SAE Aerospace
An SAE International Group

AEROSPACE RECOMMENDED PRACTICE

SAE ARP592

REV. A

Issued 1961-12
Cancelled 2003-04

Superseding ARP592

Terminal, Taper Pin, Design and Application

CANCELLATION NOTICE

This document has been declared "CANCELLED" as of April 2003. By this action, this document will remain listed in the Numerical Section of the Aerospace Standards Index.

1. PURPOSE:

   The purpose of these recommendations is to provide a guide to designers and users of electric equipment for the use of taper pins designed to make electrical connections.

2. SCOPE:

   These recommendations cover the use of taper pins in taper pin terminal blocks, multi-contact electric connectors, and components designed to accept taper pins. Taper pins are intended to facilitate termination of a wire and are not to be employed as a quick-disconnect device. The mating portions of taper pins and taper pin receptacles shall be in accordance with Figure 1.

3. DEFINITIONS:

3.1 Taper Pin:

A taper pin is an electric solderless terminal used to connect a wire to a special receptacle. It has a round tapered shank on one end, and a wire barrel on the other end that is crimped to the wire. Formed and solid pins are available. The choice is left to the designers and users.

3.1.1 Formed Taper Pins: Formed taper pins are pins formed by rolling a flat strip of metal into the appropriate shape.

3.1.2 Solid Taper Pins: Solid taper pins are pins machined from solid stock.

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: custsvc@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

3.2 Taper Pin Terminal Blocks:

Taper pin terminal blocks are electric connector blocks made from insulating material, and containing taper pin receptacles.

3.3 Taper Pin Receptacles:

Taper pin receptacles are electric terminals having round tapered holes that mate with taper pins. Formed and solid receptacles are available. The choice is left to the designers and users.

3.3.1 Formed Receptacles: Formed receptacles are taper pin receptacles having the tapered hole formed by rolling a flat strip of metal into the appropriate shape. This type of receptacle has an open longitudinal seam.

3.3.2 Solid Receptacles: Solid receptacles are taper pin receptacles in which the tapered hole is formed by a suitable means and is seamless.

3.4 Insertion Tool:

An insertion tool is a mechanical device with a tip to hold a taper pin and force it into a taper pin receptacle.

3.5 Crimping Tool:

A crimping tool is a mechanical device having specially shaped dies for reforming the wire barrel of a taper pin around a wire.

3.6 Extraction Tool:

An extraction tool is a hand operated mechanical device consisting of a hand grip and a tip designed to hold a taper pin. It is used to remove taper pins from taper pin receptacles and may be identical to an insertion tool.

3.7 Back-Up Block:

A back-up block is a piece of metal, usually steel, shaped to support the end of a multi-contact electric connector. Its mass is used to resist the impact of driving taper pins into the taper pin receptacles of the connector.

4. TAPER PIN TERMINAL BLOCK MOUNTING:

4.1 Rigidity of Mounting:

Blocks should be mounted in a frame or on a surface of sufficient strength, so that a force of twenty-five (25) pounds will not cause any significant deflection during installation of taper pins.

4.2 Clearance for Insertion Tool:

At least a 7-1/2 inch clearance in front of the block must be provided for the insertion tool.

4.3 Visibility:

The blocks must be mounted so that the identification numbers or letters for each circuit can be seen.

5. CONNECTION OF TAPER PINS TO CONDUCTORS:

5.1 Taper pins must be crimped to conductors in accordance with the manufacturer's instructions. These instructions shall include:

a. Selection of taper pins having the correct wire range for the conductor.

b. Selection of taper pins with insulation grips, where applicable, designed to accommodate wire insulation diameters.

c. Proper stripping length.

d. Selection of crimping tool with ratchet or full-cycling action.

e. Proper use of tools.

6. INSERTION OF TAPER PINS INTO RECEPTACLES:

6.1 Selection of Insertion Tool:

Only tools of the controlled force type recommended by the taper pin manufacturer shall be used.

6.1.1 The selection of the tool will be determined by:

a. Wire size of the taper pin.

b. Type of material in which receptacle is mounted (resilient or rigid).

6.1.2 The tools shall be used according to the manufacturer's instructions. These instructions shall include:

a. Placement of pin into tool.

b. Retention of pin in tool.

c. Insertion of pin into receptacle.

d. Removal of tool from pin.

7. EXTRACTION OF TAPER PINS FROM RECEPTACLES:

7.1 Selection of Tool:

The tool may be either the insertion tool or a special extraction tool.

7.2 Use of Tool:

The pins must be extracted in accordance with the manufacturer's instructions.

8. USE OF TAPER PINS WITH MULTI-CONTACT ELECTRIC CONNECTORS:

8.1 Taper pins may be used in multi-contact electric connectors having receptacles designed for use with taper pins.

8.1.1 These receptacles shall be in accordance with Figure 1. Taper pins shall not be used in conventional solder pots.

8.2 Connection of Taper Pins to Conductors:

8.2.1 Connection of taper pins to conductors shall be made in accordance with paragraph 5.

8.3 Insertion of Taper Pins into Multi-Contact Electric Connectors:

8.3.1 Taper pins shall be inserted into receptacles in accordance with paragraph 6.

8.3.2 In addition to the requirements specified in paragraph 8.3.1, the connector must be provided with a solid back-up against the insertion impact.

8.3.2.1 The back-up may be accomplished by placing the connector on a solid surface such as a bench top. If a solid surface is not available, a hand-held 8-ounce steel back-up block may be used.