



Vacuum Aligners

Robotic Components





HA-71

Facet Mounted Vacuum Aligners

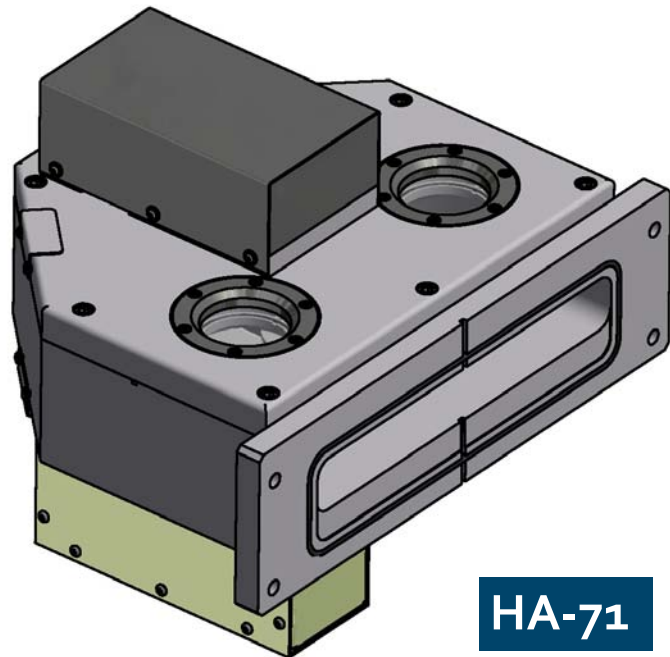
Robotic Components

FEATURES

- High reliability of > 3 million MCBF
- Fiducial alignment and centering alignment - Delta Pick
- High vacuum compatible
- RS-232 / Ethernet control interface
- CE/S2 compliant
- Available for wafer sizes up to 300mm
- Class 1 cleanroom compatible

OPTIONS

- Translucent or Opaque wafers
- 200mm Facet or 300mm Facet available



HA-71

Hine Automation's Vacuum Aligners are the next generation aligners. The HA-71 is a facet mounted aligner and can be integrated into any cluster system featuring a MESC mounting facet. Hine's HA-71 provides centering relative to the robotic handler and fiducial orientation for semiconductor and compound semiconductor substrates. Ferrofluidic seals, high precision DC motors, advanced CCD Array, and sophisticated software are integrated into a state-of-the-art design that make Hine Aligners a precise and reliable alignment solution for opaque and transparent substrates within high vacuum environments. Hine Aligners can be integrated with systems having any robotic arm able to execute Delta Picks.



HA-75

Integrated Vacuum Aligners

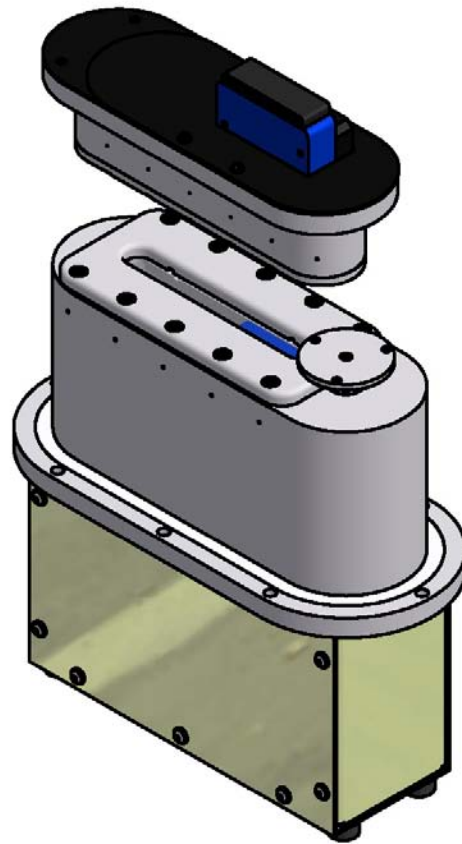
Robotic Components

FEATURES

- High reliability of > 3 million MCBF
- Fiducial alignment and centering alignment - Delta Pick
- High vacuum compatible
- RS-232 / Ethernet control interface
- CE/S2 compliant
- Available for wafer sizes up to 300mm
- Class 1 cleanroom compatible

OPTIONS

- Translucent or Opaque wafers
- Accommodates wafers up to 300mm



HA-75

Hine Automation's Vacuum Aligners are the next generation aligners. The HA-75 is an integrated aligner and can be integrated to any cluster system. Hine's HA-75 provides centering relative to the robotic handler and fiducial orientation for semiconductor and compound semiconductor substrates. Ferrofluidic seals, high precision DC motors, advanced CCD Array, and sophisticated software are integrated into a state-of-the-art design that make Hine Aligners a precise and reliable alignment solution for opaque and transparent substrates within high vacuum environments. Hine Aligners can be integrated with systems having any robotic arm able to execute Delta Picks.



Vacuum Aligners

Robotic Components

| | HA-71 | HA-75 |
|--|---|---|
| Wafer Sizes | 300mm† | 300mm† |
| Wafer Types | Opaque and Transparent | Opaque and Transparent |
| Mounting Facet | 200mm or 300mm Facet | N/A |
| Aligner Enclosure Size | 200mm or 300mm | Integrated Aligner |
| Axes of Motion | θ | θ |
| 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 | 24VDC at 2.0 Amps | 24VDC at 2.0 Amps |
| Maximum Temperature | 100°C | 100°C |
| Exposed Materials | 6061-T6 Aluminum, Stainless Steel 300 and 400 Series, Viton, Borosilicate Glass | 6061-T6 Aluminum, Stainless Steel 300 and 400 Series, Viton, Borosilicate Glass |
| Control Interface | RS-232 / Ethernet | RS-232 / Ethernet |
| MCBF | >3.00E+06 | >3.00E+06 |
| CE | compliant | compliant |
| SEMI | compliant | compliant |
| Repeatability θ Centering | 0.02 ^{0‡} <0.10mm‡ | 0.02 ^{0‡} <0.10mm‡ |
| Calibration Wafer Included | Yes | Yes |

† SEMI standard sizes up to 300mm. Other sizes are available upon request.

‡ Measured as three standard deviations (3σ)

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

