

# FINN-POWER

► **PUNCHING**

■ **LASER CUTTING**

■ **BENDING**

■ **INTEGRATED PUNCHING & SHEARING**

■ **INTEGRATED PUNCHING & LASER CUTTING**

■ **FLEXIBLE MANUFACTURING SYSTEMS**



## **TECHNICAL DATA FINN-POWER X5**

## Technical information X5

Ram force	230 kN (25.8 US Tons)
Punching stroke	servohydraulic
Number of stations / max. tools in turret	20 pcs / 98 pcs
Tools	Thick Turret
Punch diameter, max.	89 mm (3.5")
CNC Index Tool:	
Number of stations	standard 2 pcs, max. 5 pcs
Punch diameter, max.	89 mm (3.5")
Tool rotation, max.	133 r/min
Material thickness, max.	8 mm (0.31")
Sheet weight, max. *1	200 kg (441 lbs)
Clamps	pneumatic, 2 pcs (optional 3 pcs)
Max. sheet size X x Y without reposition	2,530 mm x 1,270 mm (99.6" x 50")
X-traverse	2,584 mm (101.7")
X-traverse, axis speed max.	90 m/min (3,543.3"/min)
Y-traverse	1,317 mm (51.85")
Y-traverse, axis speed max.	60 m/min (2,362")
Positioning speed, max.	108 m/min (4,251"/min)
Hit speed, max. *2	
1 mm between holes (0.039")	600 1/min
25 mm between holes (0.984)	350 1/min
250 mm between holes (9.84")	140 1/min
Punching accuracy according to LKP-7100 *3	
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 *4	
Positional deviation P <sub>a</sub> (X/Y axes)	0.08 mm / ± 0.04 mm (0.003" / ± 0.0015")
Positional scatter P <sub>s</sub> (X/Y axes)	0.04 mm / ± 0.02 mm (0.0015" / ± 0.001")
Turret rotation speed	24 r/min
Tool change time *5	1 ... 3 s
Work chute (option), max. part size	500 mm x 500 mm (19.7" x 19.7")
CNC control	Fanuc OiP
Program transfer	RS 232 / Flash card
Work memory	Fanuc: 256 Kb
Ethernet connection	Option
Machine weight	10,500 kg (23,549 lbs)
Hydraulic unit drained weight	400 kg (882 lbs)
Oil tank volume	200 l (53 gallons)
Oil cooler, cooling capacity	0.64 kW/°C (1.2 kW/°F)
Oil cooler air flow	2.1 m <sup>3</sup> /s (74 cf/s)
Electrical connection (E1)	
Average power consumption *6	20.5 kVA / 17.5 kW
Requirements for connection power *7	60 kVA
Fuse	3 x 80 A (with 3 x 400 V)
Compressed air connection (P1):	
Min. air pressure	6 bar (90 psi)
Max. air consumption	4 NI/s (8.8 cfm)
Average air consumption *8	2,5 NI/s (5.5 cfm)

\*1 Acceleration/deceleration rate of X- and Y-axes is dependent on sheet weight. Part accuracy depends on acceleration/deceleration rate and sheet size and weight.

\*2 Hit speed is dependent on the programmed stroke length, ram speed and acceleration/deceleration rate and speed of the axes.

\*3 Punching accuracy is tested according to the FINN-POWER standard LKP-7100 by punching holes in a 1 m x 1 m (39.37" x 39.37") sheet with 100 % speed and by measuring the location (X/Y) and angle (CNC Index Tool) of the punched holes from the sheet.

\*4 Positioning accuracy is measured according to the VDI/DGQ 3441 standard, using a laser interferometer measurement system, from the X- and Y-slides of the coordinate table of the machine.

\*5 When using special tools the tool change time may differ from the given value.

\*6 Average power consumption is based on production run of a typical nesting program with nominal sheet size and 1.5 mm (0.06") sheet thickness. Effective value can be used when calculating energy costs.

\*7 This value must be used when dimensioning the power supply to machine (transformer and cable sizes).

\*8 Average air consumption is based on production run of a typical nesting program with nominal sheet size and 1.5 mm (0.06") sheet thickness. Value can be used when calculating energy costs.

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

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