



General Catalogue

Product Range

Wire Cut EDM

AD325L
AQ327L AQ537L
AQ750L AQ900L
AP200L AP450L AP500L
EXC100L

Die Sinker EDM

AP1L Premium
AG35L AG55L AG75L
AD3L AQ15L

Small Hole Machine

K1C K3HN K1BL



Sodick

Nano&Solution



AZ150

Nano Machine



Ultra Nano100

Space Series



AE05

Sodick Product Range



AP200L



AP500L



EXC100L

Wire Cut EDM



AQ327L



AD325L



AQ537L



AQ750L



AQ900L

High Speed Milling Centre



HS650L



HS430L



HS150L

Die Sinker EDM



AP1L Premium



AD3L



AG55L



AQ15L



AG35L



K3HN



K1BL

Small Hole Machine



K1C

Electron Beam PIKA Finish Machine



EB300

Hybrid Wire



saving
energy

Lower ecological impact due to energy saving technologies incorporated in all SODICK products.

Linear Motor Drive Wire Cut EDM

Sodick's linear motor technology provides instantaneous reaction time which maximises cutting efficiency. As there are no ball screws or couplings, backlash is totally eliminated. This provides several advantages, including improved positioning and cutting accuracy, while providing smooth and vibration free table movement.

With Sodick's new LP Control, Parasolid files (solid models) can be directly imported into the control. This maximises cutting efficiency, reduces workflow and programming errors.

Linear High Speed Wire Cut EDM AQ327L/AQ537L with LP Control

The world's fastest and most accurate wire cut EDM. A new series of wire cut EDM incorporating linear motors, the latest technology and ergonomic design.

The AQ327L Premium and AQ537L Premium are equipped with LP power supply enabling high speed machining. They also incorporate all the necessary functions to make them the worlds most productive wire EDM's. The new LP unit, a new CNC control capable of directly importing 3-D models, is extremely effective at saving steps in the programming process, preventing operating error and improving overall manufacturing performance.



Linear Large Size Wire Cut EDM AQ750L/AQ900L with LP Control

In response to the growing demand for large dies spurred by the huge popularity of large screen TV's, the AQ750L Premium and AQ900L Premium, also equipped with LP power supply have been designed especially for machining large size dies for large size components as well as for automobile parts such as instruments, panels and bumpers. As an optional extra, the AQ750L is now available with a submerged cutting height of 600mm.



Specification	AQ327L Premium	AQ537L Premium	AQ750L Premium	AQ900L Premium
Max. workpiece size (W x D x H)	570 x 420 x 240 (submerged: 230) mm	770 x 520 x 340 (submerged: 280) mm	1050 x 750 x 400 (600 option) mm	1200 x 900 x 400 mm
Max. workpiece weight	500 kg	1000 kg	3000 kg	3000 kg
Stroke (X x Y x Z)	370 x 270 x 250 mm	570 x 370 x 350 mm	750 x 500 x 400 mm	900 x 600 x 400 mm
Auxiliary axis (U x V)	120 x 120 mm	120 x 120 mm	770 x 520 mm	920 x 620 mm
Taper angle (t=100mm)	±25° (± 45° option)	±25° (± 45° option)	±30° (± 45° option)	±30° (± 45° option)
Wire diameter	ø0.15-0.33 (Ø 0,1 option) mm	ø0.15-0.33 (Ø 0,1 option) mm	ø0.15-0.33 mm	ø0.15-0.33 mm
Dimensions (W x D x H)	2225 x 2395 x 2220 mm	2600 x 2740 x 2390 mm	2050 x 2850 x 2295 mm	2380 x 3150 x 2395 mm

Linear High Speed and Precision Wire Cut EDM AP200L/AP450L/AP500L

A newly developed wire cut EDM capable of high precision machining even on larger workpieces, equipped with linear motors and highly rigid cross roller guides with a double column structure. Also has ultra high precision pitch feed on precision transfer plate.

The AP200L achieves ultra high precision machining thanks to linear motors on 4 axes and high rigidity cross roller guides, all of which are developed and manufactured by Sodick. You can select the most suitable machine type in accordance with your machining conditions and accuracy from two different specifications based on a dielectric fluid of water or oil.



Linear Ultra Precision Wire Cut EDM EXC100L

For the first time in the world the EXC100L is equipped with a totally non-contact X-Y cross table with Sodick-made ceramic air bearings and linear motors. Furthermore, it has a minimum incremental step of 10 nanometres which is made possible with high resolution linear scales which guarantee stable ultra high precision machining.



Linear Entry Precision Wire Cut EDM AD325L with LN Power Supply

Compact linear wire cut EDM technology and now at entry level prices, but without compromised performance. Sodick made linear motors are used on X, Y, U, V axis and achieve a quicker response time in comparison with conventional ball screw drives. Since there are no ball screws or couplings, backlash is totally eliminated. This provides several advantages, including improved positioning and cutting accuracy, while providing smooth and vibration free table movement. The AD325L is complete with all the Sodick trademark features: ceramic components, glass scales, solid Meehanite castings, user-friendly software and error free data conversion. A 0.1mm wire option is also available.



Specification	AP200L	AP450L	AP500L	EXC100L	AD325L
Max. workpiece size (W x D x H)	300 x 270 x 100 mm	600 x 400 x 130 mm	650 x 500 x 100 mm	150 x 150 x 60 mm	780 x 570 x 215 (Submerged 200)
Max. workpiece weight	50 kg	100 kg	150 kg	10 kg	500 kg
Stroke (X x Y x Z)	220 x 150 x 120 mm	450 x 300 x 150 mm	500 x 400 x 110 mm	100 x 120 x 100 mm	320 x 250 x 220 mm
Auxiliary axis (U x V)	35 x 35 mm	35 x 35 mm	35 x 35 mm	20 x 20 mm	80 x 80 mm
Taper angle (t=100mm)	±7° (t=100mm)	±7° (t=100mm)	±7° (t=100mm)	±6° (t=100mm)	15° (t=100mm)
Wire diameter	ø 0.05-0.2 (ø0.03:option) mm	ø 0.05-0.3 mm	ø 0.05-0.3 mm	ø 0.02-0.1 mm	ø 0.15 ~ 0.3 mm (0,1 option)
Dimensions (W x D x H)	1940 x 2715 x 2065 mm	2290 x 1830 x 2170 mm	2290 x 1875 x 2275 mm	2280 x 1830 x 1990 mm	1895 x 2240 x 1960 mm

Wire Cut EDM



Sodick Wire Cut EDM Series

Sodick's development of core technologies has led to world record achievements in high speed precision machining. Sodick's design uses ceramics for the key components of the machine tool and implements the latest CAD design technology. However, Sodick does not lose sight of proven traditional methods, such as the scraping of all mating surfaces, to perfect the high rigidity of the basic machine structure. Furthermore the Wire Cut EDM range from Sodick comes with the World's First 10-Year Positioning Accuracy Guarantee.

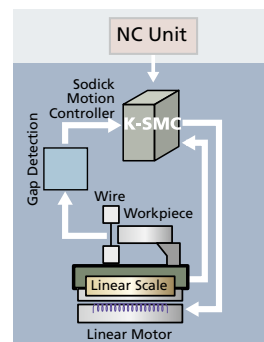
High Rigidity Structure

Sodick's expertise in EDM innovation using 3D design systems, the latest CAE technologies and numerous simulations have made it possible to create a basic machine structure. Optimised rib arrangements increase rigidity by approximately 70%, deformation is minimised, allowing for optimum performance of the high-speed, rapid acceleration-linear motors.



Linear Motor

Sodick's in-house designed and manufactured linear motor employs a direct drive, vibration free device which has unrivalled acceleration and positioning accuracy with no backlash. Its high dynamic responsiveness, stability, and performance do not diminish over time and remain maintenance free. The linear motor achieves even better performance thanks to the Motion Controller (KSMC) which Sodick has developed and perfected over the years.



Sodick Motion Controller



Ceramic Components

All Sodick Wire cut EDM's are constructed using ceramic components for the work stand table and critical parts. All of these are built in-house ensuring better electrical insulation, abrasion resistance and rigidity. Ceramics are ideal for high precision machining due to their very low thermal expansion coefficient (Less than one third than that of cast iron), high rigidity and resistance to ageing.



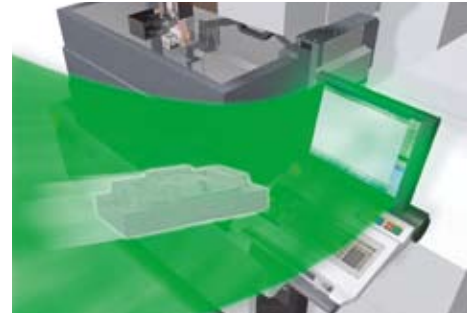
"LP" series Power Supply Unit

An NC system based on modern control theory, Windows Operating System and latest 3D solid model CAD programming. This ergonomically designed Control incorporates a 15" colour touch screen monitor for ease of operation.



Intelligent Q³vic

The LP power supply comes equipped with "Intelligent Q³vic" as standard. This enables the operator to directly import 3D models and to additionally extract every cutting contour to be wire EDM'd within seconds. Even work pieces with a complicated shape and different cutting heights can be programmed using only a single command. After the surfaces to be machined have been recognised, an NC programme is generated including all cutting parameters. A full on screen simulation is possible prior to machining.



Intelligent Q³vic And Esprit CAM System Offline

All LP series machines come with "Intelligent Q³vic" and "Esprit" on a CD ROM. This package can be run on an external PC, and allows the operator to manipulate 3D Solid Model remote from the machine. Furthermore, any other 2D and 3D formats can be imported allowing full offline programming. When the offline system is networked to the machine, a full simulation can be performed using "Intelligent Q³vic".



Hybrid Wire

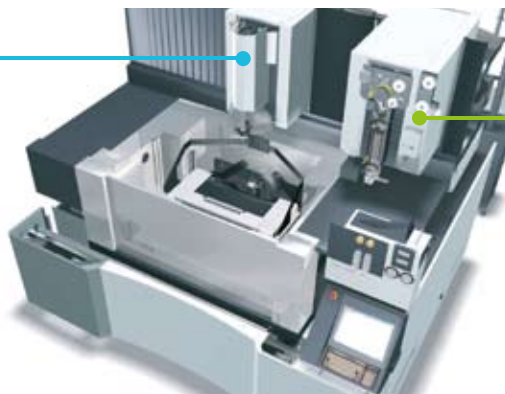
The next generation "Hybrid Wire", which enables up to 20 times faster cutting than traditional Wire-cut EDMing.

This new machine generation dramatically improves cutting speed of Wire-cut EDM, examining unconventional methods in the process.

- Wire-cut EDM and Waterjet are combined into a single "Hybrid Wire".
- The combined Hybrid machine is compact in size.
- Rough cutting speed (1st cut) by waterjet is dramatically, 20times faster than Wire-cut EDMing.
- Initial hole machining and disposal of core are performed ready for automated operation.
- "Hybrid Wire" can be applied to any 3 different requirements, such as waterjet cutting only, Wire-cut EDMing only or combined machining with waterjet and Wire-cut EDMing.



WATERJET
High Speed



Wire Cut
High Precision

Linear Motor Drive Die Sinker EDM

Sodick linear motors for CNC die sinkers reduce EDM machining time by up to 80%. As there are no ball screws or couplings, back lash is totally eliminated. The menu driven control automatically writes the NC code for the operator whilst inserting optimum cutting conditions. With instantaneous linear motor responsive control the need for flushing is eliminated making the impossible possible. Using Sodick's new LP control you can import Parasolid files (solid models). This feature maximises the cutting performance, reduces the workflow and eliminates programming errors.

Linear Micro-Precision Die Sinker EDM AP1L

Responding to the need for a higher level of machining accuracy, Sodick's AP1L Premium offers solutions to ultra precision machining requirements based on proven superiority in mini and micro-machining. Production is improved through the advanced functions for automation and labour saving operation. Revolutionary technology is needed for electrode dressing to support ultra precision high speed machining of hard and difficult materials in order to achieve manufacturing capability of micro moulds.



AG Series AG35L/AG55L/AG75L

The world's fastest die sinker EDM achieves a high quality finish and is equipped with high speed linear motors on three axes.

Using Sodick's SVC and SGF circuit, the AG Series achieves highspeed and high quality uniform surface finish. In addition, the SGF circuit allows machining using graphite electrodes with "zero" wear, eliminating the need for multiple electrodes, thus reducing manufacturing time.



Specification	AP1L Premium	AG35L	AG55L	AG75L
Table size (W x D)	360 x 220 (ceramics) mm	600 x 400 (ceramics) mm	750 x 550 (ceramics) mm	900 x 750 (ceramics) mm
Work tank inner dimensions (W x D x H)	503 x 349 x 250 mm	750 x 550 x 320 mm	950 x 725 x 410 mm	1100 x 950 x 500 mm
Stroke (X x Y x Z)	200 x 120 x 200 mm	350 x 250 x 250 mm	550 x 400 x 350 mm	700 x 500 x 350mm
Max. weight of electrode	5 kg	50 kg	50 kg	100 kg
Max weight of workpiece	25 kg	550 kg	1000 kg	2000 kg
Distance from floor to table top	940 mm	850 mm	840 mm	900 mm
Dimensions (W x D x H)	1355 x 1895 x 2030 mm	1875 x 2125 x 2395 mm	2065 x 2630 x 2720 mm	2268 x 3032 x 2900 mm

Linear Entry Die Sinker EDM AD3L

Without compromised performance, but at a competitive price, the AD3L makes the performance of linear motor drive machines available to a greater number of customers. The generator comes complete with SVC and SGF circuit as standard. The high speed linear motors maintain the optimal discharge gap and significantly increase discharge frequency to achieve the world's highest machining speed.



Linear Ultra Large Die Sinker EDM AQ15L

An ultra large die sinker EDM specialising in the highly efficient production of large size moulds such as those for automobile parts and large flat display panels, making it possible to fully utilise the high speed, high precision machining capability of linear motor drive machines.



Specification	AD3L	AQ15L
Table size (W x D)	600 x 400 mm	1000 x 2000 mm
Work tank inner dimensions (W x D x H)	925 x 555 x 300 mm	1400 x 2500 x 800 mm
Stroke (X x Y x Z)	300 x 250 x 250 mm	900 x 1500(+500) x 600 mm
Max. weight of electrode	50 kg	100 kg
Max. weight of workpiece	550 kg	10000 kg
Distance from floor to table top	810 mm	1000 mm
Dimensions (W x D x H)	1870 x 1955 x 2315 mm	3050x 5180 x 4220 mm



Die Sinker EDM



The World's First 10-Year Positioning Accuracy Guarantee

The linear motor-driven EDM's are completely free from the deterioration in machining accuracy caused by worn ball screws throughout the machine life. This enables Sodick to offer a unique 10 year precision accuracy guarantee.

Linear motor drives on Sodick die-sinker and wire-cut EDMs have enabled difficult machining operations that were not possible with conventional ball screw-type machines. This exceptional performance has resulted in cumulative sales of over 20,000 units by 2008.

"LP" Series Power Supply Unit

An NC system based on modern control theory, Windows Operating System and latest 3D solid model CAD programming. This ergonomically designed Control incorporates a 15" colour touch screen monitor for ease of operation. By using Intelligent Q³vic EDM, which comes with LP machines as standard, it is also possible to import directly 3D models and create cutting programmes and complete EDM processes without using manual G Codes.

"SGF" Discharge Unit

The "LP" series power supply unit is equipped with the "SGF" discharge unit. "SGF" minimises graphite electrode wear and maximises cutting speed offering the highest performance level possible, which allows "Zero" wear machining.

The "SGF" circuit achieves rough cutting to finishing using only a single graphite electrode. This eliminates the requirement for multiple electrodes, and therefore reduces manufacturing time.

Ceramic Components

In critical components, such as quill and table, Sodick Die Sinker machines use In-house made ceramic components. Ceramics are ideal for high precision machining due to their very low thermal expansion coefficient (Less than one third than that of cast iron), high rigidity and resistance to ageing.



Helical Gear Cutting

EDM Model	AG35L
Electrode material	Copper
Workpiece	SKD61
Machining time	11 hours 50 minutes
Surface finish	0.45 µmRa
Machining depth	12 mm



Punch Marking

EDM Model	AG55L
Electrode material	Copper
Workpiece	STAVAX
Machining time	1 hour 30 minutes
Surface finish	0.45 µmRa
Electrode clearance	0.03 mm/side

Sodick Motion Control (SMC)

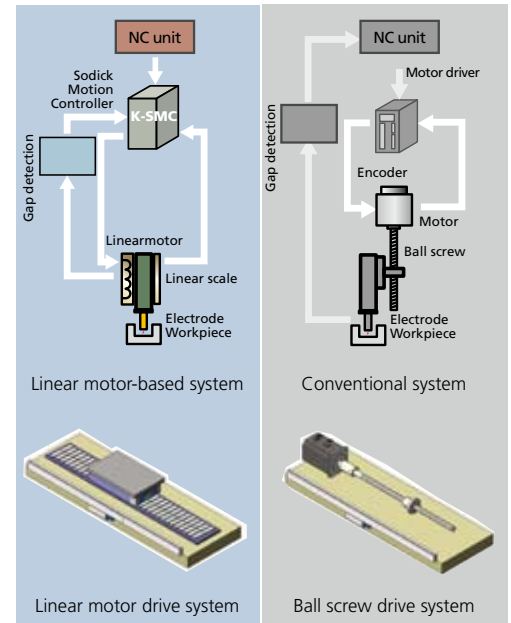
Sodick Motion Control directly monitors and drives the Linear Motor via the SMC, allowing real-time control without delay in gap detection, enabling quick response and high efficiency. The SMC is another unique Sodick development.

Linear Motor Drive

Conventional drive systems use ball screws to convert the rotational motion into the linear motion, leading to deterioration in response in conventional servo motors due to time delay and mechanical inaccuracies during the motion conversion.

Sodick's revolutionary Linear Motor Drive ensures faster response times (as a result of contact and wear free motion) which, coupled with high speed axis positioning allows for 100% accurate results every time

Comparison of Position Detection Systems



Small Hole Drilling EDM

K Series Hole Drilling EDM K1C, K3HN

The worlds finest quality range of EDM Hole Drilling machines includes the K1C, a manually operated machine and the K3HN, the CNC version with automatic electrode changer. Sodick's high speed small hole drilling range enables the machining of steel, carbide, heat treated work pieces as well as other conductive materials. Sodick patented Vitol machining fluid allows EDMing at much greater speeds than alternative small hole machines which use water as a dielectric fluid. As an option, the K3HN can be equipped with additional rotary and/or indexing axes making it the ideal product for Aerospace and Medical applications.



Linear CNC Micro-Hole Drilling EDM K1BL

Highly responsive linear motors secure continuous and high precision drilling of very small holes down to the use of 80 micron electrodes. The machining scope of K1BL, equipped with a Sodick linear motor on the main axis (Z axis) completes the range. In addition the high response of the linear motor increases the machining speed and reduces the electrode wear significantly.



Specification	K1C	K3HN	K1BL
Max. workpiece size (W x D x H)	250 x 350 x 300 mm	400 x 450 x 300 mm	240 x 290 x 95 mm
Table size (W x D)	250 x 350 mm	400 x 450 mm	200 x 250 mm
Stroke (X x Y x Z)	200 x 300 x 300 mm	300 x 400 x 300 mm	120 x 150 x 300 mm
Electrode diameter	ø 0.25-3.0 mm	ø 0.25-3.0 mm	ø 0.08-0.25 mm
Max weight of workpiece	100 kg	200 kg	50 kg
Distance from floor to table top	1020 mm	900 mm	910 mm
Dimensions (W x D x H)	810 x 870 x 2015 mm	1425 x 1120 x 2080 mm	1635 x 1530 x 2305 mm

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