

TEAM-Mate™ Loadlock System

Small Footprint, MES-C-Compatible Loadlock and Transfer System

- **Small footprint**
- **Chamber designed to minimize particulates and hydrocarbons**
- **Integrated magnetic transfer mechanism**
- **Low volume chamber reduces pumpdown time**
- **Load wafers or other substrates into a SEMI-standard process chamber without breaking vacuum**
- **Manual or automated**
- **200mm, 300mm or custom chambers**
- **SEMI-MES-C or custom interface**
- **Customizable to meet varied applications**



The TEAM-Mate™ is a compact, high-vacuum compatible, single-substrate loadlock system designed to load wafers or other flat substrates into a SEMI-standard or custom process module.

A unique magnetically-coupled slide mechanism powered by an exterior stepper motor driven stage allows wafers to be repeatedly loaded and removed without breaking vacuum. This small footprint system can mimic the motions of a complex and costly robot but is more convenient to use, significantly less costly and requires little or no engineering to integrate with a process module.

The TEAM-Mate consists of a vacuum chamber with a manually operated door with viewport, a delivery mechanism and an exterior drive system. The motorized system comes with stepper driver and power supply with communications link and end point limit switches.

Low Particulate, Low Volume

A unique design with care in selection of interfacing materials along with an integrated magnetically-coupled transfer device with moving parts located well below transfer height, minimizes generation of particulates. Machined from a single

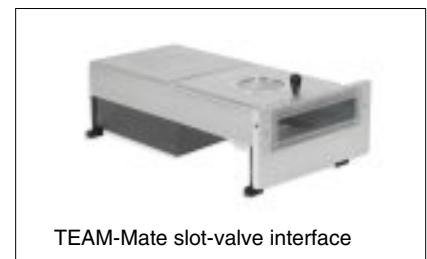
billet of aluminum — eliminating welds, this low volume loadlock chamber has free pump paths to the pump throat entrance and can be backfilled with dry N2 reducing pump down time.

Magnetically-Coupled Drive

TEAM-Mates exterior linear stage is driven by powerful magnetically-coupled circuits that are attached to the delivery mechanism inside the chamber. Incorporating the magnet-transfer into the chamber wall reduces the system's overall footprint. Motion can be operated manually or motorized.

Applications

Applications include sample delivery to modules for process development, as a manufacturing tool, or for low-volume production. TEAM-Mates valve interface can be easily modified to mate to a wide variety of vacuum systems.



TEAM-Mate slot-valve interface

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SPECIFICATIONS AND DESCRIPTION

MODEL	TEAM-Mate 200-LO	TEAM-Mate 300-LO
MATERIAL		
➔ Chamber	Single machined aluminum block H-V compatible - Metal with Viton o-rings	Single machined aluminum block HV compatible - Metal with Viton o-rings
➔ Transfer System	All HV compatible	All HV compatible
DESCRIPTION		
➔ Wafer/substrate sizes	Up to 200 mm	Up to 300mm
➔ Exterior dimension	23.64" x 13.38" x 7.59"	32" x 17.31" x 6.41"
➔ Chamber load opening	9" load opening	13.75" x 13.25" load opening
➔ Chamber door	4" window	4" window
➔ Interface - MESC Std or custom	SEMI E21	SEMI E21.1
➔ Volume of chamber	4.0 Liters	6.5 Liters
➔ Pump port	ISO NW 40 ID	ISO NW 40 ID
➔ Auxiliary ports	Two ISO NW16 ID	Two ISO NW 40 ID
➔ Weight	~ 49 pounds	~ 60 pounds
PERFORMANCE		
➔ Transfer distance	Up to 12 inches from front flange - User programmable	Up to 18.3 inches from front flange - User programmable
➔ Positioning Accuracy	±0.002 inches	±0.002 inches
➔ Repeatability	±0.002 inches	±0.002 inches
MOTORIZATION CONTROLS		
➔ System I/O Controls	Pushbutton, RS232 or digital I/O	Pushbutton, RS232 or digital I/O
➔ Pushbutton Controls	Set point/Extract/Retract	Set point/Extract/Retract
MANUAL CONTROLS		
➔ Manual Operation	Hand Crank Mechanism	Hand Crank Mechanism
➔ Vertical Lift/Lower	Lever	Lever
<i>Specifications subject to change without notice.</i>		<i>TEAM-Mate Loadlock Patent Pending.</i>

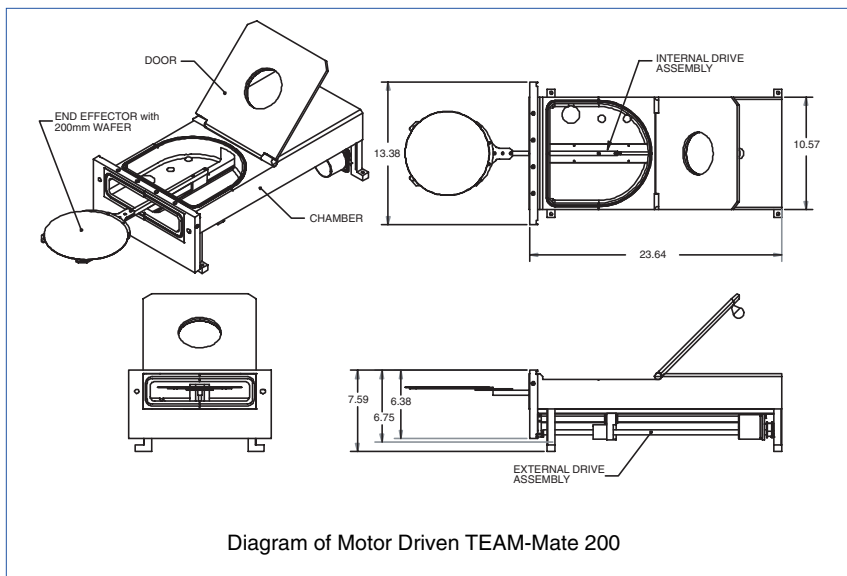
About Transfer Engineering & Mfg, Inc.

Transfer Engineering and Manufacturing provides innovative products for OEM, Production Facility and R&D/University Lab customers in the Semiconductor, Media, Sputter Deposition and R&D markets. TEAMS core expertise is in the handling, transporting, positioning, and manipulation of samples, semiconductor wafers, substrates, flat panels, and other materials with precision and reliability in HV, UHV, ultra-clean and other challenging controlled environments.

Product lines include —

- ➔ Linear, Rotary and Linear/Rotary Precision Magnetic Manipulators
- ➔ Sample transfer & loadlock systems including the TEAM-Mate and MASCOT MESC- compatible wafer transport system
- ➔ HV and UHV heating and/or cooling assemblies
- ➔ Motion and placement systems
- ➔ Automated loadlock systems
- ➔ Custom systems

At Transfer Engineering we believe the key to providing the best product solution is to work closely with customers to understand their process and objectives and to involve them in the product design to ensure that goals are met. Contact us for technical information or a quotation.



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