



ONA AE300



ONA ■ AE300

High precision, high autonomy, and minimal maintenance



A stable, high-precision mechanical structure

Fixed-bedframe machine designed for high precision cutting in submerged mode. The clamping system is fixed, so that the weight of the workpiece rests directly on the frame. The guidance system for the X, Y, U, V and Z axes is thus submitted only to light mechanical forces.

Some of the features of these models:

- The ONA AE 300 thanks to its new CNC with Expert Erosion System offers the maximum productivity, ensuring long machining times without any operator intervention.
- Automatic strategy: a simple, effective tool for programming at the highest level.
- New, quicker, friendlier CNC for enhancing human-machine interface.
- Built in is a new automatic threading system that can handle a large variety of diameters and wire types (ONA patent).
- Implementation, in standard mode, of a system for feeding the wire prepared for the following spools: DIN 355 (100 lb.), DIN 200, DIN 160, DIN 125, DIN 100.
- Filter with zero maintenance cost (ONA patent). (Option).
- Low wire consumption: from 20 to 30 foot/minute.
- 50% resin savings (EKOADD additive).
- CNC enabled with ethernet connection. Off-site transmission of automatic messages from the CNC to PC or mobile telephone.



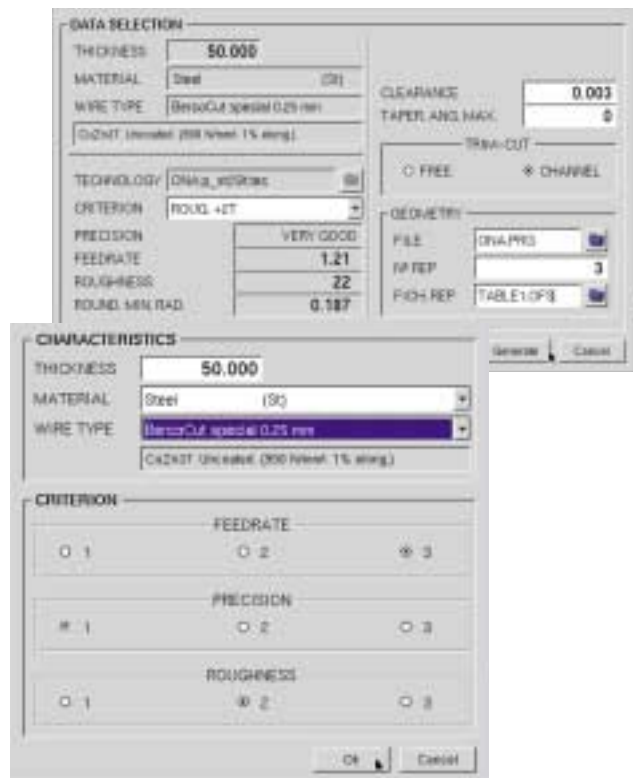
Workpiece thickness: 9.85 in.
 Material: steel (X210 CrW12)
 Wire: 0.010 in.
 Number of cuts: 1 cut and 1 trim-cut
 Straightness precision: 5 µm / side

5 µm / side of straightness precision on 9.85 in. with 1 cut and 1 trim-cut

The AE machines incorporate the new HTS (High Thickness Speed) system for spark gap control, that remarkably improves the speed and precision of straightness obtained in the first cut. The HTS system makes possible a 47% improvement of the cutting speed in high pieces. Also, with only 1 cut and 1 trim-cut allows to obtain 5 µm / side of straightness precision on 9.85 in. workpiece thickness.

Automatic strategy: a simple, effective tool for programming at the highest level

The function of this automatic programming system for wire is to generate programs automatically so that via a brief questionnaire the user without much experience can easily produce a technologically complex workpiece. A geometry defined by the user is incorporated into the final program, while the program generator incorporates the most suitable technology, along with various options that are made available for the user's consultation.



Expert Erosion System

The Expert Erosion System makes an effective control of the cuttings process, modifying automatically the programmed parameters of the power supply, ensuring optimum machine performance at each stage. The Expert Erosion System is of special importance cutting complex pieces, as staggered pieces, pieces with wide angles of taper cut, etc.

Specifications

Machine unit

Machining range (X/Y axis travel) in
 Z axis travel in
 Auxiliary travels U-V in
 Max. workpiece dimensions (L x W H)..... in
 Max. workpiece weight lb
 Max. axes speed in/min
 Maximum taper angle at 9.85 in °
 Wire diameter in
 Wire spool
 Automatic wire threader unit
 Wire chopper in

ONA AE300

15.75 x 11.8
 9.85
 3.15 X 3.15
 31.5 x 27.6 x 9.85
 2200
 78.74
 8.5° (max ±30°/2 in)
 0.004-0.012
 Up to DIN 355 (100 lb)
 Standard
 Standard

CNC

Controlled axes
 Monitor
 Minimum programmable and controllable increment
 Max. Command value
 Memory capacity (optionally expandable up to)
 Keyboard
 Pointer control
 Remote control

X , Y, U, V, Z
 12" TFT colour
 0.00004 in/0.001°
 ± 9999.999 in.
 2MB RAM
 Membrane, dust resistant
 Trackman
 Standard

Filtering unit

Paper cartridge filtering system
 Dielectric fluid
 Deionization
 Tank capacity US gal
 Filter
 Flow rate gal/min
 Filtered particle size µm

Standard
 Deionizer water
 Mixed bed resins
 196
 Paper cartridges
 28
 3

General characteristics

Total weight lb
 Max. height in
 Total surface required in

6600
 88.6
 102 x 98

Options

- Vibration absorbers.
- Wire guides: 0.004, 0.006, 0.008, 0.012 in. diameter.
- Dielectric temperature control unit.
- Special clamping systems.
- Patented mineral filtration system (No maintenance).
- CAD CAM software "ESPRIT", Microsoft Windows based and customized for ONA by DP Technology.
- ONApure® automatic water deionization module.

Control unit functions

- Up to five axes simultaneously controlled.
- Linear and circular interpolation (XY-UV).
- Types of taper cutting: sharp corner taper cutting, constant corner taper cutting (ISOCONO), constant radius taper cutting (ISORADIUS).
- Edge rounding and chanfer functions.
- Automatic rounding negative radius function.
- Programming language: ISO standard assisted.
- Simultaneous programming during machining.
- Axes speed. Cutting: 0.004 to 23.62 in/min.
 Dry run: 78.74 in/min.
 Manual: 0.004 to 78.74 in/min.
- Integral control of the process through the power supply.
- Output signals activate/inactivate (optional).
- Alarms and diagnostics displayed on the display.
- Execution: Manual/Automatic/Single block/Dry run/Machine locked.
- User's technological tables.
- Short circuit back up.
- Auto power cut by: end of program, alarm, programmed stop
- Auto switch on after power failure
- Optional stop. Program can be interrupted.
- Start point return and go to the previous position
- Enhanced corner surface cutting. The CNC, working through a cutting control system, automatically ensures against inaccuracies when the radius and sharpest corners of the workpiece are being cut.
- Absolute/incremental modes.
- Inches/metric full conversion.
- Geometric changes: Figure displacement (each 0.00004 in).
 Figure rotation (each 0.001°). Mirror image independent on axes X and Y. Axis exchange. Scale magnification (from 0.001 up to 99.999).
- Macros and subroutines: up to four nesting levels.
- Wire radius compensation.
- Dwell: programmed as a time function or as input state function.
- Allowed working zone definition.
- Jumps: conditional and not conditional, up to ten parameters.
- Centering in inner cavities (slots, holes, etc.).
- Edge searching with tolerance.
- Programmed path graphic display, with current working position.
- Cutting length and current cutting speed in mm/min display.
- Vertical position search and vertical position return.
- Consumables restlife monitoring (i.e. :wire, guides, etc.).
- Automatic strategy: generation of programs automatically via a brief questionnaire.
- External interface: Ethernet card, RJ45 connector, serial interface RS 232.
- Off-site transmission of automatic messages by the CNC to a PC or mobile telephone.

• With our commitment to up-to-date technology and design, ONA Electro-erosión reserves its right to introduce modifications in the specifications printed in this brochure without prior notice.



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