

Built-in Spindle Motor achieving  
high performance machine tool spindle

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# FANUC

## BUILT-IN SPINDLE MOTOR *Bi*-D series



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## FANUC BUILT-IN SPINDLE MOTOR Bi-D series

### FANUC BUILT-IN SPINDLE MOTOR Bi-D series

#### Features

- Built-in Spindle Motor Bi-D series exerts excellent performance in a wide range of speeds, from low to high speeds, and is the most suitable motor for machine tool spindles. Its extensive lineup meets various machining needs.
- Its speed range switching control enables both a large torque at low speeds and high power at high speeds.
- FANUC's unique spindle control technology offers a S6 short-time rated output equal to S3 with reduced heat generation during no-load idling.
- The stator resin mold offers a large torque and high power with its excellent heat dissipation effect.  
This series is available with and without a cooling jacket. (Optional)
- Both oil cooling and water cooling are available.



### FANUC BUILT-IN SPINDLE MOTOR BiS-D series

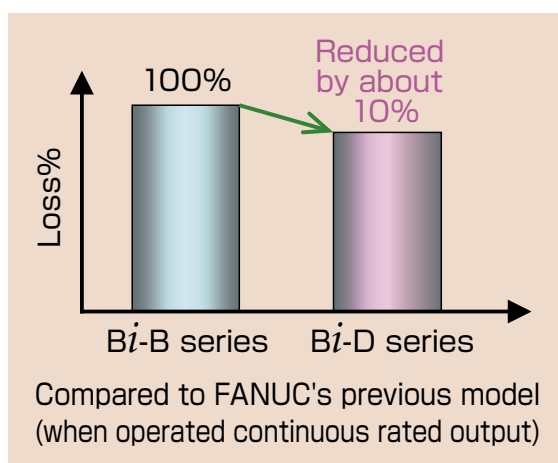
#### Features

- Built-in Spindle Motor BiS-D series offers a larger torque and high power with a compact body. It is suitable for long-time continuous machining and machining involving frequent acceleration and deceleration.
- The overvoltage protection module enables both high speeds and high power.
- The stator resin mold offers a large torque and high power with its excellent heat dissipation effect.  
This series is available with and without a cooling jacket. (Optional)
- Both oil cooling and water cooling are available.



#### Energy saving

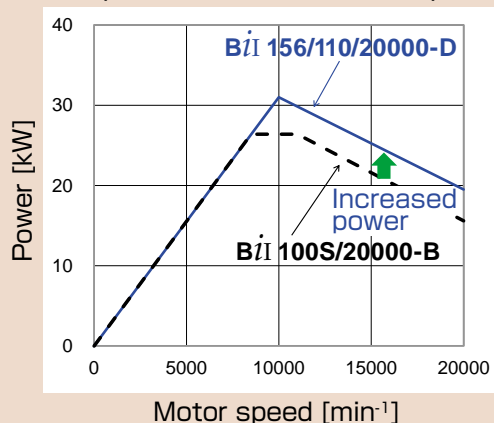
- The optimized motor magnetic circuit has enabled reduced loss, which contributes to machine energy saving. (Different models have different reduction rates.)



## Achieving high machining performance

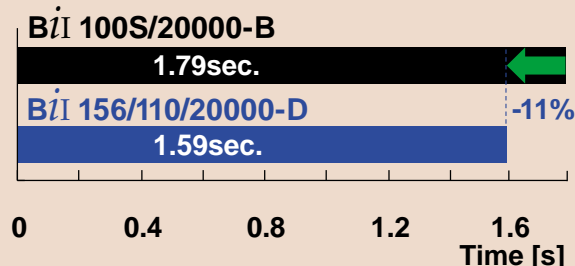
- The optimized motor magnetic circuit provides enhanced power characteristics at acceleration, achieving quick acceleration to the high-speed range, which contributes to reduced machine cycle time. (The reduction rate differs depending on the model and operating conditions.)

[Example] Comparison of acceleration power

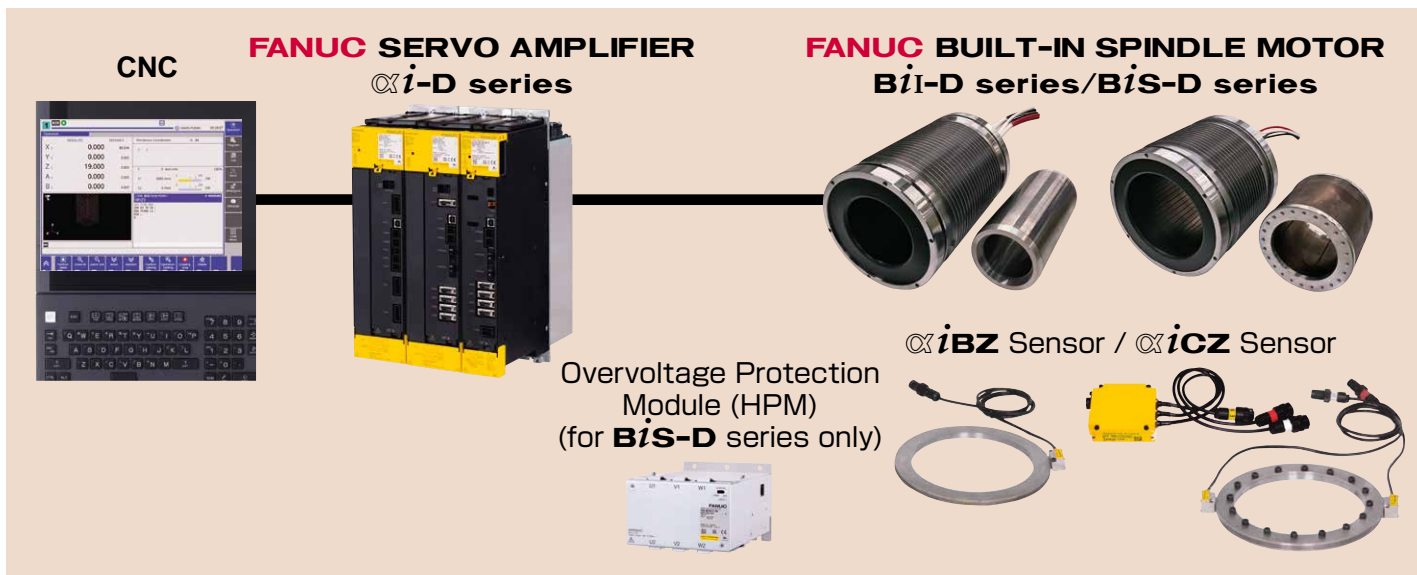


Comparison of acceleration time

Motor speed: 0 → 20,000 min<sup>-1</sup>  
(Inertia moment of spindle: 0.015 kg·m<sup>2</sup>)



## System configuration



## αiBZ Sensor / αiCZ Sensor

- This rotary encoder has a compact, simple, robust structure, which contributes to achieving smaller, more reliable rotary axes.
- αiBZ Sensor is suitable for use with general spindles and machining centers, and αiCZ Sensor is suitable for use with spindles for high-precision Cs-axis contour control and large lathes.



# Service & Support

## Excellent Maintenance Services

FANUC service team delivers customer trust and confidence based on direction of service “Maximizing Uptime”, “Global Service” and “Lifetime maintenance”.

### *Service First*

Conforming to the spirit of “Service First”, FANUC provides lifetime maintenance to its products for as long as they are used by customers, through more than 270 service locations supporting more than 100 countries and regions throughout the world.

#### Maximizing Uptime



## FANUC ACADEMY

FANUC ACADEMY operates versatile training courses to develop skilled engineers effectively in several days.



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### ● Overseas Affiliated Companies

FANUC America Corporation

FANUC Europe Corporation, S.A.

BEIJING-FANUC Mechatronics CO., LTD

KOREA FANUC CORPORATION

TAIWAN FANUC CORPORATION

FANUC INDIA PRIVATE LIMITED

Phone: (+1)248-377-7000

Phone: (+352)727777-1

Phone: (+86)10-6298-4726

Phone: (+82)55-278-1200

Phone: (+886)4-2359-0522

Phone: (+91)80-2852-0057

● Headquarters 3580, Shibokusa, Oshino-mura,  
Minamitsuru-gun Yamanashi, 401-0597, JAPAN  
Phone: (+81)555-84-5555 <https://www.fanuc.co.jp/>

<https://www.fanucamerica.com/>

<https://www.fanuc.eu/>

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Bi-D(E)-01, 2024.9, Printed in Japan