

“Lead tinning system for removing gold from the leads of QFPs or replacing RoHs finish with tin/lead for HiRel requirements”



Made in America:

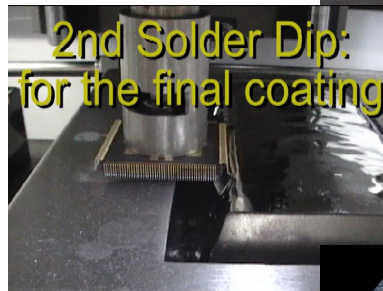
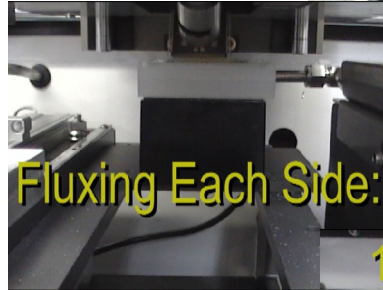
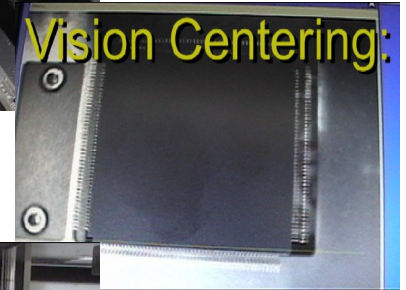
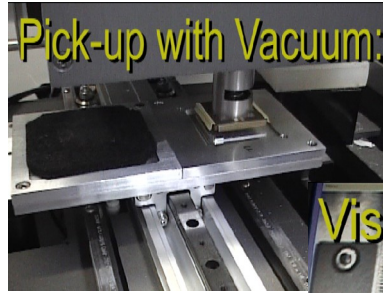
DESCRIPTION:

The **LTS-QFP** is an automated machine for processing QFPs and FP components through the Hi-Rel lead tinning process. The system includes:

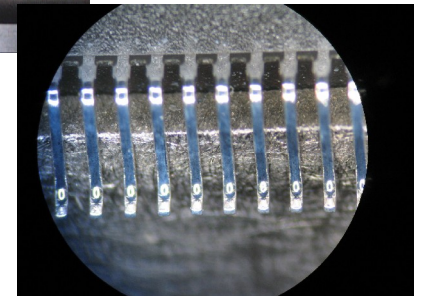
- Vacuum pick-up head with Set of 5 vacuum tips 3mm-25mm dia.
- 2 Lead alloy, “side wave” solder pots with N2 inerting
- “Side Wave” flux pot
- Vision inspection station
- Load/unload slide and location 5 nests
- PC and LCD monitor
- 24-7 start up clock
- Setup and training included

PROCESS OVERVIEW:

Using a vacuum pen (provided) the operator places a QFP onto the location nest of the load slide, then starts the cycle. The slide moves the QFP under the vacuum tip head where it is acquired. The QFP is transported to a vision inspection station where it is determined to be in position. The QFP is transported to the fluxing station where flux is applied to all sides. The next operation is to remove the original plating. This is accomplished in the left side solder pot where the leads are immersed in the unique cascading solder wave. The action of the solder wave “scrubs” off the original plating. The QFP is returned to the flux station where the leads are once again fluxed then to the second solder pot for the final homogenous intermetallic coating.



Solder dip leads to .3mm pitch



SOLDER POT:

The standard solder pots for Sn/Pb are constructed of 316 S.S. wetted surfaces. The solder pots for lead-free alloys are Titanium. The heaters are sized to bring the solder safely to temperature within an hour. Re-circulation of solder is accomplished via a programmable motor coupled to a precision impeller assembly that delivers the precise and consistent volume of solder to the wave nozzle. The solder distribution system is designed to virtually eliminate dross build up while providing an extremely consistent and repeatable wave shape.

A nitrogen blanket captured within the enclosed solder pot inerts the molten solder surfaces. The heated nitrogen surrounds the nozzle and the solder process surface functionally minimizing icicles and solder bridges while providing an inerted return of the solder from the nozzle back into the pot.

The solder temperature is interlocked within $\pm 2^{\circ}\text{C}$ of set point. The capacity of the solder pot ensures sufficient solder mass for tinning even the largest components.

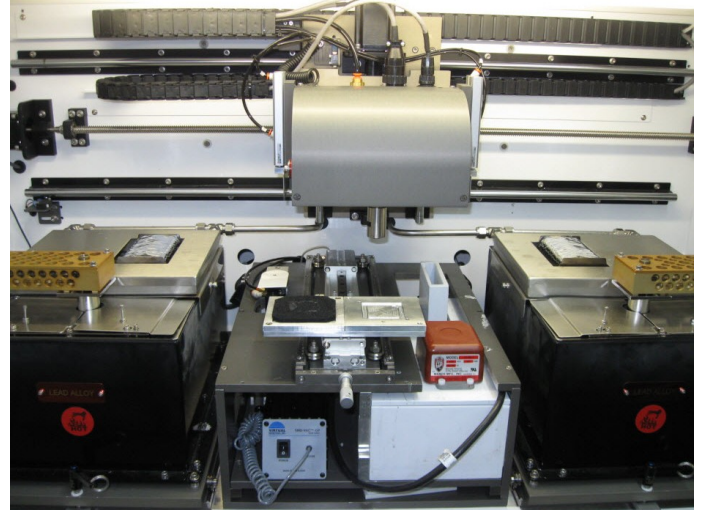
SET-UP and OPERATION:

To set the machine for a given component simply enter the JEDEC dimensions for the body and leads. That is all there is to it. You can set the cycle for single and double dip as well as fine tune the individual immersion depths. It is easy to generate specific articulation such as "agitate" while immersed in the molten solder to assist in removing the initial coating or a dwell as the leads just touch the final solder surface to effectively pre-heat to leads. You can fine tune the positions, speeds, solder wave height and other parameters to perfect the process. Save the program for that specific component for future use. Load the component and start the cycle.

OPTIONS:

- Lead-free (all Titanium) solder pots (used to convert Pb to RoHs)
- Additional flux pots
- Off-line programming
- "Special" vacuum tips for odd sized QFPs
- Nitrogen generator

The KISS LTS-QFP front view



SPECIFICATIONS:

QFP Process Capability

- Minimum body dimension 6mm x 6mm
- Maximum body dimension 75mm x 75mm
- Maximum toe to toe dimension 85mm

Motion

- Z-Axis Accuracy/Repeatability $\pm .002''$
Speed 0-5 inches/sec
Travel Distance = 3.0"
- X Axis Accuracy/Repeatability $\pm .002''$
Speed 0-10 inches/sec.
- Rotation Accuracy/Repeatability \pm MOA

Solder Pot

- Temperature Controller PID proportioning (0-350°C) $\pm 2^{\circ}\text{C}$
- Solder Capacity 90 lbs for each pot.
- Pump Variable speed, programmable

Controls

KISS-ware/Windows XP O.S.

Physical

- Dimensions 42" wide x 32" deep
- Weight 430 lbs.

Facilities

- Power 220 VAC/1 Ph 60 Hz 20 amps
- Air 80 - 90 PSI
- Nitrogen 100 CFH @ 99.99+ purity
- Ventilation 350-500 CFM (2ea.6" dia. Take-offs)

Call for a free video of the LTS-QFP machine to witness this unique lead tinning process: