# ESPRIT·III UNIVERSE

INSTRUCTION MANUAL

**KO PROPO**

## Read first

Thank you for purchasing the Esprit III Universe.

Read this manual carefully in order to obtain the maximum performance from the unit.

Keep this manual handy.

Please visit our web site (http://www.kopropo.co.jp) for the latest information released.

## Finding information in this manual

| | |
|---|---|
| What can you adjust with this unit? | **Screen Summary (P10)** |
| I want to use the transmitter at once | **Preparation for use (P12-14)** |
| I want to know a function in detail | **Function menu (P30-71)** |
| New advanced capabilities and menus of the ESPRIT series | **Function menu (P62-71)** |

**Trouble Shooting**

| | |
|---|---|
| Cannot understand what is meant by the display | **Screen Summary and find the function (P10...)** |
| Displaying an objective's screen. | **Screen Summary and find the function (P10...)** |
| Cannot understand the terminology used in this manual | **Index and Glossary (P79-83)** |

## Notice regarding the use,export,remodeling,etc.

1. This can only be used for remote controlled models.
   In Japan, this product is limited for the use of remote controlled models.
   In addition, this can only be used for ground or water controlled vehicles.

2. (a) When this product is exported from Japan, you cannot use this with a frequency that is not approved by the Wireless Telegraphy Act of the partnering country.
   In addition if this product is re-exported from other countries, it may be subject to restrictions on such re-export and prior approval of government authorities may be required.

   (b) There are times when the export trade may be regulated management when this is exported with the intent use other then the required models.
   This procedure may at times parallel with laws that require submitting an export license application.

3. KO PROPO is not responsible for any use of this product that is not in compliance with applicable laws and disclaims all responsibility for any modification or alteration of the product.

## Other notes

- It is illegal to reproduce the contents of this manual without permission.

- The contents of this manual are subjected to future changes without notice.

- Although every effort has been made to ensure the accuracy of the information contained in this manual, please contact us if you have any questions or if you find any errors.
  (Communication can end the confusion quickly)

- With the nature of radio control models, there are times when our company cannot owe responsibility concerning the results while using this product. Please acknowledge this beforehand.

## Usage of the transmitter

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# Contents

# Safety Notice

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### For the safe usage of this product

With the nature of radio control models, misoperation will result in danger.

In order to avoid these circumstances and to use this product safely, please read the contents thoroughly.

## Explanation of warnings and signs

In this manual, the following warnings and signs should be noted carefully.

**⚠ Danger!**   Failure to observe this matter discussed can lead to a serious threat of death or severe injury.

**⚠ Warning!**   Failure to observe this matter discussed can lead to death or serious injury and a great likelihood of damaging the equipment or property.

**⚠ Caution!**   Failure to observe this matter discussed can lead to injury or damage to the equipment or property.

## Meaning of icon indications

| 🚫 Prohibition | **Prohibited Matter** Not allowed to do. | ❗ Execution | **Enforced Matter** This must be carried out! |
|---|---|---|---|

## Notes before installing and using the equipment

**⚠ Warning!** ❗ Execution   Only use genuine KO PROPO crystal sets (transmitter and receiver).
※ Other crystals may vary in frequency, which could lead to misoperation or lose of control.

**⚠ Warning!** 🚫 Prohibition   Prevent metal parts in the model (car or boat) from touching that may be caused by vibration.

**⚠ Warning!** 🚫 Prohibition   This product is only designed for use with surface radio control models. Do not use this for any other purpose.

**⚠ Warning!** ❗ Execution   If a Ni-Cd battery pack is used in the transmitter, be sure to charge it properly before use.
※ If the batteries are not fully charged, the model may run out of control.

**⚠ Warning!** ❗ Execution   Be sure to connect all equipment correctly.
※ If connections are loose, the model may run out of control.
※ Vibration may damage the servo and the model may run out of control.

**⚠ Warning!** ❗ Execution   Be sure to install the receiver with thick double-sided tape.
※ A strong shock or vibration may result in the model running out of control.

**⚠ Warning!** 🚫 Prohibition   Do not cut or bundle the antenna wire of the receiver with other wires.
※ This will result in decreasing the range of the receiver and may result in the model running out of control.

**⚠ Warning!** ❗ Execution   After installing the servo, please verify its operation and that unreasonable power is not consumed.
※ Damaging the servo and the loss of power while connected will result in the loss of control.

**⚠ Warning!** ❗ Execution   Be sure to use grommets on the servo to prevent it from directly
※ touching any metal or carbon plates.
The vibration may damage the servo and the model may run out of control.

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## Notes before installation

| ⚠Caution! | ❗ Execution | Be careful not to reverse the polarity of the transmitter and the receiver. Reverse polarity will damage the products. |
|---|---|---|
| ⚠Caution! | 🚫 Prohibition | Be sure to use genuine KO Propo products, e.g. transmitter, receiver, ESC, and other optional parts.<br>※We cannot assume any responsibility of the use of other manufacture's products with this product. |

## Notes on driving (sailing)

| ⚠Warning! | ❗ Execution | When turning on the power switch, be sure that the frequency channel is available and free of use.<br>※Models using the same frequency channel will run out of control. |
|---|---|---|
| ⚠Warning! | 🚫 Prohibition | Do not use this product in a thunderstorm.<br>※It is possible that lightning will strike the antenna. |
| ⚠Warning! | 🚫 Prohibition | Do not use the transmitter in the rain or in a location where water might get on it.<br>※The unit may become wet, which would cause a loss of control. |
| ⚠Warning! | 🚫 Prohibition | Do not run the model in the following places.<br>1. Near a radio control car circuit. (Within 3km)<br>2. Near people or on the road.<br>3. Near other real sized boats in water.<br>4. Near electrical wires and communication facilities.<br>※If the model were to run out of control, it would be very dangerous. |
| ⚠Warning! | 🚫 Prohibition | Do not run the model when you experience difficulties in concentration due to being tired,under medication or while intoxicated.<br>※The misjudgment may result in accidents. |
| ⚠Warning! | ❗ Execution | Be sure to extend the antenna of the transmitter to the full length.<br>※The emission of incorrect signals will cause the model to run out of control. |
| ⚠Warning! | 🚫 Prohibition | Do not allow any plastic parts to come in contact with fuel and exhaust.<br>※Doing so causes the risk of damage. |
| ⚠Warning! | ❗ Execution | Be sure to confirm that the model memory number matches the current model that you wish to use.<br>※Not doing so may cause the model to run out of control. |
| ⚠Warning! | ❗ Execution | When you make a change to a function, be sure to stop the engine or disconnect the motor lead wire. |
| ⚠Caution! | ❗ Execution | Always turn on the switch on the transmitter first, followed by the receiver.When turning off the system, always turn off the receiver first followed by the transmitter.<br>※If you do not follow the correct order, the receiver may get interference. |
| ⚠Caution! | ❗ Execution | Attach a frequency clip when you operate the unit.<br>※Display your frequency clearly to others. |
| ⚠Caution! | 🚫 Prohibition | Do not touch the engine, motor or ESC where heat is generated.<br>※May result in a serious burn. |
| ⚠Caution! | 🚫 Prohibition | Do not touch the antenna of the transmitter while in use, because it emits high-frequency energy. |

# Safety Notice

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## Notes on driving (sailing)

| **⚠Warning!** | 🚫 Prohibition | Do not leave the antenna for the transmitter down while it is turned on.<br>※The high frequency module will become very hot and may deform the case. |
| **⚠Warning!** | ❗ Execution | In the case of electric powered cars, make sure to disconnect the battery after it's used.<br>※If the switch is accidentally turned on, the model will run out of control. |
| **⚠Warning!** | ❗ Execution | When storing the transmitter, batteries and model should be kept out of the reach of children.<br>※This may result in damage and/or bodily injury from the chemicals |
| **⚠Caution!** | ❗ Execution | Make sure to disconnect the batteries from the transmitter when not in use for a long time.<br>※It may damage the transmitter if the fluids leak out of the batteries. |
| **⚠Caution!** | 🚫 Prohibition | Do not store the transmitter in the following places.<br>※Damage or misoperation may occur.<br>　1. Extremely hot or cold places (+40C, -10C)<br>　2. Direct sunlight<br>　3. Places with high humidity<br>　4. Subjecting it to vibrations<br>　5. Dusty places |

## Notes on handling batteries for the transmitter

| **⚠Danger!** | 🚫 Prohibition | Do not short the battery terminals.<br>※This may cause a fire or explosion. |
| **⚠Danger!** | 🚫 Prohibition | Never incinerate the batteries.<br>※This is very dangerous because the batteries will explode. |
| **⚠Danger!** | 🚫 Prohibition | Do not apply a big shock to the batteries.<br>※It may damage the battery, acid can leak, short circuit and possibly cause a fire. |

> ⚠ In the case of liquid leaking from the battery, avoid eye/skin contact with the liquid. Burns and blindness may occur.
> Apply large amounts of water and contact a doctor immediately for treatment.

| **⚠Danger!** | 🚫 Prohibition | Do not dismantle or modify the batteries.<br>※Dismantling the batteries may cause liquid to leak out and it is very dangerous. |
| **⚠Danger!** | 🚫 Prohibition | Do not get batteries wet and do not charge wet batteries.<br>※It may cause excessive heat build-up and damage. |
| **⚠Danger!** | 🚫 Prohibition | Do not charge dry cell batteries.<br>※Do not charge manganese, alkali or oxy ride dry cell batteries. There is a chance that these cells can explode and ignite. |

Abandonment of the electric batteries is considered
environmental pollution.
Please cooperate and dispose of used batteries
at collection and recycling centers.

Electric trim 2

Idle Up Lever

Button 2

Electric dial 4

Channel 2
Throttle Stick

Electric trim 6

ACC
Throttle Acceleration
Indicator

ABS
Throttle ABS
Indicator

IDLE UP
Idle Up Indicator

Strap hook

Electric trim 5

Button 1

Electric dial 3

Steering Preset Lever

Channel 1
Steering Stick

Electric trim 1

Enter Key

Back Key

Jog Dial

Plus Key

Minus Key

Power switch

Power indicator

**Antenna**
You can install and remove the antenna by turning it.

**⚠ Warning!** 🛑 Execution

The antenna firmly screws into the interior and is fixed.

※ A normal electric wave is not launched when the antenna rod
is loose and this will cause a loss of control.

**Carrying handle**

**RF Module**

**Multi Access Port**

**Battery hook**

**Charging**

Headphone
Terminal

D.S.C
(Direct
Servo
Control)
Terminal

**KO PROPO®**
Digital Proportional System

**Multi angle stick**
When the four screws are
loosened, the direction of the
stick can be adjusted to the
angle of your preference.
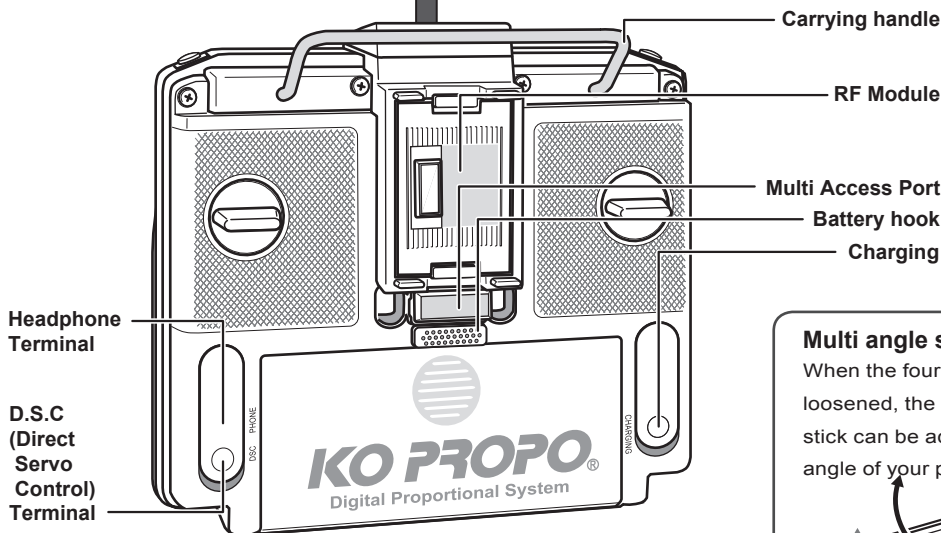
**⚠ Caution!** 🚫 Prohibition

Please note, not to loosen the machine screw of the multi angle stick (4)
too much.

※ If the machine screw is pulled out, internal parts will come off and it
becomes disjointed.

# Main Menu Screen Summary

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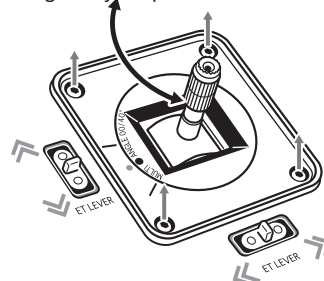
## When opening the main menu, this is the summary of the screens that are indicated.

After opening each screen, please read the respective reference page concerning the detailed operation method.

**Initial Screen**

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

**ENT**

**Enter Key**
**Back Key**
**Plus Key**
**Minus Key**
**Jog Dial**

MULTI CROSS DISPLAY

**Change Menu** P24
```
MENU
>MASTER
 CUSTOM1
 CUSTOM2
```
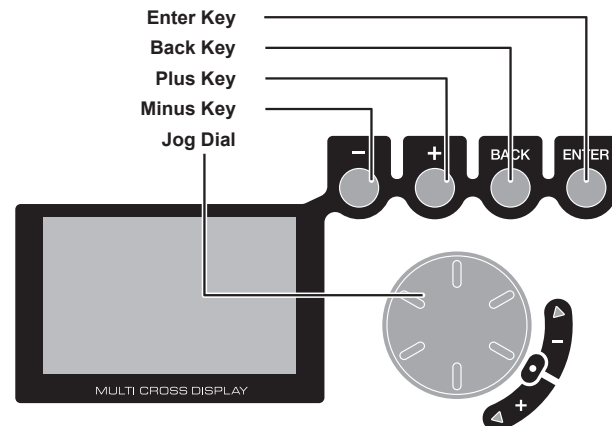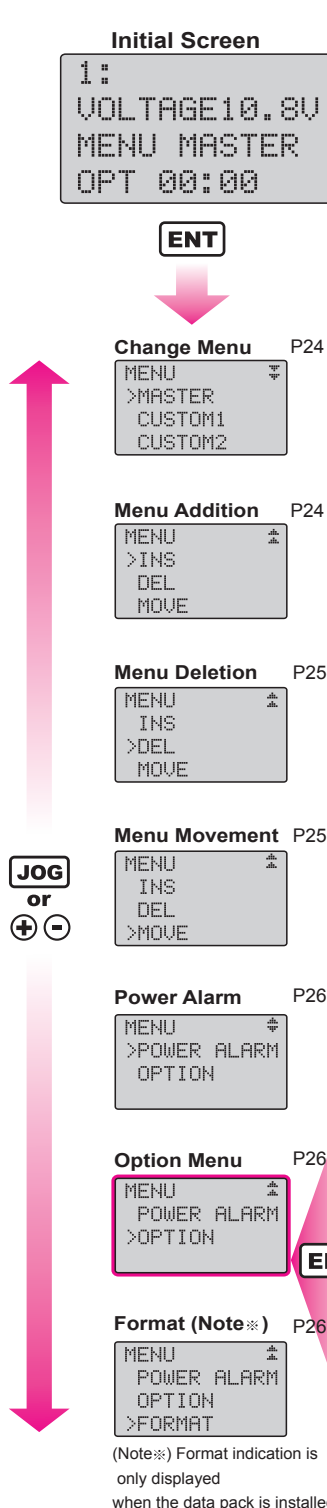
From the initial screen, the main menu opens by pressing the ENTER key.
In the main menu, there are 11 settings (note※) that can be performed.

**Menu Addition** P24
```
MENU
>INS
 DEL
 MOVE
```

Change Menu
Menu Addition
Menu Deletion
Menu Movement
Power Alarm
Option Menu : LCD Contrast : Setting : Buzzer Tone
Option Menu : Buzzer : Setting : Alarm Buzzer
Option Menu : Buzzer : Setting : Custom Tone
Format ( Note ※ )

**Menu Deletion** P25
```
MENU
 INS
>DEL
 MOVE
```

※ When the data pack is not installed, it is not indicated.

**Menu Movement** P25
```
MENU
 INS
 DEL
>MOVE
```

**JOG**
**or**
**⊕ ⊖**

To change to each screen, use either the jog dial, (+) or (-) keys.
To enter the respective screen, the ENTER key must be pressed.

**Power Alarm** P26
```
MENU
>POWER ALARM
 OPTION
```

**Option Menu** P26
```
MENU
 POWER ALARM
>OPTION
```
**ENT**

**Option Menu**

**Option Menu** P27
```
OPTION MENU
>CONTRAST
 BUZZER
 BACK LIGHT
```

**JOG**
**or**
**⊕ ⊖**

**Buzzer Setting** P27
```
OPTION MENU
 CONTRAST
>BUZZER
 BACK LIGHT
```
**ENT**

**Backlight** P29
```
OPTION MENU
 CONTRAST
 BUZZER
>BACK LIGHT
```

Option Menu **Buzzer Setting**

**Buzzer Tone** P27
```
BUZZER
>BUZZER TONE
 ALRM BUZZER
 CUSTOM TONE
```

**JOG**
**or**
**⊕ ⊖**

**Alarm Buzzer Setting** P27
```
BUZZER
 BUZZER TONE
>ALRM BUZZER
 CUSTOM TONE
```

**Custom Tone** P28
```
BUZZER
 BUZZER TONE
 ALRM BUZZER
>CUSTOM TONE
```

**Format (Note※)** P26
```
MENU
 POWER ALARM
 OPTION
>FORMAT
```
(Note※) Format indication is only displayed when the data pack is installed.

Opening the option menu shows three different settings.
Also, opening the buzzer setting allows for more settings.

**BACK** The 'BACK' key is pressed.  **ENT** The 'ENTER' is pressed.  **JOG** Jog dial operation  **⊕⊖** (+) and (-) keys are pressed.  **⊕⊖** Pressing and holding simultaneously the (+) and (-) keys. (Reset)

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**When opening the function menu, this is the summary of the screens that are shown.**

```
>MODEL SELCT
 ET:POSITION
 SUB:TRIM
 ABS
 TH:SPEED
 TH:PUNCH
 TH:CURVE
 TH:BRAKE
 TH:HIPOINT
 TH:PRESET
 TH:ACCEL
 ST:SPEED
 ST:PUNCH
 ST:CURVE
 ST:BALANCE
 ST:TRAVEL
 AUTO:START
 MODEL.COPY
 MODEL.NAME
 MEM.RESET
 ADJUST VR
 CH.SELECT
 REVERSE
 TRIM RATE
 SET UP
 UP TIMER
 DOWN TIMER
 LAP TIMER
```

**Model Select**
**ET Position**
**Sub Trim**
**A.B.S. (Active Brake System)**
**Throttle Speed**
**Throttle Punch**
**Throttle Curve**
**Throttle Brake**
**Throttle High Point**
**Throttle Preset**
**Throttle Acceleration**
**Steering Speed**
**Steering Punch**
**Steering Curve**
**Steering Balance**
**Steering Travel**
**Automatic Start**
**Model Copy**
**Model Name**
**Memory Reset**
**Adjust Volume**
**Channel Select**
**Reverse Switch**
**Trim Rate**
**Set Up**
**Up Timer**
**Down Timer**
**Lap Timer**

After opening each screen, please read the respective reference page concerning the detailed operation method.

From the initial screen, using the jog dial, (+) or (-) keys will open the function menu.
There are 37 different types of functions available.
(The 37 functions are only available from the MASTER menu.)

When CUSTOM 1 or CUSTOM 2 menu is selected, only the functions installed will be available.
Please refer to P16 and P24 for more detailed information of the menu settings.

```
 IDLE.UP
 ST:TR PRESET
 TILT.MIX
 3CH TRAVEL
 CH:3 POS
 BRAKE.MIX
 P.MIXING1
 P.MIXING2
 RESPONS
```

**Idle Up**
**Steering Travel Preset**
**Tilt Mix**
**Channel 3 Travel**
**Channel 3 Position**
**Brake Mixing**
**Program Mixing 1**
**Program Mixing 2**
**Response**

In the function menu you can use the jog dial, (+) or (-) key to navigate.

To select a function to change, press the ENTER key.

Model Select
```
MODEL SELCT
1>
2:
3:
```
P30

ET Position
```
ET1:ST TRIM
       0
ET2:TH TRIM
       0
```
P31

Sub Trim
```
SUB:TRIM
>ST       0
 TH       0
```
P32

A.B.S. (Active Brake System)
```
ABS
>WIDTH     0
 POS  B  60
 CYCLE    98
```
P33,34

Throttle Speed
```
TH:SPEED
>SPEED
 POSITION
 MODE
```
P35,36

Throttle Punch
```
TH:PUNCH
>F       0%
 B       0%
```
P37

Throttle Curve
```
TH:CURVE
>F       0%
 B       0%
```
P38

Throttle Brake
```
TH:BRAKE
      B 100
```
P39

Throttle High Point
```
TH:HIPOINT
      F 100
```
P40

Throttle Preset
```
TH:PRESET   ⬍
>ET1-ST TRIM
 ET2-TH TRIM
 ET3-BRAKE
```
P41

Throttle Acceleration
```
TH:ACCEL   ⬍
>WIDTH     0
 POS.LOW   5
 POS.HIGH 50
```
P42,43

Steering Speed
```
ST:SPEED
>SPEED
 POSITION
 MODE
```
P44,45

Steering Punch
```
ST:PUNCH
        0%
```
P46

Steering Curve
```
ST:CURVE
        0%
```
P47

Steering Balance
```
ST:BALANCE
 LEFT   70%
 RIGHT  70%
```
P48

Steering Travel
```
ST:TRAVEL
        100
```
P49

Automatic Start
```
AUTO:START ⬍
>START  OFF
```
P50

Model Copy
```
MODEL.COPY
 COPY TO  2
```
P51

Model Name
```
MODEL.NAME
1:_
```
P52

Memory Reset
```
MEMORY RESET
>NO
 YES
```
P53

Adjust Volume
```
ADJUST VR
>NO
 YES
```
P54

Channel Select
```
CH.SELECT
>SELECT  2CH
```
P55

Reverse Switch
```
REVERSE
>ST   REVERS
 TH   REVERS
```
P56

Trim Rate
```
TRIM.RATE
>ST TRIM  10
 TH TRIM  10
```
P57

Set Up
```
SET UP    ⬍
>ET1-ST TRIM
 ET2-TH TRIM
 ET3-BRAKE
```
P58

Up Timer
```
UP TIMER  ⬍
>ET1-ST TRIM
 ET2-TH TRIM
 ET3-BRAKE
```
P59

Down Timer
```
DOWN TIMER ⬍
>ET1-ST TRIM
 ET2-TH TRIM
 ET3-BRAKE
```
P60

Lap Timer
```
LAP TIMER ⬍
>ET1-ST TRIM
 ET2-TH TRIM
 ET3 BRAKE
```
P61

Idle up
```
IDLE.UP
        100
```
P62

Steering travel preset
```
ST:TR PRSET
>SET 1  100%
```
P63

Tilt mixing
```
TILT.MIX
>MIX     OFF
 CH1>3    0
 CH3>1    0
```
P64

Channel 3 travel
```
CH3:TRAVEL
>       +100
        -100
 STEP     0
```
P65

Channel 3 position
```
3CH POS
        0%
```
P66

Brake mixing
```
BRAKE.MIX  ⬍
>MIXING   OFF
 ABS      OFF
 PUNCH    OFF
```
P67,68

Program mixing 1
```
P.MIXING1  ⬍
>MIX      OFF
 MST.CH    ST
 SLV.CH    ST
```
P69

Program mixing 2
```
P.MIXING2  ⬍
>MIX      OFF
 MST.CH    ST
 SLV.CH    ST
```
P69

Response adjust
```
RESPONS
       ULTRA
```
P71

**ADVICE**

I cannot get to the initial screen!

● From any of the screens shown above, if you keep pressing the BACK key you will return to the initial screen.

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## Remove the battery box

First, the battery hook (①) is moved in direction of the arrow. Holding down 2, remove the battery box in the direction of the arrow.
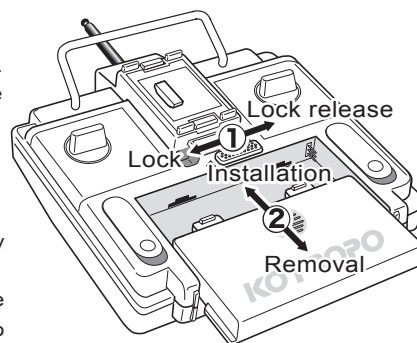
## Installing batteries

Eight AA size batteries are installed with the polarity of the battery matching the displayed polarity in the dry battery box.
When the direction of the terminal of the dry battery box and the terminal of the transmitter are lined up, push the battery box into the transmitter.

Slide the battery hook completely so it locks.

**⚠Warning!** Execution

When using dry cell batteries, never try to recharge them.
※ The transmitter will be damaged due to cells exploding and/or liquid acid corrosion.

**⚠Warning!** Execution
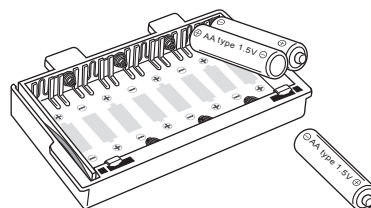
Do not use a rechargeable battery that is not a genuine KO product.
※ When a non-approved battery is used, the chance of gases being released from cells while charging can possibly corrode the inside of the transmitter.

- Please change the RF Module when changing the frequency band.
- Please change the crystals when changing the frequency band.
- Be sure to turn off the transmitter when you change the RF module or crystals.
- Insert the crystal properly.

The 40MHz band module included with the transmitter has passed the recommendation standard conformity verification test set by the Japanese radio control wave association.This being passed as a high frequency module, do not peel off the official conformity proof seal.

The 27MHz band module included with the transmitter has passed the recommendation standard conformity verification test set by the Japanese radio control wave association.

This being passed as a high frequency module, do not peel off the official conformity proof seal.

Lock release
Lock
Installation
Removal

**⚠Caution!** Prohibition

Install the battery box correctly.
※ If installed incorrectly, the battery box terminal can become damaged.

Crystal
RF (High Frequency) module
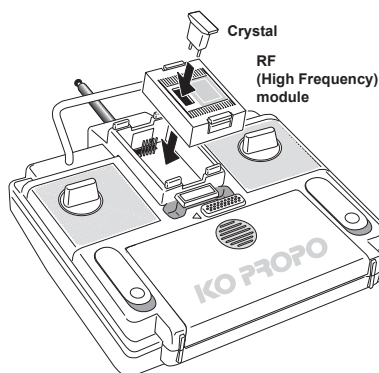
## Changing the RF module and Crystals

**⚠Warning!** Execution

Be sure to use genuine FM crystal sets (transmitter and receiver) made by our company.
※ When other manufacture's crystal sets are used, there are occasions when a frequency gap occurs and resulting in loss of control.

**⚠Caution!** Prohibition

Only the RF module for the ESPRIT III UNIVERSE can be used.

## Preparation

Insert dry cell battery or the battery pack into the transmitter. (P12)

※ Please be sure to charge battery pack before use.

ADVICE
● The battery pack will last longer if the crystal is pulled out or the RF Module is detached when only the transmitter needs to be operated.

● Also, when there is no management of the frequencies being used at a particular course, etc., it is advised to remove the crystal or the RF module to prevent conflicts with other vehicles. (Please refer to page 20 for the use of the DSC.)

## Switching the Power On

### In the case of the LCD contrast is too bright or too dark.    Reference P27

Open the main menu, open the OPTION menu and then open the CONTRAST menu and adjust.

### Changing the setting of the backlight for the LCD.    Reference P29

(The factory default for the backlight setting is [Auto].)

Open the main menu, open the OPTION menu and then open the BACK LIGHT menu to change the setting.

### Changing the pitch of the buzzer beep or change the melody.    Reference P27,P28

Open the main menu, open the OPTION menu and then open BUZZER menu to set up.

### Changing the operating response mode.    Reference P71

Open the function menu, go to the RESPONSE menu and perform the setting change.

### Changing the function assignment of the ET lever or BT button.    Reference P58

Open the function menu and go to SET UP.

### If the buzzer sound takes a while to come on and you want to adjust it.    Reference P26

The setting of the POWER ALARM in the main menu is accessed. The factory default setting for the alarm to sound when the unit is not operated is 3 minutes.

### Changing menu list when the Jog Dial, (+) or (-) keys are operated.    Reference P17

Other then the MASTER menu, you can customize the function menu displayed with either CUSTOM1 or CUSTOM 2.

You can insert, delete and prioritize which functions are displayed with the custom menu.

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**Usage of the transmitter**

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**Main menu**

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## Concerning the memory operation.

Resetting a specific model memory to the factory default setting.

Select MEM.RESET from the function menu and press enter.

(Current model memory will be reset.)

Transferring a model memory setting to another model memory.

Select MEM.RESET from the function menu and press enter.

(Current model memory will be reset.)

Select MODEL.COPY form the function menu and press enter.

## When using the optional data pack.

This unit comes with model memory numbers 1-9. With the data pack, you will have up to 25 model memories to use. Please execute the FORMAT function in the main menu when you use the data pack.

(The FORMAT function only appears in the main menu when the data pack is installed.)

## Using the optional setting features that are sold separately.

Setting up without emitting a signal from the transmitter.

The DSC function can be used by connecting the DSC cable

(option) to the DSC port. (D.S.C. = Direct Servo Controller)

## Listing all the functions used for the set up.

Storing more then 25 model memory data.

Creating a custom tone with a PC.

Using the adapter interface for the MAP (Multi Access Port) along with the PC interface (option), settings from the transmitter will be displayed and can be saved.

**Communication adaptor**

**Data pack**
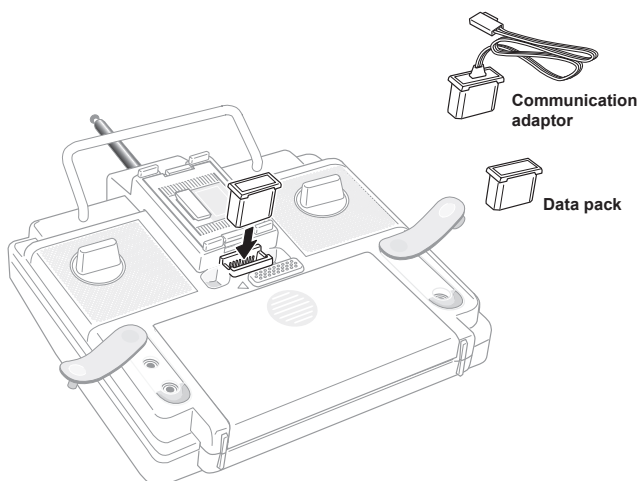
This product allows simple operation with the use of three items, jog dial, enter and back keys.
Along with all the setting functions available, the adoption of the custom menu feature allows for more simplicity while navigating the menu.

## Key Names

**LCD Screen**
**Enter Key**
**Back Key**
**Plus Key**
**Minus Key**
**Jog Dial**

- + BACK ENTER

MULTI CROSS DISPLAY

## Initial Screen Names

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

**Preset model memory number**
**and model name**
**Power supply voltage**
**Menu list that has been selected**
**Operation timer (amount of time in-use)**
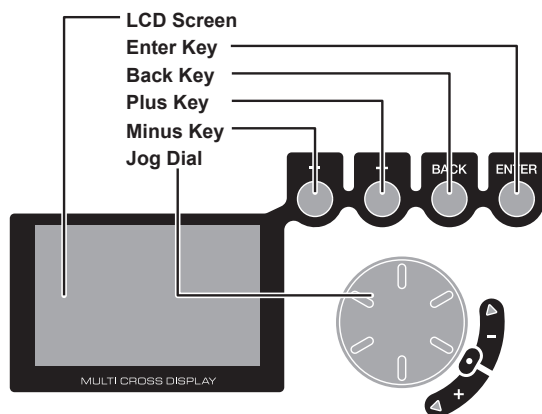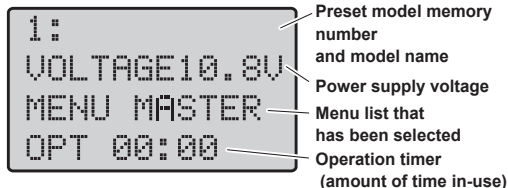
To operate each key, press on it. The LCD will change with each key's use or by rotating the jog dial left or right.

### From the initial screen

Enter key: The main menu opens when 'ENTER' is pressed.
Back key: Nothing happens.
+, - keys: The function menu opens.
Jog dial: The function menu opens.
Pressing + and - keys at the same time: Resets operation timer.

## Function of keys besides the initial screen

Enter key: Used mainly to select and to decide.

Back key: Used mainly when you cancel or want to return to the previous screen.

+, - keys: Used to increase or decrease a movement or a set value.

Jog Dial: Can be used like the + and ? keys for quicker operation.

Pressing + and - keys at the same time: Resets a value. (However cannot be used with all functions.)

## Main Menu

● This menu is opened when the 'ENTER' key is pressed from the initial screen.

● Settings performed in this menu relate to the entire system setting. The content set in this
menu is not independent for each model memory.

**Page mark**

```
MENU
>MASTER
 CUSTOM1
 CUSTOM2
```
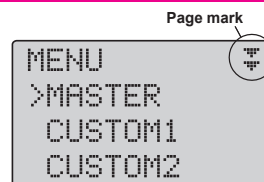
※About the Page Mark  This information is not only displayed in the main menu but can also be found in the function menu.

There is more content in the display below.      There is more content in the display above and below.

## Function Menu

● This menu opens when either the Jog Dial, (+) or (-) keys are pressed from the initial screen.
The position in the menu that was selected last is remembered only while the power is turned on.

● The content for each model memory number can be set. Although there are many functions, the number of displayed functions that are shown can be altered with the use of the CUSTOM menu feature (P16). (Change Menu System)

```
>MODEL SELCT
 ET:POSITION
 SUB:TRIM
 ABS
```

# Changing the Menu
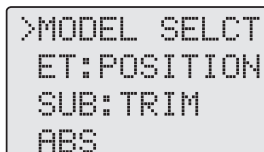
In this unit, there are a lot of functions available and not all will be used all the time.
Hence, the newly developed 'Change Menu System' has been installed.
This system was made so that you are able to quickly call up more commonly used functions by switching the Menu listed in the resister.

## Change Menu

By registering the function contents into CUSTOM1 or CUSTOM2, the function menu displayed becomes a very easily manageable system to navigate.
Functions can be added/deleted and placed in the order that you would like for quick and easy access.
For instance, CUSTOM1 can have a lot of the functions that you would use for practice and CUSTOM2 would have only the functions that you would use for a race.

● Switching the menu setting can easily be made with three actions.
● If the MASTER menu is used, all functions are displayed.
● Unregistered item functions are still effective. (Just not displayed.)

## Change Menu Procedure

The figure is a setting example when using the MASTER menu.
You must register items in the menu for CUSTOM1 beforehand.
(Please refer to P24 'CUSTOM1 initial condition' for the content of the menu.)

**1** Pressing the 'ENTER' key from the initial screen to display the main menu.

**2** MASTER, CUSTOM1 and CUSTOM2 are the three menu items that are displayed on the first screen of the main menu. Select the item that you want by using the Jog Dial, (+) or (-) keys and then press 'ENTER'.

**3** The display screen returns to the initial screen. The name of the menu option selected is changed and displayed.

MASTER is used

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
ENT

```
MENU
  MASTER
 >CUSTOM1
  CUSTOM2
```
JOG or ⊕ ⊖
ENT

Changed to CUSTOM1

```
1:
VOLTAGE10.8V
MENU CUSTOM1
OPT 00:00
```

**The example displayed shows the switch from MASTER to CUSTOM1.**

BACK The 'BACK' key is pressed. ENT The 'ENTER' is pressed. JOG Jog dial operation ⊕⊖ (+) and (-) keys are pressed. ⊕⊖ Pressing and holding simultaneously the (+) and (-) keys. (Reset)

Please refer to the main menu P24 for detailed operation methods concerning additional editing for each menu.

**ADVICE** I cannot get to the initial screen!
● Whatever the display screen is on, it will return to the initial screen if you keep pressing the 'BACK' key.

**ADVICE** Cannot select CUSTOM2!
● CUSTOM2 cannot be selected from the factory default settings because there are no items registered. It can be used if you register or add items into the menu. (Menu Addition P24)

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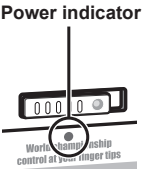
## About the display of each indicator.

ACC ● TH.ACCEL INDICATOR

ABS ● ACTIVE BRAKE SYSTEM INDICATOR

IDLE ● IDLE UP INDICATOR

**Power indicator**

Workmanship control at your finger tips

The three indicators (other than power indicator) will flash regardless of a set value when is turned on with the ET lever and a button.
Even if a function is not working effectively it will also flash when ON.

**Throttle Acceleration Indicator**
When throttle acceleration (P43) is activated, it will flash. Also, if the function to turn
On/Off the feature is allocated to an ET lever and a button, it will flash.

**Throttle A.B.S. Indicator**
When throttle A.B.S. (P34) is activated, it will flash. Also, if the function to turn On/Off of the throttle acceleration is allocated to an ET lever and a button, it will flash.

**Idle up indicator**
When throttle Idle up lever is positioned up (meaning activated), the indicator flashes.

**Power indicator**
When the power is turned on, it lights up. When it flashes, the voltage has dropped below 9V.
 (Battery Alarm)

## About the Alarm Display

**Battery Alarm**

BATTERY
ALARM

9.0V

This is displayed when the power supply voltage has dropped to 9V or less. The display of 'BATTERY ALARM' will flash.
The power indicator will also flash. The alarm buzzer will sound  (sound modification is possible P27). Also the

1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00

backlight compulsorily is turned off.
'VOLTAGE' on the LCD will continue to flash even if you return to the initial screen.

After returning to the initial screen, the flashing voltage and flashing power indicator will be cancelled after 1 minute.

**Data Pack Error**

DATA PACK
ERROR !!

This is displayed when there is something wrong with the Data Pack while in use.
DATA PACK ERROR!! will flash.
After any key is operated, Model 0 is displayed.

0:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
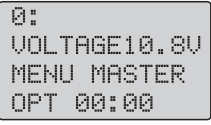
Please view the model selection (P30) concerning the indication of model memory 0.

**Memory Error**

MEMORY
ERROR

When a malfunction occurs while accessing the memory, this will be displayed.
MEMORY ERROR will flash.
After any key is operated, model memory  (memory 1)

1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00

and the factory default settings will appear.
If the power is turned on again and it is normal, the settings will be the original settings.

If this message does appear frequently, discontinue its use and send it to our service department for repairs.

**Power Alarm**
The transmitter alarm will sound when there is no operation exceeding the set time.
The factory default setting is 3 minutes. The time can be set from the Main Menu: Power Alarm (P26).
The sound of the alarm can also be set from the Main Menu: Buzzer (P27)

# D.S.C. (Direct Servo Control)

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This transmitter has the D.S.C function built inside to allow you to check and verify settings of your vehicle without emitting a radio wave. In order to use this function, the D.S.C cable (sold separately) is necessary.

**1** Turn off the power switch of the transmitter and connect the D.S.C. cable to the D.S.C. terminal.
※Please insert correctly. The power supply of the transmitter becomes unstable if there is a loose connection and a memory error might occur.

**2** The power supply of the transmitter automatically turns on once the D.S.C. is inserted.
※However, since the power is not supplied to the RF module of the transmitter, radio waves will not be emitted from the transmitter.

**D.S.C. Cable**

**3** The other side of the D.S.C. cable is connected to the receiver. (The crystal of the receiver should be removed prior to connecting the cable.)
Be sure to connect this cable to the battery channel of the receiver.

The receiver can now be used.
※Please note the operation mode when using a receiver other then the supplied receiver that came with this unit. Please review P71 concerning the operation mode.
※Only genuine KO PROPO products will work with this feature.

### For Engine Cars
※You will need to connect a twin connector or "Y" type of harness to connect the power supply and the D.S.C. cable to the battery channel. (The servos will not work if the power is not connected.)

### For Electric Cars
The servo will not operate if the power supply is not connected to the ESC.
※Please remove the motor wires while in operation to prevent the possibility of the car from moving suddenly.

**D.S.C. Cable**

**Receiver
KR-302F**
FS and FSC are included

**4** Once you are finished using the D.S.C., turn off the receiver side first and then the D.S.C. jack should be removed.
※Removing the transmitter side first will result in the servo moving rapidly and possibly damaging it.
※D.S.C. compatible receivers: KR-297FZ (discontinued) / KR-301F / KR-302F
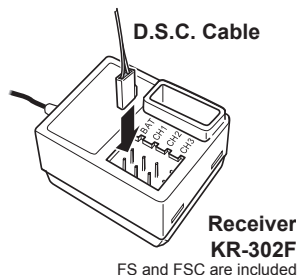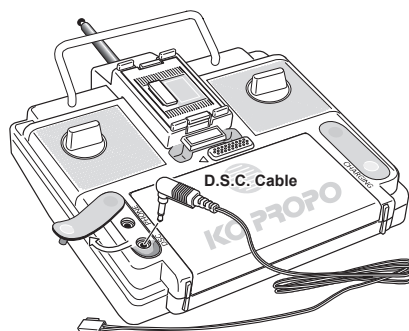
### Using the D.S.C.

Be sure to remove the receiver crystal. (Malfunction will occur.)

Make sure not to turn on the transmitter when connected.

The radio waves will be emitted from the transmitter as soon as you remove the D.S.C. jack if the transmitter is turned on.

Be sure that the transmitter is OFF when using the D.S.C.

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The multi access port offers a new method of installing, exchanging and editing of setting.
The Data Pack and the ICS communication adapter can be used through the multi access port.

## Multi Access Port

**Data pack**

The 9 model memory in the transmitter can be expanded to a total of 25 using the optional Data Pack.

### I. C. S. is our two-way communication system (Interactive Communication System)

Two-way communication is possible by connecting a PC to the transmitter with the optional interface kit. Using the software for the interface kit, settings of the transmitter can be edited in the PC and the data can be saved regardless of the number of model memory.

# Data Pack

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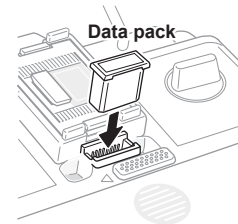
Nine-model memory is the standard memory for this transmitter. However, it is possible to add another 16 model memories with the use of the Data Pack (option). The Data Pack is connected to the Multi Access Port.

## ● Using the Data Pack

The power switch of the transmitter should be OFF when detaching or attaching the Data Pack.
Slowly push it into the Multi Access Port of the transmitter.
(The connector pins on the transmitter can be damaged if inserted with force.)
The Data Pack will be recognized automatically if installed correctly.
However, it is necessary to format the Data Pack before it is used.
Please format it from the main menu under the 'FORMAT' function.

## ● Format (initialization)

**1** From the Main Menu ('ENTER' key form the initial screen), use the Jog Dial, (+) or (-) keys to scroll down to the end of the menu to find the 'FORMAT' function. (Please note that this will not be displayed when the Data Pack is not installed.)

```
MENU
 POWER ALARM
 OPTION
>FORMAT
```
ENT
```
DATAPACK
     FORMAT?
>NO
 YES
```

JOG or ⊕ ⊖

**2** Pressing the 'ENTER' key while on the 'FORMAT' function, "DATA FORMAT?" will be displayed. Move the cursor to YES and press the 'ENTER' key to start formatting. The status of the format is displayed.

```
DATAPACK
     FORMAT?
 NO
>YES
```
ENT

**3** Once it has finished, 'COMPLETE' will flash on the screen. The screen will return to the menu once any key is pressed.
※You can confirm that the model memory has increased if "MODEL SELECT" (P30) is selected from the function menu.

Please note that all content is deleted when Data Pack that has already been formatted.

```
DATAPACK
     FORMATNG
 [..      ]
```
```
DATAPACK
     FORMAT

 COMPLETE!!
```

## ● Note on Data Pack usage

Please note that all contents of the Data Pack will be deleted once it has been formatted.
The model memory in the Data Pack is displayed as a sign of the alphabet from A-P.
If it is necessary to remove the Data Pack and the model memory that is currently being used is A-P, please return the model memory number to 1-9 before turning off the transmitter and removing the Data Pack. Data Pack error will be displayed if the memory was set to A-P and not installed. A model memory 0 will appear in its place.
The following are two methods of returning to the normal display.

**1** The content of model memory 0 is a backup of the model memory that was previously shown from the Data Pack.
Copy the content to the model memory currently displayed using the "MODEL COPY" function (P51). The model memory will change to the assigned model memory number.

**2** The display of model memory 0 will not be possible to return to once you have selected the "MODEL SELECT" function (P30). The content of the memory will be lost. Please refer to Model Select (P30) for further details.
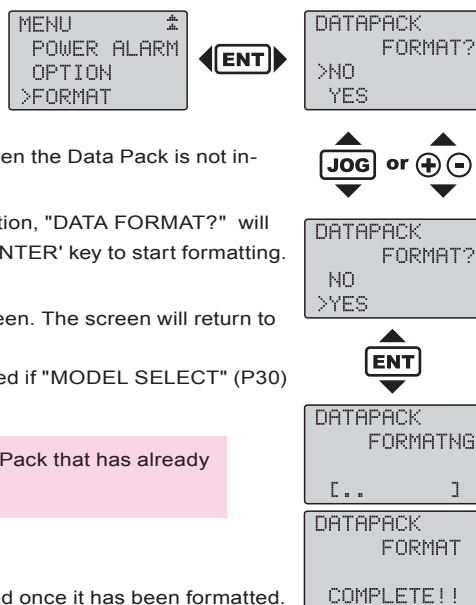
Model Memory A
```
A:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

Data Pack Error
```
DATA PACK
   ERROR !!
```

Model Memory 0
```
0:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

BACK The 'BACK' key is pressed. ENT The 'ENTER' is pressed. JOG Jog dial operation ⊕ ⊖ (+) and (-) keys are pressed. ⊕⊖ Pressing and holding simultaneously the (+) and (-) keys. (Reset)

The sub trim is a convenient function, but when the procedure is performed incorrectly the settings become rather complicated. Please use the sub trim with the correct procedure.
Please refer to the sub trim (P34) about the method of using this function.

## Purpose of Sub Trim

Normally a servo is installed after it has been connected to the receiver and the neutral setting is confirmed on the transmitter.
Sometimes the car will not necessarily run straight and thus the neutral position must be corrected on the steering servo. Also the throttle servo installed in a gas car must have the neutral position set correctly for the carburetor.

Originally, the function to correct the neutral position is called the "trim". However, the correction made by the trim is not only adjusted for centering the servo, but for also compensating for a tweaked chassis, uneven tire wear, etc.
The problem occurs when this is corrected with the normal trim.
Using the steering wheel trim to make a car run straight changes the end points for the steering movement.
For a gas car the throttle trim used, the position of the maximum amount of brake or throttle movement is changed.
The trim usually is used as a method to call the "Center Trim" and only a central position (neutral).

However, if you are trying to correct neutral position by using the center trim, this may also cause a problem for other settings.
To help in setting the neutral position of the servo we have provided the Sub Trim feature.
With the center trim and sub trim, a reasonable setting can be obtained when using them together.

※Sub Trim can be called up from the function menu. The steering trim can be allocated to the ET lever from the 'SET UP' function.
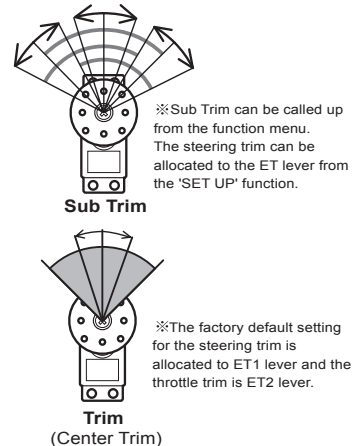
**Sub Trim**

## Center Trim

The figure to the right (top) shows the setting of the Sub Trim.
When the Sub Trim is moved, the total travel is also move according to the center position and thus the end point will change.

※The factory default setting for the steering trim is allocated to ET1 lever and the throttle trim is ET2 lever.

**Trim**
(Center Trim)

On the other hand, if the Center Trim is moved, the end points do not change for the total travel movement.
However, adjusting the neutral position with a large value using the center trim will make the right and left balance become more or less in either direction.

## Actual Setting Order

**1** Set up your linkage to try to make the servo as close to neutral as possible and then perform the Sub Trim operation. If the Sub Trim value is set to a large value, please try setting it up again.

**2** Try testing the movement and verify it is at neutral. You can also try correcting it again with the Sub Trim if you need to. Once the neutral setting is confirmed, the right and left end points should be adjusted with the 'STEERING BALANCE' (P58) and the overall travel should be adjusted with the 'STEERING TRAVEL' (P49).

**3** Adjusting the neutral position during an actual race or practice should be corrected with the Trim (Center Trim). If the Trim (Center Trim) value starts to become large, readjust the Sub Trim but make sure to reset the Trim value back to 0.

**ADVICE**
● When setting up the car before running, use the Sub Trim without using the Trim (Center Trim).
● Install the servo and horn correctly to try to make the Sub Trim value as small as you can.
● If the neutral setting changes while running, correct it by using the Trim (Center Trim).

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## Earphone Terminal

The buzzer sound can be clearly heard by using the earphone jack.

A commercially available 3.5mm earphone for radios can be used.

 (Monotype can be used. Using a stereotype, only one side will be heard.)

This is useful when you cannot hear the buzzer sound due to other outside noises. The buzzer sound can be heard from the transmitter even when the earphone jack is connected.

## About charging (only for suggested battery packs)

Connect an AC wall charger or DC 12V charger (KO PROPO products) as shown in figure.

The charging time for a low battery is usually 14-16 hours using the AC wall charger.

**Charge plug**
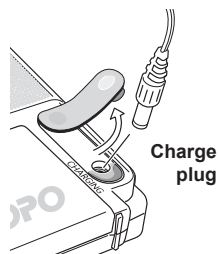
## About discharging a battery pack

Please note the battery pack cannot be discharged using charging jack.

Please remove the battery pack from the transmitter for discharging.

## Corresponding chart is classified by mode.

The corresponding products used in the Ultra High Speed correspond to the Advanced High Speed corresponding products.

● Compatible

✕ Incompatible

| | Nomal Response | Super High Speed Response | Advanced High Speed Response |
|---|---|---|---|
| **Receiver** | | | |
| KR-297FZ ※ | ● | ✕ | ✕ |
| KR-301F ※/ FS | ● | ● | ✕ |
| KR-302F ※/ FS | ● | ● | ● |
| **Analog servo** | | | |
| PS-712FET ※ | ● | ✕ | ✕ |
| PS-713FET ※ | ● | ✕ | ✕ |
| PS-401 | ● | ✕ | ✕ |
| PS-2173FET | ● | ● | ✕ |
| PS-2174FET | ● | ● | ✕ |
| PS-2113FET ※ | ● | ● | ✕ |
| PS-2133FET ※ | ● | ● | ✕ |
| **Digital servo** | | | |
| PDS-2123FET ※ | ● | ● | ● |
| PDS-2143FET ※ | ● | ● | ● |
| PDS-2144FET ※ | ● | ● | ● |
| PDS-947FET ※ | ● | ● | ● |
| PDS-2343FET | ● | ● | ● |
| PDS-2344FET | ● | ● | ● |
| PDS-8044 ICS | ● | ● | ● |
| PDS-949 ICS | ● | ● | ● |
| PDS-2363 ICS | ● | ● | ● |
| PDS-2364 ICS | ● | ● | ● |
| PDS-763 ICS | ● | ● | ● |
| PDS-764 ICS | ● | ● | ● |
| PDS-3014 ICS | ● | ● | ● |
| PDS-2413 ICS | ● | ● | ● |
| PDS-2367 ICS | ● | ● | ● |
| PDS-2368 ICS | ● | ● | ● |
| **ESC (Electronic Speed Controller)** | | | |
| EZ-1000 | ● | ● | ● |
| KSC-1000FR ※ | ● | ● | ● |
| KSC-1100FR ※ | ● | ● | ● |
| KSC-1200F ※ | ● | ● | ● |
| VFS-2000/J ※ | ● | ● | ● |
| VFS-1 PRO/ J | ● | ● | ● |
| VFS-2 | ● | ● | ● |
| VFS-FR | ● | ● | ● |
| VFS-1 PRO Competition ※ | ● | ● | ● |
| VFS-1 PRO C2 | ● | ● | ● |
| **Others** | | | |
| Fail Safe Adapter (FSA-1) | ● | ● | ✕ |

※ **Information at the end of production. (Production finalization was about 2006 September.)**

This is the menu displayed when the 'ENTER' key is pressed from the initial screen.

```
1:
VOLTAGE10.8V     ENT ▶   MENU         ↕     ENT ▶   1:
MENU MASTER             >MASTER               VOLTAGE10.8V
OPT 00:00        ◀BACK    CUSTOM1               MENU MASTER
                          CUSTOM2               OPT 00:00
```
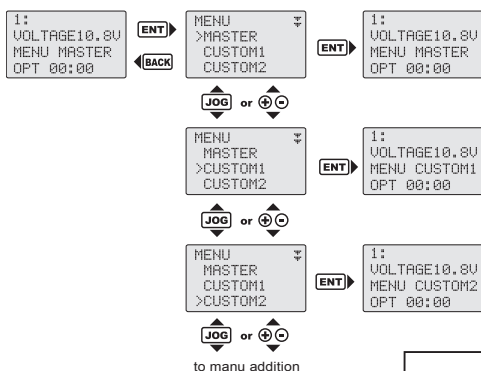
The initial screen in the main menu becomes the change menu system screen. MASTER, CUSTOM1 and CUSTOM2 are the displayed names of the menu screen respectively.

JOG or ⊕ ⊖

```
MENU         ↕     ENT ▶   1:
MASTER                      VOLTAGE10.8V
>CUSTOM1                    MENU CUSTOM1
CUSTOM2                     OPT 00:00
```

Moving the cursor is performed by using the Jog Dial, (+) or (-) keys.

JOG or ⊕ ⊖

```
MENU         ↕     ENT ▶   1:
MASTER                      VOLTAGE10.8V
CUSTOM1                     MENU CUSTOM2
>CUSTOM2                    OPT 00:00
```

Pressing the 'BACK' key will return you to the initial screen.

JOG or ⊕ ⊖

to manu addition

※ If the menu displayed is blinking, it is not registered in the function menu and cannot be selected.
※ In the factory default setting, only the function menu registered is the CUSTOM1 menu.
※ In the factory default setting, CUSTOM2 menu is empty. (This cannot be selected until a function is registered.)

**Factory default setting CUSTOM1**

| | |
|---|---|
| MODEL | ST:BALANCE |
| SELECT | ST:TRAVEL |
| SUB TRIM | MODEL NAME |
| TH:CURVE | REVERSE |
| TH:BRAKE | SET UP |
| TH:HIPOINT | RESPONS |
| ST:CURVE | |

BACK The 'BACK' key is pressed.  ENT The 'ENTER' is pressed.  JOG Jog dial operation  ⊕ ⊖ (+) and (-) keys are pressed.  ⊕⊖ Pressing and holding simultaneously the (+) and (-) keys. (Reset)

## Menu Addition

Adding a function to the menu list. You are able to add a function to CUSTOM1 and CUSTOM2.
(You cannot add to the MASTER menu.)

JOG or ⊕ ⊖

```
MENU         ↕     ENT ▶
>INS
DEL          ◀BACK
MOVE
```
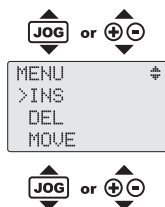
### Menu Name Selection

Select the menu name that you wish to add a function to.
Move the cursor to either CUSTOM1 or CUSTOM2 using the Jog Dial, (+) or (-) keys and press the 'ENTER' key.

```
MENU INSERT
>CUSTOM1
 CUSTOM2
```

Selected CUSTOM1

JOG or ⊕ ⊖

### Function Name Selection

Using the Jog Dial, (+) or (-) keys, select the function name that you would like to add and press the 'ENTER' key.

```
CUSTOM1 INS
>SUB:TRIM
 MODEL SELCT
 ET:POSITION
```

Selected SUB:TRIM

The function names that can be added to the menu are listed to the right. However, once a function is registered it will no longer be displayed.

| | | | | |
|---|---|---|---|---|
| MODEL SELCT | TH:HIPOINT | AUTO:START | SET UP | 3CH POS |
| ET:POSITION | TH:PRESET | MODEL.COPY | UP TIMER | BRAKE MIX |
| SUB:TRIM | TH:ACCEL | MODEL.NAME | DOWN TIMER | P.MIXING1 |
| ABS | ST:SPEED | MEM.RESET | LAP TIMER | P.MIXING2 |
| TH:SPEED | ST:PUNCH | ADJUST VR | IDLE UP | RESPONS |
| TH:PUNCH | ST:CURVE | CH.SELECT | ST:TR PRESET | |
| TH:CURVE | ST:BALANCE | REVERSE | TILT MIX | |
| TH:BRAKE | ST:TRAVEL | TRIM RATE | CH3:TRAVEL | |

### Selecting the Position

Decide the position where the function will be listed in the menu by using the Jog Dial, (+) or (-) keys and press the 'ENTER' key. The insertion will be fixed and the screen will return to the selection of the function name.

```
CUSTOM1 INS
  ET:POSITION
↕ SUB:TRIM
  MODEL SELCT
```

SUB:TRIM has been selected on this screen. It tries to insert SUB:TRIM after ET:POSITION on this screen.

```
MODEL SELCT
ET:POSITION
SUB:TRIM
```

This becomes the order. (Displayed above)

You can repeat and continually add functions from the same screen. Press the 'BACK' key to exit this feature. (Or you can return to the initial screen by pressing and holding at the same time the 'ENTER' and 'BACK' keys.)

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This is the menu displayed when the 'ENTER' key is pressed from the initial screen.

## Menu Deletion

Deleting a function from the menu list.

Functions in CUSTOM1 and CUSTOM2 can be deleted. (Functions in the MASTER menu cannot be deleted.)

### Select the Menu

Select the name of the menu that you wish to delete a function from.

Using the Jog Dial, (+) or (-) keys, move the cursor to the menu and press the 'ENTER' key.

```
MENU DELETE
>CUSTOM1
 CUSTOM2
```

In this picture,
CUSTOM1 is selected.
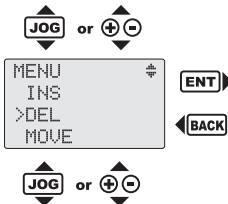
### Select the Function Name.

Move the cursor with the use of the Jog Dial, (+) or (-) keys.

Select the function name to delete and press the 'ENTER' key.

Once this is performed you can continue to delete functions from this screen.

```
MENU      ⬍
 INS
>DEL
 MOVE
```

`[ENT]` `[BACK]`

`[JOG]` or ⊕⊖

```
CUSTOM1 DEL
 MODEL SELCT
>ET:POSITION
```

In this picture,
ET:POSITION is selected.

You can repeat and continually delete functions from the same screen.

Press the 'BACK' key to exit this feature. (Or you can return to the initial screen by pressing and holding at the same time the 'ENTER' and 'BACK' keys.)
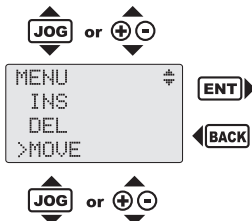
### Moving a Menu Function

The order that the functions are displayed in the menu can be changed. CUSTOM1 and CUSTOM2 menus can be edited.

(MASTER menu cannot be edited.)

```
MENU      ⬍
 INS
 DEL
>MOVE
```

`[ENT]` `[BACK]`

`[JOG]` or ⊕⊖

```
MENU MOVE
>CUSTOM1
 CUSTOM2
```

In this picture,
CUSTOM1 is selected.

### Menu Name Selection

Select the menu to be edited.

Move the cursor using the Jog Dial, (+) or (-) keys and select either CUSTOM1 or CUSTOM2 and press the 'ENTER' key.

```
CUSTOM1 MOVE
>MODEL SELCT
 ET:POSITION
 SUB:TRIM
```

In this picture,
MODEL SELCT is selected.

### Select the Function Name

Move the cursor using the Jog Dial, (+) or (-) keys and select the function name and press the 'ENTER' key.

### Selecting the Position

Decide where you would like to have the function placed within the menu using the Jog Dial, (+) or (-) keys and press the 'ENTER' key. The screen will return to the function names to be selected for movement.

```
CUSTOM1 INS
 SUB:TRIM
⬍MODEL SELCT
 ET:POSITION
```

In this picture,
MODEL SELCT is inserted
after SUB:TRIM.

```
ET:POSITION
SUB:TRIM
MODEL SELCT
```

After the function is
positioned,
it will look like
the figure above.

You can repeat and continually move functions from the same screen.

Press the 'BACK' key to exit this feature.

(Or you can return to the initial screen by pressing and holding at the same time the 'ENTER' and 'BACK' keys.)

This is the menu displayed when the 'ENTER' key is pressed from the initial screen and scrolled down.

### Power Alarm

This is the power alarm setting. If the transmitter is not operated within the listed time, the alarm will sound.

### Alarm Setting

To change the setting use the Jog Dial, (+) or (-) keys.

The smallest initial value is OFF, minimum amount of time is 1 minute; maximum amount of time is 5 minutes. To set the time, press 'ENTER' or 'BACK' keys to return to the main menu display.



JOG or ⊕⊖

MENU   ↕
>POWER ALARM
 OPTION

ENT

BACK

POWER ALARM
        3m

JOG or ⊕⊖

Three minutes are set on this screen.
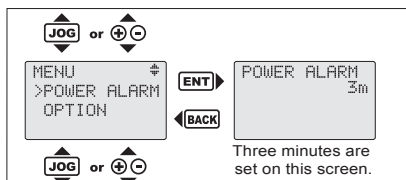
The power alarm is an effective function to remind you that the transmitter has been left on. The alarm will sound (when the transmitter has not been operated for the set time) to remind you to turn off the transmitter.

| Initial value | Minimum amount | Maximum amount | Interval |
|---|---|---|---|
| 3 minute | 1 m / minutes | 1 m / minutes | 1 minutes |

### Option Menu

Open the option menu.

In the option menu, you can adjust the LCD contrast and other features.

The display for the option menu changes as shown in the figures below.



MENU   ↕
 POWER ALARM
>OPTION

ENT

BACK

After the option menu is opened, using the jog dial, (+) or (-) keys will move the cursor.

OPTION MENU
>CONTRAST
 BUZZER
 BACK LIGHT

JOG or ⊕⊖

OPTION MEN
 CONTRAST
>BUZZER
 BACK LIGHT

JOG or ⊕⊖

OPTION MEN
 CONTRAST
 BUZZER
>BACK LIGHT
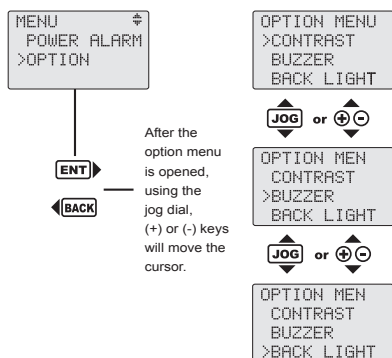
**①** The LCD contrast can be changed. (Please refer to P27 for further details.)

**②** Buzzer setting. There are additional sub menu items for this function.  (Please refer to P27 for further details.)

**③** Backlight setting. (Please refer to 29 for further details.)

### Format

This is the menu to initialize the Data Pack. This menu appears when the Data Pack has been detected by the system and is not displayed when not detected.



MENU
 POWER ALARM
 OPTION
>FORMAT

ENT

BACK

DATAPACK
    FORMAT?
>NO
 YES

JOG or ⊕⊖

DATAPACK
    FORMAT?
 NO
>YES

ENT

[ . ] will be increased

DATAPACK
    FORMATNG

[..      ]

DATAPACK
    FORMAT

COMPLETE!!

Flash "COMPLETE!!"
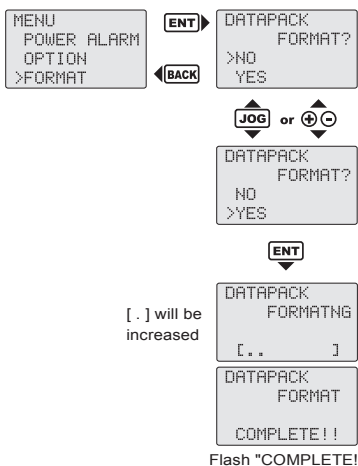
Data currently in the Data Pack is deleted when formatting it. Data cannot be retrieved even if it is formatted by mistake. Selecting "YES" confirms that you want to execute the format.

**①** To format, select YES/NO with the cursor and press the 'ENTER' key.

**②** When "YES" is selected by pressing the 'ENTER' key, the status of the Data Pack is displayed.

**②** COMPLETE!! will be displayed and flashing when the formatting is complete. The display screen will return to the menu once any key is pressed.

Please format a new Data Pack before using it.

## CONTRAST (LDC Contrast)

Adjusting the contrast of the LCD display.

Using the Jog Dial, (+) or (-) keys to adjust the contrast of the LCD. You can adjust the contrast to eight different levels.

```
OPTION MENU
>CONTRAST
 BUZZER
 BACK LIGHT
```
ENT ◀BACK
```
LCD CONTRAST

[ ||||||||    ]
```
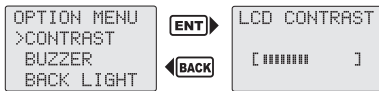
Adjusting the contrast to a very light setting (for warm room temperatures and low outdoor temperatures) may cause the character display to be faint. Please adjust accordingly.

```
OPTION MENU
 CONTRAST
>BUZZER
 BACK LIGHT
```
ENT ◀BACK
```
BUZZER
>BUZZER TONE
 ALRM BUZZER
 CUSTOM TONE
```
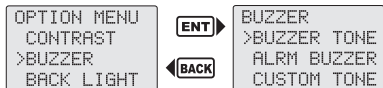
### BUZZER

**1** The tone pitch of the buzzer is adjusted. The tone pitch of the alarm and other functions are changed.

**2** Listing the buzzer tone(s) that are assigned to various functions and features in the transmitter.

**3** You can create or edit your own tone to be used.

### BUZZER TONE

```
BUZZER TONE

+:TONE UP
-:TONE DOWN
```
JOG or ⊕⊖
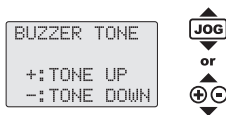
**1** Use the Jog Dial, (+) or (-) keys to adjust the interval pitch of the buzzer sound.

**2** Pressing the 'ENTER' key on a listed item will change the cursor. Once the cursor changes use the Jog Dial, (+) or (-) keys to change the setting assignment.

```
BUZZER
 BUZZER TONE
>ALRM BUZZER
 CUSTOM TONE
```
ENT ◀BACK
```
ALRM BUZZER
>UP.T    SYS
 LAP.T   SYS
 DOWN.T  SYS
```
ENT ◀BACK
**Up Timer**
```
ALRM BUZZER
*UP.T    SYS
 LAP.T   SYS
 DOWN.T  SYS
```
JOG or ⊕⊖
```
ALRM BUZZER
*UP.T    CS1
 LAP.T   SYS
 DOWN.T  SYS
```

JOG or ⊕⊖

```
ALRM BUZZER
 UP.T    SYS
>LAP.T   SYS
 DOWN.T  SYS
```
**Lap Timer**

```
ALRM BUZZER
 UP.T    SYS
 LAP.T   SYS
>DOWN.T  SYS
```
**Down Timer**

```
ALRM BUZZER
>POWER   SYS
 BATTERY SYS
 STARTUP SYS
```
**Power Alarm**

```
ALRM BUZZER
 POWER   SYS
>BATTERY SYS
 STARTUP SYS
```
**Battery Alarm**

```
ALRM BUZZER
 POWER   SYS
 BATTERY SYS
>STARTUP SYS
```
**Start up**

| SYS : System default tone |
| CS1 : Custom Tone 1 |
| CS2 : Custom Tone 2 |
| CS3 : Custom Tone 3 |
| CS4 : Custom Tone 4 |
| CS5 : Custom Tone 5 |
| CS6 : Custom Tone 6 |

| Up Timer | Up Timer Up |
|---|---|
| Lap Timer | Lap Timer Up |
| Down Timer | Lap Timer Down |
| Power Alarm | Power Alarm (Alarm) |
| Battery Alarm | Battery Alarm (Alarm) |
| Startup | Startup (When starting) |

The sounds assigned to various functions can be selected from 7 different stored sounds. Create your own personal melodies with the 6 available custom tones. (Please refer to P28.) There are no tones stored in CS1~CS6 with the factory default setting.

## Custom Tone Editor

```
BUZZER
 BUZZER TONE
 ALRM BUZZER
>CUSTOM TONE
```
**ENT ▶**
**◀ BACK**

```
CUSTOM TONE
>CUSTOM1
 CUSTOM2
 CUSTOM3
```
**JOG**
**or**
**⊕ ⊖**
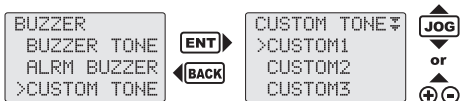
**1** Using the Jog Dial, (+) or (-) keys the cursor can be moved to one of the six custom tones to be customized. (Number Selection)

**ENT**

Back to select number **◀ BACK**

```
CUSTOM1
 1
 …
```
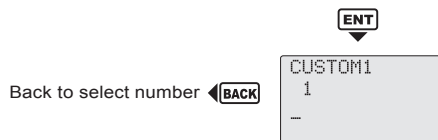
**2** This example we will select custom tone 1 where there is no data.
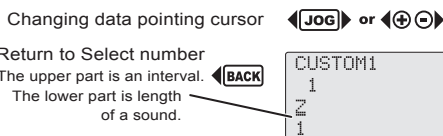
Changing data pointing cursor  **◀ JOG ▶ or ◀ ⊕ ⊖ ▶**

Return to Select number
The upper part is an interval.
The lower part is length of a sound.
**◀ BACK**

```
CUSTOM1
 1
 Z
 1
```

**3** Using the Jog Dial, (+) or (-) keys, select the pitch of the sound that will assign and press the 'ENTER' key. (A~Z 26 musical scale. Please look below for the actual sound.)

**ENT**

Return to select number **◀ BACK**

```
CUSTOM1
 1
 Z
 1
```

**4** Using the Jog Dial, (+) or (-) keys, select the pitch of the sound that will assign and press the 'ENTER' key. (A~Z 26 musical scale. Please look below for the actual sound.)

**ENT**

Display the position of sounds now.
Return to Select number
**◀ BACK**

```
CUSTOM1
 2
 Z_
 1
```
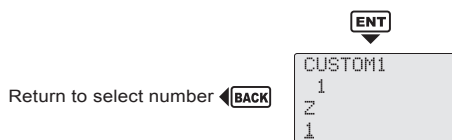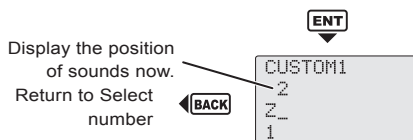
**5** When the 'ENTER' key is pressed, the cursor will move to the next sound and simultaneously the sound, which is inputted, will be played back. Also, when the 'ENTER' key is pressed the sounds that have been inputted will be played back in its entirety. (When the cursor position is not blank, the cursor will move to the next data decision.)

※To reset the input and clear the cursor press (+) and (–) keys simultaneously.

Pitch and length interval of the sound are indicated below.

**Pitch of Sound**

| Pitch Name | G | A♭ | A | B♭ | B | C | C♯ | D | E♭ | E | F | F♯ | G | A♭ | A | B♭ | B | C | C♯ | D | E♭ | E | F | F♯ | G | A♭ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LCD Indication | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |

When the LCD display shows · (point) this is a long silence.

**Length of Sound**

| Note | | | | | | | | |
|---|---|---|---|---|---|---|---|
| LCD Indication | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

LCD Indication
The length of each note is fixed, tempo becomes ♩ =120

**The input example**

```
CUSTOM1
 9
FHJ·FHJ·_
44444444
```

29

## BACK LIGHT

Setting the backlight method.
Choose 'AUTO' or 'OFF'.

ON: The backlight lights up when
the power is switched on.

AUTO: When any key or lever
is operated, the backlight will
automatically activate. When
any key or lever is not operated
(approx 3 seconds), the backlight
will go off.
The factory default setting is set
to AUTO.

OFF: The backlight setting is
always off.

```
OPTION MENU
 CONTRAST
 BUZZER
>BACK LIGHT
```
ENT ▶
◀ BACK

```
BACK LIGHT

       AUTO
```
ENT ▶
BACK ▶

◀ JOG ▶  or  ◀ ⊕ ⊖ ▶

```
BACK LIGHT

       AUTO
```
ENT ▶
BACK ▶

◀ JOG ▶  or  ◀ ⊕ ⊖ ▶

Setting will change
when you pushed
Enter Key or Back key.

```
BACK LIGHT

       OFF
```
ENT ▶
BACK ▶
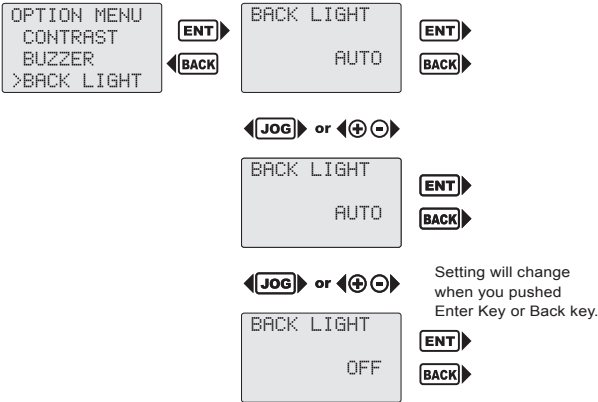
Setting of 'AUTO' will activate the backlight when navigation keys are pressed,
ET levers are used and BT buttons are pressed.  The backlight will not turn on
when the steering or throttle is used.

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# Model Select

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## Selecting the model memory to use.

This transmitter will allow the use of 9 different model memories to be used.

Using the Data Pack (sold separately) in this transmitter will allow the use of up to 25 model memories.

### [How to open the setup screen]

BACK The 'BACK' key is pressed.   ENT The 'ENTER' is pressed.   JOG Jog dial operation   ⊕⊖ (+) and (-) keys are pressed.   ⊕⊖ Pressing and holding simultaneously the (+) and (-) keys. (Reset)

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to move the cursor in the menu list to "MODEL SELECT" and press the 'ENTER' key.

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

```
>MODEL SELCT
 ET:POSITION
 SUB:TRIM
 ABS
```

**2** In the model selection screen, use the Jog Dial, (+) or (-) keys to move the cursor to the model memory number to be used.

```
MODEL SELCT
1>
2:
3:
```

**3** Once moving the cursor to the model memory to be used, press the 'ENTER' key and you will be returned to the initial screen.

**4** When the 'BACK' key is pressed, the model selection is not changed and you are returned to the initial screen.

● You can assign a model name to each of the model memories. (Maximum of 10 characters.)

● Model memory numbers 1~9. For the Data Pack, letters A~P are assigned instead of numbers. (Model Naming reference P52)

● This is convenient for assigning a model memory to each car being used.

● You can have multiple model memories saved for one car for different courses.

> **⚠Caution!** 🚫 Prohibition    If the model memory is changed while operating a car, it may become out of control.
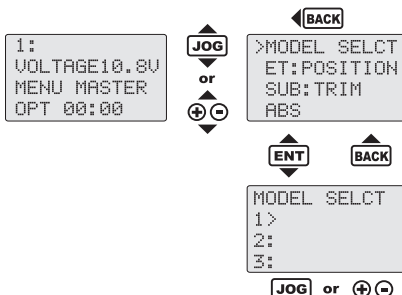
## About Model Memory 0 (Zero)

When model memory 0 is indicated it is due to the following operation.

**1** Using a model memory, which is stored in the Data Pack, the transmitter is turned off and the Data Pack is removed.

**2** While using a model memory saved in the Data Pack and the Data Pack is removed.

In this case, the model memory presently being used cannot be stored in the current location because the Data Pack has been removed from the transmitter and model memory 0 does not exist and the data will be lost.

Perform the following procedure to reset this to a usable model memory number. If this procedure is not performed, the next time the transmitter is turned on model memory 0 will be indicated.

★ Change the model memory to another model memory number.
   (Contents of model memory 0 will be lost.)

★ Use the Model Copy function (refer to P51) to copy the contents of model memory 0 to another model memory number. After the copy, the model memory will be restored.

**ADVICE**

● Memory of the model memory is limited by the contents that are set with the function menu.

● If you cannot set every model memory, please refer to the main menu function settings. (P24)

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## Verifying the current position of the ET levers.

Verify the function name and the current setting to which the ET lever setting is set to.

The display screen will show the values and adjustment cannot be made from this screen.

### [How to open the setup screen]

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to move the cursor in the menu list to "ET: POSITION" and press the 'ENTER' key.

**2** From the "ET:POSITION" screen, use the Jog Dial, (+) or (-) keys to scroll up or down to see the assigned functions for each ET lever.

**3** Pressing the 'BACK' key will return you to the initial screen.
(Pressing the 'ENTER' key will not do anything.)

● To change the assignment of the ET lever, use the "SET UP" function. (Refer to P58).

● When the function assigned to an ET lever is pressed, the automatic display will activate.

## AUTO DISPLAY (Automatic Display)

## DIRECT SET (Direct Setting Control)

**When the lever, which a function is assigned to, is operated, the contents are automatically displayed.**
If a function is assigned to an ET lever, the operational contents are displayed automatically if the lever is operated.

### [Sample]

```
AUTO DISPLAY
 ET1-ST TRIM
      R   1
```

When ET1 is operated, the steering trim is displayed as the factory default.

```
AUTO DISPLAY
 ET4-TRAVEL
       100
        99%
```

When ET3 is operated, the steering travel is displayed as the factory default.

> After the activation of the lever and it is not operated for approximately 3 seconds, the screen will return to the previous screen displayed.
> After the activation of the lever, pressing the 'BACK' key will return you to the previous screen displayed.

● While in the "MAIN MENU" (reference P24) the automatic display is non-operational.

● While in the "SET UP" function (reference P58) the automatic display is non-operational.

● When operating the ET lever that is set for the steering trim and the steering stick is turned all the way to the end point, the steering balance setting will be called up.  This short cut is called the "DIRECT SET".

● The direction that the steering is applied to will allow the setting of that direction shown by an asterisk next to the "LEFT" or "RIGHT" on the display screen.

```
DIRECT SET
ST:BALANCE
 LEFT    70%
*RIGHT   71%
```

**ADVICE**

● The function is indicated with a % (percentage) of the amount of travel to be used as a ratio, which is different from the previous screen display of the steering balance.

```
AUTO DISPLAY
 ET4-TRAVEL
         0
        99%
```

(Example)   0  has been set to the steering travel.

In this example, operating the steering will yield no movement.

# Subtrim

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## When the linkage for the servo used on the steering and throttle cannot set the servo to the neutral position, use this to center the servo.

Before running, set the center of the servo with the sub trim and then adjust the end points using the steering balance.

While practicing or racing, use the trim (center trim) to adjust the servo. Using the trim will not change the end points for the left or right.

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

```
MODEL SELCT
ET:POSITION
>SUB:TRIM
 ABS
```
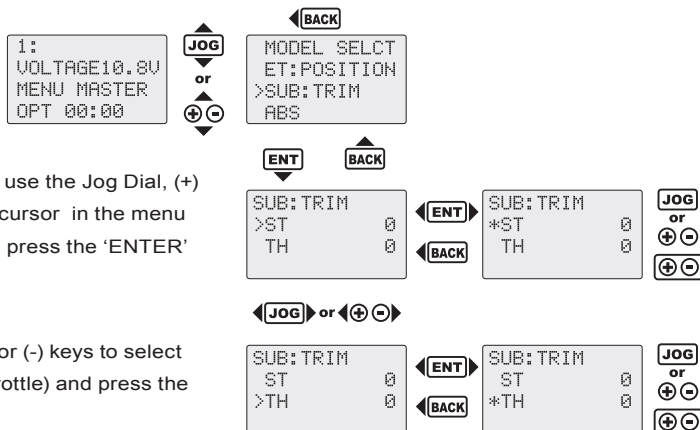
**1** From the initial screen, use the Jog Dial, (+) or (-) keys to move the cursor in the menu list to "SUB:TRIM" and press the 'ENTER' key.

```
SUB:TRIM
>ST      0
 TH      0
```

```
SUB:TRIM
*ST      0
 TH      0
```

**2** Using the Jog Dial, (+) or (-) keys to select ST (steering) or TH (throttle) and press the 'ENTER' key.

```
SUB:TRIM
 ST      0
>TH      0
```

```
SUB:TRIM
 ST      0
*TH      0
```

**3** The cursor will change and using the Jog Dial, (+) or (-) keys to change the value.

**4** To reset the value to 0, press and hold simultaneously the (+) and (-) keys.

**5** Pressing the 'BACK' key will return you to the original screen.

**6** Pressing this again will return you to the initial screen.

● The sub trim adjustment maybe necessary for steering and throttle adjustment for a gas car to set the neutral position. Usually, you adjust the position with the linkage that is connected to the servo horn, but sometime the neutral setting is not possible and the sub trim function is used.

● The difference between sub trim and trim is not just the center position of the servo. But the entire angle of movement is changed. Using trim, only the center position is adjusted (Neutral) and the position of the end points for the movement of the servo angle is not changed while the sub trim does change the end points.

**Sub trim**          **Trim (Center Trim)**
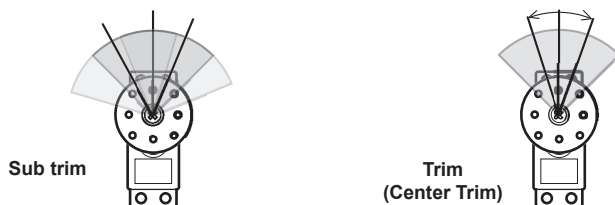
**1** Please refer to page 23 "the usage of the trim and the sub trim" along with this section.

● When the numerical value of the sub trim becomes large, please recheck your linkage and try to have this setting as close to 0 as possible. If the sub trim value is too large, the steering or throttle operation may have more movement in one direction depending on the end point setting.

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**Locking the brakes by using a pumping action is effective when the brakes begin to fade.**
As a result, you can reach a point to where the cornering of the car will become smoother.

## [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG or ⊕⊖

◀BACK

```
MODEL SELCT
ET:POSITION
SUB:TRIM
>ABS
```

ENT▶ / ◀BACK

```
ABS        ⊼
>WIDTH      0
 POS    B  60
 CYCLE     98
```

◀ENT▶ / ◀BACK

```
ABS
*WIDTH      0
 POS    B  60
 CYCLE     98
```

JOG or ⊕⊖ / ⊕⊖

JOG or ⊕⊖

```
ABS        ⊼
 WIDTH      0
>POS    B  60
 CYCLE     98
```

◀ENT▶ / ◀BACK

```
ABS
 WIDTH      0
*POS    B  60
 CYCLE     98
```

JOG or ⊕⊖ / ⊕⊖

JOG or ⊕⊖

```
ABS        ⊼
 WIDTH      0
 POS    B  60
>CYCLE     98
```

◀ENT▶ / ◀BACK

```
ABS
 WIDTH      0
 POS    B  60
*CYCLE     98
```

JOG or ⊕⊖ / ⊕⊖

JOG or ⊕⊖

```
ABS        ⊥
>DELAY      0
 DUTY - ▮▮ +
```

◀ENT▶ / ◀BACK

```
ABS        ⊥
*DELAY      0
 DUTY - ▮▮ +
```

JOG or ⊕⊖ / ⊕⊖

JOG or ⊕⊖

```
ABS        ⊥
 DELAY      0
>DUTY - ▮▮ +
```

◀ENT▶ / ◀BACK

```
ABS        ⊥
 DELAY      0
*DUTY - ▮▮ +
```

JOG or ⊕⊖ / ⊕⊖
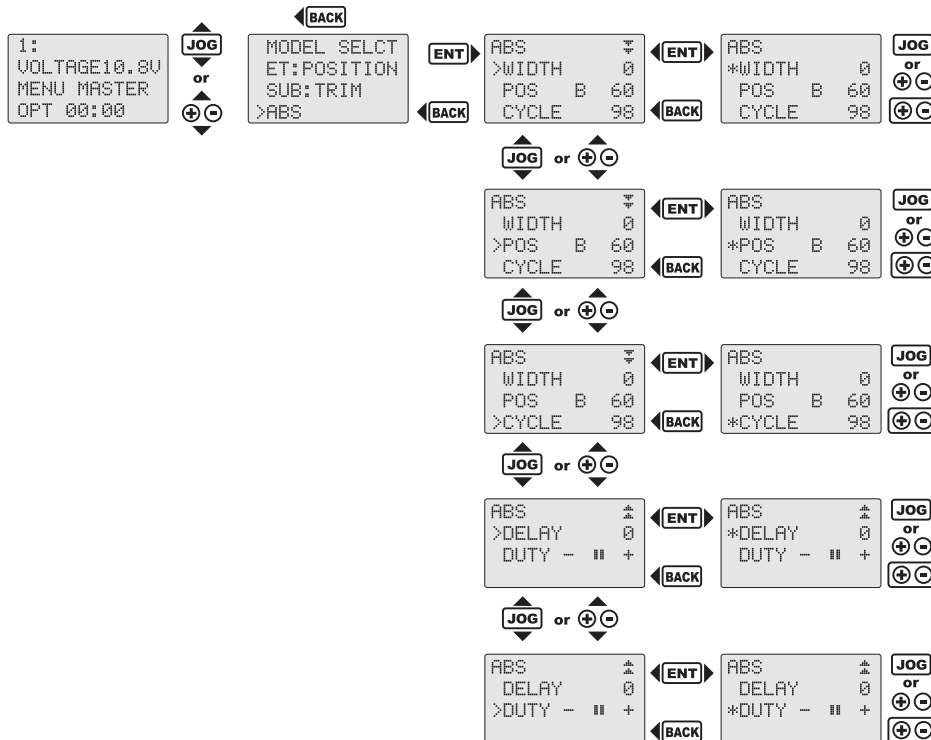
**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter into the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "ABS".

**3** Pressing the 'ENTER' key will display the setting screen.

● The ABS indicator will flash when the ABS function is activated.

● You can adjust five parameters in the ABS function.

● The maximum brake quantity is decided with the throttle brake setting. (Reference P39)

# A.B.S. (Active Brake control System) -2

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## ABS Width and Position

● The quantity, which performs the pumping of the ABS, is set.

● The quantity of where the servo actually operates the ABS according to the throttle trigger position and the width setting. The designated maximum width setting operation is 100. This is the operating movement of the servo to and from the initial position. When the width setting is small, movement to and from the initial position is small.

● The setting of the position is the engagement of the servo into this function.

● When the position is set to 100 or the width set to 0, the ABS is turned off. (LED is off.) Also, when the ABS is set to a button and the button is not pressed, the LED will go off.



Setting
ABS.WIDTH    50
ABS.POS      30
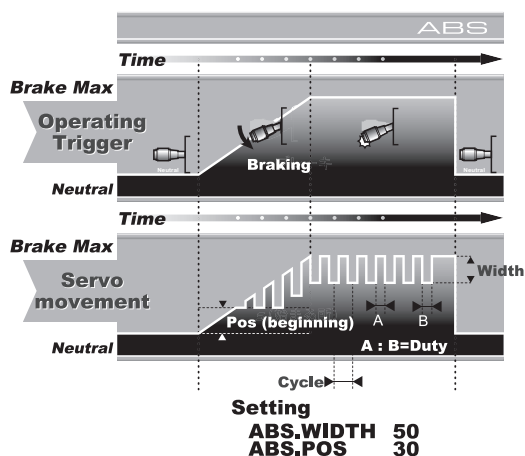
## ABS Cycle

The period of the pumping operation is set.

If the value is large, the servo operation is fast and the period is short.

A setting of a large numerical value will operate the servo using a larger amount of current. Consequently, there are times when the life of the servo can be shortened depending on the setting and usage.

## ABS Delay

Set a delay for the engagement of the ABS function.

If the ABS is not effective by itself, this will apply a strong brake action before the engagement of the ABS.

## ABS Duty

Set a ratio of the time to brake and the time to release the brake in 7 stages.

**ADVICE**

● In the case of an electric car, it would probably be easier to understand by temporarily connecting a servo in the place of the esc in the throttle channel.

● If the ABS is not effective by itself, this will apply a strong brake action before the engagement of the ABS.

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## The rate of the throttle reaction is slowed down.

This change allows for the slowing down of the signal to the throttle to make the control of the car easier.

### [How to open the setup screen]

```
TH:SPEED
  MODE   1WAY
```

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
Initial screen

**JOG** or ⊕⊖

```
ET:POSITION
SUB:TRIM
ABS
>TH:SPEED
```
Function menu

**ENT** / **BACK**

```
TH:SPEED
>SPEED
 POSITION
 MODE
```
TH SPEED

**JOG** or ⊕⊖

```
TH:SPEED
 SPEED
 POSITION
>MODE
```

**ENT** / **BACK**

```
TH:SPEED
  MODE   2WAY
```

**JOG** or ⊕⊖

```
TH:SPEED
  MODE   3WAY
```

**Setup of SPEED and POSITION will change on setup of MODE.**

MODE 1WAY →
```
TH:SPEED
>SPEED
 POSITION
 MODE
```
**ENT** / **BACK**
```
TH:SPEED
>Turn     100
 Return    100
```

**In 1way.can not select POSITION.**

MODE 2WAY →
```
TH:SPEED
>SPEED
 POSITION
 MODE
```
**ENT** / **BACK**
```
TH:SPEED
>L.Turn  100
 L.Return100
```
**ENT** / **BACK**
```
TH:SPEED
*L.Turn  100
 L.Return100
```
**JOG** or ⊕⊖

**JOG** or ⊕⊖

```
TH:SPEED
>M.Turn  100
 M.Return100
```
**ENT** / **BACK**
```
TH:SPEED
*M.Turn  100
 M.Return100
```
**JOG** or ⊕⊖

```
TH:SPEED
 SPEED
>POSITION
 MODE
```
**ENT** / **BACK**
```
TH:SPEED
>POS1     30

 TH.POS:L
```
**JOG** or ⊕⊖

The setting indication of the "TH.POS" is change by a position of stick that you can verify.

```
TH:SPEED
*POS1     30

 TH.POS:H
```
**JOG** or ⊕⊖

MODE 3WAY →
```
TH:SPEED
>SPEED
 POSITION
 MODE
```
**ENT** / **BACK**
```
TH:SPEED
>L.Turn  100
 L.Return100
```
**ENT** / **BACK**
```
TH:SPEED
*L.Turn  100
 L.Return100
```
**JOG** or ⊕⊖

**JOG** or ⊕⊖

```
TH:SPEED
>M.Turn  100
 M.Return100
```
**ENT** / **BACK**
```
TH:SPEED
*M.Turn  100
 M.Return100
```
**JOG** or ⊕⊖

**JOG** or ⊕⊖

```
TH:SPEED
>H.Turn  100
 H.Return100
```
**ENT** / **BACK**
```
TH:SPEED
*H.Turn  100
 H.Return100
```
**JOG** or ⊕⊖

```
TH:SPEED
 SPEED
>POSITION
 MODE
```
**ENT** / **BACK**
```
TH:SPEED
>POS1     30
 POS2     100
 TH.POS:L
```
**ENT** / **BACK**
```
TH:SPEED
*POS1     30
 POS2     100
 TH.POS:L
```
**JOG** or ⊕⊖

**JOG** or ⊕⊖

```
TH:SPEED
 POS1     30
>POS2     100
 TH.POS:L
```
**ENT** / **BACK**
```
TH:SPEED
 POS1     30
*POS2     100
 TH.POS:L
```
**JOG** or ⊕⊖

```
TH:SPEED
 POS1     30
*POS2     100
 TH.POS:L
```
```
TH:SPEED
 POS1     30
*POS2     100
 TH.POS:H
```

The setting indication of the "TH.POS" is change by a position of stick that you can verify.

## Throttle Speed

When controlling the throttle quickly, the car might be out of control.

Using the throttle speed can limit the operational speed of the throttle.

The throttle speed function allows you to set the "SPEED", "POSITION" and "MODE".

The "MODE" setting will allow for different setting for the "SPEED" and "POSITION".

This function will effect the forward stick action. It does not affect the brake control.

## MODE (Mode)

1 WAY, 2 WAY and 3 WAY are the three selection types.

1 WAY: The entire range in the throttle speed control is affected.

2 WAY: The range in the throttle speed control is divided into two ranges.

3 WAY: The range in the throttle speed control is divided into three ranges.

## POSITION (Position)

The point, which divides the range where the speed is set, is assigned.

Position 1 will always be the same or smaller then position 2.

The numerical value starts at 100, which is the usual reaction speed, and any lower value will reduce the reaction speed of the servo.

## SPEED (Speed)

★ The ET lever can be used to set the speed settings of the three ranges. (P58 SET UP)

※ When the "TH:SPEED" is set to 100%, the ET lever can be used.

★ You can assign the function to be turned on/off with the use of the ET lever or BT button.

※ The same effect is applied to an engine car and an electric car using an ESC.
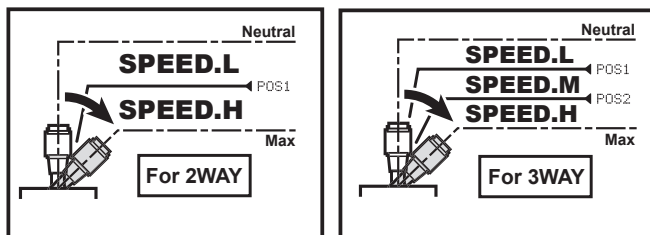


**ADVICE**

● The same effect is applied to an engine car and an electric car using an ESC.

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## Adjusting the throttle initial reaction to become quicker.

This allows for the throttle advancement side and the brake side to be adjusted.

### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG or ⊕⊖

BACK

```
SUB:TRIM
 ABS
 TH:SPEED
>TH:PUNCH
```

ENT
BACK

```
TH:PUNCH
>F      0%
 B      0%
```

ENT
BACK

```
TH:PUNCH
*F      0%
 B      0%
```

JOG or ⊕⊖
⊕⊖

JOG or ⊕⊖

```
TH:PUNCH
 F      0%
>B      0%
```

ENT
BACK

```
TH:PUNCH
 F      0%
*B      0%
```

JOG or ⊕⊖
⊕⊖
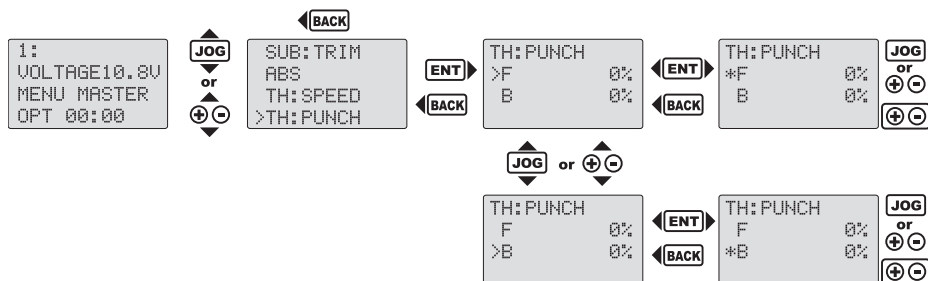
When push "ENTER" at each item. the cursor change to ✛

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to open the function menu and move the cursor to "TH:PUNCH" and press the 'ENTER' key.

**2** Using the Jog Dial, (+) or (-) keys select F (advancement side) or B (brake side) with the cursor and press the 'ENTER' key. Using the Jog Dial, (+) or (-) keys you can adjust the value. To reset the value to 0%, press and hold simultaneously the (+) and (-) keys.

**3** Pressing the 'BACK' key or the 'ENTER' key returns you to the previous screen. Pressing the 'BACK' key again will take you back to the function menu list.

※ Please note, the setting value of the throttle punch is in proportional to the initial movement. Using a combination of other settings can make the throttle react like a switch between two points.

※ When using this combined with the ABS function, please check the movement carefully before use.

Throttle Punch

Servo Movement

100 Setting
50 Setting
0 Setting

Stick operation

Neutral    Half    Full Throttle

**ADVICE**
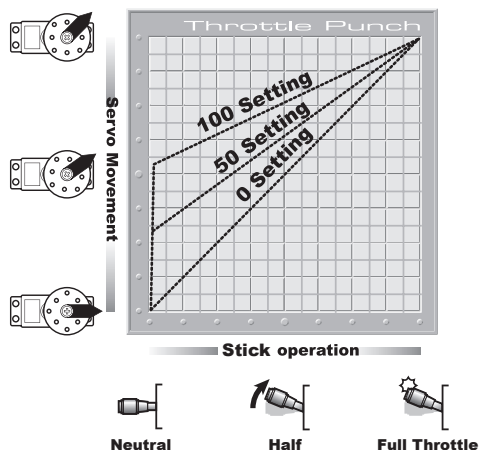
● This function is useful in canceling out the time lag of clutch engagement in a gas car.

● In a gas car, the engagement of the brake can be strengthened with this setting.

● For electric power cars using an ESC, the initial forward and brake punch is also effective.

# TH CURVE (Throttle Curve)

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## Throttle operation will have a curve (exponential) to the servo operation.

Throttle operation will have a curve (exponential) to the servo operation.

The throttle operation can be made quick or mild by applying a curve (expo) to the signal.

This can also be applied to the brakes.

### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG or ⊕⊖

```
ABS
 TH:SPEED
 TH:PUNCH
>TH:CURVE
```

BACK
ENT
BACK

```
TH:CURVE
>F        0%
 B        0%
```

ENT
BACK

```
TH:CURVE
*F        0%
 B        0%
```

JOG or ⊕⊖ ⊕⊖

JOG or ⊕⊖

```
TH:CURVE
 F        0%
>B        0%
```

ENT
BACK

```
TH:CURVE
 F        0%
*B        0%
```

JOG or ⊕⊖ ⊕⊖
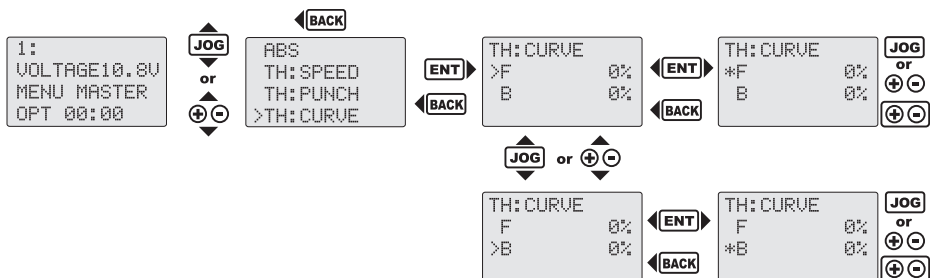
To change the value of each item push "Enter" at each to cursor change to ＊

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to open the function menu list.

**2** Use the Jog Dial, (+) or (-) keys to move the cursor to the function "TH"CURVE".

**3** Press the 'ENTER' key to enter the setting screen.

※ Moving the cursor to F (advancement side) or B (brake side) and press the 'ENTER' key and make adjustments with the Jog Dial, (+) or (-) keys.

Servo Movement

Quick
+100 Setting
0 Setting
-100 Setting
Mild
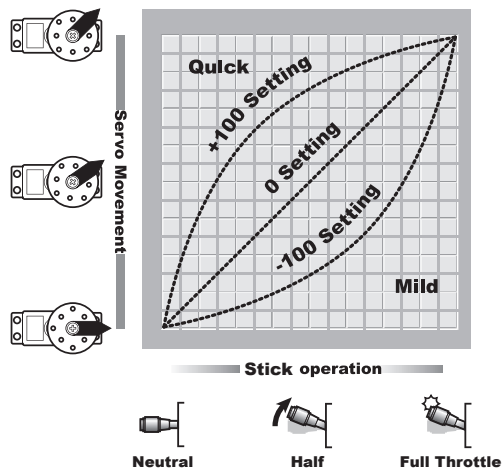
Stick operation

Neutral    Half    Full Throttle

● Setting value with a + curve is quicker, - curve is slower initially.

● A + curve, is quicker initially but slower after.

● A – curve, is slower initially, but quicker after.

**ADVICE**

● Please confirm the set up movement when this is combined with other function settings.

● Only the curve can be adjusted with this function. To increase the initial movement of the throttle, please refer to throttle punch (P37).

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## Only the operating range of the brake side of the throttle is adjusted.

Throttle operation of the brake side can be increased and decreased in range. The maximum brake quantity can be changed.

### [How to open the setup screen]
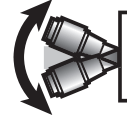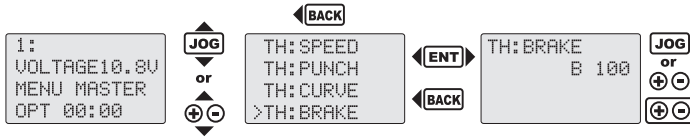
```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG
or
⊕⊖

▲BACK

```
 TH:SPEED
 TH:PUNCH
 TH:CURVE
>TH:BRAKE
```

◀ENT
◀BACK

```
TH:BRAKE
        B 100
```

JOG
or
⊕⊖
⊕⊖

When operating the throttle, you adjust the operating movement of the servo.

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to open the function menu.

**2** Using the Jog Dial, (+) or (-) keys move the cursor in the menu list to "TH:BRAKE".

**3** Press the 'ENTER' key to enter the setting screen.

---

● In a gas car, if a large value is set, the end point may not be correct and excessive duty may be applied to the servo. This will cause the servo to consume excessive voltage and possibly damage the servo. Please verify your setting and adjust it accordingly.

● In an electric car, a value set too small will not be effective and may not be recognized by the ESC. Please use the setting of 100 (factory default).

● Assigning this function to be adjusted, as a percentage being used with an ET lever is possible. (ET-4 is assigned as the factory default.) Please note that a brake setting of 0 will not yield any movement.

● When the function is assigned to an ET lever, the setting is indicated automatically (automatic display) when the lever is pressed.

---

Please note that when the percentage being used is set to 0%,

no brake movement will be yielded even if the brake setting is set to a large number.

**ADVICE**

● When assigning this function other then the ET-4 (factory default), please refer to the SET UP (P58 setup).

# TH HIPOINT (Throttle High Point)

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## Setting of only the throttle advancement side value.

Throttle maximum advancement side setting can be increased and decreased. In an electric car, the full throttle adjustment is set and for a gas car, the setting for the carburetor to open fully is set.

### [How to open the setup screen]
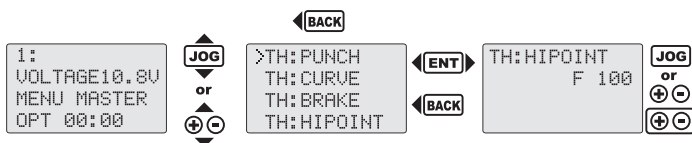
```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG
or
⊕⊖

◀BACK

```
>TH:PUNCH
 TH:CURVE
 TH:BRAKE
 TH:HIPOINT
```

◀ENT▶
◀BACK

```
TH:HIPOINT
      F 100
```

JOG
or
⊕⊖
⊕⊖

**When operating the throttle, you adjust the operating movement of the servo.**

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "TH:HIPOINT".

**3** Pressing the 'ENTER' key enters the menu and using the Jog Dial, (+) or (-) keys will change the value.

● The maximum value of the throttle advancement side is adjusted and set. This allows for simple adjustment for a gas car.

● Setting a large value in a gas car creates excessive load to the servo if not set correctly and will damage the servo.

● Please verify and adjust accordingly with this setting and the linkage.
In an electric car, if the setting is too small the ESC may not recognize the setting and there is no performance gain. Please try the setting first with the factory default setting of 100.

Please note that the minimum value is 0, but you will not get any movement from the throttle with this setting.

**ADVICE**
● Because the throttle trim is for the center trim and if the "TH:HIPOINT" setting is a small value and the trim is set to a large value, you may notice very little travel to the throttle.
(Please refer to center trim, P21)

## Moving the throttle servo to a set point using the ET lever or BT button.

This is used with either an ET lever or BT button. The throttle is moved to a position that is set while activated by either the ET lever or BT button.

### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

[JOG or ⊕ ⊖]

◀BACK

```
TH:CURVE
TH:BRAKE
TH:HIPOINT
>TH:PRESET
```

◀ENT
◀BACK

In initial screen there is no assignd button , so setup will display.

```
TH:PRESET
        0
```

[JOG or ⊕ ⊖]
⊕ ⊖

---

ex. When display SETUP assign BT-1

```
TH:PRESET  ▼
>ET1-ST TRIM
 ET2-TH TRIM
 ET3-BRAKE
```

[JOG or ⊕ ⊖]

```
TH:PRESET  ▲
>BT1-OFF
 BT2-OFF
```

◀ENT
◀BACK

```
TH:PRESET
 BT1-OFF
```

[JOG or ⊕ ⊖]

```
TH:PRESET
 BT1-PRESET
```

◀ENT
◀BACK

◀BACK

```
TH:PRESET
>BT1-PRESET
 BT2-OFF
```

---

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "TH:PRESET".

**3** Press the 'ENTER' key to access the setting screen.
 ※ If "TH:PRESET" is not assigned to an ET lever or BT button, the SETUP will be displayed for assignment.

---

- The numerical value that can be assigned is 0~F150 or 0~B150.
- The position of the throttle setting is not influenced by the value of other functions.
    (If this is set to F100 and the "TH:HIPOINT" is set to 0 and the ET lever or BT button is selected, the throttle moves to the position of F100 regardless.)
- This is useful for the engine cut, idling up, full brake, reverse, etc.

---

**⚠Caution!** 🚫 Prohibition — The throttle will be fixed at the setting when the ET lever or BT button are accessed and the throttle movement will not be functional.

---

**⚠Caution!** 🚫 Prohibition — Please make sure to verify the setting before operational use. If the settings are incorrect, you may lose control of the car.

---

**ADVICE** • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •

- Refer to the SETUP (setup P58) when assigning the ET levers and BT buttons.

• • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •

# TH ACCEL (Throttle Acceleration) - 1

## In the throttle advancement side you can create a swing effect.

An expert driver can work the throttle delicately. This is one of the techniques that can be achieved with this setting by "fanning the throttle" automatically to make the car have a faster cornering speed.

### [How to open the setup screen]
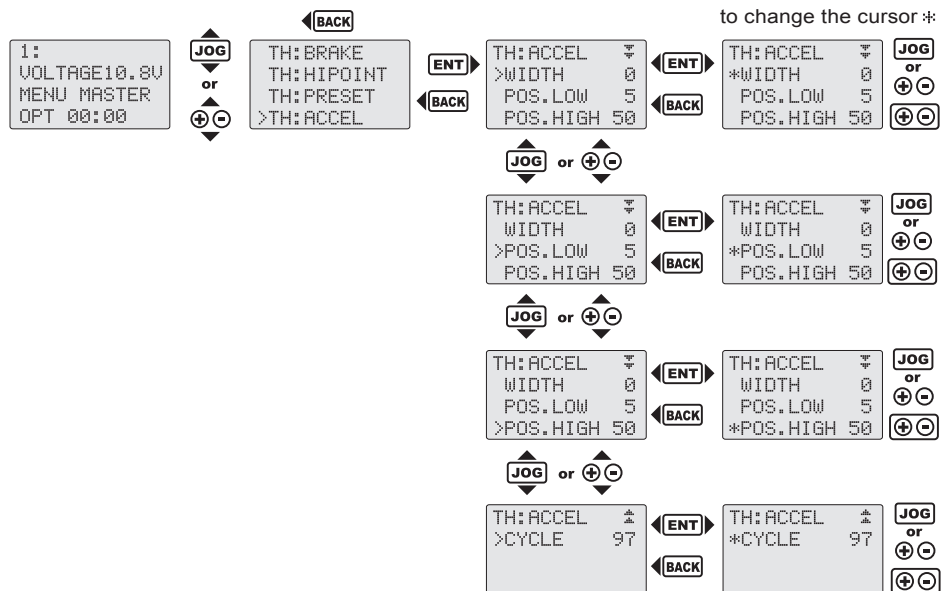
Push enter at each item to change the cursor ＊

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

```
TH:BRAKE
TH:HIPOINT
TH:PRESET
>TH:ACCEL
```

```
TH:ACCEL
>WIDTH      0
 POS.LOW    5
 POS.HIGH  50
```

```
TH:ACCEL
*WIDTH      0
 POS.LOW    5
 POS.HIGH  50
```

```
TH:ACCEL
 WIDTH      0
>POS.LOW    5
 POS.HIGH  50
```

```
TH:ACCEL
 WIDTH      0
*POS.LOW    5
 POS.HIGH  50
```

```
TH:ACCEL
 WIDTH      0
 POS.LOW    5
>POS.HIGH  50
```

```
TH:ACCEL
 WIDTH      0
 POS.LOW    5
*POS.HIGH  50
```

```
TH:ACCEL
>CYCLE      97
```

```
TH:ACCEL
*CYCLE      97
```

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "TH:ACCEL".

**3** Press the 'ENTER' key to access the setting screen.

### Throttle Accelation

Time
Maximum
Operating Trigger
Neutral
Pull the triger

Time
Maximum
Servo movement
PosH
PosL
Width
If you set this fanction that
POS L  10  POS H  80 the effect show
Neutral
Cycle
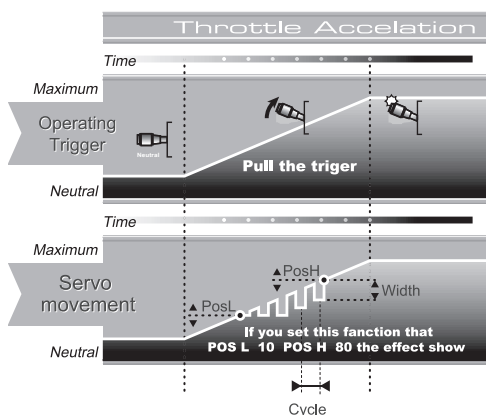
● When the setting of the "WIDTH" is 0, the acceleration is OFF.

● When the setting of the "POS.LOW" and "POS.HIGH" are the same value, the acceleration is OFF.

● The indicator will flash when the throttle acceleration is ON.

## Setting Item

| WIDTH (Width) | Set the swing width. (forward & back) |
|---|---|
| POS.LOW (Low Position) | Set the lower part of the throttle for the swing operation. |
| POS.HIGH (High Position) | Set the upper part of the throttle for the swing operation. |
| CYCLE (Cycle) | Set the cycle (period) of the swing operation. |

## Range of the setting values

| Setting Item | Maximum | Minimum | Initial Value |
|---|---|---|---|
| ACCEL.WIDTH | 100 | 0 | 0 |
| ACCEL POS.LOW | 100 | 0 | 5 |
| ACCEL POS,HIGH | 100 | 0 | 50 |
| ACCEL CYCLE | 100 | 1 | 97 |

● When setting the "POS.LOW" and the "POS.HIGH" for the throttle, the swing action is set.

● The "WIDTH" sets the width of the swing action (forward & back). This function can also be adjusted during a run, when assigned to an ET lever (ET 1~5) to the "WIDTH".

● The period (speed) of the swing is set with the "CYCLE". Like the "WIDTH", assigning this to an ET lever (ET 1~5) you can make adjustments during a run.

● Assigning BT1 or BT2 turns the function ON/OFF.

※ When the function is assigned to be turned ON/OFF with a BT button, the specification settings that are not effective (like "WIDTH" set to 0), will still flash the throttle response indicator to be ON when activated.

★ An ideal setup isn't known until an actual run, due to settings varying depending on factors such as servo, car, road surface, etc. Please test for an optimum setting.

**⚠Caution!** 🚫 Prohibition Setting large numerical values to the "CYCLE" and "WIDTH" will consume more electrical current by the servo, thus there may be times when this setting will make the life of the servo shorter.

**ADVICE** ● Please refer to SETUP (P58) when the ET levers and BT buttons are assigned to other functions.

# ST SPEED (Steering Speed) - 1

## The steering servo speed can be slowed down.

This function will restrict the maximum speed of the steering servo.

The speed of the servo turning from neutral and returning to neutral can be set.

From neutral to the endpoint on each side of the steering, you can divide the travel of the servo into two areas to set the speed. (2 WAY)

### [How to open the setup screen]

Choices are1way and 2way.

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

```
TH:BRAKE
TH:HIPOINT
TH:PRESET
>ST:SPEED
```

```
ST:SPEED
>SPEED
 POSITION
 MODE
```

```
ST:SPEED
 SPEED
 POSITION
>MODE
```

```
ST:SPEED
MODE   1WAY
```

```
ST:SPEED
MODE   2WAY
```
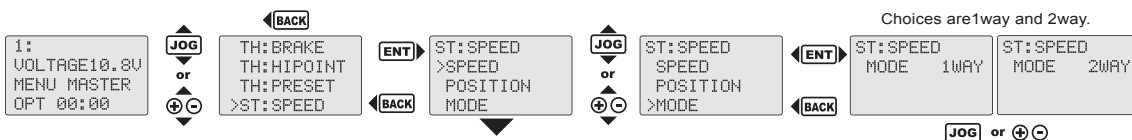
Displayed contents at "SPEED" and "POSITION" are change by setting value of MODE.

**1WAY**

```
ST:SPEED
>SPEED
 POSITION
 MODE
```

```
ST:SPEED
>TURN   100
 RETURN  100
```

```
ST:SPEED
*TURN   100
 RETURN  100
```

In 1WAY,can not select POSITION.

```
ST:SPEED
 TURN   100
>RETURN  100
```

```
ST:SPEED
 TURN   100
*RETURN  100
```

**2WAY**

```
ST:SPEED
>SPEED
 POSITION
 MODE
```

```
ST:SPEED
>TURN
 RETURN
```

```
ST:SPEED
*TURN1   100
 TURN2   100
```

Use Steering to move to TURN2.

```
ST:SPEED
 TURN1   100
*TURN2   100
```

Can change the value , where cursor are pointing.

```
ST:SPEED
 TURN
>RETURN
```

```
ST:SPEED
*RETURN1 100
 RETURN2 100
```

```
ST:SPEED
 RETURN1 100
*RETURN2 100
```

Use Steering to move to RETURN2.

TURN1 at bottom row , By steering can change to TURN2.

```
ST:SPEED
 SPEED
>POSITION
 MODE
```

```
ST:SPEED
>T.POS   30
 R.POS  100
```

```
ST:SPEED
*T.POS   30
 R.POS  100
 TURN1
```

```
ST:SPEED
*T.POS   30
 R.POS  100
 TURN2
```

```
ST:SPEED
 T.POS   30
>R.POS  100
```

```
ST:SPEED
 T.POS   30
*R.POS  100
 RETURN1
```

```
ST:SPEED
 T.POS   30
*R.POS  100
 RETURN2
```

RETURN1 at bottom row , By steering can change to RETURN2.

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "ST:SPEED".

**3** Press the 'ENTER' key to access the setting screen.

**ADVICE**

● Due to the specification differences of servos, results of this function will differ.

**2Step Steering Speed**

Time

Maximum

**Operating Stick**

Neutral

Time

Maximum

**Servo movement**

Neutral

Turn1    Turn2    Return2    Speed changing point    Return1    Speed

Turn1 20  Turn2 100  Return1 80  Return2 100  Setting
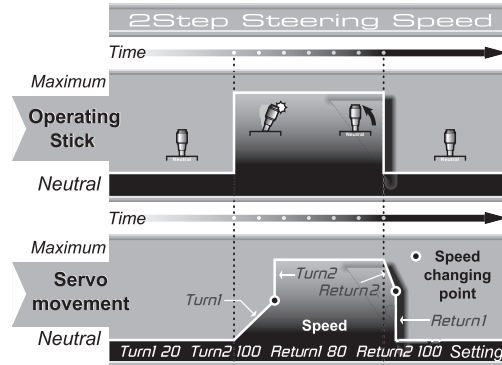
**The inclination of the graph changes according to each numerical value.**

## Mode select

● 1WAY : The entire area has the same turning speed. You can set the TURN and RETURN speed.

● 2WAY : Setting the position of where the division takes place to set the speeds for each area.

The initial turn of the servo to operate slowly, then quicker after a certain position can be set.

When there is high traction and the car is twitchy, keep dropping the initial turn speed (Turn 1) and this will help make the car corner better and become more stable.

Neutral                Neutral

**TURN 1**    T.POS        **RETURN 1**    R.POS

**TURN 2**              **RETURN 2**

Max                    Max

For 2WAY              For 2WAY
(setting of the TURN side)    (setting of the RETURN side)

★ An ideal setup isn't known until an actual run, due to settings varying depending on factors such as servo, car, road surface, etc. Please test for an optimum setting.

**ADVICE**

● Due to the specification differences of servos, results of this function will differ.

# ST PUNCH (Steering Punch)

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## The initial response of the steering is made quicker.

The initial movement of the steering is increased with this function.

### [How to open the setup screen]
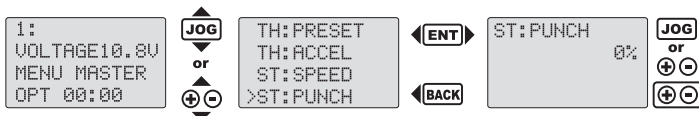
```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
JOG or ⊕⊖

```
 TH:PRESET
 TH:ACCEL
 ST:SPEED
>ST:PUNCH
```
ENT
BACK

```
ST:PUNCH
        0%
```
JOG or ⊕⊖ ⊕⊖

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "ST:PUNCH" and press the 'ENTER' key.

**3** Using the Jog Dial, (+) or (-) keys, you can adjust the setting.
Press and hold simultaneously the (+) and (-) keys to reset the setting to 0%.

**4** To return to the menu list press either the 'BACK' or the 'ENTER' key.

● When a large value is set, the initial movement increases more.

● Please note that abnormal play in the steering linkage will result in the car not going straight and this is not a characteristic of the setting.
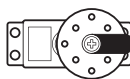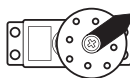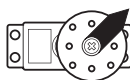
Servo Movement
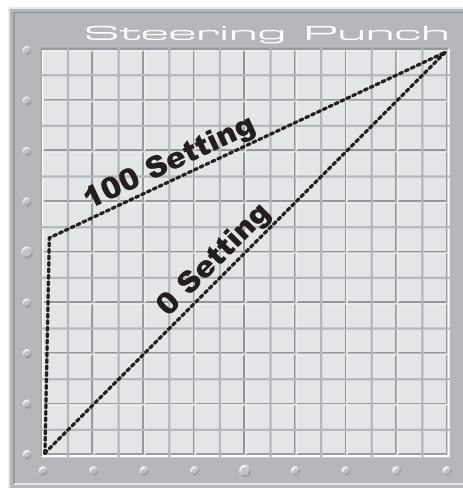
Steering Punch

100 Setting

0 Setting

Wheel Angle

**ADVICE**

● When combining this with other function settings such as steering speed, please verify the effect of each, one at a time.

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**A curve (exponential) is applied to the servo movement according to the steering operation.**
(+) quick curve and (-) mild curve settings are possible.

**[How to open the setup screen]**
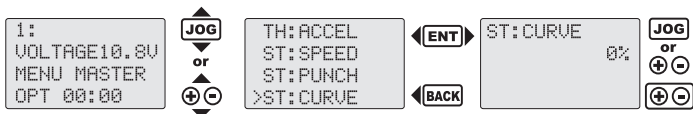
```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
JOG
or
⊕⊖

```
 TH:ACCEL
 ST:SPEED
 ST:PUNCH
>ST:CURVE
```
◀ENT▶
◀BACK

```
ST:CURVE
        0%
```
JOG
or
⊕⊖
⊕⊖

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "ST:CURVE" and press the 'ENTER' key.

**3** Using the Jog Dial, (+) or (-) keys, you can adjust the setting.
Press and hold simultaneously the (+) and (-) keys to reset the setting to 0%.

**4** To return to the menu list press either the 'BACK' or the 'ENTER' key.

● Change in the movement angle of a servo according to the angle of the stick (see figure).

● The (+) side (+1 ~ +100), reaction is greater initially and then becomes slower later.

● The (-) side (-1 ~ -100), reaction is slower initially and then becomes faster later.
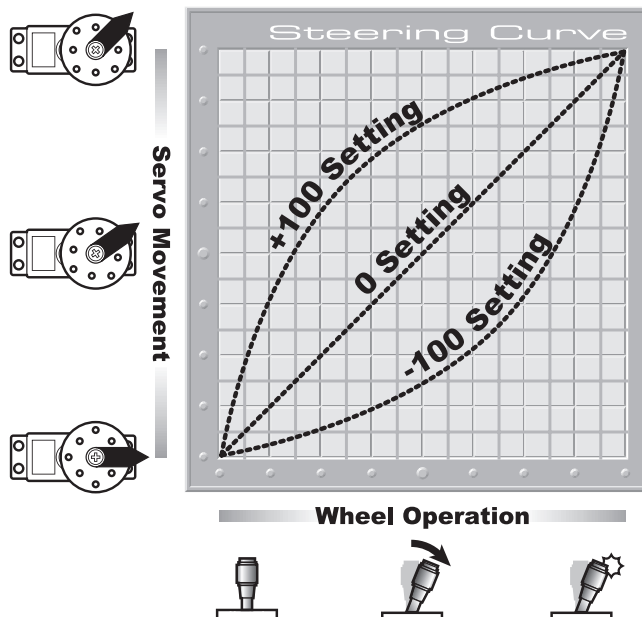
Steering Curve

Servo Movement

+100 Setting

0 Setting

-100 Setting

**Wheel Operation**

**ADVICE**

● When combining this with other function settings such as steering speed, please verify the effect of each, one at a time.

● With this function you set the curve. To change only the initial reaction, please refer to steering punch (P46).

# ST BALANCE (Steering Balance)

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## Adjusting the steering left and right endpoints independently.

Adjusting the steering servo endpoint to the left and right independently.

You can arrange the turning radius of the car for the left and the right.

### [How to open the setup screen]

Holding the steering stick in direction that you would like to change the steering end point(Steering Travel), operate the Jog Dial, (+) or (-) keys tochange the values.
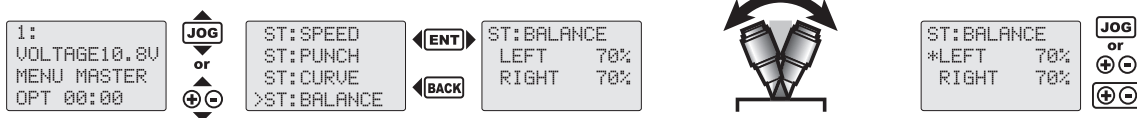
```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
JOG or

```
ST:SPEED
ST:PUNCH
ST:CURVE
>ST:BALANCE
```
ENT / BACK

```
ST:BALANCE
 LEFT    70%
 RIGHT   70%
```

```
ST:BALANCE
*LEFT    70%
 RIGHT   70%
```
JOG or

1. From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

2. Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "ST:BALANCE" and press the 'ENTER' key.
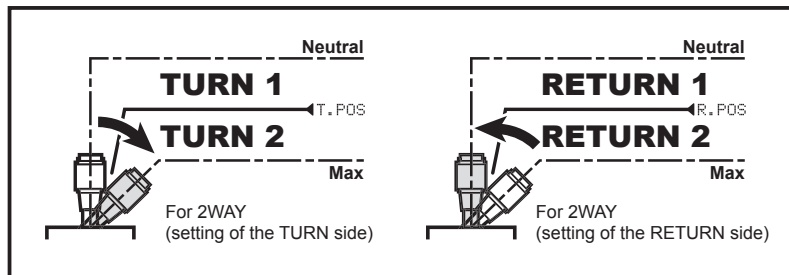
3. When the steering is moved all the way to the end and held, a cursor will appear and the adjustment can be made with the Jog Dial, (+) or (-) keys.

4. Press and hold simultaneously the (+) and (-) keys to reset the setting to 70%.

5. To return to the menu list press either the 'BACK' or the 'ENTER' key.

Another option is to move the steering stick all the way to the endpoint and hold it there while using the steering trim (ET-1) to bring up the screen setting.
Please refer to the Direct set (P31).

**ADVICE**

● Setting the trim to a large number can alter the left and right movement to the endpoints.
The case where the steering balance is adjusted first,

1. Set the trim to 0.

2. In order to set the center of the servo; adjust with the "Sub Trim".

3. The turning radius left and right are adjusted with the "Steering Balance".

4. The entire travel for the steering servo is adjusted with the "Steering Travel".

5. If the car does not run straight, correct it with the trim (ET-1).

We recommend using this type procedure to set up your steering.

※ Please refer to "Sub Trim" (P21, P32) for further information.

## Adjust the total range of movement of the steering servo.

Adjusting the total range of movement of the steering servo when the stick is moved all the way to the endpoint.

### [How to open the setup screen]
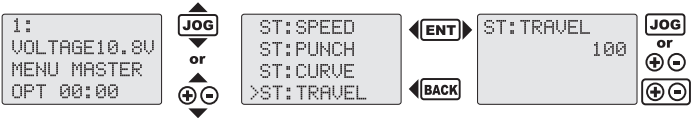
```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
JOG
or
⊕⊝

```
ST:SPEED
ST:PUNCH
ST:CURVE
>ST:TRAVEL
```
◀ENT▶
◀BACK

```
ST:TRAVEL
        100
```
JOG
or
⊕⊝
⊕⊝

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys you can adjust the settings.
Initial setting value is 100, maximum value is 150 and the minimum value is 0.

**3** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "ST:TRAVEL" and press the 'ENTER' key.

**4** Press and hold simultaneously the (+) and (-) keys to reset the setting to 100.

**5** To return to the menu list press either the 'BACK' or the 'ENTER' key.

● The steering travel is initially set to the ET-3 dial. When the ET-3 dial is operated, the screen to the right will be displayed automatically.
● The number setting displayed while using the ET-3 dial is the ratio of the steering travel to be used.
(This can be set from 40% ~ 100%)

```
AUTO DISPLAY
  ET3-TRAVEL
         100
         100%
```

Setting the steering travel to 0 does not allow movement of the servo.
Using the ET-3 dial will not yield any movement with this setting if set to 0.

**ADVICE**

● To set the endpoints for the left and right movement independently, you will need to use the steering balance (P48).
● Please set the servo accordingly so that there is no excessive strain on the servo.
※ When there is excessive stress and load on the servo, it will be damaged.

# AUTO START (Automatic Start)

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## The throttle quantity of movement set is automatically from a starting position.

When this function is set correctly, pulling the throttle at the start will set the throttle to a fixed position.

Releasing the throttle once will disengage this function and normal throttle operation will return.

### [How to open the setup screen]

**Return by pressing the 'BACK' key, but "READY" is still on.** ◀ BACK

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG ▲▼ or ⊕⊖

```
ST:PUNCH
ST:CURVE
ST:BALANCE
>AUTO:START
```

ENT   BACK

```
AUTO:START ▼
>START    OFF
```

⊕⊖

```
AUTO:START ▼
>START READY
```

Reset then start blinking "READY"

JOG or ⊕⊖

Set Throttle position.

```
AUTO:START ☰
>PRSET  F  0
 TH:POS   5%
```

◀ ENT   BACK

```
AUTO:START ☰
*PRSET  F  0
 TH:POS   5%
```

JOG ▲▼ or ⊕⊖

JOG or ⊕⊖

The position in which the function of throttle stick (CH2) works, is set.

```
AUTO:START ☰
 PRSET  F  0
>TH:POS   5%
```

◀ ENT   BACK

```
AUTO:START ☰
 PRSET  F  0
*TH:POS   5%
```

JOG or ⊕⊖

**1** When the stick is pressed forward for the throttle, the indication changes to ON when the point of the "TH:POS" is reached.

```
AUTO:START ▼
>START    ON
```

**2** When the stick is returned, the indication returns to OF

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "AUTO:START" and press the 'ENTER' key.

**3** The automatic start will be on stand-by if the reset feature is used to activate the function. ("READY" will be flashing on the screen.)
Use the Jog Dial, (+) and (-) keys to access the setting screen.
(You cannot adjust the settings when "READY" is flashing.)

**4** When pressing the 'ENTER' key, the cursor indication changes and the setting can be altered.
To reset the setting to the factory default, press and hold simultaneously the (+) and (-) keys.

**5** To return to the menu list press either the 'BACK' or the 'ENTER' key.

● PRESET : Position of the throttle is appointed when the automatic start is activated.
　　Initial Value: F0　　　Maximum Value: F150　　　Minimum Value: F0
　　　※ Normally full throttle is appointed, but please test the setting first.

● TH:POS : Appoints the position of the throttle stick where the automatic start engages.
　　Initial Value: 5%　　　Maximum Value: 100%　　　Minimum Value: 5% or OFF
　　　※ When the setting is "OFF", the automatic start does not work.

When the "READY" is flashing the automatic start is active, returning to the main menu or the initial screen will still allow it to be active as long as it is being held.

**ADVICE** ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

● Please test the operation in advance before it is to be used.

● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

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## Copying the data in a model memory to another model memory.

Contents of the current model memory are copied to another model memory number.

You can easily copy the settings of the same car to another model memory number for different course conditions.

### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG
or
⊕⊖

```
ST:BALANCE
ST:TRAVEL
AUTO:START
>MODEL.COPY
```

ENT
BACK

A copy place is chosen.

```
MODEL.COPY
COPY TO  2
```

ENT
BACK

"No" is selected and press enter key , return to menu list screen.

ENT

```
MODEL.COPY
COPY TO  2
>NO
 YES
```

JOG  or ◀⊕⊖▶

BACK
ENT

```
MODEL.COPY
COPY TO  2
 NO
>YES
```

"YES" is selected and press the

Press "ENTER Key" or "Back key", return to menu list screen.

ENT    BACK

```
MODEL.COPY
COPY TO  2

COMPLETE
```

When Model copy is finished a blinking "COMPLETE" will appear in LCD

ex. To Copy Data of MODEL MEMORY1 to MODEL MEMORY2

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "MODEL.COPY" and press the 'ENTER' key.

**3** The current model memory will be copied. Using the Jog Dial, (+) or (-) keys to select  which model memory to copy the data to.

**4** Using the Jog Dial, (+) or (-) keys, make your selection and press the 'ENTER' key.

Selecting "YES" and pressing the 'ENTER' key ➡ The model is copied and "COMPLETE" is displayed.

Selecting "NO" and pressing the 'ENTER' key ➡ Return back to the function menu list.

Selecting "YES" and pressing the 'BACK' key ➡ The cursor moves back to "NO".

Selecting "NO" and pressing the 'BACK' key ➡ Get a buzzer tone.

**5** Once executing the model copy, "COMPLETE" will be displayed and pressing either the 'ENTER' or 'BACK' keys will return you to the function menu list.

This is useful under the following circumstances.

● Saving the current settings to try a new setup.

● Moving the data in the Data Pack to the transmitter.

● Moving data to the Data Pack for someone else to load into their transmitter and try.

※ Please note that you can copy the data to another transmitter, but the setup of the transmitter cannot be copied.

Please note that copying the data to another model memory will overwrite any data stored in that model memory number.

There is no way of retrieving the lost data, so please confirm your action before you execute them.

# MODEL.NAME (Model Memory Name)

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## Assigning a name to the model memory number for easy identification.

Assigning a name in order to distinguish the model memories.

### [How to open the setup screen]
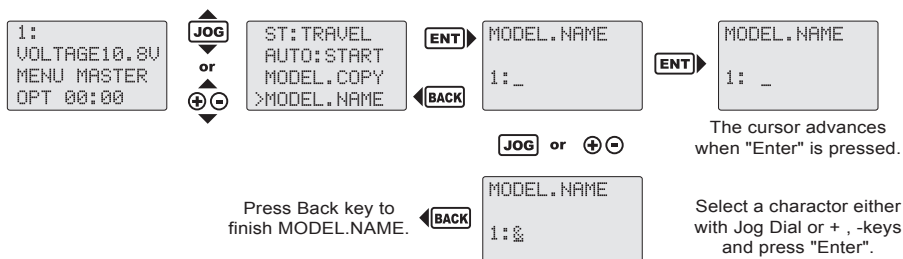
```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
JOG
or
⊕ ⊖

```
ST:TRAVEL
AUTO:START
MODEL.COPY
>MODEL.NAME
```
ENT ►
◄ BACK

```
MODEL.NAME

1:_
```
ENT ►

```
MODEL.NAME

1: _
```

The cursor advances
when "Enter" is pressed.

JOG  or  ⊕ ⊖

Press Back key to
finish MODEL.NAME.
◄ BACK

```
MODEL.NAME

1:&
```

Select a charactor either
with Jog Dial or + , -keys
and press "Enter".

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "MODEL.NAME" and press the 'ENTER' key.

**3** Use the Jog Dial, (+) or (-) keys to change the character to be used and press the 'ENTER' key to advance to the next character to be used.
(After you have reached the end of the character line it, you will return to the first character.)

**4** The maximum number of characters that can be inputted are 10.
Using the Jog Dial, (+) or (-) keys changes the character to be used and pressing the 'ENTER' key selects the character.

● The available characters that can be used for the model memory name are listed below.

&  '  (  )  *  +  ,  -  .  ／  0  1  2  3  4  5  6  7  8  9  :  ;  ＜  ＝  ＞  ?
A  B  C  D  E  F  G  H  I  J  K  L  M  N  O  P  Q  R  S  T  U  V  D  X  Y  Z
a  b  c  d  e  f  g  h  i  j  k  l  m  n  o  p  q  r  s  t  u  v  w  x  y  z  ・
を ァ ィ ゥ ェ ォ ャ ュ ョ ッ ア イ ウ エ オ カ キ ク ケ コ サ シ ス セ ソ
タ チ ツ テ ト ナ ニ ヌ ネ ノ ハ ヒ フ ヘ ホ マ ミ ム メ モ ヤ ユ ヨ ラ リ ル レ ロ
ワ ン ゛ （ 濁 点 ） ゜ （ 半 濁 音 ） ス ペ ー ス （ 空 白 ）

● When entering or editing the name, use the Jog Dial, (+) or (-) keys to select the character and press the 'ENTER' key to advance to the next character.

● The model name that is assigned to the model memory will appear from the initial screen and in the model selection menu.

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## Resetting the model memory to the factory default setting.

Contents of the current model memory are reset to the factory default setting.

Contents of the current model memory that is going to be reset will be erased.

### [How to open the setup screen]
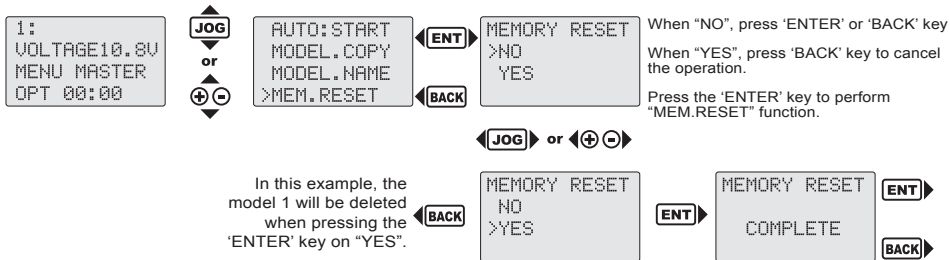
```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG

or

⊕ ⊖

```
AUTO:START
MODEL.COPY
MODEL.NAME
>MEM.RESET
```

ENT

BACK

```
MEMORY RESET
>NO
 YES
```

When "NO", press 'ENTER' or 'BACK' key

When "YES", press 'BACK' key to cancel the operation.

Press the 'ENTER' key to perform "MEM.RESET" function.

JOG ▶ or ◀⊕ ⊖▶

In this example, the model 1 will be deleted when pressing the 'ENTER' key on "YES".

BACK

```
MEMORY RESET
 NO
>YES
```

ENT

```
MEMORY RESET

 COMPLETE
```

ENT ▶

BACK ▶

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "MEM.RESET" and press the 'ENTER' key.

**3** Use the Jog Dial, (+) or (-) keys to move the cursor to "YES" or "NO".

**4** Pressing the 'BACK' key while the cursor is on "YES" or "NO" will take you back to the menu list.
In addition, selecting "NO" will also return you to the menu list.
Selecting "YES" by pressing the 'ENTER' key will execute the memory reset and "COMPLETE" will be displayed on the screen.

● Only the contents of the current model memory will be cleared and reset.

● The model memory common settings that are set with the main menu will not be cleared.

Please verify before the execution that the current model memory is the correct one to reset because all data will be lost.

**ADVICE**

● How to save the setup.

1.The data pack (sold separately) is copied.

2.Use the ICS USB Interface (sold separately) to save the data to a personal computer.

# ADJUST VR (Adjusting the Variable Resister)

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## Recalibrating the setting of the volume is updated.

Frequent usage of the steering and throttle and shipping can change the volume parameters from the normal deviation.

This function resets the normal deviation.

### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
JOG
or
(+)(−)

```
MODEL.COPY
MODEL.NAME
MEM.RESET
>ADJUST VR
```
ENT
BACK

```
ADJUST VR
>NO
 YES
```

◀ JOG ▶  or  ◀(+)(−)▶

End  ◀ BACK
```
ADJUST VR
  NO
 >YES
```
ENT ▶  ADJUST VR is executed.

### Procedure of ADJUST VR

**Steering operation**

Operate all the way to the left.

Discontinuance
BACK

```
ADJUST VR ST
NUTRAL   121
LEFT     121
RIGHT    121
```
**Steering**

```
ADJUST VR ST
NUTRAL   253
LEFT     253
RIGHT    121
```
```
ADJUST VR ST
NUTRAL    13
LEFT     121
RIGHT     13
```

Discontinuance
BACK

```
ADJUST VR ST
NUTRAL   121
LEFT     253
RIGHT     13
```
ENT

**Throttle operation**

Operate all the way to full throttle.

Discontinuance
BACK

```
ADJUST VR TH
NUTRAL   116
FORWORD  116
BRAKE    116
```
**Throttle**

```
ADJUST VR TH
NUTRAL   206
FORWORD  206
BRAKE    116
```
```
ADJUST VR TH
NUTRAL    72
FORWORD  116
BRAKE     72
```
ENT

```
ADJUST VR

  COMPLETE
```
ENT ▶
BACK ▶

If "COMPLETE" is displayed, press 'ENTER' or 'BACK' key.

Operate all the way to the right.

**Steering operation**

Operate all the way to full brake

**Throttle operation**

※ **The numerical value set by this explanation is one example. Values may differ in an actual operation.**
It is possible to discontinue this operation by pressing the 'BACK' key before the 'ENTER' key is pressed after the throttle is operated.
(The setting value in this case is not written in the memory.)
Data abnormality with the steering operation, throttle operation or no operation are not accepted when the 'ENTER' key is pressed.
(The warning sound will be heard.)

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "ADJUST VR" and press the 'ENTER' key.

**3** Use the Jog Dial, (+) or (-) keys to move the cursor to "YES" or "NO".

**4** Pressing the 'BACK' key while the cursor is on "YES" or "NO" will take you back to the menu list.
In addition, selecting "NO" will also return you to the menu list.
Selecting "YES" by pressing the 'ENTER' key will execute the adjust volume.

● After the 'ENTER' key is pressed and while the function is executing, please do not touch the steering or the throttle sticks.
 If there are abnormal values in the resetting, the use of the transmitter may become inconvenient.

● This function allows for the resetting of the volume parameters.
 The frequency and period of this recalibrating will vary depending on the usage.

● When performing this function and you are not able to finish or cancel it, please send it in to our service repair department.

**ADVICE**

● Not executing this function correctly will cause problems in the transmitter operation.

● We recommend contacting or sending this transmitter to our service repair department when you are not familiar with this function.

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## Set the number of channels to use.

The response mode that the system will be using is set.

Select 2 channel or 3 channel for the number of channels to be used.
Selecting 3 channel will allow the assigning control of a function for the third channel.
When 2 channel is selected, you can use Advanced High Speed Response or Ultra High Speed Response, but it automatically changes to Super High Speed response after you select 3 channels because the electric wave (signal) is full.

### [How to open the setup screen]
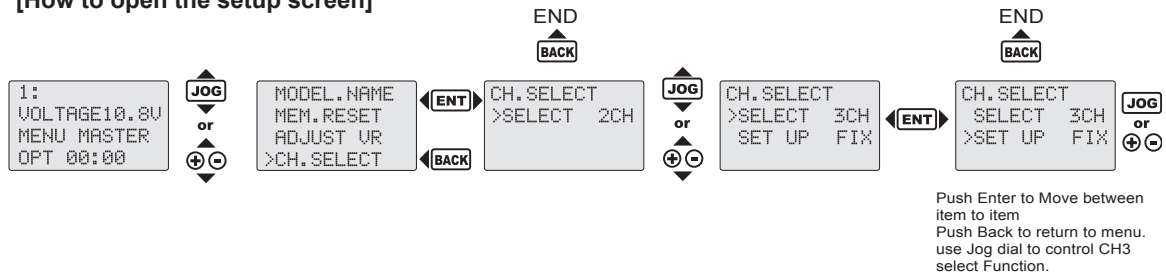
```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
JOG or ⊕⊖ →
```
MODEL.NAME
MEM.RESET
ADJUST VR
>CH.SELECT
```
◄ ENT / BACK →
END ▲ BACK
```
CH.SELECT
>SELECT  2CH
```
JOG or ⊕⊖ →
```
CH.SELECT
>SELECT  3CH
 SET UP  FIX
```
◄ ENT ►
END ▲ BACK
```
CH.SELECT
 SELECT  3CH
>SET UP  FIX
```
JOG or ⊕⊖

Push Enter to Move between item to item
Push Back to return to menu.
use Jog dial to control CH3 select Function.

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "CH.SELECT" and press the 'ENTER' key.

**3** Use the Jog Dial, (+) or (-) keys to select "2CH" or "3CH". Choosing "3CH" the "SET UP" will be displayed under this selection and you will need to assign the function to control the third channel.

**4** Pressing the 'BACK' key will return you to the menu list.
  ※ You can set up the movement of the third channel by setting "3CH TRAVEL" (P65) and 3CH POS (P66).

When the setting of "3CH" is "FIX" the signal is used but there is no control of the signal due to being fixed.
When assigned to a BT button or ET lever the function has a switch movement or can be assigned as a reverse switch (P56) to change movement directions.

ADVICE

● Please refer to page 71 concerning the details of the response mode.

# REVERSE (Reverse Switch)

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## Set the operational direction of each channel.

You can change the operational direction of each channel.

The servo and ESC operational direction is reversed.

### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG
or
⊕ ⊖

```
MEM.RESET
ADJUST VR
CH.SELECT
>REVERSE
```

ENT
BACK

Can change selected Channel

**2CH**

```
REVERSE
>ST   REVERS
 TH   REVERS
```

JOG or ⊕ ⊖

```
REVERSE
 ST   REVERS
>TH   REVERS
```
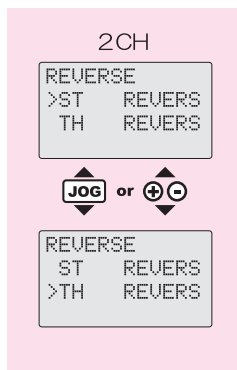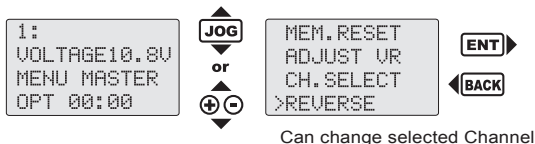
Push Enter or Back key to return the cursor.
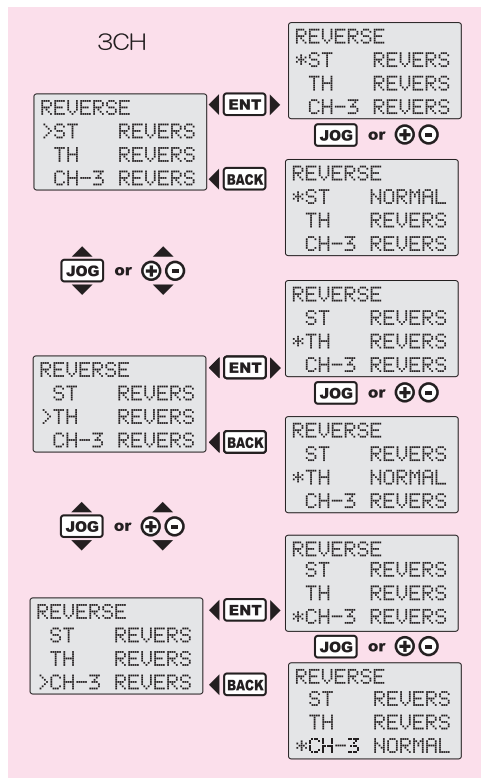
**3CH**

```
REVERSE
>ST   REVERS
 TH   REVERS
 CH-3 REVERS
```

ENT
BACK

```
REVERSE
*ST   REVERS
 TH   REVERS
 CH-3 REVERS
```

JOG or ⊕ ⊖

```
REVERSE
*ST   NORMAL
 TH   REVERS
 CH-3 REVERS
```

JOG or ⊕ ⊖

```
REVERSE
 ST   REVERS
>TH   REVERS
 CH-3 REVERS
```

ENT
BACK

```
REVERSE
 ST   REVERS
*TH   REVERS
 CH-3 REVERS
```

JOG or ⊕ ⊖

```
REVERSE
 ST   REVERS
*TH   NORMAL
 CH-3 REVERS
```

JOG or ⊕ ⊖

```
REVERSE
 ST   REVERS
 TH   REVERS
>CH-3 REVERS
```

ENT
BACK

```
REVERSE
 ST   REVERS
 TH   REVERS
*CH-3 REVERS
```

JOG or ⊕ ⊖

```
REVERSE
 ST   REVERS
 TH   REVERS
*CH-3 NORMAL
```

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "REVERSE" and press the 'ENTER' key.

**3** Use the Jog Dial, (+) or (-) keys to select the channel that you would like to modify press the 'ENTER' key and you can set the respective channel. (REVERSE / NORMAL)
※ For "3CH", you can only select this when you have selected "3CH" in the "CH.SELECT" function.
(Please refer to P55.)

**4** Pressing the 'BACK' key will return you to the menu list.

**ADVICE**

● In the case of an electric car, it is not necessary to set this function when using an ESC.
However with older ESC, unless this is set to reverse it may not operate correctly.

● The operational direction of the steering may differ with different cars.
Please verify this with each car.

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## The operating quantity of one step of the trim is set.

The total number of operating steps is 100, but the operating quantity of one step is set.

### [How to open the setup screen]
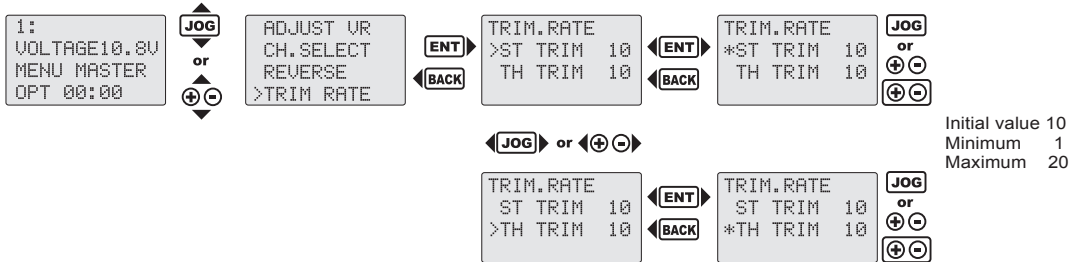
```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG
or
⊕⊖

```
ADJUST VR
CH.SELECT
REVERSE
>TRIM RATE
```

ENT
BACK

```
TRIM.RATE
>ST TRIM  10
 TH TRIM  10
```

ENT
BACK

```
TRIM.RATE
*ST TRIM  10
 TH TRIM  10
```

JOG
or
⊕⊖
⊕⊖

Initial value 10
Minimum      1
Maximum    20

JOG  or  ⊕⊖

```
TRIM.RATE
 ST TRIM  10
>TH TRIM  10
```

ENT
BACK

```
TRIM.RATE
 ST TRIM  10
*TH TRIM  10
```

JOG
or
⊕⊖
⊕⊖

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "TRIM RATE" and press the 'ENTER' key.

**3** Use the Jog Dial, (+) or (-) keys to select the "ST" (steering) or "TH" (throttle) that you would like to modify press the 'ENTER' key and you can set the respective channel.

**4** The cursor returns to the beginning of the function if the 'ENTER' or 'BACK' key is pressed and pressing the 'BACK' key again will return you to the function menu list.

● The operating quantity of one step of the trim value is set, but if the value is small the operating quantity becomes small.

● The number of total steps does not change when the trim rate is changed, but the range of correction of that one step does change the trim rate.

● If the trim has already been adjusted in the car and you change the trim rate, the setting may be off. (Setting the trim rate to 0 will cause no changes in the trim when pressed.)

ADVICE

● If the trim rate is set small the corrections will be small, but there are times when you cannot obtain the correct effect depending on the servo.

● If there is abnormal play in the linkage, servo saver, etc., small corrections in the trim may not work properly. Please check the linkage first and then the other settings.

# SET UP (Set Up)

## Assigning functions to the ET levers and BT buttons.

Assigning various functions to the ET levers and BT buttons.

The factory default setting has functions already assigned to the transmitter, but they can all be customized.

### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
JOG or ⊕⊝

```
CH.SELECT
REVERSE
TRIM RATE
>SET UP
```
ENT ▶ Do Setup
BACK

**Indication contents of each function.**

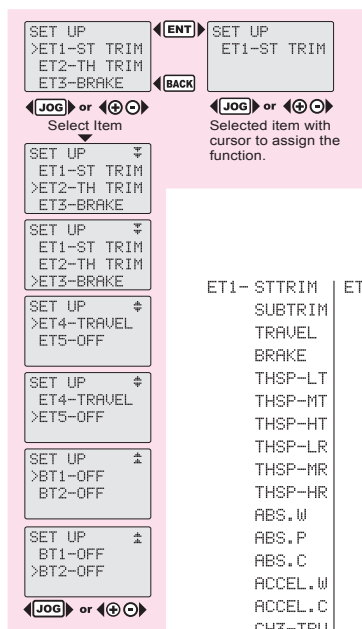| Function | Description |
|---|---|
| OFF | None |
| ST TRIM | Steering Trim |
| SUB TRIM | Steering Sub Trim |
| TRAVEL | Steering Travel |
| BRAKE | Throttle Brake |
| THSP-LT | Throttle Speed (Low Speed Turn) |
| THSP-MT | Throttle Speed (Medium Speed Turn) |
| THSP-HT | Throttle Speed (High Speed Turn) |
| THSP-LR | Throttle Speed (Low Speed Return) |
| THSP-MR | Throttle Speed (Medium Speed Return) |
| THSP-HR | Throttle Speed (High Speed Return) |
| ABS.W | ABS (Width) |
| ABS.P | ABS (Position) |
| ABS.C | ABS (Cycle) |
| TH TRIM | Throttle Trim |
| TH SPEED | Throttle Speed ON / OFF |
| ABS | ABS ON / OFF |
| ACCEL | Throttle Accelation ON / OFF |
| ACCEL.W | Throttle Accelation (Width) |
| ACCEL.C | Throttle Accelation (Cycle) |
| UPTIM | Up timer |
| LAPTIM | Lap timer |
| DOWNTIM | Down timer |
| PRSET | Preset the Throttle |
| CH3 | 3 Channels control |

```
SET UP
>ET1-ST TRIM
 ET2-TH TRIM
 ET3-BRAKE
```
ENT ▶ / ◀ BACK
```
SET UP
 ET1-ST TRIM
```
JOG or ⊕⊝
Select Item

Selected item with cursor to assign the function.

```
SET UP
 ET1-TRAVEL

 ET4-TRAVEL
```
If the functions are already used, function name will flash.
The Redundant function name will be displayed in the lower screen.

```
SET UP
 ET1-ST TRIM
>ET2-TH TRIM
 ET3-BRAKE
```
```
SET UP
 ET1-ST TRIM
 ET2-TH TRIM
>ET3-BRAKE
```
```
SET UP
>ET4-TRAVEL
 ET5-OFF
```
```
SET UP
 ET4-TRAVEL
>ET5-OFF
```
```
SET UP
>BT1-OFF
 BT2-OFF
```
```
SET UP
 BT1-OFF
>BT2-OFF
```
JOG or ⊕⊝

| ET1- STTRIM | ET2- TH TRIM | ET3- TRAVEL | ET4- BRAKE | ET5- OFF | ET6- OFF |
|---|---|---|---|---|---|
| SUBTRIM | CH3-TRV | BRAKE | THSP-LT | ST TRIM | ST TRIM |
| TRAVEL | OFF | THSP-LT | THSP-MT | SUBTRIM | SUBTRIM |
| BRAKE | TRAVEL | THSP-MT | THSP-HT | TRAVEL | TRAVEL |
| THSP-LT | BRAKE | THSP-HT | THSP-LR | BRAKE | BRAKE |
| THSP-MT | THSP-LT | THSP-LR | THSP-MR | THSP-LT | THSP-LT |
| THSP-HT | THSP-MT | THSP-MR | THSP-HR | THSP-MT | THSP-MT |
| THSP-LR | THSP-HT | THSP-HR | ABS.W | THSP-HT | THSP-HT |
| THSP-MR | THSP-LR | ABS.W | ABS.P | THSP-LR | THSP-LR |
| THSP-HR | THSP-MR | ABS.P | ABS.C | THSP-MR | THSP-MR |
| ABS.W | THSP-HR | ABS.C | ACCEL.W | THSP-HR | THSP-HR |
| ABS.P | ABS.W | ACCEL.W | ACCEL.C | ABS.W | ABS.W |
| ABS.C | ABS.P | ACCEL.C | TH TRIM | ABS.P | ABS.P |
| ACCEL.W | ABS.C | TH TRIM | CH3-TRV | ABS.C | ABS.C |
| ACCEL.C | ACCEL.W | CH3-TRV | THSPEED | ACCEL.W | ACCEL.W |
| CH3-TRV | ACCEL.C | OFF | ABS | ACCEL.C | ACCEL.C |
| OFF | | | CH3-TRV | CH3-TRV | CH3-TRV |
| | | | THSPEED | THSPEED | THSPEED |
| | | | ACCEL | ABS | ABS |
| | | | UPTIM | ACCEL | ACCEL |
| | | | LAPTIM | UPTIM | UPTIM |
| | | | DOWNTIM | LAPTIM | LAPTIM |
| | | | PRESET | DOWNTIM | DOWNTIM |
| | | | CH3-POS | PRESET | PRESET |
| | | | OFF | CH3-POS | CH3-POS |
| | | | ST TRIM | | |
| | | | SUBTRIM | | |
| | | | TRAVEL | | |

**Function list according to ET/BT**

It is a list of the function menu that can be allocated.

| BT1- OFF | BT2- OFF |
|---|---|
| THSPEED | THSPEED |
| ABS | ABS |
| ACCEL | ACCEL |
| UPTIM | UPTIM |
| LAPTIM | LAPTIM |
| DOWNTIM | DOWNTIM |
| PRESET | PRESET |
| CH3-POS | CH3-POS |

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "SET UP" and press the 'ENTER' key.

**3** Use the Jog Dial, (+) or (-) keys to select the "ET" or "BT" that you would like to modify press the 'ENTER' key.

**4** Use the Jog Dial, (+) or (-) keys to select the function that you like to assign.
If the function is already being used, the function name will flash and the currently being used function will be shown lower in the screen.

**5** To cancel the current selection press the 'BACK' key and you will return to the "SET UP" screen.
To select the current selection press the 'ENTER' key and you will return to the "SET UP" screen.

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## Setting the up timer function.

The up timer is a timer that simply adds time, but this also allows for the use of the lap navigation.

### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG or ⊕⊖

```
REVERSE
TRIM RATE
SET UP
>UP TIMER
```

ENT    BACK

```
UP TIMER    ▼
>00:00.00
```

⊕⊖

They don't have an allotment with an initial situation, a setup screen is displayed.

```
UP TIMER    ▼
>ET1-ST TRIM
 ET2-TH TRIM
 ET3-BRAKE
```

JOG or ⊕⊖

If you assign it to BT1.

```
UP TIMER    ▲
>BT1-OFF
 BT2-OFF
```
◀ENT
BACK▶

JOG or ⊕⊖

```
UP TIMER    ▲
 BT1-UPTIM
 BT2-OFF
```
ENT▶

JOG or ⊕⊖

```
UP TIMER    ▲
>BT1-UPTIM
 BT2-OFF
```

**Start**

➡ **Throttle Start**

```
UP TIMER    ▼
>    READY
```

"READY" will brink
When time data is display push reset key to clear the display

It starts for the throttle operation.

There are two kinds of start methods.

➡ **Key Start**

It starts with the assigned button.

In an example, if BT1 is pushed , it will start.
※ It can start , even if it is not a timer screen.

**Start Counting**

```
UP TIMER    ▼
>01:06.13
```

**Stop**

Control BT1 can be used even if you are not in the timer screen.

**Pause**

Pressing the 'ENTER' key is only possible while in the timer screen.

**Restart**

Control BT1 or while paused and the screen is displaying the Timer, press the 'ENTER' key.

**Reset**

⊕⊖

```
UP TIMER    ▼
>00:00.00
```

While timer is stopped (including pause), press the Reset keys.

JOG or ⊕⊖

Can set While timer is stop
(Can not set up while pausing.)

```
UP TIMER    ▲
>ALARM   OFF
 P.ALARM OFF
 NAVI    OFF
```
◀ENT
BACK▶
```
UP TIMER
*ALARM   OFF
 P.ALARM OFF
 NAVI    OFF
```
Set each item

JOG or ⊕⊖

```
UP TIMER    ▲
 ALARM   OFF
>P.ALARM OFF
 NAVI    OFF
```

```
UP TIMER    ▲
 ALARM   OFF
 P.ALARM OFF
>NAVI    OFF
```

**ALARM**
Alarm is sounded after the counting setting time has expired.
(Alarm tone can set)
Initial Value OFF , Min.Value 1 min, Max.value 99 min

**P.ALARM**
Can set Pre Alarm befor the Alarm.
Initial Value OFF , Min.Value 1 sec , Max.value 99 sec

**NAVI**
Set LAP Navigation
Initial Value OFF , Min.Value 3.00 sec , Max.value 99.99 sec

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "UP TIMER" and press the 'ENTER' key.

**3** If the up timer is not assigned to an ET or BT the setup will be shown waiting for an assignment.
If the up timer is stopped, settings can be changed in the settings screen.

**4** The cursor returns to the beginning of the function if the 'ENTER' or 'BACK' key is pressed and pressing the 'BACK' key again will return you to the function menu list.

※ The lap navigation will alarm a sound for your target time lap once it has been set.
This is convenient when you are running.
You can start the up timer and the "NAVI" function with the same button.
After you have started the up timer and you press the button again, this will start your target lap time.
Every time you press the button it will reset only your target lap time alarm.
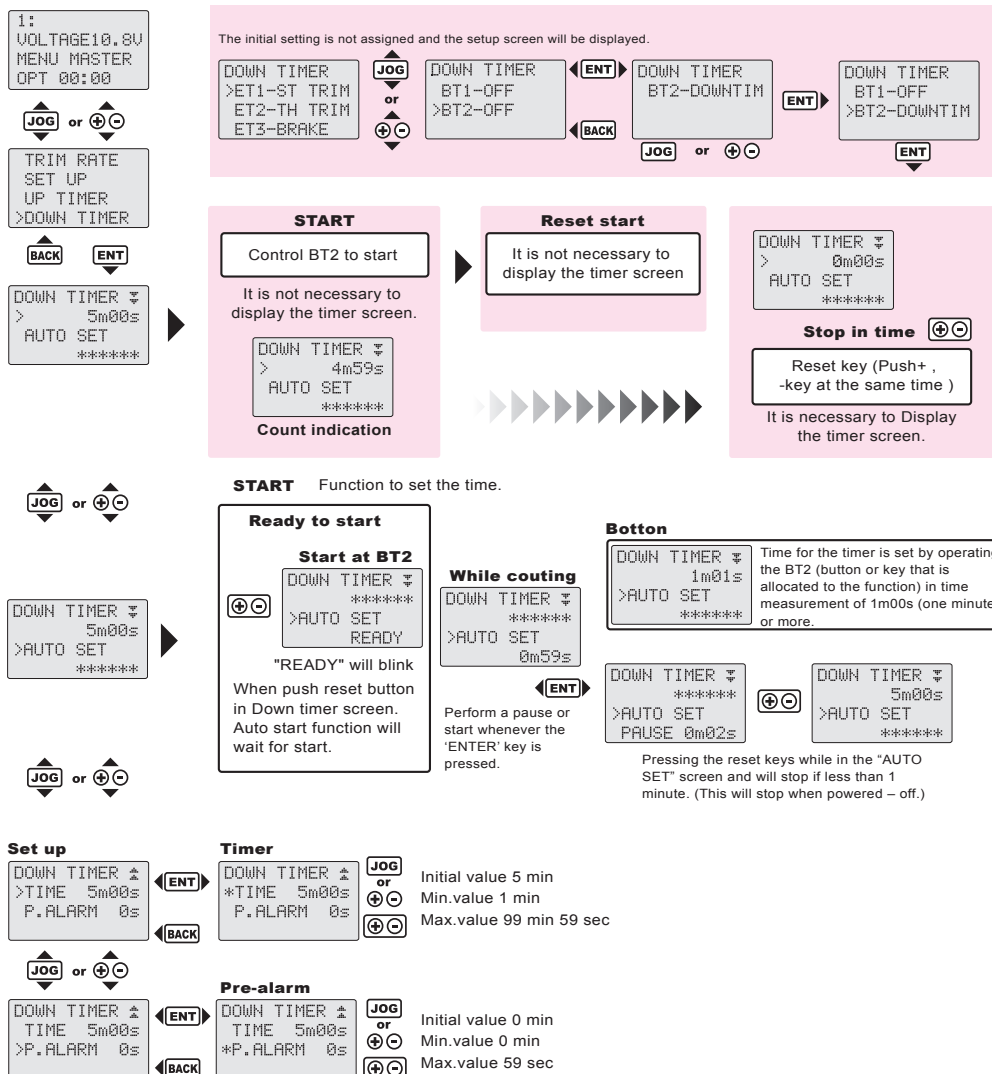To stop or pause the timer while in the up timer screen, press the 'ENTER' key.
To reset the timer, press and hold simultaneously the (+) and (-) keys.

# DOWN TIMER (Down Timer)

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## Setting the down timer (counts down).

The down timer is a timer that subtracts time from the total time that you have set.

Use this when you need to time your refueling of your gas car.

### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG or ⊕⊖

The initial setting is not assigned and the setup screen will be displayed.

```
DOWN TIMER
>ET1-ST TRIM
 ET2-TH TRIM
 ET3-BRAKE
```

JOG or ⊕⊖

```
DOWN TIMER
 BT1-OFF
>BT2-OFF
```

◀ENT
BACK▶

```
DOWN TIMER
 BT2-DOWNTIM
```

JOG or ⊕⊖

ENT▶

```
DOWN TIMER
 BT1-OFF
>BT2-DOWNTIM
```

ENT

```
TRIM RATE
SET UP
UP TIMER
>DOWN TIMER
```

BACK  ENT

```
DOWN TIMER ⍟
>       5m00s
 AUTO SET
      ******
```

**START**

Control BT2 to start

It is not necessary to display the timer screen.

```
DOWN TIMER ⍟
>       4m59s
 AUTO SET
      ******
```

**Count indication**

**Reset start**

It is not necessary to display the timer screen.

▶▶▶▶▶▶▶▶

```
DOWN TIMER ⍟
>       0m00s
 AUTO SET
      ******
```

**Stop in time** ⊕⊖

Reset key (Push+ , -key at the same time )

It is necessary to Display the timer screen.

JOG or ⊕⊖

**START** Function to set the time.

```
DOWN TIMER ⍟
        5m00s
>AUTO SET
      ******
```

**Ready to start**

**Start at BT2**

⊕⊖
```
DOWN TIMER ⍟
      ******
>AUTO SET
       READY
```

"READY" will blink

When push reset button in Down timer screen. Auto start function will wait for start.

**While couting**

```
DOWN TIMER ⍟
      ******
>AUTO SET
       0m59s
```

◀ENT▶

Perform a pause or start whenever the 'ENTER' key is pressed.

**Botton**

```
DOWN TIMER ⍟
        1m01s
>AUTO SET
      ******
```

Time for the timer is set by operating the BT2 (button or key that is allocated to the function) in time measurement of 1m00s (one minute) or more.

```
DOWN TIMER ⍟
      ******
>AUTO SET
 PAUSE 0m02s
```

⊕⊖

```
DOWN TIMER ⍟
        5m00s
>AUTO SET
      ******
```

Pressing the reset keys while in the "AUTO SET" screen and will stop if less than 1 minute. (This will stop when powered – off.)

JOG or ⊕⊖

**Set up**

```
DOWN TIMER ▲
>TIME  5m00s
 P.ALARM  0s
```

◀ENT▶
◀BACK

**Timer**

```
DOWN TIMER ▲
*TIME  5m00s
 P.ALARM  0s
```

JOG or ⊕⊖ ⊕⊖

Initial value 5 min
Min.value 1 min
Max.value 99 min 59 sec

JOG or ⊕⊖

```
DOWN TIMER ▲
 TIME  5m00s
>P.ALARM  0s
```

◀ENT▶
◀BACK

**Pre-alarm**

```
DOWN TIMER ▲
 TIME  5m00s
*P.ALARM  0s
```

JOG or ⊕⊖ ⊕⊖

Initial value 0 min
Min.value 0 min
Max.value 59 sec

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "DOWN TIMER" and press the 'ENTER' key.

**3** If the down timer is not assigned to an ET or BT the setup will be shown waiting for an assignment.

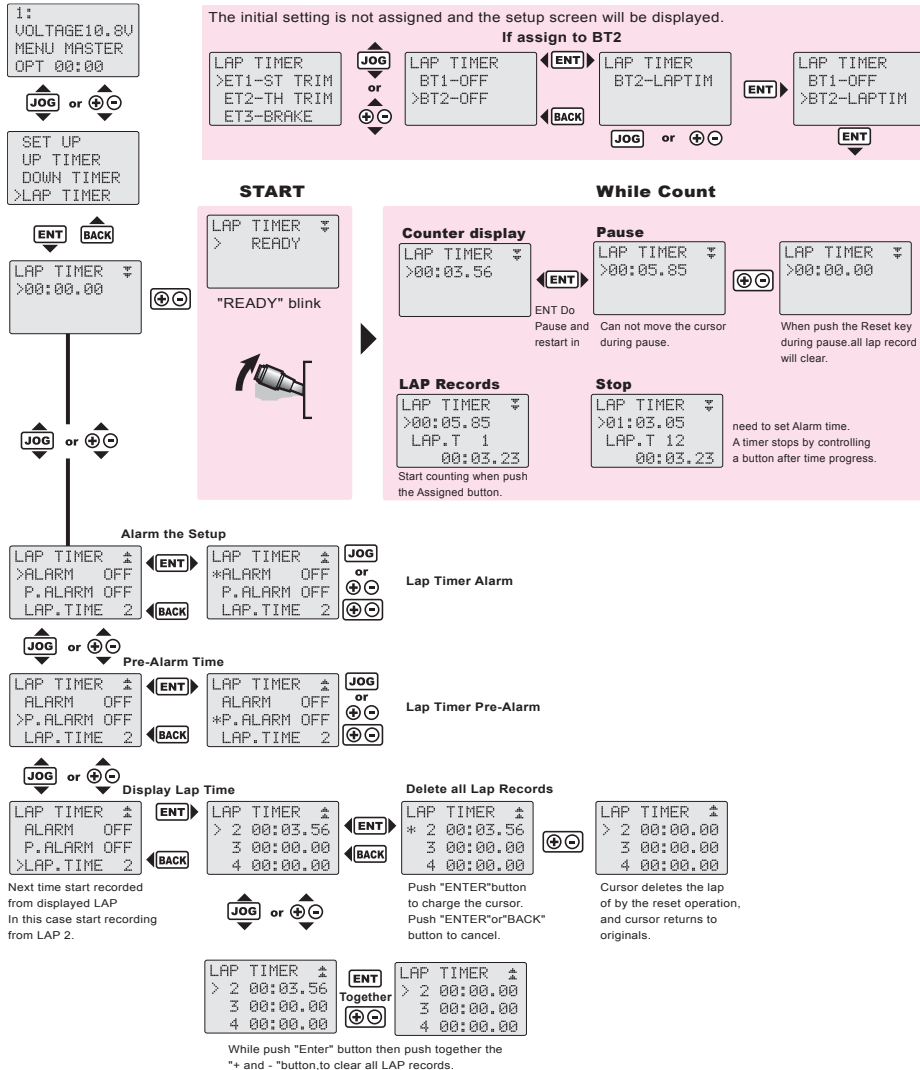If the down timer is stopped, settings can be changed in the settings screen.

**4** The down timer counts time down from the initial setting automatically.

(You can also set the total time manually.)

● With the automatic set you can set the time that you need to refuel.

● If the pre-alarm is set, this can give you notice that the refueling time is fast approaching.

● You cannot use this function unless it is assigned to an ET lever or BT button.

● You can assign a custom tone for the alarm sound of the down timer. (P27)

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## Using the lap timer you can count your laps while running.

When using the lap timer while you are running, you decide on a recording point and by pressing either an assigned BT button or ET lever you will record the lap time.
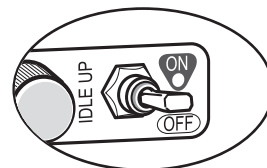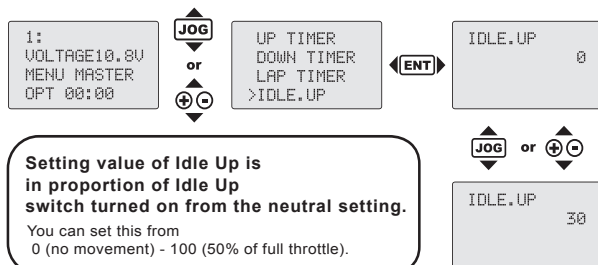
### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG or ⊕⊖

```
SET UP
UP TIMER
DOWN TIMER
>LAP TIMER
```

ENT  BACK

```
LAP TIMER  ⇳
>00:00.00
```
⊕⊖

The initial setting is not assigned and the setup screen will be displayed.

**If assign to BT2**

```
LAP TIMER
>ET1-ST TRIM
 ET2-TH TRIM
 ET3-BRAKE
```
JOG or ⊕⊖

```
LAP TIMER
 BT1-OFF
>BT2-OFF
```
ENT / BACK

```
LAP TIMER
 BT2-LAPTIM
```
ENT

```
LAP TIMER
 BT1-OFF
>BT2-LAPTIM
```
ENT

JOG or ⊕⊖

**START**

```
LAP TIMER  ⇳
>     READY
```
"READY" blink

**While Count**

**Counter display**
```
LAP TIMER  ⇳
>00:03.56
```
ENT
ENT Do
Pause and
restart in

**Pause**
```
LAP TIMER  ⇳
>00:05.85
```
Can not move the cursor
during pause.

```
LAP TIMER  ⇳
>00:00.00
```
⊕⊖
When push the Reset key
during pause.all lap record
will clear.

**LAP Records**
```
LAP TIMER  ⇳
>00:05.85
 LAP.T  1
     00:03.23
```
Start counting when push
the Assigned button.

**Stop**
```
LAP TIMER  ⇳
>01:03.05
 LAP.T 12
     00:03.23
```
need to set Alarm time.
A timer stops by controlling
a button after time progress.

JOG or ⊕⊖

**Alarm the Setup**
```
LAP TIMER  ⇳
>ALARM  OFF
 P.ALARM OFF
 LAP.TIME  2
```
ENT / BACK
```
LAP TIMER  ⇳
*ALARM  OFF
 P.ALARM OFF
 LAP.TIME  2
```
JOG or ⊕⊖

**Lap Timer Alarm**

JOG or ⊕⊖

**Pre-Alarm Time**
```
LAP TIMER  ⇳
 ALARM  OFF
>P.ALARM OFF
 LAP.TIME  2
```
ENT / BACK
```
LAP TIMER  ⇳
 ALARM  OFF
*P.ALARM OFF
 LAP.TIME  2
```
JOG or ⊕⊖

**Lap Timer Pre-Alarm**

JOG or ⊕⊖

**Display Lap Time**
```
LAP TIMER  ⇳
 ALARM  OFF
 P.ALARM OFF
>LAP.TIME  2
```
ENT / BACK
```
LAP TIMER  ⇳
> 2 00:03.56
  3 00:00.00
  4 00:00.00
```
ENT / BACK

**Delete all Lap Records**
```
LAP TIMER  ⇳
* 2 00:03.56
  3 00:00.00
  4 00:00.00
```
⊕⊖
```
LAP TIMER  ⇳
> 2 00:00.00
  3 00:00.00
  4 00:00.00
```

Next time start recorded
from displayed LAP
In this case start recording
from LAP 2.

JOG or ⊕⊖

Push "ENTER"button
to charge the cursor.
Push "ENTER"or"BACK"
button to cancel.

Cursor deletes the lap
of by the reset operation,
and cursor returns to
originals.

```
LAP TIMER  ⇳
> 2 00:03.56
  3 00:00.00
  4 00:00.00
```
ENT
**Together**
⊕⊖
```
LAP TIMER  ⇳
> 2 00:00.00
  3 00:00.00
  4 00:00.00
```

While push "Enter" button then push together the
"+ and - "button,to clear all LAP records.

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to enter the function menu.

**2** Using the Jog Dial, (+) or (-) keys, move the cursor in the menu list to "LAP TIMER" and press the 'ENTER' key.

**3** If the lap timer is not assigned to an ET or BT the setup will be shown waiting for an assignment.
If the lap timer is stopped, settings can be changed in the settings screen.
(During a pause, setting adjustments are not possible.)

**4** The lap timer will record up to a maximum of 80 laps.
If you exceed 80 laps, it will start recording over lap number 1 and continue.

**ADVICE**
● The lap times that are recorded by the lap timer are recorded in the memory of the transmitter regardless of changing the model memory number.
However, various settings of the lap timer are independent for each model memory number.

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**When the Idle Up switch turn on, the neutral position of throttle goes to pre-installed position.**

Using this function, you can easily start the engine of a gas-powered car and you can prevent an engine stall when refueling gas. Also, using an electric powered car this function can prevent the slipping of rear tires when using lay-down brushed motor.

**[How to open the setup screen]**

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG or ⊕⊖

```
UP TIMER
DOWN TIMER
LAP TIMER
>IDLE.UP
```

ENT

```
IDLE.UP
        0
```

JOG or ⊕⊖

**Setting value of Idle Up is in proportion of Idle Up switch turned on from the neutral setting.**
You can set this from
0 (no movement) - 100 (50% of full throttle).

```
IDLE.UP
        30
```

When the Idle Up Lever is turned on, the neutral position of throttle goes to the designated position.

IDLE UP  IDLE UP INDICAT
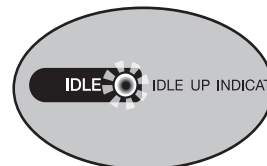
If the Idle Up function is active, the Idle Up indicator will flash.

**1** From initial screen, use the Jog dial, (+) or (-) keys to open the Function menu.

**2** Use Jog dial, (+) or (-) keys to choose the "IDLE UP" from menu list.

**3** Use Jog dial, (+) or (-) keys to adjust the value when the Idle up is active.

**4** Using the Idle Up lever turn it on and the neutral position of throttle goes to the designated position. The offset of the neutral position is not removed until you turn off the idle up lever.

**5** While Idle Up is active, the Idle Up indicator on the left of the LCD display flashes on and off.

If the numerical value that you set the stroke to is 100, this is half of the total throw of the throttle (50%) which you have set with the throttle high point.
In addition, if the Idle Up is turned ON, the throttle stick operation is still functional.
The brake high point value is not changed when the Idle Up function is set or turned on.

**ADVICE**

● Please be careful when turning on the transmitter, because the Idle Up switch is a mechanical switch and the lever can be switched on before the transmitter is turned on.

● Please verify that this is turned off before turning on the transmitter to prevent a run-away.

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This function can change the movement of steering servo to three phases that are set beforehand.
You can change the movement of steering servo by easily operating a lever even during run.

**[How to open the setup screen]**

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG
or
⊕⊖

```
 DOWN TIMER
 LAP TIMER
 IDLE.UP
>ST:TR PRESET
```

ENT

```
ST:TR PRSET
>SET 1   100%
 SET 2   100%
 SET 3   100%
```

```
3●
2●
1●
```
ST:TRAVEL
PRESET

JOG  or  ⊕⊖

**It is possible to set it within the range of 0~100%.**

```
ST:TR PRSET
 SET 1   100%
>SET 2   100%
 SET 3   100%
```

ENT
BACK

```
ST:TR PRSET
 SET 1   100%
＊SET 2   100%
 SET 3   100%
```
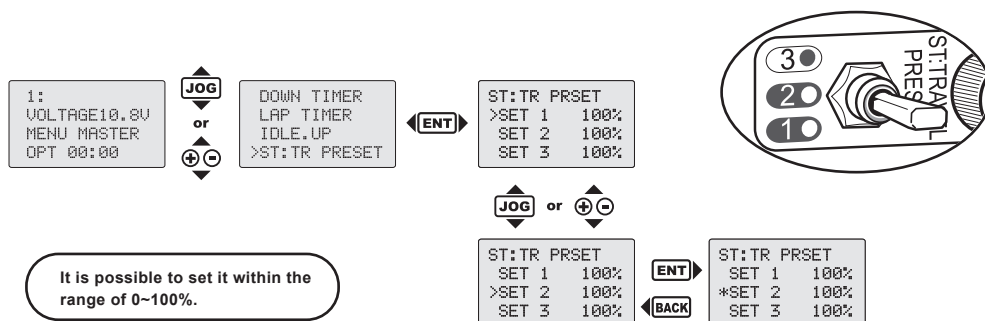
**1** From initial screen, use Jog Dial, (+) or (-) keys to open the Function menu.

**2** From the menu list, choose the "ST:TR PRSET" and press the 'ENTER' key.

**3** Press the 'ENTER' key to enter the setup menu.
Use the Jog Dial, (+) or (-) keys to choose the adjusting SET1 - 3.

Press the 'ENTER' key to enter the setting SET1 - 3, use the Jog Dial, (+) or (-) keys to adjust the value.
When pressing the Enter key at SET1 - 3, the cursor changes ⧐ to ＊ and then you can adjust the value.
To reset to the factory default, press and hold simultaneously the (+) and (-) keys.
The display will show 100%.

**4** You can adjust the value from 0 to +100. Pressing the 'ENTER' key, the cursor changes from ＊ to ⧐
and is assigned.

**5** You can change the SET1 to SET3 by operating a ST:TR PRESET Lever.

ST:TR PRESET Lever initialization is up for SET2, middle for SET1 and down for SET3.
When settings are close to one another for SET 2, 1, 3, it is easy to operate it intuitively and is convenient for prevention of false operation.

**ADVICE** ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●

● You can use this set up for low traction tracks or for Oval races.

# TILT MIX

### This will allow you to mix channel 1 and channel 3.

When using outboard engines for boats, the rudder (CH1) can be mixed to tilt (CH3) or the tilt can be mixed to rudder.
You can set the mixing control to your preference.
Operation of the rudder can be controlled via a servo using CH1 (steering stick) and the tilt servo using the ET/BT, which is set in the 'SET UP'.

### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG
or
⊕ ⊖

```
LAP TIMER
 IDLE.UP
 ST:TR PRESET
>TILT.MIX
```

ENT

```
TILT.MIX
>MIX    OFF
 CH1>3     0
 CH3>1     0
```

ENT
BACK

```
TILT.MIX
*MIX     ON
 CH1>3     0
 CH3>1     0
```

The mixing effect will activate when MIX ON is selected.

In order to use this function, 'CH SELECT' (P55) will need to be set to 3CH beforehand.
In addition, initial setting value of mixing is 0.
You can set it in a range of 100 or more +100%.

JOG or ⊕ ⊖

```
TILT.MIX
 MIX    OFF
>CH1>3     0
 CH3>1     0
```

JOG or ⊕ ⊖

```
TILT.MIX
*MIX     ON
 CH1>3     0
 CH3>1     0
```

When 3CH is not set, then the CH.SELECT screen is displayed.

JOG or ⊕ ⊖

```
TILT.MIX
 MIX    OFF
 CH1>3   +90
*CH3>1  -100
```

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to open the Function Menu.

**2** Use the Jog Dial, (+) or (-) keys to choose the 'TILT MIX' function from the menu list and press the 'ENTER' key.

**3** Choose MIX and press Enter. When the cursor changes from ▷ to ✳ , you can adjust setting by using the Jog Dial, (+) or (-) keys.

**4** The mixing effect will activate by selecting MIX ON. Pressing the 'ENTER' key, the cursor changes from ✳ to ▷ and is unassigned.
When the CH.SELECT screen is displayed and CH3 is not available, please refer to Page 55 for reference. (When CH3 is not selected, you will not be able to use this feature.)

**5** Choose CH1 >3 or CH1 >3 and coordinate the quantity of mixing with the direction of control.

**6** A setting is initialized when the 'ENTER' key is pressed.
To return to a previous screen, continue pressing the 'BACK' key.

The setting of steering servo ST:TRAVEL (ST:BALANCE , ST:CURVE , ST:PUNCH , ST:SPEED , ST:TRAVEL) will also effect the movement of CH3.
※ It may be necessary to identify and change only the movement of CH3 by using the 'REVERSE' setting feature.

**ADVICE**

● This can be applied to outboard engines in boats and also 4WS (four-wheeled steering vehicles).

## Assign the movement of Channel3.

The installed servo in channel 3 can have the movement pattern and quantity of the movement set.

**[How to open the setup screen]**
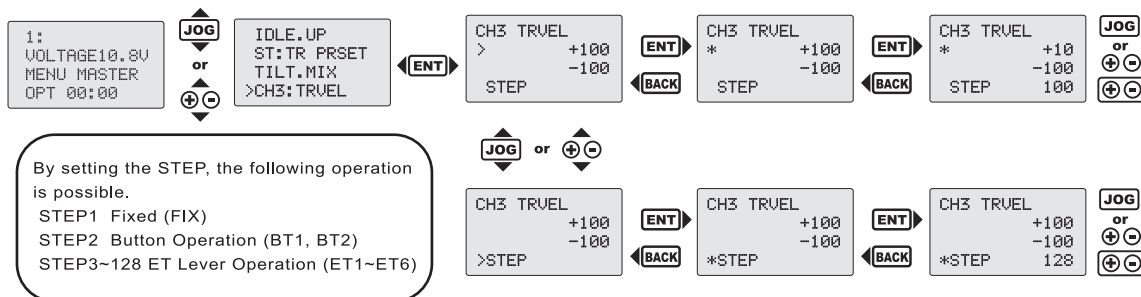
```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
JOG or ⊕⊖

```
IDLE.UP
ST:TR PRSET
TILT.MIX
>CH3:TRVEL
```
ENT

```
CH3 TRVEL
>       +100
         -100
  STEP
```
ENT / BACK

```
CH3 TRVEL
*       +100
         -100
  STEP
```
ENT / BACK

```
CH3 TRVEL
*       +10
         -100
  STEP    100
```
JOG or ⊕⊖ ⊕⊖

By setting the STEP, the following operation is possible.
STEP1 Fixed (FIX)
STEP2 Button Operation (BT1, BT2)
STEP3~128 ET Lever Operation (ET1~ET6)

JOG or ⊕⊖

```
CH3 TRVEL
        +100
         -100
>STEP
```
ENT / BACK

```
CH3 TRVEL
        +100
         -100
*STEP
```
ENT / BACK

```
CH3 TRVEL
        +100
         -100
*STEP    128
```
JOG or ⊕⊖ ⊕⊖

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to open the Function Menu.

**2** Use the Jog Dial, (+) or (-) keys to choose the 'CH3:TRAVEL' function from the menu list and press the 'ENTER' key.

**3** Choose the STEP and press the 'ENTER' key.
The cursor changes from > to ✳ and you can adjust the setting by using Jog Dial, (+) or (-) keys.
※ When setting the STEP at 2 or more, the CH.SELECT screen is displayed when channel 3 is not set. Please refer to page 55. (When setting is not correct, you cannot use CH3.)

STEP1   CH3 is fixed at the position that you set in 3CH:POS (page 66).

STEP2   CH3 can operate in 2 steps, ON or OFF.
Once assigning a BT, when you push the BT, the servo will move in the "+" direction. When releasing the BT, the servo will move in the "-" direction.

STEP3   Using ET1 to ET6, the servo can be controlled in three steps "+" direction, "Neutral position" and "-" direction.

STEP4~128   Using ET1 to ET6, you can operate the servo with in the number of the steps that divide the CH3:TRAVEL direction in either "+" or "-".

**4** After choosing the STEP, the setting will be retained by pressing the 'ENTER' key, and the cursor ✳ returns to ❯ in the display.
Please continue pressing the 'BACK' key to return to the initial screen.

**5** Set the amount of stroke for the servo after setting the linkage of a radio control model.
To adjust the + stroke, move the ❯ cursor to the line of +100, and press the 'ENTER' key.
To change the cursor from ❯ to ✳ use the Jog Dial, (+) or (-) keys to modify settings.

**5** Pressing the 'ENTER' or 'BACK' keys will change the ✳ cursor.
To return to the initial screen to continue, press the 'BACK' key.

**ADVICE**
● If the movement of channel 3 operates in the opposite direction that you would like it to, you can change the direction of the movement by using the 'REVERSE' function setting (page 56).

# 3CH POS (Third channel position)

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## Adjusting the neutral position of channel 3. (STEP 1 & 3 only)

This affects only the case of using 3CH TRAVEL for STEP 1 or 3. See page 65.

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

**JOG**
**or**
**(+)(-)**

```
 DOWN TIMER
 LAP TIMER
 IDLE.UP
>3CH.POS
```

**ENT**

```
3CH POS
          0%
```

**JOG  or  (+)(-)**
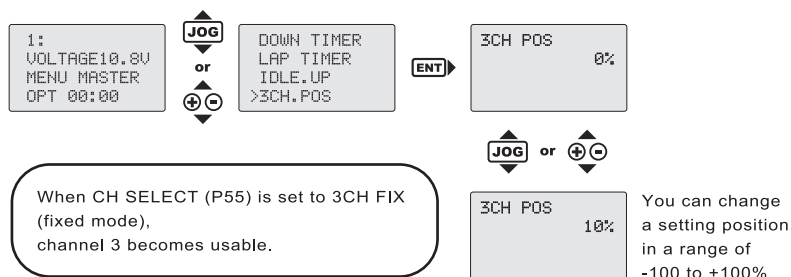
When CH SELECT (P55) is set to 3CH FIX (fixed mode), channel 3 becomes usable.

```
3CH POS
        10%
```

You can change a setting position in a range of -100 to +100%.

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to open the Function menu.

**2** Use the Jog Dial, (+) or (-) keys to choose the "3CH POS" from the menu list and press the 'ENTER' key.

**3** Use the Jog Dial, (+) or (-) keys to adjust the set position.

Please be careful not to confuse "SET UP" with "CH3-POS" appearing in the function menu.

ET and BT cannot be set in 3CH POS. This is only the neutral position setting for STEP 1 or 3. CH3.

POS function controls the operation of channel 3.

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## This function will mix the brake action to Channel3.

You can use this function when it is necessary to adjust the front brakes, independently from the rear brakes like a 1/5 car. You should make your car rear brakes controlled by channel 2, front brakes controlled by channel 3.

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```
JOG
or
⊕ ⊖
```
TILT.MIX
CH3.TRVEL
3CH.POS
>BRAKE.MIX
```
ENT
```
BRAKE.MIX
>MIXING   OFF
 ABS      OFF
 PUNCH    OFF
```
ENT / BACK
```
BRAKE.MIX
*MIXING   OFF
 ABS      OFF
 PUNCH    OFF
```
JOG or ⊕⊖ / ⊕⊖
```
BRAKE.MIX
*MIXING    15
 ABS      OFF
 PUNCH    OFF
```

**It is possible to set it within the range of 0~100%.**

JOG or ⊕⊖
```
BRAKE.MIX
 MIXING   OFF
>ABS      OFF
 PUNCH    OFF
```
ENT / BACK
```
BRAKE.MIX
 MIXING   OFF
*ABS      OFF
 PUNCH    OFF
```
JOG or ⊕⊖ / ⊕⊖
```
BRAKE.MIX
 MIXING   OFF
*ABS       ON
 PUNCH    OFF
```

JOG or ⊕⊖
```
BRAKE.MIX
 MIXING   OFF
 ABS      OFF
>PUNCH    OFF
```
ENT / BACK
```
BRAKE.MIX
 MIXING   OFF
 ABS      OFF
*PUNCH    OFF
```
JOG or ⊕⊖ / ⊕⊖
```
BRAKE.MIX
 MIXING   OFF
 ABS      OFF
*PUNCH     10
```

JOG or ⊕⊖
```
BRAKE.MIX
>ABS.WID   100
 ABS.DEL     0
```
ENT / BACK
```
BRAKE.MIX
*ABS.WID   100
 ABS.DEL     0
```

JOG or ⊕⊖
```
BRAKE.MIX
 ABS.WID   100
>ABS.DEL     0
```
ENT / BACK
```
BRAKE.MIX
 ABS.WID   100
*ABS.DEL     0
```

**1** From the initial screen, use the Jog Dial, (+) or (-) keys to open the Function menu.

**2** Use the Jog Dial, (+) or (-) keys to choose the "BRAKE MIX" function from the menu list and press the 'ENTER' key.

**3** Press the 'ENTER' key and the adjustment screen will appear.

● In the "BRAKE MIX" function, you can adjust five parameters.

● In the "BRAKE MIX" function menu, only the brake operation on the throttle servo (brake direction input of CH2) and the servo for the front brakes (CH3) will be mixed. Please refer to P.72 concerning other mixing.

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**Managing the brake mixing.**

### Mixing rate                                    Set the following parameters

● Brake operation of the throttle (CH2) and the front brakes (CH3) can be adjusted with a ratio that will have an influence on the operation.

● From OFF (no mixing) up to 100% can be set.

**ADVICE**
● Settings assigned to CH2 (TH **:** SPEED , TH:PUNCH , TH:CURVE , TH:BRAKE and TH:PRESET) influence CH3. As for the ABS feature, this can be set separately.

### ABS

● Choose ABS setting to influence CH3 or not.
As for the Throttle servo, ABS will work the front brakes (slave servo) likewise when you set it to ON.

### PUNCH

● A setting range from OFF to 100 is possible.
You can adjust only an initial reaction of the front brakes (slave servo).

**ADVICE**
● When you use the slave servo for the front brakes, you can adjust an initial reaction of the front and rear brakes independently.

### ABS.WID

● When the ABS of slave servo is active, you can adjust ABS Width of the slave servo independently.

### ABS.DEL

● When the ABS of slave servo is active, you can adjust ABS Delay of slave servo independently.

**ADVICE**
● When the slave servo is used for the front brakes, the front brakes and the rear brakes are two completely different units. You have control over each servo independently to operate the brakes effectively.

● You can easily change the setting during a run like the following example.
The front brakes are an independent adjustment that is enabled by setting the CH3. TRV and CH3. POS on an ET lever with the SET UP screen.

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## You can apply mixing between arbitrary channels.

This function will allow the mixing between steering, throttle and CH3.

P.MIXING1 and P.MIXING2 functions are an independent mixing control system for each program set.

### [How to open the setup screen]

```
1:
VOLTAGE10.8V
MENU MASTER
OPT 00:00
```

JOG
or
⊕⊖

```
3CH POS
BRAKE.MIX
 P.MIXING1
>P.MIXING2
```

ENT

```
P.MIXING2
>MIX    MODE1
 MST.CH    ST
 SLV.CH    ST
```

| MIX | OFF/MODE1/MODE2 | Mixing selection |
|---|---|---|
| MODE1: | | Mixing is by stick operation |
| MODE2: | | Mixing from the operation output |
| zST.CH: | | Appointing the master channel |
| | | which applies the mixing |
| SLV.CH: | | Appointing the slave channel |
| | | which is applied for mixing |

JOG or ⊕⊖

```
P.MIXING2
>RATE.L    0
 RATE.R    0
 OFFSET    0
```

| RATE.L | Quantity of mixing for theleft steering |
|---|---|
| | Appoint a rate |
| | (-100% reversal turn - 0 - +100% original turn) |
| RATE.R ※ | Quantity of mixing for the right steering |
| OFFSET | Appointing the center of master channel |

※When the Master channel is set for ST
Indication changes with the master channel.

JOG or ⊕⊖

※ Only MODE1 is indicated.

```
P.MIXING2
>TRIM    OFF
 FUNC    OFF
```

※ When MODE1 is set in mixing mode (MIX), the following menus can be set.

TRIM    Trim for when the Master channel is ST or TH.
Set whether the trim is reflected
by the slave or not.

FUNC    Set the function whether the Master channel
reflects the settings of the slave channel or not.

**1** From the initial screen use the Jog Dial, (+) or (-) keys to open the Function menu.

**2** Use the Jog Dial, (+) or (-) keys and choose the "P.MIXING" from the menu list and press the 'ENTER' key.

**3** Press the 'ENTER' key and the adjusting screen will appear.

**4** Please press the 'BACK' key two times to return to the function menu.

### [Addition function explanation]

● You can offset the center point of mixing for the master channel .
(The point where the direction changes)

● Choose (ON or OFF) whether the master channel lets quantity of movement of the trim influence the mixing of the slave servo in the case of CH1 (steering) or CH2 (throttle).

● Choose (ON or OFF) whether to let the output of a slave channel mix a parameter of a function menu that is set by the master channel.

Related functions are mentioned below.

Steering: SPEED, CURVE, TRAVEL

Throttle: ABS, CURVE, TRAVEL

**ADVICE**

● The movement of slave channel
= (Movement of a master channel) * (the rate set by P.MIXING) + (Control of slave channel) + (Trim of slave channel)

# P.MIXING -1.2 (Program Mixing 1 & 2)

**How to setup the Program Mixing.**

## Choose the mixing mode.

```
P.MIXING2  ≆
>MIX    OFF
 MST.CH  ST
 SLV.CH  ST
```
[ENT]
```
P.MIXING2  ≆
*MIX   MODE1
 MST.CH  ST
 SLV.CH  ST
```

Move the cursor ⫶> to "MIX" and press the 'ENTER' key.
The cursor changes to ✳ and setting changes can be made.

| | |
|---|---|
| OFF… | Mixing is turned off. |
| MODE1… | The mixing is applied from the input of the Master channel of the stick and BT or ET. |
| MODE2… | The mixing is applied from the output of the Master channel. |

## Setting of the master and slave channels.to * and setting changes can be made.

```
P.MIXING2  ≆
 MIX   MODE1
>MST.CH  ST
 SLV.CH  ST
```
[ENT]
```
P.MIXING2  ≆
 MIX   MODE1
*MST.CH  CH3
 SLV.CH  ST
```

Move the cursor ⫶> to "MST.CH" or "SLV.CH" and press the 'ENTER' key.
The cursor changes to ✳ and setting changes can be made.

| | |
|---|---|
| MST.CH (Master channel) … | This is the channel which applies the mixing that is appointed. Choices are ST (CH1), TH (CH2) or 3CH. |
| SLV.CH (Slave channel) … | This is the channel which will have the mixing applied to and is appointed. Choices are the same as the Master ST, TH and 3CH. |

**ADVICE**

● Also, it is possible to select an identical channel to the master channel and the slave channel. At that time, the operational angle mixing rate (RATE) depends on the quantity.

## Setting of mixing rate

```
P.MIXING2  ≑
>RATE.+   0
 RATE.-   0
 OFFSET   0
```
[ENT]
```
P.MIXING2  ≑
*RATE.+   50
 RATE.-   0
 OFFSET   0
```
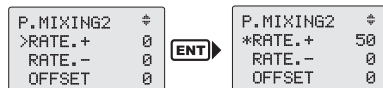
Move the cursor > to "OFFSET" and press the 'ENTER' key. The cursor changes to * and the setting changes can be made.

You can change a set point in a range from -100% to +100%.
A setting of negative value operates the slave servo in the opposite direction of the master servo. A positive setting value operates the slave in the same direction as the master.

**ADVICE**

✳ The "RATE" is changed by appointment of the master channel.

When master servo is ST.   When master servo is TH.   When master is 3Ch
Upper tier: L (left)        Upper tier: F (Advance side)   Upper tier: + (Plus side)
Lower tier: R (right)       Lower tier: B (Back side)      Lower tier: – (Minus side)

## Set the quantity of the "OFFSET".

```
P.MIXING2  ≑
 RATE.+   50
 RATE.-   0
>OFFSET   0
```
[ENT]
```
P.MIXING2  ≑
 RATE.+   50
 RATE.-   0
*OFFSET   0
```
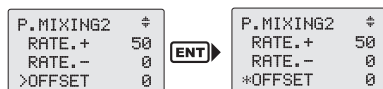
Move the cursor > to "OFFSET" and press the 'ENTER' key.
The cursor changes to * and the setting can be changed.
The setting can be changed from –100% to +100%.

A set value can be changed within the range of -100 to +100%.

OFFSET (offset function) Set the center point (the point that a direction is replaced by) of mixing from the master channel for the slave channel.
As a result, you can use the trim for the slave servo.
The operating quantity of the trim for the master channel can be reflected on the slave channel by choosing "ON" or "OFF".

## Setting of trim

```
P.MIXING2  ≛
>TRIM    OFF
 FUNC    OFF
```
[ENT]
```
P.MIXING2  ≛
*TRIM     ON
 FUNC    OFF
```
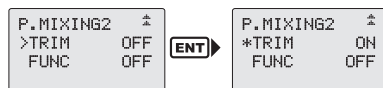
(ON) reflects the amount of operation of the trim not to be operated with the master channel in the slave servo, (OFF) will not follow this rule and can be selected.

## Function Setting (FUNC)

```
P.MIXING2  ≛
 TRIM     ON
>FUNC    OFF
```
[ENT]
```
P.MIXING2  ≛
 TRIM     ON
*FUNC    OFF
```
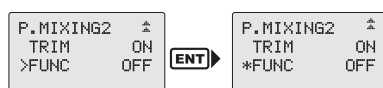
The functional effect that is set to the master channel can be reflected to the slave channel by choosing "ON" or "OFF".

## ULTRA (Ultra high-speed response mode.)
This operation speed is suitable when the super module of the Helios is installed.

The response transcends that of the EX-10 Helios using the RF-502FH super module.

※ Requires the use of the receiver and servo to match that of the advanced high-speed response.

**About channel select**
From the function menu the "RESPONS" will need to be set to "ULTRA" and the "CH.SELECT" will need to be set to "2CH".

## ADVANCED (Advanced high-speed response mode.)
This operational speed is the same as the Helios normal module.

From the function menu the "RESPONS" will need to be set to "ADVANCED" and the "CH.SELECT" will need to be set to "2CH".

This response exceeds that of the Vantage type R.

※ Requires the use of the receiver and servo to match that of the advanced high-speed response.

**About channel select**
If you set the "CH.SELECT" to "3CH", it will automatically change to the response speed to Super high-speed response mode.

## SUPER (Super high-speed response mode.)
This operational speed is the same as that of the Vantage type R.

From the function menu the "RESPONS" will need to be set to "SUPER".

In this case the number of channels, which are set in the "CH.SELECT", does not influence the speed.

※ Requires the use of the receiver and servo to match that of the super high-speed response.

## NORMAL (Normal speed response mode.)
This operational speed is the same as that of the Vantage.

From the function menu the "RESPONS" will need to be set to "NOMAL".

In this case the number of channels, which are set in the "CH.SELECT", does not influence the speed.

※ All of our receivers and servo can be used.

**[How to setup the response]**
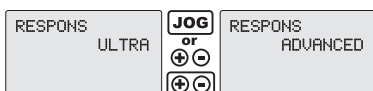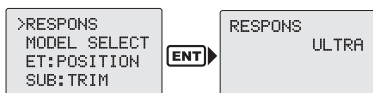
1. Using the Jog Dial, (+) or (-) keys, select the function "RESPONS" and press the 'ENTER' key.

2. Using the Jog Dial, (+) or (-) keys, select the response mode.

3. Pressing the 'ENTER' key will return you to the function menu.

**ADVICE**
● The use of ULTRA and ADVANCED high-speed response modes exclusively can only use the 2CH mode due to the limit of the speed of the radio wave.

● Please note, even if the indication on the screen is "ULTRA" or "ADVANCED", radio wave speed becomes SUPER high-speed response mode when you set it to "3CH".

# SETTING MEMO

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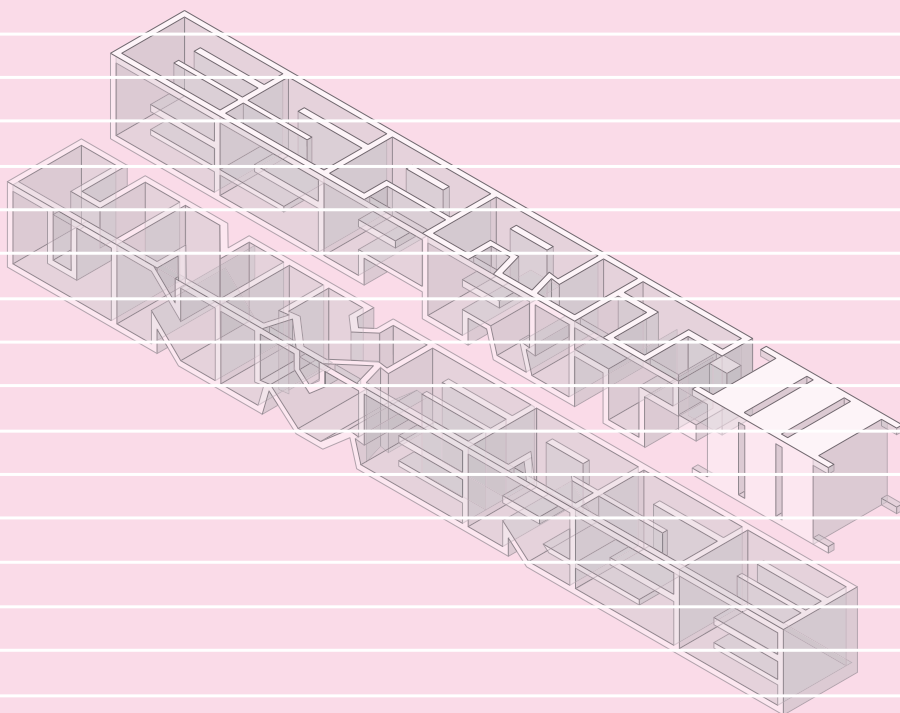
⚠ **Warning!** ❗ Execution
Be certain to use only KO Propo genuine FM crystal sets(transmitter and receiver). Never use crystals produced by other companies since such crystals may vary in frequency, which could lead to misoperation or out of control use.

⚠ **Warning!** ❗ Execution
Be sure to connect all equipment correctly. If connections are loosened by vibration,the model may run out of control.

⚠ **Warning!** 🚫 Prohibition
Do not cut or bundle the aerial wire with other cords. It may result in decreasing the sensitivity of the receiver and may result in the model running out of control.

⚠ **Caution!** 🚫 Prohibition
Be careful not to reverse the polarity of the transmitter and the receiver. Reverse polarity could damage the units.

⚠ **Caution!** ❗ Execution
Be sure to use genuine KO Propo products e.g. transmitter,receiver, ESC and other optional parts.
※ We cannot assume any responsibility for the use of other companies products with this unit.

⚠ **Warning!** ❗ Execution
Be sure to use grommets and be sure that the servo is not touching any metal plates directly.
※ The vibrations may damage the servo and the model may run out of control.

● **Connecting the receiver**

Crystal replacement

**KR-302F**

Antenna Lead

BATT
Switch Harness
CH1
Steering Servo
CH2
ESC or Throttle Servo
ESC
CH3
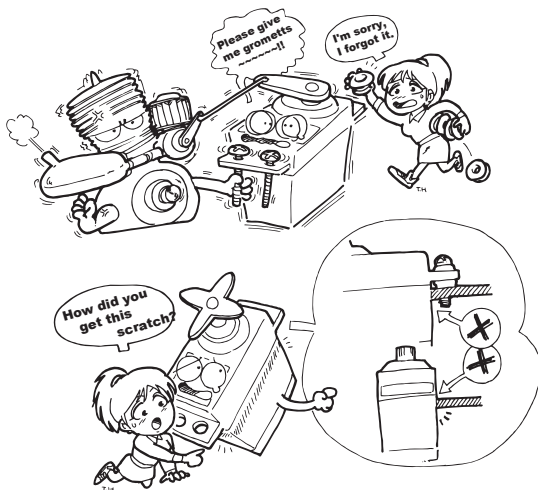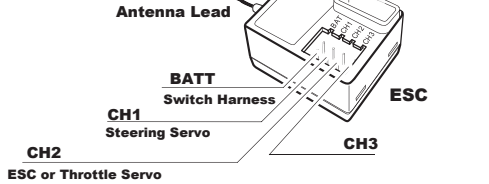
● **For an electric-powered car (ESC + 6V servos)**

Steering Servo

Receiver

ESC (Electric Speed Controler)
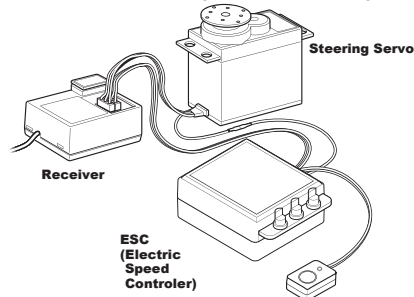
● **For a gasoline-powered car (6V servos)**

5N600mAh 6VNicd Battery
Switch Harness
Throttle Servo

Receiver

Steering Servo
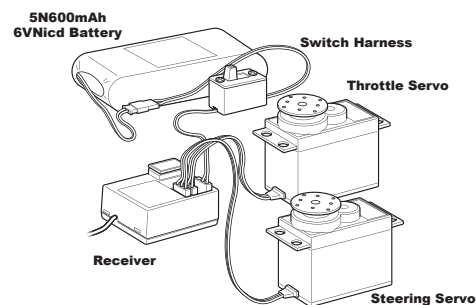
● **For a gasoline-powered car (7.2V FET Servos)**

6N600mAh 7.2VNicd Battery

7V Reguletor Switch Harness

Throttle Servo

Receiver

Steering Servo

# Connecting the Receiver

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## KR-302F / FS

Antenna Lead

BATT
Switch Harness

CH1
Steering Servo

CH2
ESC or Throttle Servo

CH3

## KR-301F

Antenna Lead

CH1
Steering Servo

CH2
ESC or Throttle Servo

CH3

BATT
Switch Harness

With different models of receivers being used, the secquence of each channel and a battery channel changes. Please connect a connectors after a checking the display. Keep in mind that things may not operate even if you connect the Servo and ESC to a battery channel.

### About frequency changes

● When the frequency to be used is exchanged in a frequency band.

The crystal of a transmitter and a receiver is exchanged for the frequency to be used.

● For changing the frequency band to be used.

Exchange of a frequency band is possible by exchanging the RF module. An exchangeable frequency band is restricted to the frequency band permitted in each country where it is used.

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## ● The Source of Noise and Electromagnetic Induction (Electric-powered car)

Assume that all areas where large currents are flowing generating noise!
Locate antenna wires and receivers as far away from the motor, ESC, nicad batteries,and silicone wire as possible. Noise is a type of radio wave, and therefore is radiated (travel through the air) in the same fashion. Therefore, locating an antenna near a noise source increases the effect of the noise.
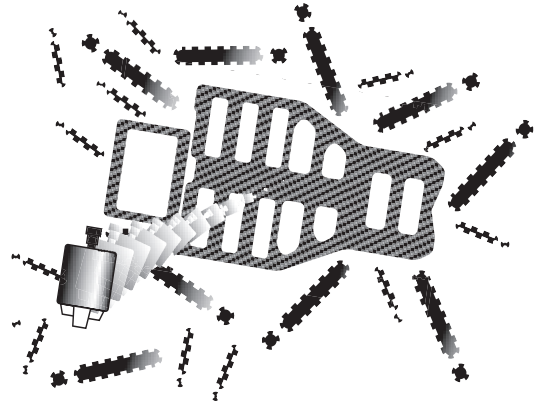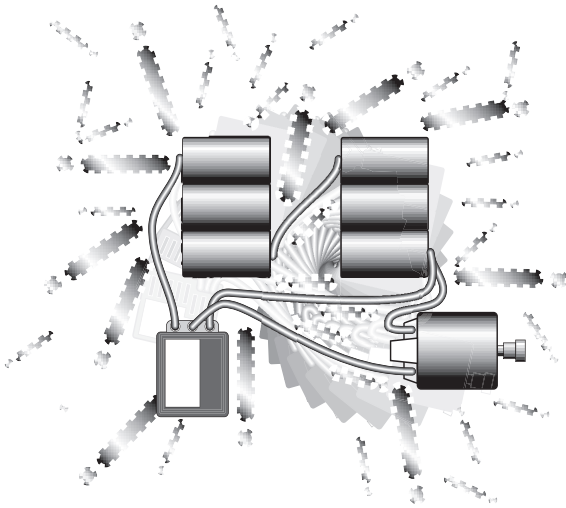
Metals and carbon can also conduct noise. As a result, you should never
closely attach the antenna wire to the plate and carbon chassis.

## ●Distance Between the Receiver and Antenna Holder

Install the antenna holder as near to the receiver as possible.
The easier it is for the antenna to pick up noise,the sensitivity of the receiver will decrease.
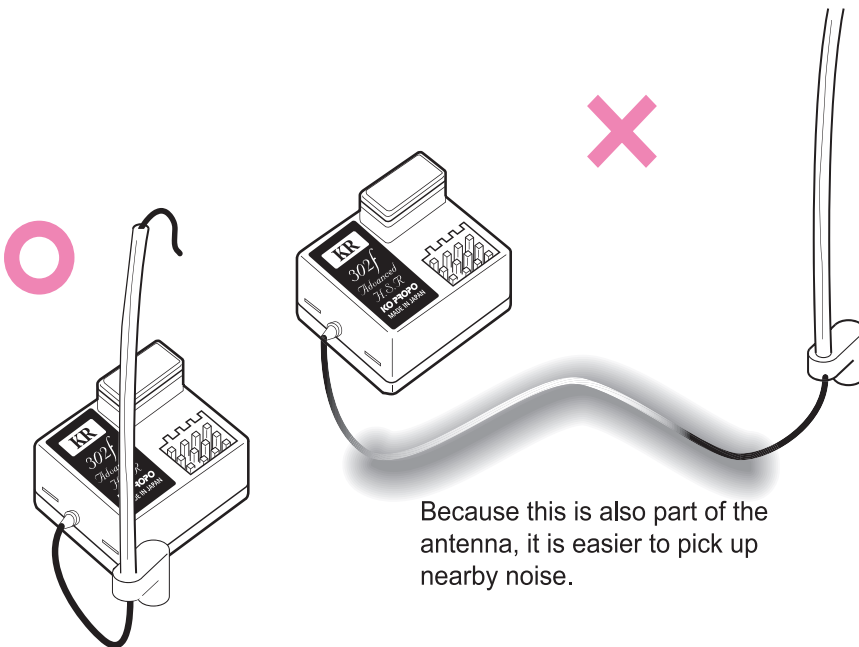
Because this is also part of the antenna, it is easier to pick up nearby noise.

# Notes on installing-1

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## Notes on Installing the Receiver

### ●Notes on Installing Position (Do not install near the reciever.)

The installation position should be as far as possible from the motor, ESC, nicad batteries, silicone wires or other noise sources.Especially, do not route the silicone wires next to the receiver. (Must not be near to the crystal)
FET servo blue wire (7.2V wire) and switches can also generate noise, position them as far away as possible from the receiver and the antenna.



The silicone wire passes directly over the receiver.

Antenna

Do not allow the silicone wires to cross the antenna.
Do not route the wires near the antenna.

Do not position the antenna opening or the crystal near the nicad batteries, motor, or the carbon chassis.

Do not position the receiver or the antenna on the top of the motor or the nicad batteries.

When mounting the receiver and antenna on the "upper deck", position them as far away from the nicad batteries and motor as possible.

## Mounting the Receiver (Electric-powered car)

●When fixing the receiver in place on the chassis or on the "mechanical plate", use two pieces of double-sided tape, one on top of the other, so that the receiver is cushioned somewhat.
Be sure that the crystal is on the high end when installing the receiver



Do not mount the receiver directly on the chassis or "mechanical deck"

Use two layers of double-sided tape.

Do not position the crystals on the bottom

Always position the crystal on the top
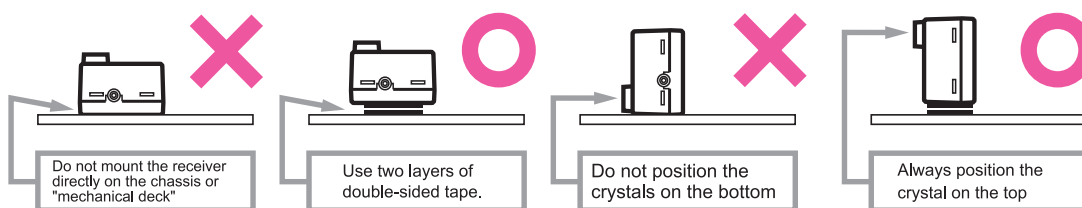
## ● Notes on Installing the Receiver (Gasoline-powered car)

Do not secure the receiver on the chassis or the "mechanical deck". Vibrations will cause the receiver to misfunction and may even cause internal damage to the receiver. Either use the bracket (receiver holder) provided with the kit or else, cushion the receiver with a sponge like material.

**Bracket**

**Sponge**
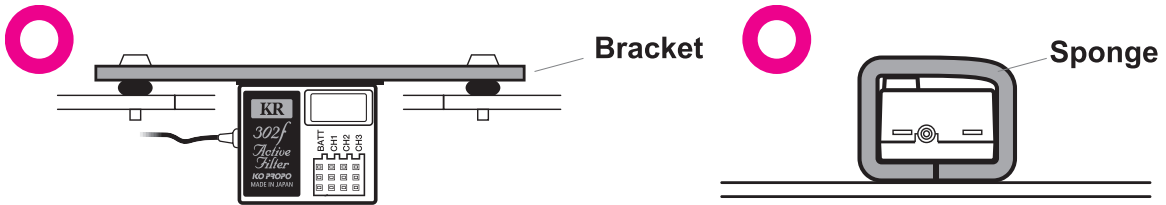
**⚠Warning!** | **❗Execution** | Do not place in an area where the exhaust gas of an engine carries nor where high temperature prevail.
※ A receiver breaks down and it can become the cause of a reckless run.

## ● Notes on Antenna Installation

Please follow the instruction as in the illustration below when you mount the antenna holder to the metal or carbon chassis.When using on FRP or carbon hollow antenna on a racing car, etc., do not pass the antenna wire through the pipe, allow it to trail away loosely outside.

**Piano wire**

**Aluminium holder**

**Metal, carbon (OK if FRP or plastic)**

**Soldered to lug board**

**Pipe**

**Aluminium holder**

**Metal, carbon (OK if FRP or plastic)**

**Pipe**

**Plastic holder**

**Metal, carbon**

**Do not secure antenna wire to the plate**

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**KO PROPO** ®

## ESPRIT-III UNIVERSE

Advanced Control For the Professional Driver.

## *Main Spacifications*

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### Transmitter        KT-306

| | |
|---|---|
| Operation method | Stick |
| Number of channels | 3 Channels |
| Transmission Freqency | Any Band by charging crystals Neutral pulse |
| | Within the frequency range |
| Neutral pulse | 1.5msec |
| Memory | EEPROM |
| Supply Voltage | 8x AA size dry cell or 8 cells Ni-cd |
| Current consumption | Less than 250mA |

### RF Module RF-402FR for KT-306

| | |
|---|---|
| Transmission Freqency range | Any frequency range by switching RF modules |
| Moduration method | FM-PPM |

### Receiver    KR-302FS

| | |
|---|---|
| Reception method | FM-PPM |
| Number of channels | 3 Channels |
| Reception frequency | Any Band by charging crystals Neutral pulse |
| | Within the frequency range |
| IF frequency | 455KHz |
| Supply Voltage | 3.5 to 6.5V |
| Dimentions | 29.3 × 24.4 × 16.4mm |
| Weight | 12.0 (excluding crystal) |

## KO PROPO ®

**LATEST LEADING RADIO CONTROL TECHNOLOGY**

## What is mixing function (mixing control)?

The input signal from sticks, ET and BT operations go only to the same channel.

The mixing function transmits these input signals to the assigned channels (mixing).

### Mixing menu for master/slave

| | Master | Slave |
|---|---|---|
| BRAKE MIX | CH2 Only the brake input | CH2 Entire area |
| TILT MIX | CH2 All inputs | CH2 Entire area |
| | or | or |
| | CH3 All inputs | CH3 Entire area |
| P.MIXING 1 | CH1-3 All inputs | CH1-3 Optional range |
| P.MIXING 1 | CH1-3 All inputs | CH1-3 Optional range |
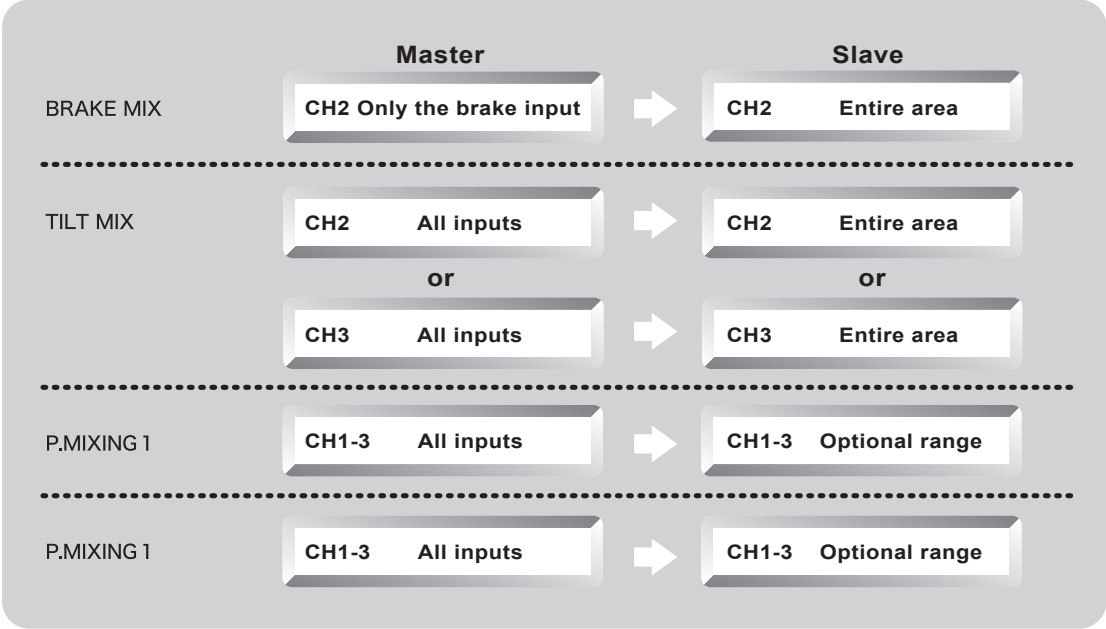
The master channel controls the signal, which mixes with the signal of the slave.

In this manual a servo is connected to the channel, which will become the master (called the master servo) and the slave (called the slave servo).

# Description

## Terminology used in radio control mode usage.Please refer to the Index for terminology or wording of this transmitter.

| Term | Definition |
|------|-----------|
| **7.2V Servo** | The Servo that a motor becomes the other power supply. By a KO PROPO original system, it is expected that a power supply is taken out of a power supply for power (7.2V) in the case of an electric car |
| **27Mhz** | It is for one of the frequency band that it can use by radio control, ground, water model, and there are 12 channels. |
| **40Mhz** | One of the frequency bands that it can use by radio control. Eight bands for ground model. There are five bands for sky model. |
| **Analog Servo** | The general term of a model of machines. This Servo which uses an analog method for control IC of Servo. |
| **Alarm** | A signal to be used as a buzzer for the transmitter. It is used as means of warning. |
| **Amplifier** | ESC - Electronic Speed Controller |
| **AM** | An electric wave to send from a transmitter A signal form of an electric wave. There is FM as another method. AM is an abbreviated designation in English of an amplitude modulation method. When that is used, It is had to match a signal form of transmission and reception machine. |
| **AC Charger** | A charge container to connect to 100V outlet. There are many situations to cut more than several hours in charge. |
| **Band plate** | It is frequency and is selected with crystal glass. It can make a change by crystal glass exchange in the same frequency band. |
| **Band** | It is frequency and is selected with crystal glass. It can make a change by crystal glass exchange in the same frequency band |
| **Backlight** | By themselves LCD (a liquid crystal display) don't emit light, visibility isn't good by the time if it is dark. It is the lamp which is installed in the backside of liquid crystal to solve this (the emission of light source) |
| **Blind sector** | Area where servo doesn't react even if stick is operated. |
| **Center Trim** | Even if the trim is adjusted, overall turning angle point will not be changed. |
| **Connector** | Electric point of contact unit of putting on and off type. |
| **CPU** | IC of a core of a computer used in various uses by digital operation processing.A microcomputer. It can be called MPU |
| **Cycle** | This is the space and period of repetition of a certain movement |
| **Channel (CH)** | Number of Servos which can be controlled with a transmitter one by one. Or it is a number of that individual signal |
| **Carburetor** | Fuel mixture device, turn number of engines are controlled. |
| **Crystal** | A component to set frequency of transmission and receiver.It is made from crystal. |
| **Clutch** | An output axis of an engine and the intermittent continuation device which there is between gearing devices. |
| **Data Pack** | It is the module which has memory for enlargement built-in. Usable model memory can be increased. |
| **Digital Servo** | The general term of a model of machines of the Servo which used a digital system for control of the IC of a Servo. |
| **Delay** | Act slowly. |
| **DC Charger** | The Charger which uses direct current for power supplies such as 12V battery or 12V stabilization power supply. |
| **Duty** | It is the ratio of two movements. |
| **Dead Band** | The field where Servo doesn't react to even if it controls foil and trigger. |
| **Discharger** | The circuit device which makes you discharge a residual quantity of a charge type battery of NiCad forcibly. |
| **ESC** | Abbreviation of an electric speed controller. It is a speed controller of a motor to use by electric car. Also called anamplifier. |
| **EEPROM** | A kind of memory. Contents written in aren't erased even if switched off. It is used for data pack in EEPROM others of memory in the main body |
| **ET** | An Abbreviation of electric trim. A button is abbreviated to BT. |
| **FM** | A signal form of an electric wave to send from a transmitter. FM is an abbreviated designation in English of a frequency modulation method |
| **FET** | An electric field effect transistor. Loss resistance is small, and in comparison with a normal transistor, a consumption electric current of oneself is small, too. |
| **FET Servo** | FET was used for a motor drive element instead of a conventional transistor, and it is being of high class Servo. |

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|---|---|
| **Fast Charger** | The Charger which charges a nickel-cadmium battery and a nickel metal hydride battery by a short time. |
| **Fail safe adaptor** | When it receives an interference electric wave, it is the device which it fixes Servo Horne at the position that a computer set up beforehand, and prevent reckless driving. |
| **Frequency band** | It is called the place that each frequency gathers, and shine, 27MHz zone (mega Hz), 40MHz zone. |
| **High frequency ESC (an amplifier)** | ESC of the method how frequency to drive a motor is high. Most are these systems, but the thing which isn't a high frequency system exists in past things. |
| **High frequency (RF) module** | An electric wave is made, and a circuit device to fire can be put on and off. When a frequency band to use (27MHz .40MHz) is changed, it is had to swap it. |
| **Home Page** | A place where it is mentioned that certain information is on the Internet. You can look using software on a personal computer called a Web browser. |
| **Internet** | The network where the communication network where plural personal computers were connected to was connected to on a large scale more. Information dispatch by a homepage and an E-mail are depended on in the world, and communication can be done. |
| **Jog dial** | A knob for data modification of a turn system not to have a stopper. If that is controlled every one click, by 1 point can do data modification, but is usable usefully when numerical value wants to be made a change in at a stretch |
| **LCD** | A cable address to mean liquid crystal indication device. It is used to display letters. |
| **Linkage** | Servo and connection mechanism to connect each mechanism to of a model. |
| **Machine plate** | The board which installs receiver Servo on a chassis of a car. |
| **Mega Hz (MHz)** | 1000Hz =1 KHz (a kilohertz) 1000KHz =1MHz. |
| **Memory** | In a personal computer, it is used for a meaning called the preservation place in which information is stored temporarily. Although the information on the memory in this case will be lost if a power supply is shut off, the memory used for a transmitter etc. is called non-volatilized memory, and even if it shuts off a power supply, it holds information. |
| **Neutral** | The situation that separated a hand from a stick of a transmitter or a position of Servo Horne at that time. |
| **NiCad (Ni-cd)** | It is different from a dry cell, The battery which it is charged repeatedly, and can be used. There are NiMH or lithium ion as the battery which it is charged, and can be used repeatedly elsewhere |
| **Noise** | An electric noise. For a kind of electric wave, it makes jumps into a receiver and malfunctions. |
| **Preset** | Will set up a position in advance |
| **PC interface** | It is an adapter it converts a signal into, and to be connected to do setting of a transmitter with a PC. |
| **Pumping Effect** | Intermittent breaking action. |
| **Push rod** | Turnbuckles which are used for linkage. |
| **Reset** | Return setting contents of setting numerical value to an initial situation |
| **Regulator** | The circuit which stabilizes the input voltage to the necessary voltage. |
| **Rubber Grommet** | The rubber component which protects Servo from vibration, an edge of a Servo case can be possessed. |
| **Receiver (RX)** | The device which an electric wave of a transmitter is received, and send a control signal forth in Servo and ESC. |
| **Response** | It is time before machinery of the receiver side reacting since it controls a transmitter. |
| **Servo** | The device which converts a management signal of a transmitter into turn machine exercise. A Servo motor. |
| **Speed controller** | ESC |
| **Stick** | Operating mechanism of the transmitter. The two cylinder shape sticks, one controls the throttle with the up and down motion and the other controls the steering with the left and right motion. |
| **Swing** | Campaign against coming and going between a certain set two points. |
| **Spline** | Exact location of the servo horn in to the neutral position. |
| **Servo Saver Horn** | The shock absorbing device that is installed or in place of servo horn. |
| **Transmitter (TX)** | Hand set that transmitter signal. |
| **Turning Angle (Travel)** | Turning angle of the servo horn. |
| **Travel** | It is a rudder angle, movement volume. |
| **Trim** | The device which adjusts a neutral position of each channel signal. |
| **VR** | It means the volume that detects the position of the stick. |
| **Wheel** | Mechanism of the transmitter which it turns it from side to side, and control a steering. |
| **Width** | The thing of width which operates by ABS or Throttle Acceleration. |
| **WEB Site** | Home Page |

Usage of the transmitter | Features | Main menu | Function menu | Connecting the receiver | Notes on installation | Description | Index | Repair & Guarantee

*Ultra*

HIGH SPEED RESPONCE