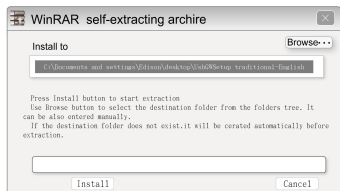


# Manual of GWS digital servo Programmer

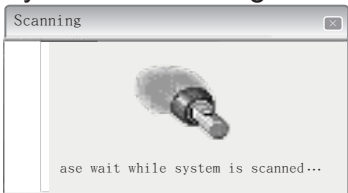
**Special note:**The relative software might be updated and then published on our web site, the updated version can be down loaded from [www.gws.com.tw](http://www.gws.com.tw) .

## 1. How to install

Try to find out this icon from visiting [www.gws.com.tw](http://www.gws.com.tw) . There will be this window shown on your PC screen after double clicking the icon. click "Browse...." and choose your desired path.



System is scanning as shown



## 2. To open the application

1). Find out then click this USB folder from the path of the installation



2). There'll then be the following 3 icons



## 3. Introduction of the values needed & functions shown

**Open Config:** To check out the PWM values that have already been saved.

**Save Config:** To save all current PWM values into PC.

**Language:** List of languages to be used. Click your desired one, normally English here.

**Dead Band:** Minimum value needed when changing PWM for controlling servo, normally 0.4~13µs.

**Lock:** To lock servo arm. Option for locking servo arm or not when out of PWM signals.

**Signal:** PWM needed on the Programmer for Neutral, normally 1400~1600µs, default 1500µs.

**Pulse Upper:** The maximum PWM value applied for the connected servo, the Recommended Value is 2100µs. The connected servo might get damaged when applying PWM value over 2100µs here.

**Neutral:** Neutral position, To set up the Neutral of servo arm throws, normally apply 1400~1600µs.

**Pulse Lower:** The minimum PWM value applied for the connected servo, the Recommended Value is 900µs, the connected servo might get damaged when applying PWM value less than 900µs here.

**Read Config:** To read/show the original set up PWM values inside of the connected servo.

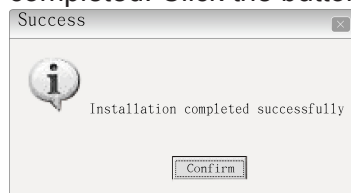
**Write Config:** To write the newly set up PWM values into the connected servo replacing the older ones.

**Initialize:** To initialize the connected Programmer by transmitting the set up PWM values from PC to the Programmer. This is for applying the Programmer without using PC. (so called "Off Line")

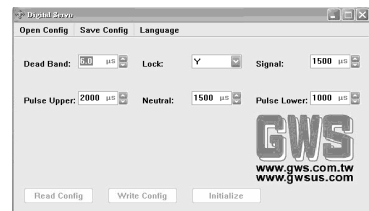
Press "Install" to start



This window tells you that the Installation has completed. Click the button to confirm.



3). Double click this icon for setting up the Programmer

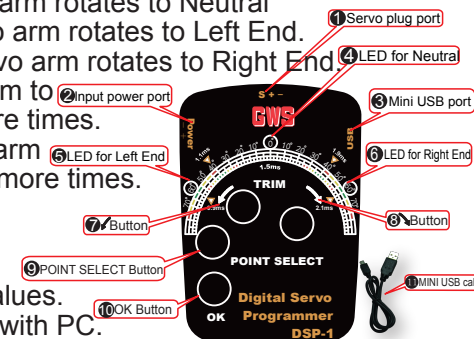


**Note 1:** After having the Programmer initialized, pull off the USB cable. it can now be applied "off line" by connecting with power source and GWS digital servo only, as shown on picture 2. The Neutral position can be relocated, and the throws can be adjusted/reduced by pressing the two buttons of TRIM on the Programmer. But the total throw can NOT be increased, as the maximum PWM value can NOT be increased up, the minimum PWM value can NOT be decreased down either on the Programmer during the "Off Line" operations.

## 4. The ports and buttons used on the Programmer

Apply correct polarities as shown when plugging servo and power source

- ① Servo plug port: Plug GWS digital servo lead into the Programmer for adjusting set up values.
- ② Input power port: For DC 4.8~6.0V or the BEC 3-pin plug from ESC (Speed Controller).
- ③ Mini USB port: Plug USB cable connecting the Programmer with PC.
- ④ LED for Neutral: This LED will be ON when servo arm rotates to Neutral
- ⑤ LED for Left End: This LED will be ON when servo arm rotates to Left End.
- ⑥ LED for Right End: This LED will be ON when servo arm rotates to Right End.
- ⑦ Button: Left fine-tune button, to trim the servo arm to left more, within the total throw, by pressing it more times.
- ⑧ Button: Right fine-tune button, to trim the servo arm to right more, within the total throw, by pressing it more times. (Refer to Note 1 when adjusting the total throw.)
- ⑨ POINT SELECT button: To test the three key points of servo arm throws.
- ⑩ OK button: To confirm the newly adjusted PWM values.
- ⑪ MINI USB cable: For connecting the Programmer with PC.



## 5. How to apply the Programmer

Apply correct polarities as shown when plugging servo and power source

### 1. Connect the Programmer with PC as picture 1.

- a. Plug the Mini USB cable into USB port of PC and the Programmer, open then said icon (USBG W. exe) on PC.
- b. Plug GWS digital servo into the Programmer, green LED is ON.
- c. To set up the PWM values & functions needed for the connected servo per the afore-mentioned introductions.



Picture 1

### 2. How to apply the Programmer when off line (as picture 2).

- a. Plug DC 4.8~6.0V or BEC from ESC into the Programmer. the 3 LED's are ON
- b. Plug GWS digital servo into "① Servo Plug Port" of the Programmer, the servo arm will then rotate to Neutral, and turn ON the green LED automatically.
- c. Press "⑨ POINT SELECT" to test the three key points of servo arm throws, the three LED's represent the points reached, orange one is for Left end, green one means Neutral, and red one means Right end.
- d. After performing the above said tests, press button ⑦ and ⑧ to adjust the servo arm throws but the maximum throws resulted by the PWM that were initialized by PC and the function <Initialize> earlier can NOT be increased by pressing "⑧" button. (Refer back to Note. 1)
- e. Press OK button to confirm the set up values that have just been adjusted.

Picture 2

**Note 2:** After pressing OK button to confirm the adjusted PWM/throws, the three key points of throws can NOT be tested further by pressing "POINT SELECT" button, Just pull off the servo plug and plug it again for testing them further, then press OK to confirm the new throws.

**Note 3:** Do not plug any power source into the Programmer when connecting it with PC. Otherwise, the Programmer might be out of order or even damaged.

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