

PROPER USE GUIDELINES

Cumulative Trauma Disorders can result from the prolonged use of manually powered hand tools. Hand tools are intended for occasional use and low volume applications. A wide selection of powered application equipment for extended-use, production operations is available.

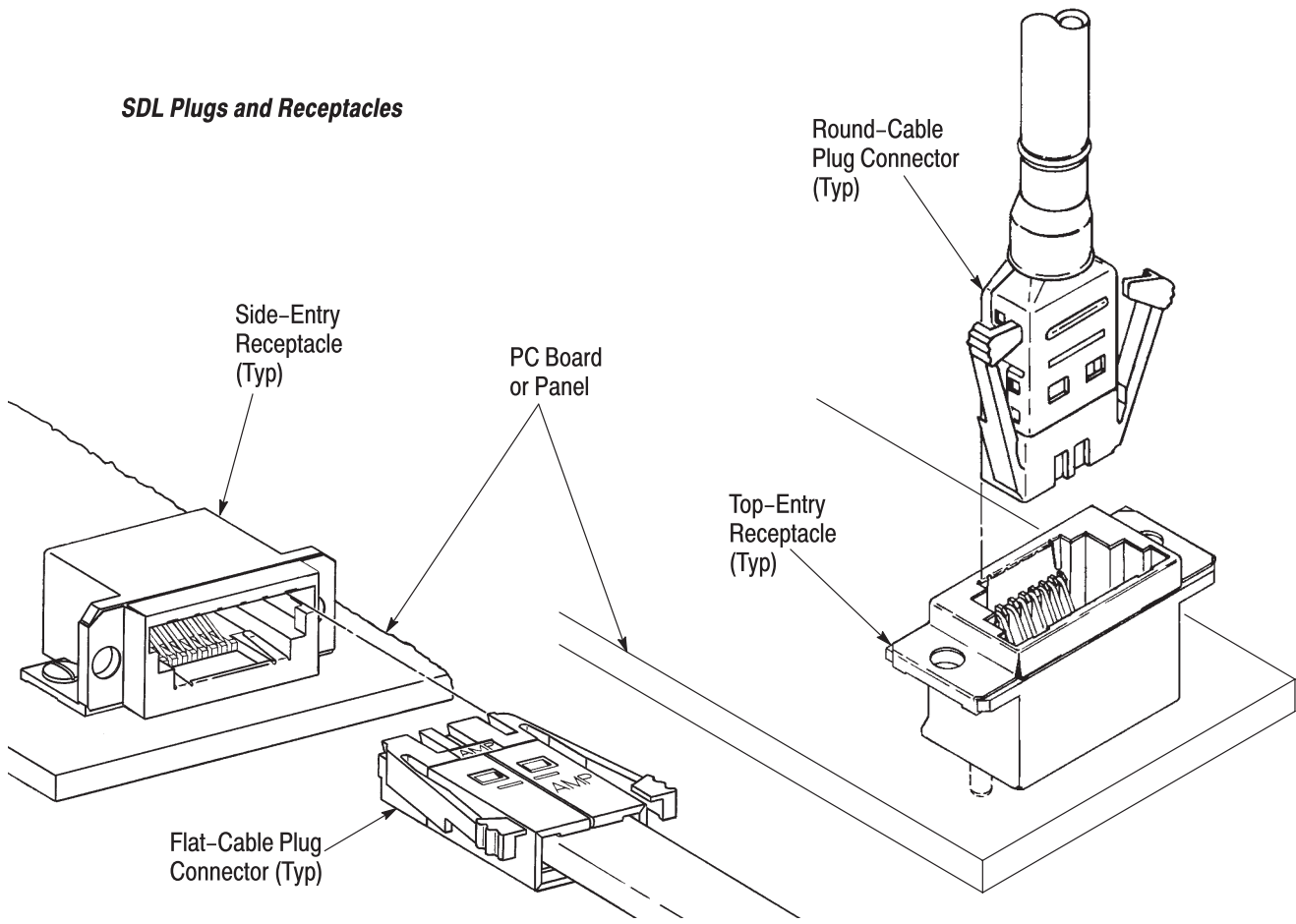


Figure 1

1. INTRODUCTION

This instruction sheet provides selection data and covers the assembly of SDL Plugs and Receptacles. Refer to Figure 1. Read these instructions and all referenced materials carefully before starting assembly of any connectors.

NOTE

Dimensions in this instruction sheet are in millimeters [with inches in brackets]. Figures are for reference only, and are not drawn to scale.

Reasons for reissue of this instruction sheet are provided in Section 6, REVISION SUMMARY.

2. DESCRIPTION (Figure 1)

SDL Connectors include both shielded plug assemblies and receptacles. The plug assemblies are available in 4-, 6-, 8-, and 16-position sizes for flat

or round shielded 7-stranded cable in a 28 to 24 AWG wire size range. The receptacle assemblies are available in 4-, 6-, 8-, and 16-position sizes in either top or side-entry configurations with or without ground. Refer to Figure 5.

In addition to shielding, the housing of either flat- or round-cable plug assemblies features locking latches, positive polarization (to prevent the insertion of a plug upside-down in a receptacle), primary strain relief applied to the cable foil (shield), drain wires (providing strain relief on the cable jacket), secondary strain relief for the main cable conductors, and preloaded 1.27 [.050] centerline contacts which are terminated to the conductors using the technique of insulation displacement. Internal or external key slots are letter-coded to ensure that plugs are correctly matched to the receptacles.

In flat-cable plug assemblies, the plug housing, which is already shielded, is terminated to the flat cable using the tooling specified in Figure 2.

In round-cable plug assemblies, the plug housing subassembly is first terminated to the round cable using the tooling for housing termination specified in Figure 3. Top and bottom shielding shells are latched around the housing and a strain relief ferrule is then crimped to the cable outlets of the shells and the cable using the crimp tooling specified in Figure 3.

Each receptacle features a shielded housing and printed circuit (pc)s board tails. Mounting hardware is not included with the receptacles.

3. ASSEMBLY PROCEDURES

3.1. SDL Plugs for Flat Cable

1. Select appropriate plug assembly and tooling from the table in Figure 2.
2. Strip 10.41 ±0.25 [.410 ±.010] of outer jacket from the cable, exposing the insulated conductors.
3. Fold the cable foil and drain wires back as illustrated in Figure 2.
4. Refer to the following instructional materials: Instruction Sheet 408-9115 (Crimping Die

Assemblies 58261-1, -3, -6); and either 408-9113 (CERTI-LOK* Hand Crimping Tool 58194-1), 408-9164 (Die Holder Assembly 58201-1 for SDL Connector Crimping Dies), or Customer Manual 409-5843 (2700-lb Pneumatic Power Unit 312522-[]), and terminate the cable conductors of the plug.

5. Refer to Figure 4 and inspect the terminated plug assembly for proper crimp height. For more details, refer to Application Specification 114-2086.

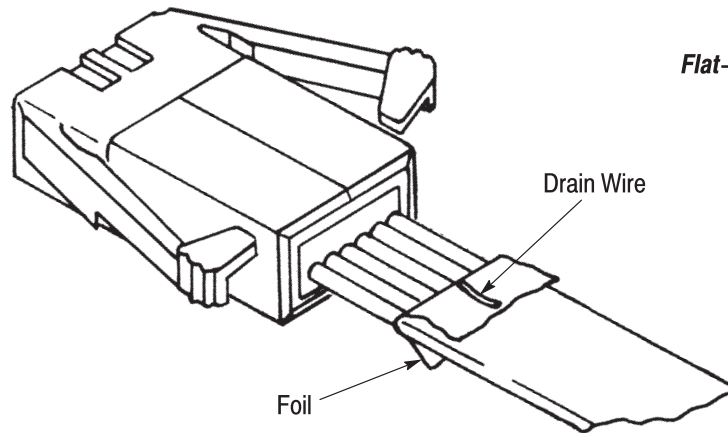
3.2. SDL Plugs for Round Cable

1. Select the appropriate plug housing, top and bottom shielding shells, ferrule, and tooling from the table in Figure 3.

If utilized, slide the optional plug boot (small end first) a few inches back from the end of the cable.

2. Refer to Figure 3 for ferrule orientation, and slide it a few inches back from the end of the cable.

3. Strip the required length from outer jacket of cable, exposing the colored insulated conductors. Refer to Application Specification 114-2090 for stripping dimensions.

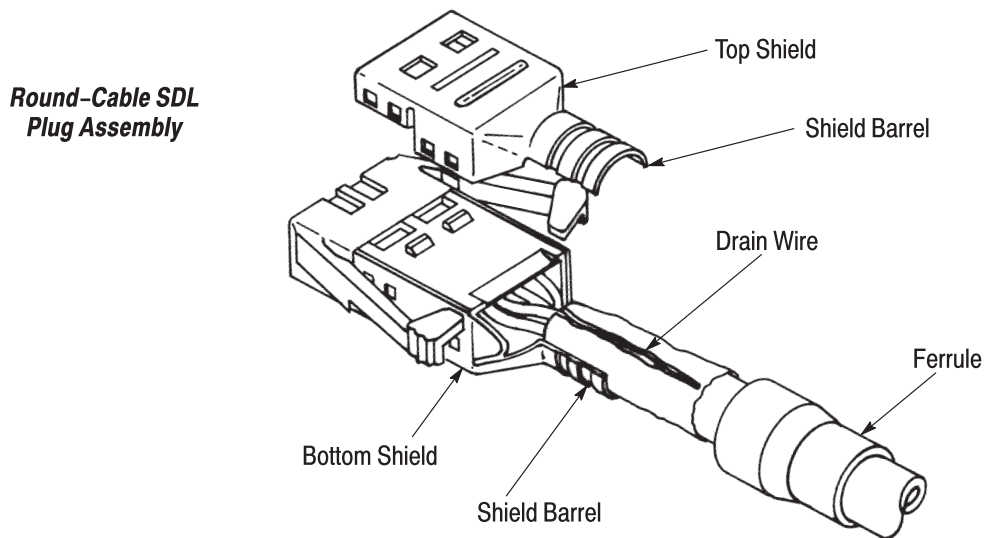


Flat-Cable SDL Plug Assembly

CONNECTOR		FLAT CABLE		TOOLING		
PART NUMBER	CONTACT POSITIONS	CONDUCTORS	WIRE SIZE, AWG	DIE ASSEMBLY	PNEUMATIC UNIT●	HAND TOOL
X-520423-1	4	4	24	58261-1	312522-1	58194-1
X-520423-2	6	6		58261-2		
X-520423-3	8	8		58261-3		
X-520423-6	16	16		58261-6		

NOTE: "X" is any keying number from 1 through 5. ●Requires use of die holder 58201-1.

Figure 2



ROUND-CABLE SDL PLUG CONNECTORS

CONNECTOR							TOOLING		
PART NUMBER	WIRE SIZE, AWG	PART NUMBER	WIRE SIZE, AWG	CONTACT POSITION	TOP SHIELD	BOTTOM SHIELD	DIE ASSY	PNEUMATIC UNIT●	HAND TOOL
X-520424-1	24	X-520532-1	28-26	4	520460-1	520461-1	58195-1	312522-1	58194-1
X-520424-2		X-520532-2		6	520462-1	520463-1	58195-2		
X-520424-3		X-520532-3		8	520464-1	520465-1	58195-3		
X-520424-6		---		16	520466-1	520467-1	58195-6		

ROUND-CABLE SDL PLUG FERRULES

FERRULE			CABLE	TOOLING		
PART NUMBER	POSITION	OPTIONAL PLUG BOOT	OUTSIDE DIAMETER	FERRULE CRIMPING DIE ASSEMBLY	PNEUMATIC TOOL	HAND TOOL
520432-1	4	520851-1	3.73-4.42 [.147-.174]	58166-1	69365-2	69710-1
520433-1	4	520851-1	4.72-5.08 [.186-.200]	58166-2		
---	6	---	4.27-5.08 [.168-.200]	---		
520435-1	6	520852-1	5.36-5.72 [.211-.225]	1-58166-1		
520436-1	8	520853-1	4.55-5.38 [.179-.212]	58166-5		
520437-1	8	520853-1	5.69-6.20 [.224-.244]	1-58166-2		
520440-1	16	520854-1	5.82-6.91 [.229-.272]	58166-7		
520441-1	16	520854-1	7.32-7.82 [.288-.308]	1-58166-3		

NOTE: "X" is any keying number from 1 through 5. ●Requires use of die holder 58201-1.

Figure 3

4. Fold the cable foil and drain wires back as illustrated in Figure 3.

5. Refer to Instruction Sheet 408-9114 and terminate the conductors and plug housing assembly.

6. Refer to Figure 4 and inspect terminated plug assembly for proper crimp height. For more details, refer to Application Specification 114-2090.

NOTE

Refer to Instruction Sheet 408-9114 for tool crimp height adjustment procedure for flat-cable plug connectors, and to Instruction Sheet 408-9115 for tool crimp height adjustment procedure for round-cable plug connectors.

7. Snap top and bottom shielding shell together around plug housing subassembly to establish connector shielding.

8. Fold foil and drain wire over cable outlet of shield assembly and slide ferrule as far forward as possible over the cable outlet of the shield assembly.

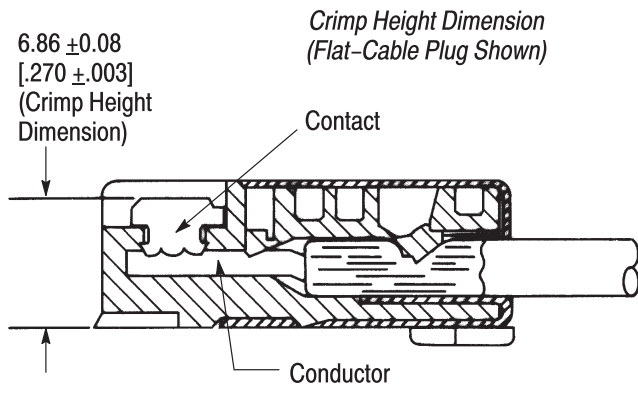


Figure 4

9. Refer to Instruction Sheet 408-9039 and crimp ferrule to cable and plug assembly.

10. Slide optional plug boot over finished assembly.

4. MATING PLUG AND RECEPTACLE

The keying letter codes of mating plugs and receptacles must be identical. Dissimilar plug and

receptacle keying letter codes will not mate without the use of excessive force. When mating plug to receptacle, ensure that the two plastic plug latches are engaged by pulling lightly on the plug assembly after mating. To remove a plug from a receptacle, grasp the plug by squeezing the plastic plug latches against the body of the plug and pull straight out. Refer to Figure 1.

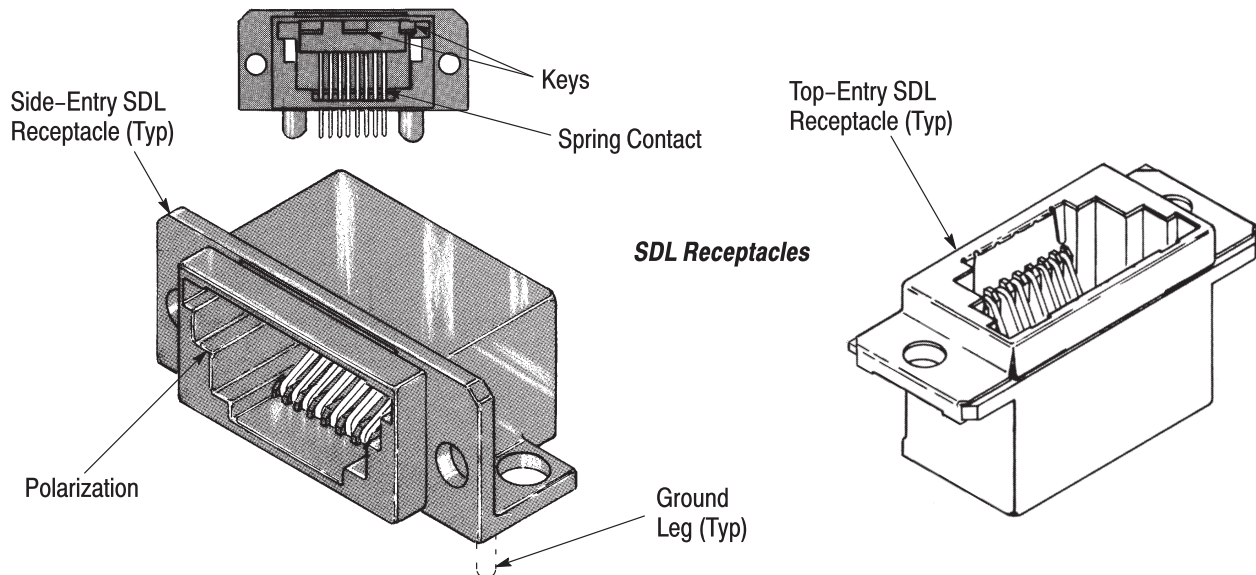
5. MOUNTING SDL RECEPTACLES

Refer to Application Specification 114-2081 for mounting details.

6. REVISION SUMMARY

Revisions to this instruction sheet per EC 0990-1268-04 include:

- Updated document to corporate requirements
- Deleted and added information in tables in Figures 2, 3, and 4
- Added text to Paragraphs 3.2.1, 3.2.10 and Section 5, MOUNTING SDL RECEPTACLES
- Deleted illustration in Figure 5



SDL RECEPTACLES*

CONTACT POSITIONS	TYPE AND BASE PART NUMBER			
	SIDE-ENTRY W/O GROUND	SIDE-ENTRY W/GROUND	TOP-ENTRY W/O GROUND	OFFSET FLANGE SIDE-ENTRY
4	X-20421-1	X-520459-1	X-520422-1	X-520501-1
6	X-520421-2	X-520459-2	X-520422-2	X-520501-2
8	X-520421-3	X-520459-3	X-520422-3	X-520501-3
16	X-520421-6	X-520459-6	X-520422-6	X-520501-6

*Prefix numbers of base part numbers relate to keying configuration. For example, part number 1-520421-1 features keying letter code "A". Consult Tyco Electronics concerning available keying.

Figure 5