LEXUS co.

Ultra Precision High-Speed Brush-less Spindle AEGIS

Max. Number of Revolutions 60,000 min-1

It endures max. high speed 60,000 rpm sufficiently by adopting air-cooling+ ceramic bearing. Excellent machinability and machined-surface accuracy are obtainable for the small diameter end-mill in less than Φ1mm.

Spindle Accuracy within 1 μm

Spindle deflection accuracy is less than 1 μm (Even dynamic deflection accuracy can be controlled). The atandard Collet AR11. ER11 can be applied, and it supports the tool shank diameter of Φ0.5~6.0mm.

High-power 370W with High Torque

The high-performance brush-less motor acquires a flat torque characteristic throughout working rotations 10,000-60,000 rpm and it realized 370W : 1.7 times higher power than others.

Compact Dimension

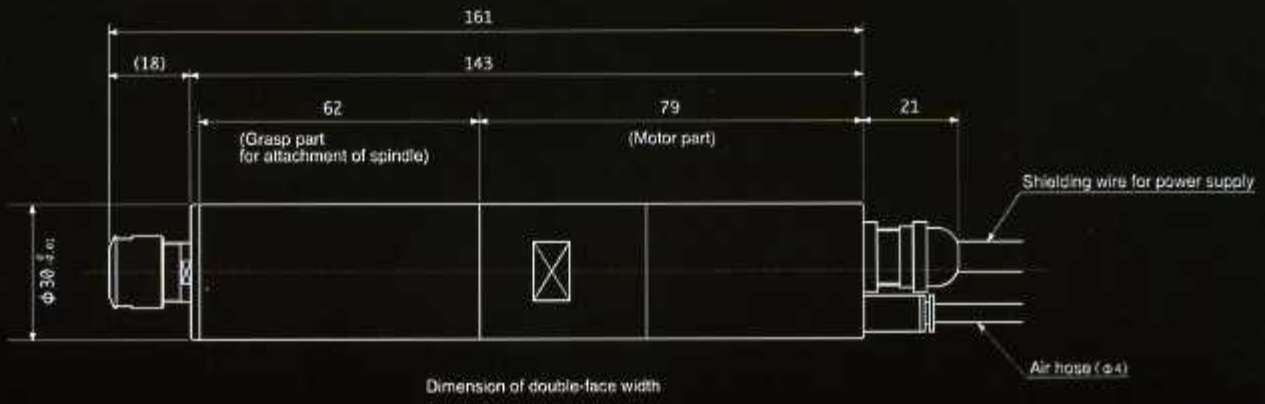
A spindle has a short body in 149mmL that is 69mm shorter than others. Approx. 1/3 downsized exclusive driver reduced the layout restriction of the loading machine by half.

High Rigidity Stainless-Steel Body

The armor material such as a motor part and a spindle part is all made of stainless steel.(SUS420J2). Spindle clamp part has the high rigidity specification that processed quenching and polishing. (High precision attachment type of the holder built-in is also available)

Equipped Various Safe Protection Circuits

It equips protection circuits that stops rotation automatically when over-loading(5.88N.cm), cooling air was suspended and working rotations reached 64,000 rpm and it's safe for the emergency trouble.



❑Principal Usage

- ○ Allow using as a tooling gear for the end-mill processing and polish processing by attaching an end-mill as well as a polish grindstone at a spindle-tip of the arch-shaped lathe.
- ○ Allow using for finishing bore diameter (for bore polishing etc.) of the small diameter with the lathe processing.
- ○ Allow using for processing screw slotting by the metal saw, punching processing by a drill and burr collecting by attaching to the exclusive machine.
- ○ By attaching to the robot arm-tip, allow using for burr collecting and polish processing,

❑Product Specification

Head Part	Model No.	HAS-PL1-H1
	Outside dimension	ϕ30 ($^{0}_{-0.01}$) mm
	Overall length	64mm
	Spindle precision	Less than 1 μm at the measured value of bore taper part in a chuck engagement part
	Collet max. grasp diameter	within ϕ6mm
	Armor material	SUS420J2 or equivalent (Quenching hardness 55HRC)
	Bearing	Grease enclosure-type, angular-contact ceramic bearing
Motor Part	Model No.	HAS-P1-M1
	Outside dimension	ϕ30 (+0, -0.1) mm
	Overall length	85mm
	Working rotations	10,000~60,000min^{-1}
	Max. output	370W
	Max. torque	5.88N・cm
	Motor model	Brushless type
	Armor material	SUS420J2
Dedicated Driver	Model No.	HAS-P1-D1
	Dimension	220(w)x 220(d)x 42(h)mm
	Weight	2.4kg
	Cord	Waterproofed with the middle connector (5m)
	Air to be supplied	0.2Mpa~0.5Mpa, Pure dry air required
	Rated input power	AC100V
	Rated power	AC123W
	Emergency stop for over-load	Suspension of rotation at 5.88N.cm
	Display of rotations	10~60 ×1,000min^{-1}

(Difference of working rotations is less than 2% to displayed rotations at the time of no load.)

○High Rigidity Attachment Spindle (for Attachment of Machine Tool)

Photo : BT40 type

As other high speed type speed-up spindle is using planetary gear or roller, the continuous practicable operation time is limited due to the heat generation. As our attachment spindle refrigerates from a motor to a head part, it allows continuous operation for a long time. Including driver's control method, it copes with the heat displacement in total. Spindle accuracy implemented the ultra-high precision in 1 μm considering dynamic deflection accuracy while rotation. High hardness quenching (HRC55 or equivalent) was done for casing to raise the rigidity sharply. It allows performing various precision high-speed cutting with high-speed rotations 60,000 min^{-1}.

※ Comply with various spec. such as BT-HSK etc.

⚠ Note : Design and specification are subject to change without notice. Available various custom-made items on request.

LEXUS co.

Address : Technoplaza II No.A, 4-390, Sue-cho, Kakamigahara-shi, Gifu, 509-0108 Japan

Phone : +81-58-384-9687 Fax : +81-58-384-9458 E-mail : lexus.co.@vrtc.net URL : http://lexus.vrtc.net