

**ROUND-CABLE SDL PLUG CONNECTORS**

TOOLING			CONNECTOR							
HAND TOOL	PNEUMATIC UNIT●	DIE ASSY PART NO.	CONN PART NO.	WIRE SIZE	CONN PART NO.	WIRE SIZE	KEY LTR CODE	NO. OF CONT POSN	TOP SHIELD	BOTTOM SHIELD
58194-1	312522-1	58195-1	4-520424-1	24	4-520532-1	26 to 28	D	4	520460-1	520461-1
			5-520424-1		5-520532-1		E			
			—		—		—			
		58195-2	1-520424-2		—		A	6	520462-1	520463-1
			3-520424-2		—		C			
			5-520424-2		5-520532-2		E			
		58195-3	1-520424-3		1-520532-3		A	8	520464-1	520465-1
			3-520424-3		3-520532-3		C			
			5-520424-3		5-520532-3		E			
		58195-6	1-520424-6		—		A	16	520466-1	520467-1
			—		—		—			
			5-520424-6		—		E			

**ROUND-CABLE SDL PLUG FERRULES**

FERRULE PART NUMBER	CABLE O.D.	FERRULE CRIMPING DIE ASSEMBLY	HAND TOOL PART NUMBER
520433-1	4.72 to 5.08 [.186 to .200]	58166-2	69710-1
520435-1	5.36 to 5.72 [.211 to .225]	1-58166-1	
520437-1	5.70 to 6.20 [.224 to .244]	1-58166-2	
520441-1	7.32 to 7.82 [.288 to .308]	1-58166-3	

●Requires use of Die Holder 58201-1

Figure 1

**1. INTRODUCTION**

This instruction sheet covers application and maintenance for AMP\* Crimping Die Assemblies 58195-1, 58195-2, 58195-3, and 58195-6. The die assemblies are used to crimp the SDL (Shielded Data Link) plug connectors listed in Figure 1. The die

assemblies are used in CERTI-LOK\* Hand Crimping Tool 58194-1 and in Pneumatic Power Unit 312522-1 with Tool Holder 58201-1. Refer to instruction sheet 408-9113 for application and maintenance information regarding the hand tool, to 408-9164 regarding the tool holder, and to Customer Manual 409-5843 for information relating to the power unit.

Read these instructions carefully before crimping any connectors and before installing or removing any die assemblies.

The Crimping Die Assemblies 58195-[ ] are CE approved for use with Die Holder Assembly 58201-1 and Pneumatic Power Unit 312522-1. Refer to Section 9, EUROPEAN REGULATORY INFORMATION. Noise levels generated when using this combination of tooling averages 89 dB.

**NOTE** All dimensions are in millimeters [with inches in brackets].

Reasons for reissue are provided in Section 10, REVISION SUMMARY.

**2. DESCRIPTION**

Each die assembly consists of an upper die (crimper) and a lower die (base plate) joined by two spring-loaded pins.

The upper die features three crimpers which enter corresponding slots in the plug connector housing and crimp the cable strain reliefs and contacts.

The lower die acts as a base for the connector and features keyed guides which provide secure positioning for the connector during the crimping procedure.

The die pins and their compression springs provide alignment for the dies and aid in die disengagement when the tool assembly is re-opened after crimping.

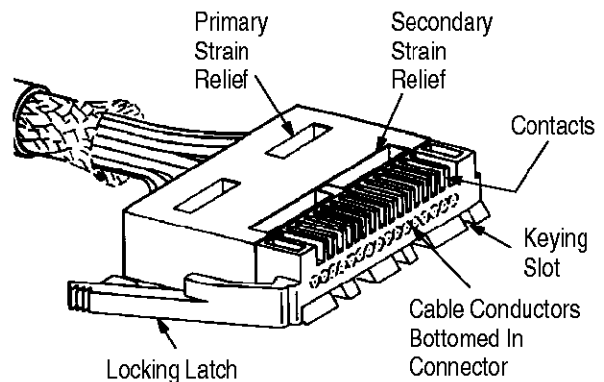
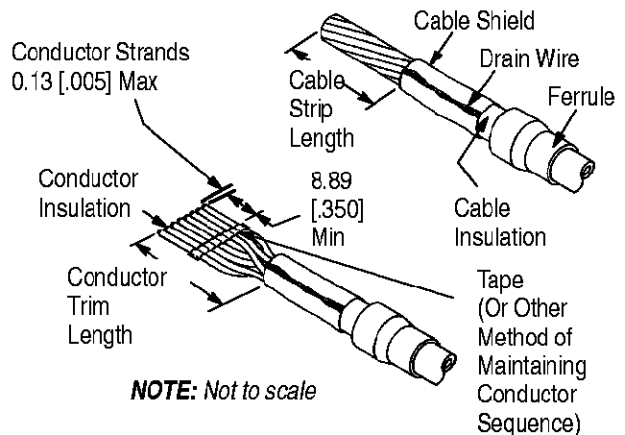
**3. CRIMPING PROCEDURE**

Determine the application requirements by selecting correct diameter cable, SDL plug connector, ferrule, shields, and die assembly from the chart in Figure 1. Ensure that the desired plug keying letter code has been selected.

1. Install die assembly in hand tool according to instructions packaged with hand tool after closing tool handles until ratchet releases and allowing handles to open FULLY.
2. Place ferrule on cable as shown in Figure 2, ensuring that ferrule is oriented as shown.
3. Strip cable jacket to the appropriate length for your application as indicated in Figure 2.
4. Fold cable foil shield and drain wire back over cable jacket. If using cable with braid shield, push braid back slightly to expand it.
5. Spread individual conductors as shown in Figure 2 and place a narrow strip of tape across them to maintain sequence.

**CAUTION** Do NOT strip insulation from individual conductors.

**NOTE** Make certain that the cable employed in the application contains a number of conductors equal to the number of cavities in the connector. If there are NOT enough conductors in the cable to fill all of the connector cavities, the empty cavities must be filled by inserting "dummy" conductors having the same conductor insulation diameter as the conductors used in your application.



NUMBER OF CONDUCTORS	MINIMUM STRIP LENGTH	TRIM LENGTH
4	22.86 [.900]	21.21 [.835]
6	24.13 [.950]	
8	25.40 [1.000]	
16	31.75 [1.250]	

Figure 2

6. Slide individual cable conductors into appropriate connector cavities until all conductors are bottomed in their respective cavities.
7. Slide connector with inserted conductors between guides in die assembly base plate.

**NOTE**

Base plate guides will center the connector in the base plate. Ensure that connector locking latches and keying slots are faced down on base plate.

8. With connector and cable properly seated, close tool handles slowly to ensure that strain relief crimpers enter strain relief slots of connector.
9. Complete crimp by closing tool handles until ratchet releases.
10. Allow tool handles to open FULLY, and remove crimped connector.

#### 4. SHIELD INSTALLATION AND FERRULE CRIMPING

Installation of shields and ferrule crimping procedure for this product are covered in additional documents. Refer to instruction sheet 408-2095 for information regarding Hand Tool 69710-1, and to 408-9039 for information regarding Ferrule Crimping Dies 58166-2, 1-58166-1, 1-58166-2, and 1-58166-3.

#### 5. CRIMP HEIGHT ADJUSTMENT

In order to compensate for different wire sizes used with the SDL plug connectors, a crimp height adjustment screw has been incorporated into the die assembly. With the die assembly installed in the hand tool or in the power unit, crimp a test connector onto a scrap piece of the desired cable, and measure the contact crimp height (using an appropriate gaging device) according to the information presented in Figure 5 of this instruction sheet. If the contact crimp height is incorrect, adjust it as follows:

1. Loosen the setscrew on the side of the upper die assembly (see Figure 1), using an appropriate hex wrench.
2. Turn the contact crimp height adjustment screw (Figure 1), using an appropriate hex wrench, in the desired direction to either increase or decrease the contact crimp height.

**NOTE**

The die holder clamp of the 58194-1 hand tool frame has the legend "CRIMP HEIGHT", "inc.", and "dec." engraved upon it. Turning the contact crimp height adjustment screw clockwise will DECREASE the crimp height, whereas turning it counterclockwise will INCREASE the crimp height. See Figure 3.

**NOTE**

A notch on the crimp height adjustment screw provides orientation with the white dot on the die holder clamp. Each complete revolution of the crimp height adjustment screw will either increase or decrease (depending on direction turned) the height of the "C" dimension in Figure 5 by .08 [.003].

3. Crimp another test connector onto a piece of scrap cable, and measure the actual crimp height

with an appropriate gaging device to determine that it is correct.

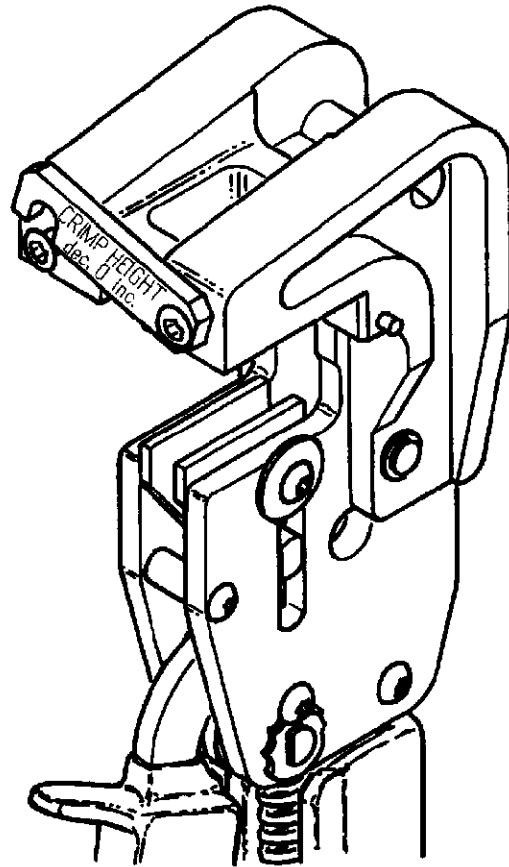


Figure 3

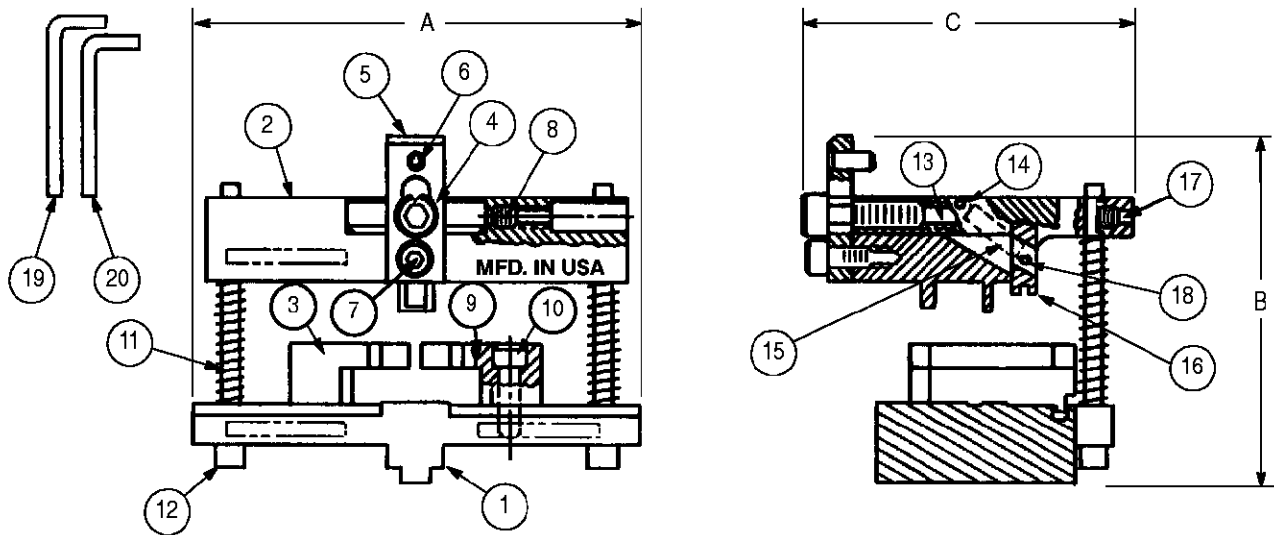
#### 6. DAILY MAINTENANCE

Remove all foreign particles with a clean, soft brush, or a clean, soft, lint-free cloth. If foreign matter cannot be removed easily, or if the die assembly appears to be damaged or out of alignment, return the tool to your supervisor.

#### 7. DIE INSPECTION

Crimping Die Assemblies are inspected before shipment. It is recommended that the die assembly be inspected immediately upon its arrival at your facility to ensure that the die has not been damaged during transit and that the die conforms to the dimensions provided in Figure 4.

Customer-replaceable parts are listed in Figure 4. A complete inventory should be stocked and controlled to prevent lost time when replacement of parts is necessary.



**DIE SPECIFICATIONS**

DIMENSIONS						WEIGHT
A	60.5 [2.38]	B	44.5 [1.75]	C	42.7 [1.68]	0.3 kg [8 oz]

**CUSTOMER-REPLACEABLE PARTS**

ITEM NO.	SDL DIE ASSEMBLY PART NUMBER				DESCRIPTION	QTY PER ASSY
	58195-1	58195-2	58195-3	58195-6		
1	312813-1	312813-2	312813-3	312813-4	PLATE, Round Base	1
2	312814-4	312814-5	312814-6	312834-3	INSERT, Upper	1
3	312815-1	312815-1	312815-1	312815-1	GUIDE, Left Product	1
4	312817-1	312817-1	312817-1	312817-1	SCREW, Cam Adjustment	1
5	312820-1	312820-1	312820-1	312820-1	PLATE, Die Holder	1
6	3- 21028-2	3- 21028-2	3- 21028-2	3- 21028-2	PIN, Slotted Spring .094D x .25L	1
7	1- 21000-3	1- 21000-3	1- 21000-3	1- 21000-3	SCREW, Skt Hd Cap 4-40 x .25L	1
8	22736-2	22736-2	22736-2	22736-2	SETSCREW, Skt 4-40 x .38L	2
9	312816-1	312816-1	312816-1	312816-1	GUIDE, Right Product	1
10	1- 21000-4	1- 21000-4	1- 21000-4	1- 21000-4	SCREW, Skt Hd Cap 4-40 x .38L	4
11	2- 28922-3	2- 28922-3	2- 28922-3	2- 28922-3	SPRING, Compression	2
12	312824-1	312824-1	312824-1	312824-1	PIN, Die Shoe	2
13	312822-1	312822-1	312822-1	312822-1	CAM, Crimp Adjusting	1
14	21028-3	21028-3	21028-3	21028-3	PIN, Slotted Spring .062D x .31L	1
15	3- 22487-2	3- 22487-2	3- 22487-2	3- 22487-2	SPRING, Extension	1
16	313276-1	313276-2	313277-1	313278-1	CRIMPER, SDL Contact	1
17	1- 21006-9	1- 21006-9	1- 21006-9	1- 21006-9	SETSCREW, Skt 4-40 x .12L	2
18	21028-2	21028-2	21028-2	21028-2	PIN, Slotted Spring .062D x .25L	1
19	2 -21027-8	2- 21027-8	2 -21027-8	2- 21027-8	KEY, Hex Socket .109 (long)	1
20	3- 21027-3	3- 21027-3	3- 21027-3	3- 21027-3	KEY, Hex Socket .050 (long)	1

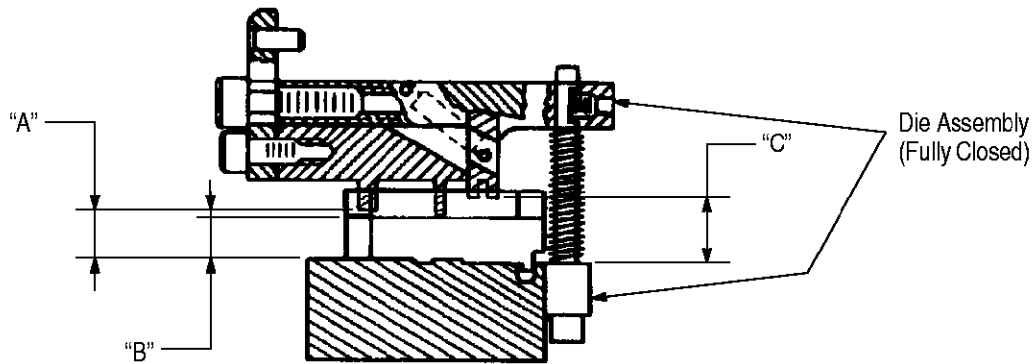
Figure 4

Regular inspections should be performed by quality control personnel. A record of scheduled inspections should remain with the die assembly or be supplied to supervisory personnel responsible for the die assembly. Though recommendations call for at least one inspection per month, the inspection frequency should be based upon the amount of use, working conditions, operator training and skill, and established

company standards. These inspections should be performed in the following sequence:

**7.1. Visual Inspection**

1. Remove all lubrication and accumulated film by immersing the dies in a suitable commercial degreaser.



CRIMPER TYPE	CRIMP HEIGHT DIMENSION	DIE ASSEMBLY			
		58195-1	58195-2	58195-3	58195-6
STRAIN RELIEF	"A"	4.52 ± .13 [.178 ± .005]	4.52 ± .13 [.178 ± .005]	4.52 ± .13 [.178 ± .005]	4.27 ± .13 [.168 ± .005]
STRAIN RELIEF	"B"	4.11 ± .08 [.162 ± .003]	3.99 ± .08 [.157 ± .003]	3.94 ± .08 [.155 ± .003]	3.94 ± .08 [.155 ± .003]
CONTACT	"C"	6.73 ± .13 [.265 ± .005]	6.71 ± .13 [.264 ± .005]	6.63 ± .13 [.261 ± .005]	6.60 ± .13 [.260 ± .005]

Figure 5

2. Make sure that the two guide pins and their compression springs are in place and are secured. If replacements are necessary, refer to the parts list in Figure 4.

3. Inspect the die assembly for worn, cracked, or broken areas. If damage to any part of the die assembly is evident, replace the damaged component, or return the die assembly for evaluation and repair (see Section 8, REPAIR).

**7.2. Measurement of Strain Relief Crimp Height**

1. Remove die assembly from tool.
2. Compress die and base plate until upper die has bottomed on guides.
3. Inspect the die closure for the dimensions provided in Figure 5.

If the crimping areas conform to the inspection dimensions provided in Figure 5, the die closure is considered dimensionally correct. If crimping areas do not conform, and cannot be adjusted to do so, the die assembly must be repaired before returning it to service. Either replace damaged or worn parts, or return the die assembly for evaluation and repair. See Section 8, REPAIR.

**8. REPAIR**

Although all parts for the die assembly are considered customer-replaceable, it may be necessary to return it to for evaluation and repair. Order replacement parts through your representative, or call

1-800-526-5142, or send a facsimile of your purchase order to 1-717-986-7605, or write to:

CUSTOMER SERVICE (38-35)  
 TYCO ELECTRONICS CORPORATION  
 P.O. BOX 3608  
 HARRISBURG, PA 17105-3608

For die repair service, please contact a representative at 1-800-526-5136.

**9. EUROPEAN REGULATORY INFORMATION**

A technical file document, as required by the Supply of Machinery (Safety) Regulations 1992, has been prepared for Crimping Die Assembly 58195-[ ], Die Holder Assembly 58201-1, and the 2700-lb Pneumatic Power Unit 312522-1. These components are CE approved only in conjunction with each other and only if the back cover 313022-1 of Die Holder Assembly 58201-1 has been replaced with back cover 662802-1. Refer to Figure 7 of instruction sheet 408-9164. The components are *not* approved separately. Refer to Drawing 662592 for the Declaration of Conformity.

**10. REVISION SUMMARY**

Since the previous release of this instruction sheet, the following changes were made per EC 0990-0060-00:

- Updated document to corporate requirements
- Corrected tool repair service information in Section 8, REPAIR