

## **Quotation:**

# **In-Line** **Vapour Phase Soldering Machine LV 600** **for High Volume Production**

**VP machine LV 600 incl. standard equipment** (Art. No. 90696)

Without liquid agent filling

### **1. Description**

The machine was designed for fully automatic in line operation. Two independent stations for loading and unloading of the carrier guarantee a maximum on throughput. The time limit is given mainly from the soldering process itself. The loading and unloading is done while another carrier is on its way through the soldering procedure. For that purpose the boards coming from the pick-and-place machine will automatically be loaded to the conveyor of the LV600.

By help of the so called multi-line-loading (multiple lines of boards are loaded on one carrier) an optimized number of boards can be loaded on a carrier. The carriers can enter the machine at a rate of as small as 120 sec. Depending on the board size it means that boards can be loaded and soldered in time rates below 20 seconds per board.

As possible working modes there are all the settings known from the IBL batch type machines. In that way it is possible to react flexible to the behaviour of different solder pastes. Because of the integrated IR-preheat zone the machine can be set up to be used also for glue hardening of the boards.

The loading and unloading of the boards is done completely outside the soldering chambers. Thus an error free handling is achieved and the loading modules are easy to reach and simply to adjust if necessary.

As standard set-up the carriers are equipped for loading three lines. A carrier can be loaded in one single line if a big board is to be soldered but can also be used for loading boards in four lines.

The machine is controlled by a PLC, its handling is done by means of a flat panel touch screen display. A PC is installed for saving the process data or the storage of program and manufacturing data. Also the machine status is shown on display and programm editing can be accomplished very comfortable.

## 2. Standard Equipment / Specification

- 2.1 Automatic loading and unloading of the carriers.
- 2.2 Integrated loading conveyor.
- 2.3 Selective possibility of loading of batch carriers.
- 2.4 Three internal chambers with automatic air locks.
- 2.5 SMEMA-Interface.
- 2.6 IR heater unit for extended preheating from above.
- 2.7 SVP for soft temperature rise. ( **Patented**).
- 2.8 Observation window to process chamber.
- 2.9 Integrated lighting of the soldering area.
- 2.10 Automatic liquid agent filtering.
- 2.11 Double control for monitoring the cooling water temperature.
- 2.12 Temperature control of heater surface with thermocouple.
- 2.13 Integrated cooling chamber for board cooling.
- 2.14 Fluid level check.
- 2.15 Automatical WPC-Temperature compensation.
- 2.16 Program storage.
- 2.17 Program set-up for glue hardening.
- 2.18 Signal lights post (red-green).
- 2.19 Integrated heat exchangers for minimizing and fluid recovery system.
- 2.20 Variable energy level set-up.
- 2.21 Maintenance free high-grade steel transportation system. ( **Patented**).
- 2.22 **Patented** process procedure.
- 2.23 Integrated PC with TFT-Panel and Software „LV-control“.
- 2.24 Solderautomatic.

## 3. Options

- 90106 Display indicator for the height of the vapour level
- 90142 Automatic adjustment of line width and middle support rails on the carriers
- 90111 ReSy device licence, for repair of QFP's and BGA's, ( **Patented** )
- 90112 Special adhesive for ReSy
- 90092 Additional batch type carrier for manually loading
- 90093 Additional multi line carrier for 3 lines with middle support
- 90490 Unloading conveyor with SMEMA-Interface
- 90501 Siemens-Interface
- 90141 Module for remote data maintenance
- 90867 S7-DP/DP-coupling unit for connection of 2 PROFIBUS-DP-networks  
Customized line integration will be charged after real expense
- 90132 Cooling device KM70 for closed loop machine cooling (no external water supply  
needed, indoor application, outdoor application on request)

Every option can also be installed afterwards.

#### 4. Technical data

<b>Machine type:</b>	<b>LV 600</b>
Length (over all)	4700 mm
Width	1200 mm(1800mm Loading Unit)
Height	1400 mm
Weight	1200 kg
Loading/unloading level, approx.	940 mm
Max. board size (hand loading)	650 x 640 x 80 mm
Max. board size (in line loading)	650 x 620 x 50 mm
Liquid agent filling	25 kg
Water connection	1/2"
Max. heating capacity of Vapour Phase heater	10,4 kW
Heating capacity of IR pre heater	8 kW
Ø power consumption/h	4 - 5,0 kWh
Power supply	400/230 VAC, 16 kW
Main fuse	32A, Typ "gL" or "C"

**Technical changes reserved.**