

Reballing Kit User Guide

APR
ADVANCED PACKAGE REWORK

Description

The APR Reballing Kit is used to place replacement solder balls onto BGA components. It uses a vacuum pump and fixture to affix a BGA component while solder balls are sprinkled and brushed into place using a customized reball screen (sold separately). The reballled component can then be transferred to the APR Scorpion Rework System where its solder balls can then be reflowed securely onto the package.

The Reballing Kit is available as the following item numbers:

Item	Description
670001	Reballing Kit, 120VAC, with North American Power Cord
670002	Reballing Kit, 220VAC, with European Power Cord

Packaging

- 1 Vacuum Fixture
- 1 Vacuum Pump
- 1 Vacuum Tube
- 1 Transport Plate
- 2 Brushes



Figure 1. Vacuum fixture



Figure 2. Transport plate

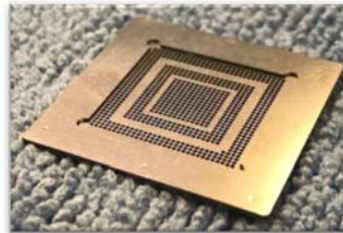


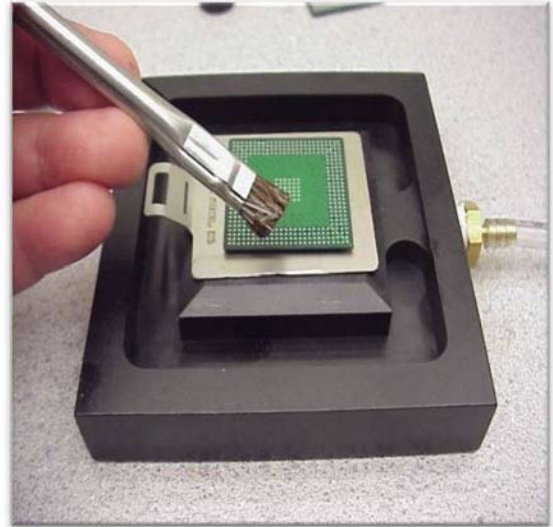
Figure 3. Custom reball screen
(sold separately)



Figure 4. Vacuum pump connected to vacuum fixture

Operation

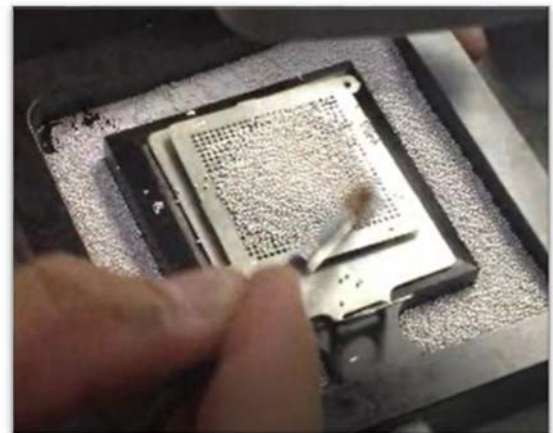
1. After you have removed the component from the PCB remove all residual solder from the component. After you have cleaned to component you will need to paint a thin layer of tacky flux to the component. This will aid in the solder ball attachment.



2. Take the reball screen (sold separately) and place it onto the component. Ensure to align the reball screen's apertures with the component's pads. The tacky flux will aid in holding of the screen during the attachment process. Turn ON the vacuum pump.



3. After you have aligned the screen, take a jar of balls and slowly pour them until you have formed a small hill. Then use the fine hairbrush move the balls around the screen until all the holes are filled. Now, you will brush all the excess balls into the collection tray. Use plenty of solder balls. By tilting the fixture, the last few balls can be rolled off the stencil into fixture capture area.



4. After you have brushed all the excess solder balls into the collection dish, you will want to carefully remove the component turn vacuum pump off and move it to you reflow source using the transfer plate.

For small components, multiple can be reflowed simultaneously under a large nozzle with no issues.

A thermocouple can be attached to the reballing plate to make profiling easy.

The solder balls only need to be reflowed for a very short time to attach to the BGA, there is no need to reflow the component above melting temperatures for significant time. In BGA rework where solder is in liquidous for 60-120 seconds, reballing components 10-20 seconds above liquidous is enough time to melt all the solder balls when using a metal plate on the underside, which acts as a mini hot plate from the bottom.

5. After you have completed the reflow, you will want to add some alcohol to the reball screen. This will aid in the release of the reball screen from the component. It is easier to remove reball screen when it is still warm after reflow.

Hold the reball screen on edges and push down in middle with finger light pressure in the middle it will help the separation.

After removing the reball screen from BGA, it is best to have it cleaned in a small ultrasonic cleaner. An alternative would be shallow tray filled to the height of the component and filled with isopropyl alcohol. Allow the component to soak for a few minutes to clean the flux then blow dry with airline or air duster into lint free wipe to save any alcohol splashes.

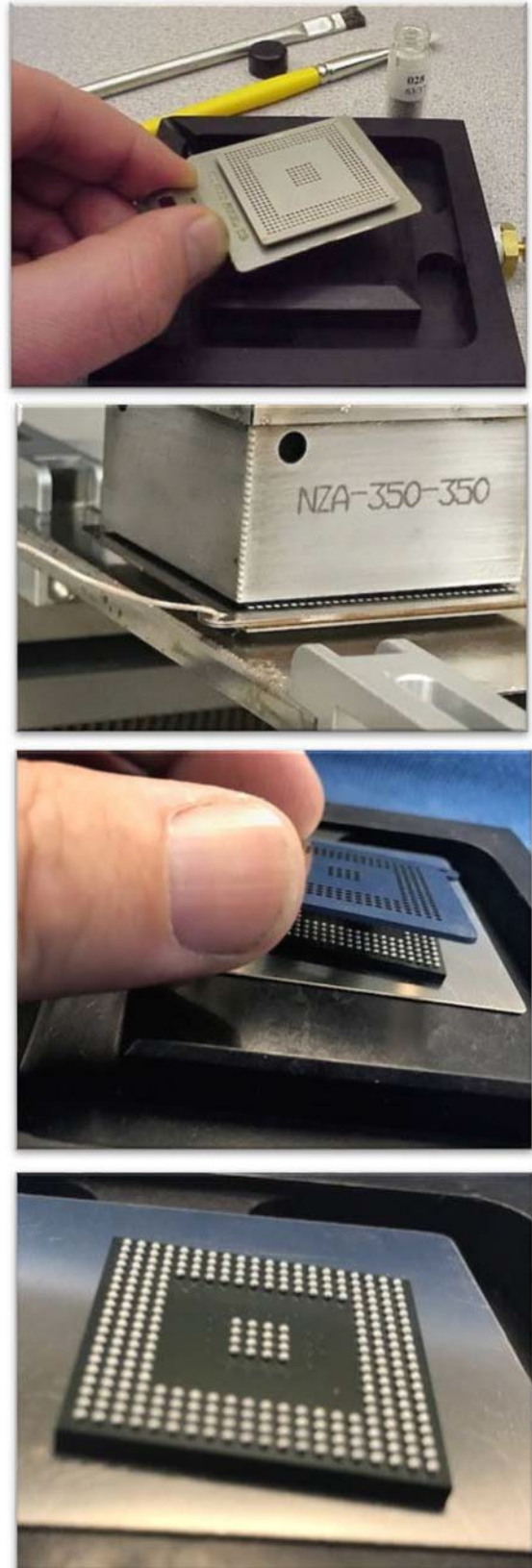


Figure 5. Example of Reballed Part after cleaning

Reball Screens

A reball screen is required for every BGA package to be reballled. Reball screens are customized to match the pitch, pattern, and solder ball size of the BGA component. They must be purchased separately. Contact APR [Customer Service](#) for pricing.



Limited Warranty

APR-Rework.com/Limited-Warranty.aspx