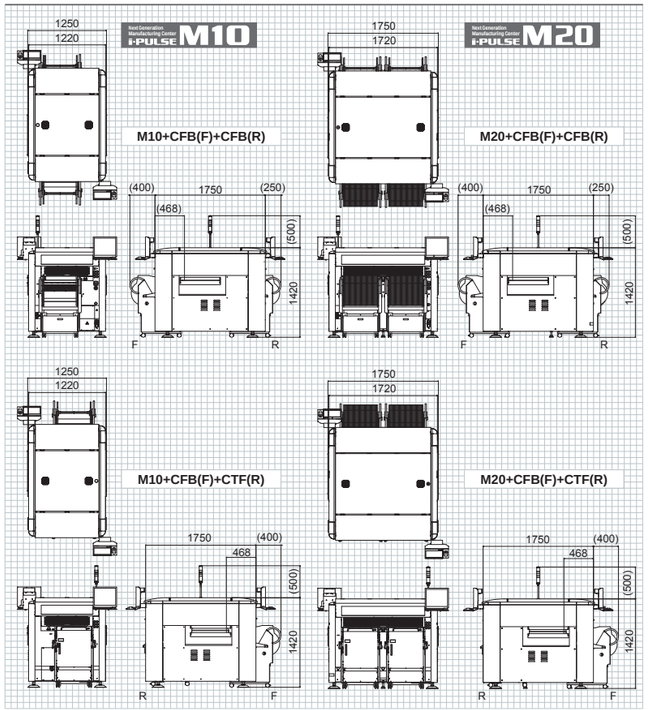
## Specifications

| Item | i-PULSE M10 | i-PULSE M20 |
|---|---|---|
| Board size (with buffer unused) | Min. L50 x W30mm to Max. L980 x W510mm *1 | Min. L50 x W30mm to Max. L1,480 x W510mm *2 |
| (with input or output buffer used) | Min. L50 x W30mm to Max. L420 x W510mm | — |
| (with input and output buffers used) | Min. L50 x W30mm to Max. L330 x W510mm | Min. L50 x W30mm to Max. L540 x W510mm |
| Board thickness | 0.4 – 4.8mm | |
| Board flow direction | Left to right (Std) | |
| Board transfer speed | Max 900mm/sec | |
| Placement speed (4 heads + 1 theta) Opt. Cond. | 0.15sec/CHIP (24,000CPH) | |
| (4 heads + 4 theta) Opt. Cond. | 0.15sec/CHIP (24,000CPH) | |
| (6 heads + 2 theta) Opt. Cond. | 0.12sec/CHIP (30,000CPH) *3 | |
| (4 heads + 1 theta) IPC9850 | 19,000CPH | |
| (4 heads + 4 theta) IPC9850 | 19,000CPH | |
| (6 heads + 2 theta) IPC9850 | 23,000CPH *3 | |
| Placement accuracy A (μ+3σ) | CHIP +/- 0.040mm | |
| Placement accuracy B (μ+3σ) | IC +/- 0.025mm | |
| Placement angle | +/-180 degrees | |
| Z axis control | AC servo motor | |
| Theta axis control | AC servo motor | |
| Component height | Max 30mm *4 (Pre-placed components: max 25mm) | |
| Applicable components | 01005 – 120x90mm, BGA, CSP, connector, etc. | |
| Component package | 8 - 56mm tape (F1/F2 Feeders), 8 - 88mm tape (F3 Electric Feeders), stick, tray | |
| Drawback check | Vacuum check and vision check | |
| Screen language | English, Chinese, Korean, Japanese | |
| Board positioning | Board grip unit, front reference, auto conveyor width adjustment | |
| Component types | Max 72 types (8mm tape), 36 lanes x 2 | Max 144 types (8mm tape), 36 lanes x 4 |
| Transfer height | 900 +/- 20mm | |
| Machine dimensions, weight | L1250xD1750xH1420mm, Approx. 1,150kg | L1750xD1750xH1420mm, Approx. 1450kg |
| Power | 3-phase 200/208/220/240/380/400/416/440V +/-10% (Transformer included), 50/60Hz | |
| Max consumption, capacity | 1.1kW, 5.5kVA | 1.1kW, 5.9kVA |
| Air pressure, consumption | 0.45Mpa, 50(4 heads) or 75(6 heads) L/min A.N.R. | |

*1 : Max. 950mm for 6-head configuration *2 : Max. 1,450mm for 6-head configuration *3 : Common options to M20 and M10 *4 : Board thickness + Component height = Max 30mm

## External dimensions




## Options

| Item |
|---|
| 4-axis 4-theta head |
| 6-axis 2-theta head |
| Air pulse type dispense head |
| Screw pump type dispense head |
| Rear fixed multi-scan camera |
| Rear 36-lane fixed feeder bank |
| Rear side switches |
| Rear side operation system |
| UPS4 |
| 200mm conveyor extension, entrance/exit |
| Component setup verifier |
| Feeder relocatability |
| Waste tape box |
| Internal lighting |
| Lead coplanarity sensor |
| Safety cover, front/rear |
| Clamp unit for CFB/CTF |
| CFB-36E F3 Electric Feeder Bank Changer |
| CFB-36 F1/F2 Feeder Bank Changer |
| CTF-36C Cassette type Changeable Tray Feeder |
| FTF-36C Cassette type Fixed Tray Feeder |
| RTS-1 Removable Tray Station |
| Parts feeders |
| Offline software |
| iQ vision |

※Configurations on pictures may be different from standard ones.
※Specification and appearance are subject to change without prior notice.(December 2015) 010103E1512E22C

YAMAHA

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YAMAHA
Revs Your Heart

# Next Generation Manufacturing Center i-PULSE M10/M20


**YAMAHA MOTOR CO., LTD.**

# Next Generation Manufacturing Center i-PULSE M10/M20


**Next Generation Manufacturing Center i-PULSE M10**

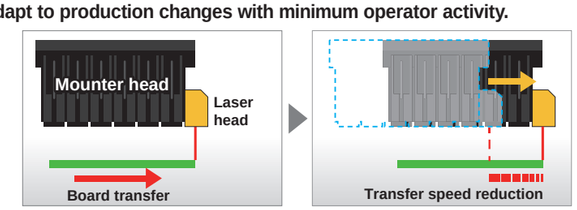
Max. board size **980 x 510mm**
Applicable components **01005 to 120 x 90mm**
Feeder capacity **72 lanes (8mm tape conversion)**
Machine width **1,250mm**

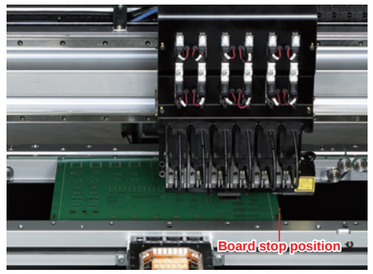
**Next Generation Manufacturing Center i-PULSE M20**

Max. board size **1,480 x 510mm**
Applicable components **01005 to 120 x 90mm**
Feeder capacity **144 lanes (8mm tape conversion)**
Machine width **1,750mm**

## New Multi-Conveyor System providing the highest large board handling capability on the market

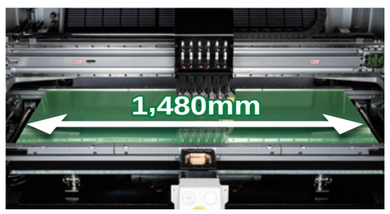
**With no mechanical board stoppers, utilizing a laser sensor to measure the board length, thus providing optimum board position for efficient component placement, regardless of size or shape. The Multi-Conveyor System can quickly and flexibly adapt to production changes with minimum operator activity.**



The laser sensor on the head unit locates the board at the optimum position.

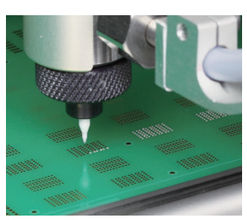
**Max. 1,480 x 510mm board can be handled as standard (M20).**



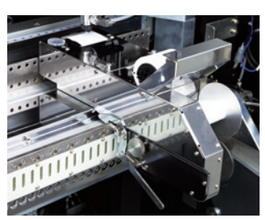

| | i-PULSE M10 board size | i-PULSE M20 board size |
|---|---|---|
| With buffer unused | Min. L50 x W30 to Max. L980 x W510mm | Min. L50 x W30 to Max. L1,480 x W510mm |
| With input or output buffer used | Min. L50 x W30 to Max. L420 x W510mm | |
| With input and output buffers used | Min. L50 x W30 to Max. L330 x W510mm | Min. L50 x W30 to Max. L540 x W510mm |

## 3D hybrid placement functions

**Dispense heads that can be exchanged with mount heads are newly developed. It becomes possible to make 3D placement where solder paste dispensing and component mounting can be alternately performed. Hybrid placement is now realized. The removable Dot Station can be fitted to the feeder bank.**


High-end (Screw pump type)


Standard (Air pulse type) with twin nozzle


Dot station



# Revolutionary and unique new features included as standard ensure the M10 and M20 evolves into the ultimate super-flexible multi-purpose machine.

## Wide ranging component handling capability and high feeder capacity

**New super high speed multi-scan camera.**

- Handling a full range of components from 01005 to 120 x 90mm as standard. (No optional camera needed)
- Image capture of chips can be performed with max. speed of 3,000mm/sec. High speed image capture and recognition are realized in accordance with component size.
- Introducing "D-SCAN" - New image capture system from i-PULSE.

**3 types of head variations Max. component height 30mm as standard (board thickness + component height)**


4-axis 1-theta head (Standard)


4-axis 4-theta head (High precision)


6-axis 2-theta head (High performance)

**Max. feeder capacity 144 lanes on M20 with rear feeder banks (option).**

**Feeder trolley and tray feeders**

**CFB-36 F1/F2 Feeder 36-lane Feeder Bank Changer**

**CFB-36E F3 Electric Feeder 36-lane Feeder Bank Changer**

**CTF-36C Changeable Tray Feeder**

**RTS-1 Removable Tray Station**

## In pursuit of ultimate flexibility and fast & easy setup

**New CFB-36E for use with F3 Electric Feeder.**

The CFB-36E F3 Feeder Bank Changer, the CFB-36 F1/F2 Feeder Bank Changer and the CTF-36C Changeable Tray Feeder can be exchanged with each other. The CFB-36E and the CFB-36 can also be fitted to the same machine.

**CFB-36E + CFB-36**

**CTF-36C×2**

**CFB-36E + CTF-36C**

* Fitted to M20 on the above pictures.

**New CTF-36C Changeable Tray Feeder.**

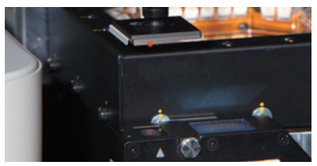
Utilizing multi-magazine tray handling with intelligent function ensures high-speed production changeover.

## In pursuit of high accuracy placement

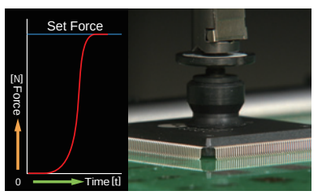
**Gripper nozzles newly added in P type nozzles of light-weight and low-impact. Odd-form handling capability further increased.**

**Component coplanarity sensor (Option).**

Floating leads are inspected and defective components are detected prior to placement.



**Placement force is fully controlled in real time to reduce stress to components.**




**Placement height measuring laser unit as standard.**

Board warp is measured with laser to ensure placement height is corrected before components are mounted.