

ARMY
NAVY
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TM 11-5895-856-34-2
EE640-CA-MMI-020/E154 CPU
TO 31W2-2T-122-2

TECHNICAL MANUAL

DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL
FOR
CENTRAL, MESSAGE SWITCHING, AUTOMATIC
AN/TYC-39(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

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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 2 TM 11-5895-856-34-2

Card Cage Assembly, Central Processor Unit - R.H., Wire List, String (149011-800)

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 string wire list for the right-hand card cage assembly of the central processor unit, drawing number 149011-800. 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, CENTRAL PROCESSOR UNIT
- RIGHT HAND
STRING WIRE LIST
149011-800**

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 FOR WIRE CODE DEFINITIONS.
4. REFERENCE TO SHEET 6 FOR WIRE PARTS 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, CPU R. H.

H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS

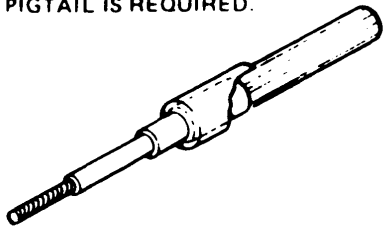
1. **Record Number** - A unique Data Processing number which associates all information pertaining to a wire "FROM" Connector, "TO" Connector, Wire Code, etc. This number is the wire ID when that field is blank.
2. **Prefix** - An assembly alphanumeric to be used when a wire terminates in two assemblies. 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 Y32.16-1968.
4. **Pin** - Exact terminating point of 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.

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 file.) 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.

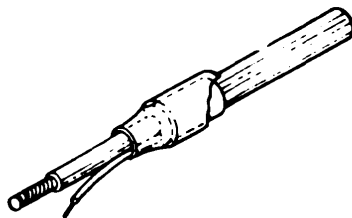
SHIELD FIGURE A

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



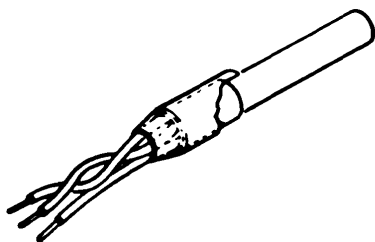
SHIELD FIGURE B

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



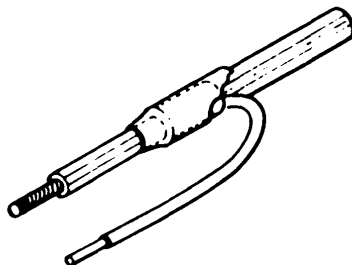
SHIELD FIGURE G

SHIELDED CABLE TERMINATION WITH DRAIN WIRE



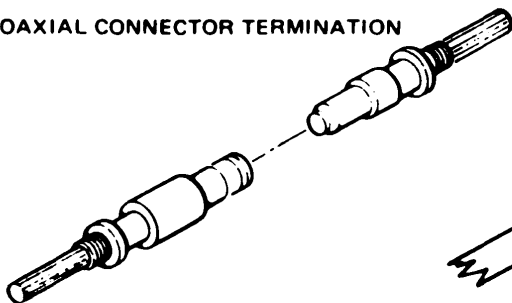
SHIELD FIGURE C

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



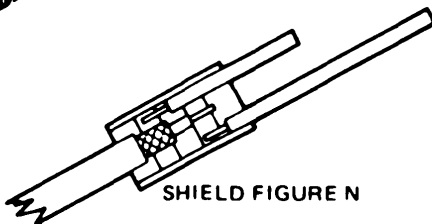
SHIELD FIGURE Z

COAXIAL CONNECTOR TERMINATION



SHIELD FIGURE N

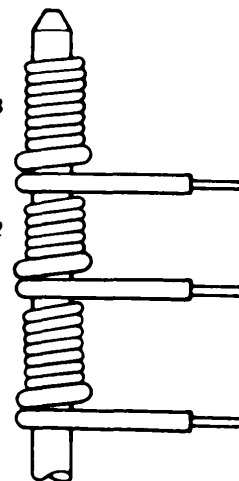
TRANSITION DEVICE WITH
SOLID WIRE PIGTAILS



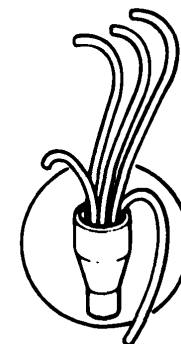
SHIELD FIGURE NO. 3

SHIELD FIGURE NO. 2

SHIELD FIGURE NO. 1



SHIELD FIGURE NUMBER
INDICATES LEVEL OF WIRE WRAP

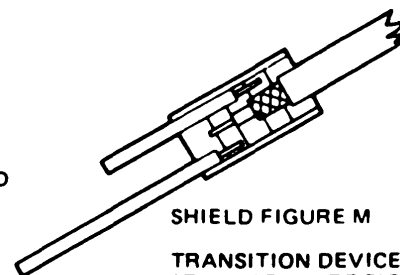


SHIELD FIGURE X

SHIELDED WIRE
PIGTAILS-HYBRID

SHIELD FIGURE M

TRANSITION DEVICE WITH
STRANDED WIRE PIGTAILS



WIRE CODE DEFINITION			WIRE CODE DEFINITION		
X X X			X X X		
Type	Description	AWG	Type	Description	AWG
1 = Polyvinylidene Fluoride (PVF) (Kynar)	1 = Buss Wire	A = 32	*F = MIL-C-17/94 (formerly MIL-C-17/68)	F = Tw Pr, Shielded	R = 2
2 = Teflon ET	2 = High Voltage	B = 30	*G = 898008-2	G = Tw Tpl, Stranded	S = 1
3 = Teflon E	3 =	C = 28	*H = 898008-1	H = Tw Tpl, Solid	T = 0
4 = Teflon EE	4 =	D = 26	*J = MIL-C-17/29	J = Tw Tpl, Shielded	U = 00
5 = Fluorinated Ethylene Propylene (FEP), Type K	5 = Integral Lead	E = 24	*K = MIL-C-17/30	K = Tw Quadr, Stranded	V = 000
6 = FEP, Type KT	6 = Auto Wire Wrap	F = 22	*L = MIL-C-17/79	L = Tw Quadr, Solid	W = 0000
7 = Special Condition	7 =	G = 20	*M = MIL-C-17/74	M = Tw Quadr, Shielded	X = Coax
8 = Polyvinyl Chloride (PVC) with Nylon Jacket, Type D	8 =	H = 18	*N = MIL-C-17/86	N = Tw Six Conductor, Stranded	Y =
9 = MIL-W-81044/12	9 =	I = 16	*P = MIL-C-17/28	P =	Z =
0 = Buss or Integral	0 = Special	J = 14	*R = 898008-4	R =	1 =
A = PVC without Jacket, Type B	A = Single Stranded	K = 12	*S = MIL-C-17/6	S =	2 =
B = PVC with Jacket	B = Single Solid	L = 10	*T = 898059-0001	T =	3 =
C = MIL-W-22759/1	C = Single Shielded	M = 8	U = 898017-1	U =	4 =
D = MIL-W-5086/1	D = TW Pr, Stranded	N = 6	V = 898017-2	V =	5 =
E = MIL-W-5086/2	E = Tw Pr, Solid	P = 4	W = 898007-1 thru -4	W = 70 Ohm Coax	6 =
			X = 898004, Type B	X = 50 Ohm Coax	7 =
			Y = 898004, Type D	Y = 75 Ohm Coax	8 =
			*Z = MIL-C-17/94	Z = 95 Ohm Coax	9 = Spcl
			*I = MIL-C-17/118		0 = Int Lead

NOTES: *1. Coax.

2. The word "BAR" in the Code Field indicates an electromechanical connection made possible by buss strips. Printed circuitry or power/ground planes will be coded "BUS" in the Code Field if required.

Drawing No.
149011-800
Rev. D, sheet 5

PARTS LIST						CONTACT NUMBER	CODE IDENT 13973	14901-800	REVISION D		
TITLE CARD CAGE ASSEMBLY, CENTRAL PROCESSOR UNIT - RH, - WIRE LIST								SHEET 6			
ITEM NO.	FEET OF WIRE REQD	CODE IDENT	PART OR IDENTIFYING NUMBER	DRAWING OR DOCUMENT NUMBER	NOMENCLATURE OR DESCRIPTION			REF SYM	TIMES USED	WIRE CODE	LINE REV
1.	4		898041-0003		WIRE, ELEC, 250V, PVF INSUL 30 GAGE (BLACK)				1	1BB	
2.	160		898041-0002		WIRE, ELEC, 250V, PVF INSUL 30 GAGE (WHITE)				40	1BB	
3.	28		898042-0004		WIRE, ELEC, 250V, PVF INSUL 26 GAGE (RED)				7	1BD	
4.	12		898042-0002		WIRE, ELEC, 250V, PVF INSUL 26 GAGE (WHITE)				3	1BD	
5.	60		898041-0023		CABLE, ELEC, TWISTED TWO CNDCT, 250V, PVF INSUL 30 CAGE (BLACK, WHITE)				14	1EB	
6.	11000		898041-0002		WIRE, ELEC, 250V, PVF INSUL 30 CG . (WHITE)				10856	16B	

DRAWING NUMBER 149011-800										STRING		UNIT ASSEMBLY NO 149011		REV D		INDEX +05VIC	
UNIT ASSEMBLY NAME CARD CAGE ASSY, CPU R.H.												FILE IDENT T39B2CP2		DATE 09-03-82		PAGE 7	
RECORD NUMBER	FROM	TO	WRF	UNIT	GROUP	CODE	IDENT	SIGNAL	SERIAL	EQUATION	TEST POINTS	SIGNAL DESCRIPTION	ECO NO				
19781	XA148 35	XA119 69				168 9		+05VIC	01		EXT						
00021	XA119 69	XA119 79				168 9		+05VIC	02		RR4 GP						
00019	XA119 75					168 9		+05VIC	03		RR4 HP						
19783	XA148 37	XA318 03				168 9		+05VIC4	01		EXT						
00082	XA318 03	XA318 33				168 9		+05VIC4	02		RR4 AP						
00086	XA318 33	XA318 49				168 9		+05VIC4	03		RR4 DP						
00090	XA318 49					168 9		+05VIC4	04		RR4 EP						
19775	XA148 27	XA448 61				168 9		+5AXUC	01		EXT						
20158	XA448 61					168 9		+5AXUC	02		EXT						
00313	XA148 28	XA448 62				168 9		+5AXUR	01		EXT						
20159	XA448 62					168 9		+5AXUR	02		EXT						
19798	XA148 53	XA448 53				168 9		+5LDCB	01		EXT						
20151	XA448 53	XA448 59				168 9		+5LDCB	02		EXT		B05				
20156	XA448 59					168 9		+5LDCB	03		EXT		B05				
22639	XA148 54	3 XA448 54				168 9		+5LDCG	01	GROUND	EXT						
20152	XA448 54					168 9		+5LDCG	02		EXT						
19756	XA148 51	XA448 51				168 9		+5PLCB	01		EXT						
20149	XA448 51	XA448 49				168 9		+5PLCB	02		EXT		B05				
20147	XA448 49					168 9		+5PLCB	03		EXT		B05				
22642	XA148 52	3 XA448 52				168 9		+5PLCG	01	GROUND	EXT						
20150	XA448 52					168 9		+5PLCG	02		EXT						
19771	XA148 23	XA119 03				168 9		+5RES1	01		EXT		B05				
00033	XA119 03	XA119 13				168 9		+5RES1	02		RR4 AP						
00031	XA119 13	XA119 21				168 9		+5RES1	03		RR4 BP						
00029	XA119 21	XA119 33				168 9		+5RES1	04		RR4 CP						
00027	XA119 33	XA119 49				168 9		+5RES1	05		RR4 DP						
00025	XA119 49	XA119 59				168 9		+5RES1	06		RR4 EP						
00023	XA119 59	XA130 79				168 9		+5RES1	07		RR4 FP						
00046	XA130 79	XA130 69				168 9		+5RES1	10		RR1 HP						
00046	XA130 69	XA130 59				168 9		+5RES1	11		RR1 GP						
00044	XA130 59	XA130 49				168 9		+5RES1	12		RR1 FP						
00042	XA130 49	XA130 33				168 9		+5RES1	13		RR1 EP						
00040	XA130 33	XA130 21				168 9		+5RES1	14		RR1 DP						
00038	XA130 21	XA130 13				168 9		+5RES1	15		RR1 CP						
00036	XA130 13	XA130 03				168 9		+5RES1	16		RR1 BP						
00034	XA130 03	XA136 03				168 9		+5RES1	17		RR1 AP						
00050	XA136 03	XA136 13				168 9		+5RES1	18		RR1 BP						
00052	XA136 13	XA136 21				168 9		+5RES1	19		RR1 BP						
00054	XA136 21	XA136 33				168 9		+5RES1	20		RR1 CP						
00056	XA136 33	XA136 49				168 9		+5RES1	22		RR1 DP						
**** SIGNAL (+5RES1) IS ON THE NEXT PAGE ****																	