
ELE-3COP-454

Title - Checking the retention of pins or sockets within a connector.

Before starting work please read this document carefully and note the guidance given.

1 Purpose and Scope

This COP describes the procedure to be used when checking the Retention of Pin or Socket contacts within a connector. The instructions in this document take preference over IPC/WHMA requirements, as do the drawing and any customer documentation.

2 Performance Objective

This code of practice is produced to support operators already trained in the installation of heat shrinkable and harnessing products. It identifies the procedure to be used when checking the retention of Pin or Socket contacts within a connector.

This procedure will ensure that the Pin or Socket contact is properly seated within the connector pin or socket retainer.

3 Materials and Equipment

Connector to be checked.

Retention tool

Pin Tester

Socket Tester



4 Health and Safety

Adhere to local Codes and Regulations relating to Safe Working practices. For the U.K. adhere to requirements of the Health and Safety at Work Act 1974 and subsequent amendments.

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5 Procedure

These tools are for checking the retention of pins and sockets in electrical connectors. The tester pin and socket tips are aluminium. All tips are replaceable. A nylon hand protector is provided with each tool. The tools can be preset at the manufacturer's factory upon request.

Obtain the contact retention force to be applied from the appropriate connector manufacturer. Where doubts exists as to the correct contact retention force - the following shall apply:

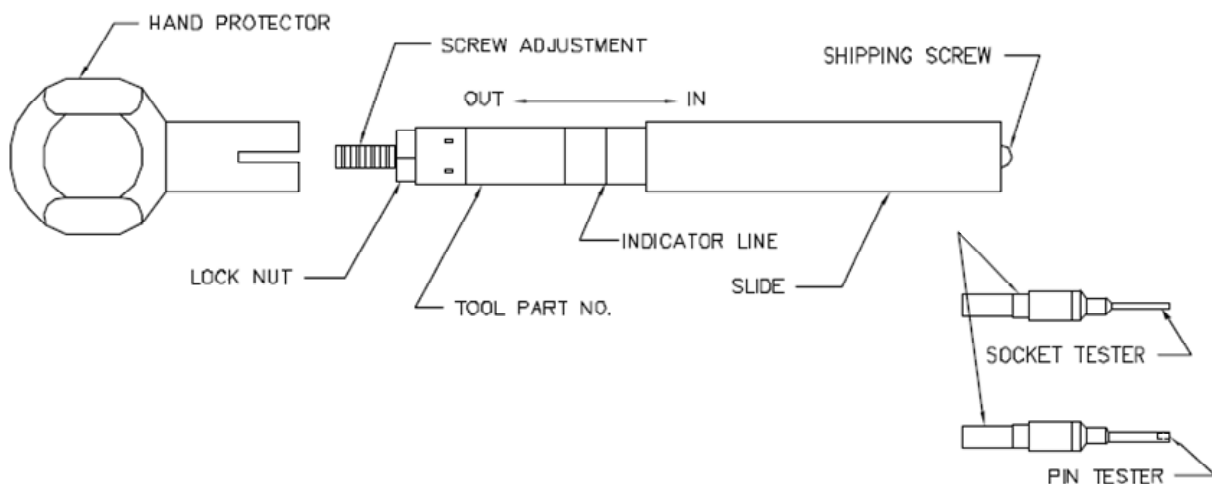
A force of 5lbs shall be applied to size 22 to 20 contacts inclusive.

A force of 10lbs shall be applied to size 16 to 12 contacts inclusive.

Tool Part Number	Range (lbs)	Range (N)	Range (Kg)
HT250-1	1.5 - 3.0	6.7 - 13.3	0.7 - 1.4
HT250-2	3.2 - 5.5	14.2 - 24.5	1.5 - 2.5
HT250-3	4.0 - 8.0	17.8 - 35.6	1.8 - 3.6
HT250-4	7.0 - 18.0	31.1 - 80.1	3.2 - 8.2
HT250-5	17.0 - 25.0	75.6 - 111.2	7.7 - 11.3
HT250-6	24.0 - 40.0	106.8 - 177.9	10.9 - 18.1

The above part numbers apply to retention tools only (less tips). Tips must be selected under the following separate part number.

Contact Size	Colour Code	Socket Tester	Pin Tester
12	Yellow	67-012-01	68-012-01
16	Blue	67-016-01	68-016-01
20	Red	67-020-01	68-020-01
22, 22M, 22D	Brown	67-022-01	68-022-01
23	Black	67-023-01	68-023-01



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Tool set and adjustment

Remove shipping screw, select appropriate tip and screw into tool body through slide.

Remove hand protector, back off lock nut away from body of tool to allow free movement of adjustment screw.

Hold firmly by hand and apply axial force until end of slide is aligned with indicator line.

Adjust tool to required force by turning adjustment screw – clockwise to increase and counter clockwise to decrease. Use in conjunction with Chatillon force measuring gauge type DPP-25 to ensure required value is achieved, tighten lock nut firmly while maintaining alignment of slide and indicator line. Tool is now set.

It is recommended that inspection labels are used to seal the Hand Protector onto the tool in order to signal any tampering with the adjustment screw.

Use of Tool

Position the retention tool tip over the pin or socket in the connector so that the tester and contact are in a straight line taking care not to bend the pin or socket.

Apply pressure to tester until the indicator band is covered by the slide. If contact is still firmly retained, the retention is satisfactory. Note: Ensure that the pin retention tool contact does not bottom out against the connector insert.

Release tool.

Repeat the test on all other contacts within the connector.

6 Inspection Requirements

Ensure connector contacts are not bent.

Examine the contact for damage and location, the contact height should be the same before and after the test.

Examine the connector front face moulding to ensure freedom from damage.

Ensure that any rectification carried out does not impair or invalidate any previous testing or inspection on the assembly. Where this is the case, all tests are to be repeated.

Accuracy of retention force setting to be checked prior to use using Chatillon force measuring gauge type DPP-25 in accordance with TE calibration procedures.

7 Visual Standards

Not applicable

For further information on HT Tooling and Tips refer to www.dmctools.com



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Rev No	CR No	Date	Raised	Approved
1	Refer to HSG	07/02/90	Trevor Holliday	Paul White
2	Refer to HSG	02/12/91	Keith Carter	Paul White
3	CR06-DM-071	30/05/06	John Cronin	Paul Newman
4	CR09-DM-018	25/03/11	Paul Newman	Neil Dorricott
5	Visual Identity	07/06/11	Paul Newman	Neil Dorricott

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