



JV-RKS
JV-RKG
JV-RKP
JV-RKX
JV-RKC

Cost effective and Fast Process Re-balling Solutions

Introduction

Cost effective, fast process and accurate results are the benefits provided from JOVY™ Re-balling Kits series as a solution for the different types of IC packages Re-balling.

Re-balling, is renewing the damaged solder ball joints in the IC packages for reworking purposes, rather than using solder paste & stencils methodology – which is depended on precious material for the stencil and on stencil thickness - JOVY™ Re-balling solution mainly depends on eutectic sphere solder balls and stencils for the most accurate results concerning the methodology of Re-balling. Meanwhile the method of solder paste and stencil mask methodology used in the mobile phone and part of the PS3 Re-balling solutions.

Customizations; for customers' satisfaction JOVY™ offers the service of producing a custom made stencil masks which it could be required from the customers in any balls matrix, patterns or stencil thickness. Only customer should provide complete data about the IC package details or simply by submitting the IC package data sheet (which include all details in addition to the package thermal profile).

Product descriptions:

Material

Re-balling kit base (JIG): Aluminum, black paint finish.

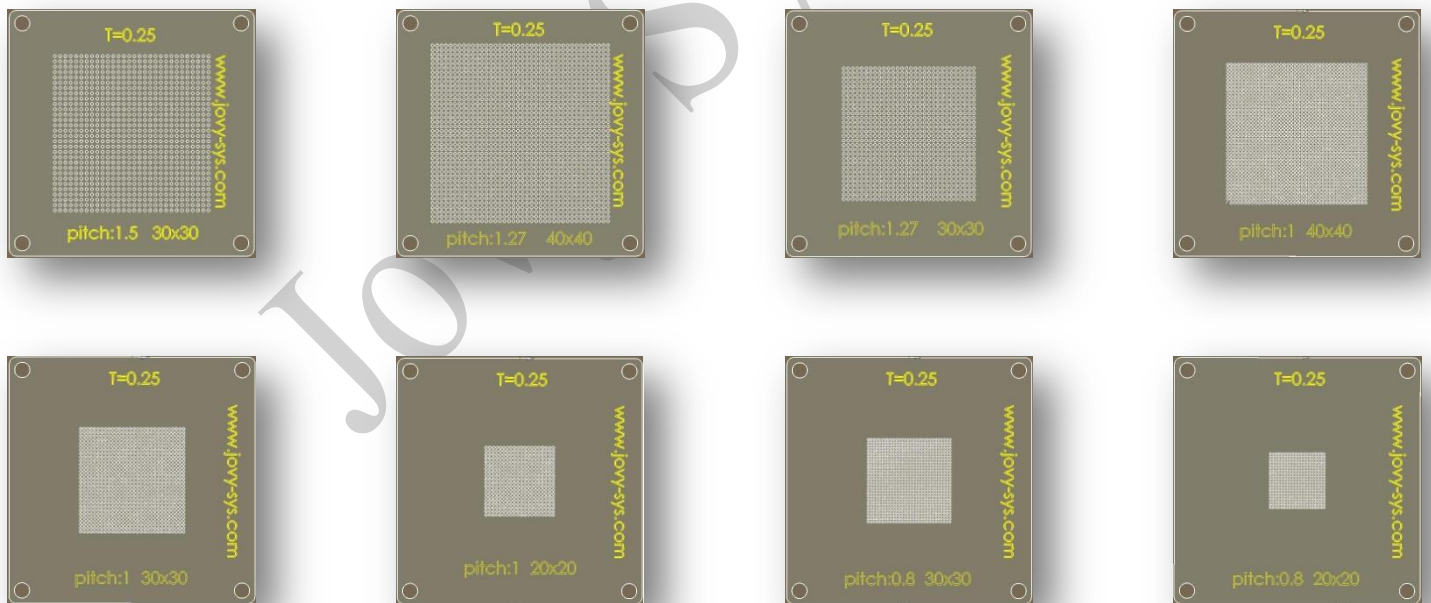
Stencils: Stainless Steel.

Product types

There is different types of re-balling kits launched by Jovy Systems to cover wide range of repair sectors, this includes:

- Mobile sector.
- Game console sector (X-box & PS3).
- Laptop and PC repair sector.

JV-RKS: Standard Re-balling Kit includes 12 stencils as shown in figure (1) and table (1), which are covering most of the IC packages type, pitch sizes, ball matrix and patterns.



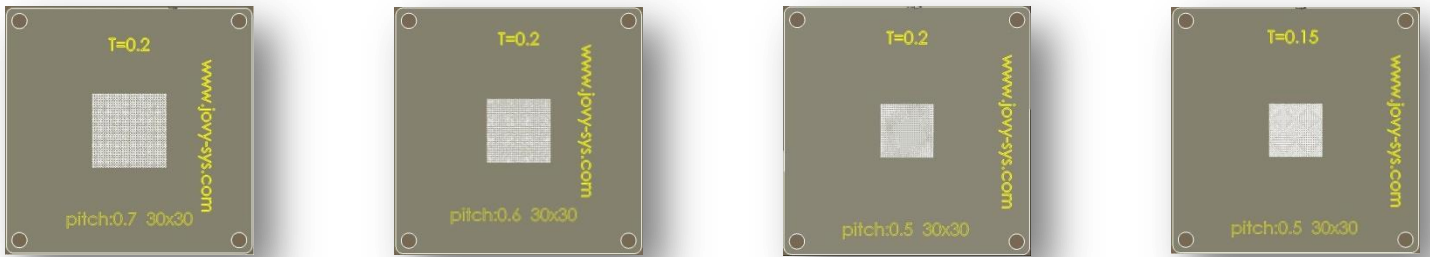


Figure (1)

Ball size	Thickness	Pitch size	Number of holes	Ball pattern
0.76 mm	0.25mm	1.50mm	900	30x30
0.76 mm	0.25mm	1.27mm	900	30x30
0.76 mm	0.25 mm	1.27mm	1600	40x40
0.65 mm	0.25 mm	1.00mm	1600	40x40
0.65 mm	0.25 mm	1.00mm	900	30x30
0.65 mm	0.25 mm	1.00mm	400	20x20
0.45 mm	0.25 mm	0.80mm	900	30x30
0.45 mm	0.25 mm	0.80mm	400	20x20
0.40 mm	0.20 mm	0.70mm	900	30x30
0.30 mm	0.20 mm	0.60 mm	900	30x30
0.30 mm	0.20 mm	0.50 mm	900	30x30
0.25 mm	0.15 mm	0.50 mm	900	30x30

Table (1)

JV-RKP: Play station 3 Re-balling kit as a first to the world JOVY™ offer stencils (figure 2) to Re-ball the RSX (Reality Synthesizer), CELL/B.E. (Cell Broadband Engine) and EE+GS PS2 (emotion engine & Graphic synthesizer) these to be used with the Sphere balls' method (more details about the specs in table 2).

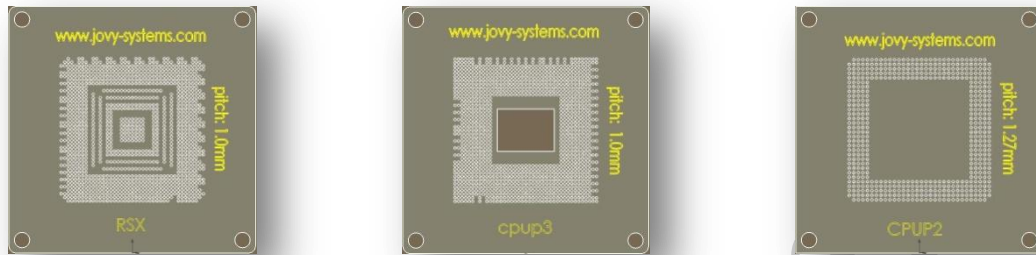


Figure (2)

PS3 Mask name	Ball Size	Mask Thickness	Pitch Size
RSX	0.60 mm	0.20 mm	1.00 mm
CPUP2	0.65 mm	0.25 mm	1.27 mm
CPUP3	0.60 mm	0.20 mm	1.00 mm

Table (2)

Other four masks are designed to use solder paste during the process (figure 3), these includes; CXD9208 GP, Si9132CBU, CXP713120 and the flash 06280W019.

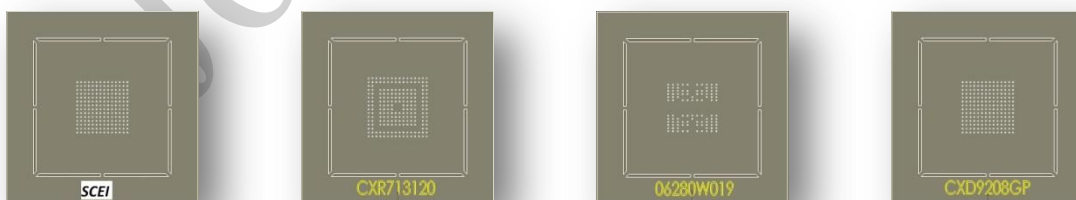


Figure (3)

JV-RKX: X-BOX 360 Re-balling Kit JOVY™ was one of the first Launchers of the GPU, CPU, South bridge and flash IC packages , more details shown in figure (4) and table (3).

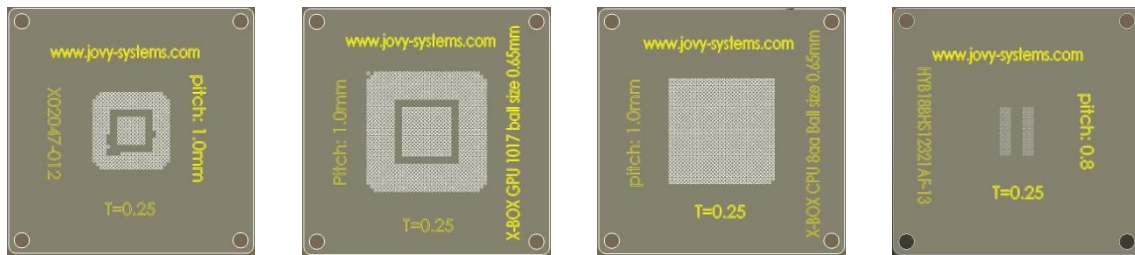


Figure (4)

XBOX Mask name	Ball Size	Mask Thickness	Pitch Size
X02047-012	0.60 mm	0.25 mm	1.00 mm
GPU	0.60 mm	0.25 mm	1.00 mm
CPU	0.60 mm	0.25 mm	1.00 mm
HYB18HS12321AF-13	0.45 mm	0.25 mm	0.80 mm

Table (3)

JV-RKC: Mobile phone Re-balling stencils designed to use with solder paste method, and it is including 54 stencils for most of the known cell/Mobile phones IC's an optional JOVY™ offer to custom made any required stencil in economic price if needed from the customer.

Fixture

The Re-balling kit consists of 3 main parts:

- Part A: Base.
- Part B: Stencil Fastener module.
- Part C: Stencil.

The kits can be used in two different methods:

- Using the sphere solder balls (JV-RKS, JV-RKG, JV-RKX and JV-RKP).
- Using the solder paste (JV-RKC, JV-RKG and JV-RKP).

Installation:

1- Re-balling JIG installation:

It contains three main parts:-

- Part (A), the top cover which contains the extra ball pockets at the bottom and 4 screws to fasten the mask, in addition to slide channel to collect the extra balls for re-use (figure 5).
- Part (B), it aligns the package level with the stencil level, and it is used to be fastened to part (A).
- Part (C), it is called "The Base", includes the vertical adjusting screw and the four stoppers which are holding the package IC. Stoppers are used to fine tune the package IC pads together with the stencil holes.

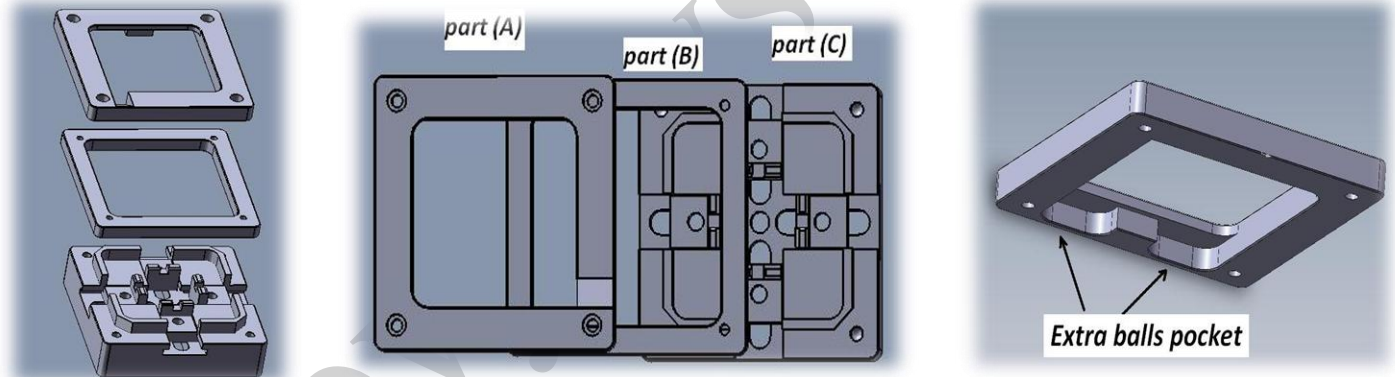
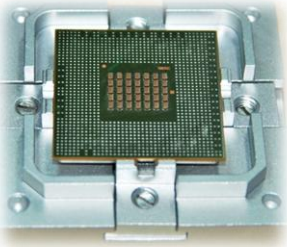

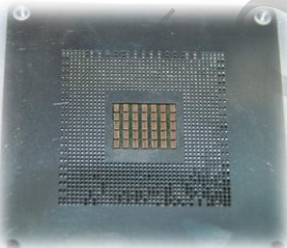
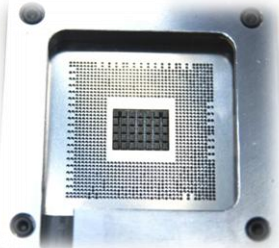


Figure (5)

2- Re-balling JIG IC Package installation:

Easy steps to install the package and do refine aligning for the package's pad with the stencil, then drop the suitable balls amount just left before baking the new eutectic balls and have accurate new joints' balls. The easy steps shown in Table below:

	<p>1- Position the IC on the middle of the jig using the four stoppers, adjust the IC height using the vertical screw and do not tighten the stoppers (Holders) screw.</p>
	<p>2- Install Part (B), make sure its level is the same as the IC package to guarantee that the balls will drop correctly over each IC pad.</p>
	<p>3- Install the stencil temporary to align accurately the following :</p> <ul style="list-style-type: none">- Stencil holes matching the IC package pads.- Stencil screw holes matching part B holes.- Remove the stencil.- Tighten the stoppers to keep the IC unmoved after final alignment.- Put the stencil again after the stoppers tightened.
	<p>4- Install Part (A), fasten the four screws, and make final check for the stencil position.</p>

Application :

Re-balling Kit Type	General Repair	PC Mother Boards	Laptop Mother Boards	Game console	Microsoft X-Box 360	Sony Play Station 3
RKS	X	X	X	X		
RKP						X
RKX					X	
RKG				X	X	X

Jovy Systems