

FLEX-i2 COMPACT INLINE HYBRID SELECTIVE SOLDERING MACHINE



General Explanation

Flex-i2 is the new generation selective with below feature:

Highest Flexibility, Compact inline !!!

XY servo table for solder station, servo axis Z1 for solder pot 1, servo axis Z2 for solder pot 2. Optional with electro-magnetic pump made in Germany.

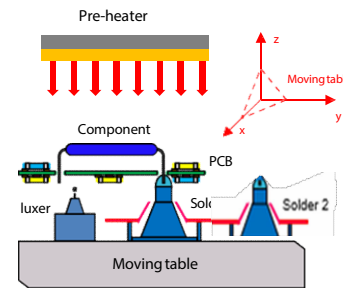
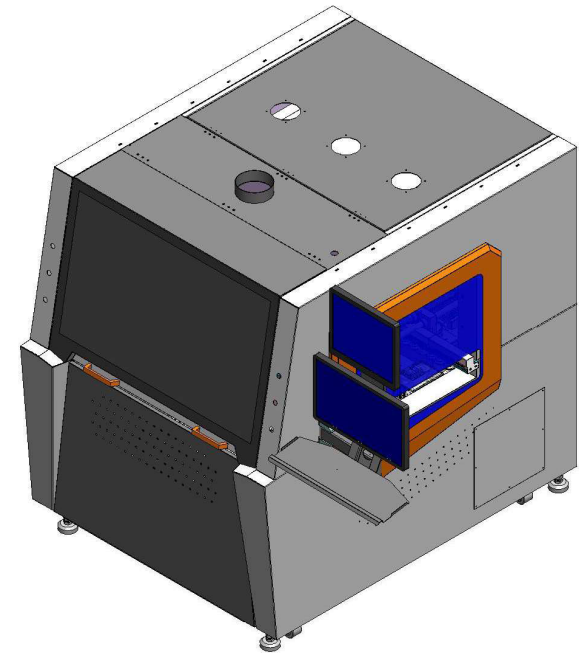
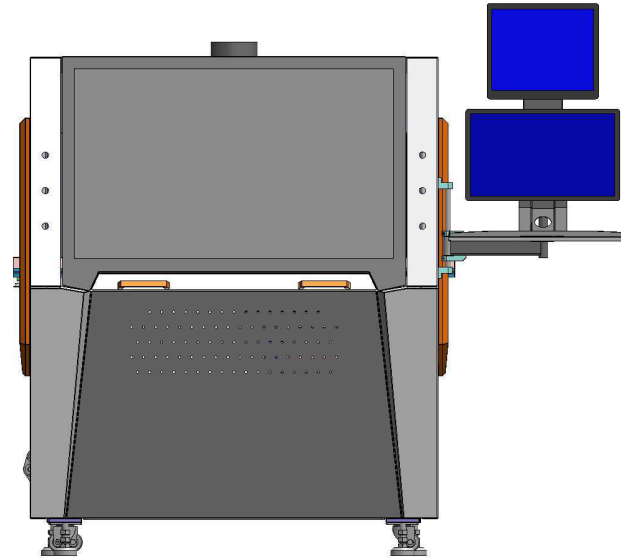
Standard equipped with one drop jet fluxer. It's in same XYZ table with solder pot. Optional for 2nd drop jet fluxer.

Top & bottom IR preheating zone

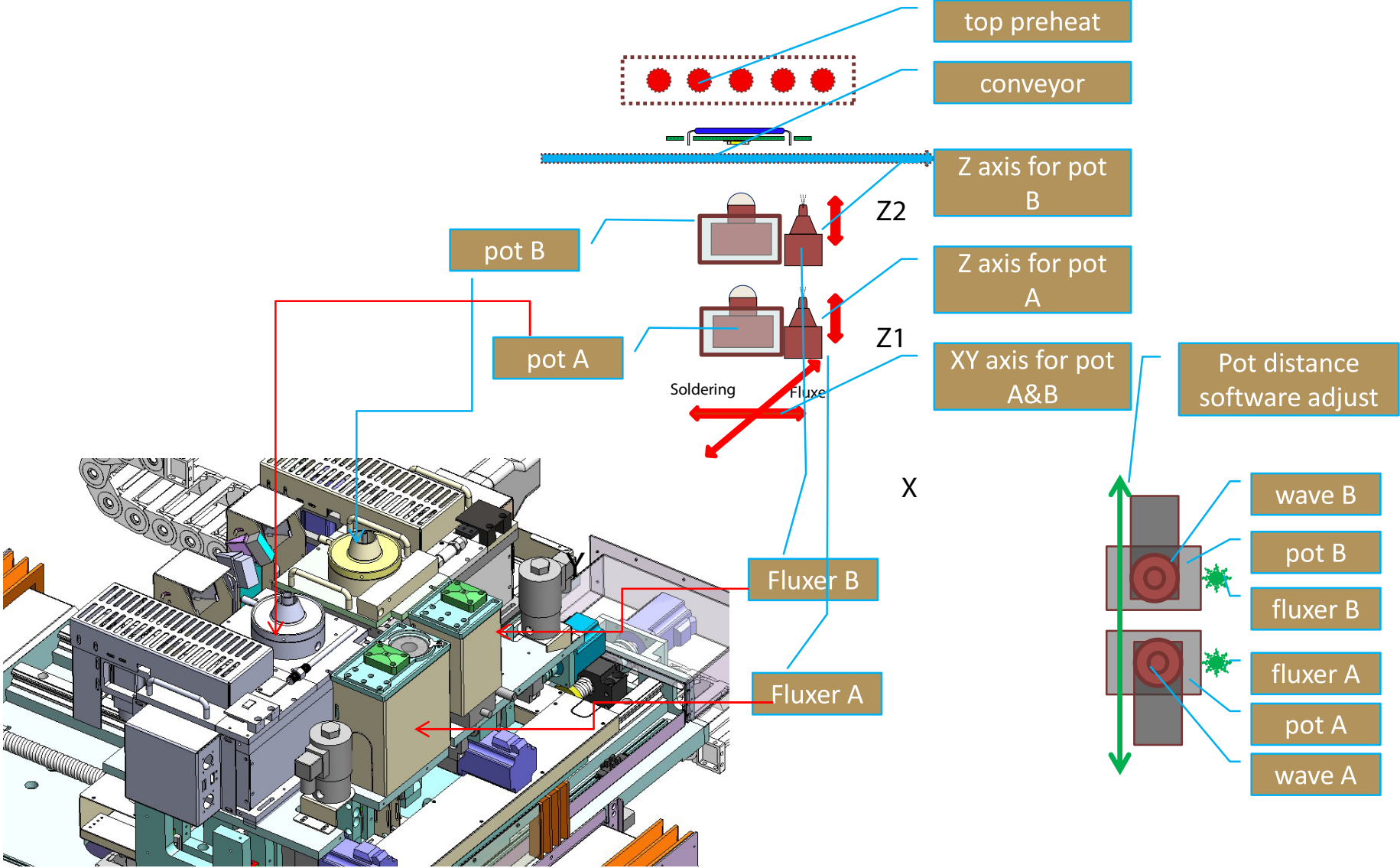
Standard equipped live-on camera for both solder pot's soldering process.

Standard equipped with wave height calibration.

Windows 10 system English version.



General Explanation: How to meet [▲] Highest Flexibility, Compact inline !!!

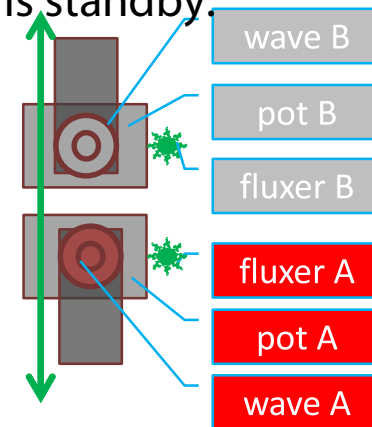
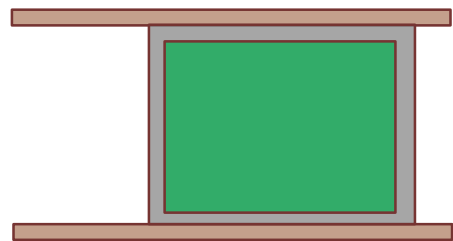


General Explanation:

How to meet ▀ Highest Flexibility, Compact inline !!! ▀

Flux		Solder		Application explanation	Max PCB
fluxer A	fluxer B	Wave A	Wave B		
work	stop or spare	work	stop or spare	use only one fluxer and one solder pot. Another fluxer and solder pot stop or standby. Another fluxer can equip another flux, another solder pot can fill different solder. To to meet quick change production line	W450mm x L508mm
work	stop or spare	stop or spare	work		
stop or spare	work	work	stop or spare		
stop or spare	work	stop or spare	work		

Refer A is working and B is standby:

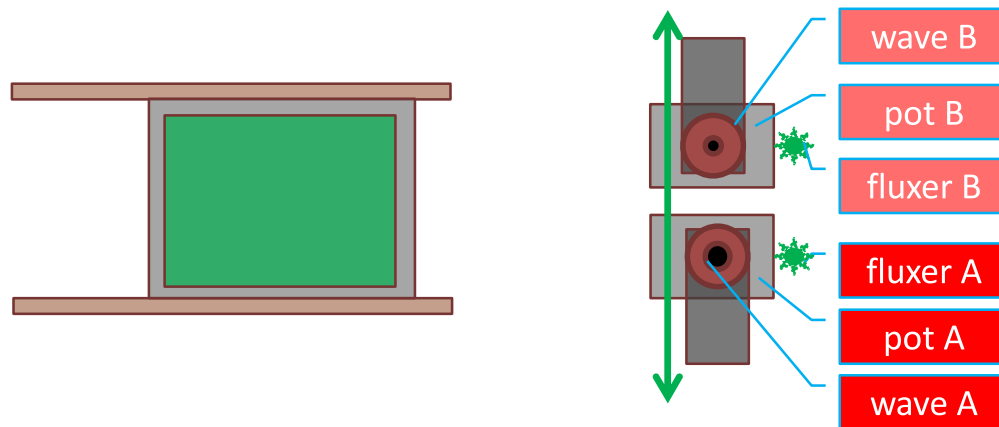


General Explanation:

How to meet ▀ Highest Flexibility, Compact inline !!! ▀

Flux		Solder		Application explanation	Max PCB
fluxer A	fluxer B	Wave A	Wave B		
work	work	working with type 1 nozzle	working with type 2 nozzle	use two different solder nozzle in two pot. Big nozzle to solder big connectors, after that small nozzle to solder small clearance comopnents	W450mm x L508mm

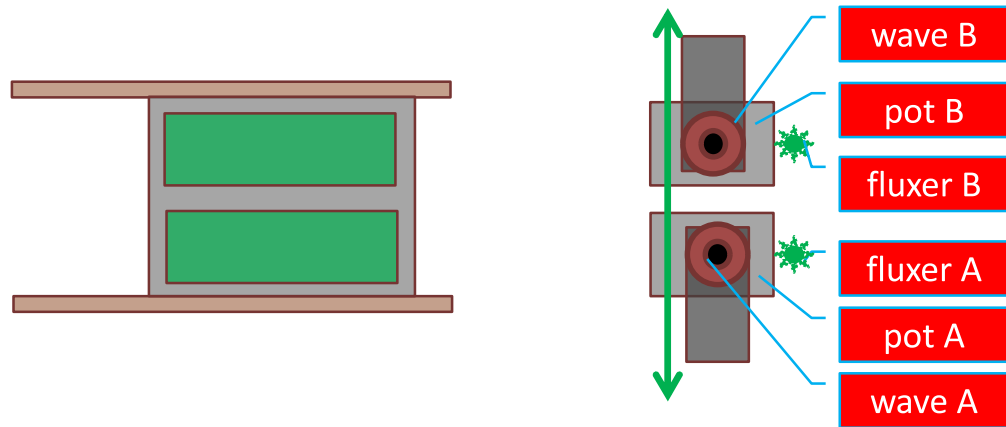
Refer first A, then B:



General Explanation: How to meet [▲] Highest Flexibility, Compact inline !!!

Flux		Solder		Application explanation	Max PCB
fluxer A	fluxer B	Wave A	Wave B		
work	work	working with type 1 nozzle	working with type 1 nozzle	Feed two same board on pallet to machine, two drop jet fluxer will flux to board at same time. Then solder two same board parallel, double the production	W235mm x L508mm

Refer A/B working simutaniously:



Highest Flexibility, Compact inline !!!

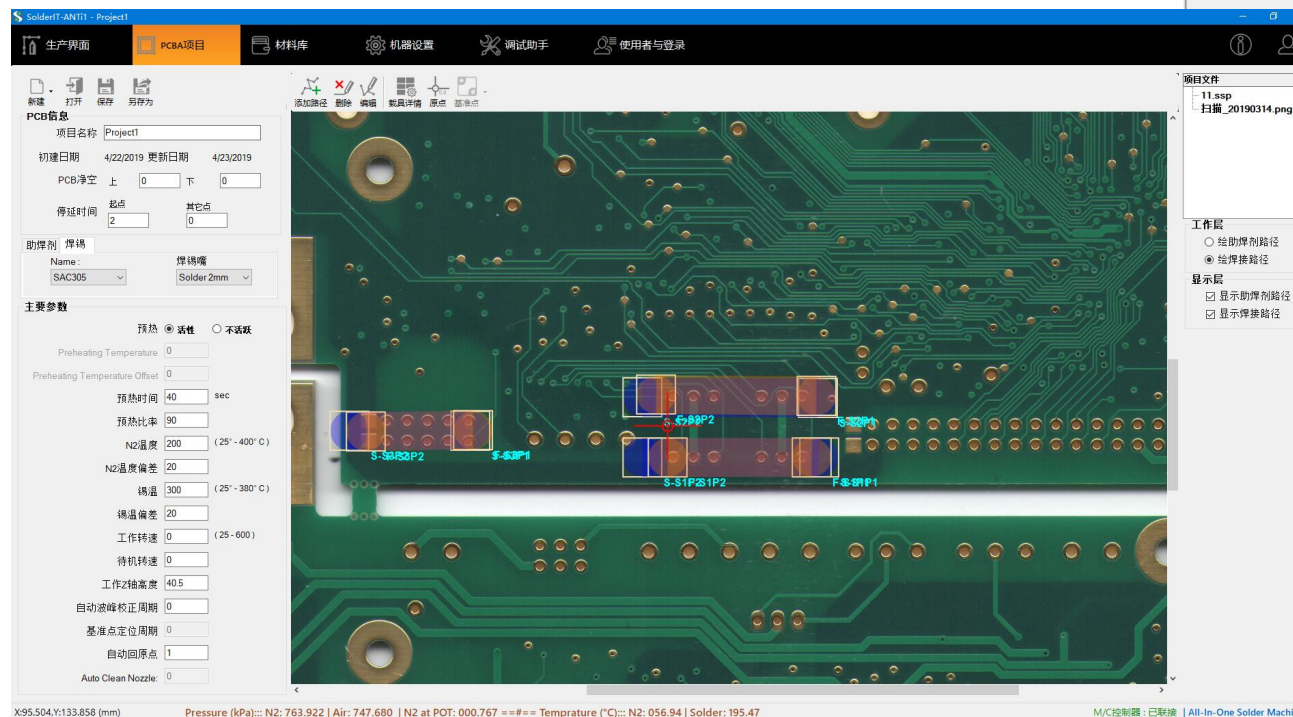
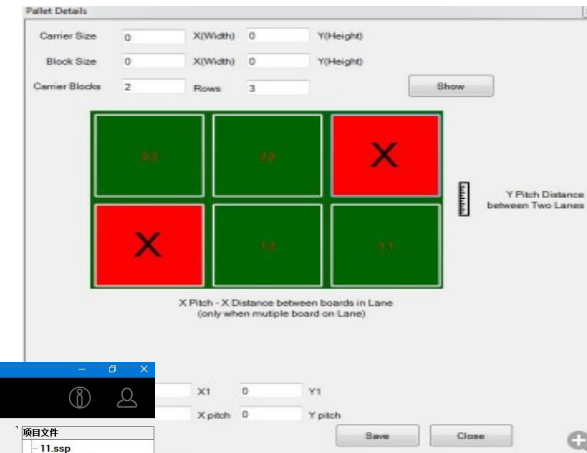
Factory Status	Machine application	Advantagous
Small volume, many different board. Two different flux, two different solder	Each drop jet flux with one tank, each tank with one kind of flux. Each solder pot with one solder.	When change process from board A to board B, no need spend time to load different flux and different solder, easy to exchange process in 10 minutes.
Middle volume, high mixed components(big different heat absorbing charactor)	use bigger soldre nozzle to solder big coomponents, grounded point, heat sink etc.	Tailor-made process, easy to get good soldering quality and volume.
Higher volume (may use two set of Flex-i2 or one MAS-i2 plus one Flex-i2)	use same solder nozzle to solder two same board together	Double the production

SOFTWARE SYSTEM

Solder It

“Solder It” is a Windows Professional 10 based software designed to create a solder program for each single solder point. It’s easy POINT AND CLICK tool ensures that a repeatable solder program is done within minutes.

Pallet Details: Program one board, array them in X,Y with setting pitch, and it can select which one working or not.



SOFTWARE SYSTEM

All motion path can be editable, include soldering speed, empty move speed, dwell time, solder Z height, wave height, wave slop speed etc.

Edit Solder Sites

Click on Site Name to View Point of the Site.

Name	Sequence	Use in Production?	Z-Offset	Pump RPM Offset	Empty Move Time	Site Working Time	Total Time
S2	1	<input checked="" type="checkbox"/>	0	0	1.803	15.192	16.995
S4	2	<input checked="" type="checkbox"/>	0	0	3.873	3.800	7.673
S1	3	<input checked="" type="checkbox"/>	0	0	1.707	3.800	5.507
S3	4	<input checked="" type="checkbox"/>	0	0	3.760	4.858	8.618

Production Time + Back to Origin Time (mm/Sec) : 12.828 27.649 40.478

Path point of : S2

Name	Vel (mm/s)	X	Y	Dwell [s]	Slop RPM	Slop Time
P1	30.000	20.828	36.576	2.000	0	0.0
P2	10.000	116.248	98.806	0.000	0	0.0

Global Dwell Time

Site First Point Dwell : Site Other Point Dwell :

SOFTWARE SYSTEM

Date base information. Engineer can input all solder, flux, solder nozzle information to machine. When doing programming, they can add these information to programming of board. In future to produce the same board, it will be easy to get not only motion information, but also what flux/solder/nozzle was used before, easy to repeat soldering quality.

The screenshot displays the SolderIT-AN11 software interface, which is divided into four main configuration panels. At the top, there is a navigation bar with icons for '生产界面' (Production Interface), 'PCBA项目' (PCBA Project), '材料库' (Material Library), '机器设置' (Machine Settings), '调试助手' (Debug Assistant), and '使用者与登录' (User and Login). The '材料库' (Material Library) panel is currently active.

助焊剂 (Flux) Configuration:

- 选用: IF 2005C
- 生产商: Interflux
- 型号: 001
- 色泽: Clear
- 固体含量 (wtw): 3.3
- 密度 25 °C (77 °C): 0.813
- 酸值 (mg KOH/g): 28
- 沸点 (T.C.C): 15
- 助焊剂类型: No clean

锡料 (Solder) Configuration:

- 选用: SAC305
- 生产商: qiandao
- 型号: 308
- 色泽: Sn-3.0Ag-0.5Cu
- 密度: 0.813
- 熔点 (°C): 217

助焊剂喷嘴 (Flux Nozzle) Configuration:

- 选用: Jet valve
- 喷嘴类型: Drop jet R
- 喷嘴孔径: 0.1 (mm)
- 路径宽: 5 (mm)
- 路径颜色: #FF4500

焊锡喷嘴 (Solder Nozzle) Configuration:

- 选用: Solder 2mm
- 适用: Round
- 内径: 2 (mm)
- 高度: 47 (mm)
- 路径宽: 5 (mm)
- 路径颜色: #0070C0

At the bottom of the interface, there is a status bar displaying real-time data: Pressure (kPa):: N2: 770.591 | Air: 718.150 | N2 at POT: 000.296 ==#=# Temperature (°C):: N2: 057.22 | Solder: 196.55. On the right side of the status bar, it indicates 'M/C控制器: 已联接 | All-In-One Solder Machine |'.

SOFTWARE SYSTEM

3 Level logging rights and date log information records. Who use machine, when use machine, what unnormal happen on machine, all these will be recorded.

The screenshot displays the SolderIT-ANT1 software interface. The top navigation bar includes icons for '生产界面', 'PCBA项目', '材料库', '机器设置', '调试助手', and '使用者与登录'. The main content area is divided into three sections:

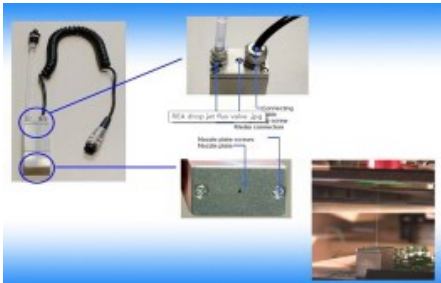
- 新使用者 (New User):** A form with fields for '用户名' (Username), '密码' (Password), and '用户类型' (User Type), with '建立' (Create) and '删除' (Delete) buttons.
- 用户管理 (User Management):** A table listing existing users with columns for '用户名', '日期', '用户类型', and '删除'.
- 日志 (Logs):** A section for viewing and deleting logs, including filters for '活动日志' (Active Logs) and '删除日志' (Delete Logs), and a table of log entries.

用户名	日期	用户类型	删除
sasinnno	14/03/2019 10:08:59 AM	Manufacturer	Delete
Operator	08/04/2019 08:58:53 PM	Operator	Delete

用户名	日期	类型	消息文本
sasinnno	24/04/2019 03:35:37 下午	ResourceNotFound	Maintenance_ReplacelimitSensors
sasinnno	24/04/2019 03:35:37 下午	ResourceNotFound	Maintenance_ReplaceN2TempTh...
sasinnno	24/04/2019 03:35:31 下午	ResourceNotFound	Maintenance_LubricateCylinder
sasinnno	24/04/2019 03:35:31 下午	ResourceNotFound	Maintenance_RailGauge
sasinnno	24/04/2019 03:35:31 下午	ResourceNotFound	Maintenance_TranportRailLubeOil
sasinnno	24/04/2019 03:35:31 下午	ResourceNotFound	Maintenance_ElecBoxCleaning
sasinnno	24/04/2019 03:35:31 下午	ResourceNotFound	Maintenance_XYCoordinates
sasinnno	24/04/2019 03:35:31 下午	ResourceNotFound	Maintenance_XYLubeOil
sasinnno	24/04/2019 03:32:07 下午	Project Loaded	11.ssp
sasinnno	24/04/2019 03:31:53 下午	ResourceNotFound	Message_LogsDeleteSuccess

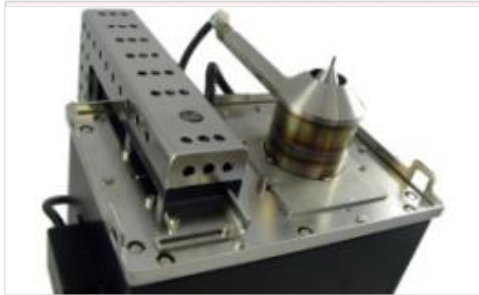
HARDWARE

Drop jet fluxer

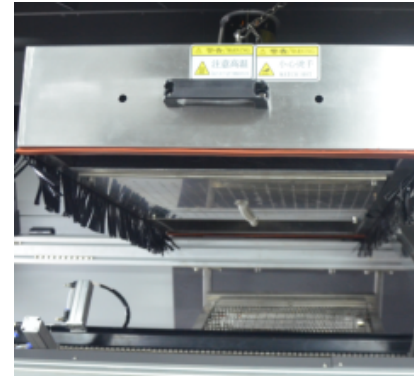


Drop jet flux made in Germany

Mechanical pump



Mechanical solder pot with Ti tank.



Preheating zone

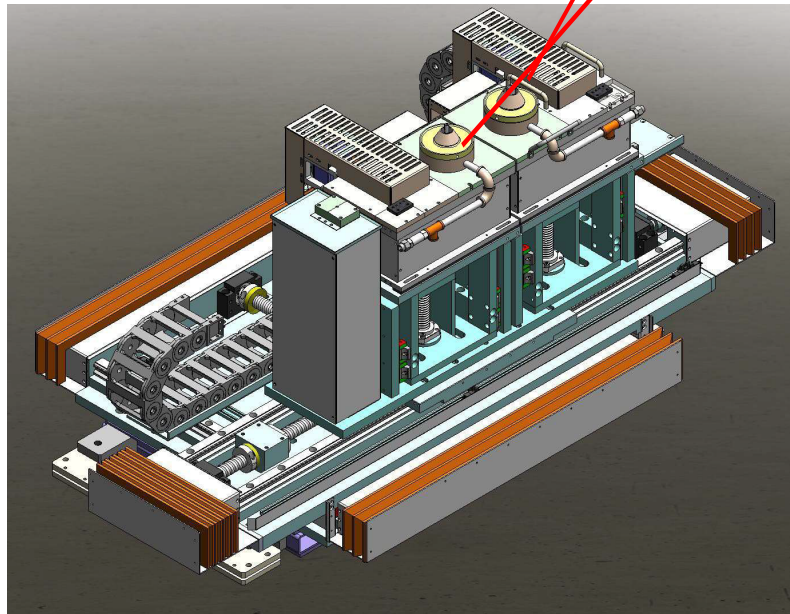
Standare with top and bottom IR preheating zone.



Dia 3MM, 4MM, 5MM, 6MM, 8MM as standard. Customized nozzle available.

Motion table

Individual Z axis at each solder station.



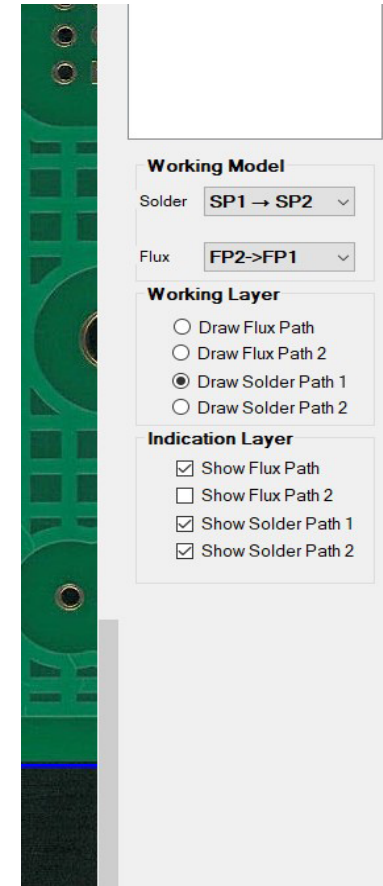
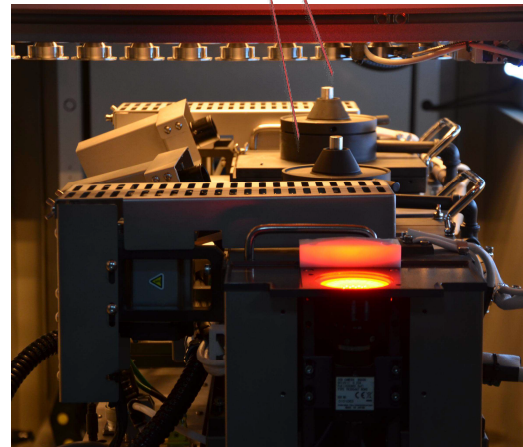
Z2 Axis, Solder pot 2

Z1 Axis, Solder pot 1

Software:

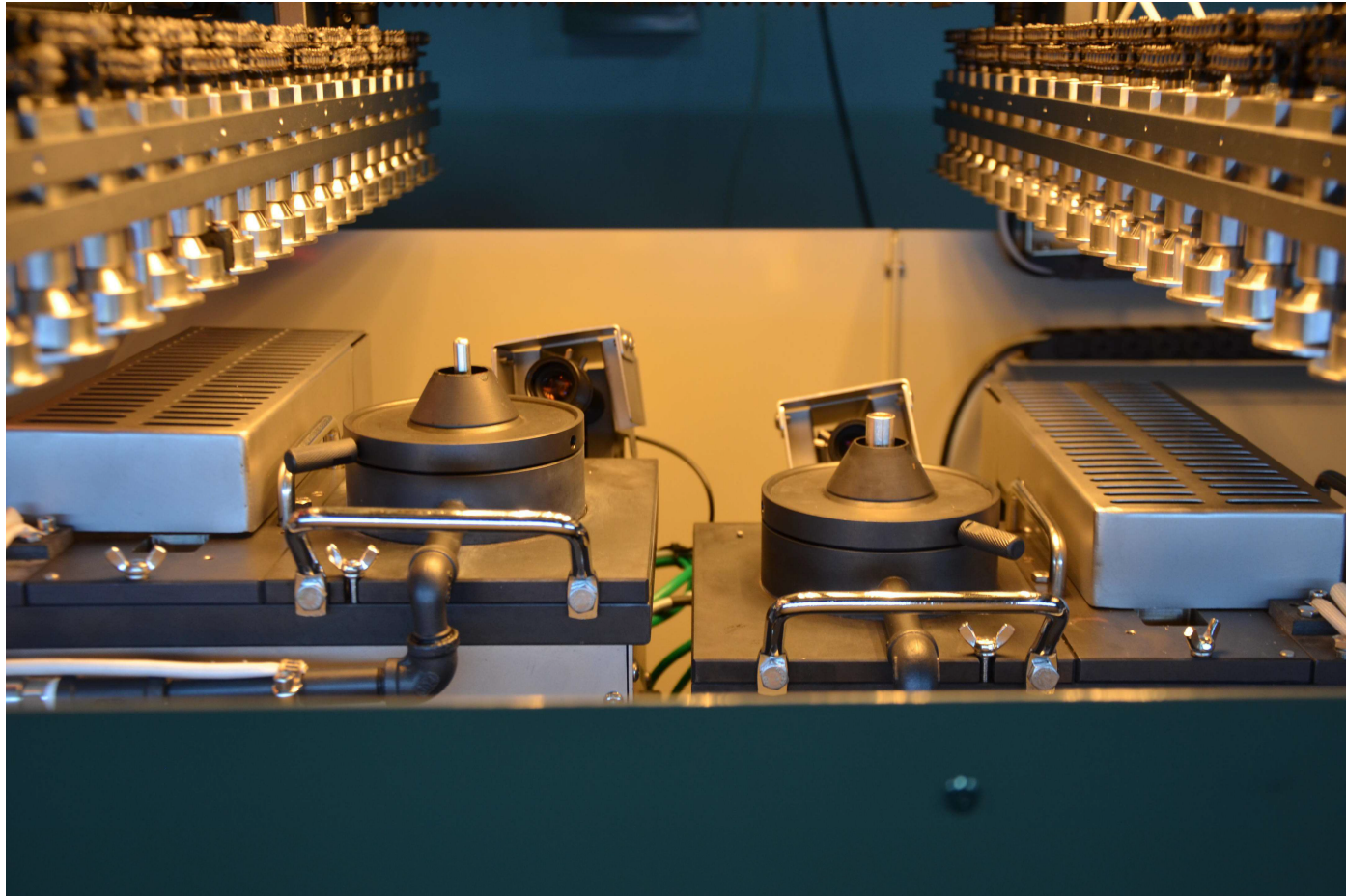
Can sequence use solder pot 1 & solder pot 2, or use them in simultaneously for double production.

Can use one fluxer for all pads, or use two fluxer to double production.



Various Soldering Application

Z axis individual run, can equip with different nozzle. For different application like First pot 1 then pot 2 for soldering or first pot 2 then pot 1, or one solder working and another standby waiting for next programmed board..



Various Soldering Application

Two same nozzle. For same PCB in carrier. Solder two boards at same time to double production.



Specification

FLEX-i2 Specifications	
General	
Operating power/Max power	6KW/16KW
Conveyor width	80--508mm
PCB top clearance	100mm
PCB bottom clearance	35mm
Machine dimension	1420(L)*1725(W)*1700(H)
Net weight	1000KG
Power supply	3PH 380V 50HZ
Air supply	3-5 bars
Exhausting required	800M3/h
PC	Yes
Typical Program Time	10 Minutes
PCB Robotic Platform	
Flux Nozzle Type	drop jet fluxer made in Germany
Flux Nozzle Quantity	Standard equip 1 set, optional to equip another set
Flux Tank Capacity	1L
Flux Tank Quantity	Standard equip 1 set, optional to equip another set (when use two different flux)
Flux Nozzle Distance	adjustable with solder pot together
Axes of Motion	share XYZ table with solder pot
Position Accuracy	+ / - 0.05mm
preheat	
Preheating method	Top & bottom IR

Specification

FLEX-i2 Specifications	
Solder Management	
Solder pot type	Standard equipped mechanical pump, optional with electro-magnetic pump(made in Germany)
Standard Solder Stations	2
Solder Pot Capacity	15 kgs (mechanical pump), 11kgs (electro-magnetic pump)
Solder pot distance	180mm--250mm (mechanical pump), 160--250mm(electro-magnetic pump)
Soldering area	max PCB W450 x L508mm (18" x 20") (Two nozzle solder individually) Max PCB W235 x L508mm (9.25" x 20") (Two nozzle solder parallel)
Solder Temperature Control	PID
Heat-Up Time	About 30mins
Max Temperature	350 C
Mini Wave Nozzles	Dia 4,6,8,10,12mm
Customized nozzle	Available
Solder nozzle Distance	adjustable by software
Axes of Motion	X, Y, Z1, Z2
Motion Control	All servo control with ball screw
Position Accuracy	+ / - 0.05mm
(N2) Inertion Management	
N2 Consumption per Nozzle	1.5m3/H Total: 3m3/h
Required N2 Purity	>99.99%