

GL SERIES

FSW GANTRY FRAME WITH WELDING TOOL TILT

REVISED 10/22/2021

GL Series machines are configured for two-dimensional welding paths with spindle axis tilt.

Applications: automotive battery trays, large cold plates, power modules, tailored blanks, or any product requiring a 2D weld paths.

The GL family consists of gantry machines with a travelling work table and a welding head mounted to the gantry cross beam using profiled, linear rails. The welding head travels across the gantry beam and has a plunge axis that is parallel to the spindle orientation. There are two servo-controlled rotary axes: one that tilts the gantry relative to the base and one that tilts the welding head side to side. When driven using standard G- and M-code path programs, the GL has full 5-axis coordinated motion, permitting two-dimensional welding paths with welding tool tilt.

Bond's GL systems also have an optional coaxial linear axis that permits forcible linear motion through the hollow spindle shaft. This feature makes possible friction stir welds with a variable pin length, used for applications that cannot tolerate the keyhole that is normally left by FSW. The coaxial linear axis is also used for self-reacting, or bobbin, welds where the backing anvil normally required in FSW is eliminated.

FEATURES

- Linear or two-dimensional weld paths with tool axis tilt
- Retractable pin FSW and variable shoulder gap bobbin welding capabilities with the optional coaxial linear axis.

- CNC controls with high speed data collection
- General-purpose work table for various welding fixtures
- Two-speed spindle gearbox for maximum speed-torque availability

GL POWERED AXES

X Axis - Work table travel under the gantry

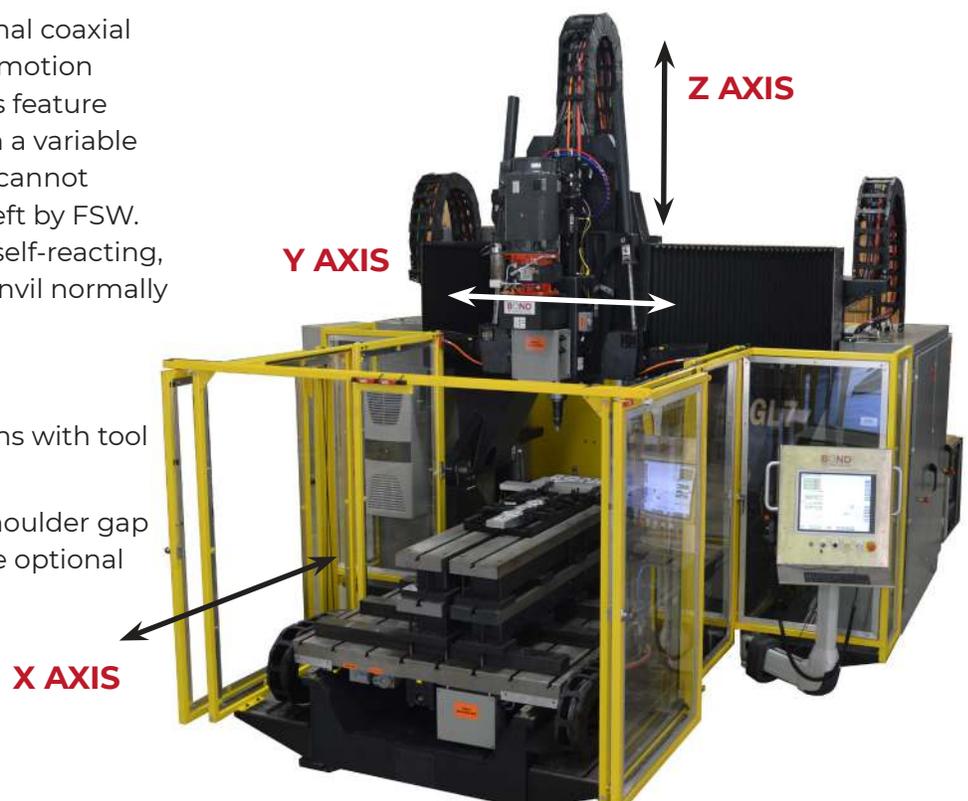
Y Axis - Weld head travel across the gantry

Z Axis - Spindle vertical motion, tilted

Coaxial Linear Axis (optional) - Linear motion axis through the spindle

A Axis - Welding head tilt in Y/Z plane

B Axis - Gantry tilt in the Z/X plane



CONTACT US FOR MORE INFORMATION

Kevin Colligan, Global Sales Director
kevin.colligan@bondtechnologies.net

Dave Hofferbert, President
dave.hofferbert@bondtechnologies.net

GL SERIES*

	GL7	
MAX WELD PENETRATION, IN ALUMINUM (APPROX.)	33 MM (1.3 IN)	
X AXIS	STROKE - 1,800 mm (71 in)	
	FORCE - 22 kN (5,000 lbs), max	
	VELOCITY - 7,000 mm/min (276 in/min), max	
Y AXIS	STROKE - 1,000 mm (39 in)	
	FORCE - 22 kN (5,000 lbs), max	
	VELOCITY - 7,000 mm/min (276 in/min), max	
Z AXIS	STROKE - 700 mm (27.5 in)	
	FORGING FORCE - 70 kN (15,700 lb), max	
	VELOCITY - 1,500 mm/min (59 in/min), max	
A- AND B-AXIS TILT	STROKE - +/- 5 degrees	
COAXIAL LINEAR AXIS (OPTIONAL)	STROKE - 305 mm (12 in)	
	FORGING FORCE - 40 kN (9,000 lb), max	
	VELOCITY - 1,000 mm/min (39 in/min), max	
SPINDLE AXIS 2-SPEED GEARBOX (OTHER SPEED AND TORQUE CONFIGURATIONS ARE AVAILABLE UPON REQUEST)	POWER - 20 kW	
	HIGH GEAR, SPEED MAX	LOW GEAR, SPEED MAX
	4,500 rev/min, max.	1,178 rev/min, max
	HIGH GEAR, TORQUE	LOW GEAR, TORQUE
	215 Nm (159 ft-lb) up to 864 rev/min, then constant power to max speed	818 Nm (603 ft-lb) up to 227 rev/min, then constant power to max speed
	TOOL INTERFACE - 50 Taper	
SERVICE REQUIREMENTS	3 phase, 50/60 Hz, options available	
CONTROLS	Bond FSW CNC, force and position control, high speed data collection	

*Actual values may vary