



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF CONNECTORS WITH FRONT RELEASE CONTACTS

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
1.	<u>PART NUMBERS AND DESCRIPTION</u>	2
	A. Backshell Assembly Part Numbers	2
	B. Necessary Materials	2
2.	<u>CONNECTOR DISASSEMBLY</u>	2
	A. Disassembly of the Backshell Components	2
	B. Contact Removal	3
	C. Removal of Seal Plugs and Seal Rods	3
3.	<u>CONNECTOR ASSEMBLY</u>	3
	A. Contact Assembly	3
	B. Contact Insertion	6
	C. Seal of an Empty Contact Cavity	7
4.	<u>BACKSHELL ASSEMBLY</u>	7
	A. Assembly of a Strain Relief Clamp	7
	B. Assembly of a Single Leg Strain Relief Clamp	7
	C. Assembly of a Conduit Adapter	7
	D. Installation of a Convolute Tube	8

20-61-00



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF CONNECTORS WITH FRONT RELEASE CONTACTS

This Subject gives the general maintenance data for the disassembly and assembly of connectors that have front release contacts.

1. PART NUMBERS AND DESCRIPTION

A. Backshell Assembly Part Numbers

Table 1
BACKSHELL COMPONENT PART NUMBERS

Description	Part Number	Supplier
Conduit Adapter	6930-06-()	Icore
	6930-09-()	Icore
	712-148	Glenair
	G8148	Glenair
	MS27557	QPL
Convolute Tube	120 Series	Glenair
	MS48 Series	Tyco/Raychem
Convolute Tube Adapter	710 Series	Glenair

Table 2
BACKSHELL ASSEMBLY TOOLS

Tool	Part Number	Supplier
Strap Wrench	TG-70	Glenair
	AT 508K	Aircraft Tools, Inc.

B. Necessary Materials

Table 3
NECESSARY MATERIALS

Material	Part Number	Supplier
Thread Locking Compound	222	Locktite
	Vibratite	The Oakland Corporation

2. CONNECTOR DISASSEMBLY

A. Disassembly of the Backshell Components

Connector backshell components can be:

- A backshell adapter
- A cable clamp adapter
- A strain relief adapter
- A strain relief clamp
- A conduit adapter
- A convolute tube adapter

20-61-00



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF CONNECTORS WITH FRONT RELEASE CONTACTS

- A convoluted tube.

- (1) Disconnect each component from the connector.
- (2) Push each component away from rear of the connector.

B. Contact Removal

- (1) Make a selection of a contact removal tool. Refer to the applicable Subject for the connector.

CAUTION: DO NOT USE PLIERS TO REMOVE A CONTACT. THE PLIERS CAN CAUSE DAMAGE TO THE CONTACT AND THE CONNECTOR GROMMET.

- (2) At the front of the connector, axially align the tool with the contact cavity.
Make sure that the plunger of the removal tool is fully retracted.

- (3) Push the tool into the contact cavity until it stops.

NOTE: The retention clips in the contact cavity begin to open when resistance is felt.

CAUTION: DO NOT USE MORE THAN THE NECESSARY AMOUNT OF FORCE TO PUSH THE REMOVAL TOOL INTO THE CONTACT CAVITY. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

- (4) Push the plunger of the tool so that the shoulder of the contact is pushed out beyond the retention clips.
- (5) Carefully remove the tool straight out of the contact cavity.
- (6) Pull the contact out of the grommet from the rear of the connector.

C. Removal of Seal Plugs and Seal Rods

- (1) Make a selection of a pair of pliers.

CAUTION: MAKE SURE THE PLIERS HAVE SMOOTH SURFACES AND NO SHARP EDGES. PLIERS WITH A ROUGH SURFACE OR A SHARP EDGE CAN CAUSE DAMAGE TO THE REAR GROMMET.

- (2) If necessary, remove the plastic tie strap or the wire harness tie that is less than 6 inches from the connector.
- (3) Hold the end of the seal plug or the seal rod tightly in the jaws of the pliers.
- (4) Carefully pull the seal plug or seal rod straight out of the contact cavity.

3. CONNECTOR ASSEMBLY

A. Contact Assembly

- (1) Make a selection of the contact. Refer to:
 - The applicable Subject for the connector
 - The Wiring Diagram Manual.
- (2) Prepare the wire. Refer to:
 - The applicable Subject for the connector
 - Subject 20-00-15 for the insulation removal procedures.

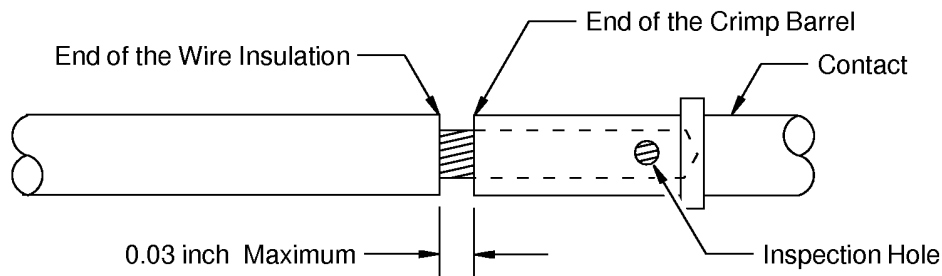
20-61-00



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF CONNECTORS WITH FRONT RELEASE CONTACTS

- (3) Make a selection of a crimp tool. Refer to:
- The applicable Subject for the connector
 - Subject 20-00-12 for alternative contact crimp tools.
- (4) For a contact without an insulation support barrel:
- (a) Put the end of the wire in the crimp barrel of the contact. Refer to Figure 1.
- Make sure that:
- All of the strands of the conductor are in the crimp barrel
 - The conductor can be seen in the inspection hole
 - The distance from the end of the insulation to the crimp barrel is not more than 0.03 inch.



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POSITION OF THE WIRE IN A CONTACT WITHOUT AN INSULATION SUPPORT BARREL

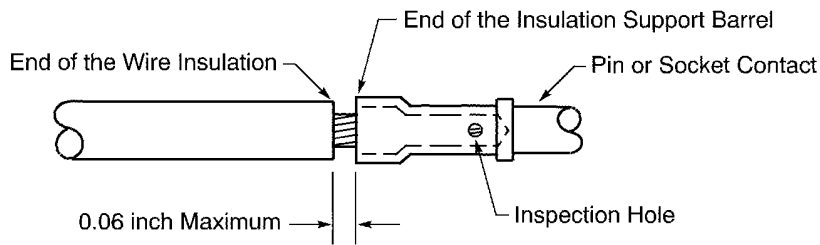
Figure 1

- (b) Crimp the contact.
- (5) For a contact with an insulation support barrel and a wire that has an O.D. that is larger than the insulation support barrel:
- (a) Put the end of the wire in the crimp barrel of the contact. Refer to Figure 2.
- Make sure that:
- All of the strands of the conductor are in the crimp barrel
 - The conductor can be seen in the inspection hole
 - The distance from the end of the insulation to the crimp barrel is not more than 0.06 inch.

20-61-00



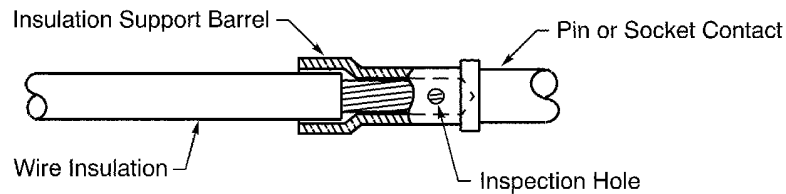
707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF CONNECTORS WITH FRONT RELEASE CONTACTS



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POSITION OF THE WIRE THAT HAS AN O.D. THAT IS LARGER THAN THE INSULATION SUPPORT BARREL
Figure 2

- (b) Crimp the contact.
- (6) For all other contacts with an insulation support barrel:
- (a) Put the end of the wire in the crimp barrel of the contact. Refer to Figure 3.
- Make sure that:
- All of the strands of the conductor are in the crimp barrel
 - The conductor can be seen in the inspection hole
 - The wire insulation is in the insulation support barrel.



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POSITION OF THE WIRE IN A CONTACT WITH AN INSULATION SUPPORT BARREL
Figure 3

- (b) Crimp the contact.

20-61-00



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF CONNECTORS WITH FRONT RELEASE CONTACTS

B. Contact Insertion

This procedure can be used to insert either of these contacts in a contact cavity:

- A wired contact
- An unwired contact.

- (1) Put the necessary connector assembly components on the wire harness.
- (2) If the connector has a single-leg clamp, put either of these materials on the wire harness:
 - Heat shrinkable sleeve
 - Filler tape and a wire harness tie.

Refer to Subject 20-60-09.

- (3) Make a selection of a contact insertion tool. Refer to the applicable Subject for the connector.
Make sure that the tip of the insertion tool:
 - Is not bent
 - Does not have any damage
 - Does not have any sharp edges.

- (4) Examine the contact.

Make sure that the contact:

- Is straight
- Does not have any damage.

- (5) Put the insertion tool on the contact so that the tool and the contact are axially aligned.

NOTE: For a size 20 contact, make sure that the insertion tool tip:

- Is against the insulation support barrel of the contact
- Is not against the rear edge of the support barrel of the contact.

- (6) Axially align the contact with the contact cavity at the rear face of the grommet.

NOTE: For the contact cavities that are adjacent to the outer edge of the connector, make sure that the open side of the tool tip is pointed toward the outer edge of the grommet.

- (7) Push the contact into the contact cavity until it stops.

- (8) If it is necessary to make the insertion of the contact easier:

- (a) Make a selection of a lubricant. Refer to Subject 20-00-11.
- (b) Put a small quantity of lubricant on either or both of these surfaces:
 - The tip of the insertion tool
 - The rear face of the connector grommet.

CAUTION: DO NOT PUT LUBRICANT ON ANY OTHER SURFACE. DAMAGE TO THE CONDUCTOR OR TO THE WIRED CONTACT OR BOTH CAN CAUSE UNSATISFACTORY PERFORMANCE.

CAUTION: DO NOT PUT MORE THAN THE NECESSARY QUANTITY OF LUBRICANT ON THE SURFACE. DAMAGE TO THE CONDUCTOR OR TO THE WIRED CONTACT OR BOTH CAN CAUSE UNSATISFACTORY PERFORMANCE.

20-61-00



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF CONNECTORS WITH FRONT RELEASE CONTACTS

- (9) Carefully pull the insertion tool straight out of the contact cavity.
- (10) Pull lightly on the wire to make sure that the contact is locked in the contact cavity.

CAUTION: DO NOT PULL THE WIRE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE AND RELIABILITY OF THE WIRE.

- (11) If the contact is not locked in the contact cavity:
 - (a) Pull the contact out of the contact cavity.
 - (b) Do Step 3.B.(5) through Step 3.B.(10) again.

C. Seal of an Empty Contact Cavity

Refer to Subject 20-60-08 for:

- The necessary conditions to seal an empty contact cavity
- The procedures to seal an empty contact cavity if applicable.

4. BACKSHELL ASSEMBLY

Refer to:

- Subject 20-25-12 for strain relief backshells
- Subject 20-25-13 for peripheral backshells
- Subject 20-25-14 for backshells with shield terminator bands.

A. Assembly of a Strain Relief Clamp

Refer to Subject 20-60-09.

B. Assembly of a Single Leg Strain Relief Clamp

Refer to Subject 20-60-09.

- (1) If it is necessary, install a safety wire. Refer to Subject 20-60-07.

C. Assembly of a Conduit Adapter

- (1) Make a selection of a conduit adapter from Table 1.
- (2) Make a selection of a thread locking compound from Table 3.
- (3) Put two drops of the thread locking compound on the adapter threads so that each drop of the thread locking compound is applied:
 - At opposite locations on the circumference of the adapter
 - To a minimum of two threads.
- (4) Engage the threads of the conduit adapter and the connector.
- (5) Manually tighten the adapter.

Make sure that the wires do not cause tension on the contacts.
- (6) Make a selection of a strap wrench from Table 2.

20-61-00



707, 727-787
STANDARD WIRING PRACTICES MANUAL

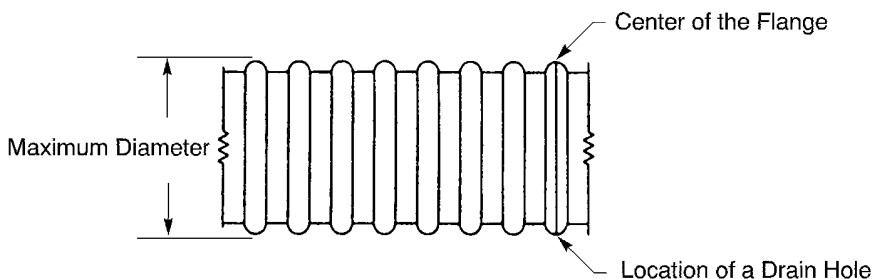
ASSEMBLY OF CONNECTORS WITH FRONT RELEASE CONTACTS

- (7) Hold the connector with a pair of soft jaw connector plug pliers.
- (8) Tighten the adapter a maximum of 1/8 turn.
- (9) Install a conduit fitting:
 - (a) Put one drop of the thread locking compound on the threads of the adapter.
 - (b) Put one drop of the thread locking compound on the threads of the removable cover.
 - (c) Dry the thread locking compound for a minimum of 30 minutes.
 - (d) Engage the threads of the conduit fitting and the adapter.

Make sure that the wires do not cause tension on the contacts.
 - (e) Manually tighten the fitting.

D. Installation of a Convoluted Tube

- (1) Make a selection of a convoluted tube from Table 1.
- (2) Prepare the tube. Refer to Figure 4.



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PREPARATION OF THE CONVOLUTED TUBE

Figure 4

- (a) Cut the necessary length of tube so that each end of the tube is cut at the center of the flange at the maximum diameter of the tube.
- (b) Remove any burrs from the ends of the tube.
- (c) Make the necessary number of drain holes in the tube at the necessary locations.

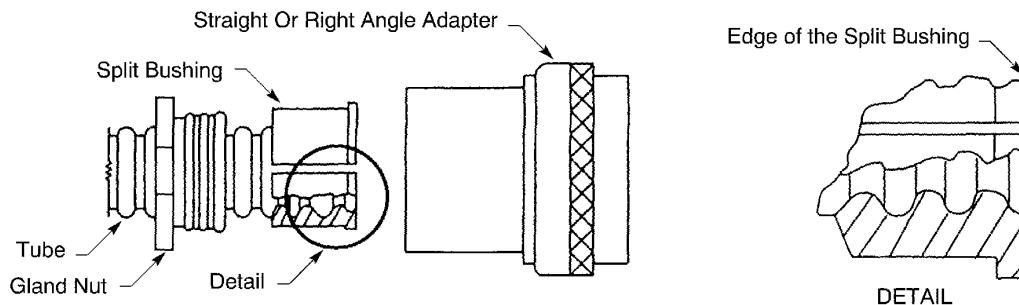
Make sure that each drain hole:

 - Has a diameter of 3/32 inch +1/32 inch, -0 inch
 - Is in the center of the flange at the maximum diameter of the tube.
- (3) Make a selection of an convoluted tube adapter from Table 1.
- (4) Assemble the adapter. Refer to Figure 5.

20-61-00

707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF CONNECTORS WITH FRONT RELEASE CONTACTS



2446035 S00061546390_V1

ASSEMBLY OF THE CONVOLUTED TUBE ADAPTER

Figure 5

- (a) Put the gland nut on the tube.
- (b) Put the split bushing on the tube so that the end of the bushing with the larger diameter is aligned with the edge of the tube.
 Make sure that the end of the tube is 0 inch to +1/16 inch from the end of the split bushing.
- (c) Make a selection of a thread locking compound from Table 3.
- (d) Put two drops of the thread locking compound on the threads of the adapter.
- (e) Put the adapter on the tube.
 Make sure that the position of the split bushing does not change.
- (f) Engage the threads of the gland nut and the adapter.
 Make sure that the master key is in the correct position.
- (g) Manually tighten the gland nut.
- (5) Engage the threads of the adapter and the connector.
- (6) Tighten the gland nut until:
 - Not more than two threads of the gland nut are can be seen outside of the adapter
 - The thread locking plug in the gland nut cannot be seen.

CAUTION: DO NOT TIGHTEN THE GLAND NUT MORE THAN NECESSARY. DAMAGE TO THE TUBE, THE BUSHING, OR THE ADAPTER CAN OCCUR.

20-61-00



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF JBX TYPE MINIATURE PUSH-PULL CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
1.	<u>PART NUMBERS AND DESCRIPTION</u>	2
	A. Connector Part Numbers	2
	B. Connector Description	2
	C. Contact Part Numbers	2
	D. Contact Description	3
2.	<u>CONNECTOR DISASSEMBLY</u>	3
	A. Contact Removal	3
3.	<u>CONNECTOR ASSEMBLY</u>	4
	A. Cable Preparation for a Solder Sleeve Shield Termination	4
	B. Contact Assembly	5
	C. Contact Insertion	7
4.	<u>RECPTACLE INSTALLION</u>	8
	A. Installation of the Recptacle	8
5.	<u>APPROVED TOOL SUPPLIERS</u>	9
	A. Removal Tool Suppliers	9
	B. Crimp Tool Suppliers	9

20-61-02



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF JBX TYPE MINIATURE PUSH-PULL CONNECTORS

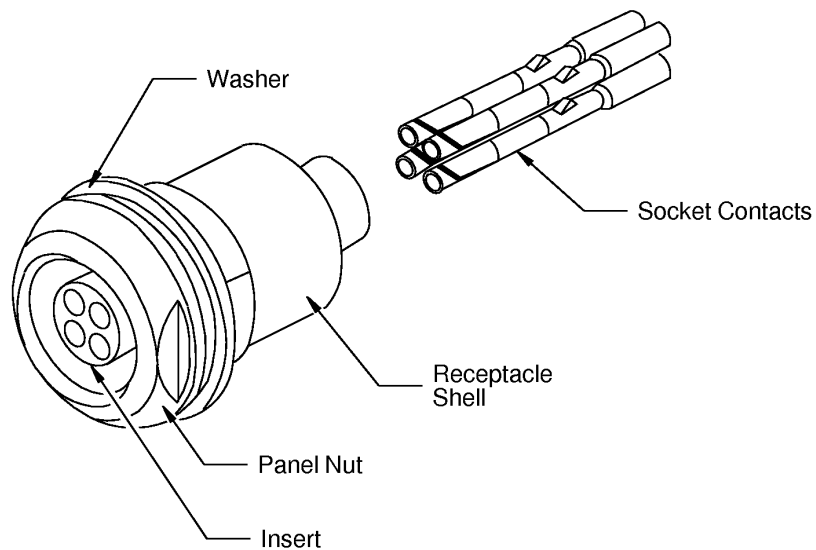
1. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

Table 1
CONNECTOR PART NUMBERS

Part Number	Connector Type	Shell Size	Number of Contact Cavities	Supplier
JBXEA1G06FCSDS	Receptacle	1	6	Souriau

B. Connector Description



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JBX RECEPTACLE CONNECTOR AND SOCKET CONTACTS
Figure 1

C. Contact Part Numbers

Table 2
CONTACT PART NUMBERS

Contact Size		Part Number	Contact Type	Supplier
Engaging End	Crimp Barrel			
22	22	JBX1CTFC07	Socket	Souriau

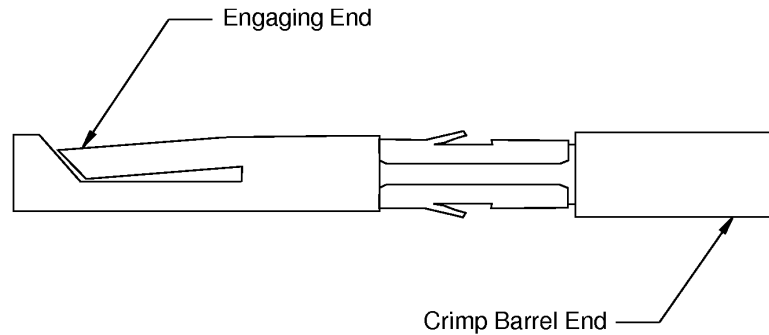
20-61-02



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF JBX TYPE MINIATURE PUSH-PULL CONNECTORS

D. Contact Description



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JBX TYPE SOCKET CONTACT
Figure 2

2. CONNECTOR DISASSEMBLY

A. Contact Removal

Table 3
CONTACT REMOVAL TOOLS

Part Number	Supplier
ATJP2045	Astro
JBXOUTDC07	Souriau

- (1) Make a selection of a contact removal tool from Table 3.
- (2) From the front of the connector, axially align the removal tool and the engaging end of the contact.
- (3) Put the removal tool on the end of the contact.
- (4) Push the tool into the contact cavity until the contact moves out from the rear of the connector. Make sure that the removal tool stays axially aligned with the contact cavity.
- (5) Carefully remove the tool from the contact cavity.
- (6) Pull the contact out of the contact cavity from the rear of the connector.
- (7) If the wire or cable has a shield that is terminated with a shield ground wire and a contact, measure and record the length of the shield ground wire.

20-61-02



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF JBX TYPE MINIATURE PUSH-PULL CONNECTORS

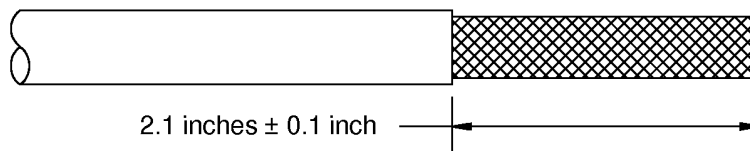
3. CONNECTOR ASSEMBLY

A. Cable Preparation for a Solder Sleeve Shield Termination

- (1) Remove 2.1 inches \pm 0.1 inch of the cable jacket from the end of the cable. Refer to Figure 3.

Refer to:

- Figure 3
- Subject 20-00-15 for the procedure to remove the cable jacket.

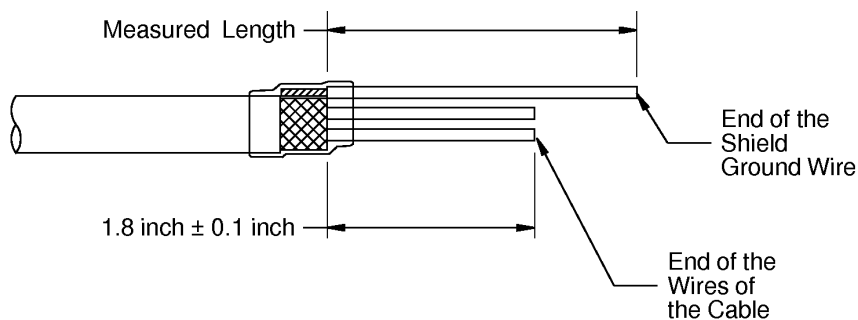


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CABLE JACKET REMOVAL

Figure 3

- (2) Assemble an insulated shield ground wire. Refer to Subject 20-10-15 and Figure 4.



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LENGTH OF THE SHIELD GROUND WIRES AND THE WIRES OF THE CABLE

Figure 4

- (3) Prepare the wires:

20-61-02



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF JBX TYPE MINIATURE PUSH-PULL CONNECTORS

- (a) Remove the necessary length from the end of each wire of the cable to make the distance from the end of the shield to the end of the wire equal to 1.8 inch \pm 0.1 inch. Refer to Figure 4.
- (b) Remove the necessary length from the end of the shield ground wire to make the distance from the end of the shield to the end of the shield ground wire equal to the measured length. Refer to Paragraph 2.A..

B. Contact Assembly

Table 4
CONTACT CRIMP TOOLS

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool		
		Basic Unit		Locator Part Number
		Part Number	Setting	
26	22	M22520/7-01	4	642-004
				86-197
				JBX1OUTLS07
		MH860	4	642-004
				86-197
				JBX1OUTLS07
24	22	M22520/7-01	5	642-004
				86-197
				JBX1OUTLS07
		MH860	5	642-004
				86-197
				JBX1OUTLS07
22	22	M22520/7-01	6	642-004
				86-197
				JBX1OUTLS07
		MH860	6	642-004
				86-197
				JBX1OUTLS07

20-61-02

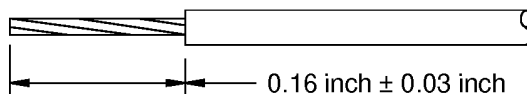


707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF JBX TYPE MINIATURE PUSH-PULL CONNECTORS

Table 5
CRIMP TOOLSUPPLIERS

Crimp Tool Part Number	Supplier
642-004	Astro
86-197	Daniels
JBX10UTLS07	Souriau
M22520/7-01	QPL
MH860	Daniels



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INSULATION REMOVAL LENGTH

Figure 5

- (1) Make a selection of a crimp tool from Table 4.
- (2) Remove 0.16 inch ± 0.03 inch of insulation from the end of the wire.
Refer to:
 - Figure 5
 - Subject 20-00-15 for the procedure to remove the wire insulation.
- (3) Put the contact in the locator.
- (4) Put the wire in the crimp barrel of the contact until it hits the bottom.
Make sure that all of the conductor strands are in the crimp barrel.
- (5) Crimp the contact.
- (6) Remove the wired contact from the tool.

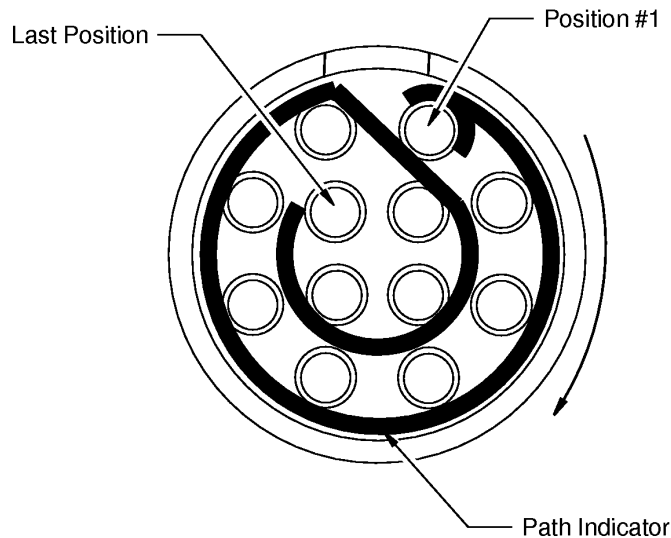
20-61-02



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF JBX TYPE MINIATURE PUSH-PULL CONNECTORS

C. Contact Insertion



2448788 S00061546398_V1

CONTACT CAVITY IDENTIFICATION

Figure 6

NOTE: An insertion tool is not needed to install the contact.

- (1) From the rear of the connector, align the contact with the contact cavity.
- (2) Carefully push the contact into the contact cavity until it makes a click.
Make sure that the contact is fully installed in the contact cavity.

CAUTION: DO NOT BEND THE CONTACT AS IT IS PUSHED INTO THE CONTACT CAVITY. A CONTACT WITH DAMAGE CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CONNECTOR.

- (3) Lightly pull the wire to make sure that the contact is locked in the contact cavity.

CAUTION: DO NOT PULL THE WIRE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE AND RELIABILITY OF THE WIRE.

- (4) If the contact assembly is not locked in the contact cavity:
 - (a) Pull the contact assembly from the contact cavity.
 - (b) Do Step 3.C.(1) through Step 3.C.(3) again.

20-61-02

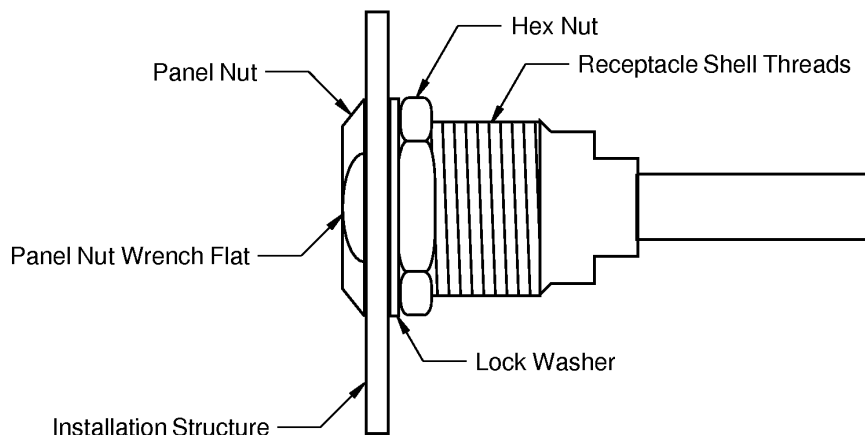


707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF JBX TYPE MINIATURE PUSH-PULL CONNECTORS

4. RECEPTACLE INSTALLION

A. Installation of the Receptacle



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RECEPTACLE CONNECTOR INSTALLATION

Figure 7

- (1) Remove the panel nut from the engaging end of the connector.
Make sure that the lock washer and the hex nut are on the threads of the receptacle shell toward the rear end of the connector.
- (2) Make sure that the lock washer and the hex nut are on the threads of the receptacle shell toward the rear end of the connector.
- (3) Turn the panel nut counterclockwise until the forward end of the panel nut and the forward end of the receptacle shell are aligned.
- (4) Turn the lock washer clockwise until the lock washer is against the structure.
- (5) Hold the panel nut in its position and turn the hex nut clockwise until the hex nut is tight against the lock washer.
- (6) Torque the hex nut 12 inch-pounds to 14 inch-pounds.

20-61-02



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF JBX TYPE MINIATURE PUSH-PULL CONNECTORS

5. APPROVED TOOL SUPPLIERS

A. Removal Tool Suppliers

Table 6
REMOVAL TOOL SUPPLIERS

Tool	Supplier
ATJP2045	Astro
JBXOUTDC07	Souriau

B. Crimp Tool Suppliers

Table 7
CRIMP TOOL SUPPLIERS

Tool	Supplier
642-004	Astro
86-197	Daniels
JBX1OUTLS07	Souriau
M22520/7-01	QPL
MH860	Daniels

20-61-02



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
1.	<u>GENERAL DATA</u>	4
	A. Location of Connector Part Number Data	4
	B. Selection of Connectors	8
	C. Minimum Wire O.D. for an Environmentally Sealed Connector	9
2.	<u>BOEING STANDARD CONNECTOR PART NUMBER AND DESCRIPTION</u>	10
	A. BACC45FL Thread Coupled Plug with RFI Shielding Capability	10
	B. BACC45FM and BACC45FS Thread Coupled Connector	11
	C. BACC45FN and BACC45FT Bayonet Coupled Connector	14
	D. BACC45FP Thread Coupled, Single Hole Mount Receptacle	18
	E. BACC63AE and BACC63AF Thread Coupled, Fire Barrier Connector	21
	F. BACC63BN Bayonet Coupled, Vibration Resistant Plug	22
	G. BACC63BP Self Locking, Thread Coupled, Vibration Resistant Plug	24
	H. BACC63BV Thread Coupled, Vibration Resistant Receptacle	28
	I. BACC63CB and BACC63CC Bayonet Coupled, Vibration Resistant Connector	30
	J. Boeing BACC63CS Threaded Coupled, Closure Rib Receptacle	32
	K. BACC63DW and BACC63DY Thread Coupled Connectors	33
	L. BACC63X and BACC63Y Thread Coupled, Fire Barrier Connector	33
	M. Boeing 10-60479-() Bayonet Coupled Connector	34
	N. Boeing 280T10()-() Bayonet Coupled Connector	37
	O. Boeing 280U001()-() Connector	42
	P. Boeing 280U2028-() Connector	43
	Q. Boeing 280W0002-1 Self Locking, Threaded Coupled Connector	44
	R. Boeing 65B414()-() Bayonet Coupled Connector	44
	S. Boeing 69B4181()-() Connector	47
	T. Boeing S283A202-() Threaded Coupled Plug	49
	U. Boeing S283T025-() Threaded Coupled Plug	50
3.	<u>SUPPLIER CONTROLLED CONNECTOR PART NUMBERS AND DESCRIPTION</u>	50
	A. Amphenol 48-16V() Bayonet Coupled Plug	50
	B. Amphenol 48-7164-() Connectors	50
	C. Cinch CN0900-329 Bayonet Coupled Plug	51
	D. Cinch CN0977() Bayonet Coupled, Hydraulic Fluid Resistant Plug	52
	E. Cinch CN0986() Thread Coupled, Hydraulic Fluid Resistant Plug	52
	F. Cinch CN1004-() Thread Coupled, Hydraulic Fluid Resistant Plug	53
	G. Cinch 1167A() Thread Coupled Receptacle	53
	H. Pyle-National ZZB-R() and ZZW-R() Bayonet Coupled, Stainless Steel Connector	54
	I. Pyle-National ZZL-R() and ZZY-R() Thread Coupled, Stainless Steel Connector	54
	J. RMS R0710(J()) Self Locking, Thread Coupled, Vibration Resistant, Hydraulic Fluid Resistant Plug with a Ground Spring	56

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

<u>PARAGRAPH</u>		<u>PAGE</u>
3.	<u>SUPPLIER CONTROLLED CONNECTOR PART NUMBERS AND DESCRIPTION (continued)</u>	50
	K. RMS R0711(M) Thread Coupled, Vibration Resistant, Hydraulic Fluid Resistant Receptacle	56
	L. RMS R0721() Bayonet Coupled, Single Hole Mount Receptacle	57
	M. Cinch Coupling Ring Polarity Adapter	57
4.	<u>CONTACT PART NUMBERS AND DESCRIPTION</u>	58
	A. General Data	58
	B. Selection of Recommended and Alternative Contacts	58
	C. Standard Contact Part Numbers	60
	D. Thermocouple Contacts	65
	E. Special Purpose Contacts	69
	F. Boeing Shielded Contacts	70
	G. Military Shielded Contacts	72
	H. Supplier Shielded Contacts	72
	I. Coax Contacts	73
5.	<u>INSERT CONFIGURATIONS</u>	73
	A. Insert Configurations for MIL-C-26500 Type Connectors	73
6.	<u>CONNECTOR DISASSEMBLY</u>	81
	A. Cinch CN0900-329 Connector Separation	81
	B. Backshell Removal	81
	C. Contact Removal	82
	D. Shielded Contact Removal	84
	E. Coax Contact Removal	85
	F. Seal Plug and Seal Rod Removal	86
7.	<u>WIRE PREPARATION</u>	86
	A. Wire Preparation	86
	B. Preparation of Champlain 24-00033 and Champlain 24-00034 Wire	88
	C. Preparation of Rockbestos or Cerro H22-4000 Wire	90
	D. Preparation of Belden 8787 Cable	91
	E. Preparation of S280T007-1 Coil Cable	92
	F. Preparation of Champlain 51-04569 and 51-04570 Cables	92
8.	<u>CONTACT ASSEMBLY</u>	93
	A. Selection of a Crimp Tool	93
	B. Contact Assembly	99
9.	<u>SHIELDED CONTACT ASSEMBLY</u>	101
	A. Assembly of a Size 1 Shielded Contact	101
	B. Assembly of MS39029/54-342 and MS27184-22P Size 1 Shielded Contacts	106
	C. Assembly of Amphenol 48-12()-() and Cinch C48-12()-() Size 1 Shielded Contacts	111
	D. Assembly of a Size 2 Shielded Contact	115

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

<u>PARAGRAPH</u>		<u>PAGE</u>
9.	<u>SHIELDED CONTACT ASSEMBLY (continued)</u>	101
	E. Assembly of a Cinch CN0900-336 Size 2 Shielded Contact	120
	F. Assembly of Boeing S283U007-7 and Cinch CN1036-7 Size 2 Shielded Contacts	125
	G. Assembly of Cinch CN0940-41, CN0940-44, Amphenol 48-2187-02 and Boeing 10-60479-() Size 2 Potted Shielded Contacts	132
	H. Assembly of Boeing 60B40147-() and 60B40037-() Size 2 Potted Shielded Contacts	139
	I. Assembly of Boeing 10-60479-() Size 2 Shielded Contacts with a BMS13-65 Type 0F Cable	144
10.	<u>COAX CONTACT ASSEMBLY</u>	149
	A. Assembly of Cory CRC280-(), CRM280-(), and CRMEF-502 Coax Contacts	149
11.	<u>CONTACT INSERTION</u>	152
	A. Contact Insertion	152
	B. Shielded Contact Insertion	158
	C. Coax Contact Insertion	160
12.	<u>SEAL OF AN EMPTY CONTACT CAVITY</u>	161
	A. Seal of an Empty Contact Cavity	161
	B. Seal of an Empty Shielded Contact Cavity with a 10-60479-() Potted Shielded Contact	162
	C. Seal of an Empty Shielded Contact Cavity with an Amphenol 217-2026 Seal Plug	162
13.	<u>INSTALLATION OF COUPLING RING POLARITY ADAPTERS</u>	163
	A. Installation of Cinch Adapters	163
	B. Installation of the Amphenol 48-7164-1S connector	164
14.	<u>PLUG AND RECEPTACLE CONNECTION</u>	164
	A. Connection of the Plug and the Receptacle	164
15.	<u>APPROVED TOOL SUPPLIERS</u>	164
	A. Contact Removal Tools	164
	B. Contact Insertion Tools	166
	C. Crimp Tools	167

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

This Subject gives the procedures for the selection and the assembly of MIL-C-26500 type connectors.

1. GENERAL DATA

A. Location of Connector Part Number Data

Table 1 gives:

- The supplier part number for a MIL-C-26500 type connector that is interchangeable and has the same performance as a connector with a Boeing Standard part number
- The Military Standard part number for a MIL-C-26500 type connector that is interchangeable and has the same performance as the connector with the Boeing Standard part number
- The supplier part number for a MIL-C-26500 type connector that is not equivalent to a Boeing Standard connector
- The location of connector part number data.

Table 2 gives a description of the MIL-C-26500 type connectors in this subject.

Table 16 gives the part number data of Boeing Standard connectors and the part number data for:

- The supplier connector that is interchangeable and has the same performance as the Boeing Standard connector
- The Military Standard connector that is interchangeable and has the same performance as the Boeing Standard connector.

Paragraph 3. gives the part number data of supplier connectors that are not equivalent to Boeing Standard connectors.

Table 1
MIL-C-26500 TYPE CONNECTOR PART NUMBERS

Boeing Standard	Boeing Specification	Part Number	Supplier	Applicable Paragraph
-	-	1167A()	Cinch	Paragraph 3.G.
-	-	48-16V()	Amphenol	Paragraph 3.A.
-	-	48-7164-()	Amphenol	Paragraph 3.B.
-	-	CN0900-329	Cinch	Paragraph 3.C.
-	-	CN0977()	Cinch	Paragraph 3.D.
-	-	CN0986()	Cinch	Paragraph 3.E.
-	-	CN1004-()	Cinch	Paragraph 3.F.
-	-	CN1178	Cinch	Paragraph 2.G.
-	-	R0710(J)	RMS	Paragraph 3.J.
-	-	R0711(M)	RMS	Paragraph 3.K.
-	-	R0721()	RMS	Paragraph 3.L.
-	-	ZZB-R()	Pyle-National	Paragraph 3.H.
-	-	ZZL-R()	Pyle-National	Paragraph 3.H.
-	-	ZZW-R()	Pyle-National	Paragraph 3.I.
-	-	ZZY-R()	Pyle-National	Paragraph 3.I.
-	10-60479-()	-	Boeing	Paragraph 2.M.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 1 MIL-C-26500 TYPE CONNECTOR PART NUMBERS (Continued)

Boeing Standard	Boeing Specification	Part Number	Supplier	Applicable Paragraph
-	10-60479-5	-	Boeing	Paragraph 2.M.
-	280T10()-()	-	Boeing	Paragraph 2.N.
-	280U001()-()	-	Boeing	Paragraph 2.O.
-	280U2028-()	-	Boeing	Paragraph 2.P.
-	280W0002-1	BACC63BP18D8SN	Boeing	Paragraph 2.Q.
-	65B414()-()	-	Boeing	Paragraph 2.R.
-	69B4181()-()	-	Boeing	Paragraph 2.S.
BACC45FL()	-	-	Boeing	Paragraph 2.A.
BACC45FM()	-	48-00R()	Amphenol	Paragraph 2.B.
		C48-00R()	Cinch	Paragraph 2.B.
		MS24264R()-T()	QPL	Paragraph 2.B.
		R0719()	RMS	Paragraph 2.B.
		ZZY()-17()	Pyle-National	Paragraph 2.B.
BACC45FN()	-	48-10R()	Amphenol	Paragraph 2.C.
		BMS24264R()-B()	Deutsch	Paragraph 2.C.
		C48-10R()	Cinch	Paragraph 2.C.
		MS24264R()-B()	QPL	Paragraph 2.C.
		R0717()	RMS	Paragraph 2.C.
		ZZW()-17()	Pyle-National	Paragraph 2.C.
BACC45FP()	-	48-03R()	Amphenol	Paragraph 2.D.
		C48-03R()	Cinch	Paragraph 2.D.
		MS24265R()-T()	QPL	Paragraph 2.D.
		ZZY()-15()	Pyle-National	Paragraph 2.D.
BACC45FS()	-	48-06R()	Amphenol	Paragraph 2.B.
		C48-06R()	Cinch	Paragraph 2.B.
		MS24266R()-T()	QPL	Paragraph 2.B.
		R0718()	RMS	Paragraph 2.B.
		ZZY()-10()	Pyle-National	Paragraph 2.B.
BACC45FT()	-	48-16R()	Amphenol	Paragraph 2.C.
		BMS24266R()-B()	Deutsch	Paragraph 2.C.
		C48-16R()	Cinch	Paragraph 2.C.
		MS24266R()-B()	QPL	Paragraph 2.C.
		R0716()	RMS	Paragraph 2.C.
		ZZW()-10()	Pyle-National	Paragraph 2.C.
BACC63AE()	-	FPK-11()	Pyle-National	Paragraph 2.E.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 1 MIL-C-26500 TYPE CONNECTOR PART NUMBERS (Continued)

Boeing Standard	Boeing Specification	Part Number	Supplier	Applicable Paragraph
BACC63AF()	-	FPK-17()	Pyle-National	Paragraph 2.E.
BACC63BN()	-	48-63N()	Amphenol	Paragraph 2.F.
		C0909()	Cinch	Paragraph 2.F.
		R0712()	RMS	Paragraph 2.F.
BACC63BP()	-	48-06R()	Amphenol	Paragraph 2.G.
		AAY-()-12()	Amphenol-Pyle	Paragraph 2.G.
		CN0966()	Cinch	Paragraph 2.G.
		R0710()	RMS	Paragraph 2.G.
		ZZY-()-12()	Pyle-National	Paragraph 2.G.
BACC63BV()	-	48-00R()	Amphenol	Paragraph 2.H.
		AAY-()-17()	Amphenol-Pyle	Paragraph 2.H.
		CN0967()	Cinch	Paragraph 2.H.
		R0711()	RMS	Paragraph 2.H.
		ZZY-()-17()	Pyle-National	Paragraph 2.H.
BACC63CB()	-	CN1020A()	Cinch	Paragraph 2.I.
		R0700()	RMS	Paragraph 2.I.
BACC63CC()	-	CN1021A()	Cinch	Paragraph 2.I.
		R0701()	RMS	Paragraph 2.I.
BACC63CS()	-	R770()	RMS	Paragraph 2.J.
BACC63DW()	-	R0727()	RMS	Paragraph 2.K.
BACC63DY()	-	R0726()	RMS	Paragraph 2.K.
BACC63X()	-	FPK-11()	Pyle-National	Paragraph 2.L.
BACC63Y()	-	FPK-17()	Pyle-National	Paragraph 2.L.
-	S283A202-11	CN1159-11	Cinch	Paragraph 2.T.
-	S283A202-12	CN1159-12	Cinch	Paragraph 2.T.
-	S283T025-2	CN1156-2	Cinch	Paragraph 2.U.
-	S283T025-4	CN1156-4	Cinch	Paragraph 2.U.

Table 2
DESCRIPTION OF MIL-C-26500 TYPE CONNECTORS

Connector	Description
10-60479-()	Bayonet Coupled Connector with Shielded Contact
10-60479-5	Bulkhead Feed Through, Hermetically Sealed Receptacle
1167A()	Modified BACC63BV Receptacle
280T10()-()	Modified BACC45FN or BACC45FT Connector
280U001()-()	Modified BACC45FN or BACC45FT Connector

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 2 DESCRIPTION OF MIL-C-26500 TYPE CONNECTORS (Continued)

Connector	Description
280U2028-()	BACC63CB or BACC63CC Connector with Special Shielded Contact
280W0002-1	Modified BACC63BP Plug
48-16V()	Bayonet Coupled Plug, Viton Elastomer
65B414()-()	Modified BACC45FN or BACC45FT Connector
69B4181()-()	Modified BACC45F() or BACC63() Connector
BACC45FL()	Thread Coupled Plug with RFI Shielding Capability
BACC45FM()	Thread Coupled Receptacle
BACC45FN()	Bayonet Coupled Receptacle
BACC45FP()	Thread Coupled, Single Hole Mount Receptacle
BACC45FS()	Thread Coupled Plug
BACC45FT()	Bayonet Coupled Plug
BACC63AE()	Thread Coupled, Fire Barrier Plug
BACC63AF()	Thread Coupled, Fire Barrier Receptacle
BACC63BN()	Bayonet Coupled, Vibration Resistant Plug
BACC63BP()	Self Locking, Thread Coupled, Vibration Resistant Plug
BACC63BV()	Thread Coupled, Vibration Resistant Receptacle
BACC63CB()	Bayonet Coupled, Vibration Resistant Plug with Ground Spring
BACC63CC()	Bayonet Coupled, Vibration Resistant Receptacle
BACC63CS()	Thread Coupled, Closure Rib Receptacle
BACC63DW()	Thread Coupled, Vibration and Skydrol Resistant Receptacle
BACC63DY()	Self Locking, Thread Coupled, Vibration and Skydrol Resistant Plug
BACC63X()	Thread Coupled, Fire Barrier Plug
BACC63Y()	Thread Coupled, Fire Barrier Receptacle
C0900-246-()	Coupling Ring Polarity Adapter
CN0900-329	Bayonet Coupled Plug with Laynard Release
CN0977()	Bayonet Coupled, Hydraulic Fluid Resistant Plug
CN0986()	Thread Coupled, Hydraulic Fluid Resistant Plug
CN1004-()	Thread Coupled, Hydraulic Fluid Resistant Plug
CN1178	Similar to BACC63BP except coupling ring diameter is 1.63 inches maximum
R0710(J)	Self Locking, Thread Coupled, Vibration Resistant, Hydraulic Fluid Resistant Plug with Ground Spring
R0711(M)	Thread Coupled, Vibration Resistant, Hydraulic Fluid Resistant Receptacle
R0721()	Bayonet Coupled, Single Hole Mount Receptacle
S283A202-11	Thread Coupled Plug with Special Shielded Contact
S283A202-12	Thread Coupled Plug with Special Shielded Contact
S283T025-()	Thread Coupled Plug

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 2 DESCRIPTION OF MIL-C-26500 TYPE CONNECTORS (Continued)

Connector	Description
ZZB-R()	Bayonet Coupled Connector, Stainless Steel Shell
ZZL-R()	Thread Coupled Connector, Stainless Steel Shell
ZZW-R()	Bayonet Coupled Connector, Stainless Steel Shell
ZZY-R()	Thread Coupled Connector, Stainless Steel Shell

B. Selection of Connectors

This paragraph gives the decision sequence to make a selection of:

- A connector to replace a connector that is in service
- A connector for a new installation.

Refer to Paragraph 1.A. for the part numbers and description of the connectors.

- (1) Make a selection of a connector that has the Boeing Standard number.
- (2) If the connector with the Boeing Standard number is not available, make a selection of an alternative connector that:
 - Has the supplier's part number
 - Is interchangeable and has the same performance as the Boeing Standard connector.
- (3) If the connector with the supplier's part number is not available, make a selection of a permitted alternative equivalent connector that:
 - Has the Military Standard part number
 - Is interchangeable and has the same performance as the Boeing Standard connector.

Refer to Table 3.

NOTE: The Equipment List or the connector container can specify a Boeing Standard BACC45F() number when the connector shell has a Military Standard part number mark.

Table 3
RELATION BETWEEN THE BOEING STANDARD AND THE MILITARY STANDARD FOR MIL-C-26500 TYPE CONNECTORS

MIL-C-26500 Connector	Boeing Standard	Military Standard
Bayonet Coupled Plug	BACC45FT()	MS24266R-B()
Bayonet Coupled Receptacle	BACC45FN()	MS24264R-B()
Thread Coupled Plug	BACC45FS()	MS24266R-T()
Thread Coupled Receptacle	BACC45FM()	MS24264R-T()
Thread Coupled, Single Hole Mount Receptacle	BACC45FP()	MS24265R-T()

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

C. Minimum Wire O.D. for an Environmentally Sealed Connector

Refer to:

- Subject 20-60-08 for the identification of an environmentally sealed connector
- Table 4 for the minimum wire O.D. that is necessary for a satisfactory seal of a contact cavity hole
- Subject 20-60-08 for the procedure to increase the diameter of the wire.

Table 4
MINIMUM WIRE O.D. FOR A SATISFACTORY SEAL

Connector	Contact Cavity Size	Minimum Wire O.D. (inch)
017832-3000	20	0.035
	16	0.068
	12	0.106
BACC45FM	20	0.035
	16	0.068
	12	0.106
BACC45FN	20	0.035
	16	0.068
	12	0.106
BACC45FP	20	0.035
	16	0.068
	12	0.106
BACC45FS	20	0.035
	16	0.068
	12	0.106
BACC45FT	20	0.035
	16	0.068
	12	0.106
BACC63BN	20	0.035
	16	0.068
	12	0.106
BACC63BP	20	0.035
	16	0.068
	12	0.106
BACC63BV	20	0.035
	16	0.068
	12	0.106

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 4 MINIMUM WIRE O.D. FOR A SATISFACTORY SEAL (Continued)

Connector	Contact Cavity Size	Minimum Wire O.D. (inch)
BACC63CB	20	0.035
	16	0.068
	12	0.106
BACC63CC	20	0.035
	16	0.068
	12	0.106
BACC63DW	20	0.035
	16	0.086
	12	0.123
BACC63DY	20	0.035
	16	0.086
	12	0.123
MIL-C-26500	20	0.035
	16	0.068
	12	0.106
MS24264R()B()	20	0.035
MS24264R()T()	20	0.035
MS24266R()B()	20	0.035
MS24266R()T()	20	0.035
R0710	20	0.040
	16	0.068
	12	0.106
R0711	20	0.040
	16	0.068
	12	0.106
R0724	20	0.040
	16	0.068
	12	0.106

2. BOEING STANDARD CONNECTOR PART NUMBER AND DESCRIPTION

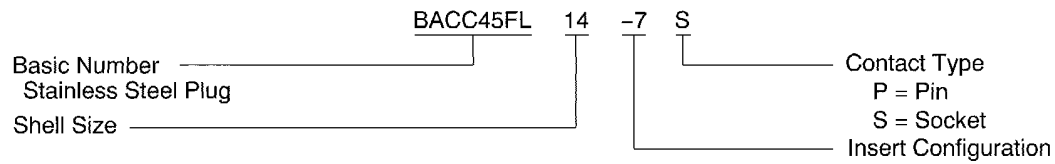
A. BACC45FL Thread Coupled Plug with RFI Shielding Capability

The BACC45FL plug connects to the BACC63BV stainless steel receptacle.

20-61-11



707, 727-787
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MIL-C-26500 FRONT RELEASE CONNECTORS

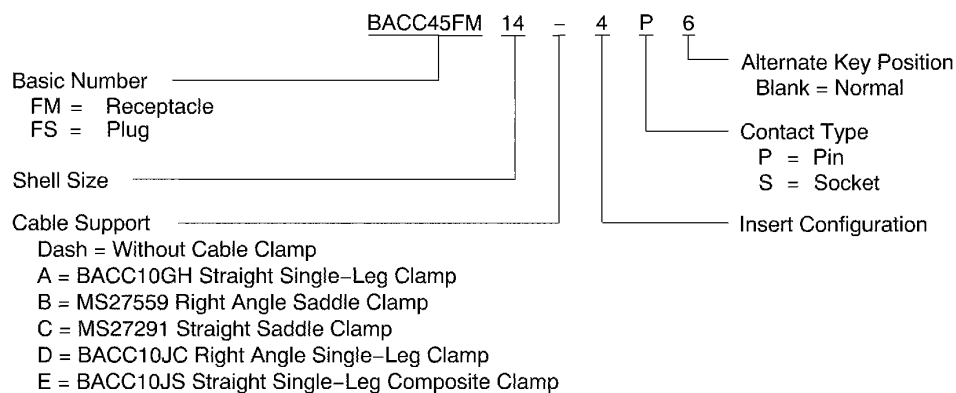


2446036 S00061546402_V1

BOEING BACC45FL CONNECTOR PART NUMBER STRUCTURE

Figure 1

B. BACC45FM and BACC45FS Thread Coupled Connector



2446037 S00061546403_V1

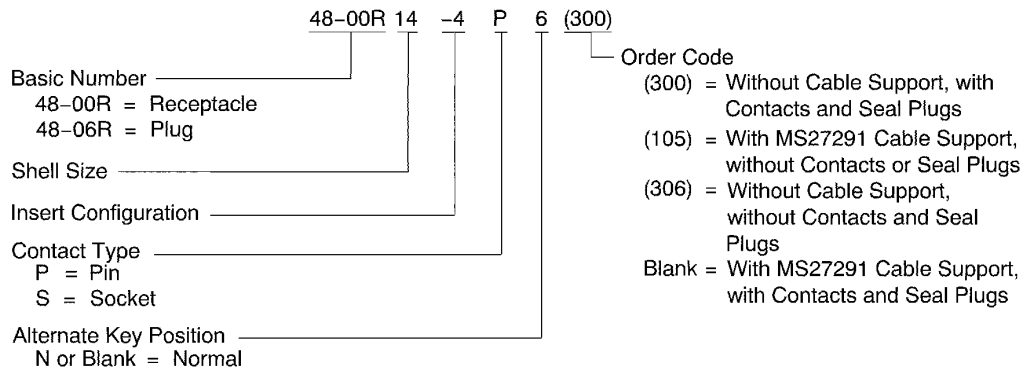
BOEING BACC45FM AND BACC45FS CONNECTOR PART NUMBER STRUCTURE

Figure 2

20-61-11

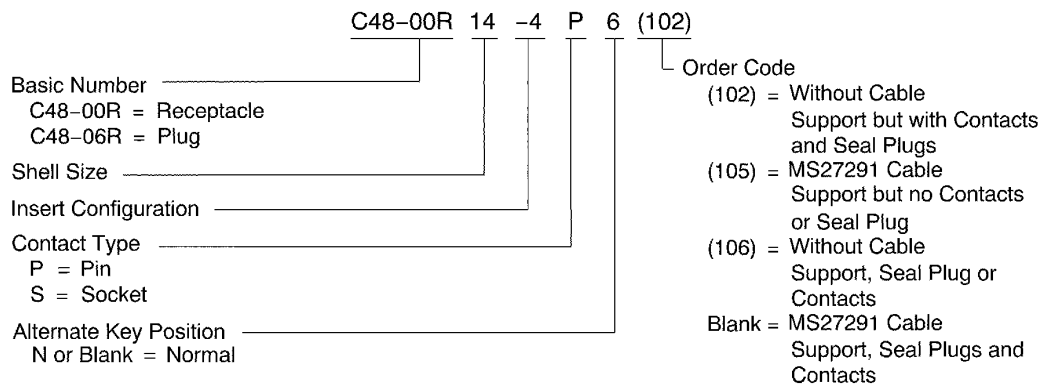


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MIL-C-26500 FRONT RELEASE CONNECTORS



2446038 S00061546404_V1

AMPHENOL BACC45FM AND BACC45FS CONNECTOR PART NUMBER STRUCTURE - 48-00R AND 48-06R
Figure 3



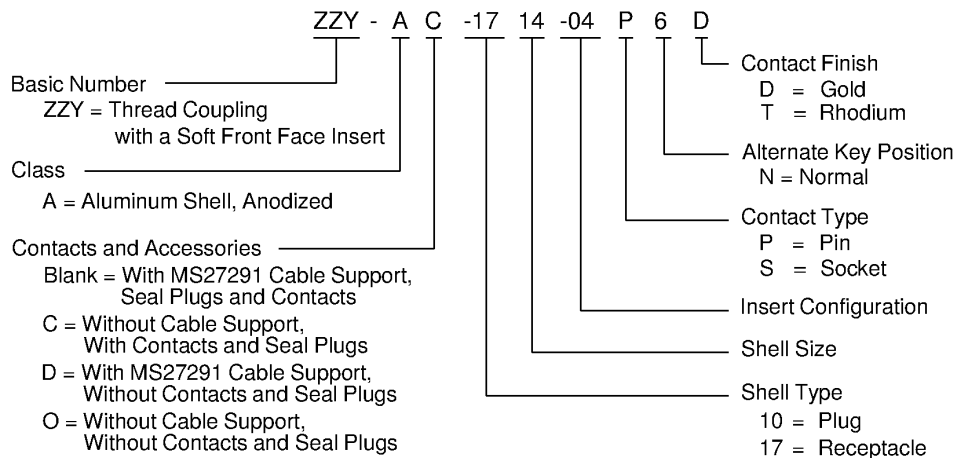
2446039 S00061546405_V1

CINCH BACC45FM AND BACC45FS CONNECTOR PART NUMBER STRUCTURE- C48-00R AND C48-06R
Figure 4

20-61-11



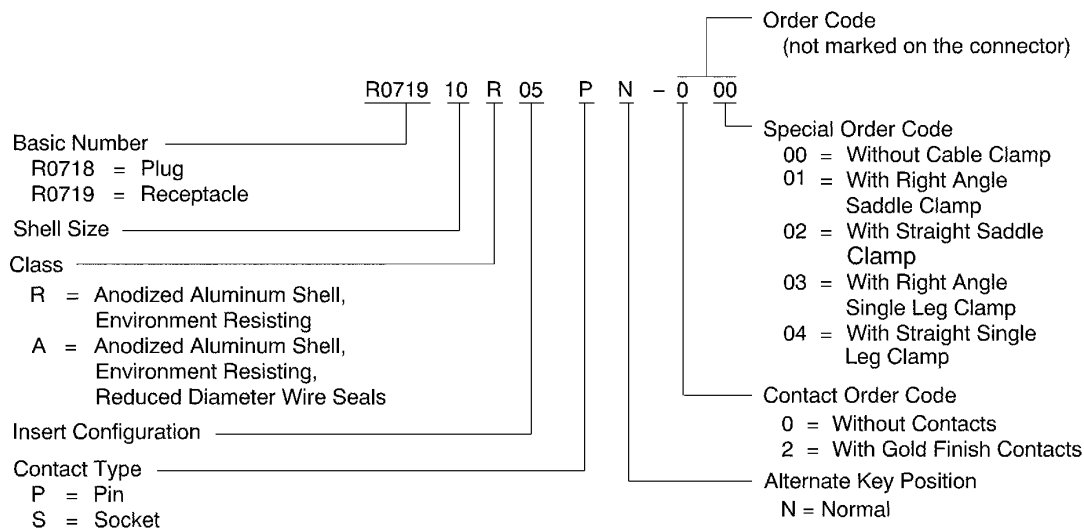
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MIL-C-26500 FRONT RELEASE CONNECTORS



2446040 S00061546406_V1

PYLE-NATIONAL BACC45FM AND BACC45FS CONNECTOR PART NUMBER STRUCTURE - ZZY

Figure 5



2446041 S00061546407_V1

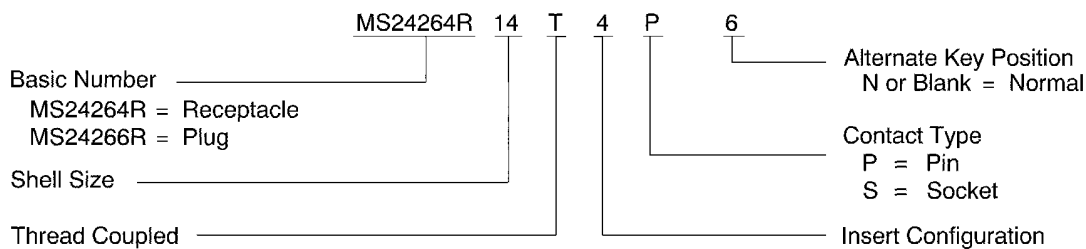
RMS BACC45FM AND BACC45FS CONNECTOR PART NUMBER STRUCTURE - R0718 AND R0719

Figure 6

20-61-11



707, 727-787
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MIL-C-26500 FRONT RELEASE CONNECTORS

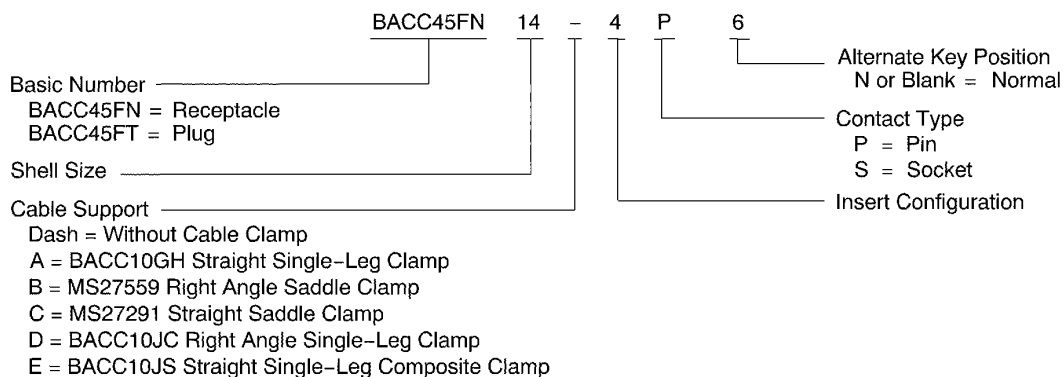


2446042 S00061546408_V1

MILITARY BACC45FM AND BACC45FS CONNECTOR PART NUMBER STRUCTURE - MS24264R AND MS24266R

Figure 7

C. BACC45FN and BACC45FT Bayonet Coupled Connector



2446043 S00061546409_V1

BOEING BACC45FN AND BACC45FT CONNECTOR PART NUMBER STRUCTURE

Figure 8

These notes are applicable to alternative BACC45FN and BACC45FT connector part numbers.

Refer to:

- Figure 8
- Table 5

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

• Table 6.

NOTE: Connectors that have Shell Size 10 and Insert Configuration 2 are not available.

NOTE: A connector part number that has Shell Size 10 and Insert Configuration 20 is a satisfactory alternative to a connector part number that has Shell Size 10 and Insert Configuration 2.

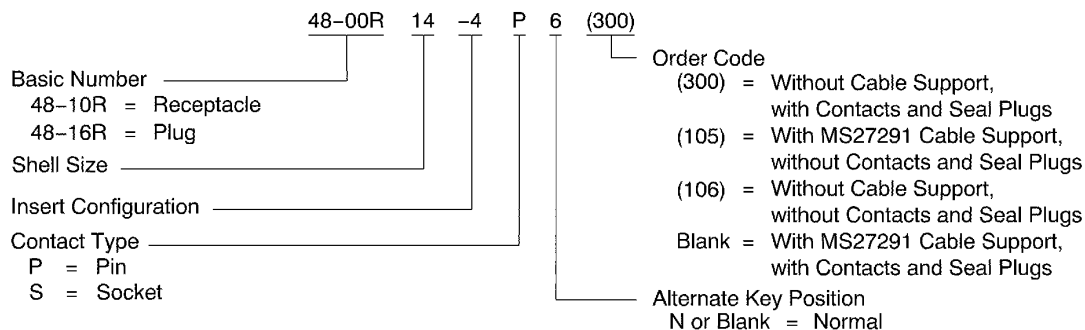
NOTE: The alternate key position of the specified connector and the alternative connector must be the same.

Table 5
ALTERNATIVE BACC45FN CONNECTOR PART NUMBERS

Specified Connector		Alternative Connector	
Part Number	Supplier	Part Number	Supplier
BACC45FN10()2P()	Boeing	BACC45FN10()20P()	Boeing
BACC45FN10()2S()	Boeing	BACC45FN10()20S()	Boeing

Table 6
ALTERNATIVE BACC45FT CONNECTOR PART NUMBERS

Specified Connector		Alternative Connector	
Part Number	Supplier	Part Number	Supplier
BACC45FT10()2P()	Boeing	BACC45FT10()20P()	Boeing
BACC45FT10()2S()	Boeing	BACC45FT10()20S()	Boeing



2446044 S00061546410_V1

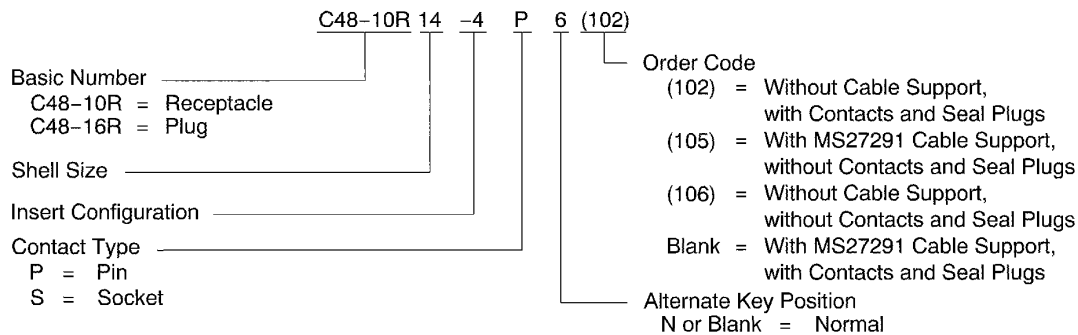
AMPHENOL BACC45FN AND BACC45FT CONNECTOR PART NUMBER STRUCTURE - 48-10R AND 48-16R

Figure 9

20-61-11

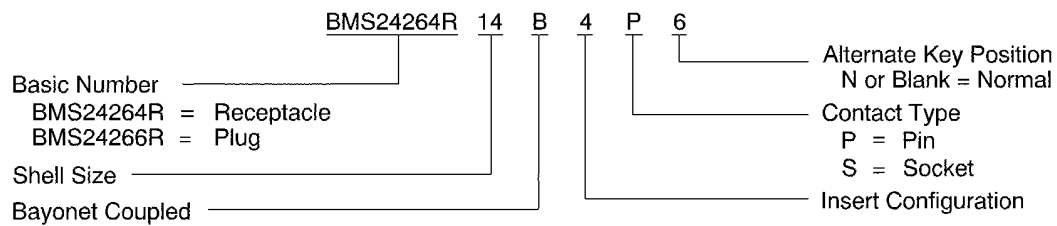


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MIL-C-26500 FRONT RELEASE CONNECTORS



2446045 S00061546411_V1

CINCH BACC45FN AND BACC45FT CONNECTOR PART NUMBER STRUCTURE - C48-10R AND C48-16R
Figure 10



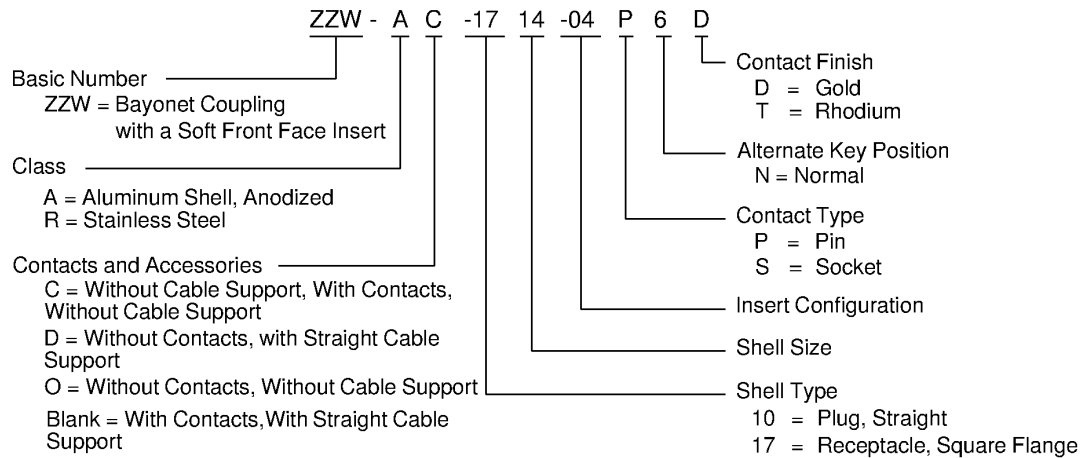
2446046 S00061546412_V1

DEUTSCH BACC45FN AND BACC45FT CONNECTOR PART NUMBER STRUCTURE - BMS24264R AND BMS24266R
Figure 11

20-61-11

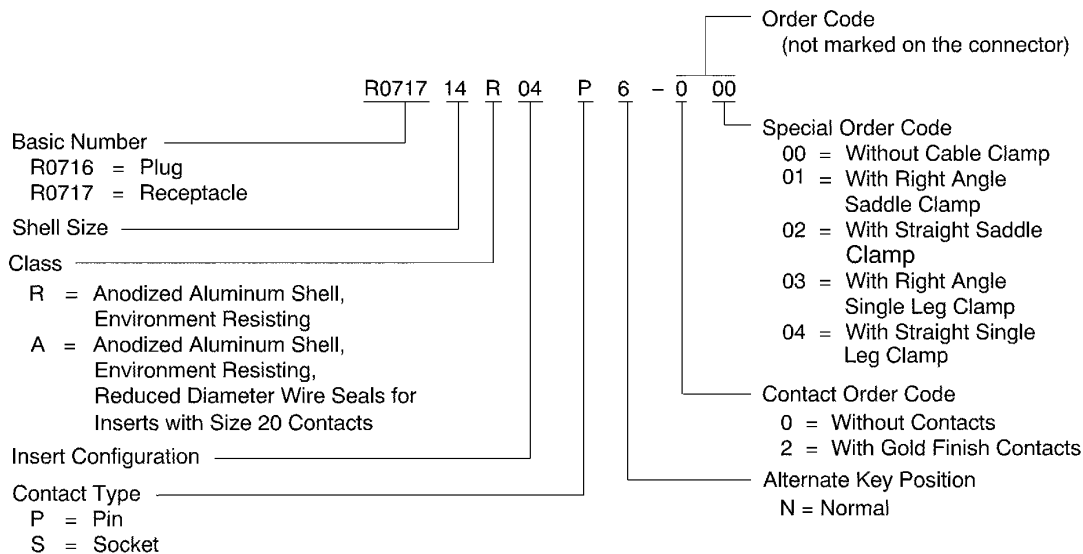


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MIL-C-26500 FRONT RELEASE CONNECTORS



2446047 S00061546413_V1

PYLE-NATIONAL BACC45FN AND BACC45FT CONNECTOR PART NUMBER STRUCTURE - ZZW
Figure 12



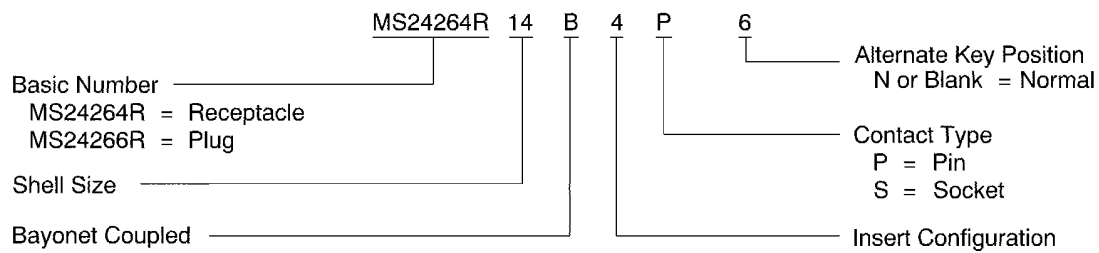
2446048 S00061546414_V1

RMS BACC45FN AND BACC45FT CONNECTOR PART NUMBER STRUCTURE - R0716 AND R0717
Figure 13

20-61-11



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MIL-C-26500 FRONT RELEASE CONNECTORS

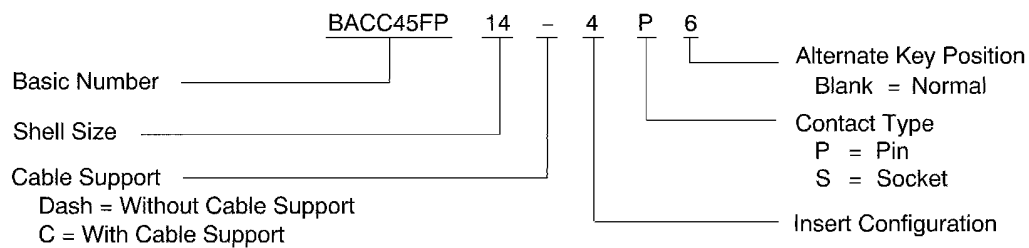


2446049 S00061546415_V1

MILITARY BACC45FN AND BACC45FT CONNECTOR PART NUMBER STRUCTURE - MS24264R AND MS24266R
Figure 14

D. BACC45FP Thread Coupled, Single Hole Mount Receptacle

The BACC45FP receptacle connects to a BACC45FS Plug.



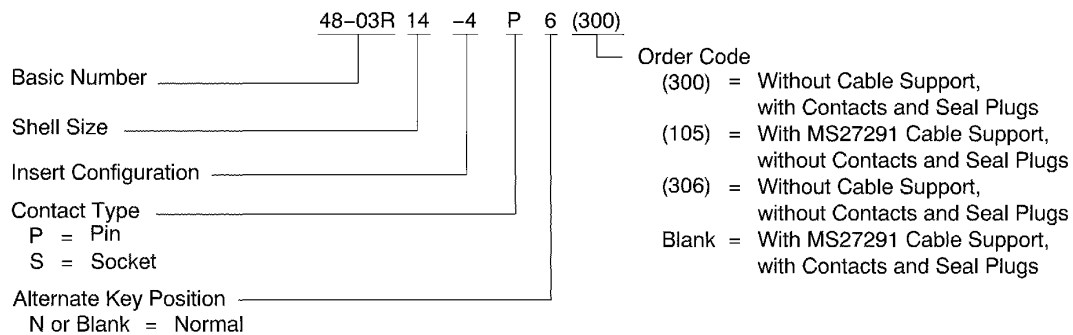
2446050 S00061546416_V1

BOEING BACC45FP CONNECTOR PART NUMBER STRUCTURE
Figure 15

20-61-11



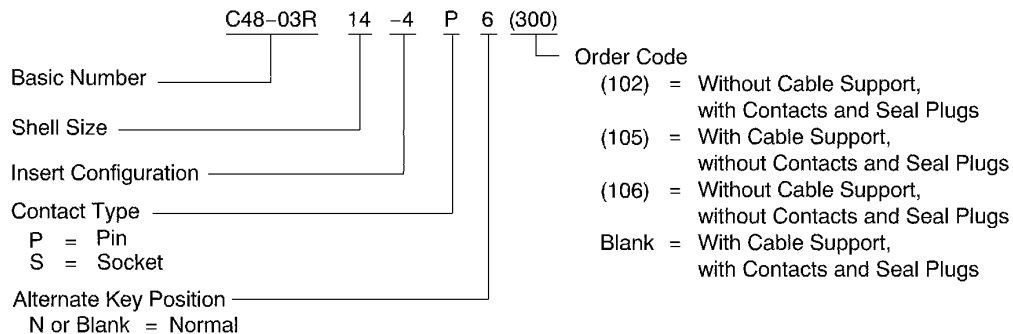
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MIL-C-26500 FRONT RELEASE CONNECTORS



2446051 S00061546417_V1

AMPHENOL BACC45FP CONNECTOR PART NUMBER STRUCTURE - 48-03R

Figure 16



2446052 S00061546418_V1

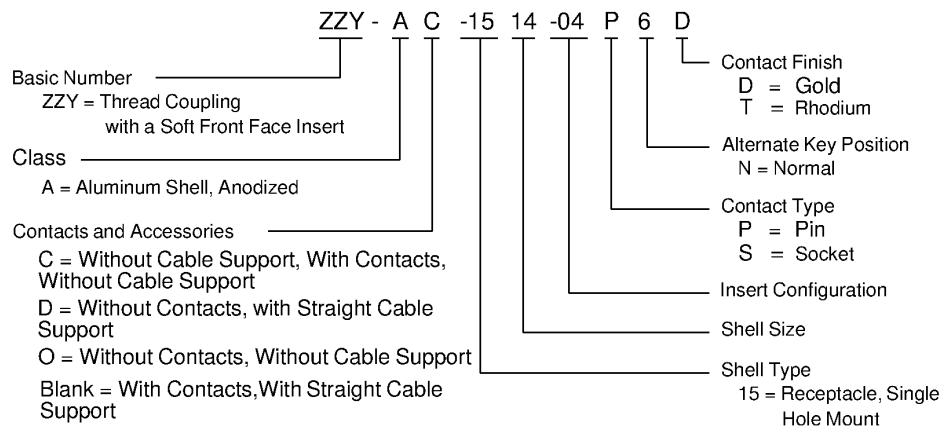
CINCH BACC45FP CONNECTOR PART NUMBER STRUCTURE - C48-03R

Figure 17

20-61-11



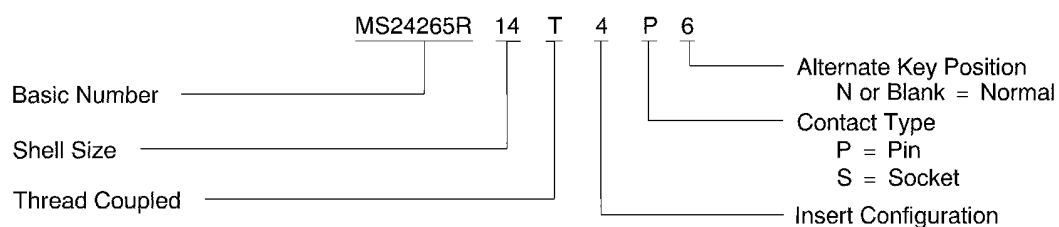
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MIL-C-26500 FRONT RELEASE CONNECTORS



2446053 S00061546419_V1

PYLE-NATIONAL BACC45FP CONNECTOR PART NUMBER STRUCTURE - ZZY

Figure 18



2446054 S00061546420_V1

MILITARY BACC45FP CONNECTOR PART NUMBER STRUCTURE - MS24265R

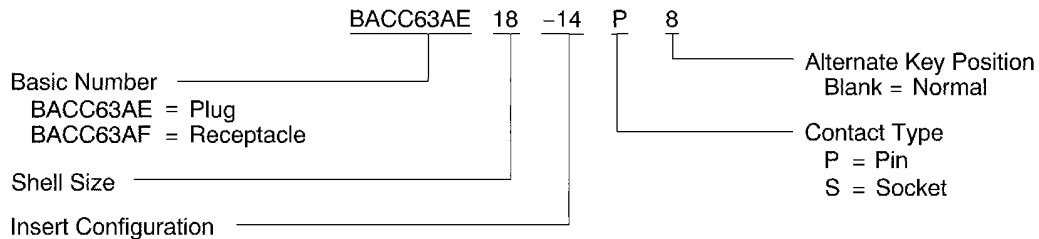
Figure 19

20-61-11



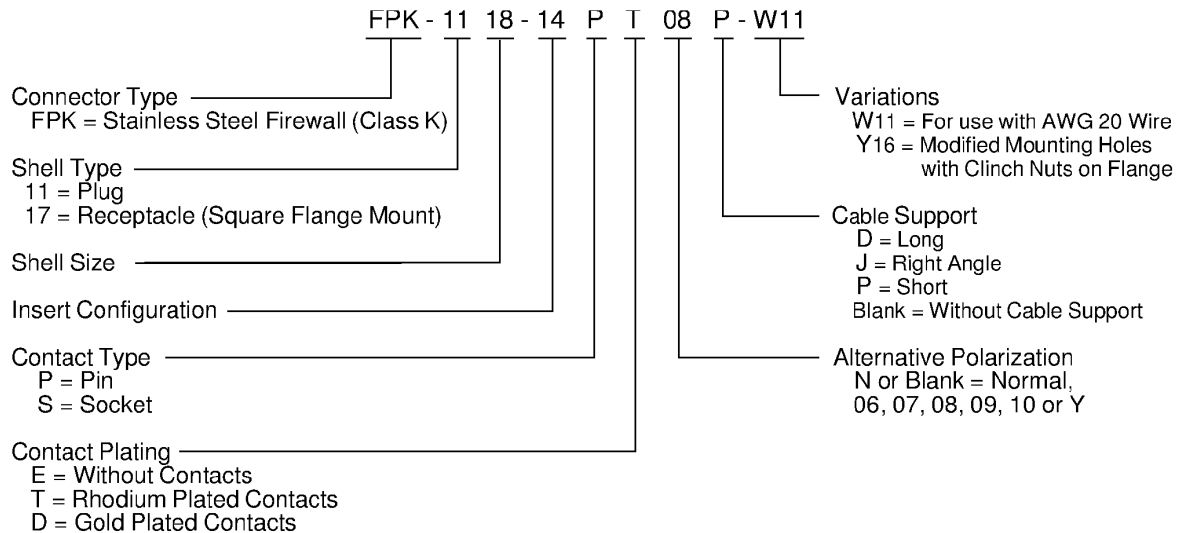
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MIL-C-26500 FRONT RELEASE CONNECTORS

E. BACC63AE and BACC63AF Thread Coupled, Fire Barrier Connector



2446055 S00061546421_V1

BOEING BACC63AE AND BACC63AF CONNECTOR PART NUMBER STRUCTURE
Figure 20



2446056 S00061546422_V1

PYLE-NATIONAL BACC63AE AND BACC63AF CONNECTOR PART NUMBER STRUCTURE - FPK
Figure 21

20-61-11

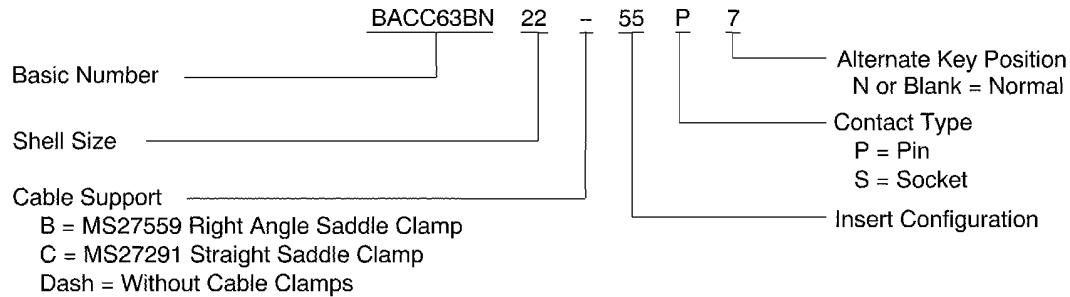


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MIL-C-26500 FRONT RELEASE CONNECTORS

F. BACC63BN Bayonet Coupled, Vibration Resistant Plug

The BACC63BN plug:

- Is the same as the BACC45FT plug, with more vibration resistance
- Engages with MIL-C-26500 type bayonet receptacles.



2446057 S00061546423_V1

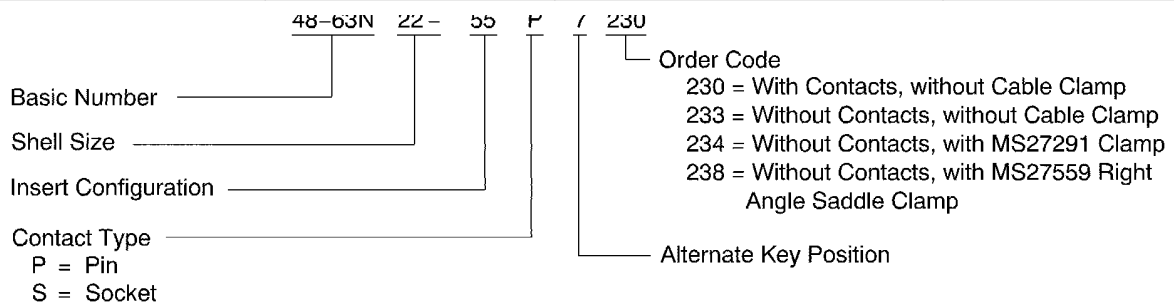
BOEING BACC63BN CONNECTOR PART NUMBER STRUCTURE

Figure 22

Table 7

ALTERNATIVE BACC63BN CONNECTOR PART NUMBERS

Specified Connector		Alternative Connector	
Part Number	Supplier	Part Number	Supplier
BACC63BN10-2PN	Boeing	BACC63BN10-20PN	Boeing
BACC63BN10B2PN	Boeing	BACC63BN10B20PN	Boeing
BACC63BN10C2PN	Boeing	BACC63BN10C20PN	Boeing
BACC63BN10-2SN	Boeing	BACC63BN10-20SN	Boeing
BACC63BN10B2SN	Boeing	BACC63BN10B20SN	Boeing
BACC63BN10C2SN	Boeing	BACC63BN10C20SN	Boeing



2446058 S00061546424_V1

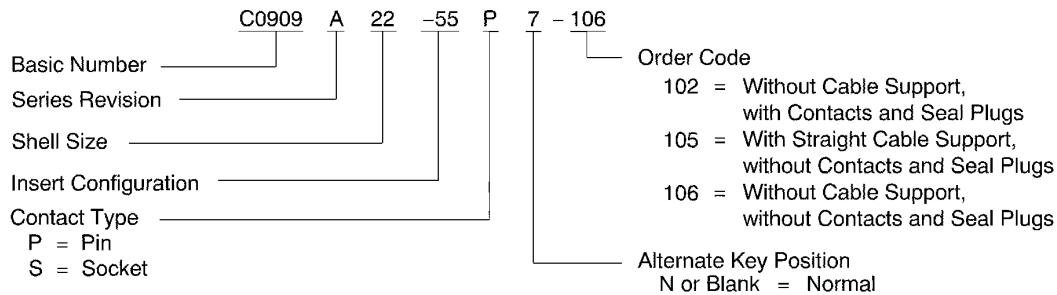
AMPHENOL BACC63BN CONNECTOR PART NUMBER STRUCTURE - 48-63N

Figure 23

20-61-11



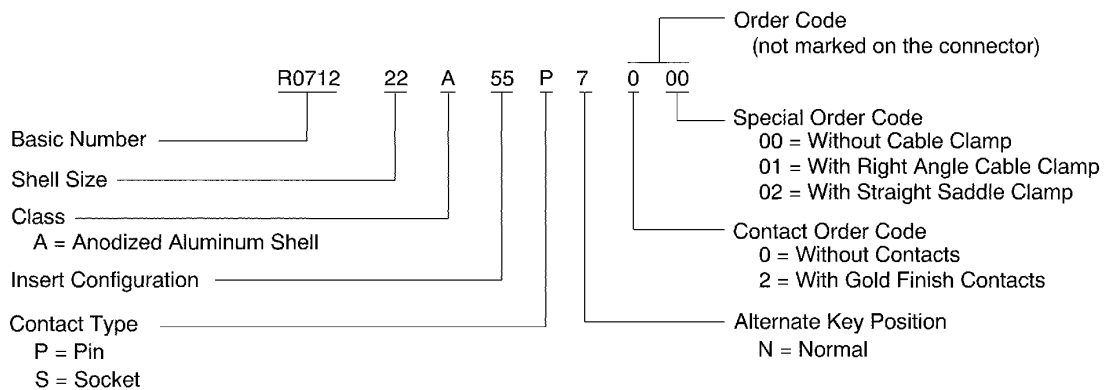
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MIL-C-26500 FRONT RELEASE CONNECTORS



2446059 S00061546425_V1

CINCH BACC63BN CONNECTOR PART NUMBER STRUCTURE - C0909

Figure 24



2446060 S00061546426_V1

RMS BACC63BN CONNECTOR PART NUMBER STRUCTURE - R0712

Figure 25

20-61-11

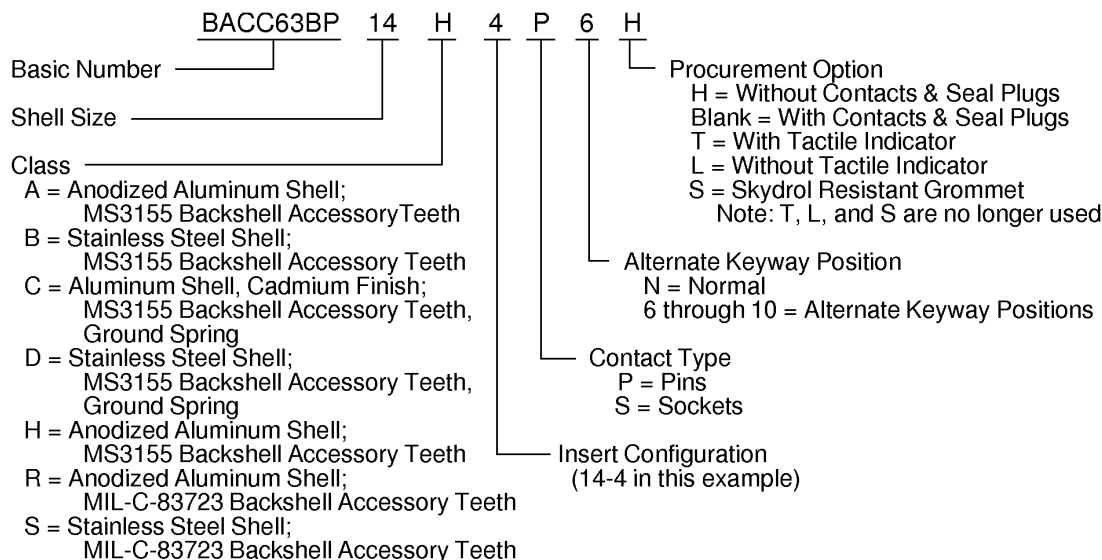


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MIL-C-26500 FRONT RELEASE CONNECTORS

G. BACC63BP Self Locking, Thread Coupled, Vibration Resistant Plug

The BACC63BP plug:

- Is similar to the BACC45FS plug, with more vibration resistance
- Has a self-locking feature
- Engages with BACC63BV and other MIL-C-26500 type thread coupled receptacles.



2446061 S00061546427_V1

BOEING BACC63BP CONNECTOR PART NUMBER STRUCTURE

Figure 26

These notes are applicable to alternative BACC63BP connector part numbers. Refer to Figure 26:

NOTE: A BACC63BP connector part number that does not have an T, an L, or an S at the end of the part number is a satisfactory alternative to a BACC63BP connector part number that has a T, an L, or an S at the end of the part number.

NOTE: BACC63BP connector part numbers that have a T, an L, or an S at the end of the part number are not available.

NOTE: A Class H connector is a satisfactory alternative to a Class A or a Class R connector.

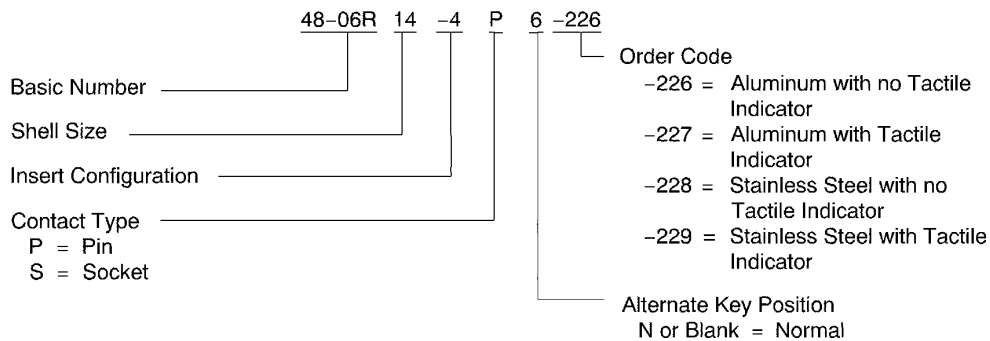
NOTE: A Class D connector is a satisfactory alternative to a Class B or a Class S connector.

NOTE: A Class A or Class H connector is a satisfactory alternative to a Class R connector.

NOTE: A Class B or Class D connector is a satisfactory alternative to a Class S connector.



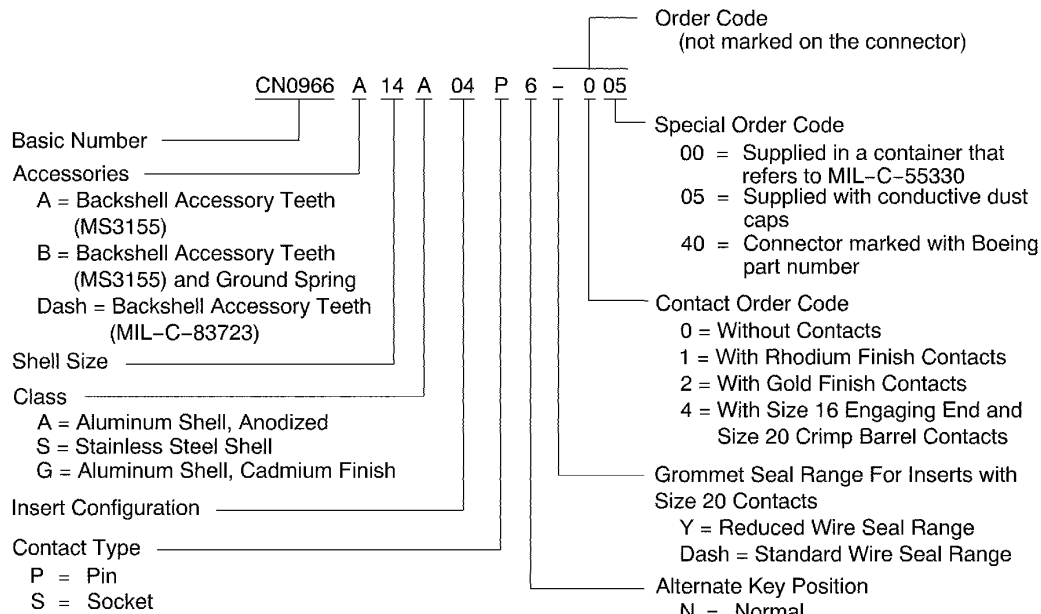
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MIL-C-26500 FRONT RELEASE CONNECTORS



2446062 S00061546428_V1

AMPHENOL BACC63BP CONNECTOR PART NUMBER STRUCTURE - 48-06R

Figure 27



2446063 S00061546429_V1

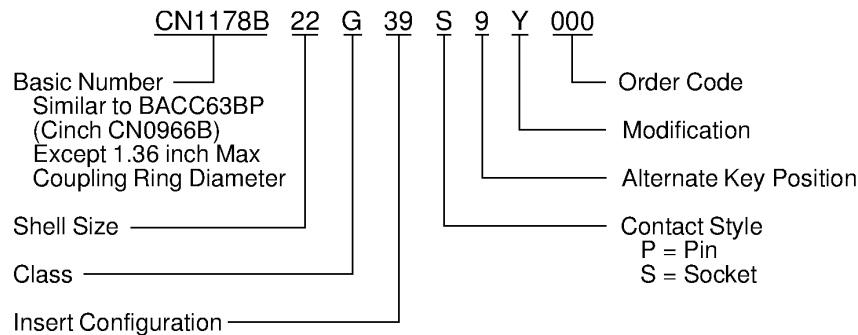
CINCH BACC63BP CONNECTOR PART NUMBER STRUCTURE - CN0966

Figure 28

20-61-11

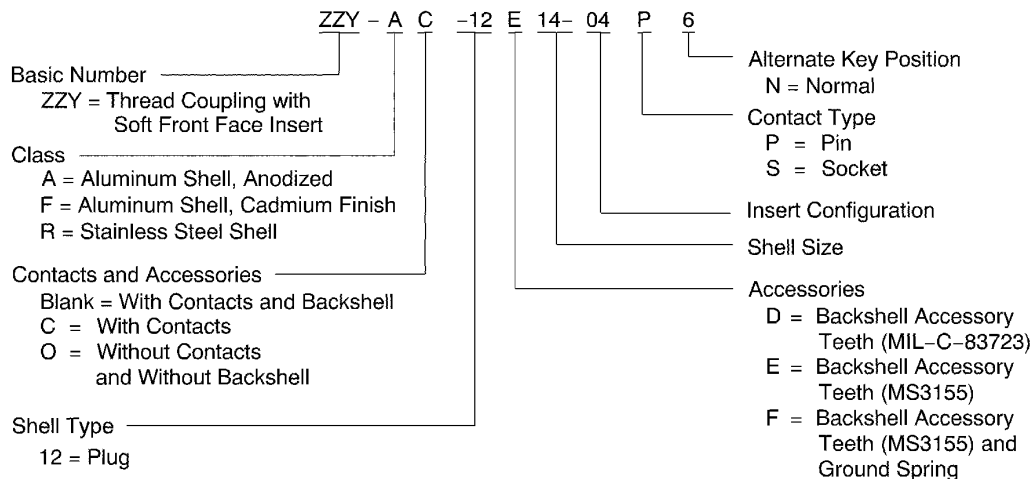


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MIL-C-26500 FRONT RELEASE CONNECTORS



2449916 S00061546430_V1

CINCH CN1178 CONNECTOR PART NUMBER STRUCTURE
Figure 29



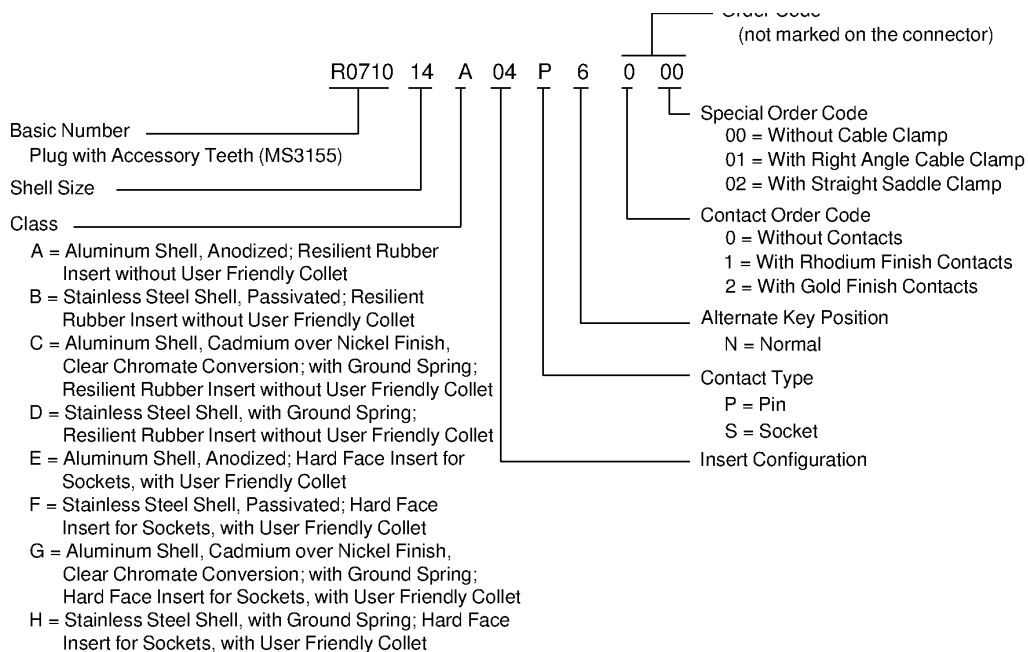
2446064 S00061546431_V1

PYLE-NATIONAL BACC63BP CONNECTOR PART NUMBER STRUCTURE - ZZY
Figure 30

20-61-11



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MIL-C-26500 FRONT RELEASE CONNECTORS



2446065 S00061546432_V1

RMS BACC63BP CONNECTOR PART NUMBER STRUCTURE - R0710

Figure 31

20-61-11

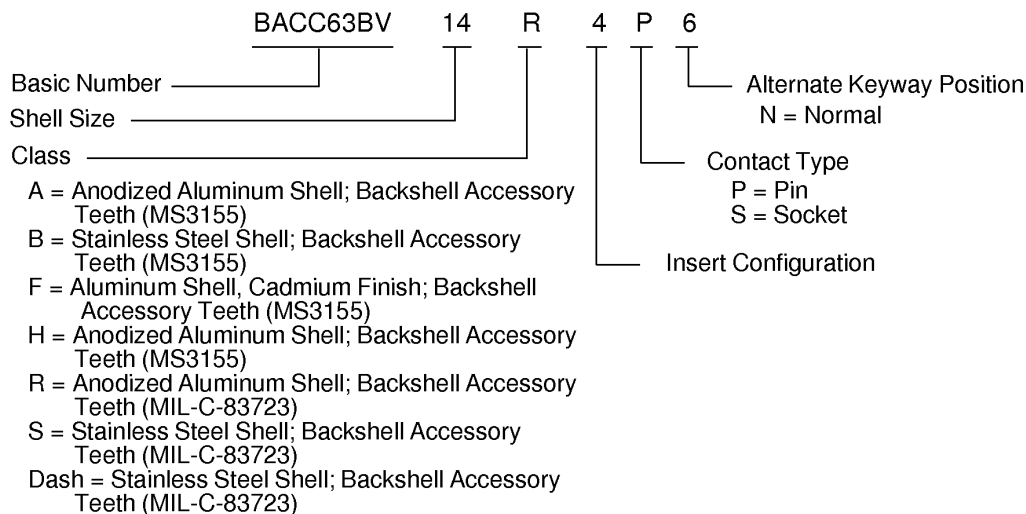


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MIL-C-26500 FRONT RELEASE CONNECTORS

H. BACC63BV Thread Coupled, Vibration Resistant Receptacle

The BACC63BV receptacle:

- Is similar to the BACC45FM receptacle
- Engages with BACC63BP and other MIL-C-26500 type thread coupled plugs.



2446066 S00061546433_V1

BOEING BACC63BV CONNECTOR PART NUMBER STRUCTURE

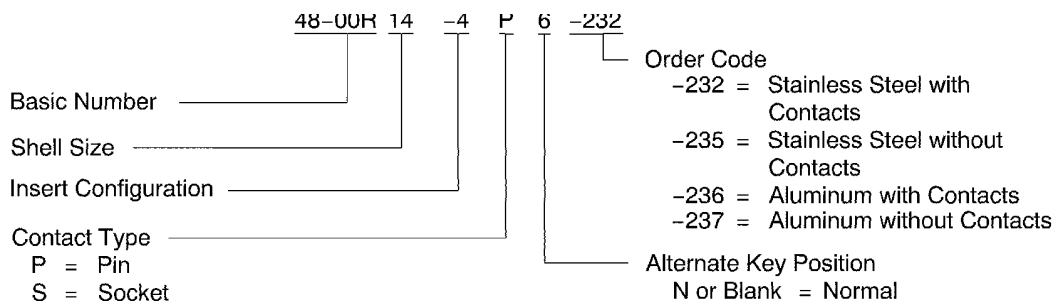
Figure 32

These notes are applicable to alternative BACC63BV connector part numbers. Refer to Figure 32:

NOTE: A Class H connector is a satisfactory alternative to a Class A or a Class R connector.

NOTE: A Class H or Class A connector is a satisfactory alternative to a Class R connector.

NOTE: A Class B connector is a satisfactory alternative to a Class S connector or a Class Dash (-) connector.



2446067 S00061546434_V1

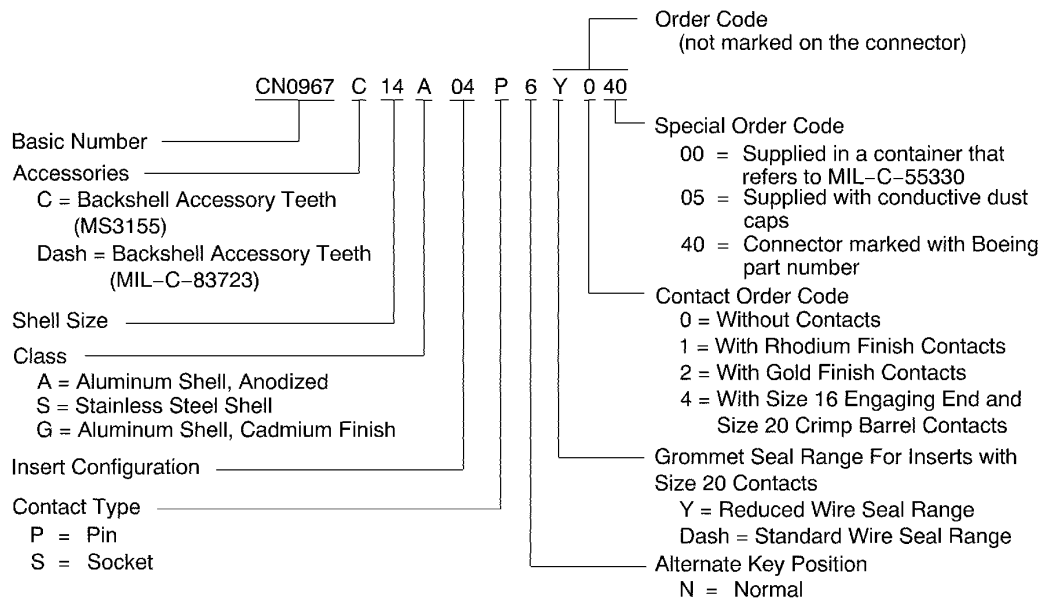
AMPHENOL BACC63BV CONNECTOR PART NUMBER STRUCTURE - 48-00R

Figure 33

20-61-11



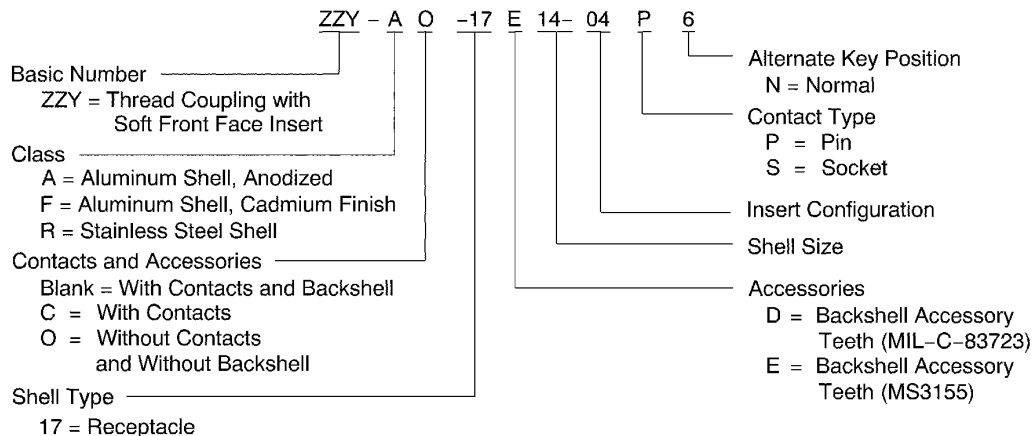
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MIL-C-26500 FRONT RELEASE CONNECTORS



2446068 S00061546435_V1

CINCH BACC63BV CONNECTOR PART NUMBER STRUCTURE - CN0967

Figure 34



2446069 S00061546436_V1

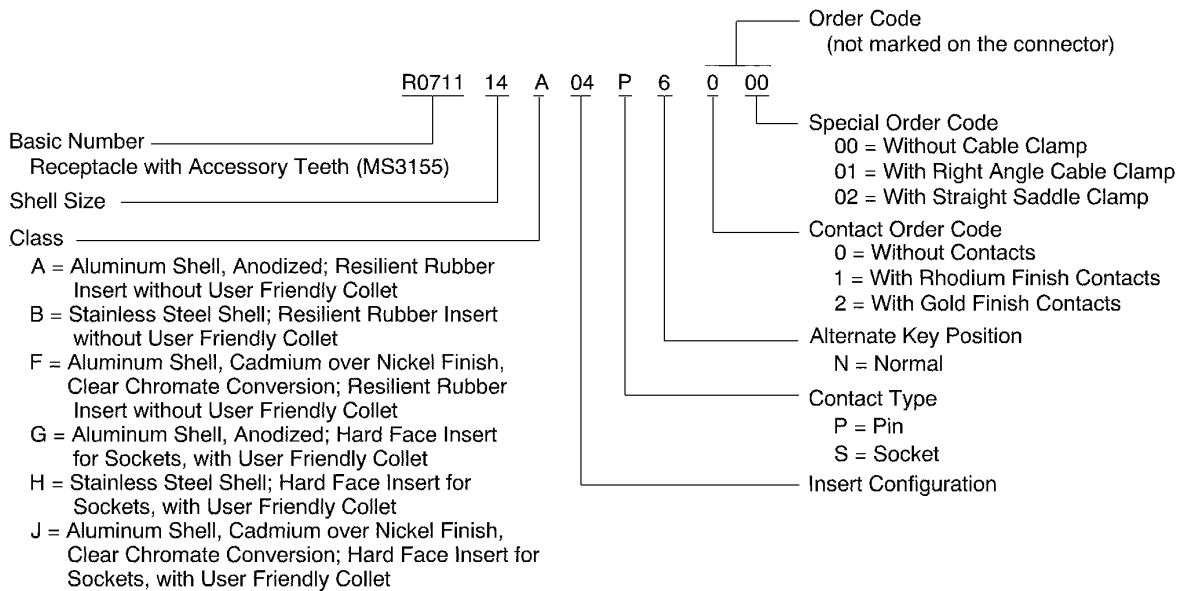
PYLE-NATIONAL BACC63BV CONNECTOR PART NUMBER STRUCTURE - ZZY

Figure 35

20-61-11



707, 727-787
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MIL-C-26500 FRONT RELEASE CONNECTORS

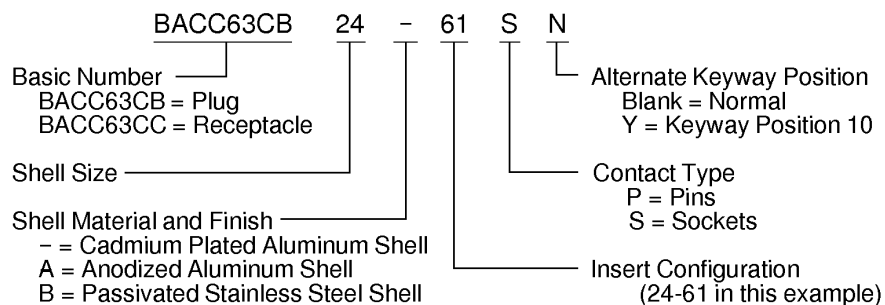


2443659 S00061546437_V1

RMS BACC63BV CONNECTOR PART NUMBER STRUCTURE - R0711

Figure 36

I. BACC63CB and BACC63CC Bayonet Coupled, Vibration Resistant Connector



2446070 S00061546438_V1

BOEING BACC63CB AND BACC63CC CONNECTOR PART NUMBER STRUCTURE

Figure 37

20-61-11



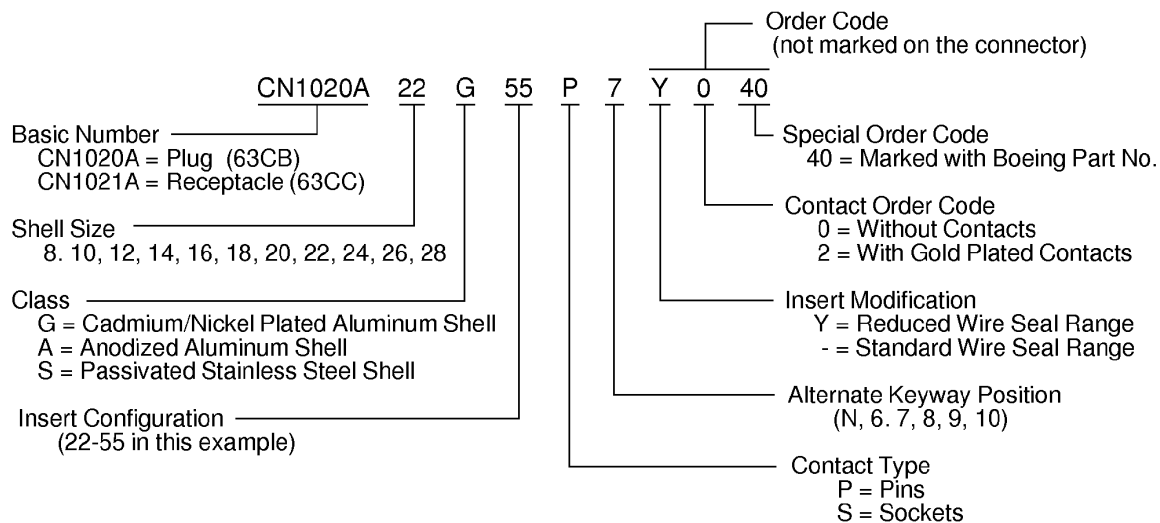
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MIL-C-26500 FRONT RELEASE CONNECTORS

Table 8
ALTERNATIVE BACC63CB CONNECTOR PART NUMBERS

Specified Connector		Alternative Connector	
Part Number	Supplier	Part Number	Supplier
BACC63CB10-2SN	Boeing	BACC63CB10-20SN	Boeing

Table 9
ALTERNATIVE BACC63CC CONNECTOR PART NUMBERS

Specified Connector		Alternative Connector	
Part Number	Supplier	Part Number	Supplier
BACC63CC10-2PN	Boeing	BACC63CC10-20PN	Boeing
BACC63CC10-2SN	Boeing	BACC63CC10-20SN	Boeing



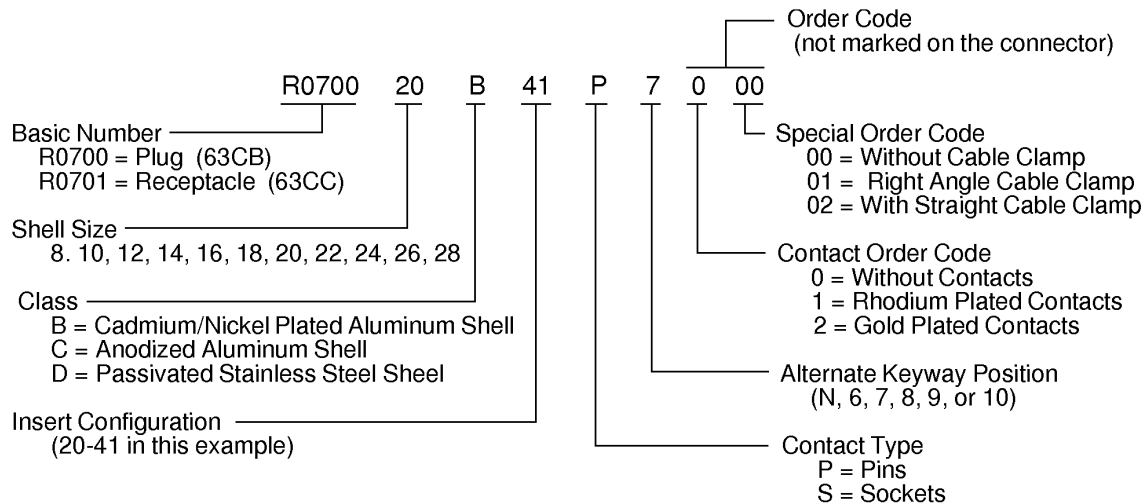
2446071 S00061546439_V1

CINCH BACC63CB AND BACC63CC CONNECTOR PART NUMBER STRUCTURE - CN1020A AND CN1021A
Figure 38

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2446072 S00061546440_V1

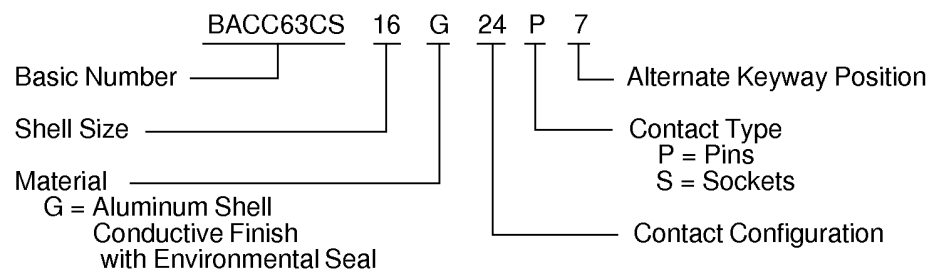
RMS BACC63CB AND BACC63CC CONNECTOR PART NUMBER STRUCTURE - R0700 AND R0701

Figure 39

J. Boeing BACC63CS Threaded Coupled, Closure Rib Receptacle

Table 10
Connector Part Numbers

Boeing Standard	Part Number	Supplier
BACC63CS16G24S7	R770G0001S7000	RMS



2448942 S00061546441_V1

BACC63CS RECEPTACLE PART NUMBER STRUCTURE

Figure 40

The BACC63CS connector is a connector that has these features:

- An extended length, shell size 16, MIL-C-26500 type, aluminum receptacle shell
- Keyway position 7
- Insert configuration 16-24

20-61-11



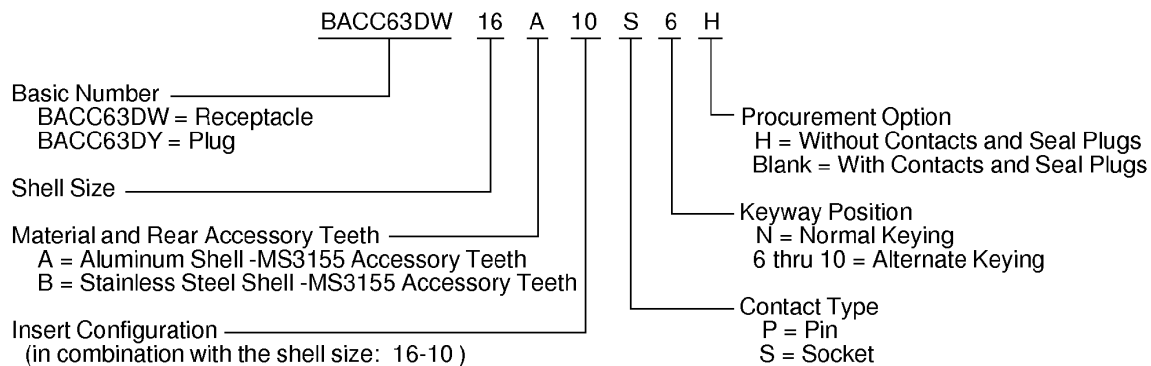
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MIL-C-26500 FRONT RELEASE CONNECTORS

- Twenty four size 20 contact cavities
- Socket contacts
- Is intended to mate with a BACC63BP plug connector.

Refer to:

- Figure 67 for the 16-24 insert configuration
- Table 24 for the part numbers for the standard size 2020 BACC47CP socket contacts.

K. BACC63DW and BACC63DY Thread Coupled Connectors

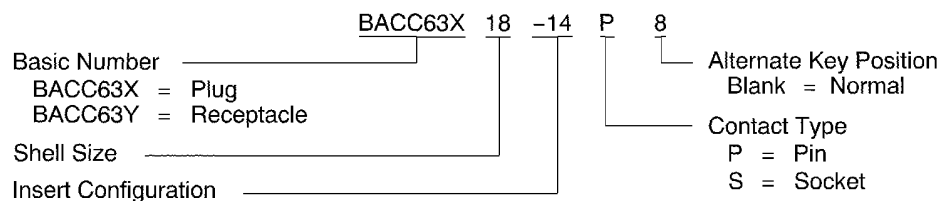


2448687 S00061546442_V1

BOEING BACC63DW AND BACC63DY CONNECTOR PART NUMBER STRUCTURE

Figure 41

L. BACC63X and BACC63Y Thread Coupled, Fire Barrier Connector



2446073 S00061546443_V1

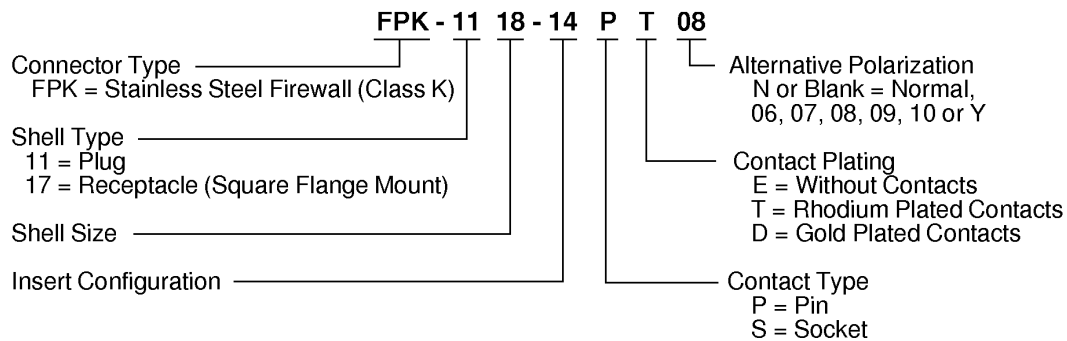
BOEING BACC63X AND BACC63Y CONNECTOR PART NUMBER STRUCTURE

Figure 42

20-61-11



707, 727-787
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MIL-C-26500 FRONT RELEASE CONNECTORS



2446074 S00061546444_V1

PYLE-NATIONAL BACC63X AND BACC63Y CONNECTOR PART NUMBER STRUCTURE - FPK

Figure 43

M. Boeing 10-60479-() Bayonet Coupled Connector

The 10-60479-() connectors have:

- Two or ten size 16 standard contacts
- One size 2 shielded contact as a replacement for the standard size 8 contact or the M39029/54-343 size 2 shielded contact or the M39029/55-345 size 2 shielded contact.

The 10-60479-5 bulkhead feed through connector:

- Is hermetically sealed
- Has a size 14 shell
- Has two size 16 pin contacts
- Has one size 2 shielded pin contact
- Engages with Boeing 10-60479-1 plug connector.

Refer to:

- Table 11 for the connector configuration, and the contact part numbers and quantity
- Table 12 for the supplier part number for the connector.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 11
BOEING 10-60479-() CONNECTOR PART NUMBERS

Boeing Specification	Components of the Boeing Specification						
	Connector			Contact			
	Insert Configuration	Shell		Type	Part Number	Size	Quantity
		Style	Keyway Position				
10-60479-1	14-3	Plug	Normal	Shielded	10-60479-44	2	1
				Standard	BACC47CP2()	16	2
10-60479-6	14-3	Receptacle	Normal	Shielded	10-60479-41	2	1
				Standard	BACC47CN2()	16	2
10-60479-12	18-11	Plug	Normal	Shielded	10-60479-44	2	1
				Standard	BACC47CP2()	16	10
10-60479-16	14-3	Plug	6	Shielded	10-60479-44	2	1
				Standard	BACC47CP2()	16	2
10-60479-17	14-3	Plug	7	Shielded	10-60479-44	2	1
				Standard	BACC47CP2()	16	2
10-60479-18	14-3	Plug	8	Shielded	10-60479-44	2	1
				Standard	BACC47CP2()	16	2
10-60479-19	14-3	Plug	9	Shielded	10-60479-44	2	1
				Standard	BACC47CP2()	16	2
10-60479-66	14-3	Receptacle	6	Shielded	10-60479-41	2	1
				Standard	BACC47CN2()	16	2
10-60479-67	14-3	Receptacle	7	Shielded	10-60479-41	2	1
				Standard	BACC47CN2()	16	2
10-60479-68	14-3	Receptacle	8	Shielded	10-60479-41	2	1
				Standard	BACC47CN2()	16	2
10-60479-69	14-3	Receptacle	9	Shielded	10-60479-41	2	1
				Standard	BACC47CN2()	16	2
10-60479-126	18-11	Plug	6	Shielded	10-60479-44	2	1
				Standard	BACC47CP2()	16	10
10-60479-127	18-11	Plug	7	Shielded	10-60479-44	2	1
				Standard	BACC47CP2()	16	10
10-60479-128	18-11	Plug	8	Shielded	10-60479-44	2	1
				Standard	BACC47CP2()	16	10
10-60479-129	18-11	Plug	9	Shielded	10-60479-44	2	1
				Standard	BACC47CP2()	16	10

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 12
SUPPLIER PART NUMBERS FOR BOEING 10-60479-() CONNECTORS

Boeing Specification	Part Number	Supplier
10-60479-1	48-16R14-2/1S	Amphenol
	CN0940-1	Cinch
	R0760-1	RMS
10-60479-5	48-7005	Amphenol
	CN0940-5	Cinch
10-60479-6	48-10R14-2/1P	Amphenol
	CN0940-6	Cinch
10-60479-12	48-16R18-10/1S	Amphenol
	CN0940-12	Cinch
	R0760-12	RMS
10-60479-16	48-16R14-2/1S6	Amphenol
	CN0940-16	Cinch
	R0760-16	RMS
10-60479-17	48-16R14-2/1S7	Amphenol
	CN0940-17	Cinch
	R0760-17	RMS
10-60479-18	48-16R14-2/1S8	Amphenol
	CN0940-18	Cinch
	R0760-18	RMS
10-60479-19	48-16R14-2/1S9	Amphenol
	CN0940-19	Cinch
	R0760-19	RMS
10-60479-66	48-10R14-2/1P9	Amphenol
	CN0940-66	Cinch
10-60479-67	48-10R14-2/1P7	Amphenol
	CN0940-67	Cinch
10-60479-68	48-10R14-2/1P8	Amphenol
	CN0940-68	Cinch
10-60479-69	48-10R14-2/1P9	Amphenol
	CN0940-69	Cinch
10-60479-126	48-16R18-10/1S6	Amphenol
	CN0940-126	Cinch
	R0760-126	RMS

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 12 SUPPLIER PART NUMBERS FOR BOEING 10-60479-() CONNECTORS (Continued)

Boeing Specification	Part Number	Supplier
10-60479-127	48-16R18-10/1S7	Amphenol
	CN0940-127	Cinch
	R0760-127	RMS
10-60479-128	48-16R18-10/1S8	Amphenol
	CN0940-128	Cinch
	R0760-128	RMS
10-60479-129	48-16R18-10/1S9	Amphenol
	CN0940-129	Cinch
	R0760-129	RMS

N. Boeing 280T10()-() Bayonet Coupled Connector

The 280T10()-() connector is a connector with one of these configurations:

- A BACC45FN or BACC45FT connector that has one or more size 1 shielded contacts as a replacement for the size 12 standard contacts
- A BACC45FN or BACC45FT connector that has one or more size 12 coax contacts as a replacement for the size 12 standard contacts
- A shorting plug assembly that is not repairable
- A shorting receptacle assembly that is not repairable.

Refer to Table 13 for the connector part number, and the shielded or coax contact part number and quantity.

For the configuration of standard contacts, refer to:

- Figure 8
- Table 36.

Table 13
BOEING 280T10()-() CONNECTOR PART NUMBERS

Boeing Specification	Components of the Boeing Specification				
	Connector Part Number	Notes	Coax or Shielded Contact		
			Part Number	Type	Quantity
280T1000-1	BACC45FN20-28S	-	C48-1227-02	Shielded	2
			48-1227-02	Shielded	2
280T1000-2	BACC45FN20-28S6	-	C48-1227-02	Shielded	4
			48-1227-02	Shielded	4
280T1000-3	BACC45FN20-28S7	-	C48-1227-02	Shielded	2
			48-1227-02	Shielded	2
280T1000-4	BACC45FN20-28S9	-	C48-1227-02	Shielded	2
			48-1227-02	Shielded	2

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 13 BOEING 280T10()-() CONNECTOR PART NUMBERS (Continued)

Boeing Specification	Components of the Boeing Specification				
	Connector Part Number	Notes	Coax or Shielded Contact		
			Part Number	Type	Quantity
280T1000-5	BACC45FT20-28P9	-	C48-1226-02	Shielded	2
			48-1226-02	Shielded	2
280T1000-6	BACC45FT20-28P6	-	C48-1226-02	Shielded	4
			48-1226-02	Shielded	4
280T1000-7	BACC45FN20-28S	-	C48-1227-02	Shielded	3
			48-1227-02	Shielded	3
280T1000-8	BACC45FT20-28P	-	C48-1226-02	Shielded	3
			48-1226-02	Shielded	3
280T1000-9	BACC45FN20-28S7	-	C48-1227-02	Shielded	3
			48-1227-02	Shielded	3
280T1000-10	BACC45FT20-28P9	-	C48-1226-02	Shielded	1
			48-1226-02	Shielded	1
280T1000-11	BACC45FN20-28S7	-	C48-1227-02	Shielded	1
			48-1227-02	Shielded	1
280T1000-12	BACC45FN20-28S9	-	C48-1227-02	Shielded	1
			48-1227-02	Shielded	1
280T1000-13	BACC45FN20-28S9	-	C48-1227-02	Shielded	3
			48-1227-02	Shielded	3
280T1000-14	BACC45FT20-28S6	-	C48-1227-02	Shielded	4
			48-1227-02	Shielded	4
280T1000-15	BACC45FN20-28P6	-	C48-1226-02	Shielded	4
			48-1226-02	Shielded	4
280T1000-16	BACC45FN20-28S6	-	C48-1227-02	Shielded	3
			48-1227-02	Shielded	3
280T1000-17	BACC45FT20-28P6	-	C48-1226-02	Shielded	3
			48-1226-02	Shielded	3
280T1000-18	BACC45FN20-28S8	-	C48-1227-02	Shielded	1
			48-1227-02	Shielded	1
280T1000-19	BACC45FT20-28P8	-	C48-1226-02	Shielded	1
			48-1226-02	Shielded	1
280T1000-20	BACC45FN20-28S6	-	C48-1227-02	Shielded	1
			48-1227-02	Shielded	1

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 13 BOEING 280T10()-() CONNECTOR PART NUMBERS (Continued)

Boeing Specification	Components of the Boeing Specification				
	Connector Part Number	Notes	Coax or Shielded Contact		
			Part Number	Type	Quantity
280T1000-21	BACC45FT20-28P6	-	C48-1226-02	Shielded	1
			48-1226-02	Shielded	1
280T1000-22	BACC45FN20-28S9	-	C48-1227-02	Shielded	4
			48-1227-02	Shielded	4
280T1000-23	BACC45FN20-28S	-	C48-1227-02	Shielded	1
			48-1227-02	Shielded	1
280T1000-24	BACC45FN20-28S8	-	C48-1227-02	Shielded	2
			48-1227-02	Shielded	2
280T1000-25	BACC45FT20-28P8	-	C48-1226-02	Shielded	2
			48-1226-02	Shielded	2
280T1000-26	BACC45FT20-28P	-	C48-1226-02	Shielded	1
			48-1226-02	Shielded	1
280T1000-27	BACC45FT20-28S	-	C48-1227-02	Shielded	3
			48-1227-02	Shielded	3
280T1000-28	BACC45FN20-28P	-	C48-1226-02	Shielded	1
			48-1226-02	Shielded	1
280T1000-100	BACC45FN20-28S	-	CRC280-2	Coax	1
280T1000-101	BACC45FN20-28P	-	CRM280-2	Coax	1
280T1000-102	BACC45FN20-28S	-	CRC280-3	Coax	2
280T1000-103	BACC45FN20-28S6	-	CRC280-3	Coax	4
280T1000-104	BACC45FN20-28S7	-	CRC280-3	Coax	2
280T1000-105	BACC45FN20-28S9	-	CRC280-3	Coax	2
280T1000-106	BACC45FT20-28P9	-	CRM280-3	Coax	2
280T1000-107	BACC45FT20-28P6	-	CRM280-3	Coax	4
280T1000-108	BACC45FN20-28S	-	CRC280-3	Coax	3
280T1000-109	BACC45FT20-28P	-	CRM280-3	Coax	3
280T1000-110	BACC45FN20-28S7	-	CRC280-3	Coax	3
280T1000-111	BACC45FT20-28P9	-	CRM280-3	Coax	1
280T1000-112	BACC45FN20-28S7	-	CRC280-3	Coax	1
280T1000-113	BACC45FN20-28S9	-	CRC280-3	Coax	1
280T1000-114	BACC45FN20-28S9	-	CRC280-3	Coax	3
280T1000-115	BACC45FT20-28S6	-	CRC280-3	Coax	4
280T1000-116	BACC45FN20-28P6	-	CRM280-3	Coax	4

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 13 BOEING 280T10()-() CONNECTOR PART NUMBERS (Continued)

Boeing Specification	Components of the Boeing Specification				
	Connector Part Number	Notes	Coax or Shielded Contact		
			Part Number	Type	Quantity
280T1000-117	BACC45FN20-28S6	-	CRC280-3	Coax	3
280T1000-118	BACC45FT20-28P6	-	CRM280-3	Coax	3
280T1000-119	BACC45FN20-28S8	-	CRC280-3	Coax	1
280T1000-120	BACC45FT20-28P8	-	CRM280-3	Coax	1
280T1000-121	BACC45FN20-28S6	-	CRC280-3	Coax	1
280T1000-122	BACC45FT20-28P6	-	CRM280-3	Coax	1
280T1000-123	BACC45FN20-28S9	-	CRC280-3	Coax	4
280T1000-124	BACC45FN20-28S	-	CRC280-3	Coax	1
280T1000-125	BACC45FN20-28S8	-	CRC280-3	Coax	2
280T1000-126	BACC45FT20-28P8	-	CRM280-3	Coax	2
280T1000-127	BACC45FT20-28P	-	CRM280-3	Coax	1
280T1000-128	BACC45FT20-28S	-	CRC280-3	Coax	1
280T1000-129	BACC45FN20-28P	-	CRM280-3	Coax	1
280T1000-132	BACC45FN20-28S	-	CRC280-4	Coax	2
280T1000-133	BACC45FN20-28S6	-	CRC280-4	Coax	4
280T1000-134	BACC45FN28-28S7	-	CRC280-4	Coax	2
280T1000-135	BACC45FN20-28S9	-	CRC280-4	Coax	2
280T1000-136	BACC45FT20-28P9	-	CRM280-4	Coax	2
280T1000-137	BACC45FT20-28P6	-	CRM280-4	Coax	4
280T1000-138	BACC45FN20-28S	-	CRC280-4	Coax	3
280T1000-139	BACC45FT20-28P	-	CRM280-4	Coax	3
280T1000-140	BACC45FN20-28S7	-	CRC280-4	Coax	3
280T1000-141	BACC45FT20-28P9	-	CRM280-4	Coax	1
280T1000-142	BACC45FN20-28S7	-	CRC280-4	Coax	1
280T1000-143	BACC45FN20-28S9	-	CRC280-4	Coax	1
280T1000-144	BACC45FN20-28S9	-	CRC280-4	Coax	3
280T1000-145	BACC45FT20-28S6	-	CRC280-4	Coax	4
280T1000-146	BACC45FN20-28P6	-	CRM280-4	Coax	4
280T1000-147	BACC45FN20-28S6	-	CRC280-4	Coax	3
280T1000-148	BACC45FT20-28P6	-	CRM280-4	Coax	3
280T1000-149	BACC45FN20-28S8	-	CRC280-4	Coax	1
280T1000-150	BACC45FT20-28P8	-	CRM280-4	Coax	1
280T1000-151	BACC45FN20-28S6	-	CRC280-4	Coax	1

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 13 BOEING 280T10()-() CONNECTOR PART NUMBERS (Continued)

Boeing Specification	Components of the Boeing Specification				
	Connector Part Number	Notes	Coax or Shielded Contact		
			Part Number	Type	Quantity
280T1000-152	BACC45FT20-28P6	-	CRM280-4	Coax	1
280T1000-153	BACC45FN20-28S9	-	CRC280-4	Coax	4
280T1000-154	BACC45FN20-28S	-	CRC280-4	Coax	1
280T1000-155	BACC45FN20-28S8	-	CRC280-4	Coax	2
280T1000-156	BACC45FT20-28P8	-	CRM280-4	Coax	2
280T1000-157	BACC45FT20-28P	-	CRM280-4	Coax	1
280T1000-158	BACC45FT20-28S	-	CRC280-4	Coax	1
280T1000-159	BACC45FN20-28P	-	CRM280-4	Coax	1
280T1000-160	BACC45FT20-28S6	-	CRC280-4	Coax	3
280T1000-161	BACC45FT20-28S7	-	CRC280-4	Coax	4
280T1000-162	BACC45FT20-28S8	-	CRC280-4	Coax	4
280T1000-163	BACC45FT20-28S	-	CRC280-4	Coax	2
280T1003-1	BPL280T1003-1	Shorting receptacle supplied by BAE Systems Controls Inc.	-	-	-
280T1004-1	BPL280T1004	Shorting plug assembly supplied by BAE Systems Controls Inc.	-	-	-
280T1004-8	BPL280T1004	Shorting plug assembly supplied by BAE Systems Controls Inc.	-	-	-
280T1004-10	BPL280T1004	Shorting plug assembly supplied by BAE Systems Controls Inc.	-	-	-
280T1021-1	BACC45FT22-32P	-	C48-1226-02	Shielded	4
			48-1226-02	Shielded	4
280T1021-2	BACC45FN22-32S	-	C48-1227-02	Shielded	4
			48-1227-02	Shielded	4
280T1021-3	BACC45FT22-32P8	-	C48-1226-02	Shielded	4
			48-1226-02	Shielded	4
280T1021-4	BACC45FN22-32S8	-	C48-1227-02	Shielded	4
			48-1227-02	Shielded	4
280T1021-5	BACC45FT22-32P6	-	C48-1226-02	Shielded	4
			48-1226-02	Shielded	4
280T1021-6	BACC45FN22-32S6	-	C48-1227-02	Shielded	4
			48-1227-02	Shielded	4

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 13 BOEING 280T10()-() CONNECTOR PART NUMBERS (Continued)

Boeing Specification	Components of the Boeing Specification				
	Connector Part Number	Notes	Coax or Shielded Contact		
			Part Number	Type	Quantity
280T1021-51	BACC45FT22-32P	-	CRM280-4	Coax	4
280T1021-52	BACC45FN22-32S	-	CRC280-4	Coax	4
280T1021-53	BACC45FT22-32P8	-	CRM280-4	Coax	4
280T1021-54	BACC45FN22-32S8	-	CRC280-4	Coax	4
280T1021-55	BACC45FT22-32P6	-	CRM280-4	Coax	4
280T1021-56	BACC45FN22-32S6	-	CRC280-4	Coax	4

O. Boeing 280U001()-() Connector

The 280U001()-() connector is a BACC45() or BACC63() connector with one of these configurations:

- One or more size 1 shielded contacts as a replacement for the size 12 standard contacts
- One or more size 12 coax contacts as a replacement for the size 12 standard contacts
- Size 2 shielded contacts as a replacement for the size 8 standard contacts or the other size 2 shielded contacts.

Refer to Table 14 for the connector part number, and the shielded or coax contact part number and quantity.

For the configuration of the standard contacts, refer to:

- Table 36
- Figure 8 for BACC45FN and BACC45FT connectors
- Figure 37 for BACC63CB and BACC63CC connectors.

Table 14
BOEING 280U001()-() CONNECTOR PART NUMBERS

Boeing Specification	Components of the Boeing Specification			
	Connector Part Number	Shielded or Coax Contact		
		Part Number	Type	Quantity
280U0013-1	BACC45FT18-8S	C48-1227-02	Shielded	8
		48-1227-02		
280U0013-51	BACC45FT18-8S	CRC280-4	Coax	8
280U0013-101	BACC45FT18-8S	CRC280-2	Coax	8
280U0013-151	BACC63CC20-28SN	CRC280-4	Coax	1
280U0013-152	BACC63CC20-28SN	CRC280-3	Coax	1
280U0013-201	BACC63CB20-28PN	CRM280-3	Coax	1
280U0013-202	BACC63CB20-28PN	CRM280-4	Coax	1
280U0014-1	BACC45FT22-12P	C48-1226-02	Shielded	12
		48-1226-02		
280U0019-1	BACC45FN18-11S	CN0900-336	Shielded	1

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 14 BOEING 280U001()-() CONNECTOR PART NUMBERS (Continued)

Boeing Specification	Components of the Boeing Specification			
	Connector Part Number	Shielded or Coax Contact		
		Part Number	Type	Quantity
280U0019-51	BACC45FN18-11S	CRMEF-502	Coax	1

P. Boeing 280U2028-() Connector

The 280U2028-() connector is a BACC63CB or BACC63CC connector with one size 12 coax contact as a replacement for one size 12 standard contact.

Refer to Table 15 for the connector part number, and the shielded contact part number and quantity.

For the configuration of the standard contacts, refer to:

- Figure 37
- Table 36.

Table 15
BOEING 280U2028-() CONNECTOR PART NUMBERS

Boeing Specification	Components of the Boeing Specification		
	Connector Part Number	Coax Contact	
		Part Number	Quantity
280U2028-100	BACC63CB20-28SN	CRC280-4	1
280U2028-106	BACC63CB20-28S6	CRC280-4	1
280U2028-107	BACC63CB20-28S7	CRC280-4	1
280U2028-108	BACC63CB20-28S8	CRC280-4	1
280U2028-109	BACC63CB20-28S9	CRC280-4	1
280U2028-200	BACC63CC20-28PN	CRM280-4	1
280U2028-206	BACC63CC20-28P6	CRM280-4	1
280U2028-207	BACC63CC20-28P7	CRM280-4	1
280U2028-208	BACC63CC20-28P8	CRM280-4	1
280U2028-209	BACC63CC20-28P9	CRM280-4	1
280U2028-300	BACC63CC20-28SN	CRC280-4	1
280U2028-306	BACC63CC20-28S6	CRC280-4	1
280U2028-400	BACC63CB20-28PN	CRM280-4	1
280U2028-406	BACC63CB20-28PN	CRM280-4	1

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Q. Boeing 280W0002-1 Self Locking, Threaded Coupled Connector

NOTE: The 280W0002-1 connector is the subject of an FAA airworthiness directive and a Boeing service bulletin.

If you must apply the mark on this connector again, use the procedures in SOPM 20-50-10.

Make sure that you can read the mark.

The Boeing 280W0002-1 connector:

- Is a BACC63BP plug that has special contacts; refer to Table 16
- Has insert configuration 18-8; refer to Table 36 and Figure 68
- Has eight special size 12 contacts; refer to Table 29
- Has a backshell that is filled with potting compound.

NOTE: If a connector that has potting requires maintenance, the connector shell must be replaced, and new potting material must be applied to the new connector assembly; refer to Subject 20-60-08.

Table 16
BOEING 280W0002-1 CONNECTOR PART NUMBER

Boeing Specification	Components of the Boeing Specification					
	Connector Part Number	Contact				
		Part Number	Size	Type	Quantity	Reference
280W0002-1	BACC63BP18D8SN	31D-1212-903	1212	Socket	8	Table 29

R. Boeing 65B414()-() Bayonet Coupled Connector

The 65B414()-() connector is a BACC45FN or BACC45FT connector with one, two, three, or four size 1 shielded contacts as a replacement for the same number of size 12 standard contacts.

Refer to Table 17 for the connector part number, and the shielded contact part number and quantity.

For the configuration of the standard contacts, refer to:

- Figure 8
- Table 36.

Table 17
BOEING 65B414()-() CONNECTOR PART NUMBERS

Boeing Specification	Components of the Boeing Specification		
	Connector Part Number	Shielded Contact	
		Part Number	Quantity
65B41429-1	BACC45FT20C28P	48-1226-02	1
65B41429-2	BACC45FT20C28P6	48-1226-02	1
65B41429-3	BACC45FT20C28P7	48-1226-02	1
65B41429-4	BACC45FT20C28P8	48-1226-02	1
65B41429-5	BACC45FT20C28P9	48-1226-02	1
65B41429-6	BACC45FT20C28S	48-1227-02	1
65B41429-7	BACC45FT20C28S6	48-1227-02	1

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 17 BOEING 65B414(-)(-) CONNECTOR PART NUMBERS (Continued)

Boeing Specification	Components of the Boeing Specification		
	Connector Part Number	Shielded Contact	
		Part Number	Quantity
65B41429-8	BACC45FT20C28S7	48-1227-02	1
65B41429-9	BACC45FT20C28S8	48-1227-02	1
65B41429-10	BACC45FT20C28S9	48-1227-02	1
65B41429-11	BACC45FN20-28P	48-1226-02	1
65B41429-12	BACC45FN20-28P6	48-1226-02	1
65B41429-13	BACC45FN20-28P7	48-1226-02	1
65B41429-14	BACC45FN20-28P8	48-1226-02	1
65B41429-15	BACC45FN20-28P9	48-1226-02	1
65B41429-16	BACC45FN20-28S	48-1227-02	1
65B41429-17	BACC45FN20-28S6	48-1227-02	1
65B41429-18	BACC45FN20-28S7	48-1227-02	1
65B41429-19	BACC45FN20-28S8	48-1227-02	1
65B41429-20	BACC45FN20-28S9	48-1227-02	1
65B41430-1	BACC45FT20C28P	48-1226-02	2
65B41430-2	BACC45FT20C28P6	48-1226-02	2
65B41430-3	BACC45FT20C28P7	48-1226-02	2
65B41430-4	BACC45FT20C28P8	48-1226-02	2
65B41430-5	BACC45FT20C28P9	48-1226-02	2
65B41430-6	BACC45FT20C28S	48-1227-02	2
65B41430-7	BACC45FT20C28S6	48-1227-02	2
65B41430-8	BACC45FT20C28S7	48-1227-02	2
65B41430-9	BACC45FT20C28S8	48-1227-02	2
65B41430-10	BACC45FT20C28S9	48-1227-02	2
65B41430-11	BACC45FN20-28P	48-1226-02	2
65B41430-12	BACC45FN20-28P6	48-1226-02	2
65B41430-13	BACC45FN20-28P7	48-1226-02	2
65B41430-14	BACC45FN20-28P8	48-1226-02	2
65B41430-15	BACC45FN20-28P9	48-1226-02	2
65B41430-16	BACC45FN20-28S	48-1227-02	2
65B41430-17	BACC45FN20-28S6	48-1227-02	2
65B41430-18	BACC45FN20-28S7	48-1227-02	2
65B41430-19	BACC45FN20-28S8	48-1227-02	2
65B41430-20	BACC45FN20-28S9	48-1227-02	2

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 17 BOEING 65B414(-)(-) CONNECTOR PART NUMBERS (Continued)

Boeing Specification	Components of the Boeing Specification		
	Connector Part Number	Shielded Contact	
		Part Number	Quantity
65B41431-1	BACC45FT20C28P	48-1226-02	3
65B41431-2	BACC45FT20C28P6	48-1226-02	3
65B41431-3	BACC45FT20C28P7	48-1226-02	3
65B41431-4	BACC45FT20C28P8	48-1226-02	3
65B41431-5	BACC45FT20C28P9	48-1226-02	3
65B41431-6	BACC45FT20C28S	48-1227-02	3
65B41431-7	BACC45FT20C28S6	48-1227-02	3
65B41431-8	BACC45FT20C28S7	48-1227-02	3
65B41431-9	BACC45FT20C28S8	48-1227-02	3
65B41431-10	BACC45FT20C28S9	48-1227-02	3
65B41431-11	BACC45FN20-28P	48-1226-02	3
65B41431-12	BACC45FN20-28P6	48-1226-02	3
65B41431-13	BACC45FN20-28P7	48-1226-02	3
65B41431-14	BACC45FN20-28P8	48-1226-02	3
65B41431-15	BACC45FN20-28P9	48-1226-02	3
65B41431-16	BACC45FN20-28S	48-1227-02	3
65B41431-17	BACC45FN20-28S6	48-1227-02	3
65B41431-18	BACC45FN20-28S7	48-1227-02	3
65B41431-19	BACC45FN20-28S8	48-1227-02	3
65B41431-20	BACC45FN20-28S9	48-1227-02	3
65B41432-1	BACC45FT20C28P	48-1226-02	4
65B41432-2	BACC45FT20C28P6	48-1226-02	4
65B41432-3	BACC45FT20C28P7	48-1226-02	4
65B41432-4	BACC45FT20C28P8	48-1226-02	4
65B41432-5	BACC45FT20C28P9	48-1226-02	4
65B41432-6	BACC45FT20C28S	48-1227-02	4
65B41432-7	BACC45FT20C28S6	48-1227-02	4
65B41432-8	BACC45FT20C28S7	48-1227-02	4
65B41432-9	BACC45FT20C28S8	48-1227-02	4
65B41432-10	BACC45FT20C28S9	48-1227-02	4
65B41432-11	BACC45FN20-28P	48-1226-02	4
65B41432-12	BACC45FN20-28P6	48-1226-02	4
65B41432-13	BACC45FN20-28P7	48-1226-02	4

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 17 BOEING 65B414()-() CONNECTOR PART NUMBERS (Continued)

Boeing Specification	Components of the Boeing Specification		
	Connector Part Number	Shielded Contact	
		Part Number	Quantity
65B41432-14	BACC45FN20-28P8	48-1226-02	4
65B41432-15	BACC45FN20-28P9	48-1226-02	4
65B41432-16	BACC45FN20-28S	48-1227-02	4
65B41432-17	BACC45FN20-28S6	48-1227-02	4
65B41432-18	BACC45FN20-28S7	48-1227-02	4
65B41432-19	BACC45FN20-28S8	48-1227-02	4
65B41432-20	BACC45FN20-28S9	48-1227-02	4

S. Boeing 69B4181()-() Connector

The 69B4181()-() connector is a BACC45F() or BACC63() connector with one Boeing standard size 2 shielded contact as a replacement for one of these contacts:

- The standard size 8 contact
- The M39029/54-343 size 2 shielded contact
- The M39029/55-345 size 2 shielded contact.

Refer to:

- Table 18 for the part numbers of the connector and shielded contact.
- Table 19 for the 10-60479-() connectors that are equivalent to the 69B41813-() connectors
- Table 11 for the configuration of the 10-60479-() connectors.

For the configuration of the standard contacts, refer to:

- Table 36
- Figure 2 for the BACCFM connectors
- Figure 8 for the BACCFN and BACCFT connectors
- Figure 32 for the BACC63BV connectors
- Figure 37 for the BACC63CB and BACC63CC connectors.

Table 18
BOEING 69B4181()-() CONNECTOR PART NUMBERS

Boeing Specification	Components of the Boeing Specification	
	Connector Part Number	Shielded Contact
69B41813-1	BACC45FT14-3S	10-60479-44
69B41813-2	BACC45FT14-3S6	10-60479-44
69B41813-3	BACC45FT14-3S7	10-60479-44
69B41813-4	BACC45FT14-3S8	10-60479-44
69B41813-5	BACC45FT14-3S9	10-60479-44
69B41813-6	BACC45FT14-3S10	10-60479-44
69B41813-7	BACC63CB14-3SN	10-60479-44

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 18 BOEING 69B4181()-() CONNECTOR PART NUMBERS (Continued)

Boeing Specification	Components of the Boeing Specification	
	Connector Part Number	Shielded Contact
69B41813-8	BACC63CB14-3S7	10-60479-44
69B41814-1	BACC45FT14-3P	10-60479-41
69B41814-2	BACC45FT14-3P6	10-60479-41
69B41814-3	BACC45FT14-3P7	10-60479-41
69B41814-4	BACC45FT14-3P8	10-60479-41
69B41814-5	BACC45FT14-3P9	10-60479-41
69B41814-6	BACC45FT14-3P10	10-60479-41
69B41815-1	BACC45FN14-3S	10-60479-44
69B41815-2	BACC45FN14-3S6	10-60479-44
69B41815-3	BACC45FN14-3S7	10-60479-44
69B41815-4	BACC45FN14-3S8	10-60479-44
69B41815-5	BACC45FN14-3S9	10-60479-44
69B41815-6	BACC45FN14-3S10	10-60479-44
69B41816-1	BACC45FN14-3P	10-60479-41
69B41816-2	BACC45FN14-3P6	10-60479-41
69B41816-3	BACC45FN14-3P7	10-60479-41
69B41816-4	BACC45FN14-3P8	10-60479-41
69B41816-5	BACC45FN14-3P9	10-60479-41
69B41816-6	BACC45FN14-3P10	10-60479-41
69B41817-1	BACC45FN18-11P	10-60479-41
69B41817-2	BACC45FN18-11P6	10-60479-41
69B41817-3	BACC45FN18-11P7	10-60479-41
69B41817-4	BACC45FN18-11P8	10-60479-41
69B41817-5	BACC45FN18-11P9	10-60479-41
69B41817-6	BACC45FN18-11P10	10-60479-41
69B41817-7	BACC63CC18-11PN	10-60479-41
69B41817-8	BACC63CC18-11P6	10-60479-41
69B41817-9	BACC63CC18-11P7	10-60479-41
69B41818-1	BACC45FT18-11S	10-60479-44
69B41818-2	BACC45FT18-11S6	10-60479-44
69B41818-3	BACC45FT18-11S7	10-60479-44
69B41818-4	BACC45FT18-11S8	10-60479-44
69B41818-5	BACC45FT18-11S9	10-60479-44
69B41818-6	BACC45FT18-11S10	10-60479-44

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 18 BOEING 69B4181()-() CONNECTOR PART NUMBERS (Continued)

Boeing Specification	Components of the Boeing Specification	
	Connector Part Number	Shielded Contact
69B41818-7	BACC63CB18-11SN	10-60479-44
69B41818-8	BACC63CB18-11S6	10-60479-44
69B41818-9	BACC63CB18-11S7	10-60479-44
69B41818-10	BACC63CB18-11S8	10-60479-44
69B41818-11	BACC63CB18-11S9	10-60479-44
69B41819-1	BACC45FM18-11S7	10-60479-44
69B41819-2	BACC45FM18-11S9	10-60479-44
69B41819-3	BACC63BV18F11S7	10-60479-44
69B41819-4	BACC63BV18F11S9	10-60479-44

Table 19
EQUIVALENT 69B41813()-() AND 10-60479()-() CONNECTORS

69B41813()-() Connector	Equivalent 10-60479()-() Connector
69B41813-1	10-60479-1
69B41813-2	10-60479-16
69B41813-3	10-60479-17
69B41813-4	10-60479-18
69B41813-5	10-60479-19
69B41813-6	-

T. Boeing S283A202()-() Threaded Coupled Plug

Refer to:

- Table 20 for the contact data for the connector
- Table 1 for the supplier part number of the connector.

Table 20
BOEING S283A202()-() CONNECTOR PART NUMBERS

Boeing Specification	Contact Components of the Boeing Specification			
	Type	Part Number	Size	Quantity
S283A202-11	Standard	BACC47CP2T	16	16
	Shielded	S283U007-7	2	1
S283A202-12	Standard	BACC47CP2T	16	20
	Shielded	S283U007-7	2	2

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

U. Boeing S283T025-() Threaded Coupled Plug

Refer to:

- Table 21 for the contact data for the connector
- Table 1 for the supplier part number of the connector.

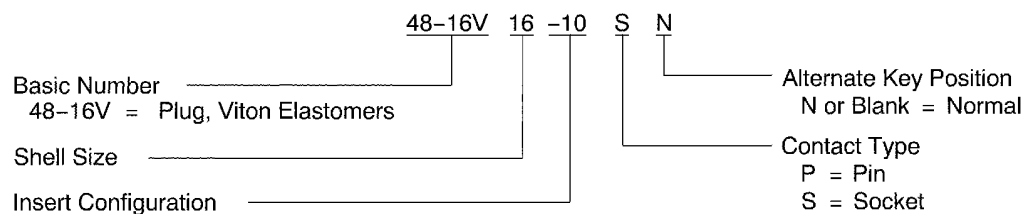
Table 21
BOEING S283T025-() CONNECTOR PART NUMBERS

Boeing Specification	Contact Components of the Boing Specification			
	Type	Part Number	Size	Quantity
S283T025-2	Standard	BACC47CP2()	16	16
	Shielded	S283U007-7	2	1
S283T025-4	Standard	BACC47CP2()	16	8
	Shielded	S283U007-7	2	1

3. SUPPLIER CONTROLLED CONNECTOR PART NUMBERS AND DESCRIPTION

A. Amphenol 48-16V() Bayonet Coupled Plug

The 48-16V() connector has Viton elastomer grommets.



2446075 S00061546445_V1

AMPHENOL 48-16V() CONNECTOR PART NUMBER STRUCTURE
Figure 44

B. Amphenol 48-7164-() Connectors

The Amphenol 48-7164-() connector part numbers are defined as:

- 48-7164-1S has socket contacts
- 48-7164-2P has pin contacts.

NOTE: Discard the size 2020 contacts that are supplied with these connectors. Use BACC47CN1 and BACC47CP1 contacts for AWG 20, AWG 22 and AWG 24 wire in these connectors.

Refer to Paragraph 13.B. for the installation of the 48-7164-1S connector.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

C. Cinch CN0900-329 Bayonet Coupled Plug

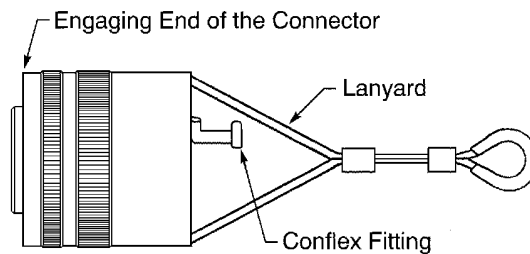
The Cinch CN0900-329 connector is the same as the BACC45FT connector with:

- A lanyard release
- An Icore Plastics 6930-06-023-13 conflex fitting.

The connector has this configuration:

- Size 10 shell
- Insert configuration 10-5
- 5 size 20 standards socket contacts
- Normal polarization.

Refer to Figure 45.



2447083 S00061546446_V1

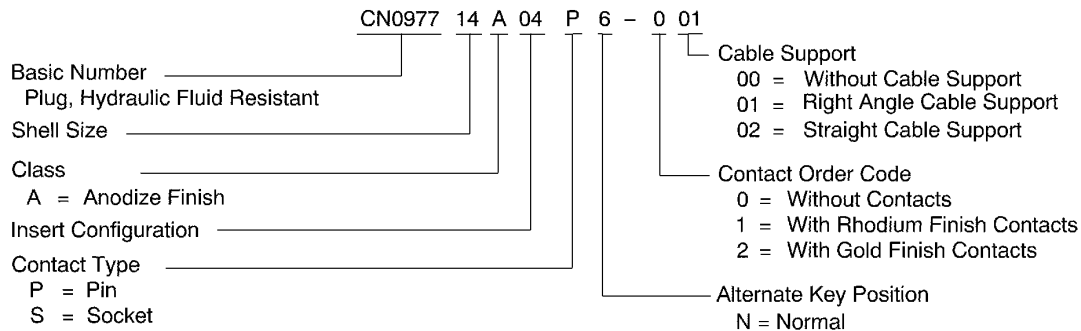
CINCH CN0900-329 CONNECTOR
Figure 45



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

D. Cinch CN0977() Bayonet Coupled, Hydraulic Fluid Resistant Plug

The CN0977() connector has ethylene-propylene elastomer grommets that are hydraulic fluid resistant.



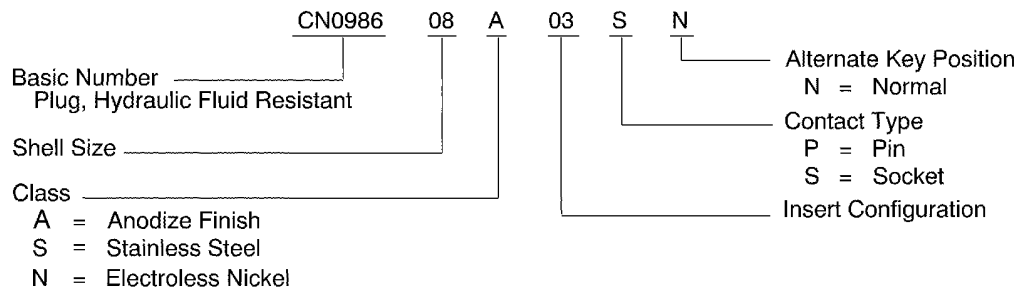
2446076 S00061546447_V1

CINCH CN0977() CONNECTOR PART NUMBER STRUCTURE

Figure 46

E. Cinch CN0986() Thread Coupled, Hydraulic Fluid Resistant Plug

The CN0986() connector has ethylene-propylene elastomer grommets that are hydraulic fluid resistant.



2446077 S00061546448_V1

CINCH CN0986() CONNECTOR PART NUMBER STRUCTURE

Figure 47

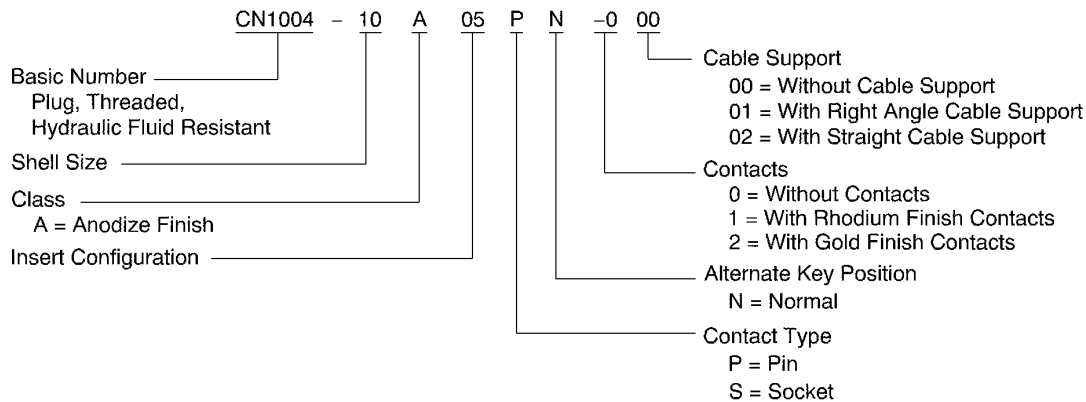
20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

F. Cinch CN1004-() Thread Coupled, Hydraulic Fluid Resistant Plug

The CN1004-() connector has ethylene-propylene elastomer grommets that are hydraulic fluid resistant.



2447084 S00061546449_V1

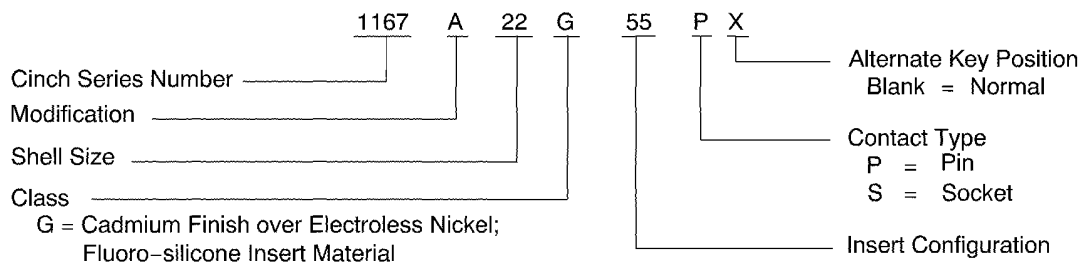
CINCH CN1004-() CONNECTOR PART NUMBER STRUCTURE

Figure 48

G. Cinch 1167A() Thread Coupled Receptacle

The 1167A() connector is almost the same as the BACC63BV receptacle, with these features:

- The body of the connector is longer than the BACC63BV receptacle
- The front of the receptacle flange touches the back of the panel where the receptacle is attached
- Engages with the BACC63BP Plug
- Can be assembled with a BACC10HF backshell.



2446078 S00061546450_V1

CINCH 1167A() CONNECTOR PART NUMBER STRUCTURE

Figure 49

20-61-11

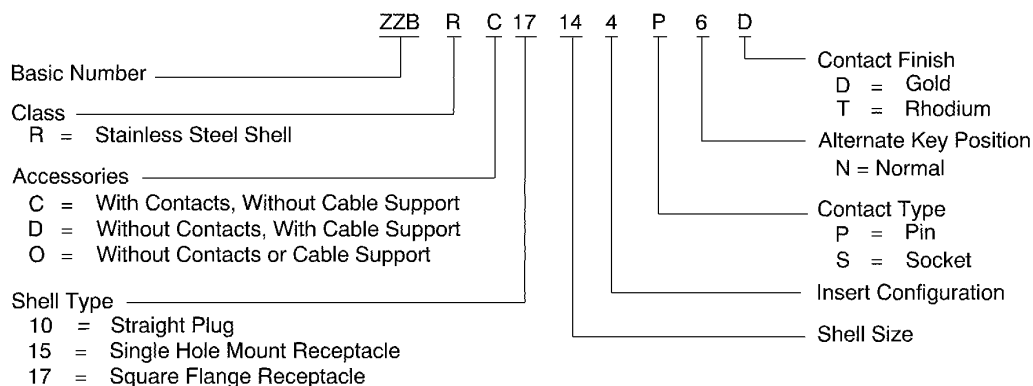


707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

H. Pyle-National ZZB-R() and ZZW-R() Bayonet Coupled, Stainless Steel Connector

The Pyle-National ZZB-R() connector is the same as the BACC45FN and BACC45FT connectors, with a stainless steel shell with a rigid pin front.

NOTE: The Pyle-National ZZW-R() connector is a permitted alternative for the Pyle-National ZZB-R()connector. Refer to Figure 12. for the ZZW-R() Connector.



2446079 S00061546451_V1

PYLE-NATIONAL ZZB-R() CONNECTOR PART NUMBER STRUCTURE
Figure 50

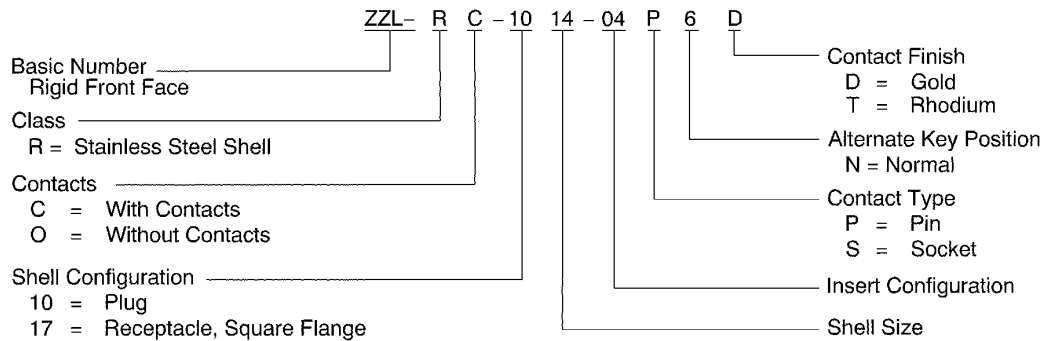
I. Pyle-National ZZL-R() and ZZY-R() Thread Coupled, Stainless Steel Connector

The Pyle-National ZZL-R() connector is the same as the BACC45FM and BACC45FS connectors, with a stainless steel shell and a rigid front face.

NOTE: The Pyle-National ZZY-R() connector is a permitted alternative for the Pyle-National ZZL-R()connector.



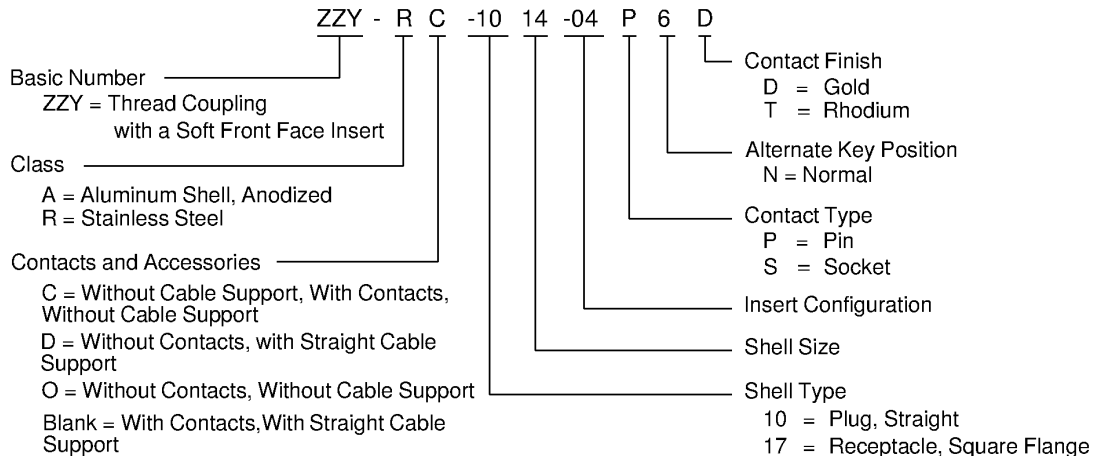
707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2446080 S00061546452_V1

PYLE-NATIONAL ZZL-R() CONNECTOR PART NUMBER STRUCTURE

Figure 51



2449153 S00061546453_V1

PYLE-NATIONAL ZZL-R() CONNECTOR PART NUMBER STRUCTURE

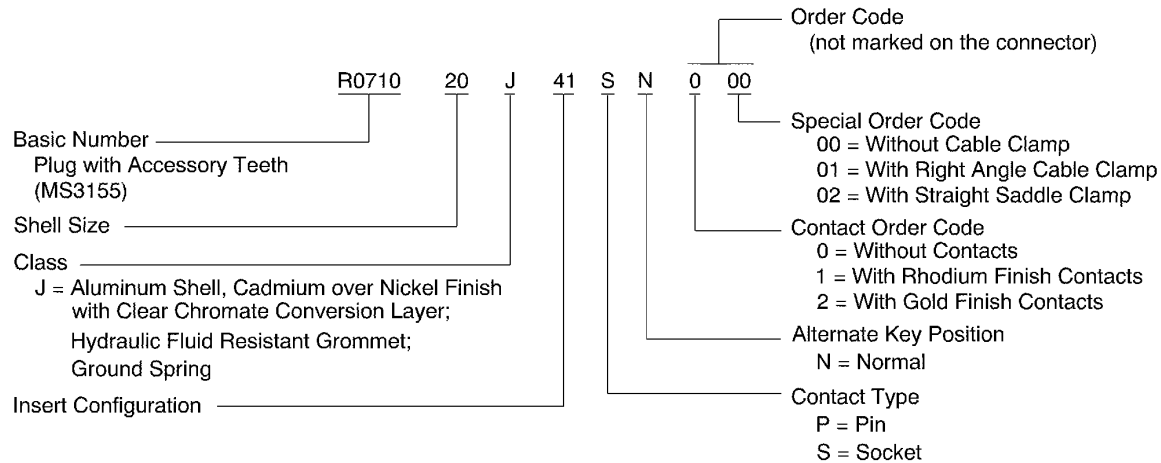
Figure 52

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

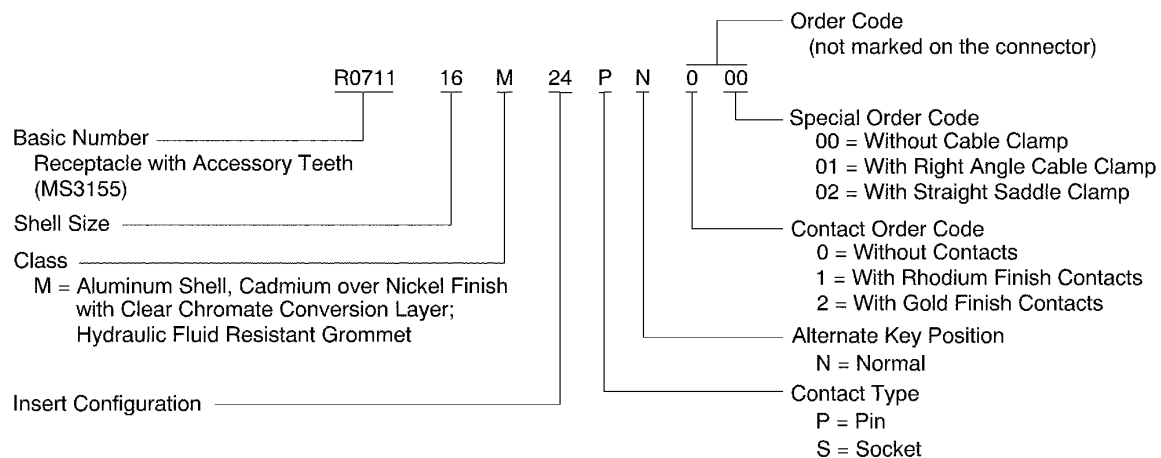
J. RMS R0710(J) Self Locking, Thread Coupled, Vibration Resistant, Hydraulic Fluid Resistant Plug with a Ground Spring



2447085 S00061546454_V1

RMS R0710(J) CONNECTOR PART NUMBER STRUCTURE
Figure 53

K. RMS R0711(M) Thread Coupled, Vibration Resistant, Hydraulic Fluid Resistant Receptacle



2447086 S00061546455_V1

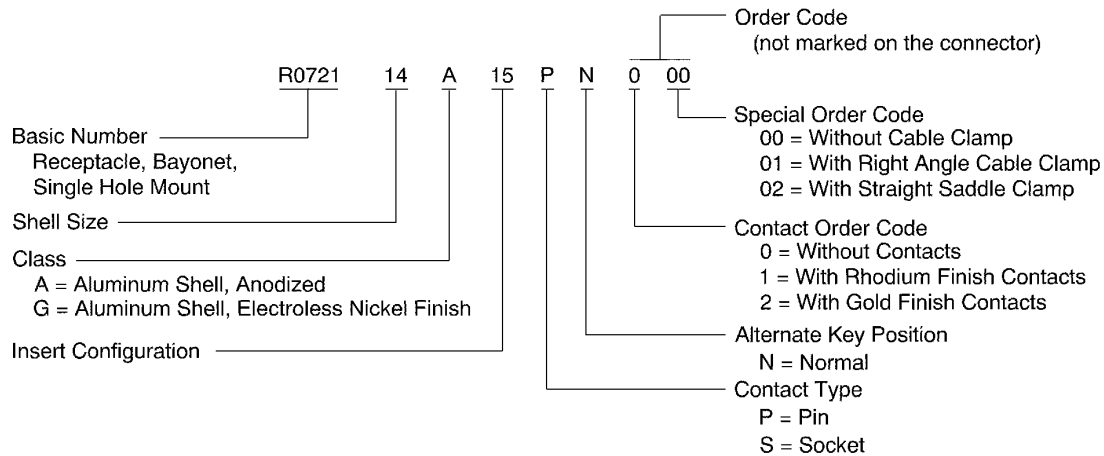
RMS R0711(M) CONNECTOR PART NUMBER STRUCTURE
Figure 54

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

L. RMS R0721() Bayonet Coupled, Single Hole Mount Receptacle



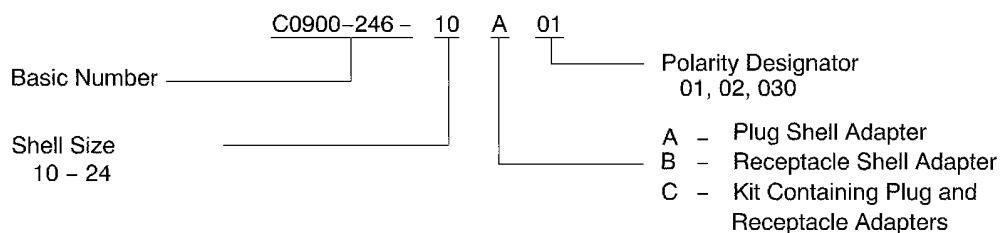
2447087 S00061546456_V1

RMS R0721() CONNECTOR PART NUMBER STRUCTURE
Figure 55

M. Cinch Coupling Ring Polarity Adapter

Table 22
COUPLING RING POLARITY ADAPTER PART NUMBERS

Part Number	Supplier
C0900-246-()	Cinch



2446081 S00061546457_V1

CINCH COUPLING RING POLARITY ADAPTER PART NUMBER STRUCTURE
Figure 56

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

4. CONTACT PART NUMBERS AND DESCRIPTION

A. General Data

The MIL-C-26500 connectors can accept these types of contacts:

- Standard contacts
- Special Purpose contacts
- Thermocouple contacts
- Shielded contacts
- Coax contacts.

The standard contacts have one of these finishes:

- Rhodium
- Gold
- Localized Gold.

NOTE: Contacts with these finishes are interchangeable and are applicable for all installations.

NOTE: It is satisfactory if contacts that have different finishes engage together.

The special purpose contacts have crimp barrels that can accept a conductor that is one, two, or four wire gauge sizes larger than the size of the engaging end. For example, a contact with a size 20 engaging end and a size 18 crimp barrel.

The thermocouple contacts are made with one of these materials:

- Alumel
- Chromel
- Constantan.

B. Selection of Recommended and Alternative Contacts

This paragraph gives the decision sequence to make a selection of:

- A contact to replace a contact that is in service
- A contact for a new installation.

These conditions identify the necessary contact for the connector assembly:

- The electrical and mechanical performance of the contact
- The insert configuration of the connector
- The size of the contact cavity in the connector
- The type of contact, pin or socket
- The size of the wire.

Table 23
LOCATION OF CONTACT PART NUMBER DATA

Contact Group	Specification	Reference
Standard	Boeing	Table 24
	Supplier	Table 25
	Military	Table 26
Thermocouple	Supplier	Table 27
	Military	Table 28

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 23 LOCATION OF CONTACT PART NUMBER DATA (Continued)

Contact Group	Specification	Reference
Special Purpose	Supplier	Table 29
Shielded	Boeing	Table 30
	Military	Table 33
	Supplier	Table 34
Shielded Potted	Boeing	Table 31
Coax	Supplier	Table 35

Refer to Table 23.

- (1) Make a selection of a contact that has the Boeing Standard number.
- (2) If the contact with the Boeing Standard number is not available, make a selection of an alternative contact that:
 - Has the supplier's part number
 - Is interchangeable with a contact that has the Boeing Standard number.

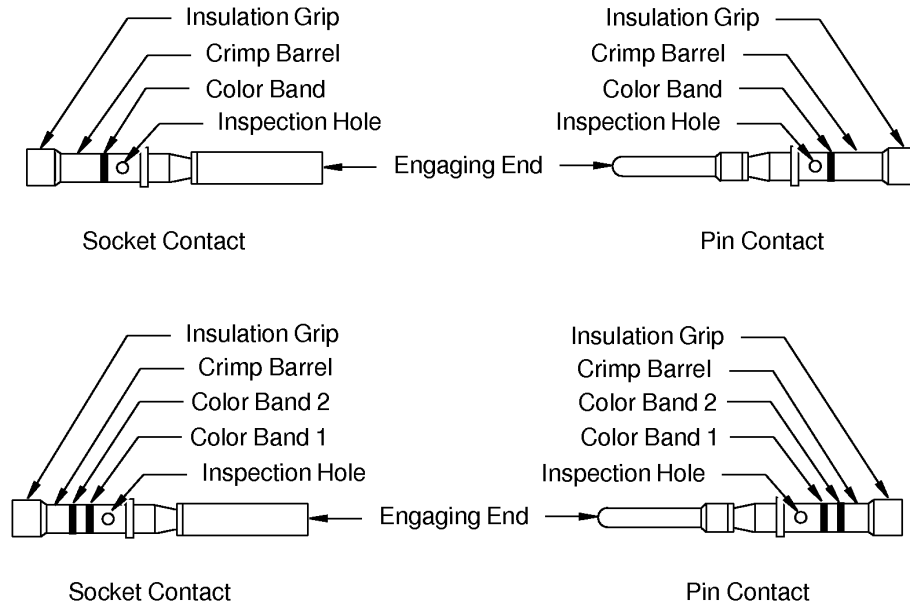
NOTE: The contact with the supplier's part number is a Boeing qualified contact that gives the same performance as the contact that has the Boeing Standard number.
- (3) If the contact with the supplier's part number is not available, make a selection of a permitted alternative equivalent contact that has the Military Standard number.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

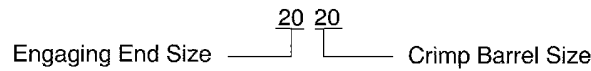
C. Standard Contact Part Numbers



2447082 S00061546458_V1

COLOR CODE BANDS OF BOEING STANDARD FRONT RELEASE CONTACTS FOR MIL-C-26500 CONNECTORS

Figure 57



2446651 S00061545900_V1

EXAMPLE OF CONTACT SIZE

Figure 58

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 24
BOEING STANDARD CONTACT PART NUMBERS

Contact Size	Contact Type	Finish	Boeing Standard	Color Code	
				Band	Color
2020	Pin	Rhodium	BACC47CN1	1	Red
		Gold	BACC47CN1A	1	Red
		Localized Gold	BACC47CN1S	1	Red
				2	Black
	Socket	Gold	BACC47CP1A	1	Red
		Localized Gold	BACC47CP1S	1	Red
				2	Black
		Rhodium	BACC47CP1T	1	Red
1616	Pin	Rhodium	BACC47CN2	1	Blue
		Gold	BACC47CN2A	1	Blue
		Localized Gold	BACC47CN2S	1	Blue
				2	Black
	Socket	Gold	BACC47CP2A	1	Blue
		Localized Gold	BACC47CP2S	1	Blue
				2	Black
		Rhodium	BACC47CP2T	1	Blue
1212	Pin	Rhodium	BACC47CN3	1	Yellow
		Gold	BACC47CN3A	1	Yellow
		Localized Gold	BACC47CN3S	1	Yellow
				2	Black
	Socket	Gold	BACC47CP3A	1	Yellow
		Localized Gold	BACC47CP3S	1	Yellow
				2	Black
		Rhodium	BACC47CP3T	1	Yellow

NOTE: Black color code for band 2 on size 16 and size 12 contacts with localized gold finish occur only on contacts made in 1998 and after.

Table 25
ALTERNATIVE PART NUMBERS FOR BOEING STANDARD CONTACTS

Boeing Standard	Part Number	Supplier
BACC47CN1A	317-2020-901	Tri-Star
	48-2335-09	Amphenol
	LRM20W-16DJ5	Burndy
	ZZL4020-36LD-H139	Pyle-National

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 25 ALTERNATIVE PART NUMBERS FOR BOEING STANDARD CONTACTS (Continued)

Boeing Standard	Part Number	Supplier
BACC47CN1S	317-2020-901-L	Tri-Star
	ZZL4020-36LD-H148	Pyle-National
BACC47CN1	417-2020-901	Tri-Star
	48-2335-02	Amphenol
	C48-2335-02	Cinch
	LRM20W-16F74	Burndy
	ZZL-4020-36LT	Pyle-National
BACC47CP1A	248-136-2002S-09	Amphenol
	318-2020-901	Tri-Star
	LRC20W-15DJ5	Burndy
	ZZL4120-36LD-H139	Pyle-National
BACC47CP1S	318-2020-901-L	Tri-Star
	LP-807105-205	Amphenol
	ZZL4120-36LD-H148	Pyle-National
BACC47CP1T	248-136-2007S-02	Amphenol
	418-2020-901	Tri-Star
	LRC20W-15F74	Burndy
	ZZL-4120-36LT	Pyle-National
BACC47CN2A	10-807100-165	Amphenol
	317-1616-902	Tri-Star
	LRM16M-16DJ5	Burndy
	ZZL4016-36LD-H139	Pyle-National
BACC47CN2S	317-1616-902-L	Tri-Star
	ZZL4016-36LD-H148	Pyle-National
BACC47CN2	417-1616-902	Tri-Star
	48-1825-02	Amphenol
	LRM16M-15F74	Burndy
	ZZL-4016-36LT	Pyle-National
BACC47CP2A	10-807103-165	Amphenol
	318-1616-902	Tri-Star
	LRC16M-15DJ5	Burndy
	ZZL4116-36LD-H139	Pyle-National
BACC47CP2S	318-1616-902-L	Tri-Star
	LP-807103-165	Amphenol
	ZZL4116-36LD-H148	Pyle-National

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

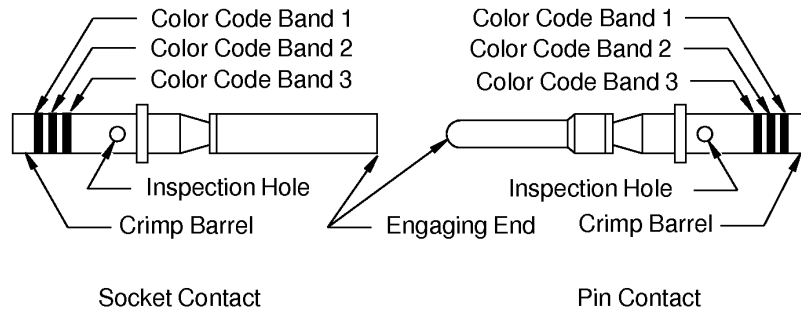
Table 25 ALTERNATIVE PART NUMBERS FOR BOEING STANDARD CONTACTS (Continued)

Boeing Standard	Part Number	Supplier
BACC47CP2T	248-136-1600S-02	Amphenol
	418-1616-902	Tri-Star
	LRC16M-15F74	Burndy
	ZZL-4116-36LT	Pyle-National
BACC47CN3A	10-807100-125	Amphenol
	317-1212-903	Tri-Star
	LRM12Z-16DJ5	Burndy
	ZZL4012-36LD-H139	Pyle-National
BACC47CN3S	317-1212-903-L	Tri-Star
	ZZL4012-36LD-H148	Pyle-National
BACC47CN3	417-1212-903	Tri-Star
	48-1827-02	Amphenol
	LRM12Z-15F74	Burndy
	ZZL-4012-36LT	Pyle-National
BACC47CP3A	10-807103-125	Amphenol
	318-1212-903	Tri-Star
	LRC12Z-15DJ5	Burndy
	ZZL4112-36LD-H139	Pyle-National
BACC47CP3S	318-1212-903-L	Tri-Star
	LP-807103-125	Amphenol
	ZZL4112-36LD-H148	Pyle-National
BACC47CP3T	248-136-1200S-02	Amphenol
	412-1212-903	Tri-Star
	LRC12Z-15F74	Burndy
	ZZL-4112-36LT	Pyle-National

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2447100 S00061546459_V1

COLOR CODE BANDS OF THE MILITARY STANDARD FRONT RELEASE CONTACTS

Figure 59

Table 26

ALTERNATIVE EQUIVALENT MILITARY CONTACT PART NUMBERS

Contact Size	Contact Type	Finish	Part Number	Color Code		Supplier
				Band or Dot	Color	
2020	Pin	Gold	M39029/31-241	1	Red	QPL
				2	Yellow	
				3	Brown	
		Rhodium	MS24254-20P	1	Red	QPL
				2	Blue	
				3	Violet	
	Socket	Gold	M39029/32-260	1	Red	QPL
				2	Blue	
				3	Black	
		Rhodium	MS24255-20S	1	Red	QPL

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 26 ALTERNATIVE EQUIVALENT MILITARY CONTACT PART NUMBERS (Continued)

Contact Size	Contact Type	Finish	Part Number	Color Code		Supplier
				Band or Dot	Color	
1616	Pin	Gold	M39029/31-229	1	Red	QPL
				2	Red	
				3	White	
		Rhodium	MS24254-16P	1	Blue	QPL
	Socket	Gold	M39029/32-248	1	Red	QPL
				2	Yellow	
				3	Gray	
		Rhodium	MS24255-16S	1	Blue	QPL
1212	Pin	Gold	M39029/31-235	1	Red	QPL
				2	Orange	
				3	Green	
		Rhodium	MS24254-12P	1	Yellow	QPL
	Socket	Gold	M39029/32-254	1	Red	QPL
				2	Green	
				3	Yellow	
		Rhodium	MS24255-12S	1	Yellow	QPL

D. Thermocouple Contacts

The contact size of thermocouple contacts gives the size of the contact engaging end and the size of the contact crimp barrel. Refer to Figure 60.

Engaging End Size 16 16 Crimp Barrel Size

2446183 S00061544383_V1

EXAMPLE OF CONTACT SIZE
Figure 60

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 27
THERMOCOUPLE CONTACT PART NUMBERS

Contact Size	Contact Type	Material	Part Number	Supplier
2020	Pin	Alumel	48-2247	Amphenol
			LRM20W-9	Burndy
			ZZL-4020-10R	Pyle-National
		Chromel	48-2178	Amphenol
			LRM20W-10	Burndy
			ZZL-4020-10P	Pyle-National
		Constantan	LRM20W-12	Burndy
			ZZL-4020-10N	Pyle-National
	Socket	Alumel	48-2233	Amphenol
			LRC20W-9	Burndy
			ZZL-4120-10R	Pyle-National
		Chromel	48-2176	Amphenol
			LRC20W-10	Burndy
			ZZL-4120-10P	Pyle-National
		Constantan	LRC20W-12	Burndy
			ZZL-4120-10N	Pyle-National
1616	Pin	Alumel	48-2358	Amphenol
			LRM16M-9	Burndy
			ZZL-4016-10R	Pyle-National
		Chromel	48-2180	Amphenol
			LRM16M-10	Burndy
			ZZL-4016-10P	Pyle-National
		Constantan	LRM16M-12	Burndy
			ZZL-4016-10N	Pyle-National
	Socket	Alumel	48-2359	Amphenol
			LRC16M-9	Burndy
			ZZL-4116-10R	Pyle-National
		Chromel	48-2182	Amphenol
			LRC16M-10	Burndy
			ZZL-4116-10P	Pyle-National
		Constantan	LRC16M-12	Burndy
			ZZL-4116-10N	Pyle-National

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 27 THERMOCOUPLE CONTACT PART NUMBERS (Continued)

Contact Size	Contact Type	Material	Part Number	Supplier
1212	Pin	Alumel	48-2244	Amphenol
			ZZL-4012-10R	Pyle-National
		Chromel	48-2184	Amphenol
			ZZL-4012-10P	Pyle-National
		Constantan	48-2185	Amphenol
			ZZL-4012-10N	Pyle-National
	Socket	Alumel	48-2095	Amphenol
			ZZL-4112-10R	Pyle-National
		Chromel	48-2096	Amphenol
			ZZL-4112-10P	Pyle-National
		Constantan	48-2186	Amphenol
			ZZL-4112-10N	Pyle-National

Refer to Figure 57 for the color code bands on a contact.

Table 28
ALTERNATIVE EQUIVALENT MILITARY THERMOCOUPLE CONTACT PART NUMBERS

Contact Size	Contact Type	Material	Part Number	Color Code		Supplier
				Band	Color	
2020	Pin	Chromel	M39029/31-225	1	Red	QPL
				2	Red	
				3	Blue	
		Alumel	M39029/31-226	1	Red	QPL
				2	Red	
				3	Blue	
		Constantan	M39029/31-227	1	Red	QPL
				2	Red	
				3	Violet	
	Socket	Chromel	M39029/32-244	1	Red	QPL
				2	Yellow	
				3	Yellow	
		Alumel	M39029/32-245	1	Red	QPL
				2	Yellow	
				3	Green	
		Constantan	M39029/32-246	1	Red	QPL
				2	Yellow	
				3	Blue	

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 28 ALTERNATIVE EQUIVALENT MILITARY THERMOCOUPLE CONTACT PART NUMBERS
(Continued)

Contact Size	Contact Type	Material	Part Number	Color Code		Supplier
				Band	Color	
1616	Pin	Chromel	M39029/31-231	1	Red	QPL
				2	Orange	
				3	Brown	
		Alumel	M39029/31-232	1	Red	QPL
				2	Orange	
				3	Red	
		Constantan	M39029/31-233	1	Red	QPL
				2	Orange	
				3	Orange	
	Socket	Chromel	M39029/32-250	1	Red	QPL
				2	Green	
				3	Black	
		Alumel	M39029/32-251	1	Red	QPL
				2	Green	
				3	Brown	
		Constantan	M39029/32-252	1	Red	QPL
				2	Green	
				3	Red	

20-61-11



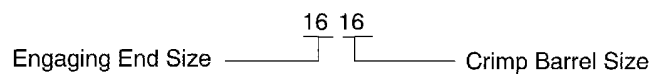
707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 28 ALTERNATIVE EQUIVALENT MILITARY THERMOCOUPLE CONTACT PART NUMBERS
(Continued)

Contact Size	Contact Type	Material	Part Number	Color Code		Supplier
				Band	Color	
1212	Pin	Chromel	M39029/31-237	1	Red	QPL
				2	Orange	
				3	Violet	
		Alumel	M39029/31-238	1	Red	QPL
				2	Orange	
				3	Gray	
		Constantan	M39029/31-239	1	Red	QPL
				2	Orange	
				3	White	
	Socket	Chromel	M39029/32-256	1	Red	QPL
				2	Green	
				3	Blue	
		Alumel	M39029/32-257	1	Red	QPL
				2	Green	
				3	Violet	
		Constantan	M39029/32-258	1	Red	QPL
				2	Green	
				3	Gray	

E. Special Purpose Contacts

The contact size of special purpose contacts gives the size of the contact engaging end and the size of the contact crimp barrel. Refer to Figure 61.



2446183 S00061544383_V1

EXAMPLE OF CONTACT SIZE
Figure 61

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 29
SUPPLIER PART NUMBERS FOR SPECIAL PURPOSE CONTACTS

Contact Size	Contact Type	Part Number	Supplier
2018	Socket	P-209541-D	Pyle-National
	Pin	P-209553-D	
	Socket	248-136-2018S-02	Amphenol
	Pin	48-100-5008P-02	
		48-100-5014P-02	
2016	Socket	P209439-D	Pyle-National
		P209439-T	
		248-136-2016S-02	Amphenol
	Pin	31A-2016-035	Tri-Star
		317-2016-035	
	Socket	318-2016-035	Amphenol
	Pin	48-100-5007P-02	
		48-100-5012P-02	
1614	Socket	248-136-1614S-02	Amphenol
	Pin	48-100-5021P-02	Amphenol
	Pin	P-208575-P	Pyle-National
	Socket	P-208575-S	Pyle-National
1212	Socket	31D-1212-903	Tri-Star
1210	Socket	248-136-1210S-02	Amphenol
	Pin	48-100-5020P-02	Amphenol
	Pin	P-204540	Pyle-National
	Socket	P-204541	Pyle-National

F. Boeing Shielded Contacts

Table 30
BOEING STANDARD SHIELDED CONTACT PART NUMBERS

Shielded Contact Size	Contact Cavity Size	Center Contact Size	Finish	Contact Type	Boeing Standard
1	12	22	Gold	Pin	BACC47EX1
				Socket	BACC47EZ1
2	8	20	Gold	Pin	BACC47EX2
				Socket	BACC47EZ2

CAUTION: THE BOEING STANDARD POTTED SHIELDED CONTACTS IN TABLE 31 ARE NOT INTERCHANGEABLE.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 31
BOEING STANDARD POTTED SHIELDED CONTACT PART NUMBERS

Shielded Contact Size	Contact Cavity Size	Center Contact Size	Finish	Contact Type	Boeing Standard
2	8	20	Rhodium	Pin	10-60479-41
					60B40037-16
					60B40147-16
				Socket	10-60479-44
					60B40037-15
					60B40147-15
					S283U007-7

Table 32
SUPPLIER PART NUMBERS FOR BOEING STANDARD SHIELDED CONTACTS

Boeing Standard or Specification	Part Number	Supplier
10-60479-41	48-1292-02	Amphenol
	CN0940-41	Cinch
10-60479-44	48-2979-02	Amphenol
	CN0940-44	Cinch
60B40037-15	48-2979-02	Amphenol
	CN0940-44	Cinch
60B40037-16	48-1292-02	Amphenol
	CN0940-41	Cinch
60B40147-15	CN0958-15	Cinch
60B40147-16	CN0958-16	Cinch
BACC47EX1	21-33500-3	Amphenol
	319-12CX-547	Tri-Star
	C48-1226-03	Cinch
BACC47EX2	21-33504-60	Amphenol
	319-08CX-548	Tri-Star
	C48-2187-03	Cinch
BACC47EZ1	21-33501-3	Amphenol
	310-12CX-547	Tri-Star
	C48-1227-03	Cinch
BACC47EZ2	21-33505-60	Amphenol
	310-08CX-548	Tri-Star
	C48-2188-03	Cinch
S283U007-7	CN1036-7	Cinch

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

G. Military Shielded Contacts

Table 33
MILITARY SHIELDED CONTACT PART NUMBERS

Shielded Contact Size	Contact Cavity Size	Center Contact Size	Contact Type	Part Number	Finish	Supplier
1	12	22	Pin	MS27184-22P	Gold	QPL
				M39029/54-342	Gold	QPL
			Socket	MS27185-22S	Gold	QPL
				M39029/55-344	Gold	QPL
2	8	20	Pin	MS27184-20P	Gold	QPL
				M39029/54-343	Gold	QPL
			Socket	MS27185-20S	Gold	QPL
				M39029/55-345	Gold	QPL

H. Supplier Shielded Contacts

CAUTION: THE SUPPLIER SHIELDED CONTACTS IN TABLE 34 ARE NOT INTERCHANGEABLE.

Table 34
SUPPLIER SHIELDED CONTACT PART NUMBERS

Shielded Contact Size	Contact Cavity Size	Center Contact Size	Finish	Contact Type	Part Number	Supplier
1	12	22	Rhodium	Pin	48-1226-02	Amphenol
					C48-1226-02	Cinch
				Socket	48-1227-02	Amphenol
					C48-1227-02	Cinch
2	8	20	Rhodium	Socket	CN0900-336	Cinch

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

I. Coax Contacts

CAUTION: THE COAX CONTACTS IN TABLE 35 ARE NOT INTERCHANGEABLE.

Table 35
COAX CONTACT PART NUMBERS

Contact Size	Contact Type	Part Number	Supplier
12	Pin	CRM280-2	Cory Components
		CRM280-3	Cory Components
		CRM280-4	Cory Components
	Socket	CRC280-2	Cory Components
		CRC280-3	Cory Components
		CRC280-4	Cory Components
8	Socket	CRMEF-502	Cory Components

5. INSERT CONFIGURATIONS

A. Insert Configurations for MIL-C-26500 Type Connectors

NOTE: The insert configurations that are specified in Table 36 include the connector shell size as the first part of the configuration. Refer to Table 1 for the part number structure that is applicable for the connector.

NOTE: The contact cavity size that is specified in Table 36 is equivalent to the size of the engaging end of the contact.

Table 36
CONNECTOR INSERT CONFIGURATIONS

Insert Configuration	Contact Cavity		Reference
	Count	Size	
8-2	2	20	Figure 62
8-3	3	20	Figure 62
10-2A	2	20	Figure 64
10-2	2	Refer to Table 37	Refer to Table 37
10-5	5	20	Figure 64
10-20	2	16	Figure 64
12-3	3	16	Figure 65
12-12	12	20	Figure 65
14-3	1	8	Figure 66
	2	16	
14-4	4	12	Figure 66
14-7	7	16	Figure 66

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 36 CONNECTOR INSERT CONFIGURATIONS (Continued)

Insert Configuration	Contact Cavity		Reference
	Count	Size	
14-12	3	16	Figure 66
	9	20	
14-15	15	20	Figure 66
16-10	10	16	Figure 67
16-24	24	20	Figure 67
18-8	8	12	Figure 68
18-11	1	8	Figure 68
	10	16	
18-14	14	16	Figure 68
18-31	31	20	Figure 68
20-16	16	16	Figure 69
20-25	19	20	Figure 69
	6	12	
20-28	24	20	Figure 69
	4	12	
20-39	2	16	Figure 69
	37	20	
20-41	41	20	Figure 69
22-12	12	12	Figure 70
22-19	19	16	Figure 70
22-32	26	20	Figure 70
	6	12	
22-39	27	20	Figure 70
	12	16	
22-55	55	20	Figure 70
24-30	30	16	Figure 71
24-43	20	16	Figure 71
	23	20	
24-57	2	12	Figure 71
	55	20	
24-61	61	20	Figure 71
28-40	36	16	Figure 72
	4	12	
28-42	42	16	Figure 72

20-61-11



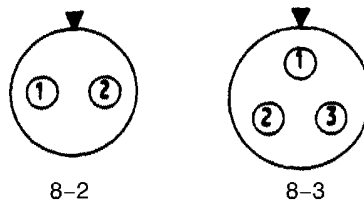
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STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 37
CONTACT CAVITY SIZES IN THE 10-2 INSERT CONFIGURATIONS

Connector Part Number	Contact Cavity		Reference
	Count	Size	
BACC45FN	2	16	Figure 63
BACC45FT	2	16	Figure 63
BACC63BN	2	16	Figure 63
BACC63BP	2	20	Figure 64
BACC63BV	2	20	Figure 64
BACC63CB	2	16	Figure 63
BACC63CC	2	16	Figure 63
All Other MIL-C-26500 Connectors that have a 10-2 Insert Configuration	2	20	Figure 64

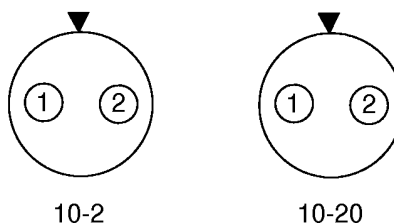
NOTE: Figure 62 through Figure 72 show the front face of an insert that has pins. The view of the front face of an insert that has sockets is a mirror image of this view.

NOTE: The triangle at the top of each insert configuration in Figure 62 through Figure 72 shows the location of the major polarization key in relation to the location of the contacts.



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8-() INSERT CONFIGURATIONS
Figure 62



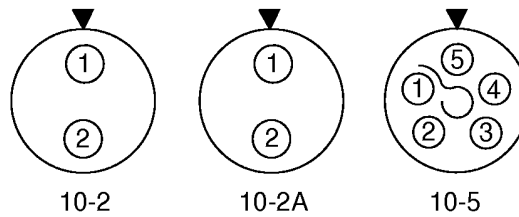
2449219 S00061546464_V1

10-() INSERT CONFIGURATIONS THAT HAVE SIZE 16 CONTACT CAVITIES
Figure 63

20-61-11

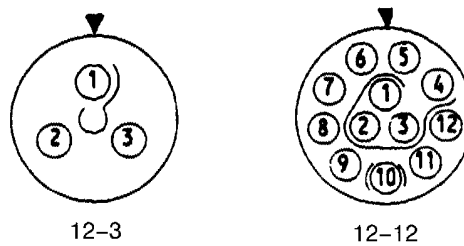


707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



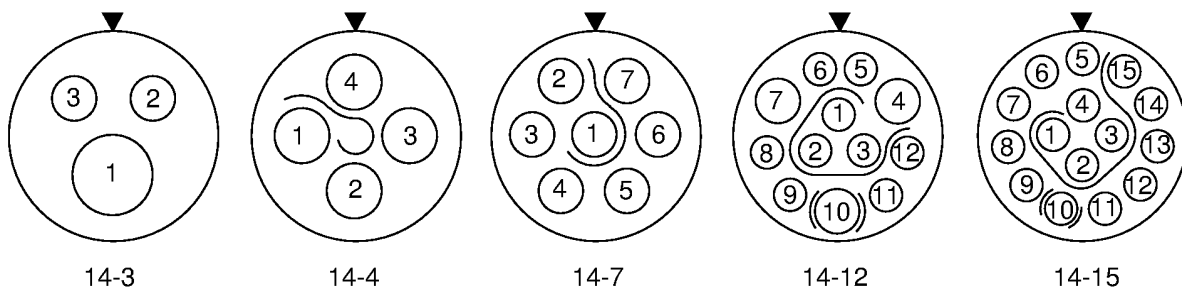
2446083 S00061546465_V1

10-() INSERT CONFIGURATIONS THAT HAVE SIZE 20 CONTACT CAVITIES
Figure 64



2446084 S00061546466_V1

12-() INSERT CONFIGURATIONS
Figure 65



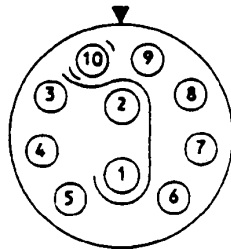
2446085 S00061546467_V1

14-() INSERT CONFIGURATIONS
Figure 66

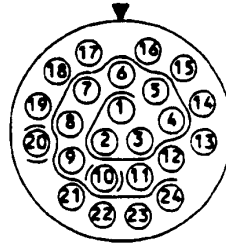
20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



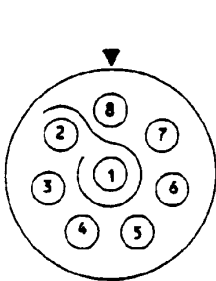
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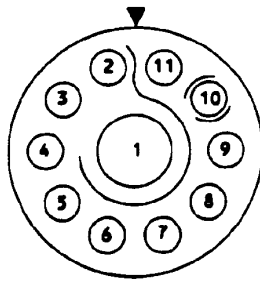
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2446086 S00061546468_V1

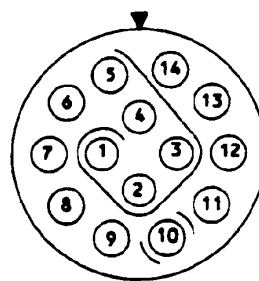
16-() INSERT CONFIGURATIONS
Figure 67



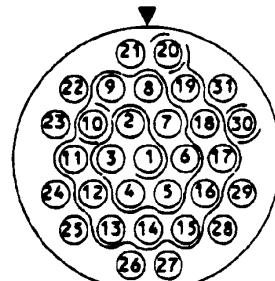
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18-11



18-14



18-31

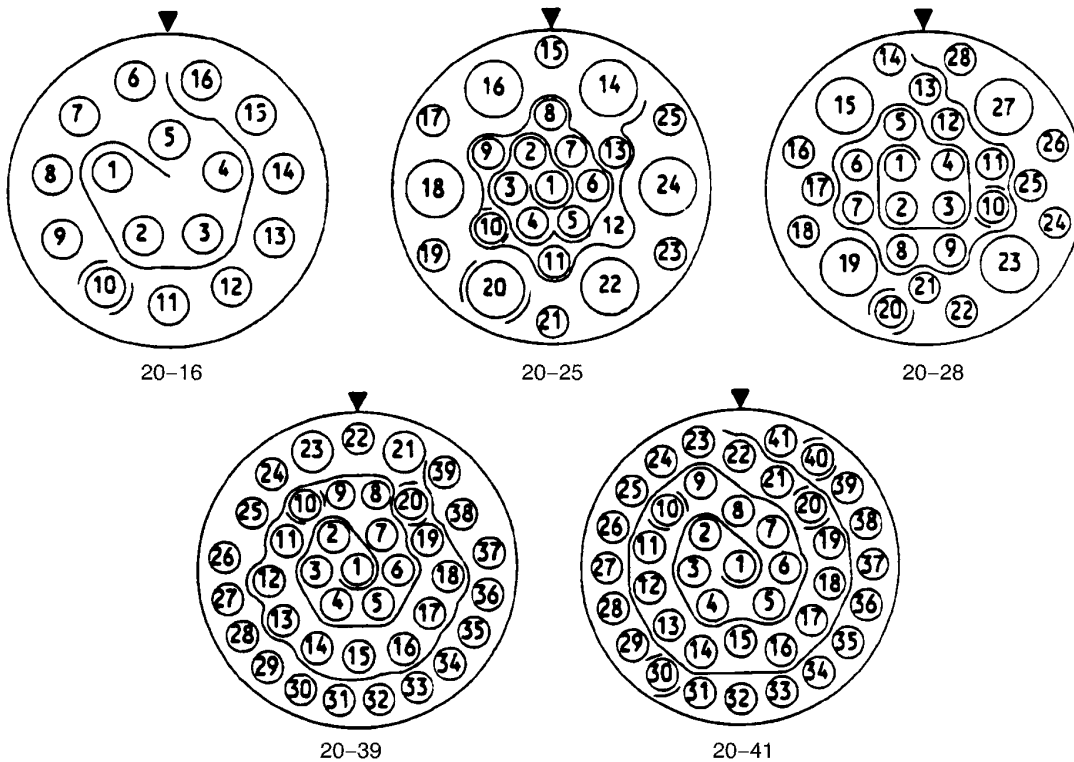
2446087 S00061546469_V1

18-() INSERT CONFIGURATIONS
Figure 68

20-61-11



707, 727-787
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MIL-C-26500 FRONT RELEASE CONNECTORS



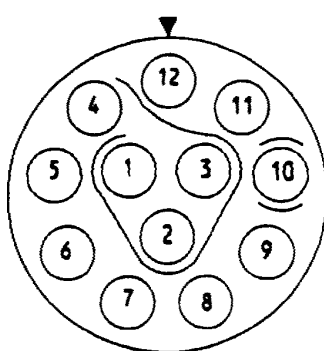
2446088 S00061546470_V1

20-() INSERT CONFIGURATIONS
Figure 69

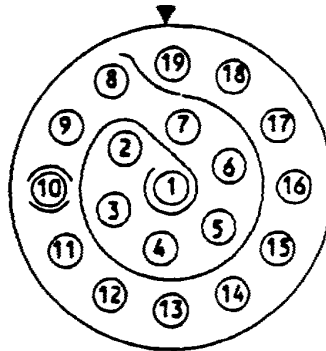
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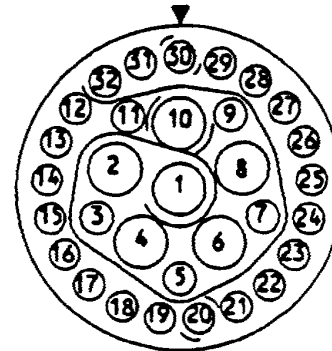
707, 727-787
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MIL-C-26500 FRONT RELEASE CONNECTORS



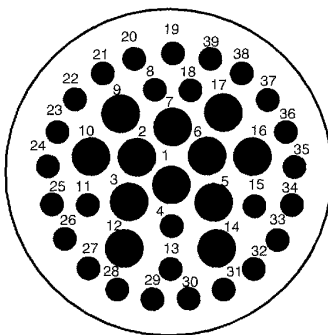
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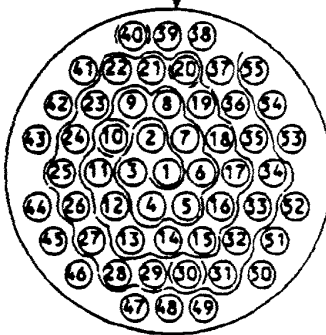
22-19



22-32



22-39



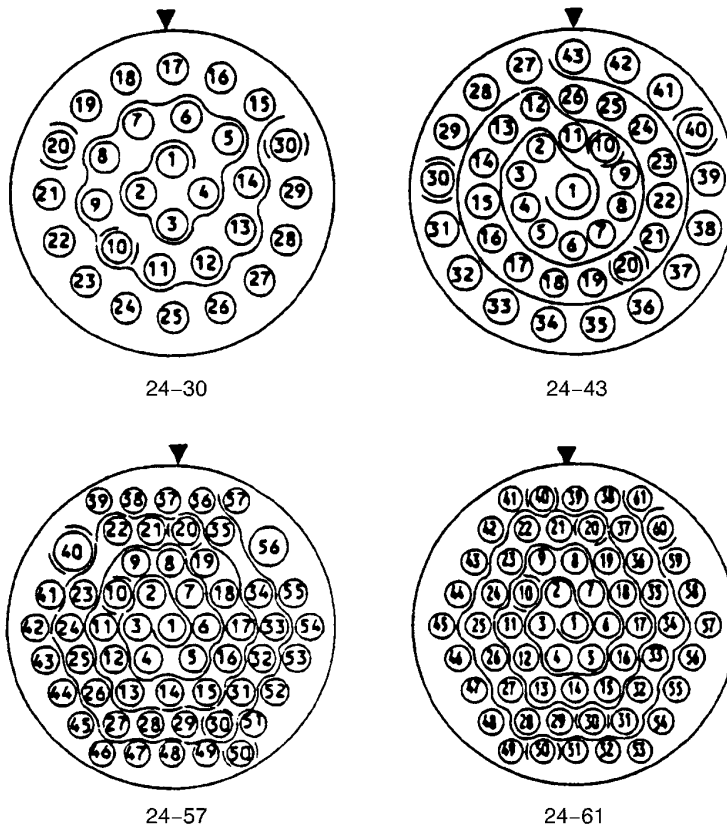
22-55

2446089 S00061546471_V1

22-() INSERT CONFIGURATIONS
Figure 70

20-61-11

707, 727-787
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MIL-C-26500 FRONT RELEASE CONNECTORS

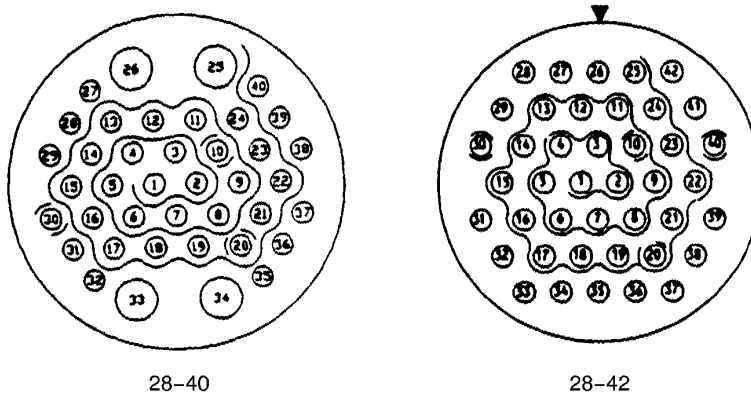


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24-() INSERT CONFIGURATIONS
Figure 71



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2446091 S00061546473_V1

28-() INSERT CONFIGURATIONS
Figure 72

6. **CONNECTOR DISASSEMBLY**

A. **Cinch CN0900-329 Connector Separation**

- (1) Turn the coupling ring clockwise until the bayonet pins of the plug are disengaged from the receptacle.

NOTE: As an alternative for connector separation, pull the lanyard straight away from the rear of the connector.

B. **Backshell Removal**

- (1) Remove the backshell components from the connector.

Refer to:

- Subject 20-60-09 for a strain relief clamp
- Subject 20-25-12 for a strain relief backshell with a shield termination
- Subject 20-25-13 for a peripheral backshell
- Subject 20-25-14 for a backshell with a shield terminator band.

NOTE: A backshell is also known as a strain relief clamp.

Make sure that the rear grommet is not removed from the connector.

CAUTION: DAMAGE TO THE CONNECTOR OCCURS IF THE REAR GROMMET IS REMOVED.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

C. Contact Removal

Refer to:

- Paragraph 6.D. for the removal of a shielded contact
- Paragraph 6.E. for the removal of a coax contact.

Table 38
CONTACT REMOVAL TOOLS

Contact Engaging End Size	Removal Tool
20	294-89
	AT 2020
	ATML 1907
	DRK20
	M81969/19-06
	M81969/19-07
	MS24256R20
	RX20-24
	RX20-24V5
	ST2220-3-13
	ZZL-R-9511-20
16	294-97
	AT 2016
	ATML 1908
	DRK16
	DRK56-16
	MS24256R16
	MS24256-16
	M81969/19-01
	M81969/19-08
	MS24256R16
	RX16-7
	RX16-8
	ST2220-3-14
	ZZL-R-9511-16

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 38 CONTACT REMOVAL TOOLS (Continued)

Contact Engaging End Size	Removal Tool
12	294-73
	AT 2012
	ATML 1909
	DRK12
	DRK56-12
	M81969/19-02
	M81969/19-09
	MS24256R12
	MS90456-12
	RTX12-7
	RX12-7
	ST2220-3-15
	ZZL-R-9511-12

- (1) Make a selection of a recommended contact removal tool from Table 38.
- (2) Examine the removal tool.

WARNING: DO NOT USE A REMOVAL TOOL THAT HAS A BENT TIP OR BIT. AN INJURY CAN OCCUR.

- (3) If it is necessary, remove the backshell components from the connector. Refer to Paragraph 6.B. Make sure that the rear grommet is not removed from the connector.

CAUTION: DAMAGE TO THE CONNECTOR WILL OCCUR IF THE REAR GROMMET IS REMOVED.

- (4) Push the backshell components away from the connector.
- (5) At the front face of the connector, axially align the tool with the contact cavity. Make sure that the plunger of the removal tool is fully retracted.

CAUTION: DO NOT INSERT THE TOOL INTO THE REAR GROMMET OF THE CONNECTOR. DAMAGE TO THE CONNECTOR WILL OCCUR.

- (6) Push the tool into the contact cavity until it stops.

NOTE: The retention clips in the contact cavity begin to open when resistance is felt.

CAUTION: DO NOT USE MORE THAN THE NECESSARY AMOUNT OF FORCE TO PUSH THE REMOVAL TOOL INTO THE CONTACT CAVITY. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

- (7) Hold the tool against the connector, and at the same time, push the plunger of the tool until the contact moves rearward in the connector.
- (8) Carefully pull the tool out from the contact cavity.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Make sure that the removal tool stays axially aligned with the contact cavity.

- (9) Pull the contact out from the rear of the connector.

D. Shielded Contact Removal

Table 39
SHIELDED CONTACT REMOVAL TOOLS

Shielded Contact Size	Connector Cavity Size	Removal Tool
1	12	294-73
		M81969/19-02
		MS24256R12
2	8	294-127
		M81969/19-03

- (1) Make a selection of a shielded contact removal tool from Table 39.
- (2) Examine the removal tool.

WARNING: DO NOT USE A REMOVAL TOOL THAT HAS A BENT TIP OR BIT. AN INJURY CAN OCCUR.

- (3) If it is necessary, remove the backshell components from the connector. Refer to Paragraph 6.B. Make sure that the rear grommet is not removed from the connector.

CAUTION: DAMAGE TO THE CONNECTOR WILL OCCUR IF THE REAR GROMMET IS REMOVED.

- (4) Push the backshell components away from the connector.
- (5) If the contact is a size 2 shielded contact with a seal boot or an O-ring:
- (a) Pull the seal boot or the O-ring until it is away from the rear grommet.
- (b) Move the seal boot or the O-ring away from the connector.
- (6) Remove the shielded contacts from the connector.
- Make sure that the center contact is not removed from the shielded contact.

CAUTION: DAMAGE TO THE SHIELDED CONTACT AND THE CONNECTOR CAN OCCUR IF THE CENTER CONTACT IS REMOVED FROM THE SHIELD.

- (a) At the front face of the connector, axially align the tool with the contact cavity.
- Make sure that the plunger of the removal tool is fully retracted.

CAUTION: DO NOT INSERT THE TOOL INTO THE REAR GROMMET OF THE CONNECTOR. DAMAGE TO THE CONNECTOR WILL OCCUR.

- (b) Push the tool into the contact cavity until it stops.

NOTE: The retention clips in the contact cavity begin to open when resistance is felt.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

CAUTION: DO NOT USE MORE THAN THE NECESSARY AMOUNT OF FORCE TO PUSH THE REMOVAL TOOL INTO THE CONTACT CAVITY. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

- (c) Hold the tool against the connector, and at the same time, push the plunger of the tool until the contact moves rearward in the connector.
- (d) Carefully pull the tool out of the contact cavity.
Make sure that the removal tool stays axially aligned with the contact cavity.
- (e) Pull the contact out from the rear of the connector.

E. Coax Contact Removal

Table 40
COAX CONTACT REMOVAL TOOLS

Contact Size	Removal Tool
12	294-73
	M81969/19-02
	MS24256R12
8	294-127
	M81969/19-03

- (1) Make a selection of a coax contact removal tool from Table 40.
- (2) Examine the removal tool.

WARNING: DO NOT USE A REMOVAL TOOL THAT HAS A BENT TIP OR BIT. AN INJURY CAN OCCUR.

- (3) If it is necessary, remove the backshell components from the connector. Refer to Paragraph 6.B.
Make sure that the rear grommet is not removed from the connector.

CAUTION: DAMAGE TO THE CONNECTOR WILL OCCUR IF THE REAR GROMMET IS REMOVED.

- (4) Push the backshell components away from the connector.
- (5) Remove the coax contact from the connector.
Make sure that the center contact is not removed from the coax contact.

CAUTION: DAMAGE TO THE COAX CONTACT AND THE CONNECTOR CAN OCCUR IF THE CENTER CONTACT IS REMOVED.

- (a) At the front face of the connector, axially align the tool with the contact cavity.
Make sure that the plunger of the removal tool is fully retracted.

CAUTION: DO NOT INSERT THE TOOL INTO THE REAR GROMMET OF THE CONNECTOR. DAMAGE TO THE CONNECTOR WILL OCCUR.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (b) Push the tool into the contact cavity until it stops.

NOTE: The retention clips in the contact cavity begin to open when resistance is felt.

CAUTION: DO NOT USE MORE THAN THE NECESSARY AMOUNT OF FORCE TO PUSH THE REMOVAL TOOL INTO THE CONTACT CAVITY. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

- (c) Hold the tool against the connector, and at the same time, push the plunger of the tool until the contact moves rearward in the connector.
- (d) Carefully pull the tool out of the contact cavity.
- Make sure that the removal tool stays axially aligned with the contact cavity.
- (e) Pull the contact out from the rear of the connector.

F. Seal Plug and Seal Rod Removal

- (1) If an unwired contact is in the contact cavity, refer to Paragraph 6.C. for the procedure to remove the contact.

NOTE: The seal plug or the seal rod is removed with the contact.

- (2) Make a selection of a pair of pliers.

CAUTION: MAKE SURE THAT THE PLIERS HAVE SMOOTH SURFACES AND NO SHARP EDGES. PLIERS WITH A ROUGH SURFACE OR A SHARP EDGE CAN CAUSE DAMAGE TO THE REAR GROMMET.

- (3) Tightly hold the end of the seal plug or the seal rod in the jaws of the pliers.
- (4) Carefully pull the seal plug or the seal rod straight out of the contact cavity.

7. WIRE PREPARATION

A. Wire Preparation

For the assembly of MIL-C-26500 type connectors with triax cable, refer to Subject 20-53-05.

For the preparation of:

- Champlain 24-00033 and Champlain 24-00034 wire, refer to Paragraph 7.B.
- Rockbestos or Cerro H22-4000 wire, refer to Paragraph 7.C.
- Belden 8787 cable, refer to Paragraph 7.D.
- S280T007-1 coil cable, refer to Paragraph 7.E.
- Champlain 51-04569 and 51-04570 cables, refer to Paragraph 7.F.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 41
INSULATION REMOVAL LENGTH

Crimp Barrel Size	Wire Size (AWG)	Removal Length (inch)			Special Instructions
		Minimum	Target	Maximum	
20	24	0.17	0.19	0.21	-
		0.25	0.28	0.31	For Pyle National ZZL-4()20-10() contacts only
	22	0.17	0.19	0.21	-
		0.25	0.28	0.31	For Pyle National ZZL-4()20-10() contacts only
	20	0.17	0.19	0.21	-
		0.25	0.28	0.31	For Pyle National ZZL-4()20-10() contacts only
18	18	0.23	0.25	0.27	-
16	24	0.47	0.50	0.53	Fold the conductor back
	22	0.47	0.50	0.53	Fold the conductor back
	20	0.23	0.25	0.27	-
	18	0.23	0.25	0.27	-
	15	0.23	0.25	0.27	-
	16	0.23	0.25	0.27	-
14	14	0.23	0.25	0.27	-
	13	0.23	0.25	0.27	-
12	24	0.47	0.50	0.53	Fold the conductor back
	22	0.47	0.50	0.53	Fold the conductor back
	20	0.47	0.50	0.53	Fold the conductor back
	18	0.47	0.50	0.53	Fold the conductor back
	16	0.23	0.25	0.27	-
	15	0.23	0.25	0.27	-
	14	0.23	0.25	0.27	-
	13	0.23	0.25	0.27	-
	12	0.23	0.25	0.27	-

- (1) Remove the necessary length of insulation from the end of the wire.

Refer to:

- Figure 73
- Table 41 for the insulation removal length
- Subject 20-00-15 for the insulation removal procedure.

NOTE: Refer to Subject 20-60-00:

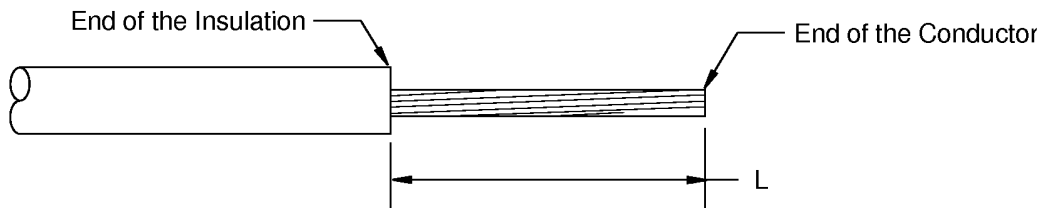
- If the wire size and a larger crimp barrel are not given in Table 41

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

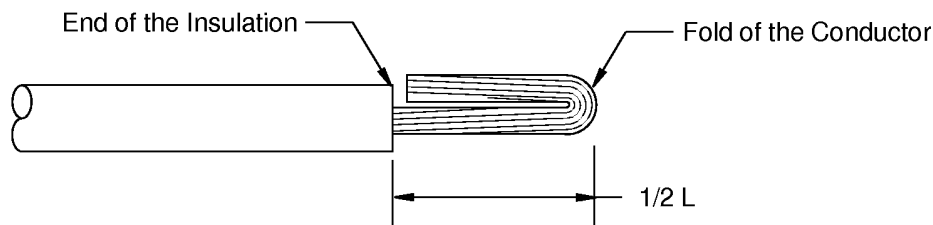
- For alternatives to the assembly of a contact with a conductor that is folded back.



2446140 S00061544325_V1

INSULATION REMOVAL LENGTH
Figure 73

- (2) If it is specified, fold the conductor back. Refer to Figure 74.



2446657 S00061544480_V1

FOLDED BACK CONDUCTOR
Figure 74

- (3) Measure the O.D. of the wire.
- (4) If the O.D. of the wire is less than the minimum seal diameter of the connector grommet hole, increase the O.D. of the wire. Refer to Paragraph 1.C.

B. Preparation of Champlain 24-00033 and Champlain 24-00034 Wire

Table 42
NECESSARY MATERIALS

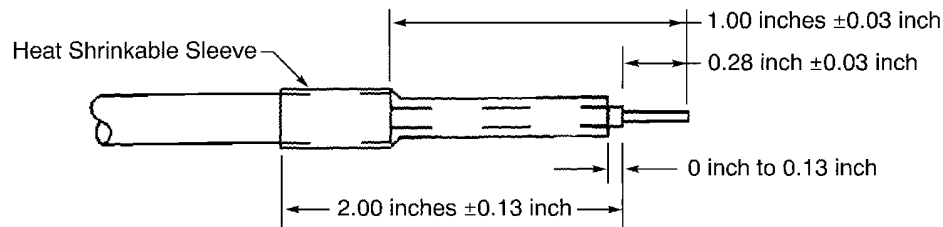
Material	Part Number	Description	Supplier
Sleeve, Heat Shrinkable	TFE 4X	3/16 inch diameter	Chemplast
			Zeus Industrial Products

NOTE: For alternative heat shrinkable sleeves, refer to Subject 20-00-11.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2446093 S00061546478_V1

PREPARATION OF CHAMPLAIN 24-00034 FIRE RESISTANT WIRE

Figure 75

Refer to Figure 75.

- (1) Make a selection of a heat shrinkable sleeve from Table 42.
- (2) Remove 1.00 inches ± 0.03 inch of the outer jacket from the end of the wire. Refer to Subject 20-00-15.
- (3) Remove 1.00 inches ± 0.03 inch of the layer of braid from the end of the wire. Refer to Subject 20-00-15.

CAUTION: DO NOT CAUSE DAMAGE TO THE INNER RUBBER LAYER. DAMAGE TO THE RUBBER LAYER CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

- (4) Remove 0.28 inch ± 0.03 inch of the inner rubber layer from the end of the wire. Refer to Subject 20-00-15.
- (5) Remove 0.28 inch ± 0.03 inch of the inner tape wrap from the end of the wire. Refer to Subject 20-00-15.

CAUTION: DO NOT CAUSE DAMAGE TO THE CONDUCTOR. DAMAGE TO THE CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

- (6) Put a 2.0 inch ± 0.13 inch length of heat shrinkable sleeve on the wire.
- (7) Align the forward end of the sleeve and the end of the inner rubber layer.

Make sure that:

- The forward end of the sleeve does not extend farther than the end of the inner rubber layer
 - The distance from the forward end of the sleeve to the end of the inner rubber layer is not more than 0.13 inch.
- (8) Shrink the sleeve into its position. Refer to Subject 20-10-14.

20-61-11



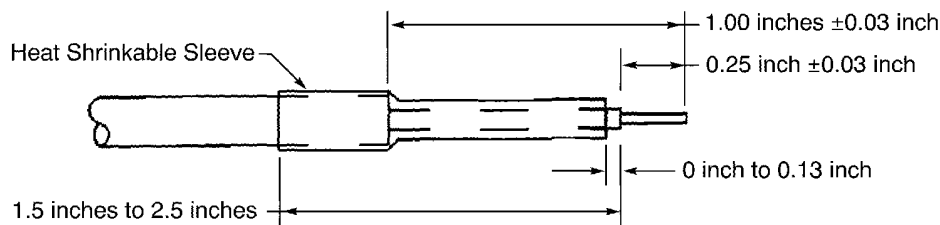
707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

C. Preparation of Rockbestos or Cerro H22-4000 Wire

Table 43
NECESSARY MATERIALS

Material	Part Number	Description	Supplier
Sleeve, Heat Shrinkable	TFE 4X	1/4 inch diameter	Chemplast
			Zeus Industrial Products

NOTE: For alternative heat shrinkable sleeves, refer to Subject 20-00-11.



2446161 S00061546481_V1

PREPARATION OF ROCKBESTOS OR CERRO H22-4000 WIRE

Figure 76

Refer to Figure 76.

- (1) Make a selection of a heat shrinkable sleeve from Table 43.
- (2) Remove 1.00 inches ± 0.03 inch of the outer braid from the end of the wire. Refer to Figure 76 and Subject 20-00-15.
- (3) Remove 1.00 inches ± 0.03 inch of the clear inner wrap from the end of the wire.

CAUTION: DO NOT CAUSE DAMAGE TO THE INNER INSULATION LAYER. DAMAGE TO THE INNER LAYER CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

- (4) Remove 0.25 inch ± 0.02 inch of the inner insulation from the end of the wire. Refer to Subject 20-00-15.

CAUTION: DO NOT CAUSE DAMAGE TO THE CONDUCTOR. DAMAGE TO THE CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

- (5) Put a 1.5 inch to 2.5 inch length of heat shrinkable sleeve on the wire.
- (6) Align the forward end of the sleeve and the end of the inner insulation.

Make sure that:

- The forward end of the sleeve does not extend farther than the end of the inner insulation
- The distance from the forward end of the sleeve to the end of the inner insulation is not more than 0.13 inch.

- (7) Shrink the sleeve into its position. Refer to Subject 20-10-14.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

D. Preparation of Belden 8787 Cable

Table 44
NECESSARY MATERIALS

Material	Part Number or Description	Supplier
Seal Sleeve, Heat Shrinkable	DWP-125	Raychem (Tyco)
Sleeve, Heat Shrinkable	Grade B, Class 1	Refer to Subject 20-00-11.

NOTE: For alternative heat shrinkable sleeves, refer to Subject 20-00-11.

- (1) Make a selection of a 3/8 inch diameter heat shrinkable seal sleeve from Table 44.
- (2) Put a 1.5 inch ± 0.2 inch length of the heat shrinkable sleeve on the cable.
- (3) Remove 1.5 inches ± 0.1 inch of the outer jacket from the end of the cable.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE INSULATION OF THE INNER WIRE. DAMAGE TO THE INSULATION WILL CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

CAUTION: DO NOT CAUSE DAMAGE TO THE UNINSULATED SHIELD DRAIN WIRES. DAMAGE TO THE DRAIN WIRES CAN DECREASE THE STRENGTH OF THE DRAIN WIRES.

- (4) Remove the necessary length of the red foil tape and the green foil tape.
Make sure that the end of each foil tape is not more than 0.06 inch from the end of the outer jacket.
- (5) Remove the necessary length of the clear Mylar tape.
Make sure that the distance from the end of the tape to the end of the outer jacket is not more than 0.06 inch.

CAUTION: DO NOT CAUSE DAMAGE TO THE UNINSULATED SHIELD DRAIN WIRES. DAMAGE TO THE DRAIN WIRES CAN DECREASE THE STRENGTH OF THE DRAIN WIRES.

- (6) Put the heat shrinkable sleeve on the outer jacket.
- (7) If it is necessary to assemble a contact on the drain wire:
 - (a) Make a selection of a 1/16 inch diameter heat shrinkable sleeve from Table 44.
 - (b) Put a 1.20 inches ± 0.06 inch length of the heat shrinkable sleeve on the drain wire.
Make sure that the rear end of the sleeve is against the end of the outer jacket.
 - (c) Shrink the sleeve on the drain wire into its position. Refer to Subject 20-10-14.
- (8) If it is not necessary to assemble a contact on the drain wire, cut the necessary length from the end of the drain wire.
Make sure that the distance from the end of the outer jacket to the end of the drain wire is not more than 0.06 inch.
- (9) Remove the necessary length of insulation from the end of the wires. Refer to Paragraph 7.A.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

E. Preparation of S280T007-1 Coil Cable

Table 45
NECESSARY MATERIALS

Material	Part Number	Supplier
Sleeve, Heat Shrinkable	MIL-LT	Raychem

NOTE: For alternative heat shrinkable sleeves, refer to Subject 20-00-11.

- (1) Make a selection of a heat shrinkable sleeve from Table 45.
Make sure that the sleeve has the smallest possible diameter that will move easily on the cable.
- (2) Put a 1.00 inch \pm 0.13 inch length of the heat shrinkable sleeve on the cable.
- (3) Remove the necessary length of insulation from the end of the wires. Refer to Paragraph 7.A.
- (4) Push the sleeve to the end of the cable until the forward end of the sleeve makes a 0.5 inch minimum overlap with the end of the cable jacket.
- (5) Shrink the sleeve into its position. Refer to Subject 20-10-14.

F. Preparation of Champlain 51-04569 and 51-04570 Cables

Table 46
NECESSARY MATERIALS

Material	Part Number	Supplier
Sleeve, Heat Shrinkable	TFE 4X	Zeus Industrial Products

NOTE: For alternative heat shrinkable sleeves, refer to Subject 20-00-11.

- (1) Assemble a shield ground wire.

NOTE: The shield ground wire can be assembled with one of these procedures:

- A mechanical ferrule
 - A solder sleeve.
- (a) Make a selection of one of these:
 - A mechanical ferrule from Subject 20-10-15
 - A solder sleeve from Table 47.

Table 47
SOLDER SLEEVE PART NUMBERS

Part Number	Supplier
D-108-02	Raychem
D-108-11	Raychem

- (b) Make a selection of a heat shrinkable sleeve from Table 46.
 - (c) Assemble the shield ground wire. Refer to Subject 20-10-15.
- (2) Remove the necessary length of insulation from the end of the wires. Refer to Paragraph 7.A.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

8. CONTACT ASSEMBLY

A. Selection of a Crimp Tool

Table 48
RECOMMENDED CONTACT CRIMP TOOLS FOR ONE WIRE IN THE CRIMP BARREL

Wire Size (AWG)	Contact Size	Crimp Tool				
		Basic Unit		Locator		Code
		Part Number	Setting	Part Number	Color	
24	2020	M22520/1-01	2	M22520/1-02	Red	B
		M22520/2-01	5	M22520/2-02	-	A
	1616	M22520/1-01	4	M22520/1-02	Blue	I
	1212	M22520/1-01	7	M22520/1-02	Yellow	N
22	2020	M22520/1-01	3	M22520/1-02	Red	D
		M22520/2-01	6	M22520/2-02	-	C
	1616	M22520/1-01	5	M22520/1-02	Blue	J
	1212	M22520/1-01	7	M22520/1-02	Yellow	N
20	2020	M22520/1-01	4	M22520/1-02	Red	F
		M22520/2-01	7	M22520/2-02	-	E
	1616	M22520/1-01	4	M22520/1-02	Blue	I
	1212	M22520/1-01	6	M22520/1-02	Yellow	M
18	2018	M22520/1-01	5	M22520/1-02	Red	H
		M22520/2-01	8	M22520/2-02	-	G
	1616	M22520/1-01	5	M22520/1-02	Blue	J
	1212	M22520/1-01	7	M22520/1-02	Yellow	N
16	2016	M22520/1-01	6	M22520/1-02	Red	H
		M22520/2-01	8	M22520/2-02	-	G
	1616	M22520/1-01	6	M22520/1-02	Blue	K
	1212	M22520/1-01	6	M22520/1-02	Yellow	M
15	1614	M22520/1-01	7	M22520/1-02	Blue	L
	1212	M22520/1-01	7	M22520/1-02	Yellow	N
14	1614	M22520/1-01	7	M22520/1-02	Blue	L
	1212	M22520/1-01	7	M22520/1-02	Yellow	N
13	1614	M22520/1-01	7	M22520/1-02	Blue	L
	1212	M22520/1-01	7	M22520/1-02	Yellow	N
12	1212	M22520/1-01	8	M22520/1-02	Yellow	O
10	1210	M22520/1-01	8	M22520/1-02	Yellow	N

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 49
ALTERNATIVE EQUIVALENT CONTACT CRIMP TOOLS FOR ONE WIRE IN THE CRIMP BARREL

Wire Size (AWG)	Contact Size	Crimp Tool				
		Basic Unit		Locator		Code
		Part Number	Setting	Part Number	Color	
24	2020	85-220	5	M22520/2-02	-	A
		85-550	2	M22520/1-02	Red	B
		WA22	5	M22520/2-02	-	A
		WA22LC	5	M22520/2-02	-	A
		WA27F	2	M22520/1-02	Red	B
	1616	85-550	4	M22520/1-02	Blue	I
		WA27F	4	M22520/1-02	Blue	I
22	2020	85-220	6	M22520/2-02	-	C
		WA22	6	M22520/2-02	-	C
		WA22LC	6	M22520/2-02	-	C
		WA27F	3	M22520/1-02	Red	D
	1616	85-550	5	M22520/1-02	Blue	J
		WA27F	5	M22520/1-02	Blue	J
20	2020	85-220	7	M22520/2-02	-	E
		85-550	4	M22520/1-02	Red	F
		WA22	7	M22520/2-02	-	E
		WA22LC	7	M22520/2-02	-	E
		WA27F	4	M22520/1-02	Red	F
	1616	85-550	4	M22520/1-02	Blue	I
		WA27F	4	M22520/1-02	Blue	I
	1212	85-550	6	M22520/1-02	Yellow	M
		WA27F	6	M22520/1-02	Yellow	M
18	2018	WA22	8	M22520/2-02	-	G
		WA27F	5	M22520/1-02	Red	H
	1616	85-550	5	M22520/1-02	Blue	J
		WA27F	5	M22520/1-02	Blue	J
	1212	85-550	7	M22520/1-02	Yellow	N
		WA27F	7	M22520/1-02	Yellow	N
16	1212	85-550	6	M22520/1-02	Yellow	M
		WA27F	6	M22520/1-02	Yellow	M
15	1212	85-550	7	M22520/1-02	Yellow	N
		WA27F	7	M22520/1-02	Yellow	N

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 49 ALTERNATIVE EQUIVALENT CONTACT CRIMP TOOLS FOR ONE WIRE IN THE CRIMP BARREL (Continued)

Wire Size (AWG)	Contact Size	Crimp Tool				
		Basic Unit		Locator		Code
		Part Number	Setting	Part Number	Color	
14	1212	85-550	7	M22520/1-02	Yellow	N
		WA27F	7	M22520/1-02	Yellow	N
13	1212	85-550	7	M22520/1-02	Yellow	N
		WA27F	7	M22520/1-02	Yellow	N
12	1212	85-550	8	M22520/1-02	Yellow	O
		WA27F	8	M22520/1-02	Yellow	O
10	1210	WA27F	8	M22520/1-02	Yellow	N

Table 50
ALTERNATIVE PERMITTED CONTACT CRIMP TOOLS FOR ONE WIRE IN THE CRIMP BARREL

Wire Size (AWG)	Contact Size	Crimp Tool				
		Basic Unit			Locator	
		Part Number	Setting	Die Set	Part Number	Color
24	2020	M10S	-	S-5	SL-3	-
22	2020	M10S	-	S-6	SL-3	-
		ST2220-1-Y	-	-	ST2220-1-1	-
20	2020	M10S	-	S-6	SL-3	-
		ST2220-1-Y	-	-	ST2220-1-1	-
	1616	M10S	-	S-7	SL-2	-
		ST2220-1-Y	-	-	ST2220-1-2	-
18	2018	M22520/2-01	8	-	K250	-
	2016	M22520/2-01	8	-	K977	-
		WA22	8	-	K977	-
	1616	M10S	-	S-7	SL-2	-
		ST2220-1-Y	-	-	ST2220-1-2	-
16	2016	M22520/2-01	8	-	K977	-
		ST2220-1-Y	-	-	ST2220-1-45	-
	1616	85-550	6	-	M22520/1-02	Blue
		M10S	-	S-7	SL-3	-
		ST2220-1-Y	-	-	ST2220-1-2	-
		WA27F	6	-	M22520/1-02	Blue
15	1614	WA27F	7	-	M22520/1-02	Blue

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 50 ALTERNATIVE PERMITTED CONTACT CRIMP TOOLS FOR ONE WIRE IN THE CRIMP BARREL
(Continued)

Wire Size (AWG)	Contact Size	Crimp Tool				
		Basic Unit			Locator	
		Part Number	Setting	Die Set	Part Number	Color
14	1614	WA27F	7	-	M22520/1-02	Blue
	1212	M10S	-	S-8	SL-4	-
		ST2220-1-Y	-	-	ST2220-1-3	-
13	1614	WA27F	7	-	M22520/1-02	Blue
12	1212	M10S	-	S-8	SL-4	-
		ST2220-1-Y	-	-	ST2220-1-2	-

Table 51
CONTACT CRIMP TOOLS FOR TWO WIRES IN THE CRIMP BARREL

Two Wires in the Crimp Barrel		Contact			Crimp Tool			
Size of the First Wire (AWG)	Size of the Second Wire (AWG)	Size	Part Number	Supplier	Basic Unit		Locator	
					Part Number	Setting	Part Number	Color
22	22	2018	P-209541-D	Pyle-National	M22520/1-01	4	M22520/1-02	Red
					M22520/2-01	7	M22520/2-02	-
		2016	P-209439-D	Pyle-National	M22520/1-01	4	M22520/1-02	Red
					M22520/2-01	7	M22520/2-02	-
	16	1614	P-208575-S	Pyle-National	M22520/1-01	7	M22520/1-02	Blue
					WA27F	7	M22520/2-02	Blue

Table 52
CONTACT CRIMP TOOL REFERENCES FOR TWO WIRES IN THE CRIMP BARREL

Two Wires in the Crimp Barrel		Contact			Crimp Tool	
Size of the First Wire (AWG)	Size of the Second Wire (AWG)	Size	Part Number or Specification	Supplier	Reference for the Basic Unit and the Locator	Setting
24	24	2020	BACC47CN1()	Boeing	Table 48	for AWG 20
			BACC47CP1()			
		1616	BACC47CN2()			
			BACC47CP2()			

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 52 CONTACT CRIMP TOOL REFERENCES FOR TWO WIRES IN THE CRIMP BARREL (Continued)

Two Wires in the Crimp Barrel		Contact			Crimp Tool	
Size of the First Wire (AWG)	Size of the Second Wire (AWG)	Size	Part Number or Specification	Supplier	Reference for the Basic Unit and the Locator	Setting
22	22	1616	BACC47CN2()	Boeing	Table 48	for AWG 18
			BACC47CP2()			
		2018	P-209541-D	Pyle- National	Table 48	for AWG 18
			P-209553-D			
			10-807107-20T	Boeing		
			10-807107-205			
			10-807120-20T			
			10-807120-205			
			248-136-2018S-02	Amphenol		
			48-100-5008P-02			
			48-100-5014P-02			
22	20	1616	BACC47CN2()	Boeing	Table 48	for AWG 18
			BACC47CP2()			
		2016	P-209439-D	Pyle- National	Table 48	for AWG 16
			P-209439-T			
			10-807118-20T	Boeing		
			10-807118-205			
			10-807155-20T			
			10-807155-205			
			248-136-2016S-02	Amphenol		
			31A-2016-035	Tri-Star		
			317-2016-035			
			318-2016-035			
			48-100-5012P-02	Amphenol		
			48-100-5007P-02			

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 52 CONTACT CRIMP TOOL REFERENCES FOR TWO WIRES IN THE CRIMP BARREL (Continued)

Two Wires in the Crimp Barrel		Contact			Crimp Tool	
Size of the First Wire (AWG)	Size of the Second Wire (AWG)	Size	Part Number or Specification	Supplier	Reference for the Basic Unit and the Locator	Setting
22	18	2016	P-209439-D	Pyle- National	Table 48	for AWG 16
			10-807118-20T	Boeing		
			10-807118-205			
			10-807155-20T			
			10-807155-205			
			248-136-2016S-02	Amphenol		
			31A-2016-035	Tri-Star		
			318-2016-035			
			48-100-5007P-02	Amphenol		
			48-100-5012P-02			
20	20	1212	BACC47CN3()	Boeing	Table 48	for AWG 16
			BACC47CP3()			
		2016	P-209439-D	Pyle- National	Table 48	for AWG 16
			10-807118-20T	Boeing		
			10-807118-205			
			10-807155-20T			
			10-807155-205			
			248-136-2016S-02	Amphenol		
			31A-2016-035	Tri-Star		
			318-2016-035			
			48-100-5007P-02	Amphenol		
			48-100-5012P-02			
20	18	1212	BACC47CN3()	Boeing	Table 48	for AWG 16
			BACC47CP3()			

- (1) If the contact is to be terminated to one wire, make a selection of a recommended crimp tool from Table 48.
- (2) If the recommended crimp tool is not available:
 - (a) Identify the code of the recommended crimp tool. Refer to Table 48.

NOTE: A crimp tool code is assigned to a crimp tool and is related to:

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- The basic unit
- The setting of the basic unit
- The locator
- The color of the locator.

For example, for an AWG 24 wire in a contact that has a size 20 engaging end and a size 20 crimp barrel, the recommended crimp tool from Table 48 is:

- An M22520/1-01 basic unit at a setting of 2
- An M22520/1-02 locator at red.

This crimp tool has a crimp tool code of B.

- (b) Make a selection of an alternative equivalent crimp tool from Table 49 that has the same crimp tool code for the same wire size and contact size.

NOTE: Crimp tools that have the same crimp tool code attach a contact to a wire in a way that is mechanically equivalent.

In the example for an AWG 24 wire in a contact that has a size 20 engaging end and a size 20 crimp barrel with a crimp tool code of B, the alternative equivalent crimp tool is:

- An 85-550 or a WA27F basic unit at a setting of 2
- An M22520/1-02 locator at red.

- (3) If the alternative equivalent crimp tool is not available, make a selection of an alternative permitted crimp tool from Table 50.
- (4) If the contact is to be terminated to two wires:
- (a) Make a selection of a crimp tool from Table 51.
 - (b) If the contact part number is not shown in Table 51, refer to Table 52 for the reference to a crimp tool and a locator for the contact size.
 - (c) Use the contact size to make a selection of a crimp tool and locator from Table 48.

NOTE: A crimp tool and a locator selected from Table 49 or Table 50 is a satisfactory alternative.

- (d) Use the wire size specified in Table 52 under Setting to find the crimp tool setting in Table 48 or Table 49 or Table 50.

B. Contact Assembly

This paragraph gives the procedure to assemble:

- A standard contact
- A thermocouple contact
- A special purpose contact.

For the procedure to assemble:

- A shielded contact, refer to Paragraph 9.
- A coax contact, refer to Paragraph 10.

- (1) Make a selection of the contact. Refer to the Wiring Diagram Manual.
- (2) Prepare the wire. Refer to:
- Paragraph 7. for the wire preparation procedure

20-61-11

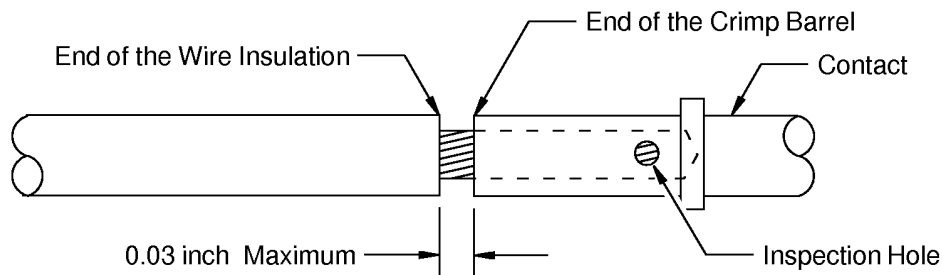


707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- Subject 20-00-15 for the insulation removal procedures.
- (3) Make a selection of a crimp tool. Refer to Paragraph 8.A.
- (4) For a contact without an insulation support barrel:
 - (a) Put the end of the wire in the crimp barrel of the contact. Refer to Figure 77.

Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The conductor can be seen in the inspection hole
- The distance from the end of the insulation to the crimp barrel is not more than 0.03 inch.



2446968 S00061546268_V1

POSITION OF THE WIRE IN A CONTACT WITHOUT AN INSULATION SUPPORT BARREL

Figure 77

- (b) Crimp the contact.
- (5) For a contact with an insulation support barrel and a wire that has an O.D. that is larger than the insulation support barrel:
 - (a) Put the end of the wire in the crimp barrel of the contact. Refer to Figure 78.

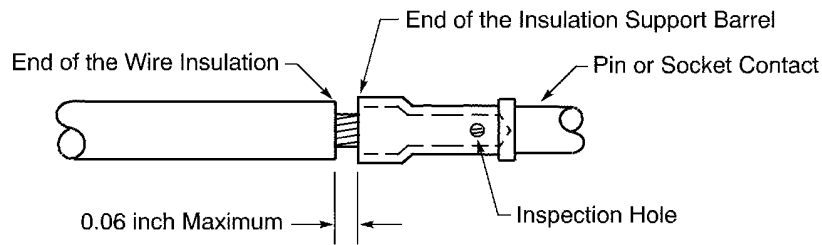
Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The conductor can be seen in the inspection hole
- The distance from the end of the insulation to the crimp barrel is not more than 0.06 inch.

20-61-11



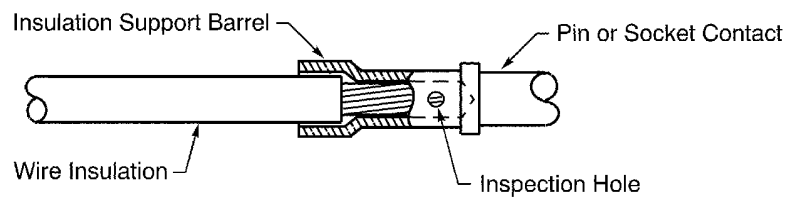
707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



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POSITION OF THE WIRE THAT HAS AN O.D. THAT IS LARGER THAN THE INSULATION SUPPORT BARREL
Figure 78

- (b) Crimp the contact.
 - (6) For all other contacts with an insulation support barrel:
 - (a) Put the end of the wire in the crimp barrel of the contact. Refer to Figure 79.
- Make sure that:
- All of the strands of the conductor are in the crimp barrel
 - The conductor can be seen in the inspection hole
 - The wire insulation is in the insulation support barrel.



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POSITION OF THE WIRE IN A CONTACT WITH AN INSULATION SUPPORT BARREL
Figure 79

- (b) Crimp the contact.

9. SHIELDED CONTACT ASSEMBLY

A. Assembly of a Size 1 Shielded Contact

For the procedure to assemble:

- MS39029/54-342 and MS27184-22P contacts, refer to Paragraph 9.B.
- 48-122()-02 and C48-122()-02 contacts with RG-174 or RG-179 coax cable, refer to Paragraph 9.C.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

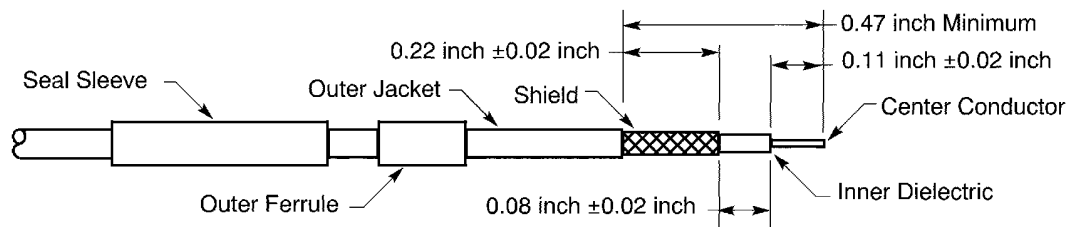
Table 53
CENTER CONTACT CRIMP TOOLS

Wire Size (AWG)	Center Contact Size	Crimp Tool		
		Basic Unit		Locator
		Part Number	Setting	
22	22	M22520/2-01	6	M22520/2-33
			6	K74S
			5	294-1631
		ST2220-1-Y	-	ST2220-1-47

Table 54
FERRULE CRIMP TOOLS

Basic Unit	Die
M22520/5-01	M22520/5-08
	M22520/5-35
WT-200	-

- (1) Make a selection of a center contact crimp tool from Table 53.
- (2) Make a selection of a ferrule crimp tool from Table 54.
- (3) Prepare the cable. Refer to Figure 80.



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CABLE PREPARATION
Figure 80

- (a) Put the seal sleeve on the cable.

NOTE: A one inch length of heat shrinkable sleeve with the smallest diameter that can move freely on the outer jacket is a satisfactory alternative to the seal sleeve.

- (b) Put the outer ferrule on the cable.
- (c) Remove a minimum of 0.47 inch of the jacket from the end of the cable.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE SHIELD. DAMAGE TO THE SHIELD CAN CAUSE UNSATISFACTORY CABLE PERFORMANCE OF THE CABLE.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (d) Remove the necessary length of the shield to make the distance from the end of the cable jacket to the end of the shield equal to 0.22 inch \pm 0.02 inch.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE INNER DIELECTRIC. DAMAGE TO THE DIELECTRIC CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (e) Remove the necessary length of the inner dielectric to make the distance from the end of the shield to the end of the inner dielectric equal to 0.08 inch \pm 0.02 inch.

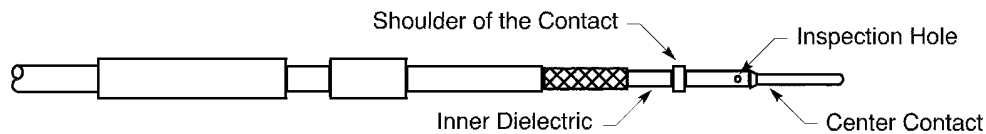
CAUTION: DO NOT CUT OR MAKE A NICK IN THE CENTER CONDUCTOR. DAMAGE TO THE CENTER CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (f) Remove the necessary length of the center conductor to make the distance from the end of the dielectric to the end of the conductor equal to 0.11 inch \pm 0.02 inch.
- (4) If the strands of the center conductor are apart, twist the strands together in their initial direction.
- (5) Push the center conductor into the crimp barrel of the center contact until the inner dielectric is against the shoulder of the center contact.

Refer to Figure 81.

Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The strands of the conductor can be seen in the inspection hole
- The dielectric is against the shoulder of the center contact.



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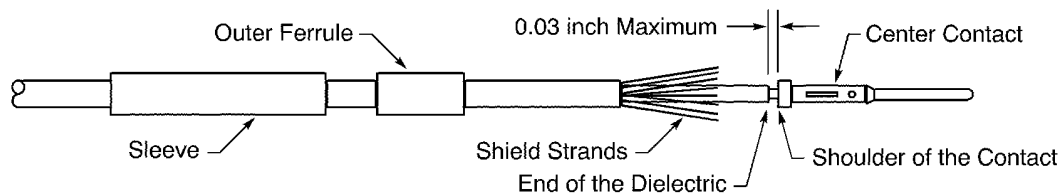
POSITION OF THE CENTER CONTACT ON THE CABLE
Figure 81

- (6) Crimp the center contact. Refer to Figure 82.
- Make sure that the distance from the end of the dielectric to the contact is not more than 0.03 inch.
- (7) Move the strands of the shield apart. Refer to Figure 82.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

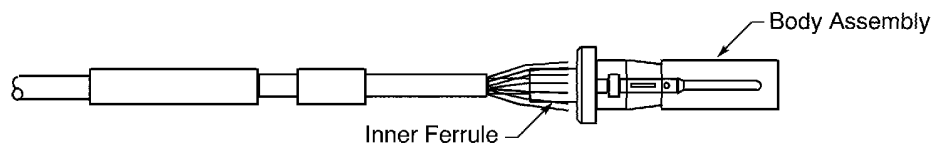


2446096 S00061546490_V1

CONFIGURATION OF THE SHIELD STRANDS

Figure 82

- (8) Put the body assembly on the center contact. Refer to Figure 83.
Make sure that the inner ferrule of the body assembly is between the shield strands and the inner dielectric.



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POSITION OF THE BODY ASSEMBLY ON THE CENTER CONTACT

Figure 83

- (9) Push the center contact into the body assembly until it is locked in the body assembly.
(10) To make sure that the center contact is locked, hold the body of the contact and lightly pull the cable.

CAUTION: DO NOT PULL THE CABLE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

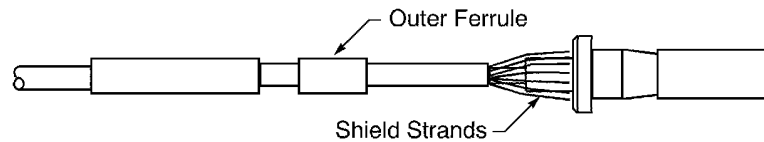
CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (11) If the center contact moves out of the body assembly, do Step 9.A.(9) and Step 9.A.(10) again.
(12) Put the strands of the shield on the inner ferrule. Refer to Figure 84.
Make sure that the strands of the shield are symmetrical around the inner ferrule.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

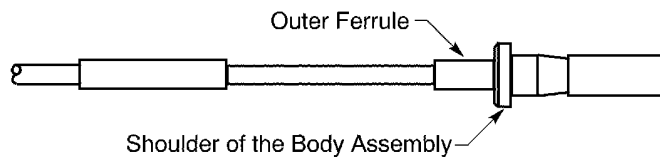


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POSITION OF THE SHIELD ON THE INNER FERRULE

Figure 84

- (13) Push the outer ferrule forward to the end of the cable until the forward end of the outer ferrule is against the shoulder of the body assembly. Refer to Figure 85.



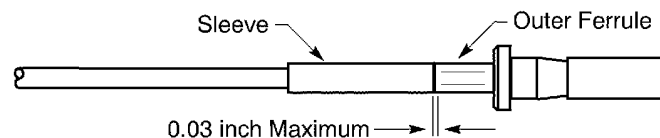
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POSITION OF THE OUTER FERRULE

Figure 85

- (14) Crimp the outer ferrule.
- (15) If the seal sleeve is on the cable, push the sleeve forward until the forward end of the sleeve is against the rear end of the outer ferrule. Refer to Figure 86.

Make sure that the distance between the forward end of the seal sleeve and the rear end of the outer ferrule is not more than 0.03 inch.



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POSITION OF THE SLEEVE

Figure 86

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (16) If a heat shrinkable sleeve is on the cable:
- (a) Push the sleeve to the end of the cable until the forward end of the sleeve is against the rear end of the outer ferrule. Refer to Figure 86.

Make sure that the distance between the forward end of the sleeve and the rear end of the outer ferrule is not more than 0.03 inch.
 - (b) Shrink the sleeve in its position. Refer Subject 20-10-14.

B. Assembly of MS39029/54-342 and MS27184-22P Size 1 Shielded Contacts

Table 55
NECESSARY MATERIALS

Material	Part Number or Description	Supplier
Heat Shrinkable Sleeve	Grade B, Class 1	Refer to Subject 20-00-11.
Seal Sleeve	DWP-125	Raychem (Tyco)

NOTE: For alternative sleeve part numbers, refer to Subject 20-00-11.

Table 56
CENTER CONTACT CRIMP TOOLS

Wire Size (AWG)	Center Contact Size	Crimp Tool			
		Basic Unit		Locator	
		Part Number	Setting	Part Number	Color
24	20	ST2220-1-Y	-	ST2220-1-15A	-
22	20	M22520/1-01	3	M22520/1-02	-
		M22520/2-01	6	M22520/2-02	-
		ST2220-1-Y	-	ST2220-1-15A	-
20	20	ST2220-1-Y	-	ST2220-1-15A	-
		WA22	7	-	-
		WA27F	4	M22520/1-02	Red
18	20	M22520/1-01	5	M22520/1-02	Red
		WA27F	5	M22520/1-02	Red

Table 57
FERRULE CRIMP TOOLS

Basic Unit	Die	
	Part Number	Cavity
612648	612661	-
M22520/5-01	M22520/5-39	-
ST965-1	-	-
WT-202-06-08	-	S

- (1) Make a selection of a center contact crimp tool from Table 56.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (2) Make a selection of a ferrule crimp tool from Table 57.
- (3) Put the necessary components on the cable:

NOTE: The seal boot, the seal sleeve, and the outer ferrule in the contact kit are not applicable for this procedure. They can be discarded.

- (a) For a Raychem 55A6087 cable, or a Boeing 10-60816-61 cable, put these sleeves on the cable in this sequence:

- A 0.50 inch ± 0.05 inch length of 1/4 inch diameter seal sleeve
- A 0.75 inch ± 0.06 inch length of 3/16 inch diameter seal sleeve.

Refer to Table 55.

- (b) For all other cables, put these sleeves on the cable in this sequence:

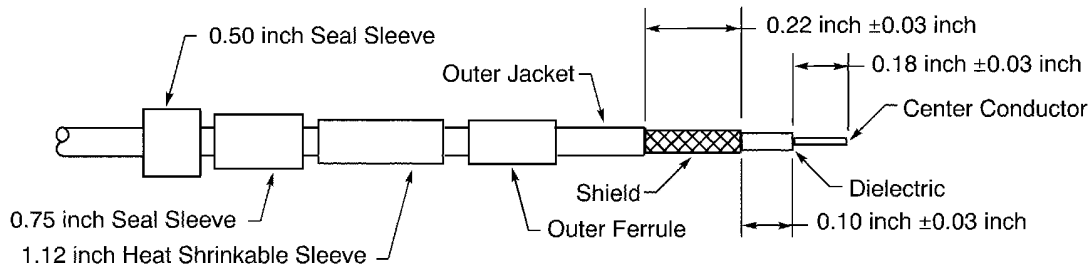
- A 0.50 inch ± 0.05 inch length of 1/4 inch diameter seal sleeve
- A 0.75 inch ± 0.06 inch length of 3/16 inch diameter seal sleeve
- A 1.12 inch ± 0.12 inch length of 1/8 inch diameter heat shrinkable sleeve.

Refer to Table 55.

- (c) Put a BACS13S156C outer ferrule on the cable.

NOTE: Refer to Subject 20-00-11 for approved suppliers and alternative part numbers for BACS13S ferrules.

- (4) Prepare the cable. Refer to Figure 87.



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CABLE PREPARATION
Figure 87

- (a) Remove a minimum of 0.59 inch of the jacket from the end of the cable.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE SHIELD. DAMAGE TO THE SHIELD CAN CAUSE UNSATISFACTORY CABLE PERFORMANCE OF THE CABLE.

- (b) Remove the necessary length of the shield to make the distance from the end of the cable jacket to the end of the shield equal to 0.22 inch ± 0.03 inch.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE INNER DIELECTRIC. DAMAGE TO THE DIELECTRIC CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (c) Remove the necessary length of the inner dielectric to make the distance from the end of the shield to the end of the inner dielectric equal to 0.10 inch \pm 0.03 inch.

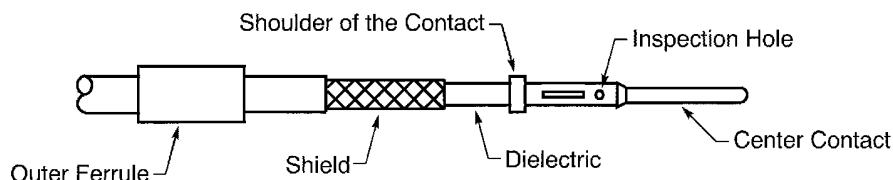
CAUTION: DO NOT CUT OR MAKE A NICK IN THE CENTER CONDUCTOR. DAMAGE TO THE CENTER CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (d) Remove the necessary length of the center conductor to make the distance from the end of the dielectric to the end of the conductor equal to 0.18 inch \pm 0.03 inch.
- (5) If the strands of the center conductor are apart, twist the strands together in their initial direction.
- (6) Push the center conductor into the crimp barrel of the center contact until the inner dielectric is against the shoulder of the center contact.

Refer to Figure 88.

Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The strands of the conductor can be seen in the inspection hole
- The dielectric is against the shoulder of the center contact.



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POSITION OF THE CENTER CONTACT ON THE CABLE

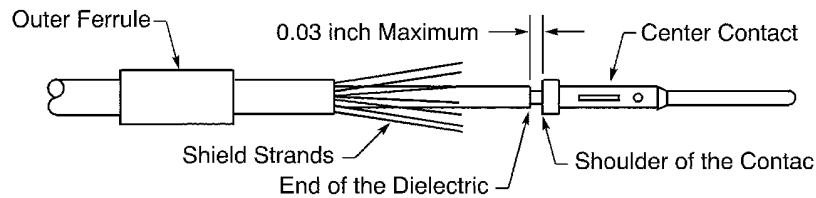
Figure 88

- (7) Crimp the center contact.
Make sure that the distance from the end of the dielectric to the contact is not more than 0.03 inch.
- (8) Move the strands of the shield apart. Refer to Figure 89.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

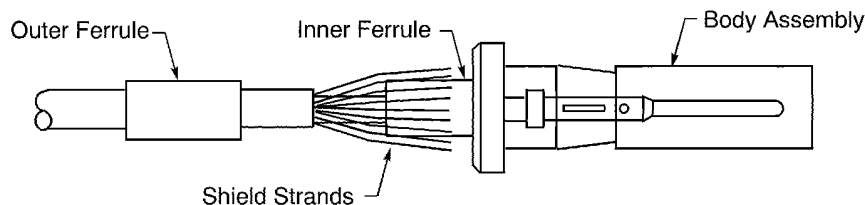


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CONFIGURATION OF THE SHIELD STRANDS

Figure 89

- (9) Put the body assembly on the center contact. Refer to Figure 90.
Make sure that the inner ferrule of the body assembly is between the shield strands and the inner dielectric.



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POSITION OF THE BODY ASSEMBLY ON THE CENTER CONTACT

Figure 90

- (10) Push the center contact into the body assembly until it is locked in the body assembly.
(11) To make sure that the center contact is locked, hold the body of the contact and lightly pull the cable.

CAUTION: DO NOT PULL THE CABLE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

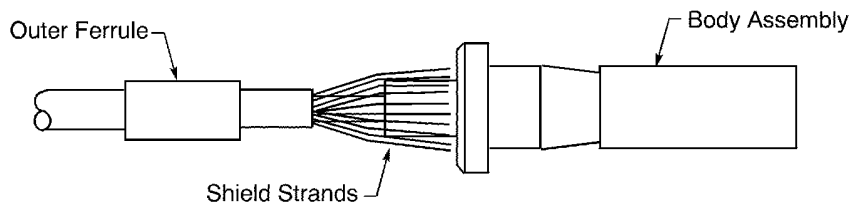
CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (12) If the center contact moves out of the body assembly, do Step 9.B.(10) and Step 9.B.(11) again.
(13) Put the strands of the shield on the inner ferrule. Refer to Figure 91.
Make sure that the strands of the shield are symmetrical around the inner ferrule.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

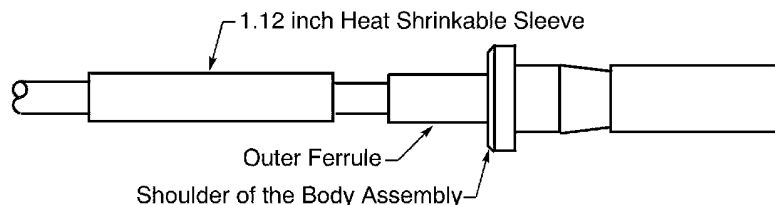


2447093 S00061544347_V1

POSITION OF THE SHIELD ON THE INNER FERRULE

Figure 91

- (14) Push the outer ferrule forward to the end of the cable until the forward end of the outer ferrule is against the shoulder of the body assembly. Refer to Figure 92.



2447094 S00061546496_V1

POSITION OF THE OUTER FERRULE

Figure 92

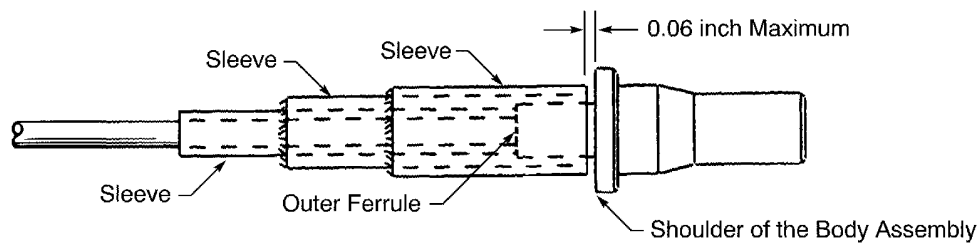
- (15) Crimp the outer ferrule.
- (16) Assemble the heat shrinkable sleeves:
- (a) If the 1.12 inch sleeve is specified, push the 1.12 inch sleeve to the end of the cable until the forward end of the sleeve is against the rear end of the outer ferrule.
 - (b) Shrink the sleeve in its position. Refer Subject 20-10-14.
 - (c) Push the 0.75 inch sleeve on the outer ferrule until the forward end of the sleeve is against the shoulder of the body assembly. Refer to Figure 93.

Make sure that the distance between the forward end of the sleeve and the shoulder is not more than 0.06 inch.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2446107 S00061546497_V1

POSITION OF THE HEAT SHRINKABLE SLEEVES

Figure 93

- (d) Shrink the sleeve in its position. Refer Subject 20-10-14.
- (e) Push the 0.50 inch sleeve on the 0.75 inch sleeve until the forward end of the sleeve is against the shoulder of the body assembly. Refer to Figure 93.

Make sure the distance between the forward end of the sleeve and the shoulder is a maximum of 0.06 inch.
- (f) Shrink the sleeve in its position. Refer Subject 20-10-14.

C. Assembly of Amphenol 48-12()-() and Cinch C48-12()-() Size 1 Shielded Contacts

Table 58
CENTER CONTACT CRIMP TOOLS

Basic Unit		Locator
Part Number	Setting	
M22520/2-01	1	M22520/2-33
	1	K74S

Table 59
FERRULE CRIMP TOOLS

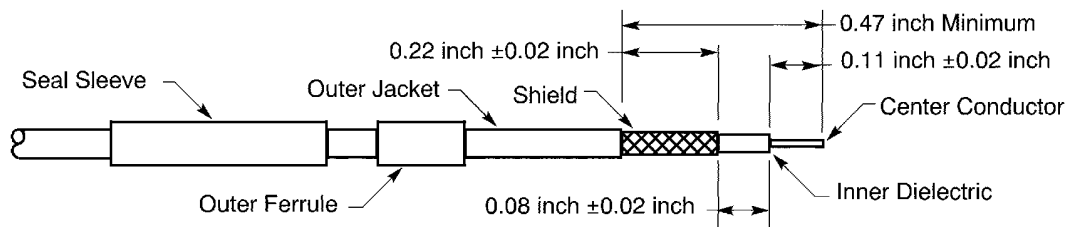
Basic Unit	Die
M22520/5-01	M22520/5-08
ST965-5	-
WT-200	-

- (1) Make a selection of a center contact crimp tool from Table 58.
- (2) Make a selection of a ferrule crimp tool from Table 59.
- (3) Prepare the cable. Refer to Figure 94.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2446094 S00061546485_V1

CABLE PREPARATION

Figure 94

- (a) Put the seal sleeve on the cable.

NOTE: A one inch length of heat shrinkable sleeve with the smallest diameter that can move freely on the outer jacket is a satisfactory alternative to the seal sleeve.

- (b) Put the outer ferrule on the cable.

- (c) Remove a minimum of 0.47 inch of the jacket from the end of the cable.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE SHIELD. DAMAGE TO THE SHIELD CAN CAUSE UNSATISFACTORY CABLE PERFORMANCE OF THE CABLE.

- (d) Remove the necessary length of the shield to make the distance from the end of the cable jacket to the end of the shield equal to 0.22 inch \pm 0.02 inch.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE INNER DIELECTRIC. DAMAGE TO THE DIELECTRIC CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (e) Remove the necessary length of the inner dielectric to make the distance from the end of the shield to the end of the inner dielectric equal to 0.08 inch \pm 0.02 inch.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE CENTER CONDUCTOR. DAMAGE TO THE CENTER CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (f) Remove the necessary length of the center conductor to make the distance from the end of the dielectric to the end of the conductor equal to 0.11 inch \pm 0.02 inch.

- (4) If the strands of the center conductor are apart, twist the strands together in their initial direction.
(5) Push the center conductor into the crimp barrel of the center contact until the inner dielectric is against the shoulder of the center contact.

Refer to Figure 95.

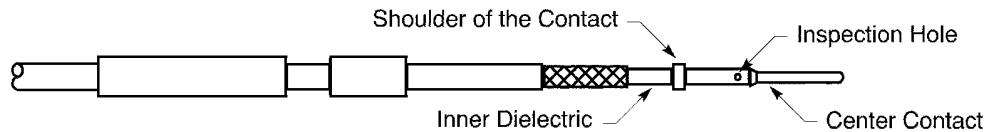
Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The strands of the conductor can be seen in the inspection hole
- The dielectric is against the shoulder of the center contact.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

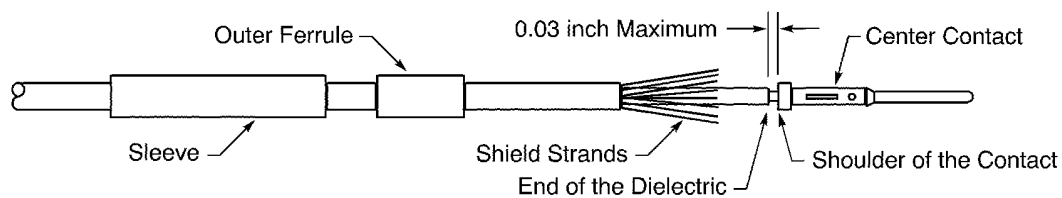


2446095 S00061546489_V1

POSITION OF THE CENTER CONTACT ON THE CABLE

Figure 95

- (6) Crimp the center contact.
Make sure that the distance from the end of the dielectric to the contact is not more than 0.03 inch.
- (7) Move the strands of the shield apart. Refer to Figure 96.

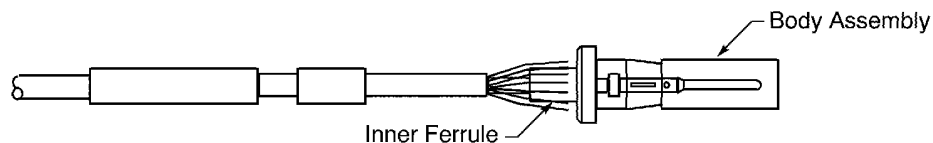


2446096 S00061546490_V1

CONFIGURATION OF THE SHIELD STRANDS

Figure 96

- (8) Put the body assembly on the center contact. Refer to Figure 97.
Make sure that the inner ferrule of the body assembly is between the shield strands and the inner dielectric.



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POSITION OF THE BODY ASSEMBLY ON THE CENTER CONTACT

Figure 97

20-61-11



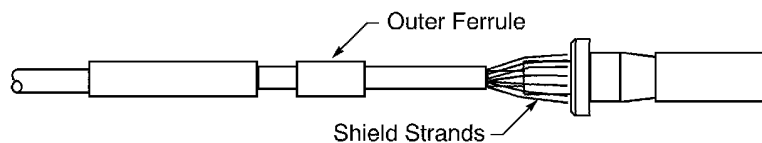
707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (9) Push the center contact into the body assembly until it is locked in the body assembly.
- (10) To make sure that the center contact is locked, hold the body of the contact and lightly pull the cable.

CAUTION: DO NOT PULL THE CABLE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (11) If the center contact moves out of the body assembly, do Step 9.C.(9) and Step 9.C.(10) again.
- (12) Put the strands of the shield on the inner ferrule. Refer to Figure 98.
Make sure that the strands of the shield are symmetrical around the inner ferrule.

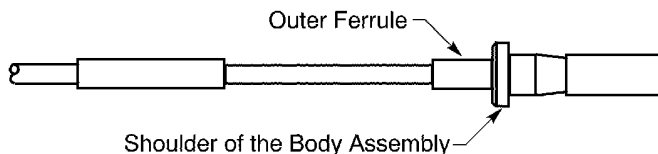


2446098 S00061546492_V1

POSITION OF THE SHIELD ON THE INNER FERRULE

Figure 98

- (13) Push the outer ferrule forward to the end of the cable until the forward end of the outer ferrule is against the shoulder of the body assembly. Refer to Figure 99.



2446099 S00061546493_V1

POSITION OF THE OUTER FERRULE

Figure 99

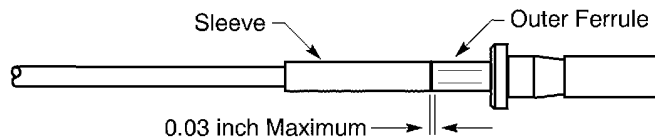
- (14) Crimp the outer ferrule.
- (15) If the seal sleeve is on the cable, push the sleeve forward until the forward end of the sleeve is against the rear end of the outer ferrule. Refer to Figure 100.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Make sure that the distance between the seal sleeve and the outer ferrule is not more than 0.03 inch.



2446100 S00061546494_V1

POSITION OF THE SLEEVE
Figure 100

- (16) If a heat shrinkable sleeve is on the cable:
- (a) Push the sleeve toward the end of the cable until the forward end of the sleeve is against the rear end of the outer ferrule. Refer to Figure 100.

Make sure that the distance between the forward end of the sleeve and the rear end of the outer ferrule is less than or equal to 0.03 inch.
 - (b) Shrink the sleeve in its position. Refer Subject 20-10-14.

D. Assembly of a Size 2 Shielded Contact

For the procedure to assemble:

- A Cinch CN0900-336 shielded contact, refer to Paragraph 9.E.
- An S283U007-7 or a Cinch CN1036-7 shielded contact, refer to Paragraph 9.F.
- A 10-60479-41 or a 10-60479-44 shielded contact, refer to Paragraph 9.G.
- An Amphenol 48-2187-02 shielded contact, refer to Paragraph 9.G.
- A Cinch CN0940-41 or a CN0940-44 shielded contact, refer to Paragraph 9.G.
- A 60B40037-15 or a 60B40037-16 shielded contact, refer to Paragraph 9.H.
- A 10-60479-41 or a 10-60479-44 shielded contact with BMS13-65 Type 0F cable, refer to Paragraph 9.I.

Table 60
NECESSARY MATERIALS

Material	Part Number or Description	Supplier
Heat Shrinkable Sleeve	Grade B, Class 1	Refer to Subject 20-00-11.
Seal Sleeve	DWP-125	Raychem (Tyco)

NOTE: For alternative sleeve part numbers, refer to Subject 20-00-11.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 61
CENTER CONTACT CRIMP TOOLS

Wire Size (AWG)	Center Contact Size	Crimp Tool		
		Basic Unit		Locator
		Part Number	Setting	
20	20	M22520/2-01	7	M22520/2-24
			7	K75S-1
		ST2220-1-Y	-	ST2220-1-15A

Table 62
FERRULE CRIMP TOOLS

Basic Unit	Die	
	Part Number	Cavity
612648	612661	-
M22520/5-01	M22520/5-10	-
	M22520/5-39	-
ST965-1	-	-
WT-202	-	-
WT-202-06-08	-	S

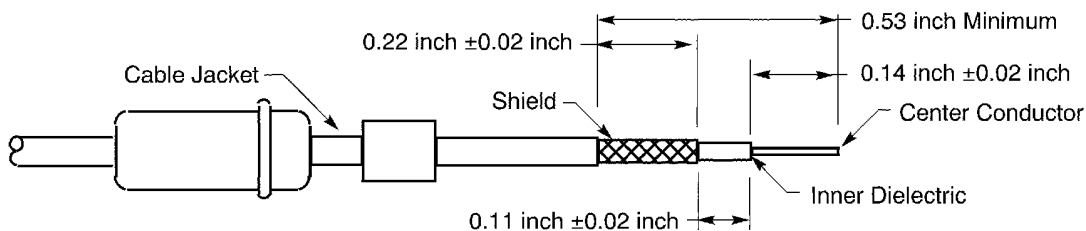
- (1) Make a selection of a center contact crimp tool from Table 61.
- (2) Make a selection of a ferrule crimp tool from Table 62.
- (3) If a seal boot must be installed, put the boot on the cable.
- (4) If a seal boot is not installed, put the heat shrinkable sleeves on the cable.
 - (a) For a Raychem 55A6087 cable or a Boeing 10-60816-61 cable, put these sleeves on the cable in this sequence:
 - A 0.5 inch \pm 0.1 inch length of 1/4 inch diameter seal sleeve
 - A 0.75 inch \pm 0.20 inch length of 3/16 inch diameter seal sleeve.Refer to Table 60.
 - (b) For all other cables, put these sleeves on the cable in this sequence:
 - A 0.5 inch \pm 0.1 inch length of 1/4 inch diameter seal sleeve
 - A 0.75 inch \pm 0.20 inch length of 3/16 inch diameter seal sleeve
 - A 1.3 inch \pm 0.1 inch length of 1/8 inch diameter heat shrinkable sleeve.Refer to Table 60.
- (5) Put the outer ferrule on the cable.

NOTE: The BACS13C156C ferrule is a satisfactory alternative to the Amphenol 48-1540-02 ferrule for the MS27184-20P or MS27185-20S contacts.
- (6) Prepare the cable. Refer to Figure 101.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2446101 S00061546498_V1

CABLE PREPARATION

Figure 101

- (a) Remove a minimum of 0.53 inch of the jacket from the end of the cable.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE SHIELD. DAMAGE TO THE SHIELD CAN CAUSE UNSATISFACTORY CABLE PERFORMANCE OF THE CABLE.

- (b) Remove the necessary length of the shield to make the distance from the end of the cable jacket to the end of the shield equal to 0.22 inch \pm 0.02 inch.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE INNER DIELECTRIC. DAMAGE TO THE DIELECTRIC CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (c) Remove the necessary length of the inner dielectric to make the distance from the end of the shield to the end of the dielectric equal to 0.11 inch \pm 0.02 inch.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE CENTER CONDUCTOR. DAMAGE TO THE CENTER CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (d) Remove the necessary length of the center conductor to make the distance from the end of the inner dielectric to the end of the conductor equal to 0.14 inch \pm 0.02 inch.

- (7) Assemble the contact:

- (a) If the strands of the center conductor are apart, twist the strands together in their initial direction.
- (b) Push the center conductor into the crimp barrel of the center contact until the inner dielectric is against the shoulder of the center contact.

Make sure that:

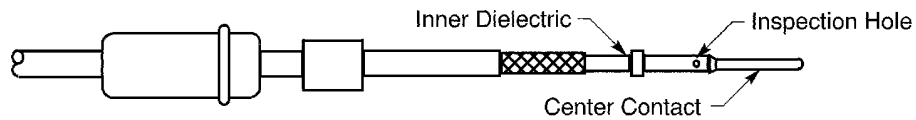
- All of the strands of the conductor are in the crimp barrel
- The strands of the conductor can be seen in the inspection hole
- The dielectric is against the shoulder of the center contact.

Refer to Figure 102.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



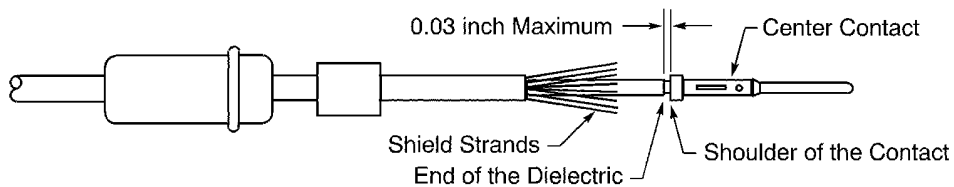
2446102 S00061546499_V1

POSITION OF THE CENTER CONTACT ON THE CABLE
Figure 102

- (c) Crimp the center contact.

Make sure that the distance from the end of the dielectric to the contact is not more than 0.03 inch.

- (8) Move the strands of the shield apart. Refer to Figure 103.

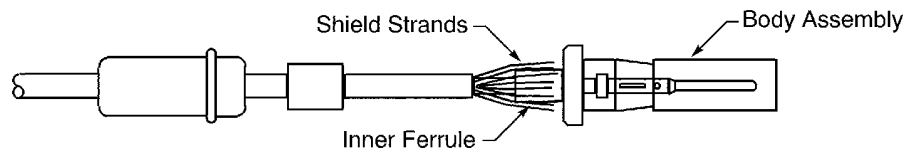


2446103 S00061546500_V1

CONFIGURATION OF THE SHIELD STRANDS
Figure 103

- (9) Put the body assembly on the center contact. Refer to Figure 104.

Make sure that the inner ferrule of the body assembly is between the shield strands and the inner dielectric.



2446104 S00061546501_V1

POSITION OF THE BODY ASSEMBLY ON THE CENTER CONTACT
Figure 104

20-61-11



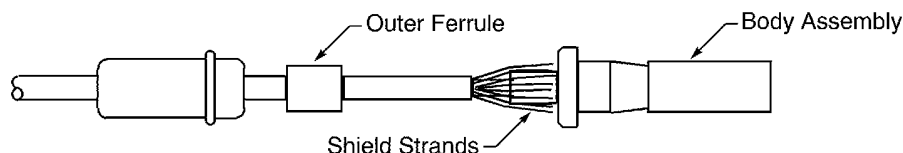
707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (10) Put the center contact in the inner ferrule of the body assembly.
- (11) Push the center contact into the body assembly until it is locked in the body assembly.
- (12) To make sure that the center contact is locked, hold the body of the contact and lightly pull the cable.

CAUTION: DO NOT PULL THE CABLE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

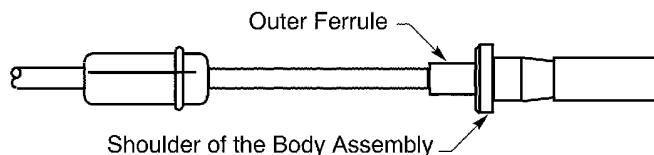
- (13) If the center contact moves out of the body assembly, do Step 9.D.(11) and Step 9.D.(12) again.
- (14) Put the strands of the shield on the inner ferrule. Refer to Figure 105.
Make sure that the strands of the shield are symmetrical around the inner ferrule.



2446105 S00061546502_V1

POSITION OF THE SHIELD ON THE INNER FERRULE
Figure 105

- (15) Push the outer ferrule forward to the end of the cable until the forward end of the outer ferrule is against the shoulder of the body assembly. Refer to Figure 106.



2446106 S00061546503_V1

POSITION OF THE OUTER FERRULE
Figure 106

- (16) Crimp the outer ferrule.
- (17) If it is applicable, assemble the heat shrinkable sleeves:

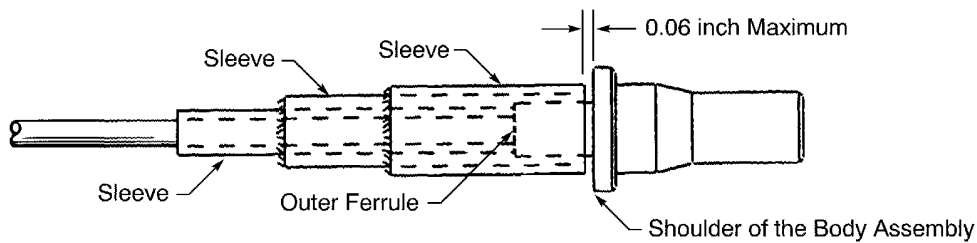
20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (a) If the 1.3 inch sleeve is specified, push the 1.3 inch sleeve to the end of the cable until the forward end of the sleeve is against the rear end of the outer ferrule. Refer to Figure 107.
- (b) Shrink the sleeve in its position. Refer Subject 20-10-14.
- (c) Push the 0.75 inch sleeve on the outer ferrule until the forward end of the sleeve is against the shoulder of the body assembly. Refer to Figure 107.

Make sure the distance between the forward end of the sleeve and the shoulder is not more than 0.06 inch.



2446107 S00061546497_V1

POSITION OF THE HEAT SHRINKABLE SLEEVES
Figure 107

- (d) Shrink the sleeve in its position. Refer Subject 20-10-14.
- (e) Push the 0.5 inch sleeve on the 0.75 inch sleeve until the forward end of the sleeve is against the shoulder of the body assembly. Refer to Figure 107.

Make sure the distance between the forward end of the sleeve and the shoulder is not more than 0.06 inch.

- (f) Shrink the sleeve in its position. Refer Subject 20-10-14.

E. Assembly of a Cinch CN0900-336 Size 2 Shielded Contact

Table 63
CENTER CONTACT CRIMP TOOLS

Wire Size (AWG)	Center Contact Size	Crimp Tool		
		Basic Unit		Locator
		Part Number	Setting	
20	20	M22520/2-01	7	M22520/2-24
			7	K75S-1

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

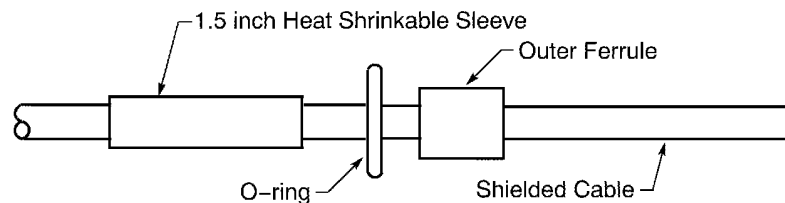
Table 64
FERRULE CRIMP TOOLS

Basic Unit	Die	Die Opening
M22520/5-01	Y322	A

- (1) Make a selection of a center contact crimp tool from Table 63.
- (2) Make a selection of a ferrule crimp tool from Table 64.
- (3) Make a selection of a 1/8 inch diameter, or a 3/16 inch diameter Grade B, Class 1 heat shrinkable sleeve from Subject 20-00-11.
- (4) Put these components on the cable in this sequence:
 - A 1.5 inch length of the heat shrinkable sleeve
 - The O-ring
 - The outer ferrule.

NOTE: These components are supplied with the contact.

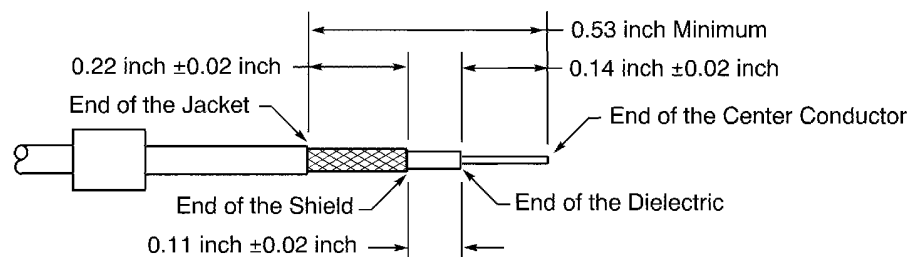
Refer to Figure 108.



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POSITION OF THE O-RING AND THE OUTER FERRULE ON THE CABLE
Figure 108

- (5) Prepare the cable. Refer to Figure 109.



2447866 S00061546505_V1

CABLE PREPARATION
Figure 109

- (a) Remove a minimum of 0.53 inch of the jacket from the end of the cable.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

CAUTION: DO NOT CUT OR MAKE A NICK IN THE SHIELD. DAMAGE TO THE SHIELD CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (b) Remove the necessary length of the shield to make the distance from the end of the cable jacket to the end of the shield equal to 0.22 inch \pm 0.02 inch.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE INNER DIELECTRIC. DAMAGE TO THE DIELECTRIC CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (c) Remove the necessary length of the inner dielectric to make the distance from the end of the shield to the end of the dielectric equal to 0.11 inch \pm 0.02 inch.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE CENTER CONDUCTOR. DAMAGE TO THE CENTER CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (d) Remove the necessary length of the center conductor to make the distance from the end of the inner dielectric to the end of the conductor equal to 0.14 inch \pm 0.02 inch.

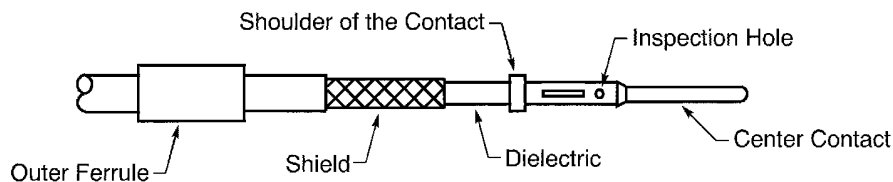
- (6) Assemble the contact:

- (a) If the strands of the center conductor are apart, twist the strands together in their initial direction.
- (b) Push the center conductor into the crimp barrel of the center contact until the inner dielectric is against the shoulder of the center contact.

Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The strands of the conductor can be seen in the inspection hole
- The dielectric is against the shoulder of the center contact.

Refer to Figure 110.



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POSITION OF THE CENTER CONTACT ON THE CABLE

Figure 110

- (c) Crimp the center contact.

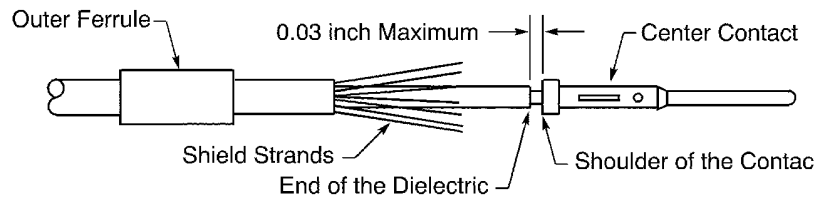
Make sure that the distance from the end of the dielectric to the contact is not more than 0.03 inch.

- (7) Move the strands of the shield apart. Refer to Figure 111.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

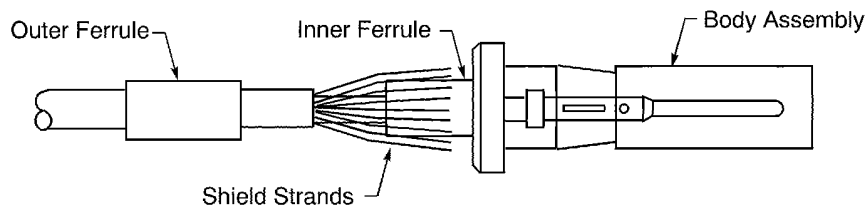


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CONFIGURATION OF THE SHIELD STRANDS

Figure 111

- (8) Put the body assembly on the center contact. Refer to Figure 112.
Make sure that the inner ferrule of the body assembly is between the shield strands and the inner dielectric.



2447092 S00061544344_V1

POSITION OF THE BODY ASSEMBLY ON THE CENTER CONTACT

Figure 112

- (9) Push the center contact into the body assembly until it is locked in the body assembly.
(10) To make sure that the center contact is locked, hold the body of the contact and lightly pull the cable.

CAUTION: DO NOT PULL THE CABLE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

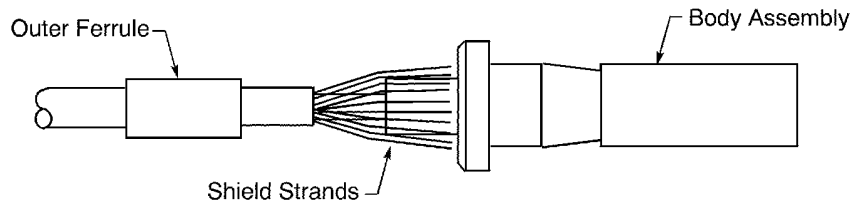
CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (11) If the center contact moves out of the body assembly, do Step 9.E.(9) and Step 9.E.(10) again.
(12) Put the strands of the shield on the inner ferrule. Refer to Figure 113.
Make sure that the strands of the shield are symmetrical around the inner ferrule.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

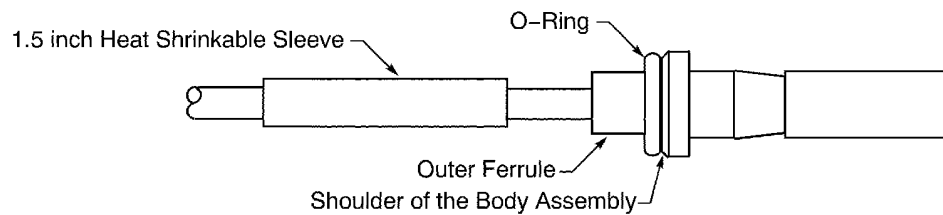


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POSITION OF THE SHIELD ON THE INNER FERRULE

Figure 113

- (13) Push the outer ferrule forward to the end of the cable until the forward end of the outer ferrule is against the shoulder of the body assembly. Refer to Figure 114.



2447867 S00061546507_V1

POSITION OF THE OUTER FERRULE

Figure 114

- (14) Crimp the outer ferrule.
- (15) Push the O-ring forward to the end of the cable until the O-ring is against the rear end of the outer ferrule. Refer to Figure 114.
- (16) Push the heat shrinkable sleeve forward to the end of the cable until the forward end of the sleeve is against the O-ring.
- (17) Shrink the sleeve in its position. Refer to Subject 20-10-14.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

F. Assembly of Boeing S283U007-7 and Cinch CN1036-7 Size 2 Shielded Contacts

This procedure is to assemble the contact with:

- A wire with one shield
- A wire with two shields.

Table 65
NECESSARY MATERIALS

Material	Part Number or Description	Supplier
Potting Compound	BMS8-68	QPL
	RTV-3110	Dow Corning
Heat Shrinkable Sleeve	Grade B, Class 1	Refer to Subject 20-00-11.
Seal Sleeve	DWP-125	Raychem (Tyco)
Solvent, Aliphatic Naphtha	TT-N-95 Type II	An available source

NOTE: For alternative sleeve part numbers, refer to Subject 20-00-11.

Table 66
PRIMER MATERIALS

Potting Compound	Primer	
	Part Number	Supplier
BMS8-68	CS 3808	Flamemaster Corporation Chem Seal Division
	CS 9903	Flamemaster Corporation Chem Seal Division
RTV-3110	RTV 1201	Dow Corning

Table 67
CENTER CONTACT CRIMP TOOLS

Basic Unit		Locator
Part Number	Setting	
M22520/2-01	7	M22520/2-24
		K75S

Table 68
FERRULE CRIMP TOOLS

Basic Unit	Die	
	Part Number	Cavity
612648	612661	-
M22520/5-01	M22520/5-10	-
	M22520/5-39	-
WT-202	-	-
ST965-1	-	-

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 68 FERRULE CRIMP TOOLS (Continued)

Basic Unit	Die	
	Part Number	Cavity
WT-202-06-08	-	S

- (1) Make a selection of a center contact crimp tool from Table 67.
- (2) Make a selection of a ferrule crimp tool from Table 68.
- (3) Make a selection of these materials from Table 65:
 - A solvent
 - A potting compound.
- (4) Make a selection of a primer from Table 66.
- (5) For a wire with two shields:
 - Assemble a shield ground wire with the outer shield; refer to Subject 20-10-15
 - Assemble the contact with the inner shield and the center conductor.

Make sure that the location of the outer shield ground wire does not prevent the correct assembly of the shielded contact.

- (6) Discard the seal boot in the contact kit.
- (7) For a Boeing 10-60816-61 shielded wire, put these sleeves on the wire in this sequence:
 - A 0.50 inch ± 0.06 inch length of 1/4 inch diameter seal sleeve
 - A 0.75 inch ± 0.06 inch length of 3/16 inch diameter seal sleeve.

Refer to Table 65 and Figure 118.

- (8) For all other wire type codes, put these sleeves on the wire in this sequence:
 - A 0.50 inch ± 0.06 inch length of 1/4 inch diameter seal sleeve
 - A 0.75 inch ± 0.06 inch length of 3/16 inch diameter seal sleeve
 - A 0.75 inch ± 0.06 inch length of 1/8 inch diameter heat shrinkable sleeve.

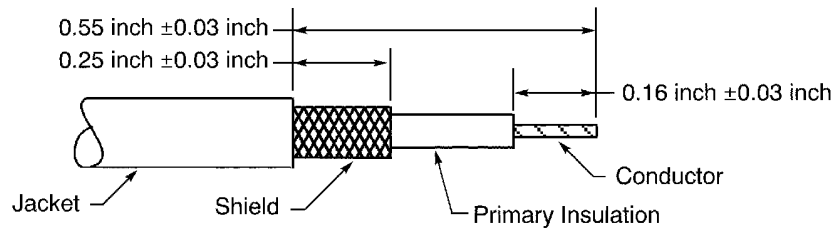
Refer to Table 65 and Figure 118.

- (9) Put the ferrule on the cable.
- (10) Prepare the cable. Refer to Figure 115.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2447075 S00061546508_V1

CABLE PREPARATION

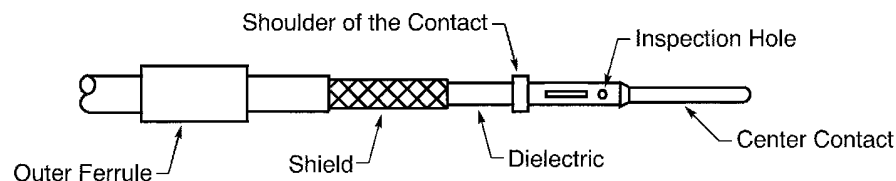
Figure 115

- (a) Remove 0.55 inch \pm 0.03 inch of the jacket from the end of the cable.
 - (b) Remove the necessary length of the shield to make the distance between the end of the shield and the end of the jacket equal to 0.25 inch \pm 0.03 inch.
 - (c) Remove the necessary length of the primary insulation to make the distance between the end of the insulation and the end of the conductor equal to 0.16 inch \pm 0.03 inch.
- (11) Assemble the center contact:
- (a) If the strands of the conductor are apart, twist the strands together in their initial direction.
 - (b) Push the conductor into the crimp barrel of the center contact until the primary insulation is against the shoulder of the center contact.

Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The strands of the conductor can be seen in the inspection hole
- The dielectric is against the shoulder of the center contact.

Refer to Figure 116.



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POSITION OF THE CENTER CONTACT ON THE CABLE

Figure 116

- (c) Crimp the center contact.

Make sure that the distance from the end of the dielectric to the contact is not more than 0.03 inch.

20-61-11

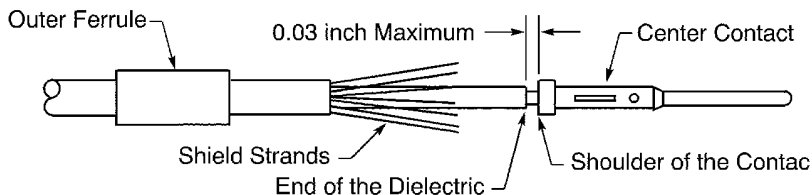


707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (12) Clean the primary insulation and the center contact with the solvent.
- (13) Let the solvent dry.
- (14) Apply a thin layer of primer to the primary insulation.
- (15) Apply a thin layer of primer to the center contact assembly.
Make sure that no primer is applied to the engaging end of the center contact.

CAUTION: PRIMER ON THE ENGAGING END OF CENTER CONTACT CAN CAUSE UNSATISFACTORY OPERATION OF THE CONTACT.

- (16) Let the primer dry.
- (17) Move the strands of the shield apart. Refer to Figure 117.



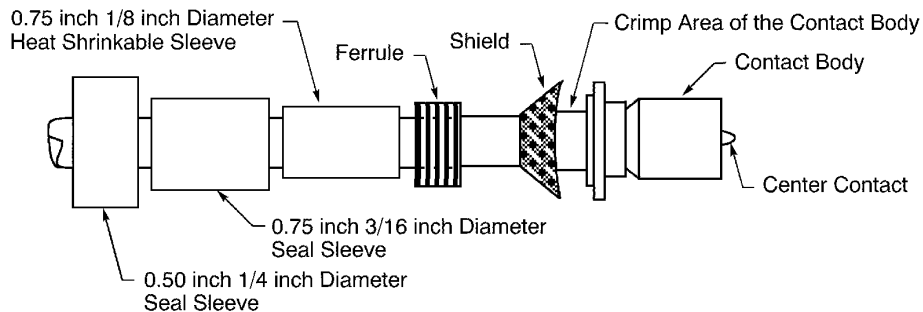
2447091 S00061544343_V1

CONFIGURATION OF THE SHIELD STRANDS
Figure 117

- (18) Put the body assembly on the center contact.
- (19) Put the body assembly on the center contact. Refer to Figure 118.
Make sure that the inner ferrule of the body assembly is between the shield strands and the inner dielectric.



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2447076 S00061546510_V1

POSITION OF THE BODY ASSEMBLY ON THE CENTER CONTACT

Figure 118

- (20) Push the center contact into the body assembly until it is locked in the body assembly. Refer to Figure 118.

NOTE: The end of the center contact will be approximately 0.03 inch forward from the end of the contact body.

- (21) To make sure that the center contact is locked, hold the body of the contact and lightly pull the cable.

CAUTION: DO NOT PULL ON THE WIRE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

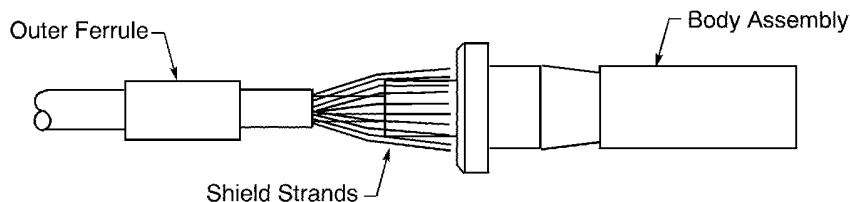
CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (22) If the center contact moves out of the body assembly, do Step 9.F.(20) and Step 9.F.(21) again.
- (23) Put the strands of the shield on the inner ferrule. Refer to Figure 119.
Make sure that the strands of the shield are symmetrical around the inner ferrule.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



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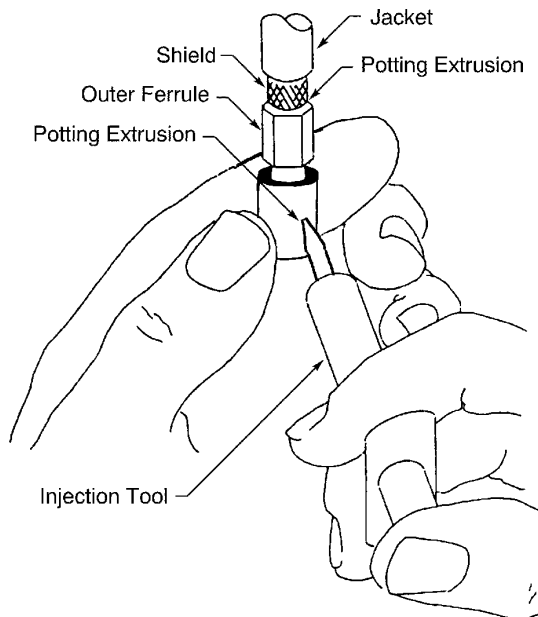
POSITION OF THE SHIELD ON THE INNER FERRULE

Figure 119

- (24) Push the outer ferrule forward to the end of the cable until the forward end of the outer ferrule is against the shoulder of the body assembly.
- (25) Remove the remaining shield strands that extend farther than the forward end of the ferrule.
- (26) Crimp the ferrule.

NOTE: A distance of 0.03 inch between the contact shoulder and the crimp ferrule is permitted.

- (27) Seal the contact with the potting compound. Refer to Figure 120.



2446108 S00061546512_V1

POSITION OF THE INJECTION TOOL IN THE FILLER HOLE OF THE SHIELDED CONTACT

Figure 120

- (a) Hold the shielded contact assembly in a vertical position.
Make sure that the engaging end of the contact is pointed down.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (b) Put the end of the injection tool into one of the potting filler holes in the contact body assembly.
- (c) Push the plunger of the injection tool.
Make sure that the potting compound goes into the contact and starts to flow out of the other filler hole.
- (d) Cause a blockage of this hole to stop the flow of the potting material from the hole.
- (e) Continue to push the plunger of the injection tool until the potting material starts to flow out between the shield and the outer ferrule.
- (f) Remove the injection tool from the filler hole.
- (g) Remove the blockage from the other filler hole.
- (h) Cure the potting compound.

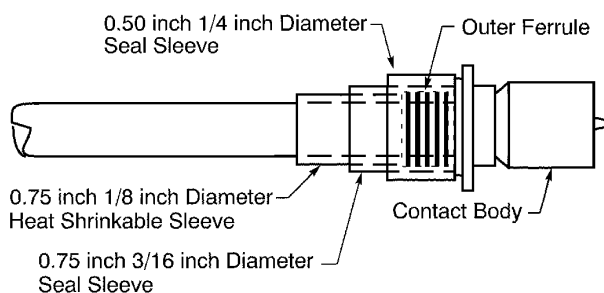
CAUTION: OBEY THE MANUFACTURER'S INSTRUCTIONS TO CURE THE POTTING COMPOUND. POTTING COMPOUND THAT IS NOT CURED CORRECTLY CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CONTACT.

- (28) Push the 0.75 inch length of 1/8 inch diameter sleeve to the end of the cable until the forward end of the sleeve is against the rear end of the outer ferrule.

Make sure that the distance between the forward end of the sleeve and the shoulder is not more than 0.06 inch.

Refer to Figure 121.

NOTE: This step is not applicable for Boeing 10-60816-61 shielded wire.



2447077 S00061546514_V1

COMPLETED CONTACT ASSEMBLY
Figure 121

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (29) Shrink the sleeve in its position. Refer to Subject 20-10-14.
- (30) Push the 0.75 inch length of 3/16 inch diameter sleeve on the outer ferrule until the forward end of the sleeve is against the shoulder of the body assembly. Refer to Figure 121.
Make sure that the distance between the forward end of the sleeve and the shoulder is not more than 0.06 inch.
- (31) Shrink the sleeve in its position. Refer to Subject 20-10-14.
- (32) Push the 0.50 inch sleeve on the 0.75 inch sleeve until the forward end of the sleeve is against the shoulder of the body assembly. Refer to Figure 121.
Make sure that the distance between the forward end of the sleeve and the shoulder is not more than 0.06 inch.
- (33) Shrink the sleeve in its position. Refer to Subject 20-10-14.

G. Assembly of Cinch CN0940-41, CN0940-44, Amphenol 48-2187-02 and Boeing 10-60479-() Size 2 Potted Shielded Contacts

Table 69
NECESSARY MATERIALS

Material	Part Number or Description	Supplier
Potting Compound	BMS8-68	QPL
	RTV-3110	Dow Corning
Sleeve, Heat Shrinkable	Grade B, Class 1	Refer to Subject 20-00-11.
Sleeve, Seal	DWP-125	Raychem (Tyco)
Solvent, Aliphatic Naphtha	TT-N-95 Type II	An available source
Injection Tool	-	An available source

NOTE: For alternative sleeve part numbers, refer to Subject 20-00-11.

Table 70
PRIMER MATERIALS

Potting Compound	Primer	
	Part Number	Supplier
BMS8-68	CS 3808	Flamemaster Corporation Chem Seal Division
	CS 9903	Flamemaster Corporation Chem Seal Division
RTV-3110	RTV 1201	Dow Corning

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 71
CENTER CONTACT CRIMP TOOLS

Center Contact Size	Wire Size (AWG)	Crimp Tool			
		Basic Unit		Locator	
		Part Number	Setting	Part Number	Color
2020	24	M22520/1-01	2	M22520/1-02	-
		M22520/2-01	5	M22520/2-02	-
		ST2220-1-Y	-	ST2220-1-15A	-
		WA22	5	M22520/2-02	-
		WA27F	2	M22520/1-02	Red
	22	M22520/1-01	3	M22520/1-02	-
		M22520/2-01	6	M22520/2-02	-
		ST2220-1-Y	-	ST2220-1-15A	-
		WA22	6	M22520/2-02	-
		WA27F	3	M22520/1-02	Red
	20	M22520/1-01	4	M22520/1-02	-
		M22520/2-01	7	M22520/2-02	-
		ST2220-1-Y	-	ST2220-1-15A	-
		WA22	7	M22520/2-02	-
		WA27F	4	M22520/1-02	Red
	18	M22520/1-01	5	M22520/1-02	Red
		WA27F	5	M22520/1-02	Red

Table 72
FERRULE CRIMP TOOLS

Basic Unit	Die	
	Part Number	Cavity
612648	612661	-
M22520/5-01	M22520/5-10	-
	M22520/5-39	-
ST965-1	-	-
WT-202	-	-
WT-202-06-08	-	S

- (1) Make a selection of a center contact crimp tool from Table 71.
- (2) Make a selection of a ferrule crimp tool from Table 72.
- (3) Make a selection of these materials from Table 69:
 - A solvent
 - A potting compound.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (4) Make a selection of a primer from Table 70.
- (5) Put the necessary components on the cable.

NOTE: The seal sleeve, the seal boot, and the outer ferrule in the contact kit are not applicable for this procedure. They can be discarded.

- (a) For a Raychem 55A6087 cable or a Boeing 10-60816-61 cable, put these sleeves on the cable in this sequence:
 - A 0.50 inch ± 0.05 inch length of 1/4 inch diameter seal sleeve
 - A 0.75 inch ± 0.06 inch length of 3/16 inch diameter seal sleeve.

Refer to Table 69.

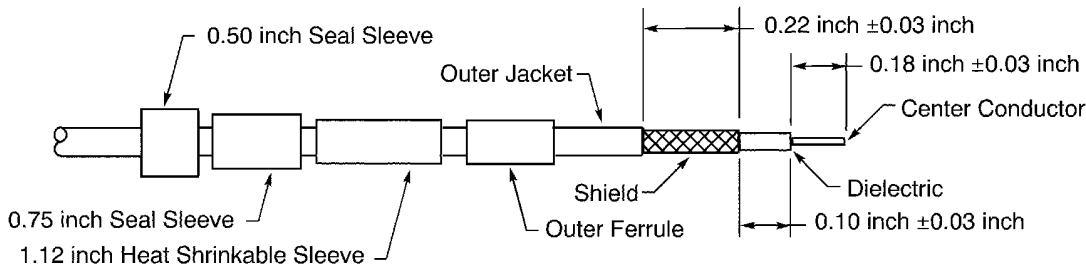
- (b) For all other cables, put these sleeves on the cable in this sequence:
 - A 0.50 inch ± 0.05 inch length of 1/4 inch diameter seal sleeve
 - A 0.75 inch ± 0.06 inch length of 3/16 inch diameter seal sleeve
 - A 1.12 inch ± 0.12 inch length of 1/8 inch diameter heat shrinkable sleeve.

Refer to Table 69.

- (c) Put a BACS13S156C outer ferrule on the cable.

NOTE: Refer to Subject 20-00-11 for approved suppliers and alternative part numbers for BACS13S ferrules.

- (6) Prepare the cable. Refer to Figure 122.



2447089 S00061546495_V1

CABLE PREPARATION
Figure 122

- (a) Remove a minimum of 0.59 inch of the jacket from the end of the cable.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE SHIELD. DAMAGE TO THE SHIELD CAN CAUSE UNSATISFACTORY CABLE PERFORMANCE OF THE CABLE.

- (b) Remove the necessary length of the shield to make the distance from the end of the cable jacket to the end of the shield equal to 0.22 inch ± 0.03 inch.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE INNER DIELECTRIC. DAMAGE TO THE DIELECTRIC CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (c) Remove the necessary length of the inner dielectric to make the distance from the end of the shield to the end of the dielectric equal to 0.10 inch \pm 0.03 inch.

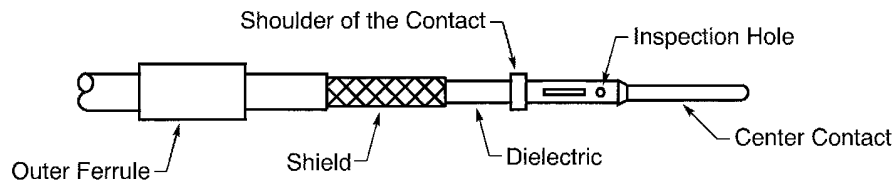
CAUTION: DO NOT CUT OR MAKE A NICK IN THE CENTER CONDUCTOR. DAMAGE TO THE CENTER CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (d) Remove the necessary length of the center conductor to make the distance from the end of the inner dielectric to the end of the conductor equal to 0.18 inch \pm 0.03 inch.
- (7) Assemble the contact:
- (a) If the strands of the center conductor are apart, twist the strands together in their initial direction.
- (b) Push the center conductor into the crimp barrel of the center contact until the inner dielectric is against the shoulder of the center contact.

Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The strands of the conductor can be seen in the inspection hole
- The dielectric is against the shoulder of the center contact.

Refer to Figure 123.



2447090 S00061544342_V1

POSITION OF THE CENTER CONTACT ON THE CABLE
Figure 123

- (c) Crimp the center contact.
- Make sure that the distance from the end of the dielectric to the contact is not more than 0.03 inch.

- (8) Clean the center contact assembly with the solvent.
- (9) Apply a thin layer of the primer to the center contact assembly.
- Make sure that no primer is applied to the engaging end of the center contact.

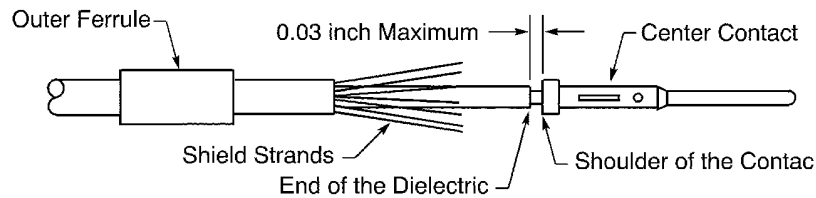
CAUTION: PRIMER ON THE CENTER CONTACT CAN CAUSE UNSATISFACTORY OPERATION OF THE CONTACT.

- (10) Let the primer dry.
- (11) Move the strands of the shield apart. Refer to Figure 124.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

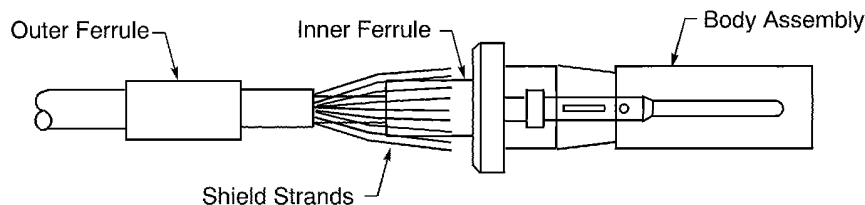


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CONFIGURATION OF THE SHIELD STRANDS

Figure 124

- (12) Put the body assembly on the center contact. Refer to Figure 125.
Make sure that the inner ferrule of the body assembly is between the shield strands and the inner dielectric.



2447092 S00061544344_V1

POSITION OF THE BODY ASSEMBLY ON THE CENTER CONTACT

Figure 125

- (13) Push the center contact into the body assembly until it is locked in the body assembly.
(14) To make sure that the center contact is locked, hold the body of the contact and lightly pull the cable.

CAUTION: DO NOT PULL THE CABLE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

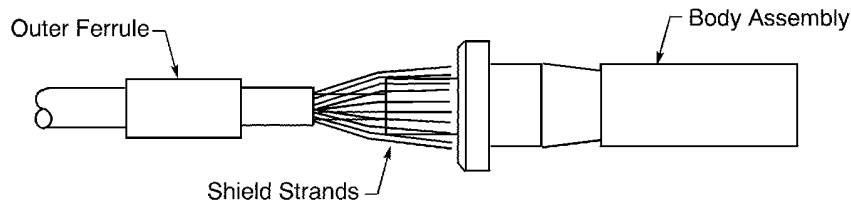
CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (15) If the center contact moves out of the body assembly, do Step 9.G.(13) and Step 9.G.(14) again.
(16) Put the strands of the shield on the inner ferrule. Refer to Figure 126.
Make sure that the strands of the shield are symmetrical around the inner ferrule.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

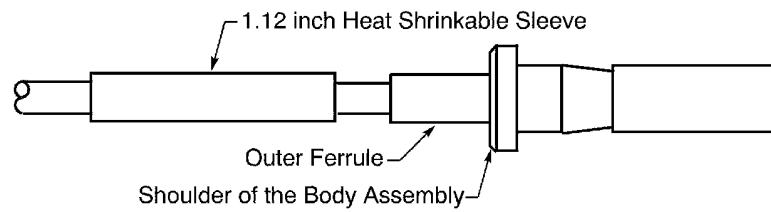


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POSITION OF THE SHIELD ON THE INNER FERRULE

Figure 126

- (17) Push the outer ferrule forward to the end of the cable until the forward end of the outer ferrule is against the shoulder of the body assembly. Refer to Figure 127.



2447094 S00061546496_V1

POSITION OF THE OUTER FERRULE

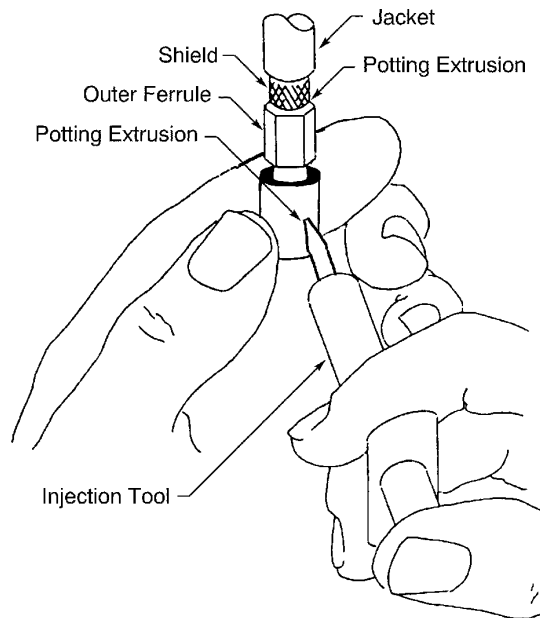
Figure 127

- (18) Crimp the outer ferrule.
- (19) If the 1.12 inch sleeve is specified, push the 1.12 inch sleeve to the end of the cable until the forward end of the sleeve is against the rear end of the outer ferrule.
- (20) Shrink the sleeve in its position. Refer Subject 20-10-14.
- (21) Seal the contact with the potting compound. Refer to Figure 128.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2446108 S00061546512_V1

POSITION OF THE INJECTION TOOL IN THE FILLER HOLE OF THE SHIELDED CONTACT

Figure 128

- (a) Hold the shielded contact assembly in a vertical position.
Make sure that the engaging end of the contact is pointed down.
- (b) Put the end of the injection tool into one of the potting filler holes in the contact body assembly.
- (c) Push the plunger of the injection tool.
Make sure that the potting compound goes into the contact and starts to flow out of the other filler hole.
- (d) Make a blockage of the other filler hole to stop the flow of the potting material.
- (e) Continue to push the plunger of the injection tool until the potting material starts to flow out between the shield and the outer ferrule.
- (f) Remove the injection tool from the filler hole.
- (g) Remove the blockage from the other filler hole.
- (h) Cure the potting compound.

CAUTION: OBEY THE MANUFACTURER'S INSTRUCTIONS TO CURE THE POTTING COMPOUND. POTTING COMPOUND THAT IS NOT CURED CORRECTLY CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CONTACT.

- (22) Assemble the remaining heat shrinkable sleeves:

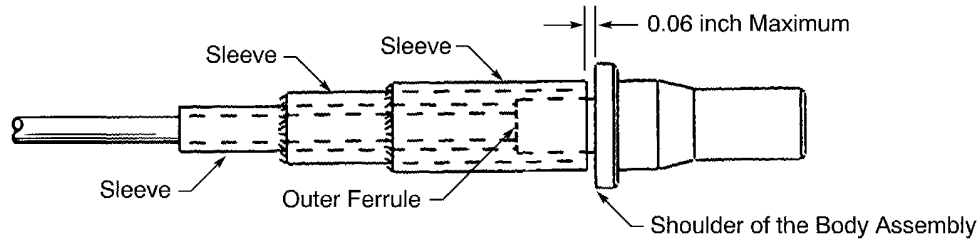
- (a) Push the 0.75 inch sleeve on the outer ferrule until the forward end of the sleeve is against the shoulder of the body assembly. Refer to Figure 129.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Make sure that the distance between the forward end of the sleeve and the shoulder is not more than 0.06 inch.



2446107 S00061546497_V1

POSITION OF THE HEAT SHRINKABLE SLEEVES
Figure 129

- (b) Shrink the sleeve in its position. Refer Subject 20-10-14.
- (c) Push the 0.50 length of sleeve on the 0.75 inch sleeve until the forward end of the sleeve is against the shoulder of the body assembly. Refer to Figure 129.

Make sure that the distance between the forward end of the sleeve and the shoulder is a maximum of 0.06 inch.

- (d) Shrink the sleeve in its position. Refer Subject 20-10-14.

H. Assembly of Boeing 60B40147-() and 60B40037-() Size 2 Potted Shielded Contacts

Table 73
NECESSARY MATERIALS

Description	Material	Supplier
Potting Compound	RTV 11	General Electric Silicones
	RTV-3110	Dow Corning
Primer	RTV 1201	Dow Corning
	A-4094	Dow Corning
Solvent	Standard 265 Thinner	Chevron USA Incorporated
Solvent, Aliphatic Naphtha	TT-N-95 Type II	An available source

Table 74
CENTER CONTACT CRIMP TOOLS

Wire Size (AWG)	Center Contact Size	Crimp Tool		
		Basic Unit		Locator
		Part Number	Setting	
20	20	M22520/2-01	7	M22520/2-24
			7	K75S-1

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 75
FERRULE CRIMP TOOLS

Basic Unit	Die	
	Part Number	Cavity
612648	612661	-
M22520/5-01	M22520/5-10	-
	M22520/5-39	-
ST965-1	-	-
WT-202	-	-
WT-202-06-08	-	S

- (1) Make a selection of a center contact crimp tool from Table 74.
- (2) Make a selection of a ferrule crimp tool from Table 75.
- (3) Make a selection of these materials from Table 73:
 - A solvent
 - A primer
 - A potting compound.
- (4) Prepare the cable.
 - (a) Remove 0.57 inch \pm 0.06 inch of the jacket from the end of the cable.
 - (b) Remove 0.22 inch \pm 0.03 inch of the shield from the end of the cable.
 - (c) Remove 0.22 inch \pm 0.03 inch of the dielectric from the end of the conductor.
- (5) Assemble the contact.
 - (a) If the strands of the center conductor are apart, twist the strands together in their initial direction.
 - (b) Push the center conductor into the crimp barrel of the center contact until the dielectric is against the shoulder of the center contact.

Make sure that:

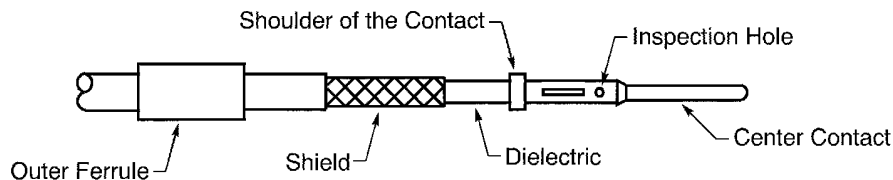
 - All of the strands of the conductor are in the crimp barrel
 - The strands of the conductor can be seen in the inspection hole
 - The dielectric is against the shoulder of the center contact.

Refer to Figure 130.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

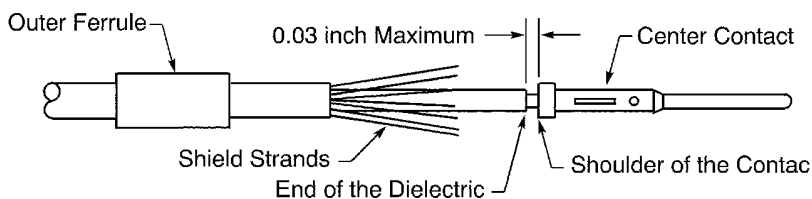


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POSITION OF THE CENTER CONTACT ON THE CABLE

Figure 130

- (c) Crimp the center contact.
Make sure that the distance from the end of the dielectric to the contact is not more than 0.03 inch.
 - (d) Clean the center contact assembly with the solvent.
 - (e) Apply a thin layer of the primer to the center contact assembly.
Make sure that no primer is applied to the engaging end of the center contact.
- CAUTION:** PRIMER ON THE CENTER CONTACT CAN CAUSE UNSATISFACTORY OPERATION OF THE CONTACT.
- (f) Let the primer dry.
 - (g) Move the strands of the shield apart. Refer to Figure 131.



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CONFIGURATION OF THE SHIELD STRANDS

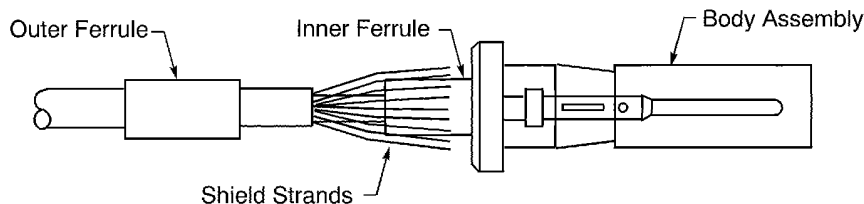
Figure 131

- (h) Put the body assembly on the center contact. Refer to Figure 132.
Make sure that the inner ferrule of the body assembly is between the shield strands and the dielectric.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2447092 S00061544344_V1

POSITION OF THE BODY ASSEMBLY ON THE CENTER CONTACT

Figure 132

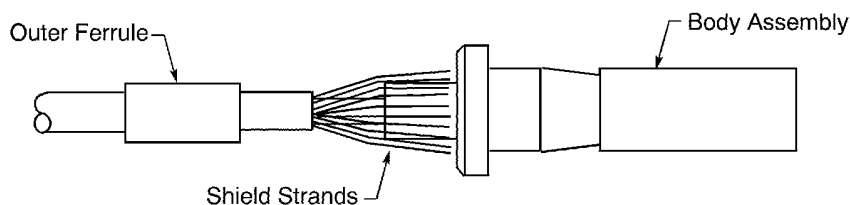
- (i) Push the center contact into the body assembly until it is locked in the body assembly.
- (j) To make sure that the center contact is locked, hold the body of the contact and lightly pull the cable.

CAUTION: DO NOT PULL ON THE WIRE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (k) If the center contact moves out of the body assembly, do Step (i) and Step (j) again.
- (l) Put the strands of the shield on the inner ferrule. Refer to Figure 133.

Make sure that the strands of the shield are symmetrical around the inner ferrule.



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POSITION OF THE SHIELD ON THE INNER FERRULE

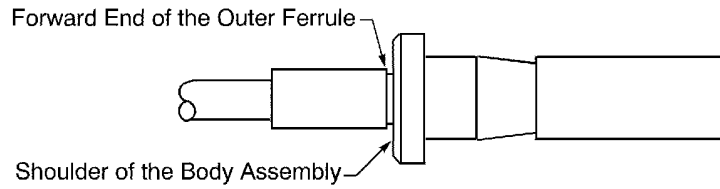
Figure 133

- (m) Push the outer ferrule forward to the end of the cable until the forward end of the outer ferrule is against the shoulder of the body assembly. Refer to Figure 134.

20-61-11



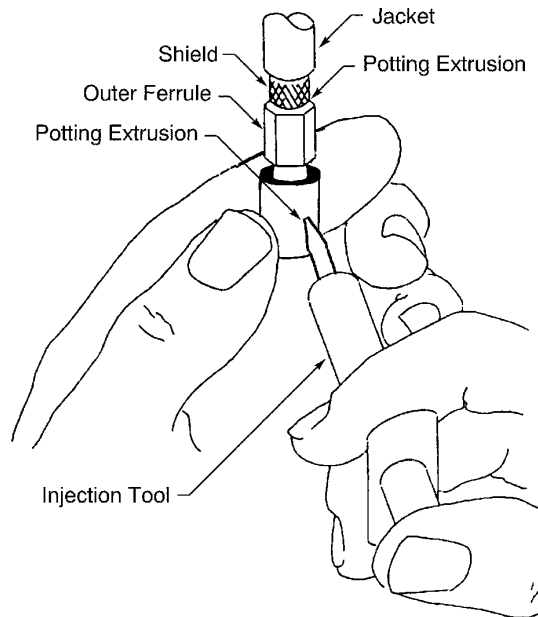
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MIL-C-26500 FRONT RELEASE CONNECTORS



2447973 S00061546516_V1

POSITION OF THE OUTER FERRULE
Figure 134

- (n) Crimp the outer ferrule.
- (6) Seal the contact with the potting compound. Refer to Figure 135.



2446108 S00061546512_V1

POSITION OF THE INJECTION TOOL IN THE FILLER HOLE OF THE SHIELDED CONTACT
Figure 135

- (a) Hold the shielded contact assembly in a vertical position.
Make sure that the engaging end of the contact is pointed down.
- (b) Put the end of the injection tool into one of the potting filler holes in the contact body assembly.
- (c) Push the plunger of the injection tool.
Make sure that the potting compound goes into the contact and starts to flow out of the other filler hole.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (d) Cause a blockage of this hole to stop the flow of the potting material from the hole.
- (e) Continue to push the plunger of the injection tool until the potting material starts to flow out between the shield and the outer ferrule.
- (f) Remove the injection tool from the filler hole.
- (g) Remove the blockage from the other filler hole.
- (h) Cure the potting compound.

CAUTION: OBEY THE MANUFACTURER'S INSTRUCTIONS TO CURE THE POTTING COMPOUND. POTTING COMPOUND THAT IS NOT CURED CORRECTLY CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CONTACT.

I. Assembly of Boeing 10-60479-() Size 2 Shielded Contacts with a BMS13-65 Type 0F Cable

Table 76
NECESSARY MATERIALS

Material	Part Number	Supplier
Seal Sleeve	DWP-125	Tyco/Raychem

NOTE: For alternative sleeve part numbers, refer to Subject 20-00-11.

Table 77
CENTER CONTACT CRIMP TOOLS

Wire Size (AWG)	Center Contact Size	Crimp Tool		
		Basic Unit		Locator
		Part Number	Setting	
22	20	M22520/2-01	6	M22520/2-24
		ST2220-1-Y	-	ST2220-1-15A

Table 78
FERRULE CRIMP TOOLS

Basic Unit	Die	
	Part Number	Cavity
612648	612661	-
M22520/5-01	M22520/5-10	-
	M22520/5-39	-
ST965-1	-	-
WT-202	-	-
WT-202-06-08	-	S

- (1) Make a selection of a center contact crimp tool from Table 77.
- (2) Make a selection of a ferrule crimp tool from Table 78.

20-61-11

707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (3) Put the necessary components on the cable.

NOTE: The seal sleeve, the seal boot, and the outer ferrule in the contact kit are not applicable for this procedure. They can be discarded.

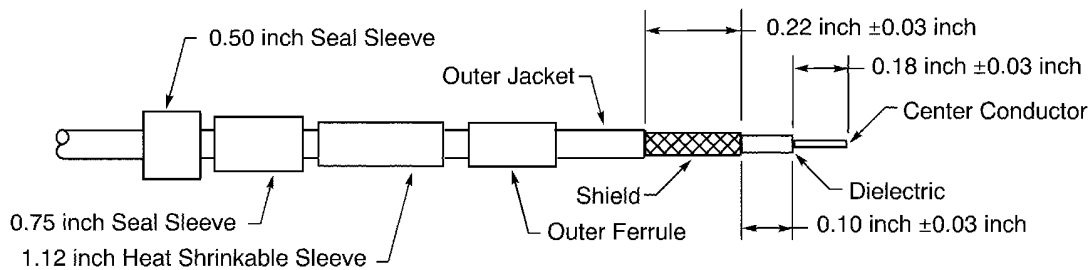
- (a) Put these sleeves on the cable in this sequence:

- A 0.50 inch ± 0.05 inch length of 1/4 inch diameter seal sleeve
- A 0.75 inch ± 0.06 inch length of 3/16 inch diameter seal sleeve
- A 1.12 inch ± 0.12 inch length of 1/8 inch diameter heat shrinkable sleeve.

Refer to Table 76.

- (b) Put a BACS13S156C outer ferrule on the cable

- (4) Prepare the cable. Refer to Figure 136.



2447089 S00061546495_V1

CABLE PREPARATION
Figure 136

- (a) Remove a minimum of 0.59 inch of the jacket from the end of the cable.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE SHIELD. DAMAGE TO THE SHIELD CAN CAUSE UNSATISFACTORY CABLE PERFORMANCE OF THE CABLE.

- (b) Remove the necessary length of the shield to make the distance from the end of the cable jacket to the end of the shield equal to 0.22 inch ± 0.03 inch.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE INNER DIELECTRIC. DAMAGE TO THE DIELECTRIC CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (c) Remove the necessary length of the inner dielectric to make the distance from the end of the shield to the end of the dielectric equal to 0.10 inch ± 0.03 inch.

CAUTION: DO NOT CUT OR MAKE A NICK IN THE CENTER CONDUCTOR. DAMAGE TO THE CENTER CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (d) Remove the necessary length of the center conductor to make the distance from the end of the inner dielectric to the end of the conductor equal to 0.18 inch ± 0.03 inch.

- (5) Assemble the contact:



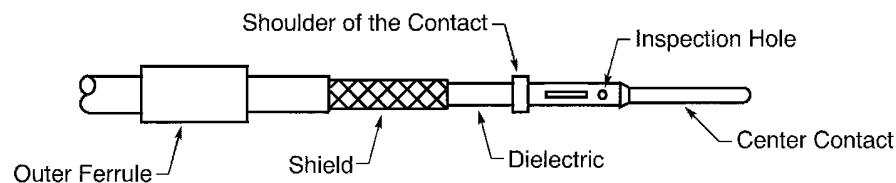
707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (a) If the strands of the center conductor are apart, twist the strands together in their initial direction.
- (b) Push the center conductor into the crimp barrel of the center contact until the inner dielectric is against the shoulder of the center contact.

Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The strands of the conductor can be seen in the inspection hole
- The dielectric is against the shoulder of the center contact.

Refer to Figure 137.



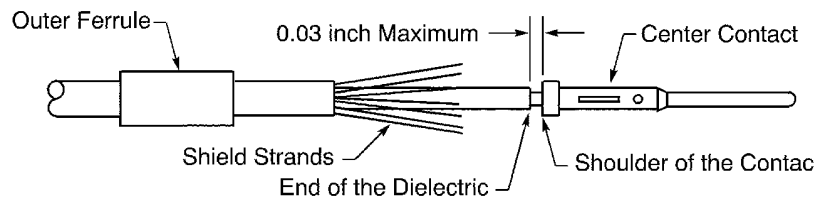
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POSITION OF THE CENTER CONTACT ON THE CABLE
Figure 137

- (c) Crimp the center contact.

Make sure that the distance from the end of the dielectric to the contact is not more than 0.03 inch.

- (6) Move the strands of the round conductor shield apart. Refer to Figure 138.
Make sure that the strands of the flat conductor shield stay against the dielectric.



2447091 S00061544343_V1

CONFIGURATION OF THE SHIELD STRANDS
Figure 138

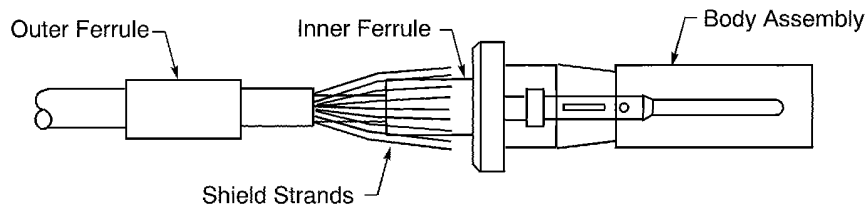
- (7) Put the body assembly on the center contact. Refer to Figure 139.

Make sure that the inner ferrule of the body assembly is between the round conductor shield and the flat conductor shield.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



2447092 S00061544344_V1

POSITION OF THE BODY ASSEMBLY ON THE CENTER CONTACT

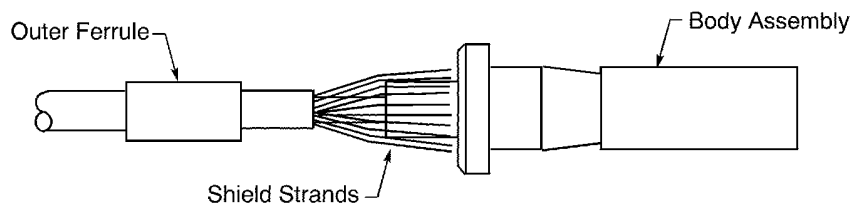
Figure 139

- (8) Push the center contact into the body assembly until it is locked in the body assembly.
- (9) To make sure that the center contact is locked, hold the body of the contact and lightly pull the cable.

CAUTION: DO NOT PULL THE CABLE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

- (10) If the center contact moves out of the body assembly, do Step 9.I.(8) and Step 9.I.(9) again.
- (11) Put the strands of the shield on the inner ferrule. Refer to Figure 140.
Make sure that the strands of the shield are symmetrical around the inner ferrule.



2447093 S00061544347_V1

POSITION OF THE SHIELD ON THE INNER FERRULE

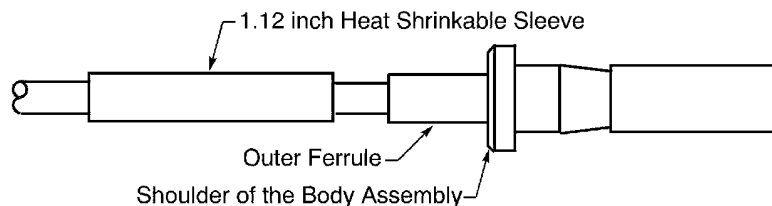
Figure 140

- (12) Push the outer ferrule forward to the end of the cable until the forward end of the outer ferrule is against the shoulder of the body assembly. Refer to Figure 141.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS



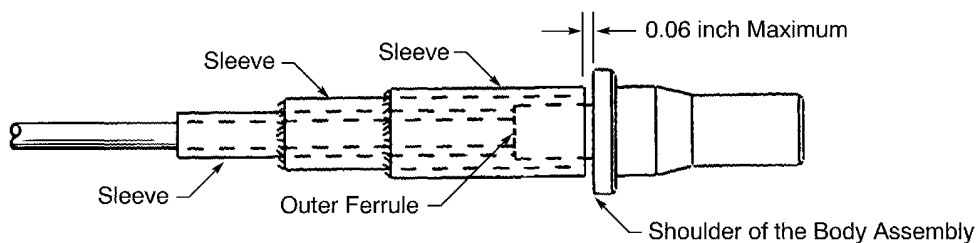
2447094 S00061546496_V1

POSITION OF THE OUTER FERRULE

Figure 141

- (13) Crimp the outer ferrule.
- (14) Assemble the heat shrinkable sleeves:
 - (a) Push the 1.12 inch sleeve to the end of the cable until the forward end of the sleeve is against the rear end of the outer ferrule.
 - (b) Shrink the sleeve in its position. Refer Subject 20-10-14.
 - (c) Push the 0.75 inch sleeve on the outer ferrule until the forward end of the sleeve is against the shoulder of the body assembly. Refer to Figure 142.

Make sure that the distance between the forward end of the sleeve and the shoulder is not more than 0.06 inch.



2446107 S00061546497_V1

POSITION OF THE HEAT SHRINKABLE SLEEVES

Figure 142

- (d) Shrink the sleeve in its position. Refer Subject 20-10-14.
- (e) Push the 0.5 inch sleeve on the 0.75 inch sleeve until the forward end of the sleeve is against the shoulder of the body assembly.

Make sure that the distance between the end of the sleeve and the shoulder is not more than 0.06 inch.

- (f) Shrink the sleeve in its position. Refer Subject 20-10-14.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

10. COAX CONTACT ASSEMBLY

A. Assembly of Cory CRC280-(), CRM280-(), and CRMEF-502 Coax Contacts

Table 79
COAX CENTER CONTACT CRIMP TOOL

Coax Contact	Basic Unit		Locator
	Part Number	Setting	
CRC280-2	M22520/2-01	5	K709
CRC280-3	M22520/2-01	5	K709
CRC280-4	M22520/2-01	5	K709
CRM280-2	M22520/2-01	5	M22520/2-14
CRM280-3	M22520/2-01	6	M22520/2-14
CRM280-4	M22520/2-01	5	M22520/2-14
CRMEF-502	M22520/2-01	6	M22520/2-37

Table 80
COAX CONTACT BODY CRIMP TOOL

Coax Contact	Basic Unit	Die	
		Part Number	Cavity
CRC280-2	612648	612642	B
	KTH-1000	KTH-2007	A
	M22520/5-01	M22520/5-05	B
		M22520/5-41	B
		Y197	B
CRC280-3	M22520/5-01	M22520/5-39	B
		Y139	B
CRC280-4	612648	612642	B
	KTH-1000	KTH-2007	A
	M22520/5-01	M22520/5-05	B
		M22520/5-41	B
		Y197	B
CRM280-2	612648	612642	B
	KTH-1000	KTH-2007	A
	M22520/5-01	M22520/5-05	B
		M22520/5-41	B
		Y197	B
CRM280-3	M22520/5-01	M22520/5-39	B
		Y139	B

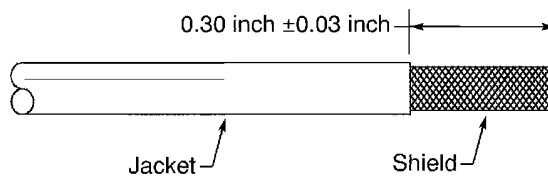
20-61-11

707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 80 COAX CONTACT BODY CRIMP TOOL (Continued)

Coax Contact	Basic Unit	Die	
		Part Number	Cavity
CRM280-4	612648	612642	B
	KTH-1000	KTH-2007	A
	M22520/5-01	M22520/5-05	B
		M22520/5-41	B
		Y197	B
CRMEF-502	612648	612642	B
	KTH-1000	KTH-2007	A
	M22520/5-01	M22520/5-05	B
		M22520/5-41	B
		Y197	B

- (1) Make a selection of a center contact crimp tool from Table 79.
- (2) Make a selection of a contact body crimp tool from Table 80.
- (3) Cut the end of the cable.
Make sure that the end is perpendicular to the longitudinal axis.
- (4) Remove 0.30 inch \pm 0.03 inch of the outer jacket from the end of the cable. Refer to Figure 143.



2447078 S00061546517_V1

OUTER JACKET REMOVAL LENGTH

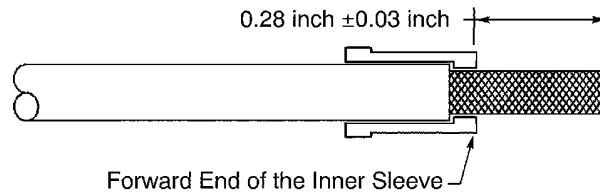
Figure 143

- (5) Put the inner sleeve on the cable. Refer to Figure 144.
Make sure that:
 - The inner shoulder of the sleeve is against the end of the cable jacket
 - The distance from the forward end of the inner sleeve to the end of the cable is 0.28 inch \pm 0.03 inch.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

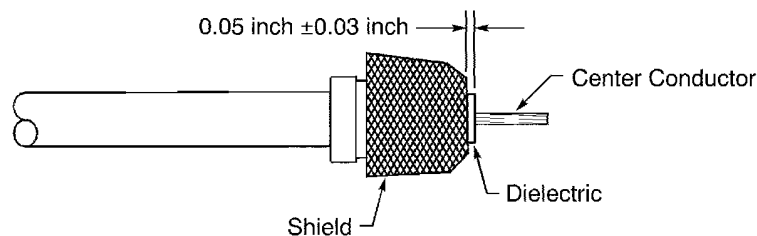


2447079 S00061546518_V1

POSITION OF THE INNER SLEEVE

Figure 144

- (6) Fold the outer shield with round strands back. Refer to Figure 145.
Make sure that strands of the outer shield are against the inner sleeve.



2447080 S00061546519_V1

POSITION OF THE OUTER SHIELD

Figure 145

- (7) Remove the necessary length of the inner shield with flat strands.
Make sure that the end of the inner shield is aligned with the forward end of the inner sleeve.

CAUTION: DO NOT CAUSE DAMAGE TO THE ROUND STRANDS OF THE OUTER SHIELD.
DAMAGE TO THE OUTER SHIELD CAN CAUSE UNSATISFACTORY
PERFORMANCE OR RELIABILITY OF THE COAX CABLE.

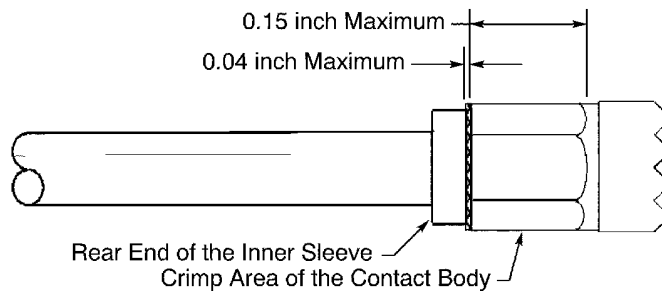
- (8) Remove the necessary length of the dielectric.
Make sure that the distance from the forward end of the inner sleeve to the end of the dielectric is 0.05 inch \pm 0.03 inch.
- (9) Put the center contact on the center conductor.
- (10) Crimp the center contact.
- (11) Put the body of the contact on the cable.
Make sure that:
- The barrel is on the shield
 - The center contact is fully inserted in the body.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (12) To make sure that the center contact is locked, hold the body of the contact and lightly pull the cable.
- (13) If it is necessary, remove a short length of the shield to align the end of the shield with the rear end of the contact body.
- (14) Crimp the contact body. Refer to Figure 146.
- Make sure that the distance between the flange of the inner sleeve and the rear end of the contact body is not more than 0.04 inch.



2447081 S00061546521_V1

CRIMP OF THE CONTACT BODY
Figure 146

11. CONTACT INSERTION

A. Contact Insertion

Refer to:

- Paragraph 11.B. for the insertion of a shielded contact
- Paragraph 11.C. for the insertion of a coax contact.

This procedure can be used to insert these contacts in a contact cavity:

- A wired contact
- An unwired contact.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 81
CONTACT INSERTION TOOLS

Contact Size	Wire O.D. (inch)	Basic Unit	Bit
2020	More than 0.06	294-88	-
		AT 1020	-
	Less than 0.06	ATB 1067	-
	-	DAK20	-
	Less than 0.06	DAK351	-
	More than 0.06	MS24256A20	-
		M81969/17-03	-
	Less than 0.06	RTM20-5	-
		RTPIT-085B	DAK602-2
	More than 0.06	RTPIT-085B	ST2220-2-1
	Less than 0.06	RTPIT-120B	DAK602-2
	More than 0.06	RTPIT-120B	ST2220-2-1
	Less than 0.06	ST2220-2	DAK602-2
	More than 0.06	ST2220-2	ST2220-2-1
	-	ZZL-R-9510-20	-
2018	-	RTPIT-085B	ST2220-2-1
		RTPIT-120B	ST2220-2-1
		ST2220-2	ST2220-2-1
2016	-	RTPIT-085B	ST2220-2-1
		RTPIT-120B	ST2220-2-1
		ST2220-2	ST2220-2-1

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 81 CONTACT INSERTION TOOLS (Continued)

Contact Size	Wire O.D. (inch)	Basic Unit	Bit
1616	Less than 0.088	294-96	-
		AT 1016	-
		ATBO1108	-
		ATBO1108-16	-
		ATBO1108-90	-
	-	DAK55-16	-
		MS24256A16	-
	Less than 0.088	M81969/17-04	-
	-	MS90455-16	-
		RTM16-2	-
	Less than 0.088	RTPIT-085B	ST2220-2-4
	Between 0.088 and 0.130	RTPIT-085B	ST2220-2-4A
	Less than 0.088	RTPIT-120B	ST2220-2-4
	Between 0.088 and 0.130	RTPIT-120B	ST2220-2-4A
	Less than 0.088	ST2220-2	ST2220-2-4
	Between 0.088 and 0.130	ST2220-2	ST2220-2-4A
1212	Less than 0.088	ZZL-R-9510-16	-
	-	294-72	-
		AT 1012	-
		DAK55-12	-
		MS24256A12	-
		M81969/17-05	-
		MS90455-12	-
		RTM12-5	-
		RTPIT-120B	ST2220-2-5
		ST2220-2	ST2220-2-5
		ZZL-R-9510-12	-

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 82
Contact Retention Test Tools

Contact Size	Contact Type	Contact Retention Test Tool Part Number (Probe Included)	Color Bands		Replacement Probe Part Number	Supplier
			First Color Band	Second Color Band		
2020	Pin	HT210-20	-	-	68-020-01	Daniels
		RTCRT-20	Red	Black	RTCRT-20-P1	Russtech
	Socket	HT210-20	-	-	67-020-01	Daniels
		RTCRT-20	Red	Black	RTCRT-20-P1	Russtech
1616	Pin	HT210-16	-	-	68-016-01	Daniels
		RTCRT-16	Blue	Black	RTCRT-16-P1	Russtech
	Socket	HT210-16	-	-	67-016-01	Daniels
		RTCRT-16	Blue	Black	RTCRT-16-P1	Russtech
1212	Pin	HT210-12	-	-	68-012-01	Daniels
		RTCRT-12	Yellow	Black	RTCRT-12-P1	Russtech
	Socket	HT210-12	-	-	67-012-01	Daniels
		RTCRT-12	Yellow	Black	RTCRT-12-P1	Russtech

- (1) Make a selection of a contact insertion tool from Table 81.
Refer to Subject 20-00-16 to find the O.D. of the wire.
- (2) Examine the tool.

WARNING: A DEFECTIVE TOOL CAN CAUSE INJURY TO THE PERSON.

CAUTION: DO NOT USE A TOOL WITH:

- A TIP THAT IS BENT
- A TIP THAT IS FLARED
- A TIP THAT IS BROKEN
- A TIP THAT HAS A CRACK.

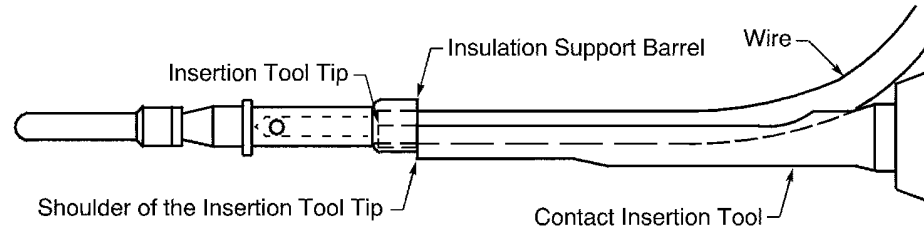
CAUTION: A DEFECTIVE TOOL CAN CAUSE DAMAGE TO THE GROMMET OF THE CONNECTOR OR THE CONTACT RETENTION CLIPS.

- (3) Put the necessary connector assembly components on the wire harness.
- (4) Examine the contact.
Make sure that the contact:
 - Is straight
 - Does not have damage.
- (5) Put the contact assembly in the insertion tool.
For a size 20 contact, refer to:

20-61-11

707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

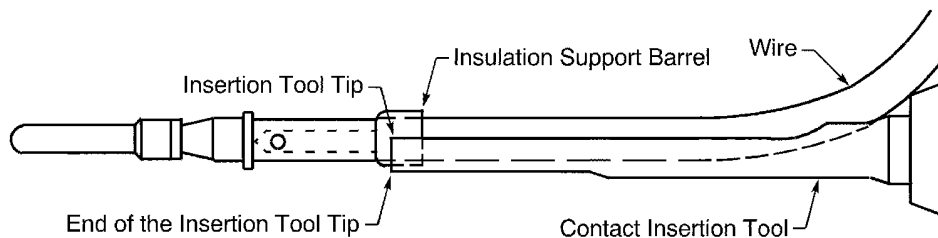
- Figure 147 for the correct position of the insertion tool tip on the contact assembly with a wire O.D. less than 0.06 inch
- Figure 148 for the correct position of the insertion tool tip on the contact assembly with a wire O.D. more than 0.06 inch.



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POSITION OF THE INSERTION TOOL TIP INSIDE THE WIRE INSULATION BARREL FOR SIZE 20 CONTACTS AND A WIRE O.D. LESS THAN 0.06 INCH

Figure 147



2447097 S00061546525_V1

POSITION OF THE INSERTION TOOL TIP OUTSIDE THE WIRE INSULATION BARREL FOR SIZE 20 CONTACTS AND A WIRE O.D. MORE THAN 0.06 INCH

Figure 148

- (6) From the rear of the connector, axially align the insertion tool and the contact cavity.

CAUTION: DAMAGE TO THE CONNECTOR OCCURS IF A TOOL IS INSERTED INTO THE FRONT FACE OF THE CONNECTOR.

- (7) Carefully push the insertion tool into the contact cavity until it stops.

CAUTION: DO NOT TURN THE INSERTION TOOL AT THE SAME TIME THAT THE TOOL IS PUSHED IN THE GROMMET. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

- (8) If it is necessary to make the insertion of the contact easier:

- (a) Put a small quantity of isopropyl alcohol or denatured alcohol on one of these surfaces or each of these surfaces:

- The contact
- The rear face of the connector grommet.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

CAUTION: DO NOT PUT LUBRICANT ON ANOTHER SURFACE. DAMAGE TO THE CONDUCTOR OR TO THE WIRED CONTACT CAN CAUSE UNSATISFACTORY PERFORMANCE.

CAUTION: DO NOT PUT MORE THAN THE NECESSARY QUANTITY OF LUBRICANT ON THE SURFACE. DAMAGE TO THE CONDUCTOR OR TO THE WIRED CONTACT CAN CAUSE UNSATISFACTORY PERFORMANCE.

- (9) Carefully pull the insertion tool straight out of the contact cavity.
- (10) To make sure that the contact is locked in the contact cavity, lightly pull on the wire, or as an alternative procedure, perform the contact retention test in Step 11.A.(11).

CAUTION: DO NOT PULL THE WIRE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

- (11) As an alternative to Step 11.A.(10), perform this step to make sure that the contact is locked in the contact cavity:

- (a) Make a selection of the correct contact retention test tool from Table 82.

NOTE: The probe has a steel pin on one end, to test socket contacts and a plastic tip on the other end, to test pin contacts.

- (b) If it is necessary to test a pin contact, make sure that the plastic end of the probe extends from the contact retention test tool.
 - (c) If it is necessary to test a socket contact, make sure that the end of the probe that has a steel pin extends from the contact retention test tool.
 - (d) Examine the end of the probe that it is necessary to use.

CAUTION: IF YOU USE A DEFECTIVE PROBE, YOU CAN CAUSE DAMAGE TO THE CONTACT OR THE CONNECTOR. DO NOT USE A TOOL THAT HAS A PROBE THAT HAS THESE DEFECTS:

- A BENT STEEL PIN
- A BROKEN STEEL PIN
- A STEEL PIN WITH A NICK
- A PLASTIC END THAT DOES NOT HAVE A RECESS

WARNING: ALWAYS WEAR EYE PROTECTION. DO NOT TEST OR PUSH THE CONTACT RETENTION TEST TOOL AGAINST A HARD SURFACE SUCH AS A TABLE TOP OR A WORK BENCH. THE PROBE MAY BREAK AND CAUSE INJURY.

- (e) Align the longitudinal axis of the contact retention test tool with the longitudinal axis of the pin or socket contact under test.
 - (f) For a pin contact, put the end of the plastic end of the probe on top of the pin. Make sure that the end of the pin is in the recess in the end of the probe.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (g) For a socket contact, carefully push the end of the probe that has the steel pin into the socket contact.
- Make sure that you keep the alignment between the contact retention test tool and the socket. Push the contact retention test tool carefully into the socket until the steel pin touches the bottom of the socket.
- (h) Push the tool until the movement limit rod on the contact retention test tool touches the front of the connector.
- (i) Remove the contact retention removal tool from the contact and the connector.
- (j) Look at the contact under test.
- Make sure that the position of the tip of the contact did not move back in relation to the position of the tips of the other contacts.
- (k) If the position of the tip of the contact has moved back, gently pull the contact out of the contact cavity to remove the contact-to-wire assembly from the connector.
- (12) If the contact is not locked in the contact cavity:
- (a) Pull the contact out of the contact cavity.
- (b) Do Step 11.A.(4) through Step 11.A.(10) again.

B. Shielded Contact Insertion

Table 83
SHIELDED CONTACT INSERTION TOOLS

Shielded Contact		Connector Contact Cavity Size	Insertion Tool
Part Number	Size		
10-60479-41	2	8	DAK623
10-60479-44	2	8	DAK623
48-2187-02	2	8	DAK623
MS27184-22P	1	12	DAK623
MS39029/54-342	1	12	DAK623
S283U007-7	2	8	DAK623

Table 84
SHIELDED CONTACT INSERTION TOOLS

Shielded Contact Size	Connector Cavity Size	Insertion Tool
1	12	294-72
		M81969/17-05
		MS24256A12
2	8	294-128
		M81969/17-06

- (1) Make a selection of an insertion tool from:
- Table 83 for a 10-60479-() shielded contact

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- Table 83 for a 48-2187-02 shielded contact
- Table 83 for an MS27184-22P or an MS39029/54-342 shielded contact
- Table 83 for an S283U007-7 shielded contact
- Table 84 for all other shielded contacts.

- (2) Examine the tool.

WARNING: A DEFECTIVE TOOL CAN CAUSE INJURY TO THE PERSON.

CAUTION: DO NOT USE A TOOL WITH:

- A TIP THAT IS BENT
- A TIP THAT IS FLARED
- A TIP THAT IS BROKEN
- A TIP THAT HAS A CRACK.

CAUTION: A DEFECTIVE TOOL CAN CAUSE DAMAGE TO THE GROMMET OF THE CONNECTOR OR THE CONTACT RETENTION CLIPS.

- (3) Put the necessary connector assembly components on the wire harness.

- (4) Examine the contact.

Make sure that the contact:

- Is straight
- Does not have damage.

- (5) Put the contact assembly in the insertion tool.

- (6) From the rear of the connector, axially align the insertion tool and the contact cavity.

CAUTION: DAMAGE TO THE CONNECTOR OCCURS IF A TOOL IS INSERTED INTO THE FRONT FACE OF THE CONNECTOR.

- (7) Carefully push the insertion tool into the contact cavity until it stops.

CAUTION: DO NOT TURN THE INSERTION TOOL AT THE SAME TIME THAT THE TOOL IS PUSHED IN THE GROMMET. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

- (8) Carefully remove the tool from the contact cavity.

- (9) To make sure that the contact is locked, lightly pull the wire.

CAUTION: DO NOT PULL THE WIRE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

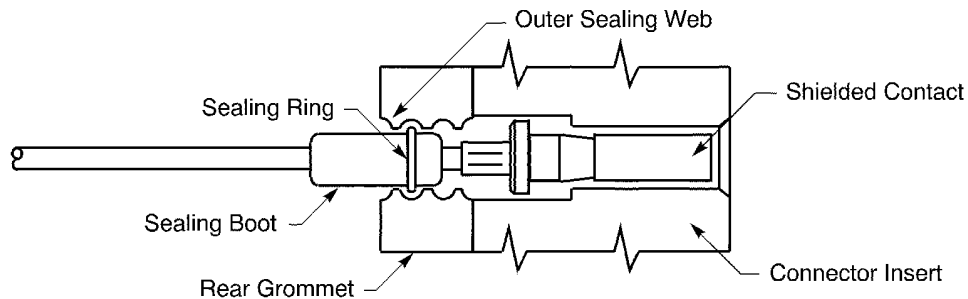
- (10) If the contact is not locked in the contact cavity, do Step 11.B.(7) through Step 11.B.(9) again.

- (11) For the Cinch CN0900-336 contacts:

20-61-11

707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

- (a) Make a selection of a blunt tool.
 - (b) Carefully push the O-ring into the rear grommet to make the O-ring go behind the outer sealing web of the grommet.
- (12) If there is a sealing boot on the cable, push the sealing boot into the contact cavity of the rear grommet. Refer to Figure 149.
- Make sure that the sealing ring of the sealing boot is behind the outer sealing web in the rear grommet.



2446109 S00061546532_V1

POSITION OF THE SEALING RING BEHIND THE OUTER SEALING WEB
Figure 149

C. Coax Contact Insertion

Table 85
COAX CONTACT INSERTION TOOLS

Contact Size	Insertion Tool
12	294-72
	M81969/17-05
	MS24256A12
8	294-128
	M81969/17-06

- (1) Make a selection of a coax contact insertion tool from Table 85.
- (2) Make a selection of a coax contact insertion tool from Table 85.

WARNING: A DEFECTIVE TOOL CAN CAUSE INJURY TO THE PERSON.

CAUTION: DO NOT USE A TOOL WITH:

- A TIP THAT IS BENT
- A TIP THAT IS FLARED
- A TIP THAT IS BROKEN
- A TIP THAT HAS A CRACK.

CAUTION: A DEFECTIVE TOOL CAN CAUSE DAMAGE TO THE GROMMET OF THE CONNECTOR OR THE CONTACT RETENTION CLIPS.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

(3) Put the necessary connector assembly components on the wire harness.

(4) Examine the contact.

Make sure that the contact:

- Is straight
- Does not have damage.

(5) Put the contact assembly in the insertion tool.

(6) From the rear of the connector, axially align the insertion tool with the contact cavity.

CAUTION: DAMAGE TO THE CONNECTOR OCCURS IF A TOOL IS INSERTED INTO THE FRONT FACE OF THE CONNECTOR.

(7) Carefully push the tool straight into the correct contact cavity until it stops.

CAUTION: DO NOT TURN THE INSERTION TOOL AT THE SAME TIME THAT THE TOOL IS PUSHED IN THE GROMMET. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

(8) Carefully remove the tool from the contact cavity.

(9) To make sure that the contact is locked, lightly pull the wire.

CAUTION: DO NOT PULL THE CABLE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE CABLE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE CABLE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE CABLE.

(10) If the contact is not locked in the contact cavity, do Step 11.C.(7) through Step 11.C.(9) again.

12. SEAL OF AN EMPTY CONTACT CAVITY

A. Seal of an Empty Contact Cavity

All empty contact cavities must be sealed.

Refer to:

- Subject 20-60-08 to seal an empty standard contact cavity
- Paragraph 12.B. to seal an empty shielded contact cavity with a Boeing 10-60479-() potted shielded contact
- Paragraph 12.C. to seal an empty shielded contact cavity with an Amphenol 217-2026 seal plug.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

B. Seal of an Empty Shielded Contact Cavity with a 10-60479-() Potted Shielded Contact

A satisfactory alternative to this procedure is the seal of an empty shielded contact cavity with an Amphenol 217-2026 seal plug. Refer to Paragraph 12.C.

- (1) Assemble a 10-60479-() potted shielded contact without a center contact. Refer to Paragraph 9.G.

Make sure that:

- The center contact is not installed
 - The potting compound is sufficiently dry.
- (2) Make a selection of an insertion tool from Table 83.
 - (3) Put the tip of the insertion tool over the end of the unwired shielded contact.
 - (4) From the rear of the connector, push the tool straight into the correct contact cavity until it stops.
 - (5) Carefully remove the tool from the contact cavity.
 - (6) Push the sealing boot into the grommet.
 - (7) Push a size 16 seal plug or seal rod into the wire hole of the boot until the seal plug is against the contact.

C. Seal of an Empty Shielded Contact Cavity with an Amphenol 217-2026 Seal Plug

A satisfactory alternative to this procedure is the seal of an empty shielded contact cavity with a Boeing 10-60479-() potted shielded contact. Refer to Paragraph 12.B.

- (1) Align the plug with the contact cavity.
Make sure that the end with the grooves is pointed to the contact cavity.
- (2) Push the plug into the contact cavity until it is locked in the cavity.

20-61-11

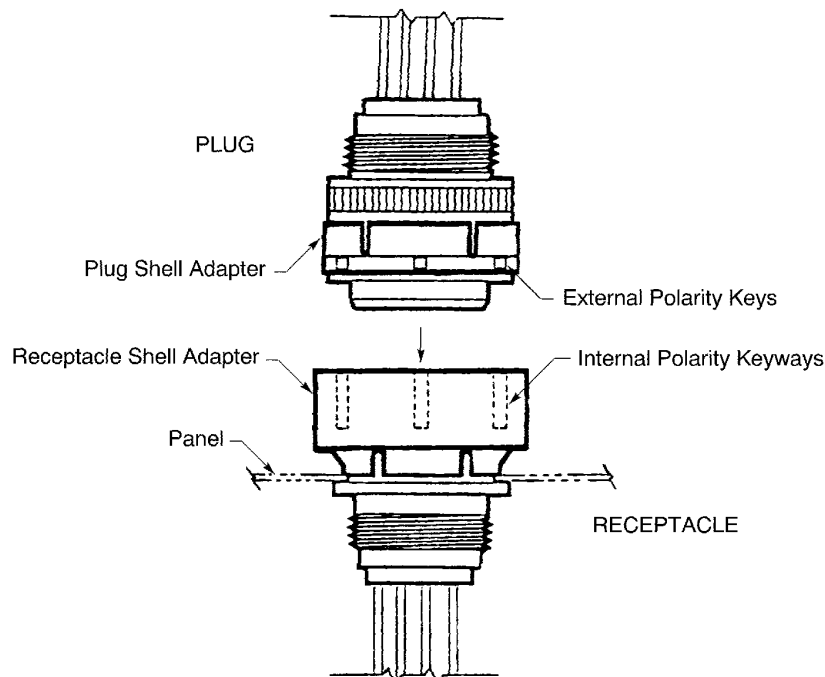


707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

13. INSTALLATION OF COUPLING RING POLARITY ADAPTERS

A. Installation of Cinch Adapters

Refer to Paragraph 3.M. for the adapter configurations and part numbers.



2446110 S00061546534_V1

COUPLING RING POLARITY ADAPTERS

Figure 150

- (1) To install the plug shell adapter:
 - (a) Put the adapter on the plug. Refer to Figure 150.

Make sure that the end with the external polarity keys is pointed to the engaging face of the plug.
 - (b) Push the adapter on the coupling ring or the plug until the retention device is locked.
- (2) To install the receptacle shell adapter:
 - (a) Put the adapter on the receptacle. Refer to Figure 150.

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Make sure that the end with the internal polarity keyways is pointed to the engaging face of the receptacle.

- (b) Push the adapter over the receptacle until one of these conditions occur:
- The adapter retention device is locked
 - The adapter is against the panel of the mounted receptacle.

B. Installation of the Amphenol 48-7164-1S connector

Table 86
NECESSARY MATERIALS

Material	Description	Part Number	Supplier
Alcohol	Isopropyl	-	An available source
Thread Lock Compound	-	222	Loctite
		271	Loctite

Table 87
NECESSARY TOOLS

Tool	Description	Part Number	Supplier
Wiper	Cloth	-	An available source
Torque Tool	-	-	An available source

- (1) Make a selection of an alcohol and a thread lock compound from Table 86.
- (2) Make a selection of a wiper and a torque tool from Table 87.
- (3) Clean the threads of the 48-7164-1S connector body and retainer nut with the wiper moist with isopropyl alcohol.
- (4) Apply two drops of the thread lock compound on the threads of the 48-7164-1S connector body and the threads of the retainer nut.
- (5) Install the connector.
- (6) Torque the retainer nut to 46 inch-pounds \pm 10 inch-pounds.

14. PLUG AND RECEPTACLE CONNECTION

A. Connection of the Plug and the Receptacle

Refer to Subject 20-60-06 for the procedure for the connection of the plug and the receptacle.

15. APPROVED TOOL SUPPLIERS

A. Contact Removal Tools

Table 88
REMOVAL TOOL SUPPLIERS

Removal Tools	Supplier
294-73	Amphenol

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 88 REMOVAL TOOL SUPPLIERS (Continued)

Removal Tools	Supplier
294-89	Amphenol
294-97	Amphenol
294-127	Amphenol
AT 2012	Astro
AT 2016	Astro
AT 2020	Astro
ATML 1907	Astro
ATML 1908	Astro
ATML 1909	Astro
DRK12	Daniels
DRK16	Daniels
DRK20	Daniels
DRK56-12	Daniels
DRK56-16	Daniels
M81969/19-01	QPL
M81969/19-02	QPL
M81969/19-03	QPL
M81969/19-06	QPL
M81969/19-07	QPL
M81969/19-08	QPL
M81969/19-09	QPL
MS24256R12	QPL
MS24256-16	QPL
MS24256R16	QPL
MS24256R20	QPL
MS90456-12	QPL
RTX12-7	Burndy
RX12-7	Burndy
RX16-7	Burndy
RX16-8	Burndy
RX20-24	Burndy
RX20-24V5	Burndy
ST2220-3-13	Boeing
ST2220-3-14	Boeing
ST2220-3-15	Boeing

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 88 REMOVAL TOOL SUPPLIERS (Continued)

Removal Tools	Supplier
ZZL-R-9511-12	Pyle-National
ZZL-R-9511-16	Pyle-National
ZZL-R-9511-20	Pyle-National

B. Contact Insertion Tools

Table 89
INSERTION TOOL SUPPLIERS

Insertion Tools	Supplier
294-72	Amphenol
294-88	Amphenol
294-96	Amphenol
294-128	Amphenol
AT 1012	Astro
AT 1016	Astro
AT 1020	Astro
ATB 1067	Astro
ATBO1108	Astro
ATBO1108-16	Astro
ATBO1108-90	Astro
DAK20	Daniels
DAK351	Daniels
DAK55-12	Daniels
DAK55-16	Daniels
DAK602-2	Daniels
DAK623	Daniels
M81969/17-03	QPL
M81969/17-04	QPL
M81969/17-05	QPL
M81969/17-06	QPL
MS24256A12	QPL
MS24256A16	QPL
MS24256A20	QPL
MS90455-12	QPL
MS90455-16	QPL
RTM12-5	Burndy
RTM16-2	Burndy

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 89 INSERTION TOOL SUPPLIERS (Continued)

Insertion Tools	Supplier
RTM20-5	Burndy
RTPIT-085B	Russtech
RTPIT-120B	Russtech
ST2220-2	Boeing
ST2220-2-1	Boeing
ST2220-2-4	Boeing
ST2220-2-4A	Boeing
ST2220-2-5	Boeing
ZZL-R-9510-12	Pyle-National
ZZL-R-9510-16	Pyle-National
ZZL-R-9510-20	Pyle-National

C. Crimp Tools

Table 90
CRIMP TOOL SUPPLIERS

Crimp Tools	Supplier
294-1631	Amphenol
612642	Buchanan
612648	Buchanan
612661	Buchanan
85-220	Balmar
85-550	Balmar
K709	Daniels
K74S	Daniels
K75S	Daniels
K75S-1	Daniels
K977	Daniels
KTH-1000	Kings
KTH-2007	Kings
M10S	Burndy
M22520/1-01	QPL
M22520/1-02	QPL
M22520/2-01	QPL
M22520/2-02	QPL
M22520/2-14	QPL
M22520/2-24	QPL

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL
MIL-C-26500 FRONT RELEASE CONNECTORS

Table 90 CRIMP TOOL SUPPLIERS (Continued)

Crimp Tools	Supplier
M22520/2-33	QPL
M22520/2-37	QPL
M22520/5-41	QPL
M22520/5-01	QPL
M22520/5-05	QPL
M22520/5-08	QPL
M22520/5-10	QPL
M22520/5-35	QPL
M22520/5-39	QPL
M22520/5-41	QPL
S-5	Burndy
S-6	Burndy
S-7	Burndy
S-8	Burndy
SL-2	Burndy
SL-3	Burndy
SL-4	Burndy
ST2220-1-1	Boeing
ST2220-1-2	Boeing
ST2220-1-3	Boeing
ST2220-1-15A	Boeing
ST2220-1-45	Boeing
ST2220-1-47	Boeing
ST2220-1-Y	Boeing
ST965-1	Boeing
ST965-5	Boeing
WA22	Daniels
WA22LC	Daniels
WA27F	Daniels
WT-200	Thomas&Betts
WT-202	Thomas&Betts
WT-202-06-08	Thomas&Betts
Y139	Daniels
Y197	Daniels
Y322	Daniels

20-61-11



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL 67 SERIES AND CINCH CN0906 SERIES CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
1.	<u>PART NUMBERS AND DESCRIPTION</u>	2
	A. Connector Part Numbers	2
	B. Connector Description	2
	C. Contact Part Numbers	2
2.	<u>CONNECTOR DISASSEMBLY</u>	3
	A. Safety Wire Removal	3
	B. Contact Removal	3
3.	<u>CONNECTOR ASSEMBLY</u>	4
	A. Contact Assembly	4
	B. Contact Insertion	5
	C. Connector Assembly	6
	D. Safety Wire Installation	7
4.	<u>APPROVED TOOL SUPPLIERS</u>	8
	A. Removal Tool Suppliers	8
	B. Insertion Tool Suppliers	8
	C. Crimp Tool Suppliers	8

20-61-12

707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL 67 SERIES AND CINCH CN0906 SERIES CONNECTORS

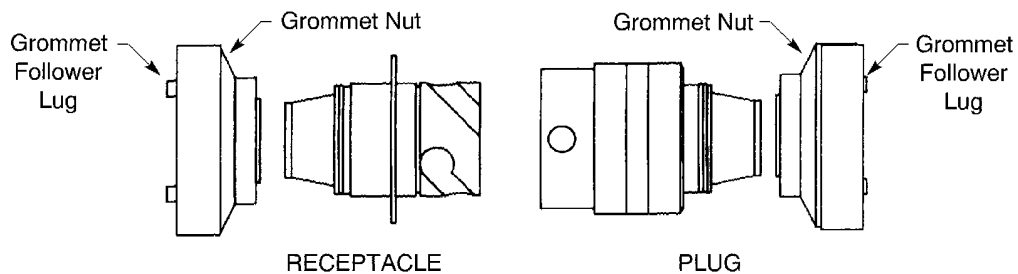
1. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

Table 1
CONNECTOR PART NUMBERS

Part Number	Connector Type	Supplier
67-906	Receptacle	Amphenol
67-907	Plug	Amphenol
CN0906-06E14-12P	Plug	Cinch
CN0906-02E14-12S	Receptacle	Cinch

B. Connector Description

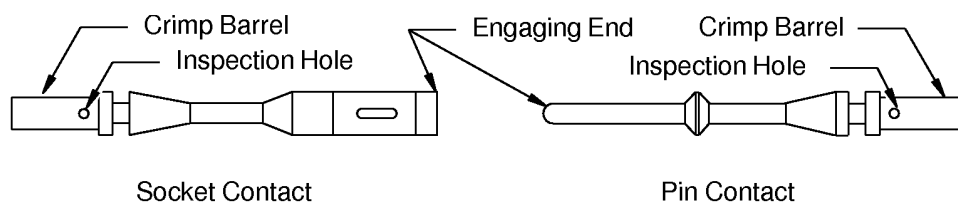


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CONNECTOR RECEPTACLE AND PLUG

Figure 1

C. Contact Part Numbers



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CONTACTS FOR THE AMPHENOL 67 SERIES AND CINCH CN0906 SERIES CONNECTORS

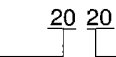
Figure 2

20-61-12



**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF AMPHENOL 67 SERIES AND CINCH CN0906 SERIES CONNECTORS

Engaging End Size  Crimp Barrel Size

2446651 S00061545900_V1

EXAMPLE OF A CONTACT SIZE

Figure 3

**Table 2
CONTACT PART NUMBERS**

Contact Size		Part Number	Contact Type	Supplier
Engaging End	Crimp Barrel			
20	20	10-827767-000	Socket	Amphenol
		67-1890-03	Pin	Amphenol
		CN0906-2000P-02	Pin	Cinch
		CN0906-2000S-02	Socket	Cinch

2. CONNECTOR DISASSEMBLY

A. Safety Wire Removal

- (1) Remove the safety wire between the grommet nut and the grommet follower.
- (2) Loosen the grommet nut.
- (3) Push the nut over the wire.

CAUTION: DO NOT TRY TO REMOVE THE INTEGRAL GROMMET FROM THE SHELL.

B. Contact Removal

**Table 3
CONTACT REMOVAL TOOLS**

Engaging End Size	Contact Type	Removal Tool	
		Handle	Tip
20	Pin	294-152	294-1034
		ST-2220-2	ST-2220-3-16
	Socket	294-152	294-1033
		ST-2220-2	ST-2220-3-17

- (1) Make a selection of a contact removal tool from Table 3.

20-61-12



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL 67 SERIES AND CINCH CN0906 SERIES CONNECTORS

- (2) Carefully put the tip of the tool on the engaging end of the contact so that the tool is against the front face of the connector insert.
- (3) Pull the wire and the tool from the contact cavity at the same time.

3. CONNECTOR ASSEMBLY

A. Contact Assembly

**Table 4
CRIMP TOOLS FOR BELT OR REEL MOUNTED CONTACTS**

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool		
		Basic Unit		Locator Block
		Part Number	Setting	
24	20	612916	Blue	Yellow
22	20	11148	Red	Red
		612916	Yellow	Red
20	20	612916	Yellow	Blue

**Table 5
CONTACT CRIMP TOOLS**

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool		
		Basic Unit		Locator
		Part Number	Setting	
24	20	M22520/2-01	5	K149
		WA22	5	K149
22	20	M22520/2-01	6	K149
		ST2220-1-Y	Fixed	ST2220-1-12
		WA22	6	K149
20	20	M22520/2-01	7	K149
		ST2220-1-Y	Fixed	ST2220-1-12
		WA22	7	K149
18	20	M22520/2-01	8	K149
		ST2220-1-Y	Fixed	ST2220-1-12
		WA22	8	K149

- (1) Remove 0.34 inch \pm 0.03 inch of wire insulation.
- (2) Make a selection of a crimp tool from Table 4 or Table 5.
- (3) Put the contact in the locator.
- (4) Put the wire in the crimp barrel of the contact until it hits the bottom.
Make sure that:

20-61-12

707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL 67 SERIES AND CINCH CN0906 SERIES CONNECTORS

- All of the conductor strands are in the crimp barrel
 - The wire is visible through the inspection hole.
- (5) Crimp the contact.
 - (6) Remove the wired contact from the tool.

B. Contact Insertion

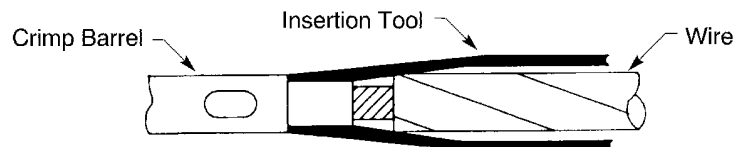
**Table 6
CONTACT INSERTION TOOLS**

Engaging End Size	Insertion Tool	
	Handle	Tip
20	294-152	294-1096
	ST-2220-2	ST-2220-2-15

- (1) Make a selection an insertion tool from Table 6.
- (2) Install spare contacts in all of the unused contact cavities.
- (3) Put the wired contact in the tool. Refer to Figure 4.

Make sure that:

- The tool tip is against the shoulder of the contact
- The inner shoulder of the tool is against the end of the contact.



2446113 S00061546539_V1

POSITION OF THE CONTACT IN THE INSERTION TOOL

Figure 4

- (4) Push the contact into the connector.
- (5) Align the contact and the tool so that they are perpendicular to the rear face of the grommet.
- (6) Push the contact into the contact cavity until the stepped part of the tool tip is within 0.375 inch of the grommet.
- (7) Carefully pull the tool from the connector.
- (8) To make sure that each contact is completely inserted, hold the wire and pull slowly until the thumb and forefinger slip along the wire.

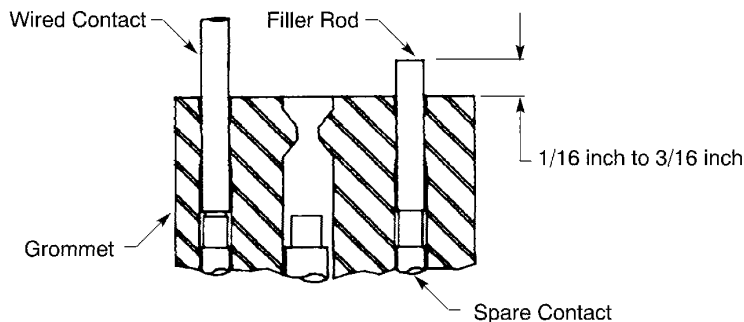
CAUTION: DO NOT PULL THE WIRE WITH A SUDDEN FORCE OR INDENT THE WIRES WITH THE FINGERNAILS.

20-61-12

707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL 67 SERIES AND CINCH CN0906 SERIES CONNECTORS

- (9) Insert a filler rod in all spare contacts.
Make sure that the end of the filler rod is against the end of the crimp barrel.
- (10) Remove the unwanted length of the filler. Refer to Figure 5.
Make sure that the end of the filler is 1/16 inch to 3/16 inch from the face of the grommet.



2446114 S00061546541_V1

FILLER ROD INSTALLATION
Figure 5

C. Connector Assembly

- (1) Push the grommet nut against the connector backshell.
- (2) Hold the grommet follower lugs and turn the follower to align the keyway in the grommet follower with the key in the shell.
- (3) Tighten the grommet nut with pliers until the nut stops.

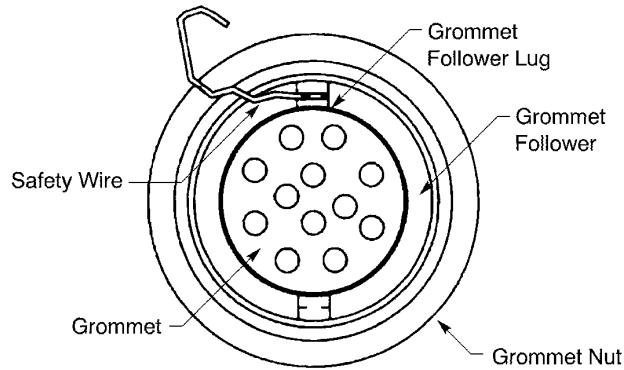
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707, 727-787
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ASSEMBLY OF AMPHENOL 67 SERIES AND CINCH CN0906 SERIES CONNECTORS

D. Safety Wire Installation



2446115 S00061546542_V1

SAFETY WIRE INSTALLATION

Figure 6

- (1) When it is necessary, install safety wire on the grommet nut and grommet follower lug. Refer to Figure 6.
- (2) If the grommet nut holes are more than 0.38 inch apart:
 - (a) Use the double twist method. Refer to Figure 6 and Subject 20-60-07.
 - (b) Install the safety wire between the grommet follower lug and the grommet nut.
 - (c) Install the safety wire in any one of the grommet nut holes.
- (3) If the grommet nut holes are less than 0.38 inch apart:
 - (a) Use the single wire method. Refer to Subject 20-60-07.
 - (b) Install the safety wire so that the wire is tightens when the grommet nut is loosened.
 - (c) Twist the wires 3 to 5 turns at the end of the wire.
 - (d) Bend the end of the wire back.

20-61-12



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL 67 SERIES AND CINCH CN0906 SERIES CONNECTORS

4. APPROVED TOOL SUPPLIERS

A. Removal Tool Suppliers

Table 7
REMOVAL TOOL SUPPLIERS

Tool	Supplier
294-152	Amphenol
294-1033	Amphenol
294-1034	Amphenol
ST-2220-2	Boeing
ST-2220-3-16	Boeing
ST-2220-3-17	Boeing

B. Insertion Tool Suppliers

Table 8
INSERTION TOOL SUPPLIERS

Tool	Supplier
294-1096	Amphenol
294-152	Amphenol
ST-2220-2	Boeing
ST-2220-2-15	Boeing

C. Crimp Tool Suppliers

Table 9
CRIMP TOOL SUPPLIERS

Tool	Supplier
11148	Buchanan
612916	Buchanan
K149	Daniels
M22520/2-01	QPL
ST2220-1-12	Boeing
ST2220-1-Y	Boeing
WA22	Daniels

20-61-12



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF AMPHENOL 69 SERIES CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>	<u>PAGE</u>
1. <u>PART NUMBERS AND DESCRIPTION</u>	2
A. Connector Part Numbers	2
B. Contact Part Numbers	3
C. Filler Sleeve Part Numbers	4
2. <u>CONNECTOR DISASSEMBLY</u>	5
A. Contact Removal	5
3. <u>CONNECTOR ASSEMBLY</u>	6
A. Contact Assembly	6
B. Contact Insertion	7
4. <u>AMPHENOL 69-0R32-17S(170) CONNECTOR ASSEMBLY</u>	8
A. Contact Assembly	8
B. Contact Insertion	10
C. Connector Assembly	10
5. <u>APPROVED TOOL SUPPLIERS</u>	10
A. Crimp Tool Suppliers	10
B. Insertion Tool Suppliers	10
C. Removal Tool Suppliers	10

20-61-13



707, 727-787
STANDARD WIRING PRACTICES MANUAL

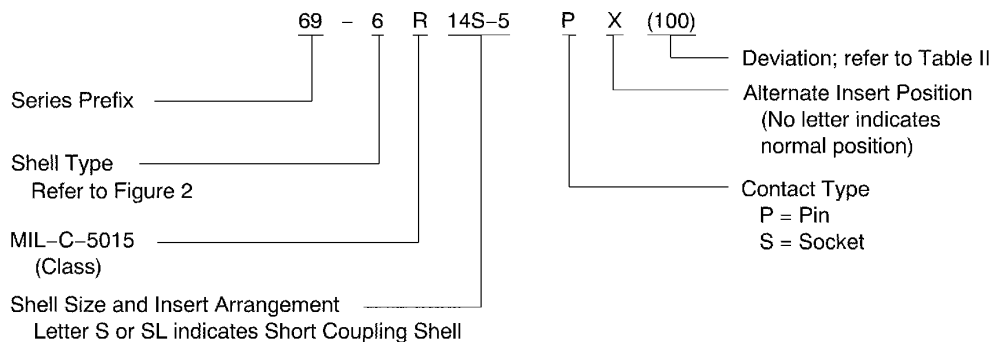
ASSEMBLY OF AMPHENOL 69 SERIES CONNECTORS

1. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

Table 1
CONNECTOR PART NUMBERS

Part Number	Type	Supplier
69-()R()	Connector	Amphenol
69-6()R	Square Flange Receptacle	Amphenol
69-0()R	Straight Plug	Amphenol



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AMPHENOL 69 SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 1

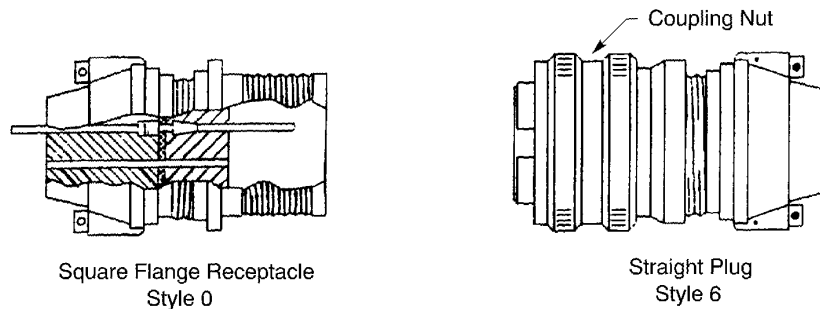
Table 2
AMPHENOL 69 SERIES CONNECTOR DEVIATIONS

Deviation	Description
100	Connector supplied with contacts
101	Connector supplied without contacts
135	Same as 100 with cable clamp 69-1500X
155	Same as 100 with 90 degree angle, and Glenair adapter containing metal grommet follower with cable clamp
170	Silicone elastomer, nylon grommet follower, rhodium plated contacts

20-61-13



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF AMPHENOL 69 SERIES CONNECTORS

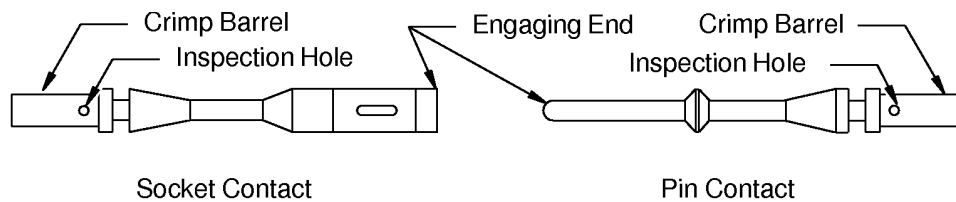


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TYPICAL AMPHENOL 69 SERIES CONNECTOR

Figure 2

B. Contact Part Numbers



2446112 S00061546537_V1

CONTACTS FOR THE AMPHENOL 69 SERIES CONNECTORS

Figure 3

CAUTION: ONLY CONNECTORS THAT HAVE SHORT COUPLING SHELLS AND HAVE A LETTER S OR SL IN THE SHELL SIZE PART NUMBER USE SIZE 16S (SHORT) CONTACTS.

20-61-13



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF AMPHENOL 69 SERIES CONNECTORS

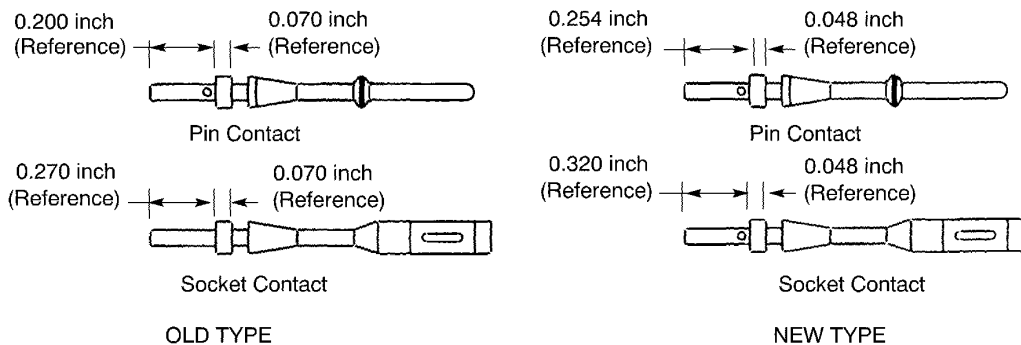
Table 3
CONTACT PART NUMBERS

Contact Size	Engaging End Size	Crimp Barrel Size	Contact Type	Part Number	Supplier
16	16	16	Pin	69-1120-03	Amphenol
			Socket	69-1105-03	Amphenol
16S	16	16	Pin	69-1125-03	Amphenol
			Socket	69-1110-03	Amphenol
12	12	12	Pin	69-1115-03	Amphenol
			Socket	69-1100-03	Amphenol
4	4	4	Pin	-	-
			Socket	203-10104-1	Cannon

C. Filler Sleeve Part Numbers

Table 4
CANNON FILLER SLEEVES

Wire Size	Filler Sleeve	Supplier
8	252-0128-000	ITT Cannon
6	252-0127-001	ITT Cannon



2446118 S00061546547_V1

AMPHENOL 69 SERIES CONNECTOR TYPICAL CONTACTS
Figure 4

20-61-13



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL 69 SERIES CONNECTORS

2. CONNECTOR DISASSEMBLY

A. Contact Removal

Table 5
CONTACT REMOVAL TOOLS

Contact Engaging End Size	Removal Tool		
	Type	Handle	Bit
16	Pin	-	294-466
	Socket	-	294-467
	Pin	-	ATA 0249
	Socket	-	ATA 0250
12	Pin	-	294-469
	Socket	-	294-470
	Pin	-	ATA 0252
	Socket	-	ATA 0253
4	Socket	294-1283	294-1288

Table 6
INSERTION AND REMOVAL TOOL KITS

Contact Engaging End Size	Tool Kit	Supplier
16	294-39	Amphenol
	ATA 3069	Astro
12	294-40	Amphenol
	ATA 3095	Astro

NOTE: The tool kits include the handle and the insertion and removal bits.

NOTE: The backshell must be removed from the connector before the contacts can be removed.

- (1) Make a selection of a removal tool from Table 5.
- (2) At the front face of the connector, axially align the tool and the contact cavity.
- (3) Push the tool into the contact cavity until the contact moves out from the rear of the connector.
Make sure that the removal tool stays axially aligned with the contact cavity.
- (4) Carefully remove the tool from the contact cavity.
- (5) Pull the contact out of the contact cavity from the rear of the connector.

20-61-13



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL 69 SERIES CONNECTORS

3. CONNECTOR ASSEMBLY

A. Contact Assembly

Table 7
INSULATION REMOVAL LENGTH

Wire Size (AWG)	Crimp Barrel Size	Removal Length (inch)		Special Instructions
		Target	Tolerance	
24	16	1/2	1/32	Fold the conductor back on itself
22	16	1/2	1/32	Fold the conductor back on itself
20	16	9/32	1/32	-
	12	1/2	1/32	Fold the conductor back on itself
18	16	9/32	1/32	-
	12	1/2	1/32	Fold the conductor back on itself
16	16	9/32	1/32	-
	12	1/2	1/32	Fold the conductor back on itself
14	12	9/32	1/32	-
12	12	9/32	1/32	-
8	4	9/32	1/32	-
6	4	9/32	1/32	-

Table 8
CONTACT CRIMP TOOLS

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool			
		Basic Unit		Locator	
		Part Number	Setting	Part Number	Color
24	16	M22520/1-01	2	M22520/1-02	Blue
22	16	M22520/1-01	3	M22520/1-02	Blue
20	16	M22520/1-01	4	M22520/1-02	Blue
	12	M22520/1-01	4	M22520/1-02	Yellow
18	16	M22520/1-01	5	M22520/1-02	Blue
	12	M22520/1-01	5	M22520/1-02	Yellow
16	16	M22520/1-01	6	M22520/1-02	Blue
	12	M22520/1-01	6	M22520/1-02	Yellow
14	12	M22520/1-01	7	M22520/1-02	Yellow
12	12	M22520/1-01	8	M22520/1-02	Yellow
8	4	13642	-	ST2354-2	-
6	4	13642	-	ST2354-2	-

20-61-13



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL 69 SERIES CONNECTORS

- (1) Remove the correct length of wire insulation. Refer to Table 7.
- (2) Make a selection of a crimp tool from Table 8.
- (3) Insert the wire into the crimp barrel of the contact.
- (4) Crimp the contact onto the wire.

B. Contact Insertion

Table 9
CONTACT INSERTION TOOLS

Crimp Barrel Size	Insertion Tool	
	Handle	Bit
16	-	294-465
16	-	ATA 0251
12	-	294-468
12	-	ATA 0254
4	294-1283	294-1290-04

Table 10
INSERTION AND REMOVAL TOOL KITS

Crimp Barrel Size	Tool Kit	Supplier
16	294-39	Amphenol
	ATA 3069	Astro
12	294-40	Amphenol
	ATA 3095	Astro

NOTE: The tool kits include the handle and the insertion and removal bits.

Table 11
SOCKET CONTACT INSERTION GUIDES

Crimp Barrel Size	Insertion Guide
16	ST2216-16A
12	ST2216-12A
4	200-908-136-02

- (1) Loosen the grommet clamp nut on the connector so that only two or three threads are engaged.
- (2) Install spare contacts in the unused contact cavities of the connector.

CAUTION: MAKE SURE THAT SIZE 16S (SHORT) CONTACTS ARE ONLY INSTALLED IN THE CONNECTORS WITH SHORT COUPLING SHELLS. THESE CONNECTORS HAVE THE LETTER S OR SL IN THE SHELL SIZE PORTION OF THE PART NUMBER.

- (3) Make a selection the correct insertion tool from Table 9.
- (4) If the contact is a socket, make a selection the correct insertion guide from Table 11.

20-61-13



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL 69 SERIES CONNECTORS

CAUTION: TO PREVENT DAMAGE TO THE CONNECTOR, USE INSERTION GUIDES TO HELP WITH THE INSERTION OF SOCKET CONTACTS.

- (5) Place the wired or unwired contact in the insertion tool with the tip of the tool up against the contact shoulder.
- (6) Align the contact and the insertion tool perpendicular to the back face of the grommet.

CAUTION: KEEP THE CONTACT AND INSERTION TOOL PERPENDICULAR TO THE BACK FACE OF THE GROMMET DURING THE INSERTION.

NOTE: To make the contact easier to insert, both the contact and insertion tool may be lubricated with isopropyl alcohol.

- (7) If the contact is a socket, insert the flat side on the shank of the guide toward the indent in the engagement pressure spring.
- (8) Carefully guide the contact through the grommet hole.

CAUTION: AVOID INJURY TO THE HAND BY THE INSERTION GUIDE DURING THE INSERTION.

- (9) Push the contact into the contact cavity until it fully seats in the connector.

On the engaging face of the connector:

- The ends of the socket contacts should be approximately 0.10 inch below the surface of the insert
- The front shoulder of the pin contacts should be less than 0.12 inch below the surface of the insert.

- (10) Make sure that each contact is fully seated in the contact cavity:
 - (a) Gently grasp each wire between the thumb and the forefinger
 - (b) Slowly pull until the thumb and forefinger slip on the wire.

CAUTION: DO NOT INDENT THE WIRE INSULATION WITH THE FINGERNAILS.

4. AMPHENOL 69-0R32-17S(170) CONNECTOR ASSEMBLY

A. Contact Assembly

- (1) Put the grommet clamp nut over the wires so that the threaded end points with toward the connector.
- (2) Put the nylon grommet follower over the wires so that the open end points toward the connector. Make sure that each wire in its correct contact position.
- (3) Remove 11/16 inch \pm 1/16 inch of wire insulation.
- (4) Make a selection of heat shrinkable sleeve from Table 12.

NOTE: Refer to Subject 20-00-11 for alternative heat shrinkable sleeve.

20-61-13



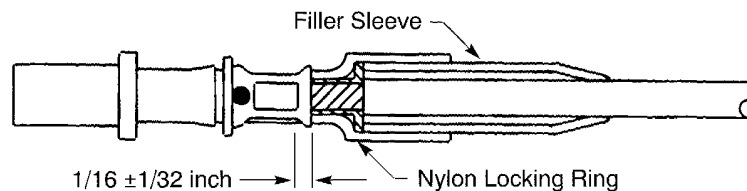
707, 727-787
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ASSEMBLY OF AMPHENOL 69 SERIES CONNECTORS

Table 12
NECESSARY MATERIAL

Material	Part Number	Supplier
Heat Shrinkable Sleeve	DWP-125	Tyco/Raychem

- (5) Put a 1-3/4 inch $\pm 1/8$ inch length of 1/4 inch of the selected heat shrinkable sleeve over each wire and place the forward edge 0 inch to 1/16 inch from the edge of the insulation.
- (6) Shrink the sleeve into place. Refer to Subject 20-10-14.
- (7) Put a 2 inch $\pm 1/8$ inch length of 3/8 inch the selected heat shrinkable sleeve over the first sleeve and place the forward edge 0 inch to 1/16 inch from the edge of the insulation.
- (8) Shrink that sleeve into place. Refer to Subject 20-10-14.
- (9) For AWG 8 wire:
 - (a) Make a selection of a 0.5 inch diameter Grade B, Class 1 heat shrinkable sleeve from Subject 20-00-11.
 - (b) Put a 2-1/2 inch $\pm 1/8$ inch length of the sleeve on the two layers of the heat shrinkable sleeves applied in Step 4.A.(5) and Step 4.A.(7) 0 inch to 1/16 inch from the edge of the insulation.
 - (c) Shrink that sleeve into place. Refer to Subject 20-10-14.
- (10) Install a filler sleeve. Refer to Figure 5.
 - (a) Make a selection of a filler sleeve from Table 4.
 - (b) Put a filler sleeve over each conductor with the flanged end against the wire insulation.
 - (c) Put a nylon locking ring over each sleeve.



2446119 S00061546553_V1

203-10104-1 CONTACT ASSEMBLY
Figure 5

- (11) Put a Cannon 203-10104-1 contact on each wire with the end of the wire barrel against the nylon locking ring.
- (12) Make a selection of a crimp tool from Table 8.
- (13) Crimp the contact onto the wire.

Make sure that the edge of the crimp is 1/16 inch $\pm 1/32$ inch from the end of the wire barrel. Refer to Figure 5.

20-61-13



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL 69 SERIES CONNECTORS

B. Contact Insertion

- (1) Insert the contacts into the connector by hand.

NOTE: To make the contact easier to insert, the grommet may be lightly lubricated with isopropyl alcohol.

C. Connector Assembly

- (1) Push the nylon grommet follower over the grommet.
(2) Push the grommet clamp nut over the grommet follower.
(3) Tighten the nut.

5. APPROVED TOOL SUPPLIERS

A. Crimp Tool Suppliers

Table 13
CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
13642	Thomas & Betts
M22520/1-01	QPL
M22520/1-02	QPL
ST2354-2	Boeing

B. Insertion Tool Suppliers

Table 14
INSERTION TOOL SUPPLIERS

Insertion Tool	Supplier
294-1290-04	Amphenol
294-465	Amphenol
294-468	Amphenol
ATA 0251	Astro
ATA 0254	Astro

C. Removal Tool Suppliers

Table 15
REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
294-1283	Amphenol
294-1288	Amphenol
294-466	Amphenol
294-467	Amphenol

20-61-13



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF AMPHENOL 69 SERIES CONNECTORS

Table 15 REMOVAL TOOL SUPPLIERS (Continued)

Removal Tool	Supplier
294-469	Amphenol
294-470	Amphenol
ATA 0249	Astro
ATA 0250	Astro
ATA 0252	Astro
ATA 0253	Astro

20-61-13



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF DEUTSCH DS SERIES CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>	<u>PAGE</u>
1. <u>PART NUMBERS AND DESCRIPTION</u>	2
A. Connector Part Numbers	2
B. Contact Part Numbers	7
2. <u>CONNECTOR DISASSEMBLY</u>	8
A. Contact Removal	8
3. <u>CONNECTOR ASSEMBLY</u>	9
A. Contact Assembly	9
B. Spare Contact Installation	11
C. Contact Insertion	11

20-61-15



707, 727-787
STANDARD WIRING PRACTICES MANUAL

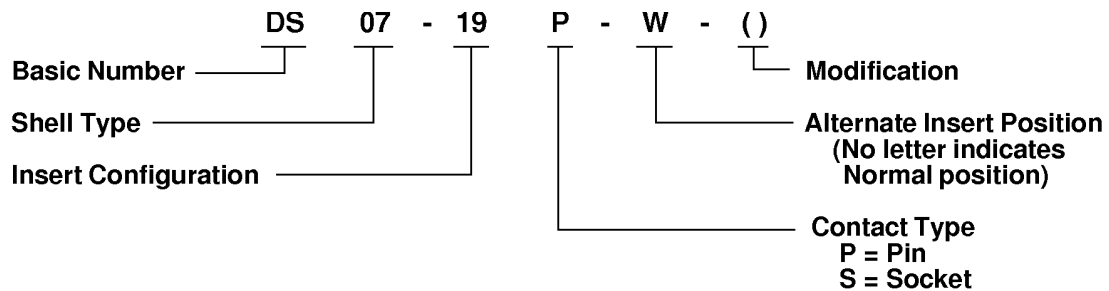
ASSEMBLY OF DEUTSCH DS SERIES CONNECTORS

1. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

Table 1
CONNECTOR PART NUMBERS

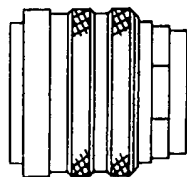
Part Number	Shell Type	Supplier
DS07-()	Plug	Deutsch
DS00-()	Square Flange Receptacle	Deutsch
DS04-()	Jam Nut Receptacle	Deutsch



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DEUTSCH DS SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 1



Straight Plug
Type 07

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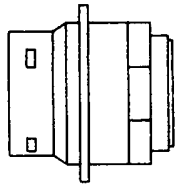
DEUTSCH DS CONNECTOR PLUG

Figure 2

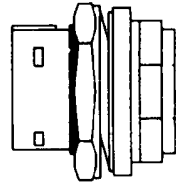
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707, 727-787
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ASSEMBLY OF DEUTSCH DS SERIES CONNECTORS



**Square Flange Receptacle
Type 00**



**Jam Nut Mount Receptacle
Type 04**

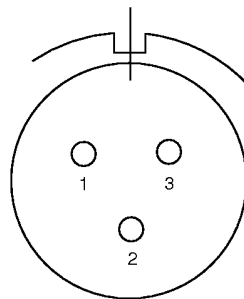
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DEUTSCH DS CONNECTOR RECEPTACLES

Figure 3

**Table 2
CONNECTOR INSERT CONFIGURATIONS**

Insert Configuration	Contact Cavity		Reference
	Count	Size	
03	3	20	Figure 4
07	7	20	Figure 5
12	12	20	Figure 6
19	19	20	Figure 7
27	27	20	Figure 8
37	37	20	Figure 9
61	61	20	Figure 10



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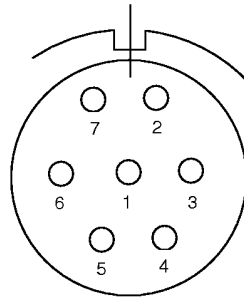
INSERT CONFIGURATION 03

Figure 4

20-61-15

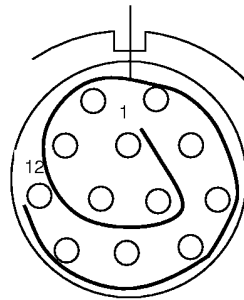


707, 727-787
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ASSEMBLY OF DEUTSCH DS SERIES CONNECTORS



2449143 S00061546559_V1

INSERT CONFIGURATION 07
Figure 5



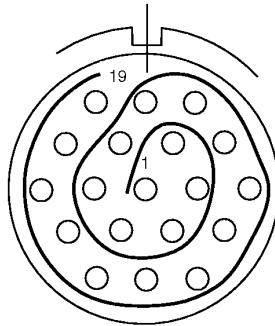
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INSERT CONFIGURATION 12
Figure 6

20-61-15

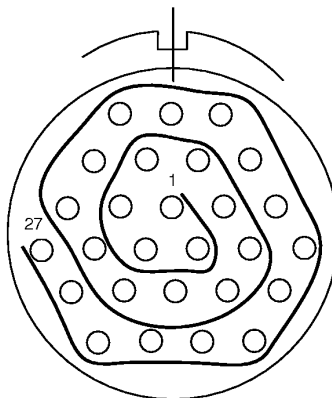


707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF DEUTSCH DS SERIES CONNECTORS



2449145 S00061546561_V1

INSERT CONFIGURATION 19
Figure 7



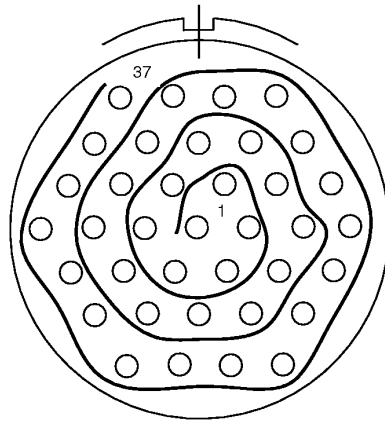
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INSERT CONFIGURATION 27
Figure 8

20-61-15

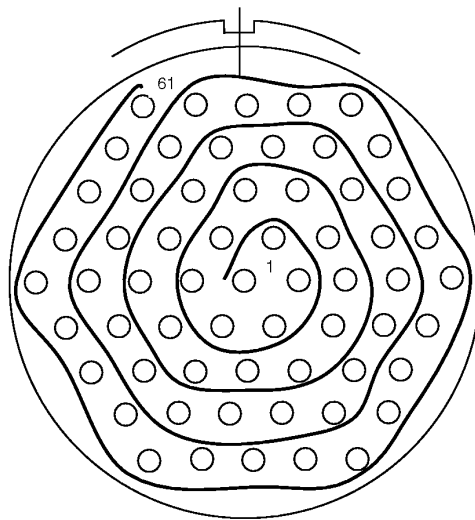


707, 727-787
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ASSEMBLY OF DEUTSCH DS SERIES CONNECTORS



2449147 S00061546563_V1

INSERT CONFIGURATION 37
Figure 9



2449148 S00061546564_V1

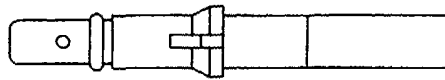
INSERT CONFIGURATION 61
Figure 10

20-61-15

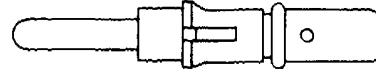


707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF DEUTSCH DS SERIES CONNECTORS

B. Contact Part Numbers



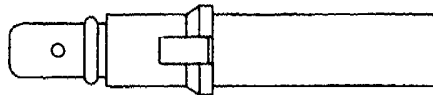
Socket



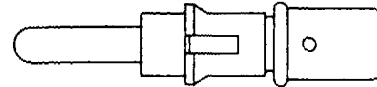
Pin

2446123 S00061546565_V1

SIZE 2020 CONTACTS
Figure 11



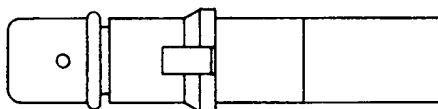
Socket



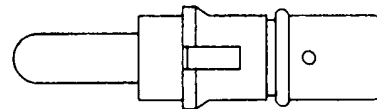
Pin

2446124 S00061546566_V1

SIZE 1616 CONTACTS
Figure 12



Socket



Pin

2446125 S00061546567_V1

SIZE 1212 CONTACTS
Figure 13

20-61-15



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF DEUTSCH DS SERIES CONNECTORS

Engaging End Size 20 20 Crimp Barrel Size

2446651 S00061545900_V1

EXAMPLE OF A CONTACT SIZE

Figure 14

Table 3
CONTACT PART NUMBERS

Contact Size		Contact Type	Part Number	Supplier
Engaging End	Crimp Barrel			
20	20	Socket	800-20/30-1	Deutsch
		Pin	800-20/32-1	Deutsch
16	16	Socket	200-16/30-3	Deutsch
		Pin	800-16/32-1	Deutsch
12	12	Socket	200-12/30-3	Deutsch
		Pin	800-12/32-1	Deutsch

2. CONNECTOR DISASSEMBLY

A. Contact Removal

Table 4
CONTACT REMOVAL TOOLS

Engaging End Size	Removal Tool	Supplier
20	DRK51-20	Daniels
	M15515-20	Deutsch
16	DRK51-16	Daniels
	M15515-16	Deutsch
12	DRK51-12	Daniels
	M15515-12	Deutsch

20-61-15



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF DEUTSCH DS SERIES CONNECTORS

**Table 5
COAX CONTACT REMOVAL TOOLS**

Removal Tool	Supplier
M15513-25	Deutsch

- (1) Make a selection of a removal tool from Table 4 or Table 5.
- (2) Pull the extraction rod handle of the tool back to its full retracted position.
- (3) Carefully push the tip of the tool over the engaging end of the contact until the tip reaches a definite stop in the contact cavity.
- (4) To remove the contact from the connector, hold the tool firmly in position and push the extraction rod handle.

3. CONNECTOR ASSEMBLY

A. Contact Assembly

**Table 6
INSULATION REMOVAL LENGTH**

Wire Size (AWG)	Crimp Barrel Size	Removal Length (inch)		Special Instructions
		Minimum	Maximum	
24	20	3/16	7/32	Fold the conductor back on itself
22	20	3/16	7/32	Fold the conductor back on itself
	16	7/32	1/4	Fold the conductor back on itself
20	20	3/16	7/32	Fold the conductor back on itself
	16	7/32	1/4	Fold the conductor back on itself
18	16	7/32	1/4	-
16	16	7/32	1/4	-
14	12	7/32	1/4	-
12	12	7/32	1/4	-

**Table 7
CONTACT CRIMP TOOLS**

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool				
		Basic Unit			Locator	-
		Part Number	Setting	Supplier	Part Number	Supplier
24	20	MS3191-1	-	QPL	11096-1	Buchanan
22	20	294-358	0.039	Amphenol	ST967C-3	Boeing
		294-80	0.039	Amphenol	ST967C-3	Boeing
		MS3191-1	-	QPL	11096-1	Buchanan
	16	ST940	0.039	Boeing	ST967C-4	Boeing

20-61-15



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF DEUTSCH DS SERIES CONNECTORS

Table 7 CONTACT CRIMP TOOLS (Continued)

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool				
		Basic Unit			Locator	-
		Part Number	Setting	Supplier	Part Number	Supplier
20	20	11743	-	Buchanan	-	-
		294-358	0.039	Amphenol	ST967C-3	Boeing
		294-80	0.039	Amphenol	ST967C-3	Boeing
	16	11743	-	Buchanan	-	-
		MS3191-1	-	QPL	11096-2	Buchanan
		ST940	0.039	Boeing	ST967C-4	Boeing
18	16	11743	-	Buchanan	-	-
		MS3191-1	-	QPL	11096-2	Buchanan
		ST940	0.039	Boeing	ST967C-4	Boeing
16	16	11743	-	Buchanan	-	-
		MS3191-1	-	QPL	11096-2	Buchanan
		ST940	0.039	Boeing	ST967C-4	Boeing
14	12	11743	-	Buchanan	-	-
		MS3191-1	-	QPL	11096-3	Buchanan
		ST940	0.066	Boeing	ST967C-5	Boeing
12	12	11743	-	Buchanan	-	-
		MS3191-1	-	QPL	11096-3	Buchanan
		ST940	0.066	Boeing	ST967C-5	Boeing

NOTE: The ST940 is a 294-80 crimp tool with special Buchanan indentors.

- (1) Remove the wire insulation. Refer to Table 6.
- (2) Make a selection of a crimp tool from Table 7.
 Make sure to use the Buchanan 11743 crimp tool for nickel plated wire.
- (3) Put the contact in the tool.
- (4) Put the wire in the crimp barrel of the contact.
 Make sure that all the strands of the conductor are in the crimp barrel.
- (5) Crimp the contact.

20-61-15



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF DEUTSCH DS SERIES CONNECTORS

B. Spare Contact Installation

- (1) Install spare contacts in all unused contact cavities. Refer to Paragraph 3.C.
Make sure to install the spare contacts before the wired contacts.

NOTE: Spare coax contacts are not necessary.

- (2) Install seal rods in all unwired contacts. Refer to Subject 20-60-08.

C. Contact Insertion

Table 8
CONTACT INSERTION TOOLS

Crimp Barrel Size	Insertion Tool	Supplier
20	DAK51-20	Daniels
	M15513-20	Deutsch
16	DAK55-16	Daniels
	M15513-16	Deutsch
12	DAK55-12	Daniels
	M15513-12	Deutsch
	M81969/17-05	QPL
	MS24256A12	QPL

Table 9
COAX CONTACT INSERTION TOOLS

Insertion Tool	Supplier
M15513-25	Deutsch

- (1) Make a selection of an insertion tool from Table 8 or Table 9.
- (2) Put the contact in the tool.
- (3) Align the contact and the tool so they are perpendicular to the back face of the grommet.
- (4) Carefully push the contact into the grommet hole until it clicks.
- (5) Carefully pull the tool from the connector.
- (6) Examine the contacts from the engaging end of the connector to make sure that all the contacts are completely inserted.

20-61-15



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
1.	<u>GENERAL DATA</u>	2
	A. Minimum Wire O.D. for an Environmentally Sealed Connector	2
2.	<u>PART NUMBERS AND DESCRIPTION</u>	2
	A. Connector Part Numbers	2
	B. Contact Part Numbers	6
3.	<u>INSERT CONFIGURATIONS</u>	11
	A. MIL-C-26482 Series I Connectors	11
4.	<u>CONNECTOR DISASSEMBLY</u>	17
	A. Seal Plug and Seal Rod Removal	17
	B. Contact Removal	17
5.	<u>CONNECTOR ASSEMBLY</u>	18
	A. Wire Preparation	18
	B. Preparation of RG108 Twinax Cable	20
	C. Contact Assembly	21
	D. Contact Insertion	22
	E. Seal of an Empty Contact Cavity	23
	F. Backshell and Strain Relief Assembly	23
6.	<u>APPROVED TOOL SUPPLIERS</u>	24
	A. Contact Removal Tools	24
	B. Contact Crimp Tools	25
	C. Contact Insertion Tools	25

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

1. GENERAL DATA

A. Minimum Wire O.D. for an Environmentally Sealed Connector

Refer to:

- Subject 20-60-08 for the identification of an environmentally sealed connector
- Table 1 for the minimum wire O.D. that is necessary for a satisfactory seal of a contact cavity hole
- Subject 20-60-08 for the procedure to increase the diameter of the wire.

Table 1
MINIMUM WIRE O.D. FOR A SATISFACTORY SEAL

Connector	Description	Contact Cavity Size	Minimum Wire O.D. (inch)
MIL-C-26482	Series I; front release, rear removal crimp contacts	20	0.047
		16	0.066
		12	0.097

2. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

The connectors in this Subject:

- Have standard metal contact retention clips
- Have front release contacts.

NOTE: This Subject gives maintenance information for Amphenol/Bendix PT()SE, and SP()SE connectors. For maintenance information for Amphenol/Bendix PT()CE, and PC()CE connectors, refer to Subject 20-61-20.

Table 2
CONNECTOR PART NUMBERS

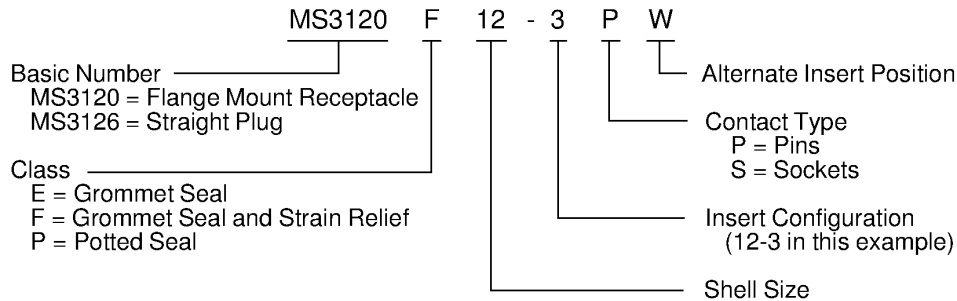
Part Number	Supplier	Reference
KPSE()	ITT Cannon	Figure 6
L()T()	Burndy	Figure 4
LPT()	Deutsch	Figure 5
MS3120()	QPL	Figure 1
MS3126()	QPL	Figure 1
PT()SE()	Amphenol/Bendix	Figure 2
SP()SE()	Amphenol/Bendix	Figure 3

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

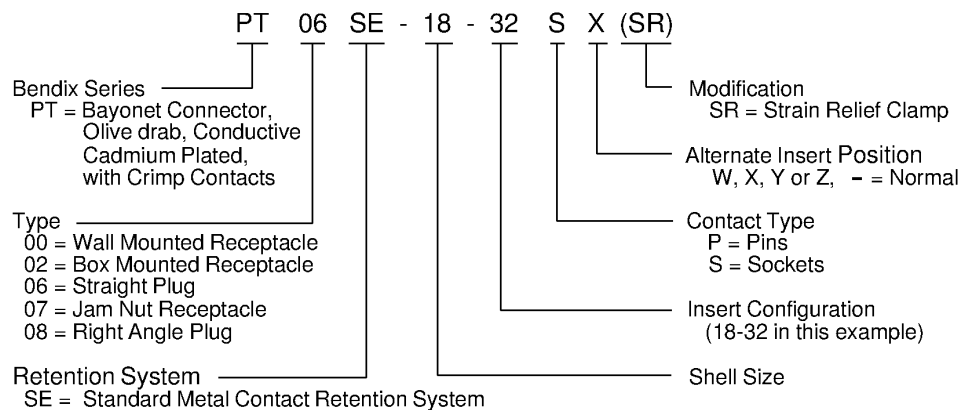
ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS



2446126 S00061546569_V1

MS3120 AND MS3126 CONNECTOR PART NUMBER STRUCTURE

Figure 1



2446127 S00061546570_V1

AMPHENOL/BENDIX PT(SE) SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 2

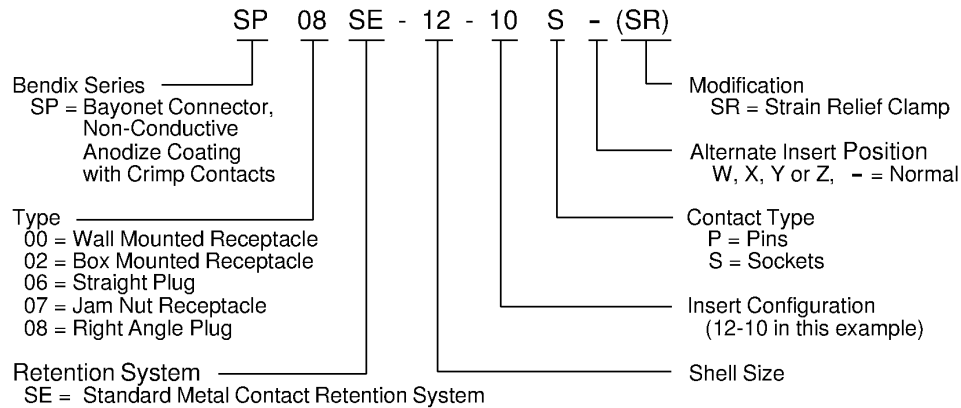
20-61-16



707, 727-787

STANDARD WIRING PRACTICES MANUAL

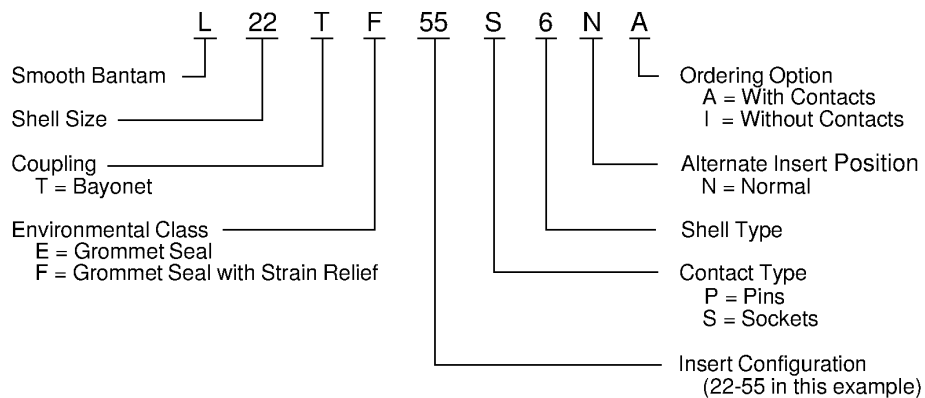
ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS



2449418 S00061546571_V1

AMPHENOL/BENDIX SP()SE() SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 3



2446128 S00061546572_V1

BURNDY L SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 4

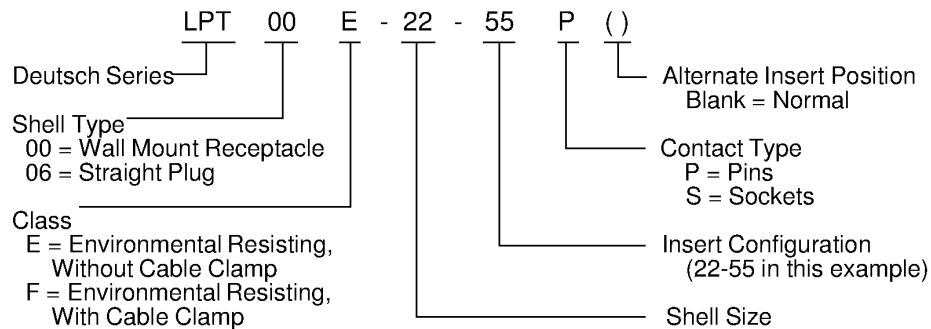
20-61-16



707, 727-787

STANDARD WIRING PRACTICES MANUAL

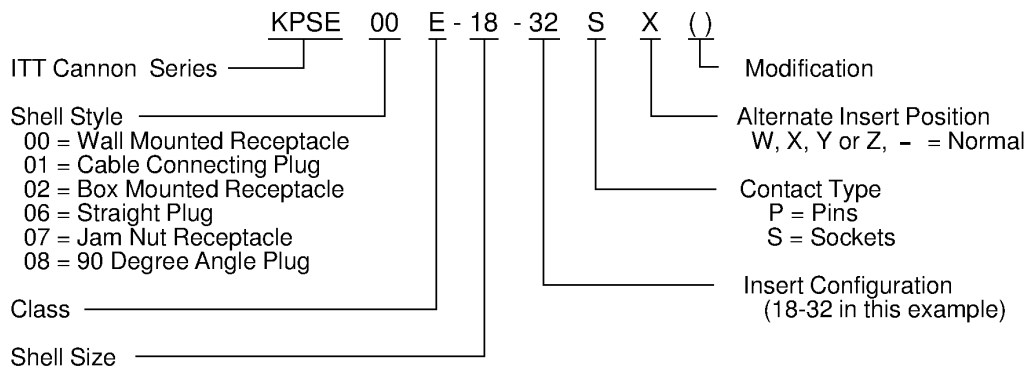
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2446129 S00061546573_V1

DEUTSCH LPT SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 5



2446130 S00061546574_V1

ITT CANNON KPSE SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 6

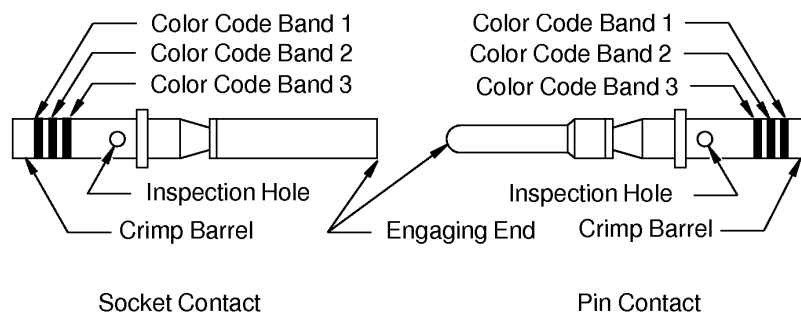
20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

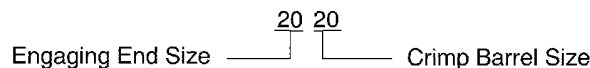
B. Contact Part Numbers



2447100 S00061546459_V1

FRONT RELEASE CONTACTS

Figure 7



2446651 S00061545900_V1

EXAMPLE OF A CONTACT SIZE

Figure 8

Table 3 gives the standard front release crimp type contacts for MIL-C-26482 Series I connectors.

NOTE: Satisfactory alternative contacts are specified in:

- Table 4 for the standard MIL-C-26500 connector contacts
- Table 5 for the Boeing Standard MIL-C-26500 type connector contacts.

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

Table 3
STANDARD MIL-C-26482 SERIES I CONNECTOR CONTACT PART NUMBERS

Contact Size	Contact Type	Part Number	Supplier
2020	Pin	030-9036-000	Cannon
		LRM20W-28DJ5	Burndy
		LRM20W-5DE5	Burndy
		M39029/31-240	QPL
		M39029/31-241	QPL
		MS3192A20-20A	QPL
	Socket	031-9074-002	Cannon
		LRC20W-28DJ5	Burndy
		LRC20W-5DE5	Burndy
		M39029/32-259	QPL
		MS3193A20-20A	QPL
1616	Pin	030-9032-003	Cannon
		LRM16M-28DJ5	Burndy
		LRM16M-5DE5	Burndy
		M39029/31-228	QPL
		MS3192-16-16A	QPL
	Socket	031-9095-003	Cannon
		LRC16M-28DJ5	Burndy
		LRC16M-5DE5	Burndy
		M39029/32-247	QPL
		MS3193-16-16A	QPL
1212	Pin	LRM12Z-28DJ5	Burndy
		LRM12Z-5DE5	Burndy
		M39029/31-234	QPL
		MS3192-12-12A	QPL
	Socket	LRC12Z-28DJ5	Burndy
		LRC12Z-5DE5	Burndy
		M39029/32-253	QPL
		MS3193-12-12A	QPL

20-61-16

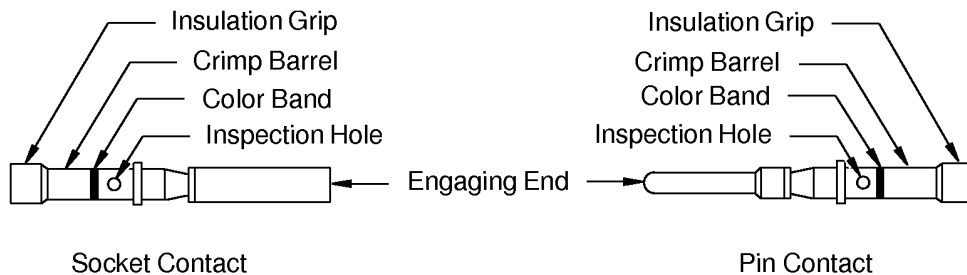


**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

**Table 4
MIL-C-26500 CONNECTOR CONTACT PART NUMBERS**

Contact Size	Contact Type	Part Number	Supplier
2020	Pin	M39029/31-241	QPL
		M39029/31-627	
		ZZL-4020-36LD	Pyle-National
	Socket	M39029/32-260	QPL
		M39029/32-449	
		ZZL-4120-36LD	Pyle-National
1616	Pin	M39029/31-229	QPL
		ZZL-4016-36LD	Pyle-National
	Socket	M39029/32-248	QPL
		ZZL-4116-36LD	Pyle-National
1212	Pin	M39029/31-235	QPL
		ZZL-4012-36LD	Pyle-National
	Socket	M39029/32-254	QPL
		ZZL-4112-36LD	Pyle-National



2446182 S00061546575_V1

**BOEING STANDARD MIL-C-26500 TYPE CONNECTOR CONTACTS
Figure 9**

**Table 5
BOEING STANDARD MIL-C-26500 TYPE CONNECTOR CONTACT PART NUMBERS**

Contact Size	Contact Type	Boeing Standard
1212	Pin	BACC47CN3
		BACC47CN3A
		BACC47CN3S
	Socket	BACC47CP3A
		BACC47CP3S
		BACC47CP3T

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

Table 5 BOEING STANDARD MIL-C-26500 TYPE CONNECTOR CONTACT PART NUMBERS (Continued)

Contact Size	Contact Type	Boeing Standard
1616	Pin	BACC47CN2
		BACC47CN2A
		BACC47CN2S
	Socket	BACC47CP2A
		BACC47CP2S
		BACC47CP2T
2020	Pin	BACC47CN1
		BACC47CN1A
		BACC47CN1S
	Socket	BACC47CP1A
		BACC47CP1S
		BACC47CP1T

Table 6
SUPPLIER PART NUMBERS FOR BOEING STANDARD CONTACTS

Boeing Standard	Part Number	Supplier
BACC47CN1	417-2020-901	Tri-Star
	48-2335-02	Amphenol
	LRM20W-16F74	Burndy
	ZZL-4020-36LT	Pyle-National
BACC47CN1A	317-2020-901	Tri-Star
	48-2335-09	Amphenol
	LRM20W-16DJ5	Burndy
	ZZL-4020-36LD	Pyle-National
BACC47CN1S	317-2020-901-L	Tri-Star
	ZZL-4020-36LD-H148	Pyle-National
BACC47CN2	417-1616-902	Tri-Star
	48-1825-02	Amphenol
	LRM16M-15F74	Burndy
	ZZL-4016-36LT	Pyle-National
BACC47CN2A	10-807100-165	Amphenol
	317-1616-902	Tri-Star
	LRM16M-16DJ5	Burndy
	ZZL-4016-36LD-H139	Pyle-National
BACC47CN2S	317-1616-902-L	Tri-Star
	ZZL-4016-36LD-H148	Pyle-National

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

Table 6 SUPPLIER PART NUMBERS FOR BOEING STANDARD CONTACTS (Continued)

Boeing Standard	Part Number	Supplier
BACC47CN3	417-1212-903	Tri-Star
	48-1827-02	Amphenol
	LRM12Z-15F74	Burndy
	ZZL-4012-36LT	Pyle-National
BACC47CN3A	10-807100-125	Amphenol
	317-1212-903	Tri-Star
	LRM12Z-16DJ5	Burndy
	ZZL-4012-36LD-H139	Pyle-National
BACC47CN3S	317-1212-903-L	Tri-Star
	ZZL-4012-36LD-H148	Pyle-National
BACC47CP1A	248-136-2002S-09	Amphenol
	318-2020-901	Tri-Star
	LRC20W-15DJ5	Burndy
	ZZL-4120-36LD	Pyle-National
BACC47CP1S	318-2020-901-L	Tri-Star
	LP-807105-205	Amphenol
	ZZL-4120-36LD-H148	Pyle-National
BACC47CP1T	248-136-2001S-02	Amphenol
	418-2020-901	Tri-Star
	LRC20W-15F74	Burndy
	ZZL-4120-36LT	Pyle-National
BACC47CP2A	10-807103-165	Amphenol
	318-1616-902	Tri-Star
	LRC16M-15DJ5	Burndy
	ZZL-4116-36LD-H139	Pyle-National
BACC47CP2S	318-1616-902-L	Tri-Star
	LP-807103-165	Amphenol
	ZZL-4116-36LD-H148	Pyle-National
BACC47CP2T	248-136-1600S-02	Amphenol
	418-1616-902	Tri-Star
	LRC16M-15F74	Burndy
	ZZL-4116-36LT	Pyle-National

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

Table 6 SUPPLIER PART NUMBERS FOR BOEING STANDARD CONTACTS (Continued)

Boeing Standard	Part Number	Supplier
BACC47CP3A	10-807103-125	Amphenol
	318-1212-903	Tri-Star
	LRC12Z-15DJ5	Burndy
	ZZL-4112-36LD-H139	Pyle-National
BACC47CP3S	318-1212-903-L	Tri-Star
	LP-807103-125	Amphenol
	ZZL-4112-36LD-H148	Pyle-National
BACC47CP3T	248-136-1200S-02	Amphenol
	412-1212-903	Tri-Star
	LRC12Z-15F74	Burndy
	ZZL-4112-36LT	Pyle-National

3. INSERT CONFIGURATIONS

A. MIL-C-26482 Series I Connectors

NOTE: The insert configurations that are specified in Table 7 include the connector shell size as the first part of the configuration. Refer to Table 2 for the part number structure that is applicable for the connector.

NOTE: The contact cavity size that is specified in Table 7 is equivalent to the size of the engaging end of the contact.

Table 7
CONNECTOR INSERT CONFIGURATIONS

Insert	Contact Cavity		Reference
	Count	Size	
8-2	2	20	Figure 10
8-3	3	20	Figure 10
8-4	4	20	Figure 10
8-33	3	20	Figure 10
10-6	6	20	Figure 11
10-98	6	20	Figure 11
12-3	3	16	Figure 12
12-8	8	20	Figure 12
12-10	10	20	Figure 12
14-5	5	16	Figure 13
14-12	8	20	Figure 13
	4	16	

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

Table 7 CONNECTOR INSERT CONFIGURATIONS (Continued)

Insert	Contact Cavity		Reference
	Count	Size	
14-15	14	20	Figure 13
	1	16	
14-18	18	20	Figure 13
14-19	19	20	Figure 13
16-8	8	16	Figure 14
16-23	22	20	Figure 14
	1	16	
16-26	26	20	Figure 14
16A99	21	20	Figure 14
18-8	8	12	Figure 15
18-11	11	16	Figure 15
18A28	26	20	Figure 15
	2	16	
18-30	29	20	Figure 15
	1	16	
18-32	32	20	Figure 15
20-16	16	16	Figure 16
20-24	24	20	Figure 16
20-39	37	20	Figure 16
	2	16	
20-41	41	20	Figure 16
22-12	12	12	Figure 17
22-21	21	16	Figure 17
22-32	32	20	Figure 17
22-34	34	20	Figure 17
22-36	36	20	Figure 17
22-41	27	20	Figure 17
	14	16	
22-55	55	20	Figure 17
24A8	1	20	Figure 18
	7	Coax	
24A31	31	16	Figure 18
24A57	55	20	Figure 18
	2	12	

20-61-16



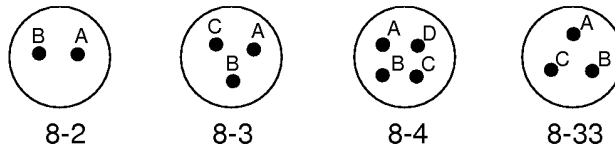
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STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

Table 7 CONNECTOR INSERT CONFIGURATIONS (Continued)

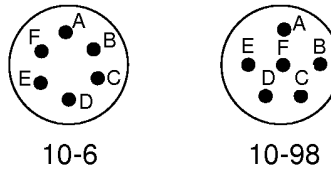
Insert	Contact Cavity		Reference
	Count	Size	
24-61	61	20	Figure 18

NOTE: Figure 10 through Figure 18 show the front face of an insert that has pins. The view of the front face of an insert that has sockets is the mirror image of this view.



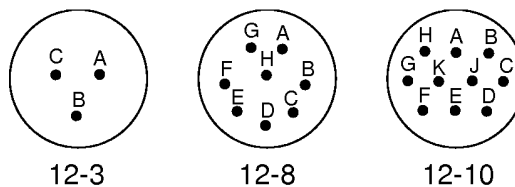
2446131 S00061546576_V1

8-() INSERT CONFIGURATIONS
Figure 10



2446132 S00061546577_V1

10-() INSERT CONFIGURATIONS
Figure 11



2446133 S00061546578_V1

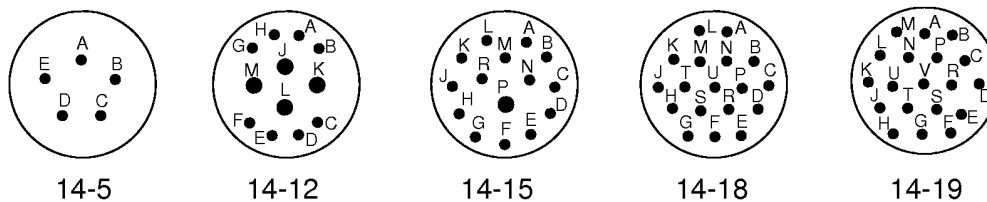
12-() INSERT CONFIGURATIONS
Figure 12

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

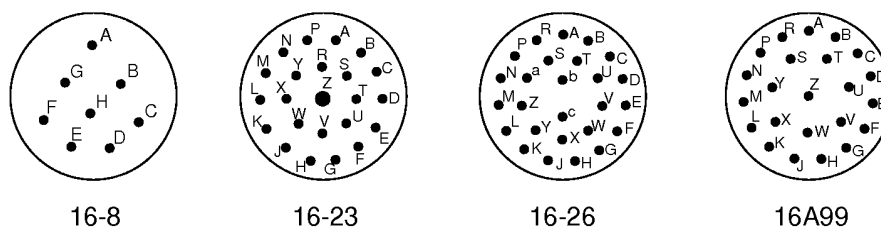
ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS



2446134 S00061546579_V1

14-() INSERT CONFIGURATIONS

Figure 13



2446135 S00061546580_V1

16-() INSERT CONFIGURATIONS

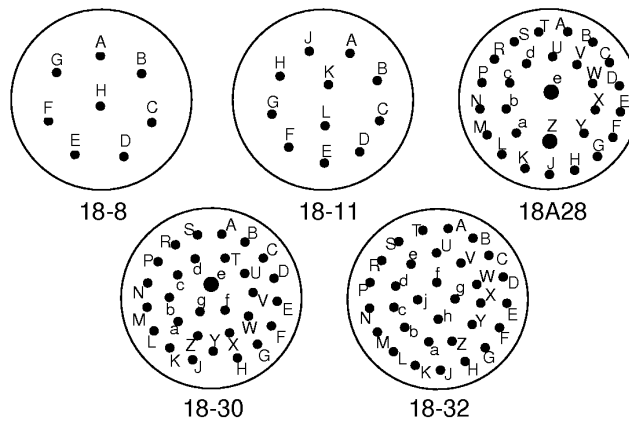
Figure 14

20-61-16



707, 727-787
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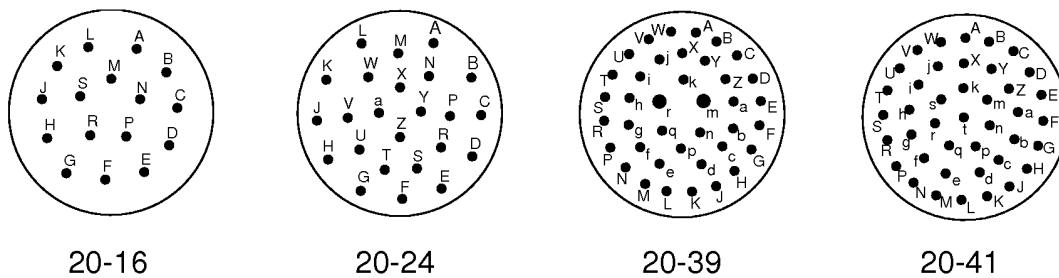
ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS



2446136 S00061546581_V1

18-() INSERT CONFIGURATIONS

Figure 15



2446137 S00061546582_V1

20-() INSERT CONFIGURATIONS

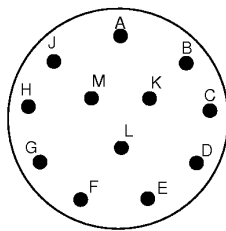
Figure 16

20-61-16

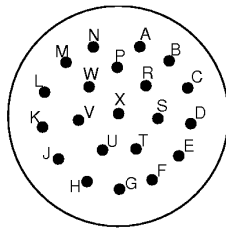


707, 727-787
STANDARD WIRING PRACTICES MANUAL

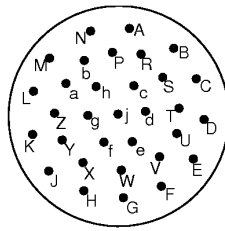
ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS



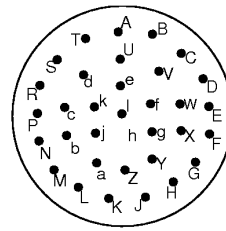
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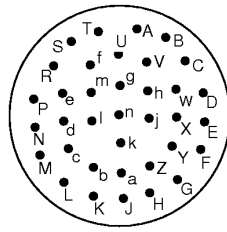
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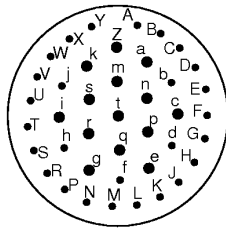
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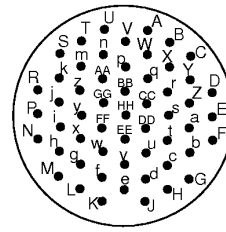
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22-36



22-41

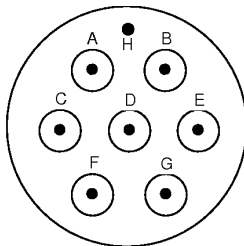


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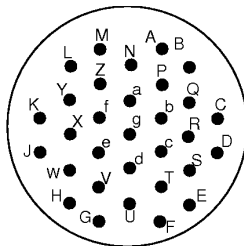
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22-() INSERT CONFIGURATIONS

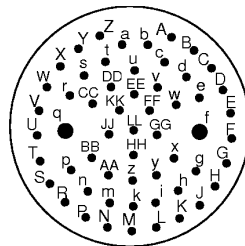
Figure 17



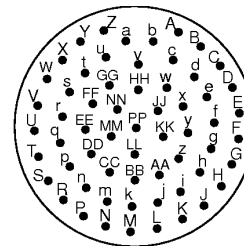
24A8



24A31



24A57



24-61

2446139 S00061546584_V1

24-() INSERT CONFIGURATIONS

Figure 18

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

4. CONNECTOR DISASSEMBLY

A. Seal Plug and Seal Rod Removal

Table 8
NECESSARY TOOLS

Tool	Type
Pliers	Needle Nose

- (1) Make a selection of a pliers from Table 8.

CAUTION: MAKE SURE THE PLIERS HAVE SMOOTH SURFACES AND NO SHARP EDGES. PLIERS WITH A ROUGH SURFACE OR A SHARP EDGE CAN CAUSE DAMAGE TO THE REAR GROMMET.

- (2) If it is necessary, remove a plastic tie strap or a wire harness tie that is less than 6 inches from the connector.
- (3) Hold the end of the seal plug or the seal rod tightly in the jaws of the pliers.
- (4) Pull the seal plug or the seal rod from the contact cavity.

B. Contact Removal

Table 9
CONTACT REMOVAL TOOLS

Contact Engaging End Size	Removal Tool
20	294-89
	AT 2020
	ATML 1907
	DRK20
	M81969/19-07
	MS24256R20
	RX 20-24
	ZZL-R-9511-20
16	294-97
	AT 2016
	ATML 1908
	DRK16
	M81969/19-08
	MS24256R16
	RX 16-7
	ZZL-R-9511-16

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

Table 9 CONTACT REMOVAL TOOLS (Continued)

Contact Engaging End Size	Removal Tool
12	294-73
	AT 2012
	ATML 1909
	DRK12
	M81969/19-09
	MS24256R12
	RTX 12-7
	ZZL-R-9511-12

- (1) Make a selection of a contact removal tool from Table 9.
- (2) If it is necessary, remove the backshell components from the connector.
- (3) Push the backshell components rearward away from the connector.
- (4) At the front of the connector, axially align the removal tool and the contact cavity.
Make sure that the plunger of the removal tool is fully retracted.
- (5) Push the tool into the contact cavity until it stops.

CAUTION: DO NOT USE MORE FORCE THAN THE FORCE THAT IS NECESSARY TO PUSH THE REMOVAL TOOL INTO THE CONTACT CAVITY. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

- (6) Push the plunger of the tool until the contact starts to come out of the contact cavity.
- (7) Carefully pull the tool out from the contact cavity.
Make sure that the removal tool stays axially aligned with the contact cavity.
- (8) Pull the contact out of the contact cavity from the rear of the connector.

5. CONNECTOR ASSEMBLY

A. Wire Preparation

For the assembly of a MIL-C-26482 Series I connector with triax cable, refer to Subject 20-53-05.

For the preparation of RG108 twinax cable, refer to Paragraph 5.B.

Table 10
INSULATION REMOVAL LENGTH

Wire Size (AWG)	Crimp Barrel Size	Removal Length L (inch)		Special Instructions
		Target	Tolerance	
24	20	0.19	±0.03	-
	16	0.50	±0.03	Fold the conductor back on itself

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

Table 10 INSULATION REMOVAL LENGTH (Continued)

Wire Size (AWG)	Crimp Barrel Size	Removal Length L (inch)		Special Instructions
		Target	Tolerance	
22	20	0.19	± 0.03	-
	16	0.50	± 0.03	Fold the conductor back on itself
20	20	0.19	± 0.03	-
	16	0.25	± 0.03	-
	12	0.50	± 0.03	Fold the conductor back on itself
18	16	0.25	± 0.03	-
	12	0.50	± 0.03	Fold the conductor back on itself
16	16	0.25	± 0.03	-
	12	0.25	± 0.03	-
14	12	0.25	± 0.03	-
12	12	0.25	± 0.03	-

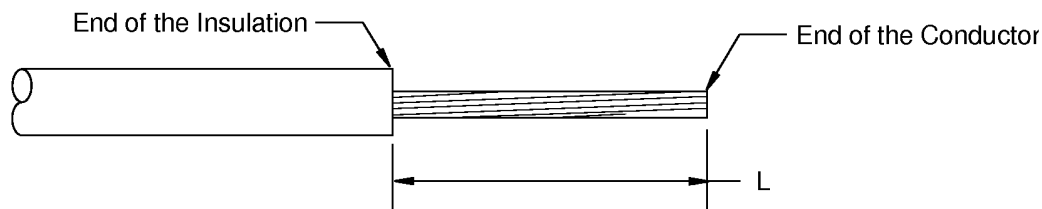
- (1) Remove the necessary length of insulation from the end of the wire.

Refer to:

- Figure 19
- Table 10 for the insulation removal length
- Subject 20-00-15 for the insulation removal procedure.

NOTE: Refer to Subject 20-60-00:

- If the wire size and a larger crimp barrel size are not given in Table 10
- For the alternatives to the assembly of a contact with a conductor that is folded back.



2446140 S00061544325_V1

INSULATION REMOVAL LENGTH

Figure 19

- (2) Measure the O.D. of the wire.
- (3) If the O.D. of the wire is less than the minimum seal diameter of the connector grommet hole, increase the O.D. of the wire. Refer to Paragraph 1.A.
- (4) If it is specified, fold the conductor back. Refer to Figure 20.

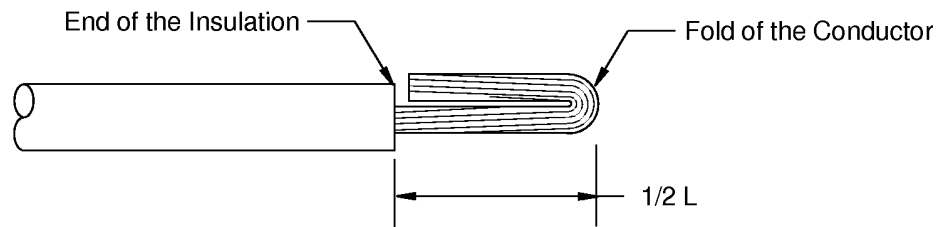
20-61-16



707, 727-787

STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

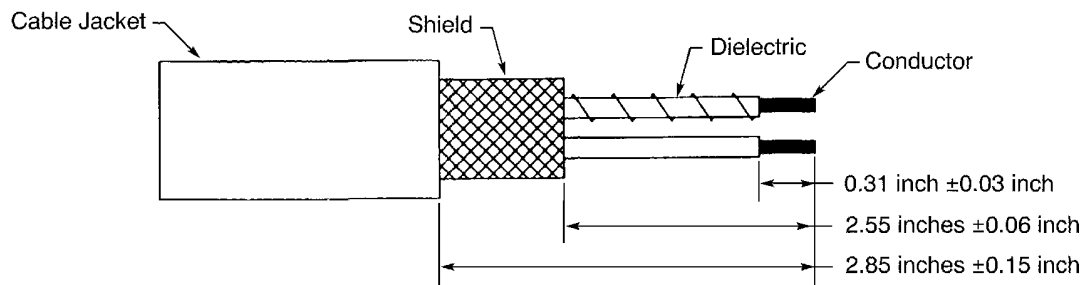


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FOLDED BACK CONDUCTOR

Figure 20

B. Preparation of RG108 Twinax Cable



2446141 S00061546586_V1

RG108 TWINAX CABLE PREPARATION

Figure 21

Refer to Figure 21.

- (1) Remove 2.85 inches \pm 0.15 inch of the jacket from the end of the cable.
- (2) Remove 2.55 inches \pm 0.06 inch of the shield from the end of the cable.
- (3) Remove 0.31 inch \pm 0.03 inch of the dielectric from the each conductor.
- (4) Assemble a shield ground wire. Refer to Subject 20-10-15.
Make sure that the size of the shield ground wire is AWG 20.

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

C. Contact Assembly

Table 11
CONTACT CRIMP TOOLS

Wire Size (AWG)	Contact Crimp Barrel Size	Crimp Tool			
		Basic Unit		Locator	
		Part Number	Setting	Part Number	Color
24	20	M22520/1-01	2	M22520/1-02	Red
		M22520/2-01	5	M22520/2-02	-
		MS3191-1	-	MS3191-20	Red
	16	M22520/1-01	4	M22520/1-02	Blue
		MS3191-1	-	MS3191-16	Blue
22	20	M22520/1-01	3	M22520/1-02	Red
		M22520/2-01	6	M22520/2-02	-
		MS3191-1	-	MS3191-20	Red
	16	M22520/1-01	5	M22520/1-02	Blue
		MS3191-1	-	MS3191-16	Blue
20	20	M22520/1-01	4	M22520/1-02	Red
		M22520/2-01	7	M22520/2-02	-
		MS3191-1	-	MS3191-20	Red
	16	M22520/1-01	4	M22520/1-02	Blue
		MS3191-1	-	MS3191-16	Blue
	12	M22520/1-01	6	M22520/1-02	Yellow
		MS3191-1	-	MS3191-12	Yellow
18	16	M22520/1-01	5	M22520/1-02	Blue
		MS3191-1	-	MS3191-16	Blue
	12	M22520/1-01	7	M22520/1-02	Yellow
		MS3191-1	-	MS3191-12	Yellow
16	16	M22520/1-01	6	M22520/1-02	Blue
		MS3191-1	-	MS3191-16	Blue
	12	M22520/1-01	6	M22520/1-02	Yellow
		MS3191-1	-	MS3191-12	Yellow
14	12	M22520/1-01	7	M22520/1-02	Yellow
		MS3191-1	-	MS3191-12	Yellow
12	12	M22520/1-01	8	M22520/1-02	Yellow
		MS3191-1	-	MS3191-12	Yellow

- (1) Make a selection of a contact crimp tool from Table 11.
- (2) Put the end of the wire in the crimp barrel of the contact. Refer to Figure 22.

20-61-16

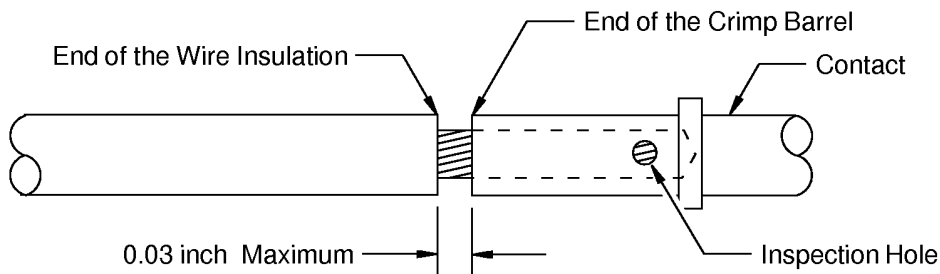


707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The conductor can be seen in the inspection hole
- The distance from the end of the insulation to the crimp barrel is not more than 0.03 inch.



2446968 S00061546268_V1

POSITION OF THE WIRE IN THE CRIMP BARREL OF THE CONTACT

Figure 22

- (3) Crimp the contact.

Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The conductor can be seen in the inspection hole
- The distance from the end of the insulation to the crimp barrel is not more than 0.03 inch.

D. Contact Insertion

NOTE: If a backshell is specified, the necessary backshell components must be put on the wire harness before the insertion of the contacts into the connector.

Table 12
CONTACT INSERTION TOOLS

Contact Size	Insertion Tool
2020	294-88
	M81969/17-03
	MS24256A20
	ATA 1086
	RTM 20-5
	ZZL-R-9510-20
1616	294-96
	M81969/17-04
	MS24256A16
	RTM 16-2
	ZZL-R-9510-16

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

Table 12 CONTACT INSERTION TOOLS (Continued)

Contact Size	Insertion Tool
1212	294-72
	M81969/17-05
	MS24256A12
	RTM 12-5
	ZZL-R-9510-12

- (1) Make a selection of an insertion tool from Table 12.
- (2) Put the contact assembly in the insertion tool.
Make sure that the end of the tool is against the rear shoulder of the contact.
- (3) At the rear of the connector, axially align the insertion tool and the contact cavity.
- (4) Carefully push the insertion tool and the contact assembly into the contact cavity until it stops.
Make sure that the insertion tool stays axially aligned with the contact cavity.

CAUTION: DO NOT TURN THE INSERTION TOOL IN THE CONTACT CAVITY. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

- (5) Carefully pull the tool out of the contact cavity.
- (6) Lightly pull the wire to make sure that the contact is locked in the contact cavity.

CAUTION: DO NOT PULL THE WIRE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

- (7) If the contact is not locked in the contact cavity:
 - (a) Pull the contact assembly out of the contact cavity.
 - (b) Do Step 5.D.(2) through Step 5.D.(6) again.

E. Seal of an Empty Contact Cavity

All empty contact cavities must be sealed. Refer to Subject 20-60-08.

F. Backshell and Strain Relief Assembly

Refer to Subject 20-60-09.

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

6. APPROVED TOOL SUPPLIERS

A. Contact Removal Tools

Table 13
REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
294-73	Amphenol
294-89	Amphenol
294-97	Amphenol
AT 2012	Astro
AT 2016	Astro
AT 2020	Astro
ATML 1907	Astro
ATML 1908	Astro
ATML 1909	Astro
DRK12	Daniels
DRK16	Daniels
DRK20	Daniels
M81969/19-07	QPL
M81969/19-08	QPL
M81969/19-09	QPL
MS24256R12	QPL
MS24256R16	QPL
MS24256R20	QPL
RTX 12-7	Burndy
RX 16-7	Burndy
RX 20-24	Burndy
ZZL-R-9511-12	Pyle-National
ZZL-R-9511-16	Pyle-National
ZZL-R-9511-20	Pyle-National

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-26482 SERIES I FRONT RELEASE CONNECTORS

B. Contact Crimp Tools

Table 14
CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
M22520/1-01	QPL
M22520/1-02	QPL
M22520/2-01	QPL
M22520/2-02	QPL
MS3191-1	QPL
MS3191-12	QPL
MS3191-16	QPL
MS3191-20	QPL

C. Contact Insertion Tools

Table 15
INSERTION TOOL SUPPLIERS

Insertion Tool	Supplier
294-88	Amphenol
294-96	Amphenol
294-72	Amphenol
ATA 1086	Astro
M81969/17-03	QPL
M81969/17-04	QPL
M81969/17-05	QPL
MS24256A12	QPL
MS24256A16	QPL
MS24256A20	QPL
RTM 20-5	Burndy
RTM 16-2	Burndy
RTM 12-5	Burndy
ZZL-R-9510-12	Pyle-National
ZZL-R-9510-16	Pyle-National
ZZL-R-9510-20	Pyle-National

20-61-16



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF MIL-C-26482 SERIES II CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>	<u>PAGE</u>
1. <u>ASSEMBLY OF MIL-C-26482 SERIES II CONNECTORS</u>	2

20-61-17

D6-54446

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Page 1
Oct 15/2015



**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF MIL-C-26482 SERIES II CONNECTORS

1. ASSEMBLY OF MIL-C-26482 SERIES II CONNECTORS

This Subject is now located in Subject 20-63-21.

20-61-17

D6-54446

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Page 2
Oct 15/2015



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
1.	<u>PART NUMBERS AND DESCRIPTION</u>	2
	A. Connector Part Numbers	2
	B. Connector Description	4
	C. Contact Part Numbers	6
2.	<u>INSERT CONFIGURATIONS</u>	6
	A. Insert Configurations for Amphenol/Bendix 10-244 Connectors	6
3.	<u>CONNECTOR DISASSEMBLY</u>	11
	A. Contact Removal	11
4.	<u>CONNECTOR ASSEMBLY</u>	12
	A. Wire Preparation	12
	B. Contact Assembly with Cerro H22-4000 Fire Resistant Wire	13
	C. Contact Assembly with Vibro-Meter 60-116-00 or Vibro-Meter 80-116-00 Cable	13
	D. Contact Assembly	14
	E. Contact Insertion	16
	F. Seal of Empty Contact Cavities	17
	G. Assembly of an Endbell with a Conduit	17

20-61-18



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

This Subject gives the procedures to assemble Amphenol/Bendix 10-244() connectors and:

- Cerro H22-4000 fire resistant wire
- Vibro-Meter 60-116-00 cable
- Vibro-Meter 80-116-00 cable.

1. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

Table 1
CONNECTOR PART NUMBERS

Part Number	Supplier
10-244011-3P	Amphenol/Bendix
10-244014-7H	Amphenol/Bendix
10-244014-7P	Amphenol/Bendix
10-244014-7S	Amphenol/Bendix
10-244016-1P	Amphenol/Bendix
10-244016-1S	Amphenol/Bendix
10-244016-8S	Amphenol/Bendix
10-244020-27S	Amphenol/Bendix
10-244022-14S	Amphenol/Bendix
10-244211-3P	Amphenol/Bendix
10-244611-3S	Amphenol/Bendix
10-244611-4S	Amphenol/Bendix
10-244612-3S	Amphenol/Bendix
10-244614-5S	Amphenol/Bendix
10-244614-7G	Amphenol/Bendix
10-244614-7P	Amphenol/Bendix
10-244614-7S	Amphenol/Bendix
10-244616-1S	Amphenol/Bendix
10-244618-12S	Amphenol/Bendix
10-244618-4S	Amphenol/Bendix
10-244620-27S	Amphenol/Bendix
10-244622-14P	Amphenol/Bendix
10-244811-3S	Amphenol/Bendix
10-244811-4S	Amphenol/Bendix
10-244812-3S	Amphenol/Bendix
10-244814-5S	Amphenol/Bendix
10-244814-7S	Amphenol/Bendix
10-244814-9S	Amphenol/Bendix

20-61-18

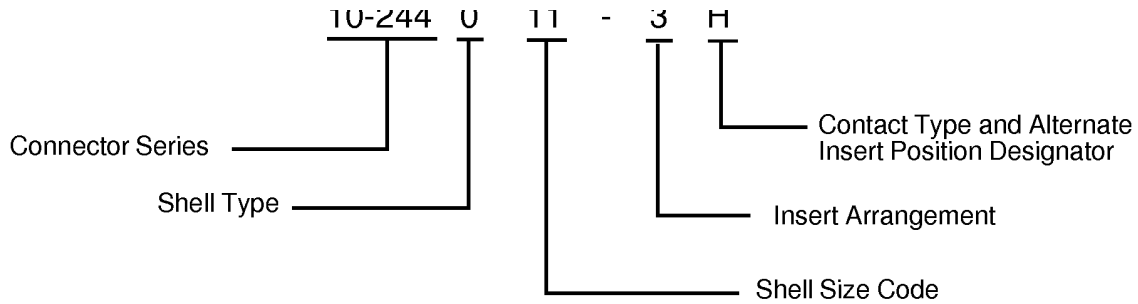


**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

Table 1 CONNECTOR PART NUMBERS (Continued)

Part Number	Supplier
10-244816-1S	Amphenol/Bendix
10-244816-8S	Amphenol/Bendix
10-244818-12S	Amphenol/Bendix



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AMPHENOL-BENDIX 10-244() SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 1

**Table 2
SHELL TYPES**

Shell Type	Description
0	Wall Mount Receptacle
2	Box Mount Receptacle
6	Straight Plug
8	90 Degree Plug

**Table 3
SHELL SIZE CODES**

Shell Size Code	Shell Size
11	10SL
12	12S
14	14S
16	16S
18	18
20	20
22	22

20-61-18



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

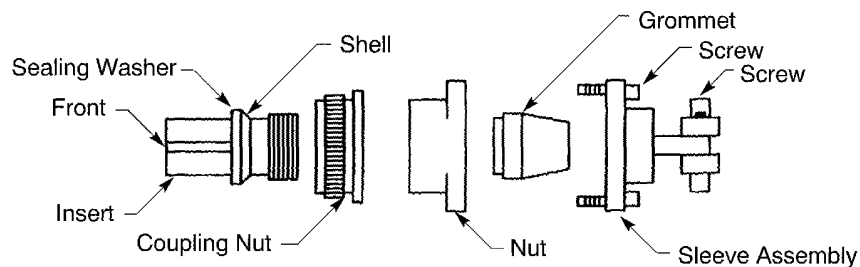
Table 4
CONTACT TYPES AND ALTERNATE POSITION DESIGNATORS

Contact Type and Alternate Insert Position Designator	Contact Type	Alternate Insert Position
G	Pins	W
H	Sockets	
I	Pins	X
J	Sockets	
K	Pins	Y
L	Sockets	
M	Pins	Z
N	Sockets	
P	Pins	Normal
S	Sockets	

Table 5
ALTERNATIVE CONNECTOR PART NUMBERS

Specified Connector		Alternative Connector	
Part Number	Supplier	Part Number	Supplier
10-244614-7P	Amphenol/Bendix	BACC63CE14S7P	Boeing
10-244814-7S	Amphenol/Bendix	BACC63CE14S7P	Boeing

B. Connector Description



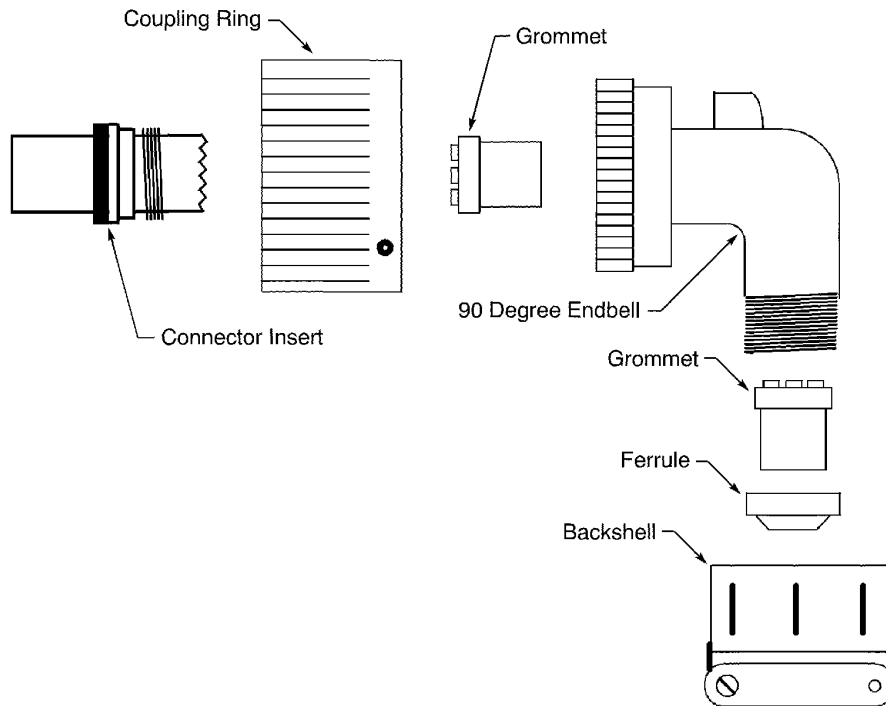
2446144 S00061546591_V1

BENDIX 10-244() PLUG CONNECTOR
Figure 2

20-61-18

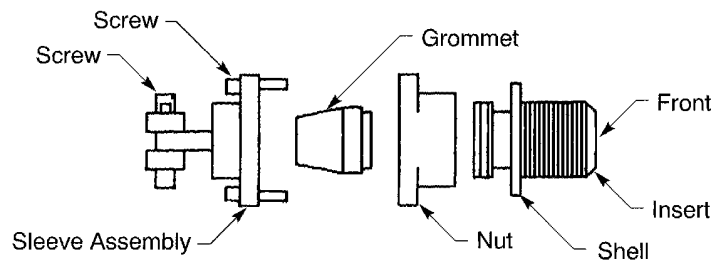


707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS



2446944 S00061546592_V1

90 DEGREE CONFIGURATION OF THE BENDIX 10-244() PLUG CONNECTOR
Figure 3



2446145 S00061546593_V1

BENDIX 10-244() RECEPTACLE CONNECTOR
Figure 4

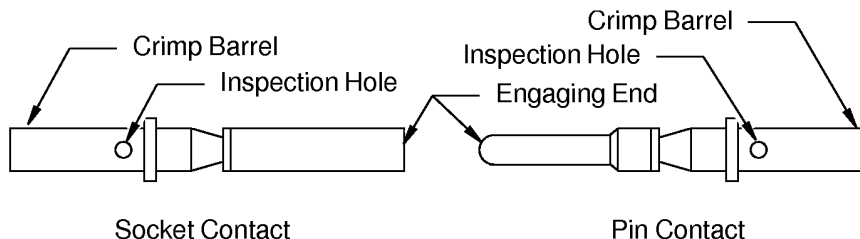
20-61-18



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

C. Contact Part Numbers



2449042 S00061546594_V1

FRONT RELEASE CONTACTS

Figure 5

NOTE: If the connector insert arrangement has one or more size 16 contact cavities:

- Contact size 16L is used in connector shell size 8, 10, 12, 16, 18, 20, 22, 24, 28, 32, 36, 40, 44 or 48
- Contact size 16S is used in connector shell size 8S, 10S, 10SL, 12S, 14S, or 16S.

Table 6
CONTACT PART NUMBERS

Contact					
Size	Engaging End Size	Crimp Barrel Size	Type	Part Number	Supplier
16L	16	16	Pin	10-229192-166	Amphenol/Bendix
			Socket	10-229193-166	Amphenol/Bendix
16S	16	16	Pin	10-229192-156	Amphenol/Bendix
			Socket	10-229193-156	Amphenol/Bendix
12	12	12	Pin	10-229192-126	Amphenol/Bendix
			Socket	10-229193-126	Amphenol/Bendix
8	8	8	Pin	10-229192-86	Amphenol/Bendix
			Socket	10-229193-86	Amphenol/Bendix

2. INSERT CONFIGURATIONS

A. Insert Configurations for Amphenol/Bendix 10-244 Connectors

NOTE: The insert configurations that are specified in Table 7 and Table 8 include the connector shell size as the first part of the configuration. Refer to Figure 1 for the connector part number structure.

20-61-18



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

Table 7
CONNECTORS THAT HAVE 10-244 INSERT CONFIGURATIONS

Connector Part Number	Shell Size	Insert Configuration
10-244011-3P	10SL	10SL-3
10-244014-7H	14S	14S-7
10-244014-7P	14S	14S-7
10-244014-7S	14S	14S-7
10-244016-1P	16S	16S-1
10-244016-1S	16S	16S-1
10-244016-8S	16S	16S-8
10-244020-27S	20	20-27
10-244022-14S	22	22-14
10-244211-3P	10SL	10SL-3
10-244611-3S	10SL	10SL-3
10-244611-4S	10SL	10SL-4
10-244612-3S	12S	12S-3
10-244614-5S	14S	14S-5
10-244614-7G	14S	14S-7
10-244614-7P	14S	14S-7
10-244614-7S	14S	14S-7
10-244616-1S	16S	16S-1
10-244618-12S	18	18-12
10-244618-4S	18	18-4
10-244620-27S	20	20-27
10-244622-14P	22	22-14
10-244811-3S	10SL	10SL-3
10-244811-4S	10SL	10SL-4
10-244812-3S	12S	12S-3
10-244814-5S	14S	14S-5
10-244814-7S	14S	14S-7
10-244814-9S	14S	14S-9
10-244816-1S	16S	16S-1
10-244816-8S	16S	16S-8
10-244818-12S	18	18-12

NOTE: The contact cavity size that is specified in Table 7 is equivalent to the size of the engaging end of the contact.

20-61-18



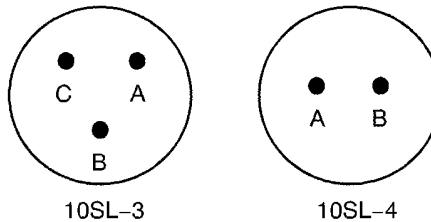
707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

Table 8
10-244 CONNECTOR INSERT CONFIGURATIONS

Insert Configuration	Contact Cavity		Reference
	Count	Size	
10SL-3	3	16	Figure 6
10SL-4	2	16	
12S-3	2	16	Figure 7
14S-5	5	16	Figure 8
14S-7	3	16	
14S-9	2	16	
16S-1	7	16	Figure 9
16S-8	5	16	
18-4	4	16	Figure 10
18-12	6	16	
20-27	14	16	Figure 10
22-14	19	16	Figure 10

NOTE: Figure 6 through Figure 12 show the front face of an insert that has pins. The view of the front face of an insert that has sockets is the mirror image of this view.



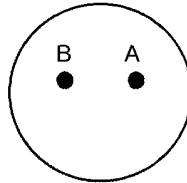
2446158 S00061546595_V1

10SL-() INSERT CONFIGURATIONS
Figure 6

20-61-18



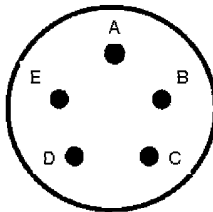
707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS



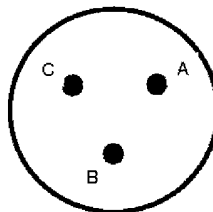
12S-3

2446911 S00061546596_V1

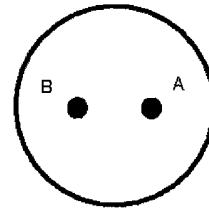
12S-() INSERT CONFIGURATIONS
Figure 7



14S-5



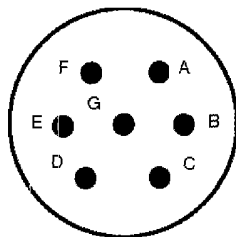
14S-7



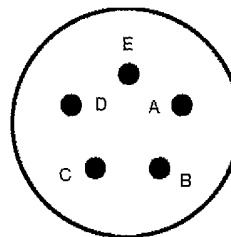
14S-9

2443675 S00061546597_V1

14S-() INSERT CONFIGURATIONS
Figure 8



16S-1



16S-8

2443676 S00061546598_V1

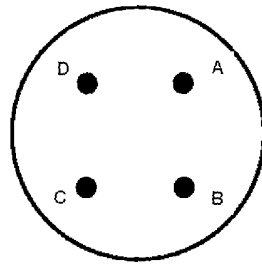
16S-() INSERT CONFIGURATIONS
Figure 9

20-61-18

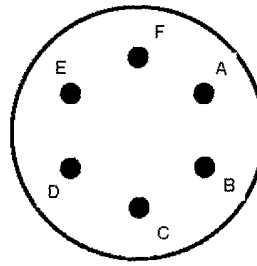


707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS



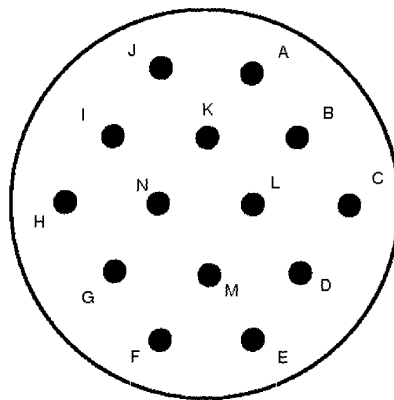
18-4



18-12

2443677 S00061546599_V1

18-() INSERT CONFIGURATIONS
Figure 10



20-27

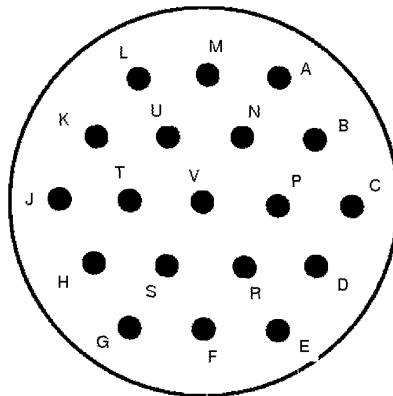
2443678 S00061546600_V1

20-() INSERT CONFIGURATIONSS
Figure 11

20-61-18



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS



22-14

2443679 S00061546601_V1

22-() INSERT CONFIGURATIONS
Figure 12

3. CONNECTOR DISASSEMBLY

A. Contact Removal

Table 9
CONTACT REMOVAL TOOLS

Crimp Barrel Size	Contact Type	Removal Tool			
		Handle		Tip	
		Part Number	Supplier	Part Number	Supplier
16	Pin	11-6911	Amphenol/Bendix	11-3697	Amphenol/Bendix
		ST2220-2	Amphenol/Bendix	ST2220-3-2	Amphenol/Bendix
	Socket	11-6911	Amphenol/Bendix	11-3698	Amphenol/Bendix
		ST2220-2	Amphenol/Bendix	ST2220-3-2	Amphenol/Bendix
12	Pin	11-6911	Amphenol/Bendix	11-3696	Amphenol/Bendix
	Socket	11-6911	Amphenol/Bendix	11-3698	Amphenol/Bendix

- (1) If it is necessary, remove:
 - The conduit assembly
 - Any rear accessories.
- (2) If it is necessary, move these components away from the end of connector.
 - The ferrule

20-61-18



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

- The nut
 - The grommet
 - The sleeve assembly.
- (3) Make a selection of a removal tool from Table 9.
- (4) Remove the contact. Refer to Subject 20-61-00.
- (5) If it is necessary, remove any seal rods or any seal plugs. Refer to Subject 20-61-00.

4. CONNECTOR ASSEMBLY

A. Wire Preparation

Refer to:

- Figure 2 for a plug connector
- Figure 3 for a 90 degrees plug connector
- Figure 4 for a receptacle connector.

- (1) Cut the end of each wire so that the end of the wire is perpendicular with longitudinal axis of the wire.

NOTE: To make the insertion of the wire through the grommet holes easier, the end of the wire can be cut at a 45 degree angle.

- (2) For a connector with a 90 degree endbell to conduit, put these components on the cable in this sequence:
- A grommet
 - The 90 degree endbell
 - A grommet
 - The coupling ring.

NOTE: The ferrule and the backshell are not used and can be discarded.

- (3) For the plug connector, put these components on the cable in this sequence:
- The sleeve assembly
 - The grommet
 - The nut
 - The coupling nut.
- (4) For the receptacle connector, put these components on the cable in this sequence:
- The sleeve assembly
 - The grommet
 - The nut.
- (5) If a wire was cut at a 45 degree angle, cut the wire so that the end of the wire is perpendicular to the longitudinal axis of the wire.
- (6) To assemble a contact with a Cerro H22-4000 fire resistant wire, refer to Paragraph 4.B.
- (7) To assemble a contact with a Vibro-Meter 60-116-00 or a Vibro-Meter 80-116-00 cable, refer to Paragraph 4.C.

20-61-18

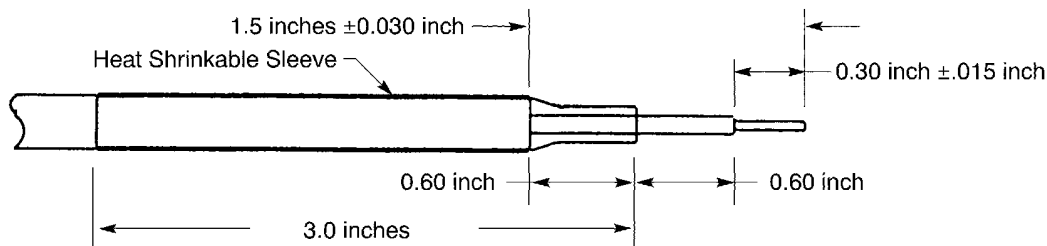


707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

(8) To assemble a contact with any other wire refer to Paragraph 4.D.

B. Contact Assembly with Cerro H22-4000 Fire Resistant Wire



2446146 S00061546602_V1

PREPARATION OF CERRO FIRE RESISTANT WIRE

Figure 13

Refer to Figure 13.

(1) Prepare the wire:

- (a) Remove 1.5 inches ± 0.030 inch of the outer braid from the end of the wire.
- (b) Remove 1.5 inches ± 0.030 inch of the inner layer of clear Teflon from the wire.

CAUTION: DO NOT CUT THE DIELECTRIC MATERIAL.

- (c) Remove 0.30 inch ± 0.015 inch of the inner insulation from the conductor.
 - (d) Put a 3.0 inch length of 1/4 inch diameter thinwall TFE 4X heat shrinkable sleeve on the wire.
- (2) Make a selection of a crimp tool from Table 10.
- (3) Insert the wire into the contact.
- (4) Crimp the contact.
- (5) Move the heat shrinkable sleeve so that the forward end of sleeve makes a 0.60 inch overlap with the end of the outer braid. Refer to Figure 13.
- (6) Shrink the sleeve into position. Refer to Subject 20-10-14.

C. Contact Assembly with Vibro-Meter 60-116-00 or Vibro-Meter 80-116-00 Cable

(1) Remove 3 inches of:

- The white outer jacket
- The yellow layer of polyimide
- The braided shield
- The black outer graphite layer of tape
- The fiberglass binder and filler
- The black individual conductor graphite layer of tape.

(2) To remove any remaining carbon from the primary insulation of conductors, either sandblast the cable or brush it with a fiberglass eraser.

20-61-18



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

- (3) Clean the wire with acetone or an equivalent solvent.
- (4) Remove 5/8 inch \pm 1/32 inch of the wire insulation.
- (5) Put a 2.0 inch \pm 0.1 inch length of 1/8 inch thinwall TFE 4X sleeve on each wire so that the end of the sleeve is aligned with the end of the outer jacket.
- (6) Shrink the sleeve into position. Refer to Subject 20-10-14.
- (7) Assemble a shield dead end on the cable. Refer to Subject 20-10-15.
 Make sure that the sleeve of the shield dead end makes an overlap with the sleeves of the individual conductors.
- (8) Put the sleeve assembly on the cable.
- (9) Push the grommet over the conductors with the sleeves.
- (10) Make a selection of a crimp tool from Table 10.
- (11) Fold the conductor back.
- (12) Put the wire into the crimp barrel of the contact.
- (13) Crimp the contact.

D. Contact Assembly

Table 10
CONTACT CRIMP TOOLS

Contact Size	Wire Size (AWG)	Contact Type	Crimp Tool					
			Basic Unit				Locator	
			Part Number	Positioner Selector Color	Setting	Supplier	Part Number	Supplier
16S	20	Pin	11-7295	-	-	Amphenol	11-7771-1	Amphenol
			M22520/1-01	Red	4	QPL	TH29-1	Daniels
			M22520/1-01	Red	4	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-24	Boeing
		Socket	11-7295	-	-	Amphenol	11-7771-1	Amphenol
			M22520/1-01	Red	4	QPL	TH29-1	Daniels
			M22520/1-01	Red	4	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-24	Boeing

20-61-18



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

Table 10 CONTACT CRIMP TOOLS (Continued)

Contact Size	Wire Size (AWG)	Contact Type	Crimp Tool					
			Basic Unit				Locator	
			Part Number	Positioner Selector Color	Setting	Supplier	Part Number	Supplier
16S	18	Pin	11-7295	-	-	Amphenol	11-7771-1	Amphenol
			M22520/1-01	Red	5	QPL	TH29-1	Daniels
			M22520/1-01	Red	5	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-24	Boeing
		Socket	11-7295	-	-	Amphenol	11-7771-1	Amphenol
			M22520/1-01	Red	5	QPL	TH29-1	Daniels
			M22520/1-01	Red	5	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-24	Boeing
16S	16	Pin	11-7295	-	-	Amphenol	11-7771-1	Amphenol
			M22520/1-01	Red	6	QPL	TH29-1	Daniels
			M22520/1-01	Red	6	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-24	Boeing
		Socket	11-7295	-	-	Amphenol	11-7771-1	Amphenol
			M22520/1-01	Red	6	QPL	TH29-1	Daniels
			M22520/1-01	Red	6	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-24	Boeing
16L	20	Pin	11-7295	-	-	Amphenol	11-7771-3	Amphenol
			M22520/1-01	Blue	4	QPL	TH29-1	Daniels
			M22520/1-01	Blue	4	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-40	Boeing
		Socket	11-7295	-	-	Amphenol	11-7771-2	Amphenol
			M22520/1-01	Green	4	QPL	TH29-1	Daniels
			M22520/1-01	Green	4	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-41	Boeing
16L	18	Pin	11-7295	-	-	Amphenol	11-7771-3	Amphenol
			M22520/1-01	Blue	5	QPL	TH29-1	Daniels
			M22520/1-01	Blue	5	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-40	Boeing
		Socket	11-7295	-	-	Amphenol	11-7771-2	Amphenol
			M22520/1-01	Green	5	QPL	TH29-1	Daniels
			M22520/1-01	Green	5	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-41	Boeing

20-61-18



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

Table 10 CONTACT CRIMP TOOLS (Continued)

Contact Size	Wire Size (AWG)	Contact Type	Crimp Tool					
			Basic Unit				Locator	
			Part Number	Positioner Selector Color	Setting	Supplier	Part Number	Supplier
16L	16	Pin	11-7295	-	-	Amphenol	11-7771-3	Amphenol
			M22520/1-01	Blue	6	QPL	TH29-1	Daniels
			M22520/1-01	Blue	6	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-40	Boeing
		Socket	11-7295	-	-	Amphenol	11-7771-2	Amphenol
			M22520/1-01	Green	6	QPL	TH29-1	Daniels
			M22520/1-01	Green	6	QPL	616266	Astro
			ST2220-1-Y	-	-	Boeing	ST2220-1-41	Boeing
12	14	Pin	11-7295	-	-	Amphenol	11-7771-4	Amphenol
			M22520/1-01	Green	8	QPL	TH29-1	Daniels
			M22520/1-01	Green	8	QPL	616266	Astro
		Socket	11-7295	-	-	Amphenol	11-7771-4	Amphenol
			M22520/1-01	Green	8	QPL	TH29-1	Daniels
			M22520/1-01	Green	8	QPL	616266	Astro
12	12	Pin	11-7295	-	-	Amphenol	11-7771-4	Amphenol
			M22520/1-01	Green	8	QPL	TH29-1	Daniels
			M22520/1-01	Green	8	QPL	616266	Astro
		Socket	11-7295	-	-	Amphenol	11-7771-4	Amphenol
			M22520/1-01	Green	8	QPL	TH29-1	Daniels
			M22520/1-01	Green	8	QPL	616266	Astro

- (1) Remove 5/16 inch \pm 1/32 inch of wire insulation from the end of the wire.
- (2) Make a selection of a crimp tool from Table 10.
- (3) Crimp the contact.

E. Contact Insertion

Table 11
CONTACT INSERTION TOOLS

Crimp Barrel Size	Contact Type	Insertion Tool	
		Part Number	Supplier
16	Pin	11-7345	Amphenol/Bendix
	Socket		

20-61-18



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF AMPHENOL/BENDIX 10-244() SERIES CONNECTORS

Table 11 CONTACT INSERTION TOOLS (Continued)

Crimp Barrel Size	Contact Type	Insertion Tool	
		Part Number	Supplier
12	Pin	11-7082	Amphenol/Bendix
	Socket		

- (1) Make a selection of an insertion tool from Table 11.
- (2) Insert the contact. Refer to Subject 20-61-00.

F. Seal of Empty Contact Cavities

- (1) It is necessary to install seal rods in contact cavities that are not used. Refer to Subject 20-61-00.

G. Assembly of an Endbell with a Conduit

- (1) Engage the threads of the endbell with the threads of the coupling ring of the conduit.
- (2) Tighten the coupling ring to the specified torque.

20-61-18



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>	<u>PAGE</u>
1. GENERAL DATA	3
A. Minimum Wire O.D. for an Environmentally Sealed Connector	3
2. PART NUMBERS AND DESCRIPTION	5
A. Connector Part Numbers	5
B. BACC63BD and BACC63BE Connectors	7
C. BACC63BW and BACC63BY Connectors	9
D. BACC63CD and BACC63CE Connectors	10
E. ITT Cannon CA66()-() and CA80()-() Connectors	12
F. ITT Cannon FRF, FRA, FVF and FVA Connectors	13
G. Sabritec 017832-3000 Connector	14
H. Boeing 280W0002-2 Connector	14
I. Contact Part Numbers	14
J. Backshell Component Part Numbers	21
3. INSERT CONFIGURATIONS	26
A. MIL-C-5015 Type Connectors	26
4. CONNECTOR DISASSEMBLY	32
A. Seal Plug and Seal Rod Removal	32
B. Contact Removal	32
5. CONNECTOR ASSEMBLY	34
A. Wire Preparation	34
B. Preparation of Champlain 24-00033 and Champlain 24-00034 Wire	37
C. Preparation of Rockbestos or Cerro H22-4000 Wire	39
D. Preparation of AWG 2 and AWG 4 Wire for Assembly of a Size 1/0 Engaging End Contact	40
E. Contact Assembly	41
F. Contact Insertion	48
G. Seal of an Empty Contact Cavity	50
H. Backshell and Strain Relief Assembly	50
6. BACKSHELL ASSEMBLY CONFIGURATIONS	51
A. Applicable Conditions for Backshell Assembly	51
B. Backshell Installation Torque	51
C. Standard Backshell Assembly Configuration	52
D. Backshell Assembly Configuration for a 28-22 Insert Configuration and Three AWG 4 or AWG 8 Wires	53
E. Backshell Assembly Configuration for a 36-5 Insert Configuration and AWG 2 Wire	55
F. Backshell Assembly Configuration for a 36-5 Insert Configuration and AWG 4 Wire	56
G. Backshell Assembly Configuration for a 36-5 Insert Configuration and a Glenair G63292 Backshell	60

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

<u>PARAGRAPH</u>		<u>PAGE</u>
6.	<u>BACKSHELL ASSEMBLY CONFIGURATIONS (continued)</u>	51
	H. Backshell Assembly Configuration for AWG 1/0 Wire and a Glenair G6652 Backshell	63
	I. Backshell Assembly Configuration for a Sunbank S3972-4 Extension Adapter and a BACC10K() Backshell	64
	J. Backshell Assembly Configuration for a Sunbank S1347 90 Degree Backshell	65
	K. Backshell Assembly Configuration for the 280W0002-2 Connector	66
7.	<u>STRAIN RELIEF ASSEMBLY CONFIGURATIONS</u>	72
	A. Applicable Conditions for Strain Relief Assembly	72
	B. Standard Strain Relief Assembly	72
	C. Strain Relief Assembly Configuration for a 36-5 Insert Configuration and AWG 2 Wire	74
8.	<u>CONNECTOR INSTALLATION</u>	74
	A. Selection of a Connector Installation	74
	B. Installation of the ITT Cannon CA66279-() Plug	75
	C. Installation of the ITT Cannon CA66287-50 and the ITT Cannon CA66434-6 Plug	75
9.	<u>APPROVED TOOL SUPPLIERS</u>	76
	A. Contact Removal Tools	76
	B. Crimp Tools	77
	C. Contact Insertion Tools	78
	D. Special Tools	79

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

1. GENERAL DATA

A. Minimum Wire O.D. for an Environmentally Sealed Connector

Refer to:

- Subject 20-60-08 for the identification of an environmentally sealed connector
- Table 1 for the minimum wire O.D. that is necessary for a satisfactory seal of a contact cavity hole
- Paragraph 5.D. for the procedure to increase the O.D. of AWG 2 or AWG 4 wire to seal in a size 1/0 contact cavity
- Subject 20-60-08 for the procedure to increase the O.D. of the wire.

Table 1
MINIMUM WIRE O.D. FOR A SATISFACTORY SEAL

Connector	Description	Contact Cavity Size	Minimum Wire O.D. (inch)
BACC63BD	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390
BACC63BE	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390
BACC63BW	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390
BACC63BY	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390
BACC63CD	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 1 MINIMUM WIRE O.D. FOR A SATISFACTORY SEAL (Continued)

Connector	Description	Contact Cavity Size	Minimum Wire O.D. (inch)
BACC63CE	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390
CA66	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390
CA80	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390
FRA	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390
FRF	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390
FVA	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 1 MINIMUM WIRE O.D. FOR A SATISFACTORY SEAL (Continued)

Connector	Description	Contact Cavity Size	Minimum Wire O.D. (inch)
FVF	MIL-C-5015 type; front release, rear removal contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390
MIL-C-5015	Front release, rear removal crimp contacts	16	0.070
		12	0.100
		8	0.140
		4	0.230
		0	0.390

2. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

Table 2
CONNECTOR PART NUMBERS

Boeing Standard	Boeing Specification	Part Number	Supplier	Reference
-	-	017832-3000	Sabritec	Paragraph 2.G.
-	-	CA66278-101	ITT Cannon	Paragraph 2.E.
-	-	CA66278-105	ITT Cannon	Paragraph 2.E.
-	-	CA66278-93	ITT Cannon	Paragraph 2.E.
-	-	CA66279-102	ITT Cannon	Paragraph 2.E.
-	-	CA66279-106	ITT Cannon	Paragraph 2.E.
-	-	CA66279-94	ITT Cannon	Paragraph 2.E.
-	-	CA66286-45	ITT Cannon	Paragraph 2.E.
-	-	CA66287-50	ITT Cannon	Paragraph 2.E.
-	-	CA66420-1	ITT Cannon	Paragraph 2.E.
-	-	CA66422-9	ITT Cannon	Paragraph 2.E.
-	-	CA66432-2	ITT Cannon	Paragraph 2.E.
-	-	CA66434-6	ITT Cannon	Paragraph 2.E.
-	-	CA80503-14	ITT Cannon	Paragraph 2.E.
-	-	FRA()-()	ITT Cannon	Paragraph 2.F.
-	-	FRA()36-5()-747	ITT Cannon	Paragraph 2.F.
-	-	FRF()-()	ITT Cannon	Paragraph 2.F.

20-61-19



**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 2 CONNECTOR PART NUMBERS (Continued)

Boeing Standard	Boeing Specification	Part Number	Supplier	Reference
-	-	FRF()36-5()-747	ITT Cannon	Paragraph 2.F.
-	-	FVA()-()	ITT Cannon	Paragraph 2.F.
-	-	FVA()36-5()-747	ITT Cannon	Paragraph 2.F.
-	-	FVF()-()	ITT Cannon	Paragraph 2.F.
-	-	FVF()36-5()-747	ITT Cannon	Paragraph 2.F.
-	280W0002-2	BACC63CE24()22S	-	Paragraph 2.H.
BACC63BD	-	246-3006R()-()	Amphenol	Paragraph 2.B.
		FC-3406D()-()	Flight	Paragraph 2.B.
BACC63BE	-	246-3000R()-()	Amphenol	Paragraph 2.B.
		FC-3400D()-()	Flight	Paragraph 2.B.
BACC63BW	-	FC3406D()-()	Flight	Paragraph 2.C.
		WFB6()-()	ITT Cannon	Paragraph 2.C.
BACC63BY	-	FC3400D()-()	Flight	Paragraph 2.C.
		WFB0()-()	ITT Cannon	Paragraph 2.C.
BACC63CD	-	CSF3440C()-()CD	Cinch	Paragraph 2.D.
		FC3400D()-()-140	Flight	Paragraph 2.D.
		SF3440C()-()	IPI	Paragraph 2.D.
		WFB0()-()CD	ITT Cannon	Paragraph 2.D.
BACC63CE	-	CSF3446C()-()CE	Cinch	Paragraph 2.D.
		FC3406D()-()-144	Flight	Paragraph 2.D.
		SF3446C()-()	IPI	Paragraph 2.D.
		WFB6()-()CE	ITT Cannon	Paragraph 2.D.

**Table 3
ALTERNATIVE CONNECTOR PART NUMBERS**

Specified Connector		Alternative Connector
Part Number	Supplier	
246-3000R()-()	Amphenol	BACC63CD
246-3006R()-()	Amphenol	BACC63CE
BACC63BD	Boeing	BACC63CE
BACC63BE	Boeing	BACC63CD
BACC63BW	Boeing	BACC63CE
BACC63BY	Boeing	BACC63CD
CSF3440C()-()CD	Cinch	BACC63CD
CSF3446C()-()CE	Cinch	BACC63CE
FC-3400D()-()	Flight	BACC63CD

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 3 ALTERNATIVE CONNECTOR PART NUMBERS (Continued)

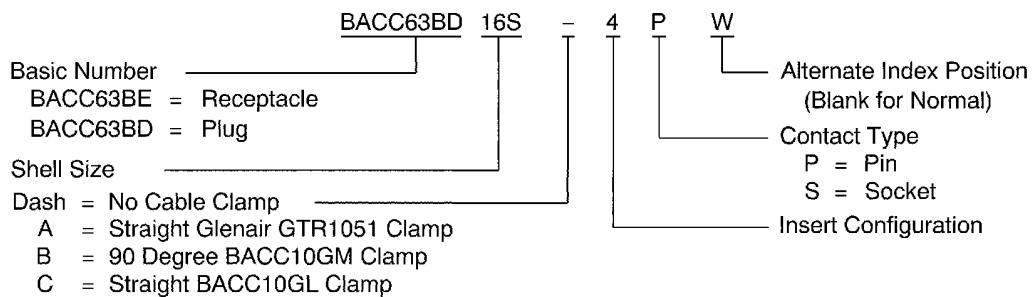
Specified Connector		Alternative Connector
Part Number	Supplier	
FC3400D()-()-140	Flight	BACC63CD
FC-3406D()-()	Flight	BACC63CE
FC3406D()-()-144	Flight	BACC63CE
SF3440C()-()	IPI	BACC63CD
SF3446C()-()	IPI	BACC63CE
WFB0()-()	ITT Cannon	BACC63CD
WFB6()-()	ITT Cannon	BACC63CE

Table 4
APPROVED SUPPLIERS OF BOEING STANDARD CONNECTORS

Boeing Standard	Supplier
BACC63BD	-
BACC63BE	-
BACC63BW	-
BACC63BY	-
BACC63CD	ITT Cannon
BACC63CE	ITT Cannon

B. BACC63BD and BACC63BE Connectors

If the replacement of a BACC63BD or BACC63BE connector is necessary, and a new BACC63BD or BACC63BE connector is not available, refer to Table 5 for the replacement connector and backshell.



2446154 S00061546605_V1

BOEING BACC63BD AND BACC63BE CONNECTOR PART NUMBER STRUCTURE

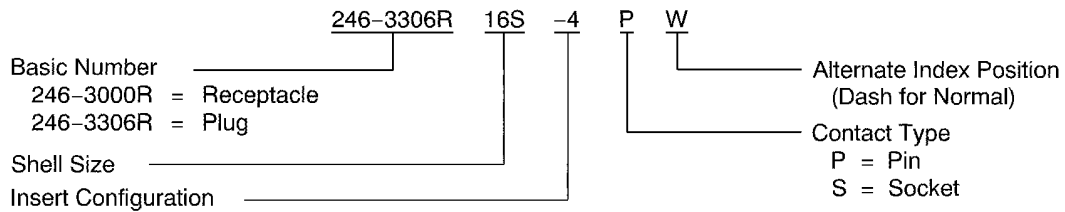
Figure 1

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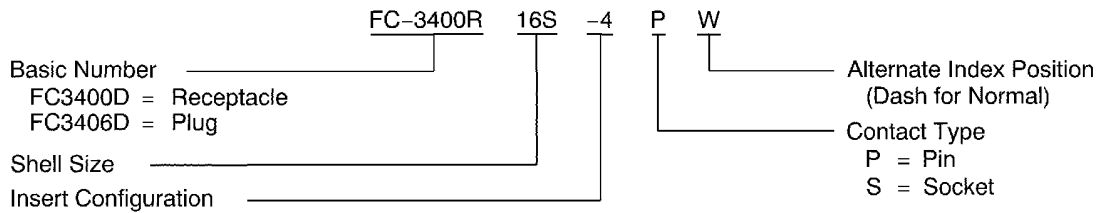
707, 727-787 **STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



2446156 S00061546606_V1

AMPHENOL BACC63BD AND BACC63BE CONNECTOR PART NUMBER STRUCTURE - 246-3000R AND 246-3306R **Figure 2**



2446155 S00061546607_V1

FLIGHT BACC63BD AND BACC63BE CONNECTOR PART NUMBER STRUCTURE - FC3400D AND FC3406D **Figure 3**

Table 5
ALTERNATIVE CONNECTOR AND BACKSHELL ASSEMBLIES

Specified Connector and Backshell Assembly		Alternative Connector and Backshell Assembly	
Connector	Backshell	Connector	Backshell
BACC63BD()-()	-	BACC63CE()-()	-
BACC63BD()(A)	GTR1051()	BACC63CE()(A)	BACC10HV()
BACC63BD()(B)	BACC10GM()	BACC63CE()(B)	BACC10HW()
BACC63BD()(C)	BACC10GL()	BACC63CE()(A)	BACC10HV()
BACC63BE()-()	-	BACC63CD()-()	-
BACC63BE()(A)	GTR1051()	BACC63CD()(A)	BACC10HV()
BACC63BE()(B)	BACC10GM()	BACC63CD()(B)	BACC10HW()
BACC63BE()(C)	BACC10GL()	BACC63CD()(A)	BACC10HV()

20-61-19

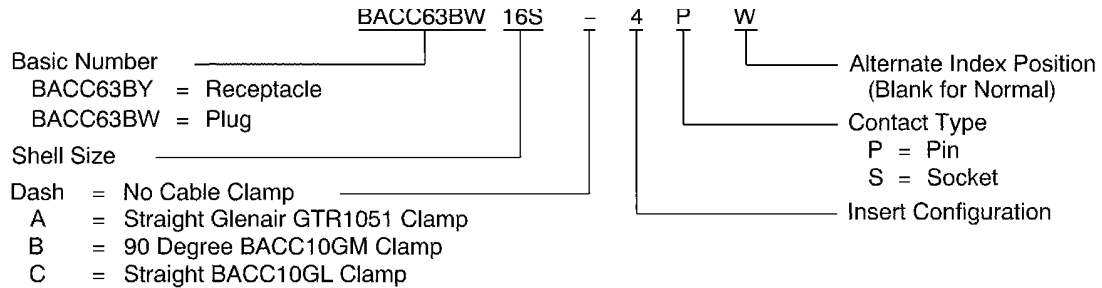


707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

C. BACC63BW and BACC63BY Connectors

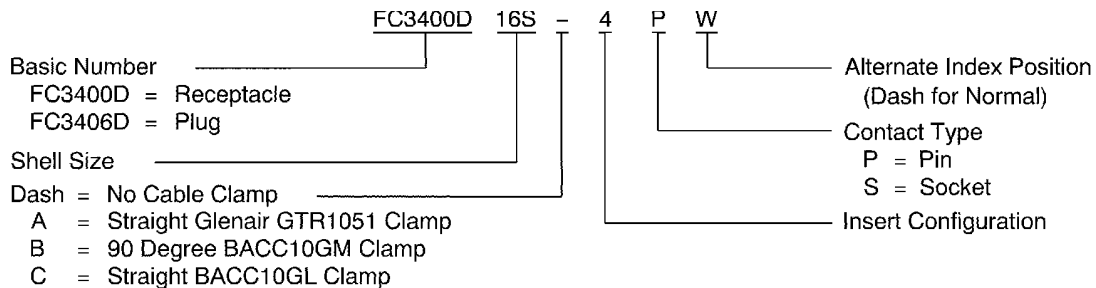
If the replacement of a BACC63BW or BACC63BY connector is necessary, and a new BACC63BW or BACC63BY connector is not available, refer to Table 6 for the replacement connector and backshell.



2446151 S00061546608_V1

BOEING BACC63BW AND BACC63BY CONNECTOR PART NUMBER STRUCTURE

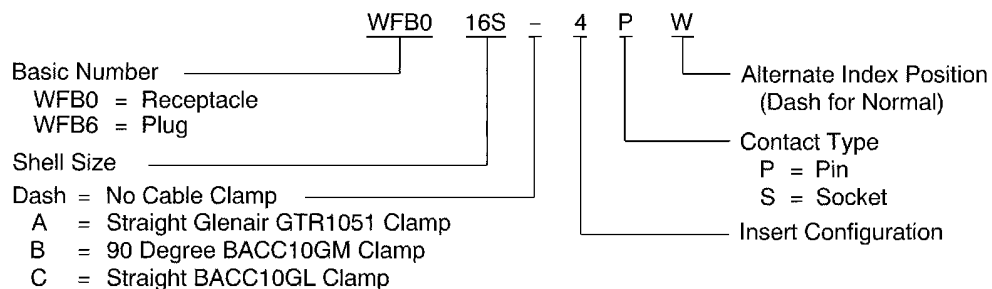
Figure 4



2446152 S00061546609_V1

FLIGHT BACC63BW AND BACC63BY CONNECTOR PART NUMBER STRUCTURE - FC3400D AND FC3406D

Figure 5



2446153 S00061546610_V1

ITT CANNON BACC63BW AND BACC63BY CONNECTOR PART NUMBER STRUCTURE - WFB0 AND WFB6

Figure 6

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

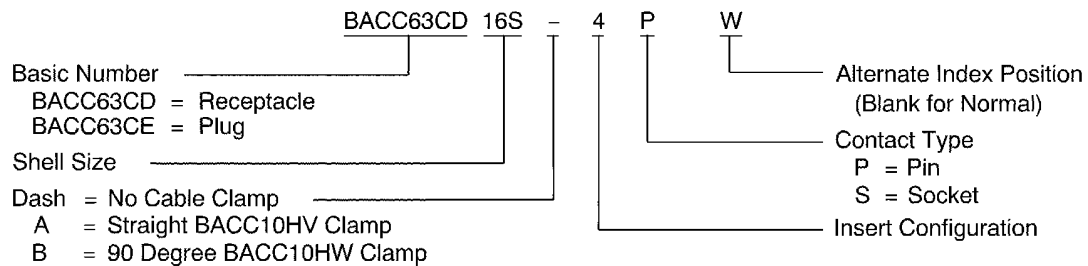
ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 6
ALTERNATIVE CONNECTOR AND BACKSHELL ASSEMBLIES

Specified Connector and Backshell Assembly		Alternative Connector and Backshell Assembly	
Connector	Backshell	Connector	Backshell
BACC63BW()-()	-	BACC63CE()-()	-
BACC63BW()(A)	GTR1051()	BACC63CE()(A)	BACC10HV()
BACC63BW()(B)	BACC10GM()	BACC63CE()(B)	BACC10HW()
BACC63BW()(C)	BACC10GL()	BACC63CE()(A)	BACC10HV()
BACC63BY()-()	-	BACC63CD()-()	-
BACC63BY()(A)	GTR1051()	BACC63CD()(A)	BACC10HV()
BACC63BY()(B)	BACC10GM()	BACC63CD()(B)	BACC10HW()
BACC63BY()(C)	BACC10GL()	BACC63CD()(A)	BACC10HV()

D. BACC63CD and BACC63CE Connectors

BACC63CD and BACC63CE connectors have anti-rotation backshell teeth.

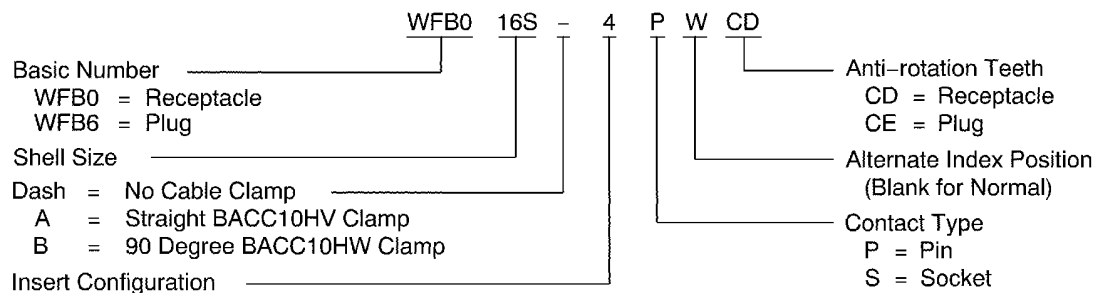


2446147 S00061546611_V1

BOEING BACC63CD AND BACC63CE CONNECTOR PART NUMBER STRUCTURE

Figure 7

NOTE: Cinch, Flight, and IPI are no longer qualified suppliers of BACC63CD and BACC63CE connectors.



2446148 S00061546612_V1

ITT CANNON BACC63CD AND BACC63CE CONNECTOR PART NUMBER STRUCTURE - WFB0()CD AND WFB6()CE

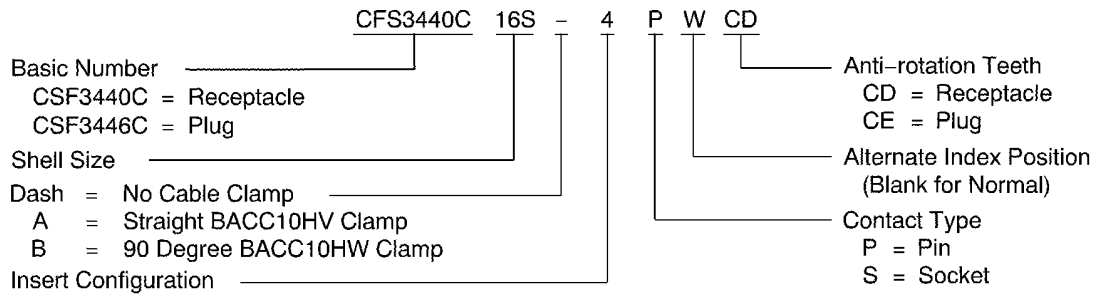
Figure 8

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

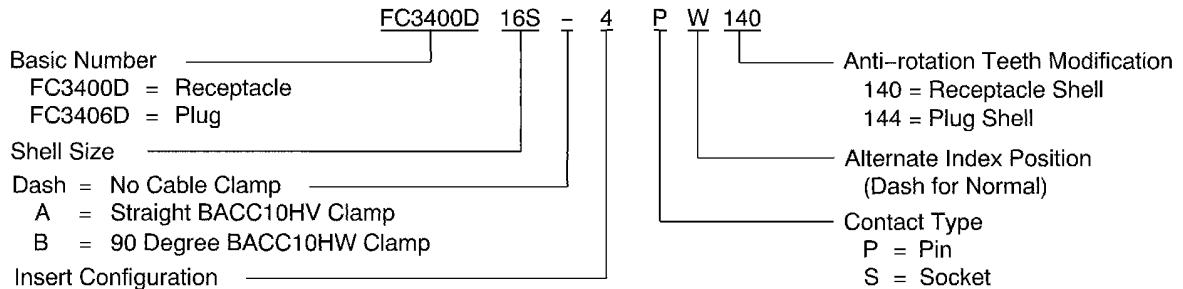


2447508 S00061546613_V1

CINCH BACC63CD AND BACC63CE CONNECTOR PART NUMBER STRUCTURE - CSF3440C AND CSF3446C

Figure 9

NOTE: Cinch is no longer a qualified supplier of BACC63CD and BACC63CE connectors.

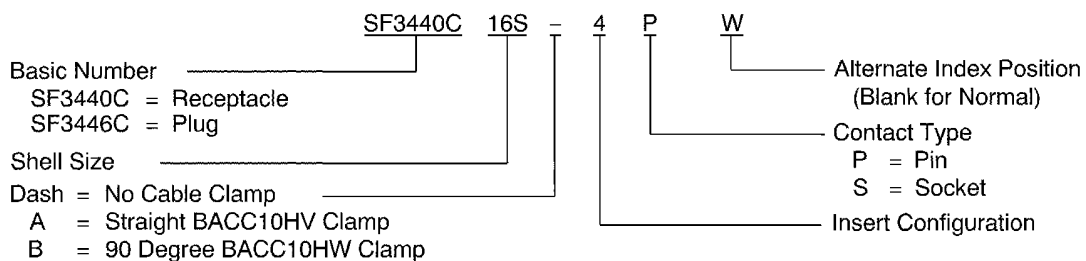


2446150 S00061546614_V1

FLIGHT BACC63CD AND BACC63CE CONNECTOR PART NUMBER STRUCTURE - FC3400D AND FC3406D

Figure 10

NOTE: Flight is no longer a qualified supplier of BACC63CD and BACC63CE connectors.



2446149 S00061546615_V1

IPI BACC63CD AND BACC63CE CONNECTOR PART NUMBER STRUCTURE - SF3440C AND SF3446C

Figure 11

NOTE: IPI is no longer a qualified supplier of BACC63CD and BACC63CE connectors.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

E. ITT Cannon CA66()-() and CA80()-() Connectors

Table 7
ITT CANNON CA66()-() AND CA80()-() CONNECTOR PART NUMBERS

Part Number	Description	Insert Configuration	Contact Type
CA66278-93	Receptacle	28-22	Pin
CA66278-101	Receptacle	28-22	Pin
CA66278-105	Receptacle	28-22	Pin
CA66279-94	Plug with castellated self-locking coupling ring	28-22	Socket
CA66279-102	Plug with castellated self-locking coupling ring	28-22	Socket
CA66279-106	Plug with castellated self-locking coupling ring	28-22	Socket
CA66286-45	Receptacle	36-5	Pin
CA66287-50	Plug with hex self-locking coupling nut	36-5	Socket
CA66420-1	Receptacle	28-22	Pin
CA66422-9	Receptacle	36-5	Pin
CA66432-2	Plug with knurled self-locking coupling ring	28-22	Socket
CA66434-6	Plug with hex self-locking coupling nut	36-5	Socket
CA80503-14	Receptacle	22-2	Socket

Table 8
ITT CANNON CA66()-() AND CA80()-() BACKSHELL COMPONENT PART NUMBERS

Connector	Backshell Component		
	Type	Part Number	Supplier
CA66278-101	Ferrule	304-0395-000	ITT Cannon
	Straight Backshell	057-0872-000	ITT Cannon
CA66278-105	Ferrule	304-0395-000	ITT Cannon
	Straight Backshell	057-0872-000	ITT Cannon
CA66278-93	Ferrule	304-0395-000	ITT Cannon
	Straight Backshell	057-0872-000	ITT Cannon
CA66279-102	Straight Backshell	057-0872-000	ITT Cannon
CA66279-106	Straight Backshell	057-0872-000	ITT Cannon
CA66279-94	Ferrule	304-0395-000	ITT Cannon
	Straight Backshell	057-0872-000	ITT Cannon
CA66286-45	Ferrule	304-0415-001	ITT Cannon
	Straight Backshell	627-048	Glenair
CA66287-50	Ferrule	304-0415-001	ITT Cannon
	Straight Backshell	627-048	Glenair
CA66420-1	Straight Backshell	057-0872-000	ITT Cannon

20-61-19



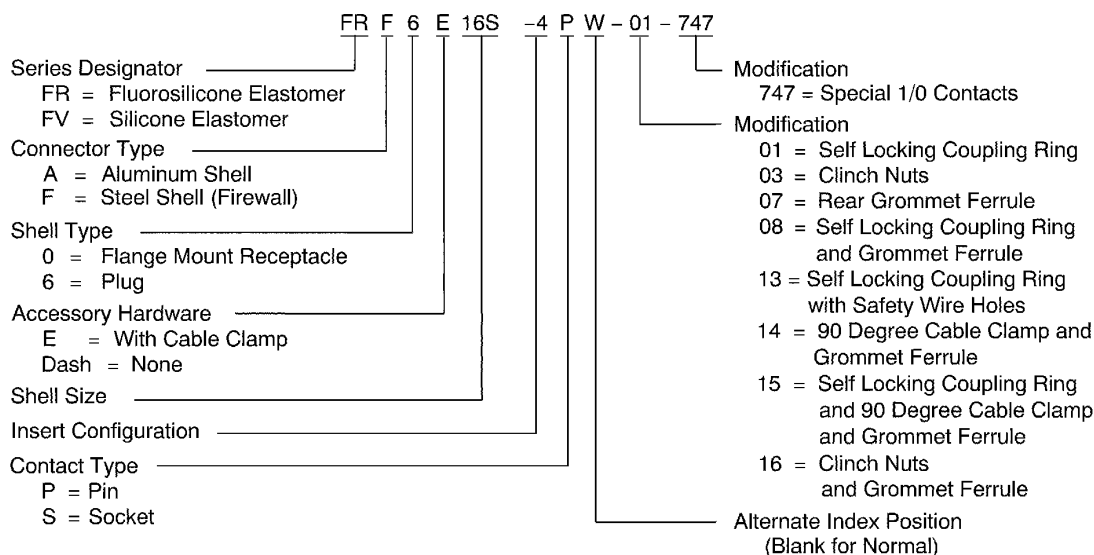
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ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 8 ITT CANNON CA66()-() AND CA80()-() BACKSHELL COMPONENT PART NUMBERS (Continued)

Connector	Backshell Component		
	Type	Part Number	Supplier
CA66422-9	Ferrule	304-0415-000	ITT Cannon
	Straight Backshell	627-048	Glenair
CA66432-2	Ferrule	304-0395-000	ITT Cannon
	Straight Backshell	057-0872-000	ITT Cannon
CA66434-6	Ferrule	304-0415-001	ITT Cannon
	Straight Backshell	627-048	Glenair
CA80503-14	Straight Backshell	057-0870-000	ITT Cannon

F. ITT Cannon FRF, FRA, FVF and FVA Connectors



2446157 S00061546616_V1

ITT CANNON FR()-() AND FV()-() CONNECTOR PART NUMBER STRUCTURE

Figure 12

NOTE: Table 21 gives the backshell part numbers that are supplied with the ITT Cannon FR()E() and FV()E() connectors:

- A 90 Degree backshell and a grommet ferrule are supplied with the ITT Cannon FR()E() and FV()E() when the connector part number specifies modification codes 14 or 15. Refer to Figure 12.
- A straight backshell is supplied with the ITT Cannon FR()E() and FV()E() when the connector part number does not specify modification code 14 or 15. Refer to Figure 12.
- FVF()E() and FVA()E connectors supplied with a straight backshell are supplied with a grommet ferrule.



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- FRF()E() and FRA()E connectors supplied with a straight backshell are not supplied with a grommet ferrule.

G. Sabritec 017832-3000 Connector

The Sabritec 017832-3000 connector:

- Is a plug with a threaded coupling
- Has an aluminum alloy shell with black chromate over a cadmium finish
- Has a 12S-3 insert configuration; refer to Table 27 and Figure 20
- Has 2 size 16, MIL-C-26500 connector type, standard socket contacts; refer to Subject 20-61-11.

The connector is the same as a BACC63CE12S-3S connector with these differences:

- It has a decreased length
- It has different contacts
- It does not have anti-rotational backshell teeth.

H. Boeing 280W0002-2 Connector

The Boeing S280W0002-2 connector:

- Is a BACC63CE plug; refer to Table 9
- Has insert configuration 24-22; refer to Table 27 and Figure 26
- Has four special size 0808 contacts; refer to Table 15.

**Table 9
BOEING 280W0002-2 CONNECTOR PART NUMBER**

Boeing Specification	Connector Specification Components					
	Connector	Contact				
		Part Number	Size	Type	Quantity	Reference
280W0002-2	BACC63CE24()22S	BACC47FW3	0808	Socket	4	Table 15

I. Contact Part Numbers

**Table 10
CONTACT SELECTION**

Connector	Contact Type	Reference
017832-3000	MIL-C-26500	Subject 20-61-11
BACC63BD	Standard	Table 11
	Thermocouple	Table 13
BACC63BE	Standard	Table 11
	Thermocouple	Table 13
BACC63BW	Standard	Table 11
	Thermocouple	Table 13
BACC63BY	Standard	Table 11
	Thermocouple	Table 13

20-61-19

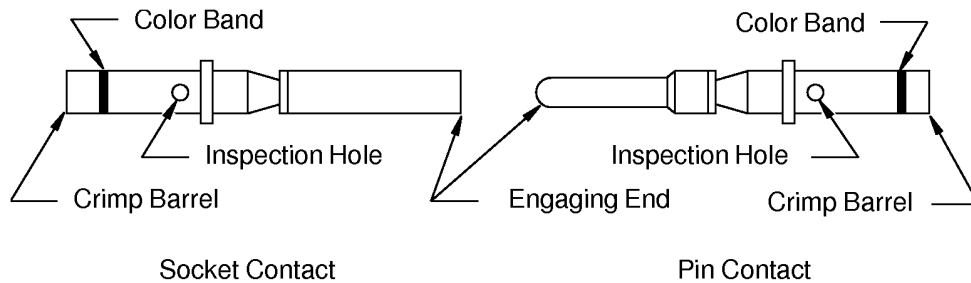


**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 10 CONTACT SELECTION (Continued)

Connector	Contact Type	Reference
BACC63CD	Standard	Table 11
	Thermocouple	Table 13
BACC63CE	Standard	Table 11
	Thermocouple	Table 13
CA66()-()	Special	Table 14
CA80()-()	Special	Table 14
FRA()36-5()-747	Standard	Table 11
FRA()-()	Standard	Table 11
	Thermocouple	Table 13
FRF()36-5()-747	Standard	Table 11
FRF()-()	Standard	Table 11
	Thermocouple	Table 13
FVA()36-5()-747	Standard	Table 11
FVA()-()	Standard	Table 11
	Thermocouple	Table 13
FVF()36-5()-747	Standard	Table 11
FVF()-()	Standard	Table 11
	Thermocouple	Table 13



2449041 S00061546617_V1

BOEING STANDARD FRONT RELEASE CONTACTS FOR MIL-C-5015 TYPE CONNECTORS

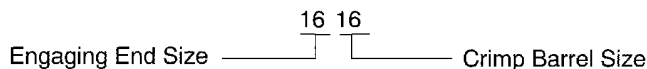
Figure 13

20-61-19



**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



2446183 S00061544383_V1

EXAMPLE OF CONTACT SIZE

Figure 14

**Table 11
BOEING STANDARD CONTACT PART NUMBERS**

Contact Size	Engaging End Size	Crimp Barrel Size	Color Band	Contact Type	Boeing Standard
1616	16	16	Blue	Pin	BACC47DP1
				Socket	BACC47DR1
1212	12	12	Yellow	Pin	BACC47DP2
				Socket	BACC47DR2
0808	8	8	Red	Pin	BACC47DP3
				Socket	BACC47DR3
0404	4	4	Blue	Pin	BACC47DP4
				Socket	BACC47DR4
1/0-1/0	1/0	1/0	Yellow	Pin	BACC47DP5
				Socket	BACC47DR5

Table 12

APPROVED SUPPLIERS OF BOEING STANDARD CONTACTS

Boeing Standard	Supplier
BACC47DP()	ITT Cannon
	Tri-Star
BACC47DR()	ITT Cannon
	Tri-Star

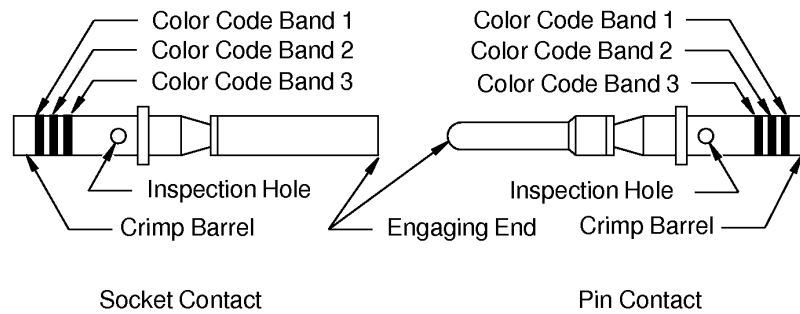
20-61-19



707, 727-787

STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



2447100 S00061546459_V1

COLOR CODE BANDS OF THE THERMOCOUPLE CONTACTS

Figure 15

20-61-19

D6-54446

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Page 17
Feb 15/2016



**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

**Table 13
THERMOCOUPLE CONTACT PART NUMBERS**

Contact Size		Type	Material	Color Code		Part Number	Supplier
Engaging End	Crimp Barrel			Band	Color		
16	16	Pin	Alumel	1	Blue	016-0007-106	Flight
				2	Blue		
				3	Green		
				1	Blue	030-1878-007	ITT Cannon
				2	Blue		
				3	Green		
			Chromel	1	Blue	016-0007-107	Flight
				2	Blue		
				3	White		
				1	Blue	030-1878-006	ITT Cannon
				2	Blue		
				3	White		
		Socket	Alumel	1	Blue	016-1007-206	Flight
				2	Blue		
				3	Green		
				1	Blue	031-1040-003	ITT Cannon
				2	Blue		
				3	Green		
			Chromel	1	Blue	016-1007-207	Flight
				2	Blue		
				3	White		
				1	Blue	031-1040-004	ITT Cannon
				2	Blue		
				3	White		

20-61-19



**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 13 THERMOCOUPLE CONTACT PART NUMBERS (Continued)

Contact Size		Type	Material	Color Code		Part Number	Supplier
Engaging End	Crimp Barrel			Band	Color		
12	12	Pin	Alumel	1	Yellow	012-0008-106	Flight
				2	Yellow		
				3	Green		
				1	Yellow	030-1879-009	ITT Cannon
				2	Yellow		
				3	Green		
			Chromel	1	Yellow	012-0008-107	Flight
				2	Yellow		
				3	White		
				1	Yellow	030-1879-010	ITT Cannon
				2	Yellow		
				3	White		
		Socket	Alumel	1	Yellow	012-1008-206	Flight
				2	Yellow		
				3	Green		
				1	Yellow	031-1041-009	ITT Cannon
				2	Yellow		
				3	Green		
			Chromel	1	Yellow	012-1008-207	Flight
				2	Yellow		
				3	White		
				1	Yellow	031-1041-010	ITT Cannon
				2	Yellow		
				3	White		

**Table 14
CONTACT PART NUMBERS FOR ITT CANNON CA66()-() AND CA80()-() CONNECTORS**

Connector	Contact					
	Type	Contact Size	Engaging End Size	Crimp Barrel Size	Part Number	Supplier
CA66278-93	Pin	0404	4	4	030-1881-737	ITT Cannon
		1616	16	16	BACC47DP1	Boeing
CA66278-101	Pin	0408	4	8	030-1881-777	ITT Cannon
		1616	16	16	BACC47DP1	Boeing

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 14 CONTACT PART NUMBERS FOR ITT CANNON CA66()-() AND CA80()-() CONNECTORS
(Continued)

Connector	Contact					
	Type	Contact Size	Engaging End Size	Crimp Barrel Size	Part Number	Supplier
CA66278-105	Pin	0408	4	8	030-1881-777	ITT Cannon
		1616	16	16	BACC47DP1	Boeing
CA66279-94	Socket	0404	4	4	031-1043-737	ITT Cannon
		1616	16	16	BACC47DR1	Boeing
CA66279-102	Socket	0408	4	8	031-1043-777	ITT Cannon
		1616	16	16	BACC47DR1	Boeing
CA66279-106	Socket	0408	4	8	031-1043-777	ITT Cannon
		1616	16	16	BACC47DR1	Boeing
CA66286-45	Pin	1/0-1/0	1/0	1/0	030-8400-500	ITT Cannon
CA66287-50	Socket	1/0-02	1/0	2	031-8010-500	ITT Cannon
CA66420-1	Pin	0408	4	8	030-1881-777	ITT Cannon
		1616	16	16	BACC47DP1	Boeing
CA66422-9	Pin	1/0-02	1/0	2	030-8225-100	ITT Cannon
CA66432-2	Socket	0408	4	8	031-1043-777	ITT Cannon
		1616	16	16	BACC47DR1	Boeing
CA66434-6	Socket	1/0-1/0	1/0	1/0	031-8014-800	ITT Cannon
CA80503-14	Socket	0808	8	8	031-1042-001	ITT Cannon

Table 15
SPECIAL CONTACT PART NUMBERS FOR 280W0002-2 CONNECTORS

Boeing Standard	Type	Contact Size	Engaging End Size	Crimp Barrel Size
BACC47FW3	Socket	0808	8	8

Table 16
APPROVED SUPPLIERS OF BACC47FW CONTACTS

Boeing Standard	Supplier
BACC47FW3	Radiall

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 17
CONTACT ADAPTER SLEEVE PART NUMBERS

Part Number	Plating Material	Supplier
252-0127-000	Silver	ITT Cannon
252-0127-001	Silver	ITT Cannon
252-0128-000	Silver	ITT Cannon
252-0128-001	Gold	ITT Cannon
252-0130-000	Silver	ITT Cannon
252-0130-001	Gold	ITT Cannon
252-0146-000	Silver	ITT Cannon
252-0146-001	Gold	ITT Cannon
252-0318-000	Silver	ITT Cannon
252-0318-001	Gold	ITT Cannon
252-1230-000	Silver	ITT Cannon
252-1230-001	Gold	ITT Cannon
252-1231-000	Silver	ITT Cannon
252-1231-001	Gold	ITT Cannon
252-8006-500	Gold	ITT Cannon

NOTE: A gold plated adapter sleeve and a silver plated adapter sleeve give equivalent performance.

CAUTION: KEEP THE SILVER PLATED ADAPTER SLEEVES IN THEIR INITIAL CONTAINER UNTIL CONTACT ASSEMBLY IS DONE. THIS HELPS TO PREVENT TARNISH.

J. Backshell Component Part Numbers

Table 18
BACKSHELL PART NUMBERS

Part Number	Description	Configuration	Supplier
057-08()-000	Strain Relief Backshell with Saddle Clamp	Straight	ITT Cannon
627-048	Strain Relief Backshell with Saddle Clamp and Wire Separator	Straight	Glenair
BACC10GL()	Strain Relief Backshell with Saddle Clamp	Straight	Boeing
BACC10GM()	Strain Relief Backshell with Saddle Clamp	90 Degree	Boeing
BACC10HV()	Strain Relief Backshell with Saddle Clamp	Straight	Boeing
BACC10HW()	Strain Relief Backshell with Saddle Clamp	90 Degree	Boeing
BACC10KA()	Strain Relief Backshell with Saddle Clamp	Straight	Boeing

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 18 BACKSHELL PART NUMBERS (Continued)

Part Number	Description	Configuration	Supplier
BACC10KB()	Strain Relief Backshell with Saddle Clamp	90 Degree	Boeing
BACC10KC()	Strain Relief Backshell with Saddle Clamp	45 Degree	Boeing
G63292	Aluminum Strain Relief Backshell with Saddle Clamp and Aluminum Wire Separator	Straight	Glenair
G63292-1	Aluminum Strain Relief Backshell with Saddle Clamp and Composite Wire Separator	Straight	Glenair
G6652-()	Aluminum Strain Relief Backshell with Saddle Clamp and Aluminum Wire Separator	Straight	Glenair
G6652-()-1	Aluminum Strain Relief Backshell with Saddle Clamp and Composite Wire Separator	Straight	Glenair
S1347-()	Strain Relief Backshell with 3 setscrews on coupling ring and Saddle Clamp	90 Degree	Sunbank
S3972-()	Extension Adapter	Straight	Sunbank

Table 19
ALTERNATIVE BACKSHELL PART NUMBERS

Specified Backshell		Alternative Backshell	
Part Number	Supplier	Part Number	Supplier
G6652-36	Glenair	G63292	Glenair
		G63292-1	Glenair
G6652-36-1	Glenair	G63292	Glenair
		G63292-1	Glenair

Table 20
APPROVED SUPPLIERS OF BOEING STANDARD BACKSHELLS

Part Number	Supplier
BACC10GL()	Glenair
BACC10GM()	Glenair
BACC10HV()	Glenair
	Sunbank
BACC10HW()	Glenair
	Sunbank

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 20 APPROVED SUPPLIERS OF BOEING STANDARD BACKSHELLS (Continued)

Part Number	Supplier
BACC10KA()	Glenair
	Sunbank
BACC10KB()	Glenair
	Sunbank
BACC10KC()	Glenair
	Sunbank

Table 21
BACKSHELL PART NUMBERS FOR ITT CANNON FR() AND FV() CONNECTORS

Part Number	Shell Size	Configuration	Supplier
057-0866-000	10SL	Straight	ITT Cannon
	12S	Straight	ITT Cannon
	12	Straight	ITT Cannon
057-0867-000	14S	Straight	ITT Cannon
	14	Straight	ITT Cannon
057-0868-000	16S	Straight	ITT Cannon
	16	Straight	ITT Cannon
057-0869-000	20	Straight	ITT Cannon
057-0870-000	22	Straight	ITT Cannon
057-0871-000	24	Straight	ITT Cannon
057-0872-000	28	Straight	ITT Cannon
057-0865-000	32	Straight	ITT Cannon
057-0873-000	36	Straight	ITT Cannon
S1347-12-2	10SL	90 Degree	Sunbank
	12S	90 Degree	Sunbank
	12	90 Degree	Sunbank
S1347-14-2	14S	90 Degree	Sunbank
	14	90 Degree	Sunbank
S1347-16-2	16S	90 Degree	Sunbank
	16	90 Degree	Sunbank
S1347-20-2	20	90 Degree	Sunbank
S1347-22-2	22	90 Degree	Sunbank
S1347-24-2	24	90 Degree	Sunbank
S1347-28-2	28	90 Degree	Sunbank
S1347-32-2	32	90 Degree	Sunbank
S1347-36-2	36	90 Degree	Sunbank

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 22
FERRULE PART NUMBERS

Connector		Ferrule		
Shell Size	Contact Type	Part Number	Length (inch)	Supplier
10SL	Pin	304-0399-000	0.332	ITT Cannon
	Socket	304-0400-000	0.496	ITT Cannon
12S	Pin	304-0399-000	0.332	ITT Cannon
	Socket	304-0400-000	0.496	ITT Cannon
14S	Pin	304-0397-000	0.332	ITT Cannon
	Socket	304-0398-000	0.496	ITT Cannon
16S	Pin	304-0392-000	0.332	ITT Cannon
	Socket	304-0393-000	0.496	ITT Cannon
28	Pin	304-0395-000	0.377	ITT Cannon
	Socket	304-0395-000	0.377	ITT Cannon
36	Pin	304-0415-000	0.377	ITT Cannon
		304-0415-001	0.877	ITT Cannon
	Socket	304-0415-000	0.377	ITT Cannon
		304-0415-001	0.877	ITT Cannon

Table 23
WIRE SEPARATOR PART NUMBERS

Part Number	Number of Wires	Material	Supplier
BACS18AX2	3	Nylon	Boeing
BACS45A115	3	Nylon	Boeing
6000-052-0000	4	Teflon	Amphenol
687-522	4	-	Glenair

Table 24
ALTERNATIVE WIRE SEPARATORS

Specified Wire Separator	Alternative Wire Separator
BACS45A115	BACS18AX2

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

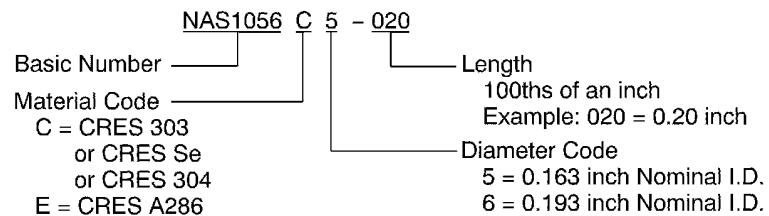
Table 25
APPROVED SUPPLIERS OF BOEING STANDARD WIRE SEPARATORS

Boeing Standard	Supplier
BACS18AX()	Component Products
	Nylon Molding
	WSI Technologies
	Zites

Table 26
SPACER PART NUMBERS

Connector Shell Size		Spacer		Reference
Minimum	Maximum	Part Number	Supplier	
8	16	NAS1056C5-()	QPL	Figure 16
		NAS1056C6-()	QPL	Figure 16
		NAS1057T1-()	QPL	Figure 17
		NAS1057W1-()	QPL	Figure 17
		NAS43DD1-()	QPL	Figure 18
18	28	NAS1056E5-()	QPL	Figure 16
		NAS1056E6-()	QPL	Figure 16
		NAS1057T3-()	QPL	Figure 17
		NAS1057W3-()	QPL	Figure 17
		NAS43DD3-()	QPL	Figure 18
36	36	BACS13S-297B	Boeing	-

NOTE: Refer to Subject 20-00-11 for approved suppliers and alternative part numbers for BACS13S ferrules.



2447496 S00061545028_V1

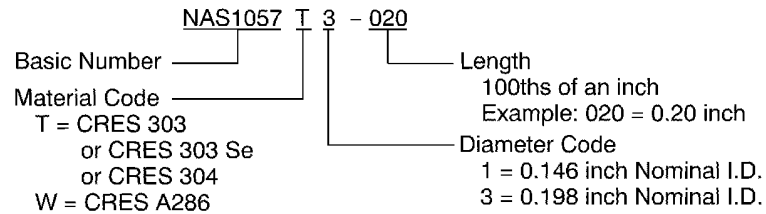
NAS1056 SPACER PART NUMBER STRUCTURE
Figure 16

20-61-19



707, 727-787 STANDARD WIRING PRACTICES MANUAL

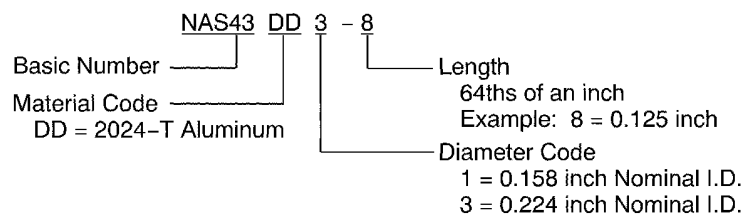
ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



2447521 S00061545029_V1

NAS1057 SPACER PART NUMBER STRUCTURE

Figure 17



2447522 S00061545030_V1

NAS43 SPACER PART NUMBER STRUCTURE

Figure 18

3. INSERT CONFIGURATIONS

A. MIL-C-5015 Type Connectors

NOTE: The insert configurations that are specified in Table 27 include the connector shell size as the first part of the configuration. Refer to Table 2 for the part number structure that is applicable for the connector.

NOTE: The contact cavity size that is specified in Table 27 is equivalent to the size of the engaging end of the contact.

Table 27
CONNECTOR INSERT CONFIGURATIONS

Insert Configuration	Contact Cavity		Reference
	Count	Size	
10SL-3	3	16	Figure 19
10SL-4	2	16	Figure 19
12S-3	2	16	Figure 20
14S-2	4	16	Figure 21
14S-5	5	16	Figure 21

20-61-19



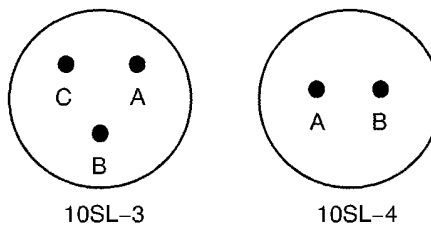
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STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 27 CONNECTOR INSERT CONFIGURATIONS (Continued)

Insert Configuration	Contact Cavity		Reference
	Count	Size	
14S-6	6	16	Figure 21
14S-7	3	16	Figure 21
16S-1	7	16	Figure 22
18-4	4	16	Figure 23
20-4	4	12	Figure 24
22-2	3	8	Figure 25
24-10	7	8	Figure 26
24-11	6	12	Figure 26
	3	8	
24-22	4	8	Figure 26
28-11	18	16	Figure 27
	4	12	
28-12	26	16	Figure 27
28-22	3	16	Figure 27
	3	4	
32-7	28	16	Figure 28
	7	12	
32-17	4	4	Figure 28
36-5	4	1/0	Figure 29

NOTE: Figure 19 through Figure 29 show the front face of an insert that has pins. The view of the front face of an insert that has sockets is the mirror image of this view.



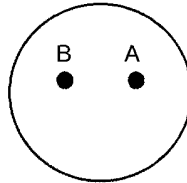
2446158 S00061546595_V1

10SL-() INSERT CONFIGURATIONS
Figure 19

20-61-19



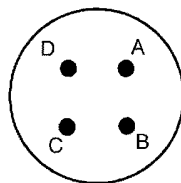
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STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



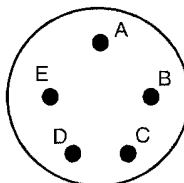
12S-3

2446911 S00061546596_V1

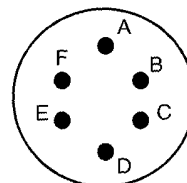
12S-() INSERT CONFIGURATIONS
Figure 20



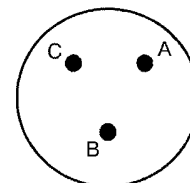
14S-2



14S-5



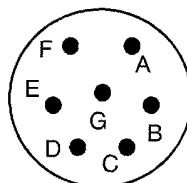
14S-6



14S-7

2446912 S00061546619_V1

14S-() INSERT CONFIGURATIONS
Figure 21



16S-1

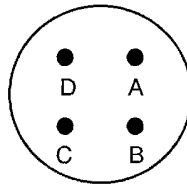
2446913 S00061546620_V1

16S-() INSERT CONFIGURATIONS
Figure 22

20-61-19



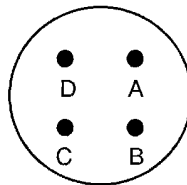
707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



18-4

2446914 S00061546621_V1

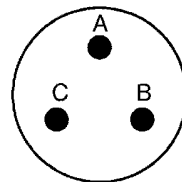
18-() INSERT CONFIGURATIONS
Figure 23



20-4

2446915 S00061546622_V1

20-() INSERT CONFIGURATIONS
Figure 24



22-2

2447313 S00061546623_V1

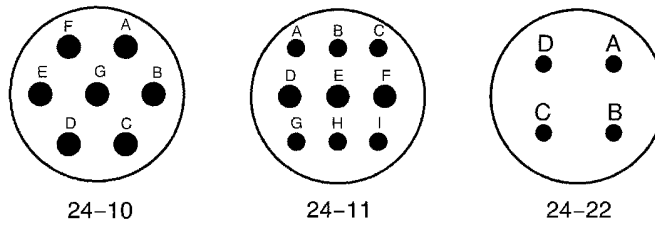
22-() INSERT CONFIGURATIONS
Figure 25

20-61-19



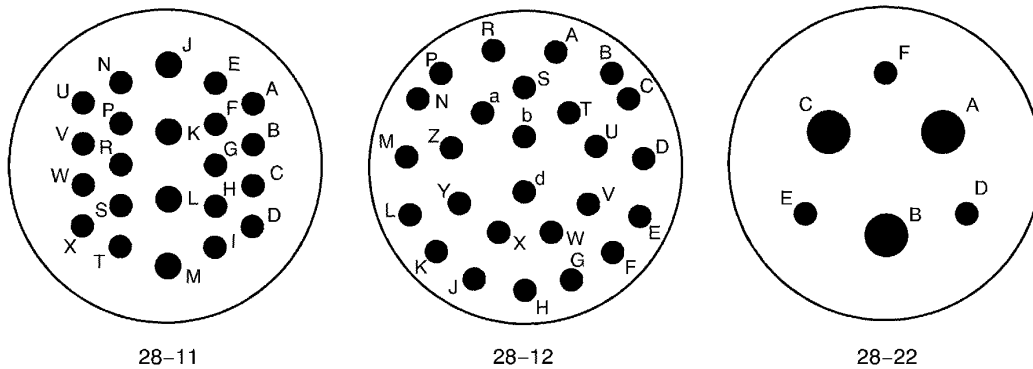
707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



2446916 S00061546624_V1

24-() INSERT CONFIGURATIONS
Figure 26



2446917 S00061546625_V1

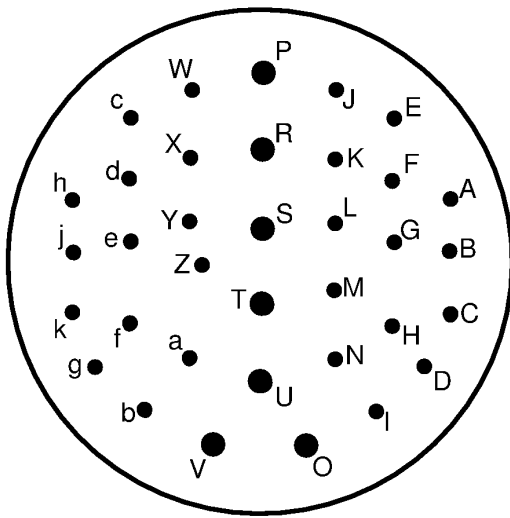
28-() INSERT CONFIGURATIONS
Figure 27

20-61-19

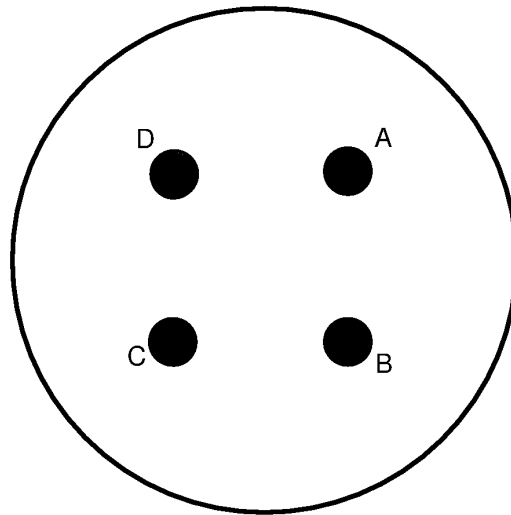


707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



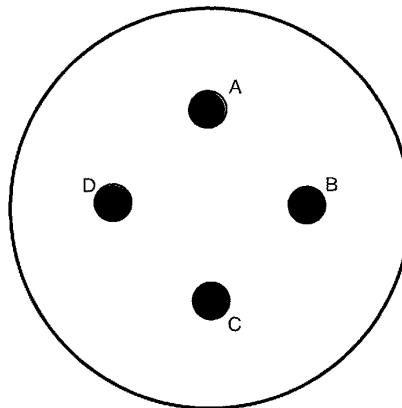
32-7



32-17

2446918 S00061546626_V1

32-() INSERT CONFIGURATIONS
Figure 28



36-5

2446919 S00061546627_V1

36-() INSERT CONFIGURATIONS
Figure 29

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

4. CONNECTOR DISASSEMBLY

A. Seal Plug and Seal Rod Removal

Table 28
NECESSARY TOOLS

Tool	Type
Pliers	Needle Nose

- (1) Make a selection of a pliers from Table 28.

CAUTION: MAKE SURE THE PLIERS HAVE SMOOTH SURFACES AND NO SHARP EDGES. PLIERS WITH A ROUGH SURFACE OR A SHARP EDGE CAN CAUSE DAMAGE TO THE REAR GROMMET.

- (2) If it is necessary, remove a plastic tie strap or a wire harness tie that is less than 6 inches from the connector.
- (3) Hold the end of the seal plug or the seal rod tightly in the jaws of the pliers.
- (4) Pull the seal plug or the seal rod from the contact cavity.

B. Contact Removal

Table 29
CONTACT REMOVAL TOOLS

Contact Engaging End Size	Removal Tool
16	294-219
	CET-FRF-16-22A
	DRK56-16
	M81969/19-01
	MS90456-16
	MS90456-1
12	294-230
	CET-FRF-12
	DRK56-12
	M81969/19-02
	MS90456-12
	MS90456-2

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 29 CONTACT REMOVAL TOOLS (Continued)

Contact Engaging End Size	Removal Tool
8	294-240
	DRK559
	DRK56-8
	CET-FRF-8
	M81969/19-03
	MS90456-8
	MS90456-3
4	294-239
	CET-FRF-4
	DRK56-4
	M81969/19-04
	MS90456-4
1/0	294-241
	CET-FRF-0
	DRK56-0
	M81969/19-05
	MS90456-0
	MS90456-5

- (1) Make a selection of a contact removal tool from Table 29.
- (2) If it is necessary, remove the backshell components from the connector.
- (3) Push the backshell components rearward away from the connector.
- (4) At the front face of the connector, axially align the tool and the contact cavity.
Make sure that the plunger of the removal tool is fully retracted.
- (5) Push the tool into the contact cavity until it stops.

CAUTION: DO NOT USE MORE FORCE THAN THE FORCE THAT IS NECESSARY TO PUSH THE REMOVAL TOOL INTO THE CONTACT CAVITY. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

- (6) Push the plunger of the tool until the contact starts to come out of the contact cavity.
- (7) Carefully pull the tool out from the contact cavity.
Make sure that the removal tool stays axially aligned with the contact cavity.
- (8) Pull the contact out of the contact cavity from the rear of the connector.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

5. CONNECTOR ASSEMBLY

A. Wire Preparation

For the preparation of:

- Champlain 24-00033 and Champlain 24-00034 wire, refer to Paragraph 5.B.
- Rockbestos or Cerro H22-4000 wire, refer to Paragraph 5.C.

Table 30
INSULATION REMOVAL LENGTH

Contact Crimp Barrel Size	Wire Size (AWG)	Removal Length L (inch)		Special Instructions
		Target	Tolerance	
16	24	0.50	±0.03	Fold the conductor back on itself
	22	0.50	±0.03	Fold the conductor back on itself
	20	0.25	±0.03	-
	18	0.25	±0.03	-
	16	0.25	±0.03	-
12	20	0.50	±0.03	Fold the conductor back on itself
	18	0.50	±0.03	Fold the conductor back on itself
	16	0.25	±0.03	-
	15	0.25	±0.03	-
	14	0.25	±0.03	-
	13	0.25	±0.03	-
	12	0.25	±0.03	-
8	20	0.50	±0.03	Increase the size of the conductor
	18	0.50	±0.03	Increase the size of the conductor
	16	0.50	±0.03	Increase the size of the conductor
	14	0.50	±0.03	Increase the size of the conductor
	12	0.50	±0.03	Increase the size of the conductor
	10	0.50	±0.03	Increase the size of the conductor
	8	0.50	±0.03	-
4	10	0.50	±0.03	Increase the size of the conductor
	8	0.50	±0.03	Increase the size of the conductor
	6	0.50	±0.03	Increase the size of the conductor
	4	0.50	±0.03	-
2	4	0.62	±0.03	Increase the size of the conductor
	2	0.62	±0.03	-

20-61-19



**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 30 INSULATION REMOVAL LENGTH (Continued)

Contact Crimp Barrel Size	Wire Size (AWG)	Removal Length L (inch)		Special Instructions
		Target	Tolerance	
1/0	4	0.62	±0.03	Increase the size of the conductor
	2	0.62	±0.03	Increase the size of the conductor
	1/0	0.62	±0.03	-

**Table 31
CONTACT ADAPTER SLEEVES AND FILLER WIRE**

Contact Crimp Barrel Size	Wire Size (AWG)	Adapter Sleeve	Filler Wire	
			Size (AWG)	Quantity
8	20	252-1231-000	10	1
		252-1231-001	10	1
	18	252-1231-000	10	1
		252-1231-001	10	1
	16	252-1231-000	10	1
		252-1231-001	10	1
		-	12	2
	14	252-1231-000	12	1
		252-1231-001	12	1
		-	12	2
	12	252-0146-000	-	0
		252-0146-001	-	0
		252-1231-000	14	1
		252-1231-001	14	1
		-	10	1
	10	252-1231-000	-	0
		252-1231-001	-	0
		-	12	1

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 31 CONTACT ADAPTER SLEEVES AND FILLER WIRE (Continued)

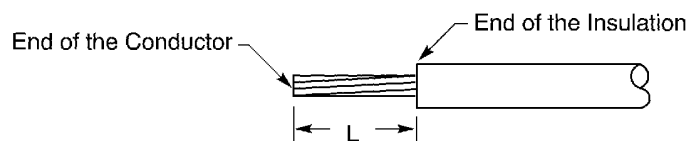
Contact Crimp Barrel Size	Wire Size (AWG)	Adapter Sleeve	Filler Wire	
			Size (AWG)	Quantity
4	10	252-0128-000	12	1
		252-0128-001	12	1
		-	One 6AWG filler wire and one 12AWG filler wire	2
	8	252-0128-000	-	0
		252-0128-001	-	0
		-	12	4
	6	252-0127-000	-	0
		252-0127-001	-	0
		252-0318-000	-	0
		252-0318-001	-	0
2	4	252-8006-500	-	0
1/0	4	252-0130-000	-	0
		252-0130-001	-	0
	2	252-1230-000	-	0
		252-1230-001	-	0

CAUTION: KEEP THE SILVER PLATED ADAPTER SLEEVES IN THEIR INITIAL CONTAINER UNTIL THEY ARE USED. THIS HELPS PREVENT TARNISH.

- (1) Remove the necessary length of insulation from the end of the wire.

Refer to:

- Figure 30
- Table 30
- Subject 20-00-15 for the insulation removal procedure.



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INSULATION REMOVAL
Figure 30

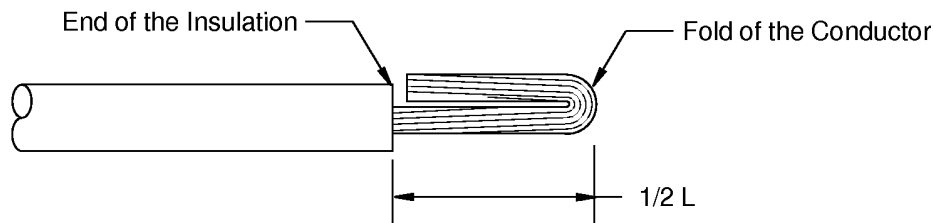
20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- (2) If it is specified, fold the conductor back on itself. Refer to Figure 31.



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FOLDED BACK CONDUCTOR
Figure 31

- (3) If it is specified to increase the size of the conductor, make a selection of:
- An adapter sleeve, or a filler wire, or an adapter sleeve and a filler wire, from Table 31 if the contact is to be crimped with a hex type crimp tool
 - A filler wire from Table 31 if the contact part number is BACC47FW(), or if the contact is size 0808 and is to be crimped with a pneumatic indenter crimp tool.
- (4) If a filler wire is specified, prepare the filler wire.
- (a) Find the insulation removal length for the specified contact. Refer to the Table 30.
- (b) Remove the necessary length of the insulation from the end of the filler wire.
- Refer to:
- Figure 30
 - Subject 20-00-15 for the insulation removal procedure.
- (5) Measure the O.D. of the wire.
- (6) If the O.D. of the wire is less than the minimum seal diameter of the connector grommet hole, increase the O.D. of the wire. Refer to Paragraph 1.A.

B. Preparation of Champlain 24-00033 and Champlain 24-00034 Wire

Table 32
NECESSARY MATERIALS

Material	Part Number	Description	Supplier
Sleeve, Heat Shrinkable	TFE 4X	3/16 inch diameter	Chemplast
			Zeus Industrial Products

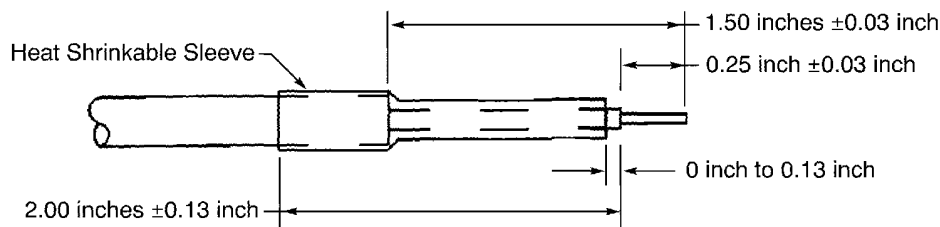
NOTE: For alternative heat shrinkable sleeves, refer to Subject 20-00-11.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



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CHAMPLAIN 24-00033 AND CHAMPLAIN 24-00034 WIRE PREPARATION

Figure 32

Refer to Figure 32.

- (1) Make a selection of a heat shrinkable sleeve from Table 32.
- (2) Remove 1.50 inch ± 0.03 inch of the outer jacket from the end of the wire. Refer to Subject 20-00-15.
- (3) Remove 1.50 inch ± 0.03 inch of the layer of braid from the end of the wire. Refer to Subject 20-00-15.

CAUTION: DO NOT CAUSE DAMAGE TO THE RUBBER INSULATION LAYER. DAMAGE TO THE RUBBER INSULATION LAYER CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

- (4) Remove 0.25 inch ± 0.03 inch of the rubber insulation layer from the end of the wire. Refer to Subject 20-00-15.
- (5) Remove 0.25 inch ± 0.03 inch of the inner tape wrap from the end of the wire. Refer to Subject 20-00-15.

CAUTION: DO NOT CAUSE DAMAGE TO THE CONDUCTOR. DAMAGE TO THE CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

- (6) Put a 2.0 inch ± 0.13 inch length of heat shrinkable sleeve on the wire.
- (7) Align the forward end of the sleeve and the end of the inner rubber layer.

Make sure that:

- The forward end of the sleeve does not extend farther than the end of the rubber insulation layer
- The distance from the forward end of the sleeve to the end of the rubber insulation layer is not more than 0.13 inch.

- (8) Shrink the sleeve into its position. Refer to Subject 20-10-14.

20-61-19

707, 727-787 STANDARD WIRING PRACTICES MANUAL

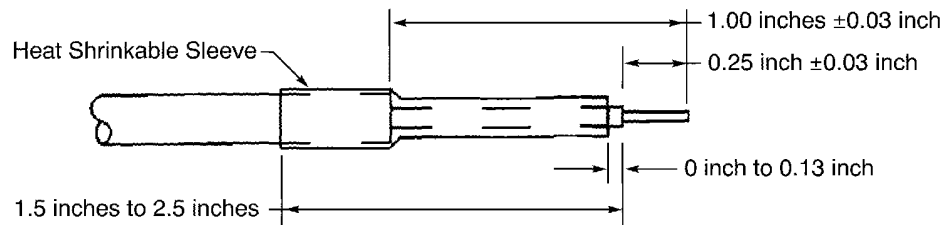
ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

C. Preparation of Rockbestos or Cerro H22-4000 Wire

Table 33
NECESSARY MATERIALS

Material	Part Number	Description	Supplier
Sleeve, Heat Shrinkable	TFE 4X	1/4 inch diameter	Chemplast
			Zeus Industrial Products

NOTE: For alternative heat shrinkable sleeves, refer to Subject 20-00-11.



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ROCKBESTOS OR CERRO H22-4000 WIRE PREPARATION

Figure 33

Refer to Figure 33.

- (1) Make a selection of a heat shrinkable sleeve from Table 33.
- (2) Remove 1.00 inch ± 0.03 inch of the outer braid from the end of the wire. Refer to Subject 20-00-15.
- (3) Remove 1.00 inch ± 0.03 inch of the clear inner wrap from the end of the wire. Refer to Subject 20-00-15.

CAUTION: DO NOT CAUSE DAMAGE TO THE INNER INSULATION LAYER. DAMAGE TO THE INNER LAYER CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

- (4) Remove 0.25 inch ± 0.03 inch of the inner insulation from the end of the wire. Refer to Subject 20-00-15.

CAUTION: DO NOT CAUSE DAMAGE TO THE CONDUCTOR. DAMAGE TO THE CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

- (5) Put a 1.5 inch to 2.5 inch length of heat shrinkable sleeve on the wire.
- (6) Align the forward end of the sleeve and the end of the inner insulation.

Make sure that:

- The forward end of the sleeve does not extend farther than the end of the inner insulation
- The distance from the forward end of the sleeve to the end of the inner insulation is not more than 0.13 inch.

- (7) Shrink the sleeve into its position. Refer to Subject 20-10-14.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

D. Preparation of AWG 2 and AWG 4 Wire for Assembly of a Size 1/0 Engaging End Contact

Table 34
TYPES OF INSULATION MATERIAL FOR SPECIFIED WIRES

Wire		Insulation Material			
Type	Size (AWG)	Type	Part Number	Description	Supplier
BMS 13-31	2	Sleeve	8443-2	Cold Shrinkable	3M
BMS 13-58	2	Sleeve	8443-2	Cold Shrinkable	3M
BMS 13-58	4	Sleeve	8443-6.5	Cold Shrinkable	3M
		Tape	Scotch 70	1.0 inch width	3M
BMS 13-60	4	Sleeve	8443-6.5	Cold Shrinkable	3M
		Tape	Scotch 70	1.0 inch width	3M

- (1) Make a selection of an insulation material from Table 34.
For a connector with a Glenair 6652 backshell, make sure that the length of the build-up sleeve is 3.0 inches ± 0.25 inch.
- (2) To increase the O.D. of the wire with cold shrinkable sleeve:
 - (a) Put the sleeve on the wire.
Make sure that the distance from the end of the sleeve to the end of the wire insulation is 0.06 inch maximum.
 - (b) Hold the sleeve in its position with one hand.
 - (c) Pull the core out of the sleeve with the other hand.
- (3) To increase the O.D. of the wire with tape, wind 3.5 to 4 layers of tape around the wire.
Make sure that:
 - The distance from the forward edge of the tape to the end of the contact crimp barrel is 0.75 inch ± 0.10 inch
 - Each layer of tape has a 100 percent overlap.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

E. Contact Assembly

Table 35
INDENTER TYPE CRIMP TOOLS FOR CONTACTS THAT HAVE SIZE 16 AND SIZE 12 CRIMP BARRELS

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool			
		Basic Unit		Locator	
		Part Number	Setting	Part Number	Color
24	16	294-126	-	-	-
		M22520/1-01	4	M22520/1-02	Blue
		MS3191-1		MS3191-16A	Blue
		ST2220-1-Y		ST2220-1-2	-
		WA27F		M22520/1-02	Blue
22	16	294-126	-	-	-
		M22520/1-01	5	M22520/1-02	Blue
		MS3191-1		MS3191-16A	Blue
		ST2220-1-Y		ST2220-1-2	-
		WA27F		M22520/1-02	Blue
20	16	294-126	-	-	-
		M22520/1-01	4	M22520/1-02	Blue
		MS3191-1		MS3191-16A	Blue
		ST2220-1-Y		ST2220-1-2	-
		WA27F		M22520/1-02	Blue
	12	294-126	-	-	-
		M22520/1-01	6	M22520/1-02	Yellow
		MS3191-1		MS3191-12A	Yellow
		ST2220-1-Y		ST2220-1-3	-
18	16	294-126	-	-	-
		M22520/1-01	5	M22520/1-02	Blue
		MS3191-1		MS3191-16A	Blue
		ST2220-1-Y		ST2220-1-2	-
		WA27F		M22520/1-02	Blue
	12	294-126	-	-	-
		M22520/1-01	7	M22520/1-02	Yellow
		MS3191-1		MS3191-12A	Yellow
		ST2220-1-Y		ST2220-1-3	-

20-61-19



**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 35 INDENTER TYPE CRIMP TOOLS FOR CONTACTS THAT HAVE SIZE 16 AND SIZE 12 CRIMP BARRELS (Continued)

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool			
		Basic Unit		Locator	
		Part Number	Setting	Part Number	Color
16	16	294-126	-	-	-
		M22520/1-01	6	M22520/1-02	Blue
		MS3191-1		MS3191-16A	Blue
		ST2220-1-Y		ST2220-1-2	-
		WA27F		M22520/1-02	Blue
	12	294-126	-	-	-
		M22520/1-01	6	M22520/1-02	Yellow
		MS3191-1		MS3191-12A	Yellow
		ST2220-1-Y		ST2220-1-3	-
14	12	294-126	-	-	-
		M22520/1-01	7	M22520/1-02	Yellow
		MS3191-1		MS3191-12A	Yellow
		ST2220-1-Y		ST2220-1-3	-
12	12	294-126	-	-	-
		M22520/1-01	8	M22520/1-02	Yellow
		MS3191-1		MS3191-12A	Yellow
		ST2220-1-Y		ST2220-1-3	-

**Table 36
HEX TYPE CRIMP TOOLS FOR SIZE 0808, 0408, 0404, 1/0-02 AND 1/0-1/0 CONTACTS**

Wire Size (AWG)	Contact Engaging End Size	Contact Crimp Barrel Size	Contact Size	Crimp Tool		
				Basic Unit	Die Set	-
					Primary	Secondary
16	8	8	0808	13642	ST2354-5	11732
14	8	8	0808	13642	ST2354-5	11732
12	8	8	0808	13642	ST2354-5	11732
				Y29BH	ST2354B-5	-
10	8	8	0808	13642	ST2354-5	11732
				Y29BH	ST2354B-5	-
	4	8	0408	13642	ST2354-5	11732
		4	0404	13642	ST2354-2	11734
				Y29BH	ST2354B-2	-

20-61-19



**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

**Table 36 HEX TYPE CRIMP TOOLS FOR SIZE 0808, 0408, 0404, 1/0-02 AND 1/0-1/0 CONTACTS
(Continued)**

Wire Size (AWG)	Contact Engaging End Size	Contact Crimp Barrel Size	Contact Size	Crimp Tool		
				Basic Unit	Die Set	-
					Primary	Secondary
8	8	8	0808	13642	ST2354-5	11732
				TBHD1	ST2354-5	11732
				Y29BH	ST2354B-5	-
	4	8	0408	13642	ST2354-5	11732
		4	0404	13642	ST2354-2	11734
				TBHD1	ST2354-2	11734
6	4	4	0404	Y29BH	ST2354B-2	-
				13642	ST2354-2	11734
				TBHD1	ST2354-2	11734
4	4	4	0404	Y29BH	ST2354B-2	-
				13642	ST2354-2	11734
				TBHD1	ST2354-2	11734
	1/0	2	1/0-02	13642	ST2354-1	-
		1/0	1/0-1/0	13642	11738	11737
				TBHD1	11738	11737
2	1/0	2	1/0-02	13642	ST2354-1	-
		1/0	1/0-1/0	13642	11738	11737
				TBHD1	11738	11737
1/0	1/0	1/0	1/0-1/0	13642	11738	11737
				13642	ST2354AB-1	ST2354AB-1

**Table 37
PNEUMATIC INDENTER CRIMP TOOLS FOR BACC47FW3 CONTACTS**

Contact Size	Wire Size (AWG)	Crimp Tool			
		Type	Basic Unit	Die	Locator
0808	12	Pneumatic Indenter	400B	414DA-8N	4046A
			400BHD	414DA-8N	4046A
	10	Pneumatic Indenter	400B	414DA-8N	4046A
			400BHD	414DA-8N	4046A
	8	Pneumatic Indenter	400B	414DA-8N	4046A
			400BHD	414DA-8N	4046A

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

NOTE: If it is necessary, a filler wire must be used in the crimp barrel to assemble a size 0808 contact with a pneumatic indenter crimp tool.

NOTE: A pneumatic indenter crimp tool cannot be used to assemble a size 0808 contact that has an adapter sleeve in the crimp barrel.

Table 38
PNEUMATIC INDENTER CRIMP TOOLS FOR SIZE 0808, SIZE 0404, AND SIZE 1/0-1/0 CONTACTS

Wire Size (AWG)	Contact Engaging End Size	Contact Crimp Barrel Size	Contact Size	Crimp Tool		
				Basic Unit	Die	Locator
16	8	8	0808	400B	414DA-8N	4046A
				400-B-1	414DA-8N	4046A
14	8	8	0808	400B	414DA-8N	4046A
				400-B-1	414DA-8N	4046A
12	8	8	0808	400B	414DA-8N	4046A
				400-B-1	414DA-8N	4046A
10	8	8	0808	400B	414DA-8N	4046A
				400-B-1	414DA-8N	4046A
				M22520/23-01	WA23-2	WA23-9
				WA23	WA23-2	WA23-9
	4	8	0408	400B	414DA-8N	4112
				M22520/23-01	WA23-2	WA23-9
				WA23	WA23-2	WA23-9
		4	0404	400B	414DA-4N	4112
8	8	8	0808	400B	414DA-8N	4046A
				400-B-1	414DA-8N	4046A
				M22520/23-01	WA23-2	WA23-9
				M22520/23-01	M22520/23-02	M22520/23-09
				WA23	WA23-2	WA23-9
	4	8	0408	400B	414DA-8N	4112
				M22520/23-01	WA23-2	WA23-9
				WA23	WA23-2	WA23-9
		4	0404	400B	414DA-4N	4112
				400-B-1	414DA-4N	4112
6	4	4	0404	400B	414DA-4N	4112
				400-B-1	414DA-4N	4112

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 38 PNEUMATIC INDENTER CRIMP TOOLS FOR SIZE 0808, SIZE 0404, AND SIZE 1/0-1/0 CONTACTS (Continued)

Wire Size (AWG)	Contact Engaging End Size	Contact Crimp Barrel Size	Contact Size	Crimp Tool		
				Basic Unit	Die	Locator
4	4	4	0404	400B	414DA-4N	4112
				400-B-1	414DA-4N	4112
				M22520/23-01	M22520/23-04	M22520/23-11
	1/0	1/0	1/0-1/0	400B	414DA-ON	4066
				400-B-1	414DA-ON	4066
2	1/0	1/0	1/0-1/0	400-B-1	414DA-ON	4066
1/0	1/0	1/0	1/0-1/0	400B	414DA-ON	4066
				400-B-1	414DA-ON	4066
				M22520/23-01	M22520/23-05	M22520/23-13

(1) Prepare the wire and contact:

(a) Select one 10 AWG filler wire to increase the size of the conductor for these contact assemblies:

- A BACC47FW3 contact and a 12 AWG wire
- A size 0808 contact and a 12 AWG wire.

(b) Select one 12 AWG filler wire to increase the size of the conductor for these contact assemblies:

- A BACC47FW3 contact and a 10 AWG wire
- A size 0808 contact and a 10 AWG wire.

Refer to:

- Paragraph 5.A. for wire preparation procedures
- Table 31 for filler wires or adapter sleeves for different wire sizes and contact sizes.

(2) Make a selection of a crimp tool from:

- Table 35 for size 16 and 12 contacts
- Table 36 for size 0404, 0808, and 1/0-1/0 contacts that have an adapter sleeve, or, do not have an adapter sleeve
- Table 37 for BACC47FW3 and size 0808 contacts that do not have an adapter sleeve
- Table 38 for size 0404, 0808, and 1/0-1/0 contacts that do not have an adapter sleeve.

(3) For the assembly of a contact with an adapter sleeve only, put the adapter sleeve in the crimp barrel of the contact.

NOTE: A pneumatic indenter crimp tool cannot be used to assemble a size 8 contact that has an adapter sleeve in the crimp barrel.

(4) For the assembly of a contact with a filler wire only, put the filler wire in the crimp barrel of the contact.

(5) For the assembly of a contact with an adapter sleeve and filler wire:

20-61-19

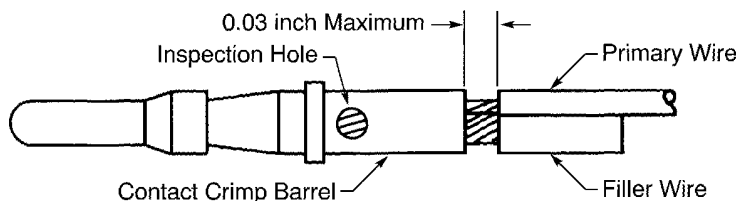
707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- (a) Put the adapter sleeve in the crimp barrel of the contact.
- (b) Put the filler wire in the adapter sleeve.
- (6) Put the conductor in the crimp barrel or in the adapter sleeve in the crimp barrel. Refer to Figure 34.

Make sure that:

- All of the strands of the conductor are in the crimp barrel or in the adapter sleeve
- If a filler wire is specified, all of the strands of the filler wire are in the crimp barrel or in the adapter sleeve
- If an adapter sleeve is not in the crimp barrel, the conductor can be seen in the inspection hole
- If an adapter sleeve is in the crimp barrel, the flange of the adapter sleeve stays against the rear end of the crimp barrel
- The distance from the end of the insulation to the end of the crimp barrel or to the end of the adapter sleeve is not more than 0.03 inch.



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CONTACT ASSEMBLY WITH FILLER WIRE

Figure 34

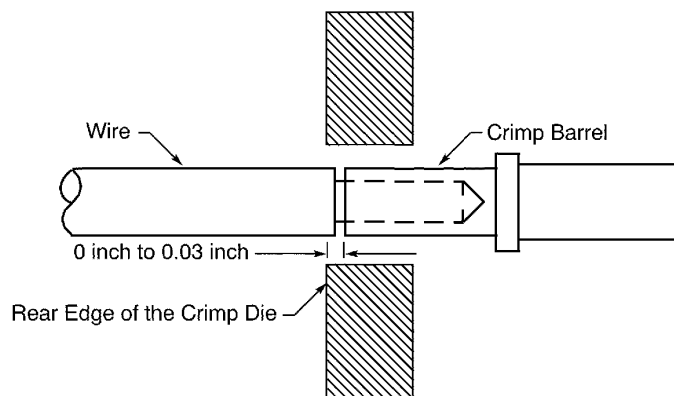
- (7) If the crimp tool is an indenter type crimp tool, crimp the contact.
- NOTE:** A pneumatic indenter crimp tool cannot be used to assemble a size 8 contact that has an adapter sleeve in the crimp barrel.
- (8) If the crimp tool is a hex type crimp tool:
 - (a) Put the contact in the primary crimp die. Refer to Figure 35.

Make sure that:

- The distance from the rear end of the crimp barrel to the rear edge of the die is between 0 inch and 0.03 inch
- If the crimp tool is the 13642 basic unit and the ST2354AB-1 die, the contact is put in Cavity 1.



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



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POSITION OF THE CONTACT AND WIRE IN THE CRIMP TOOL DIE

Figure 35

- (b) Crimp the contact with the primary crimp die.
- (c) Turn the contact 60 degrees on the longitudinal axis of the contact.
- (d) Put the crimp barrel end of the contact in the secondary crimp die. Refer to Figure 35.

Make sure that:

- The distance from the rear end of the crimp barrel to the rear edge of the die is between 0 inch and 0.03 inch
- If the crimp tool is the 13642 basic unit and the ST2354AB-1 die, the contact is put in Cavity 2.

- (e) Crimp the contact with the secondary crimp die.
- (f) If the contact crimp barrel has flash, do Step (c) through Step (e) again.

NOTE: Copper that can be seen on the edges of the crimp barrel is permitted.

- (9) Examine the contact.

Make sure that:

- All of the strands of the conductor are in the crimp barrel or in the adapter sleeve
- If a filler wire is specified, all of the strands of the filler wire are in the crimp barrel or in the adapter sleeve
- If an adapter sleeve is not in the crimp barrel, the conductor can be seen in the inspection hole
- If an adapter sleeve is in the crimp barrel, the flange of the adapter sleeve stays against the rear end of the crimp barrel

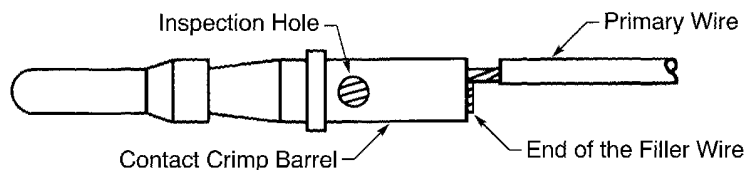
20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- The distance from the end of the insulation to the end of the crimp barrel or to the end of the adapter sleeve is not more than 0.03 inch.
- (10) If the contact has a filler wire, remove the unwanted length of the filler wire as close as possible to the end of the crimp barrel. Refer to Figure 36.



2447523 S00061546271_V1

REMOVAL OF THE UNWANTED LENGTH OF THE FILLER WIRE

Figure 36

CAUTION: DO NOT CAUSE DAMAGE TO THE STRANDS OF THE CONDUCTOR. DAMAGE TO THE CONDUCTOR CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

F. Contact Insertion

NOTE: If a backshell is specified, the necessary backshell components must be installed on the wire harness before the insertion of the contacts into the connector. Refer to Paragraph 5.H.

Table 39
CONTACT INSERTION TOOLS

Contact Size	Insertion Tool
1616	ATF 1101
	CIT-16-2
	M81969/17-01
	M81969/17-04
	294-192
1212	ATF 1144
	CIT-12
	M81969/17-02
	M81969/17-05
	294-229
0808	ATF 1260
	M81969/17-06
	294-237

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 39 CONTACT INSERTION TOOLS (Continued)

Contact Size	Insertion Tool
0408	ATF 1260
	M81969/17-06
	294-237
0404	ATF 1378
	M81969/17-07
	294-236
1/0-1/0	ATF 1558
	M81969/17-08
	294-235

- (1) Make a selection of an insertion tool from Table 39.
- (2) Put the contact assembly in the insertion tool.
Make sure that the end of the tool is against the rear shoulder of the contact.
- (3) Axially align the insertion tool and the contact cavity at the rear of the connector.
- (4) Carefully push the insertion tool and the contact assembly in the contact cavity until it stops.
Make sure that the insertion tool stays axially aligned with the contact cavity.

CAUTION: DO NOT TURN THE INSERTION TOOL IN THE CONTACT CAVITY. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

- (5) Carefully pull the tool out of the contact cavity.
- (6) Lightly pull the wire to make sure that the contact is locked in the contact cavity.

CAUTION: DO NOT PULL THE WIRE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE WIRE.

- (7) If the contact is not locked in the contact cavity:
 - (a) Pull the contact assembly out of the contact cavity.
 - (b) Do Step 5.F.(2) through Step 5.F.(6) again.

20-61-19



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

G. Seal of an Empty Contact Cavity

All empty contact cavities must be sealed. Refer to Subject 20-60-08.

If a stub wire is specified, the minimum length of the stub wire is 12.0 inches.

H. Backshell and Strain Relief Assembly

If the connector and the applicable conditions are not specified in Table 40, refer to Paragraph 6.C. for the standard backshell assembly configuration.

Table 40
SELECTION OF A SPECIAL BACKSHELL OR STRAIN RELIEF ASSEMBLY PROCEDURE

Connector	Applicable Conditions			Assembly Procedure
	Insert Configuration	Backshell	Contact Assemblies	
280W0002-2	24-22	BACC10HV24 and Glenair 687-522 Wire Separator	Four AWG 8 or 12 Wires	Paragraph 6.K.
CA66()	28-22	Supplied with the connector	Three AWG 4 Wires	Paragraph 6.D.
	36-5	Glenair G6652	AWG 1/0 Wire	Paragraph 6.H.
		Glenair G63292	All	Paragraph 6.G.
		Supplied with the connector	AWG 2 Wire	Paragraph 6.E.
		None	AWG 2 Wire	Paragraph 7.C.
		Supplied with the connector	AWG 4 Wire	Paragraph 6.F.
CA66279-102	28-22	BACC10KA28 with Sunbank S3972-4 Extension Adapter	All	Paragraph 6.I.
		BACC10KB28 with Sunbank S3972-4 Extension Adapter	All	Paragraph 6.I.
		BACC10KC28 with Sunbank S3972-4 Extension Adapter	All	Paragraph 6.I.
CA80503-14	22-2	ITT Cannon 057-0870-000 supplied with the connector	Three AWG 8 Wires	Paragraph 6.D.
FCA80()	36-5	Glenair G63292	All	Paragraph 6.G.
FR()	All	Sunbank S1347()	All	Paragraph 6.J.
FV()	All	Sunbank S1347()	All	Paragraph 6.J.
F()340()KE36-5()	36-5	Supplied with the connector	AWG 4 Wire	Paragraph 6.F.
FRF()28-22()	28-22	Supplied with the connector	Three AWG 4 Wires	Paragraph 6.D.
FRF()36-5()	36-5	Glenair G6652	AWG 1/0 Wire	Paragraph 6.H.
		Glenair G63292	All	Paragraph 6.G.
		Supplied with the connector	AWG 2 Wire	Paragraph 6.E.
FRF()E36-5()	36-5	ITT Cannon 057-0873-000 supplied with the connector	AWG 4 Wire	Paragraph 6.F.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- (1) Make a selection of a backshell assembly procedure from Table 40.

Use these to make the selection:

- The connector
- The insert configuration
- The backshell
- The contact assemblies.

NOTE: Refer to Table 19 for alternative backshell part numbers.

- (2) Assemble the connector and backshell. Refer to the appropriate procedure from Table 40.

6. BACKSHELL ASSEMBLY CONFIGURATIONS

A. Applicable Conditions for Backshell Assembly

Thread lock compound on the threads at the rear of the connector is necessary if all of these conditions occur:

- The backshell does not have a coupling ring
- No shield ground wire terminal lugs must be attached to the cable clamp.

The installation of safety wire on the backshell coupling ring is necessary if one or more of these conditions occur:

- The initial backshell assembly configuration had safety wire on the backshell coupling ring
- The connector is in the engine or APU area and the backshell has a coupling ring that is not self-locking
- The connector is in the engine or APU area and one or more shield ground wire terminal lugs must be attached to the cable clamp.

For the conditions that are applicable for the assembly of the backshell strain relief, refer to Paragraph 7.A.

B. Backshell Installation Torque

Table 41
BACKSHELL INSTALLATION TORQUE VALUES

Connector Shell Size	Torque (inch-pounds)	
	Target	Tolerance
10SL	32.5	±2.5
12S	37.5	±2.5
14S	37.5	±2.5
16	37.5	±2.5
16S	37.5	±2.5
18	37.5	±2.5
20	77.5	±2.5
22	77.5	±2.5
24	77.5	±2.5

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 41 BACKSHELL INSTALLATION TORQUE VALUES (Continued)

Connector Shell Size	Torque (inch-pounds)	
	Target	Tolerance
28	117.5	±2.5
32	117.5	±2.5
36	117.5	±2.5

C. Standard Backshell Assembly Configuration

For the conditions that are applicable for this procedure, refer to Paragraph 5.H.

Table 42
NECESSARY MATERIALS

Material	Part Number	Description	Supplier
Thread Lock Compound	222	-	Locktite
	242	-	Locktite

Table 43
NECESSARY TOOLS

Tool	Description
Torque	Torque tool with strap wrench

- (1) Put the necessary backshell components on the wire harness.
Make sure that the strain relief end of the backshell is pointed away from the end of the wire harness.
- (2) Install the contacts in the connector. Refer to Paragraph 5.F.
- (3) If thread lock compound is necessary, put one or two drops of thread lock compound on the threads at the rear of the connector.

Refer to:

- Paragraph 6.A. for the applicable conditions that make thread lock compound necessary
- Table 42 for the selection of a thread lock compound.

CAUTION: THREAD LOCK COMPOUND MUST NOT BE APPLIED ON THE COUPLING MECHANISM OF THE CONNECTOR. UNSATISFACTORY OPERATION OF THE COUPLING MECHANISM CAN OCCUR.

- (4) Engage the threads of the backshell and the connector.
- (5) Torque the backshell. Refer Table 41.
- (6) If safety wire is necessary, install the safety wire on the backshell coupling ring.

Refer to:

- Paragraph 6.A. for the applicable conditions that make the installation of safety wire on the backshell coupling ring necessary
- Subject 20-60-07 for the procedure to install the safety wire.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

(7) Assemble the strain relief. Refer to Paragraph 7.B.

D. Backshell Assembly Configuration for a 28-22 Insert Configuration and Three AWG 4 or AWG 8 Wires

For the conditions that are applicable for this procedure, refer to Paragraph 5.H.

Table 44
NECESSARY MATERIALS

Material	Part Number	Description	Supplier
Tape	P-212HD	1.0 inch width	Permacel
	P-421	1.0 inch width	Permacel
	P-440	1.0 inch width	Permacel
Thread Lock Compound	222	-	Locktite
	242	-	Locktite

Table 45
NECESSARY LAYERS OF TAPE

Tape	Number of Layers
P-212HD	8
P-421	8
P-440	14

Table 46
NECESSARY TOOLS

Tool	Description
Torque	Torque tool with strap wrench

(1) Make a selection of a tape from Table 44.

(2) Make a selection of a Nylon wire separator for 3 wires from Table 23.

NOTE: Two separators are necessary.

(3) If a ferrule is necessary and is not supplied with the connector, make a selection of a ferrule from Table 22.

NOTE: A ferrule is necessary for the assembly of these connectors with a Sunbank S1347 backshell:

- A CA66() connector
- A CA80() connector
- An FR() connector
- An FV() connector.

(4) Put the necessary backshell components on the wire harness.

Make sure that:

- The backshell is put on the wire harness before the ferrule is put on

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- The strain relief end of the backshell is pointed away from the end of the wire harness
 - The larger end of the ferrule is pointed forward to the end of the wire harness.
- (5) Install the contacts in the connector. Refer to Paragraph 5.F.
- (6) If a ferrule is on the harness, put the ferrule on the rear grommet of the connector.
- NOTE:** If it is necessary, a small amount of isopropyl alcohol can be put on the grommet to make it easier to put the ferrule on the grommet.
- (7) If thread lock compound is necessary, put one or two drops of thread lock compound on the threads at the rear of the connector.

Refer to:

- Paragraph 6.A. for the applicable conditions that make thread lock compound necessary
- Table 44 for the selection of a thread lock compound.

CAUTION: THREAD LOCK COMPOUND MUST NOT BE APPLIED ON THE COUPLING MECHANISM OF THE CONNECTOR. UNSATISFACTORY OPERATION OF THE COUPLING MECHANISM CAN OCCUR.

- (8) Engage the threads of the backshell and the connector.
- (9) Torque the backshell. Refer to Table 41.
- (10) If safety wire is necessary, install the safety wire on the backshell coupling ring.

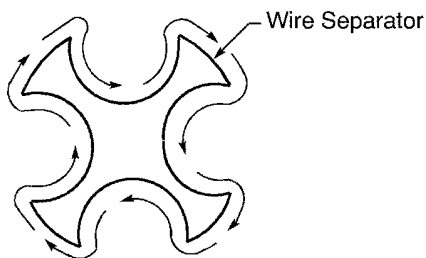
Refer to:

- Paragraph 6.A. for the applicable conditions that make the installation of safety wire on the backshell coupling ring necessary
 - Subject 20-60-07 for the procedure to install the safety wire.
- (11) Carefully put tape around the wire separator.

Make sure that the layers of tape follow the shape of the wire separator.

Refer to:

- Table 45 for the necessary layers of tape
- Figure 37.



2447551 S00061546632_V1

CONFIGURATION OF THE TAPE ON THE WIRE SEPARATOR
Figure 37

- (12) Repeat Step 6.D.(11) for the other wire separator.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- (13) Put the wire separator between the wires and against the connector grommet.
- (14) Put the other wire separator between the wires at the location where the saddle bars of the cable clamp must be installed.
- (15) Wrap 2 to 3 layers of the tape around the wire harness and the wire separator at the location where the saddle bars of the cable clamp must be installed.
- (16) Assemble the strain relief. Refer to Paragraph 7.B.

E. Backshell Assembly Configuration for a 36-5 Insert Configuration and AWG 2 Wire

For the conditions that are applicable for this procedure, refer to Paragraph 5.H.

Table 47
NECESSARY MATERIALS

Material	Specification or Part Number	Description	Supplier
Rod, Seal	AMS 3656	PTFE, 0.5 inch diameter	A Qualified Source

Table 48
NECESSARY TOOLS

Tool	Description
Torque	Torque tool with strap wrench

- (1) Make a selection of a Teflon wire separator for 4 wires from Table 23.
- (2) Make a selection of a seal rod from Table 47.
- (3) If a ferrule is necessary and is not supplied with the connector, make a selection of a ferrule from Table 22.

NOTE: A ferrule is necessary for the assembly of these connectors with a Sunbank S1347 backshell:

- A CA66() connector
- A CA80() connector
- An FR() connector
- An FV() connector.

- (4) Put the necessary backshell components on the wire harness.

Make sure that:

- The backshell is put on the wire harness before the ferrule is put on
- The strain relief end of the backshell is pointed away from the end of the wire harness
- The larger end of the ferrule is pointed forward to the end of the wire harness.

- (5) Install the contacts in the connector. Refer to Paragraph 5.F.
- (6) Install an unwired contact into each empty contact cavity.
- (7) Install a 2.25 inch \pm 0.10 inch length of seal rod in each contact cavity that has an unwired contact.

Make sure that:

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- The forward end of the seal rod is against the rear end of the crimp barrel in the contact cavity
 - The ends of the rod do not have sharp edges.
- (8) If a ferrule is on the harness, put the ferrule on the rear grommet of the connector.
- NOTE:** If it is necessary, a small amount of isopropyl alcohol can be put on the grommet to make it easier to put the ferrule on the grommet.
- (9) If thread lock compound is necessary, put one or two drops of thread lock compound on the threads at the rear of the connector.

Refer to:

- Paragraph 6.A. for the applicable conditions that make thread lock compound necessary
- Table 42 for the selection of a thread lock compound.

CAUTION: THREAD LOCK COMPOUND MUST NOT BE APPLIED ON THE COUPLING MECHANISM OF THE CONNECTOR. UNSATISFACTORY OPERATION OF THE COUPLING MECHANISM CAN OCCUR.

- (10) Engage the threads of the backshell and the connector.
- (11) Torque the backshell. Refer to Table 41.
- (12) If safety wire is necessary, install the safety wire on the backshell coupling ring.

Refer to:

- Paragraph 6.A. for the applicable conditions that make the installation of safety wire on the backshell coupling ring necessary
- Subject 20-60-07 for the procedure to install the safety wire.

- (13) Put the wire separator between the wires and the seal rod.

Make sure that:

- The larger end of the wire separator is pointed forward to the connector grommet
- The smaller end of the wire separator is 0.25 inch maximum farther than the rear end of the cable clamp.

- (14) Assemble the strain relief. Refer to Paragraph 7.B.

F. Backshell Assembly Configuration for a 36-5 Insert Configuration and AWG 4 Wire

For the conditions that are applicable for this procedure, refer to Paragraph 5.H.

Table 49
NECESSARY MATERIALS

Material	Specification or Part Number	Description	Supplier
Rod, Seal	AMS 3656	PTFE, 3/8 inch diameter	A Qualified Source
		PTFE, 1/2 inch diameter	A Qualified Source
Tape	P-421	PTFE, 1.0 inch width	Permacel
	P-440	PTFE, 1.0 inch width	Permacel

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 49 NECESSARY MATERIALS (Continued)

Material	Specification or Part Number	Description	Supplier
Thread Lock Compound	222	-	Locktite
	242	-	Locktite

Table 50
NECESSARY TOOLS

Tool	Description
Torque	Torque tool with strap wrench

- (1) Make a selection of:
 - A Teflon wire separator for 4 wires from Table 23
 - A 3/8 inch diameter seal rod from Table 49
 - A 1/2 inch diameter seal rod from Table 49
 - A tape from Table 49
 - Two spacers from Table 26.
- (2) If a ferrule is necessary and is not supplied with the connector, make a selection of a ferrule from Table 22.

NOTE: A ferrule is necessary for the assembly of these connectors with a Sunbank S1347 backshell:

- A CA66() connector
 - A CA80() connector
 - An FR() connector
 - An FV() connector.
- (3) Put the necessary backshell components on the wire harness.
Make sure that:
 - The backshell is put on the wire harness before the ferrule is put on
 - The strain relief end of the backshell is pointed away from the end of the wire harness
 - The larger end of the ferrule is pointed forward to the end of the wire harness.
 - (4) Install the contacts in the connector. Refer to Paragraph 5.F.
 - (5) Install an unwired contact into each empty contact cavity.
 - (6) Install a 1.0 inch \pm 0.1 inch length of 1/2 inch diameter seal rod in each contact cavity that has an unwired contact.
Make sure that:
 - The forward end of the seal rod is against the rear end of the crimp barrel in the contact cavity
 - The ends of the rod do not have sharp edges.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- (7) If a ferrule is on the harness, put the ferrule on the rear grommet of the connector.
- NOTE:** A small amount of isopropyl alcohol can be put on the grommet to make it easier to put the ferrule on the grommet.
- (8) Put the wire separator between the wires and seal rod against the connector grommet.
Make sure that the larger end of the wire separator is pointed forward to the connector grommet
- (9) Put a 1.0 inch \pm 0.1 inch length of 3/8 inch diameter seal rod in the empty wire position in the wire separator.
Make sure that the ends of the rod do not have sharp edges.
- (10) Put the saddle bars on the backshell.
 - Make sure that the smaller end of the wire separator is 0.25 inch maximum farther than the rear edge of the saddle bars.
- (11) Align the center of the seal rod with the center of the saddle bars.
- (12) Remove the saddle bars.
Make sure that the wire separator and the seal rod stay in position.
- (13) Wrap the tape around the wires, the seal rod, and the wire separator to increase the diameter of the wire harness.
Make sure that:
 - The center of the layers of tape is where the saddle bars must be
 - The layers of tape make a 100 percent overlap.
- (14) If thread lock compound is necessary, put one or two drops of thread lock compound on the threads at the rear of the connector.
Refer to:
 - Paragraph 6.A. for the applicable conditions that make thread lock compound necessary
 - Table 49 for the selection of a thread lock compound.
- CAUTION:** THREAD LOCK COMPOUND MUST NOT BE APPLIED ON THE COUPLING MECHANISM OF THE CONNECTOR. UNSATISFACTORY OPERATION OF THE COUPLING MECHANISM CAN OCCUR.
- (15) Engage the threads of the backshell and the connector.
- (16) Torque the backshell. Refer to Table 41.
- (17) If safety wire is necessary, install the safety wire on the backshell coupling ring.
Refer to:
 - Paragraph 6.A. for the applicable conditions that make the installation of safety wire on the backshell coupling ring necessary
 - Subject 20-60-07 for the procedure to install the safety wire.
- (18) Discard the two lockwashers that are supplied with the backshell.
- (19) Put a spacer on each cable clamp screw.
- (20) Put the saddle bars in position.
- (21) Engage the threads of each cable clamp screw and the applicable screw hole.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- (22) Tighten the screws until the ends of the saddle bars are against the legs of the backshell.
Make sure that:
- The saddle bars do not crush or pinch the wire harness
 - The wire harness is tight in the cable clamp
 - The cable clamp screws are tight.
- (23) If the clamp does not hold the wire harness tightly, increase the diameter of the wire harness with filler material. Refer to Subject 20-60-09.
If the filler material is a Teflon rod, make sure that the ends of the rod do not have sharp edges.
- (a) Remove the saddle bars.
- (b) Wind 2 or 3 layers tape around the wire harness where the saddle bars must be.
Make sure that:
- The center of the layers of tape is where the saddle bars must be
 - The layers of tape make a 100 percent overlap.
- (24) Engage the threads of the screws and the holes in the saddle bars again.
- (25) Tighten the screws again.
Make sure that:
- The saddle bars do not crush or pinch the wire harness
 - The wire harness is tight in the cable clamp
 - The cable clamp screws are tight.
- (26) If the ends of the saddle bars are not against the legs of the backshell or the wire harness is too tight in the clamp:
- (a) Make a selection of a spacer from Table 26.
NOTE: Two spacers are necessary.
Make sure that the spacer is the smallest that can make a tight fit of the wire harness in the cable clamp.
- (b) Remove the cable clamp screws.
- (c) Put one spacer on each screw between the saddle bar and the leg of the backshell.
- (d) Engage the threads of the screws and the holes in the saddle bars again.
- (e) Tighten the screws again.
Make sure that:
- The saddle bars do not crush or pinch the wire harness
 - The wire harness is tight in the cable clamp
 - The cable clamp screws are tight.
- (27) Do Step 6.F.(23) or Step 6.F.(26) again until the fit of the wire harness in the cable clamp is correct and the cable clamp screws are tight.
- (28) If safety wire is necessary, install the safety wire on each cable clamp screw.
Refer to:

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- Paragraph 7.A. for the applicable conditions that make the installation of safety wire on the cable clamp screws necessary
- Subject 20-60-07 for the procedure to install the safety wire.

Make sure that each safety wire goes through the hole in:

- The screw head
- The adjacent leg of the backshell.

G. Backshell Assembly Configuration for a 36-5 Insert Configuration and a Glenair G63292 Backshell

For the conditions that are applicable for this procedure, refer to Paragraph 5.H.

Table 51
NECESSARY MATERIALS

Material	Specification or Part Number	Description	Supplier
Tape	Scotch 70	1.25 inches width	3M
Thread Lock Compound	222	-	Loctite
	242	-	Loctite

Table 52
NECESSARY TOOLS

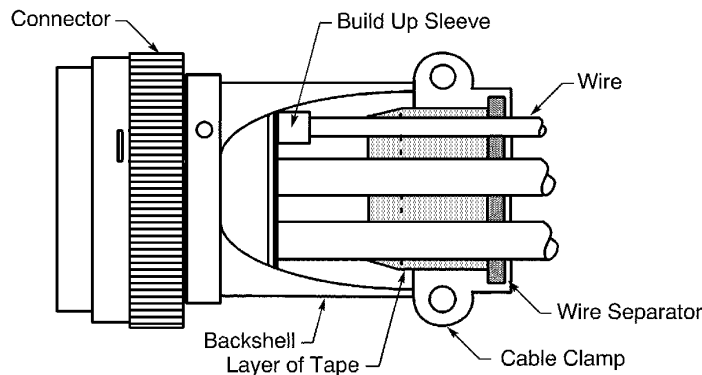
Tool	Description
Torque	Torque tool with strap wrench

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



2447513 S00061546633_V1

BACKSHELL ASSEMBLY

Figure 38

- (1) Make a selection of:
 - A tape from Table 51
 - A thread lock compound from Table 51.
- (2) Put the necessary backshell components on the wire harness.

Make sure that the strain relief end of the backshell is pointed away from the end of the wire harness.
- (3) Install the contacts in the connector. Refer to Paragraph 5.F.
- (4) Carefully put tape around the wire separator that is supplied with the backshell. Refer to Figure 39.

Make sure that:

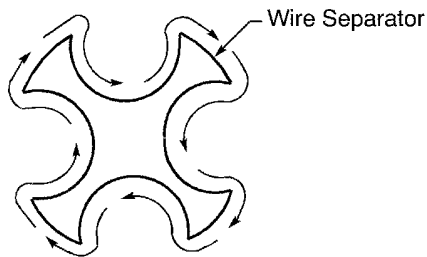
- The layer of tape is located on the smaller diameter end of the wire separator
- The layer of tape follows the shape of the wire separator.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



2447551 S00061546632_V1

CONFIGURATION OF THE TAPE ON THE WIRE SEPARATOR

Figure 39

- (5) Put the wire separator between the wires.
Make sure that the larger diameter end of the wire separator is pointed away from the connector.
- (6) Put one or two drops of thread lock compound on the rear threads of the connector.

CAUTION: THREAD LOCK COMPOUND MUST NOT BE APPLIED ON THE COUPLING MECHANISM OF THE CONNECTOR. UNSATISFACTORY OPERATION OF THE COUPLING MECHANISM CAN OCCUR.

- (7) Engage the threads of the backshell and the connector.
- (8) Torque the backshell. Refer to Table 41.
- (9) Put a lockwasher on each cable clamp screw.
- (10) Put the saddle bars in position.
Make sure that the larger end of the wire separator is in the groove inside the end of the cable clamp. Refer to Figure 38.
- (11) Engage the threads of each cable clamp screw and the applicable screw hole.
- (12) Tighten the cable clamp screws.
- (13) If safety wire is necessary, install the safety wire on each cable clamp screw.

Refer to:

- Paragraph 7.A. for the applicable conditions that make the installation of safety wire on the cable clamp screws necessary
- Subject 20-60-07 for the procedure to install the safety wire.

Make sure that each safety wire goes through the hole in:

- The screw head
- The adjacent leg of the backshell.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

H. Backshell Assembly Configuration for AWG 1/0 Wire and a Glenair G6652 Backshell

For the conditions that are applicable for this procedure, refer to Paragraph 5.H.

Table 53
NECESSARY MATERIALS

Material	Specification or Part Number	Description	Supplier
Rod, Seal	AMS 3656	PTFE, 3/8 inch diameter	A Qualified Source
Tape	P-421	PTFE, 1.0 inch width	Permacel
	P-440	PTFE, 1.0 inch width	Permacel
Thread Lock Compound	222	-	Locktite
	242	-	Locktite

Table 54
NECESSARY TOOLS

Tool	Description
Torque	Torque tool with strap wrench

- (1) Make a selection of:
 - A thread lock compound from Table 53
 - A 3/8 inch diameter seal rod from Table 53
 - A tape from Table 53.
- (2) Put the necessary backshell components on the wire harness.
Make sure that the strain relief end of the backshell is pointed away from the end of the wire harness.
- (3) Install the contacts in the connector. Refer to Paragraph 5.F.
- (4) Put the wire separator between the wires.
Make sure that the larger end of the wire separator is pointed forward to the connector.
- (5) Push the wire separator forward until it is against the grommet.
- (6) Put a 1.0 inch \pm 0.10 inch length of seal rod between all the wires at the center of the rear end of the wire separator.
Make sure that the ends of the rod do not have sharp edges.
- (7) Push the rod forward until the end is against the center of the rear end of the wire separator.
- (8) Wrap 8 layers of tape around the wire harness, the wire separator, and the rod.
Make sure that:
 - The center of the layers of tape is aligned with the rear edge of the wire separator
 - The layers of tape make a 100 percent overlap.
- (9) Put one or two drops of thread lock compound on the threads at the rear of the connector.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

CAUTION: THREAD LOCK COMPOUND MUST NOT BE APPLIED ON THE COUPLING MECHANISM OF THE CONNECTOR. UNSATISFACTORY OPERATION OF THE COUPLING MECHANISM CAN OCCUR.

- (10) Engage the threads of the backshell and the connector.
- (11) Torque the backshell. Refer to Table 41.
- (12) Assemble the strain relief. Refer to Paragraph 7.B.

I. Backshell Assembly Configuration for a Sunbank S3972-4 Extension Adapter and a BACC10K() Backshell

For the conditions that are applicable for this procedure, refer to Paragraph 5.H.

Table 55
NECESSARY MATERIALS

Material	Part Number	Description	Supplier
Thread Lock Compound	222	-	Locktite
	242	-	Locktite

Table 56
NECESSARY TOOLS

Tool	Description
Torque	Torque tool with strap wrench

- (1) Make a selection of a thread lock compound from Table 55.
- (2) Put the necessary backshell components on the wire harness.
Make sure that:
 - The backshell is put on the wire harness before the extension adapter is put on
 - The strain relief end of the backshell is pointed away from the end of the wire harness
 - The end of the extension adapter with external threads is pointed away from the end of the wire harness.
- (3) Install the contacts in the connector. Refer to Paragraph 5.F.
- (4) Put one drop of thread lock compound on the threads at the rear of the connector on one side of the connector.

CAUTION: THREAD LOCK COMPOUND MUST NOT BE APPLIED ON THE COUPLING MECHANISM OF THE CONNECTOR. UNSATISFACTORY OPERATION OF THE COUPLING MECHANISM CAN OCCUR.

- (5) Put one drop of thread lock compound on the threads at the rear of the connector on the other side of the connector.

CAUTION: THREAD LOCK COMPOUND MUST NOT BE APPLIED ON THE COUPLING MECHANISM OF THE CONNECTOR. UNSATISFACTORY OPERATION OF THE COUPLING MECHANISM CAN OCCUR.

- (6) Engage the threads of the adapter and the connector.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

CAUTION: THREAD LOCK COMPOUND MUST NOT BE APPLIED ON THE COUPLING MECHANISM OF THE CONNECTOR. UNSATISFACTORY OPERATION OF THE COUPLING MECHANISM CAN OCCUR.

- (7) Torque the adapter 190 inch-pounds \pm 10 inch-pounds.
Make sure that the forward end of the adapter is not against the coupling ring of the connector.
- (8) Engage the threads of the backshell coupling ring and the adapter.
- (9) Torque the backshell coupling ring. Refer to Table 41.
- (10) If safety wire is necessary, install the safety wire on the backshell coupling ring.
Refer to:
 - Paragraph 6.A. for the applicable conditions that make the installation of safety wire on the backshell coupling ring necessary
 - Subject 20-60-07 for the procedure to install the safety wire.
- (11) Assemble the strain relief. Refer to Paragraph 7.B.

J. Backshell Assembly Configuration for a Sunbank S1347 90 Degree Backshell

For the conditions that are applicable for this procedure, refer to Paragraph 5.H.

Table 57
NECESSARY TOOLS

Tool	Description
Torque	Torque tool with strap wrench

- (1) If a ferrule is not supplied with the connector, make a selection of a ferrule from Table 22.
- (2) Put the necessary backshell components on the wire harness.
Make sure that:
 - The backshell is put on the wire harness before the ferrule is put on
 - The strain relief end of the backshell is pointed away from the end of the wire harness
 - The larger end of the ferrule is pointed forward to the end of the wire harness.
- (3) Install the contacts in the connector. Refer to Paragraph 5.F.
- (4) Put the ferrule on the rear grommet of the connector.
NOTE: A small amount of isopropyl alcohol can be put on the grommet to make it easier to put the ferrule on the grommet.
- (5) Engage the threads of the backshell coupling ring and the connector.
- (6) Put the backshell in the correct clock position.
- (7) Torque the backshell coupling ring. Refer to Table 41.
- (8) Tighten the three backshell coupling ring set screws.
- (9) If safety wire is necessary, install the safety wire on the backshell coupling ring.
Refer to:
 - Paragraph 6.A. for the applicable conditions that make the installation of safety wire on the backshell coupling ring necessary

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- Subject 20-60-07 for the procedure to install the safety wire.

(10) Assemble the strain relief. Refer to Paragraph 7.B.

K. Backshell Assembly Configuration for the 280W0002-2 Connector

For the conditions that are applicable for this procedure, refer to Paragraph 5.H.

Table 58
BACKSHELL COMPONENTS

Part Number	Description	Supplier
687-522	Wire Separator	Glenair
BACC10HV24	Backshell	QPL

Table 59
NECESSARY MATERIALS

Material	Description	Specification or Part Number	Supplier
Tape	0.45 inch \pm 0.05 inch wide	A-A-59163	QPL
		Scotch 70	3M
	1.0 inch wide	P-421	Permacel
	1.0 inch wide	A-A-59474T1C1	QPL
Thread Lock Compound	-	081	Loctite
		242	Loctite
		83	Loctite

Table 60
NECESSARY TOOLS

Tool	Supplier
1/4 inch drive torque tool	An available source
3/8 inch drive torque tool	An available source
Strap Wrench	An available source

(1) Make a selection of these components from Table 58:

- A backshell
- A wire separator.

(2) Make a selection of these materials from Table 59:

- A thread lock compound
- A 1.0 inch wide tape
- A 0.45 inch wide tape.

NOTE: An equivalent tape is a satisfactory alternative. Refer to Subject 20-00-11.

(3) Make a selection of these tools from Table 60:

- A strap wrench

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- A torque tool from Table 60.

- (4) Put the backshell on the wire harness.

Make sure that the strain relief end of the backshell is pointed away from the end of the wire harness.

- (5) Install the contacts in the connector. Refer to Paragraph 5.F.

- (6) Engage the threads of the backshell coupling ring and the connector.

- (7) Wrap 2 layers minimum of the 1.0 inch wide tape on each AWG 8 wire at the location where the saddle bars of the backshell will be on the wires.

Make sure that:

- The center of the tape and the center of the saddle bars is aligned
- The layers minimum of tape make a 100 percent overlap.

- (8) Wrap 6 to 8 layers of the 1.0 inch wide tape on each AWG 12 wire at the location where the saddle bars of the backshell will be on the wires.

Make sure that:

- The center of the tape and the center of the saddle bars is aligned
- The layers of tape make a 100 percent overlap.

- (9) Put the wire separator between the wires at the rear of the backshell. Refer to Figure 42.

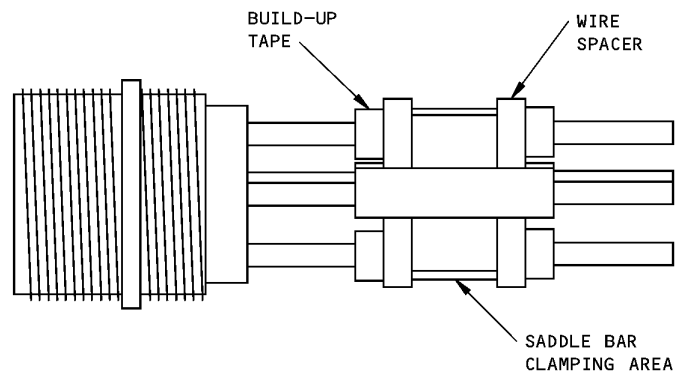
Make sure that:

- All the wires fit snugly into the slots of the wire spacer.
- Enough tape is used so that the outside diameter of the build-up tape on the wires extends outside the diameter of the wire spacer in the saddle bar clamping area.
- Each wire is located in one of the four slots of the wire separator.
- The four wires are parallel with each other
- The wires are aligned with the contact cavities in the connector
- All the wires fit snugly into the slots of the wire spacer.
- Assure that enough tape is used so that the outside diameter of the build-up tape on the wires extends outside the diameter of the wire spacer in saddle bar clamping area. Apply additional tape if necessary.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



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Position of the Wire Spacer
Figure 40

- (10) Wind 2 layers of the 0.45 inch wide tape around the outside of the wire separator.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Make sure that:

- The layers of tape make a 100 percent overlap.
- The center of the tape is approximately centered with the center of wire spacer.

20-61-19

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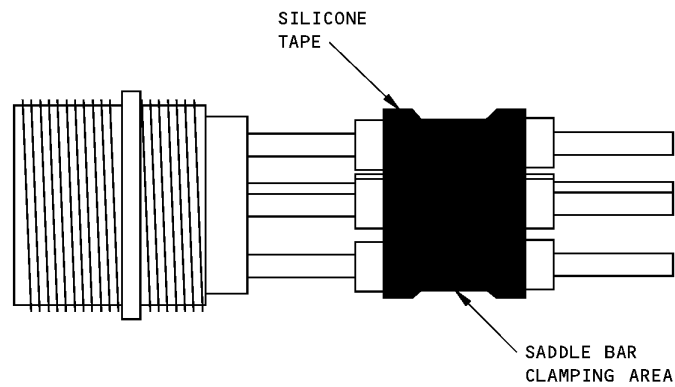
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Page 69
Jun 15/2016



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS



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POSITION of the Silicon Tape
Figure 41

- (11) Move the wire separator to its position between the saddle bars of the backshell.

20-61-19

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Page 70
Jun 15/2016



707, 727-787 STANDARD WIRING PRACTICES MANUAL

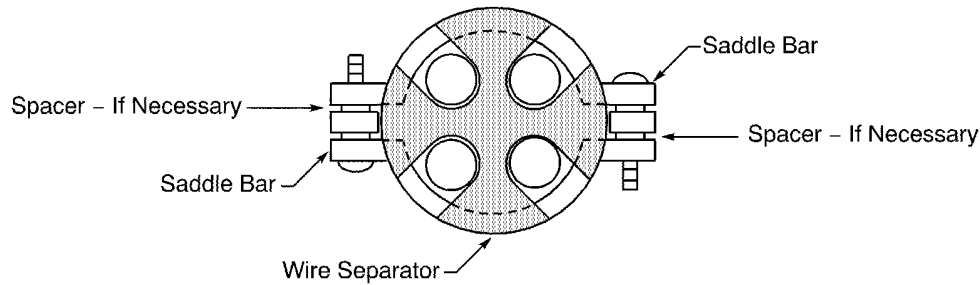
ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Make sure that:

- Each wire is located in one of the four slots of the wire separator
- The wires are aligned with the contact cavities of the connector.

- (12) Align the wire separator and the backshell. Refer to Figure 42.

CAUTION: IF THE BACKSHELL IS NOT ALIGNED AS SHOWN IN FIGURE 41, THE WIRES WILL NOT BE SUPPORTED SUFFICIENTLY.



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POSITION OF THE WIRE SEPARATOR

Figure 42

- (13) Tighten the backshell coupling ring to the connector with the hand.
Make sure that the wire separator and the connector stay aligned. Refer to Figure 42.
- (14) Torque the backshell coupling ring to 105 inch-pounds +5.0 inch pounds, -0.0 inch-pounds.
Make sure that the wire separator and the connector stay aligned. Refer to Figure 42.
- (15) Temporarily tighten the saddle bar screws.
Make sure that:
- The saddle bars hold the wire separator
 - The saddle bars are against the legs of the backshell
 - The saddle bar screws are tight.
- (16) If the saddle bars are not against the legs of the backshell:
- (a) Make a selection of spacers. Refer to Paragraph 2.J.
Make sure that the spacer is the smallest that can make a tight fit of the wire separator in the cable clamp.
 - (b) Remove the saddle bar screws.
 - (c) Put one spacer on each screw between the saddle bar and the leg of the backshell. Refer to Figure 42.
 - (d) Engage the threads of the screws and the holes in the saddle bars again.
 - (e) Tighten the screws again.

Make sure that:

- The saddle bars hold the wire separator

20-61-19



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- The saddle bar screws are tight.
- (17) Loosen the cable clamp screws.
- (18) Apply one drop of thread lock compound on the screw threads and nut threads of the saddle bar screws.
- (19) Tighten the screws again.
- (20) Install safety wire on the connector and backshell assembly. Refer to Subject 20-60-07 for procedure to install the safety wire.

7. STRAIN RELIEF ASSEMBLY CONFIGURATIONS

A. Applicable Conditions for Strain Relief Assembly

Safety wire must be installed on each cable clamp screw if one or more of these conditions occur:

- The initial backshell assembly configuration had safety wire on the cable clamp screws
- The connector is in the engine or APU area and one or more shield ground wire terminal lugs must be attached to the cable clamp.

B. Standard Strain Relief Assembly

Table 61
NECESSARY MATERIALS

Material	Part Number	Description	Supplier
Tape	P-440	PTFE, 1.0 inch width	Permacel

- (1) Make a selection of a tape from Table 61.
- (2) Align the screw holes of a saddle bar of the cable clamp and the screw holes in the legs of the backshell.
- (3) Make a mark on the wire harness at the center of the saddle bar.
- (4) Put the other saddle bar on the wire harness and the backshell.
- (5) Push the saddle bars of the cable clamp together.
- (6) If the clamp does not hold the wire harness tightly, increase the diameter of the wire harness with filler material. Refer to Subject 20-60-09.
If the filler material is a Teflon rod, make sure that the ends of the rod do not have sharp edges.
 - (a) Remove the saddle bars.
 - (b) Wrap 2 or 3 layers tape around the wire harness at the mark on the wire harness.
Make sure that:
 - The center of the layers of tape is aligned with the mark on the wire harness
 - The layers of tape make a 100 percent overlap.
- (7) Put a lockwasher on each cable clamp screw.
- (8) If the wire harness has shield ground wire terminal lugs that must be attached to the cable clamp screws:
 - (a) Put approximately half of the terminal lugs on one cable clamp screw.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

- (b) Put the remaining terminal lugs on the other cable clamp screw.
- (9) Put the saddle bars in position.
- (10) Engage the threads of each cable clamp screw and the applicable screw hole.
- (11) Tighten the screws until the ends of the saddle bars are against the legs of the backshell.
- Make sure that:
- The saddle bars do not crush or pinch the wire harness
 - The wire harness is tight in the cable clamp
 - The cable clamp screws are tight.
- (12) If the ends of the saddle bars are not against the legs of the backshell or the wire harness is too tight in the clamp:
- (a) Make a selection of a spacer from Table 26.
- NOTE:** Two spacers are necessary.
- Make sure that the spacer is the smallest that can make a tight fit of the wire harness in the cable clamp.
- (b) Remove the cable clamp screws.
- (c) Put one spacer on each screw between the saddle bar and the leg of the backshell.
- (d) Engage the threads of the screws and the holes in the saddle bars again.
- (e) Tighten the screws again.
- Make sure that:
- The saddle bars do not crush or pinch the wire harness
 - The wire harness is tight in the cable clamp
 - The cable clamp screws are tight.
- (13) If the fit of the wire harness in the cable clamp is not correct, do Step 7.B.(6) or Step 7.B.(12) again.
- (14) If safety wire is necessary, install safety wire on each cable clamp screw.
- Refer to:
- Paragraph 7.A. for the applicable conditions that make the installation of safety wire on the cable clamp screws necessary
 - Subject 20-60-07 for the procedure to install the safety wire.
- Make sure that each safety wire goes through the hole in:
- The screw head
 - The adjacent leg of the backshell.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

C. Strain Relief Assembly Configuration for a 36-5 Insert Configuration and AWG 2 Wire

For the conditions that are applicable for this procedure, refer to Paragraph 5.H.

Table 62
NECESSARY MATERIALS

Material	Specification or Part Number	Description	Supplier
Rod, Seal	AMS 3656	PTFE, 0.5 inch diameter	A Qualified Source

- (1) Make a selection of:
 - A Teflon wire separator for 4 wires from Table 23
 - A seal rod from Table 62.
- (2) Install the contacts in the connector. Refer to Paragraph 5.F.
- (3) Install an unwired contact into each empty contact cavity.
- (4) Install a 2.25 inch \pm 0.10 inch length of seal rod in each contact cavity that has an unwired contact.

Make sure that:

 - The forward end of the seal rod is against the rear end of the crimp barrel in the contact cavity
 - The ends of the rod do not have sharp edges.
- (5) Put the wire separator between the wires and the seal rod.

Make sure that the larger end of the wire separator is pointed forward to the connector grommet.
- (6) Assemble a lacing tape wire harness tie around the wires and seal rod in the groove of the wire separator. Refer to Subject 20-10-11.

Make sure that the tie material is a Temperature Grade D material.

8. CONNECTOR INSTALLATION

A. Selection of a Connector Installation

If the connector is not specified in Table 63, refer to Subject 20-60-06 for the standard connector installation procedure.

Table 63
SELECTION OF A SPECIAL CONNECTOR INSTALLATION

Connector	Installation Procedure
CA66279-94	Paragraph 8.B.
CA66279-102	Paragraph 8.B.
CA66279-106	Paragraph 8.B.
CA66287-50	Paragraph 8.C.
CA66434-6	Paragraph 8.C.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

B. Installation of the ITT Cannon CA66279-() Plug

For the conditions that are applicable for this procedure, refer to Paragraph 8.A.

Table 64
NECESSARY TOOLS

Tool	Type	Part Number
Adapter, Coupling Ring	Castellated	MT0011
Drive Extension	-	-
Wrench	Torque	-

- (1) Make a selection of these tools from Table 64:
 - A coupling ring adapter
 - A torque wrench
 - A drive extension.
- (2) Put the coupling ring adapter on the drive extension.
- (3) Align the keyway of the plug and the key of the receptacle.
Make sure that the wire harness has sufficient slack for the plug:
 - To move forward
 - To make a satisfactory connection with the receptacle
 - To prevent tension on the contact assemblies in the plug.
- (4) Engage the threads of the plug and the receptacle.
- (5) Fully engage the coupling ring adapter with the coupling ring of the plug.
- (6) Torque the coupling ring 200 inch-pounds to 240 inch-pounds.

C. Installation of the ITT Cannon CA66287-50 and the ITT Cannon CA66434-6 Plug

For the conditions that are applicable for this procedure, refer to Paragraph 8.A.

Table 65
NECESSARY TOOLS

Tool	Type	Part Number
Drive Extension	-	-
Wrench	Torque	-
Wrench	2-9/16 inch Crowfoot Adapter	47482

- (1) Make a selection of these tools from Table 65:
 - A crowfoot wrench
 - A torque wrench
 - A drive extension.
- (2) Put the crowfoot wrench on the drive extension.
- (3) Align the keyway of the plug and the key of the receptacle.

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Make sure that the wire harness has sufficient slack for the plug:

- To move forward
 - To make a satisfactory connection with the receptacle
 - To prevent tension on the contact assemblies in the plug.
- (4) Engage the threads of the plug and the receptacle.
- (5) Engage the flats of the crowfoot wrench with the flats of the coupling nut of the plug.
- (6) Torque the coupling nut 450 inch-pounds to 520 inch-pounds.

9. APPROVED TOOL SUPPLIERS

A. Contact Removal Tools

Table 66
CONTACT REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
294-219	Amphenol
294-230	Amphenol
294-239	Amphenol
294-240	Amphenol
294-241	Amphenol
CET-FRF-0	ITT Cannon
CET-FRF-12	ITT Cannon
CET-FRF-16-22A	ITT Cannon
CET-FRF-4	ITT Cannon
CET-FRF-8	ITT Cannon
DRK559	Daniels
DRK56-0	Daniels
DRK56-12	Daniels
DRK56-16	Daniels
DRK56-4	Daniels
DRK56-8	Daniels
M81969/19-01	QPL
M81969/19-02	QPL
M81969/19-03	QPL
M81969/19-04	QPL
M81969/19-05	QPL
MS90456-0	QPL
MS90456-1	QPL
MS90456-12	QPL

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 66 CONTACT REMOVAL TOOL SUPPLIERS (Continued)

Removal Tool	Supplier
MS90456-16	QPL
MS90456-2	QPL
MS90456-3	QPL
MS90456-4	QPL
MS90456-5	QPL
MS90456-8	QPL

B. Crimp Tools

Table 67
CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
11732	Thomas & Betts
11734	Thomas & Betts
11737	Thomas & Betts
11738	Thomas & Betts
13642	Thomas & Betts
294-126	Amphenol
400B	Pico
400-B-1	Pico
4046A	Pico
4066	Pico
4112	Pico
414DA-4N	Pico
414DA-8N	Pico
414DA-ON	Pico
M22520/1-01	QPL
M22520/1-02	QPL
M22520/23-01	QPL
M22520/23-02	QPL
M22520/23-04	QPL
M22520/23-05	QPL
M22520/23-09	QPL
M22520/23-11	QPL
M22520/23-13	QPL
MS3191-1	QPL
MS3191-12A	QPL

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 67 CRIMP TOOL SUPPLIERS (Continued)

Crimp Tool	Supplier
MS3191-16A	QPL
ST2220-1-2	Boeing
ST2220-1-3	Boeing
ST2220-1-Y	Boeing
ST2354-1	Boeing
ST2354-2	Boeing
ST2354-5	Boeing
ST2354AB-1	Boeing
ST2354B-2	Boeing
TBHD1	Daniels
ST2354B-5	Boeing
WA23	Daniels
WA23-2	Daniels
WA23-9	Daniels
WA27F	Daniels
Y29BH	Burndy

C. Contact Insertion Tools

Table 68
CONTACT INSERTION TOOL SUPPLIERS

Insertion Tool	Supplier
ATF 1101	Astro
ATF 1144	Astro
ATF 1260	Astro
ATF 1378	Astro
ATF 1558	Astro
294-192	Amphenol
294-229	Amphenol
294-235	Amphenol
294-236	Amphenol
294-237	Amphenol
CIT-16-2	ITT Cannon
CIT-12	ITT Cannon
M81969/17-01	QPL
M81969/17-02	QPL
M81969/17-04	QPL

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-5015 FRONT RELEASE CONTACT TYPE CONNECTORS

Table 68 CONTACT INSERTION TOOL SUPPLIERS (Continued)

Insertion Tool	Supplier
M81969/17-05	QPL
M81969/17-06	QPL
M81969/17-07	QPL
M81969/17-08	QPL

D. Special Tools

Table 69
SPECIAL TOOL SUPPLIERS

Tool	Supplier
MT0011	Daniels
47482	Utica

20-61-19



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
1.	<u>PART NUMBERS AND DESCRIPTION</u>	2
	A. Connector Part Numbers	2
	B. Contact Part Numbers	3
2.	<u>INSERT CONFIGURATIONS</u>	4
	A. Bendix PC()CE and PT()CE Series Connectors	4
3.	<u>CONNECTOR DISASSEMBLY</u>	9
	A. Contact Removal	9
4.	<u>CONNECTOR ASSEMBLY</u>	10
	A. Contact Assembly	10
	B. Contact Insertion	11
	C. Installation of Spare Contacts	12
	D. Installation of Seal Plugs or Seal Rods	12
5.	<u>APPROVED TOOL SUPPLIERS</u>	12
	A. Contact Removal Tools	12
	B. Contact Crimp Tools	13
	C. Contact Insertion Tools	13

20-61-20



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS

1. PART NUMBERS AND DESCRIPTION

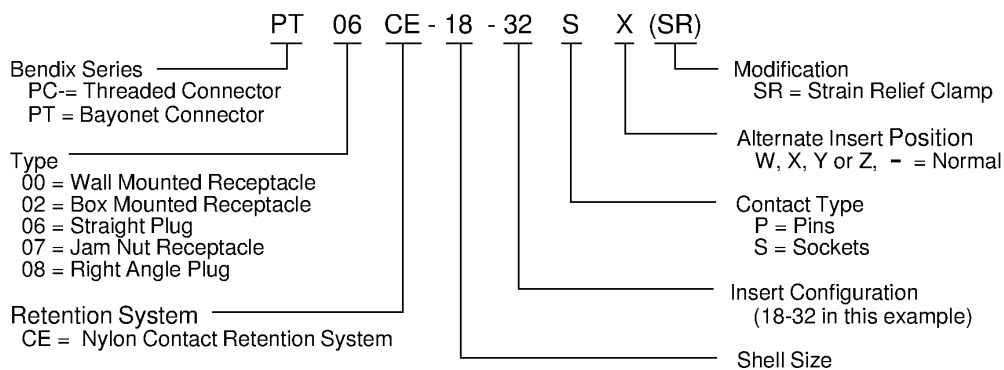
A. Connector Part Numbers

NOTE: This Subject gives maintenance information for Amphenol/Bendix PT()CE, and PC()CE connectors. For maintenance information for Amphenol/Bendix PT()SE, and SP()SE connectors, refer to Subject 20-61-16.

NOTE: The Amphenol/Bendix PT()CE, and PC()CE connectors have a Nylon contact retention system. Refer to Paragraph 3.A. for the contact removal procedure.

Table 1
CONNECTOR PART NUMBERS

Part Number	Coupling Mechanism	Supplier
PC()CE	Threaded Coupling	Amphenol/Bendix
PT()CE	Bayonet Coupling	Amphenol/Bendix



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BENDIX PT()CE AND PC()CE SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 1

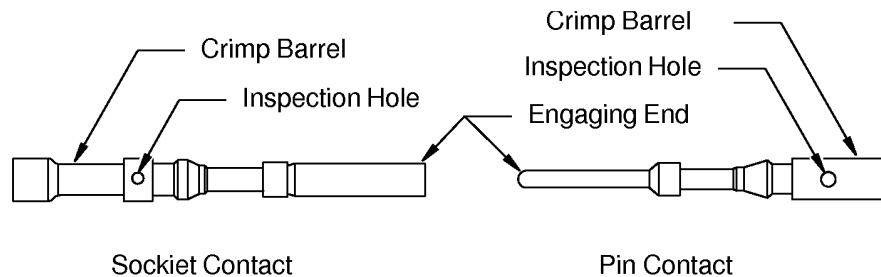
20-61-20



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS

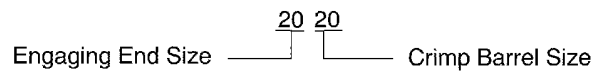
B. Contact Part Numbers



2449043 S00061546637_V1

CRIMP TYPE CONTACTS FOR AMPHENOL-BENDIX PT()CE AND PC()CE CONNECTORS

Figure 2



2446651 S00061545900_V1

EXAMPLE OF A CONTACT SIZE

Figure 3

Table 2
CONTACT PART NUMBERS

Contact Size		Contact Type	Part Number	Supplier
Engaging End	Crimp Barrel			
20	20	Pin	10-189000-20F	Bendix
		Socket	10-189002-20F	Bendix
			10-597817-351	Bendix
20	16	Pin	10-195962-20F	Bendix
		Socket	10-195963-20F	Bendix
16	16	Pin	10-189004-16F	Bendix
		Socket	10-189006-16F	Bendix

20-61-20



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS

2. INSERT CONFIGURATIONS

A. Bendix PC()CE and PT()CE Series Connectors

Table 3
CONNECTOR INSERT CONFIGURATIONS

Insert Configuration	Contact Cavities		Reference
	Count	Size	
8-2	2	20	Figure 4
8-3	3	20	
8-4	4	20	
8-33	3	20	
10-6	6	20	Figure 5
10-98	6	20	
12-3	3	16	Figure 6
12-8	8	20	
12-10	10	20	
14-5	5	16	Figure 7
14-12	8	20	
	4	16	
14-15	14	20	
	1	16	
14-18	18	20	
14-19	19	20	Figure 8
16-8	8	16	
16-23	22	20	
	1	16	
16-26	26	20	
16A99	21	20	
	2	16	Figure 9
18-11	11	16	
18A28	26	20	
	2	16	
18-30	29	20	
	1	16	
18-32	32	20	

20-61-20

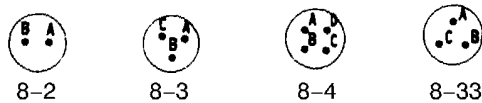


707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS

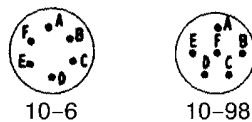
Table 3 CONNECTOR INSERT CONFIGURATIONS (Continued)

Insert Configuration	Contact Cavities		Reference
	Count	Size	
20-16	16	16	Figure 10
20-24	24	20	
20-39	37	20	
	2	16	
20-41	41	20	
22-21	21	16	Figure 11
22-32	32	30	
22-34	34	20	
22-36	36	20	
22-41	27	20	
	14	16	
22-55	55	20	
24A31	31	16	Figure 12
24-61	61	20	



2446163 S00061546638_V1

SIZE 8 INSERT CONFIGURATIONS
Figure 4



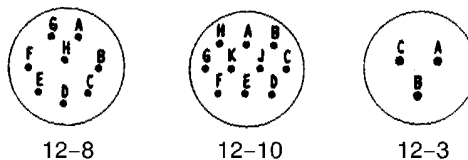
2446164 S00061546639_V1

SIZE 10 INSERT CONFIGURATIONS
Figure 5

20-61-20



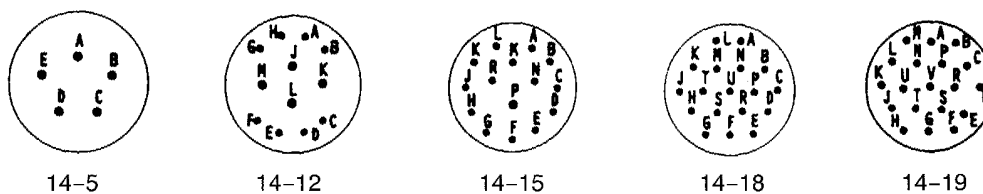
707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS



2446165 S00061546640_V1

SIZE 12 INSERT CONFIGURATIONS

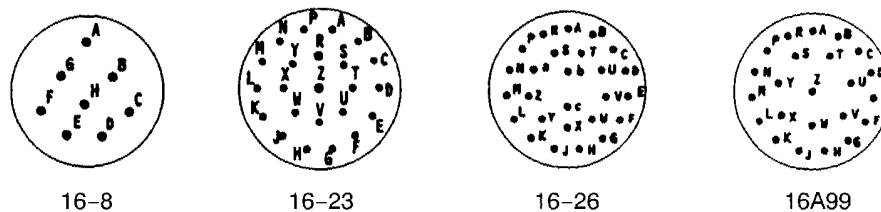
Figure 6



2446166 S00061546641_V1

SIZE 14 INSERT CONFIGURATIONS

Figure 7



2446167 S00061546642_V1

SIZE 16 INSERT CONFIGURATIONS

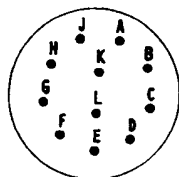
Figure 8

20-61-20

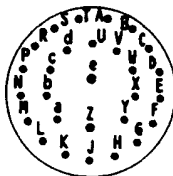


707, 727-787
STANDARD WIRING PRACTICES MANUAL

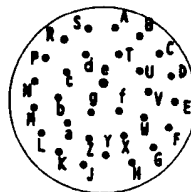
ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS



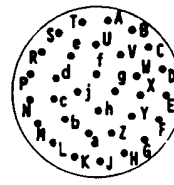
18-11



18A28



18-30

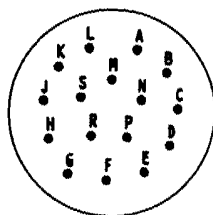


18-32

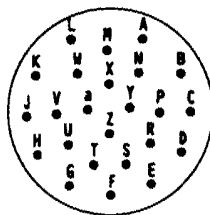
2446168 S00061546643_V1

SIZE 18 INSERT CONFIGURATIONS

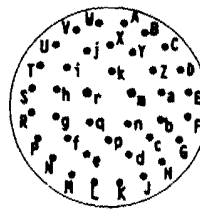
Figure 9



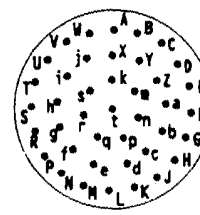
20-16



20-24



20-39



20-41

2446169 S00061546644_V1

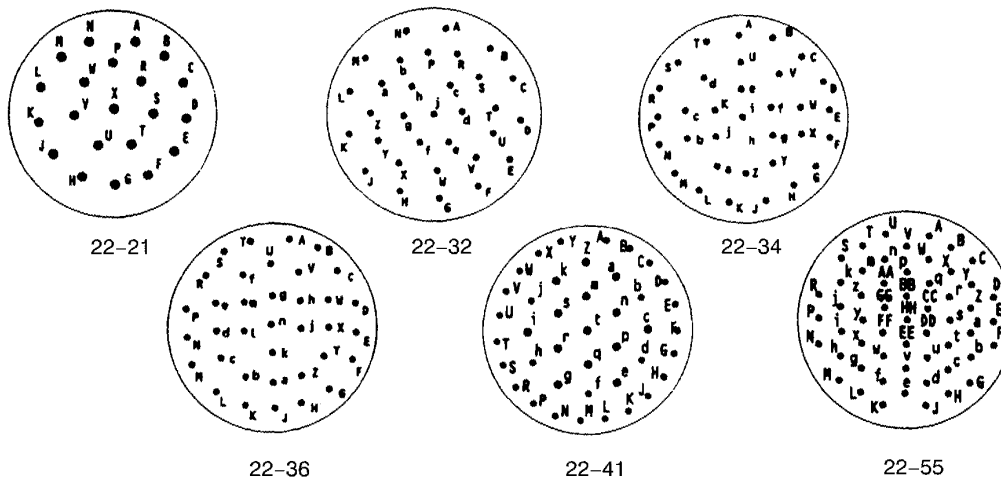
SIZE 20 INSERT CONFIGURATIONS

Figure 10

20-61-20

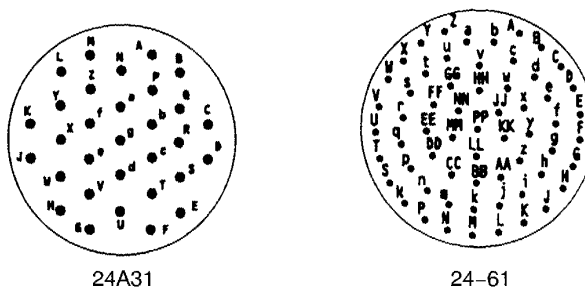


707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS



2446170 S00061546645_V1

SIZE 22 INSERT CONFIGURATIONS
Figure 11



2446171 S00061546646_V1

SIZE 24 INSERT CONFIGURATIONS
Figure 12

20-61-20



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS

3. CONNECTOR DISASSEMBLY

A. **Contact Removal**

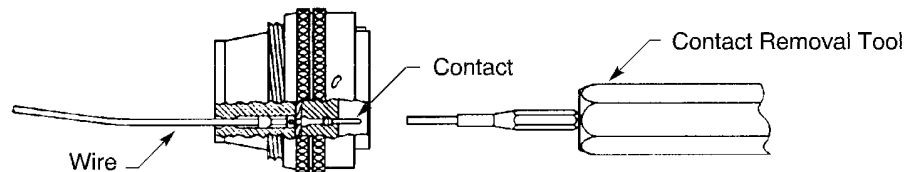
NOTE: The contact removal tools given in Table 4 are available in the Bendix 11-6900 kit.

Table 4
CONTACT REMOVAL TOOLS

Contact		Removal Tool	
Engaging End Size	Type	Handle	Tip
20	Pin	11-6911	11-6783
	Socket		11-6784
16	Pin	11-6911	11-3697
	Socket		11-3698

- (1) Make a selection of a contact removal tool from Table 4.
- (2) From the front of the connector, axially align the tool with the contact. Refer to Figure 13.

CAUTION: DAMAGE TO THE CONNECTOR CAN OCCUR IF THE REMOVAL TOOL IS NOT ALIGNED WITH THE CONTACT CAVITY.



2446172 S00061546648_V1

ALIGNMENT OF THE REMOVAL TOOL
Figure 13

- (3) Carefully push the tip of the tool straight into the contact cavity until the contact:
 - Is released from the connector
 - Starts to come out of the contact cavity from the rear of the connector.

CAUTION: DO NOT PUSH THE TOOL INTO THE CONTACT CAVITY FROM THE REAR OF THE CONNECTOR. DAMAGE TO THE CONNECTOR OR THE TOOL, OR BOTH CAN OCCUR.

- (4) Carefully pull the removal tool from the contact cavity.
- (5) From the rear of the connector, carefully pull the wired contact out of the contact cavity.

20-61-20



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS

4. CONNECTOR ASSEMBLY

A. Contact Assembly

Table 5
CONTACT CRIMP TOOLS

Wire Size (AWG)	Contact Size		Crimp Tool			
	Engaging End	Crimp Barrel	Basic Unit		Locator	
			Part Number	Setting	Part Number	Color
24	20	20	M22520/1-01	2	TH254	Red
			ST2220-1-Y	-	11-7771-5	-
22	20	20	M22520/1-01	3	TH254	Red
			ST2220-1-Y	-	11-7771-5	-
20	20	20	M22520/1-01	4	TH254	Red
			ST2220-1-Y	-	11-7771-5	-
	16	16	M22520/1-01	4	TH254	Blue
			ST2220-1-Y	-	11-7771-6	-
18	20	16	M22520/1-01	5	TH254	Red
			ST2220-1-Y	-	ST2220-1-1	-
	16	16	M22520/1-01	5	TH254	Blue
			ST2220-1-Y	-	11-7771-6	-
16	20	16	M22520/1-01	6	TH254	Red
			ST2220-1-Y	-	ST2220-1-1	-
	16	16	M22520/1-01	6	TH254	Blue
			ST2220-1-Y	-	11-7771-6	-

NOTE: If the size of the wire is smaller than the size of the crimp barrel of the contact, it is necessary to increase the diameter of the conductor. Refer to Subject 20-60-00.

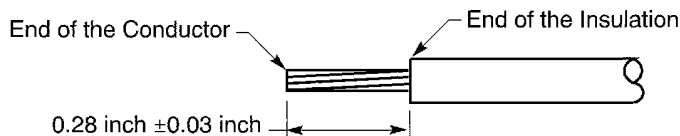
- (1) Remove the necessary length of insulation from the end of the wire so that the distance from the end of the insulation to the end of the conductor is 0.28 inch \pm 0.03 inch.

Refer to Figure 14 and Subject 20-00-15.

20-61-20



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS



2446173 S00061546650_V1

WIRE PREPARATION

Figure 14

- (2) Make a selection of a crimp tool from Table 5.
- (3) Put the conductor in the crimp barrel of the contact so that the end of the conductor is against the bottom of the crimp barrel.

Make sure that:

- All of the strands of the conductor are in the crimp barrel
 - The strands of the conductor can be seen in the inspection hole.
- (4) Crimp the contact.
 - (5) Examine the wired contact for these types of damage:
 - Any broken strands of the conductor
 - Any strands of the conductor on which the base metal can be seen
 - Any cracks in the crimp barrel of the contact.

B. Contact Insertion

Table 6
CONTACT INSERTION TOOLS

Crimp Barrel Size	Insertion Tool
20	11-6782
16	11-6781

- (1) Make a selection of a contact insertion tool from Table 6.
- (2) Put the wired contact in the end of the insertion tool.
- (3) Axially align the contact and the tool with the contact cavity.
- (4) Push the tool straight into the contact cavity until the tool stops.

CAUTION: THE TOOL AND CONTACT MUST BE PUSHED STRAIGHT INTO THE CONTACT CAVITY SO THAT DAMAGE TO THE CONNECTOR DOES NOT OCCUR.

- (5) Carefully remove the tool from the contact cavity.
- (6) Lightly pull the wire to make sure that the contact is locked in the contact cavity.

20-61-20



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS

CAUTION: DO NOT PULL THE WIRE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONTACT.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE AND RELIABILITY OF THE WIRE.

- (7) If the contact is not locked in the contact cavity:
- (a) Pull the wired contact out of the cavity.
 - (b) Do Step 4.B.(2) through Step 4.B.(6) again.

C. Installation of Spare Contacts

Refer to Subject 20-60-08.

If it is necessary to install a spare contact in the contact cavities that are not used:

- (1) Make a selection of a contact insertion tool from Table 6.
- (2) Put the contact in the contact cavity.
- (3) Axially align the tool and the contact.
- (4) Push the tool straight into the contact cavity until the tool stops.
- (5) Carefully remove the tool from the contact cavity.

D. Installation of Seal Plugs or Seal Rods

Refer to Subject 20-60-08.

If it is necessary to install a seal plug or a seal rod in the contact cavities that are not used:

- (1) Make a selection of a seal plug or a seal rod.
- (2) Push the plug or the rod into the contact cavity.

Make sure that the distance from the end of the plug or the rod to the grommet is less than 0.1 inch.

5. APPROVED TOOL SUPPLIERS

A. Contact Removal Tools

Table 7
REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
11-3697	Bendix
11-3698	Bendix
11-6783	Bendix
11-6784	Bendix
11-6911	Bendix

20-61-20



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BENDIX PT()CE AND PC()CE SERIES CONNECTORS

B. Contact Crimp Tools

Table 8
CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
11-7771-5	Buchanan
11-7771-6	Buchanan
M22520/1-01	QPL
ST2220-1-1	Boeing
ST2220-1-Y	Boeing
TH254	Daniels

C. Contact Insertion Tools

Table 9
INSERTION TOOL SUPPLIERS

Insertion Tool	Supplier
11-6781	Bendix
11-6782	Bendix



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF BURNDY MBG28 SERIES CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
1.	<u>PART NUMBERS AND DESCRIPTION</u>	2
	A. Connector Part Numbers	2
	B. Connector Description	2
	C. Contact Part Numbers	2
2.	<u>CONNECTOR DISASSEMBLY</u>	3
	A. Contact Removal	3
3.	<u>CONNECTOR ASSEMBLY</u>	3
	A. Cable Preparation	3
	B. Contact Assembly	4
	C. Contact Insertion	4
	D. Connector Assembly	4
4.	<u>APPROVED TOOL SUPPLIERS</u>	4
	A. Contact Removal Tools	4
	B. Contact Crimp Tools	5

20-61-23

707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BURNDY MBG28 SERIES CONNECTORS

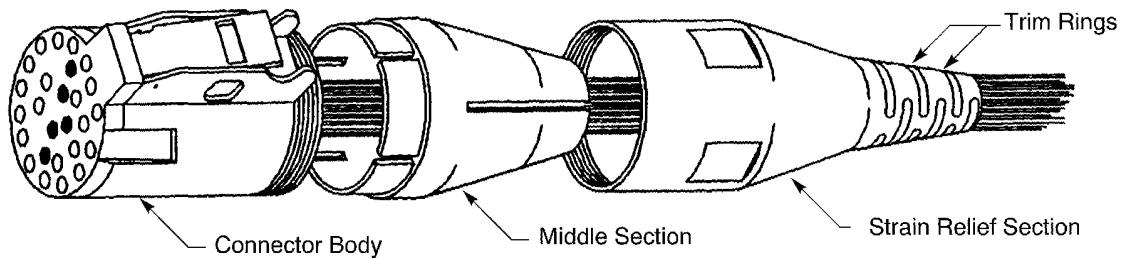
1. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

Table 1
CONNECTOR PART NUMBERS

Part Number	Type	Supplier
MBG28P	Plug	Burndy
MBG28R	Receptacle	Burndy

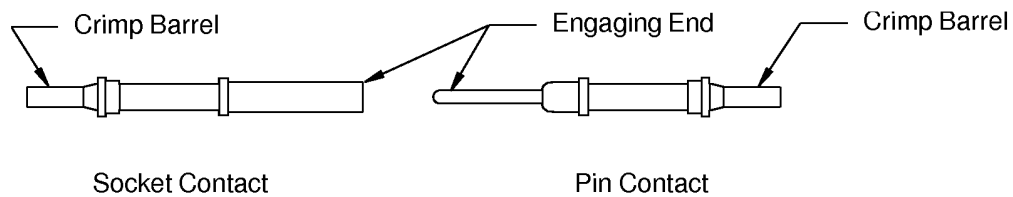
B. Connector Description



2446174 S00061546653_V1

BURNDY MBG28R CONNECTOR RECEPTACLE
Figure 1

C. Contact Part Numbers



2449047 S00061546654_V1

CONTACTS FOR BURNDY MBG28 SERIES CONNECTORS
Figure 2



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF BURNDY MBG28 SERIES CONNECTORS

Table 2
CONTACT PART NUMBERS

Wire Size (AWG)	Contact Type	Contact	
		Part Number	Supplier
20	Socket	RC20M-12F29	Burndy
	Pin	RM20M-12F29	Burndy

2. CONNECTOR DISASSEMBLY

A. Contact Removal

Table 3
CONTACT REMOVAL TOOLS

Engaging End Size	Removal Tool
20	RX16-D11
	RX16-D11-D1

- (1) Make a selection of a removal tool from Table 3.
- (2) Remove the contacts from the engaging face of the connector.

3. CONNECTOR ASSEMBLY

A. Cable Preparation

Refer to Figure 1.

- (1) Put a 2 inch length of the smallest practical size of heat shrinkable sleeve on the cable.
- (2) Put the strain relief section of the connector on the cable so that the wide aperture of the section is toward the end of the cable.

If the cable diameter is larger than the aperture at the strain relief end of the section, remove the necessary trim rings so that the cable fits through the aperture.
- (3) Put the middle section of the connector on the cable so that the wide aperture of the section is toward the end of the cable.

If the cable diameter is larger than the small aperture at the end of the section, ream the aperture so that the cable fits through the aperture.

CAUTION: DO NOT CUT THE SMALL APERTURE. THE CONNECTOR SECTION WILL BE DAMAGED.

20-61-23



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BURNDY MBG28 SERIES CONNECTORS

B. Contact Assembly

Table 4
CONTACT CRIMP TOOLS

Wire Size (AWG)	Crimp Tool		
	Basic Unit	Die Set	Stop Bushing
20	M10S-1	S-10	SL-40

- (1) Remove 3/16 inch \pm 1/32 inch of insulation.
- (2) Make a selection of a crimp tool from Table 4.
- (3) Put the contact and the conductor in the crimp tool.
- (4) Crimp the contact.

C. Contact Insertion

- (1) Push the contact into the contact cavity manually.
NOTE: The use of an insertion tool is not necessary.
- (2) Push the heat shrinkable sleeve over the contact until it touches the connector body.
Make sure that the end of the sleeve is no more that 1/16 inch from the connector body.
- (3) Shrink the sleeve in position. Refer to Subject 20-10-14.

D. Connector Assembly

Refer to Figure 1.

- (1) Push the middle section of the connector into the connector body.
Make sure to align the slots on the section with the slots on the connector.
- (2) Engage the threads of the middle section and the strain relief section.
- (3) Manually tighten the sections.

4. APPROVED TOOL SUPPLIERS

A. Contact Removal Tools

Table 5
REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
RX16-D11	Burndy
RX16-D11-D1	Burndy

20-61-23



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF BURNDY MBG28 SERIES CONNECTORS

B. Contact Crimp Tools

Table 6
CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
M10S-1	Burndy
S-10	Burndy
SL-40	Burndy

20-61-23



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF DEUTSCH DD SERIES CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>	<u>PAGE</u>
1. <u>PART NUMBERS AND DESCRIPTION</u>	2
A. Connector Part Numbers	2
B. Contact Part Numbers	2
2. <u>CONNECTOR DISASSEMBLY</u>	2
A. Contact Removal	2
3. <u>CONNECTOR ASSEMBLY</u>	3
A. Contact Assembly	3
B. Contact Insertion	5
C. Spare Contact or Seal Plug Installation	5
4. <u>APPROVED TOOL SUPPLIERS</u>	5
A. Crimp Tool Suppliers	5
B. Insertion Tool Suppliers	6
C. Removal Tool Suppliers	6

20-61-24



707, 727-787 STANDARD WIRING PRACTICES MANUAL

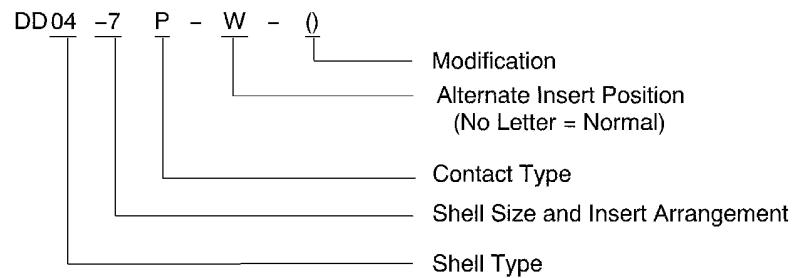
ASSEMBLY OF DEUTSCH DD SERIES CONNECTORS

1. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

Table 1
CONNECTOR PART NUMBERS

Part Number	Type	Supplier
DD()-()	Connector	Deutsch



2446175 S00061546657_V1

DEUTSCH DD SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 1

B. Contact Part Numbers

Table 2
DEUTSCH DD SERIES CONNECTOR CONTACTS

Contact Size		Contact Type	Part Number	Supplier
Engaging End	Crimp Barrel			
20	20	Pin	0004-058-000	Deutsch
		Socket	0007-008-000	Deutsch
16	16	Pin	0004-065-000	Deutsch
		Socket	0007-013-000	Deutsch

2. CONNECTOR DISASSEMBLY

A. Contact Removal

Table 3
CONTACT REMOVAL TOOLS

Crimp Barrel Size	Removal Tool
20	294-89
	MS24256-R20
	RX 20-24
	ZZL-R-9511-20

20-61-24



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF DEUTSCH DD SERIES CONNECTORS

Table 3 CONTACT REMOVAL TOOLS (Continued)

Crimp Barrel Size	Removal Tool
16	294-97
	MS24256-R16
	RX 16-7
	ZZL-R-9511-16

- (1) Make a selection of a removal tool from Table 3.
- (2) Remove the contact.

3. CONNECTOR ASSEMBLY

A. Contact Assembly

Table 4
INSULATION REMOVAL LENGTH

Wire Size (AWG)	Crimp Barrel Size	Removal Length (inch)		Special Instructions
		Target	Tolerance	
24	20	7/16	1/32	Fold the conductor back
	16	1/2	1/32	Fold the conductor back
22	20	3/16	1/32	If the wire insulation is too large to enter the insulation support barrel, remove 1/4 inch minimum to 5/16 inch maximum of insulation
	16	1/2	1/32	Fold the conductor back
20	20	3/16	1/32	If the wire insulation is too large to enter the insulation support barrel, remove 1/4 inch minimum to 5/16 inch maximum of insulation
	16	9/32	1/32	-
18	16	9/32	1/32	-
16	16	9/32	1/32	-

20-61-24



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF DEUTSCH DD SERIES CONNECTORS

Table 5
CONTACT CRIMP TOOLS

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool			
		Basic Unit		Locator	
		Part Number	Setting	Part Number	Color
24	20	M22520/1-01	2	M22520/1-02	Red
		M22520/2-01	5	M22520/2-02	-
		MS3191-1	-	MS3191-20A	Red
	16	M22520/1-01	4	M22520/1-02	Blue
		MS3191-1	-	MS3191-16A	Blue
22	20	M22520/1-01	3	M22520/1-02	Red
		M22520/2-01	6	M22520/2-02	-
		MS3191-1	-	MS3191-20A	Red
	16	M22520/1-01	5	M22520/1-02	Blue
		MS3191-1	-	MS3191-16A	Blue
20	20	M22520/1-01	4	M22520/1-02	Red
		M22520/2-01	7	M22520/2-02	-
		MS3191-1	-	MS3191-20A	Red
	16	M22520/1-01	4	M22520/1-02	Blue
		MS3191-1	-	MS3191-16A	Blue
18	16	M22520/1-01	5	M22520/1-02	Blue
		MS3191-1	-	MS3191-16A	Blue
16	16	M22520/1-01	6	M22520/1-02	Blue
		MS3191-1	-	MS3191-16A	Blue

- (1) Make a selection of a contact from Table 2.
- (2) Remove the wire insulation.
Refer to Table 4.
- (3) Make a selection of a crimp tool from Table 5.
- (4) Crimp the contact onto the wire.

20-61-24



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF DEUTSCH DD SERIES CONNECTORS

B. Contact Insertion

Table 6
CONTACT INSERTION TOOLS

Contact Size	Insertion Tool
20	294-88
	MS24256-A20
	RTM 20-5
	ZZL-R-9510-20
16	294-97
	MS24256-A16
	RTM 16-2
	ZZL-R-9510-16

NOTE: MS24256 kit includes the MS24256-A20 and MS24256-A16 removal tools.

- (1) Make a selection of an insertion tool from Table 6.
- (2) Insert the contact.

C. Spare Contact or Seal Plug Installation

- (1) Seal all unused contact cavities. Refer to Subject 20-60-08.

4. APPROVED TOOL SUPPLIERS

A. Crimp Tool Suppliers

Table 7
CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
M22520/1-01	QPL
M22520/1-02	QPL
M22520/2-01	QPL
M22520/2-02	QPL
MS3191-1	QPL
MS3191-16A	QPL
MS3191-20A	QPL

20-61-24



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF DEUTSCH DD SERIES CONNECTORS

B. Insertion Tool Suppliers

Table 8
INSERTION TOOL SUPPLIERS

Tool	Supplier
294-88	Amphenol
294-97	Amphenol
MS24256-A16	QPL
MS24256-A20	QPL
RTM 16-2	Burndy
RTM 20-5	Burndy
ZZL-R-9510-16	Pyle-National
ZZL-R-9510-20	Pyle-National

C. Removal Tool Suppliers

Table 9
REMOVAL TOOL SUPPLIERS

Tool	Supplier
294-89	Amphenol
294-97	Amphenol
MS24256-R16	QPL
MS24256-R20	QPL
RX 16-7	Burndy
RX 20-24	Burndy
ZZL-R-9511-20	Pyle-National
ZZL-R-9511-16	Pyle-National

20-61-24



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF WIRE-PRO 84-() SERIES CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>	<u>PAGE</u>
1. <u>PART NUMBERS AND DESCRIPTION</u>	2
A. Connector Part Numbers	2
B. Contact Part Numbers	2
2. <u>CONNECTOR DISASSEMBLY</u>	3
A. Contact Removal - Connector Deviation 115	3
3. <u>CONNECTOR ASSEMBLY</u>	4
A. Contact Assembly	4
B. Contact Insertion	5
C. Spare Contact or Seal Plug Installation	6
4. <u>APPROVED TOOL SUPPLIERS</u>	6
A. Contact Crimp Tools	6
B. Contact Removal Tools	7
C. Contact Insertion Tools	7

20-61-26



707, 727-787
STANDARD WIRING PRACTICES MANUAL

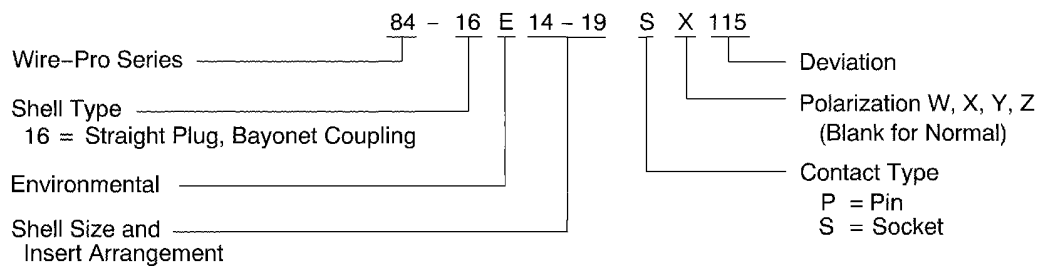
ASSEMBLY OF WIRE-PRO 84-() SERIES CONNECTORS

1. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

Table 1
CONNECTOR PART NUMBERS

Part Number	Type	Supplier
84-()	Plug	Wire-Pro



2446176 S00061546659_V1

WIRE-PRO 84-() SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 1

NOTE: Connector deviations 110, 111, 115, and 116 have non-removable grommets.

NOTE: Deviation 109 does not require the removal of the grommet to remove the contacts.

B. Contact Part Numbers

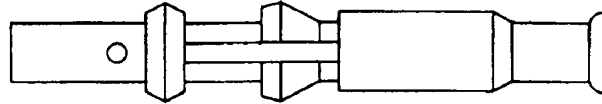
Table 2
CONTACT PART NUMBERS

Contact Size		Contact Type	Part Number	Supplier
Engaging End	Crimp Barrel			
20	20	Pin	84-1477	Wire-Pro
		Socket	84-1478	Wire-Pro
16	16	Pin	84-1674	Wire-Pro
		Socket	84-1675	Wire-Pro

20-61-26



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF WIRE-PRO 84-() SERIES CONNECTORS



2446177 S00061546660_V1

SIZE 20 84-1478 SCREW MACHINE COLLET TYPE SOCKET CONTACT

Figure 2

2. CONNECTOR DISASSEMBLY

A. Contact Removal - Connector Deviation 115

NOTE: Deviation 109 does not require the removal of the grommet to remove the contacts.

NOTE: Connector deviations 110, 111, 115, and 116 have non-removable grommets.

Table 3
CONTACT REMOVAL TOOLS

Contact Engaging End Size	Removal Tool	Special Instructions
20	294-58	0.089 inch maximum Wire O.D.
	ST2220-3-8	-
16	294-48	0.089 inch maximum Wire O.D.
	ST2220-3-9	-

- (1) Remove the cable clamp and the tape (if tape is used) from the wire bundle.
- (2) Loosen the grommet clamp nut.
- (3) Make a selection of a removal tool from Table 3.
- (4) Put the tip of the removal tool on the engaging end of the contact.
- (5) Push the removal into the contact cavity until its stops.
- (6) Push on the removal tool, and at the same time, push on the extraction knob to remove the contact.

NOTE: This operation will also remove seal plugs or seal rods when spare contacts are removed.

20-61-26



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF WIRE-PRO 84-() SERIES CONNECTORS

3. CONNECTOR ASSEMBLY

A. Contact Assembly

Table 4
INSULATION REMOVAL LENGTH

Wire Size (AWG)	Crimp Barrel Size	Removal Length (inch)		Special Instructions
		Target	Tolerance	
24	20	7/16	1/32	Fold the conductor back on itself
	16	9/16	1/32	Fold the conductor back on itself
22	20	3/16	1/32	-
	16	9/16	1/32	Fold the conductor back on itself
20	20	3/16	1/32	-
	16	3/16	1/32	-
18	16	17/64	1/32	-

Table 5
CONNECTOR GROMMET WIRE OUTSIDE DIAMETER RANGE

Contact Cavity Size	Wire O.D. (inch)	
	Minimum	Maximum
20	0.060	0.090
16	0.064	0.120

Table 6
CONTACT CRIMP TOOLS

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool			Special Instructions
		Basic Unit	Locator		
			Part Number	Color	
24	20	11148	71-17019	Red	Remove 7/16 inch ±1/32 inch of insulation and fold back
		MS3191-1	3360-2	-	
	16	11148	71-17148	Blue	Remove 9/16 inch ±1/32 inch of insulation and fold back
		MS3191-1	2520-3	-	
22	20	11148	71-17019	Red	-
		MS3191-1	3360-2	-	-
	16	11148	71-17148	Blue	Remove 9/16 inch ±1/32 inch of insulation and fold back
		MS3191-1	2520-3	-	

20-61-26



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF WIRE-PRO 84-() SERIES CONNECTORS

Table 6 CONTACT CRIMP TOOLS (Continued)

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool			Special Instructions
		Basic Unit	Locator		
			Part Number	Color	
20	20	11148	71-17019	Red	-
		MS3191-1	3360-2	-	-
	16	11148	71-17148	Blue	-
		MS3191-1	2520-3	-	-
18	16	11148	71-17148	Blue	-
18	16	MS3191-1	2520-3	-	-

NOTE: The MS3191-1 is a hand tool; the 11148 is a power tool.

- (1) Remove the applicable length of wire insulation. Refer to Table 4.
- (2) Install a heat shrinkable sleeve to all undersized wire to build up the wire O.D.
Refer to Table 5 and Subject 20-10-14.
- (3) For connector Deviation 101, solder the wire in the contact.
Refer to Subject 20-40-00.
- (4) For all connector deviations expect Deviation 101:
 - (a) Select a crimp tool from Table 6.
 - (b) Crimp the contact onto the wire.

B. Contact Insertion

Table 7
CONTACT INSERTION TOOLS

Crimp Barrel Size	Insertion Tool		Special Instructions
	Handle	Bit	
20	294-473-05	294-953	-
	ST2220-2	ST2220-2-6	0.089 inch maximum Wire O.D.
		ST2220-2-8	
16	294-473-05	294-952	-
	ST2220-2	ST2220-2-4	0.089 inch maximum Wire O.D.
		ST2220-2-4A	

20-61-26



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF WIRE-PRO 84-() SERIES CONNECTORS

Table 8
AMPHENOL INSERTION TOOL KIT CONTENTS

Tool Kit	Tool Kit Contents	
	Description	Part Number
294-66	Handle	294-473-05
	Cap	294-472-05
	Nut	294-471-05
	Insertion Bit	294-953
		294-952

- (1) Loosen the grommet nut before contact insertion.
- (2) If wires are not necessary in all contacts of the connector, install spare contacts in the unused contact cavities before the wired contacts are inserted.
Refer to Paragraph 3.C.
- (3) Make a selection of an insertion tool from Table 7.
- (4) Place the contact or wired contact in the insertion tool.
- (5) Align the contact and insertion tool perpendicular to the back face of the grommet.

CAUTION: TO PREVENT GROMMET DAMAGE, THE OPEN FACE OF THE INSERTION TOOL TIP MUST FACE OUTWARD WHEN THE CONTACTS ARE INSERTED INTO THE OUTER ROW OF GROMMET HOLES.

- (6) Carefully guide the contact through the grommet hole.
- (7) Push the tool straight in, perpendicular to the grommet surface, until the contact is fully seated.
The insertion is complete when the contact is seated firmly against the stop.
- (8) Keep the tool perpendicular to the grommet surface and carefully withdraw the tool.

C. Spare Contact or Seal Plug Installation

Refer to Subject 20-61-00.

4. APPROVED TOOL SUPPLIERS

A. Contact Crimp Tools

Table 9
CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
11148	Buchanan
2520-3	Astro
3360-2	Astro
71-17019	Astro
71-17148	Astro

20-61-26



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF WIRE-PRO 84-() SERIES CONNECTORS

Table 9 CRIMP TOOL SUPPLIERS (Continued)

Crimp Tool	Supplier
MS3191-1	QPL

B. Contact Removal Tools

Table 10
REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
294-48	Amphenol
294-58	Amphenol
ST2220-3-8	Boeing
ST2220-3-9	Boeing

C. Contact Insertion Tools

Table 11
INSERTION TOOL SUPPLIERS

Insertion Tool	Supplier
294-66	Amphenol
294-952	Amphenol
294-953	Amphenol
294-473-05	Amphenol
ST2220-2	Boeing
ST2220-2-4	Boeing
ST2220-2-4A	Boeing
ST2220-2-6	Boeing
ST2220-2-8	Boeing

20-61-26



707, 727-787
STANDARD WIRING PRACTICES MANUAL

VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
1.	<u>PART NUMBERS AND DESCRIPTION</u>	2
	A. Connector Part Numbers	2
	B. Connector Component Part Numbers	4
	C. Contact Part Numbers	4
	D. Necessary Parts	5
	E. Recommended Tools	5
2.	<u>CONNECTOR DISASSEMBLY</u>	6
	A. Separation of a Plug from a Receptacle	6
	B. Removal of a Receptacle from a Panel	7
	C. Contact Removal	10
	D. Seal Plug Removal	10
3.	<u>CONNECTOR ASSEMBLY</u>	11
	A. Contact Assembly	11
	B. Contact Insertion	14
	C. Spare Contact Installation	16
	D. Seal Plug or Seal Rod Installation	16
4.	<u>CONNECTOR INSTALLATION</u>	16
	A. Installation of a Plug in the In-line Receptacle	16
	B. Installation of a Receptacle in a Panel	18
5.	<u>APPROVED TOOL SUPPLIERS</u>	20
	A. Contact Removal Tools	20
	B. Contact Insertion Tools	20
	C. Contact Crimp Tools	21

20-61-28



707, 727-787 STANDARD WIRING PRACTICES MANUAL

VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

This subject gives these procedures for the Viking Electronics AMC() series circular connectors:

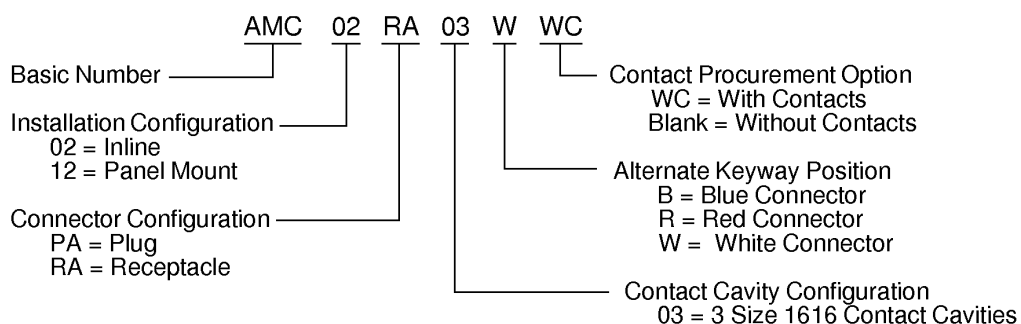
- Disassembly
- Assembly
- Installation.

1. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

Table 1
CONNECTOR PART NUMBERS

Part Number	Type	Supplier
AMC02PA03B	Plug	Viking Electronics
AMC02PA03R	Plug	Viking Electronics
AMC02PA03W	Plug	Viking Electronics
AMC02RA03B	Receptacle	Viking Electronics
AMC02RA03R	Receptacle	Viking Electronics
AMC02RA03RWC	Receptacle	Viking Electronics
AMC02RA03W	Receptacle	Viking Electronics
AMC12RA03B	Receptacle	Viking Electronics
AMC12RA03R	Receptacle	Viking Electronics
AMC12RA03W	Receptacle	Viking Electronics



2446179 S00061546663_V1

VIKING ELECTRONICS AMC() SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 1

20-61-28

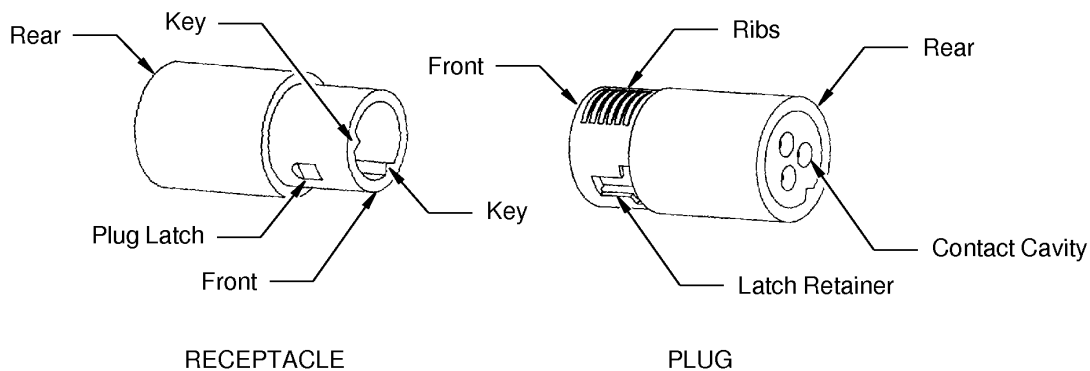


707, 727-787
STANDARD WIRING PRACTICES MANUAL

VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

The Viking Electronics AMC() circular connector has these technical features:

- It has a circular configuration
- The connector shell is plastic
- It is an in-line receptacle or a single hole panel mount receptacle
- It is a quick disconnect latch configuration
- It has one contact size
- The contacts are front release, rear removable
- The connector has a color code that shows the alternate key position.



2446180 S00061546664_V1

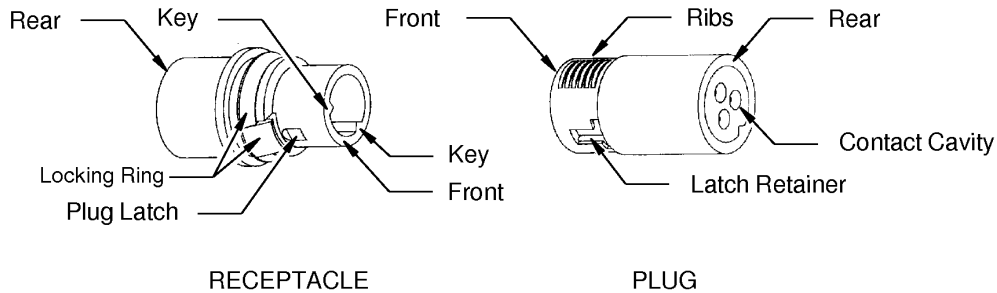
IN-LINE CONFIGURATION OF THE AMC() SERIES CONNECTOR

Figure 2

20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL
VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS



2446181 S00061546665_V1

PANEL MOUNT CONFIGURATION OF THE AMC() SERIES CONNECTOR

Figure 3

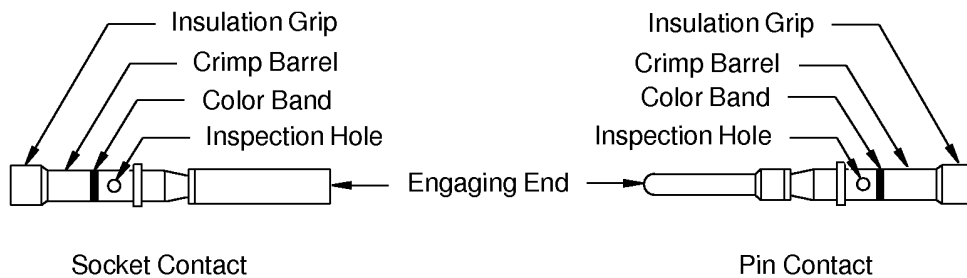
B. Connector Component Part Numbers

Table 2
CONNECTOR COMPONENT PART NUMBER

Connector Component Type	Part Number	Supplier
Locking Ring	128-0066-001	Viking

NOTE: Refer to Figure 3 for location of the locking ring on the connector.

C. Contact Part Numbers



2446182 S00061546575_V1

STANDARD FRONT RELEASE SIZE 1616 PIN AND SOCKET CRIMP TYPE CONTACTS

Figure 4

20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL
VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

Engaging End Size 16 16 Crimp Barrel Size

2446183 S00061544383_V1

EXAMPLE OF A CONTACT SIZE

Figure 5

Table 3
CONTACT PART NUMBERS

Contact Size		Contact Type	Boeing Standard	Color Band	Finish
Engaging End	Crimp Barrel				
16	16	Pin	BACC47CN2	Blue	Rhodium
			BACC47CN2A	Blue	Gold
			BACC47CN2S	Blue	Localized Gold
		Socket	BACC47CP2A	Blue	Gold
			BACC47CP2S	Blue	Localized Gold
			BACC47CP2T	Blue	Rhodium

D. Necessary Parts

Table 4
NECESSARY PARTS AND MATERIALS FOR CONNECTOR ASSEMBLY

Material	Specification	Part Number	Supplier	Note
Filler	Y6051C	-	ITT Cannon	-
Seal Plug	-	MS27488-16	QPL	Blue
Seal Rod	AMS3656	-	QPL	-

E. Recommended Tools

NOTE: The satisfactory alternatives for:

- Contact removal tools are given in Table 6
- Contact crimp tools are given in Table 9
- Contact insertion tools are given in Table 11.

20-61-28



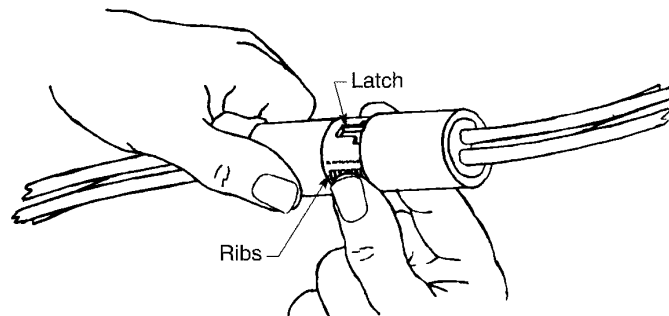
707, 727-787
STANDARD WIRING PRACTICES MANUAL
VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

Table 5
RECOMMENDED TOOLS FOR CONNECTOR ASSEMBLY

Procedure	Contact Size		Tool	
	Engaging End	Crimp Barrel	Type	Part Number
Contact Removal	16	16	Removal	MS24256R16
Contact Assembly	16	16	Crimp	M22520/1-01
			Locator	M22520/1-02
Contact Insertion	16	16	Insertion	M81969/17-04

2. CONNECTOR DISASSEMBLY

A. Separation of a Plug from a Receptacle



2446184 S00061546666_V1

SEPARATION OF THE PLUG AND THE RECEPTACLE

Figure 6

- (1) Hold the plug in one hand and the receptacle in the other hand. Refer to Figure 6.
- (2) To release the latches, apply pressure on the ribs of both connectors at the same time.
- (3) Pull the plug and receptacle apart.

20-61-28

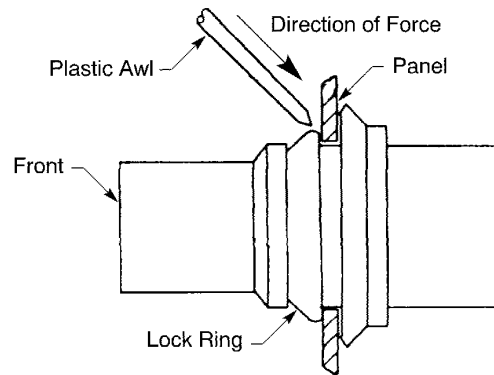


**707, 727-787
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VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

B. Removal of a Receptacle from a Panel

- (1) Push on the lock ring at the front of the panel with a plastic awl or an equivalent tool.
Refer to Figure 7 and Figure 8.



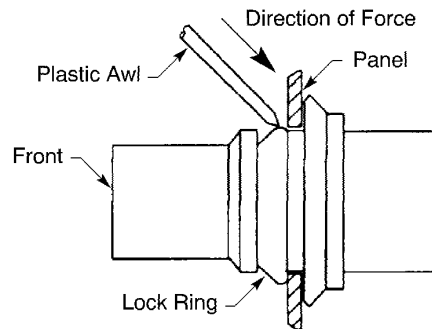
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**POSITION OF PLASTIC AWL ON THE LOCK RING
Figure 7**

20-61-28



707, 727-787
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VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS



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COMPRESSED POSITION OF THE LOCK RING

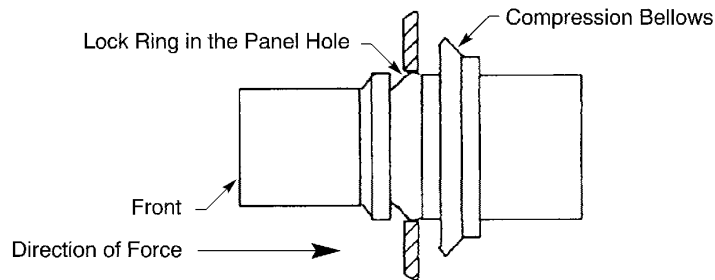
Figure 8

- (2) As the lock ring is compressed, push it into the hole in the panel.
- (3) Do Step 2.B.(1) and Step 2.B.(2) again until the outer surface of the lock ring is in the hole in the panel. Refer to Figure 9.

20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL
VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

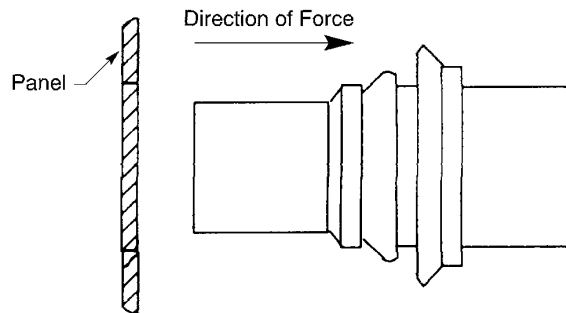


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POSITION OF THE LOCK RING IN THE PANEL HOLE

Figure 9

- (4) Push the front of the receptacle into the panel until it is free from the panel. Refer to Figure 10.



2446188 S00061546670_V1

RECEPTACLE REMOVED FROM THE PANEL

Figure 10

20-61-28



707, 727-787
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VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

C. Contact Removal

Table 6
CONTACT REMOVAL TOOLS

Contact Size		Removal Tool
Engaging End	Crimp Barrel	
16	16	MS24256R16
		RRBX-16S

- (1) Make a selection of a contact removal tool from Table 6.
- (2) Put the tool plunger in the retracted position.
- (3) From the front of the connector, carefully push the tool axially straight into the contact cavity until it stops.

CAUTION: DO NOT PUSH THE TOOL INTO THE CONTACT CAVITY FROM THE REAR OF THE CONNECTOR. DAMAGE TO THE CONNECTOR AND THE TOOL CAN OCCUR.

- (4) Push the plunger into the tool.
- (5) If the plunger does not push the contact towards the rear of the connector:
 - (a) Carefully remove the tool from the contact cavity.
 - (b) Turn the tool approximately 90 degrees.
 - (c) Do Step 2.C.(3) and Step 2.C.(4) again.
- (6) Pull the wire to remove the contact from the connector.
- (7) Examine the front of the connector for a crack or a chip that extends from:
 - One contact cavity to another contact cavity
 - A contact cavity to the shell of the connector.

D. Seal Plug Removal

- (1) Remove the backshell from the rear of the connector with a pair of needle nose pliers that have smooth surfaces and no sharp edges.

CAUTION: NEEDLE NOSE PLIERS WITH ROUGH SURFACES OR SHARP EDGES CAN CAUSE DAMAGE TO THE REAR GROMMET.

- (2) Hold the end of the seal plug or seal rod tightly in the jaws of the pliers.
- (3) Pull the seal plug or seal rod out of the rear grommet in the direction that is perpendicular to the face of the grommet.
- (4) Examine the rear grommet for these types of damage:
 - Gouges between two contact cavities
 - Cuts between two contact cavities
 - Cracks between two contact cavities
 - Cracks between cavities and the shell in the rear grommet.

20-61-28



**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

3. CONNECTOR ASSEMBLY

A. Contact Assembly

**Table 7
INSULATION REMOVAL LENGTH**

Wire Size (AWG)	Crimp Barrel Size	Removal Length L (inch)		Special Instructions
		Target	Tolerance	
24	16	1/2	±1/32	Fold the conductor back so that the length L of the bare conductor is 1/4 inch
		1/4	±1/32	Put a contact filler into the crimp barrel
22	16	1/2	±1/32	Fold the conductor back so that the length L of the bare conductor is 1/4 inch
		1/4	±1/32	Put a contact filler into the crimp barrel
20	16	1/4	±1/32	-
18	16			
16	16			

**Table 8
BELT OR REEL MOUNTED CONTACT CRIMP TOOLS**

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool		
		Basic Unit		Locator Block
		Part Number	Setting	
24	16	11148	Red	Blue
22	16	11148	Red	Blue
20	16	11148	Red	Blue
18	16	11148	Red	Blue
16	16	11148	Red	Blue

**Table 9
CONTACT CRIMP TOOLS**

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool			
		Basic Unit		Locator	
		Part Number	Setting	Part Number	Color
24	16	M22520/1-01	4	M22520/1-02	Blue
		85-550			
		WA27F			
		ST2220-1-Y	-	ST2220-1-2	-

20-61-28



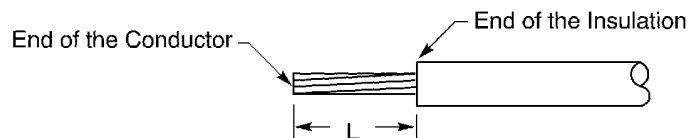
**707, 727-787
STANDARD WIRING PRACTICES MANUAL**

VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

Table 9 CONTACT CRIMP TOOLS (Continued)

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool			
		Basic Unit		Locator	
		Part Number	Setting	Part Number	Color
22	16	M22520/1-01	5	M22520/1-02	Blue
		85-550			
		WA27F			
		ST2220-1-Y	-	ST2220-1-2	-
20	16	M22520/1-01	4	M22520/1-02	Blue
		85-550			
		WA27F			
		M10S S-7	-	SL-2	-
		ST2220-1-Y	-	ST2220-1-2	-
18	16	M22520/1-01	5	M22520/1-02	Blue
		85-550			
		WA27F			
		M10S S-7	-	SL-2	-
		ST2220-1-Y	-	ST2220-1-2	-
16	16	M22520/1-01	6	M22520/1-02	Blue
		85-550			
		WA27F			
		M10S S-7	-	SL-3	-
		ST2220-1-Y	-	ST2220-1-2	-

- (1) Remove the necessary length L of the insulation from the end of the wire.
Refer to Table 7 and Figure 11.



2446159 S00061546266_V1

INSULATION REMOVAL

Figure 11

- (2) If it is necessary, fold the conductor back on itself so that the length of the bare conductor is 1/4 inch.

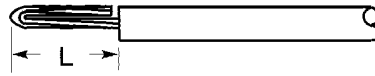
20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL

VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

Refer to Table 7 and Figure 12.



2446092 S00061546673_V1

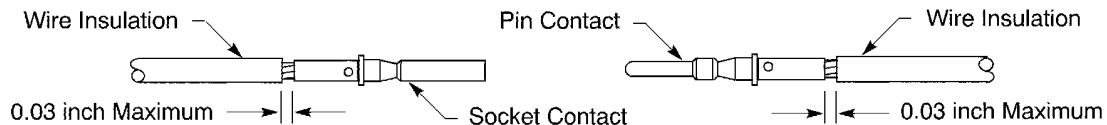
A CONDUCTOR FOLDED BACK ON ITSELF

Figure 12

- (3) Make a selection of the crimp tool from Table 8 or Table 9.
- (4) Push the conductor into the crimp barrel of the contact until the end of the conductor is against the bottom of the crimp barrel. Refer to Figure 13.

Make sure that:

- All of the strands of the conductor are in the crimp barrel
- The strands of the conductor can be seen in the inspection hole
- The distance from the end of the insulation to the end of crimp barrel is less than or equal to 0.03 inch.



2446189 S00061546674_V1

POSITION OF THE WIRE IN THE CRIMP BARREL

Figure 13

- (5) Crimp the contact.
- (6) Examine the wired contact for these types of damage:
 - Any broken conductor strands
 - Any conductor strands on which the base metal can be seen
 - Any cracks in the crimp barrel of the contact.

20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL

VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

B. Contact Insertion

Table 10
AWG 16 WIRES WITH A LARGER OUTSIDE DIAMETER

Wire Size (AWG)	Boeing Specification	Class
16	BMS 13-31	1
	BMS 13-55	1
	BMS 13-58	1

Table 11
CONTACT INSERTION TOOLS

Crimp Barrel Size	Insertion Tool		
	O.D. of the Cable	Handle	Bit
16	Less than 0.088 inch	294-96	-
		AT 1016	-
		ATBO1108	-
		ATBO1108-16	-
		ATBO1108-90	-
		M81969/17-04	-
		ZZL-R-9510-16	-
		ST2220-2	ST2220-2-4
16	Greater than 0.088 inch and less than 0.130 inch	ST2220-2	ST2220-2-4A

- (1) Find the O.D. of the wire.
Refer to Table 10 for the AWG 16 wires with an O.D. that is greater than 0.088 inch but less than 0.130 inch.
- (2) Make a selection of a contact insertion tool from Table 11.

CAUTION: DO NOT USE A TOOL WITH:

- A TIP THAT IS BENT
- A TIP THAT IS FLARED
- A TIP THAT IS BROKEN
- A TIP THAT IS CRACKED
- A BIT THAT IS BENT.

WARNING: A DEFECTIVE TOOL CAN CAUSE INJURY TO THE OPERATOR.

CAUTION: A DEFECTIVE TOOL CAN CAUSE DAMAGE TO THE REAR GROMMET OF THE CONNECTOR OR THE CONTACT RETENTION CLIPS, OR BOTH.

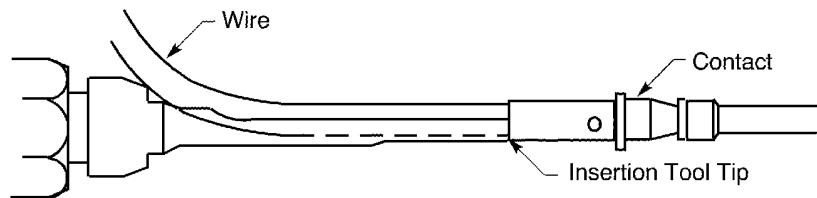
20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL

VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

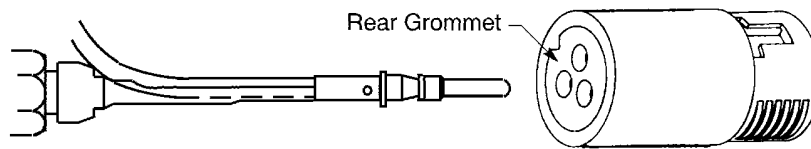
- (3) Put the wired contact into the tool so that the tip of the tool is against the end of the wire barrel of the contact. Refer to Figure 14.



2446190 S00061546677_V1

POSITION OF THE WIRED CONTACT IN THE INSERTION TOOL
Figure 14

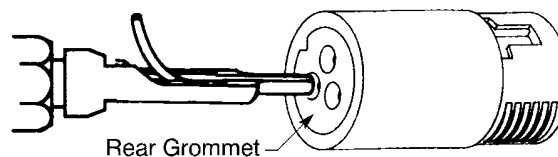
- (4) Axially align the tool and the contact with the contact cavity. Refer to Figure 15.



2446191 S00061546678_V1

POSITION OF THE WIRED CONTACT IN RELATION TO THE CONTACT CAVITY
Figure 15

- (5) Push the tool straight into the contact cavity until the tool stops. Refer to Figure 16.



2446192 S00061546679_V1

INSERTION OF THE CONTACT
Figure 16

- (6) Carefully remove the tool from the contact cavity.
(7) Lightly pull the wire to make sure that the contact is locked in the contact cavity.

20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL

VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

CAUTION: DO NOT PULL THE WIRE WITH A STRONG OR A SUDDEN FORCE. THE FORCE CAN CAUSE DAMAGE TO THE CONNECTOR OR THE CONTACT, OR BOTH.

CAUTION: DO NOT MAKE A DENT IN THE WIRE INSULATION WITH THE FINGERNAILS. DAMAGE TO THE WIRE INSULATION CAN CAUSE UNSATISFACTORY PERFORMANCE AND RELIABILITY OF THE WIRE.

- (8) If the contact does is not locked in the contact cavity:
 - (a) Pull the wired contact out of the contact cavity.
 - (b) Do Step 3.B.(3) through Step 3.B.(7) again.

C. Spare Contact Installation

Refer to Subject 20-60-08.

- (1) If it is necessary to install a spare contact in the contact cavities that are not used:
 - (a) Make a selection of the contact from Table 3.
 - (b) Make a selection of a contact insertion tool from Table 11.
 - (c) Put the contact in the contact cavity.
 - (d) Axially align the tool and the contact.
 - (e) Push the tool straight into the contact cavity until the tool stops.
 - (f) Carefully remove the tool from the contact cavity.

D. Seal Plug or Seal Rod Installation

Refer to Subject 20-60-08.

- (1) If it is necessary to install a seal plug or a seal rod in the contact cavities that are not used:
 - (a) Make a selection of a seal plug or seal rod from Table 4.
 - (b) Push the plug or the rod into the contact cavity.

Make sure that the distance from the end of the plug or the rod to the connector grommet is less than 0.1 inch.

4. CONNECTOR INSTALLATION

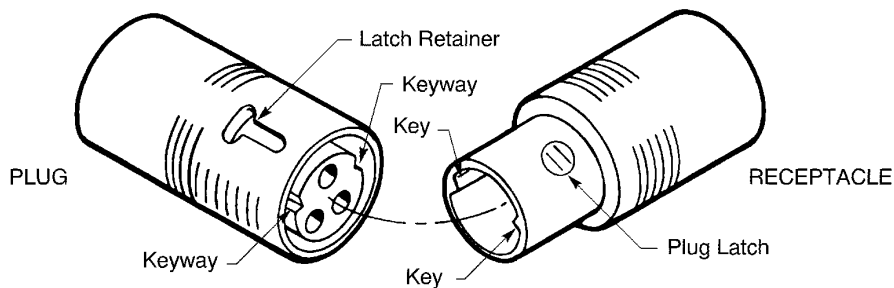
A. Installation of a Plug in the In-line Receptacle

- (1) Align the keys of the receptacle with the keyways of the plug.
Refer to Figure 17.

20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL
VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

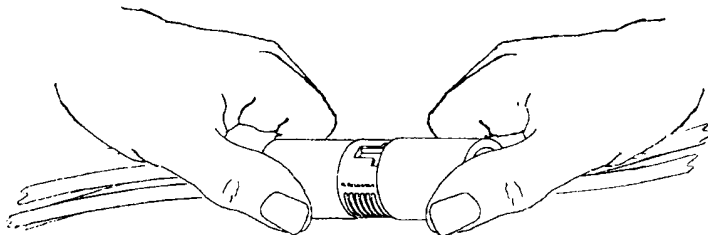


2446193 S00061546681_V1

POSITION OF THE KEYS AND THE KEYWAYS

Figure 17

- (2) Push the plug into the receptacle until it stops.
When the plug stops:
 - A click can be heard
 - The plug latches lock in the latch retainers.
- (3) Lightly pull the plug and the receptacle apart to make sure that the plug latches are locked. Refer to Figure 18.



2446194 S00061546682_V1

POSITION OF THE HANDS TO PULL AGAINST THE PLUG LATCHES

Figure 18

- (4) If the plug moves away from the receptacle, do Step 4.A.(2) and Step 4.A.(3) again.
- (5) Examine the connector for these types of damage:
 - Cracks in the connector shell

20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL

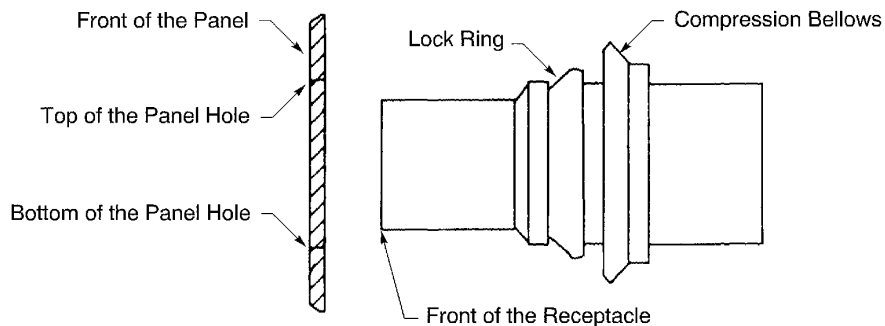
VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

- Cracks or chips in the plug latches.

CAUTION: DO NOT INSTALL A WIRE HARNESS TIE OR A WIRE HARNESS CLAMP ON THE MATED CONNECTORS. THIS CAN CAUSE UNSATISFACTORY PERFORMANCE OF THE LATCH RETAINER AND CAUSE THE CONNECTORS TO BECOME DISCONNECTED IN SERVICE.

B. Installation of a Receptacle in a Panel

- (1) From the back of the panel, align the receptacle with the hole. Refer to Figure 19.



2446195 S00061546684_V1

POSITION OF THE RECEPTACLE IN RELATION TO THE HOLE IN THE PANEL

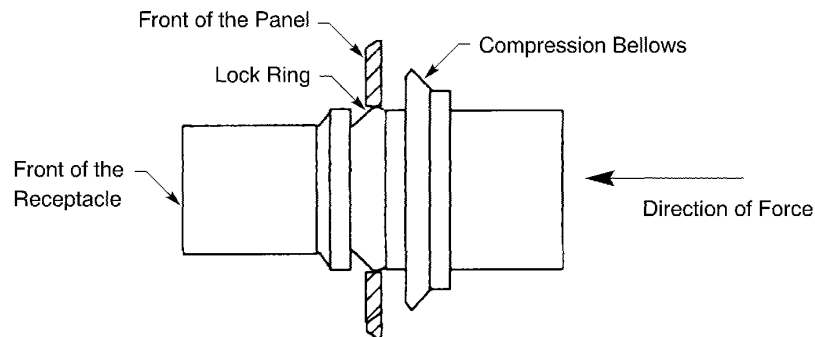
Figure 19

- (2) Push the receptacle into the hole so that the lock ring becomes compressed. Refer to Figure 20.

20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL
VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS



2446196 S00061546685_V1

LOCK RING COMPRESSED IN THE PANEL HOLE

Figure 20

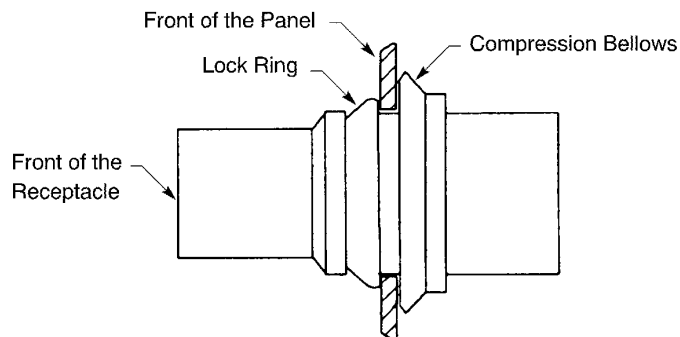
- (3) Push the receptacle through the hole until:
- The lock ring extends and holds the receptacle in position on the panel
 - The rear surface of the lock ring is against the front of the panel
 - The forward end of the compression bellows is against the panel.

Refer to Figure 21.

20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL
VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS



2446197 S00061546686_V1

POSITION OF THE RECEPTACLE IN THE PANEL

Figure 21

- (4) Push the receptacle from the front to make sure that it is locked in the panel.
- (5) If the receptacle moves, do Step 4.B.(3) and Step 4.B.(4) again.

5. APPROVED TOOL SUPPLIERS

A. Contact Removal Tools

Table 12
REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
MS24256R16	QPL
RRBX-16S	Russtech

B. Contact Insertion Tools

Table 13
INSERTION TOOL SUPPLIERS

Insertion Tool	Supplier
294-96	Amphenol
AT 1016	Astro
ATBO1108	Astro
ATBO1108-16	Astro

20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL

VIKING ELECTRONICS AMC() SERIES CIRCULAR CONNECTORS

Table 13 INSERTION TOOL SUPPLIERS (Continued)

Insertion Tool	Supplier
ATBO1108-90	Astro
M81969/17-04	QPL
ST2220-2	Boeing
ST2220-2-4	Boeing
ST2220-2-4A	Boeing
ZZL-R-9510-16	Pyle-National

C. Contact Crimp Tools

Table 14
CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
11148	Buchanan
85-550	Balmar
M10S S-7	Burndy
M22520/1-01	QPL
M22520/1-02	QPL
SL-2	Burndy
SL-3	Burndy
ST2220-1-2	Boeing
ST2220-1-Y	Boeing
WA27F	Daniels

20-61-28



707, 727-787
STANDARD WIRING PRACTICES MANUAL
CORY AND TRI-STAR CSLT2-21P() CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>	<u>PAGE</u>
1. <u>CORY AND TRI-STAR CSLT2-21P() CONNECTORS</u>	2

20-61-29

D6-54446

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Page 1
Oct 15/2015



707, 727-787
STANDARD WIRING PRACTICES MANUAL
CORY AND TRI-STAR CSLT2-21P() CONNECTORS

1. CORY AND TRI-STAR CSLT2-21P() CONNECTORS

This Subject is now located in Subject 20-63-22.

20-61-29

D6-54446

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Page 2
Oct 15/2015



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS

TABLE OF CONTENTS

<u>PARAGRAPH</u>		<u>PAGE</u>
1.	<u>PART NUMBERS AND DESCRIPTION</u>	2
	A. Connector Part Numbers	2
	B. Shell Type Designators	3
	C. Contact Part Numbers	4
2.	<u>INSERT CONFIGURATIONS</u>	5
	A. MIL-C-81511 Series 1 and 2 Connectors	5
3.	<u>CONNECTOR DISASSEMBLY</u>	10
	A. Contact Removal	10
4.	<u>CONNECTOR ASSEMBLY</u>	12
	A. Contact Assembly	12
	B. Contact Insertion	13
	C. Seal Plug Installation	14
	D. Connector Assembly	14
5.	<u>APPROVED TOOL SUPPLIERS</u>	14
	A. Contact Removal Tools	14
	B. Contact Insertion Tools	15
	C. Contact Crimp Tools	15

20-61-30



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS

This front release connector subject is relocated from:

- 20-63-18 "Assembly of MIL-C-81511 Series 1 and Series 2 Connectors"

to:

- 20-61-30 "Assembly of MIL-C-81511 Series 1 and Series 2 Connectors"

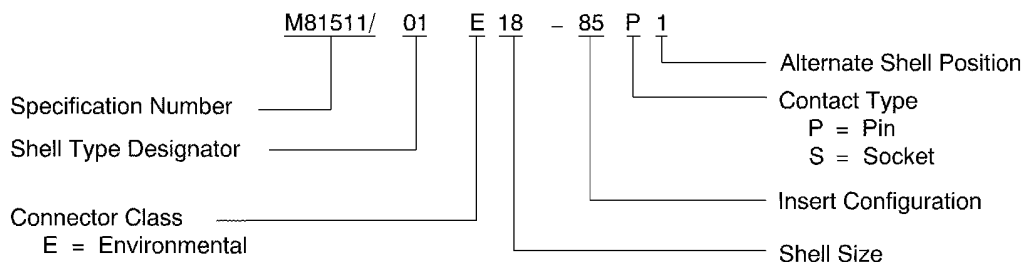
This Subject gives the procedure to assemble MIL-C-81511 Series 1 and Series 2 electrical connectors.

1. PART NUMBERS AND DESCRIPTION

A. Connector Part Numbers

Table 1
CONNECTOR PART NUMBERS

Part Number	Supplier
348-()	Amphenol/Bendix
M81511/()	QPL



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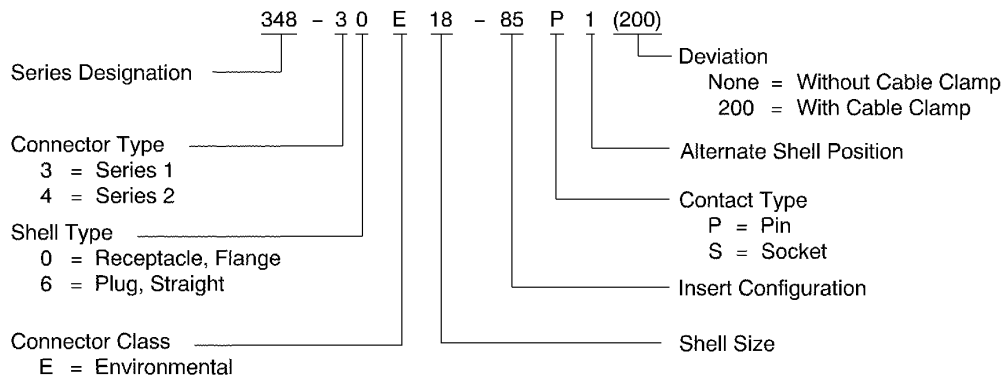
M81511() SERIES CONNECTOR PART NUMBER STRUCTURE
Figure 1

20-61-30



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS



2446320 S00061546690_V1

AMPHENOL/BENDIX 348-() SERIES CONNECTOR PART NUMBER STRUCTURE

Figure 2

B. Shell Type Designators

Table 2
SHELL TYPE DESIGNATORS FOR MIL-C-81511 SERIES 1 AND 2 CONNECTORS

Connector Series	Designator	Shell Type
1	21	Receptacle
	22	Receptacle
	23	Receptacle
	24	Receptacle
	25	Receptacle
	26	Plug
	27	Receptacle
	35	Receptacle
	36	Receptacle
	37	Receptacle
	38	Plug

20-61-30



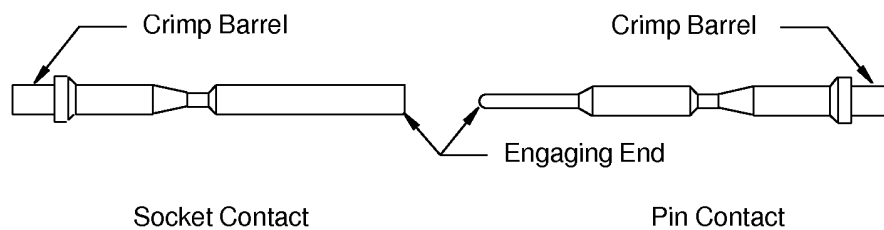
707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS

Table 2 SHELL TYPE DESIGNATORS FOR MIL-C-81511 SERIES 1 AND 2 CONNECTORS (Continued)

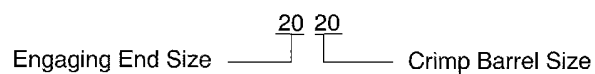
Connector Series	Designator	Shell Type
2	01	Receptacle
	02	Receptacle
	03	Receptacle
	04	Receptacle
	05	Receptacle
	06	Plug
	28	Receptacle
	31	Receptacle
	32	Receptacle
	33	Receptacle
	34	Plug

C. Contact Part Numbers



2446321 S00061546691_V1

CRIMP TYPE CONTACTS FOR MIL-C-81511 SERIES I AND II CONNECTORS
Figure 3



2446651 S00061545900_V1

EXAMPLE OF A CONTACT SIZE
Figure 4

20-61-30



**707, 727-787
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ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS

**Table 3
CONTACT PART NUMBERS**

MIL-C-81511 Connector Series	Contact Size		Contact		
	Engaging End	Crimp Barrel	Type	Part Number	Supplier
1	23	22	Pin	M39029/47-314	QPL
			Socket	M39029/33-264	QPL
	20	20	Pin	M39029/47-316	QPL
			Socket	M39029/33-266	QPL
	16	16	Pin	M39029/47-337	QPL
			Socket	M39029/33-268	QPL
2	23	22	Pin	M39029/47-314	QPL
			Socket	M39029/46-304	QPL
	20	20	Pin	M39029/47-316	QPL
			Socket	M39029/46-306	QPL
	16	16	Pin	M39029/47-337	QPL
			Socket	M39029/46-308	QPL
	12	12	Pin	M39029/47-339	QPL
			Socket	M39029/46-310	QPL

2. INSERT CONFIGURATIONS

A. MIL-C-81511 Series 1 and 2 Connectors

**Table 4
INSERT CONFIGURATIONS**

Insert Configuration	Contact Cavity		Reference
	Count	Size	
8-04	4	23	Figure 5
10-03	3	16	
10-05	5	20	
10-12	12	23	
14-04	4	12	Figure 6
14-09	9	16	
14-19	19	20	
14-37	37	23	

20-61-30

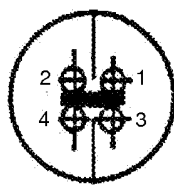


707, 727-787
STANDARD WIRING PRACTICES MANUAL

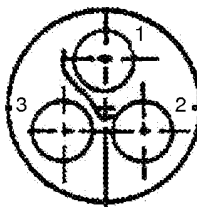
ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS

Table 4 INSERT CONFIGURATIONS (Continued)

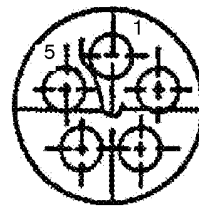
Insert Configuration	Contact Cavity		Reference
	Count	Size	
16-07	7	12	Figure 7
16-14	14	16	
16-27	27	20	
16-55	55	23	
18-09	9	12	Figure 8
18-21	21	16	
18-38	38	20	
18-85	85	23	
20-11	11	12	Figure 9
20-24	24	16	
20-45	45	20	
20-92	92	23	
22-14	14	12	Figure 10
22-32	32	16	
22-61	61	20	
22-121	121	23	
24-19	19	12	Figure 11
24-41	41	16	
24-74	74	20	
24-155	155	23	



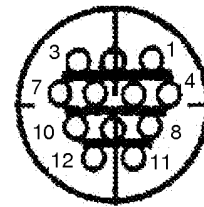
8-04



10-03



10-05



10-12

2449126 S00061546692_V1

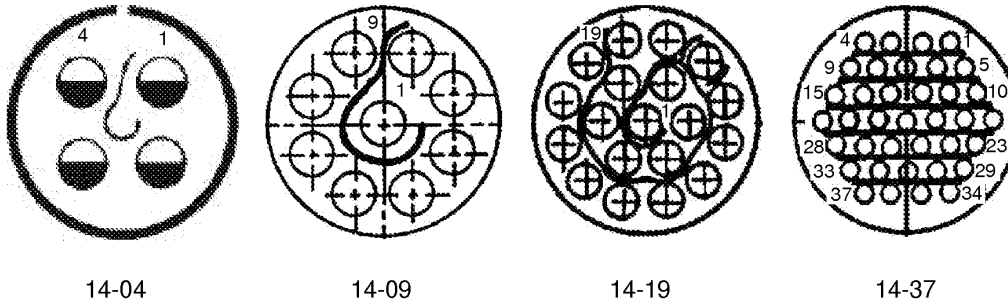
Shell Size 8 and 10
Figure 5

20-61-30



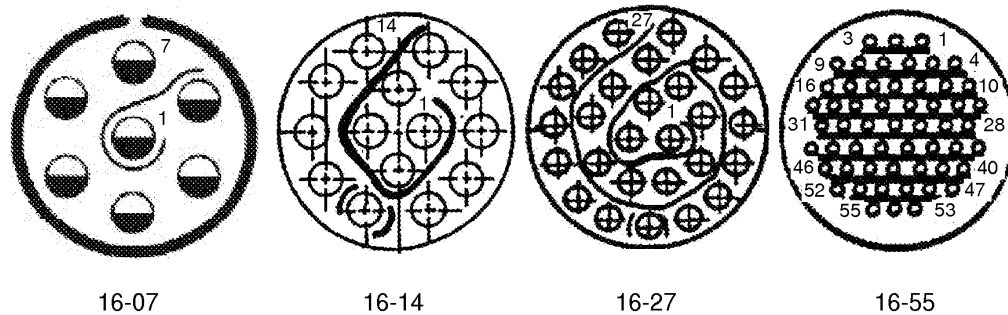
707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS



2449127 S00061546693_V1

Shell Size 14
Figure 6



2449128 S00061546694_V1

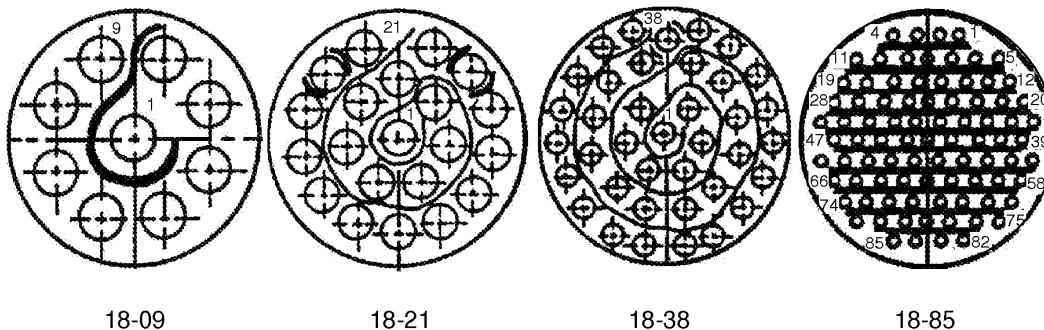
Shell Size 16
Figure 7

20-61-30



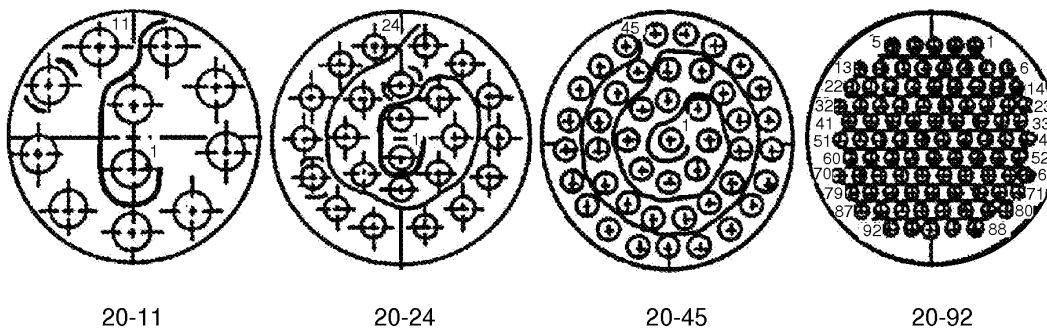
707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS



2449129 S00061546695_V1

Shell Size 18
Figure 8



2449130 S00061546696_V1

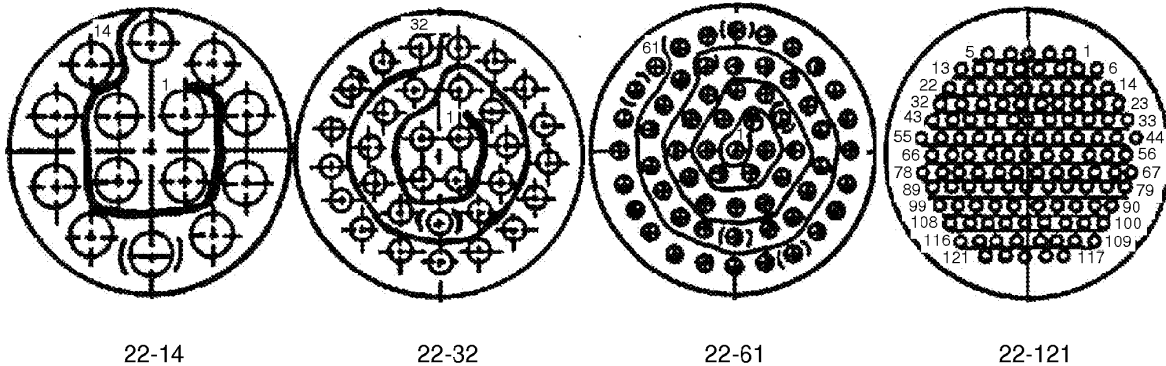
Shell Size 20
Figure 9

20-61-30



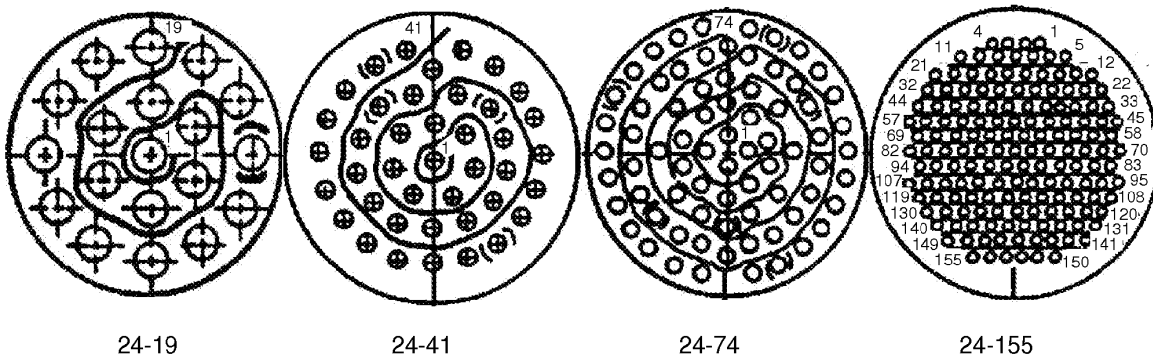
707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS



2449131 S00061546697_V1

Shell Size 22
Figure 10



2449132 S00061546698_V1

Shell Size 24
Figure 11

20-61-30



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS

3. CONNECTOR DISASSEMBLY

A. Contact Removal

Table 5
CONTACT REMOVAL TOOLS

Contact		Removal Tool
Engaging End Size	Type	
23	Pin	294-286
		MS3342-23
		ATA-2348-2
	Socket	294-287
		MS3344-23
		M81969/3-01
		ATA-2348-22
20	Pin	294-28
		MS3342-20
	Socket	294-29
		MS3344-20
16	Pin	294-31
		MS3342-16
	Socket	294-32
		MS3344-16
12	Pin	294-34
		MS3342-12
	Socket	294-35
		MS3344-12

- (1) If a cable clamp is installed, loosen the clamp screws.
- (2) Remove the cable clamp from the connector.
- (3) To unlock the rear nut, turn the nut counterclockwise approximately 2-1/2 turns. Refer to Figure 12.

NOTE: The rear nut assembly must be unlocked before any contacts can be inserted or removed.

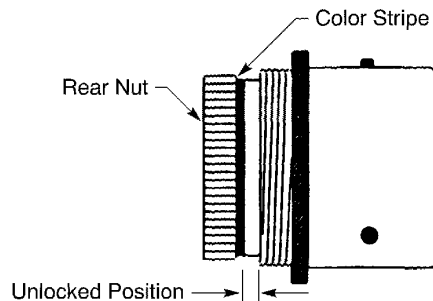
After approximately 2-1/2 turns:

- Resistance to more turns can be felt
- The colored stripe can be seen fully.

20-61-30



707, 727-787
STANDARD WIRING PRACTICES MANUAL
ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS



2446322 S00061546699_V1

REAR NUT OF THE CONNECTOR

Figure 12

- (4) To remove a pin contact:
- (a) Make a selection of a contact removal tool from Table 5.
 - (b) From the front of the connector, put the removal tool over the pin.
 - (c) Push until the tool is fully against the face of the connector insert.
 - (d) Pull the contact out of the rear of the connector.

CAUTION: REMOVE ONE CONTACT AT A TIME TO PREVENT DAMAGE TO THE CONNECTOR GROMMET.

- (5) To remove a socket contact:
- (a) Make a selection of a contact removal tool from Table 5.
 - (b) Push the tip of the removal tool into the insert and the socket contact.
 - (c) Push until the tool is fully against the face of the connector insert.
 - (d) Pull the contact out of the rear of the connector.

CAUTION: REMOVE ONE CONTACT AT A TIME TO PREVENT DAMAGE TO THE CONNECTOR GROMMET.

20-61-30



707, 727-787 STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS

4. CONNECTOR ASSEMBLY

A. Contact Assembly

Table 6
INSULATION REMOVAL LENGTH

Contact Size		Removal Length (inch)		
Engaging End	Crimp Barrel	Minimum	Target	Maximum
23	22	0.219	0.219	0.250
20	20	0.268	0.268	0.299
16	16	0.268	0.268	0.299
12	12	0.281	0.281	0.313

Table 7
CONTACT CRIMP TOOLS

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool		
		Basic Unit		Locator
		Part Number	Setting	
26	22	ST2220-1-Y	5	ST2220-1-52
24	22	294-286	4	294-1551-01
		M22520/2-01	4	M22520/2-03
		MS3198	4	-
		ST2220-1-Y	5	ST2220-1-53
		ST2220-10	5	ST2220-10-3
22	22	294-286	5	294-1551-01
		M22520/2-01	5	M22520/2-03
		MS3198	5	-
		ST2220-1-Y	5	ST2220-1-53
		ST2220-10	5	ST2220-10-3
20	20	MS3198	3	-
	20	MS3198	4	-
20	16	MS3198	4	-
	16	MS3198	5	-
18	16	MS3198	5	-
16	16	294-1718	-	294-1722-01
		MS3198	5	-
14	12	294-1462	-	294-1722-01
		MS3191-4	-	-

20-61-30



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS

Table 7 CONTACT CRIMP TOOLS (Continued)

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool		
		Basic Unit		Locator
		Part Number	Setting	
12	12	294-1462	-	294-1722-01
		MS3191-4	-	-

- (1) Remove the necessary length of insulation from the end of the wire. Refer to Table 6.
- (2) Make a selection of a contact crimp tool from Table 7.
- (3) Put the contact in the crimp tool locator.
- (4) Put the end of the wire into the crimp barrel of the contact.
- (5) Close the handles of the crimp tool until the ratchet releases.
- (6) Remove the wired contact from the tool.
- (7) Examine the contact to make sure that the wire can be seen in the inspection hole.

B. Contact Insertion

Table 8
CONTACT INSERTION TOOLS

Crimp Barrel Size	Insertion Tool
22	294-278
	MS3323-22
20	294-27
	MS3323-20
16	294-30
	MS3323-16
12	294-33
	MS3323-12

- (1) If a cable clamp is used, put the clamp on the wire bundle.
- (2) To unlock the rear nut, turn the nut counterclockwise approximately 2-1/2 turns. Refer to Figure 4.

NOTE: The rear nut assembly must be unlocked before any contacts can be inserted or removed.

After approximately 2-1/2 turns:

- Resistance to more turns can be felt
 - The colored stripe can be seen fully.
- (3) Manually put the wired contact in the applicable contact cavity until only the crimped portion of the contact extends from the connector grommet.
 - (4) Make a selection of an insertion tool from Table 8.
 - (5) Put tool around the rear of the contact so that it is against the contact shoulder.

20-61-30



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS

- (6) Push the contact into the connector until it is fully inserted.
- (7) Carefully pull the tool from the connector grommet.

C. Seal Plug Installation

- (1) Install a seal plug into each contact cavity that is not used.

NOTE: As an alternative, an unwired contact can be inserted before the seal plug is installed.

D. Connector Assembly

- (1) To lock the rear nut, turn the nut until it is tight and the color stripe cannot be seen.
- (2) If a cable clamp is used, push the clamp until it is against the rear of the connector.
- (3) Tighten the cable clamp manually.
- (4) Tighten the clamp 1/8 of a turn more.

5. APPROVED TOOL SUPPLIERS

A. Contact Removal Tools

Table 9
CONTACT REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
294-28	Amphenol
294-286	Amphenol
294-287	Amphenol
294-29	Amphenol
294-31	Amphenol
294-32	Amphenol
294-34	Amphenol
294-35	Amphenol
294-386	Amphenol
ATA-2348-22	Astro
M81969/3-01	QPL
MS3342-12	QPL
MS3342-16	QPL
MS3342-20	QPL
MS3342-23	QPL
MS3344-12	QPL
MS3344-16	QPL
MS3344-20	QPL
MS3344-23	QPL

20-61-30



707, 727-787
STANDARD WIRING PRACTICES MANUAL

ASSEMBLY OF MIL-C-81511 SERIES 1 AND SERIES 2 CONNECTORS

B. Contact Insertion Tools

Table 10
CONTACT INSERTION TOOL SUPPLIERS

Insertion Tool	Supplier
294-278	Amphenol
294-27	Amphenol
294-30	Amphenol
294-33	Amphenol
MS3323-12	QPL
MS3323-16	QPL
MS3323-20	QPL
MS3323-22	QPL

C. Contact Crimp Tools

Table 11
CONTACT CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
294-1462	Amphenol
294-1551-01	Amphenol
294-1718	Amphenol
294-1722-01	Amphenol
294-286	Amphenol
M22520/2-01	QPL
M22520/2-03	QPL
MS3191-4	QPL
MS3198	QPL
ST2220-1-52	Boeing
ST2220-1-53	Boeing
ST2220-1-Y	Boeing
ST2220-10	Boeing
ST2220-10-3	Boeing

20-61-30