

# FlexTRAK-2MB Plasma Treatment System

**March**  
A NORDSON COMPANY

## DUAL LANE BOAT PROCESSING WITH MULTIPLE IN-LINE PLASMA MODULES

The FlexTRAK-2MB plasma system is designed for high throughput in-line processing of microelectronic devices held in boats, trays, or other carriers, up to 2 boats per plasma cycle. The patented plasma module provides exceptional uniformity and run-to-run process repeatability. Its advanced three axis symmetrical plasma chamber ensures highly uniform plasma treatment, and control over all process parameters ensures highly repeatable results.

The FlexTRAK-2MB plasma system seamlessly integrates into your production line, while accommodating a wide range of boat sizes, yielding unmatched production flexibility. Its compact plasma chamber and proprietary process control system minimize cycle times. The system provides fully automated plasma processing via SMEMA 1.2 protocol.

### APPLICATIONS

Plasma processes for pre-Flip Chip underfill (FCUF), pre-die attach, pre-wire bond, and pre-mold steps.

#### Plasma Contamination Removal & Cleaning

- Fluorine & other halogens
- Metals & metal oxides
- Organic compounds

#### Plasma Etching

- Roughen surfaces to improve adhesion and reduce delamination
- Modify surfaces to increase bondability and make surfaces more wettable

#### Surface Activation by Plasma

- Improve Flip Chip underfill performance to eliminate voids, enhance adhesion, increase wicking speed, and increase fillet height uniformity
- Improve adhesive flow to eliminate voids and enhance adhesion
- Improve mold material flow to eliminate voids and reduce wire sweep



### HIGH THROUGHPUT IN-LINE PLASMA PROCESSING

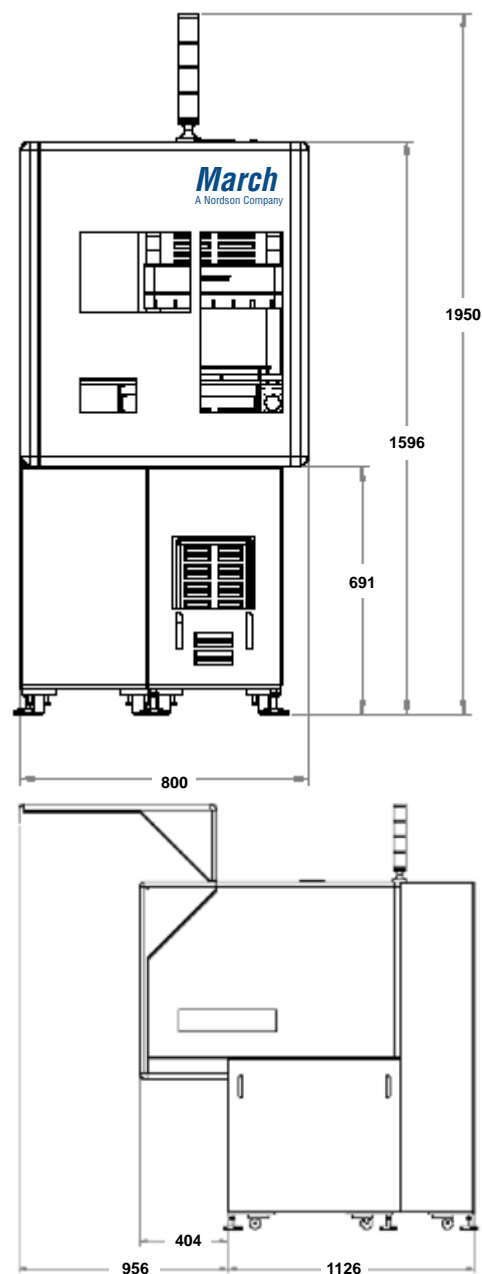
The FlexTRAK-2MB plasma system's integrated boat handler provides rapid material transfer for a wide range of boat sizes, up to 2 boats per plasma cycle. Processing can be done with most types of boats, trays and flat carriers. The patented chamber design and control architecture enable short plasma cycle times, ensuring that throughput is maximized and cost of ownership is minimized.

### FEATURES AND BENEFITS

- Unique boat "by-pass" feature optimizes productivity
- Multiple in-line plasma modules increase throughput
- Highly uniform plasma treatment
- Production-ready dual lane boat handling
- Low cost of ownership
- Ideal for pre-Flip Chip underfill (FCUF) processes

## FlexTRAK-BH System Specifications

Enclosure	Powder-coated aluminum Completely houses the process chamber(s), electronics, dry pump and RF generator
Chamber	Material: Nickel-plated aluminum with aluminum fixturing Std. Part Envelope: JEDEC Compliant / Auer Boat Compatible Patented "F3" plasma chamber technology
RF Power	600 W, solid state 13.56 MHz
Gas Control	Two (2) Mass Flow Controllers: 100 SCCM, 250 SCCM (other sizes available upon request) Up to four (4) MFCs optional
User Interface	Touch-screen PC with intuitive graphical user interface Unlimited alphanumeric recipe storage
Pump System	16 CFM Dry Pump (per Process Module) Variable Frequency Drive Suitable for corrosive gases (e.g. CF <sub>4</sub> , SF <sub>6</sub> , etc.)
System Controls	Automatic Impedance Matching Network Temperature-Compensated Pressure Gauge
Facility Requirements	<b>System Dimensions W x D x H (with light tower):</b> 800 x 1530 x 1950 mm (31.5 x 60.2 x 76.8 in.) <b>Power:</b> Single-phase 220VAC ± 10%, 20A, 50/60 Hz <b>Process Gases*:</b> 6 mm (1/4 in.) compression fitting, 0.7-1.4 bar (10-20 PSI) *System can accommodate a wide range of process gases <b>CDA:</b> 6 mm (1/4 in.) compression fitting, 5.5-6.9 bar (80-100 PSI) Flow: 23 L/min. @ 2.5 cycles/min. <b>N<sub>2</sub> or CDA (Chamber Purge):</b> 6 mm (1/4 in.) compression fitting, 5.5-6.9 bar (80-100 PSI) Flow: 25 L/min. @ 2.5 cycles/min. (Peak flow: 150 L/min.) <b>N<sub>2</sub> (Pump Purge):</b> 6 mm (1/4 in.) compression fitting, 0.7-3.5 bar (10-50 PSI) Flow: 1.65 L/min.
Compliance	Complete machine enclosure with interlocks Light tower CE marked SEMI E10 SEMI S2/S8 SMEMA 1.2 compatible



**Boat Width & Throughput Chart**

Boat Size (width)	Boats/Cycle	Units Per Hour (UPH)*
50 to 150 mm	2	180 (1PM) - 360 (2PMs)
151 to 305 mm	1	90 (1PM) - 180 (2PMs)

\*Machine-capable rates, 1PM = 1 Process Module, 2PMs = 2 Process Modules

Our Applications and Customer Service departments bring to you more than 20 years of experience in RF plasma technology.



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## Leading Plasma Innovations

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