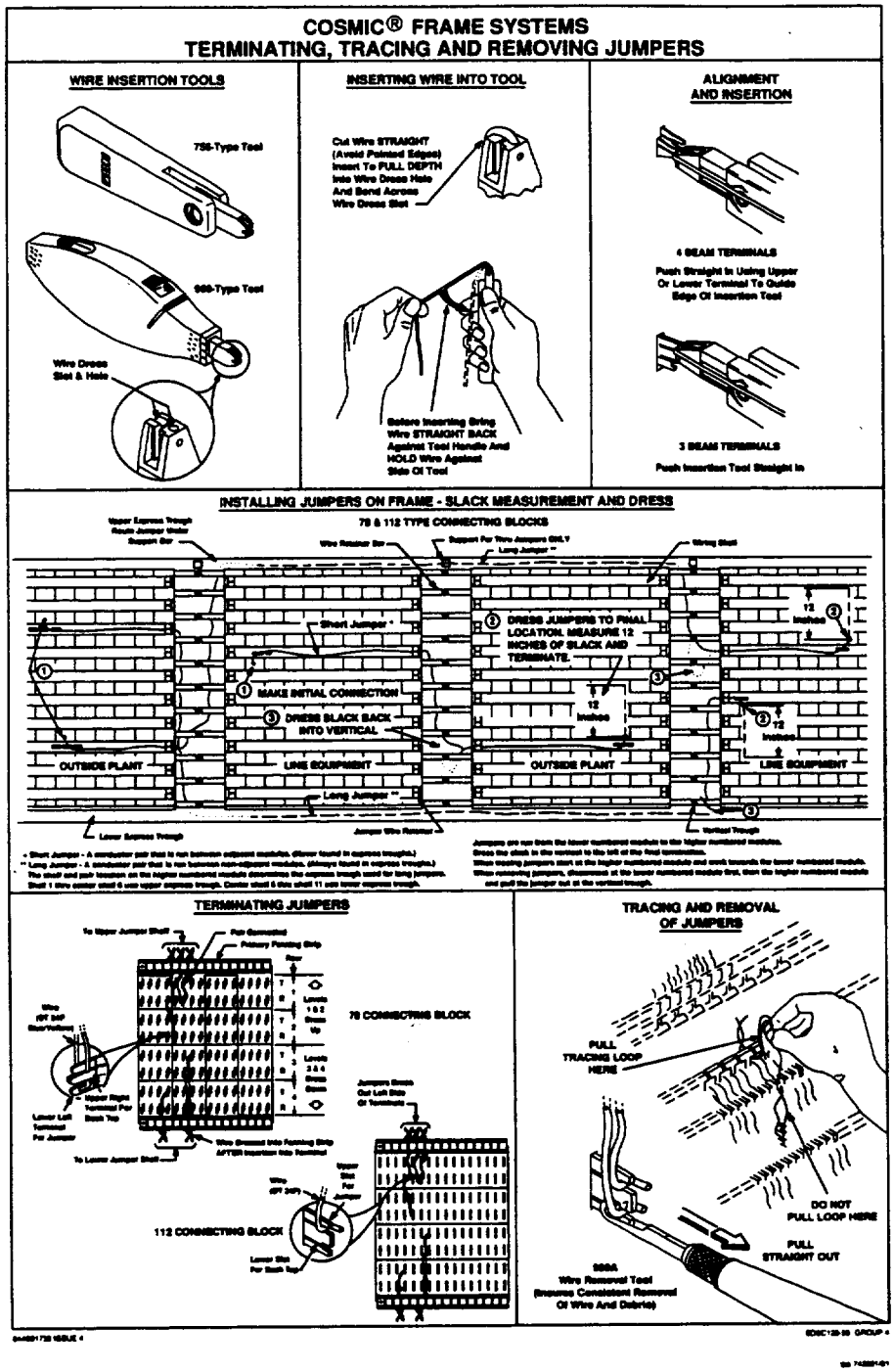


Figure 35. Frame Operations Decal—Cross-Connect Side (78 and 112 Blocks)

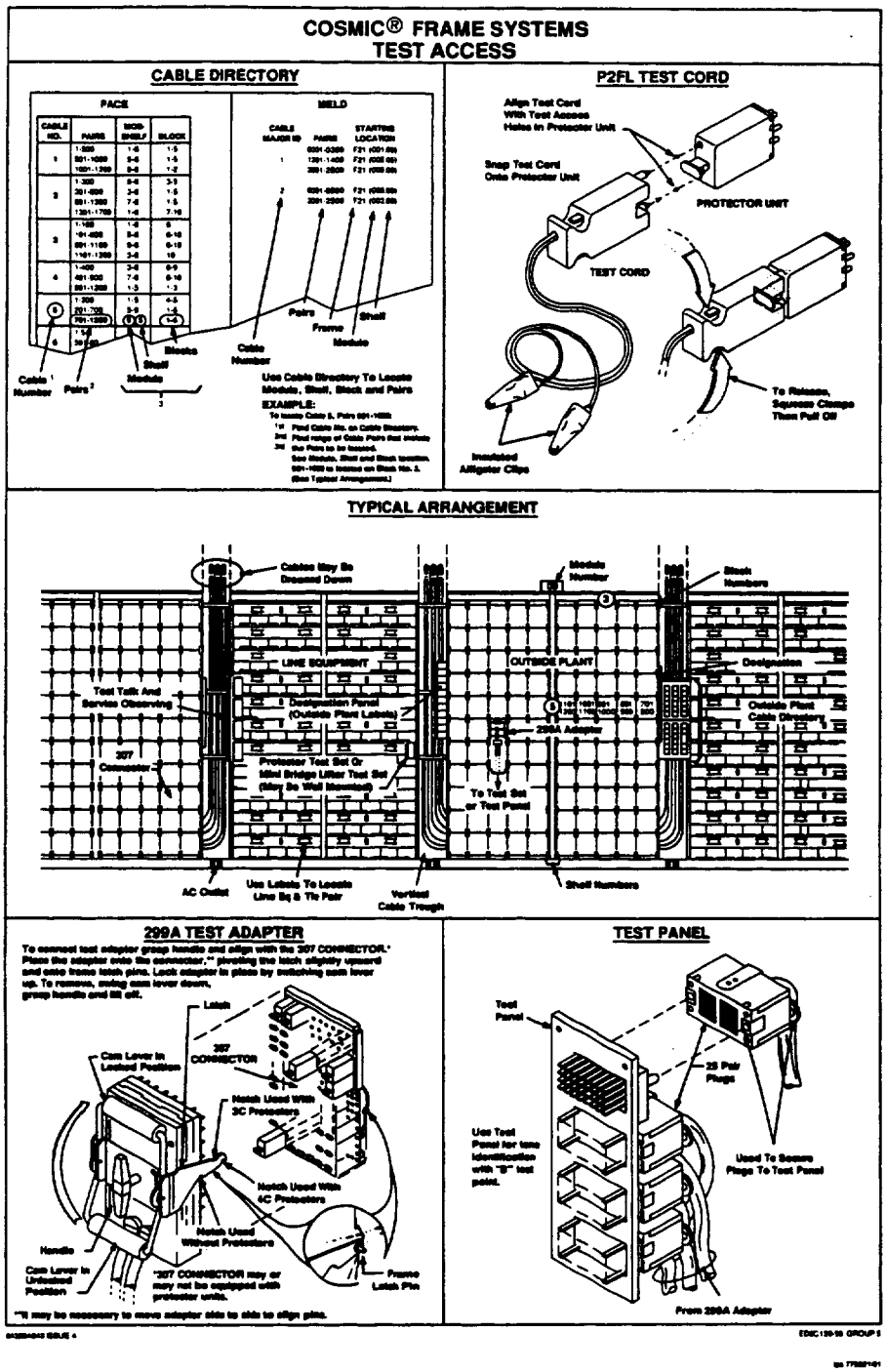


Figure 36. Frame Operations Decal—Protector Side

5. Splicing Connector Tools

709-Type Connector Tools

5.01 The 709-type connectors, used to join cable or wire, require no special tools for single pair operation. A standard 6-inch (152 mm), long-nose pliers (AT- 8810, Comcode 401773056) may be used to press the 709-type connector (Figure 37).

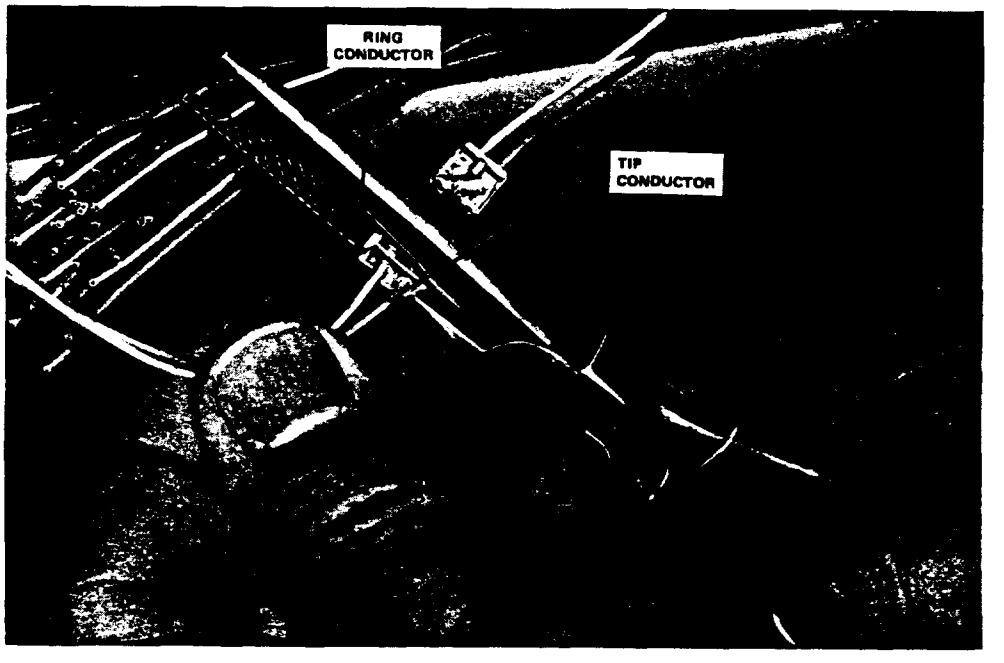


Figure 37. Pressing Connector with 6-Inch (152 mm) Long-Nose Pliers for Single Pair Operation

1709A Tool for 709 Connector

5.02 The 1709A tool (Comcode 104208467, Figure 38) is a magazine-type hand-operated presser that automatically advances connectors to the pressing station. A connector is fully pressed, one side at a time, by positioning the slide above the pressing station and operating the pressing handle. The magazine will accept the 709SCT or the 709SDT connectors.

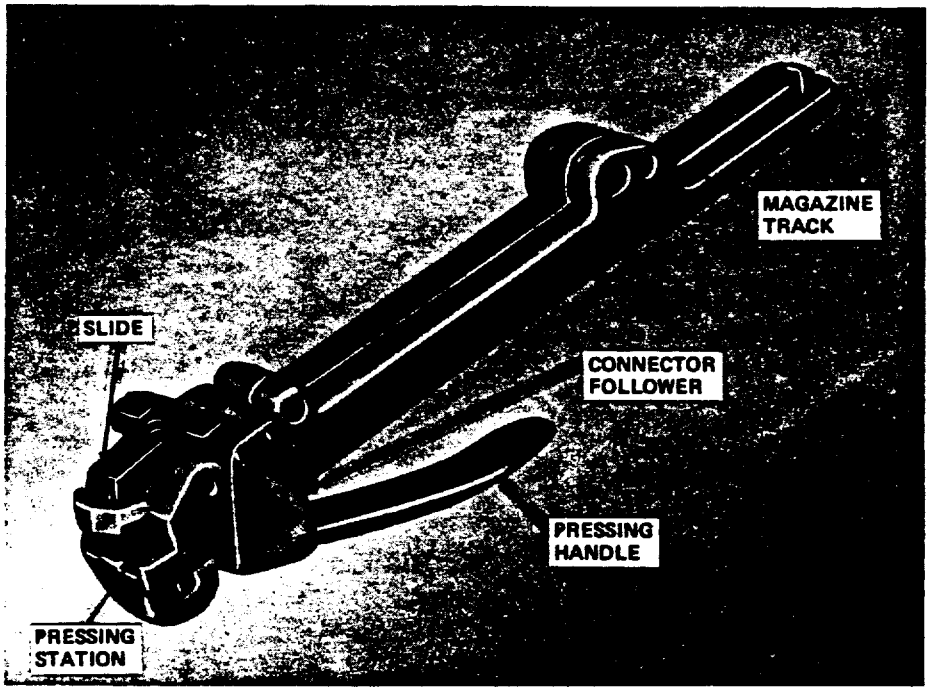


Figure 38. 1709A Tool

710 Connector System Tools

890E Tool

5.03 The 890E tool (Comcode 104430319, Figure 39) is a manually-operated tool used for assembling 25-pair, 710 connectors. The 890B tool (Comcode 105229777) is similar to the 890E tool except that the test feature has been omitted. The hand-operated lever actuates a cam/hydraulic system that provides the power for assembling the connectors. The 890E tool is wired for use with pair verification test set.

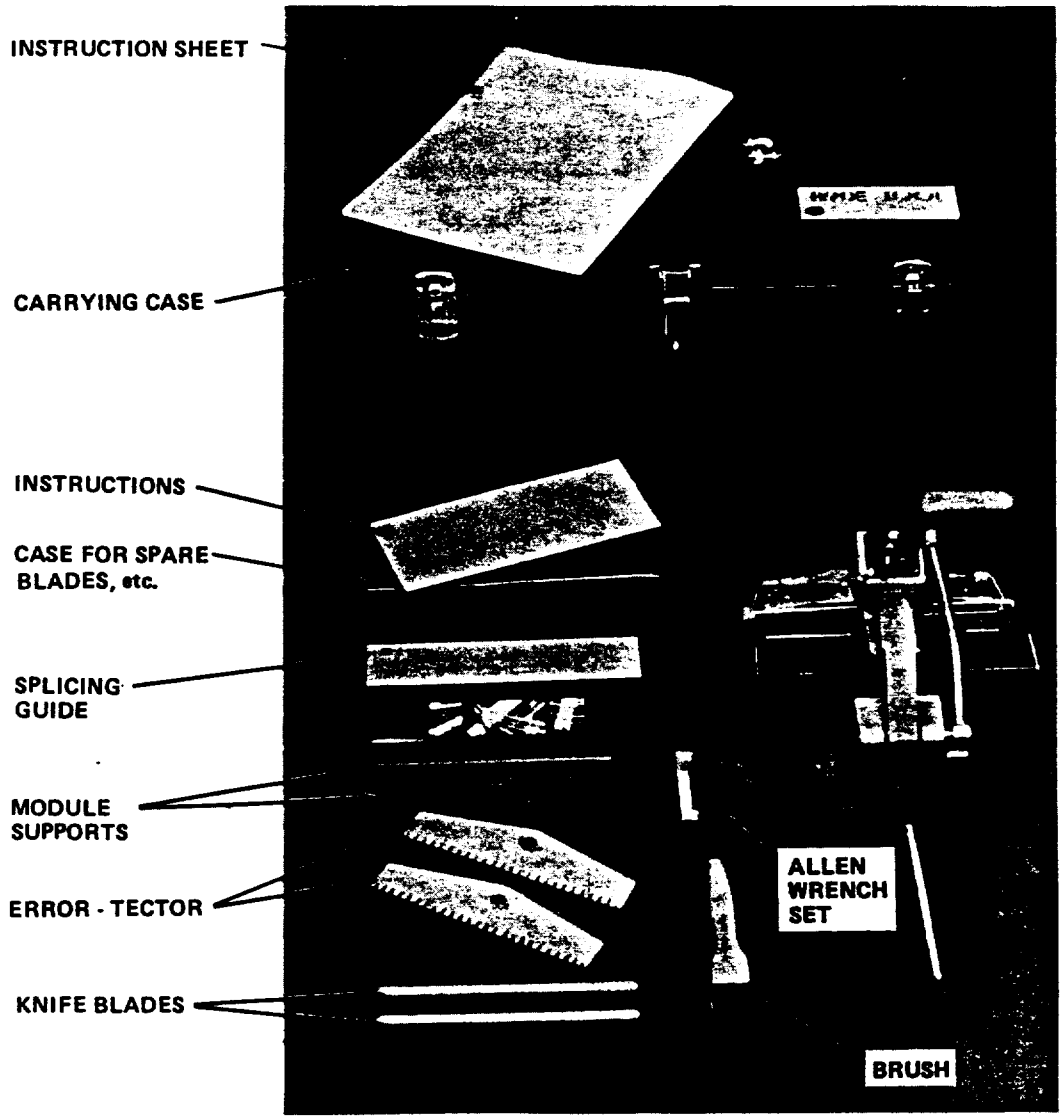
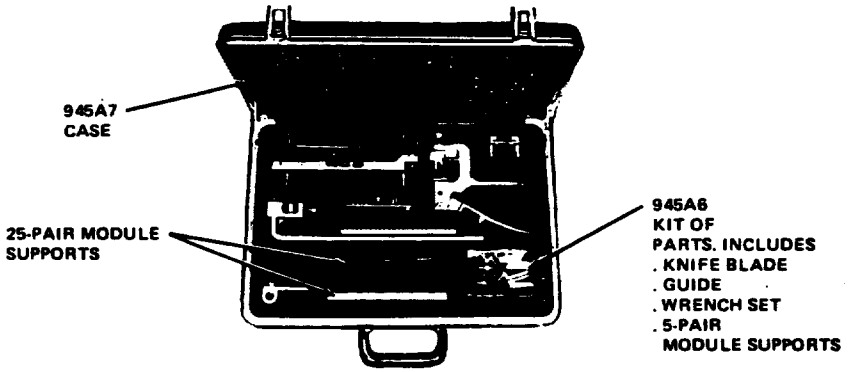


Figure 39. 890E Tool

945A Tool

5.04 The 945A tool (Comcode 103289765, Figure 40) is a manually operated tool used to assemble 25-pair or 5-pair 710 connectors. The tool is equipped with a mounting rod for aerial cable mounting. The 945A tool can be used with any of the 710A tool mounting setups.



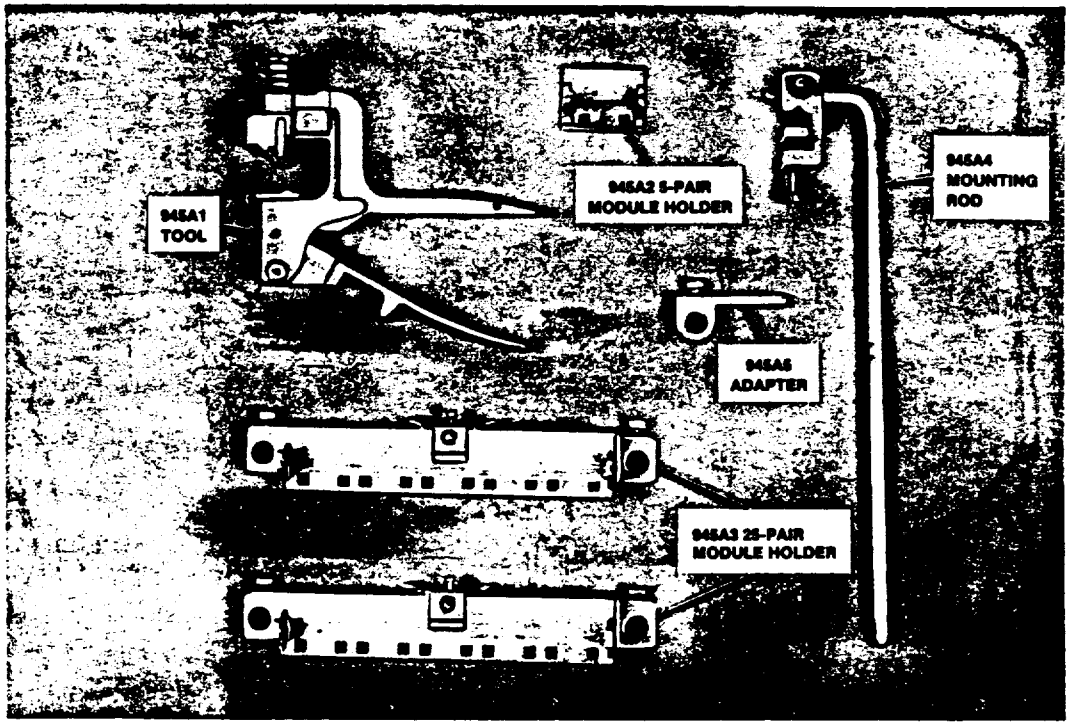


Figure 40. 945A Tool

AT-8948L Connector Presser and AT-8927C Bridge Module Removal Tool

5.05 The AT-8948L connector presser (Comcode 402490064, Figure 41) is used to insert and seat (plug) individual BD-type bridging connectors into SD-type connectors. The AT-8927C bridge module removal tool (Comcode 402321590, Figure 41) is used to disconnect the assembled 710BD connector and the 710SD connector.

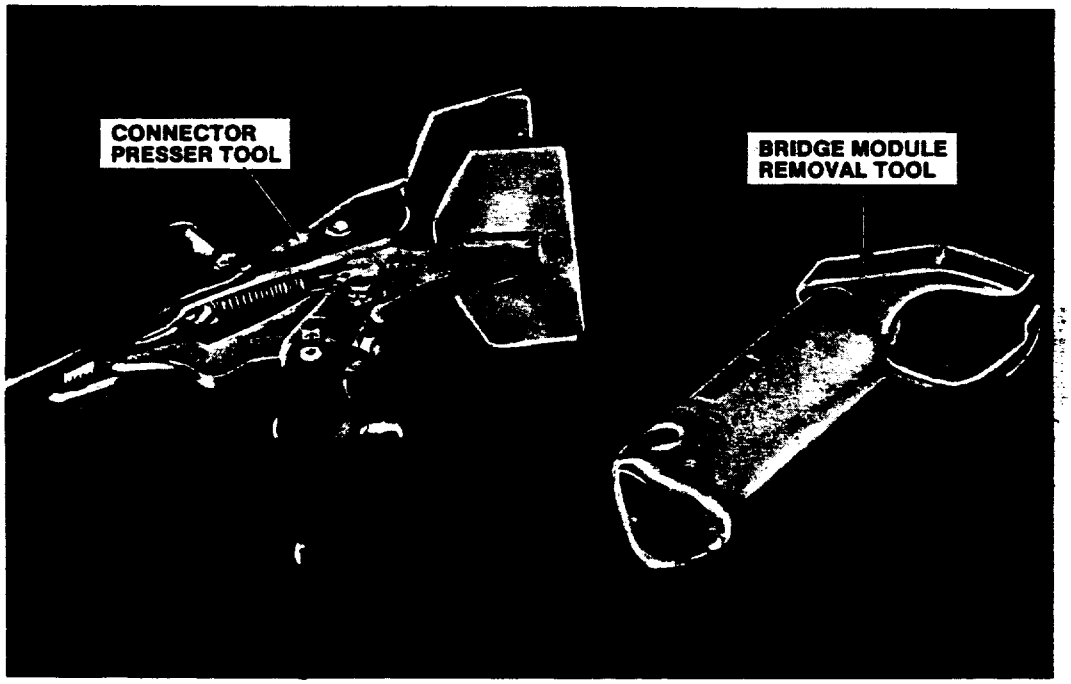
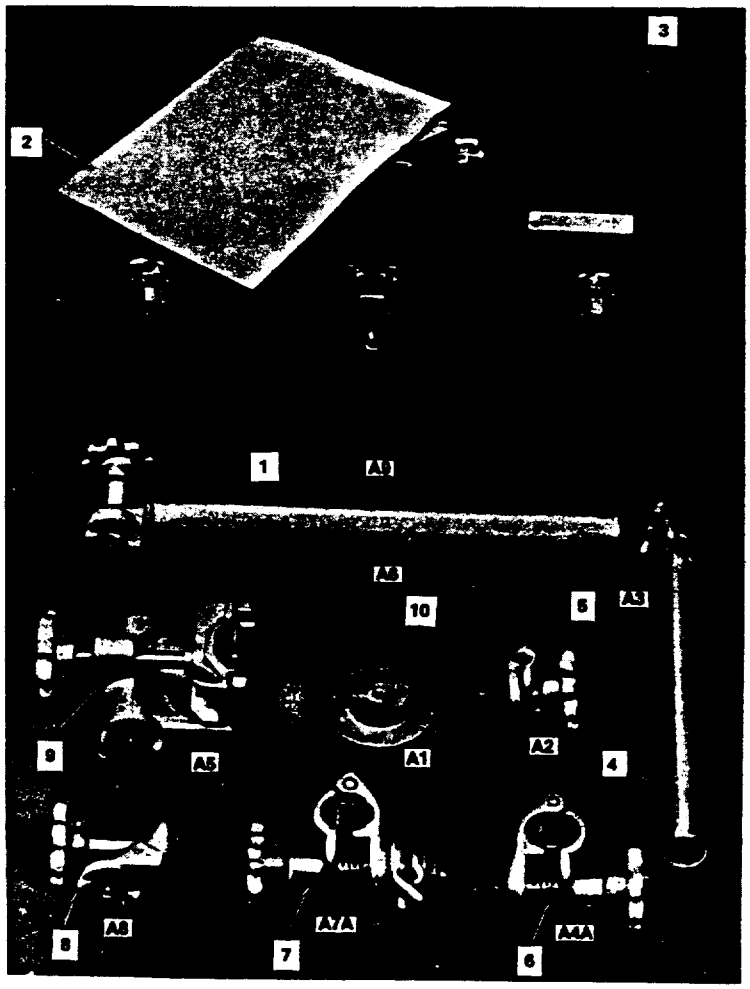


Figure 41. AT-8948L Connector Presser and AT-8927C Bridge Module Removal Tool

711 Connector System Tools

710A Tool Mounting

5.06 The 710A tool mounting kit (Comcode 102974805, Figure 42) includes a variety of hardware used to support splicing tools in the correct position for constructing modular splices with either 710 or 711 connectors.



1 710A6 SWIVEL BAR AND KNOB
2 INSTRUCTION SHEET
3 710A9 CASE
4 710A3 SWIVEL BAR
5 710A2 TOOL CLAMP
6 710A4A TUBE CLAMP
7 710A7A TUBE/TOOL CLAMP
8 710A8 90° MOUNT
9 710A5 VISE CLAMP
10 710A1 BASE

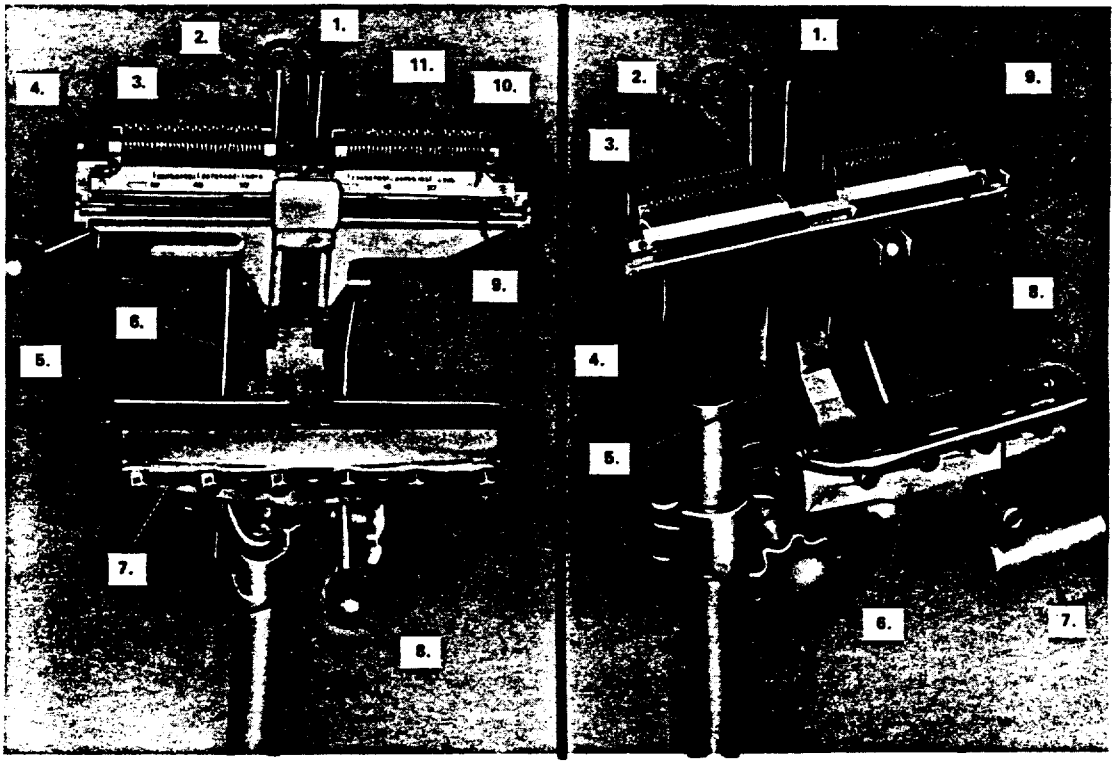
Figure 42. 710A Tool Mounting

711 Connector System

5.07 The 711 connector system is a family of unique modular fire-retardant splicing connectors for use in the central office or other non-outside plant environments. The connector permits general splicing, in-service half-tapping, dual half-tapping, and bridging without the aid of special materials. The two basic components, i.e., the receptacle assembly and connector module are the only parts required for all applications. (See AT&T Practice 632-205-222.)

850A or 850B Tool Setup

5.08 The 850A or 850B cutter-presser tools (Figure 43) are manually operated tools used for assembling the 711 connectors. The 850A tool has been rated Discontinued Availability (DA), but is addressed in this practice to support product in the field. The 850B tool (Comcode 105491344) is a feature enhanced version of the original 850A cutter-presser. The hand operated lever actuates a cam/hydraulic system that provides the power for assembling the connectors.



850A (DA)

1. Elastic Tie
2. Wire Dressing Posts
3. Rear Comb
4. Mandrel Retainer
5. Slide Handle
6. Support Mount
7. T–Bar Head
8. Lever
9. Wire Retaining Spring
10. Wire Identification Plate
11. Foward Comb

850B (STANDARD)

1. Elastic Tie
2. Wire Dressing Posts
3. Rear Comb
4. Mandrel Retainer
5. Support Mount
6. T–Bar Head
7. Lever
8. Wire Retaining Spring
9. Foward Comb

Figure 43. 850A and 850B Cutter-Presser Tools

851A Tool

5.09 The 851A tool (Comcode 102996212, Figure 44) is a hand-held lever action closing tool which is used to press the connector module into the mating receptacles.

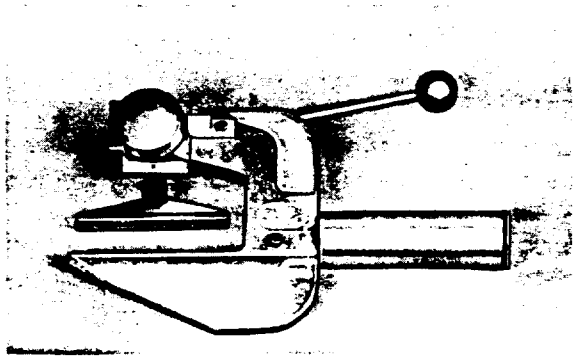


Figure 44. 851A Tool

854A Tool

5.10 The 854A tool (Comcode 103714143, Figure 45) is a manually operated tool consisting of two wire fanning combs, two movable wire forming posts, one set of mandrel retainers, two wire retaining springs, and a removable stuffer head. The stuffer head is used to press the wires simultaneously into the mandrel. The tool may be clamped to a support rod and supported with standard 710A tool mounting hardware to meet splice location requirements.

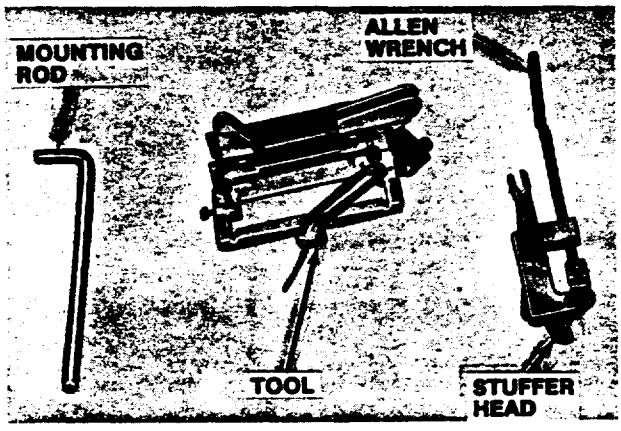


Figure 45. 854A Tool

855A Tool

5.11 The 855A tool (Comcode 103714150, Figure 46) is a manually operated, tandem double mandrel tool designed to permit double half-tapping of equipment cables or extend cable lengths. It consists of four wire fanning combs, four movable wire forming posts, two sets of mandrel retainers, two wire retaining springs, and a removable stuffer head. The stuffer head is used to press the wires simultaneously into the mandrels. The tool may be clamped to the support rod and at splice location with 710A tool mounting hardware.

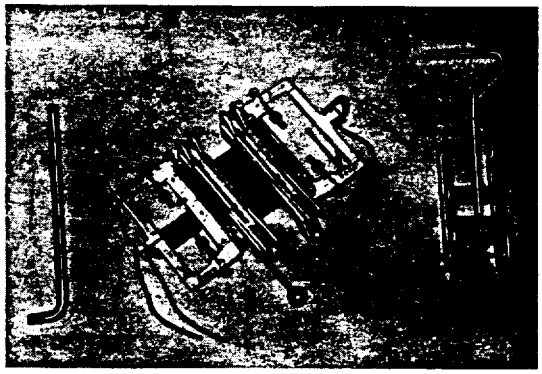


Figure 46. 855A Tool

711 Tool Kits

5.12 The following kits are used with the 711 connectors:

1025B Tool Kit—

The 1025B tool kit contains the four basic tools for use with the 711 connector, i.e., 850B, 851A, 852A, and 998A tools, spare tool parts and carrying case (Comcode 105491351)

1042A Tool Kit—

The dual half-tap tool kit contains four basic tools for use with the 711 connector, i.e., 855A, 851A, 852A, and 998A tools, verification comb, spare parts, and carrying case (Comcode 104404470)

1043A Tool Kit—

The single mandrel tool kit contains four basic tools for use with the 711 connector, i.e., 854A, 851A, 852A, and 998A (Comcode 104404488).

6. Reference Documents

6.01 The following AT&T Practices, Manuals, and Workcenter Information Packages (WIPs) are associated with this practice.

Practices

Number	Title
AT&T 065-105-301	*Rolling Platform Ladder — KS-21415, L1 and L2 — Operation, Adjustment, Piece-Part Data, and Replacement Procedures*
AT&T 074-205-104	*Bags — Description*
AT&T 074-205-114	*Bits — Description*
AT&T 074-241-115	*Needles — Description*
AT&T 074-247-128	*Pliers II — Description*
AT&T 074-253-114	*Reel, Wire — Description*
AT&T 074-256-141	*Sleeves, Wire Wrapping — Description*
AT&T 074-257-136	*Wire Strippers — Description*
AT&T 074-269-113	*Wire Wrapper — Description*
AT&T 074-269-126	*Wrench, Protector Unit — Description*
AT&T 075-150-801	*Wire Reel KS-21955 — Piece-Part Data*
AT&T 201-207-301	*300-Type Connectors and Associated Protectors — Maintaining Protectors*
AT&T 201-208-106	*Test Equipment, Cords, Plugs, Warning Markets, Guards, Insulators, and Indicators*
AT&T 201-208-110	*307-Type Connectors — Description, Use, Installation, and Repair Procedures*
AT&T 201-220-302	*Conventional Distributing Frames — 93-Type Connecting Blocks — Description — Methods of Cross- Connecting and Repair Procedures*
AT&T 201-221-101	*Modular Distributing and Protector Frames — Description — 1 and 2* ***ESS*** *Switches*
AT&T 201-221-301	*66G-, 66H-, 78A1-, and 78B1-Type Connecting Blocks — Method of Cross-Connecting Modular Distributing Frames — 1 and 2* ***ESS*** *Switches*
AT&T 201-222-120	***COSMIC*** *Mini Combined Distributing Frame System— Description*

AT&T 201-222-301	*78C- and 112-Type Connecting Blocks, Method of Making Connections, Repair and Replacement Procedures — **COSMIC** Distributing Frames*
AT&T 632-205-216	*709-Type Connectors (**QUICK- SNAP®**) — Description and Use*
AT&T 632-205-217	*Product Application Bulletin — **QUICK-SNAP** Connector*
AT&T 632-205-220	*Wire Joining, 710 Connector System*
AT&T 632-205-222	*711 Connector System*

Manuals

Number	**Title**
AT&T 201-200-050	*DFSPM Distributing Frame Systems Product Manual*
AT&T 201-222-050	***COSMIC** Distributing Frame Systems Planning, Engineering, Installation, and Operation - System Reference Guide*

Video Cassettes (WIPs)

Video cassettes (1/2 inch (1.27 cm) VHS format) are available as Workcenter Information Packages (WIPs) as follows:

WIP	**TITLE**
365-WIP-004V	***COSMIC** Distributing Frame Systems - Operations*
632-WIP-002S	*709 Connector*
632-WIP-003V	*710 Modular Splicing System*
632-WIP-004V	*711 Connector System — 1025B Tool Kit*
632-WIP-005V	*711 Connector System — 1042A Tool Kit*
632-WIP-006V	*711 Connector System — 1043A Tool Kit*
636-WIP-012V	*Cable Rearrangement Facility (CRF) - Installation*
636-WIP-013V	***COSMIC** Distributing Frame Systems - Growing with the Future*

6.02 The AT&T Practices, Manuals, and WIPs listed in paragraph 6.01 are stocked in Indianapolis, Indiana, at the AT&T Customer Information Center. To order copies:

- Call 1-800-432-6600
  or
- Complete Form IND 1-80.80 and mail to:

  AT&T Customer Information Center
  ATTN: Order Entry Department
  2855 N. Franklin Road
  Indianapolis, IN 46219-1999