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## 1.0 OBJECTIVE

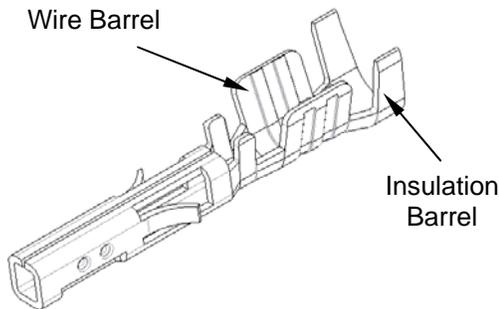
This specification provides information and requirements regarding customer application of Minitek Pwr3.0 crimp to wire connectors. This specification is intended to provide general guidance for application process development. It is recognized that no single application process will work under all customer scenarios and that customers will develop their own application processes to meet their needs. However, if these application processes differ greatly from the one recommended, FCI cannot guarantee results.

## 2.0 SCOPE

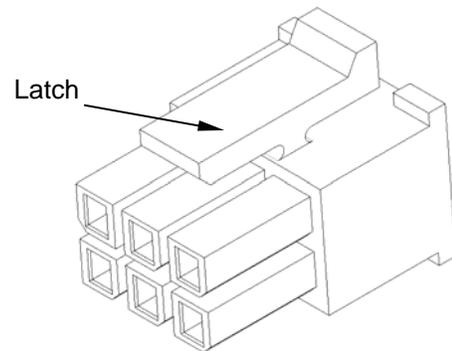
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## 3.0 GENERAL

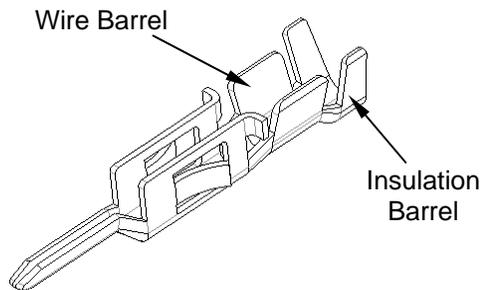
This document is meant to be an application guide. If there is a conflict between the product drawings and specifications, the drawings take precedence.



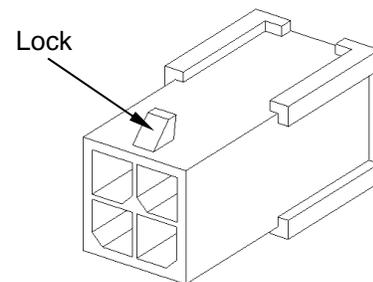
Receptacle Terminal 10127718 and 10132447 Series



Receptacle HSG 10127716 and 10132445 Series



Plug Terminal 10127719 and 10132448 Series



Plug HSG 10127717 and 10132446 Series

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#### 4.0 DRAWINGS AND APPLICABLE DOCUMENTS

- 4.1 FCI Product Specification: GS-12-1177 and GS-12-1291
- 4.2 FCI Product drawings: Latest version of 10127716 (Receptacle HSG), 10127717 (Plug HSG); 10127718 (Receptacle crimp terminal), 10127719 (Plug crimp terminal).
- 4.3 FCI Product drawings: Latest version of 10132445 (Receptacle HSG), 10132446 (Plug HSG); 10132447 (Receptacle crimp terminal), 10132448 (Plug crimp terminal).

Product drawings and **FCI's GS-12-1177** and **GS-1291** Product Specification are available at [www.fci.com](http://www.fci.com) In the event of a conflict between this application specification and the drawing, the drawing will take precedence. Customers are advised to refer to the latest revision level of FCI product drawings for appropriate details.

#### 5.0 APPLICATION REQUIREMENTS

The wires in Table 1 are the wiring information for use with crimp terminals 10127718 & 10127719.

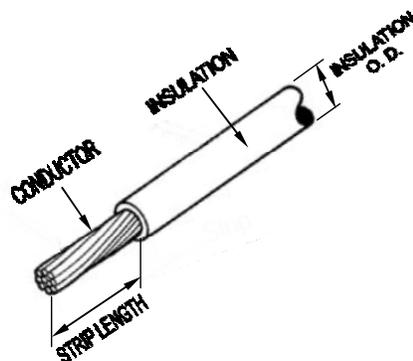


Table 1

Crimp Terminal Part Number	Applicable Wire Gauge (AWG)	Insulation Outside Diameter (mm)	Strip Length (mm)
10127718-00XLF 10127719-00XLF	AWG 30 ~ 20	1.27 ~ 1.85	2.5 ~ 3
10132447-00XLF 10132448-00XLF	AWG 20 ~ 16	Max. OD 2.20	2.5 ~ 3

#### 6.0 APPLICATION TOOLING

Application Tooling needed for installation of crimp terminals are defined in Table 2:

Table 2: Application tooling list

Tool Description	Tool P/ N and Model No.	Applicable Terminal
Ratched hand crimping tool	10129483-001LF (or equivalent model) (*)	10127718-00XLF
Semi auto crimping machine	10129484-001LF (or equivalent model)	10127719-00XLF
	Crimping die: To be designed per customer's request (**)	10132447-00XLF
		10132448-00XLF

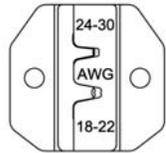
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\* Read the instructions before using these commercial crimping machine and tool.

\*\* Depends on conductor dia. and insulation dia. of selected wire.



10129483-001LF



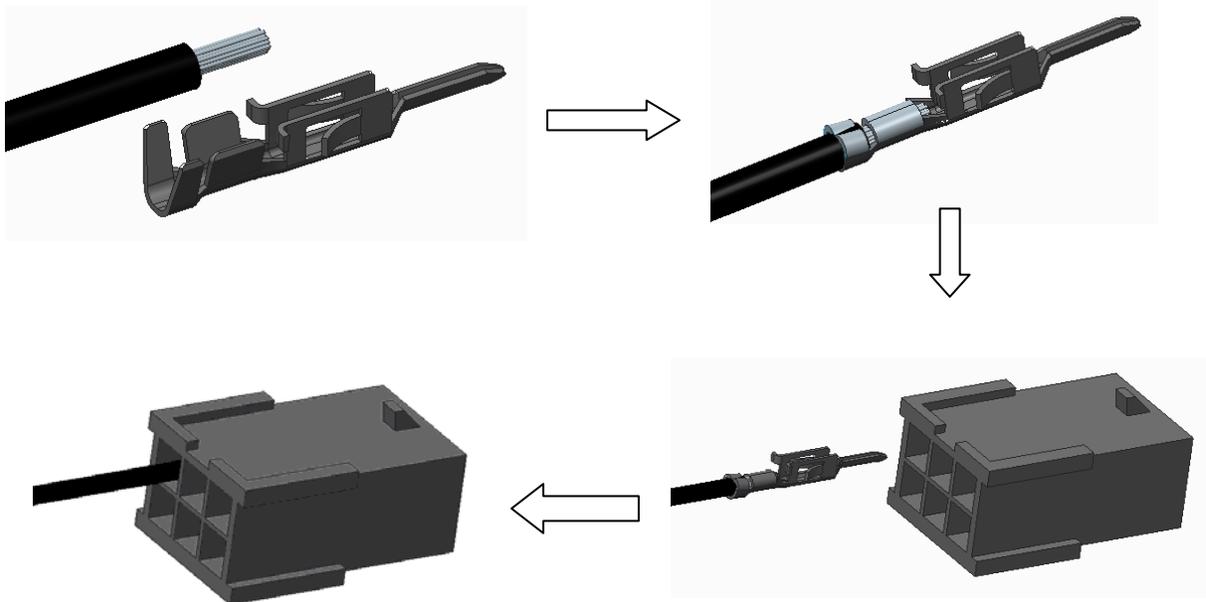
(Crimping Die)



10129484-001LF

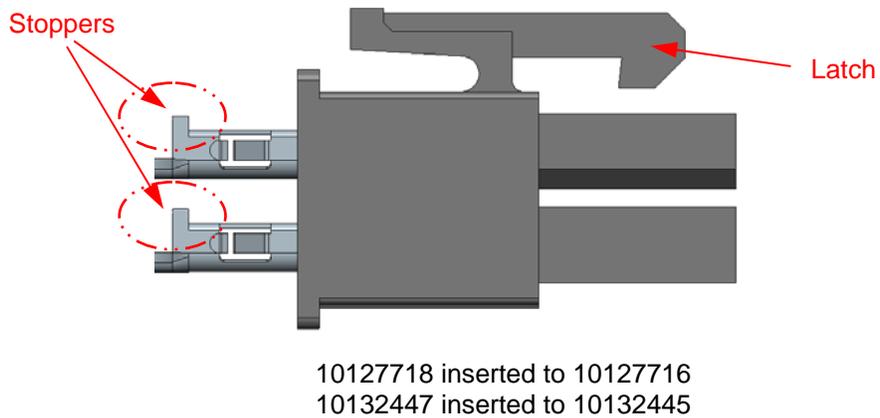
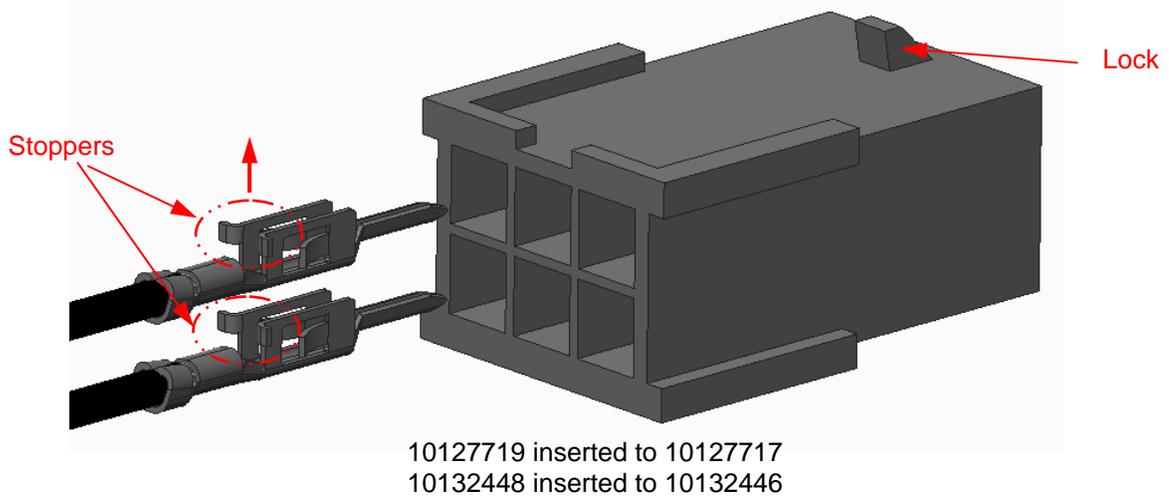
## 7.0 APPLICATION PROCEDURE

7.1 Strip the wire (Table 1). Crimp wire and inserting to housing. No insertion tool is required. (Same for 10127718-00XLF & 10127719-00XLF and 10132447-00XLF and 10132448-00XLF)

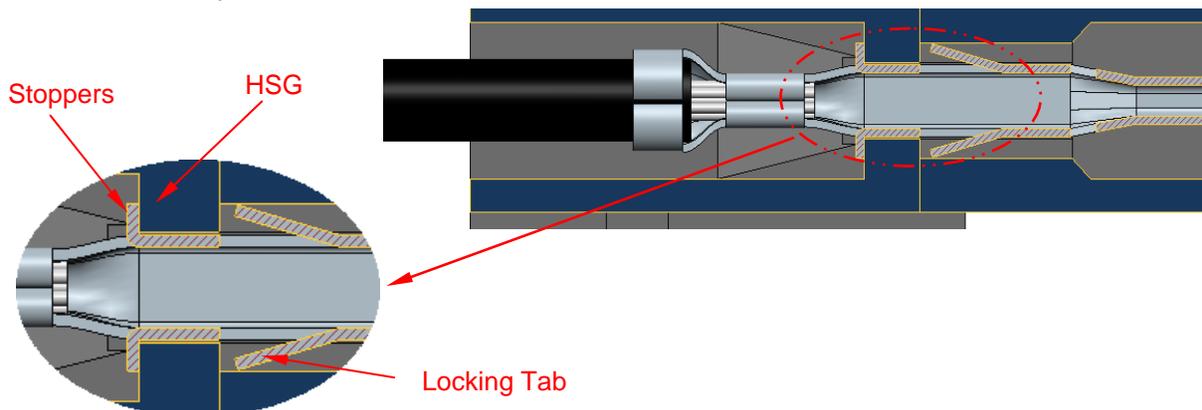


7.2 Make sure the stoppers on the terminals are always upwards for both rows: towards the lock (latch) of HSG. (Same for 10127718-00XLF & 10127719-00XLF and 10132447-00XLF & 10132448-00XLF)

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7.3 Insert the terminal into HSG until the stopper is stopped by HSG. Then locking tabs will be engaged the retention shoulder and prevent back out during mating. Pull back on the wire lightly and ensure the terminal is fully seated.

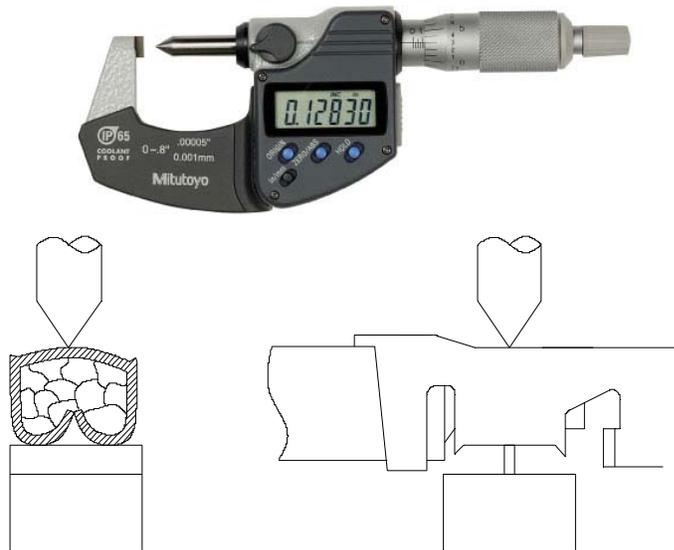


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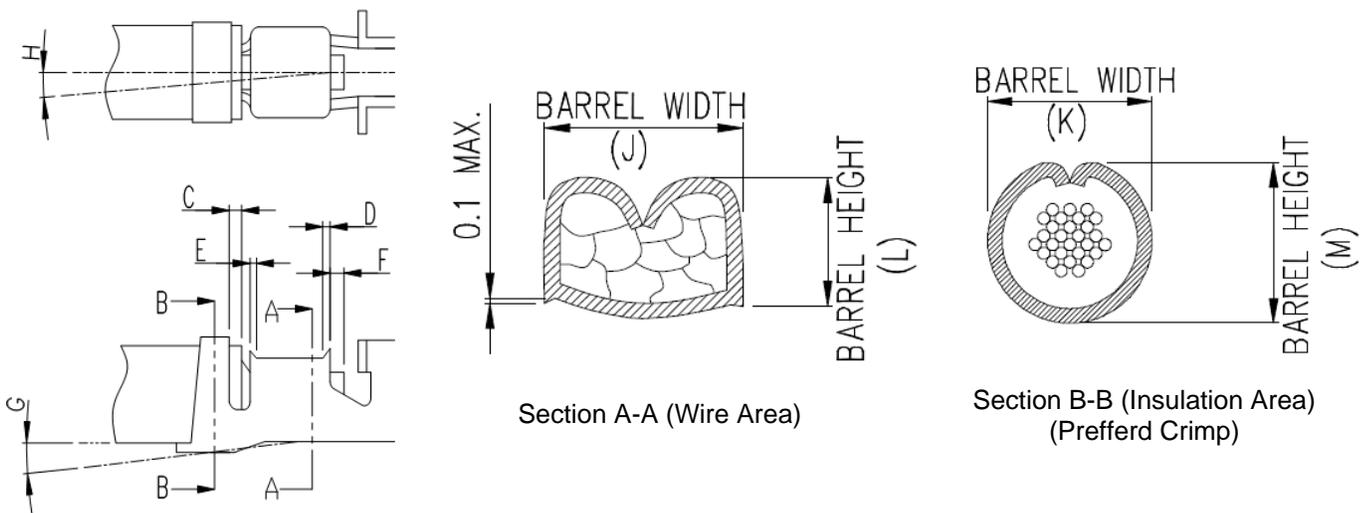
## 8.0 POST-APPLICATION INSPECTION PROCEDURES

### 8.1 Crimp height and width measurement:

8.1.1 Use Crimp Height Type Micrometers to measure crimping height.



8.2 Required crimping dimensions, crimp height and width for different wire AWG are defined in Table 3 & Table 4.



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Table 3 (unit: mm)

Item		Requirement	Note
Insulation position	C	0.5 mm (Ref.)	Insulation and wire should be both visual in this area
Front bell mouth	D	0.4 mm max.	
Rear bell mouth	E	0.4 mm max.	
Extruded wire length	F	0.8mm max.	
Bend up / down	G	±3° max.	
Bend right / left	H	±3° max.	

Table 4 (unit: mm) -

Crimping Width & Height (mm)		AWG 20	AWG 22	AWG 24	AWG 26	AWG 28	AWG 30
Crimping Width (Wire barrel)	J	1.80	1.75	1.70	1.65	1.60	1.55
Crimping Width (Insulation barrel)	K	2.20	2.10	2.00	1.90	1.80	1.70
Crimping Height (Wire barrel)	L	0.80	0.70	0.60	0.45	0.40	0.35
Crimping Height (Insulation barrel)	M	1.70	1.60	1.50	1.40	1.30	1.20

Crimping Width & Height (mm) of 10132447 & 10132448		AWG 16	AWG 18	AWG 20
Crimping Width (Wire barrel)	J	1.71	1.71	1.70
Crimping Width (Insulation barrel)	K	2.27	2.24	2.21
Crimping Height (Wire barrel)	L	1.68	1.44	1.39
Crimping Height (Insulation barrel)	M	2.63	2.33	1.92

\* When using hand crimping tool, crimping height K & M in this table are reference only. Because the range of wires, strands, insulation OD will affect the actual crimping height.

\*\* Pullout force should be performed to check the hand crimping tool.

### 8.3 Pullout force measurement

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- 8.3.1 After crimping, pullout force measurement should be applied to ensure the performance.
- 8.3.2 Follow test procedure of GS-12-1177 and GS-12-1291. Apply an axial pullout force on the wire at a rate of  $25 \pm 6$  mm.
- 8.3.3 Pullout force should not be less than those listed in Table 5.

Table 5 (unit: N)

Wire AWG	AWG 20	AWG 22	AWG 24	AWG 26	AWG 28	AWG 30
Wire Pullout Force	57.8	35.6	22.2	13.3	8.9	6.6

Table 5 (unit: N) – For HCC Series

Wire AWG	AWG 16	AWG 18	AWG 20
Wire Pullout Force 10132447-00XLF & 10132448-00XLF	68.8	68.8	49

8.4 Visual Inspection:

- 8.4.1 No damage, deformation on locking tabs, contact area or other portion of the terminals.
- 8.4.2 Insulation should not be crimped into wire barrel.
- 8.4.3 Wire should not be cut-off and insulation should not be broken after crimping process.

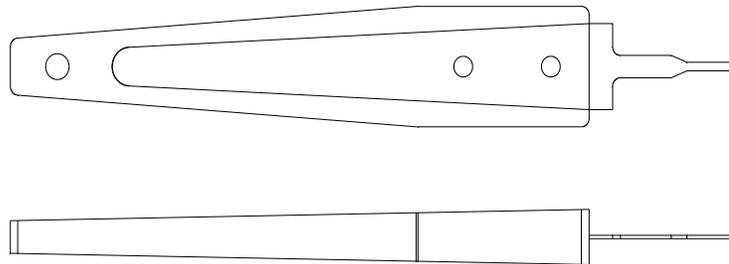
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## 9.0 REPAIR TOOLING

The tool needed for extracting terminals from HSG is defined in Table 6:

Table 6

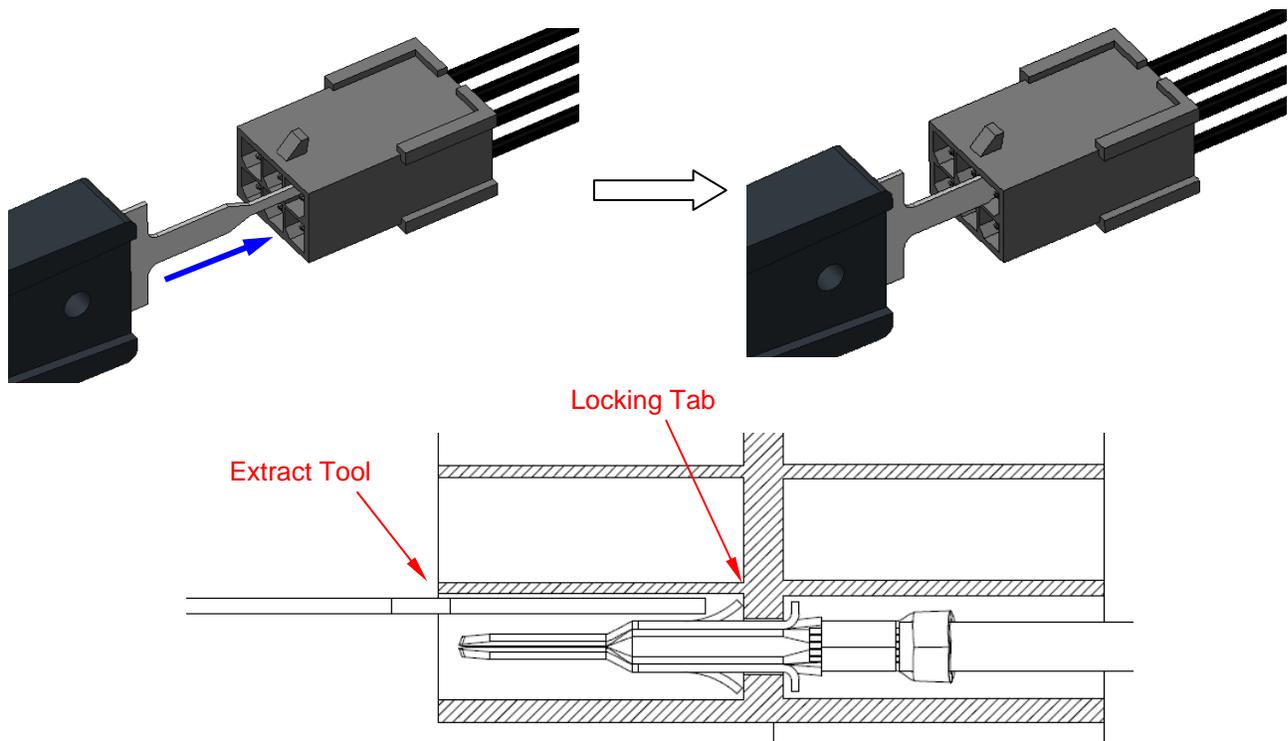
Tool P/N	Tool Description	Applicable Terminal P/N
FCI 10129274-030LF	Terminal extract tool	10127718 & 10127719 series 10132447 & 10132448 series



## 10.0 REPAIR / REMOVAL PROCEDURE

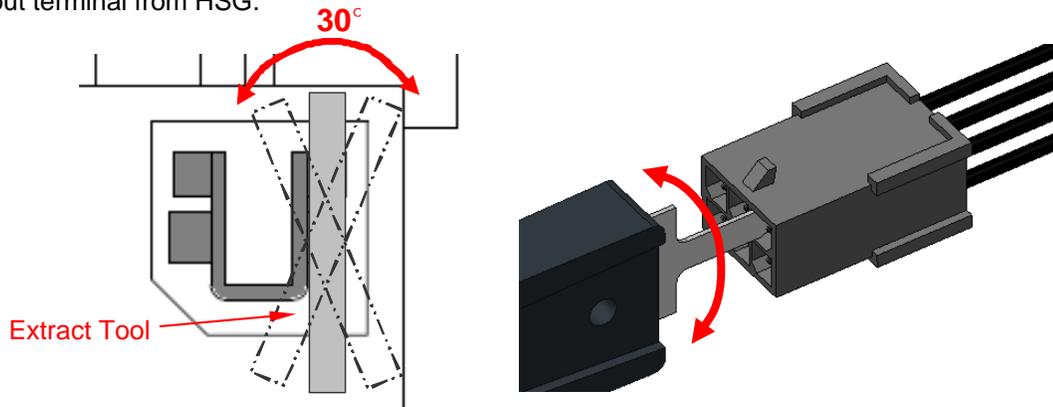
10.1 Use the extract tool 10129274-030LF to remove individual terminal which is installed in the HSG.

10.1.1 Insert the extract tool on one side of the terminal until it stops.



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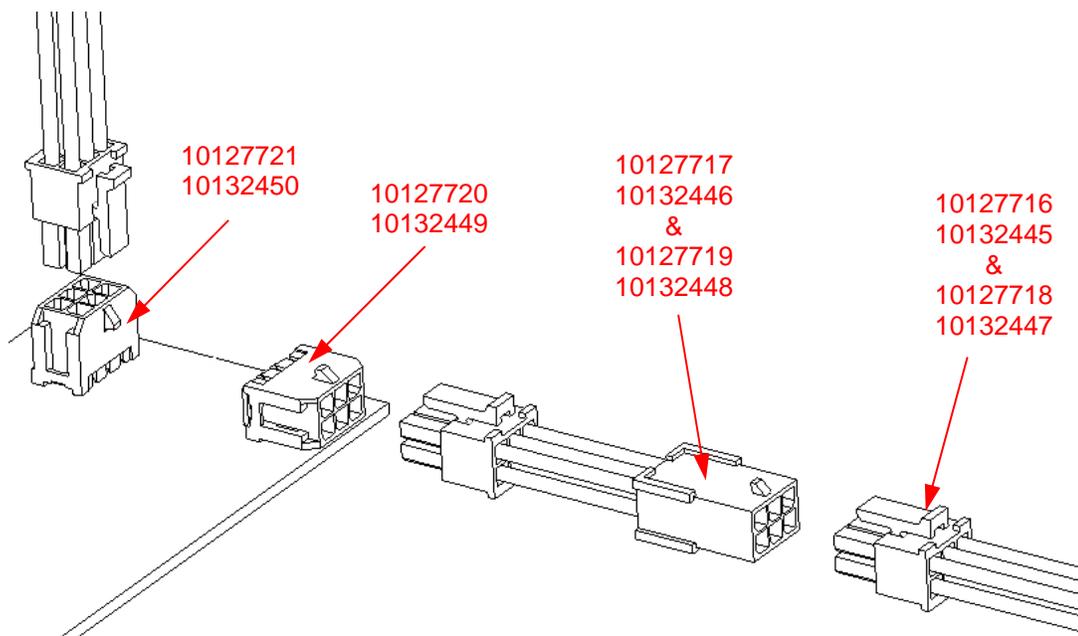
- 10.1.2 Rotate the tool clockwise and then counter-clockwise about 30 degree in each direction.
- 10.1.3 Repeat above steps on the opposite side of terminal. Depress locking tabs on the terminal and pull out terminal from HSG.



10.2 The locking tabs, after extracted from HSG, will be damaged and the terminal is not reusable.

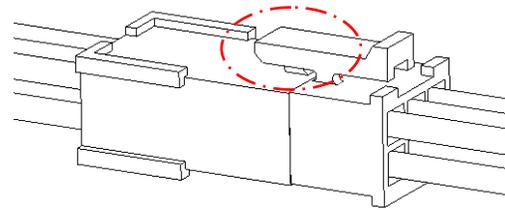
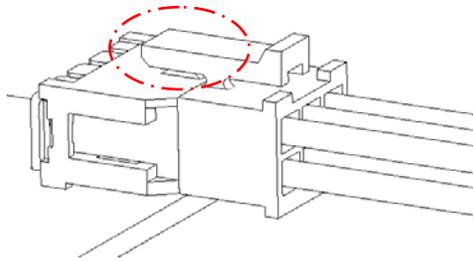
## 11.0 OTHERS

- 11.1 Mating Pairs: Receptacle wire connector 10127716 and 10132445, with receptacle crimping terminals 10127718 and 10132447 inserted, can mate with the following FCI wire / board connectors:
  - 11.1.1 Plug wire connector 10127717 and 10132446, with plug crimping terminals 10127719 and 10132448 inserted;
  - 11.1.2 Right angle board connector 10127720 and 10132449;
  - 11.1.3 Vertical board connector 10127721 and 10132450;



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11.2 During connectors mating, make sure latch on the receptacle wire connector is fully secured to the lock on plug wire connector or board connectors.



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**12.0 RECORD RETENTION**

REV	PAGE	DESCRIPTION	EC#	DATE
A	All	New Release		2014/3/17
B	All	Add data for Minitex Pwr 3.0 HCC	ELX-T-26082	2017/2/10