

2. Technical information

2.1. Laser Punch LPE5

Punching force	200 kN
Punch stroke	Electrical servo motor
Ram stroke length in punching	Automatic intelligent optimisation (NC-axis)
Stroke depth adjustment in forming	Programmable with 0,001mm increment
Stroke length adjustment in forming	Programmable with 0,001mm increment
Ram speed adjustment	Programmable
Number of turret stations	20 pcs
Tools	Thick Turret
Max. punch diameter	89 mm
CNC Index Tool:	
Index Tool stations	std. 2 pcs (max. 10 pcs)
Max. punch diameter	89 mm
Max. tool rotation	58 r/min
Upward forming cylinder (option):	
Force	200 kN
Die stroke height in forming	Programmable with 0,001mm increment (max. 12 mm)
Forming speed ⁽¹⁾ :	
(25 mm form-to-form distance)	80 - 150 1/min
Max. material thickness:	
Steel	Punching: 8.0 mm Laser cutting: 8.0 mm
Stainless steel	8.0 mm WB Triagon 8.0 mm
Aluminium	8.0 mm ROFIN-SINAR 6.0 mm
Min. material thickness	0,5 mm
Max. sheet weight ⁽²⁾ :	200 kg
Clamps	Pneumatic, 2 pcs (optional 3 rd clamp)
Max. sheet size (X x Y)	2530 mm x 1270 mm
X-traverse	2584 mm (X-42 ... X2542)
Y-traverse	1317 mm (Y-25 ... Y1292)
Max. axis speed (X-axis)	80 m/min
Max. axis speed (Y-axis)	60 m/min
Max. traversing speed	100 m/min
Max. hit speed ⁽³⁾ :	
Nibbling (1...3 mm)	480 1/min
25 mm hole to hole distance	310 1/min
250 mm hole to hole distance	140 1/min
Punching accuracy according to LKP-7300 ⁽⁴⁾ :	
Hole location deviation (X/Y axes), max.	0,1 mm
Hole-to-hole distance deviation (X/Y axes), max.	+/- 0,05 mm
Angular deviation (CNC Index Tool), max.	+/- 0,1°
Positioning accuracy according to VDI/DGQ 3441 ⁽⁵⁾ :	
Positional deviation Pa (X/Y axes)	0,08 mm (+/- 0,04 mm)
Positional scatter Ps (X/Y axes)	0,04 mm (+/- 0,02 mm)
Turret rotation	30 r/min
Tool change time	1 ... 3 s
Work chute, max. part size ⁽⁶⁾ :	
Punched workpieces (X x Y)	1. chute 500 mm x 500 mm
Laser-cut workpieces (X x Y)	2. chute 300 mm x 400 mm, 3. chute 800 mm x 800 mm

CNC control	Siemens Sinumerik 840D, where 14" touch screen
Program memory	1500 kB
Graphic user interface	Touch screen, Windows™ based user interface
Total weight	13 300 kg
Power supply, max. (E1) *)	33 - 46 kVA
Front fuse	3 x 100 A
Power consumption, average (150 hits/min) ⁽⁷⁾	4...5 kW
Compressed air consumption, max.	5 NI/s
Compressed air pressure, min.	6 bar
Central lubrication tank	2000 cm ³

*) Depends on the resonator type, cooler and auxiliary equipment attached to the machine.

2.2. Laser resonator

Type		WB TRIAGON® 2500	ROFIN DC 025
Dimensions:	Resonator	1508 x 1208 x 1837 mm	1700 x 800 x 853 mm
	Control unit	no individual unit	800 x 600 x 1900 mm
Weight:	Resonator	approx. 850 kg	approx. 500 kg
	Control unit	no individual unit	approx. 570 kg
Excitation		DC	RF
Beam wavelength		10,6 µm	10,6 µm
Guaranteed beam output power max.		2500 W	2500 W
Beam power range		50 - 2500 W	250 - 2500 W
Beam power stability		+/- 1,5 %	+/- 2 %
Beam mode		Low order TEM	K > 0,8
Beam divergence		+/- 0,10 mrad	<0,5 mrad full angle (1 to 10 m)
Beam diameter		22 mm +/-10%	<22 mm
Polarisation		linear, 45°	linear, 45°
Beam pulse frequency		0 - 2500 Hz	0 or 8 to 5000 Hz
Pulse frequency width		200 µsec to CW	26 µsec to CW
Gas consumption:	Helium (He)	35 NI/h	Not in use
	Nitrogen (N ₂)	20 NI/h	Not in use
	Carbon dioxide (CO ₂)	3 NI/h	Not in use
ROFIN-SINAR Premix gas		Not in use	0.3 NI/h
Required gas purity		99,995 %	ROFIN-SINAR Premix
Power supply (E2)		27 kVA	40 kVA
Front fuse		3 x 50 A	3 x 80 A

2.3. Cutting head

Type	WB TRIAGON® 2500	ROFIN DC 025
Type	HP 1.5" with removable lens cartridge	HP 1.5" with removable lens cartridge
Focal length	5 IN (3,75 IN; 7,5 IN optional quick change)	7,5 IN (5 IN optional quick change)
Distance to material sensing	Programmable, capacitive (non-contacting)	Programmable, capacitive (non-contacting)
Adjustment of cutting gas pressure	via CNC control or manually via CNC control or manually	
Cutting gas pressure, max. ⁽⁸⁾	25 bar	25 bar

2.4. Chiller

	WB TRIAGON® 2500	ROFIN DC 025
Type	KLB - S 22 FP50	LUMIKKO LJ 35
Dimensions	1450 x 902 x 1550 mm	1400 x 1160 x 1820 mm
Weight (w/o water)	approx. 380 kg	approx. 500 kg
Cooling capacity	25,7 kW	35,0 kW
Cooling water temperature:		
Primary circuit	18°C +/- 1°, resonator	20°C +/- 1°, resonator
Secondary circuit	24°C +/- 1°, optics	24°C +/- 1°, optics + electric power center
Volume of chiller water tank	350 litres	325 litres
Noise level	68 dB (A), 5m distance	68 dB (A), 5m distance

2.5. Dust collector

Type	INR VA07
Dimensions L x W x H	900 x 660 x 2000 mm
Weight	235 kg
Air flow, max.	270 m ³ /h
Under pressure, max.	14000 Pa
Filters	4 x FIPAT050
Filter area	12,0 m ²
Efficiency ⁽⁹⁾	99.99 % of particles
Noise level CE (DIN 45635-3), 1m:	70dB (A)

2.6. Notes

- (1) Upward forming speed is dependent on height of form, ram speed, acceleration/deceleration rate of X and Y axes and axis speed
- (2) Maximum acceleration/deceleration rate of X and Y axes depends on sheet weight. Part accuracy depends on acceleration/deceleration rate and sheet size and weight.
- (3) Hit speed depends on sheet thickness, ram speed, acceleration/deceleration rate of X and Y axes, axis speed and tool length.
- (4) Punching accuracy is tested according to the Finn-Power standard LKP-7300 by punching holes in a 1m x 1m sheet with 100% speed and by measuring the location (X/Y) and angle (CNC Index Tool) of the punched holes and the location and roundness of the laser-cut holes.
- (5) Positioning accuracy is measured according to the VDI/DGQ 3441 standard, using a laser interferometer, from the X and Y slides of the coordinate table of the machine.
- (6) Laser-cut workpieces (sorting through work chute 2 or 3) are detected with a programmable workpiece detection system.
- (7) Average power consumption is based on production run of a typical NC program with 1.5 mm x 1250 mm x 2500 mm sheet size (punching and cutting without loading/unloading devices). This value can be used when calculating energy costs.
- (8) Maximum gas pressure depends on the specifications of the focusing lens.
- (9) Efficiency of the dust collector depends on the specifications of the filters.

The technical performance of the machine is guaranteed only when the requirements of the instruction "Finn-Power pre-installation instruction and checklist" are fulfilled!

We reserve the right to change technical specifications without prior notice.