

Coeur CST High Current Connector System and Application Tools

SERIES:

204313	Pressfit option with 1.0mm of float
204365	SMT option with 1.0mm of float
204318	SMT standard
204316	Pressfit standard
204608	1/0 crimp option
204600	2 circuit male assembly
204599	2 circuit crimped female assembly



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1.0 SCOPE:

This specification applies to the CST connector system for function, assembly and use of this product.

2.0 PRODUCT DESCRIPTION:

The CST connector system is a single circuit high current power connector for busbar and PCB applications. Connectors available with or without 1.0mm of float. Also available in crimp contacts for cable applications.

3.0 REFERENCE DOCUMENTS:

- 3.1 2043130010-SD 8MM CST PRESSFIT WITH 1.0mm FLOAT
- 3.2 2043650010-SD 8MM CST SMT WITH 1.0mm FLOAT
- 3.3 2043160001-SD 8MM CST STANDARD PRESSFIT
- 3.4 2043180001-SD 8MM CST STANDARD SMT
- 3.5 2046080001-SD 8MM CST 1/0 CRIMP SOCKET
- 3.6 2043130008-PS Product Specification
- 3.7 2043139001-PK Packaging Specification

4.0 HEADER GENERAL REQUIREMENTS:

The CST male pin requires mounting to a board via SMT or pressfit into a busbar

4.1 SMT

- a. Min board thickness is 1.6mm
- b. Board layers shall be as such to handle needed current
- c. Copper OSP plating is recommended, other plating types acceptable
- d. Allow for proper fixturing under board to allow part to protrude during reflow

4.2 Bus bar recommendations

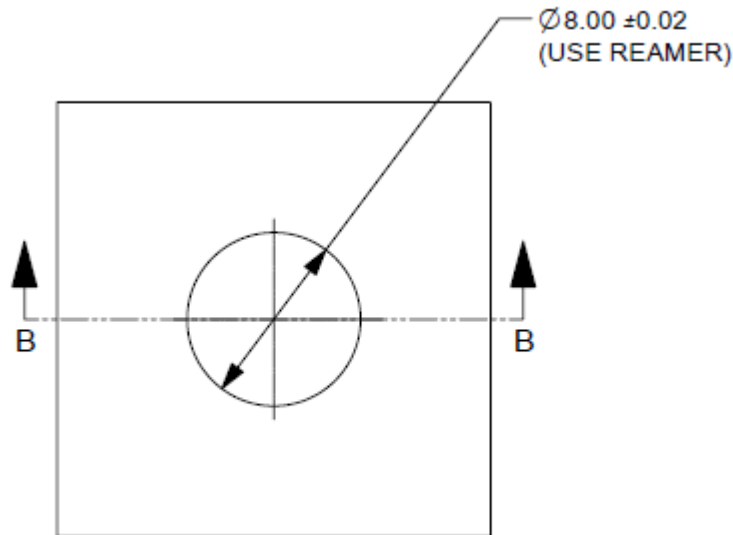
- a. Minimum busbar thickness is 1.5mm
- b. Reem all holes
- c. Verify hole sizes prior to install
- d. Allow for proper fixturing under press in holes to avoid hole deformation especially in thin busbars

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5.0 INSTALLATION OF CST

5.1 CST single male terminal (203263****) Press in Steps

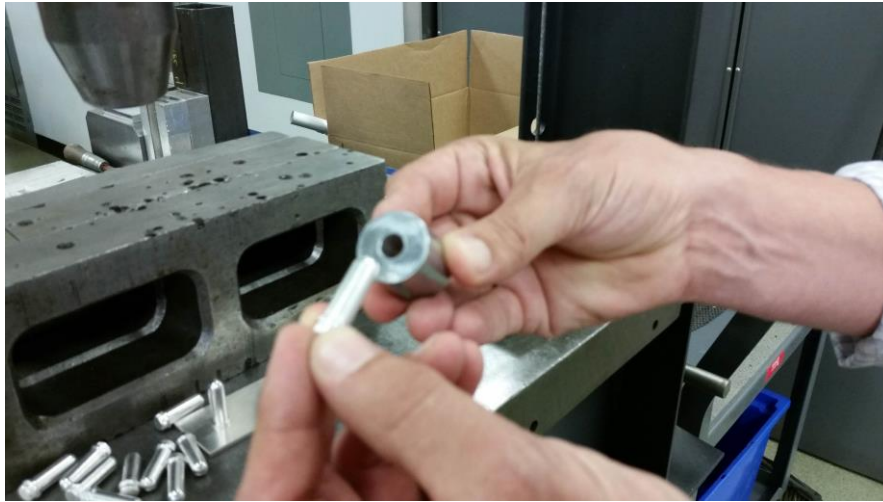
1. Follow recommended hole size and drill hole in busbar per sales drawing (example layout shown below)



HOLE REQUEST ON BUS BAR

2. Verify hole with gage pin
3. Create fixture to allow for CST features and other components protruding through bottom of busbar.
 - a. Hole for clearance should be 0.25mm larger in diameter maximum
 - b. Fixture and hole to be aligned within the 0.25mm difference to prevent stubbing
4. Hand place male terminal into tool (contact molex for insertion tooling information)

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5. Place tool with terminal into center of above verified hole

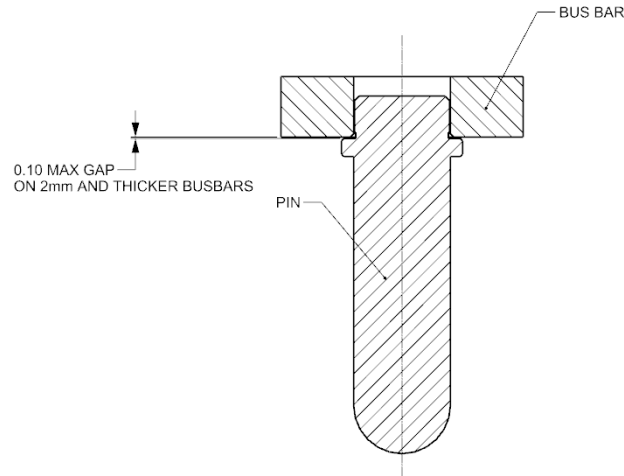


6. Press head can be used to hold tool and terminal in place until press



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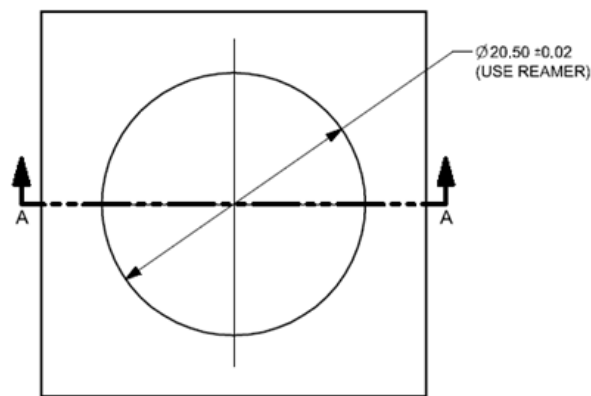
7. Press on top of tool until bottom of positive stop on the part is flush with the top of busbar
 - a. Do not under press connector



- b. Do not over press connector
8. Inspect pressed in part looking for damage and straightness

5.2 CST Pressfit Socket with 1.0mm of float (204313****) Press in Steps

1. Follow recommended hole size and drill hole in busbar per sales drawing (example layout shown below)



RECOMMENDED DRILL(ON BUSBAR).

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2. Verify hole with gage pin
3. Create fixture to allow for CST features and other components protruding through bottom of busbar
 - a. Hole for clearance should be no larger than 0.25mm in diameter from press in hole
 - b. Fixture and hole to be aligned within the 0.25mm difference to prevent stubbing
4. Hand place CST socket into center of above verified hole



5. Place tool with hole for onto top of placed socket, aligning hole over the protruding socket. DO NOT PRESS ON TOP OF CONNECTOR (contact molex for insertion tooling information)



6. Press head can be used to hold tool and terminal in place until press

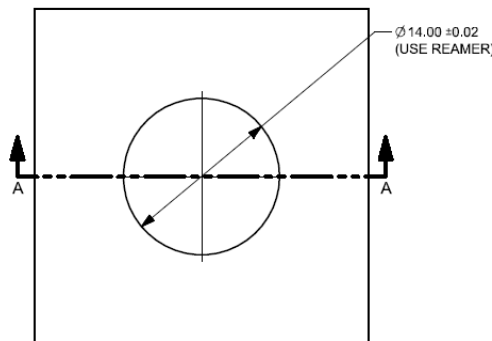
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7. Press on top of tool until bottom of positive stop on the part is flush with the top of busbar
 - c. Do not under press connector
 - d. Do not over press connector
8. Inspect pressed in part looking for damage, straightness, and if socket still floats

5.3 CST Standard Pressfit Socket (204316****) Press in Steps

1. Follow recommended hole size and drill hole in busbar per sales drawing (example layout shown below)



RECOMMENDED DRILL(ON BUSBAR).

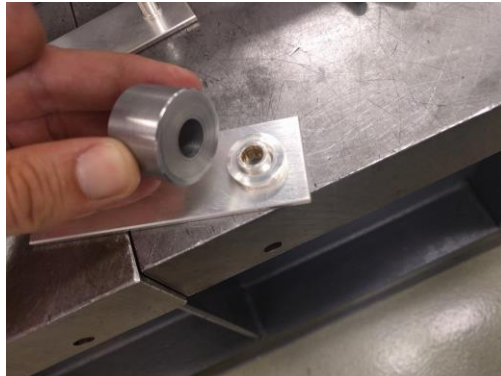
1. Verify hole with gage pin

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2. Create fixture to allow for CST features and other components protruding through bottom of busbar
 - a. Fixture Hole for clearance should be no larger than 0.25mm in diameter from press in hole
 - b. Fixture and hole to be aligned within the 0.25mm difference to prevent stubbing
3. Hand place CST socket into center of above verified hole



4. Place flat rock tooling on top of product, this CST version can be pressed directly on the top of the part



5. Press head can be used to hold tool and terminal in place until press

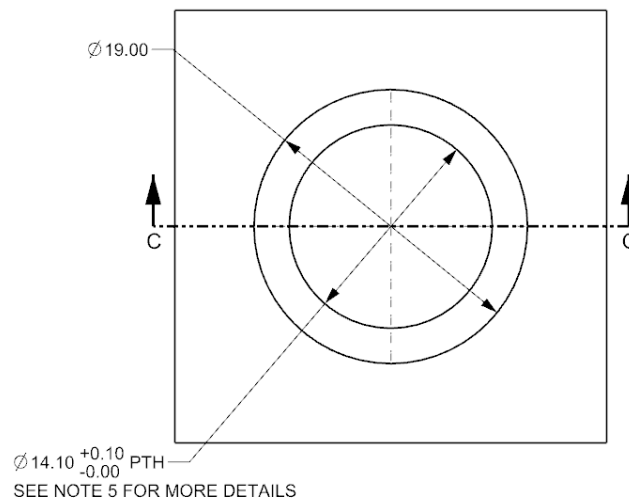
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6. Press on top of tool until bottom of positive stop on the part is flush with the top of busbar
 - a. Do not under press connector
 - b. Do not over press connector
7. Inspect pressed in part looking for damage, straightness

5.4 CST Standard SMT Socket (204318****) solder Steps

1. Hole pattern in 1.6mm min board per the sales drawing (example shown below)

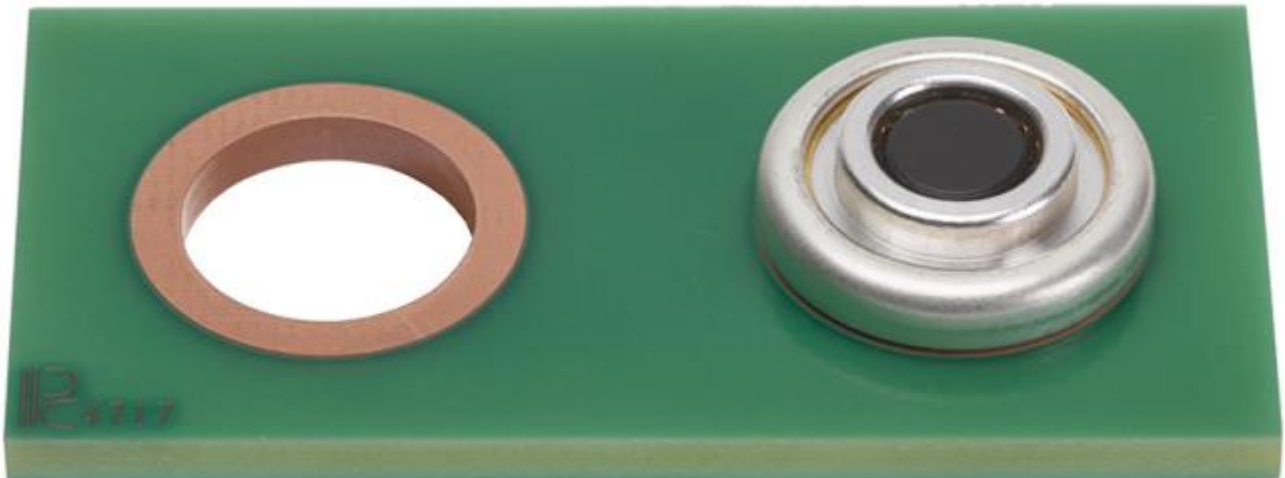


RECOMMENDED PCB LAYOUT

2. Verify hole with gage pin, as shown above in male terminal steps

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3. Apply solder paste for above hole pattern using a 6 mil stencil thickness
 - a. Standard SAC 305 lead free paste was used in testing
4. Create fixture to allow for protruding features of CST and other components during installation if needed.
 - a. Fixture Hole for clearance should be a minimum of 0.25mm in diameter from solder hole
 - b. Fixture and hole to be aligned within the 0.25mm difference to prevent stubbing
5. Lightly hand place CST socket into center of above verified hole making sure to not press the solder out of the way



6. Verify part is centered properly on hole pattern
7. Solder part (s) using a recommended standard convection oven reflow technique
 - a. Parts tested with zone temperatures below and a conveyor speed of 12 in/min

Zone Heater Temperatures

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Top	160 deg. C	168 deg. C	200 deg. C	230 deg. C	270 deg. C
Bottom	160 deg. C	168 deg. C	200 deg. C	230 deg. C	270 deg. C

Zone Airflow

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Top	50 L/min	30 L/min	30 L/min	70 L/min	20 L/min
Bottom	50 L/min	30 L/min	30 L/min	70 L/min	20 L/min

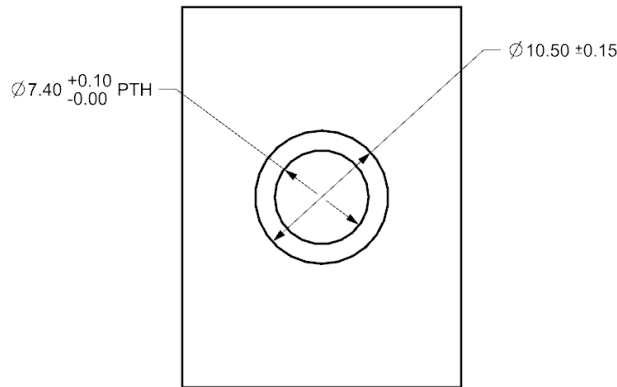
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8. Inspect soldered in part looking for a good solder joint, damage, and straightness

- Solder process is highly dependent on customer application and set up. processing should be adjusted appropriately for each application

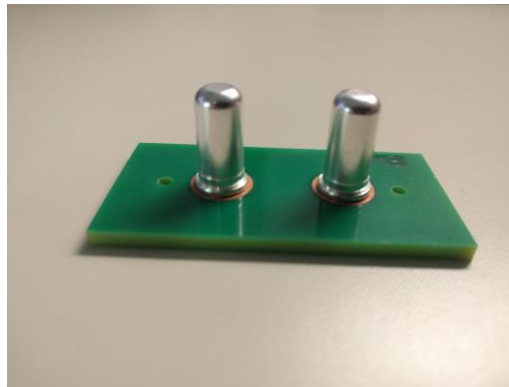
5.5 Cst Standard SMT (203263****) male terminal solder Steps

a. Hole pattern in 1.6mm min board per the sales drawing (example shown below)



2. Verify hole with gage pin, as shown above in male terminal press in steps
3. Apply solder paste for above hole pattern using a 6 mil stencil thickness
 - a. Standard SAC 305 lead free paste was used in testing
4. Create fixture to allow for protruding features of CST and other components during installation if needed
 - a. Fixture Hole for clearance should be a minimum of 0.25mm in diameter from solder hole
 - b. Fixture and hole to be aligned within the 0.25mm difference to prevent stubbing
5. Lightly hand place CST terminal into center of above verified hole making sure to not press the solder out of the way
 - a. A SOLDER FIXTURE MAY BE NEEDED FOR STRAIGHTNESS OF LONGER SOLDERED PINS

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6. Verify part is straight and centered properly on hole pattern
7. Solder part (s) using a recommended standard convection oven reflow technique
 - a. Parts tested with zone temperatures below and a conveyor speed of 12 in/min

Zone Heater Temperatures

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Top	160 deg. C	168 deg. C	200 deg. C	230 deg. C	270 deg. C
Bottom	160 deg. C	168 deg. C	200 deg. C	230 deg. C	270 deg. C

Zone Airflow

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Top	50 L/min	30 L/min	30 L/min	70 L/min	20 L/min
Bottom	50 L/min	30 L/min	30 L/min	70 L/min	20 L/min

8. Inspect soldered in part looking for a good solder joint, damage, and straightness
 - Solder process is highly dependent on customer application and set up. processing should be adjusted appropriately for each application

6.0 CST CRIMPED CABLE ASSEMBLY:

6.1 Cable requirements:
1/0 cable

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6.2 Cut cable to desired length

6.3 Strip cable per below schematic

- a. Recommended cable processing machine is a Schleuniger EcoStrip 9600
- b. The cable stripping aid (tool 62203-0623) is used to pull the insulation slug off the cable

20.00+/-0.80 Strip Length



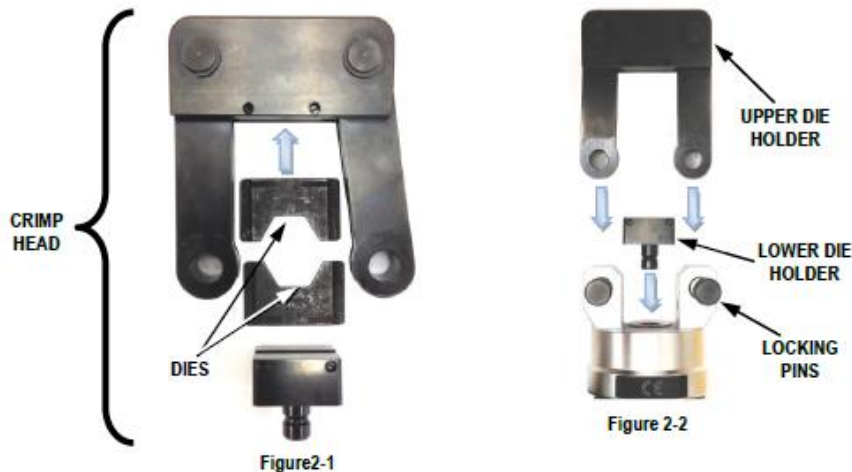
6.4 Fully insert terminal onto stripped wire (wire ties may be used on exposed strands to prevent loose strands)

- a. When handling the terminals, wear protective gloves to prevent cross-contamination of oils. Avoid handling terminals in the contact area and use the crimp barrel if needed

6.5 Verify there are no loose ends of wire protruding from terminal

6.6 Place terminal with cable into the crimping tool

- a. recommend molex crimp tool 192890800
- b. Portable crimping tool 638161000 and crimp head 638161100 also needed



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Battery Powered Crimping Tool



6.7 Crimp the terminal in the press. See document TM-192862000 for tool operating instructions
 6.8 Inspect the terminal crimp dimensions specified in documents ATS-192900080 (1/0 crimps)

Note: Coeur CST crimp contacts are also compatible with other industry standard crimp tooling for 1/0 cable (e.g., “4-point” crimp tooling), which are not sold by Molex

- Performance of industry standard 1/0 crimps should be tested per application

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