

MESH Automation Cell
MACStud2d Technical Data Sheet



The MACStud2d is a professional grade, pre-engineered, gantry based flexible automation cell. The MACStud2d is designed for stud welding on sheet type metal products and can be put in line with an automated material handling system or after an automatic forming machine. The pre-engineered features and options make for a great value with quick deliveries, while also allowing for easy size and layout customization.

This third generation design has been fine tuned to provide a service life greater than 15 years by using the Nexen roller pinion system with profiled linear bearings. The MACStud2d features unparalleled fit and finish, modern globally available hardware, precision designs for product repeatability and low process variability. It also has available features such as parametric programming that allow for push-button changeovers and batch size of one processing.

MODEL	MACSTUD2D MINI	MACSTUD2D
Product size range max (L x W x H)	6" x 4" x 20ga	6" x 4" x 20ga
Product size range min (L x W x H)	96" x 42" x 1.5"	42" x 24" x 1.5"
Gauge minimum	20ga carbon or SS without back marking	
Stud placement accuracy	+-.008" (provided diagonal dimensions of product are within +- .015" with a CPK of 1.33)	
Stud rate	Nominal 3 seconds per stud, (depends on stud pattern) 10 seconds to convey, index and clamp product. Stud welding duty cycle to be up to 30 studs/min	
Stud sizes	Wide range of studs from M3 – M12	
Stud types	Drawn Arc and Capacitive discharge	
Stud loading and feeding	Bowl fed with air transport to automatic stud gun. Bowl capacity is 2000 studs.	
Stud strength	Non-destructive torque test with cpk of 1.33	
Changeover	No tool, pushbutton recipe driven from the HMI. Bar code scan is optional	
Material handling	Covered roller conveyor for scratch free handling if kept clean	
Camera Locating Device	Cognex or Keyence, 2mp camera to locate a feature and offset placement of stud from feature	
Grounding	Isolated from the machine and balanced to prevent arc blow or other weld quality issues	
Independent shielding gas	SMC brand components	
Safety	Fully Compliant with ISO 12100 and ANSI/RIA R15.06-2012 safety standards.	
Front Guarding Type	Light curtain protection	
Rear and side guarding type	Mesh style sheet metal guarding or other industrial fence style guarding	
High Voltage Controls	High Voltage Power Distribution Panel	
Low Voltage Controls (Rockwell)	Rockwell CompactLogix L30, Dual Ethernet, Safety PLC	
Low Voltage Controls (Siemens)	Siemens S7 1200F dual Profinet, Safety PLC	
HMI (Rockwell)	PanelView Plus 7, Touch Screen, 10.4 inches	
HMI (Siemens)	SIMATIC TP900, 9 inches	
Process camera packages	CCTV camera with TV or industrial monitor mounted to the outside of the cell. Available as an option	
Industry 4.0 data packages	Available as an option	

▪ **Optional Bolt-On Process Modules**

- **Fixturing**
 - Custom designed and professionally built with features such as remote I/O blocks, cleanly run and shielded cables, and anti- spatter features.
 - Servo Fixture – Fixture specifically designed to hold square/ rectangular type products (i.e. frames, enclosures or panels). Servo motion control for push button batch size of one processing.
- **Product Loading**
 - Conveyorized product feed with no mar rollers or belt
- **Stud Feeding Modules**
 - Stud bowl feeder
 - Non-flanged stud feeding
 - Stud diverter
 - Stud feeder
 - Bowl feeder stand
 - Stud Escapement

