



SmartHeat® PowerTips™ Create Easy Transition to Lead-Free Soldering

OK International announces a series of enhancements that optimize existing Metcal MX-500 and SP200 systems for a simple, cost-effective transition to lead-free soldering.

With the introduction of ROHS legislation in July this year, soldering will undergo considerable changes. Not surprisingly, electronics manufacturers the world over are reviewing their processes and identifying the equipment, materials and procedures that will be compatible with the higher temperatures and narrower processing windows that are associated with lead-free production.

As a leading manufacturer of Production Assembly Equipment worldwide, OK International has supplied countless soldering systems to its clients over the years; systems that are known for their reliability, robustness and longevity; systems that are perfect for lead-free manufacture even though they have been in use in the industry for years.

With this in mind, and with the clear intention to protect its customers from added investments where none are needed, OK International has developed a series of cost-effective enhancements for its Metcal MX-500 and SP200 soldering systems that optimize them for lead-free manufacture.

The first of these is a range of new SmartHeat® PowerTips™ for the Metcal MX-500 system.



Specifically designed for lead-free applications, these tips provide the highest thermal performance possible, allowing the user to solder even the most demanding joint without heat damage. OK International's European Product Manager Craig Brown explains: "If you simply turn up the temperature, you risk burning off the flux and ending up with an insufficient joint. Instead, we have developed a series of tips that are extremely efficient in transferring more energy to the joint".

The company found that different solder tip geometries allow different amounts of energy to flow to the solder joint. Calculated mathematically using its length, width and shape, each solder tip's "Conductivity Factor" indicates how efficient it is in conducting this energy – the higher the number, the more efficient the tip.

"By using this Conductivity Factor we have designed our tips for improved thermal performance, enabling us to keep our source temperatures constant while meeting the needs of lead-free soldering. This is a first for our industry", adds Craig Brown.

Based on its 10 most popular tip geometries, OK International has introduced a range of 7 SmartHeat® PowerTips™ for use with existing Metcal MX-500 systems. It plans to add new geometries as lead-free manufacture takes hold.

For the Metcal SP200 soldering system, the company has taken a different approach: here the cartridges have been upgraded with a new high-power coil assembly that delivers additional power to lead-free solder joints; again, with no need for increased source temperatures.



Both systems use OK International's powerful SmartHeat® technology to ensure that the solder joint being reflowed receives exactly the energy required. This eliminates the risk of heat damage and allows the solder tip to work at lower temperatures for a longer useful life.

Working life can be extended still further thanks to OK International's Auto Sleep Stand. In conjunction with SmartHeat® technology, this interrupts the energy flow to the solder tip the instant the hand-piece enters the cradle, reducing tip temperature to a minimum idling level as it rests in the stand. This reduces the oxidization that can be a problem with higher temperature lead-free solders and fluxes, and this can be further reduced with the help of the stand's special brass wire wool cleaning compartment. In addition, tip temperature returns to optimum working levels within a second of the hand-piece being removed from the stand, so no working time is lost.

A further issue in moving to lead-free manufacture is contamination between lead-containing and lead-free solders. As Craig Brown explains: "The two principal problem areas are the stand and the tips: the stand contains waste solder that has dripped from the tip and the hand piece can be used with any tip, so it is important to know which stand and which hand piece are being used with which solder". OK International has introduced two simple but effective accessories that clearly identify lead-free equipment: first, a green cradle that can be inserted into the Auto Sleep Stand; and second, green lead-free identification rings that can be slipped onto soldering tips and cartridges. These accessories can be used with any of OK International's soldering systems.



OK International's series of SmartHeat® PowerTips™, enhanced SP200 tip cartridges, Auto Sleep Stand and the green lead-free identification cradle and rings all offer clear evidence of OK International's deep understanding of its customers' needs and its dedication to ensuring that they get the most out of their investments in the electronics manufacturing workbench. All equipment and accessories are available through OK International and its global distribution network.