



Star Systems

Integrated Systems





SL-200 Star Systems

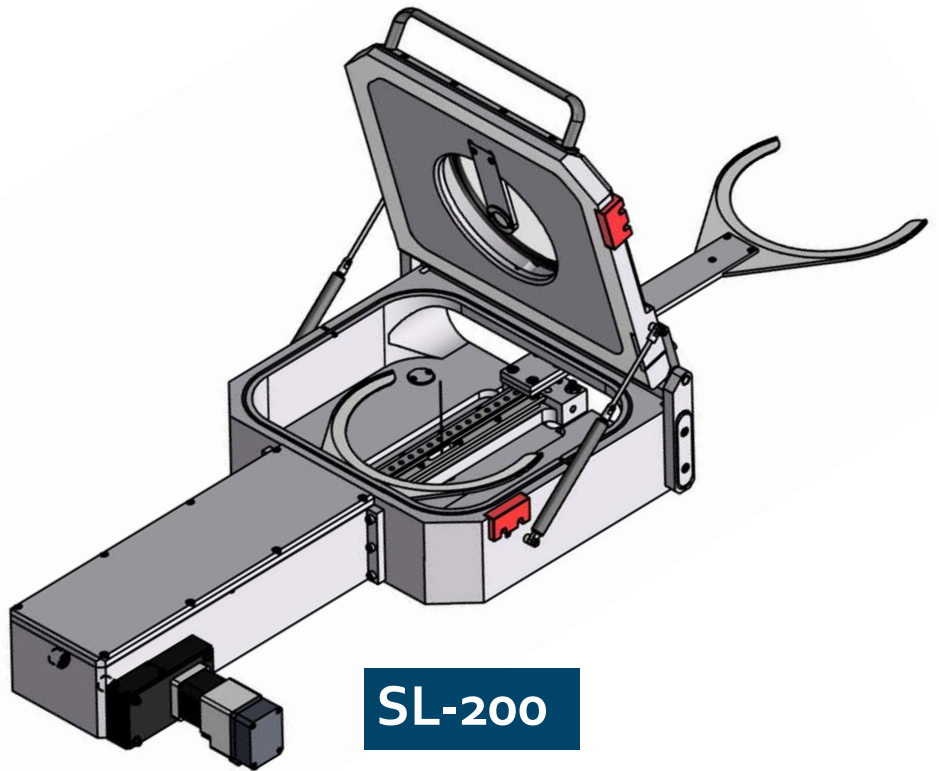
Integrated Systems

FEATURES

- Handles wafer sizes up to 200mm
- High vacuum compatibility
- Custom end effectors
- CE compliant
- Plug and Play Vacuum Transport System

OPTIONS

- Vertical motion – Z lift
- Vacuum and gas plumbing
- Integrated transfer control module



Hine Automation's Star Systems are automated load locks compatible with high vacuum environments. Hine's Star Systems are designed to eliminate the need to vent and evacuate the OEMs process chamber during every substrate cycle. The Star SL-200 accommodates substrates up to 200mm in diameter. The Star systems offer various levels of functionality and integration that meet technical and budgetary requirements of most OEMs. Vacuum and gas plumbing, slit valve, end effector, and Hine's integrated control module are options available to OEMs. Additionally, the Star system offers the Z-lift mechanism. The Z-lift provides vertical motion to pick-up an drop-off substrates in a process chamber without lift pins. Thanks to its MESC mounting interface and the various options of controller interface, Hine's Star Systems can be easily integrated with any thin-film OEM.



SL-300 Star Systems

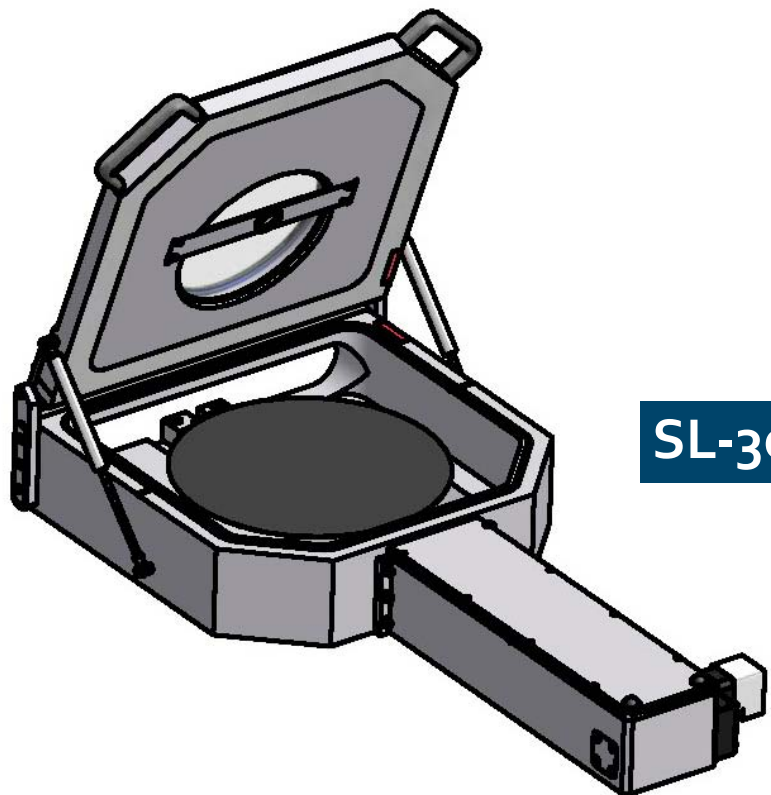
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FEATURES

- Handles wafer sizes up to 300mm
- High vacuum compatibility
- Custom end effectors
- CE compliant
- Plug and Play Vacuum Transport System

OPTIONS

- Vertical motion – Z lift
- Vacuum and gas plumbing
- Integrated transfer control module



SL-300

Hine Automation's Star Systems are automated load locks compatible with high vacuum environments. Hine's Star Systems are designed to eliminate the need to vent and evacuate the OEMs process chamber during every substrate cycle. The Star SL-300 accommodates substrates up to 300mm in diameter. The Star systems offer various levels of functionality and integration that meet technical and budgetary requirements of most OEMs. Vacuum and gas plumbing, slit valve, end effector, and Hine's integrated control module are options available to OEMs. Additionally, the Star system offers the Z-lift mechanism. The Z-lift provides vertical motion to pick-up an drop-off substrates in a process chamber without lift pins. Thanks to its MESC mounting interface and the various options of controller interface, Hine's Star Systems can be easily integrated with any thin-film OEM.



SL-450 Star Systems

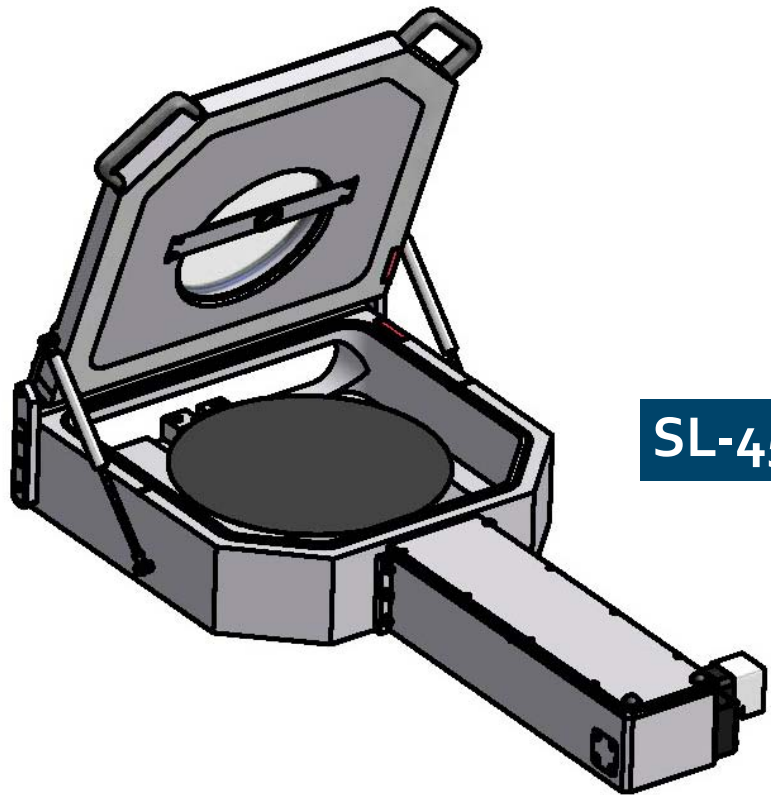
Integrated Systems

FEATURES

- Handles wafer sizes up to 450mm
- High vacuum compatibility
- Custom end effectors
- CE compliant
- Plug and Play Vacuum Transport System

OPTIONS

- Vertical motion – Z lift
- Vacuum and gas plumbing
- Integrated transfer control module



SL-450

Hine Automation's Star Systems are automated load locks compatible with high vacuum environments. Hine's Star Systems are designed to eliminate the need to vent and evacuate the OEMs process chamber during every substrate cycle. The Star SL-450 accommodates substrates up to 450mm in diameter. The Star systems offer various levels of functionality and integration that meet technical and budgetary requirements of most OEMs. Vacuum and gas plumbing, slit valve, end effector, and Hine's integrated control module are options available to OEMs. Additionally, the Star system offers the Z-lift mechanism. The Z-lift provides vertical motion to pick-up an drop-off substrates in a process chamber without lift pins. Thanks to its MESC mounting interface and the various options of controller interface, Hine's Star Systems can be easily integrated with any thin-film OEM.



Star Systems

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	SL-200	SL-300	SL-450
Wafer Sizes	≤200mm†	≤300mm††	≤300mm††
Pay Load	1.5kg *	1.5kg *	5kg *
Mounting facet	200mm MESC	300mm MESC	400mm MESC
Axes of Motion	R, Z	R, Z	R, Z
Vacuum performance Base operating pressure Leak Rate	<5.00E-07 Torr 1.00E-09 scc He/sec	<5.00E-07 Torr 1.00E-09 scc He/sec	<5.00E-07 Torr 1.00E-09 scc He/sec
Input Power	24 VDC 2.0 Amps	24 VDC 2.0 Amps	24 VDC 2.0 Amps
Maximum Temperature	100°C	100°C	100°C
Exposed Materials	6061-T6 Aluminum, Stainless Steel 300 and 400 Series, Viton, Borosilicate Glass, Crytox, Delrin, PEEK	6061-T6 Aluminum, Stainless Steel 300 and 400 Series, Viton, Borosilicate Glass, Crytox, Delrin, PEEK	6061-T6 Aluminum, Stainless Steel 300 and 400 Series, Viton, Borosilicate Glass, Crytox, Delrin, PEEK
Control Interface	RS-232 / Ethernet	RS-232 / Ethernet	RS-232 / Ethernet
MCBF	>3.00E+05	>3.00E+05	>3.00E+05
CE	compliant	compliant	compliant
Repeatability			
R	0.15mm‡ 0.10mm‡	0.15mm‡ 0.10mm‡	0.15mm‡ 0.10mm‡
Z			
Max. Reach	305mm**	355mm**	635mm**
Vertical Stroke	0.5 ⁰ ***	0.5 ⁰ ***	0.5 ⁰ ***

† SEMI Standard sizes available up to 200mm. Custom end effectors available upon request.

†† SEMI Standard sizes available up to 300mm. Custom end effectors available upon request.

‡ Measured as three standard deviations (3σ)

* Payload depends on end effector

**Maximum reach measured from the edge of the slit valve

*** Vertical Stroke is optional

CONNECTOR
PANEL



About Hine Automation

Hine Automation, LLC is a designer and manufacturer of automation systems and robotic components. We serve Original Equipment Manufacturers (OEMs) in the semiconductor, solar, flat panel display and related industries across the globe. Our robotic components satisfy a wide range of needs; from flexible research and development environments to stringent manufacturing environments. Combining our unsurpassed quality and reliability with modular and versatile designs to meet today's automation challenges, our products provide functional and economical solutions.

Our Mission

Our goal is to design and manufacture the most cost effective automation solutions and deliver unparalleled customer service and support.

Our Strengths

- Demonstrated Reliability
- Cost Effective Solutions
- Custom Solutions
- Lightning Speed Response and Turn-around Times
- Knowledge, Experience-driven Designs

Our Products

- **Cluster Systems:**
Constellation Systems
- **Automated Load Locks:**
Star Systems
- **Robotic Components:**
Vacuum Robotic Arms
Vacuum Elevators
Vacuum Aligners
Atmospheric Robotic Arms
Atmospheric Elevators
Atmospheric Aligners

