ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

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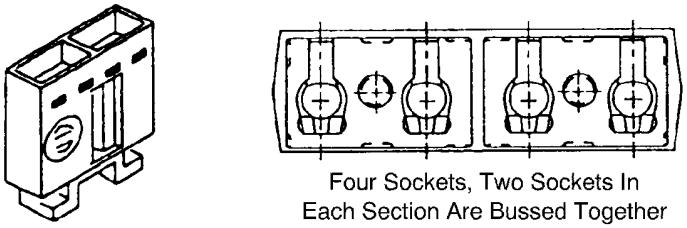
ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

1. PART NUMBERS AND DESCRIPTION

A. Terminal Block Module Part Numbers

Table 1
TERMINAL BLOCK MODULES

Boeing Standard	Block Type (Reference)	Terminal Block Module		
		Part Number	Density	Supplier
BACM15C1A	F	YHLZ-22	Standard	Burndy
BACM15C1B	G	YHLZ-44	Standard	Burndy
BACM15C2A	H	YHLZ-8	Standard	Burndy
BACM15C3A	X	YHLZ16-2	High	Burndy
BACM15C3D		421120-450	High	Precision Connector Design
BACM15C3B	Y	YHLZ16-4	High	Burndy
BACM15C3E		421120-452	High	Precision Connector Design
BACM15C3C	Z	YHLZ16-8	High	Burndy
BACM15C3F		421120-454	High	Precision Connector Design



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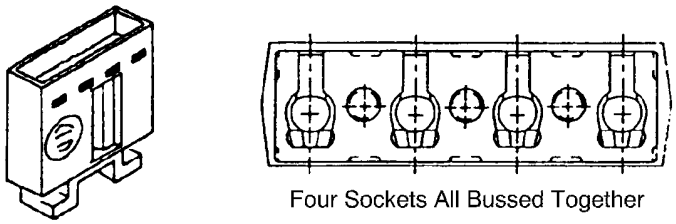
TYPE F TERMINAL BLOCK
Figure 1



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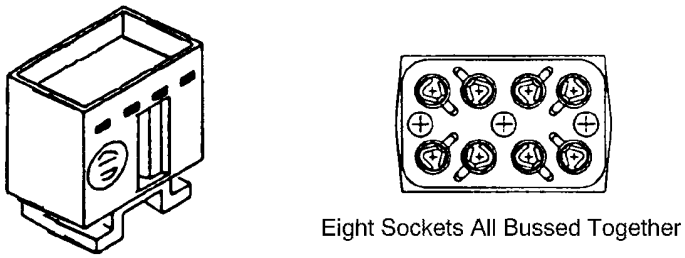
TYPE G TERMINAL BLOCK
Figure 2



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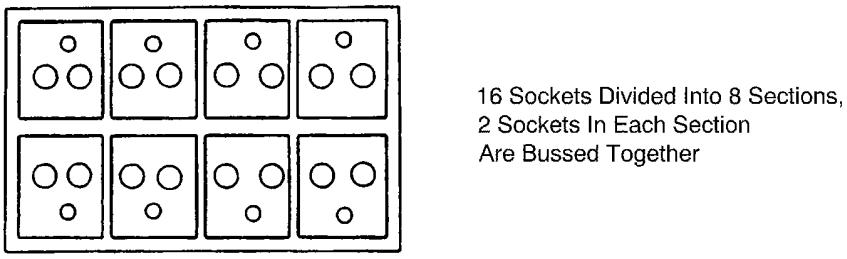
TYPE H TERMINAL BLOCK
Figure 3



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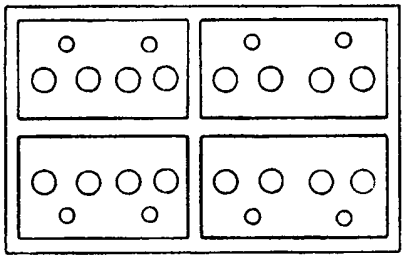
TYPE X TERMINAL BLOCK
Figure 4

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES



16 Sockets Divided Into 4 Sections,
4 Sockets In Each Section Are
Bussed Together

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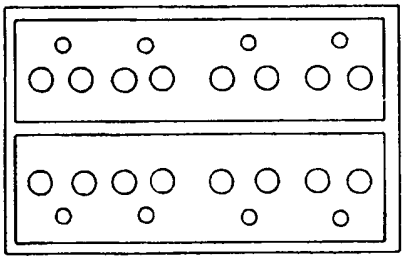
TYPE Y TERMINAL BLOCK
Figure 5



16 Sockets Divided Into 2 Sections,
8 Sockets In Each Section Are
Bussed Together

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TYPE Z TERMINAL BLOCK
Figure 6

B. Resistor and Diode Terminal Block Part Numbers

Table 2
BURNDY RESISTOR TERMINAL BLOCK MODULES

Module Part Number	Internal Resistor				Module Color		Supplier
	Resistance (ohm)	Tolerance (percent)	Watts (W)	Part Number	Side A	Side B	
YHLZR-1	27K	2	0.5	RLR20C2702GR	Blue	Natural	Burndy
YHLZR-2	4.3K	2	0.5	RLR20C4301GR	Blue	Black	Burndy
YHLZR-3	5.6K	2	0.5	RLR20C5601GR	Black	Black	Burndy
YHLZR-4	6.2K	2	0.5	RLR20C6201GR	Yellow	Yellow	Burndy
YHLZR-5	9.1K	2	0.5	RLR20C9101GR	Black	Orange	Burndy
YHLZR-6	10	2	0.25	RLR07C10ROGR	Yellow	Black	Burndy
YHLZR-7	120	5	0.25	RLR07C1200GS	Yellow	Green	Burndy
YHLZR-8	51.1K	1	0.25	RNC60K5112FR	Yellow	Blue	Burndy
YHLZR-9	12K	2	0.5	RLR20C1202GR	Yellow	Red	Burndy
YHLZR-10	11K	1	0.25	RLR07C1102FS	Yellow	Natural	Burndy

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

Table 2 BURNDY RESISTOR TERMINAL BLOCK MODULES (Continued)

Module Part Number	Internal Resistor				Module Color		Supplier
	Resistance (ohm)	Tolerance (percent)	Watts (W)	Part Number	Side A	Side B	
YHLZR-11	24K	2	0.5	RLR20C2402GR	Brown	Brown	Burndy
YHLZR-13	240	2	0.25	RLR07C2400GR	Brown	Brown	Burndy
YHLZR-14A	1K	2	0.5	RLR20C1001GR	Green	Green	Burndy
YHLZR-15A	2.7K	2	0.5	RLR20C2701GR	Black	Red	Burndy
YHLZR-16	71.5	1	0.5	RLR20C71R5FR	Red	Orange	Burndy
YHLZR-17	2.0K	1	2	RWR80S2001FR	Green	Brown	Burndy
YHLZR-18	4.3K	2	0.5	RLR20C4301GR	Brown	Brown	Burndy
YHLZR-19	270	1	0.5	RLR20C2700FR	Brown	Brown	Burndy
YHLZR-20	820	1	0.5	RLR20C8200FR	Brown	Brown	Burndy
YHLZR-21	23.2K	1	0.25	RLR07C2322FR	Brown	Brown	Burndy
YHLZR-22	2.15K	1	0.25	RLR0C72151FR	Brown	Brown	Burndy
YHLZR-23	1.69K	1	0.25	RLR07C1691FR	Brown	Brown	Burndy
YHLZR-24	750	1	0.25	RLR07C7500FR	Brown	Brown	Burndy
YHLZR-25	487	1	0.25	RLR07C4870FS	Brown	Brown	Burndy
YHLZR-26	316	1	0.25	RLR07C3160FR	Brown	Brown	Burndy
YHLZR-27	232	1	0.25	RLR07C2320FR	Brown	Brown	Burndy
YHLZR-28	1.8K	0.5	0.1	RNC55H1801DR	Brown	Brown	Burndy
YHLZR-29	1.5K	1	0.25	RLR07C1501FR	Brown	Brown	Burndy
YHLZR-30	3K	0.5	0.25	RNC60H3001DR	Brown	Brown	Burndy
YHLZR-31	16K	2	0.25	RLR07C1602GR	Brown	Brown	Burndy
YHLZR-32	100K	1	0.1	RNC55H1003FR	Brown	Brown	Burndy
YHLZR-33	10K	2	0.25	RLR07C1002GR	Brown	Brown	Burndy
YHLZR-34	120K	1	0.1	RNC55J1203BS	Brown	Brown	Burndy
YHLZR-35	80.6K	1	0.25	RNC60H8062BS	Brown	Brown	Burndy
YHLZR-36	33K	5	0.25	RLR07C3302JR	Brown	Brown	Burndy
YHLZR-37	15	1	2	RWR80N15ROFS	Brown	Brown	Burndy
YHLZR-38	4.99K	1	0.25	RLR07C4991FS	Brown	Brown	Burndy
YHLZR-39	332	1	0.5	RLR20C3320FR	Brown	Brown	Burndy
YHLZR-40	365	1	0.5	RLR20C3650FR	Brown	Brown	Burndy
YHLZR-41	200K	1	0.25	RLR07C2003FR	Brown	Brown	Burndy
YHLZR-42	100	1	0.5	RLR20C1000FS	Brown	Brown	Burndy
YHLZR-43	47K	2	0.25	RLR07C4702GR	Brown	Brown	Burndy
YHLZR-44	200K	1	0.25	RNC60H2003FS	Brown	Brown	Burndy
YHLZR-45	150	2	1	RWR81S1500GR	Brown	Brown	Burndy

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

Table 2 BURNDY RESISTOR TERMINAL BLOCK MODULES (Continued)

Module Part Number	Internal Resistor				Module Color		Supplier
	Resistance (ohm)	Tolerance (percent)	Watts (W)	Part Number	Side A	Side B	
YHLZR-48	1.0K	1	2	RWR80S1001FR	Brown	Brown	Burndy
YHLZR-49	22.1K	1	0.25	RNC60J2212FM	Brown	Brown	Burndy
YHLZR-50	0.124K	1	0.25	RLR07C1240FM	Brown	Brown	Burndy
YHLZR-51	0.412K	1	0.25	RN60D4120F	Brown	Brown	Burndy

Table 3
BURNDY DIODE TERMINAL BLOCK MODULES

Part Number	Color		Internal Components	Marking		Notes	Supplier
	Side A	Side B		Side A	Side B		
YHLZD-1	Blue	Orange	JAN1N3613 and RLR32C1500GR	+	-	YHLZD-32 is a satisfactory alternative.	Burndy
YHLZD-2	Red	Red	JAN1N5126 or LS10318-2 and RLR32C1500GR	---	---	YHLZD-32 is a satisfactory alternative.	Burndy
YHLZD-3	Green	Green	JAN1N6130 or LS10318-3	---	---	YHLZD-32 is a satisfactory alternative.	Burndy
YHLZD-8	Black	White	JAN1N3613	+	-	YHLZD-32 is a satisfactory alternative.	Burndy
YHLZD-9	Red	Red	JAN1N3613	A	C	YHLZD-32 is a satisfactory alternative.	Burndy
YHLZD-11	Red	Green	JAN1N3022	A	C	-	Burndy
YHLZD-14	Red	Blue	R4615	A	C	No longer available, no alternative.	Burndy
YHLZD-15	Red	Natural	1N5552	A	C	If no longer available, YHLZD-33 is a satisfactory alternative.	Burndy
YHLZD-23	Green	Blue	UZ1325	A	C	No longer available, no alternative	Burndy
YHLZD-24	Green	Orange	UDZ860	A	C	-	Burndy
YHLZD-26	Green	Black	1N5061	A	C	-	Burndy
YHLZD-28	Brown	Black	JANTX1N4965	A	C	-	Burndy
YHLZD-29	Brown	Yellow	JANTX1N5551	A	C	-	Burndy
YHLZD-30	Brown	Orange	JANTX1N5618	A	C	-	Burndy
YHLZD-31	Green	Yellow	JANTX1N4971	A	C	-	Burndy
YHLZD-32	Blue	Yellow	JANTX1N3613	A	C	-	Burndy
YHLZD-33	Red	Yellow	JANTX1N5552	A	C	-	Burndy

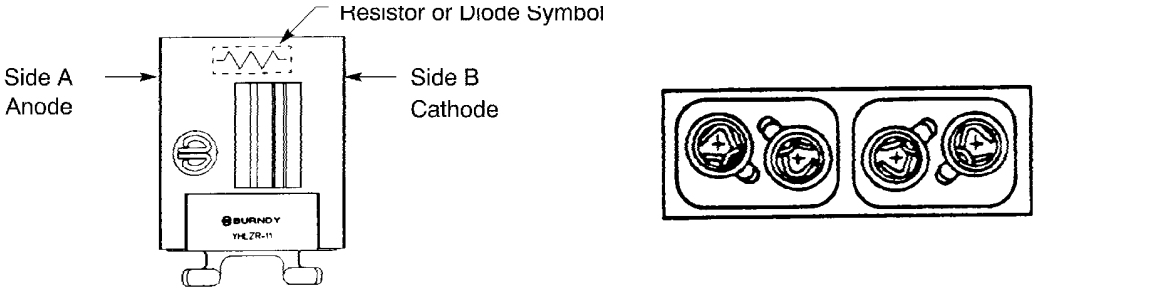
ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

Table 3 BURNDY DIODE TERMINAL BLOCK MODULES (Continued)

Part Number	Color		Internal Components	Marking		Notes	Supplier
	Side A	Side B		Side A	Side B		
YHLZD-34	Red	Brown	JANTX1N5553	A	C	Electrostatic Discharge Sensitive (ESDS)	Burndy
YHLZD-35	Red	Black	JANTX1N4148-1	A	C	Electrostatic Discharge Sensitive (ESDS)	Burndy
YHLZD-38	Blue	Blue	JANTX1N4972	A	C	-	Burndy
YHLZD-39	Natural	Red	JANTX1N6467	A	C	-	Burndy
YHLZD-40	Natural	Green	JANTX1N6122 or JANTX1N6122A	A	C	-	Burndy
YHLZD-41	Natural	Blue	JANTX1N6158	A	C	-	Burndy

NOTE: For the internal components in the modules in Table 3:

- A JANTXV() or a JANS() component is a satisfactory alternative to a specified JANTX() component
- A JANTX(), JANTXV() or a JANS() component is a satisfactory alternative to a specified JAN() component.



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TYPE F RESISTOR OR DIODE TERMINAL BLOCK
Figure 7

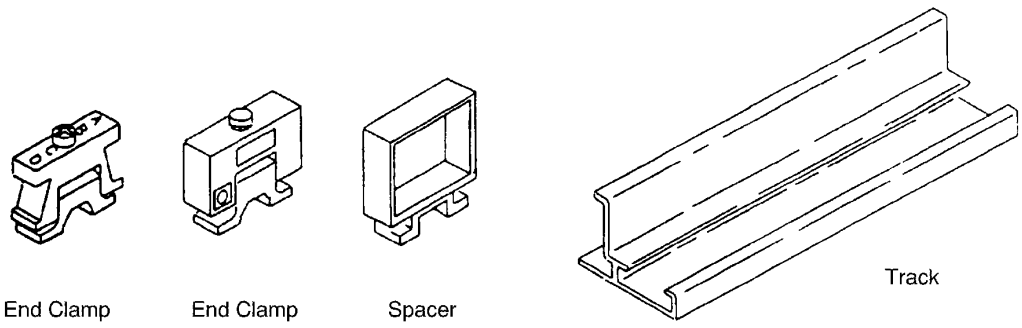
C. Terminal Block Module Accessory Part Numbers

NOTE: A BACS18AR1 identification spacer is not necessary when the BACC29A2 end clamp is used.

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

Table 4
TERMINAL BLOCK MODULE ACCESSORIES

Accessory	Boeing Standard	Module Accessories	
		Part Number	Supplier
End Clamp	BACC49A1	AMMC-6	Burndy
		H-28-1	Harper
		UP103	Metal Forms
	BACC49A2	H-49-2	Harper
		MF104-2	Metal Forms
	BACC49A3	H-49-3	Harper
		MF104-3	Metal Forms
Spacer	BACS18AR1	YHLZ1C-2	Burndy
		FAB276-A	Fabricators
		H-21-1	Harper
		UP300-1	Metal Forms
	BACS18AR6	YHLZ1C-7	Burndy
		FAB276-0	Fabricators
		H-21-6	Harper
		UP300-6	Metal Forms
Track	BACT44()	AMY()T()	Burndy



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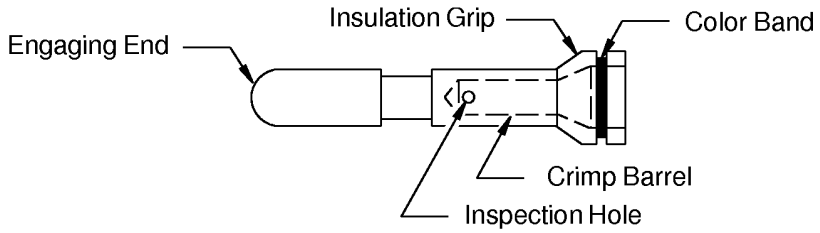
TERMINAL BLOCK MODULE ACCESSORIES
Figure 8

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

D. Contact Part Numbers for the Standard Density Terminal Blocks



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BACC47DE CONTACTS FOR THE STANDARD DENSITY TERMINAL BLOCKS
Figure 9

NOTE: Refer to Paragraph 5.A. for contact selection.

Table 5
SUPPLIER PART NUMBERS FOR BOEING STANDARD CONTACTS

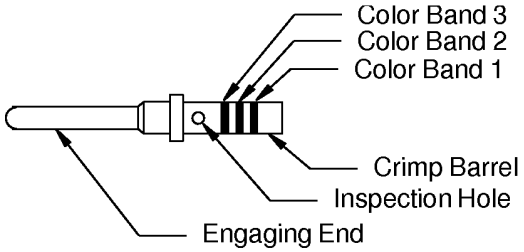
Boeing Standard	Contact	
	Part Number	Supplier
BACC47DE1A	YHMM16-6D28	Burndy
	417-1215-332	Tri-Star
BACC47DE3A	YHMM22-4D28	Burndy
	417-1223-332	Tri-Star
BACC47DE4A	YHMM22-5D28	Burndy
	417-1222-332	Tri-Star
BACC47DE5A	YHMM16-7D28	Burndy
	417-1216-332	Tri-Star
BACC47DE6A	YHMM18-3D28	Burndy
	417-1218-332	Tri-Star
BACC47DE7A	YHMM20-3D28	Burndy
	417-1220-332	Tri-Star
BACC47DE8A	YHMM24-3D28	Burndy
	417-1224-332	Tri-Star

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

Table 6
ALTERNATIVE CONTACT PART NUMBERS

Specified Contact			Alternative Contact		
Boeing Standard	Contact		Boeing Standard	Contact	
	Part Number	Supplier		Part Number	Supplier
BACC47DE1	YHMM16-1F50	Burndy	BACC47DE1A	YHMM16-6D28	Burndy
				417-1215-332	Tri-Star
BACC47DE3	YHMM22-1DB8	Burndy	BACC47DE3A	YHMM22-4D28	Burndy
				417-1223-332	Tri-Star
BACC47DE4	YHMM22-2DB8	Burndy	BACC47DE4A	YHMM22-5D28	Burndy
				417-1222-332	Tri-Star
BACC37DE5	YHMM16-4F50	Burndy	BACC47DE5A	YHMM18-3D28	Burndy
				417-1216-332	Tri-Star
BACC47DE6	YHMM18-2F50	Burndy	BACC47DE6A	YHMM18-3D28	Burndy
				417-1218-332	Tri-Star
-	YHMM20-1F50	Burndy	BACC47DE7A	YHMM20-3D28	Burndy
				417-1220-332	Tri-Star
BACC47DE7	YHMM20-2DB8	Burndy	BACC47DE7A	YHMM20-3D28	Burndy
				417-1220-332	Tri-Star
BACC47DE8	YHMM24-1F50	Burndy	BACC47DE8A	YHMM24-3D28	Burndy
				417-1224-332	Tri-Star

E. Contact Part Numbers for the High Density Terminal Block



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LOCATIONS OF THE COLOR BANDS
Figure 10

Table 7
CONTACT PART NUMBERS FOR THE HIGH DENSITY TERMINAL BLOCKS

Part Number	Color Code		Supplier
	Band	Color	
M39029/11-145	1	Brown	QPL
	2	Yellow	
	3	Green	

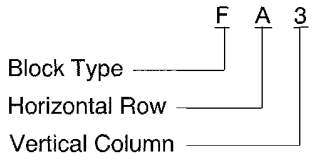
2. TERMINAL BLOCK MODULE LOCATION CODES

A. Terminal Block Module Identification

Terminal block modules are identified on the wire diagrams by a code that gives:

- The block type
- The location.

Refer to Figure 11.



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TERMINAL BLOCK MODULE LOCATION CODE
Figure 11

The location code is the position of the block in relation to the horizontal row identifier and the vertical column identifier.

Refer to Figure 12.

The vertical column identifier:

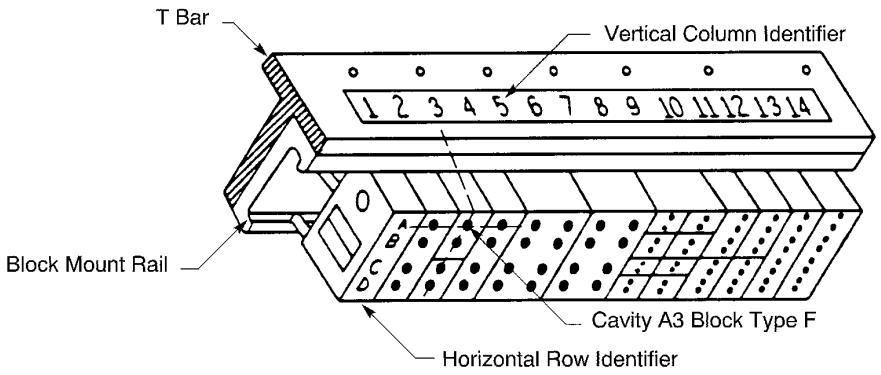
- Can be located on the T bar or on the block mount rail
- Gives the column of the cavities that is directly adjacent to the number.

The horizontal row identifier:

- Can be located on the end clamp, on a spacer, or on the block mount rail
- Gives the row of the cavities in all the blocks in the rail that is directly adjacent to the letter.

NOTE: If the block module identification code does not have a horizontal row identifier:

- All the cavities in that column are bussed together
- The horizontal location is not important.



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LOCATION OF A MODULE
Figure 12

3. TERMINAL BLOCK MODULE REMOVAL

A. Removal of the Module from the Track

(1) Loosen the clamp screw until the clamp can be moved.

(2) Turn the clamp 90 degrees and lift from the track.

NOTE: A satisfactory alternative is to slide the clamp out of the track.

(3) Move or remove any terminal block modules next to the specified module.

(4) To remove the block module, turn the module 90 degrees and lift from the track.

NOTE: A satisfactory alternative is to slide the block module out of the track.

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

4. TERMINAL BLOCK MODULE DISASSEMBLY

A. Contact Removal from Standard Density Terminal Block Modules

Table 8
CONTACT REMOVAL TOOLS

Contact	Removal Tool		
	Handle	Tip	Supplier
BACC47DE()	ATB3062-2	-	Astro
	DHK21	-	Daniels
	J-1276-1	-	Burndy
	ST2220-3-34-1	ST2220-3-34A-3	Boeing
	ST2220-3-34-2	ST2220-3-34A-8	Boeing

(1) Make a selection of a contact removal tool from Table 8.

CAUTION: USE ONLY THE REMOVAL TOOLS THAT ARE GIVEN IN TABLE 8. OTHER TOOLS CAN CAUSE DAMAGE TO THE MODULE.

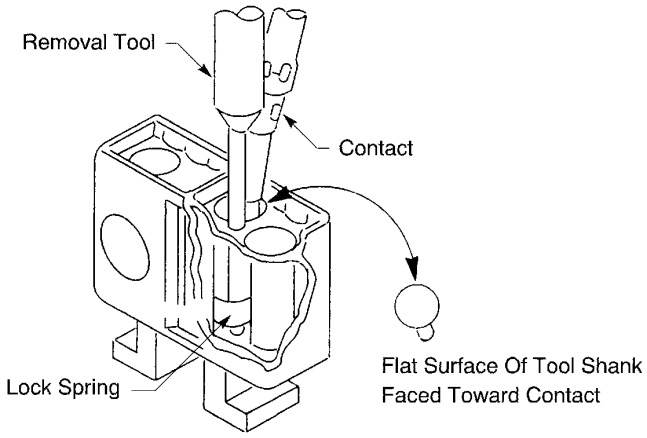
(2) Put the removal tool into the contact removal tool slot in the module.
The contact removal tool slot is adjacent to the contact.

(3) Push the tool into the slot of the module until it stops.
This releases the lock spring that locks the contact in position.

CAUTION: IF A CONTACT IS REMOVED WHEN THE LOCK SPRING IS NOT RELEASED, DAMAGE TO ANY OF THESE COMPONENTS OCCURS:

- THE CONTACT
- THE MODULE
- THE WIRE.

(4) Carefully, pull the wire and the contact from the cavity of the module. Refer to Figure 13.



CONTACT REMOVAL
Figure 13

(5) After the wired contact is removed, pull the removal tool out of the slot.

B. Contact Removal from High Density Terminal Block Modules

Table 9
CONTACT REMOVAL TOOLS

Contact	Removal Tool	Supplier
M39029/11-145	CIET20HDL	Cannon
	DRK-269	Daniels
	M81969/1-02	QPL
	MS3156-20	QPL

(1) Make a selection of a removal tool from Table 9.

NOTE: The DRK-269 contact removal tool is recommended for high density terminal blocks.

(2) Put the removal tool on the wire.

(3) Push the tool on the wire and into the module block until it stops.

(4) Hold the wire against the tool.

(5) Pull the tool and the wired contact out of the module at the same time.

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

5. STANDARD DENSITY TERMINAL BLOCK MODULE ASSEMBLY

A. Contact Assembly

Table 10
CONTACT SELECTION FOR A CONTACT THAT HAS ONE WIRE IN THE CRIMP BARREL

Wire Size (AWG)	Wire Insulation Diameter (inch)		Contact			
	Min	Max	Crimp Barrel Wire Size Range	Boeing Standard	Finish	Color Band
24	0.032	0.045	24	BACC47DE8A	Gold	Violet
				BACC47DE8	Silver	Green
	0.041	0.065	22-24	BACC47DE4A	Gold	Green
				BACC47DE4	Gold	Green
	0.070	0.080	22-24	BACC47DE3A	Gold	None
				BACC47DE3	Gold	None
22	0.047	0.065	20-22	BACC47DE7A	Gold	Red
				BACC47DE7	Gold	Red
	0.041	0.065	22-24	BACC47DE4A	Gold	Green
				BACC47DE4	Gold	Green
	0.070	0.080	22-24	BACC47DE3A	Gold	None
				BACC47DE3	Gold	None
20	0.047	0.065	20-22	BACC47DE7A	Gold	Red
				BACC47DE7	Gold	Red
	0.056	0.069	18-20	BACC47DE6A	Gold	Black
				BACC47DE6	Silver	Black
	0.063	0.083	16-20	BACC47DE5A	Gold	Blue
				BACC47DE5	Silver	Red
	0.080	0.110	16-20	BACC47DE1A	Gold	Brown
				BACC47DE1	Silver	None
18	0.056	0.069	18-20	BACC47DE6A	Gold	Black
				BACC47DE6	Silver	Black
	0.063	0.083	16-20	BACC47DE5A	Gold	Blue
				BACC47DE5	Silver	Red
	0.080	0.110	16-20	BACC47DE1A	Gold	Brown
				BACC47DE1	Silver	None

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

Table 10 CONTACT SELECTION FOR A CONTACT THAT HAS ONE WIRE IN THE CRIMP BARREL (Continued)

Wire Size (AWG)	Wire Insulation Diameter (inch)		Contact			
	Min	Max	Crimp Barrel Wire Size Range	Boeing Standard	Finish	Color Band
16	0.063	0.083	16-20	BACC47DE5A	Gold	Blue
				BACC47DE5	Silver	Red
	0.080	0.110	16-20	BACC47DE1A	Gold	Brown
				BACC47DE1	Silver	None

Table 11
CONTACT SELECTION FOR A CONTACT THAT HAS TWO WIRES IN THE CRIMP BARREL

Wire Combination		Boeing Standard
First Wire Conductor Size (AWG)	Second Wire Conductor Size (AWG)	
20	20	BACC47DE1A
		BACC47DE1
		BACC47DE5A
		BACC47DE5
		BACC47DE6A
		BACC47DE6
20	22	BACC47DE1A
		BACC47DE1
		BACC47DE5A
		BACC47DE5
		BACC47DE6A
		BACC47DE6
20	24	BACC47DE1A
		BACC47DE1
		BACC47DE5A
		BACC47DE5
		BACC47DE6A
		BACC47DE6

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

Table 11 CONTACT SELECTION FOR A CONTACT THAT HAS TWO WIRES IN THE CRIMP BARREL (Continued)

Wire Combination		Boeing Standard
First Wire Conductor Size (AWG)	Second Wire Conductor Size (AWG)	
22	22	BACC47DE1A
		BACC47DE1
		BACC47DE5A
		BACC47DE5
		BACC47DE6A
		BACC47DE6
22	24	BACC47DE1A
		BACC47DE1
		BACC47DE5A
		BACC47DE5
		BACC47DE6A
		BACC47DE6
24	24	BACC47DE1A
		BACC47DE1
		BACC47DE5A
		BACC47DE5
		BACC47DE6A
		BACC47DE6

Table 12
MANUAL CRIMP TOOLS

Basic Unit		Die	Locator	Supplier
Part Number	Setting			
LH8	5	-	LH281	Daniels
M10S-1	-	S-1	SL-53	Burndy
11210	-	-	612245	Astro

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

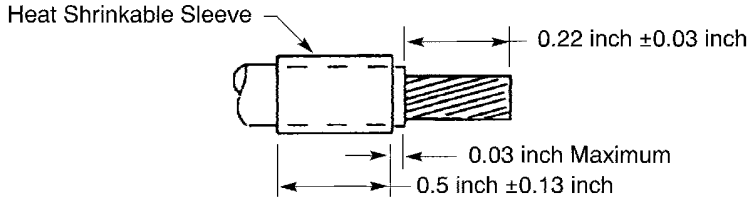
Table 13
POWER CRIMP TOOLS

Basic Unit	Die	Positioner	Supplier
YD2-1	YDD-1	-	Burndy
AM2-4	AMK-11	-	Burndy
AM4D-1	AMK-11	-	Burndy
WA22HPB	-	D30	Daniels
WA27XF	-	TP-904	Daniels
WA27FAP	-	AP27SA	Daniels

(1) Make a selection of a contact from:

- Table 10 for a contact that has one wire in the crimp barrel
- Table 11 for a contact that has two wires in the crimp barrel.

(2) Remove 0.22 inch ±0.03 inch of the insulation from the end of the wire or wires. Refer to Figure 14.



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WIRE PREPARATION
Figure 14

(3) If only one wire will be terminated in the contact, measure the diameter of the insulation of the wire.

(4) If one wire will be terminated in the contact, and If the wire insulation diameter is less than the minimum wire insulation diameter specified in Table 10 for the contact, do step (a) through step (d).

(a) Make a selection of a Grade B, Class 1 heat shrinkable sleeve from Subject 20-00-11.

(b) Put a 0.5 inch ±0.13 inch length of the sleeve on the wire.

Make sure that the end of the sleeve is aligned with the end of the wire insulation.

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

Make sure that the end of the sleeve:

- Is not on the conductor
- Is within 0.03 inch of the end of the insulation.

(d) If the insulation grip of the contact and the outer diameter of the sleeve on the wire do not make a fit, measure the new diameter of the sleeve and insulation on the wire, and make a selection of a different contact from Table 10.

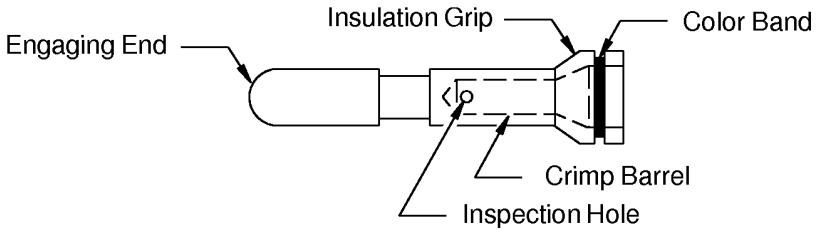
(5) Make a selection of a manual crimp tool from Table 12 or a power crimp tool from Table 13.

(6) Put the conductor or the conductors into the crimp barrel of the contact. Refer to Figure 15.

Make sure that:

- All of the conductors of the wire or wires are inside the crimp barrel of the contact
- The conductors can be seen in the inspection hole of the contact
- If only one wire is in the crimp barrel of the contact, the wire insulation is against the bottom of the insulation grip of the contact.

NOTE: If two wires are in the crimp barrel, it is not necessary for the wire insulation of the wire to be in the insulation grip of the contact.



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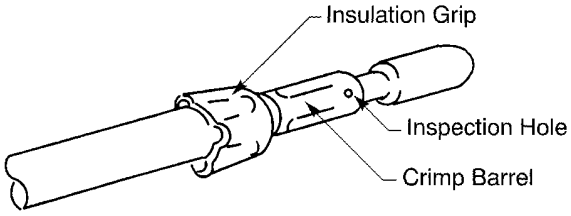
BACC47DE CONTACT
Figure 15

(7) Crimp the contact. Refer to Figure 16.

Make sure that there are four crimp indents on:

- The contact crimp barrel
- The wire insulation grip.



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CONTACT CRIMP DETAIL
Figure 16

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

B. Contact Insertion

Table 14
CONTACT INSERTION TOOLS

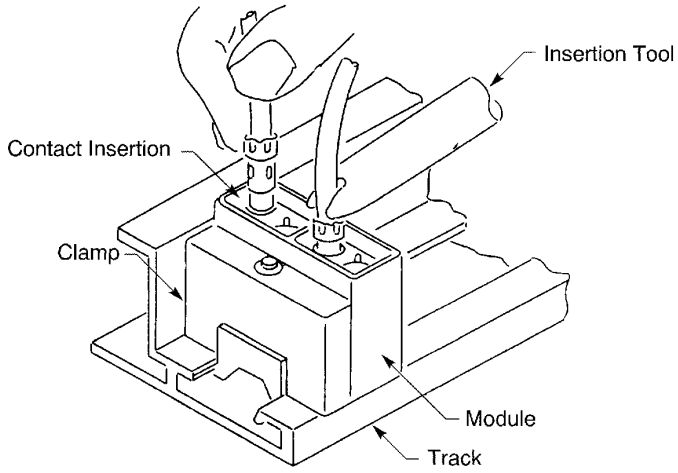
Contact	Insertion Tool	Supplier
BACC47DE()	ATB3062-2	Astro
	DHK21	Daniels
	J-1276-1	Burndy
	ST2220-3-34A-1	Boeing
	ST2220-3-34A-2	Boeing

(1) Make a selection of a contact insertion tool from Table 14.

(2) Put the tip of the wired contact into the contact cavity of the module.

(3) Put the tip of the tool on the contact until it makes a click and the contact stops.

(4) Push the contact in position. Refer to Figure 17.
Make sure that the contact is locked in the module.



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CONTACT INSERTION
Figure 17

ASSEMBLY OF BACM15C AND BURNDY YHLZD-() AND YHLZR-() TERMINAL BLOCK MODULES

6. HIGH DENSITY TERMINAL BLOCK MODULE ASSEMBLY

A. Contact Assembly

Table 15
CONTACT CRIMP TOOLS

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool				
		Basic Unit			Locator	
		Part Number	Setting	Supplier	Part Number	Supplier
24	20	612916	6	Buchanan	-	-
		M22520/2-01	5	QPL	M22520/2-08	QPL
		M22520/7-01	4	QPL	M22520/7-02	QPL
		ST2220-1-Y	-	Boeing	ST2220-1-43	Boeing
		WA22	5	Daniels	M22520/2-08	QPL
22	20	612916	7	Buchanan	-	-
		M22520/2-01	6	QPL	M22520/2-08	QPL
		M22520/7-01	5	QPL	M22520/7-02	QPL
		ST2220-1-Y	-	Boeing	ST2220-1-43	Boeing
		WA22	6	Daniels	M22520/2-08	QPL
20	20	612916	8	Buchanan	-	-
		M22520/2-01	7	QPL	M22520/2-08	QPL
		M22520/7-01	6	QPL	M22520/7-02	QPL
		ST2220-1-Y	-	Boeing	ST2220-1-43	Boeing
		WA22	7	Daniels	M22520/2-08	QPL

(1) Make a selection of a contact from Table 7.

(2) Remove 3/16 inch ±1/32 inch of the wire insulation.

(3) Make a selection of a crimp tool from Table 15.

(4) Put the conductor into the wire barrel of the contact.

(5) Crimp the contact.

B. Contact Insertion

Table 16
CONTACT INSERTION TOOLS

Contact	Insertion Tool	Supplier
M39029/11-145	M81969/1-02	QPL
	MS3156-20	QPL

(1) Make a selection of an insertion tool from Table 16.

NOTE: Manual insertion of the contact is a satisfactory alternative.

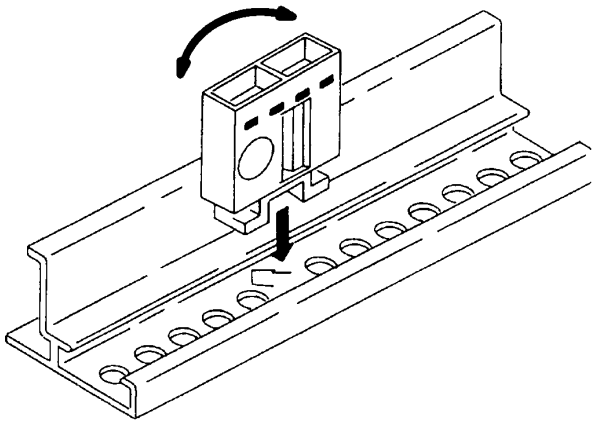
(2) Insert the wired contact into the contact cavity.

7. TERMINAL BLOCK MODULE INSTALLATION

A. Installation of the Module on the Track

(1) Install the block module. Refer to Figure 18.

NOTE: A satisfactory alternative is to slide the block module into the track from the end.



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INSTALLATION OF A MODULE
Figure 18

(a) Put the block module in the track.

Make sure that the sides of the terminal blocks and the end clamps that have the part numbers are turned toward the open side of the track assembly.

(b) Turn the block 90 degrees.

(2) When all the terminal blocks and fillers are aligned correctly in the track, push the end clamp tightly against the last block or filler.

NOTE: The A side of the end clamp is on the closed side of the track assembly.

(3) Tighten the clamp screw so that:

- The lockwasher is fully compressed
- The end clamp does not move or turn when pressure is applied.

NOTE: Only a split lockwasher is permitted under the screw head.

ASSEMBLY OF BURNDY SEALOK SEALED TERMINAL BLOCKS

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ASSEMBLY OF BURNDY SEALOK SEALED TERMINAL BLOCKS

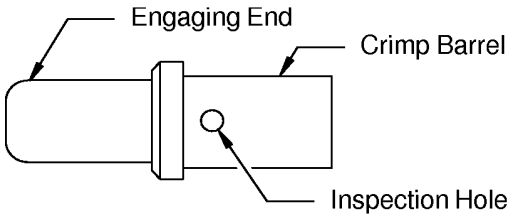
1. PART NUMBERS AND DESCRIPTION

A. Terminal Block Part Numbers

Table 1
TERMINAL BLOCK PART NUMBERS

Terminal Block		Contact
Part Number	**Supplier**	
TBS20-8-1	Burndy	YTB20-2
TBS20-22-1	Burndy	YTB20-2
TBS20-42-1	Burndy	YTB20-2
TBS20-44-1	Burndy	YTB20-2
TBS20-62-1	Burndy	YTB20-2
TBS1620-8-1	Burndy	YTB16-1
		YTB20-2
TBS1620-22-1	Burndy	YTB16-1
		YTB20-2
TBS1620-44-1	Burndy	YTB16-1
		YTB20-2
TBS16-8-1	Burndy	YTB16-1
TBS16-22-1	Burndy	YTB16-1
TBS16-44-1	Burndy	YTB16-1
TBS12-8-1	Burndy	YTB12-1
TBS12-22-1	Burndy	YTB12-1
TBS12-44-1	Burndy	YTB12-1

B. Contact Part Numbers



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PIN CONTACTS FOR SEALOK TERMINAL BLOCKS
Figure 1

ASSEMBLY OF BURNDY SEALOK SEALED TERMINAL BLOCKS

Table 2
TERMINAL BLOCK CONTACT PART NUMBERS

Part Number	Crimp Barrel Size	Supplier
YTB20-2	20	Burndy
YTB16-1	16	Burndy
YTB12-1	12	Burndy

C. Seal Plug Part Numbers

Table 3
SEAL PLUG PART NUMBERS

Terminal Block	Seal Plug		
	Part Number	Color	Supplier
TBS20-8-1	TBP20-1	Red	Burndy
TBS20-22-1	TBP20-1	Red	Burndy
TBS20-42-1	TBP20-1	Red	Burndy
TBS20-44-1	TBP20-1	Red	Burndy
TBS20-62-1	TBP20-1	Red	Burndy
TBS1620-8-1	TBP16-1	Blue	Burndy
	TBP20-1	Red	Burndy
TBS1620-22-1	TBP16-1	Blue	Burndy
	TBP20-1	Red	Burndy
TBS1620-44-1	TBP16-1	Blue	Burndy
	TBP20-1	Red	Burndy
TBS16-8-1	TBP16-1	Blue	Burndy
TBS16-22-1	TBP16-1	Blue	Burndy
TBS16-44-1	TBP16-1	Blue	Burndy
TBS12-8-1	TBP12-1	Yellow	Burndy
TBS12-22-1	TBP12-1	Yellow	Burndy
TBS12-44-1	TBP12-1	Yellow	Burndy

D. Terminal Block Mounting Track Part Number

Table 4
TERMINAL BLOCK MOUNTING TRACK PART NUMBERS

Mounting Track	Supplier
TBT7200-()	Burndy

ASSEMBLY OF BURNDY SEALOK SEALED TERMINAL BLOCKS

2. TERMINAL BLOCK DISASSEMBLY

A. Terminal Block Removal

(1) Make a selection of the removal tool from Table 8.

(2) Remove the terminal block from the mounting track.
Refer to the instructions on the tool.

B. Contact Removal

(1) Make a selection of the contact removal tool from Table 7.

(2) Remove the contact from the module block with the removal end of the tool.

3. TERMINAL BLOCK ASSEMBLY

A. Contact Assembly

Table 5
INSULATION REMOVAL LENGTH

Wire Size (AWG)	Contact	Removal Length (inch)	
		Target	Tolerance
24	YBT20-2	3/16	±1/32
22	YBT20-2	3/16	±1/32
20	YBT20-2	3/16	±1/32
	YBT16-1	3/16	±1/32
18	YBT16-1	3/16	±1/32
16	YBT16-1	3/16	±1/32
14	YBT12-1	1/4	±1/32
12	YBT12-1	1/4	±1/32

Table 6
CONTACT CRIMP TOOLS

Contact	Crimp Tool			
	Basic Unit	Die	Locator	Supplier
YBT12-1	M10S-1	S-8	SL-2	Burndy
YBT16-1	M10S-1	S-7	SL-3A	Burndy
YBT20-2	M10S-1	S-6A	SL-3A	Burndy

(1) Remove the necessary length of insulation from the end of the wire.
Refer to Table 5 and Subject 20-00-15.

(2) Make a selection of a crimp tool from Table 6.

(3) Put the wire in the crimp barrel of the contact.

Make sure that:

- All the strands of the conductor are in the crimp barrel
- The strands of the conductor are can be seen in the inspection hole.

(4) Crimp the contact.

B. Contact Insertion

Table 7
CONTACT INSERTION AND REMOVAL TOOLS

Contact	Insertion and Removal Tool	Supplier
YBT20-2	NAS1664-20	Burndy
YBT16-1	NAS1664-16	Burndy
YBT12-1	NAS1664-12	Burndy

NOTE: Each tool is both an insertion tool and a removal tool.

(1) Make a selection of an insertion tool from Table 7.

(2) Put the contact in the module block with the insertion end of the tool.

C. Seal Plug Installation

A sea plug must be installed in all unused contact cavities.

(1) Make a selection of a seal plug from Table 3.

(2) Manually install a seal plug in the contact cavity.

D. Terminal Block Installation

Table 8
TERMINAL BLOCK INSTALLATION AND REMOVAL TOOLS

Installation and Removal Tool	Supplier
TBTS-1	Burndy

NOTE: The tool is both an installation tool and a removal tool.

(1) Make a selection of an installation tool from Table 8.

(2) Install the terminal block in the mounting track.
Refer to the instructions on the tool.

ASSEMBLY OF DEUTSCH JIFFY JUNCTION SPLICES

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ASSEMBLY OF DEUTSCH JIFFY JUNCTION SPLICES

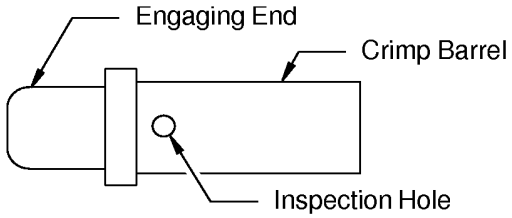
1. PART NUMBERS AND DESCRIPTION

A. Jiffy Junction Splice Part Numbers

Table 1
JIFFY JUNCTION SPLICE PART NUMBERS

Part Number	Supplier
TSE-20-01	Deutsch
TSE-16-01	Deutsch
TSE-12-01	Deutsch

B. Contact Part Numbers



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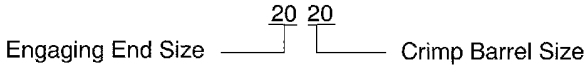
PIN CONTACTS FOR THE DEUTSCH JIFFY JUNCTION SPLICES
Figure 1



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EXAMPLE OF A CONTACT SIZE
Figure 2

ASSEMBLY OF DEUTSCH JIFFY JUNCTION SPLICES

Table 2
CONTACT PART NUMBERS

Contact Size		Part Number	Supplier
Engaging End	Crimp Barrel		
20	20	1841-1-5620	Deutsch
16	16	1841-1-5616	Deutsch
12	12	1841-1-5612	Deutsch

2. MODULE DISASSEMBLY

A. Contact Removal

Table 3
CONTACT REMOVAL TOOLS

Crimp Barrel Size	Removal Tool	Supplier
20	M15570-20	Deutsch
	M81969/14-02	QPL
	M83723/31-20	QPL
16	M15570-16	Deutsch
	M81969/14-03	QPL
	M83723/31-16	QPL
12	M15570-12	Deutsch
	M81969/14-04	QPL
	M83723/31-12	QPL

(1) Make a selection of a contact removal tool from Table 3.

(2) Slide the tip of the removal tool over the wired contact and into the module until the tool releases the contact retention clip.

(3) Hold the wire against the tool and pull the wired contact and the tool out at the same time.

3. MODULE ASSEMBLY

A. Contact Assembly

Table 4
INSULATION REMOVAL LENGTH

Wire Size (AWG)	Contact Size		Removal Length (inch)		Special Instructions
	Engaging End	Crimp Barrel	Target	Tolerance	
24	20	20	13/64	1/64	-
22	20	20	13/64	1/64	-

ASSEMBLY OF DEUTSCH JIFFY JUNCTION SPLICES

Table 4 INSULATION REMOVAL LENGTH (Continued)

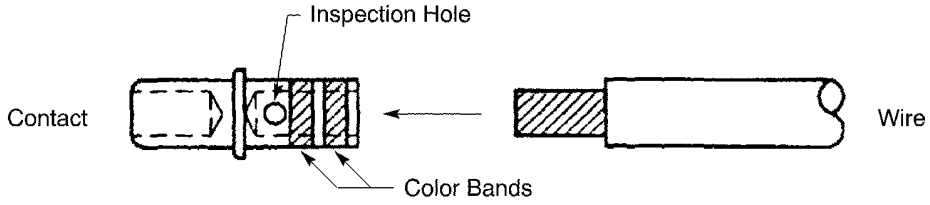
Wire Size (AWG)	Contact Size		Removal Length (inch)		Special Instructions
	Engaging End	Crimp Barrel	Target	Tolerance	
20	20	20	13/64	1/64	-
	16	16	13/64	1/64	-
18	16	16	19/64	1/64	-
16	16	16	19/64	1/64	-
14	12	12	19/64	1/64	-
12	12	12	19/64	1/64	-

Table 5
CONTACT CRIMP TOOLS

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool			
		Basic Unit		Locator	
		Part Number	Setting	Part Number	Color
24	20	M22520/2-01	5	M22520/2-02	-
22	20	M22520/2-01	6	M22520/2-02	-
20	20	M22520/2-01	7	M22520/2-02	-
20	16	M22520/1-01	4	M22520/1-02	Blue
18	16	M22520/1-01	5	M22520/1-02	Blue
16	16	M22520/1-01	6	M22520/1-02	Blue
14	12	M22520/1-01	7	M22520/1-02	Yellow
12	12	M22520/1-01	8	M22520/1-02	Yellow

(1) Remove the necessary length of insulation from the end of the wire.
Refer to Table 4 and Subject 20-00-15.

(2) Put the wire in the contact crimp barrel. Refer to Figure 3.
Make sure that the wire is inserted completely into the crimp barrel.



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WIRE POSITION IN THE CONTACT CRIMP BARREL
Figure 3

(3) Make a selection of a crimp tool from Table 5.

(4) Crimp the contact.

(5) Remove the crimped contact from the tool.

Make sure that:

- All the wire strands are in the contact crimp barrel
- The wire strands are visible in the inspection hole.

B. Contact Insertion

Table 6
CONTACT INSERTION TOOLS

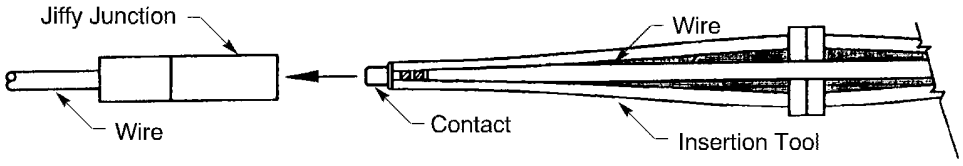
Crimp Barrel Size	Insertion Tool	Supplier
20	M15570-20	Deutsch
	M81969/14-02	QPL
	M83723/31-20	QPL
16	M15570-16	Deutsch
	M81969/14-03	QPL
	M83723/31-16	QPL
12	M15570-12	Deutsch
	M81969/14-04	QPL
	M83723/31-01	QPL

(1) Make a selection of an insertion tool from Table 3.

NOTE: As an option, the contact can be inserted by hand.

(2) Push the contact into the contact cavity. Refer to Figure 4.

Make sure the contact snaps into the retention clip.



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CONTACT INSERTION
Figure 4

ASSEMBLY OF DEUTSCH JIFFY JUNCTION SPLICES

4. APPROVED TOOL SUPPLIERS

A. Contact Removal Tools

Table 7
REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
M15570-20	Deutsch
M15570-16	Deutsch
M15570-12	Deutsch
M81969/14-02	QPL
M81969/14-03	QPL
M81969/14-04	QPL
M83723/31-20	QPL
M83723/31-16	QPL
M83723/31-12	QPL

B. Contact Crimp Tools

Table 8
CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
M22520/1-01	QPL
M22520/1-02	QPL
M22520/2-01	QPL
M22520/2-02	QPL

C. Contact Insertion Tools

Table 9
INSERTION TOOL SUPPLIERS

Insertion Tool	Supplier
M15570-20	Deutsch
M15570-16	Deutsch
M15570-12	Deutsch
M81969/14-02	QPL
M81969/14-03	QPL
M81969/14-04	QPL
M83723/31-20	QPL
M83723/31-16	QPL
M83723/31-12	QPL

ASSEMBLY OF S280W555-(), BACC50AN(), AND BURNDY RB(), TERMINAL MODULES AND GROUND MODULES

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ASSEMBLY OF S280W555-(), BACC50AN(), AND BURNDY RB(), TERMINAL MODULES AND GROUND MODULES

1. PART NUMBERS AND DESCRIPTION

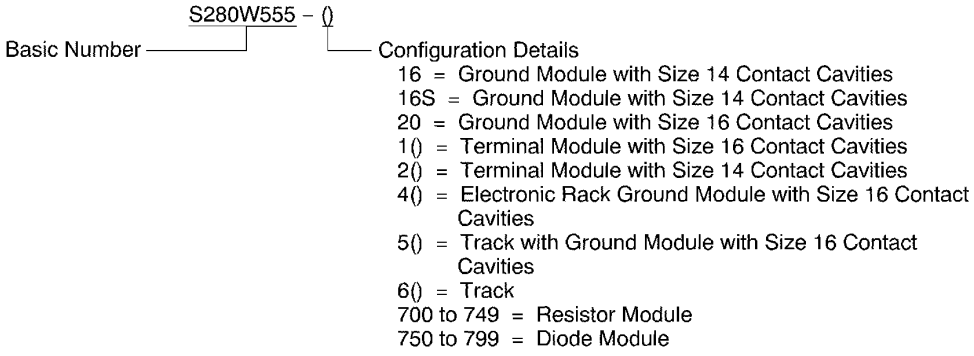
A. Description of Components

This subject contains these components:

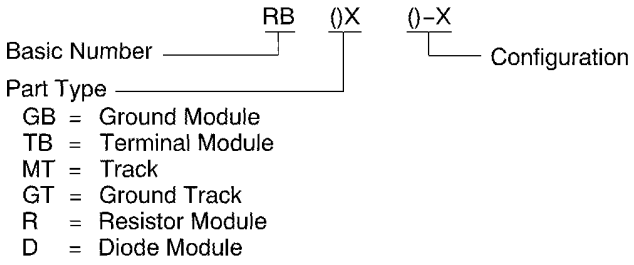
- Terminal modules
- Ground modules
- Tracks
- Tracks with ground modules
- Diode modules
- Resistor modules.

In a ground module, a contact installed in a cavity is connected to ground.

In a terminal module, all contact cavities in a bus set are connected together. Contacts installed within the boundaries of a bus set are connected together. Boundaries between the bus sets are shown by the lines on the face of the terminal module. Refer to Table 13 and Figure 15.



S280W555-() TERMINAL JUNCTION SYSTEM PART NUMBER STRUCTURE
Figure 1



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BURNDY TERMINAL JUNCTION SYSTEM PART NUMBER STRUCTURE
Figure 2

2449231 S00061548965_V1

BACC50AN ENVIRONMENTALLY SEALED GROUND MODULE PART NUMBER STRUCTURE
Figure 3

B. Terminal Module Part Numbers

Table 1
TERMINAL MODULE PART NUMBERS

Boeing Standard	737 Block Type (Reference)	747, 767, 777 and 787 Block Type (Reference)	Description
S280W555-102	X	P	Feedback
S280W555-104	Y	Q	Feedback
S280W555-108	Z	U	Feedback
S280W555-203	V	V	Feedback
S280W555-206	W	W	Feedback

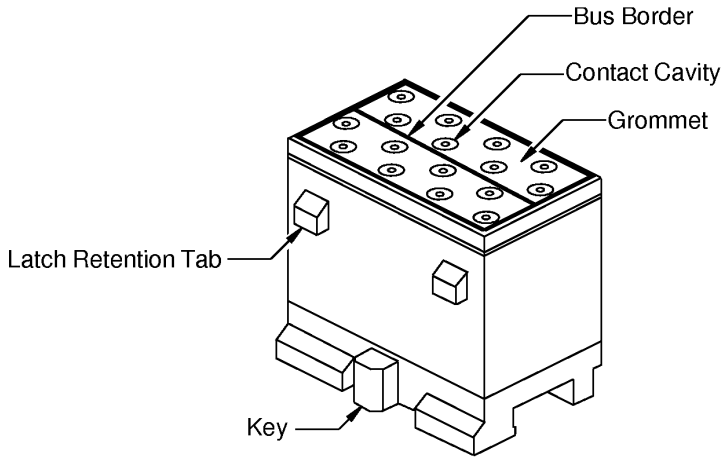
ASSEMBLY OF S280W555-(), BACC50AN(), AND BURNDY RB(), TERMINAL MODULES AND GROUND MODULES

Table 2
SUPPLIER PART NUMBERS OF BOEING S280W555-() TERMINAL MODULES

Boeing Standard	Part Number	Supplier
S280W555-102	RBTB20-2	Souriau
S280W555-104	RBTB20-4	Souriau
S280W555-108	RBTB20-8	Souriau
S280W555-203	RBTB16-3	Souriau
S280W555-206	RBTB16-6	Souriau

Table 3
ALTERNATIVE TERMINAL MODULE PART NUMBERS

Specified Module	Alternative Module	
	Part Number	Supplier
S280W555-104	MDTB20-4	Framatome Connectors International
S280W555-108	MDTB20-8	Framatome Connectors International



2448996 S00061548966_V1

S280W555 TERMINAL MODULE
Figure 4

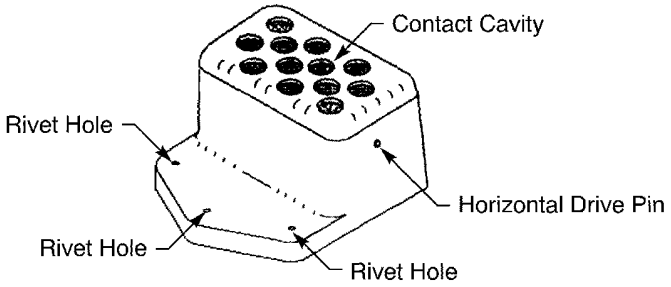
C. Ground Module Part Numbers

Table 4
GROUND MODULE PART NUMBERS

Boeing Standard	Description	Color	Mount Type
S280W555-16	Ground Module	Blue	Panel
S280W555-16S	Ground Module	Blue	Panel
S280W555-20	Ground Module	Red	Panel
S280W555-401	Electronic Rack Ground Module	-	Electronic Rack
S280W555-402	Electronic Rack Ground Module	-	Electronic Rack
BACC50AN16	Ground Module	Blue	Panel
BACC50AN20	Ground Module	Red	Panel

Table 5
SUPPLIER PART NUMBERS OF BOEING S280W555-() GROUND MODULES

Boeing Standard	Part Number	Supplier
S280W555-16	RBGB16-1	Souriau
S280W555-20	RBGB20-1	Souriau
S280W555-401	RBG516-1	Souriau
S280W555-402	RBG532-1	Souriau
BACC50AN16	BDX016016	Amphenol PCD
BACC50AN20	BDX016020	Amphenol PCD



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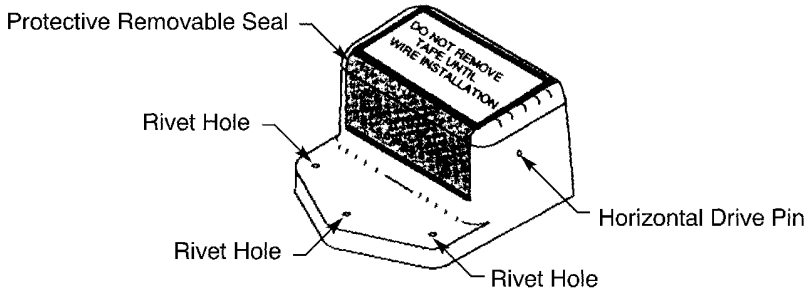
S280W555-() GROUND MODULE
Figure 5



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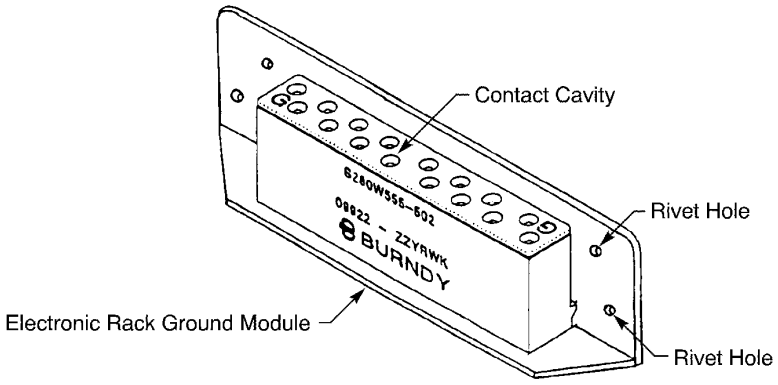
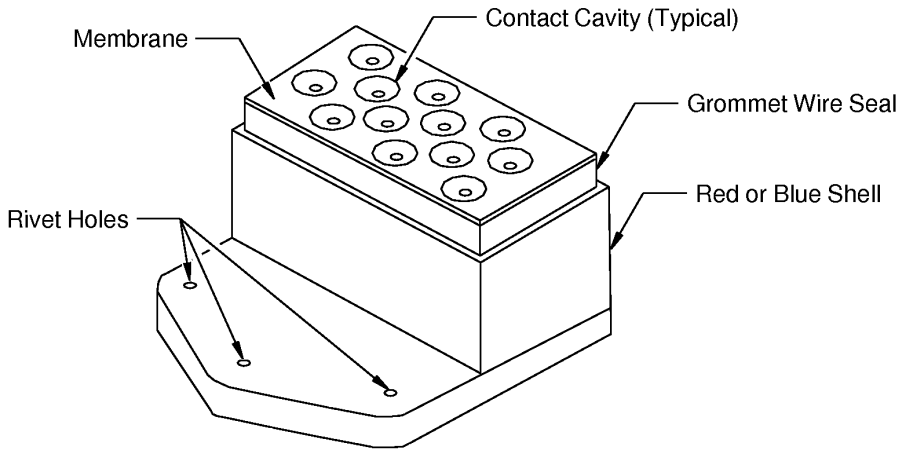
S280W555-() GROUND MODULE WITH A PROTECTIVE SEAL
Figure 6



2446851 S00061548969_V1

S280W555-4() ELECTRONIC RACK GROUND MODULE
Figure 7



2449232 S00061548970_V1

BACC50AN GROUND MODULE
Figure 8

D. Terminal Module Track Part Numbers

Table 6
TERMINAL MODULE TRACK PART NUMBERS

Boeing Standard	Description	Length (inch)
S280W555-502	Track with Ground Module	2
S280W555-504	Track with Ground Module	4
S280W555-506	Track with Ground Module	6
S280W555-508	Track with Ground Module	8
S280W555-510	Track with Ground Module	10
S280W555-514	Track with Ground Module	14
S280W555-516	Track with Ground Module	16
S280W555-516	Track with Ground Module	18
S280W555-522	Track with Ground Module	22
S280W555-526	Track with Ground Module	26
S280W555-5502	Track with Ground Module	2
S280W555-5504	Track with Ground Module	4
S280W555-5506	Track with Ground Module	6
S280W555-5508	Track with Ground Module	8

Table 6 TERMINAL MODULE TRACK PART NUMBERS (Continued)

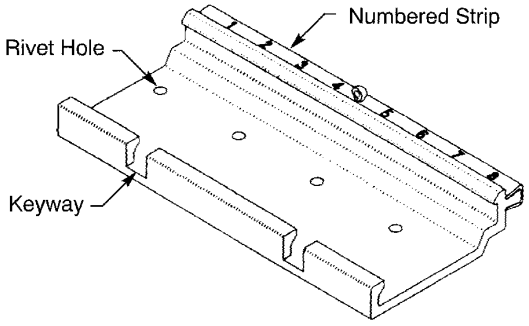
Boeing Standard	Description	Length (inch)
S280W555-5510	Track with Ground Module	10
S280W555-5514	Track with Ground Module	14
S280W555-5516	Track with Ground Module	16
S280W555-5518	Track with Ground Module	18
S280W555-5522	Track with Ground Module	22
S280W555-5526	Track with Ground Module	26
S280W555-602	Track	2
S280W555-604	Track	4
S280W555-606	Track	6
S280W555-608	Track	8
S280W555-610	Track	10
S280W555-614	Track	14
S280W555-616	Track	16
S280W555-622	Track	22
S280W555-626	Track	26
S280W555-6602	Track	2
S280W555-6604	Track	4
S280W555-6606	Track	6
S280W555-6610	Track	10
S280W555-6614	Track	14
S280W555-6616	Track	16

Table 7
SUPPLIER PART NUMBERS OF BOEING S280W555-() TERMINAL MODULE TRACKS

Boeing Standard	Part Number	Supplier
S280W555-502	RBGT2	Souriau
S280W555-504	RBGT4	Souriau
S280W555-506	RBGT6	Souriau
S280W555-508	RBGT8	Souriau
S280W555-510	RBGT10	Souriau
S280W555-514	RBGT14	Souriau
S280W555-516	RBGT16	Souriau
S280W555-522	RBGT22	Souriau
S280W555-526	RBGT26	Souriau
S280W555-602	RBMT2	Souriau

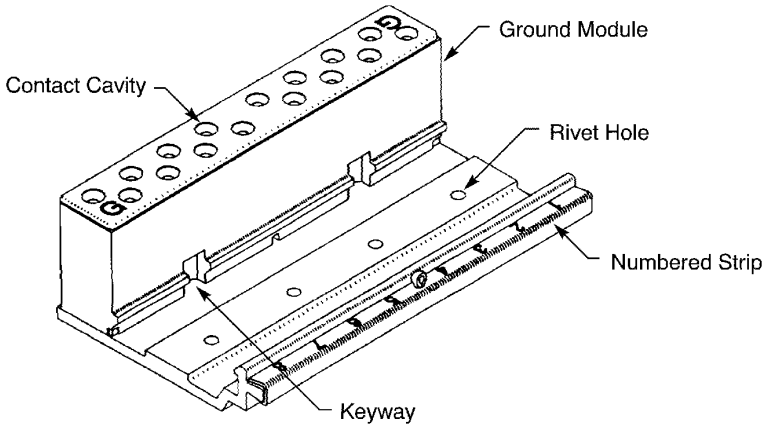
Table 7 SUPPLIER PART NUMBERS OF BOEING S280W555-() TERMINAL MODULE TRACKS (Continued)

Boeing Standard	Part Number	Supplier
S280W555-604	RBMT4	Souriau
S280W555-606	RBMT6	Souriau
S280W555-608	RBMT8	Souriau
S280W555-610	RBMT10	Souriau
S280W555-614	RBMT14	Souriau
S280W555-616	RBMT16	Souriau
S280W555-622	RBMT22	Souriau
S280W555-626	RBMT26	Souriau



2446847 S00061548971_V1

S280W555-6() TRACK
Figure 9



2446848 S00061548972_V1

S280W555-5() TRACK WITH A GROUND MODULE
Figure 10

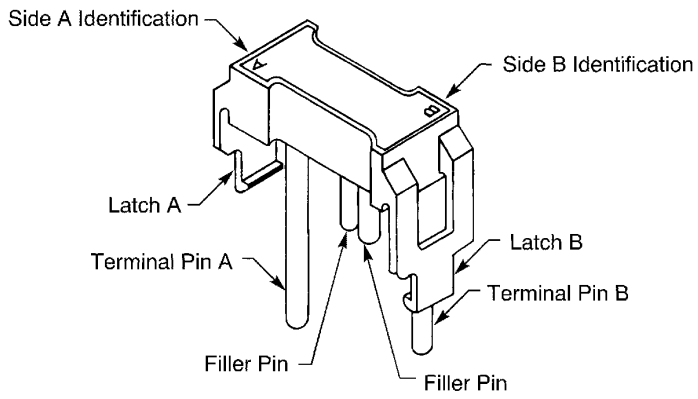
E. Diode Module Part Numbers

Table 8
DIODE MODULE PART NUMBERS

Boeing Standard	Diode Current (Amps)
S280W555-751	1
S280W555-753	3

Table 9
SUPPLIER PART NUMBERS OF BOEING S280W555-() DIODE MODULES

Boeing Standard	Part Number	Supplier
S280W555-751	RBD20-1	Souriau
S280W555-753	RBD20-3	Souriau



2446850 S00061548973_V1

S280W555-7() DIODE MODULE
Figure 11

F. Resistor Module Part Numbers

Table 10
RESISTOR MODULE PART NUMBERS

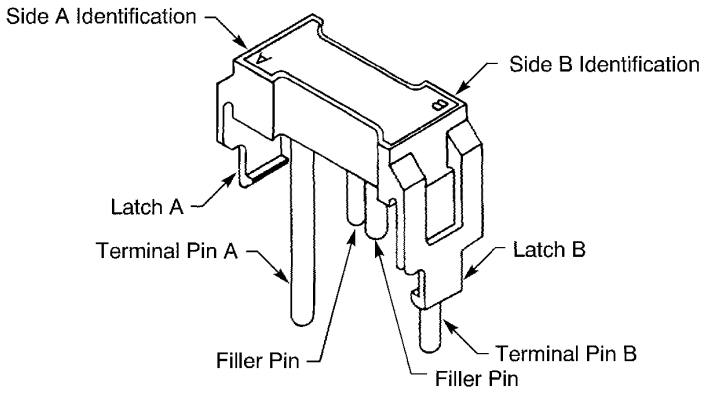
Boeing Standard	Resistance (Ohms)
S280W555-702	4300
S280W555-703	12000
S280W555-704	49900
S280W555-705	71.5
S280W555-706	10000
S280W555-707	1800

Table 11
SUPPLIER PART NUMBERS OF BOEING S280W555-() RESISTOR MODULES

Boeing Standard	Part Number	Supplier
S280W555-702	RBR20-2	Souriau
S280W555-703	RBR20-3	Souriau
S280W555-704	RBR20-4	Souriau
S280W555-705	RBR20-5	Souriau

Table 11 SUPPLIER PART NUMBERS OF BOEING S280W555-() RESISTOR MODULES (Continued)

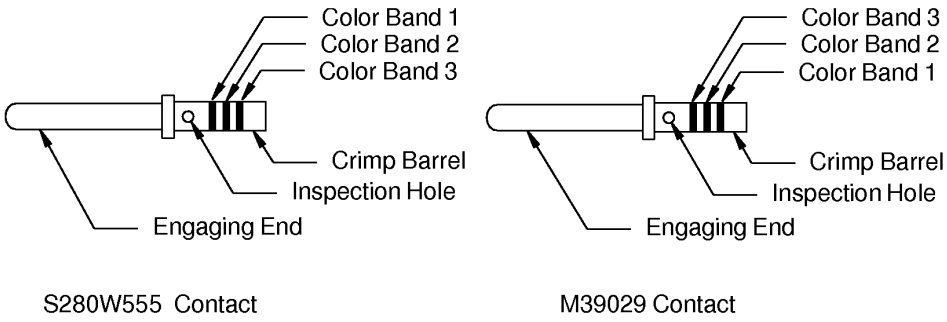
Boeing Standard	Part Number	Supplier
S280W555-706	RBR20-6	Souriau
S280W555-707	RBR20-7	Souriau



2446849 S00061548974_V1

S280W555-7() RESISTOR MODULE
Figure 12

G. Contact Part Numbers

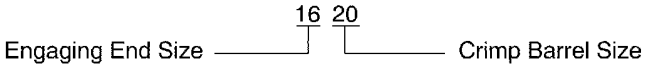


S280W555 Contact

M39029 Contact

2448998 S00061547479_V1

PIN CONTACTS
Figure 13



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EXAMPLE OF A CONTACT SIZE
Figure 14

The contacts have these technical properties:

- A pin configuration
- A gold finish.

NOTE: The Souriau RBM18M-1DJ5 contact does not have a gold finish.

Table 12
CONTACT PART NUMBERS

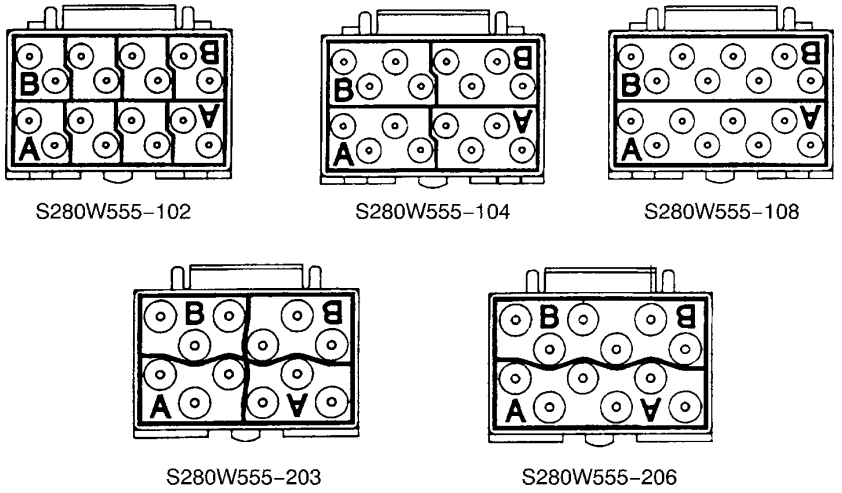
Contact Size		Contact Type	Part Number	Supplier	Color Code	
Engaging End	Crimp Barrel				Band	Color
16	20	Pin	M39029/1-101	QPL	1	Brown
					2	Black
					3	Brown
			S280W555-920	Tri Star	1	Red
					2	Red
					3	Red
	18	Pin	RBM18M-1DJ5	Souriau	-	-
			S280W555-918	Tri Star	1	Red
					2	White
					3	Red
14	16	Pin	M39029/1-102	QPL	1	Brown
					2	Black
					3	Red
			S280W555-916	Tri Star	1	Blue
					2	Blue
					3	Blue

2. TERMINAL MODULE AND GROUND MODULE CONFIGURATIONS

A. Terminal Module Configurations

Table 13
TERMINAL MODULE CONFIGURATIONS

Boeing Standard	Contact		Bus Configuration	
	Engaging End Size	Quantity	Bus Sets	Contact Cavities
S280W555-102	16	16	8	2
S280W555-104	16	16	4	4
S280W555-108	16	16	2	8
S280W555-203	14	12	4	3
S280W555-206	14	12	2	6



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TERMINAL MODULE BUS CONFIGURATIONS
Figure 15

The contact cavities in each bus set are connected together. You can install a contact in any cavity that belongs to a bus set. Divisions between bus sets are shown by lines on the face of the terminal module. Reference Table 13 and Figure 15.

B. Ground Module Configurations

Table 14
GROUND MODULE CONFIGURATIONS

Boeing Standard	Contact	
	Engaging End Size	Quantity
BACC50AN16	14	12
BACC50AN20	16	16
S280W555-16	14	12
S280W555-16S	14	12
S280W555-20	16	16
S280W555-401	16	16
S280W555-402	16	32
S280W555-502	16	16
S280W555-504	16	32
S280W555-506	16	48
S280W555-508	16	64

Table 14 GROUND MODULE CONFIGURATIONS (Continued)

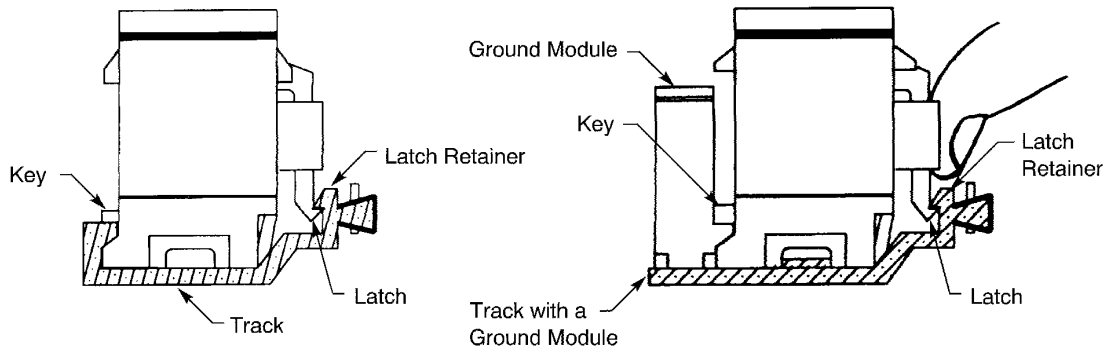
Boeing Standard	Contact	
	Engaging End Size	Quantity
S280W555-510	16	80
S280W555-514	16	112
S280W555-516	16	128
S280W555-522	16	176
S280W555-526	16	208

All contact cavities in a ground module are connected to ground. You can install a contact in any cavity in a ground module.

3. DISASSEMBLY

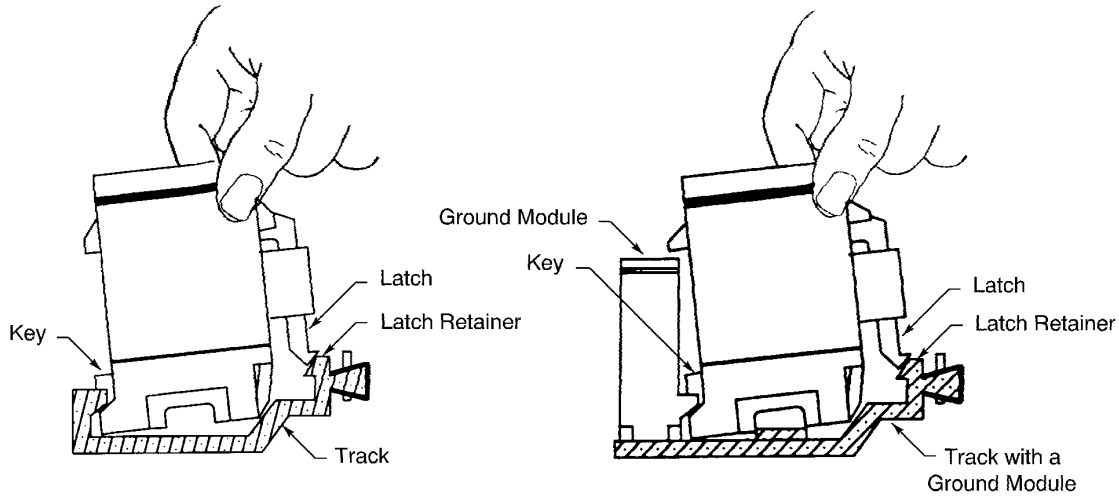
A. Removal of a Terminal Module from a Track

(1) Push the latch of the terminal module to release the latch from the latch retainer on the track. Refer to Figure 16.



LOCATION OF THE LATCH ON THE TERMINAL MODULE
Figure 16

(2) Pull the front of the module from the front of the track. Refer to Figure 17.



REMOVAL OF THE TERMINAL MODULE FROM THE TRACK
Figure 17

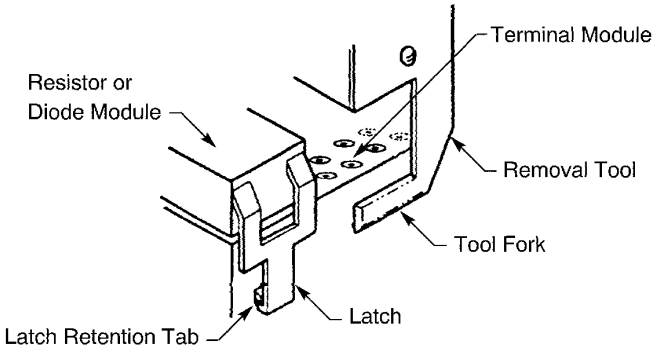
(3) Carefully pull the module to the front of the track until the key is disengaged from the keyway.

(4) Pull the module from the track.

B. Removal of a Diode or a Resistor Module

Table 15
MODULE REMOVAL TOOLS

Module	Removal Tool
Diode	RDW20-4
Resistor	RDW20-4



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DIODE OR RESISTOR MODULE REMOVAL
Figure 18

Refer to Figure 18.

(1) Make a selection of a removal tool from Table 15.

(2) Put the fork of the tool behind the latch of the module to release the latch retention tab.

(3) Pull the tool up to remove the resistor or diode module from the terminal module.

C. Contact Removal

For the procedure to remove an unwired contact, refer to Paragraph 3.D.

Table 16
CONTACT REMOVAL TOOLS

Crimp Barrel Size	Removal Tool	
	Part Number	Color
20	ATR 2080 BAC	-
	ATR 2079 BAC	-
	DRK83-20	Red
	M81969/14-02	White
	M81969/14-10	White
	M81969/14-11	White
	M83723/31-20	White
	RRX20B	-

Table 16 CONTACT REMOVAL TOOLS (Continued)

Crimp Barrel Size	Removal Tool	
	Part Number	Color
18	ATR 2080 BAC	-
	ATR 2079 BAC	-
	M81969/14-02	White
	M81969/14-10	White
	M81969/14-11	White
	M83723/31-20	White
16	ATR 2112 BAC	-
	ATR 2106 BAC	-
	M81969/14-03	White
	M83723/31-16	White
	RRX16B	-

(1) Make a selection of a contact removal tool from Table 16.

(2) Put the end of the tool on the wire near the rear grommet.

(3) Carefully push the tool into the contact cavity until it stops.
Make sure that the tool stays aligned with the contact cavity.

CAUTION: DO NOT TURN THE TOOL WHILE IT IS IN THE CONTACT CAVITY. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

(4) Carefully pull the wire and the tool out of the contact cavity at the same time.
Make sure that the tool stays aligned with the contact cavity.

(5) If the contact does not come out of the contact cavity:

(a) Pull the tool out of the contact cavity.

(b) Turn the tool 90 degrees.

(c) Do Step 3.C.(2) through Step 3.C.(4) again.

D. Unwired Contact Removal

Table 17
UNWIRED CONTACT REMOVAL TOOLS

Contact Size		Removal Tool		
Engaging End	Crimp Barrel	Handle	Bit	
			Part Number	Color
16	20	DRK-110-1SA	DRK-20-2	Red
	18	DRK-110-1SA	DRK-20-2	Red
	16	DRK-110-1SA	DRK-16-2	Blue

(1) Make a selection of a contact removal tool from Table 17.

(2) Align the tool axially with the contact.

(3) Pull the plunger back until it stops.

(4) Hold the plunger in position.

(5) Carefully push the end of the tool straight into the contact cavity until it stops.

(6) Carefully pull the tool straight out of the contact cavity.

(7) Push the plunger forward to release the contact from the tool.

E. Seal Plug or Seal Rod Removal

(1) Make a selection of a pair of needle nose pliers that has:

- Jaws with smooth surfaces
- No sharp edges.

CAUTION: 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 plug or rod straight out of the rear grommet.

4. ASSEMBLY OF THE TERMINAL MODULE

A. Cable Preparation for Shield Termination in a Ground Block

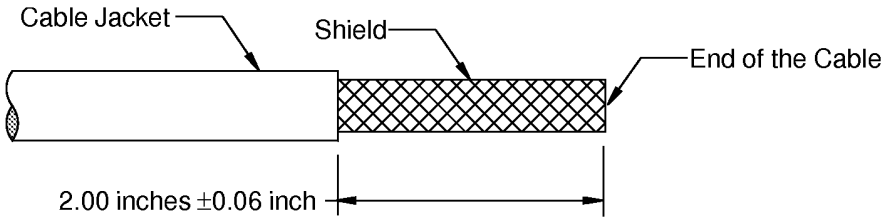
This section gives the procedure for the preparation of a cable for shield termination when the location of the breakout does not prevent the assembly of a solder sleeve shield termination at the end of the cable jacket.

For the alternative configuration of a cable shield termination when the location of the breakout prevents the assembly of the solder sleeve shield termination approximately 2 inches from the end of the cable, refer to Paragraph 4.B..

(1) Remove 2.00 inches ±0.06 inch of the cable jacket from the end of the cable.

Refer to:

- Figure 19.
- Subject 20-00-15 for the procedure to remove the cable jacket.



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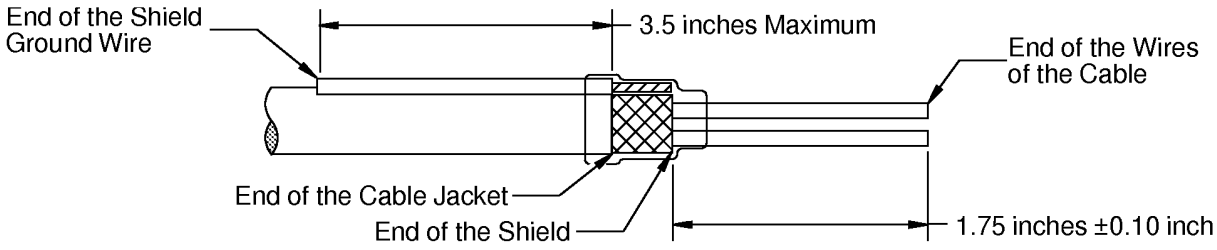
CABLE JACKET REMOVAL
Figure 19

(2) Assemble an insulated shield ground wire at the end of the cable jacket. Refer to Subject 20-10-15.

Make sure that the end of the shield ground wire is pointed rearward away from the end of the cable.

(3) Remove the unwanted length from the end of the shield ground wire and the wires of the cable. Refer to Figure 20.



2448986 S00061548980_V1

LENGTH OF THE SHIELD GROUND WIRE AND THE WIRES OF THE CABLE
Figure 20

(a) Remove the necessary length from the end of the shield ground wire to make the distance from the end of the cable jacket to the end of the shield ground wire equal to 3.5 inches maximum.

(b) 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 1.75 inches ±0.10 inch.

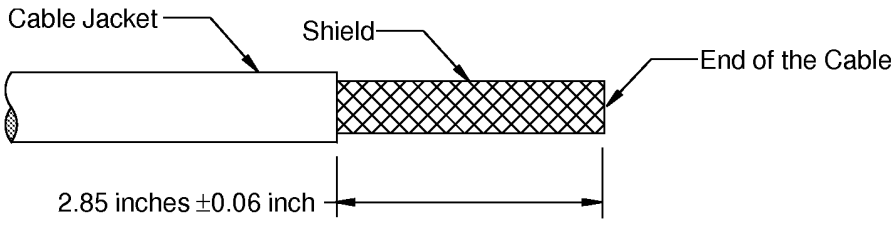
B. Cable Preparation for Shield Termination in a Ground Block - Alternative

For the conditions that are applicable for this procedure, refer to Paragraph 4.A..

(1) Remove 2.00 inches ±0.06 inch of the cable jacket from the end of the cable.

Refer to:

- Figure 21.
- Subject 20-00-15 for the procedure to remove the cable jacket.



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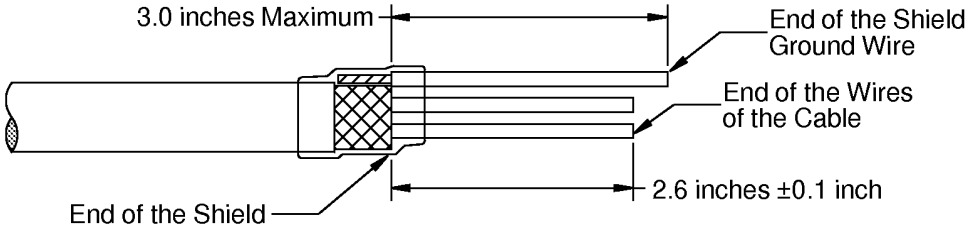
CABLE JACKET REMOVAL
Figure 21

(2) Assemble an insulated shield ground wire at the end of the cable jacket. Refer to Subject 20-10-15.

Make sure that the free end of the shield ground wire is pointed forward toward the end of the cable.

(3) Remove the unwanted length from the end of the shield ground wire and the wires of the cable: Refer to Figure 22.



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LENGTH OF THE SHIELD GROUND WIRE AND THE WIRES OF THE CABLE
Figure 22

(a) 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 3.0 inches maximum.

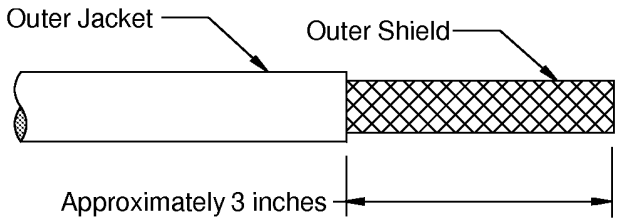
(b) Remove the necessary length from the end of each wire of the cable to make the distance from the end of the shield to the end of the wire equal to 2.6 inches ±0.1 inch.

C. Cable Preparation for Shield Termination in a Ground Block - Isolated Shields

(1) Remove approximately 3 inches of the outer jacket from the end of the cable.

Refer to:

- Figure 23.
- Subject 20-00-15 for the procedure to remove the cable jacket.



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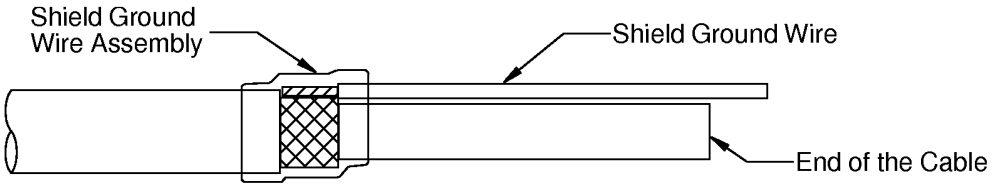
OUTER JACKET REMOVAL
Figure 23

(2) Assemble an insulated shield ground wire at the end of the outer jacket.

Refer to:

- Figure 24.
- Subject 20-10-15 for the procedure to assemble the shield ground wire.

Make sure that the free end of the outer shield ground wire is pointed forward to the end of the cable.



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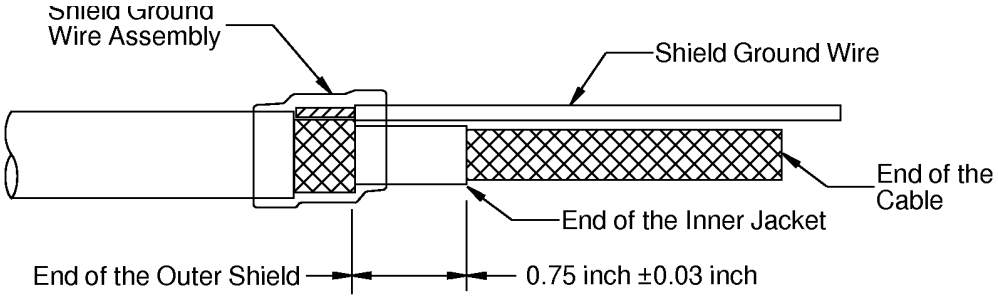
TERMINATION OF THE OUTER SHIELD
Figure 24

(3) Remove the necessary length of the inner jacket from the end of the cable to make the distance from the end of the outer shield to the end of the inner jacket equal to 0.75 inch ±0.03 inch.

Refer to:

- Figure 25
- Subject 20-00-15 for the procedure to remove the cable jacket.



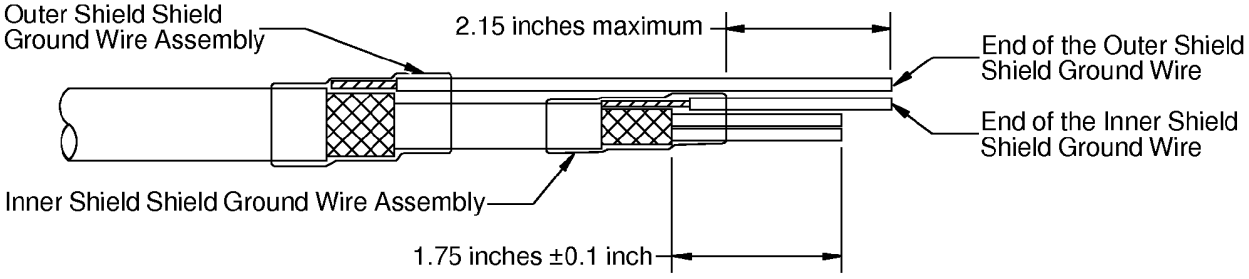
INNER JACKET REMOVAL
Figure 25

(4) Assemble an insulated shield ground wire at the end of the inner jacket.

Refer to:

- Figure 26.
- Subject 20-10-15 for the procedure to assemble the shield ground wire.

Make sure that the free end of the shield ground wire is pointed forward to the end of the cable.



LENGTH OF THE SHIELD GROUND WIRES AND THE WIRES OF THE CABLE
Figure 26

(5) Prepare the wires of the cable. Refer to Figure 26.

(a) Remove the necessary length from the end of the shield ground wire of the inner shield to make the distance from the end of the inner shield to the end of the shield ground wire equal to 2.15 inches maximum.

(b) Remove the necessary length from the end of the shield ground wire of the outer shield to make the distance from the end of the inner shield to the end of the shield ground wire equal to 2.15 inches maximum.

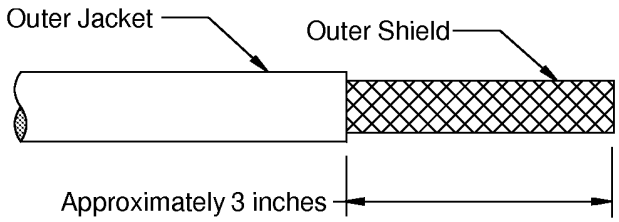
(c) Remove the necessary length from the end of each wire of the cable to make the distance from the end of the inner shield to the end of each wire equal to 1.75 inches ±0.1 inch.

D. Cable Preparation for Shield Termination in a Module and in a Ground Block - Isolated Shields

(1) Remove approximately 3 inches of the outer jacket from the end of the cable.

Refer to:

- Figure 27.
- Subject 20-00-15 for the procedure to remove the cable jacket.



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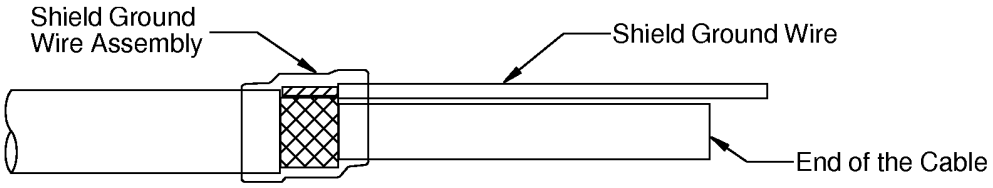
OUTER JACKET REMOVAL
Figure 27

(2) Assemble an insulated shield ground wire at the end of the outer jacket.

Refer to:

- Figure 28.
- Subject 20-10-15 for the procedure to assemble the shield ground wire.

Make sure that the free end of the outer shield ground wire is pointed forward to the end of the cable.



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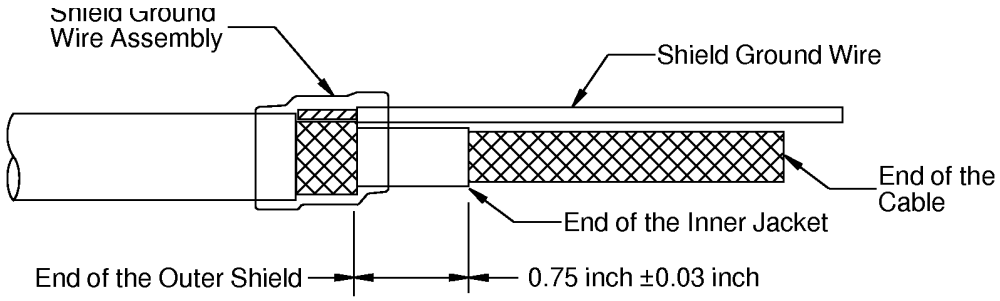
TERMINATION OF THE OUTER SHIELD
Figure 28

(3) Remove the necessary length of the inner jacket from the end of the cable to make the distance from the end of the outer shield to the end of the inner jacket equal to 0.75 inch ±0.03 inch.

Refer to:

- Figure 29
- Subject 20-00-15 for the procedure to remove the cable jacket.



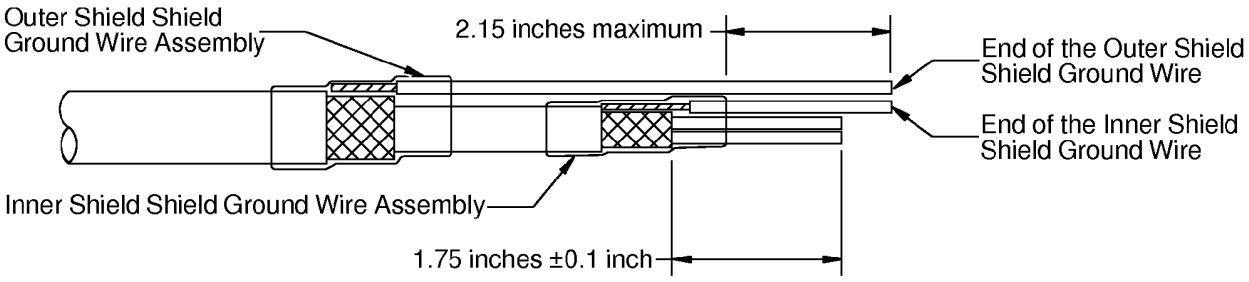
INNER JACKET REMOVAL
Figure 29

(4) Assemble an insulated shield ground wire at the end of the inner jacket.

Refer to:

- Figure 30.
- Subject 20-10-15 for the procedure to assemble the shield ground wire.

Make sure that the free end of the shield ground wire is pointed forward to the end of the cable.



LENGTH OF THE SHIELD GROUND WIRES AND THE WIRES OF THE CABLE
Figure 30

(5) Prepare the wires of the cable. Refer to Figure 30.

(a) Remove the necessary length from the end of the shield ground wire of the inner shield to make the distance from the end of the inner shield to the end of the shield ground wire equal to 2.15 inches maximum.

(b) Remove the necessary length from the end of the shield ground wire of the outer shield to make the distance from the end of the inner shield to the end of the shield ground wire equal to 2.15 inches maximum.

(c) Remove the necessary length from the end of each wire of the cable to make the distance from the end of the inner shield to the end of each wire equal to 1.75 inches ±0.1 inch.

E. Contact Assembly

Table 18
INSULATION REMOVAL LENGTH

Wire Size (AWG)	Crimp Barrel Size	Removal Length L (inch)		Special Instructions
		Target	Tolerance	
24	20	0.15	±0.02	-
	16	0.54	±0.04	Fold the conductor back
22	20	0.15	±0.02	-
	16	0.54	±0.04	Fold the conductor back
20	20	0.15	±0.02	-
	16	0.27	±0.02	-
18	18	0.15	±0.02	-
	16	0.27	±0.02	-
16	16	0.27	±0.02	-

Table 19
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	M22520/2-11	-
		WA22	5	M22520/2-11	-
		WA22LC	5	M22520/2-11	-
		WA27	2	M22520/1-02	Red
	16	M22520/1-01	5	M22520/1-02	Blue
		ST2220-1-Y	-	ST2220-1-2	-
		WA27F	5	M22520/1-02	Blue
22	20	M22520/1-01	3	M22520/1-02	Red
		M22520/2-01	6	M22520/2-11	-
		WA22	6	M22520/2-11	-
		WA22LC	6	M22520/2-11	-
		WA27	3	M22520/1-02	Red
	16	M22520/1-01	6	M22520/1-02	Blue
		ST2220-1-Y	-	ST2220-1-2	-
		WA27F	6	M22520/1-02	Blue

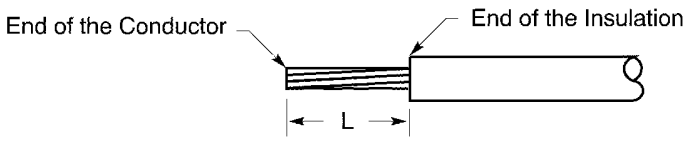
Table 19 CONTACT CRIMP TOOLS (Continued)

Wire Size (AWG)	Crimp Barrel Size	Crimp Tool			
		Basic Unit		Locator	
		Part Number	Setting	Part Number	Color
20	20	M22520/1-01	4	M22520/1-02	Red
		M22520/2-01	7	M22520/2-11	-
		WA22	7	M22520/2-11	-
		WA22LC	7	M22520/2-11	-
		WA27	4	M22520/1-02	Red
	16	M22520/1-01	4	M22520/1-02	Blue
		ST2220-1-Y	-	ST2220-1-2	-
		WA27F	4	M22520/1-02	Blue
18	18	M22520/2-01	7	M22520/2-11	-
		WA27	5	M22520/1-02	Red
	16	M22520/1-01	5	M22520/1-02	Blue
		WA27	5	M22520/1-02	Blue
16	16	M22520/1-01	6	M22520/1-02	Blue
		WA27	6	M22520/1-02	Blue

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

Refer to:

- Figure 31
- Table 18
- Subject 20-00-15 for the insulation removal procedures.



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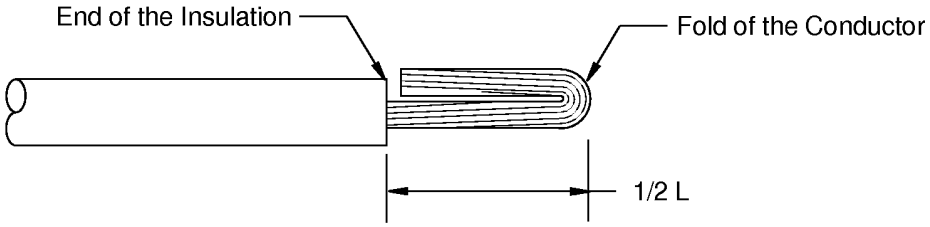
WIRE PREPARATION
Figure 31

(2) If it is specified, fold the conductor back. Refer to Figure 32.



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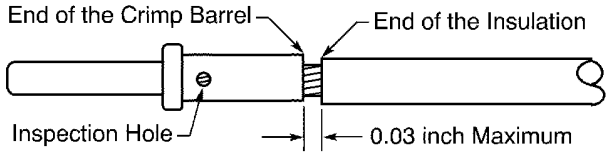
CONDUCTOR FOLDED BACK
Figure 32

(3) Make a selection of a crimp tool from Table 19.

(4) Put the end of the wire into the crimp barrel of the contact. Refer to Figure 33.

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 the crimp barrel is a maximum of 0.03 inch.



2446855 S00061544427_V1

POSITION OF THE WIRE IN THE CRIMP BARREL
Figure 33

(5) Crimp the contact.

(6) Examine the contact assembly for these types of damage:

- Broken strands of the conductor
- Strands of the conductor on which the base metal can be seen
- Cracks in the crimp barrel of the contact.

(7) If the contact or the wire has damage, replace the contact.

F. Contact Insertion

Table 20
CONTACT INSERTION TOOLS

Crimp Barrel Size	Insertion Tool	
	Part Number	Color
20	DAK83-20	-
	M81969/14-11	Red
	ST2220-2-28	-
18	91039-1	-
	DAK83-20	-
	M81969/14-11	Red
16	DAK83-16	-
	M81969/14-03	Blue
	ST2220-2-4	-
	ST2220-2-11A	-

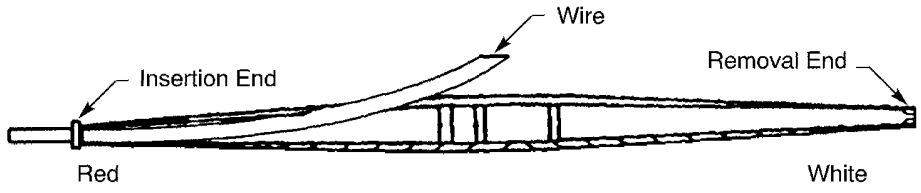
(1) Make a selection of a contact insertion tool from Table 20.

CAUTION: DO NOT USE A TOOL WITH A TIP THAT:
- IS BENT
- IS FLARED
- IS BROKEN
- HAS A CRACK.

WARNING: A DEFECTIVE TOOL CAN CAUSE INJURY TO THE OPERATOR.

CAUTION: A DEFECTIVE TOOL CAN CAUSE DAMAGE TO THE GROMMET OF THE CONNECTOR OR THE CONTACT RETENTION CLIPS.

(2) Put the contact in the insertion end of the insertion tool. Refer to Figure 34.



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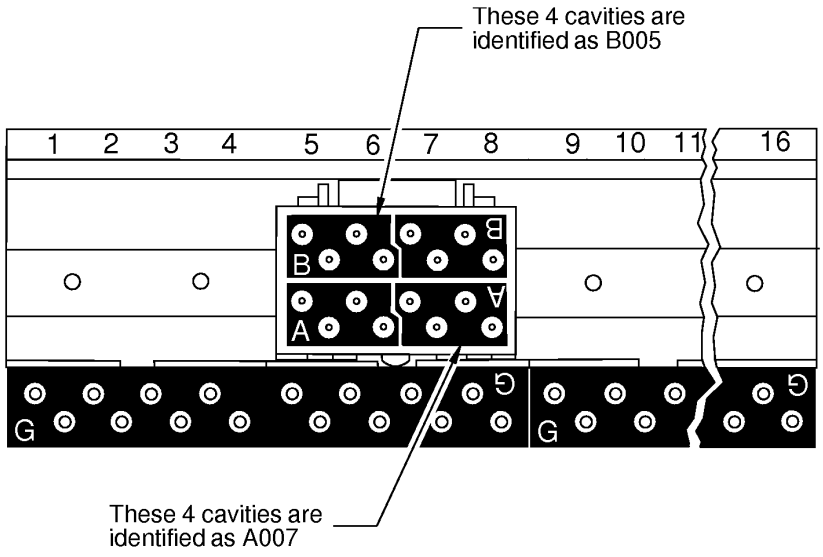
POSITION OF THE CONTACT IN THE INSERTION TOOL
Figure 34

(3) If the contact is to be installed in a module that has a grommet seal, lubricate the contact, and the grommet with isopropyl alcohol.

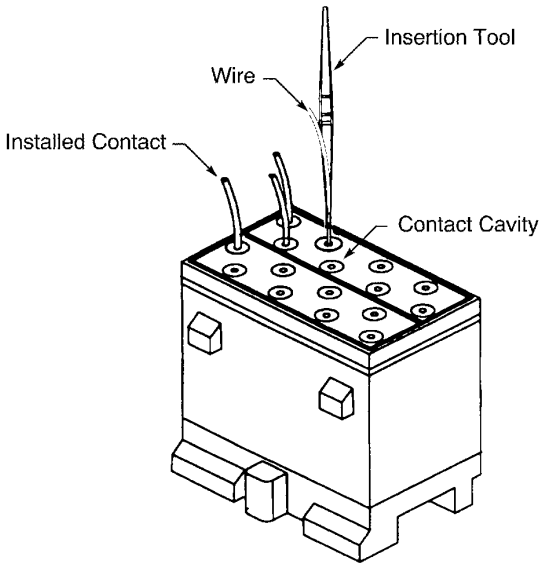
(4) Axially align the contact and the tool with the contact cavity.

Refer to:

- Figure 35 for the identification of the contact cavities
- Figure 36 for the position of the contact insertion tool and the contact cavity.



IDENTIFICATION OF THE CONTACT CAVITIES ON THE S280W555-( ) TERMINAL JUNCTION MODULE
Figure 35



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POSITION OF THE CONTACT INSERTION TOOL AND THE CONTACT CAVITY
Figure 36

(5) Carefully push the tool into the contact cavity until it stops.

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

CAUTION: DO NOT TURN THE TOOL WHEN IT IS IN THE CONTACT CAVITY. DAMAGE TO THE CONTACT RETENTION CLIPS CAN OCCUR.

(6) Carefully pull the tool out of the contact cavity.

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

(7) Lightly pull the wire to make sure that the contact is locked in position.

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

(8) If the contact is not locked in the contact cavity:

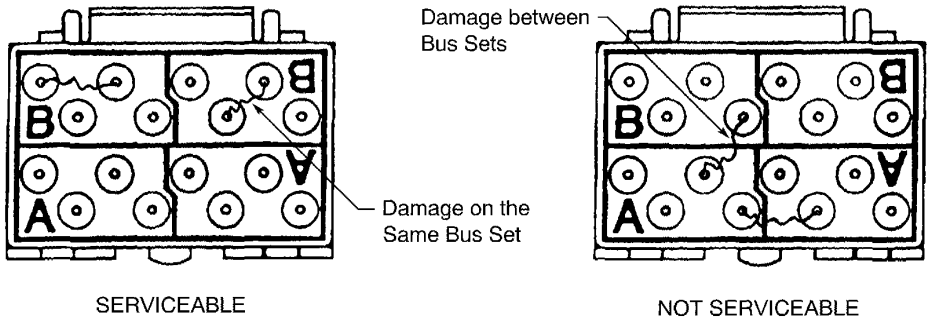
(a) Pull the contact out of the cavity.

(b) Do Step 4.F.(2) through Step 4.F.(7) again.

(9) Examine the grommet for these types of damage:

• Damage between the bus sets; refer to Figure 37

- Damage of the contact cavity that has a depth that is more than the outer seal web in the grommet; refer to Figure 38.



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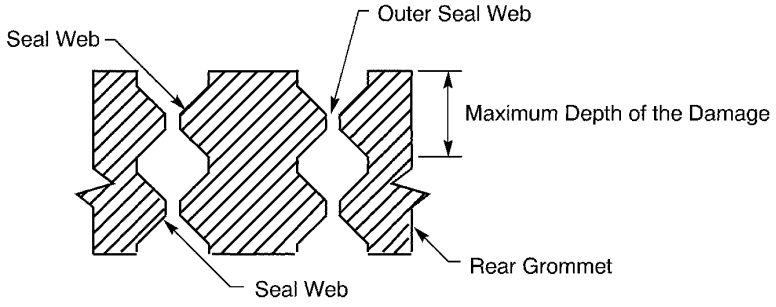
TYPES OF DAMAGE OF THE MODULE GROMMET
Figure 37



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DAMAGE OF THE GROMMET IN RELATION TO THE OUTER SEAL WEB
Figure 38

G. Seal of an Empty Contact Cavity

These conditions are applicable:

- For a ground module that does not have a grommet, an empty contact cavity cannot be sealed
- For a ground module that has a grommet that has a membrane, empty contact cavities where the membrane is punctured must be sealed with a seal plug
- For a terminal module in the pressurized area, the seal of an empty contact cavity is not necessary
- For a terminal module in the unpressurized area, an empty contact cavity must be sealed with a seal plug or a seal rod.

Table 21
SEAL PLUGS FOR BACC50AN GROUND MODULES

Ground Module Part Number	Seal Plug	
	Part Number	Supplier
BACC50AN16	MS27488-16-1	QPL
BACC50AN20	MS27488-20-1	QPL

(1) For an empty contact cavity in a BACC50AN ground module that has a punctured membrane seal:

(a) Make a selection of a seal plug from Table 21.

(b) Push the seal plug into the contact cavity until it stops.

Make sure that the large diameter end of the seal plug goes into the membrane first.

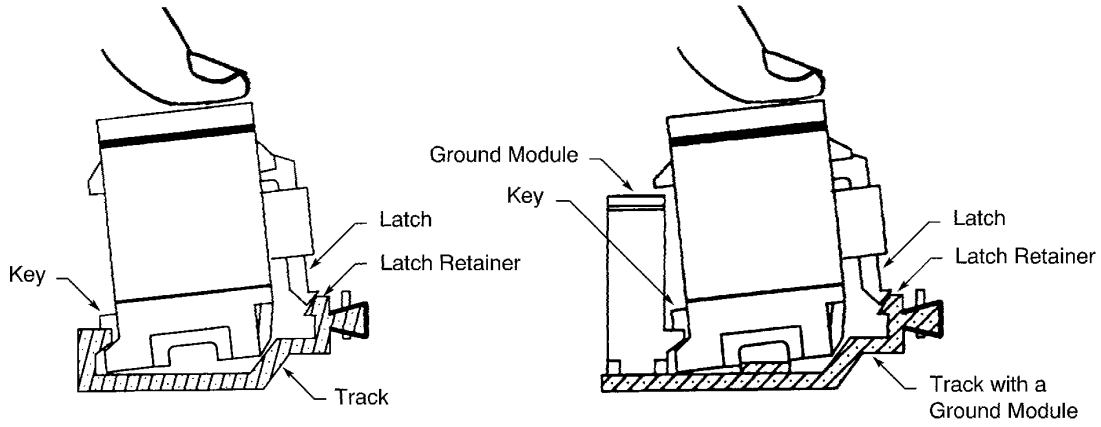
(2) For terminal modules in the unpressurized area, install a seal plug or a seal rod in each empty contact cavity of the terminal module. Refer to Subject 20-60-08.

If a seal rod is installed, make sure that the length of the seal rod is 0.5 inch ±0.1 inch.

5. INSTALLATION

A. Installation of a Terminal Module on a Track

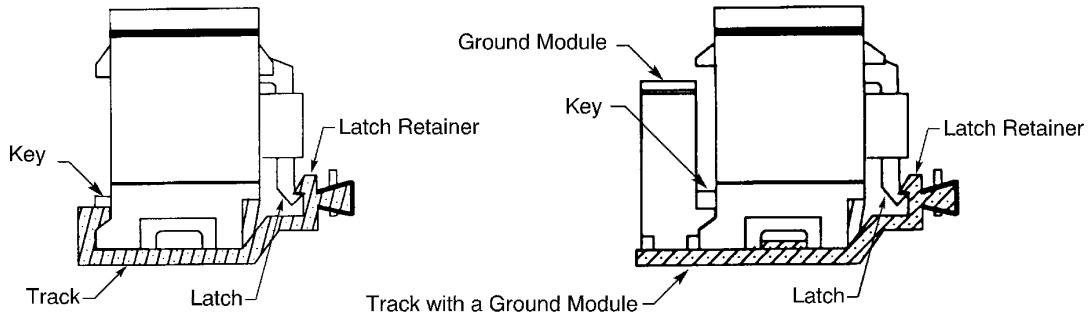
(1) Align the key of the module with the applicable keyway on the track. Refer to Figure 39.



2446860 S00061548991_V1

POSITION OF THE TERMINAL MODULE ON THE TRACK
Figure 39

(2) Push the top of the module until it makes a click and the latch is locked in the latch retainer. Refer to Figure 40.



2446861 S00061548992_V1

TERMINAL MODULE INSTALLED ON THE TRACK
Figure 40

(3) Examine the terminal module for these types of damage:

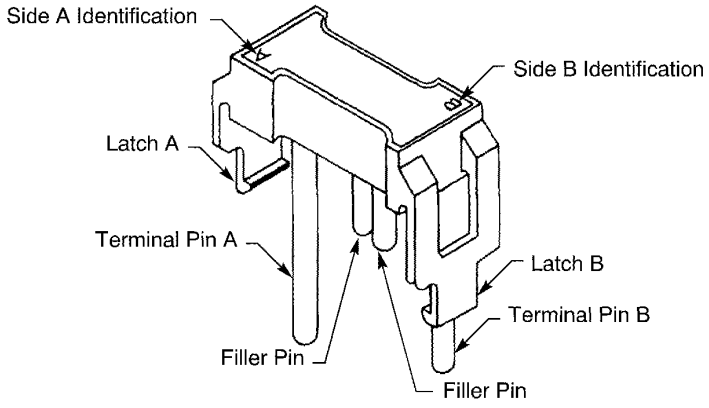
- A latch that is bent or broken
- A latch that has a crack
- A latch retention tab that is broken
- A module shell that has a crack
- A key that is broken.

B. Installation of the Diode or Resistor Module

(1) Refer to the Wiring Diagram to find the position of the diode or the resistor module in the terminal module.

(2) Examine the module. Refer to Figure 41.

Make sure that the terminal pins and the alignment pins are straight.



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CONFIGURATION OF THE DIODE MODULE OR THE RESISTOR MODULE
Figure 41

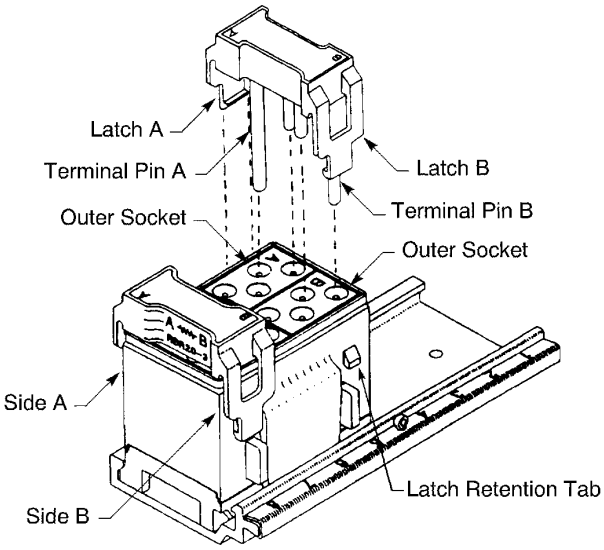
(3) Align the pins of the diode or resistor module with the sockets of the terminal module. Refer to Figure 42.

Make sure that:

- Latch A is aligned with side A of the terminal module
- Terminal Pin A is aligned with the outer socket on Side A
- Latch B is aligned with side B of the terminal module
- Terminal Pin B is aligned with the outer socket on Side B
- The two filler pins of the module are aligned with the corresponding inner sockets in the terminal module.

ASSEMBLY OF S280W555-(), BACC50AN(), AND BURNDY RB(), TERMINAL MODULES AND GROUND MODULES

CAUTION: IF THE LATCHES ARE NOT ALIGNED WITH THE APPLICABLE SIDE OF THE TERMINAL MODULE, INCORRECT OPERATION OF THE TERMINAL MODULE CAN OCCUR.

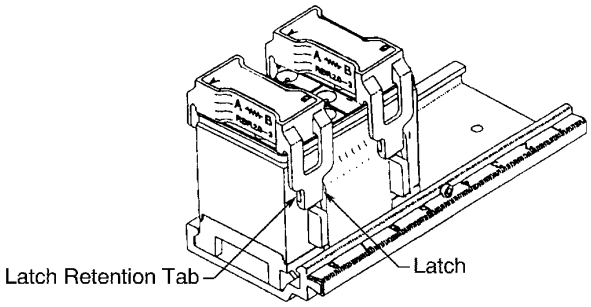


2446863 S00061548995_V1

ALIGNMENT OF THE DIODE OR RESISTOR MODULE AND THE TERMINAL MODULE
Figure 42

(4) Push the module down into the terminal module. Refer to Figure 43.
Make sure that:

- The two terminal pins engage the two sockets
- The two latches are fully engaged with the two latch retention tabs.



2446864 S00061548996_V1

POSITION OF THE DIODE OR RESISTOR MODULE IN THE TERMINAL MODULE
Figure 43

(5) Examine the diode or resistor module for these types of damage:

- A module shell that has a crack
- A latch that has a crack or a bend
- A latch that is broken
- A pin that is bent.

C. Installation of a Track on an Assembly or the Structure

CAUTION: A RIVET MUST NOT BE INSTALLED IN AN OLD HOLE IN THE STRUCTURE. THE ELECTRICAL BOND BETWEEN THE RIVET IN AN OLD HOLE AND THE STRUCTURE CAN CAUSE UNSATISFACTORY PERFORMANCE.

(1) Make a selection of a rivet that:

- Is aluminum
- Has an alodine finish
- Has a 0.125 inch diameter
- Has the necessary length for the installation.

(2) Drill a hole in the assembly or the structure for each hole in the track.
Make sure that the hole has the correct diameter for the rivet.

(3) Install a rivet in each hole of the track and the assembly or structure.

6. APPROVED TOOL SUPPLIERS

A. Contact Removal Tools

Table 22
CONTACT REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
ATR 2079 BAC	Astro
ATR 2080 BAC	Astro
ATR 2106 BAC	Astro
ATR 2112 BAC	Astro
DRK83-20	Daniels
DRK-110-1SA	Daniels
DRK-20-2	Daniels
DRK-16-2	Daniels
M81969/14-02	QPL
M81969/14-03	QPL
M81969/14-10	QPL
M81969/14-11	QPL
M83723/31-16	QPL
M83723/31-20	QPL
RRX16B	Russtech
RRX20B	Russtech

B. Terminal Module Removal Tools

Table 23
MODULE REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
RDW20-4	Russtech

C. Contact Insertion Tools

Table 24
CONTACT INSERTION TOOL SUPPLIERS

Insertion Tool	Supplier
91039-1	AMP
DAK83-16	Daniels
DAK83-20	Daniels
M81969/14-03	QPL
M81969/14-11	QPL

Table 24 CONTACT INSERTION TOOL SUPPLIERS (Continued)

Insertion Tool	Supplier
ST2220-2-4	Boeing
ST2220-2-11A	Boeing
ST2220-2-28	Boeing

D. Contact Crimp Tools

Table 25
CONTACT CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
M22520/1-01	QPL
M22520/1-02	QPL
M22520/2-01	QPL
M22520/2-11	QPL
ST2220-1-2	Boeing
ST2220-1-Y	Boeing
WA22	Daniels
WA22LC	Daniels
WA27	Daniels
WA27F	Daniels

BURNDY RBDSC-() AND BACM15J() PROGRAM SWITCH MODULE

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BURNDY RBDSC-() AND BACM15J() PROGRAM SWITCH MODULE

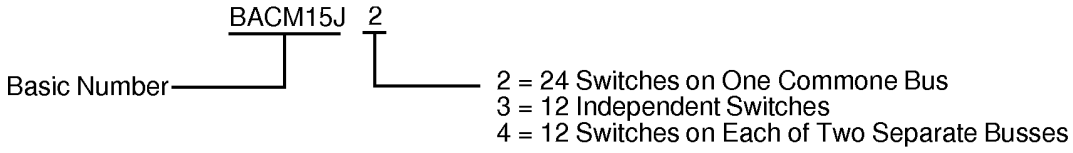
This Subject gives the procedures to assemble, connect, disconnect, and install the BACM15J() and Burndy RBDSC-() Program Switch Module.

1. PART NUMBERS AND DESCRIPTION

A. Program Switch Module Part Numbers

Table 1
PROGRAM SWITCH MODULE ASSEMBLY PART NUMBERS

Boeing Part Number	Supplier Part Numbers	Supplier
BACM15J()	RBDSC-()	IFC Burndy/IFC Souriau



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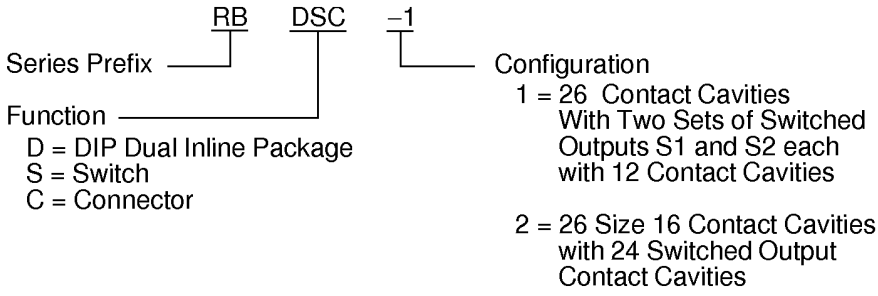
PROGRAM SWITCH MODULE BOEING PART NUMBER STRUCTURE
Figure 1



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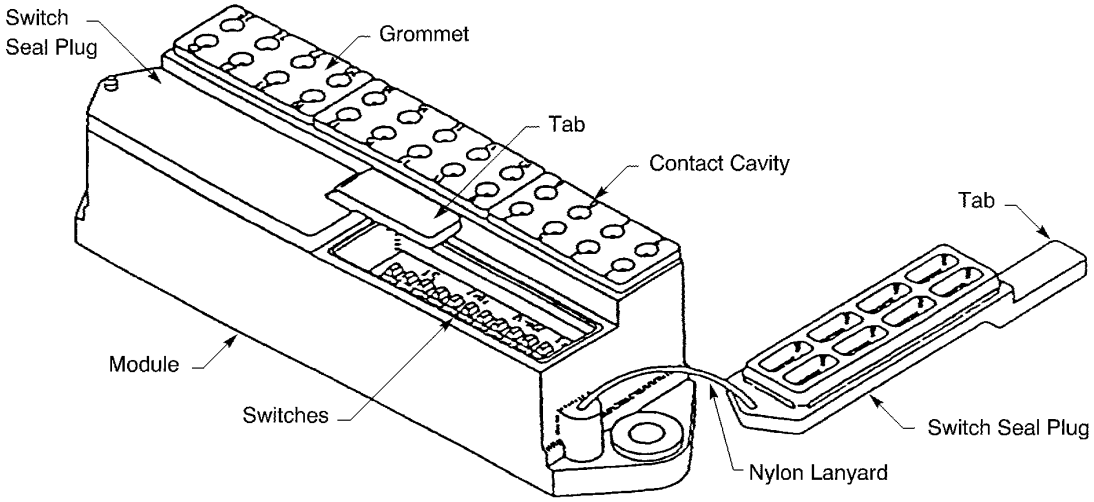
BURNDY RBDSC-( ) PROGRAM SWITCH MODULE PART NUMBER STRUCTURE
Figure 2

BURNDY RBDSC-() AND BACM15J() PROGRAM SWITCH MODULE



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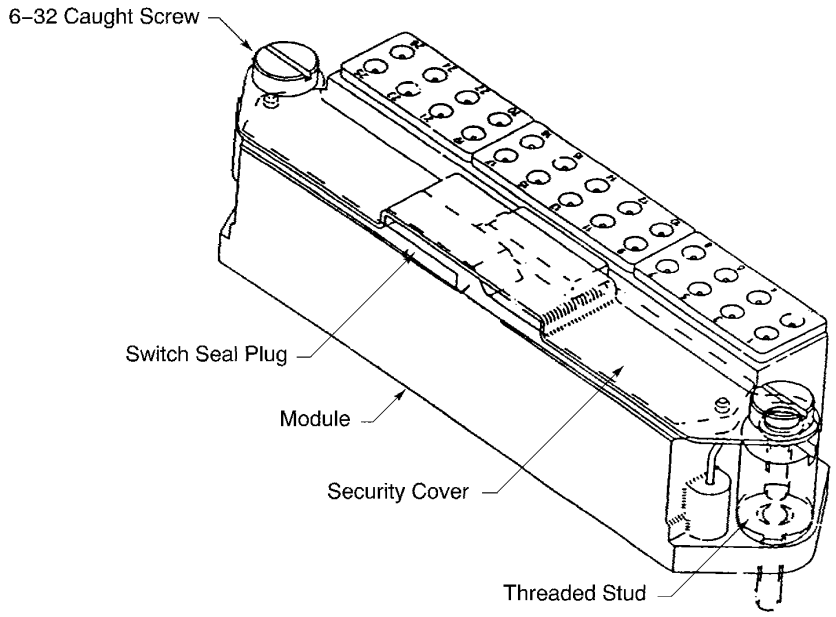
THE PROGRAM SWITCH MODULE
Figure 3



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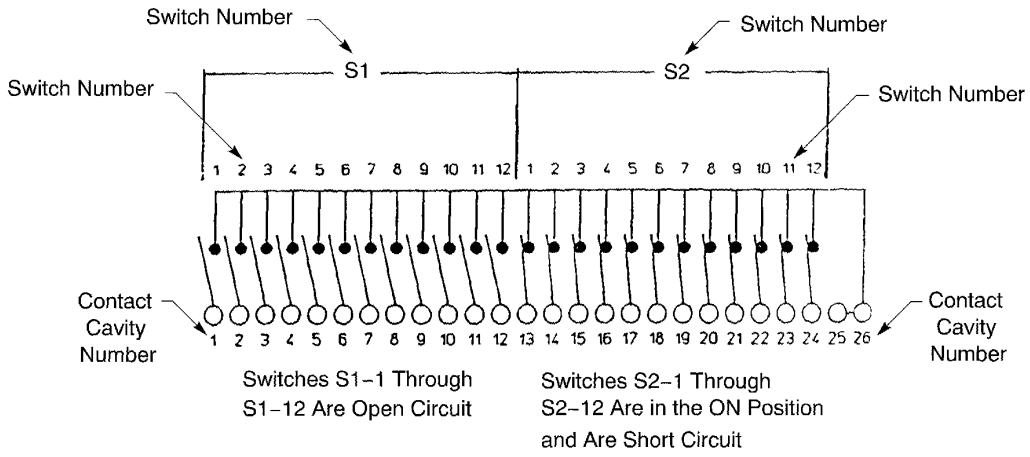
THE PROGRAM SWITCH MODULE WITH A SECURITY COVER
Figure 4

BURNDY RBDSC-() AND BACM15J() PROGRAM SWITCH MODULE



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ELECTRICAL CONFIGURATION OF THE SWITCH MODULE
Figure 5

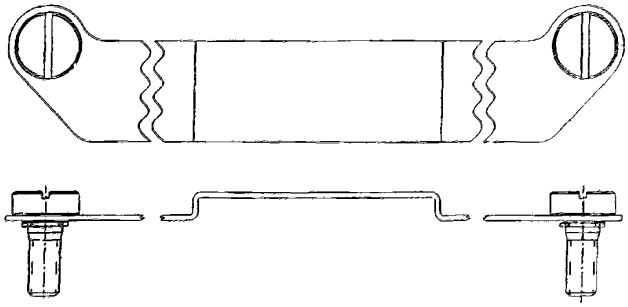
The program switch module have these technical features:

- 24 switched outputs
- Captive switch seal plugs
- Security covers to protect switch positions
- Standard MIL-C-39029/1-101 size 1620 contacts.

B. Security Cover Assembly Part Numbers

Table 2
SECURITY COVER ASSEMBLY PART NUMBERS

Description	Boeing Part Number	Supplier Part Number	Supplier	Note
Security Cover	BAC50AL1	RBDSC-1P15	IFC Burndy/IFC Souriau	Held in position by the threaded stud
Threaded Stud	BACS53E1	RBDSC-1P12	IFC Burndy/IFC Souriau	Holds the security cover on the program switch module and the module on the structure



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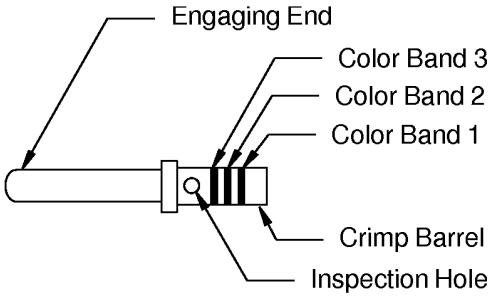
THE SECURITY COVER
Figure 6

The security cover:

- Gives protection from accidental change of the position of the switch
- Locks the switch seal covers into position
- Prevents the contamination of the switches.

C. Contact Part Numbers



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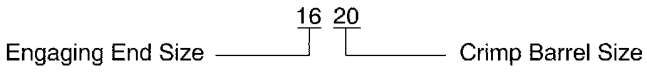
M39029/1 PIN CONTACT
Figure 7



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EXAMPLE OF A CONTACT SIZE
Figure 8

The contacts have these technical features:

- A size 20 crimp barrel
- A gold finish.

Table 3
CONTACT PART NUMBERS

Contact Size		Contact Type	Part Number	Color Code		Supplier
Engaging End	Crimp Barrel			Band	Color	
16	20	Pin	MIL-C-39029/1-101	1	Brown	QPL
				2	Black	
				3	Brown	

D. Necessary Materials

Table 4
NECESSARY MATERIALS FOR ASSEMBLY

Material	Specification	Supplier	Note
Seal Plug	MS27488-16	QPL	Blue
Seal Rod	AMS 3656	QPL	Cut to the necessary length

E. Recommended Tools

NOTE: The satisfactory alternatives to the tools in Table 5 are:

- In Table 6 for contact removal tools
- In Table 8 contact crimp tools
- In Table 9 contact insertion tools.

BURNDY RBDSC-() AND BACM15J() PROGRAM SWITCH MODULE

Table 5
RECOMMENDED TOOLS

Procedure	Contact Size		Tool	
	Engaging End	Crimp Barrel	Type	Part Number
Contact Removal	16	20	Removal	M81969/14-11
Contact Assembly	16	20	Crimp	M22520/1-01
			Locator	M22520/1-02
Contact Insertion	16	20	Insertion	M81969/14-11
Switch Configuration	16	20	Insertion	M81969/14-02

2. DISASSEMBLY OF THE PROGRAM SWITCH MODULE

A. Security Cover Removal

(1) Loosen the screws that hold the cover to the module.

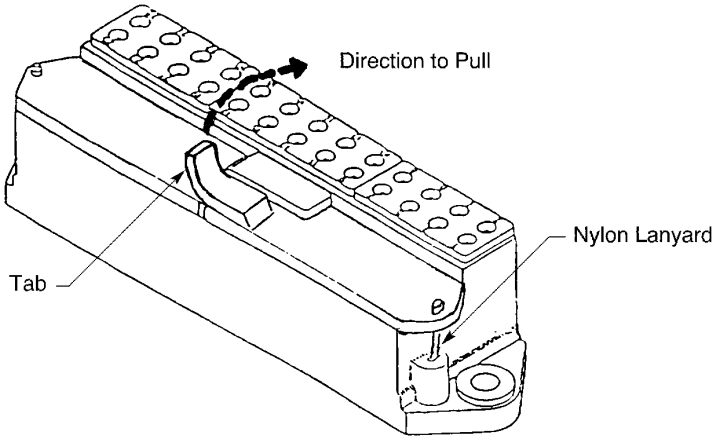
(2) Remove the cover.

B. Switch Seal Plug Removal

(1) Carefully pull the tab of the applicable switch seal plug up and away from the module. Refer to Figure 9.

Make sure to pull the tab lightly so that the nylon lanyard at the other end of the plug does not break.

CAUTION: THE NYLON LANYARD AT THE ONE END OF THE SWITCH SEAL PLUG KEEPS THE SEAL PLUG ATTACHED TO THE MODULE SO THAT THE PLUG IS ALWAYS AVAILABLE TO GIVE PROTECTION TO THE SWITCHES. DO NOT DISCONNECT THIS END OF THE PLUG.



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SWITCH SEAL PLUG REMOVAL
Figure 9

C. Switch Module Removal from the Structure

(1) Loosen the two nuts that attach the switch module to the structure until each nut is free from each screw.

(2) Remove the switch module from the structure.

D. Contact Removal

Table 6
CONTACT REMOVAL TOOLS

Crimp Barrel Size	Removal Tool	
	Part Number	Color
20	ATR 2079 BAC	-
	ATR 2080 BAC	-
	M81969/14-11	White
	RRX20B	-

(1) Make a selection of a contact removal tool from Table 6.

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.

WARNING: A DEFECTIVE TOOL CAN CAUSE INJURY TO THE OPERATOR.

CAUTION: A DEFECTIVE TOOL CAN CAUSE DAMAGE TO THE GROMMET OF THE CONNECTOR OR THE CONTACT RETENTION CLIPS, OR BOTH.

(2) Put the tip of the tool on the wire near the grommet.

(3) Carefully push the tip of the tool into the contact cavity until it stops.

(4) Pull the wire and the tool out of the contact cavity at the same time.

(5) If the contact does not release:

(a) Carefully pull the tool out of the contact cavity.

(b) Turn the tool 90 degrees.

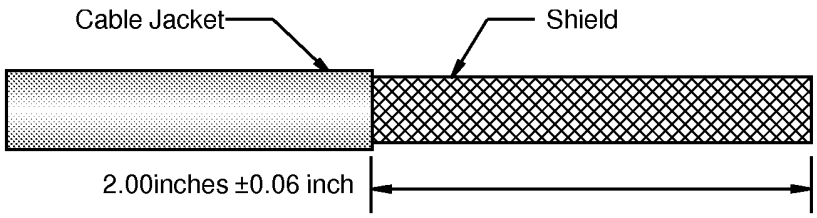
(c) Do Step 2.D.(2) through Step 2.D.(4) again.

3. ASSEMBLY OF THE PROGRAM SWITCH MODULE

A. Cable Preparation for a Solder Sleeve Shield Termination

(1) Remove 2.00 inches ±0.06 inch of the cable jacket from the end of the cable. Refer to:

- Figure 10
- Subject 20-00-15 for the procedure to remove the cable jacket.



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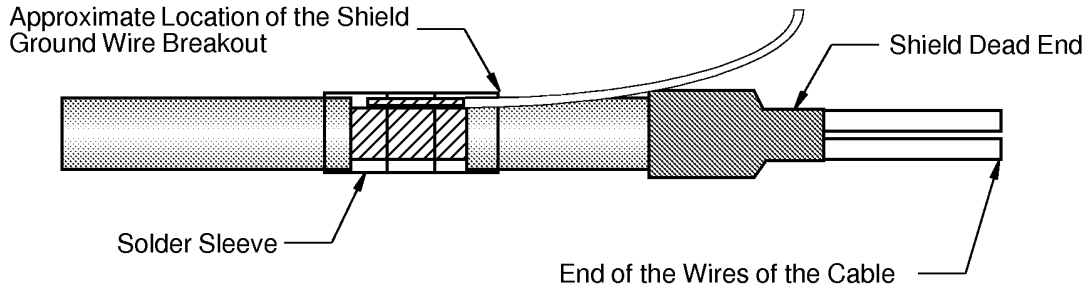
CABLE JACKET REMOVAL
Figure 10

(2) If the location of the shield ground wire breakout is specified at a location that is different than the end of the cable jacket:

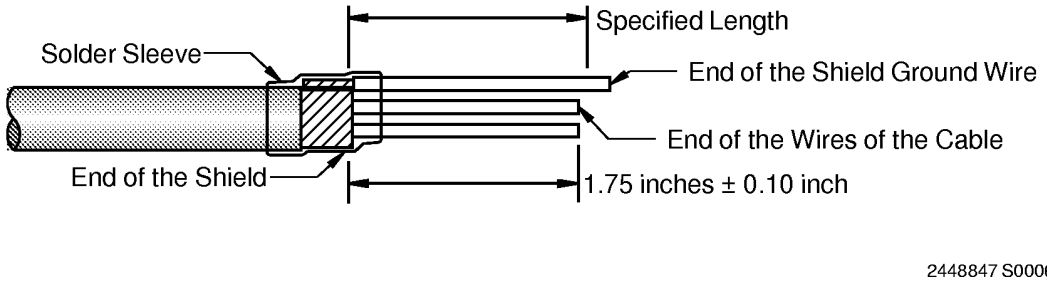
(a) Assemble the shield termination at the specified location. Refer to Figure 11.

Make sure that the shield ground wire is pointed in the direction that is specified for the shield ground wire connection.



SOLDER SLEEVE SHIELD TERMINATION AT THE LOCATION OF A SPECIFIED BREAKOUT
Figure 11

(b) Assemble a shield dead end at the end of the cable jacket. Refer to Figure 12



SOLDER SLEEVE SHIELD TERMINATION AT THE END OF THE CABLE JACKET
Figure 12

(3) If the location of the shield ground wire breakout is not specified, assemble the insulated shield ground wire at the end of the cable jacket. Refer to Figure 12.

Make sure that the shield ground wire is pointed in the direction that is specified for the shield ground wire connection.

(4) 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 1.75 inches ± 0.10 inch. Refer to Figure 12.

B. Contact Assembly

Table 7
INSULATION REMOVAL LENGTH

Wire Size (AWG)	Crimp Barrel Size	Removal Length L (inch)		Special Instructions
		Target	Tolerance	
24	20	0.15	±0.02	-
22	20	0.15	±0.02	-
20	20	0.15	±0.02	-

BURNDY RBDSC-() AND BACM15J() PROGRAM SWITCH MODULE

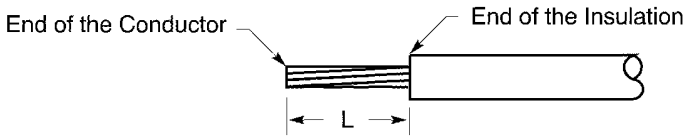
Table 8
CONTACT CRIMP TOOLS

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	M22520/2-11	-
		WA22	5	M22520/2-11	-
		WA22LC	5	M22520/2-11	-
		WA27	2	M22520/1-02	Red
22	20	M22520/1-01	3	M22520/1-02	Red
		M22520/2-01	6	M22520/2-11	-
		WA22	6	M22520/2-11	-
		WA22LC	6	M22520/2-11	-
		WA27	3	M22520/1-02	Red
20	20	M22520/1-01	4	M22520/1-02	Red
		M22520/2-01	7	M22520/2-11	-
		WA22	7	M22520/2-11	-
		WA22LC	7	M22520/2-11	-
		WA27	4	M22520/1-02	Red

(1) Make a selection of a crimp tool from Table 8.

(2) Remove the necessary length of insulation from the end of the wire. Refer to:

- Table 7 for the insulation removal length
- Figure 13
- Subject 20-00-15 for the insulation removal procedure.



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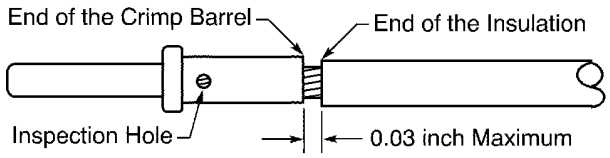
INSULATION REMOVAL LENGTH
Figure 13

(3) Put the end of the wire the crimp barrel of the contact. Refer to Figure 14.
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 the crimp barrel is less than or equal to 0.03 inch.



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POSITION OF THE WIRE IN THE CRIMP BARREL
Figure 14

(4) Crimp the contact.

(5) Examine the contact assembly for these types of damage:

- Broken strands of the conductor
- Strands of the conductor on which the base metal can be seen
- Cracks in the crimp barrel of the contact.

C. Contact Insertion

Table 9
CONTACT INSERTION TOOLS

Crimp Barrel Size	Insertion Tool	
	Part Number	Color
20	DAK83-20	-
	M81969/14-11	Red
	ST2220-2-28	-

(1) Make a selection of a contact insertion tool from Table 9.

CAUTION: DO NOT USE A TOOL WITH:

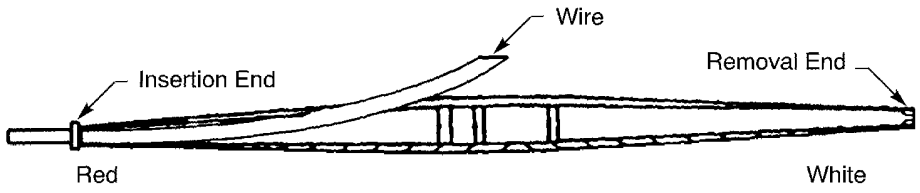
- A TIP THAT IS BENT
- A TIP THAT IS FLARED
- A TIP THAT IS BROKEN
- A TIP THAT IS CRACKED.

BURNDY RBDSC-() AND BACM15J() PROGRAM SWITCH MODULE

WARNING: A DEFECTIVE TOOL CAN CAUSE INJURY TO THE OPERATOR.

CAUTION: A DEFECTIVE TOOL CAN CAUSE DAMAGE TO THE GROMMET OF THE CONNECTOR OR THE CONTACT RETENTION CLIPS, OR BOTH.

(2) Put the wired contact into the end of the insertion tool. Refer to Figure 15.



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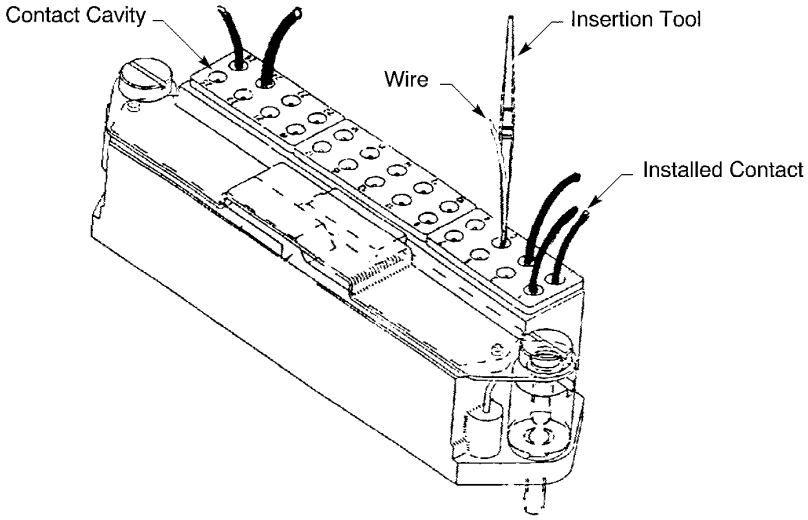
POSITION OF THE WIRED CONTACT IN THE M81969/14-11 INSERTION TOOL
Figure 15

(3) Axially align the contact and the tool with the correct contact cavity. Refer to Figure 16.



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POSITION OF THE CONTACT INSERTION TOOL AND THE CONTACT CAVITY
Figure 16

(4) Push the tool straight into the contact cavity until the tool stops.

(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.

BURNDY RBDSC-() AND BACM15J() PROGRAM SWITCH MODULE

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

(7) If the contact is not locked in the contact cavity:

(a) Pull the wired contact out of the cavity.

(b) Do Step 3.C.(2) through Step 3.C.(6) again.

(8) Examine the grommet for these types of damage:

- A crack or a hole in the grommet that extends from one contact cavity to another contact cavity
- The grommet does not have a cracker or a hole that extends from one contact cavity to the edge of the grommet
- A contact cavity that does not have a number.

D. 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 9.

(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.

E. 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 from Table 4.

(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.
- Each seal plug is fully pushed down all around the perimeter
- A seal plug does not have cracks, gouges, or tears
- Each seal plug is attached to a nylon lanyard.

BURNDY RBDSC-() AND BACM15J() PROGRAM SWITCH MODULE

F. Configuration of the Switches

(1) Remove the switch seal plugs from the module. Refer to Paragraph 2.B.

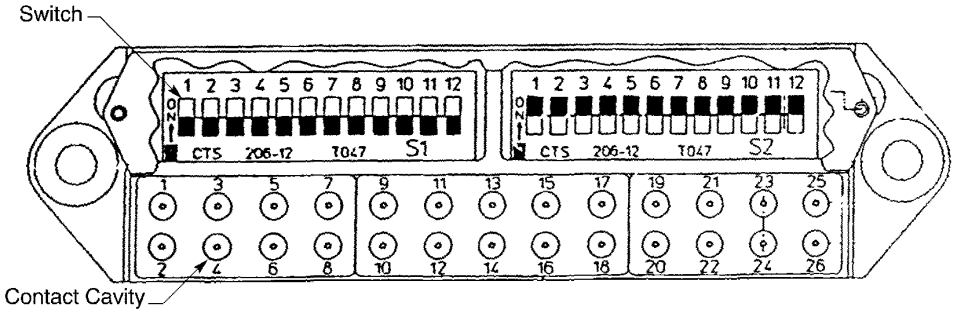
(2) Make a selection of a contact insertion tool from Table 5.

NOTE: A plastic awl is a satisfactory alternative.

(3) Set the switches to the correct position. Refer to Figure 5 and Figure 17.

NOTE: The Wiring Diagram gives the correct position for each switch.

NOTE: The ON position of the switch is an electrical short circuit. The opposite position of the switch is an electrical open circuit.



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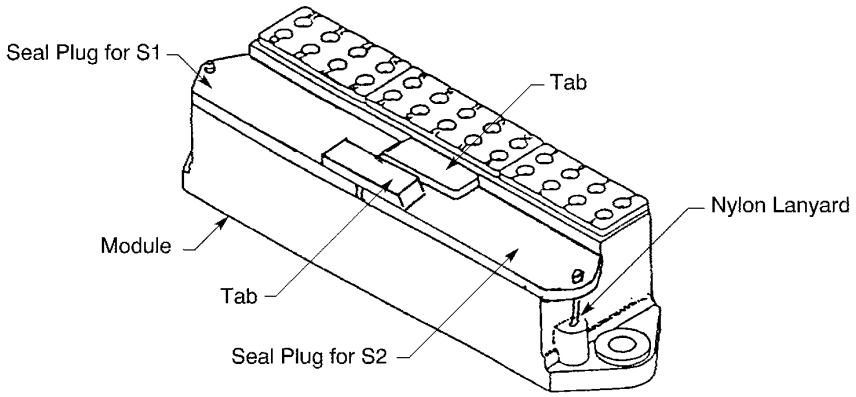
CONFIGURATION OF THE SWITCHES
Figure 17

(4) Put the each switch seal plug in the correct position over the switches.

Make sure that each switch operates correctly.

(5) Carefully push the seal plug into the module so that each seal plug is locked into position. Refer to Figure 18.



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POSITION OF THE SEAL PLUGS IN THE PROGRAM SWITCH MODULE
Figure 18

4. INSTALLATION OF THE PROGRAM SWITCH MODULE

A. Installation of the Security Cover on the Module

Refer to Figure 4.

(1) Put the security cover in the correct position on the switch seal plugs.

(2) Align the screws in the security cover with the holes in the threaded studs.

(3) Put each screw into the top end of each threaded stud.

(4) Tighten the screws equally until the bottom of the security cover touches the top of the threaded studs.

B. Installation of the Switch Module on the Structure

(1) If necessary, remove the 6-32 nuts and the 6-32 screws from the flanges on the module.

(2) If a security cover is installed on the module:

(a) Put the threaded stud in each hole in the flange of the module.

Make sure that the two threaded studs on the base of the module are aligned with the holes on the structure.

(b) Put the module on the structure so the threaded studs go through the holes in the structure.

(3) If a security cover is not installed on the module:

(a) Align the holes in the flange of the module with the holes in the structure.

(b) Put the 6-32 screws through:

- The holes in the flanges of the module
- The two holes in the structure.

(4) Put the 6-32 elastic lock nuts on the end of each threaded stud.

(5) Tighten the screws so that the module does not move on the structure.

(6) If the module moves, tighten the screws again.

(7) Examine the switch module for these types of damage:

- Any cracks in the shell of the switch module
- Any cracked or broken flanges of the switch module
- Any cracked or broken switch seal plugs
- A worn nylon lanyard
- A broken nylon lanyard.

5. APPROVED TOOL SUPPLIERS

A. Contact Removal Tools

Table 10
REMOVAL TOOL SUPPLIERS

Removal Tool	Supplier
ATR 2079 BAC	Astro
ATR 2080 BAC	Astro
M81969/14-11	QPL
RRX20B	Russtech

B. Contact Insertion Tools

Table 11
INSERTION TOOL SUPPLIERS

Insertion Tool	Supplier
DAK83-20	Daniels
M81969/14-11	QPL
ST2220-2-28	Boeing

C. Contact Crimp Tools

Table 12
CRIMP TOOL SUPPLIERS

Crimp Tool	Supplier
M22520/1-01	QPL
M22520/1-02	QPL
M22520/2-01	QPL

BURNDY RBDSC-() AND BACM15J() PROGRAM SWITCH MODULE

Table 12 CRIMP TOOL SUPPLIERS (Continued)

Crimp Tool	Supplier
M22520/2-11	QPL
WA22	Daniels
WA22LC	Daniels
WA27	Daniels