

Targeting medical, aerospace, and high precision parts manufacturing!!

The most affordable linear motor drive Wire-Cut EDM, "AD325L"

Sodick announces the release of the new linear motor drive high speed wire-cut EDM, "AD325L", targeting the high precision parts manufacturing industry, which has seen the trend of miniaturization of products and growing requirements for higher machining accuracy during recent years.

In high precision parts manufacturing industry such as medical equipments, aerospace, cutting tools such as PCD, carbide, and etc, there has been a growing demand to efficiently carry out the machining of a large number of complicated shape parts. To meet such demands, Sodick releases the highly affordable linear motor drive wire-cut EDM, "AD325L".

The efficient design of discharge circuit unit has realized the smallest machine installation space compared with the same class Wire-EDM, even with all the equipments such as linear motor drive system, tension servo function, automatic fluid depth control, and super Jet AWT.

Operability has also been improved with installation of a square shape work stand, a vertically slide front door, and etc. The auto programming system, "Heart NC", is standard with the "New LN power supply", which enables even a beginning level user to easily machine a workpiece into a complicated shape.

Sodick, as "a contributor to the manufacturing in the world", has been concerned with high accuracy machining fields represented by mold and die industry. However, for the sake of further contribution to the overall manufacturing industry, Sodick has developed the Wire-cut EDM which best fits the needs of parts manufacturing industry.

This machine is exhibited in SIMTOS 2008, which is held in Korea from 8th to 13th, April 2008.

■Main features

- 1) XYUV axes are driven by linear motors developed by Sodick
- 2) High rigidity machine structure
- 3) Super Jet AWT (Type B)
- 4) "New LN power supply" and auto programming system "Heart NC"
- 5) Latest electric al discharge unit for Wire-cut EDM, "WS series".
- 6) Other features to improve manufacturing efficiencies.
- 7) Compatible with indexer (option), meeting the varieties of machining needs.

■Details

1) XYUV axes are driven by linear motors developed by Sodick

As an affordable model of high speed wire-cut EDM, "AD325L" are equipped with linear motors to drive XYUV axes. The frictionless high speed movement without backlash and excellent positioning accuracy of linear motor ensure high responsiveness, long term stable performance and serviceability. Linear scale, which is often handled as an option for ordinary machine tools, is standard for this entry model EDM to realize higher machining accuracy. By combining linear motor and motion controller (K-SMC) which has been developed by Sodick over the years, excellent machining performance has been realized.

2) High rigidity machine structure

By integrating the cutting edge structural analysis technique with the know-how for designing EDM that Sodick has accumulated over the years, optimum rib arrangement has been realized to make weight reduction of 10% possible while maintaining high rigidity structure. This high rigidity structure minimizes the positioning displacement caused by the movement of the machining tank that can accommodate much larger workpiece (780 x 570 x 215mm), compared with the similar size EDMs.

3) Super Jet AWT (Type B)

"Super Jet AWT (Type B)" is the new auto wire threading device which uses round dice as an upper wire guide. Wire threading success rate has been greatly increased by introducing wire annealing function. "Narrow clearance dice", which is used in upper class machines (AQ327L/AQ537L), is standard. "Narrow clearance dice" ensures the clearance between the wire and the dice as closer to zero as possible to improve positioning and machining accuracy. Longevity of the dice is also improved to reduce the running cost. Varieties of machining types required for Wire-cut EDM can be superbly carried out from the perspective of surface quality, pitch accuracy, roundness, and shape accuracy.

To thread a wire through a hole inside a counter bore, in which both upper and lower wire guides are unable to approach the threading hole, or to thread a wire through a stepped workpiece, "Super Jet AWT Type A" (factory option), which adopts "Pipe Jet" wire threading method with split guide, is available.

4) "New LN power supply" and auto programming system "Heart NC"

In the "New LN Power supply", the new control panel used in the upper grade "LP power supply" is standard.

In designing the new keyboard, operability was prioritized over anything else by adopting highly visible color arrangement for each key and concavo-convex surface for frequently used keys.

Auto programming support system "Heart NC" enables even a beginning level operator to easily create machining programs for complicated machining shapes such as different top and bottom shape,

involute gears, and free curve. Moreover, it is possible, to import other CAD/CAM data in DXF format and easily create machining program based on the data.

5) New Wire-cut EDM electrical discharge unit “WS series”

The cutting edge electric power supply, “WS series”, features improved machining accuracy in cutting hard materials such as CBN, PCD or stepped workpiece. Machining speed has also been improved. In developing “WS series”, highest priority was placed on operability at manufacturing site. New functions have been added that enable to shift a machining condition to the optimum one with just one click, “EPA”function, or to select a condition by a sliding bar.

6) Other features to improve manufacturing efficiencies

Operability has been improved with the introduction of a square shape work-stand, a vertically slide front door, and etc. Thanks to the remote controller which has every button necessary in setup process, setup of workpiece can be efficiently carried out without looking at the monitor on the control panel.

7) Compatible with an indexer (option), meeting the varieties of machining needs

To meet the needs for machining more complicated shapes by using an indexer, “WS-4P / WS-5P”, are available.

■Specification

Machine tool

Maximum workpiece size (Width×Depth×Height)	780×570×215 mm
Maximum workpiece weight	500 kg
Machining tank dimensions (With×Depth)	810×650 mm
Axis travel (X × Y × Z)	320×250×220mm
Auxiliary axis travel (U × V)	80×80mm
Maximum taper angle (workpiece thickness 120 mm)	±15°
Wire diameter	φ0.15 ~ φ0.3mm
Machine dimensions (Width×Depth×Height)	1850×2170×1960 mm
Space require to carry in (Width×Height)	1445×1930 mm
Machine tool weight	2400 kg
Total power input	11 kVA

Power supply unit

Maximum machining current	40 A
Power input	200/220 V 50/60 Hz
NC	Multi task OS, K S M C - L I N K System
Simultaneously controlled axes	Max. 4 axes (L N 10W : 6 / 8 axes)

AD 3 2 5 L with LN power supply

