

# S3004 Specifications

Stock Number	Servo	Torq/Spd 4.8V	Torq/Spd 6.0V	Bearing	Size	Weight oz.
FUTM0004	S3004 Standard BB	44/.23	57/.19	Top	1.6 x .8 x 1.4	1.30

## Notes from the Tech Department

This is the Futaba S3004 Light Weight, Ball Bearing Servo. This basic servo is used in cars, boats, or where standard servos are used. Note: This servo is not designed for use with glow-powered helicopters.

**FEATURES:**

- Single ball bearing on output shaft.
- Precise tight fit throughout the gear train.
- Being standard size and light weight, it fits many applications.
- Three pole motor

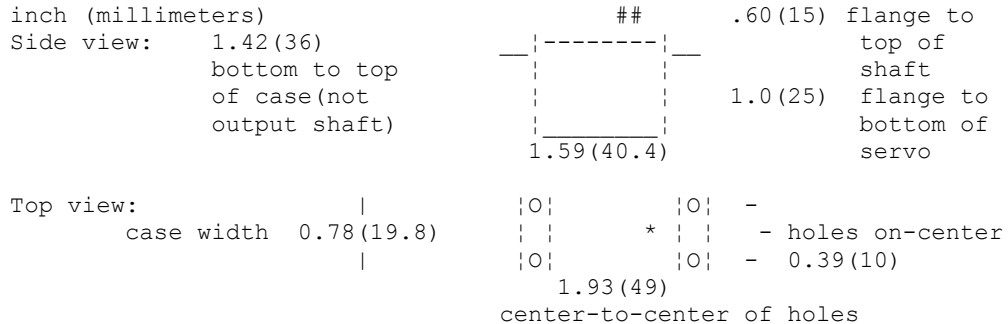
**INCLUDES:**

- One S3004 standard servo with preinstalled round servo horn (FSH6W)
- Four brass eyelets
- Four black one-piece rectangle rubber grommets
- Four servo mounting screws
- Three servo horns (1 lg. round, 1 lg. "X" and 1 sm. "x")

**SPECS:**

- Speed:
  - o 0.23 sec/60 degrees at 4.8V
  - o 0.19 sec/60 degrees at 6.0V
- Torque:
  - o 44 oz/in (3.2kg-cm) at 4.8V
  - o 57 oz/in (4.1kg-cm) at 6.0V
- Length: 1.6" (41mm)
- Width: 0.8" (20mm)
- Height: 1.4" (36mm)
- Weight: 1.3 ounce (37.2 grams)
- Connector: "J" type with approx. 5" wire

**COMMENTS:** inch (millimeters)



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## ***Frequently Asked Questions***

### **What is the voltage of the output signal?**

Voltage out is based on Voltage in. Receivers typically operate on a 4.8V DC input voltage. This can be increased to 6.0V, where more power and speed can be derived from attached servos, but a decrease in lifespan for said items might result as well due to increased stress. An ABSOLUTE minimum operating voltage is very near 4.0V. Rx's typically use a 3.3V regulator which requires an additional 0.7V to power itself, resulting in the 4.0V minimum. In application, however, it is typical for performance to become severely degraded as power falls under 4.3V DC.

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### **Is the output signal digital?**

Output signals are ANALOG. Receivers vary by design on how they RECEIVE and ENCODE signals. But all deliver very similar output pulse signals, which is used to drive the servo to the desired location. This output pulse ranges from 1000uS to 2000uS, with 1500uS typically being center.

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### **Is the output signal an on/off signal or does it have an internal regulator?**

The output signal for each channel is a pulsed signal. The pulse width (commonly 1000uS to 2000uS) is determined by the corresponding channel of the transmitter. When activated by one of the proportional channels (such as elevator, aileron, throttle, rudder, or knob control) the pulse width will vary. This controls the servo movement. Most servos will be centered when the pulse is at 1500uS. Channels that are controlled by a switch (such as the gear channel) will operate the pulse width from two set values such as 1100uS when in one position and 1900uS when set to the other position to activate servo movement.

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### **What signal does the receiver emit to differentiate forward or backward movement?**

Direction of movement is determined by the direction in which the respective pulse is shifted off of center (neutral). Center being 1500uS, if the pulse is shifted above 1500uS, the direction of travel is one direction. If the pulse is shifted below 1500uS, the direction of travel is in the opposite direction.