create your future

Sodick



Large Size Linear Die Sinker EDM

AL100G+

Core Technology

Five core technologies developed in-house for achieving the world's highest quality machining

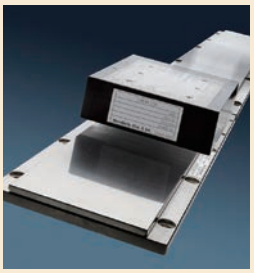
Tech 1 & 2 NC Power Supply Unit + Discharge Unit

The Sodick Die Sinker AL100G+ features Sodick's latest SP series power supply unit, which is capable of high-speed, high-precision and high-efficiency machining. The outstanding performance of the SP series power supply is controlled by a modern in-house designed NC system running on a Windows Operating System. The user interface benefits from a 19" colour touch screen for ease of use and operation.



Tech 3 Linear Motor

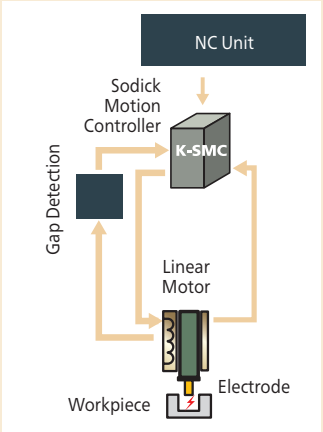
The most outstanding features of the Sodick in-house developed and manufactured Linear Motors are high-speed axis motion and quick response, which result from wear-free motion and without the need for old-fashioned ball screws. Conventional drive systems use ball screws to convert the rotational motion of the motor into the linear motion of the axis stroke, leading to the unavoidable deterioration in response of high speed servo motors due to back-lash and mechanical lost motion. However linear motors directly provide motion to each axis without converting rotational movements of motor to linear motion.



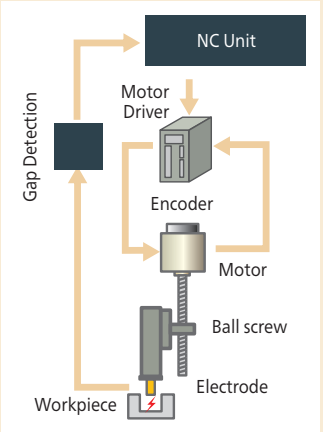
Tech 4 Motion Controller + Absolute Linear Scales

In order to achieve maximum performance with a linear motor, the K-SMC motor controller is also developed in-house and incorporates Sodick control know-how accumulated over the years. The feedback from the spark gap is directly input in to the K-SMC board allowing for instantaneous adaptation of the sparking conditions.

With the introduction of new advanced absolute linear glass scales the need for referencing has been removed. Therefore, ensuring total positional control at all times and reduced setting up time.



Linear Motor Drive



Conventional Ball Screw

Tech 5 Ceramic Components

In major components, such as the quill, the Sodick AL100G+ is equipped with in-house manufactured ceramic material, which has been carefully researched and is considered as the best material for use in high-end EDM machines.



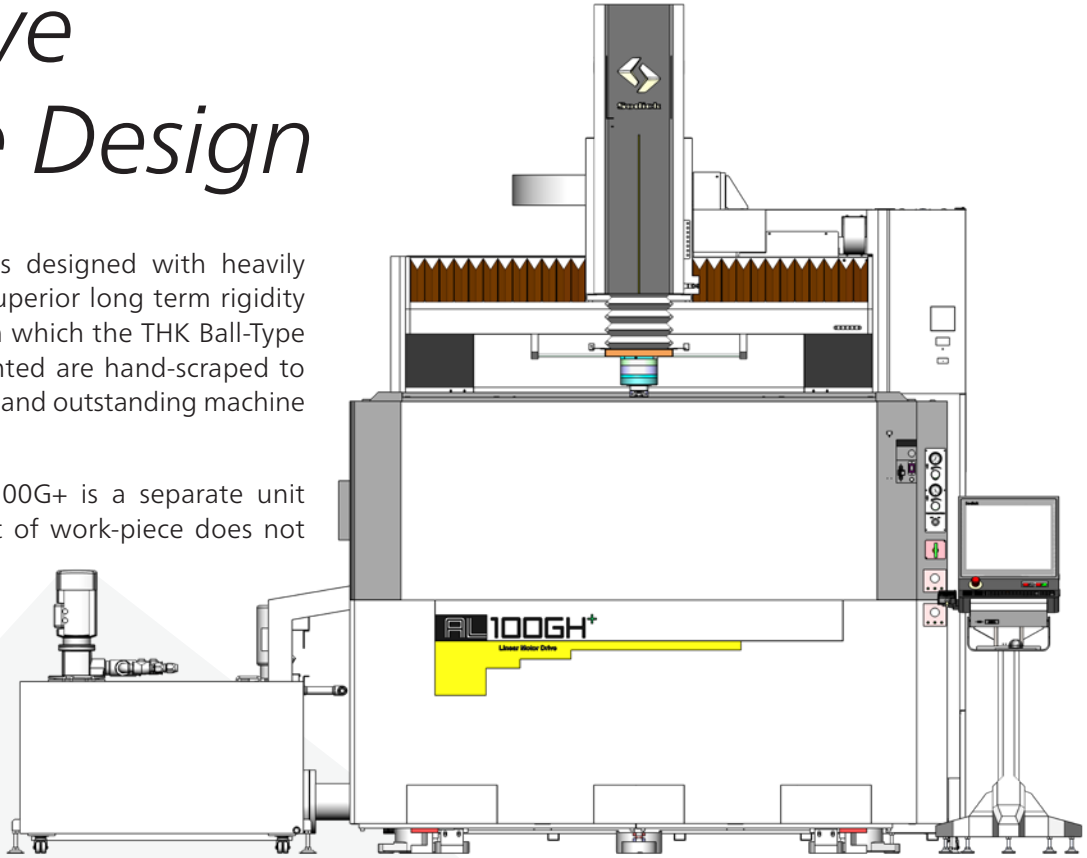
Starting with the development of electrical discharge circuits, Sodick has continued to make untiring efforts in the research and development of advanced EDMs. Sodick's philosophy has been the pursuit of the highest level of accuracy, speed and versatility of machining in order to provide the highest quality products to its customers.

Sodick's: Power Supply Units, Discharge Units, Linear Motors, Motion Controllers and Fine Ceramic Components have evolved as its five core technologies. These developments have positioned Sodick at the pinnacle of EDM technologies.

Innovative Machine Design

The machine construction is designed with heavily ribbed sections to provide superior long term rigidity and stability. The surfaces on which the THK Ball-Type Linear Guide-ways are mounted are hand-scraped to ensure a perfectly flat surface and outstanding machine geometry.

Since the work-tank of AL100G+ is a separate unit of the machine tool, weight of work-piece does not adversely affect the precision and speed of the axis movements. Furthermore, the advanced machine design allows the flexibility to customize work-tank dimensions on request as required by the customers' application.



Efficient Energy Conservation with Advanced Pump Technology

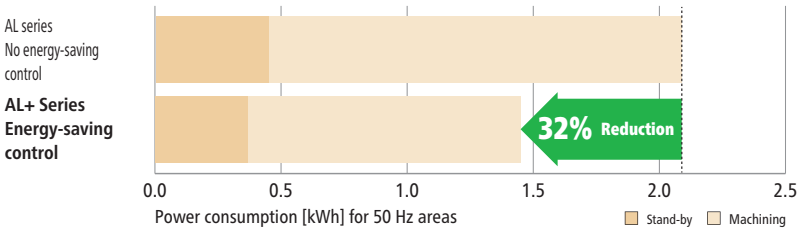
A newly developed energy-saving pump system has been integrated into the dielectric tank. This intelligent monitoring system helps reduce the pump drive energy required for flushing. As a result, the AL+ series achieves an impressive over 30% reduction in power consumption, including standby, compared to the conventional models.

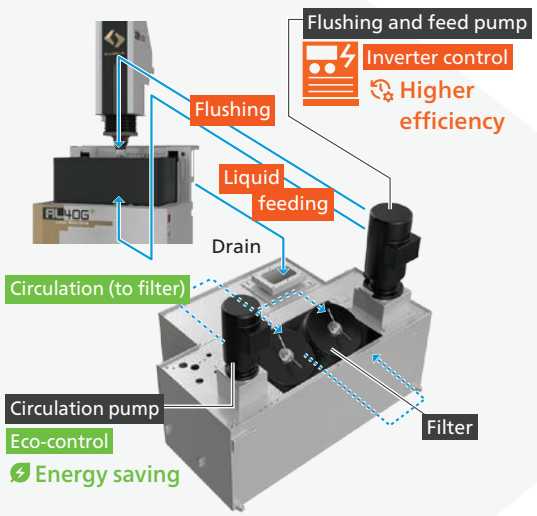
AL+ series

Energy-saving performance

Environment

- copper-electrode: ϕ10, workpiece: steel, machining depth: 1mm
- 1 cycle: Stand-by operation 15 minutes (25%), Machining 45 minutes (75%)





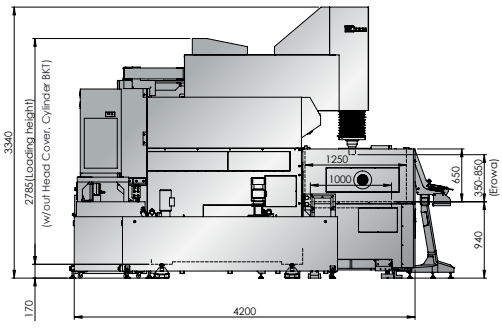
Specifications

Technical Specifications	AL100G+
X/Y/Z axis travel (mm)	1,200 x 650 x 500
Table dimensions (mm)	1,600 x 1,000
Worktank dimensions (mm)	2,100 x 1,250 x 650
Dielectric level (min ~ max, mm)	325 ~ 600
Max. workpiece weight (kg)	5,000
Max. electrode weight (kg)	100
Distance from floor to table top (mm)	940
Machine tool dimensions (W x D x H, mm) (Incl. power supply and dielectric tank)	3,820 x 4,200 x 3,340
Step resolution (mm)	0.0001
Machine weight (kg)	13,700
Controlled axis	4
Air pressure (Automatic Clamping chuck, MPa)	0.65

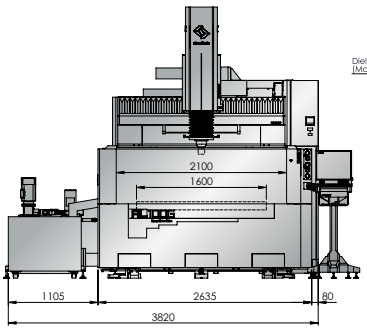
Dielectric Tank	AL100G+
External dimensions (W x D x H, mm)	2,520 x 900 x 2,330 (Main) 900 x 2,650 x 1,250 (Sub)
Empty weight (kg)	650 (Main) + 450 (Sub)
Dielectric fluid	Oil
Capacity (l)	2,770
Filtration method	6 replaceable paper filters

The dielectric chillers on Sodick machines contain either fluorinated greenhouse gas R410A or R407C.
Due to ongoing research, specifications are subject to change without prior notice.

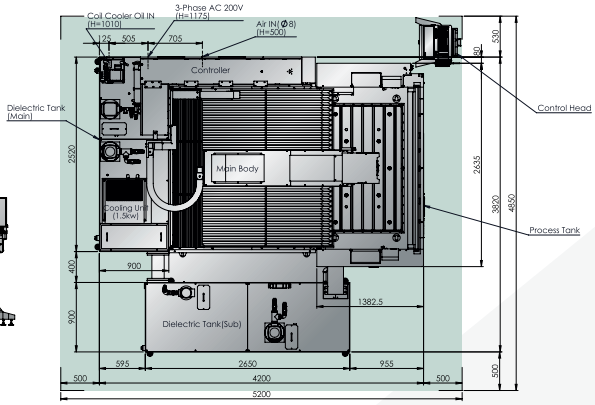
Floor Layout



Side View



Front View



Top View

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