

NuFlex-i2

COMPACT INLINE HYBRID SELECTIVE
SOLDERING MACHINE

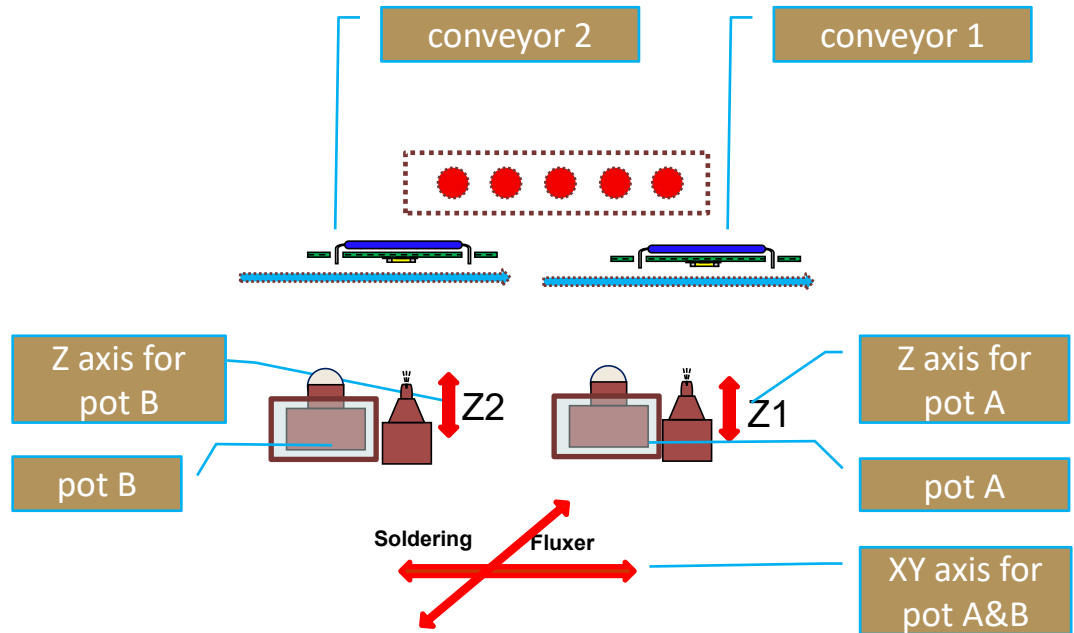


General Explanation

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

Highest Flexibility, Compact inline !!!

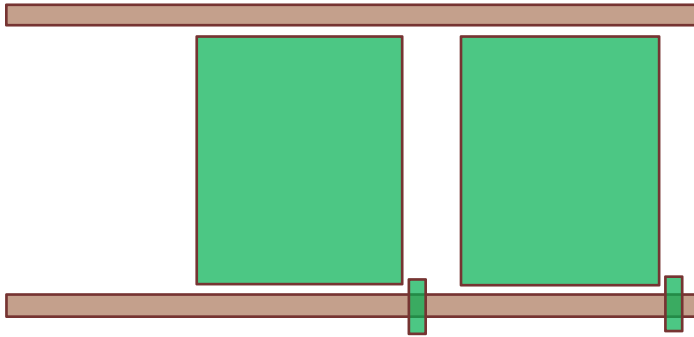
- XY servo table for solder station, servo axis Z1 for solder pot 1, servo axis Z2 for solder pot 2. Optional with electro-magnetic pump made in Germany.
- Standard equipped with 2 drop jet fluxer. It's in same XYZ table with solder pot.
- Top & bottom IR preheating zone.
- Standard equipped live-on camera for both solder pot's soldering process.
- Standard equipped with wave height calibration.
- Windows 10 system English version.
- **Unique conveyor design, can work as one section conveyor to load one board per time, can also work as two section conveyors to load two boards per time.**



General Explanation: How to meet “High produciton, high Flexibility”

Different conveyor model mixed with different soldering process, provide most flexibility solution in the market

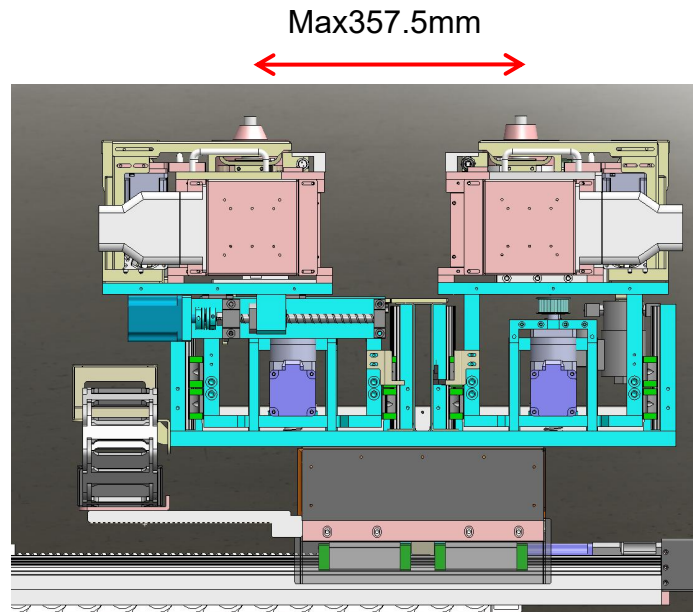
Dual section conveyor



In software, chooes to run machine with 2 section conveyor. It will load 2 boards to conveyor. Machine will meet :

1. Max board size W508mm x L350mm
2. Two solder pot can equip with same Dia nozzle, **to solder two same boards at same time, double production without using carrier !!!**

With Flux model: Flux1 = Flux2
With soldering model: Pot1 = Pot2
(use two same size nozzle)

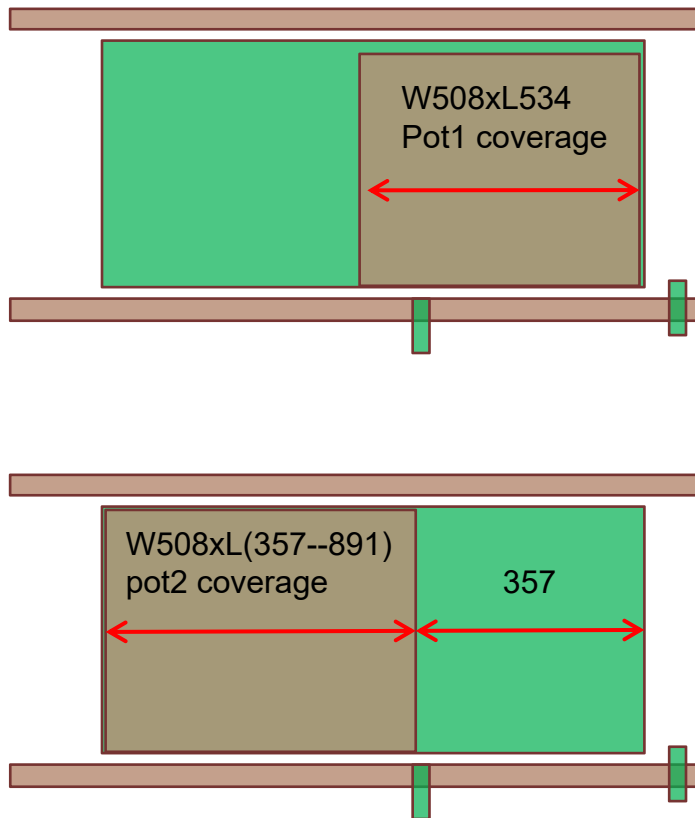


Auto adjust two solder nozzle to Max357.5mm

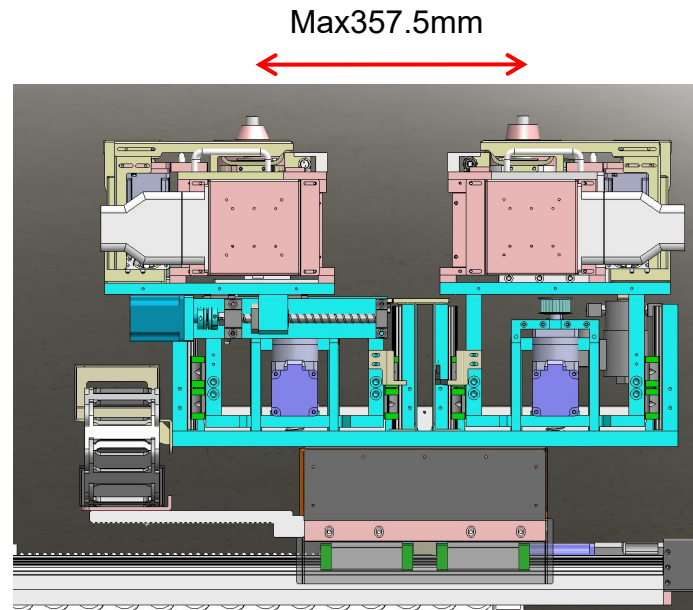
General Explanation: How to meet “High produciton, high Flexibility”

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provide most flexibility solution in the market

Single section conveyor



With Flux model: Flux1 to Flux2
With soldering model: Pot1 to Pot2



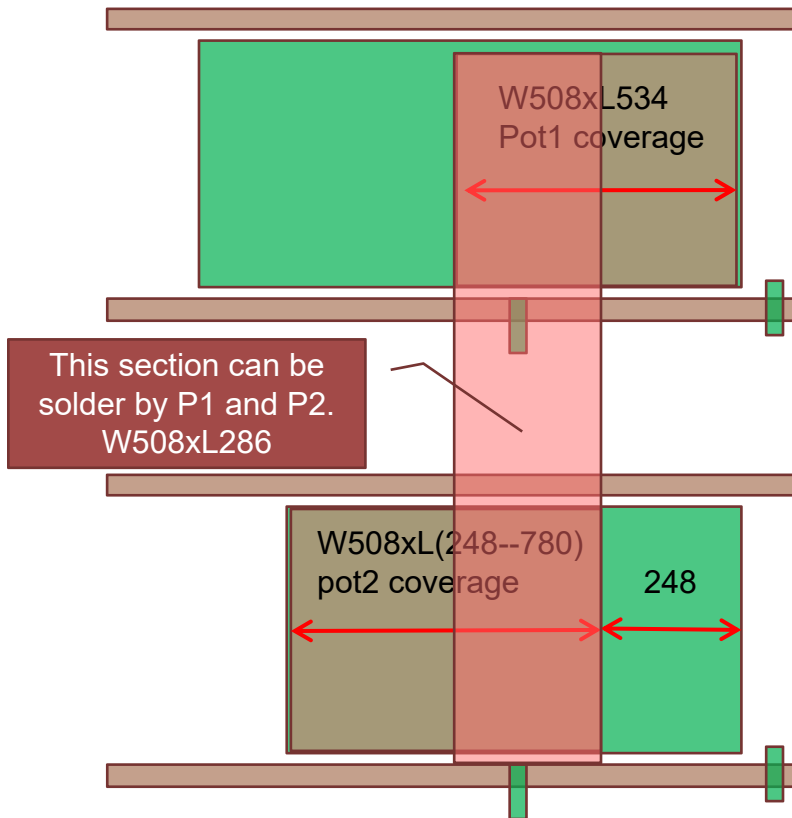
Auto adjust two solder nozzle to Max357.5mm

In software, chooes to run machine with 1
section conveyor.
Max soldable board size W508mm x L891mm

General Explanation: How to meet “High produciton, high Flexibility”

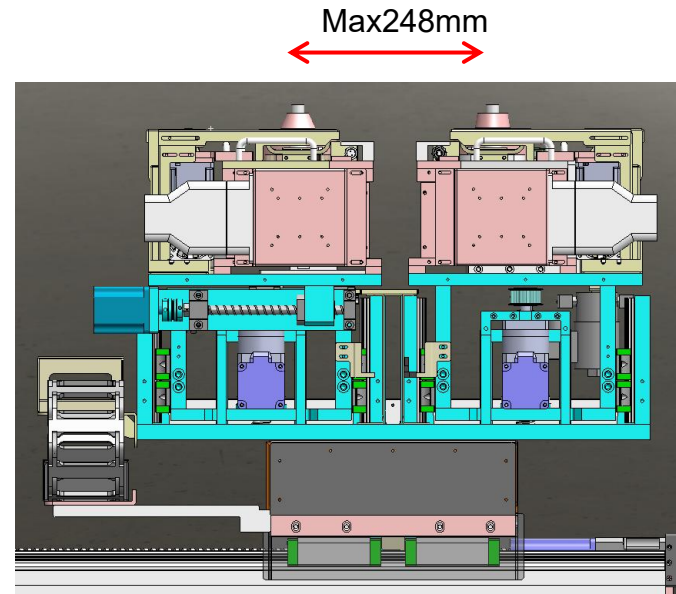
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Single section conveyor



With Flux model: Flux1 to Flux2

With soldering model: Pot1 to Pot2



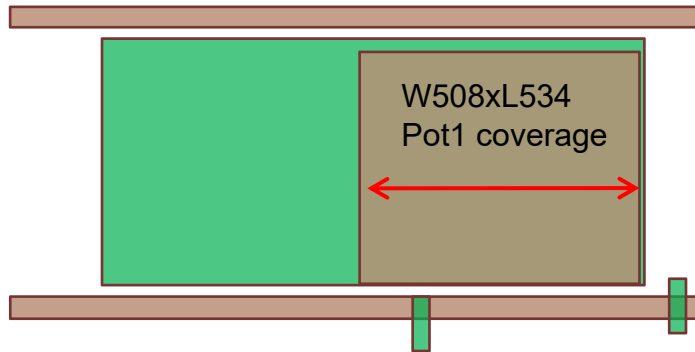
Auto adjust two solder nozzle to min 248mm

In software, chooes to run machine with 1
section conveyor.

General Explanation: How to meet “High produciton, high Flexibility”

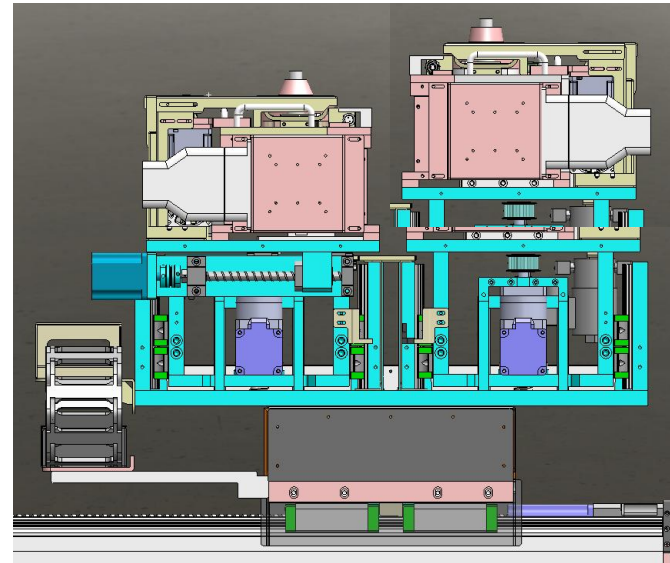
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Single section conveyor



With Flux model: Only Flux1

With soldering model: Only Pot1



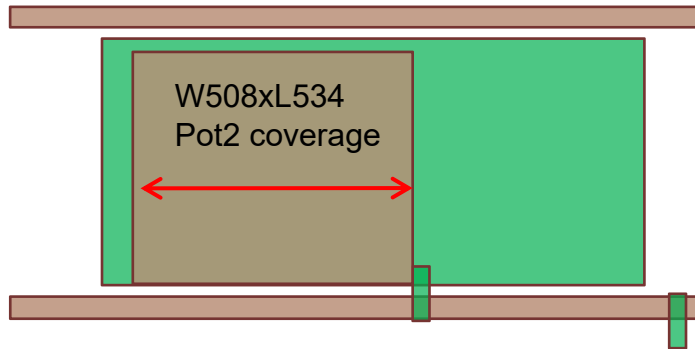
Auto adjust two solder nozzle to min 248mm

In software, chooes to run machine with 1
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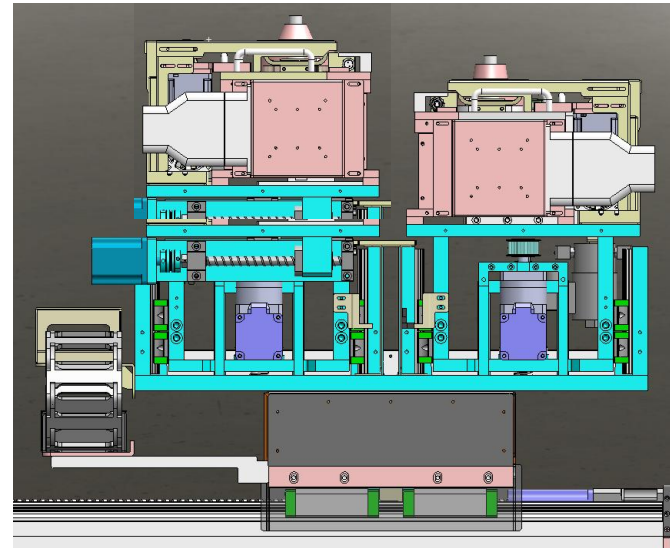
Single section conveyor



In software, chooes to run machine with 1
section conveyor.

With Flux model: Only Flux2

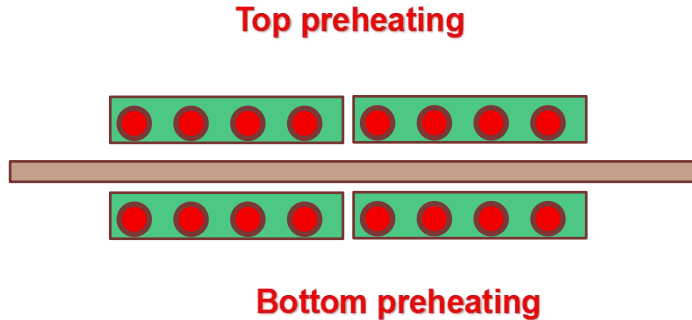
With soldering model: Only Pot2



Auto adjust two solder nozzle to min 248mm

General Explanation: How to meet “High produciton, high Flexibility”

Preheating design



In this market, this is the only compact inline selective soldering with **bottom preheating zone**.

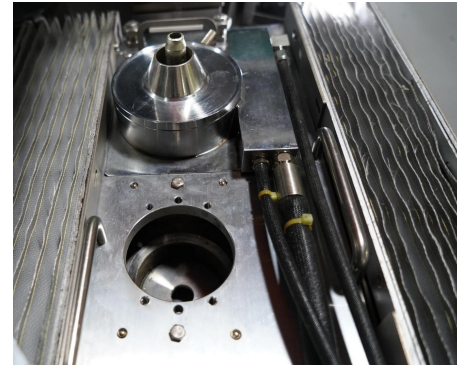
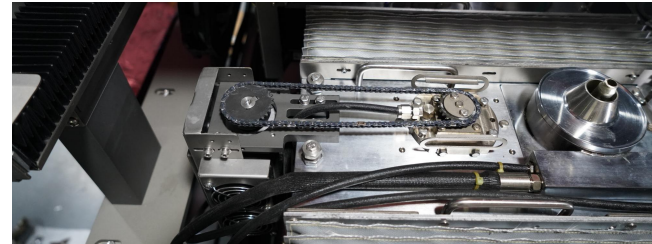
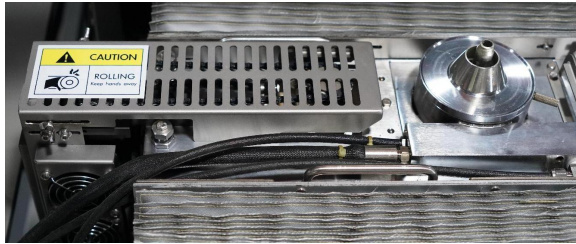
In top & bottom preheating zone, the heaters are in two groups. Engineer can decide to open two groups together or only one group according to PCB's length, so to **save energy!**

NuFlex-i2 Hardware

Unique Mechanical pump design:

Modular design for impeller/shaft/bracket,

1. Can take it out and install a new whole set in 10 minutes !!! Saving machine's downtime .
2. No need to take whole wave tunnel out for cleaning, so no need to calibration the wave nozzle's position after cleaning !!! Saving time again.



MODEL: NuFlex-i2

NuFlex-i2 Specifications	
General	
Operating power/Max power	6KW/16KW
PCB/Carrier dimension	100x100---W508xL891mm (when one conveyor section model) 100x100---W508xL350mm (when two conveyor sections model)
PCB top clearance PCB	100mm
PCB bottom clearance PCB	40mm
Max PCB&carrier load	5kgs
Machine dimension	1830(L)*1730(W)*1660(H)
Net weight	1000KG
Power supply	3PH 380V 50HZ optional 3phase 220v 50hz
Air supply	3-5 bars
Exhausting required	600M3/h x 1 ports
Controlling System	
Industrial PC	Yes
Typical Program Time	10 Minutes
Program method	Draw path in scanned picture of board
Controlling system	PC
Fluxing system	
Flux Nozzle type	drop jet nozzle
Flux nozzle number	2 sets
Flux Capacity	1L x 2sets
Flux Tank	Constant pressure tank
Cleaning tank	Constant pressure tank
Cleaning Capacity	1L x 1set
Motion table	X,Y servo motor
Preheat system	
Top preheating	hot air conveciton, 4kw
Bottom preheating	IR preheating, 5kw

MODEL: NuFlex-i2

NuFlex-i2 Specifications	
Soldering system	
Solder Pot quantity	2sets
Solder Pot Capacity	15kgs/pot(mechanical pump), 11kgs (electro-magnetic pump)
Wave tunnel & fountain	2 set
Wave nozzle number	2
Pump type	Mechanical pump (optional with electro-magnetic pump)
Solder Temperature Control	PID
Heat-Up Time	About 30mins
Max Temperature	380 C
Solder Pot heater	1.5kw /pot
Solder pot distance	see explanation
Soldering area	see explanation
Motion table	X,Y, table for both soldering (POT1 and Pot2) and fluxing (fluxer 1 and fluxer 2) Z1 for pot 1, Z2 for pot 2. Pot 1 &2 distance in Y direction adjustable by servo
Fidicious camera	Optional
Solder Nozzles	
Mini Wave Nozzles	Dia 4, 6,8,10,12mm
Customized nozzle	Available
Nozzle Material	Proprietary Alloy
(N2) Inertion Management	
N2 heater	Standard Equipped
N2 Temp PID Control Range	25 - 250 C
N2 Consumption per Nozzle	1.5m3/H x 2pot =3m3/h (Recommend to connect with Selmate-4 N2 generator)
Required N2 Purity	>99.99%

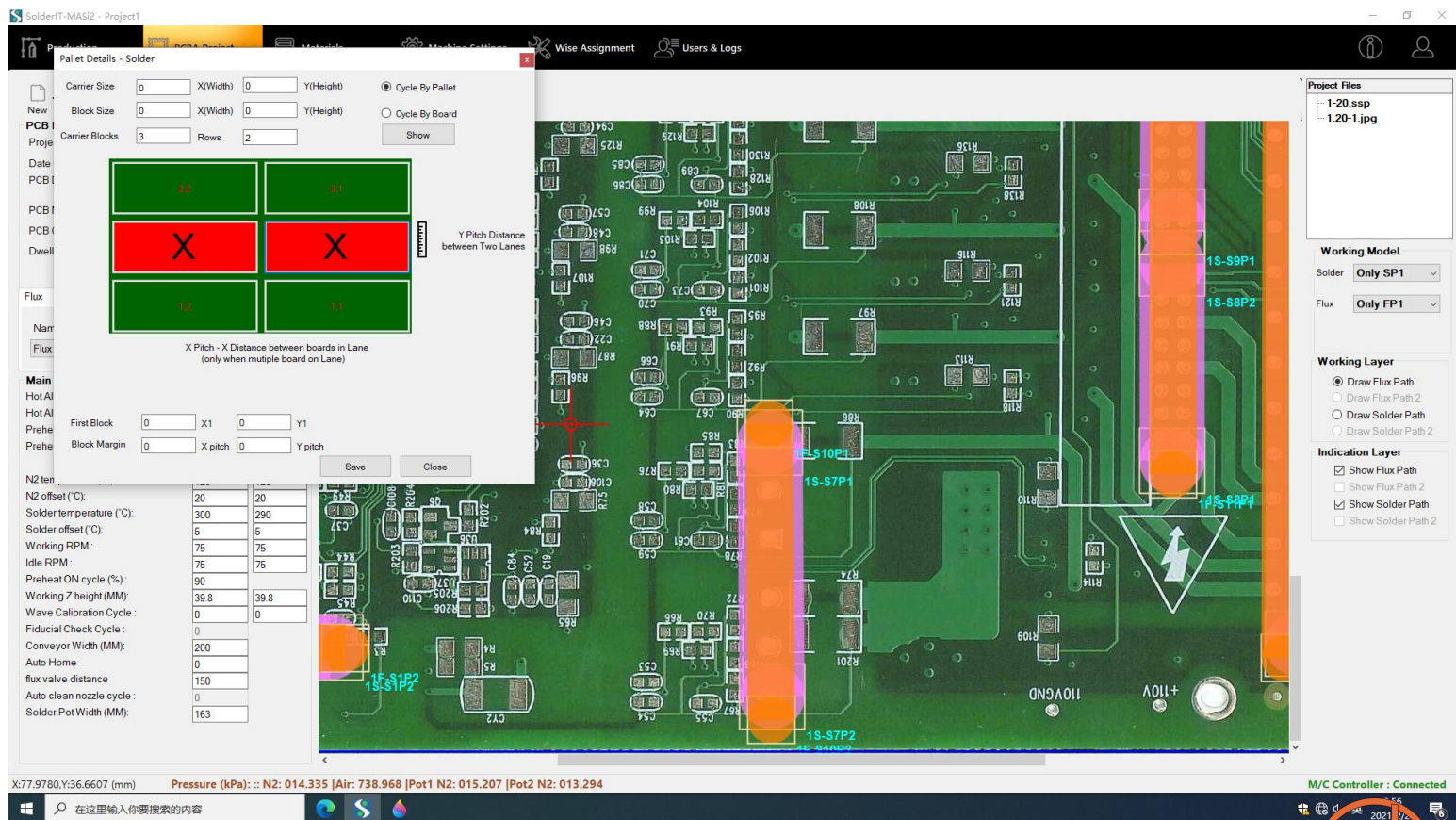
MODEL: NuFlex-i2

NuFlex-i2 Specifications	
Conveyor System	
Conveyor height	900+/-30mm
Conveyor section	2
Conveyor type	Stainless steel rollers
Conveyor width adjustment	Auto by software
Conveyor stopper	yes
Conveyor side clamp	yes
SMEMA connection	yes
Alarm & monitoring	
Air pressue monitoring	yes
flux level alarm	yes
cleaning solvent level alarm	yes
N2 flow monitoring	optional
N2 purity monitoring	optional
Solder process monitoring	yes
solder level alarm	yes
temperature alarm	yes
maintenance remind	yes
consumable parts life time	yes
count down	
Motion table limit alarm	yes

SOFTWARE SYSTEM

Solder It

“Solder It” is a Windows Professional 10 based software designed to create a solder program. It can easy POINT AND CLICK for fluxing path and soldering parameters.



SOFTWARE SYSTEM

All motion path can be editable, include soldering speed, empty move speed, dwell time, solder Z height, wave height, wave slop speed, solder leaving angle, N2 temperature etc. Meanwhile, any factors related to good soldering result, it will be monitored , for sample all air pressure, N2 pressure, N2 purity, N2 flow rate etc.

Pressure (kPa) ::: N2 : 3018.650 | Air : 3018.650 | N2 at POT : 3018.650 ==#== Temprature (°C) ::: N2 : 624.98 | Solder : 624.98

Production **PCBA Project** **Materials** **Machine Settings** **Wise Assignment** **Users & Logs**

PCB Information
Project Name: Project1
Date Created: 05/12/2023 Last Update: 2024/1/31
PCB Dimension: 0 0 0
Width Length Thickness
PCB Material: PCB PCB Layer: 0
PCB Clearance: 0 Upper 0 Bottom-Offset
Dwell time: 2 First point 0 Other point

Flux Flux POT2 Solder Solder POT2
Name Nozzle
Flux name Flux Spray

Main Parameter
Hot Air Temperature (°C) 102
Hot Air Temperature Offset (°C) 20
Preheating Time (Sec) 10
Bottom Preheat ON cycle (%) 20
N2 temperature (°C) 200 Pot 1 Pot 2 200
N2 offset (°C) 20 0
Solder temperature (°C) 300 300
Solder offset (°C) 20 30
Working RPM 34.5 0
Idle RPM 34.5 0
Top Preheat ON cycle (%) 1
Working Z height (MM) 25 25
Wave Calibration Cycle 0 0
Fiducial Check Cycle 1
Conveyor Width (MM) 200
Flux Valve Distance 150
Auto Clean Nozzle Cycle 0
Solder Pot Width (mm) 187

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	☒	0	0	1.803	15.192	16.995
S4	2	☒	0	0	3.873	3.800	7.673
S1	3	☒	0	0	1.707	3.800	5.507
S3	4	☒	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 : Update Dwell

Working Model
Solder SP1 → SP2
Flux Only FP2

Working Layer
☐ Draw Flux Path
☒ Draw Flux Path 2
☐ Draw Solder Path
☐ Draw Solder Path 2

Indication Layer
☐ Show Flux Path
☒ Show Flux Path 2
☐ Show Solder Path
☐ Show Solder Path 2

X:10.5833;Y:131.4027 (mm)

Pressure (kPa)::N2 421.187 |Air 514.954 |Pot1 N2 004.102 |Pot2 N2 000.717

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.

SolderIT-DualMASi2-C3 - Project1

Production PCBA Project Materials Machine Settings Wise Assignment Users & Logs

Flux Material

Select Flux Mat: [Add New](#) [Edit](#) [Delete](#)

Flux Manufacture:

Flux Serial:

Flux Appearance:

Solid Content (wt/wt):

Specific Gravity 25°C (77°F):

Acid Value (mg KOH/g):

Boiling Point (T.C.C):

Flux Type:

Reference Picture



Flux Sprayer

Select Flux Sprayer: [Add New](#) [Edit](#) [Delete](#)

Sprayer Type:

Nozzle Hole Diameter:

Path Width:

Path Color:

Reference Picture



Solder Material

Select Solder: [Add New](#) [Edit](#) [Delete](#)

Solder Manufacture:

Solder Serial:

Main Content:

Specific Gravity:

Melting Point (°C):

Reference Picture



Solder Nozzle

Select Nozzle: [Add New](#) [Edit](#) [Delete](#)

Nozzle Shape:

Nozzle Inner Diameter:

Nozzle Height:

Path Width:

Path Color:

Reference Picture



Pressure (kPa):N2 421.508 |Air 517.268 |Pot1 N2 003.881 |Pot2 N2 000.747

M/C Controller : Connected

10:21 2024/2/1

SOFTWARE SYSTEM

Pre-maintenance & consumable parts timing function. Can count down consumable parts' life time, remind engineer to do necessary change in advance. Also, can remind for necessary maintenance of machine.

SolderIT-DualMASi2-C3 - Project1

Production PCBA Project Materials Machine Settings Wise Assignment Users & Logs

Machine Maintenance

Part Maintenance Part Replacement

Sequence	Machine Part	Estimated Maintain Time	Cycle (Hrs)	Actual Used Time (Hrs)	Remaining Time (Hrs)	Last Maintenance Done	Action
1	Clean Flux Nozzle	5mins	8	0	8	2024/1/31 14:02:40	NA
2	Check If Flux Nozzle Blocked	15mins	2	0	2	2024/1/31 14:02:40	NA
3	Flux X,Y Lube Oil	10mins	56	20.56	35.44	2024/1/31 14:02:40	NA
4	Flux Electric Box Cleaning	1hours	56	20.56	35.44	2024/1/31 14:02:40	NA
5	Flux Lube Oil on Transport Rail	10mins	240	20.56	219.44	2024/1/31 14:02:40	NA
6	Check Flux Rail Gauge	10mins	240	20.56	219.44	2024/1/31 14:02:40	NA
7	Flux Lubricate Cylinders	1mins	240	20.56	219.44	2024/1/31 14:02:40	NA
8	Preheat Clean Sensor	5mins	8	18.01	0	2024/1/31 14:02:40	Done
9	Preheat Electric Box Cleaning	5mins	56	20.56	35.44	2024/1/31 14:02:40	NA
10	Preheat Lube Oil on Transport Guide Rail	5mins	240	20.56	219.44	2024/1/31 14:02:40	NA
11	Check Preheat the Rail Gauge	10mins	240	20.56	219.44	2024/1/31 14:02:40	NA
12	Check Preheat Heat Pipe is Working Properly	5mins	1440	20.56	1419.44	2024/1/31 14:02:40	NA
13	Clean the tin slag in solder pot	15mins	8	18.01	0	2024/1/31 14:02:40	Done
14	Clean the solder dross around solder level sensor	10mins	168	20.56	147.44	2024/1/31 14:02:40	NA
15	Check Solder Temperature(using Thermometer)	10mins	168	20.56	147.44	2024/1/31 14:02:40	NA
16	Replace the solder in solder pot	1hours	2000	0	2000	2024/1/31 14:02:40	NA
17	Clean the tin slag in wave pump	1hours	200	0	200	2024/1/31 14:02:40	NA
18	The wave chain adds lubricant	10mins	200	0	200	2024/1/31 14:02:40	NA
19	Wave-peak impeller bearings adds lubricating	10mins	200	0	200	2024/1/31 14:02:40	NA

Preview Period Export Items

Pressure (kPa)::N2 417.793 |Air 509.607 |Pot1 N2 003.871 |Pot2 N2 001.077

IPC Control Nr: Connected

2024/2/1

Smart And Steady Innovation

SOFTWARE SYSTEM

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

