

## BGA RE-BALLING WITH SOLDER PASTE

### **Re-balling with Reflow oven:**

1. Carefully remove the BGA from the bottom module.
2. Place BGA inside a reflow oven for re-balling.
3. Reflow oven temperature profile should be adjusted to fit the BGA to be re-balled.
4. Allow BGA to cool down before handling.
5. Clean off excess flux.

### **Re-balling with Infra-red systems and Hot air guns:**

1. When using infra-red systems or hot air guns, it is critical that the temperature applied to the BGA be very similar to the recommended component reflow profile.
2. The BGA can be removed and placed in a preheating system, or directly reflowed using the infra-red gun.
3. Allow BGA to cool down before handling.
4. Clean off excess flux.

### **Repeatability:**

For same type BGA re-balling, These simple procedure below will produce perfect alignment with no additional adjustments to the modules.

1. Place the next BGA to be re-balled on to the holder.
2. Snap on upper module.
3. Follow applying solder paste procedure.
4. Reflow.

Manufacturer:

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**AOYUE<sup>®</sup>**

**BGA Re-Balling System**

## **INSTRUCTION MANUAL**

Thank you for purchasing Aoyue BGA re-balling system.  
Please read this manual before operating the equipment.  
Keep manual in accessible place for future reference.

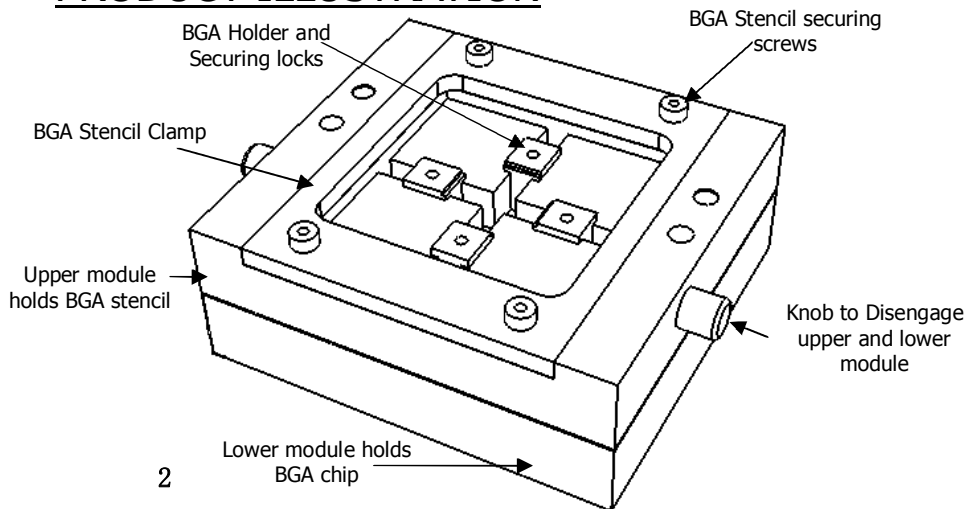
## TABLE OF CONTENTS

Safety Precautions	2
Product Illustration	2
BGA Cleaning	3
BGA Re-balling with Solder Balls	4-7
BGA Re-balling with Solder Paste	7-8

## SAFETY PRECAUTIONS

- When soldering temperature may reach as high as 480°C.
  - Do not use the device near flammable materials.
  - Always use proper equipment when handling hot materials..
- Soldering process produces smoke — use on well ventilated place.
- Chemicals used in soldering may cause skin irritation, use proper protective equipments when handling such chemicals.
- When handling material with lead content always follow proper rules and safety guidelines.

## PRODUCT ILLUSTRATION



## BGA RE-BALLING WITH SOLDER BALLS

### **Re-balling with Infra-red systems:**

1. Clean up excess balls surrounding the bga.
2. When using infra-red systems, it is critical that the temperature applied to the BGA be very similar to the recommended component re-flow profile.
3. The BGA can be removed and placed in a preheating system, or directly reflowed using the infra-red gun.
4. Allow BGA to cool down before handling.
5. Clean off excess flux.

### **Repeatability:**

THE BGA re-balling system is designed to allow repeated re-balling of the same type component with little to no adjustment of the module. Simply place the next BGA to be re-balled on to the holder, apply flux, snap on upper module apply solder balls then reflow. The system will produce repeated perfect alignment of balls to pads with no additional adjustments.

## BGA RE-BALLING WITH SOLDER PASTE

### **Initial Procedures:**

1. Follow BGA cleaning guide.
2. Follow direction as given in "BGA re-balling with solder balls: guide. Except do not add flux during "BGA Placement" procedure.
3. During "BGA Stencil Placement and Adjustment" procedure, the stencil used for re-balling with solder paste should be thicker than the stencil used with solder balls.
4. After "BGA Stencil Placement and Adjustment" procedure continue with "Applying Solder paste " procedures below.

### **Applying Solder paste:**

1. Gently spread an even amount of solder paste into every hole of the stencil.
2. Clean excess solder paste off the stencil.
3. Trigger the two disengagement knob. Slowly detach the entire upper module from the bottom module.

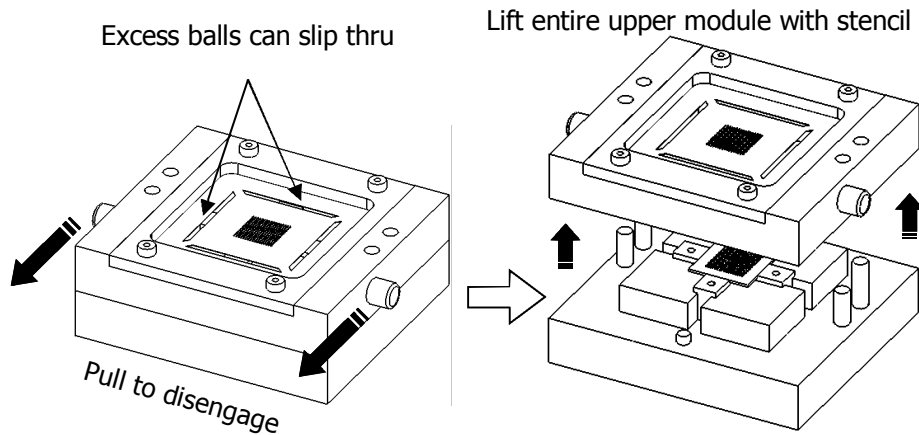
## BGA RE-BALLING WITH SOLDER BALLS

### **Applying Solder balls:**

1. Spread solder balls on top of the BGA stencil.
2. Allow excess solder balls to drop down via the slits. The balls can be collected later for reuse.
3. Check each hole to ensure a solder ball is present in each.
4. The solder balls would stick to the BGA due to flux applied during the BGA placement step.

### **Detaching the Upper Module:**

1. After all the hole are filled with solder balls we may now slowly lift up the upper module.
2. Trigger the two disengagement knob. Then carefully and slowly lift up the Upper module



### **Re-balling with Reflow oven:**

1. Clean up excess balls surrounding the bga.
2. Carefully remove the BGA from the bottom module.
3. Place BGA inside a reflow oven for re-balling.
4. Reflow oven temperature profile should be adjusted to fit the BGA to be re-balled.
5. Allow BGA to cool down before handling.
6. Clean off excess flux.

## BGA CLEANING

After removing BGA from the board it is important that it be thoroughly cleaned before re-balling.

### **Cleaning using solder wick**

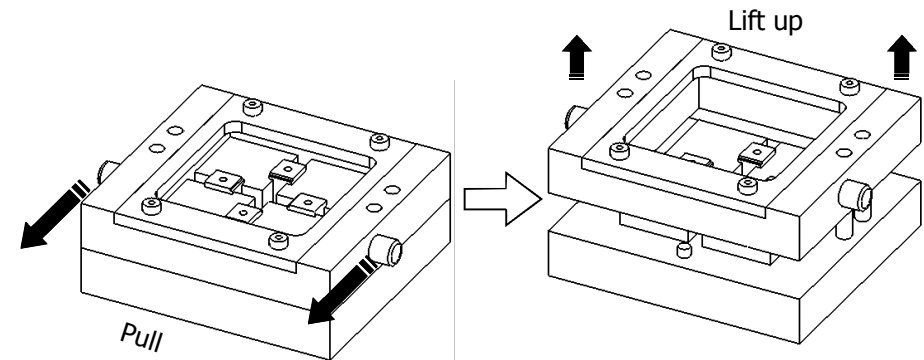
1. Affix BGA to a flat surface.
2. Apply flux to the BGA.
3. Place the desoldering braid on top of the BGA.
4. Heat up the desoldering braid using a soldering iron.
5. Gently glide the iron and desoldering braid on the BGA surface.
6. Repeat until all solder balls are cleaned.
7. Clean the flux residue with isopropyl alcohol.
8. Inspect and repeat above procedures if BGAs are not thoroughly cleaned.

Note: Do not exert too much pressure on the BGA, too much pressure may damage the pads or the BGA itself.

## BGA RE-BALLING WITH SOLDER BALLS

### **Detaching lower module :**

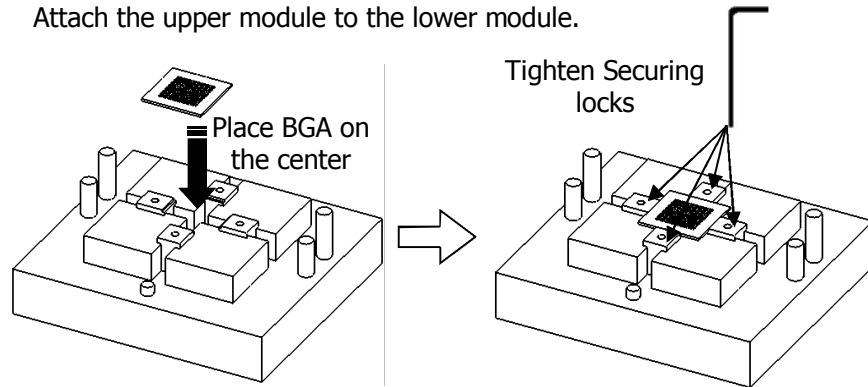
1. BGA must first be secured to the lower module.
2. Detach Upper module from the lower module by pulling forward the two disengagement knob. Then lift up the Upper module.



## BGA RE-BALLING WITH SOLDER BALLS

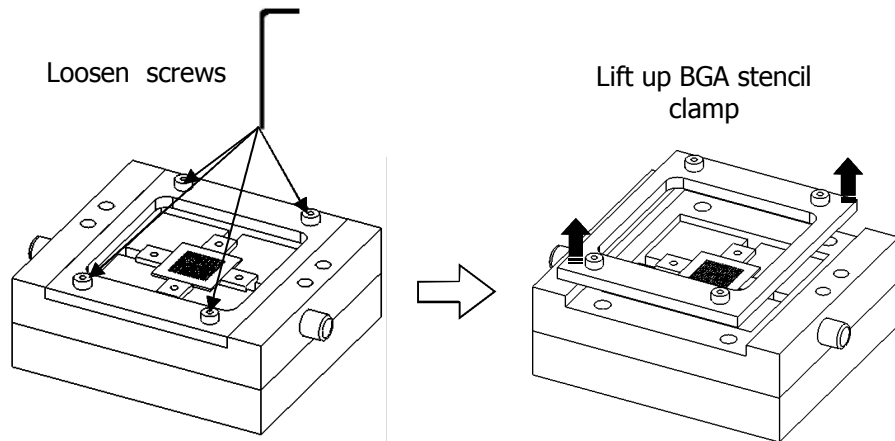
### **BGA Placement:**

1. BGA may now be placed on the lower module.
2. Adjust the BGA holder so that the BGA is at the center of the Lower module.
3. Lock the BGA holder and securing screws tightly.
4. A thin film of tacky flux may now be applied to the BGA. It is important that the flux be of sticky characteristic so the solder balls would stick to the BGA.
5. Attach the upper module to the lower module.



### **Upper module BGA stencil clamp detachment:**

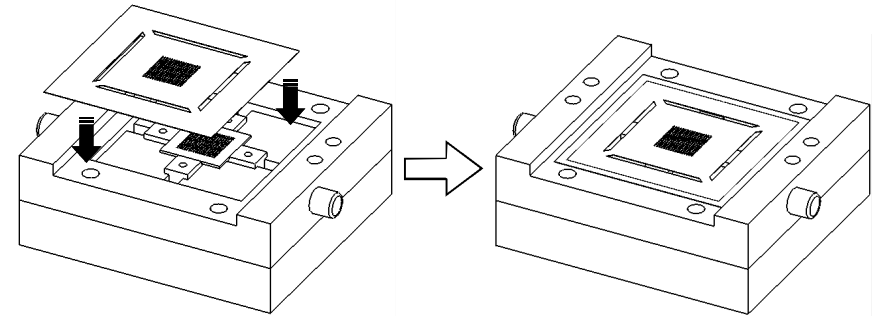
1. To place the BGA stencil, we must first detach the stencil clamp.
2. Loosen the four screws that attaches the clamp to the upper module.
3. Pull up the clamp.



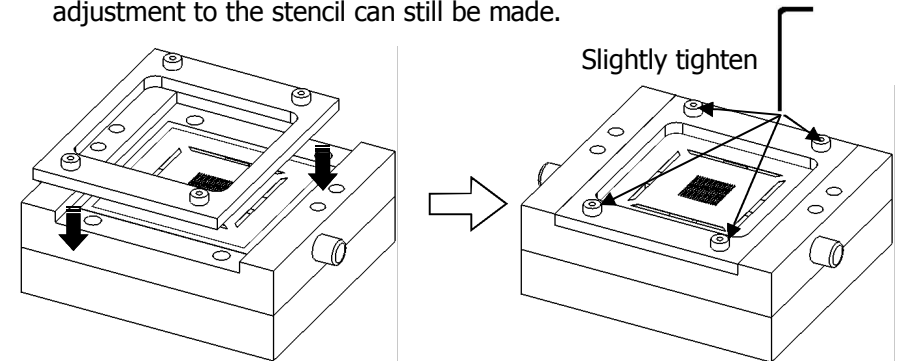
## BGA RE-BALLING WITH SOLDER BALLS

### **BGA Stencil Placement and Adjustment:**

1. Place the BGA stencil such that the holes match that of the BGA.



2. Secure the BGA stencil by placing the clamp on top of it.
3. Slightly tighten the screws but allow enough space such that slight adjustment to the stencil can still be made.



4. Slowly adjust the stencil such that its position is an exact match to the BGA below.
5. Lock the clamp screws tightly.

