ELECTRIC SOLDERING COPPERS AND IRONS

TESTS AND INSPECTIONS

1. GENERAL

1.01 This section describes methods of testing and inspecting electric soldering coppers and irons.

1.02 This section is reissued to:

- Delete the headset and associated apparatus from 2.01 and to change the title of Part 2 accordingly
- Revise the ***Note*** in Part 3 which is referenced in Steps 16d and 17e.

1.03 In order to reduce potential fire and accident hazards, electric soldering coppers shall be removed from service immediately when found defective. They should be tagged DEFECTIVE in accordance with local instructions if the defect is not corrected at the time.

1.04 Electric soldering coppers which do not meet the test and inspection requirements listed herein shall be repaired or replaced. Piece-part data and replacement procedures for the KS-8740 and KS-14440 soldering coppers and the KS-16346 soldering iron (including KS-16368 transformer) are covered in Section 075-191-812. Shaping and tinning of KS-8740 soldering copper tips are covered in Section 069-140-811.

1.05 Cords that are worn or show signs of becoming defective shall be cut back or replaced.

1.06 ***Lettered Steps:*** A letter a, b, c, etc, added to a step number in Part 3 of this section indicates an action which may or may not be required depending on local conditions. The condition under which a lettered step or a series of lettered steps should be made is given in the ACTION column, and all steps governed by the same condition are designated by the same letter within a test. Where a condition does not apply, all steps designated by that letter should be omitted.

2. ▶LIST OF TOOLS AND GAUGES◀

2.01 The following list of tools and gauges is used for tests and inspection of electric soldering coppers and irons:

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
AT-6655	V-notch diagonal pliers
AT-7860	B long-nose pliers
—	3-inch C screwdriver (or the replaced 3-inch cabinet screwdriver)
GAUGES	
KS-14510 L11	▶Volt-ohm-milliammeter (or the replaced KS-14510 L1)◀
KS-8340	Ohmmeter

3. METHOD

STEP	ACTION	VERIFICATION
Cord, Attachment Plug Cap, and Electrical Connections		
1	Disconnect soldering coppers and irons from electrical outlets for a sufficient time to allow them to cool prior to making following inspections.	

STEP	ACTION	VERIFICATION
	Note: The soldering coppers and irons shall remain disconnected from the electrical outlets during the inspections.	
2a	For KS-8740 soldering coppers— Unscrew handle and slip back on cord.	
3b	For KS-16346 soldering irons— Remove clamp nut and slide handle forward on tip.	
4c	For KS-14440 soldering coppers— Unscrew handle and slip back on cord.	
5c	Move insulating sleeve away from connections.	
6	Inspect connections.	Insulation on wires comes up to fastening terminals. Cord strain insulator and nontwist devices are in their proper positions. Connections are tight and free from loose wire ends.
7	Inspect cord clip.	Clip is securely crimped on cord. On recent design, clip is fabricated with a hole and assembled to threaded hole in cord strain device with machine screw. On earlier design, end of clip (without hole) is in notch in cord strain insulator.
	Note: A clip as furnished with the heater assembly should be applied to all KS-8740 soldering coppers on which inspection shows it is missing.	
8	Inspect attachment plug cap or transformer.	No cracks, bent blades, or other defects. Connections are tight and free from loose wire ends.
	Note: On cords with a separate attachment plug cap, remove insulating disc.	
	On cords with separate attachment plug— Insulation on wires comes up to fastening terminal. Cord grip is sufficiently tight to grasp insulation firmly.	
9	Inspect entire length of cord.	No worn or broken insulation.

STEP	ACTION	VERIFICATION
	Note: If necessary, cut back cord at plug cap end to inspect white rubber on conductors.	
10	Return soldering copper handle, insulating disc on separate attachment plug cap to normal position.	
Tip and Heater Element		
11	Inspect tip.	Tip is secured tightly to shell. Tip is clean, free from excess solder, and not worn or pitted. If tip has an aluminum oxide coating, coating is not chipped.
12a	For KS-8740 and KS-14440 soldering coppers—Remove tip using wrenching flats. If tip is insulated, grasp on uninsulated portion only.	Threads are clean and free from corrosion.
13a	Remount tip.	
14	Connect copper or iron to electrical outlet and allow to reach operating temperature.	Melts solder readily.
AC Test for KS-8740 and KS-14440 Soldering Coppers		
15	Connect soldering coppers to electrical outlet, and allow to heat to operating temperature.	
16d	If copper is equipped with a polarized plug, using the KS-14510 ▶L11◀ volt-ohmmeter (use 300V range), check from sheath to ground.	If there is an ac voltage reading (see ***Note***), the soldering copper should be rejected.
17e	If copper is equipped with a nonpolarized plug, check the same way as in Step 16, reversing the plug in the socket for the second check. ***Caution: Exercise care to avoid burns while testing the heating element.***	***Note:*** ▶The inductive effect of the heating element may cause a 2 or 3 division deflection on the 300-volt scale. To determine whether the deflection is inductive or an ac voltage leak, continue switching to a lower voltage scale to obtain a more accurate voltage reading. If the deflection obtained on the lower voltage scales does not change appreciably from the deflection observed on the 300-volt scale, it is an inductive effect and is not cause for rejection.◀ If there is an ac voltage reading (see ***Note***) from either position of the plug, the soldering copper should be rejected.

STEP	ACTION	VERIFICATION
	Resistance Check for KS-8740 L33 and L34 Tips and KS-14440 L24 Manufacture Discontinued and L25 Heater and Tip Assemblies	
18	With copper unplugged and using the KS-14510 ▶L11◀ volt-ohmmeter with meter set on X1 of the ohm scale, check between sheath and coated area of tip.	If reading of infinity is obtained, tip is usable. If reading shows zero or a direct short, tip is not usable.
	Electrical Test for KS-16346 Soldering Iron (Includes KS-16368 Transfo.mers)	
19	Disconnect iron from electrical outlet.	
20	Disconnect cord from transformer.	
21	Connect transformer to electrical outlet.	
22	Connect KS-14510 ▶L11◀ volt-ohm-milliammeter across transformer terminals. (Use 12-volt ac scale.)	Meter reads approximately 6.3 volts.
23	Disconnect meter.	
24	Disconnect transformer from electrical outlet.	
25	Connect KS-14510 ▶L11◀ volt-ohm-milliammeter across one of transformer power prongs and one of transformer terminals. (Use X-10,000 scale.)	No reading on meter.
26	Disconnect meter.	
27	Connect KS-8340 ohmmeter across cord terminals.	Meter reads: Min 2.0 ohms Max 3.0 ohms
28	Disconnect meter.	
29	Reconnect cord to transformer.	