



# ragworm

## Ragworm Assembly Service

### Kit Criteria For Customer Supplied Components And Documentation

This document describes the guidelines on how customer supplied PCB assembly kits should be presented for automated assembly processes.

Since board designs and quantity requirements vary with each customer, each case is different. But, these guidelines can be followed so you can obtain the highest quality and most competitive pricing.

Our quotations are based upon the guidelines listed below. Kits arriving that differ significantly from this format will potentially have a cost impact associated with them.

### Surface Mount Components and Data

Electronic PCB Data - The following PCB data is needed for aiding in the manufacturing process: Panellised Gerber Files, X-Y data and Bills of Material (in excel format). The X-Y data must be in .csv, .xls or .txt format. This data will be used in solder stencil fabrication and automated pick and place machine programming.

Kits supplied without this data may experience a delay in shipments. Sending this data prior to sending the component kit will, in most cases, assure on time delivery of the final product.

### SMT

#### Passive parts (capacitors, resistors, etc.)

These parts should all be received in proper pick and place format. If submitting on tape, please allow a minimum of 4% attrition extra for each part.

NOTE: While customers occasionally need to use loose bulk components for smaller quantity requirements or availability situations, additional assembly process time is incurred processing these loose bulk components.

#### Integrated Circuits (IC's) or other leaded type components

These components need to be in tape, tubes, trays or their original properly packaged containers in order to ensure that there is no lead damage in transit. Any components that are loaded by the customer should have Pin1 consistently in the same direction.

When parts are received that are not in the same direction, quality of the product is compromised, and further time is incurred in correcting the directional placement problem.

#### DSP or other similar parts

Often these parts are packaged in containers requiring special handling. For instance, moisture sensitive components sometimes require baking. In cases like this, these sealed packages should not be opened. If they are opened, they need to be resealed in accordance with the manufacturer's suggested methods. Usually, specially designed waffle trays are used as the containers for these parts and are easily suitable or can be adapted to P&P equipment.

#### SMT Sockets or Connectors

These parts should be sent in their original waffle packaging avoiding damage to the leads.

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### SMT Stencils

If a stencil is supplied by customer it will be reviewed by Ragworm engineers for production and machine compatibility. (This is to ensure no flaws of solder balling, tombstone, and shorting on fine pitch parts.)

### Through Hole

**These components should be supplied properly packaged and not oxidized Intergrated Circuits or DIP Packages.**

These can be received in tubes or loose (parts should be plugged into anti-static foam). Parts received in loose form usually cause damage to the leads and creates potential quality and manufacturing problems.

### Sockets or Connectors

These parts should be supplied in their original package preventing damaged or bent leads. Parts received in loose form can create potential quality and manufacturing problems.

### Multiple kits supplied at the same time using shared components

When multiple kits are issued that require sharing of components, we request that each kit be a complete kit (with sufficient attrition supplied in multiple tubes, tapes and reels, and trays). This will facilitate building more than one assembly at the same time.

### General

**Please make sure that the current, accurate and updated drawings and final BOM's (preferably in excel) are sent with each new kit matching the revision listed on the purchase order.**

All production starts. "After Receipt of Last Shortage". In order to maintain accurate delivery schedules, we request that the customer realize that an adjustment is necessary to any purchase order due date(s) according to when the final parts for assembly are received. You should review the quotation for the turn time and adjust.