



# Vacuum Elevators

*Robotic Components*



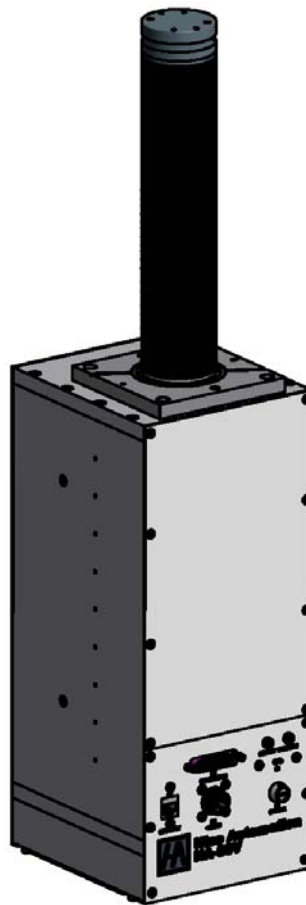


# HA-50V Vacuum Elevators

## *Robotic Components*

### FEATURES

- High reliability of > 3 million MCBF
- Pay load up to 34kg
- Compact design including integrated controller
- RS-232 / Ethernet control interface
- CE/S2 compliant
- High vacuum compatible
- Class 1 cleanroom compatible
- The best replacement for the Hine Design 48V and EMS 1248V elevator models
- Stroke 185mm



**HA-50V**

Hine Automation's Vacuum Elevators are the next generation Random Access Vacuum Elevators. The HA-50V can be integrated into any cassette load port or process module requiring vertical motion. Thanks to its stainless steel bellows, brushless DC motor and its proven design, Hine's Vacuum Elevators provide precise substrate indexing capabilities within high vacuum environments. High strength undercarriage and precision guides allow Hine's elevators to be integrated in applications requiring handling of heavy payloads. The HA-50V features identical command sets and form factor as the vacuum elevator manufactured previously by Hine Design® and can be used as a replacement for the 48V model.



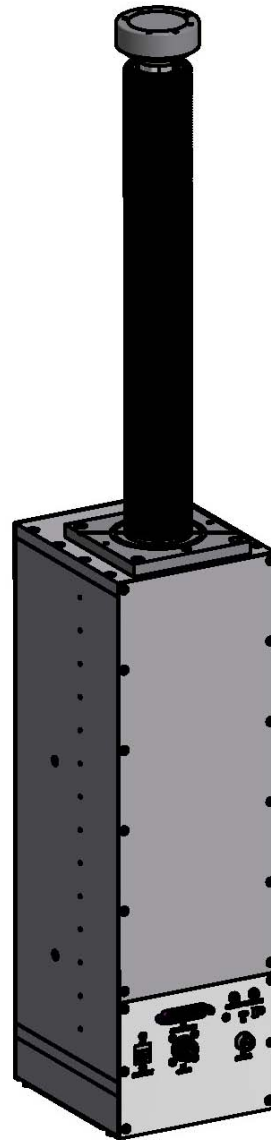
# HA-51V Vacuum Elevators

## *Robotic Components*

### FEATURES

- High reliability of > 3 million MCBF
- Pay load up to 34kg
- Compact design including integrated controller
- RS-232 / Ethernet control interface
- CE/S2 compliant
- High vacuum compatible
- Class 1 cleanroom compatible
- Stroke 305mm

**HA-51V**



Hine Automation's Vacuum Elevators are the next generation Random Access Vacuum Elevators. The HA-51V can be integrated into any cassette load port or process module requiring vertical motion. Thanks to its stainless steel bellows, brushless DC motor and its proven design, Hine's Vacuum Elevators provide precise substrate indexing capabilities within high vacuum environments. High strength undercarriage and precision guides allow Hine's elevators to be integrated in applications requiring handling of heavy payloads.



# Vacuum Elevators

## Robotic Components

	HA-50V	HA-51V
Wafer Sizes	User Defined†	User Defined†
Pay Load	34kg*	34kg*
Mounting Configuration	Bottom	Bottom
Axes of Motion	Z	Z
Weight	27kg	33kg
Vacuum performance Base operating pressure Leak Rate	<5.00E-09 Torr 1.00E-09 scc He/sec	<5.00E-09 Torr 1.00E-09 scc He/sec
Input Power	24 VDC at 2.5 Amps	24 VDC at 2.5 Amps
Maximum Temperature	100°C	100°C
Exposed Materials	Stainless Steel 300 and 400 Series	Stainless Steel 300 and 400 Series
Control Interface	RS-232 / Ethernet	RS-232 / Ethernet
MCBF	>3.00E+06	>3.00E+06
SEMI S2	compliant	compliant
CE	compliant	compliant
Repeatability Z	0.05mm‡	0.05mm‡
Vertical Stroke	185mm	305mm

† Head plates for SEMI standard wafer sizes up to 200mm available. Custom substrate sizes available upon request.

\* Higher payloads available upon request

‡ Measured as three standard deviations (3σ)

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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

