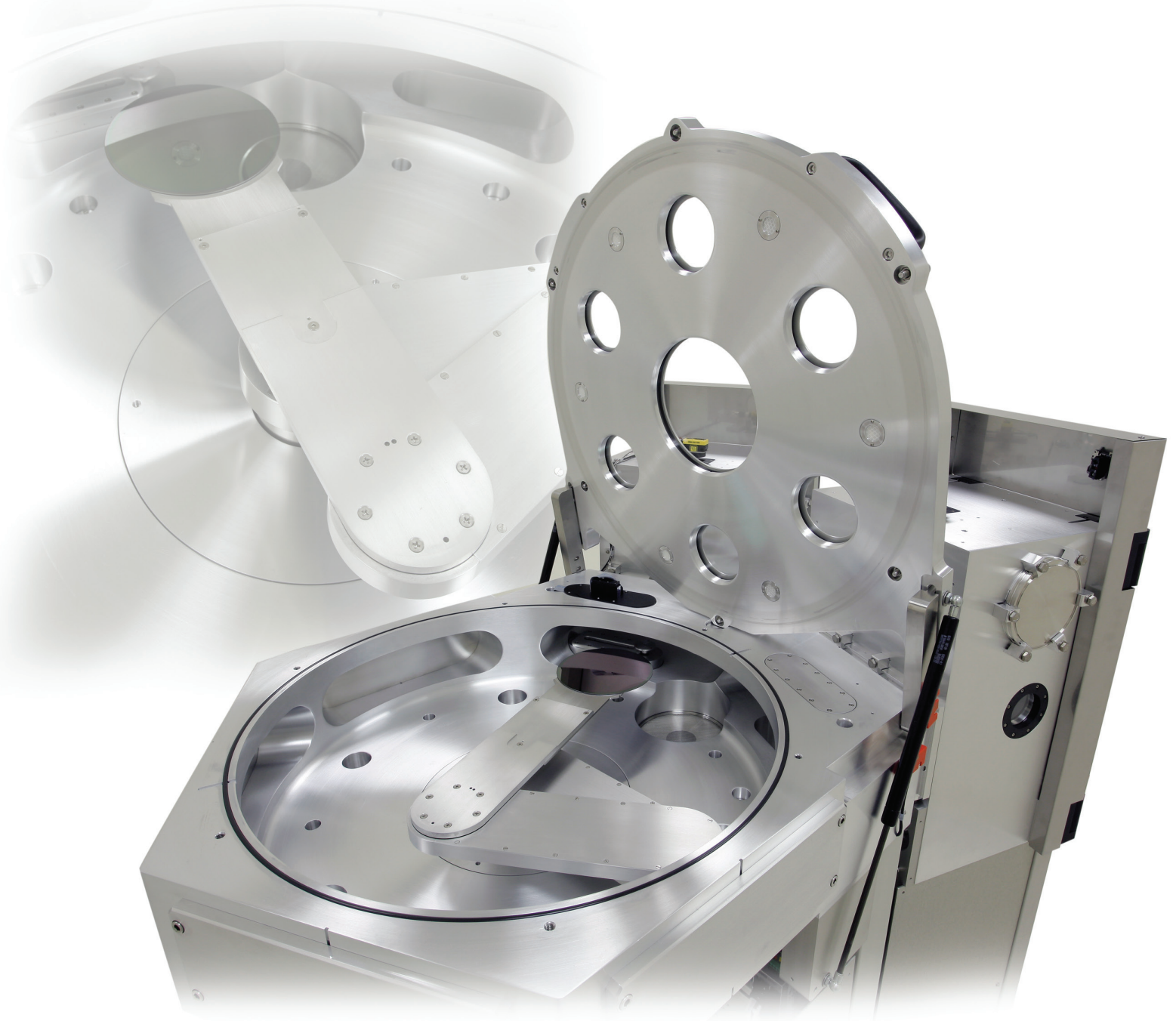




Constellation Systems

Integrated Systems





Constellation HA-200 Systems

Integrated Systems

FEATURES

- Hine Robotics: HA-3.2 Robotic Arm and HA-50V Vacuum Elevator
- High reliability of > 3 million MCBF
- Handles wafer sizes up to 200mm
- Sophisticated automation features including wafer mapping, wafer cross-slot detection
- Safety interlocks
- High vacuum compatibility
- CE/S2 compliant
- RS-232 / Ethernet control interface

OPTIONS

- Mechanical aligners
- Cassette isolation plumbing and slit valve
- SEMI standard and custom end effectors
- Dual/Single end effector
- 25 or 50 wafer cassettes
- Facet mounted Optical Aligner HA-71A



HA-200

Hine Automation's Constellation HA-200 system is an entry-level Cassette-To-Cassette Vacuum Transfer Systems. This four-sided in-line handling system features 1 cassette load port and 3 additional facets. The Constellation HA-200 integrates the HA-3.0 vacuum robotic arm, the HA-50V vacuum elevator, and as an option, the HA-71A vacuum optical aligner with the latest system integration technology in a functional design with a small system footprint. The proven reliability of these components ensures high system uptime and reduces costs. Safety interlocks and sophisticated automation features such as wafer mapping and wafer cross-slot detection, accelerates system integration, reduce product development costs, and shift OEM's engineering resources from system integration to process development. As with all of Hine Automation products, the versatile design of the Constellation System can be customized to fit your unique needs.



Constellation HA-400 Systems

Integrated Systems

FEATURES

- Hine Robotics: HA-5.0 Robotic Arm and HA-50V Vacuum Elevator
- High reliability of > 3 million MCBF
- Handles wafer sizes up to 200mm
- Sophisticated automation features including wafer mapping, wafer cross-slot detection
- Safety interlocks
- High vacuum compatibility
- CE/S2 compliant
- RS-232 / Ethernet control interface

OPTIONS

- Optical aligners
- SEMI standard and custom end effectors
- Dual/Single end effector
- 25 or 50 wafer cassettes



Hine Automation's Constellation HA-400 system is a Cassette-To-Cassette Vacuum Transfer Systems. This four-sided cluster system features 1 cassette load port and 3 additional facets. The Constellation HA-400 integrates the HA-5.0 vacuum robotic arm, the HA-50V vacuum elevator, and the HA-75 vacuum optical aligner with the latest system integration technology in a functional design with a small system footprint. The proven reliability of these components ensures high system uptime and reduces costs. Safety interlocks and sophisticated automation features such as wafer mapping and wafer cross-slot detection, accelerates system integration, reduce product development costs, and shift OEM's engineering resources from system integration to process development. As with all of Hine Automation products, the versatile design of the Constellation System can be customized to fit your unique needs.



Constellation HA-500 Systems

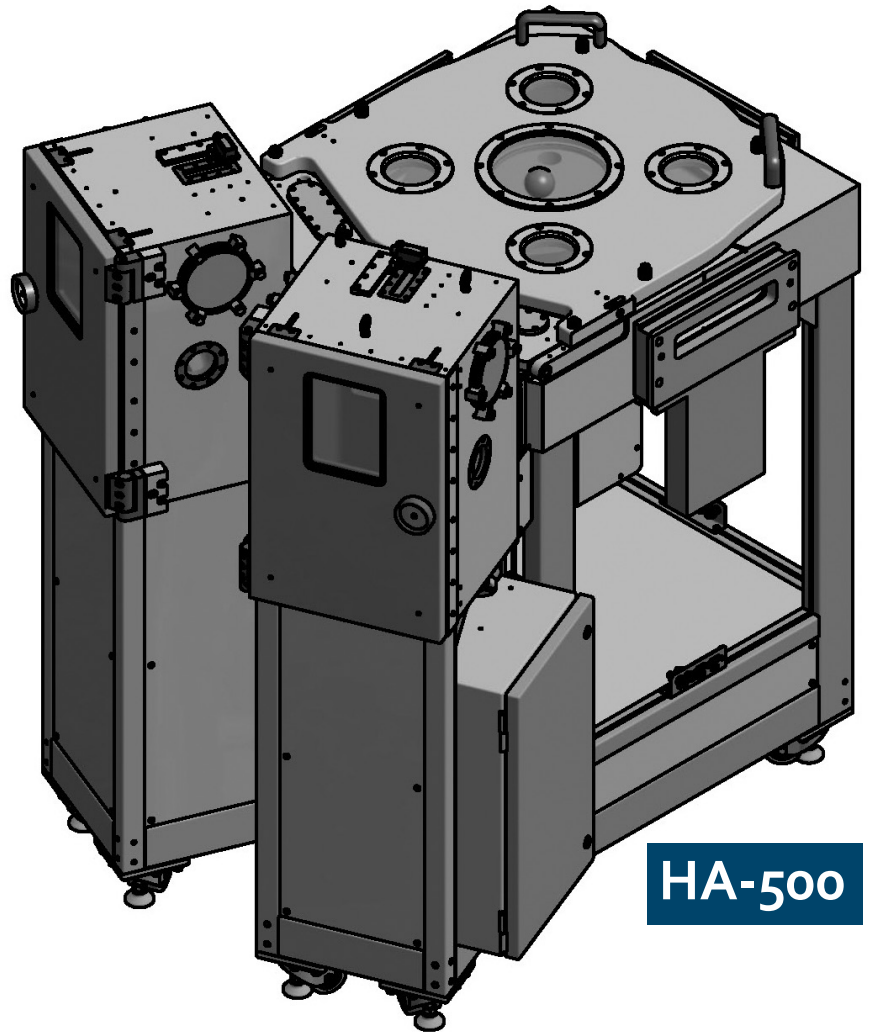
Integrated Systems

FEATURES

- Hine Robotics: HA-5.0 Robotic Arm and HA-50V Vacuum Elevator
- High reliability of > 3 million MCBF
- Handles wafer sizes up to 200mm
- Sophisticated automation features including wafer mapping, wafer cross-slot detection
- Safety interlocks
- High vacuum compatibility
- CE/S2 compliant
- RS-232 / Ethernet control interface

OPTIONS

- Optical aligners
- SEMI standard and custom end effectors
- Dual/Single end effector
- 25 or 50 wafer cassettes



Hine Automation's Constellation HA-500 system is a Cassette-To-Cassette Vacuum Transfer System. This five-sided cluster system features 1 or 2 cassette load ports and 3 additional facets. The Constellation HA-500 integrates the HA-5.0 vacuum robotic arm, the HA-50V vacuum elevator, and the HA-75 vacuum optical aligner with the latest system integration technology in a functional design with a small system footprint. The proven reliability of these components ensures high system uptime and reduces costs. Safety interlocks and sophisticated automation features such as wafer mapping, and wafer cross-slot detection accelerates system integration, reduce product development costs, and shift OEM's engineering resources from system integration to process development. As with all of Hine Automation products, the versatile design of the Constellation System can be customized to fit your unique needs.



Constellation HA-600 Systems

Integrated Systems

FEATURES

- Hine Robotics: HA-5.0 Robotic Arm & HA-50V Vacuum Elevator
- High reliability of >3 million MCBF
- Handles wafer sizes up to 200mm
- Sophisticated automation features including wafer mapping, wafer cross-slot detection
- Safety interlocks
- High vacuum compatibility
- CE/S2 compliant
- RS-232 / Ethernet control interface

OPTIONS

- Optical aligners
- SEMI standard and custom end effectors
- Dual/Single end effector
- 25 or 50 wafer cassettes

HA-600



Hine Automation's Constellation HA-600 system is a Cassette-To-Cassette Vacuum Transfer Systems. This six-sided cluster system features 1 or 2 cassette load ports and 4 additional facets. The Constellation HA-600 integrates the HA-5.0 vacuum robotic arm, the HA-50V vacuum elevator, and the HA-75 vacuum optical aligner with the latest system integration technology in a functional design with a small system footprint. The proven reliability of these components ensures high system uptime and reduces costs. Safety interlocks and sophisticated automation features such as wafer mapping, and wafer cross-slot detection accelerates system integration, reduce product development costs, and shift OEM's engineering resources from system integration to process development. As with all of Hine Automation products, the versatile design of the Constellation System can be customized to fit your unique needs.



Constellation HA-800 Systems

Integrated Systems

FEATURES

- Hine Robotics: HA-5.0 Robotic Arm and HA-50V Vacuum Elevator
- High reliability of > 3 million MCBF
- Handles wafer sizes up to 200mm
- Sophisticated automation features including wafer mapping, wafer cross-slot detection
- Safety interlocks
- High vacuum compatibility
- CE/S2 compliant
- RS-232 / Ethernet control interface

OPTIONS

- Optical aligners
- SEMI standard and custom end effectors
- Dual/Single end effector
- 25 or 50 wafer cassettes



Hine Automation's Constellation HA-800 system is a Cassette-To-Cassette Vacuum Transfer Systems. This eight-sided cluster system features 1 or 2 cassette load ports and 6 additional facets. The Constellation HA-800 integrates the HA-5.0 vacuum robotic arm, the HA-50V vacuum elevator, and the HA-75 vacuum optical aligner with the latest system integration technology in a functional design with a small system footprint. The proven reliability of these components ensures high system uptime and reduces costs. Safety interlocks and sophisticated automation features such as wafer mapping, and wafer cross-slot detection accelerates system integration, reduce product development costs, and shift OEM's engineering resources from system integration to process development. As with all of Hine Automation products, the versatile design of the Constellation System can be customized to fit your unique needs.



Constellation Systems

Integrated Systems

	HA-200	HA-400	HA-500	HA-600	HA-800
Wafer Sizes	≤200mm†				
Sides	4	4	5	6	8
Cassette Load Lock	1	1	2	2	2
Transfer Height	1100mm				
High Vacuum Package	Available				
Wafer per Cassette	25*				
High payload option	Yes				
Vacuum performance Base operating pressure Leak rate	<5.00E-07 Torr 5.00E-09 scc He/sec				
Input Power	208 VAC 20A 1Ø				
Electrical Integration	Yes				
Maximum Temperature	100°C				
MCBF	>3.00E+06				
MTTR	<2 hours				
Materials exposed	6061-T6 Aluminum, Stainless Steel 300 and 400 Series, Viton, Borosilicate Glass				
Interface	200mm MESCF‡	200mm MESCD			
Control Interface	RS-232 / Ethernet				
SEMI S2	Compliant				
CE	Compliant				

† SEMI standard sizes up to 200mm. Other sizes are available upon request.

* Custom wafer cassettes upon request.

◇ CLP Slit Valve and Isolation Plumbing come standard with each cassette load port.

‡ Optional CLP Slit Valve and Isolation Plumbing available.

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

