

ANTARES 700 XA

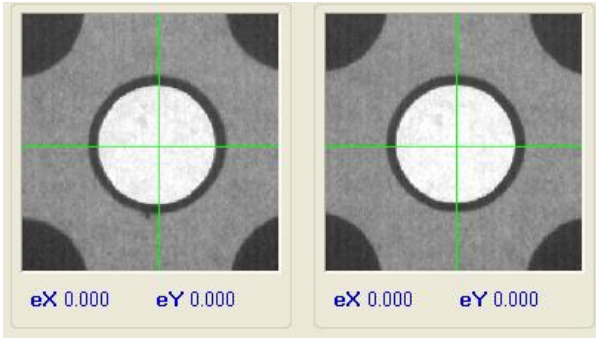
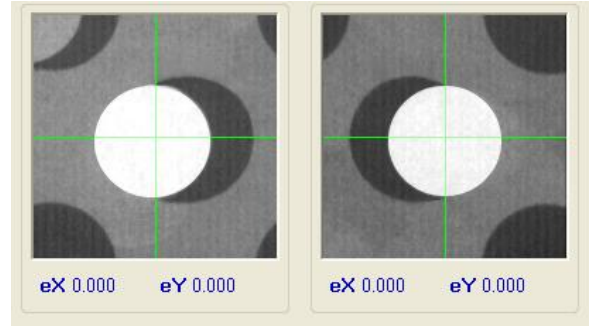


**X-RAY REFERENCE DRILLING MACHINE
WITH AUTOMATED LOAD/UNLOAD SYSTEM**

PURPOSES:

Antares 700 XA is designed to drill reference holes (pinning) on multi-layer panels. The **automatic loader/unloader** allows the machine operating in full autonomy after the batch of panels is started.

- Free programmable targets and holes (posit., diam., shape)
- Optimised drilling (best fit) – One and two axes optimization
- On-target drilling

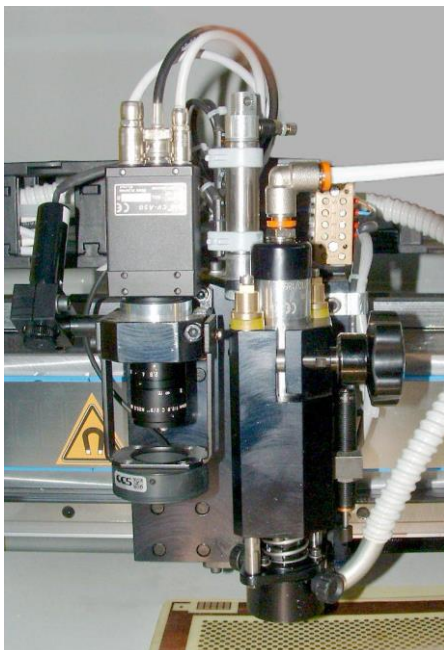
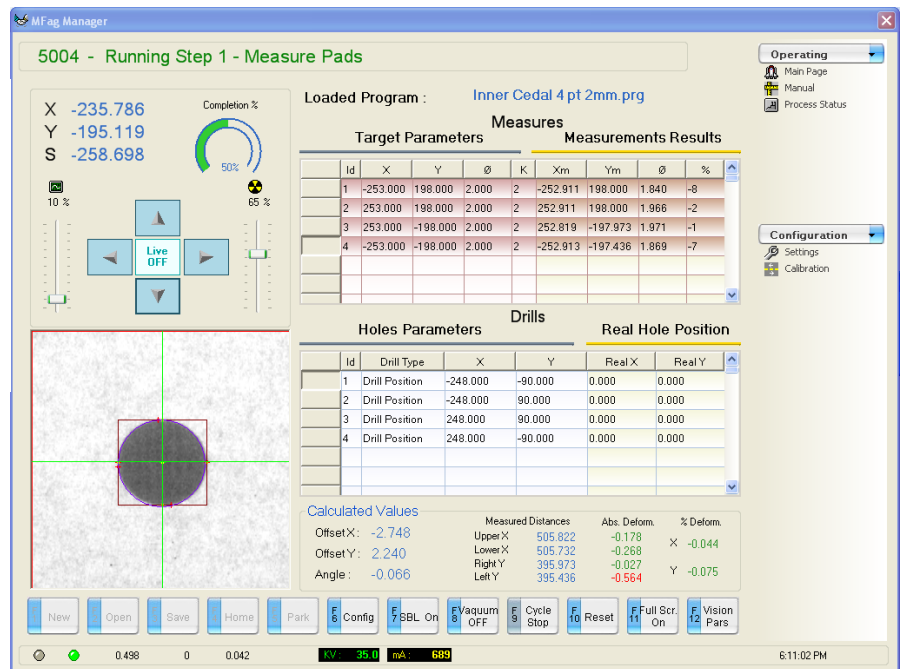


HARDWARE:

- High performance CNC integrating Motion controller, Vision system and I/O management
- Position transducers with 1 μ resolution
- Linear motors
- High reliability X-Ray source
- High sensitivity X-Ray camera
- Compact solution (see overall dimensions)

SOFTWARE:

- Friendly user interface
- Part-program based process
- All data of measured panels stored into a *.mdb file (network access)
- Measuring functions available



PROCESS:

- Panel pick-up from input trolley (at left)
- Process cycle: X-Ray measurement of target and drilling
- Worked panel is laid down into output trolley (at right)
- Panels out of tolerance are rejected into rear trolley
- Operations involving panel manipulation are in masked time respect to machine process

SAFETY:

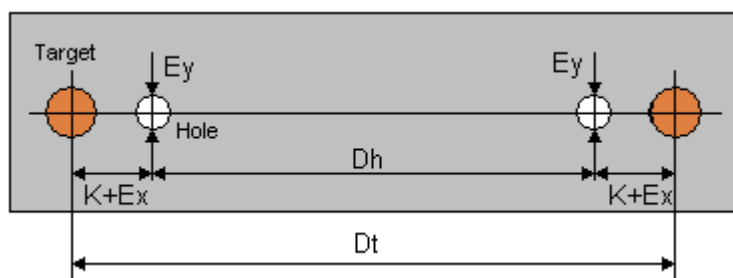
- No special anti X-Ray protection required for operators.
- Radiation leakage < 1 μ Sv / hour
- Radioprotection certificate according to Euratom directives.

Machine Specifications	Value	Notes
Electrical supply voltage	380 V – 50/60 Hz	3 Ph + Ground
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	X, Y, S (X-R source)	Etel
Max axes speed	60 m/min	
Position accuracy	± 0.003 mm	
Position transducer resolution	± 0.001 mm	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	
Chips evacuation system	Venturi	Standard dust vacuum bag
Panel clamp system	Vacuum - Venturi	Table centre (Blind area 150x250 mm)
Panel load mode	Automatic	From left cart
Panel unload mode	Automatic	To right cart
Rejection of bad panels	Automatic	To rear cart
Panel reference system	n. 2 Cross laser lines	For use in manual load mode
X-Ray source	50 KV – 1mA	Focal spot = 50 µm
X-Ray sensor type	CCD + Scintillator	
Sensor field of view	12,5 x 9,6 mm	
Vision system accuracy	± 4 µ	

Panel specifications using automated load/unload system	Value	Notes
Max. dimensions	580(X) x 660(Y) mm	20" x 26"
Min. dimensions	320(X) x 320(Y) mm	12" x 18"
Max. Weight	3,0 Kg	6.6 Lb
Thickness	0,3 to 4 mm	Indicative
Min. Thickness	Down to 0,1 mm	With special vacuum table

Panel specifications in Manual Load Mode	Value	Notes
Max. dimensions	711(X) x 650(Y) mm	28" x 26"
Min. dimensions	300(X) x 200(Y) mm	12" x 8"
Thickness	0,3 to 6 mm	0.012" to 0.24" (Indicative)
Min. thickness	Down to 0,100 mm	0.004" (With special vacuum table)

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



Definition of optimized drilling accuracy :

- Dt = Measured distance between targets
- Dh = Distance between holes
- 2K = Eventual difference between theor. distances
- Ex = Errors along X axis (scale error)
- Ey = Errors along Y axis

