

LEXUS co.

The highest
performance
in the world

High torque-small spindle

Physical size comparison
(Compared with our ordinary product)

Revolution of high efficiency machining~L2S Spindle~



Outside diameter 40mm ϕ

Motor output 800W or more

L2S-A Type

Compact and light

Less restrictions of the inter-axis pitch at the time of multi-axis use, and compact and light (1/3 or less as compared with other similar device) make less restrictions at the time of machine loading.

High efficiency

High torque (Machining of M8 prepared-hole FC250 for aluminum or M6 prepared-hole for SC is possible without inching) and high revolution ($2,000\text{min}^{-1} \sim 15,000\text{min}^{-1}$) allow machining efficiency of 3.5 times or more as compared with other similar device.

Secure sealing performance

Even standard specified model ensures high sealing performance by the labyrinth air purge.

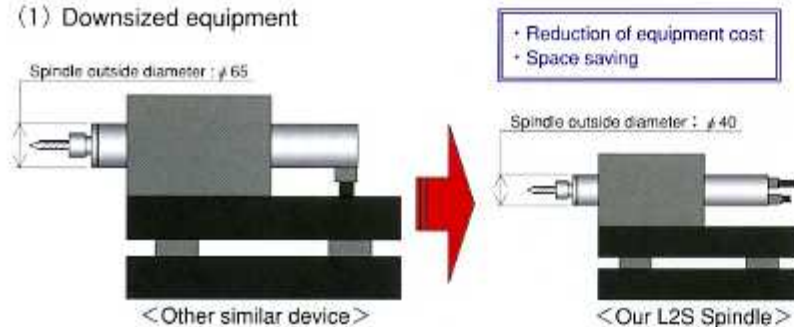
Supporting quick change

Capable of supporting quick change upon user's request.

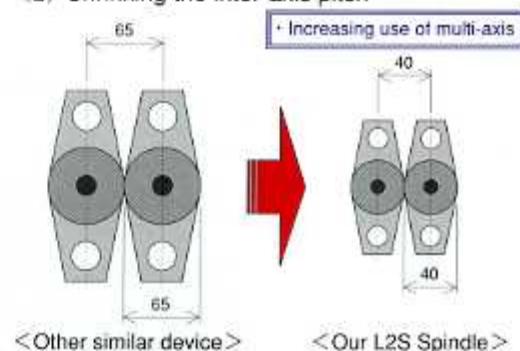
L2S Spindle Merits

① Merit of downsizing

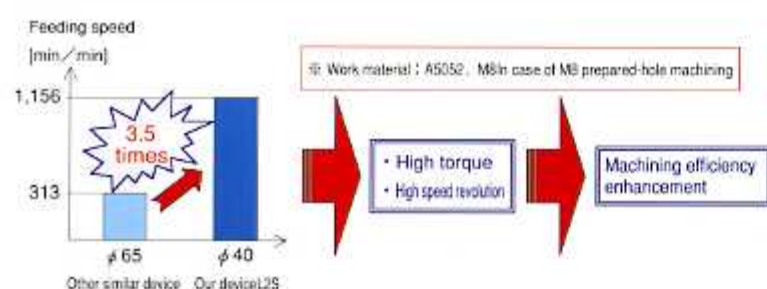
(1) Downsized equipment



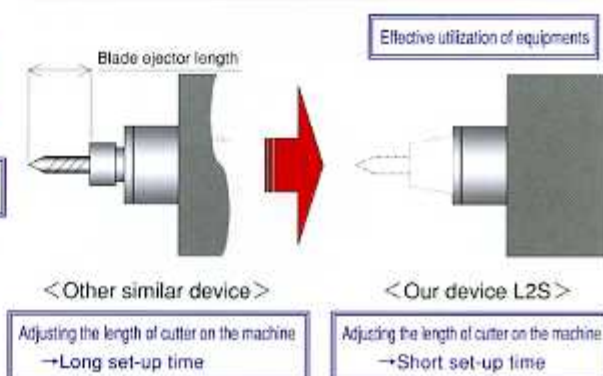
(2) Shrinking the inter-axis pitch



② Merits by high efficiency machining



③ Supporting quick change



Major Application

Drilling of automobile parts such as cylinder heads etc.

Piston

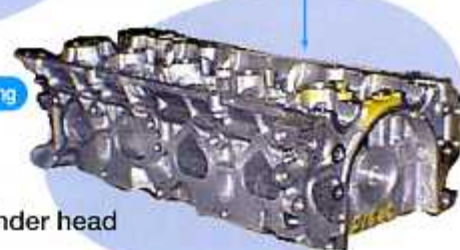


Connecting rod



Machining of mounting hole/setting hole etc.

Cylinder head



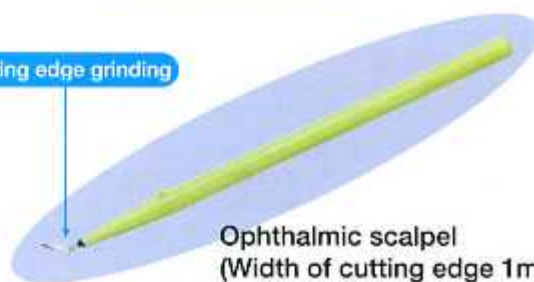
Parts machine of air equipments

Hole/counterbore machining



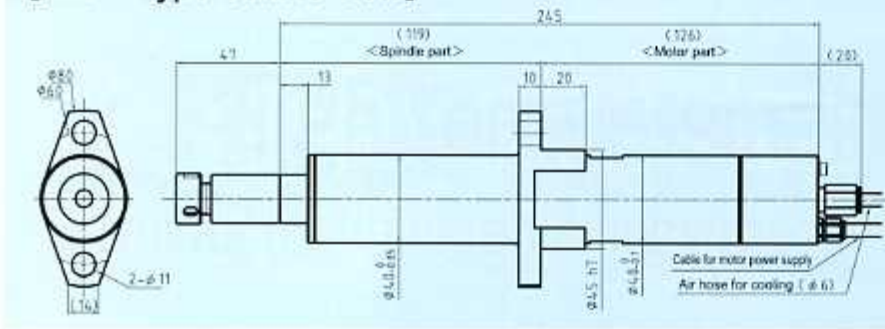
Grinding etc.

Cutting edge grinding



Lineup of L2S Spindle

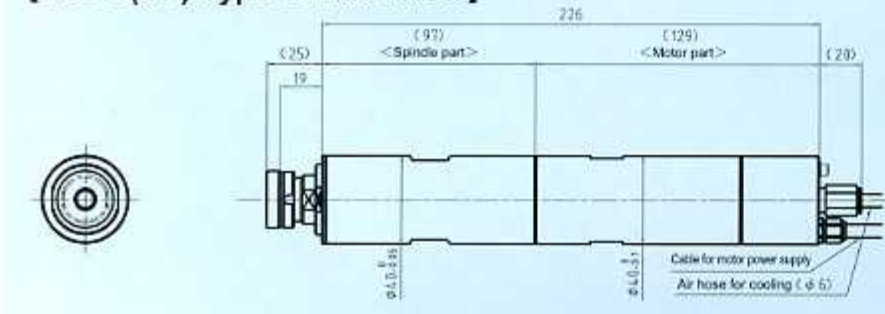
【L2S A Type Outline View】



＜Specification＞

- ① Method for tool grasp... Quick change (NT tool multi-bore type)
② Tool shank... $\phi 0.5 \sim \phi 7.0$
③ Maximum thrust... 700N

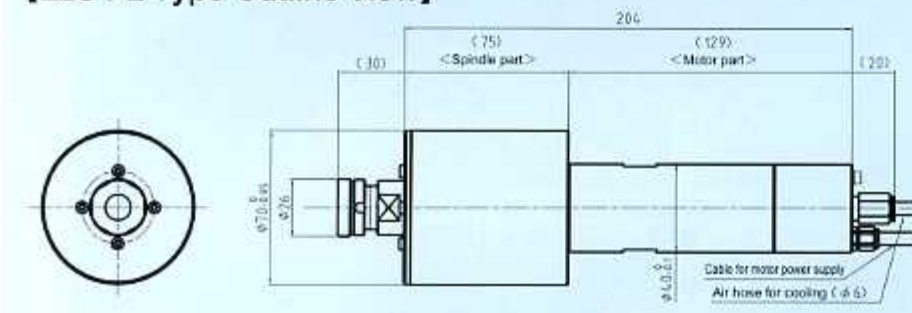
[L2S C(UP) Type Outline View]



＜Specification＞

- ① Method of tool grasp (Standard) ... Collet grasp (SG8)
- ② Tool shank ... $\phi 1.0 \sim \phi 8.0$
- ③ Maximum thrust ... 500N
- ④ Taper mouth deflection accuracy (in case of UP) ... $10\mu\text{m}$ ($3\mu\text{m}$)

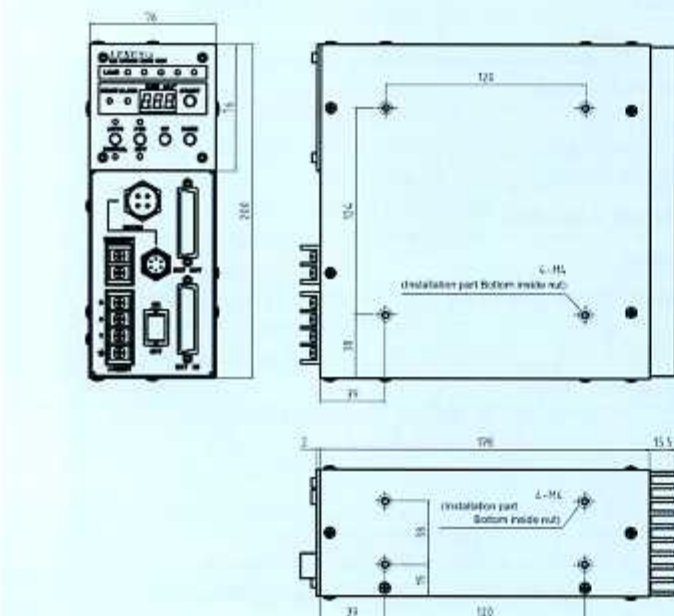
【L2S FE Type Outline View】



＜Specification＞

- ① Method of tool grasp (Standard) ... Collet grasp (SG8)
- ② Tool shank
(Maximum diameter) ... $\phi 1.0 \sim \phi 8.0$
- ③ Static rigidity ... Radial rigidity: $9.6 \text{ N}/\mu\text{m}$
Axial rigidity: $75 \text{ N}/\mu\text{m}$
- ④ Taper mouth deflection accuracy ... $10 \mu\text{m}$

【Power Supply (Common)】



＜Specification＞

- ① Rated Input Voltage---Three-phase alternating current 200V
- ② Manual input---Revolution indication Setting the number of revolution: Normal rotation/Reverse rotation
- ③ I/O---IN PUT: Revolution indication, Indication of rotation direction, Setting the number of revolution by BCD cord.
OUT PUT: Power status for control, Power status for engine, Access signal of the number of revolution, Alarm signal
Indication of the number of revolution by BCD cord
Current value (Analog voltage output)
Number of revolution (Analog voltage output)
- ④ Alarm output---Emergency stop function, Overload protecting function
Malrotation protecting function
Control abnormality protecting function

Machining Ability of L2S

■Result of actual machining (Sampling test)

Performed the following machining (Table#1) under the condition using the work material A5052, non step and water-miscible cutting fluid.

(Table#1) . Machining condition when having carried out a feed into 0.02 times the drill diameter at $F=1156(\text{mm}/\text{min})$.

No.	F (mm/min)	Drill diameter (mm)	Feed f (mm/rev)	Estimated necessary torque M		Thrust T (N)	Indicated number of revolution N (min^{-1})	Output P (W)	Velocity of wind V (m/min)	Machining time (sec)	Notes
				(N·m)	(kg fcm)						
1	1,156	6.8	0.136	0.73	7.43	355.52	8,500	637.3	181.492	1	M8 prepared-hole

■Achievement at the time of continuous machining (175 holes)

After attaching L2S to the selffeeder remodeling unit, the continuous machining was performed to drill 175 holes with drill diameter 6.8mm, hole depth 13.6mm(2D) under the condition of using the work material A5052, non step and water-miscible cutting fluid.

Table #1 is one that traced a change of the hole diameter from the stop state (Cold Start) to the completion of machining (in case of single taper), which shall be completely within range of the target value($7\text{mm } \phi \sim 6.7\text{mm } \phi$).

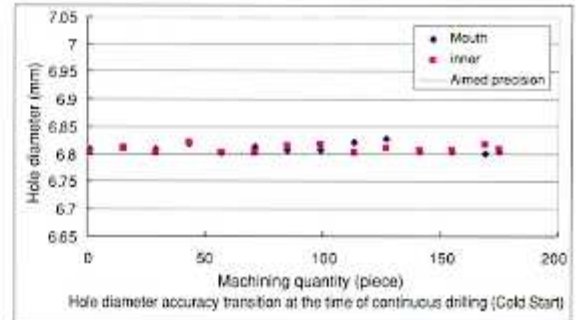
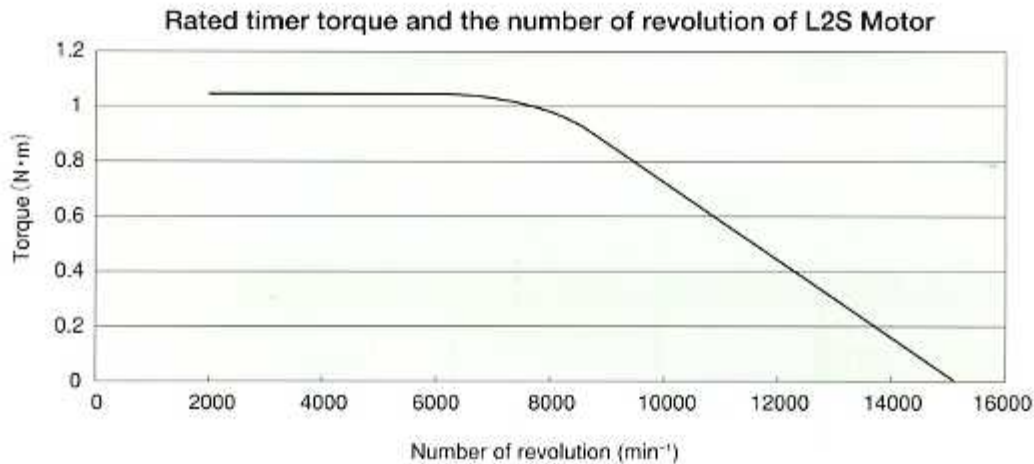


Table #1



Main Specification of L2S

	Items	Specifications	Notes
1	Drive	By brushless (DC) motor	
2	Applied bearing (Spindle part)	Grease inclusion angular bearing	
3	Maximum number of revolution	15,000[min^{-1}]	
4	Minimum number of revolution	2,000[min^{-1}]	
5	Motor maximum torque at the time of	1.05[N·m] machining (Retain 2 seconds)	
6	Motor output	800[W] or more	
7	Motor cooling method	Forced air-cooling(Supply air pressure 0.3(MPa) or more)	(Clean dry air required)
8	Rated input voltage	Three-phase AC200[V]	
9	with sealing	Combined use of labyrinth air purge	

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