



MH-3000

Strip Laser Mark Handler

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Module Description

- Input stack I/O
 - Manual loading of a leadframe cassette into sliding drawer.
 - Strip transfer from stack to input pick and place.
 - Drawer is mechanically keyed to assure correct cassette orientation.
- Input pick and place
 - Strip transfer from input stack to linear shuttle.
- Linear shuttle
 - Transports a strip to the pre-mark brush and Laser Light Box.
- Optional pre mark orientation inspection
- Optional pre-mark brush
 - Twin rows of stationary brushes
 - Cleans devices on the leadframe prior to laser marking
- Laser light box and mark site
 - Laser mark of devices in a safe environment
 - Optional vision alignment for marking of small devices in leadframes.
- Optional light box air ionizer
- Light box vacuum system to remove majority of dust
- Post mark brush
 - Twin rows of stationary brushes.
 - Cleans devices after laser marking
- Optional Post Mark Vision Inspection
 - Sample mark alignment verification
 - Sample mark quality verification
- Output Pick and Place
 - Strip transfer from the linear shuttle to the output strip stack.
- Output Stack I/O
 - Strip transfer from Output Pick and Place to output strip stack.
 - Manual unloading of leadframe cassette with sliding drawer.

Equipment Overview

The MH-3000 Laser Marker marks leadframes or devices. It offers a variety of options and configurations that can be customized to meet the changing needs of the semiconductor industry. To ensure optimum quality, process and data control, the MH-3000 is supported by MCT's leading data management software including the SmartTrak™ Software Suite.

Superb index times, a wide common base, and the ability to provide increased flexibility and performance at lower cost combine to make the MCT MH-3000 an innovative automation solution for either the assembly or back-end test sectors of the semiconductor market.

Equipment Advantages

Integrated Lasers from Trumpf, Rofin Sinar, EO Technics and or other intelligent type lasers, which have a small footprint and can mark up to 1000 characters per second.

High Throughput from end of mark to next start mark index time of 600 msec to 1.5 sec.

Virtually Jam Free Operation increases laser utilization, increases capacity, and reduces the number of systems and operators.

Innovative Data Management software that can be integrated into customer existing MES/MIS.

Quick Kit Changeover from one leadframe type to another in less than 30 minutes.

Software recipe selection to setup for specific device type or mark instructions.

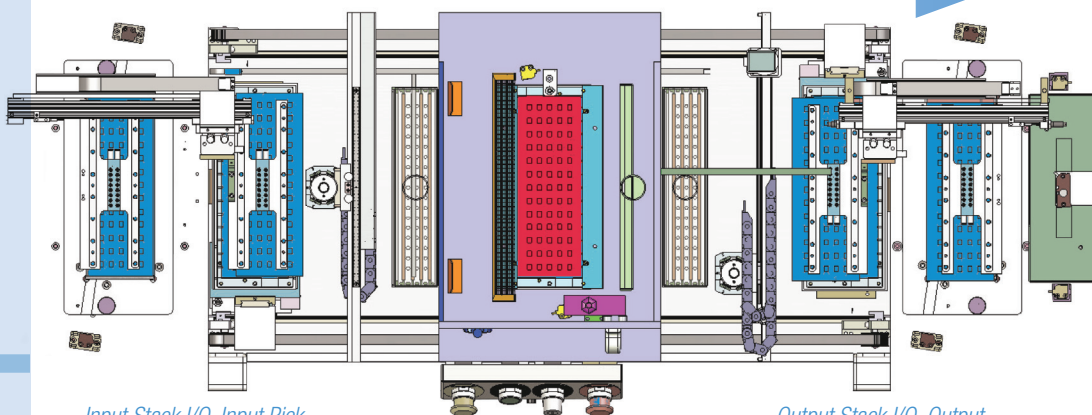
System Modularity allows customer to buy and configure only what is needed with the potential for future expansion.

Significant Reduction in Cost of Ownership over conventional processes. Less floor space, and reduced spares requirements.

Industry-leading Process and Applications Experience reduces lead-time to device qualification.

MCT is the Leading Provider of test handling and marking equipment.

Product Flow: Left to Right in an Inline System



Input Stack I/O, Input Pick and Place, Linear Shuttle, and Premark Brush

Laser Light Box and Laser Mark Site of test handling and marking equipment.

Output Stack I/O, Output Pick and Place, /Post Mark Inspection, Post Mark Brushof test handling and marking equipment.



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Technical Specifications.

The Laser Marking System is capable of being converted to run stacked or slotted cassettes. This specification defines the mechanical, electrical, software control, functional, safety, general and requirements of the equipment. The Equipment is designed to comply with S2-93 and CE directives.

General Functional and Performance Requirement

General

Tray-to-Tray Index Time:	600 msec to 1.5 sec dependent on laser mark time
Accuracy for Mark	Standard +/- 80 microns
Kit changeover:	< 15 minutes
Strip warp	< 3 mm
Jam Rate	< 1 jam in 1000 strips run
Uptime	> 97%
MTTA Mean Time to Assist	< 2 min.
MTBF Mean Time Between Failure (any failure that is not considered an assist)	> 200 hours
MTTR Mean Time to Repair	< 20 min
ESD	< 30 V within 75 mm of device path with optional ionizer

Strip requirements

Strip width	23 - 100 mm
Strip length	50 - 275 mm
Strip thickness	50 to 750 microns
Package types	Leadframes and laminates

Stacked I/O

Cassette types	28 - 110 mm
Cassette length	110 - 280 mm
Cassette height	200 - 450 mm
Number of cassettes	One (1) input and one (1) output

Each equipment purchase entitles the purchaser three (3) training credits, which is inclusive of training for up to five (5) personnel for maximum of three (3) days. Training shall be conducted at customer's site to operators, service technicians and Equipment Engineers. Training shall be conducted in English.

Basic (2 days) shall include operation and basic trouble shooting of mechanical, electrical, software and hardware.

Basic operation – Starting system, software/menus, operating etc.

Device kit conversion

Intermediate (2-3 days) – suggested that it occur 1 to 2 months after basic training). In depth machine training as follow:

Mechanical alignment procedures and diagnostic techniques
Electrical/electronics maintenance, troubleshooting and tuning procedures

Daily/Weekly/Monthly/Bimonthly/Quarterly/half yearly/yearly machine preventative Maintenance.

SYSTEM SPECIFICATIONS

Laser

Type Supported	Currently capable for Trumpf, Rofin Sinar, EO Technics
Typical Mark Times per Strip	Leadframe Mark 3.0 to 12 sec Note – Mark times are Application and Laser Dependent.

Configuration

Product Flow	Left to right
Size:	1.7m x 0.9m x 1.6m (L x W x H)
Weight	< 400 KGs
Mobility	Transportable
Available Options	
ESD	Ground Fault Monitoring (Option)
Inspection	Premark inspection (Option) Post mark inspection (Option)
Cell Controller	Embedded or External (Option)

Computer Controller

CPU	Pentium Core 2 Duo, 2 GHz or greater
Storage	
Main Memory	DDR, 2 GB or greater
Hard Disk	80 GB or greater
Removable Storage	DVD / CD R/W Drive
Video Adaptor	Onboard
Power Supply	350W or greater
USB Ports – 2/1.1	(2) present, (1) port available on back of marker
Ethernet Ports	(2) available on back of marker
Operating System	Windows XP

Operating Conditions

Ambient Temperature	18-27 C
Clean Room	ISO Class 8 or Better
Relative Humidity	20-80% Non-Condensing
Maximum Floor Load:	200 kg/m ²
Audible Noise Level	< 65 db at 1m

Interfaces

Operator Computer Interface	17" LCD panel with Touch screen
Operator Indicator (Light Tower)	
Red light	Configurable by customer
Solid Yellow light	Configurable by customer
Flashing Yellow light	Configurable by customer
Green light	Configurable by customer
Flashing Green light	Configurable by customer
Factory network connection	Ethernet (TCP/IP, Microsoft)
Customer Host Interface	SECS/GEM compliant

Power and Facilities Requirements

Electrical	208 - 220 V single phase, 50-60 Hz, 20 Amps
Compressed Air:	CDA, 4 – 8 bar (~59 - 118 psi)
Documentation	Operations manual Maintenance manual Electrical documentation (wire tabs, etc.) Pneumatic schematic
Warranty	13 months after acceptance for defects in materials excluding consumables or a maximum of 13 months from date shipment.

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