Title:

Prepping Operation Procedure

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Originator

Director of Quality Assurance
Dior Wu

Title:

Prepping Operation Procedure

1.0 Purpose

1.1 To describe the method of prepping components prior to assembly.

2.0 Scope

2.1 This procedure covers manual and machine operation instructions for part prepping. Detailed adjustment and maintenance instructions are available in the machine manufacturer's manuals.

3.0 Reference

3.1 SOP22 ESD Control Procedure

3.2 SOP19 Equipment Preventative Maintenance Procedure

3.3 IPC-A-610 Acceptability of Electronic Assemblies

3.4 Special customer prepping requirements

3.5 Machine Operation Manuals

4.0 Definitions

4.1 Prepping: Any component pre-forming or pre-cutting prior to assembly process including wire pre-cutting, piggy back part pre-form, etc.

4.2 Lead Protrusion: The lead length measured from bottom of PCB to end of the lead.

4.3 Lead Spacing: The distance between the centers of two particular holes

4.4 Primary Die: The die set has the equal or better output of parts meeting the specifications

4.5 Backup Die: The die set replaces the primary die on temporary basis and capable of producing acceptable prepped parts

4.6 PCB: Printed Circuit Board

5.0 Responsibilities

5.1 It is everybody's responsibility to follow the ESD and safety rules described in this procedure and operation manuals.

5.2 The operator is responsible for checking their own work with sample board, metal ruler or caliper to ensure proper quality.

6.0 Equipment

6.1 Metal ruler with decimal inch scale or calipers

6.2 Hand prep tools

6.3 Sample boards

6.4 Prepping dies

6.5 Single stroke cutting machines (i.e. Hepco 3000-2)

6.6 Automatic axial trimming and forming machines (i.e. Electroprep A5200)

6.7 Semi-automatic/ automatic radial trimming or forming machines (i.e. Hepco 1500-1, or GPD C.F.7)

6.8 Hand feed automatic IC DIP lead former (i.e. Hepco 7900-LFA adjustable on 0.300", 0.400", and 0.600")

6.9 Hand feed automatic IC DIP lead cutters (i.e. Hepco C-7600)

7.0 Materials

7.1 Components to be prepped.

8.0 Records

8.1 The total retention period for the documents listed by Meritronics, is indicated on the Master Forms Listing under the column heading, Record Retention. When the records are no longer in an active status they will be forwarded to Document Control and filed/maintained in accordance with SOP 29.

9.0 Procedures

9.1 Safety

9.1.1 Always keep fingers off sharp edges and moving parts.

9.1.2 Turn off the power or keep foot away from foot switch while setting up prepping dies.

9.1.3 Fasten all required hardware before operating machines.

9.1.4 Follow all safety rules in manufacturer's manuals

9.2 Hand Forming

9.1.1 Some axial parts can be formed by Speedy Bend if not able to prep by machine.

9.1.2 Form the leads of parts per IPC-A-610 class II requirements unless otherwise specified by customer documentation.

9.1.3 Trim the hand formed parts with HEPCO 3002-2 single stroke cutting machine to less than 0.100" unless otherwise specified by customer documentation.

9.2 Set-up and Operating

9.2.1 Check for prep style and quantity prior to operation.

9.2.2 Set-up machine per operation manual. Automatic transistor prepping dies should be only set-up by lead or trained designee.

9.2.3 Run first part through machine to ensure correct fit per IPC-A-610 class 2 or per customer specifications.

9.2.4 Handle crystals or oscillators with care. Crystals that come in tubes need to be put back in the tube gently right after the parts are prepped with all polarities facing the same direction.

9.2.5 Check for lead/meniscus damage per IPC-A-610 or customer requirements.

9.2.6 Verify correct fit and lead protrusion in the sample board.

9.2.7 Store the parts in the original or proper ESD safe containers for components whose leads can get bent easily. Otherwise, store the parts in static safe bags or containers with the part number clearly marked.

9.3 Prepping Die Management

9.3.1 All prepping dies should be marked with manufacturer's part numbers on non-mating surface.

9.3.2 Certain high-run dies have backup die set available kept with maintenance department. When there is a need to send out the primary for service, use the backup die from the maintenance department while the primary die is out for service.

9.3.3 Prepping dies/blades need to be cleaned and sharpened per operation manuals.

9.4 Machine Maintenance

9.4.1 Machines need to cleaned, lubricated, and maintained per SOP19 and operation manuals.