

ANTARES 700X



X-RAY REFERENCE DRILLING MACHINE
FOR MULTILAYER PANELS



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“Antares 700 X is designed to drill optimized reference holes and any other mechanical reference on multi-layer panels and inner layers”

HARDWARE

- Latest generation CNC
- Position transducers with 1μ resolution
- Linear motors
- High reliability X-Ray system
- High sensitivity X-Ray camera
- Compact solution (see overall dimensions)

SOFTWARE

- User friendly interface
- All data of measured panels stored into a *.mdb file (network access)
- Measuring functions available

5004 - Running Step 1 - Measure Pads

Loaded Program : Inner Cedal 4 pt 2mm.prg

Measures

Target Parameters		Measurements Results						
Id	X	Y	\emptyset	K	Xm	Ym	\emptyset	%
1	-253.000	198.000	2.000	2	-252.911	198.000	1.840	-8
2	253.000	198.000	2.000	2	252.911	198.000	1.966	-2
3	253.000	-198.000	2.000	2	252.819	-197.973	1.971	-1
4	-253.000	-198.000	2.000	2	-252.913	-197.436	1.869	-7

Drills

Holes Parameters		Real Hole Position			
Id	Drill Type	X	Y	Real X	Real Y
1	Drill Position	-248.000	-90.000	0.000	0.000
2	Drill Position	-248.000	90.000	0.000	0.000
3	Drill Position	248.000	90.000	0.000	0.000
4	Drill Position	248.000	-90.000	0.000	0.000

Calculated Values

	Measured Distances	Abs. Deform.	% Deform.
Offset X : -2.748	Upper X 505.822	-0.178	X -0.044
Offset Y : 2.240	Lower X 505.732	-0.268	
Angle : -0.066	Right Y 395.973	-0.027	Y -0.075
	Left Y 395.436	-0.564	

Operating

- Main Page
- Manual
- Process Status

Configuration

- Settings
- Calibration

Completion % 50%

X -235.786
Y -195.119
S -258.698

10 % 65 %

Live OFF

New Open Save Home Park Config SBL On Vacuum OFF Cycle Stop Reset Full Scr. On Vision Pars

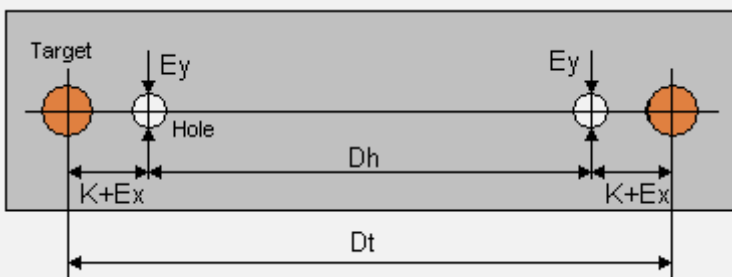
0.498 0 0.042 KV: 35.0 mA: 689 6:11:02 PM

TARGET

- Fully programmable target recognition
- Blob analysis and pattern matching technologies
- Easy management of layers

HOLES

- Optimised drilling (best fit)
- On-target drilling
- Scaled drilling



Definition of optimized drilling accuracy:

D_t = Measured distance between targets

D_h = Distance between holes

$$2K = D_t - D_h$$

E_x = Errors along X axis (scale error)

E_y = Errors along Y axis

TWO SPINDLE VERSIONS

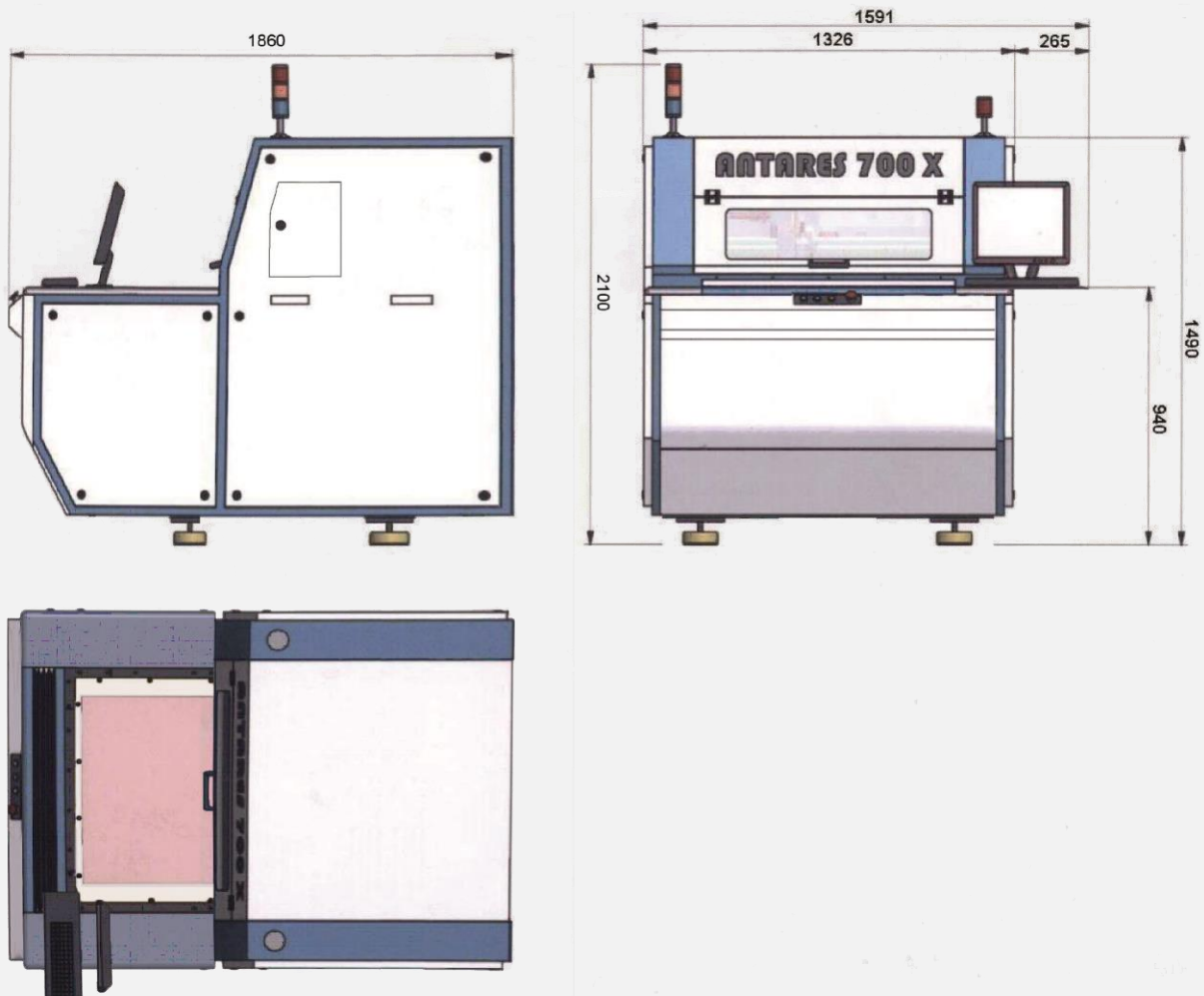
PNEUMATIC

- 30.000 rpm fixed speed
- Adjustable descending speed
- Single tool
- 16 μm run-out
- Easy and fast tool change

ELECTRIC

- Max 60.000 rpm
- Position and speed controlled Z axis
- ATC (automatic tool change)
- 4 station tool magazine
- TLD (tool length device)
- Within 2 μm run-out

INSTALLATION REQUIREMENTS



VACUUM CHIP SUCTION

- De-pressure: 150 mbar
- Flow: 14 L/min (0,84 m³/h)
- Connection size: 40 mm

ENVIRONMENT

- Room temp: 20 – 23 °C
- Relative humidity: < 55%
- Floor: Absence of vibrations
- Machine weight: 1500 Kg

MACHINE HEIGHT

- Top: 1500 mm from the floor
- With front door open ad totem lights: approx. 2100 mm

SPECIFICATIONS

Process Specifications	Measuring Accuracy	±15 µm	Within a vision area of 640x480 mm (25" x 19")
	Drill-on-target accuracy	±15 µm	Round target
	Optimised drilling accuracy	±18 µm (See description)	Round targets @ Dt = 600 mm and Dh=Dt - 5 mm
	Cycle time	20 s	4 targets + 3 holes
	Productivity	3 panels / minute	4 targets + 3 holes

Machine Specifications	Electrical supply	3 Ph + Ground – 50/60 Hz	Voltage on request
	Electrical power consumption	2 KVA (Max)	
	Air pressure supply	6 ÷ 10 Bar	
	Air consumption	400 L/min (Avg)	1400 L/min (Peak)
	N. of position controlled axes	3	4 with electro-spindle
	Max axes speed	60 m/min	
	Position accuracy	± 3 µm	
	Position transducer resolution	± 1 µm	Heidenhain
	X / Y strokes	800 / 900 mm	
	Vision Area	700 x 580 mm	Blind area 150 x 250 mm at the centre
	Z-axis motion system	Pneumatic	
	Z axis stroke	40 mm	
	Z drilling feed	0,2 ÷ 2 m/min	Adjustable
	Spindle type	Turbine	
	Spindle speed	30.000 rpm	Fixed
	Tool change	Manual	
	Tool diameters	1 ÷ 5 mm	
	Z-axis motion system	Position Controlled	
	Z axis stroke	50 mm	
	Z drilling feed	0,2 ÷ 2 m/min	Adjustable
	Spindle type	Turbine	
	Spindle speed	Up to 60.000 rpm	Programmable for each tool
	Tool change	Automatic	4 tools
	Tool diameters	1 ÷ 5 mm	
	Chips evacuation system	Centralized	(on board as option)
	Panel clamp system	Vacuum - Venturi	Table centre (Blind area 150x250 mm)
	Panel load mode	Manual	
Panel unload mode	Manual		
Panel reference system	n. 2 Cross laser lines		
X-Ray source	50 KV – 1mA	Focal spot = 50 µm	
Radiation leakage	< 1 µSv / hour	Euratom certificate	
X-Ray sensor type	CCD + Scintillator		
Sensor field of view	20 x 15 mm		
Vision system accuracy	± 4 µ		

Panel Specifications	Max. dimensions	700(X) x 700(Y) mm	27.5" x 27.5"
	Min. dimensions	300(X) x 200(Y) mm	12" x 8"
	Thickness	0,3 to 10 mm	0.012" to 0.40" (Indicative)
	Min. thickness	Down to 0,100 mm	0.004" (With special vacuum seal)