

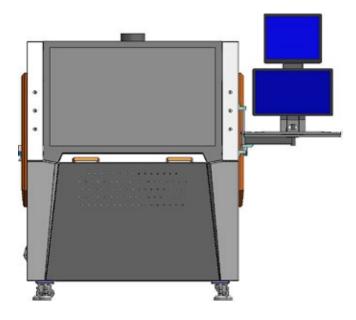


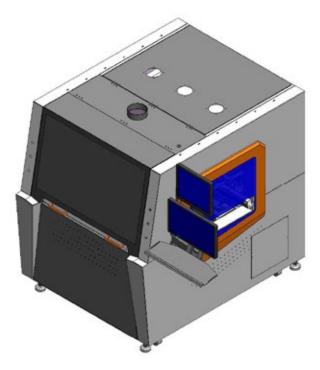
PCB Unlimited

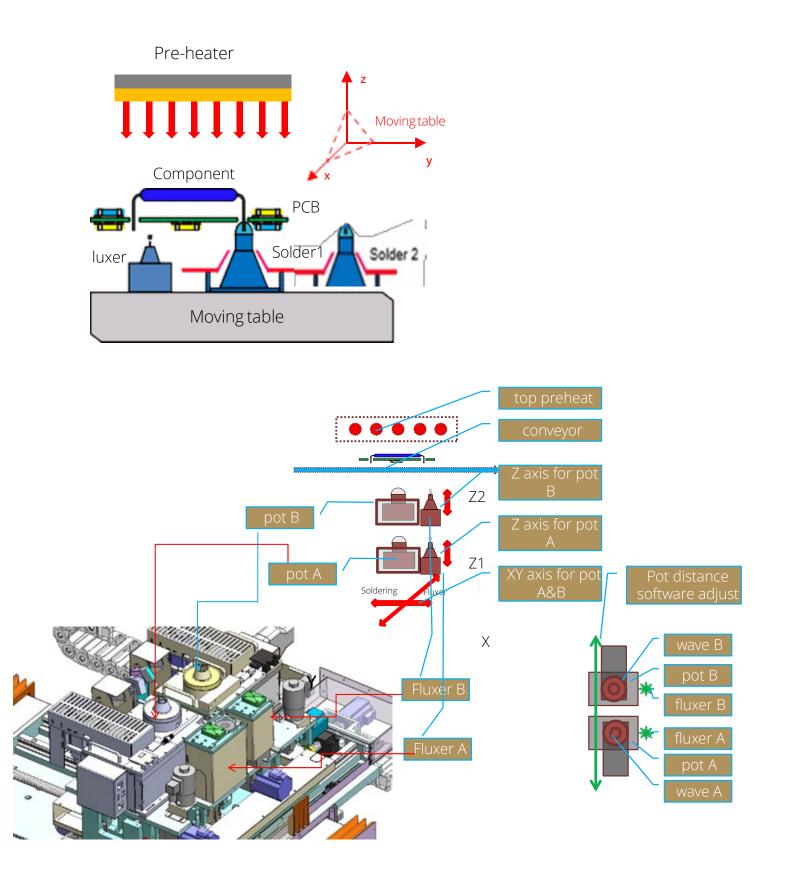
### Features

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

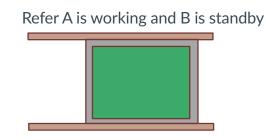
- XY servo table for solder station, servo axis Z1 for
  solder pot 1, servo axis Z2 for solder pot 2. Optional with electro-magnetic pump made in Germany.
- Standard equipped with one drop jet fluxer. It's in same XYZ table with solder pot. Optional for 2nd drop jet fluxer.
- Top & bottom IR preheating zone.
- Standard equipped live-on camera for both solder pot's soldering process.
- Standard equipped with wave height calibration.
- Windows 10 system English version.

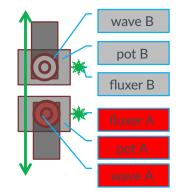




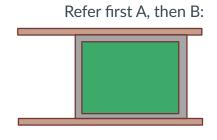


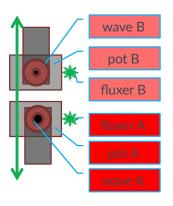
| Flux          |               | Solder        |               | Application explanation  | Max PCB               |  |
|---------------|---------------|---------------|---------------|--|-----------------------|--|
| Fluxer A      | Fluxer B      | Wave A        | Wave B        |  |                       |  |
| Work          | Stop or spare | Work          | Stop or spare | Use only one fluxer and one solder pot.  |                       |  |
| Work          | Stop or spare | Stop or spare | Work          | Another fluxer and<br>solder pot stop or   | W450mm<br>x<br>L508mm |  |
| Stop or spare | Work          | Work          | Stop or spare | standby. Another fluxer<br>can equip another flux,   |                       |  |
| Stop or spare | Work          | Stop or spare | Work          | another solder pot can<br>fill different solder. To to<br>meet quick change<br>production line | LOUGMM                |  |





| Flux     |          | Solder                           |                                  | Application explanation   | Max PCB               |  |
|----------|----------|----------------------------------|----------------------------------|---|-----------------------|--|
| Fluxer A | Fluxer B | Wave A                           | Wave B                           |   |                       |  |
| Work     | Work     | Working<br>with type 1<br>nozzle | Working<br>with type 2<br>nozzle | Use two different solder<br>nozzle in two pot.<br>Big nozzle to solder big<br>connectors, after<br>that small nozzle to<br>solder small clearance<br>components | W450mm<br>x<br>L508mm |  |

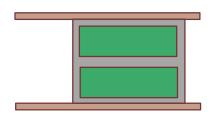


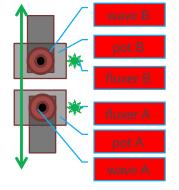




| Flux     |          | Solder                           |                                  | Application explanation   | Max PCB               |  |
|----------|----------|----------------------------------|----------------------------------|---|-----------------------|--|
| Fluxer A | Fluxer B | Wave A                           | Wave B                           |   |                       |  |
| Work     | Work     | Working<br>with type 1<br>nozzle | Working<br>with type 1<br>nozzle | Feed two same board on<br>pallet to machine, two<br>drop jet fluxer will flux<br>to board at same time.<br>Then solder two same<br>board paralley, double<br>the production | W235mm<br>x<br>L508mm |  |

### Refer A/B working simutaniously:





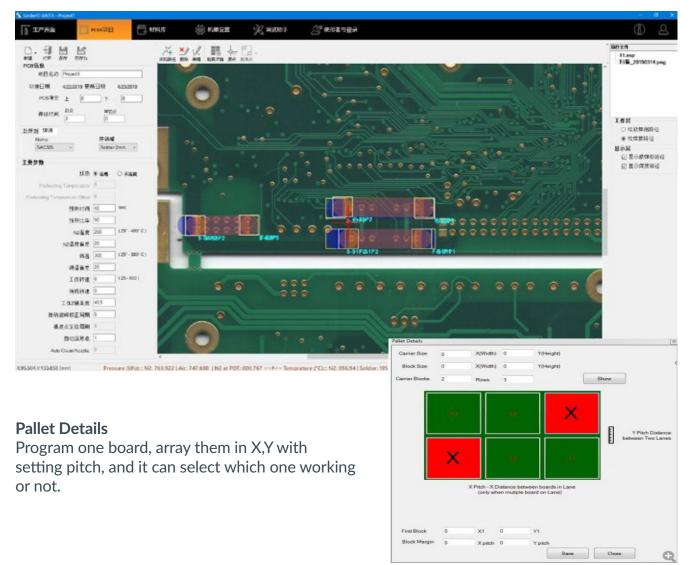
| Factory Status   | Machine application   | Advantagous  |
|--|---|--|
| Small volume, many different<br>board. Two different flux, two<br>different solder | Each drop jet flux with one<br>tank, each tank with one kind<br>of flux.<br>Each solder pot with one<br>solder. | When change process from<br>board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





### All motion path can be editable, include soldering

speed, empty move speed, dwell time, solder Z height, wave height, wave slop speed etc.

| lame | Sequence         | Use in<br>Production? | Z-Offset | Pump RPM<br>Offset | EmptyMove<br>Time | Site<br>Working<br>Time | Total Time |
|------|------------------|-----------------------|----------|--------------------|-------------------|-------------------------|------------|
| 52   | 1                | <b>N</b>              | 0        | 0                  | 1.803             | 15.192                  | 16.995     |
| S4   | 2                |                       | 0        | 0                  | 3.873             | 3,800                   | 7.673      |
| S1   | 3                | 2                     | 0        | 0                  | 1.707             | 3.800                   | 6.607 [    |
| \$3  | 4                | [w]                   | 0        | 0                  | 3.760             | 4.858                   | 8.618      |
| P2   | 30.000           | 20.828                |          |                    | 000.0             | 0                       | 0.0        |
|      | ell Time         |                       |          |                    |                   |                         |            |
| 4C+4 | e First Point De | well :                | Site O   | ther Point Dwel    |                   | Update E                | Iwell      |

#### Date base information

Engineer can input all solder, flux, solder nozzle information to machine. When doing programming, they can add the se 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.

|                     |                       | and 🛞 nancar 🕉 nancar 🤅 | <u>ि</u> दश्वहत्त्वय      |               |              | ٢ |
|---------------------|-----------------------|-------------------------|---------------------------|---------------|--------------|---|
| MI.                 | # 2005C               | - Di III MA             | 88                        | 842308        | × 28 84 88   |   |
| 1/1                 | ined a                |                         | 1/1                       | aisobit       |              |   |
| 170                 | 001                   |                         | 51                        | 308           |              |   |
| 64                  | Cuar -                |                         | 63                        | 8+3 08p 0.8Cu |              |   |
| BIREMM              | 13                    |                         | 2.8                       | 9.010         |              |   |
| BE 2510770          | 2.015                 | ENDH                    | Sec. 10                   | 217           | 84EH         |   |
| RB (ng KOH))        | 20                    |                         |                           |               |              |   |
| sance:              | 15                    | Time Inc.               |                           |               |              |   |
| bitting             | Notices               | 1 45                    |                           |               |              |   |
| 66                  | Jetualve              | - ISH 108 MA            | 51544<br>ER               | Dobler Znan   | - AN 201 BE  |   |
| 6.4                 | - at using            |                         |                           |               |              |   |
|                     | Directore .           |                         | 44                        | Food .        |              |   |
| 0612                | Ching just W          | (mm)                    |                           | Front         |              |   |
| 9645<br>9646        | Direction R · · · · · |                         | e#                        | Poord         |              |   |
| 9643<br>9646<br>262 | Direction R · · · · · | (mm)<br>(mm)            | 88<br>98                  | Found         | nan)<br>nan) |   |
| 9645<br>9646        | Direction R · · · · · | (mm)                    | 28.<br>142<br>8.8         | Found         | nes)<br>nes) |   |
| 9645<br>9645        | Direction R · · · · · | (mm)<br>(mm)            | 0.0<br>0.0<br>8.0<br>9.00 | Found         | nan)<br>nan) |   |
| 9645<br>9645        | Direction R · · · · · | (mm)<br>(mm)            | 0.0<br>0.0<br>8.0<br>9.00 | Found         | nan)<br>nan) |   |
| 9646<br>9646        | Direction R · · · · · | (mm)<br>(mm)            | 0.0<br>0.0<br>8.0<br>9.00 | Found         | nan)<br>nan) |   |

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.

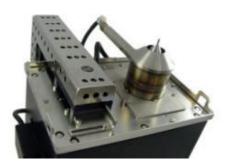
| 生产养育                                    | CINARD E      | ी <del>गा।</del> /द 🛞 गाम हाड | K metro f | 使用者与服果   |  |                              |  |   | 1   |
|---|---------------|-------------------------------|-----------|--|--|------------------------------|--|---|---|
| 687.004<br>AP-6<br>AP-65<br>AP-65<br>R2 |               | 1<br>1<br>8                   |           | 0.5<br>1940-15<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940-5<br>1940 | 24 04 2515<br>05 05 2017<br>05 05 2017<br>06 05 2017 |                              | <ul> <li>第10日本</li> <li>第20日本</li> <li>第20日本人</li> <li>第20日本人</li> <li>第20日本人</li> <li>第20日本人</li> <li>第20日本人</li> <li>第20日本人</li> <li>第20日本人</li> </ul> | 05 05 2017<br>05 05 2017<br>05 05 2017<br>05 05 2017<br>1 | а-<br>а-<br>а-<br>Я                       |
| 1728                                    |               |                               |           | 显示目志大小   |  |                              |  |   | 总目志大小 33.168                              |
| 1-61<br>RP8                             | EM.           | 用户表示                          | 819       | 用户名  | EM   |                              | 東都   | 通急文:  |   |
| 1000                                    | Monalischerer | 14/03/2013 10:05:50 AM        | Delete    | 825390   |  | 9633637FF                    | HessorceNetFound.  |   | ance ReplaceLantSeaso                     |
| perator                                 | Operator      | 05/04/2019 08:58:53 PM        | Delete    | sasimo   |  | 963.36.37 下午<br>963.36.31 下午 | ResourceNetFound.  |   | ance ReplaceN2TempTh                      |
|   |               |                               |           | satiseo  |  | 9433631 FF                   | ResourceNotFound<br>ResourceNotFound   |   | anco_LubricateCyclinder<br>anco RaiKlauge |
|   |               |                               |           | sasinno  |  | 963.36.31 FT                 | HesourceNetFound.  |   | ance Ralkaage<br>ance, TranportRailLubeO  |
|   |               |                               |           | antine   |  | 9433831 FT                   | ResourceNotFound   |   | ance_ElectionCleaning                     |
|   |               |                               |           | Satimo   |  | 9633631下午                    | ResourceNot cond.  |   | ance XYCoordinates                        |
|   |               |                               |           | nacimo   |  | 943 36 31 FF                 | BuseweekoFound   |   | anco_XYLabeOil                            |
|   |               |                               |           | aasimo   |  | 943-12-07 FT                 | ProjectLeaded  | 11.810  |   |
|   |               |                               |           | Sacres   |  | 943.31.53 FT                 | ResourceNot ound.  |   | e LogsDeleteSuccess                       |
|   |               |                               |           |  |  |                              |  |   |   |



# Hardware



**Drop jet fluxer** Drop jet flux made in Germany



**Mechanical pump** Mechnical solder pot with Ti tank.



**Preheating zone** Standare with top and bottom IR preheating zone.

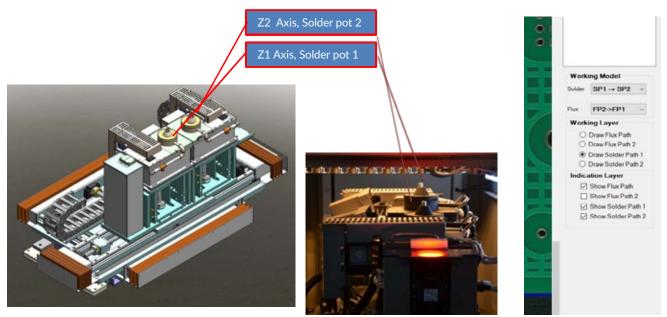


Dia 3MM, 4MM, 5MM, 6MM, 8MM as standard. Customzied nozzle avaliable.

## **Motion table**

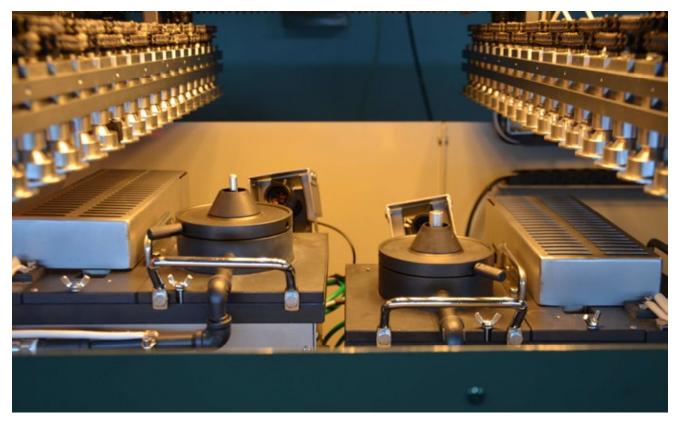
Can sequence use solder pot 1 & solder pot 2, or use them in simutiously for double production. Can use one fluxer for all pads, or use two fluxer to double producton.

### Individual Z axis at each solder station.



### 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



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





# FLEX-i2 Specifications

| General                    |   |
|----------------------------|---|
| Operating power/Max power  | 6KW/16KW  |
| Conveyor width             | 80508mm   |
| 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                | Adjustable with solder pot together   |
| Axes of Motion             | Share XYZ table with solder pot   |
| Position Accuracy          | + / - 0.05mm  |
| Preheat                    |   |
| Preheating method          | Top & bottom IR   |
| 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        | 180mm250mm (mechanical pump), 160250mm (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%                           |  |  |  |  |

