ABSTRACT

A series of compact handheld tube sealers for sealing Polyvinyl Chloride (PVC) and Thermoplastic Elastomer (TPE) tubing via radio frequency (RF) and thermal means respectively. An internal clamping mechanism is used in this series to perform sealing of tubes, with hardened metal used in the jaw design to minimize wear and tear from repeated usage. The jaw design has a scoring feature to produce a scoring mark on the tubes after sealing for easy separation of the sealed tubes as well. The internal clamping mechanism enables convenient changing of moving jaws due to usage over time and to accommodate for different tube diameters. A portable RF tube sealer with a RF hand gun and a portable RF control unit allows sealing of tubes with dielectric properties on the go due to its compact size and inbuilt battery. A compact thermal tube sealer with a compact thermal handgun and thermal control unit minimizes space taken up on the workspace, as well as enables easier shifting of the sealer when needed. Further fine-tuning of the thermal handgun's width may be performed via an adjustment dial. The portable RF tube sealer can come with the option of being carried in a form of pouch to free users' hands to seal the tubes more effectively. The portable RF tube sealer may also be used in conjunction with a linkable charging dock to provide the option of using the portable RF tube sealer in a desktop configuration. A linkable tower RF tube sealer maybe be used alternatively for a desktop configuration. The portable RF tube sealer with a linkable charging dock and linkable tower RF tube sealer are modular set-ups where multiple units can be linked together to perform multiple sealing on a tube simultaneously. A hand activated mechanism in them is triggered simultaneously as a tube is inserted to activate the internal clamping mechanism in the devices to perform the seals.

Figure of Publication

Figure 1