

Abstract

E11-P11a

In order to produce separate measured portions (1") of liquid solder, solid solder (1) in the form of wire or rod is guided through the longitudinal bore of a guide tube (20). A zone including the end (22) of the tube (20) is heated above the solder's melting temperature, in order to liquefy the solder. By contrast, an adjacent zone of the guide tube is cooled, whereby a positionally stable temperature transition is maintained in the tube (20). Thereby the amount of molten solder available above a narrowed outlet (62) is controlled. A drive mechanism (3) advances the solder (1) step by step so that the solid solder acts as a piston to eject portions of liquid solder through the aforesaid outlet (62). A suitable apparatus (5) for applying portions of solder to a substrate (4) can be raised and lowered (a). At its base it has a moulding die (6) connected to the outlet (62) that can be set down upon the substrate and has a moulding cavity open on its underside. This determines and restricts the surface wetted by the liquid solder (1') on the substrate (4). The main application is the bonding of semiconductor chips (8) by soft-soldering.

(Figure 1)

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