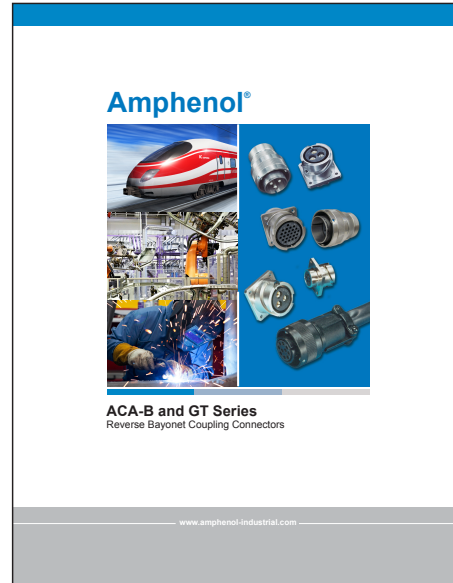
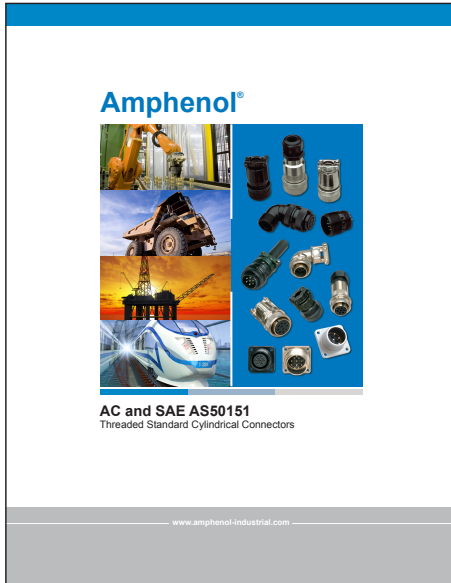


Amphenol®



Termination Instructions: L-1295 SAE AS50151, AC, ACA and GT Series Solder and Crimp

SAE AS50151, AC, ACA and GT Series

This publication contains instructions for installing, disassembling, inspecting and reassembling Amphenol, SAE AS5015, AC Threaded, ACA Reverse Bayonet and GT Reverse Bayonet Connectors manufactured by Amphenol Industrial Operations in it's different Manufacturing Divisions.

AC THREADED SERIES BASIC SHELL STYLES

Plug: 06



Inline: 01



Wall Mount: 01



Box Mount: 02



A	
AD	
AF	
E	
F	
R	
08:F	

NO REAR ACCESSORIES THREADS ON 02 BOX MOUNT RECEPTACLE

SAE AS50151, AC, ACA and GT Series

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SAE AS50151 SERIES BASIC SHELL STYLES

Plug: 3106



Inline: 3101







Wall Mount: 3100



Box Mount: 3102



A	
E/F	
08:A	
08:E	

**NO REAR ACCESSORIES THREADS ON
02 BOX MOUNT RECEPTACLE**

SAE AS50151, AC, ACA and GT Series

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ACA-B SERIES BASIC SHELL STYLES

Plug: 3106



Inline: 3101



Flange Rcpt: 3103/00



Jamnut Rcpt: 3107



Box Mount: 3102



E	
F	
08:E	
08:F	

**NO REAR ACCESSORIES THREADS ON
02 BOX MOUNT RECEPTACLE**

SAE AS50151, AC, ACA and GT Series

This publication contains instructions for installing, disassembling, inspecting and reassembling Amphenol, SAE AS5015, AC Threaded, ACA Reverse Bayonet and GT Reverse Bayonet Connectors manufactured by Amphenol Industrial Operations in it's different Manufacturing Divisions.

GT REVERSE BAYONET SERIES BASIC SHELL STYLES

Plug: 3106



Inline: 3101



Flange Rcpt: 3103/00



Jamnut Rcpt: 3107



Box Mount: 3102



A	
AF	
F	
R	
08:F	
08:R	

NO REAR ACCESSORIES THREADS ON 02 BOX MOUNT RECEPTACLE

Installation Instructions

SAE AS50151, AC, ACA and GT Series, Containing Crimp Contacts.

Amphenol, SAE AS50151, AC Threaded, ACA Reverse Bayonet and GT Reverse Bayonet incorporate MIL-STD-1651 insert arrangements as well as some special arrangements. Crimp type contacts in size 4/0, 1/0, 0, 4, 8, 12, 16 and 16S are available for use in these insert arrangements. This publication contains information for proper crimping, insertion and removal of crimp contacts as well as applicable tool information.

1. Cleaning:

Inserts contacts and inside surfaces of shells must be kept free of oil, grease and dirt throughout the installation procedure. Use a clean cloth moistened with Isopropyl Alcohol.



Do Not use Any Other Lubricant or Cleaning Chemical than Isopropyl Alcohol

2. Cable Wire and Preparation:

- a. Provide for sufficient wire slack to permit easy installation of the connector. Using Table 1 as a guide, cut the wires to length and strip the insulation the appropriate distance from the end. Use extreme care to avoid nicking or cutting wire strands. (Figure 1 & 2)
- b. Check to be sure strands of wire are not separated. If necessary, reform by lightly twisting the strands together

TABLE I					
Contact Size	0	4	8	12	16
Strip Insulation	3/4"	1/2"	9/16"	5/16"	5/16"



Figure 1



Figure 2

Installation Instructions

SAE AS50151, AC, ACA and GT Series, Containing Crimp Contacts (cont...).

3. Crimping:

- Insert the stripped end of wire into the contact wire-well and apply slight pressure until it is positively bottomed. Visually check to assure the wire strands are visible in the inspection hole provided in the wire well. (Figure 3)
- Using the appropriate crimping tool and preset the tool in accordance with instructions provided with the tool. Table IV.
- Special wire wells may require a reduction sleeve to obtain the appropriate tensile strength, insert the reduction sleeve into the wire well prior to inserting the wire. Table III lists the applicable wire well adapters for the various wire and contact combinations.
- Insert the contact and wire into the tool as far as possible, then close the tool handles. This tool has a built in safety feature in that the handles cannot be reopened until the crimping cycle is completed, refer to Table II for tensile strength data. Visually inspect the crimp. Wires should be visible in the inspection hole (Figure 4)

TABLE II Tensile Strength for Crimp Joint Tests		
Contact Size	Wire Size	Initial Min. Pull-out Force lb. (Prior to Conditioning)
16	20	20
	18	40
	16	50
12	14	70
	12	110
8	8	185
4	4	450
0	0	800



Figure 3

TABLE III Wire Well Adapters			
Mating End Size	Wire Barrel Size	Allowable Wire Size	Required Wire Adapter Sleeve
16 Short	16	16	-
		18	-
		20	-
		22*	10-74696-6
16 Long	16	16	-
		18	-
		20	-
		22*	10-74696-6
12	12	12	-
		14	-
8	8	8	-
		10*	10-74696-1
4	4	4	-
		6*	10-74696-2
0	0	0	-
		2*	10-74696-7

*When using wire adapter sleeve shown.



Figure 4

TABLE IV CRIMP CONTACTS

PART NUMBER				Mating Size**	Wire Well	Insertion Tool	Extraction Tool	Crimp Tool	Positioner/ Die Set	Locator/ Color
PIN		SOCKET								
SILVER	GOLD	SILVER	GOLD							
10-040553-000	10-597160-15D	10-597109-161	10-597109-16D	16S	16-18-20	11-7345	11-8250	Daniels AF8 or M225520/1-01	Daniels: TH29-1 Astro Tools 616266	Red
10-606014-040	10-597160-40D	10-597109-401	10-597109-40D		12-14					
10-606014-291	10-597160-34D	10-597109-341	10-597109-34D		20-22					
10-606014- 46	10-597160-46D	10-597109-461	10-597109-46D		20-24					
10-040557-000	10-597160-16D	10-597109-171	10-597109-17D	16L	16-18-20	11-7345	11-8250	Daniels AF8 or M225520/1-01	Daniels: TH29-1 Astro Tools 616266	Pin: Blue Socket: Green
10-606014-022	10-597160-22D	10-597109-221	10-597109-22D		12-14					
10-606014-171	10-597160-17D	10-597109-141	10-597109-14D		14-16					
10-606014-301	10-597160-32D	10-597109-321	10-597109-32D		18-20					
10-606014-311	10-597160-33D	10-597109-331	10-597109-33D		20-22					
10-606014-361	10-597160-36D	10-597109-361	10-597109-36D		20-24					
10-606014-121	10-597160-12D	10-597109-131	10-597109-13D	12	12-14	11-7082	11-8250	Daniels AF8 or M225520/1-01	Daniels: TH29-1 Astro Tools 616266	Green
10-606014-231	10-597160-23D	10-597109-231	10-597109-23D		8-10					
10-606014-251	10-597160-26D	10-597109-261	10-597109-26D		10-12					
10-606014-271	10-597160-27D	10-597109-271	10-597109-27D		14-16-18					
10-606014-261	10-597160-24D	10-597109-241	10-597109-24D		18-20					
10-606014-201	10-597160-20D	10-597109-201	10-597109-20D		20-22					
10-040792-000	10-597160- 8D	10-040793-000	10-597109- 8D	8	8	11-8220	11-8250	Pico 414DA-8N Daniels WA23-2	Pico: Pin- 4025 Socket-4026	
10-606014- 41	10-597160-41D	10-597109-411	10-597109-41D		6					
10-606014-321	10-597160-28D	10-606014-321	10-597109-28D		10-12					
10-606014-381	10-597160-38D	10-597109-381	10-597109-38D		12-14					
10-040564-000	10-597160- 4D	10-040565-000	10-597109- 4D	4	4	11-7365-4***	Pin-11-73708-4 Socket-11-7674-2	Pico 400 BHD or Daniels WA23	Pico 414DA-4N Daniels WA23-4	Pico: 4043
10-606014- 58	10-597160-58D	10-597109-581	10-597109-58D		6					
10-606014-331	10-597160-35D	10-597109-351	10-597109-35D		8					
10-606014- 44	10-597160-44D	10-606015-441	10-597109-44D		10					
10-581806-000	10-597160- 1D	10-581808-000	10-597159- 1D	0	0	11-7365-5***	Pin-11-7370-5 Socket-11-7674-3	Pico 414DA-0N Daniels WA23-5	Pico: Pin-4042-1 Socket-4042	
10-606014-341	10-597160-29D	10-597109-291	10-597109-29D		0-2					
10-606014-351	10-597160-30D	10-606015-351	10-597109-30D		4					
10-597276-48	10-597276-48D	10-606015-48	10-597109-48D	2/0	2/0	*	*	Pico 5000	Pico 514DA2/0N	Pico Pin-6490
10-597276-47	10-597276-47D	10-606015-47	10-597109-47D	4/0	4/0	*	*		Pico 514DA4/0N	Socket-6491

* Consult Amphenol Industrial, Daniels Manufacturing or Pico Tools.

** Letter Designations: S designates Short, L designates Long.

*** 11-7365 Series Insertion Tool and 11-7370, 11-7674 Series Removal Tools must be used with 11-7364 Arbor press. Refer to L-632 for Applicable instructions.

Installation Instructions

SAE AS50151, AC, ACA and GT Series, Containing Crimp Contacts (cont...).

4. Installing Contacts

- a. Slide the connector rear accessories over the wire bundle in the correct sequence, Cable Clamp /End bell (may Include Tapered sleeve or other accessories depending on Cable clamp style, Adapter (if required), Sleeve, Grommet. (Figure 5)
- b. Use the Insertion tool specified in Table IV, Place the contact in the tool, the tool should but against the shoulder of the of the contact. Contact sizes 16S, 16 and 12 Use a pliers style tool.
- c. Contact size 8, 4 and 0 us a “C” style shaped shaft.
- d. Lubricate the grommet, insert the contact through the appropriate cavity position in the grommet, corresponding to the cavity position on the rear portion of the insert (Figure 6), size 16S, 16 and 12 Pilot pins may be used to assist in the installation of socket contacts. See Figure 7.



Figure 5



Figure 6

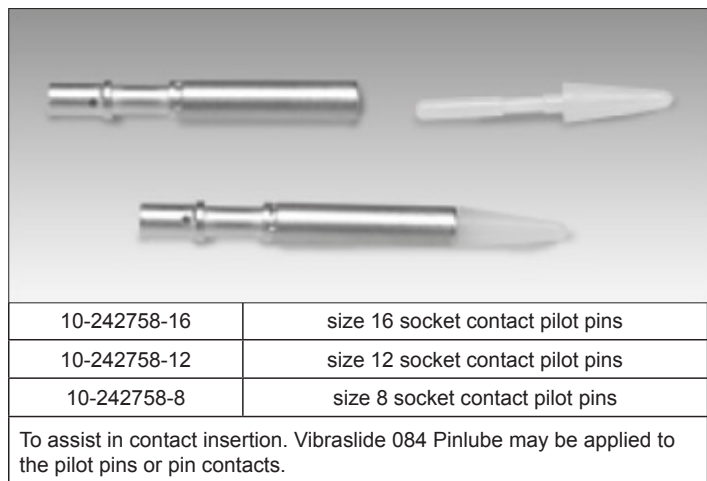


Figure 7

Installation Instructions

SAE AS50151, AC, ACA and GT Series, Containing Crimp Contacts (cont...).

4. Installing Contacts

- e. Place the connector on mating shell or connector for greater stability, if you are not using a fixture make sure to allow clearance on the mating side of the connector to allow the guide pins to go through.
- f. Lubricate the rear face of the insert and cavities with Isopropyl Alcohol Only.
- g. Using guide pins as needed, with Firm even pressure push the contact straight down until the contact is seated in position, personnel inserting the contact will normally feel the contact reach it's fully seated position, it is recommended to start at the center of an insert arrangement and work outwards toward the edge, if you are terminating a Plug connector make sure the coupling nut is assembled onto the plug shell before insert the contacts. (Figure 8)
- h. The Arbor Press can be used for inserting size 4 or larger contacts, when the Arbor Press method of insertion is used, contacts and attached wire should be placed in the predetermined insertion tip and inserted in their applicable insert cavity, positive stop setting of the Arbor Press will control the contact insertion depth.
- i. Visually check the mating ends of the connector to be sure all contacts are properly inserted to the same depth.
- j. Fill all the empty cavities with non terminated contacts and grommet with sealing plugs to maintain the sealing integrity of the connector.
- k. After the installation and inspection of contacts has been completed, slide all rear accessories forward and tighten with 11-6147-1 pliers.
- l. Torque specifications are listed in L-725-3. (Figure 9)
- m. Removing Contacts for Replacement, Loosen all rear accessories and unscrew them from the connector shell, slide all parts back along the wire, determine the appropriate removal tool (Table IV) and push back the contact through the mating side of the connector and remove.

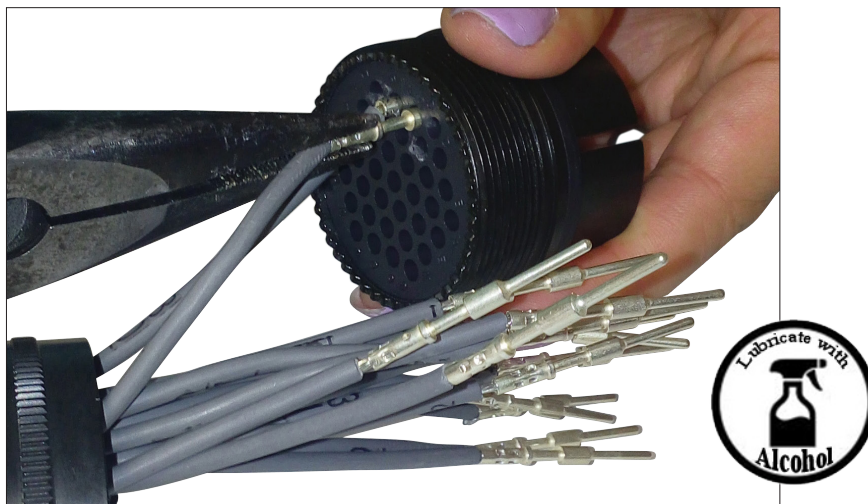


Figure 8

Installation Instructions

SAE AS50151, AC, ACA and GT Series, Containing Solder Contacts.

5. Preparation for installation:

- Slide the connector rear accessories over the wire bundle in the correct sequence, Cable Clamp / End bell (may include Tapered sleeve or other accessories depending on Cable clamp style, Adapter (if required), Sleeve, Grommet. (Figure 5)
- Lubricate the grommet, insert the wire through the appropriate cavity position in the grommet, corresponding to the cavity position on the rear portion of the insert. Use Isopropyl Alcohol to lubricate the grommet.



Figure 5

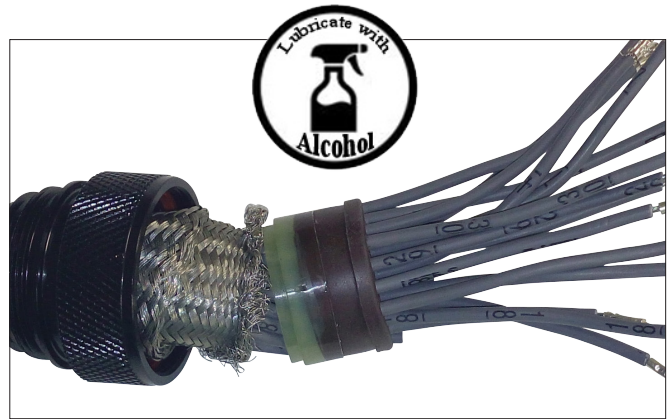


Figure 6

6. Cable and Wire Preparation:

- Provide sufficient wire slack to permit easy installation.
- Strip the wire ends according to the size of contact see Table V.

TABLE V					
Contact Size	0	4	8	12	16
Strip Cable Insulation to "B"	3/4"	5/8"	5/8"	5/16"	1/4"



Installation Instructions

SAE AS50151, AC, ACA and GT Series, Containing Solder Contacts (cont...).

7. Cable and Wire Preparation:

- a. Make Sure the stripped conductors are clean, straight and strands are tight together.
- b. Apply a good grade of Rosin Alcohol to the stripped ends, this can be done by dipping the bare ends in flux half way to the insulation, shake off excess flux.
- c. Pre-Tin approximately 50% of the exposed conductor end. This can be achieved using a solder pot or wire solder a good grade of 60/40 Tin-Lead solder is recommended. Solder pot temperature should be 500° to 550° F, avoid melting, burning or scorching the insulation. Shake off excess solder.
- d. Wire wells of size 12 and 16 contacts are Pre-Filled, larger sizes are Pre-Tinned.

8. Soldering:

- a. Either a Probe Type resistance soldering equipment or a soldering iron is suitable for soldering conductors to contacts. When using an Iron it may be necessary to re-shape the tip to provide access to dense contact arrangements. To obtain the greatest amount of heat transfer use the recommended iron size in Figure 10.
- b. Position the connector so the cut away sides of the wire well are facing up, add support to the wire being attached to relief strain from the connector shell and insert.
- c. It is recommended to start soldering at the bottom row working across then up.
- d. To avoid a cold joint maintain heat until solder both in the solder well and on the conductor is completely liquid.
- e. Careful not overheat the bonded in insert, do not hold the contact at elevated temperature any longer than necessary.
- f. While holding the wire steady and properly aligned remove the heat source and allow the solder to cool until completely solid, permitting the wire to move while the solder is in plastic state will result in crystallization and a weak joint.
- g. Remove any Excess solder from the wire well.
- h. After the conductors have all been soldered, proceed to slide back and assemble the rear accessories.
- i. To remove unsolder the conductors.

Probe type Resistance Soldering Iron

500 WATT	Size 0-4
300 WATT	Size 3
100 WATT	Size 12-16

Figure 10

Approved Source:

Kester Solder Company
Alpha Metals Inc.
Qualitek International, Inc.

Figure 11

Soldering Material

FLUX	9-6037 J-STD-004 Types ROL0 / ROL1 ROSIN
SOLDER	High Grade 60/40 TIN-LEAD
ROHS Compliant Solder	Tin-Silver & Tin-Copper

Figure 12

Torque Values - Electrical Connectors

- Introduction: This publication contains minimum and maximum torque values recommended by Amphenol Corporation, Sidney, New York 13838.
- Maximum torque values are primarily governed by strength of material used to fabricate threaded components. Maximum values listed in this publication were computed to protect threads and other bearing surfaces which could be damaged by excessive torque.
- Minimum torque values were computed to assure proper mating of connectors and/or accessories (when threaded areas are properly lubricated). Torque values are shown as follows: Table I for connectors with single start threads, Table III for connectors with double stub threads, Table IV for MIL-DTL-26482 bayonet coupling, and Table V for MIL-DTL-38999 Series I & III connectors.
- Metal to metal sealing of mated parts should occur where a flat gasket is used for an end seal. In some instances, when a cable accessory of MIL-C-85049/1, /2, /41 and /42 type clamp is used with maximum diameter cable, a metal to metal seating may not occur on the initial tightening. A second tightening is therefore necessary after cable has been allowed to cold flow (approximately 12 hours).
- Torques values are listed by thread sizes in Table I below and Tables II, III and IV on the next page. We recommend reviewing applicable connector catalogs for mating and accessory thread diameters for each connector shell size. Amphenol catalogs are available on-line at www.amphenol-aerospace.com or www.amphenol-industrial.com.
NOTE: See torque value notes (6, 7, 8) following Table I for accessories having three threads or less.
- The torque values listed in Table I are for UN (Handbook H-28) threads. These values apply to connector's coupling nut, jam nut, cable clam, backshell or accessories.
- Column "A" of Table I lists the minimum and maximum values for threads on aluminum die cast parts such as MS or MS Modified connectors.
- Column "B" of Table I lists the minimum and maximum values for threads on extruded or machined aluminum and steel parts. The torque value for hex mounting nuts on all jam nut receptacles is listed in column "A" of Table I. The hex nuts are machined but the torque value is reduced due to the limited amount of threads. (Continues with NOTES on next page).

Figure 9

TORQUE VALUES								
Thread Size	COLUMN "A" Torque for Threads on Die Cast Aluminum Parts				COLUMN "B" Torque for Threads on Extruded or Machined Aluminum and Steel Parts			
	Inch Lbs.		Foot Lbs.		Inch Lbs.		Foot Lbs.	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
0.3125	20	26			70	75		
0.3750	20	26			70	75		
0.4375	20	26			70	75		
0.5000	20	26			70	75		
0.5625	26	32			80	85		
0.6250	26	32			90	95		
0.6875	30	36			100	110	8	9
0.7500	34	40			110	120	9	10
0.8125	40	46			120	130	10	11
0.8750	46	50			140	150	11	12
0.9375	50	55			150	160	12	13
1.0000	55	60			160	170	13	14
1.0625	60	65			190	200	16	17
1.1250	70	75			210	230	18	19
1.1875	75	80			240	260	20	21
1.2500	80	85			260	280	21	23
1.3125	85	90			280	300	24	25
1.3750	90	95			300	320	24	25
1.4375	100	110	8	9	300	325	26	28
1.5000	100	110	8	9	325	350	28	30
1.6250	110	120	9	10	350	375	28	30
1.7500	120	130	10	11	375	400	30	32
1.8750	140	150	11	12	400	425	32	34
2.0000	150	160	12	13	425	450	36	38
2.0625	160	170	13	14	450	475	38	40
2.1250	170	180	14	15	475	500	40	42
2.2500	170	180	14	15	500	525	42	44
2.3125	180	190	15	16	525	550	44	46
2.3750	190	200	16	17	550	575	46	48
2.5000	200	210	17	18	575	600	48	50
2.5250	210	220	18	19	600	650	50	55
2.7500	220	230	18	19	650	700	55	60
2.8750	230	240	19	20	700	750	55	60
3.0000	240	250	20	21	750	800	60	65



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