



LEADING THE WAY OF INNOVATION

EQUIPE AXM 400 Series GENERATION 2

Wafer Handling Atmospheric Robots

Milara delivers total automation. The company's hardware, software and services can manage every wafer, reticle and data movement in the fab, helping semiconductor manufacturers accelerate time-to-market while reducing their risk. Milara products are used in virtually every fab in the world.

Equipe - the world standard in wafer handling atmospheric robots

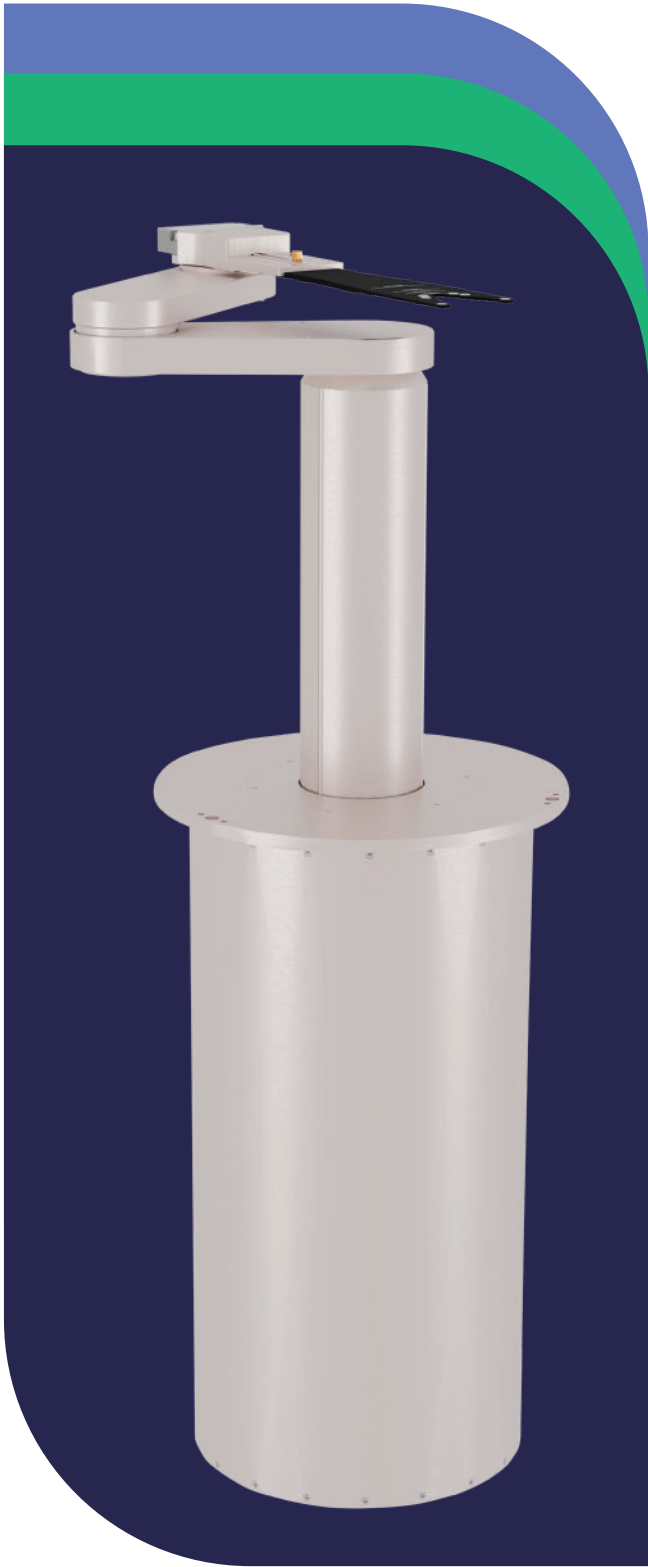
Highly functional, repeatable and dependable, Milara's Second Generation (Gen2) of Equipe Atmospheric Bottom Mount (ABM-400) and Equipe Atmospheric Top Mount (ATM-400) robots are designed to bring existing Equipe customers a fresh update to an industry titan. Our ISO Class 1 cleanroom compatible wafer handling robots are designed to handle wafers up to 300mm in diameter. The ATM robot is mounted at the top flange, while the ABM's base-mount design is ideal for use with our Linear Track.

The 400 Series is backed by Milara's unsurpassed expertise in developing advanced automation systems and software for the semiconductor industry.

Equipe GEN2 - designed for superior performance

Featuring New generation Low-Voltage AC Servo Motor with 23-bit absolute encoder allows extreme precision control, these large motors and smooth anti-backlash transmissions allow rapid movements with no sensitivity loss within the closed-loop DC servo system.

The AXM 400's patented mechanical system has very few moving parts, and the flexible internal printed circuit boards have life expectancy of over 10 million cycles. These features, combined with a high ESD immunity tolerance, contribute to each unit's high MTBF - greater than 40,000 hours.

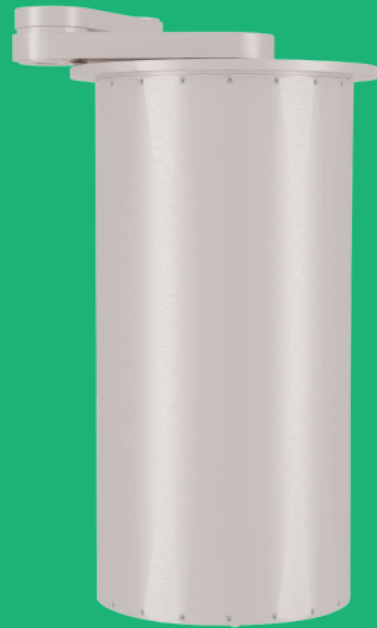


Mounting specifications	
Robot hole diameter	292.1mm [11.500"]
Robot bolt pattern	3 x 6.35mm [0.25"] thru on dia. 313.69mm [12.350"]
End effector	4 x 4-40 on dia. 35.306mm [1.390"] (405, 407)
	4 x 6-32 on dia. 50.8mm [2.000"] (407B, 407C)
Dead zone	25°

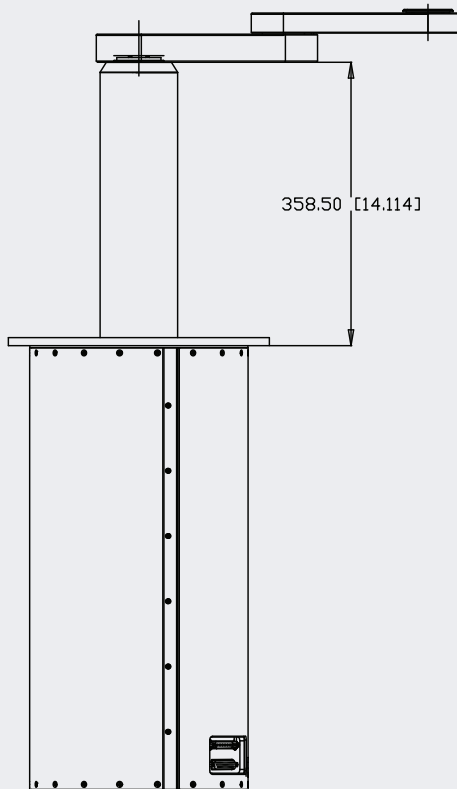
FEATURES

- Designed for handling wafers and reticles up to 300mm
- Free of backlash, providing highly repeatable positioning
- System parts are below the wafer plane, minimizing particulate contamination
- Built-in reliability and high ESD immunity tolerance
- Rapid motion with no sensitivity loss
- Highly configurable
- Macro programmable

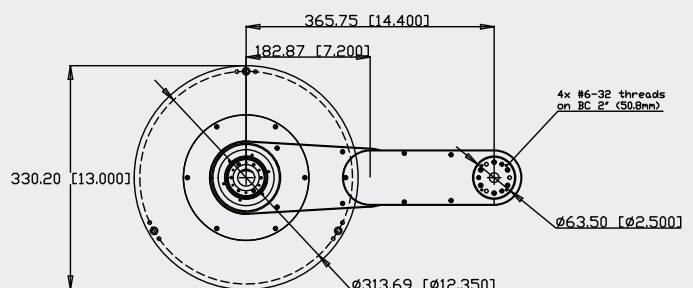
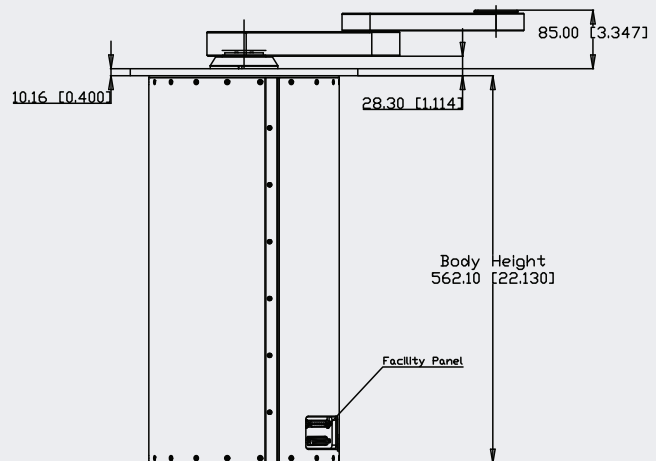
DROP-IN REPLACEMENT



Fully compatible, direct replacement for Equipe Generation 1 Robots



Recommended Table Hole Size $\varnothing 11.5"$ (292mm)



All dimensions are in mm [inch]

GEN2 intelligent controls

Each robot runs with the ESC-200 GEN2 Series Smart Controller, a fully programmable controller for wafer handling robots. The controller enables the user to supplement the standard command library with customized macro commands. The servo card utilizes "S" curve velocity profiling and high sampling frequency or better performance. Milara also offers versions of the AXM 400 that are compatible with the hardware and software of most other robots on the market.

Highly configurable for all applications

ATM and ABM robots are available in a variety of configurations with a range of payload capacities, Z-axis vertical travel and radial reach capabilities. Standard arm links have total available reach equal to 10.50" plus end-effector length. When extra reach is required, links of 7.2" are available. The 5.20" arm links are suitable for applications requiring minimized footprint and reach. New revisions to the arm links maximize stiffness for increased planarity under greater loads.

General specifications

Model	ATM 405/407	407B	407C
Payload	0.45 kg. [1 lb.]	0.68 kg. [1.5 lb.]	1.81 kg. [4 lb.]
Substrate sensors	Vacuum		
Throughput	< 4 seconds / wafer / pick and place		
Cleanliness	ISO 3 (ISO14644) / Class 1 (FED STD 209E) Clean room compatible		
Weight	27.21 kg [60 lb.]		
Vacuum required	18-24 inches Hg		
Power required	100-240 VAC, 50/60 Hz		
MTBF	> 40,000 hours		
Certified	TUV (IEC/UL 61010-1), KCs (KOSHA Certification)		
Compliance	CE, UKCA, SEMI S2, S8, S22		

Axes specifications

Range of motion	
Radial axis	2 x (133.35mm [5.25"] or 182.88mm [7.20"])
Theta axis	335°
Z axis	330.2mm [13"]
Repeatability (Typical)	
Radial axis	± 0.0508mm [0.002"] @3 σ
Theta axis	± 0.02° @3 σ
Z axis	± 0.0508mm [0.002"] @3 σ
Speed (Typical)	
Radial axis	60.96 cm/sec [24 inches/sec]
Theta axis	360°/sec
Z axis	25.4 cm/sec [10 inches/sec]