

INTRODUCTION

Thank you for purchasing your Delta X Wave Soldering system.

This document contains information to answer all the frequently asked questions in relation to the installation of a Delta X Wave Soldering system.

Section 1 – Important Installation Requirements

Section 2 – Machine Footprint

Section 3 – Training

If you have any further questions, please don't hesitate to contact the Vitronics Soltec Customer Support Group @ +1-800-737-8110, option 5 or vsustsc@itweae.com

Thank you for your cooperation, may I take the opportunity of wishing you many years of quality production with your new Delta X Wave Soldering system.

Sincerely,

Pat O'Brien
Vice President/General Manager

Delta X

PRE-INSTALLATION INSTRUCTION



Customer Service and Support

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GENERAL INFORMATION

1. DIMENSIONS DELTA MODELS

MODEL	DELTA X
Length in mm/inch	3535 mm/1392 inch
Height in mm/inch	1618 mm/63.7 inch
Width in mm/inch	1437 mm/56.6 inch

2. SHIPPING WEIGHT

MODEL	DELTA X
Shipping Weight	2800 kg / 6200 lb

3. TRANSPORT & STORAGE CONDITIONS

DESCRIPTION	
Temperature	-25° to 55° C (-13° to 131° F)
Relative humidity	30% to 95%

4. OPERATING CONDITIONS

DESCRIPTION	
Temperature	5° to 40° C (41° to 104° F)
Relative humidity	30% - 95%
Atmospheric pressure	950 mbar - 1030 mbar
Noise level	< 63 dB
Altitude	Max 1000 meters (3300 feet)

5. SUPPLY REQUIREMENTS

DESCRIPTION	DELTA X
Power supply	Standard 3x400V +N, 50/60 Hz, max. 63 kVA I largest load 95 A Supply tolerance +10%, -10%
Nitrogen pressure (required). Connection hose 10mm	6 bar (87 PSI) (0.6 MPa)
Nitrogen consumption (Nitrowave)	0 - 10 m³/h / 0 - 5.9 CFM
Air consumption (Spray Fluxer)	to be defined
Nitrogen purity (required)	The lower the better; typical < 99.99% is sufficient for the process

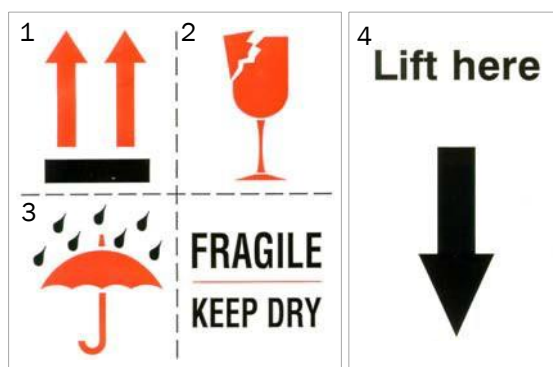
Prepare for Installation

1. GENERAL

Installing only by trained Vitronics Soltec / Agent personnel. At the end of this chapter an installation sheet is located.

2. TRANSPORT

2.1 SYMBOLS USED



1. Position pallet/box for transport
2. Breakable
3. Keep dry
4. Lift here (labels are placed on position where forklift should lift)

2.2 CENTRE OF GRAVITY

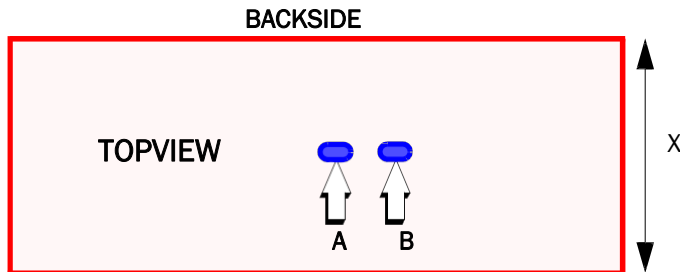


FIGURE 2.2 CENTRE OF GRAVITY ON PALLET

A = Centre with empty solderpot

B = Centre with filled solderpot



Use forklift with minimum distance between forks of 800 - 1000mm. The length of the forks under the pallet must be minimum 2/3 of X.

2.3 UNPACKING

The Vitronics Soltec Delta Soldering machine is packed on a wooden pallet.

When necessary, the machine is packed in crates (e.g. when shipped). If packed in crates the following procedure should followed.

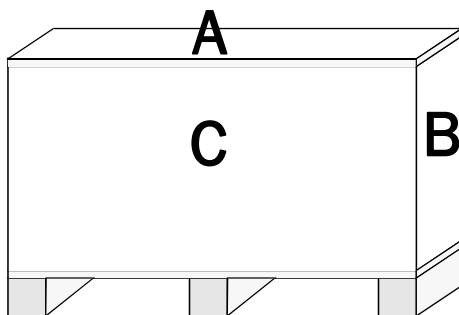


FIGURE 2.3 CRATE



Use the above figure order A,B,C to uncrate. Other order can result in damaging the machine or personal injury.

Uncrating order:

1. Take off top cover A.
2. Remove left and right-side panels B.
3. Remove front and back cover C.

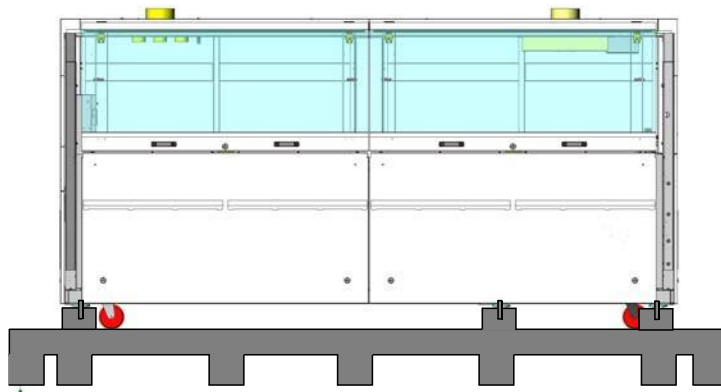


FIGURE 2.4 REMOVING MACHINE FROM PALLET

2.4 LIFTING WITH FORKLIFT

When the transporting straps are removed, the Delta can be placed on the place the customer has planned it.

To lift and transport the Delta use the figure below. The points where the forks from the forklift can be placed are shown(In Figure 3.5).

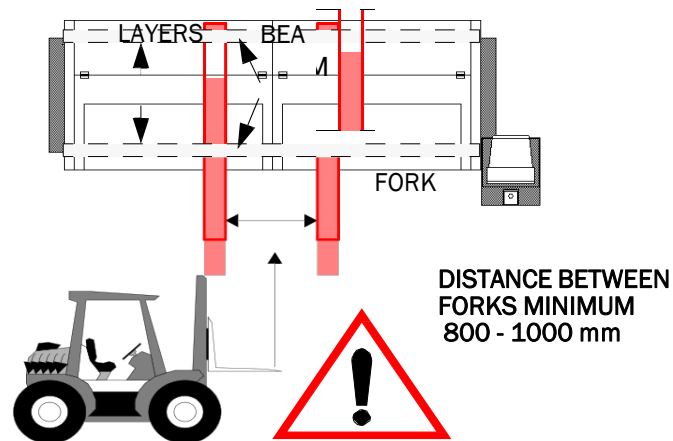


FIGURE 2.5 LIFTING

This machine can only be lifted (at the vertical beam) as shown on the figure above.

2.5 ADJUST LEVELING PADS

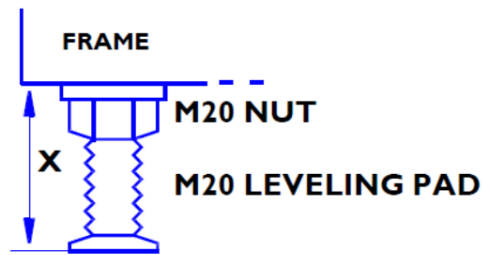


FIGURE 3.6 LEVELING PAD

When the Delta is lifted from the pallet, the following has to be done:

1. Adjust the leveling pad with a maximum of $X=15$ cm. See Figure 3.6.
Be sure that all leveling pads are inserted with the same length.

3. INSTALLATION INFO

3.1 WEIGHT ON FLOOR PER LEVELING PAD

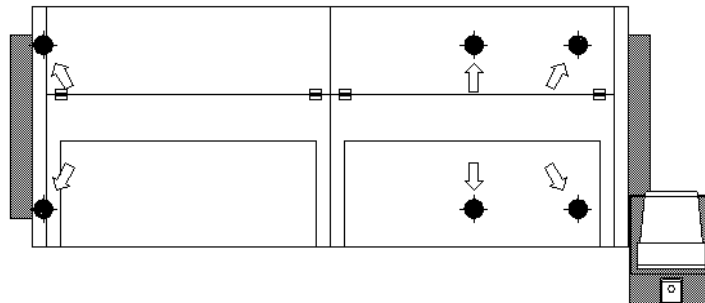


FIGURE 3.1 CARRYING CAPACITY

Weight per leveling pad depending on DX machine:

- Delta X maximum 475 kg

3.2 CLEARANCE REQUIREMENTS FOR OPERATION/MAINTENANCE

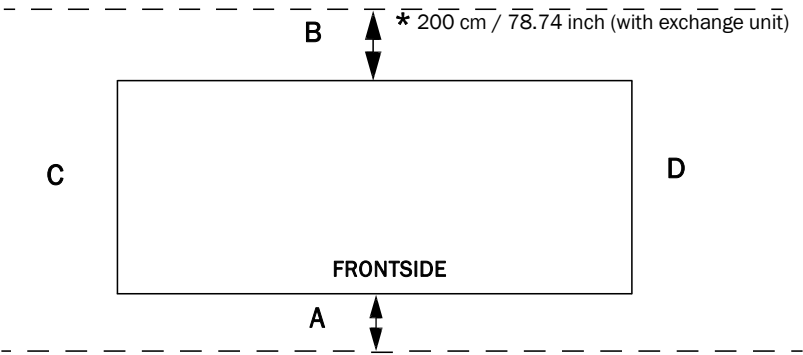


TABLE 3.1 CLEARANCE

POSITION	CLEARANCE FOR OPERATE (CM)	CLEARANCE FOR MAINTENANCE (CM)
A	100	100
B	100	150
C	75	75
D	75	75

3.3 INSTALLATION REQUIREMENT

See [3.8 "Installation sheet", on page 15.](#)

3.4 PUTTING IN POSITION

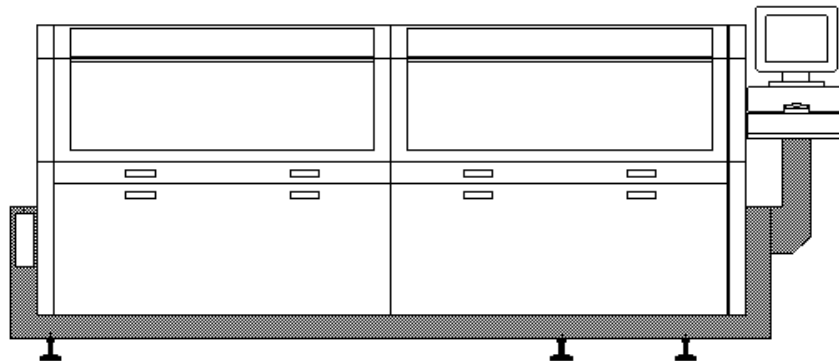


FIGURE 3.4 DELTA

3.5 MECHANICAL ADJUSTMENTS

After carefully positioning the machine with sufficient working position around, follow below steps to set machine into proper conditions.

1. Place the machine on its intended working location.



When the solderpot is filled, be sure that when leveling the machine, the weight on all leveling- pads stays roughly the same. To achieve this, do not turn a leveling pad for more than a 360°.

2. Adjust the leveling pads of the machine until it stands perfectly level in both longitude and latitude direction. A spirit level should be placed on the underframe for checking the longitude direction. For the latitude direction the spirit level should be placed on the solderpot and/or the both conveyor bars.

LEVELING THE MACHINE ONLY WITH THE LEVELING PADS



3. The solderpot and fluxer units are levelled in relation to the underframe prior to the machine leaving the factory. The solderpot is set in the basic work position (wave height 7 mm).

4. Check if the solderpot drain is closed by turning it clockwise.

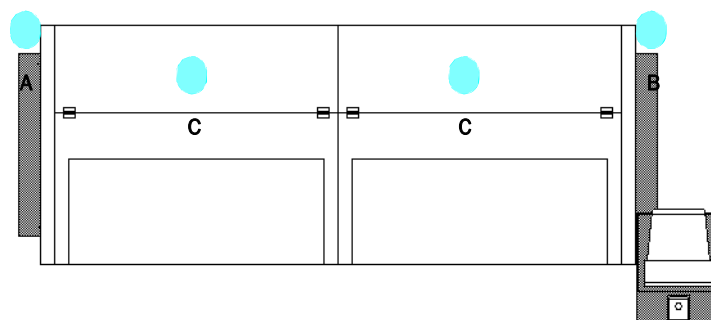


FIGURE 3.5 CONNECTIONS

- A Air & Electrical connection
- B Nitrogen connection
- C Exhaust connection

3.6 ELECTRICAL CONNECTION



Only qualified electricians should work on the electrical circuits of the machine.

1. Feed the mains-cable for the whole machine through the bottom side of the infeed section.
2. Connect the mains leads in accordance with the diagrams.



Check the current rotation of the phases. The current rotation of the phases L1, L2, L3 must be clockwise.

3. Block the main switch with a padlock to prevent dangerous situations.

3.7 AIR CONNECTION

1. Connect the air supply hose to the 10 mm hose spigot at the rear infeed side of the machine.

Make sure that the supplied air is free of oil and moisture.



* = If a flammable liquid is used in the pressurized vessel, its not allowed to use Air for pressurizing the vessel. In this case Nitrogen must be used.

3.8 NITROGEN CONNECTION

1. Connect the nitrogen supply hose to the 10 mm hose spigot at the rear outfeed side of the machine.

3.9 EXHAUST SYSTEM

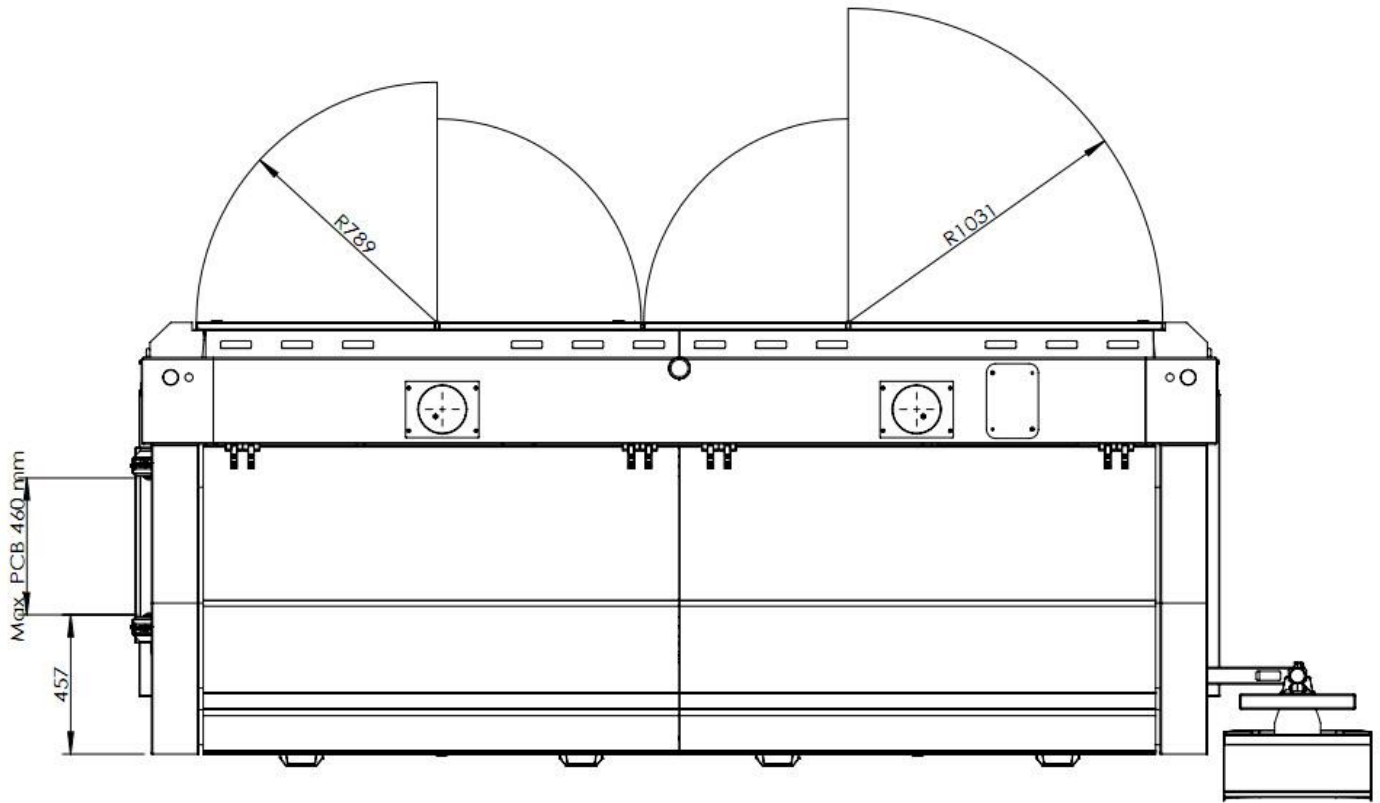
Two exhaust ports of 160 mm (6.3") are provided. One for the flux unit and one for the solder fumes. These should be connected with the customer's exhaust system (not supplied by Vitronics Soltec).

- Inflammable and/or explosive gas might develop in the machine because of the evaporation of the solvent in the flux.
- An exhaust system that functions well, will solve most of this problem.
- It is therefore necessary to have a sufficient exhaust in the machine.
- The exhaust system also has to be checked continuously on its functioning well.

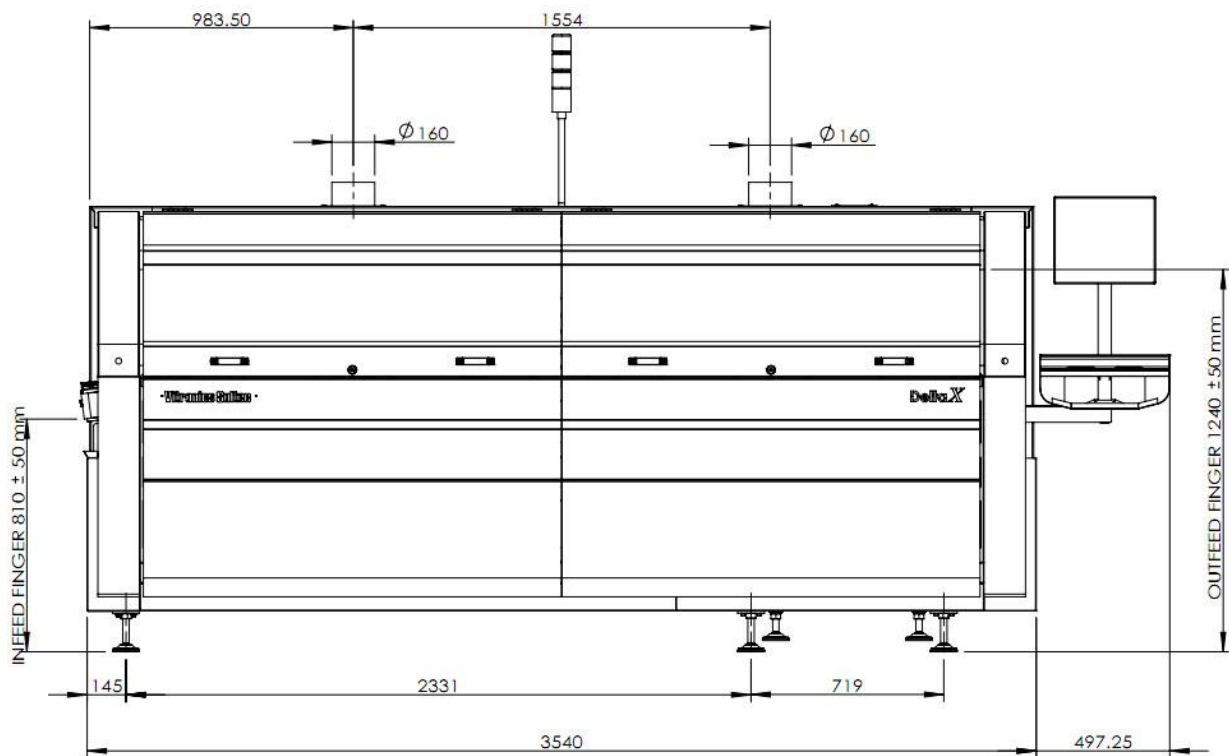
NEVER USE THE MACHINE WITHOUT THE EXHAUST SYSTEM



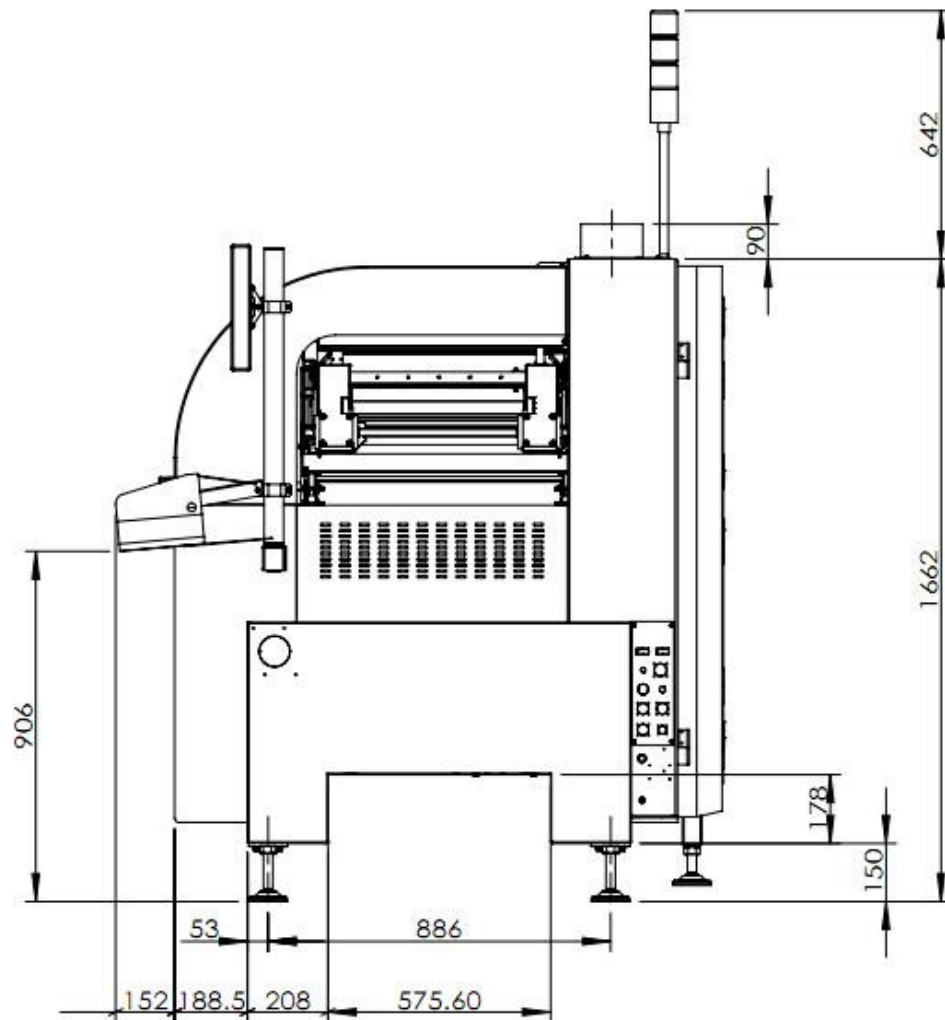
Installation sheet Delta X Top View



Installation sheet Delta X Front View



Installation sheet Delta X Side View



Installation sheet Delta series

DESCRIPTION	UNITS	Delta X
Input Voltage	V	3x400
Frequency	Hz	50/60
Power Maximum	kVA	63
I largest Load	A	95
Weight Machine (based on SAC305 solder)	kg / lb	1900 (4189)
Carrying capacity floor per leveling feet	kg / lb	475 (1147)
Nitrogen Requirements (hose pillar 10 mm)	bar / psi / MPa	6 / 87 / 0.6
Air Requirements (hose pillar 10 mm)	bar / psi / MPa	4 / 58 / 0.4
Nitrogen Consumption (NitroWave)	m ³ /h	0-10
Air Consumption (Spray Fluxer)	m ³ /h	0-6
Exhaust Requirements Exhaust 1 (Ø 160 mm, 6.3 in)	m ³ /h / CFM / at Pa / in H ₂ O	1000 / 589 / 800 / 3.212
Exhaust Requirements Exhaust 2 (Ø 160 mm, 6.3 in)	m ³ /h / CFM / at Pa / in H ₂ O	600 / 353 / 200 / 0.803
Clearance for operate & maintenance FRONTSIDE	cm / inch	100 / 39.37
Clearance for operate & maintenance BACKSIDE	cm / inch	150 / 59.05
Clearance BACKSIDE with exchange unit	cm / inch	200 / 78.74
Clearance for operate & maintenance LEFT/RIGHT SIDE	cm / inch	75 / 29.52
Clearance for operate & maintenance RIGHTSIDE	cm / inch	75 / 29.52

Installation sheet Delta series

FLUX Supply Container Capacity (Single)	Liter/gal	10 / 2.65
FLUX Supply Container Capacity (Double)	Liter/gal	20 / 5.28
Solder pot capacity (for SnPb37)	Kg /lbs	800 / 1764
Solder pot capacity (for Lead Free Solder types)	Kg /lbs	704 / 1552

TRAINING AT INSTALLATION

As part of the Installation process, ITW EAE offers a complimentary “up and running” training program. This covers the basic operation, maintenance and programming of Delta X Wave Soldering system and associated options.

Training Summary

Customer Start-Up Assistance Training

- The FSE (field service engineer) will provide maximum of 4 hours of training for up to four process engineers)
- The FSE will provide a maximum of two hours of training for up to four operators.
- The FSE will provide a maximum of two hours of training for up to four maintenance technicians.
- The FSE will then demonstrate that the system performs to specification using the customer’s production materials

*NOTE: The customer's personnel are expected to devote the entire time to the training program. Hours not devoted by the customer may not be “banked” for later use.

Additional Training

A full range of training courses are available covering operation, maintenance and process. Courses are conducted at our ITW EAE facility in Camdenton, MO.

For further information, including course descriptions and schedule please contact the Training Department or visit <http://www.itweae.com/services-and-support/americas>

NEED CONSUMABLES?

*For current pricing and availability please contact our Parts Department at parts@itweae.com.

*For any questions you may also contact us at 800-737-8110, option 4

Vitronics Soltec

Electronic Assembly Equipment *ITW EAE*