



# S9070 PC-Link Program Manual

The operating parameters of the Futaba programmable servo S9070 can be set and changed from a PC by using this program. Since the Futaba CIU-2 USB adapter and power supply (4.8~6V battery) and Y-harness (landing gear adapter) are necessary, procure them beforehand and place into the state in which the CIU-2 is operated properly from the PC. (Download and install the CIU-2 driver from the Futaba home page.)

**\*Note:**The S9070 PC-Link program is for Windows® Vista/XP/2000 use and is not compatible with other OS.

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## Downloaded Zip file extraction (decompression)

The downloaded S9070 PC-Link Eng V100 file is a Zip format file. Extract (decompress) this file. (\*For Windows® 2000, separate decompression software is necessary.)

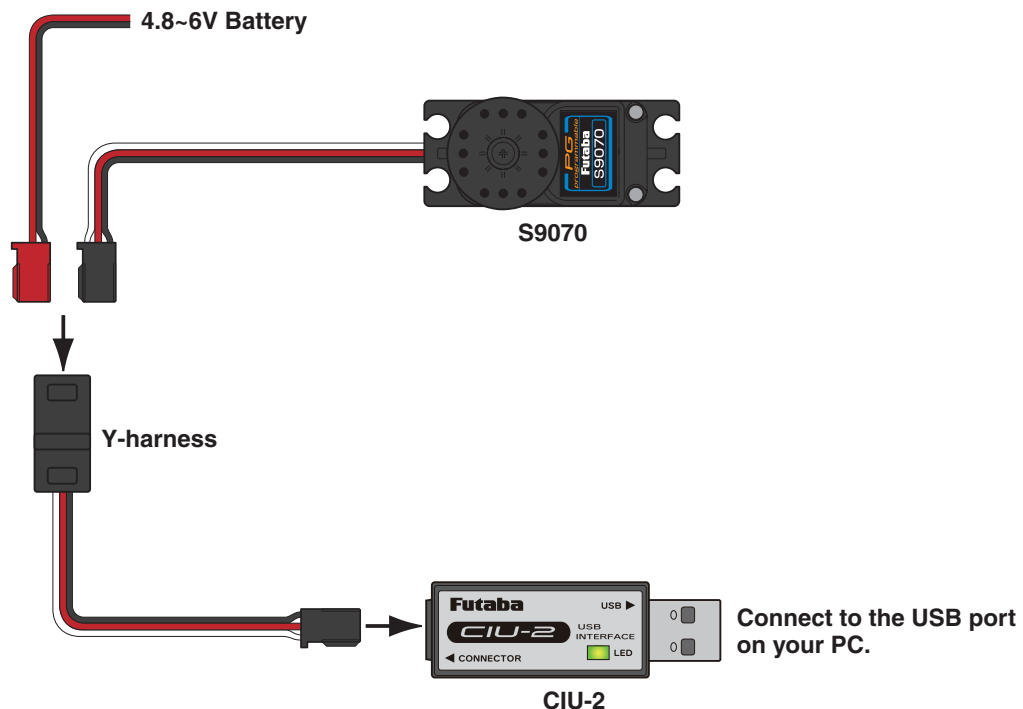
1. With Windows Vista/XP, double click file S9070 PC-Link Eng V100 to display its contents.
2. Click "Extract all files". The Extraction Wizard launches.
3. Extract (decompress) Zip file S9070 PC-Link Eng V100 to the same location as the Zip file storage location. PC-Link.exe file is extracted.

## CIU-2 and S9070 connection

Connect S9070, CIU-2 USB adapter, 4.8~6V battery and Y-harness as shown below.

1. Connect the Y-harness to the CIU-2.
2. Connect the S9070 and the batteries to the Y-harness.
3. Connect the CIU-2 to the USB port on your PC.

The CIU-2 LED turns on green.

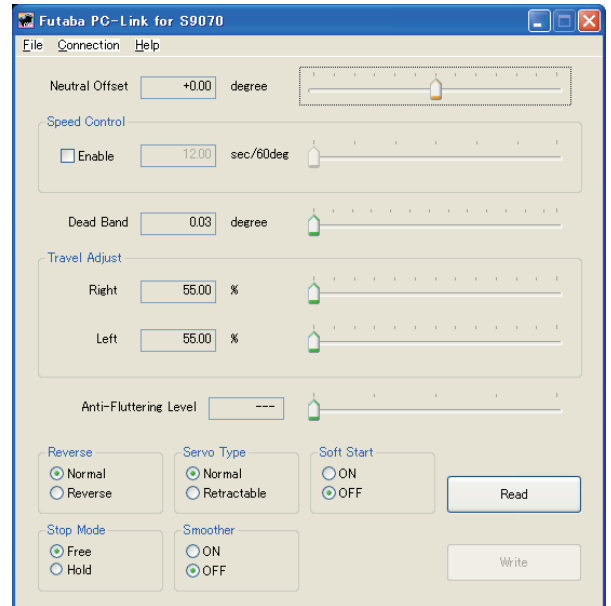


## Calling the setting parameters

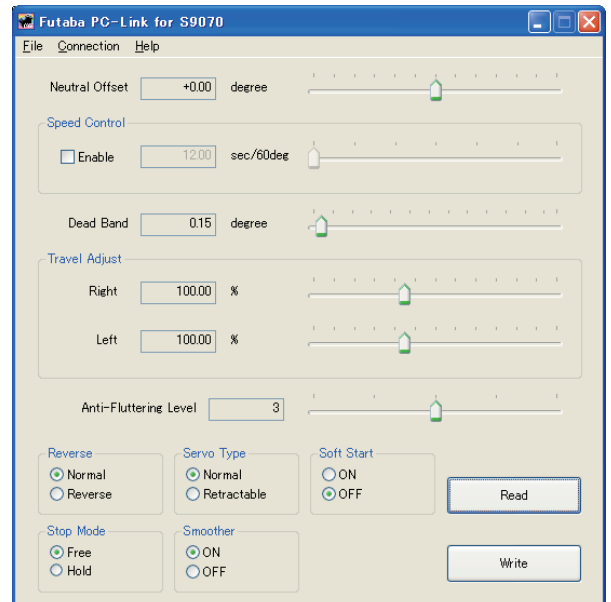
1. When PC-Link.exe file is executed, the "Futaba PC-Link for S9070" dialog box shown at the right will be displayed.

2. To read the current parameters, click the "Read" button. The currently programmed parameters will be displayed.

If the CIU-2 USB adapter is not connected to the PC, when the PC-Link.exe file is executed, an "A CIU-2 is not connected." message will be displayed. Push the OK button after connecting the CIU-2 properly.



3. When the parameters are in the initial state, initial values like those shown at the right will be displayed.



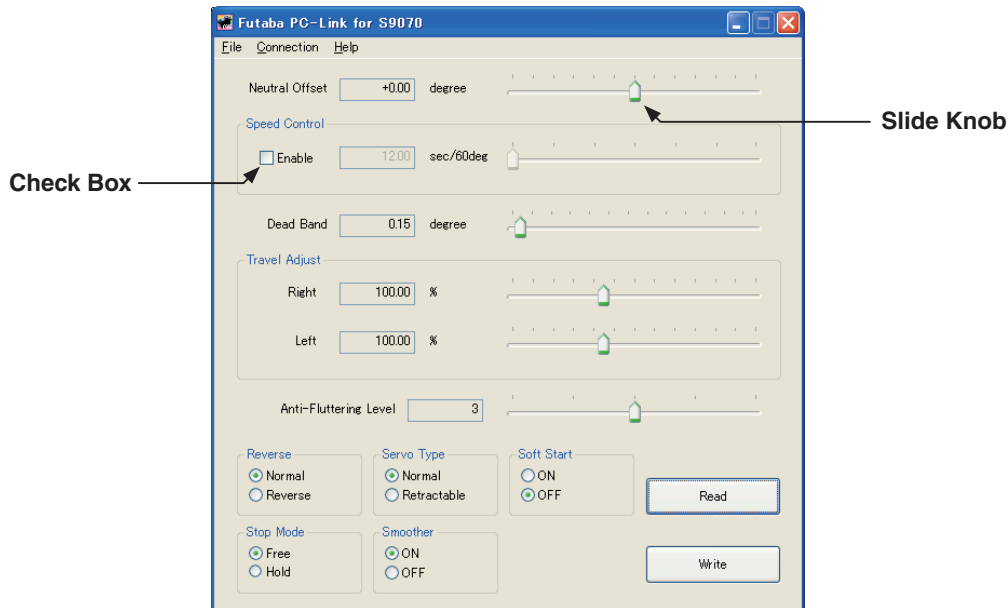
### Saving the parameters to a file:

1. Select "Save As" menu in "File" menu.
2. The file save dialog box is shown. Enter the file name and click the "Save" button.

### Opening the parameters from a file:

1. Select "Open" menu in "File" menu.
2. The file open dialog box is shown. Select the file and click the "Open" button.

## Changing the parameters



1. When the slide knob of each item on the screen is changed, the set value is changed.

When setting an exact value, the value can be changed in minimum units by PC cursor key operation.

2. When you want to return the parameters to their initial state, click File at the top left of the screen and select Default. A "The data will be initialized to the default. Are you sure?" dialog box appears. When Yes (Y) is clicked, the servo enters the default state.
3. To change the Speed Control parameter, enter a check by clicking the Enable check box and then perform speed setting.
4. Select the function you want to set for the Reverse, Servo Type, Soft Start, Stop Mode, and Smoother parameter items.
5. For Anti-Fluttering Level, the mode in which it is difficult for the fluttering phenomena to appear when the servo is used with a large wing aircraft can be selected. Level 5 is the setting which suppresses fluttering to the maximum.

The lower the Anti-Flutter set value, the higher the sensitivity. However, when a low set value is selected, response to movement will become too sensitive and the servo will operate constantly. Therefore, select a setting which provides a margin at a level at which the flutter phenomena does not occur.

**Note:** If the Anti-Fluttering Level is set to a value that exceeds the display range of this software by changing the specification of the servo, "---" is displayed. Do not change the level if using the current setting.

6. After the optimum value of each item was set, the new parameters can be written by clicking the "Write" button.

**Note:** Do not disconnect the servo and do not turn off power while writing the parameter.

**Note:** Always confirm the servo operates as desired before installing it in the airframe after rewriting the parameter. Moreover, confirm the normal operation in the ground test after installing it in the airframe enough.

## Description of the function of each parameter

- **Neutral Offset**

The neutral position can be changed.

- **Speed Control**

Speeds can be matched by specifying the operating speed. The speed of multiple servos can be matched without being affected by motor fluctuations. This is effective for load torques below the maximum torque.

However, note that the maximum speed will not be exceeded even if a speed over the maximum speed of the servo at each operating voltage is set.

- **Dead Band**

The dead band angle at stopping can be specified. If the dead band angle is small, the servo will operate continuously and the life of the servo may be shortened.

- **Travel Adjust**

The left and right travels centered about the neutral position can be set independently.

- **Anti-Fluttering Level**

With fuselages with a large wing area, etc., the flutter phenomena whereby the control surfaces begin to oscillate continuously due to inertia may occur. However, when this phenomena occurs, the oscillations can be reduced by changing this parameter. Mode 5 has the highest suppression effect.

- **Reverse**

The direction in which the servo rotates can be changed.

- **Servo Type**

When the servo remains stopped for 30 seconds, the dead band expands and unnecessary hold current due to external force is eliminated. When a new position signal enters, the normal mode is restored and normal operation is resumed.

Select the "Retractable" mode for the retractable landing gear servo. In this case, set the Travel Adjust and the Speed Control at the same time.

- **Soft Start**

Restricts operation in the specified direction the instant the power is turned on. By making this setting, only the first operation when the power is turned on slowly moves the servo to the specified position.

- **Stop Mode**

The state of the servo when the servo input signal is lost can be specified. The "Hold" mode setting holds the servo in its last commanded position even if using AM or FM system.

- **Smoother**

This function smoothly changes servo operation relative to operation signal changes. Normally use at Smooth setting. Especially, select the "OFF" mode when quick operation is necessary.

## Setting range of each parameter

- **Neutral Offset:**  $\pm 30^\circ$  based on the default position
- **Speed Control:** Max. 0.12sec/60° (at 7.2V) ~12sec/60°
- **Dead Band:** 0.03~3.98°
- **Travel Adjust:** 55~175%
- **Anti-Fluttering Level:** Mode 1~Mode 5
- **Reverse:** Normal/Reverse
- **Servo Type:** Normal/Retractable
- **Soft Start:** ON/OFF
- **Stop Mode:** Free/Hold
- **Smoother:** ON/OFF