

# MACHINE SPECIFICATIONS

Items	Specifications		Remarks
	FABRI GEAR 300V 8m 2.5 kW	FABRI GEAR 300V 8m 4.0 kW	
Type	Hybrid Type		X-axis: Chuck Travel Y,Z,A,B-axis: Laser beam motion
Max. cutting size	Round Material: 0.79-10.51" <-> Square Material: 0.79-8.00"		
Height to Material Rotational Center	43.71"		From floor level
Max. Thickness	0.75"	0.87"	For mild steel
Axis stroke (Effective stroke)	X-axis	344.49"	
	U-axis	358.27"	
	V-axis	91.14"	
	Y-axis	50.00"	
	Z-axis	14.57"	
	A-axis	+/- 360 degrees	
	B-axis	+/- 135 degrees	
Rapid traverse rate	X, U, V : 1181 ipm Y : 945 ipm Z : 787 ipm A, B : 9600 degrees/min C : 6000 degrees/min		
Maximum Machining Feed rate	394 ipm		
Axial drive system	AC servo motor, digital servo drive X-axis: Rack & pinion Y,Z-axis: Ball screws		
Positioning accuracy	X,U, & V axis: +/- 0.002"/19.69" Y-axis: +/- .0004"/19.69" Z-axis: +/- .0004"/3.94"		This is possible only when machine is functioning within all applicable environmental conditions
Repeatability	X,U, & V-axis: ±0.0004" Y&Z-axis : +/-0.0004" A,B-axis : +/- .01 degrees		
Cutting head	With the lens of 7.5" focal distance		Withstand pressure: 15kg/sq cm
Z-axis profiler	Non-contact capacitance type		
Work light	50 Watt beam lamp		
Oscillation indicator lamps	Yellow signal light is lit when the laser high-voltage is on Red signal light is lit when the shutter is open		
Assist-gas switch	3 kinds of gases (Oxygen, air, & 3rd gas) are selectable Pressure set at 0.05 to 0.6 MPa (7.25 to 87.02 psi) Pressure supplied: 0.8 MPa (116.03 psi)		Setting unit: 0.01 MPa (1.45 psi)
Numerical control of assist-gas pressure	Programming can set assist-gas pressure. Maximum pressure is 0.6 MPa (87.02 psi)		
Laser Pointer	Used for teaching and alignment		Semiconductor type
Power Supply 3-phase AC	74.2 KVA	98 KVA	50/60 Hz Voltage fluctuation within +/- 10% frequency fluctuation within +/- 1 Hz Rating
Weight	32,700 kg (72,090 lb)	33,100 kg (71,970)	w/chiller,transformer,loader/unloader

## MATERIAL HANDLING UNIT SPECIFICATIONS

Items	Specifications FABRI GEAR 300V 8m	Remarks
Quantity of Automatic Loading System supports	3 (4)	( ) is for option
Quantity of Automatic Unloading System Supports	5	
Maximum transportable length Automatic Loading system	135.83" – 314.96"	
	86.61" – 314.96"	Optional if additional loading system support unit is purchased
Maximum transportable length Automatic Unloading system	27.56" – 314.96"	Parts smaller than 27" will fall into a small parts catcher
Number of "V" style automatic loading/unloading system locations	5	Loads and unloads up to 5 pieces of material automatically
Transportation Stroke	48.00"	
Transportation Speed	118 ipm	
Drive Method	AC induction motor	
Material delivery method	Manual Operation	

## AUTOMATIC LOADING / UNLOADING SYSTEM AREA SPECIFICATIONS

Items	Specifications FABRI GEAR 300V 8m	Remarks
Maximum Transportable Quantity	1	
Maximum Transportable Weight	1052 lb.	
Transportation Stroke X,Y,Z & a-axis	34.45"	X,Y,Z&A-axis: Horizontal axis for the transportation arm.
Transportation Stroke U,V,W & B axis	10.43"	U,V,W & B-axis: Vertical axis for the transportation arm.
Rapid Traverse Rate X,Y,Z & A-axis	787 ipm	
Rapid Traverse Rate U,V,W & B axis	590 ipm	
Drive Method	AC Servo Motor Digital Servo System	

## RESONATOR SPECIFICATIONS

Items	Specifications		Remarks
	2.5 kW laser	4.0 kW laser	
Laser type	CO <sub>2</sub> gas		Far-infrared ray
Wave length	10.6 μm		Invisible ray
Oscillation mode, configuration	Co-axial type, High-speed axial-flow type Integrated oscillator and power unit type		
Continuous rated output	2500 W	4000 W	CW output
Pulsed peak output rate	Normal Pulse 2500 W	Normal Pulse 4000 W	Output rates depend upon frequency and duty cycle.
Output range	500 to 2500 W	800 to 4000 W	CW output
Pulse frequency	0 kHz to 1 kHz: 0 to 100 %		Normal Pulse
Pulse duty	1 kHz to 2 kHz: 20 to 100 %		
Beam mode	TEM <sub>00</sub> main constitute		
Beam diameter	Maximum φ22.5 mm (0.89")		0.3 m (11.82') from output mirror port
Beam divergence	2.0 mrad		Total Angle.
Output stability	±2.0 %/ per hours		Variable depending on rated output
Laser gas	Mixed gases of He, N <sub>2</sub> , and CO <sub>2</sub>		
Mixture rate of laser gases	He : N <sub>2</sub> : CO <sub>2</sub> = 74.9% (balanced) : 23.4 ±1.0% : 1.7 ±0.2%		
Gas consumption amount	30L (1.06 ft <sup>3</sup> ) /H in continuous operation		
Beam shutter	Built-in mechanical shutter		
Environment	Temperature 0 –35 degrees C Maximum 85% Humidity Maximum Vibration .07G Maximum Amplitude 7 Micron		No Condensation
Power Source	AC 200V +/-10% or AC220V +/-10% 60HZ		
Chiller Unit	Capacity: 30,000kcal/h	Capacity: 38,000kcal/h	Anti Rust and Anti Freeze is required.

# CONTROL SPECIFICATIONS

Items	Specifications
Name	Mazak & Fanuc L-64
CPU	64 bits
Standard memory capacity	2800 yards
Standard Program Capacity	400 ( Subject to memory capacity)
Number of controlled axes	Simultaneous 5-axis control (X,Y,Z,A,B) Simultaneous 6-axis control with optional C-axis (rotary table)
Least input increment	0.01 mm (0.0001") for X,Y,Z axis .001 degree for A,B,C axis
Graphic Monitor	10.4" inch color, liquid crystal display
Tape punch/microdisk/Printer interface	Equipped with RS-232C
Laser Processing Function	Linear interpolation, Circular interpolation, 3 dimensional circular inpterpolution, Attitude interpolation, Profiling, NC machining condition.
Other Functions	Single block Feed rate override Manual Pulse generator Automatic zero point return Dwell Self Diagnosis Sequencer number display and search Stored pitch error compensation Run hour display Decimal point programming Rapid traverse override Automatic acceleration/deceleration for feed Stored stroke limit EIA/ISO automatic switching Circular interpolation by radius designation Automatic corner override
Servo system specification	Digital
Position detector	Encoder