

Linear Motor Drive Wire-cut EDM

# AL series

AL400P	AL600P
AL400G	AL600G
ALN400G	ALN600G



Smart Pulse & Smart Linear

The AL Series demonstrates the best performance by internally developing and manufacturing all the component technology represented by the linear motor, electric discharge power supply, NC unit, motion controller and ceramics, based on the development concept of "Smart Pulse & Smart Linear."

### Positioning Accuracy

Sodick's Wire-cut EDM equipped with the linear motor drive system realized various types of machining which was not possible with the conventional ball screw drive system.

Maintains the initial machine accuracy semi-permanently without deterioration of the accuracy throughout the life of the machine (17 years or more).



#### AL400P/AL600P

- High Precision Premium Specification
- 4 axis linear motor drive system
- Equipped with ceramics
- 3-sided machining tank with automatic up/down door
- Digital-PIKA-W Plus: Best surface roughness Ra 0.04 $\mu$ m  
(Cemented carbide material)
- DSF (Dynamic Shape First)
- CFRP full cover

#### AL400G/AL600G

- 4 axis linear motor drive system
- Equipped with ceramics
- 3-sided machining tank with automatic up/down door
- Digital-PIKA-W Plus: Best surface roughness Ra 0.04 $\mu$ m  
(Cemented carbide material)
- DSF (Dynamic Shape First)
- Full cover

# Opening the Door of Next Generation Machining

## Smart Pulse & Smart Linear

### Features & Functions

Windows 7 OS, Dual Core Processor  
19 inch LCD Multi touch panel  
Auto power failure recovery (UPS)  
Heart NC onboard programming  
Auto machining condition search  
user friendly GUI interface  
Intelligent Q3vic EDW  
Remote control  
LAN / USB port  
Anti virus

Linear Motor Drive system (X,Y,U,V axes)  
Absolute Linear glass scales (X,Y,U,V axes)  
High Precision Linear motion guide ways  
Multitasking OS, K-SMC (M4-LINK) NC unit  
Taper cut unit  
Codeless operation  
Work tilt offset function  
Work Plane offset function  
Onboard operational help  
Maintenance screen  
Onboard manuals  
Calcuator

Digital PIKA-W Plus  
TMP control II  
Electrolysis free circuit  
Dynamic Shape First (DSF)  
Barrel free effect control II  
Fine pickup function (FT II)  
Advanced corner control  
Easy power adjust (EPA)  
Energy saving circuit  
Core clip function

Ceramic Workstand & Baseplate  
Ceramic Upper and Lower arms  
Tripple filtration system  
Filter pressure indicator  
Ion exchange unit-18 ltrs  
Self cleaning slide plate  
Dielectric cooling unit  
Stepdown transformer  
Auto voltage regulator  
Wire alignment block  
Air filter  
Clamping kit  
Tool box

Automatic 3 side raise/drop tank  
Rectangular work table  
Submerge and Flush type machining  
90°swing type position adjustable panel  
64 step flush control Digital inverter  
New wire tension servo function  
High flushing pressure indicator  
Digital water resistivity display  
Flat discharge cables  
Meehanite casting

Auto Wire Threading (FJ-AWT)  
Round Diamond guides  
Pop-up search function  
Wire tip processing unit  
Sub panel for AWT operation  
Z axis Auto liquid level control  
Intermediate liquid level function  
Easy adjustable power feed contact  
Adjustable wire ejection roller unit



### ALN400G/ALN600G

4 axis linear motor drive system  
Equipped with ceramics  
3-sided machining tank with automatic up/down door  
Digital-PIKA-W Plus: Best surface roughness Ra0.04 $\mu$ m  
(Cemented carbide material)  
DSF (Dynamic Shape First)

The AL Series fully adopted the latest wire electric discharge control technology. The newly developed "Smart Pulse" equipped with the latest devices, realized high speed and improved stability, and the machining performance is demonstrated with Sodick's original "HAYABUSA WIRE" and "Tsubame Wire Plus" according to the purpose.

# Smart Pulse

Equipped with newly developed horizontal 19-inch LCD touch panel screen  
"Barrel-free Effect Control II" which greatly reduces the barrel amount of the first cut  
"TMP Control II" which improves the surface roughness during second cut machining, and realizes high speed and improves stability of semi-finish machining  
"Digital-PIKA-W Plus" which realizes excellent surface roughness in finish machining by EHF digital pulse machining  
The best machining performance can be demonstrated with the standardly equipped wire electric discharge control technology.

Barrel-free Effect Control II improves the machining accuracy including the first cut to the corner portions. The Digital-PIKA-W Plus which realizes the best surface roughness also improves the overall performance including the shape accuracy, surface roughness and machining speed.

Best surface roughness (P type, G type)

Cemented carbide Ra 0.04 $\mu$ m (Rz 0.34 $\mu$ m)

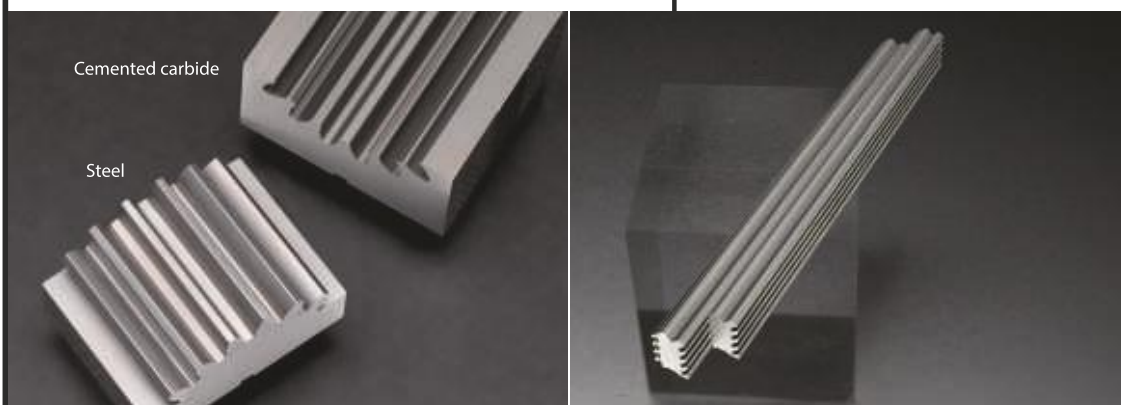
Thickness 15 mm

Steel Ra 0.09 $\mu$ m (Rz 0.91 $\mu$ m)

Thickness 15 mm

Cemented carbide Ra 0.04 $\mu$ m (Rz 0.31 $\mu$ m)

Thickness 100 mm





Machining material	SKD11
Thickness	100 mm
Machining accuracy	$\pm 2\mu\text{m}$
Surface roughness	Ra 0.12 $\mu\text{m}$ (Rz 0.93 $\mu\text{m}$ )
Wire diameter	$\phi 0.2\text{mm}$ HAYABUSA WIRE
Machining time	9 hour 35 min



Fin shaped high precision mating parts in a hydro-regulator  
A high quality finish of the 5 ° angles on the end with a 0.4 mm width  
can be achieved across a 100mm thickness. (P type, G type)

\* The surface roughness unit Rz is used based on JIS B0601:2001 and ISO4287:1997/ISO1302:2002.  
\* Digital-PIKA-W Plus does not support the Q type  
\* The data indicated in this catalog is based on Sodick's measurement standards in our machining environment.



World's First! Wire-cut EDMs equipped  
with linear motor drive

1999

AQ325L



2004

AQ327L

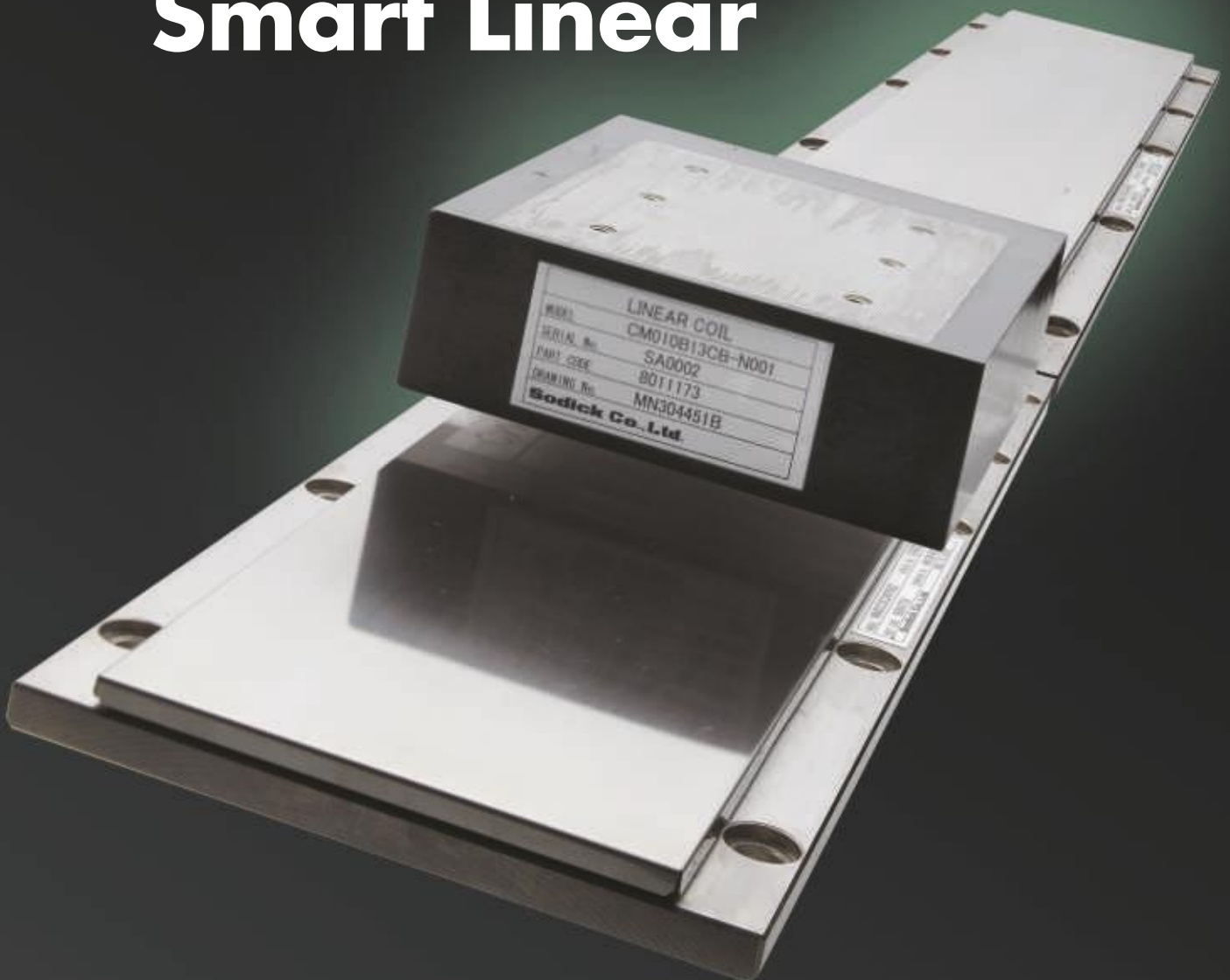


2008

AG400L



# Smart Linear



2016

Total shipments of more than 36,000 machines



A total of more than 36,000 machines have been shipped for this product group equipped the linear motor drive method, which has accumulated a track record of more than 17 years since its adoption prior to the industry in 1999, are used in the global market today.

Maintains the initial machine accuracy semi-permanently without deterioration of the accuracy throughout the life of the machine (17 years or more)



## Standardly Equipped with X, Y, U and V Axis Linear Motors

The standardly equipped 4 axis (XYUV) linear motor drive method has been realized by adopting the best technology, such as the full-closed loop control "K-SMC (M4-LINK)" with highly rigid guides and new motion technology, including an absolute linear scale, and Sodick's latest motion controller.

Sodick's linear motor drive is standardly equipped with an absolute linear scale made by Heidenhain with a resolution of 0.01 $\mu$ m.

Maintains excellent position detection and stability over a long period.

## Linear Motor

Although backlash accompanying reverse occurs in the axis movement by a ball screw drive system, a smooth drive is possible with a linear motor without a ball screw as there is no mechanical contact. Since the linear motor consists of a maintenance free non-contact simple structure, the initial accuracy is maintained for a long period without wear and deterioration.

## Sodick's Motion Controller

Sodick performed research and development of "Sodick's Motion Controller (K-SMC)" which accurately controls the movement of the high-speed and high accuracy linear motor based on commands from the NC unit, which brought technological innovation to electric discharge machining. Reliably controls the high-speed, high acceleration and accurate positioning.

# Core Technology

All component technology is developed and manufactured in-house

## NC Unit

Sodick developed and manufactures the NC unit which can be operated easily by anyone, and demonstrates the performance of the machining to the utmost. In order to realize high precision machining, the drive system K-SMC and the electrical discharge power supply wire running system are accurately controlled by computer with artificial intelligence equipped with the latest electric discharge machining theories.

## Discharge Power Supply Unit

This unit is equipped with numerous circuits which optimally control the electric discharge energy. The rapidity which is focused on in rough machining, and the quality required in finish machining, are controlled by an optimal discharge pulse, which realizes excellent surface finishing and shape accuracy. The discharge power supply unit equipped with these circuits consists of an energy saving design, which minimizes the loss of energy.

## Ceramics

Since the thermal displacement of ceramic is extremely low, this material is ideal for wire-cut EDMs. The ceramic material has electrical insulation which is important for wire-cut EDMs, as well as being hard, lightweight, resistant to heat and abrasion resistant. Using this material in the main parts of the machine naturally allows for high quality machining surfaces in fine areas without dedicated tools.





Sodick

0.0000  
 0.0000  
 0.0000  
 0.0000

A054

① 速度/进给倍率 100%  
 ② 速度/进给倍率 100%  
 ③ 速度/进给倍率 100%  
 ④ 速度/进给倍率 100%

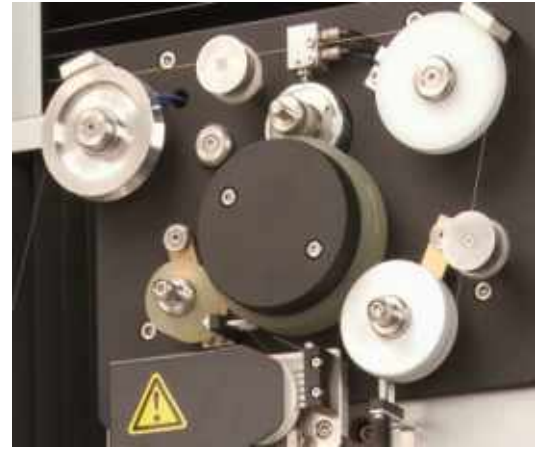
ON	OFF	DP	MR	MR	
SP	SP	SP	SP	SP	
PR	SP	MR	MR	MR	
SP	SP	SP	SP	SP	
OFF	OFF	OFF	OFF	OFF	

A multi-key keypad with a grid of small buttons, including a prominent green button on the left and a red button on the right.

A red emergency stop button with a yellow base, located on the control panel.

### New Wire Tension Servo Function

This machine is equipped with the "New Wire Tension Servo Function" which optimally controls the strength of the wire tension. The high performance tension detection realizes high-speed and high accuracy machining.



## Improved Operability

# Operability

The stand base made of ceramic is standardly equipped with a "square shaped" work table. The setup time indispensable for high precision machining can be reduced with the mechanism (Automatic Liquid Level Control) where the liquid level is automatically adjusted with the Z-axis, and the "Intermediate Liquid Level Control Function" which adjusts the temperature conditions during machining and setup.

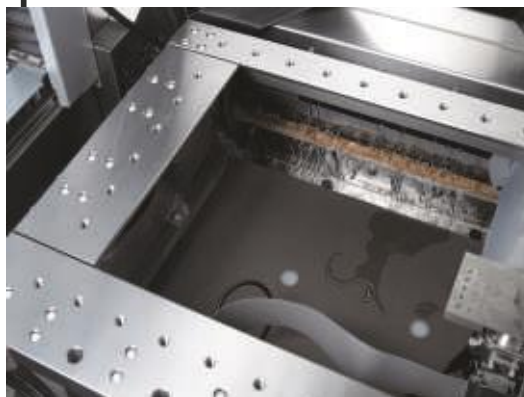
### Triple Filtration System

This system is designed in consideration of maintainability. The external appearance differs by model.



### "Square Shaped" Work Table

The inside of the machining tank can be used sparsely with the square shaped table.



### Slide Plate

This plate is equipped with a self-cleaning function which prevents adhesion of sludge on the seal.





# FJ-AWT

## New High-speed Automatic Wire Threading Unit

This unit is equipped with the newly developed wire annealing function and tip processing unit, which demonstrates a high threading rate regardless of being submerged or non-submerged.

Continuous machining is possible even in auto wire threading scenes, where it is difficult to thread narrow diameter holes and special shapes.

The auto wire threading using the pop-up search function supports unmanned multiple machining and automation, which improves productivity.

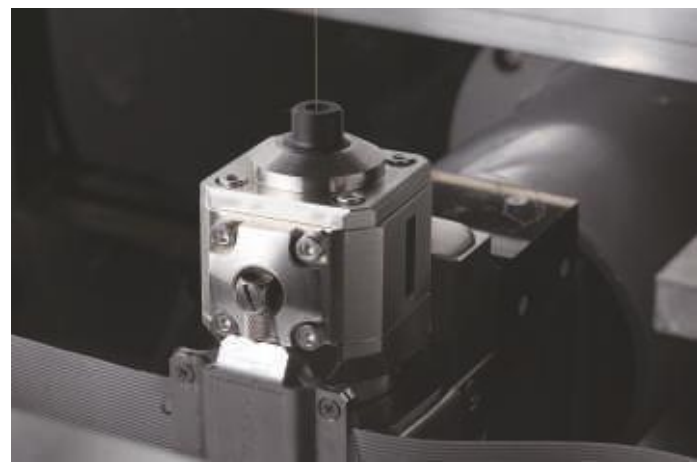


### Power Feed Contact

The up/down guide is equipped with a power feed contact, which makes it easy to change the location where it is used and the positioning.

### Standardly Equipped with Round Diamond Guides

The standardly equipped round diamond dies with a narrow clearance improves the repeatability and stability of high precision machining. The maintainability was improved with a new mechanism that makes disassembly and cleaning easy.



# Samples

The synergetic effect of the latest electric discharge control technology by "Smart Pulse" and the linear motor drive system, greatly improved the machining performance of the Wire-cut EDM in all areas.

## Barrel amount: 4 μm or less

Improves the first cut dimensional accuracy of thick plate from 100 mm to 300 mm. Barrel-free Effect Control II suppresses the barrel amount.

Machining material ■ SKD11  
Thickness ■ 100 mm, 200 mm, 300 mm  
Barrel amount ■ 4 μm or less  
Wire diameter ■ φ0.25 mm



## 14 ° Tapered Angle Block

Improves the surface roughness in machining with large tapered angles, and corner shape accuracy. (P type, G type)

Machining material ■ SKD11  
Thickness ■ 40 mm  
Machining accuracy ■ ±2 μm  
Surface roughness ■ Ra 0.20 μm (Rz 1.39 μm)  
Wire diameter ■ φ0.2 mm HAYABUSA WIRE  
Machining time ■ 2 Hrs. 45 Min. (1 piece)



## Mating at 10 ° inclination

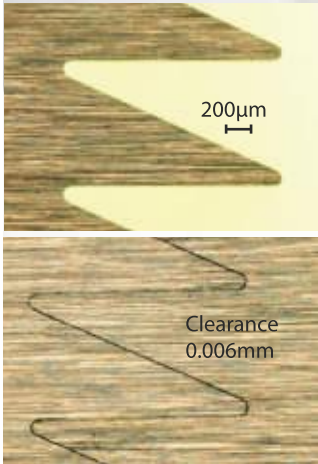
Machining material ■ SKD11  
Thickness ■ 40 mm  
Machining accuracy ■ ±2 μm  
Surface roughness ■ Ra 0.23 μm (Rz 2.18 μm)  
Wire diameter ■ φ0.2 mm HAYABUSA WIRE  
Machining time ■ 4 Hrs. 18 Min. (1 piece)



\* The surface roughness unit Rz is used based on JIS B0601:2001 and ISO4287:1997/ISO1302:2002.

\* The data indicated in this catalog is based on Sodick's measurement standards in our machining environment.

### Corner R: 0.060 mm High precision mating



Machining material ■ Cemented carbide  
Thickness ■ 40 mm  
Machining accuracy ■  $\pm 2 \mu\text{m}$   
Surface roughness ■ Ra 0.11  $\mu\text{m}$  (Rz 0.96  $\mu\text{m}$ )  
Wire diameter ■  $\phi 0.1$  mm Tsubame Wire Plus  
Machining time ■ 7 Hrs. 15 Min. (1 piece)

### "T" Shaped Groove Mating Part: 200 mm, 10 ° Inclination

Improves the accuracy of taper machining,  
and demonstrates excellent machining per -  
formance which allows the mating of 200mm  
thick plates with a 10 ° inclination.

Machining material ■ SKD11  
Thickness ■ 200 mm  
Machining accuracy ■  $\pm 5 \mu\text{m}$   
Surface roughness ■ Ra 0.32  $\mu\text{m}$  (Rz 2.69  $\mu\text{m}$ )  
Wire diameter ■  $\phi 0.25$  mm HAYABUSA WIRE



### Spring Shape Mating

Machining material ■ SKD11  
Thickness ■ 250 mm  
Width ■ Spring portion 0.5 mm  
Surface roughness ■ Ra 0.26  $\mu\text{m}$  (Rz 2.09  $\mu\text{m}$ )  
Wire diameter ■  $\phi 0.2$  mm HAYABUSA WIRE



### 100 mm Thick Shape Mating

Machining material ■ SKD11  
Thickness ■ 100 mm  
Machining accuracy ■  $\pm 3 \mu\text{m}$   
Surface roughness ■ Ra 0.20  $\mu\text{m}$  (Rz 2.10  $\mu\text{m}$ )  
Wire diameter ■  $\phi 0.2$  mm HAYABUSA WIRE  
Machining time ■ 2 hour 57 min (1 piece)

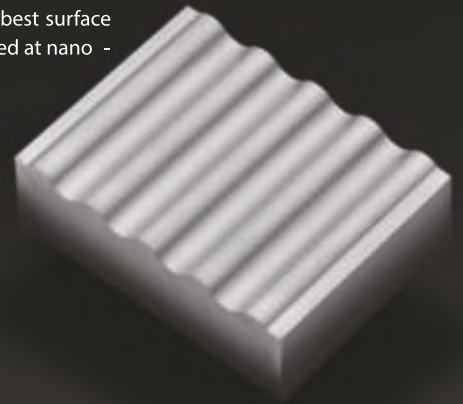


# Samples

## Digital PIKA W Plus

The Digital-PIKA-W Plus demonstrates the best surface roughness by amplifying the pulse controlled at nano - second level to the utmost.

Machining material ■ Cemented carbide  
Thickness ■ 15 mm  
Machining accuracy ■ Ra 0.04 $\mu$ m (Rz 0.34 $\mu$ m)  
Wire diameter ■  $\phi$ 0.2 mm HAYABUSA WIRE

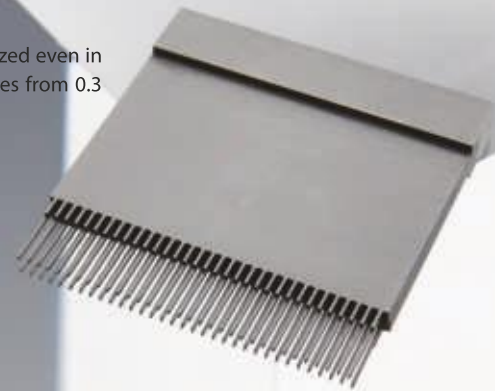


## Core Pin 2 Step Machining

Stable and high precision machining is realized even in core pin shapes where the thickness changes from 0.3 mm to 1.0 mm.

33 pins in 2 layers; Pitch: 0.6 mm

Machining material ■ SKD11  
Thickness ■ 0.3 mm to 1.0 mm  
Machining accuracy ■  $\pm$ 2 $\mu$ m  
Surface roughness ■ Ra 0.24 $\mu$ m (Rz 2.05 $\mu$ m)  
Wire diameter ■  $\phi$ 0.1 mm HAYABUSA WIRE  
Machining time ■ 3 hour 48 min



## Cemented Carbide Precision Shapes

Machining material ■ Cemented carbide  
Thickness ■ 80 mm  
Machining accuracy ■  $\pm$ 3 $\mu$ m  
Surface roughness ■ Ra 0.27  $\mu$ m (Rz 2.35  $\mu$ m)  
Wire diameter ■  $\phi$ 0.2 mm HAYABUSA WIRE



\*The surface roughness unit Rz is used based on JIS B0601:2001 and ISO4287:1997/ISO1302:2002.

\*The data indicated in this catalog is based on Sodick's measurement standards in our machining environment.

#### Outer Shape Parts

Machining material ■ SKD11

Thickness ■ 40 mm

Machining accuracy ■  $\pm 2.5\mu\text{m}$

Surface roughness ■ Ra  $0.35\mu\text{m}$  (Rz  $2.76\mu\text{m}$ )

Wire diameter ■  $\phi 0.2$  mm HAYABUSA WIRE

Machining time ■ 59 min (1 piece)

#### Center Part

Machining material ■ SKD11

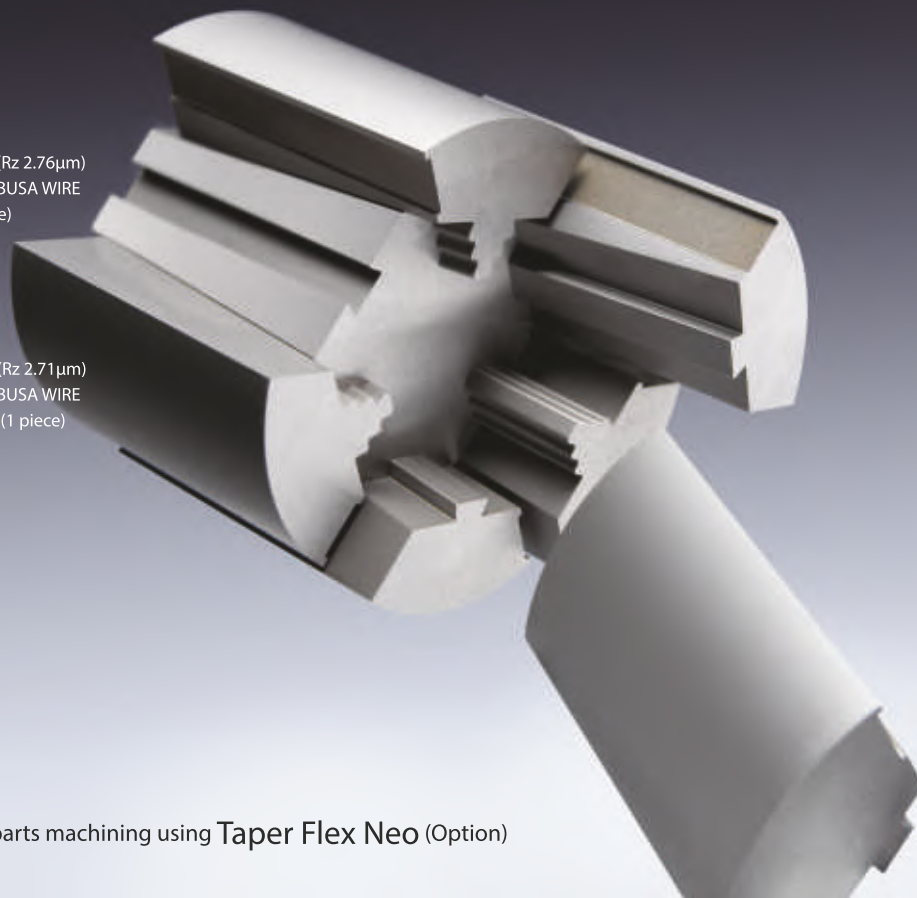
Thickness ■ 40 mm

Machining accuracy ■  $\pm 2.5\mu\text{m}$

Surface roughness ■ Ra  $0.36\mu\text{m}$  (Rz  $2.71\mu\text{m}$ )

Wire diameter ■  $\phi 0.2$  mm HAYABUSA WIRE

Machining time ■ 3 hour 14 min (1 piece)



Tapered shaped mating parts machining using Taper Flex Neo (Option)

## High Quality Machining in Step Shapes by DSF

DSF (Dynamic Shape First) controls the energy in multi-step shape machining.

Performs optimal machining control in hollow shapes and shapes with spot facing without depending on know-how.

20 to 80 mm workpieces with steps  
3 pieces mated in the center

Machining material ■ SKD11

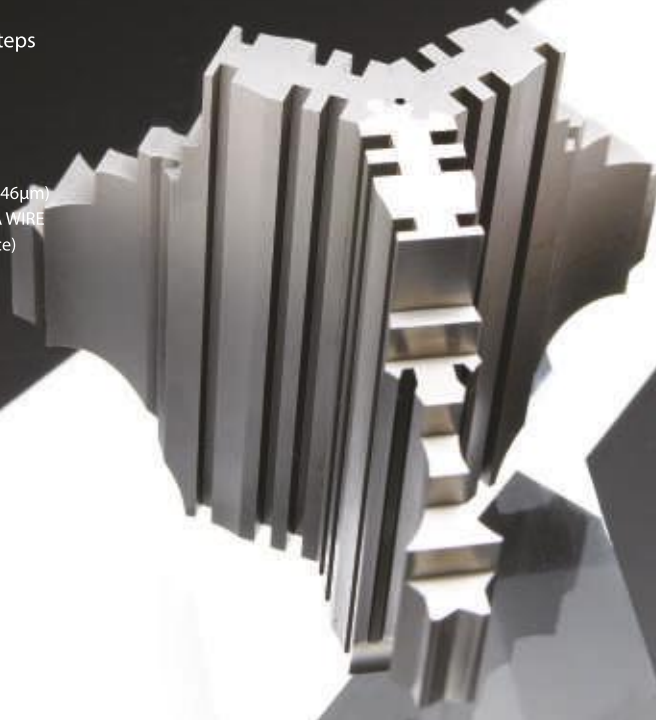
Thickness ■ 20 to 80mm

Machining accuracy ■  $\pm 2.5\mu\text{m}$

Surface roughness ■ Ra  $0.32\mu\text{m}$  (Rz  $2.46\mu\text{m}$ )

Wire diameter ■  $\phi 0.2$  mm HAYABUSA WIRE

Machining time ■ 5 Hrs. 9 Min. (1 piece)





## Machining Conditions Search Function

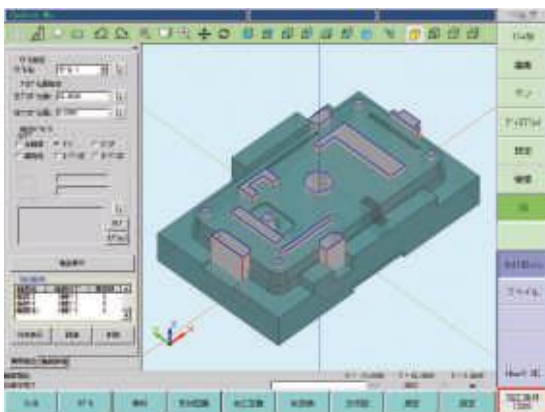
The machining conditions can be set by simple operation, just by selecting and entering the wire diameter, workpiece material, and thickness, etc.



## Intelligent Q3vic EDW (Standard)

3D solid models can be acquired directly. Since the operator can recognize detailed machined shapes by a solid model, consistent and highly efficient manufacturing flows can be established. Existing data (DXF, ASC) can be utilized effectively, as drawings and contour drawings of 2D shape data can easily be created in 2D models.

\* Please contact Sodick if verification and instruction are required.



## Expanded Pitch Compensation Function

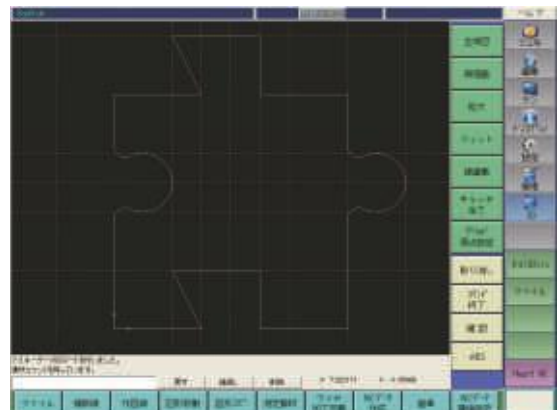
Straightness compensation was added, in addition to the conventional pitch compensation and plane pitch compensation. The combined use of these functions improves the geometric accuracy. A function which feeds back the pitch machining results to compensate the machining position was also added. This function enables higher accuracy pitch machining than ever before.

\* Please contact a sales representative for each function.



## Heart NC (Standard)

Automatic programs can be created easily by drawing shapes, such as varying top and bottom shapes, involute gears, core-less shapes, and free form curves, etc. Data created in other CAD/CAM can also be read in DXF format to output the optimal machining program.





# AL series Specifications

Machine	AL400P/AL400G	AL600P/AL600G
Machining tank inner dimensions (W x D)	850x610 mm	1050x710 mm
X axis stroke	400 mm	600 mm
Y axis stroke	300 mm	400 mm
Z axis stroke	250 mm	350 mm
U x V axis stroke	150x150 mm	150x150 mm
Max. taper angle	± 25° (Thickness: 130 mm)	± 25° (Thickness: 130 mm)
Max. workpiece size (W x D x H)	600x470x240 (Flush machining) mm 600x470x230 (Immersion machining) mm	800x570x340 (Flush machining) mm 800x570x280 (Immersion machining) mm
Max. weight of workpiece	500 (Flush machining) kg 350 (Immersion machining) kg	1000 kg
Wire diameter	ø 0.05 to ø 0.3 mm <sup>*1</sup>	ø 0.05 to ø 0.3 mm <sup>*1</sup>
Wire tension	3 to 23 N	3 to 23 N
Wire feed rate	Max. 420 mm/sec	Max. 420 mm/sec
Distance from floor to table upper surface	995 mm	995 mm
Machine dimensions (W x D x H)	2,115x2,500x2,230 mm	2,495x2,895x2,345 mm
Machine installation dimensions (W x D)	3,350x3,850 mm	3,780x4,245 mm
Machine weight (Power supply & service tank included)	3,400 kg	4,600 kg
Air supply	0.5 MPa 30 NL/min	0.5 MPa 30 NL/min
Total electric capacity	3-phase 50/60 Hz 13 kVA <sup>*2</sup>	3-phase 50/60 Hz 13 kVA <sup>*2</sup>

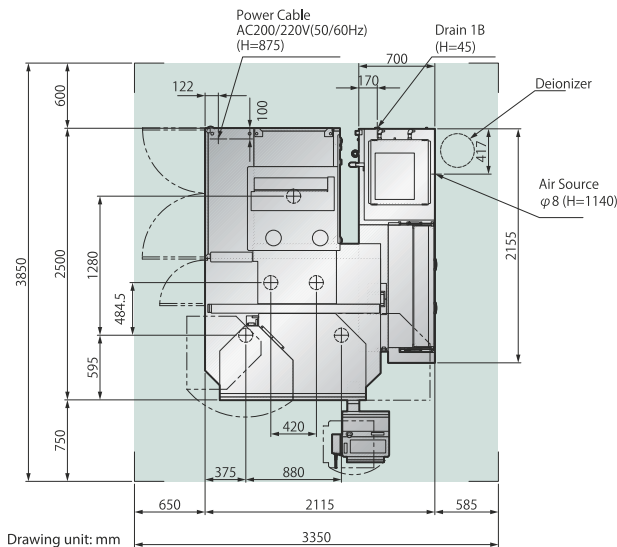
\*1 ø 0.05 mm, ø 0.05 mm and ø 0.07 mm are optional. \*2 Electric capacity when ø 0.2 mm wire is used.

Service Tank	AL400P	AL400G	AL600P	AL600G
Service tank capacity	675 Liter	600 Liter	850 Liter	800 Liter
Machining fluid filtration method	Paper filter replacement type (3 cylinder inner pressure type)		Paper filter replacement type (3 cylinder inner pressure type)	
Deminerizer	Ion exchange resin (18 L specification)		Ion exchange resin (18 L specification)	

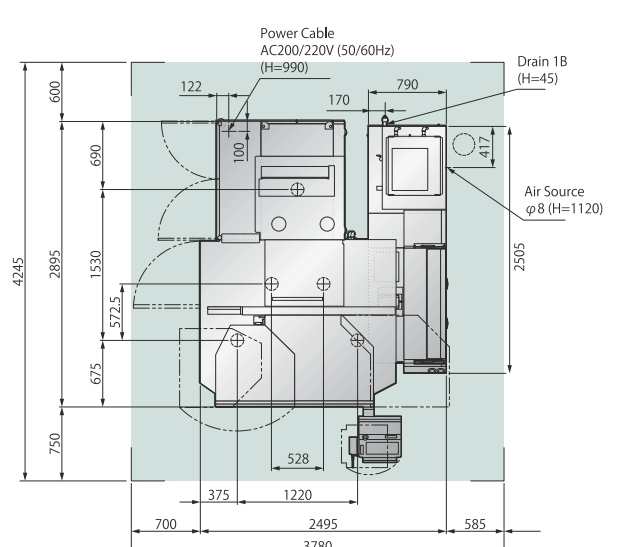
CNC Power Supply Unit SPW	
Max. machining current	40 A (60A:Option)
Power supply input specification	AC200V 50/60 Hz
NC unit	Multi-tasking OS, K-SMC-LINK method (M4-LINK)
User memory capacity	Editing space: 100,000 blocks, Saving space: 30 M bytes
Memory device	SSD, External memory
Input method	External memory, multi-touch panel, screen keyboard, LAN
Display method	19-inch TFT-LCD
Printable characters	Kanji (JIS Level 1 Kanji characters), alphabet, numerical characters, etc.
Keyboard	Standard 101 keyboard, function key
Position command method	Incremental / absolute in combination
Input range	±999999.999/±99999.9999/±9999.99999/±999.999999 (Changeable)
Electric discharge machining condition registration function	10,000 conditions can be registered (C0000 to C9999)
Offset function	10,000 conditions can be registered (H0000 to H9999)
Program sequence number specification	Setting from N000000000 to N999999999
Coordinate value	60
Number of simultaneously controlled axes	4 axes max (SPW-E: 8 axes max <sup>*4</sup> )
Min. command unit	0.001 μm
Min. drive unit	0.01 μm (X, Y, U, V axes)
Max. feed speed	X, Y-axis: Max. 3 m/min, Z-axis: 2 m/min
Position detection method	Full closed loop (Linear scale)
Drive system	Linear motor (X, Y, U, V axes)
Various compensation	Pitch error, plane pitch error, torque and torsion compensation for each axis Workpiece inclination and workpiece distortion compensation
Graphics function	XY, YZ and ZX planes, drawing while machining, drawing while 3-dimensional machining, zoom in, zoom out, rotation Background drawing

\*4 SPW-E: 8 axis specification compatible with AL400P/AL600P, AL400G/AL600G, and ALN400G/ALN600G.

AL400P / AL400G



AL600P / AL600G





Machine	ALN400G	ALN600G
Machining tank inner dimensions (W x D)	850x610 mm	1050x710 mm
X axis stroke	400 mm	600 mm
Y axis stroke	300 mm	400 mm
Z axis stroke	250 mm	350 mm
U x V axis stroke	150x150 mm	150x150 mm
Max. taper angle	± 25° (Thickness: 130 mm)	± 25° (Thickness: 130 mm)
Max. workpiece size (W x D x H)	600x470x240 (Flush machining) mm 600x470x230 (Immersion machining) mm	800x570x340 (Flush machining) mm 800x570x280 (Immersion machining) mm
Max. weight of workpiece	500 (Flush machining) kg 350 (Immersion machining) kg	1000 kg
Wire diameter	ø 0.05 to ø 0.3 mm <sup>*1</sup>	ø 0.05 to ø 0.3 mm <sup>*1</sup>
Wire tension	3 to 23 N	3 to 23 N
Wire feed rate	Max. 420 mm/sec	Max. 420 mm/sec
Distance from floor to table upper surface	995 mm	995 mm
Machine dimensions (W x D x H)	2,115x2,335x2,185 mm	2,445x2,685x2,296 mm
Machine installation dimensions (W x D)	3,365x3,660 mm	3,695x4,060 mm
Machine weight (Power supply & service tank included)	3,200 kg	4,300 kg
Air supply	0.5 MPa 30 NL/min	0.5 MPa 30 NL/min
Total electric capacity	3-phase 50/60 Hz 13 kVA <sup>*2</sup>	3-phase 50/60 Hz 13 kVA <sup>*2</sup>

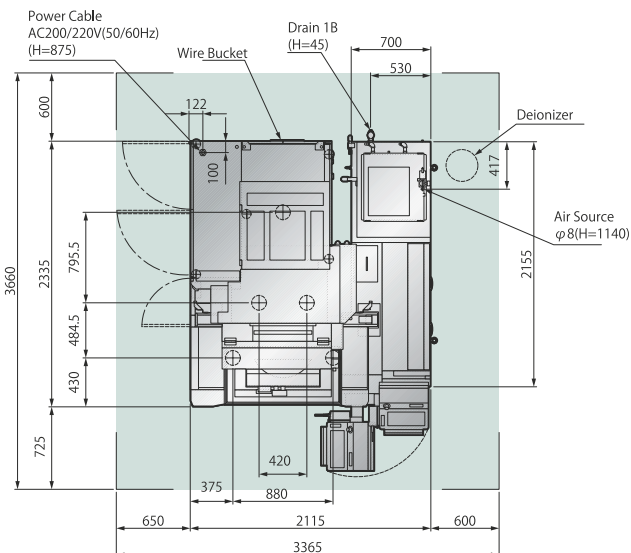
\*1 ø 0.05 mm, ø 0.05 mm and ø 0.07 mm are optional. \*2 Electric capacity when ø 0.2 mm wire is used.

Service Tank	ALN400G	ALN600G
Service tank capacity	675 Liter	850 Liter
Machining fluid filtration method	Paper filter replacement type (3 cylinder inner pressure type)	
Deminerizer	Ion exchange resin (18 L specification)	

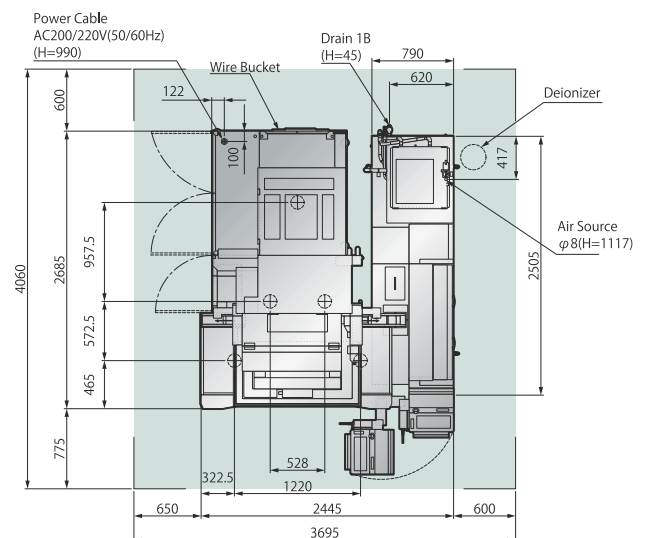
CNC Power Supply Unit SPW	
Max. machining current	40 A (60A:Option)
Power supply input specification	AC200V 50/60 Hz
NC unit	Multi-tasking OS, K-SMC-LINK method (M4-LINK)
User memory capacity	Editing space: 100,000 blocks, Saving space: 30 M bytes
Memory device	SSD, External memory
Input method	External memory, multi-touch panel, screen keyboard, LAN
Display method	19-inch TFT-LCD
Printable characters	Kanji (JIS Level 1 Kanji characters), alphabet, numerical characters, etc.
Keyboard	Standard 101 keyboard, function key
Position command method	Incremental / absolute in combination
Input range	±999999.999/±99999.9999/±9999.99999/±999.999999 (Changeable)
Electric discharge machining condition registration function	10,000 conditions can be registered (C0000 to C9999)
Offset function	10,000 conditions can be registered (H0000 to H9999)
Program sequence number specification	Setting from N000000000 to N999999999
Coordinate value	60
Number of simultaneously controlled axes	4 axes max (SPW-E: 8 axes max <sup>*4</sup> )
Min. command unit	0.001 μm
Min. drive unit	0.01 μm (X, Y, U, V axes)
Max. feed speed	X, Y-axis: Max. 3 m/min, Z-axis: 2 m/min
Position detection method	Full closed loop (Linear scale)
Drive system	Linear motor (X, Y, U, V axes)
Various compensation	Pitch error, plane pitch error, torque and torsion compensation for each axis Workpiece inclination and workpiece distortion compensation
Graphics function	XY, YZ and ZX planes, drawing while machining, drawing while 3-dimensional machining, zoom in, zoom out, rotation Background drawing

\*4 SPW-E: 8 axis specification compatible with AL400P/AL600P, AL400G/AL600G, and ALN400G/ALN600G.

ALN400G



ALN600G



# Sodick-IoT

Sodick's IoT Solutions

## SEIKANet

Sodick's network system uses standard network protocols

- ▶ NC programs can be transferred between the machine and a PC, or between machines



- ▶ Machine status can be understood from a PC via a network

⇒ Machine information can be understood from locations away from the machine  
 Commands can be sent to a machine from locations away from the machine



## MTconnect compliant

The AL Series complies with the communication standards based on the XML released by AMT (The Association for Manufacturing Technology). The following information can be acquired.

- Program name
- Halt, error information
- Mechanical coordinates value
- Offset
- Overall machining length
- Resistivity, voltage, float, ST
- Dry, single, upper/lower dice, etc.

## Miemmerce

Software which inspects each NC unit at a fixed interval to collect data

- ▶ Operating status of registered NC units can be centrally managed
- ⇒ Centralized management of machine operating status improves the machine operation rate



## LQ e-mail

Software which transfers errors and stop information of registered NC units by e-mail

- ▶ Up to 4 machines can be registered
- ▶ Three e-mail addresses can be registered per machine
- ⇒ Notification of unexpected errors and stoppage of machines can be received at locations other than the machining site



## NSD VINA CO., LTD

#03, hamlet 15, Cau Dien ward, Nam Tu Liem dist., Hanoi  
 100-0000 Vietnam

TEL: 84-24-6688-2448 EMAIL: info@nsdvina.com

<http://www.nsdvina.com>

## Sodick Co.,Ltd.

3-12-1, Nakamachidai, Tsuzuki-ku, Yokohama, Kanagawa  
 224-8522 Japan

TEL: 81-45-942-3111 FAX: 81-45-943-7880

<http://www.sodick.jp>