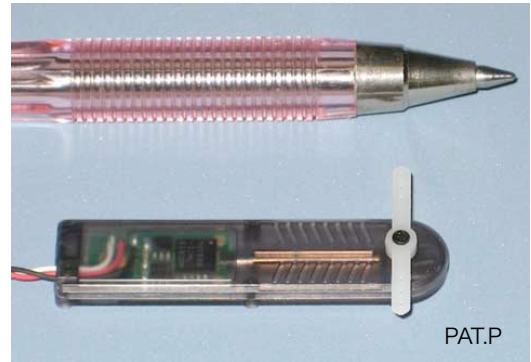


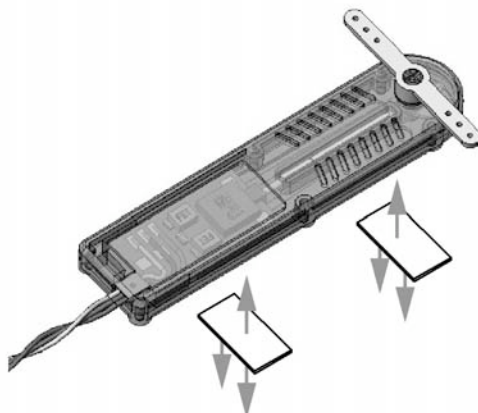
SmartServo® RC-1

SmartServo RC-1 is the servo actuator based on a quite new principle. The drive element of RC-1 is a metallic artificial muscle fiber (BioMetal Fiber, BMF60) which also works as a positioning sensor. RC-1 is micro-mini and super lightweight because it does not use any motor, voice coil, piezoelectric element and any sensors. RC-1 does not generate any vibration, mechanical and electromagnetic noise. RC-1 is driven with the signal and power supply of a popular digital proportional receiver for RC hobby.

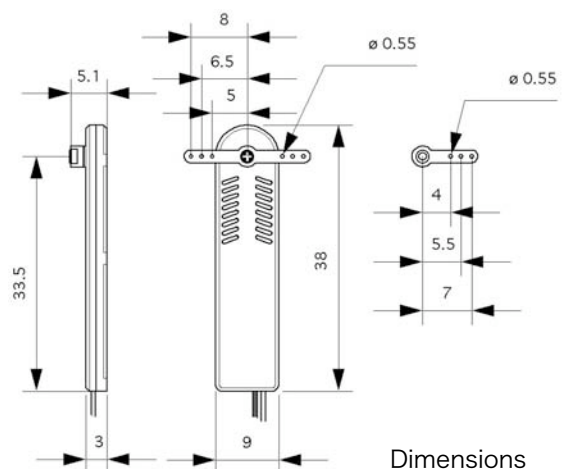


INSTRUCTION

SmartServo RC-1 is an actuator operating on a completely new principle, however RC-1 is moved, by the signal of a digital proportional receiver of RC hobby same as a RC servomotor. Therefore, RC-1 has little different property from a conventional servomotor. A connector isn't attached to RC-1 in order to save lightweight. When you connect RC-1 to a receiver, pay attention to polarity of power supply line (red +, black -). An electric circuit is overheated and damaged if you connect them in reverse. Right after RC-1 is connected to a RC receiver and switched on, the horn of RC-1 moves in right and left automatically. This movement is not failure of an electric circuit, but for the automatic calibration of Biometal Fiber (BMF). The trim of a transmitter is effective when you switch on the receiver, and the horn comes back to a neutral position when you switch it off. (Dynamic trim). Please note that small electric current is consumed when using a trim even if you place a stick of a transmitter in neutral position, using trim. RC-1 consumes current responding to the horn angle and the current is minimum at a neutral position. When you repeat quick motion in full right and left stroke many times, the motion of RC-1 will become smaller and slower. The behavior is not out of order but a characteristic of BMF. The motion performance will recover in half seconds after you stop or slow down the operation. The movement also becomes slow in high temperature condition. RC-1 works normally in a designated temperature range, because the temperature and load of BMF are feed-backed indirectly. Don't install RC-1 on the place where the temperature tends to become high, such as the surface of a battery. Though RC-1 has a built in shock absorber, don't stop the moving horn by hand as it will cause trouble. For the same reason, be careful that there is no mechanical resistance such as friction when you put RC-1 on your airframe. When you install RC-1 in airframe, you can use several pieces of ultra thin adhesive double-coated tape, and fix at several places. Don't stick tape to the part where the rotation arbor is coming out, in the backside of RC-1. As RC-1 is a very delicate and precise device, don't disassemble it as you cannot reconstruct it. Hold the horn when you loosen or tighten the screw of the operational axis. RC-1 is micro servo actuator developed for tiny model airplanes with gross weight of less than 50g and is not suitable for bigger models.



Adhesive double coated tape should be stuck in several parts.



Dimensions

Specifications (non guarantee value)

Dimensions	: 38 x 9 x 3 (mm)
Weight	: approx. 0.8g (except a horn, a connector, and cable)
Actuator element	: BioMetal Fiber, BMF60 x 110 mm (wight : 2 mg)
Materials	: body : ABS, built in parts and horn : POM, PC board : Lead-free solder
Torque	: approx. 15 gCm
Operational Angle	: 30 degrees, right and left each side
Power Supply Voltage	: 3 - 5 V
Current Consumption	: 30mA, 0.15W (@ 5V, 20 degrees Celsius)
Max. Current Consumption	: 80mA, 0.4W (moving to right or left end point @ 5 V)
Input Line	: 3 wire type; power supply (red +, black -), signal (white)
Control Signal	: positive PWM signal of 1.5 ms \pm 0.5 ms in every 20 ms
Operating Temperature	: 0 - 40 degrees (Celsius)

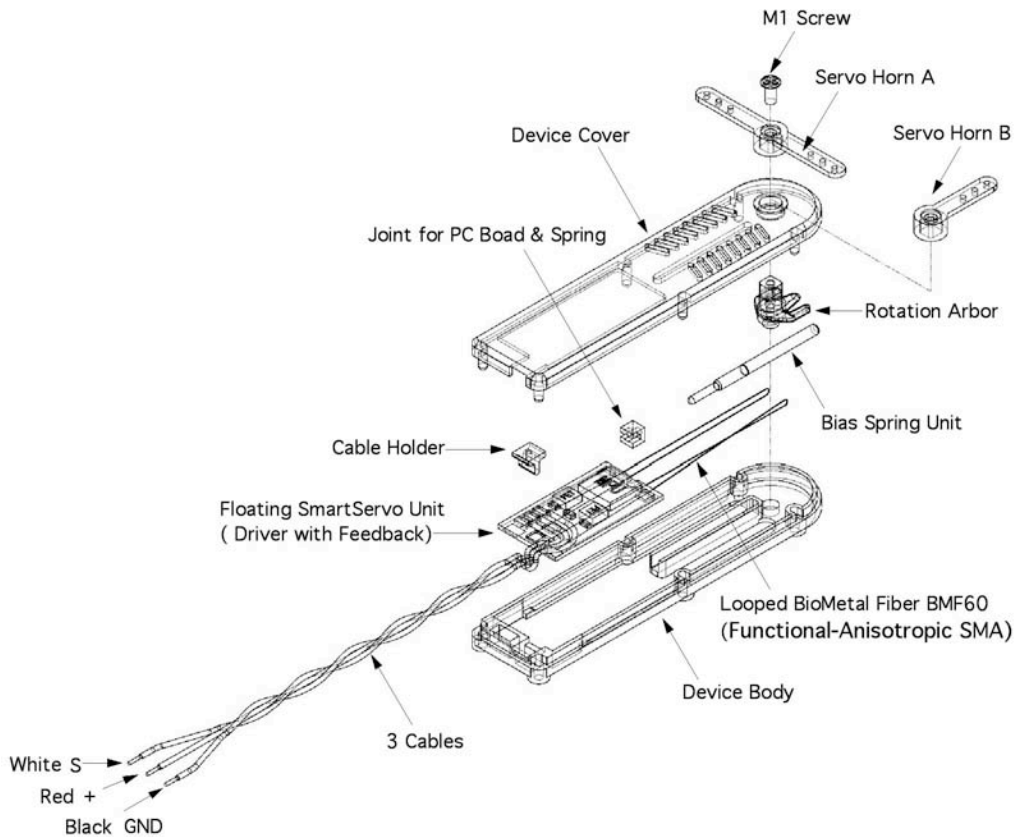


Fig. Exploded View of SmartServo RC-1

Caution: This product is the scientific model materials. It is impossible to use in a practical application that needs reliability and durability. This product is assumed a person who has technology and knowledge for micro RC hobby. All responsibility about an accident or the problem that occurred by the wrong uses out of our assumption cannot be due. The data in the table are not guaranteed values but reference values. The specifications of this product may be changed without a notice for reasons of the improvement. Please inform of an inquiry such as a maintenance part by E-mails to direct us.

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