

ARMY
NAVY
AIR FORCE

TM 11-5895-856-34-20
EE640-CA-MMI-200/E154 CPU
TO 31W2-2T-122-20

TECHNICAL MANUAL

DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL
FOR
CENTRAL, MESSAGE SWITCHING AUTOMATIC
AN/TYC-29(V)1
AND
CENTRAL OFFICE, TELEPHONE AUTOMATIC
AN/TTC-39(V)2

AUTOMATIC DATA PROCESSING
ASSEMBLIES

DEPARTMENTS OF THE ARMY, NAVY AND AIR FORCE

22 SEPTEMBER 1983

TECHNICAL MANUAL
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DEPARTMENTS OF THE ARMY
THE NAVY, AND
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Washington, DC, 22 September 1983

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REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703.

For Air Force, submit AFTO Form 22 (Technical Order System Publication Improvement Report and Reply) in accordance with paragraph 6-5, Section VI, T.O. 00-5-1. Forward direct to prime ALC/MST.

For Navy, mail comments to the Commander, Naval Electronics Systems Command, ATTN: ELEX 8122, Washington, DC 20360.

In either case, a reply will be furnished direct to you.

TABLE OF CONTENTS**VOLUME 20 TM 11-5895-856-34-20**

Card Cage Assembly, Input/Output Unit- L.H., Wire List, Connector (149019-880)

This volume is part of a 24-volume set covering the direct support and general support maintenance of the automatic data processing assemblies. This volume contains the connector wire list for the left-hand card cage assembly of the input/output unit, drawing number 149019-880. Refer to volume 1 of this series (TM 11-5895-856-34-1) for an explanation of how to use this wire list as well as other lists contained in the set.

NOTE

The pages in volumes 2 through 24 of TM 11-5895-856-34 have been numbered in a special manner. Pages within these volumes are found by keying to two page identifiers: the drawing number and the page number. To find the page that you desire within the volume, follow the steps listed below:

1. Find the applicable wire run list in the table of contents and note the applicable drawing number.
2. Look through the pages of the volume until you find the particular drawing number of the wire run list that you seek. This will insure that you are in the correct wire run section.
3. Go through these pages until you find the page number you are looking for within this particular wire run list.

Remember, pages in the volumes cited above are found by keying to the drawing number applicable to a particular wire run list, as well as, a page number. Make sure you are on the correct page by checking both page identifiers.

**CARD CAGE ASSEMBLY, INPUT/OUTPUT UNIT
- LEFT HAND
CONNECTOR WIRE LIST
149019-880**

NOTES: UNLESS OTHERWISE SPECIFIED

1. REFERENCE TO SHEET 3 FOR DEFINITION OF FIELDS.
2. REFERENCE TO SHEET 4 FOR CONFIGURATIONS OF SHIELD AND WIRE TERMINATIONS.
3. REFERENCE TO SHEET 5 OF STRING LIST FOR WIRE CODE DEFINITIONS.
4. REFERENCE TO SHEET 6 OF STRING LIST FOR WIRE SUMMARY LIST.
5. ALL ABBREVIATIONS PER MIL-STD-12.
6. THROUGHOUT THE BODY OF THIS DOCUMENT THE UNIT NAME IS REFERRED TO AS: CARD CAGE ASSY, I/O UNIT.

H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS

1. **Record Number** - A unique Data Processing number which associates all information pertaining to a wire "FROM" Connector "TO" Connector, wire Code, etc. This number is the wire ID when that field's blank.
2. **Prefix** - An assembly alphanumeric to be used when a wire terminates in two assemblies. This number will be the reference designation as required by USAS Y32.16-1968.
3. **Connector** - Any type of terminating point plug, receptacle, etc. Designations are in accordance with USAS Y32.16-2968.
4. **Pin** - Exact terminating point at the respective connector. Designations are unique:
 - A. SHXXXX indicates the junction of a shield and a pigtail, the four digits to the right are the wire identity of the shielded wire.
 - B. JCT indicates a common point of two or more shield pigtails.
 - C. Jacket: the terminology used when describing the line that defines the identification of a shielded wire.
5. **Sh Fg** - References a graphic representation showing how a shielded wire or coax is to be terminated. A number in this field indicates the level of automatic wire wrapping.
6. **Multi Group** - Associates wires of a group such as "twisted wire" or "shielded wire". Jacket, pigtails and center conductors will be shown as a common group.
7. **Wire Code** - A three-digit code for wire type and gage or bus bar.
8. **Wire color** - Standard RETMA color code.
 - A. Base Stripe Tracer.
 - B. Stripe. Tracer 1 and Tracer 2 if the digit to the left is other than 9 and the two positions to the right are not blank and not equal. The Base Color is understood to be white.
9. **Wire Ident** - A number used for reference to differentiate one wire from another. This number will be used to identify the wire when specified in the wire list sleeve code field.
10. **Spc Inst** - A code which indicates that a wire must be given special attention as follows:
 - A. Direct routing, no service loops, no harnessing.
 - B. See general notes or instruction pages.
 - C. See general notes or instruction pages.
 - D. See general notes or instruction pages.
 - E. See general notes or instruction pages.
 - F. See signal description.
 - G. This connection does not go directly to the 'TO' connector, but intersects a line going to the "TO" connector.
 - H. See special routing page.
 - I. Junction point for multilayer laminated board (MLB) connection.
 - J. Denotes a bus reference point.
 - K. Blank out "TO" connector and pin.
 - L. Will cause a signal name of three characters or less to be entered in the string list.
 - M. will cause a record to be omitted from the string list. (This record will print in the connector list.)
 - N. Will suppress printing the wire identity in the harness string and double entry list.
 - P. Will cause the equation to be used as the signal name for sorting purposes only in the string list.

Drawing No.
149019-880
Rev. G, sheet 2

H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS - Continued

- Q. Will cause an equation record to be omitted from logic listing.
- R. Will suppress printing the "FROM TO" pin number in the string and connector lists.
- S. Do not move record number to the ident field for an ADD transaction in the harness string and double entry only (Use only when adding a tile.)
- T. Twist wire code.
- U. Not available.
- V. See general notes or instruction pages.
- W. Fixed wire length submitted
- X. Sequence of string is to be left as is.
- Y. See general notes or instruction pages.
- Z. Will suppress printing of the "FROM" pin.

- 10. **Misc** - Unless otherwise noted, the number 1 indicates a pre-wired connector.
- 11. **Signal** - An alphanumeric signal name, mnemonic where feasible which identifies one specific function from another.

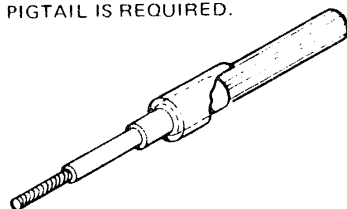
SPP - Denotes an available termination.
 SPF - Denotes an unwired termination which has an assigned function.
 SPW - Denotes a non-functional wire which is terminated at one or both ends.
 SPO - Denotes a spare output of a circuit.
 DNW - Indicates that a termination may not be wired.
 SPA - Denotes an unassigned circuit, as one of a group on a printed circuit board.
 SPI - Denotes a spare input of a circuit.
 SPG - Denotes an unassigned logic gate, as one of a group on a printed circuit board.
 SPR - Denotes a spare resistor.
 SPD - Denotes an unassigned input diode of an assigned logic gate.

- 12. **Seq No.** - A number which in conjunction with SIGNAL, allows a signal string to be consistently printed in a given order.
- 13. **Equation** - A mnemonic name assigned to each gate of an element.
- 14. **Term** - An "OR" function composed of one or more factors.
- 15. **Factor** - A specific input to a logical gate or active element.
- 16. **Ckt or Chip Type** - Denotes a specific circuit board type.
- 17. **Group** - Denotes a specific circuit on a printed circuit board.
- 18. **Load or Power Plane** - Denotes the current draw in milliamps by a specific circuit or voltage.
- 19. **AND Test Point** - Denotes the input test point for a specific circuit on a printed circuit board.
- 20. **OR Test Point** - Denotes the output test point for a specific circuit on a circuit board.
- 21. **Signal Description** - A written description or name of a signal or voltage.
- 22. **ECO No.** - A letter number combination to show the Engineering Change Order level of that particular wire list record.

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Rev. G, sheet 3

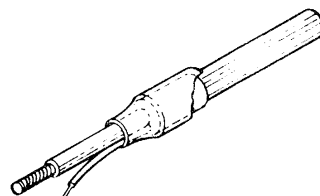
SHIELD FIGURE A

SHIELD TERMINATION FOR SHIELDED,
SINGLE AND MULTIPLE CONDUCTORS,
NO PIGTAIL IS REQUIRED.



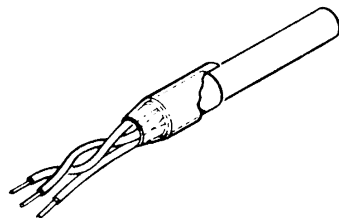
SHIELD FIGURE B

SHIELD TERMINATION FOR SHIELDED,
SINGLE AND MULTIPLE CONDUCTORS,
FRONT PIGTAIL IS REQUIRED.



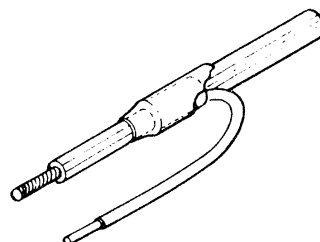
SHIELD FIGURE G

SHIELDED CABLE TERMINATION WITH DRAIN WIRE



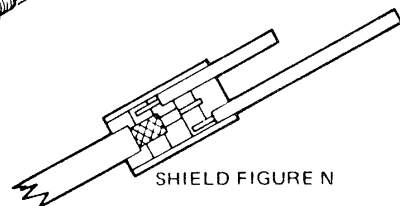
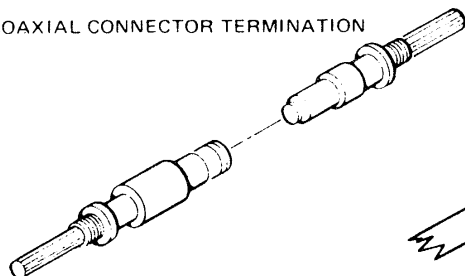
SHIELD FIGURE C

SHIELD TERMINATION FOR SHIELDED,
SINGLE AND MULTIPLE CONDUCTORS,
A REAR PIGTAIL IS REQUIRED.



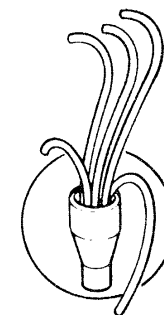
SHIELD FIGURE Z

COAXIAL CONNECTOR TERMINATION



SHIELD FIGURE N

TRANSITION DEVICE WITH
SOLID WIRE PIGTAILS



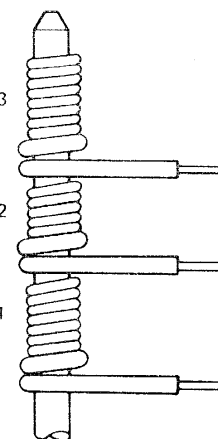
SHIELD FIGURE X

SHIELDED WIRE
PIGTAILS—HYBRID

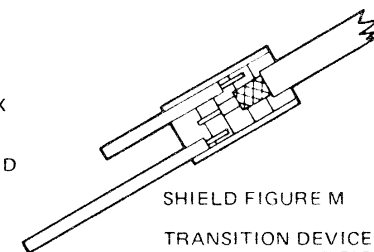
SHIELD FIGURE NO. 3

SHIELD FIGURE NO. 2

SHIELD FIGURE NO. 1



SHIELD FIGURE NUMBER
INDICATES LEVEL OF WIRE WRAP



SHIELD FIGURE M

TRANSITION DEVICE WITH
STRANDED WIRE PIGTAILS

DRAWING NUMBER 149019-880

CONNECTOR

UNIT ASSEMBLY NO. 149019

REV G

INDEX

UNIT ASSEMBLY NAME CARD CAGE ASSY, I/O UNIT

FILE IDENT

T39BIUX2

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RECORD NUMBER	FROM				TO				WIRE				SIGNAL	SEQ NO	EQUATION	TERM	FACTOR	CKT OR CHIP TYPE	GROUP	LOAD CP POWER PLANE	TEST POINTS		SIGNAL DESCRIPTION	ECO NO
	PREFIX	CONNECTOR	PIN	WIRE	PREFIX	CONNECTOR	PIN	WIRE	MULTI GROUP	CODE	COLOR	IDENT									AND	OR		
21074		J01	A1										SPP	01				EX9						
21075		J01	A2										SPP	01				EX9						
21076		J01	A3										SPP	01				EX9						
21072		J01	A4			XA201	15		JC	1ED	9		KIOPON	01				EX9						
21077		J01	A5										SPP	01				EX9						
20882		J01	A6										GND	01	GROUND			EX9						
21071		J01	A6			XA201	16		JC	1ED	0		KIOP06	01				EX9						
20852		J01	B1										+5V	01				EX9						
20860		J01	B1			J01	D1			1BD	2		+5V01	01				EX9						
20883		J01	B2										GND	01	GROUND			EX9						
20853		J01	B3										+5V	01				EX9						
20868		J01	B3			J01	F3			1BD	2		+5V05	01				EX9						
20884		J01	B4										GND	01	GROUND			EX9						
20854		J01	B5										+5V	01				EX9						
20885		J01	B6										GND	01	GROUND			EX9						
20886		J01	C1										GND	01	GROUND			EX9						
20855		J01	C2										+5V	01				EX9						
20866		J01	C2			J01	F1			1BD	2		+5V04	01				EX9						
20887		J01	C3										GND	01	GROUND			EX9						
20856		J01	C4										+5V	01				EX9						
20862		J01	C4			J01	E4			1BD	2		+5V02	01				EX9						
20888		J01	C5										GND	01	GROUND			EX9						
20857		J01	C6										+5V	01				EX9						
20864		J01	C6			J01	E6			1BD	2		+5V03	01				EX9						
20861		J01	D1										+5V01	02				EX9						
20889		J01	D2										GND	01	GROUND			EX9						
20858		J01	D3										+5V	01				EX9						
20872		J01	D3			J01	N2			1BD	2		+5V07	01				EX9						
20890		J01	D4										GND	01	GROUND			EX9						
20859		J01	D5										+5V	01				EX9						
20870		J01	D5			J01	F5			1BD	2		+5V06	01				EX9						
20891		J01	D6										GND	01	GROUND			EX9						
20875		J01	E2			XA201	07		PK	1ED	2		EPSFLT	01				EX9						
20874		J01	E3			XA201	08		PK	1ED	0		EPSFLG	01				EX9						
20892		J01	E3										GND	01	GROUND			EX9						
20863		J01	E4										+5V02	02				EX9						
20877		J01	E5										GND	01	GROUND			EX9						
20865		J01	E6										+5V03	02				EX9						
20867		J01	F1										+5V04	02				EX9						
20893		J01	F2										GND	01	GROUND			EX9						
20869		J01	F3										+5V05	02				EX9						
20894		J01	F4										GND	01	GROUND			EX9						
20871		J01	F5										+5V06	02				EX9						
20895		J01	F6										GND	01	GROUND			EX9						
21078		J01	H1										SPP	01				EX9						
21079		J01	H2										SPP	01				EX9						
21080		J01	H5										GND	01				EX9					A01	
21081		J01	H6										SPP	01				EX9						
21082		J01	J1										SPP	01				EX9						
21083		J01	K1										SPP	01				EX9						
CONNECTOR J01 CONTINUED ON THE NEXT PAGE ****																								