



# 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

### *Integrated Systems*

#### 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 a 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

## Integrated Systems

	SL-200	SL-300	SL-450
Wafer Sizes	≤200mm†	≤300mm†	≤450mm†
Pay Load (Std/Hi Load)	1.5/5.0 kg*		
Mounting Facet	200mm MESC	300mm MESC	450mm MESC
Axes of Motion	R, Z		
Vacuum performance Base operating pressure Leak Rate	<5.00E-07 Torr 1.00E-09 scc He/sec		
Input Power	24 VDC 2.0 Amps		
Maximum Temperature	100°C		
Exposed Materials	6061-T6 Aluminum, Stainless Steel 300 and 400 Series, Viton, Borosilicate Glass, Crytox, Delrin, PEEK		
Control Interface	RS-232 / Ethernet		
MCBF	>3.00E+05		
CE	Compliant		
Repeatability R Z	0.15mm‡ 0.10mm‡		
Max. Reach	305mm**	355mm**	635mm**
Vertical Stroke	0.5°***		

- † SEMI standard sizes available and custom end effectors available upon request.
- ‡ Measured as three standard deviations (3σ)
- \* End effector design may impact max payload capability
- \*\* Maximum reach measured from the edge of the slit valve
- \*\*\* Vertical stroke is optional

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## 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

