

Specification GS 235

6622CC DeltaWave Soldering Machine



3.1 GENERAL INFORMATION

3.1.1 AREA OF APPLICATION

The 6622CC is an in-line automatic wave soldering machine, designed to solder printed circuit boards with through-hole and/or SMT components. PCB's are transported by a finger conveyor system over the fluxing station, the three preheat zones and the solderpot at one uniform velocity. The finger conveyor offers the flexibility of transporting PCB's without support or inside pallets or adapted metal carriers. Right-to-left machine configuration is possible, and is covered by GS 244.

The DeltaWave is designed to meet the European CE directives.

3.1.2 BOARD DIMENSIONS.

(other data in accordance with GS 500)	DIMENSIONS IN MM		DIMENSIONS IN INCH	
	MIN	MAX	MIN	MAX
PCB length	150	500	5.90	16.68
PCB width standard	50 ❶	410	1.97 ❶	16.14
PCB width optional 1	50 ❶	260	1.97 ❶	10.24
PCB width optional 2	50 ❶	460 ❷	1.97 ❶	18.11 ❷
Component height	-	150	-	5.90
Max. lead length without NitroWave	-	8	-	0.31
Max. lead length with NitroWave	-	6	-	0.24
Max. board thickness for V-fingers	-	2	-	0.08
Max. board thickness for L-fingers	-	10	-	0.39

❶ = For machines with PCB wire support slidable in width: 60 mm / 2.36 inch min. board width.

❷ = For machines with PCB wire support (handwheel or automatic) 455 mm / 17.91 inch max board width.

For machines with automatic width adjustment 455 mm / 17.91 inch max. board width.

3.2 MODULES

3.2.1 FLUXING UNIT

The machine can be equipped with different fluxers. One of the standard fluxer types can be chosen from the range below. All fluxer types are quickly interchangeable by releasing 4 screws.

3.2.1.1 SPECIFICATION FOAM FLUXER



DESCRIPTION	
Main description	316 Stainless steel foam fluxer with foam aerator and drainplug
Accurate spraying start/stop	Using Delta PCB tracking system
Adjustable foamfluxer nozzle	- Maximum foam height is depending on the foaming properties of the flux used - Front and back plates adjustable
Max. foam height	10mm (0.4 inch) (depending on flux type)
Air consumption foam fluxer	Adjustable with scale, max. is 17 liter/min (0.60 CFM)
Activation Airknife	By tracking system
Air consumption air knife	Adjustable, max. is 160 liter/min (5.65 CFM) activation airknife via tracking system
Stone material	VYON FF
Stone porosity	35 micron (10 and 20 micron available on request)
Optional	Foam stones 10 and 20 micron
Compressed air control unit	Standard
Flux and thinner container	316 Stainless steel
Capacity of flux container	20 L (5.3 US gallon)
Inside bin area	300x250x400 mm (11.8x9.8x15.8 inch)
Capacity of thinner container	10 L (2.65 US gallon)
Inside bin area	250x250x300 mm (9.8x9.8x11.8 inch)
Flux and thinner storage	space for user supplied containers
Fluxer level control	maintained by Recirculation pump and overflow
Alarms	Low level flux and thinner alarm
Cover for foam tower	
Optional	Density control system See 3.2.1.3 on page 3-7
Optional	Width 260 mm (10.24 inches)

CONTROLS	
Foam fluxer	On/Off
Fluxer airknife	On/Off
Pneumatic panel for precise pressure regulation and control	

For more information about parameters settings, see [3.2.1.3 "Flux density controller option"](#), on page 3–7.

3.2.1.2 SPECIFICATION NOZZLE SPRAY FLUXER



DESCRIPTION																																										
Main description	316 Stainless steel																																									
Accurate spraying start/stop	Using Delta PCB tracking system																																									
Layer of flux on the printed circuit board	Reproducible																																									
Spray head	Oscillating																																									
Spraying area	Programmable																																									
On and off times for earlier or later starting and stopping of spraying	Programmable																																									
Nozzle head movement	Auto detect																																									
Spraying system	Single or dual head																																									
Flux supply system	Single or dual																																									
Alarms	<ul style="list-style-type: none"> No fluxer configured No air pressure No zero position nozzle Cylinder not moving Low level flux tank 1 or 2 No flow detection nozzle 1 or 2 No exhaust 																																									
Spraying	Programmable uni- or bi-directional																																									
Auto nozzle cleaning	with airshot of 6 bar at parking position to prevent nozzle clogging																																									
Flow control	Sensor detects liquid flow																																									
Type of flux	All low solid fluxes (<3% solids) compatible with nozzle fluxing Also higher solid fluxes in most cases, but is depending on flux chemistries Vitronics Soltec nozzle can only be used with fluxes having a viscosity smaller than 200 cP																																									
Flux amount spray fluxer gear pump system	<table border="1"> <thead> <tr> <th>Nozzle</th> <th>Pump freq. in Hz</th> <th>Amount l/hr</th> <th>Amount ft³/hr</th> </tr> </thead> <tbody> <tr> <td>FC 3*</td> <td>50 Hz</td> <td>4.5 l/hr</td> <td>0.16 ft³/hr</td> </tr> <tr> <td>FC 3*</td> <td>70 Hz</td> <td>7.5 l/hr</td> <td>0.26 ft³/hr</td> </tr> <tr> <td>FC 3*</td> <td>90 Hz</td> <td>10.5 l/hr</td> <td>0.37 ft³/hr</td> </tr> <tr> <td>FC 7</td> <td>30 Hz</td> <td>1.5 l/hr</td> <td>0.05 ft³/hr</td> </tr> <tr> <td>FC 7</td> <td>70 Hz</td> <td>3.0 l/hr</td> <td>0.11 ft³/hr</td> </tr> <tr> <td>FC 7</td> <td>110 Hz</td> <td>4.5 l/hr</td> <td>0.16 ft³/hr</td> </tr> <tr> <td>FC 16*</td> <td>30 Hz</td> <td>0.9 l/hr</td> <td>0.03 ft³/hr</td> </tr> <tr> <td>FC 16*</td> <td>70 Hz</td> <td>2.1 l/hr</td> <td>0.07 ft³/hr</td> </tr> <tr> <td>* Option</td> <td>FC 16*</td> <td>110 Hz</td> <td>2.7 l/hr</td> <td>0.10 ft³/hr</td> </tr> </tbody> </table>	Nozzle	Pump freq. in Hz	Amount l/hr	Amount ft ³ /hr	FC 3*	50 Hz	4.5 l/hr	0.16 ft ³ /hr	FC 3*	70 Hz	7.5 l/hr	0.26 ft ³ /hr	FC 3*	90 Hz	10.5 l/hr	0.37 ft ³ /hr	FC 7	30 Hz	1.5 l/hr	0.05 ft ³ /hr	FC 7	70 Hz	3.0 l/hr	0.11 ft ³ /hr	FC 7	110 Hz	4.5 l/hr	0.16 ft ³ /hr	FC 16*	30 Hz	0.9 l/hr	0.03 ft ³ /hr	FC 16*	70 Hz	2.1 l/hr	0.07 ft ³ /hr	* Option	FC 16*	110 Hz	2.7 l/hr	0.10 ft ³ /hr
Nozzle	Pump freq. in Hz	Amount l/hr	Amount ft ³ /hr																																							
FC 3*	50 Hz	4.5 l/hr	0.16 ft ³ /hr																																							
FC 3*	70 Hz	7.5 l/hr	0.26 ft ³ /hr																																							
FC 3*	90 Hz	10.5 l/hr	0.37 ft ³ /hr																																							
FC 7	30 Hz	1.5 l/hr	0.05 ft ³ /hr																																							
FC 7	70 Hz	3.0 l/hr	0.11 ft ³ /hr																																							
FC 7	110 Hz	4.5 l/hr	0.16 ft ³ /hr																																							
FC 16*	30 Hz	0.9 l/hr	0.03 ft ³ /hr																																							
FC 16*	70 Hz	2.1 l/hr	0.07 ft ³ /hr																																							
* Option	FC 16*	110 Hz	2.7 l/hr	0.10 ft ³ /hr																																						

Flux amount spray fluxer pressure system	Nozzle	Pressure in bar	Amount l/hr	Amount ft ³ /hr
	FC 3*	0.05 bar	4.2 l/hr	0.15 ft ³ /hr
	FC 3*	0.1 bar	8.1 l/hr	0.29 ft ³ /hr
	FC 3*	0.2 bar	12.9 l/hr	0.46 ft ³ /hr
	FC 7	0.05 bar	1.2 l/hr	0.04 ft ³ /hr
	FC 7	0.25 bar	5.1 l/hr	0.18 ft ³ /hr
	FC 7	0.5 bar	7.5 l/hr	0.26 ft ³ /hr
	FC 16*	0.05 bar	0.6 l/hr	0.02 ft ³ /hr
	FC 16*	0.25 bar	2.9 l/hr	0.10 ft ³ /hr
* Option	FC 16*	0.5 bar	4.4 l/hr	0.16 ft ³ /hr
Spray pressure	0 - 2.5 bar			
Air/nitrogen consumption	Approx. 500 liter/min. (~17.66 CFH) for the spray nozzle Approx. 1.000 liter/min. (~36.31 CFH) for the cylinder			
Flux consumption	Depending on production speed and machine settings 0 - 1 l/hr (0 - 2.9 gal/hr)			
Nozzle speed	Uni- or bi-directional (selectable in software), max. average 1.0 m/sec (3.28 ft/sec)			
Flux layer thickness	Max. approx. 750 mg/dm ² (48.38 mg/sqin)			
Air pressure on the nozzle	6 bar (84 PSI) on needle valve; approx. 300 mbar (4.2 PSI) for spraying			
Air consumption	Adjustable and depending on machine load, air is switched on and off automatically by the tracking system, average consumption is 500 l/min. (17.66 CFM)			
Reduced nozzle clogging	Standard small air flow through the nozzle to avoid clogging by flux, also a 6 bar air shot through the nozzle cleans after each application			
One direction spraying	The nozzle head oscillates over the full length of the cylinder. The nozzle sprays only on the on-going stroke over the pre-set spray width of the board. On the return stroke, the nozzle is closed and travels with a maximum speed			
Two direction spraying	The nozzle head oscillates between the limits of the pre-set spray area of the board. The nozzle head sprays continuously while the board is going over the nozzle head			
Enhanced Flux Penetration	In order to improve flux penetration a low nozzle travel speed is recommended. To improve the flux penetration the standard distance of 80 mm (3.15") between the nozzle and the circuit board for a Single Nozzle system is reduced to 55 mm (2.16")			
Optional	Dual head single supply			
Optional	Dual head dual supply			
Optional	Diagnostic software: <ul style="list-style-type: none"> • nozzle needle test • spray air test • air shot test • cylinder test; detection of movement and sensor test 			
Optional	Pressurized supply system			

CONTROLS	
Nozzle Fluxer	On/Off
Pneumatic panel for precise pressure regulation and control	

For more information about parameters settings, see [3.2.5 "Controls"](#), on page 3–15

3.2.1.3 FLUX DENSITY CONTROLLER OPTION



DESCRIPTION	
Main description	Auto control of density and Programmable temperature compensation
Flux level control	Automatic
Pumps	Recirculation pump and thinner supply pump
Density range	700 - 1100 gr/liter 0.750 to 0.999 with setpoint increments of 0.001
Accuracy	± 0.001 gr/cm ³ Standard inside the specific gravity measuring instrument
Temperature compensation	$\pm 1^{\circ}$ C ($\pm 1.8^{\circ}$ F)

CONTROLS	
Density Control	On/Off

For more information about parameters settings, see [3.2.5 "Controls"](#), on page 3–15

3.2.1.4 FLUX SUPPLY SYSTEM



DESCRIPTION	
Flux supply	Flux container of 20 liter (5.3 US gal.) is standard, but also the container of the flux supplier can be used, when its neck has an inside diameter of min. 30 mm and max. 60 mm (1.18 - 2.36 inch)
Thinner supply	A flux container of 10 liter (2.65 US gal.) is standard included in this option for the thinner, but also the container of the flux supplier can be used, when its neck has a diameter of min. 30 mm and max. 60 mm (1.18 - 2.36 inch)

Pumps	Selfpriming
Alarms	<ul style="list-style-type: none"> • Min flux level alarm for standard and suppliers drums • Min thinner level alarm for standard and suppliers drum
Optional	Second flux supply in case of interchangeable fluxing systems

CONTROLS	
Supply	On/Off
Pneumatic panel for precise pressure regulation and control	

For more information about parameters settings, see [3.2.5 "Controls", on page 3–15](#)

3.2.2 PREHEAT: THREE ZONES



The preheating zone is divided in 3 sections. Each section can be equipped with one of the three types of preheating.

The different preheating modules are quickly interchangeable with auto recognition of which pre-heater type is at which position.

The preheating zone is over the full length equipped with hinged stainless steel cover to optimize the heating efficiency of the system. These covers have an exhaust and a window for inspection of the process.

3.2.2.1 CALROD PREHEATER



DESCRIPTION	
Main Description	<ul style="list-style-type: none"> Stainless steel box with 11 Self cleaning IR long wave heating elements) Elements automatically switch on/off depending on the width Elements 1 - 4 always on Quick interchangeable with other type of preheater
Maintenance	Easy replaceable Aluminium foil under the elements
Temperature control	PID closed loop temperature control with sensor on 2nd PCB heating element
Maximum temperature	Zone 1: 500° C (932° F) / Zone 2+3: 525° C (977° F)
Power / element	850 W
Heating length	0.6 m (2 ft)
Optional	Calrod preheating in zone 2 and/or 3

3.2.2.2 LAMPS PREHEATER



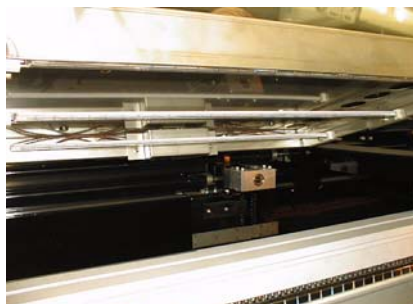
DESCRIPTION	
Main Description	<ul style="list-style-type: none"> Stainless steel box with 11 IR fast responding medium wave heating elements) Elements automatically switch on/off depending on the width Elements 1 - 4 always on Quick interchangeable with other type of preheater
Maintenance	Glass cover to protect elements against damage and contamination
Temperature control	% control of element power
Maximum temperature	Zone 1: max. 60% of max. output
Power / element	820 W
Heating length	0.6 m (2 ft)
Optional	Lamps preheating in zone 2 and/or 3

3.2.2.3 FORCED CONVECTION



DESCRIPTION	
Main Description	<ul style="list-style-type: none"> • Recirculated air flow to minimize energy consumption • Equal ΔT between components • High convective airflow • Quick interchangeable with other type of preheater • Zone 1 big pipes to avoid spreading of VOC free flux under components or between pallet and PCB • Zone 2 small pipes for better heat transfer
Flux	Ideal for predrying water-based fluxes
Temperature control	Air temperature PID controlled
Max. temperature (zone 1)	180° C (356° F)
Max. temperature (zone 2,3)	230° C (446° F)
Power	9 kW
Recirculated gas per module	400 m ³ /hr (235 CFM)
Heating length	0.6 m (2 ft)
Optional	Forced Convection in zone 2 and/or 3

3.2.2.4 TOPSIDE PREHEATER

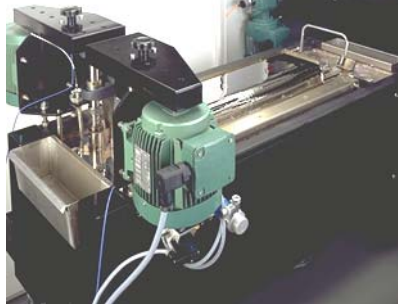


DESCRIPTION	
Main Description	Stainless steel box with 3 IR fast responding medium wave heating elements)
Temperature control	% control of element power
Maximum temperature	max. 60% of max. output
Power / element	820 W
Heating length	0.6 m (2 ft)
Optional	Topside heating in zone 2 and/or 3

Controls For more information about parameters settings, see [3.2.5 "Controls"](#), on page 3–15

3.2.3 SOLDERPOT

3.2.3.1 SOLDERPOT



DESCRIPTION	
Iron solderpot	Heating elements at the outer side of the solderpot.
Total heating elements	12
Power / element	1100 W
Coating on solderpot	High temperature protective coating at the topside of solderpot. Titanium bolts used in solderpot.
Solder drain valve	
Pump impellers	Chromium finished pump impellers to reduce wear in lead free application
Pump shaft sealing	The shafts are not in contact with air at the solder level (no turbulence at pump area), to avoid lead powder production. No blanketing oil is required
Low dross sump	Due to reduction of solder drop height, dross production is minimized to approx. 4 kg/shift at normal wave settings. Dross flows automatically to the separate dross compartment at the front side of the machine
Closed loop temperature control	
Heat-up time of solderpot	Approx. 4 hours to reach 250° C (482° F) for eutectic 63/37 solder, by 12 heating elements (1.1 kW each) attached outside the solderpot
High temperature shut down temperature protection	at 310° C to 330° C (590° F to 626° F)
Overnight temperature	Solderpot with adjustable overnight temperature
Overheat alarm	
Opening and closing of optional Chip nozzle for easy maintenance	
Back plate	Easy adjustable on one position from the operator side. Also the side plates are adjustable
Possibility to use different wave types	Single, Smart, Double or Combi Wave
Wave width standard	410 mm (16.14 inch)
Optional	wave widths * 460 mm (18.11 inch)
Chip wave	Chip nozzle opening is 2 mm (0.079 inch) adjustable, and with a fixed angle of 20 degrees

Optional	chip angles ** 15 and 30 degrees
Chip nozzle	Can be opened for cleaning
Space between chip and main wave	Only 80 mm (3.15 inch) to reduce thermal shock on SMT devices
Max. height of main wave	Approx. 10 mm (0.39 inch), in case of Nitrowave 8 mm (0.31 inch)
Max. height of chip wave	10 mm (advised max. process value, more is technically possible)
Solderpot height	Motorized adjustable and with automatic switch-off at required operating height
Solderpot capacity SnPb37	Approx. 800 kg (1764 lbs.)
Solderpot capacity lead free soldertypes	Approx. 704 kg (1552 lbs.)
Solderpot rollout unit	Electrical roll out of solderpot
Solderpot lowering unit	Solderpot motorized lowered for easy maintenance
Low level control	Standard
Optional	Wave height measurement
Optional	Automatic solder addition two bars with the following max. dimensions: length: 550 mm (19.68 inch) width: 45 mm (1.77 inch) thick: 35 mm (1.38 inch) Hole diameter must be minimal 20 mm (0.79 inch)

Controls

For more information about parameters settings, see [3.2.5 "Controls", on page 3–15](#)

3.2.3.2 NITRO WAVE

DESCRIPTION	
Main Description	Reduces oxides on waves,
Waves	Suitable for all wave types
Nitrogen consumption	8 - 12 m ² /hr
Proposed O ₂ level of delivered N ₂	5 ppm O ₂ - based on the delivery specifications for nitrogen as liquid gas. More info: See Information Sheet 109
Required N ₂ pressure	3 bar

Controls

For more information about parameters settings, see [3.2.5 "Controls", on page 3–15](#)

3.2.4 TRANSPORT FINGER CONVEYOR

3.2.4.1 CONVEYOR WITH TITANIUM FINGERS



DESCRIPTION	
Speed	Adjustable between 0.5 and 3 m/min (0.66 - 9.84 ft/min) Accuracy 1 rpm/min
Accuracy	Stable distance between conveyor and solderpot
Width adjustment	Between 50 and 460 mm (1.96 and 18.11 inch) by hand wheel, Optionally motorized via PC menu Between 50 and 455 mm (1.96 and 17.91 inch) with motorized width adjustment
Conveyor angle	Adjustable between 4 and 8 degrees. Factory set at 7 degrees. When 3 forced convection heaters are mounted the angle is limited between 6 and 8 degrees
Fingers	Standard Titanium V-shape finger for board thickness between 0.4 (0.016") and 2 mm (0.079 inch), Spring loaded finger to assure constant pressure on the PCB and allow expansion of the PCB during preheating and soldering
Optional	L-shape fingers for thicker boards and Heavy duty Fingers (2mm) For different finger shapes, please contact Vitronics Soltec
Fingercleaning	with low liquid alarm level
Conveyor height (PCB level)	810 mm (31.89 inch) at finger infeed position
Parallelism conveyor tracks	Within 1 mm (0.039 inch)
Return conveyor	Provision for return conveyor 280 x 580 mm (11x22.8 inch)
Optional	Finger Crash Protection which stops the conveyor in case fingers are bended in a wrong direction. Fingers are protected at the entrance and at the exit over a length of 400 mm (15.75 inch)
Optional	Right to Left machine
Optional	Overload protection
Optional	Fingercleaning with low liquid alarm level
Optional	Top and bottom cooling on additional outfeed conveyor
Optional	Front rail adjustable, rear rail fixed
Optional	Finger wetting system to reduce solder adherence
Optional	Provision for return conveyor

Controls For more information about parameters settings, see [3.2.5 "Controls"](#), on page 3–15

3.2.4.2 PCB WIRE SUPPORT



DESCRIPTION	
Main Description	<ul style="list-style-type: none"> Stainless steel wire to support PCB PCB supported over the preheater and the solderpot
Required space on the PCB	A free zone in the transport direction of minimum 3 mm (0.12 inch) is required
Max PCB -load	Max 5 kg for a 500 mm (19.68 inch) long PCB
Version 1	Adjustable in width by handwheel with park position in case of non-use of the wire
Version 2	Adjustable in width by sliding and extra support between the waves
Optional	Handwheel adjustable versions can be motorized. Automatic width adjustment via the PC screen is possible
Optional	Heavy duty wire support

3.2.5 CONTROLS

3.2.5.1 GENERAL

Lamp on the machine with colour indication about the good functioning of the machine.

Via the PC screen the operator can access the following parameters

Main settings

- Machine ON/OFF
- Interior lights ON/OFF
- Solderfeeder ON/OFF
- Timer ON/OFF
- Finger cleaner ON/OFF
- Chip cleaner ON/OFF (Optional)
- Automenu ON/OFF (Optional)
- Blocking infeed ON/OFF (Optional)
- Foam knife ON/OFF (Optional)
- Cooling unit ON/OFF (Optional)
- Nitrogen option ON/OFF (Optional)
- Finger wetting ON/OFF (Optional)
- Dross grabber ON/OFF (Optional)

Access control to the parameters

- 10 different levels with users passwords gives access to different functions and setup of these functions

Parameter settings

- Editing and monitoring of the different parameters
- 1000 different sets of soldering parameters can be stored

Parameters

- Settings of deviation alarms
- Set Point Boundaries
- Calibration (Optional)
- Stand-by values
- PID settings
- Tracking
- Status
- Motor control parameters
- In and outfeed conveyor speed (Optional)
- UPS (Optional)
- Week Timer
- Finger Cleaning /Finger wetting (Optional)
- Bar code reader (Optional)

- Pin code reader (Optional)
- Communications port settings
- Debug program I/O status Racks PLC
- Error Check and Time of check
- Diagnostics Nozzle fluxer functions (Optional)

Status logging

- SPC (Optional)
- Error logging
- Maintenance information logging
- Trends logging parameters
- Bar code logging (Optional)
- Heating elements check (Optional)

3.2.5.2 FLUXERS

NOZZLE FLUXER

Spraying in the length direction can be customized by the ontime and offtime offset

NAME	DESCRIPTION
The pitch	To adjust uniformity of flux deposition, pitch is the distance between two strokes
The speed	Low nozzle speed increases flux quantity and improves flux penetration in general
The pumpfrequency	Higher pumpfrequency setting increases the flux amount
Supply pressure (pressure system) option	Higher pressure setting increases the flux amount
Nozzle fluid cap type	FC 3, FC4, FC7, FC16 for resp. high to small flux quantity. FC7 cap is standard
One or two direction spraying	Two direction spraying for higher flux quantity
Single or Dual Nozzle head	Use of single head spraying or dual heads for different flux types

Controllable Parameter

PARAMETER	RANGE	FUNCTION
Pumpfrequency	20-130 Hz	Flux amount
Supply pressure (pressure system) option	0-500 mbar	Flux amount
Cylinder speed	20 - 100 cm/s (7.9 - 39 inch/s)	Nozzle speed
Start position	0 - 400 mm (0 - 15.7 inch)	Start position for spraying
End position	60 - 400 mm (2.4 - 15.7 inch)	Stop position for spraying
On time tracking system	-200 - +500 mm (-7.9 - +19.7 inch)	Earlier or delayed start position
Off time tracking system	-200 - +500 mm (-7.9 - +19.7 inch)	Earlier or delayed stop position
Pitch	14 - 99 mm (0.6 - 3.9 inch)	Distance between spray strokes
Work area	0 - 999 mm (0 - 39.3 inch)	Accelerating distance cylinder
Spraying	One direction / two directions	
Spray nozzles	One or two selectable if installed (Selectable only with two pumps)	Wider spray stroke with two nozzles simultaneously

Alarms

- E-stop active
- No air pressure
- No zero position nozzle
- Cylinder not moving
- Low level flux tank 1 or 2
- No flow detection nozzle 1 or 2
- No exhaust
- Leaking hoses or connections nozzle 1 or 2

3.2.5.3 PREHEATER

Controllable Parameter (depending on preheater type)

CALROD PREHEATER

PARAMETER	RANGE	FUNCTION
Temperature range	Zone 1: 150 - 500° C (302 - 932° F) Zone 2+3: 150 - 525° C (302-977° F)	
Temperature deviation	10° C (50° F)	

Alarms

- Deviation alarm
- PT 100 disconnected
- Heating element broken

LAMPS

PARAMETER	RANGE	FUNCTION
Temperature	1-60% of max. input	
On time tracking system	-500 - +500 mm (-19.7 - +19.7 inch)	Earlier or delayed start position
Off time tracking system	-500 - +500 mm (-19.7 - +19.7 inch)	Earlier or delayed stop position

Alarms

- Deviation alarm
- Heating element broken

FORCED CONVECTION

PARAMETER	RANGE	FUNCTION
Temperature range	50 - 250° C (122 - 482° F)	
Temperature deviation	10° C (50° F)	

Alarms

- Deviation alarm
- PT 100 disconnected
- Heating element broken

3.2.5.4 TRANSPORT FINGER CONVEYOR

Controllable Parameter

PARAMETER	RANGE	FUNCTION
Transport speed	50 - 300 cm/min (20 - 118 in/min)	Transport speed
Deviation	5 cm/min (2 in/min)	Accuracy speed

Alarms

- E-Stop active
- Deviation alarm
- No pulses from tracking system
- Crash protection (optional)
- Motor not running

3.2.5.5 SOLDERPOT

Controllable Parameter

PARAMETER	RANGE	FUNCTION
Solder temperature	220 - 350° C (428 - 662° F)	Temperature of solder
Pump release temperature	250° C (482° F)	
Temperature deviation	5° C (41° F)	

Alarms

- E-Stop active
- Overheat temperature
- Deviation alarm
- PT 100 disconnected
- Heating element broken

3.2.5.6 MAIN SOLDER WAVE

Controllable Parameter

PARAMETER	RANGE	FUNCTION
Pump speed	0 - 400 rpm	Wave height
Deviation	5 rpm	Accuracy speed
On time tracking system	-200 - +500 mm (-7.9 - +19.7 inch)	Earlier or delayed start position
Off time tracking system	-200 - +500 mm (-7.9 - +19.7 inch)	Earlier or delayed stop position

Alarms

- Deviation alarm
- Motor not running

3.2.5.7 CHIP SOLDER WAVE

Controllable Parameter

PARAMETER	RANGE	FUNCTION
Pump speed	0 - 400 rpm	Chip wave height
Deviation	5 rpm	Accuracy speed
On time tracking system	-200 - +500 mm (-7.9 - +19.7 inch)	Earlier or delayed start position
Off time tracking system	-200 - +500 mm (-7.9 - +19.7 inch)	Earlier or delayed stop position

Alarms

- Deviation alarm
- Motor not running

3.2.5.8 SMART SOLDER WAVE

Controllable Parameter

PARAMETER	RANGE	FUNCTION
Pump speed	0 - 1500 rpm	Smart wave height
Deviation	5 rpm	Accuracy speed
On time tracking system	-200 - +500 mm (-7.9 - +19.7 inch)	Earlier or delayed start position
Off time tracking system	-200 - +500 mm (-7.9 - +19.7 inch)	Earlier or delayed stop position

Alarms

- Deviation alarm
- Motor not running

3.2.6 SUPPLIES

NAME	DESCRIPTION
Power supply	400 V, 50/60 Hz, 3 Ph, max. 48 kW (min. 34 kW) other voltages optional
PC	A PC is standard delivered with the machine. Pentium Processor or equal performance, color screen, CD-rom, Hard-disk and disk drive included. Delivered with track ball
Operating software	Windows based operating software including automatic maintenance scheduling, solder menu selection, full text alarm handling
PLC	Standard
SHEMA interface	Option, see GS 243
UPS-power back up	Option, see GS 245
Exhaust (Ø 160mm, 6.3")	Exhaust 1: <ul style="list-style-type: none"> with spray fluxer 1000 m³/hr (589 CFM) at 800 Pa, with foam fluxer 250 m³/hr (147 CFM) at 50 Pa, with preheater 600 m³/hr (353 CFM) at 200 Pa, Exhaust 2: <ul style="list-style-type: none"> 600 m³/hr (353 CFM) at 200 Pa, (incl. 2x175 m³/hr (2x103 CFM) on top side covers) Exhaust 3: <ul style="list-style-type: none"> with spray fluxer 1000 m³/hr (589 CFM) at 800 Pa,
Maximum weight on coverpack	20 kg
Ambient temperature	Maximum 25° C - 77° F
Filtering	The Vitronics Soltec exhaust system does not contain filter equipment



3.2.7 POWER CONSUMPTION

NAME	CONSUMPTION
Solderpot from 25° C - 77° F to 250° C - 482° F	34 kW (3,5 hours)
Solderpot stable at 250° C - 482° F	4 kW
Calrod preheater stable at 350° C - 662° F	2 kW
Forced convection stable at 200° C - 392° F	6 kW

3.2.8 SHIPPING & INSTALLATION

3.2.8.1 MACHINE COLOUR

The standard colour of the covers is grey white (RAL 9002) in combination with quartz grey (RAL 7039) for the under frame, which is only partly visible. At ordering, the colour of the machine covers is selectable if specified in a RAL number. The under frame colour cannot be changed.

3.2.8.2 MACHINE HEIGHT

The machine has a standard infeed height of 760-860 mm / 29.92-33.86 inch, measured PCB height at infeed position of fingers.

For increasing the PCB transport height, the Delta can be positioned onto an additional under-frame.

Possibilities are:

- increase 85 mm / 3.35 inch, see drawing 421758
- increase 170 mm / 6.69 inch, see drawing 421758

* All specifications are subject to periodic review and may be changed without notice. Vitronics Soltec assumes no obligation for specification contained herein.

All customer used chemicals must be compatible with materials used by Vitronics Soltec.

