S3173SVi

Series Wiring S.BUS2 Servo For Glider and EP Glider models

S.BUS2 **High Voltage System HV**

INSTRUCTION MANUAL

Usage Precautions

⚠ WARNING

❶ **The S3173SVi servo is designed to be used only for glider and EPglider models. Due to the special design of the S3173SVi, we cannot recommend its use in other types of models (gas powered models.)**

⊘ **Do not use it for a gas powered models.** There is a danger of waking up loose connection, for a vibration peculiar to an engine model. Moreover, loose connection will be woken up if fuel is applied to a wiring junction.

❶ **Turn on the power in transmitter → receiver order. In addition, always check the operation of all the servos before flight.**

⊘ **Do not insert or remove the servo connector while the receiver power is ON.** Since the S.BUS2 servo switches the operation mode automatically according to the type of signal (S.BUS signal/PWM signal) from the receiver, if the connector is inserted or removed while the power is ON, an S.BUS connected servo will be erroneously recognized and may stop.

⊘ **Do not leave the servo in the locked state.** Leaving the servo in the locked state (state in which enough force is applied that the servo cannot move) may cause smoke, fire, and damage.

⊘ **Never connect the battery in reverse.** Reverse connection may cause smoke, fire, and damage.

⊘ **Do not expose the servo to dust and water.** The servo does not have a waterproof construction. If it gets wet, the servo may not operate or the power supply may short circuit.

❶ **When installing the servo, check PUSHROD LINKAGE to make sure there is no binding** in order to prevent excessive power consumption and decrease the life of the motor and battery.

⚠ CAUTION

⊘ **Do not touch the servo case immediately after servo operation.** You may be burned because the motor and circuits inside the servo become hot.

⊘ **Do not turn the servo horn with unreasonable force.** The servo may be damaged.

⊘ **Do not disassemble or modify the servo.** The servo has a precision construction. Futaba Corp. will not be responsible for any disassembly or modification other than those specified by us.

⊘ **Do not drop the servo or expose it to strong shocks or vibrations.** It will damage with a shock.

❶ **Use the servo as an actuator in hobby applications.** Futaba will not be responsible if the servo is used in applications other than the above.

> **Futaba will not be responsible for damage, etc. caused by the use of parts other than Genuine Futaba parts.**

•**Current consumption**
This servo is designed so that much series connection can be performed. For this reason, a large current flows during servo operation. Therefore, decide the safe number of uses by paying careful attention to the remaining battery capacity.

•**Power supply**
Use the battery as specification. Use a battery or a voltage regulator with an ample margin as the power supply. The specified performance cannot be displayed with a dry cell battery. Even if using a receiver with the BATTERY FAIL SAFE function, it may not operate correctly. Therefore always check the battery voltage and charge the battery quickly.

•**System use**
For full performance, 2.4GHz system is recommended.

•**Programming function**
This servo can be connected to a PC by using the CIU-2 USB Adapter sold separately and its various operating characteristics can be changed as a programmable servo by means of dedicated software **"S-Link"**. **S-Link** is downloadable from a Futaba WEB site. However, channel setting and other operating characteristics settings cannot be made with the existing S.BUS PCLink software. If the transmitter which can perform a S.BUS setup (T18MZ etc.) is used, it is connecting an S.BUS2 servo and a power supply to the S.BUS setting connector of the transmitter, and it can set up on the screen of transmitter. This servo does not have stop mode function. Therefore becomes as [hold] when the input signal of a servo stops. Depending on a setup, a servo carries out vibration. If a servo continues carrying out vibration, it will break, please restore a setup.

•**Soft start**
In order to protect the linkage, only the first operation when the power is turned on moves the servo to the specified position slowly. When a new control signal enters while the soft start is operating, it become normal operation at once.

•**S3173SVi Specifications**

		at 6.6V	at 7.4V
SPEED	(sec/60°)	0.18	0.16
TORQUE	(kgf・cm)	3.9	4.3
	(ozf・in)	54.2	59.7

SIZE	30.0×10.8×29.1 mm
	(1.18×0.43×1.15 in)
WEIGHT	20.6g (0.73 oz)
RATED VOLTAGE	DC6.0V~7.4V
OPERATING VOLTAGE	DC4.0V~8.4V

No dry battery use

10.8(0.43)
29.1(1.19)
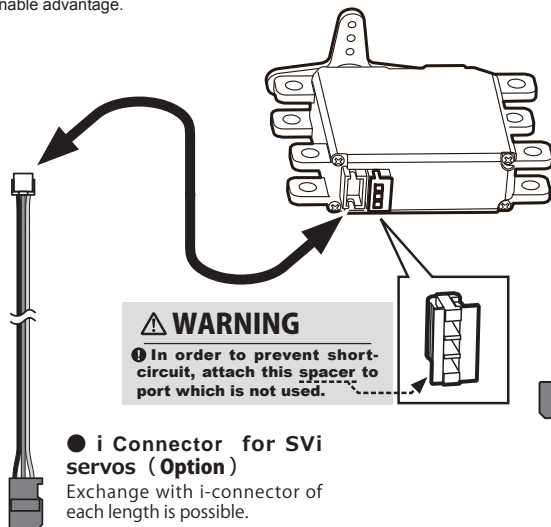21.5(0.85)
30.0(1.18)
36.0(1.42)

Unit : mm(in)
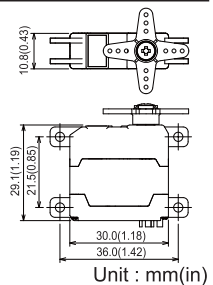
i Connector

•**The servo of SVi series is used for glider, and EP glider.**

•**Connector exchange of a servo**
The servo of **SVi** series is exchangeable for the connector which suited your model.
Please choose out of the **i-connector** prepared as an option.
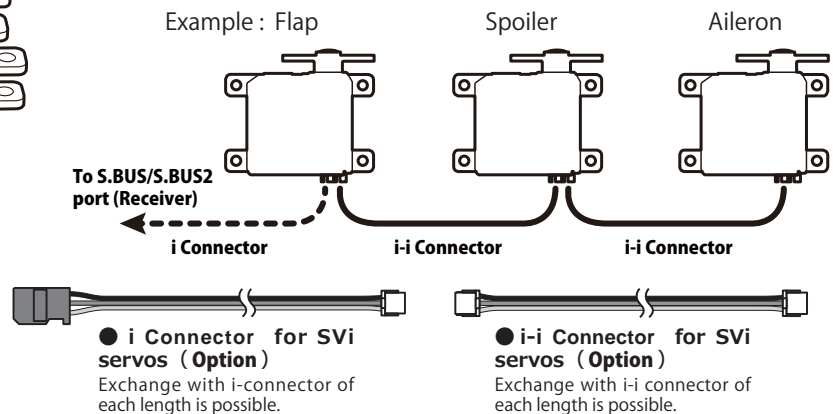Moreover, while the connector is fixed to the model, a servo is removed and there is a maintainable advantage.

⚠ WARNING

❶ **In order to prevent short-circuit, attach this spacer to port which is not used.**

● **i Connector for SVi servos（Option）**
Exchange with i-connector of each length is possible.

•**When S.BUS/S.BUS2 is not used**
When not using a S.BUS/S.BUS2 system, without serial connection, one servo can be connected to the conventional CH and it can also operate.

i - i Connector - Series Wiring

•**If the i-i connector (option) and S.BUS/S.BUS2 system are used, two or more S3173SVi's is connectable.**

•**Each servo by which serial connection was made by carrying out ch setup carries out only ch operation of it to a servo in S.BUS/S.BUS2.**

•**Simple wiring will be brought about also by glider which carries many servos.**

Example : Flap   Spoiler   Aileron

To S.BUS/S.BUS2 port (Receiver)

i Connector   i-i Connector   i-i Connector

● **i Connector for SVi servos（Option）**
Exchange with i-connector of each length is possible.

● **i-i Connector for SVi servos（Option）**
Exchange with i-i connector of each length is possible.

⚠ WARNING

❶ Be sure to insert the connector until it stops at the deepest point.

❶ To prevent the servo lead cable from being broken by vibration during flight, provide a little slack in the cable and fasten it at suitable points. Periodically check the cable during daily maintenance.

⊘ Do not apply a vibration strong against a servo and a connector.

The direction of a connector

Guide

⚠ **Be sure to insert the connector until it stops at the deepest point.**

White
Red
Black
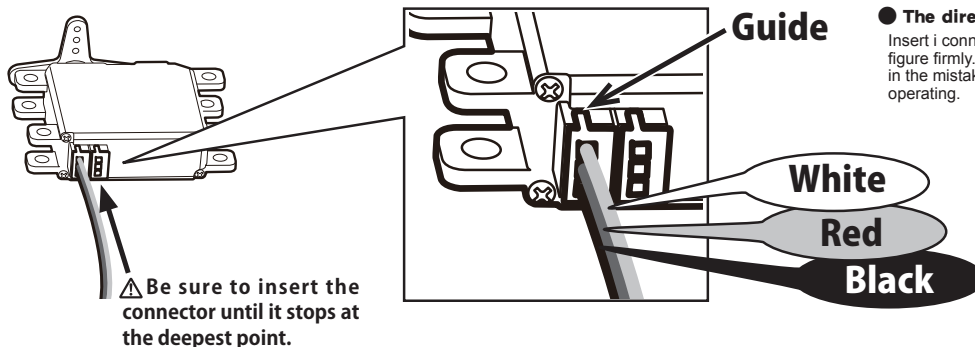
● **The direction of a connector**
Insert i connector and an i-i connector in the direction of a figure firmly. Don't insert in the mistaken direction. If it inserts in the mistaken direction, a connector will be damaged without operating.

About the S.BUS/S.BUS2 system

What is S.BUS?

Different from conventional radio control systems the **S.BUS** system uses data communication to transmit control signals from a receiver to a servo, gyro, or other **S.BUS** compatible device.

This data includes commands such as "move the channel 3 servo to 15 degrees, move the channel 5 servo to 30 degrees" to multiple devices. The **S.BUS** devices execute only those commands for their own set channel. For this reason, it can be used by connecting multiple servos to the same signal line.

Many **S.BUS** servos is in the connected state, one servo of them can be set it up. The **ID code** of each servo is used for it. **ID code** is indicated on the seal of the case. After carrying in a model, it is convenient, if you use attached ID seal and CH seal when ID cannot be seen.
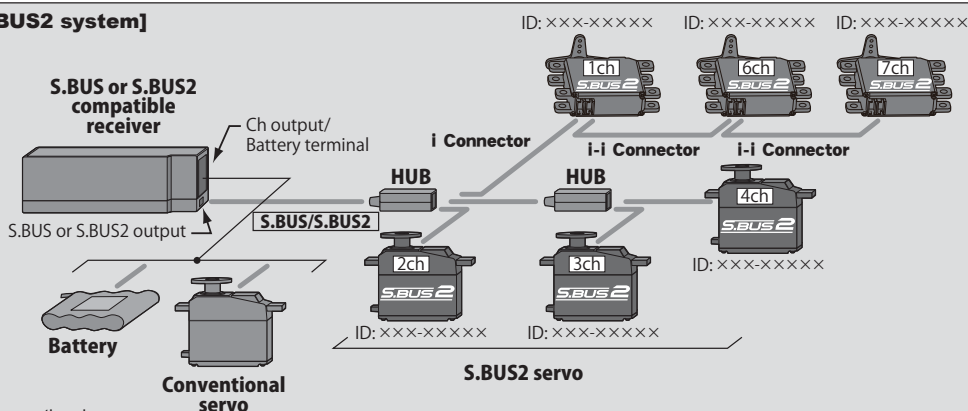
S.BUS2 servo → it can be used in **S.BUS2** and **S.BUS** port.
S.BUS servo → it can**not** be used in **S.BUS2 port.**

S.BUS2

Using the S.BUS2 port an impressive array of telemetry sensors may be utilized. This servo is connectable with the both sides of S.BUS and S.BUS2 port.

[Connection by S.BUS/S.BUS2 system]

ID: ×××-×××××   ID: ×××-×××××   ID: ×××-×××××

1ch   6ch   7ch

S.BUS or S.BUS2 compatible receiver

Ch output/ Battery terminal

i Connector   **i-i Connector**   **i-i Connector**

HUB   **HUB**

4ch

S.BUS or S.BUS2 output

S.BUS/S.BUS2

2ch   3ch

ID: ×××-×××××

Battery

Conventional servo

ID: ×××-×××××   ID: ×××-×××××

S.BUS2 servo

* Can also be used together with conventional servos.
* ***Items required:*** **S.BUS** or **S.BUS2** receiver, **S.BUS2** servo, **S.BUS** hub or **i-iConnector**, **SBC-1** channel changer or **CIU-2** USB serial interface (It is possible also at the transmitter which can perform a S.BUS setup ---T18MZ etc.).

[Procedure for use with the S.BUS/S.BUS2 system]

1. Set the channel at the S.BUS2 servos.

Set the channel at the **S.BUS2** servos by using an **S.BUS** channel setup compatible receiver, an **SBC-1** channel changer or **CIU-2** USB serial interface (It is possible also at the transmitter which can perform a S.BUS setup ---T18MZ etc.).

* Refer to the **S.BUS** compatible receiver, the channel changer or setting program instruction manual for the **S.BUS** servo channel setting method.

2. Connect the servos to an S.BUS or S.BUS2 compatible receiver.

Connect the servos from the **S.BUS** or **S.BUS2** port of the **S.BUS** or **S.BUS2** compatible receiver via **S.BUS** hubs (or **i-i Connectors**).

[Connection to conventional receiver]

Conventional Servo

Conventional Receiver

Ch output/ Battery terminal

S3173SVi

S3173SVi

Battery
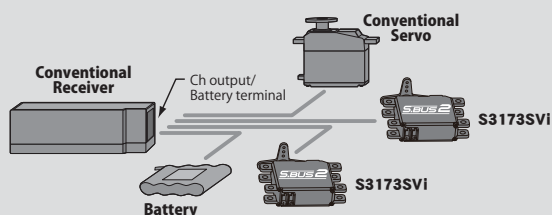
* Operation is the same as that of a conventional servo.
* ***Items required:*** Receiver, **S.BUS2** servo, **CIU-2** (if changing the servo settings)

[Operation by conventional radio control]

An **S.BUS2** servo connected to a conventional receiver operates as a conventional servo. The channel becomes the receiver connection point.

*The contents set by programmable function are effective.

[Method of connecting conventional servo to S.BUS]

Conventional servo

S.BUS decoder SBD-1

S.BUS

Conventional servo

Conventional servo
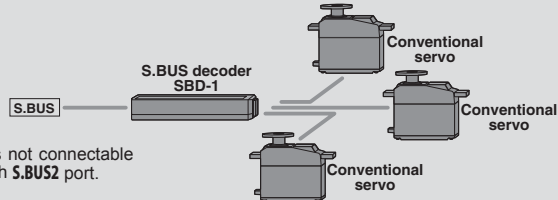
*It is not connectable with **S.BUS2** port.

Conventional servo

* ***Items required:*** **S.BUS** receiver, **SBD-1 S.BUS** decoder, servo, **SBC-1** channel changer or **CIU-2** USB serial interface

[Connecting conventional servos to the S.BUS]

Conventional servos can be connected to the **S.BUS** by using an **SBD-1**. The servo channel is set at the **SBD-1**.

* Refer to the **SBD-1** instruction manual for the **SBD-1** channel setting method.