Receiver Installation

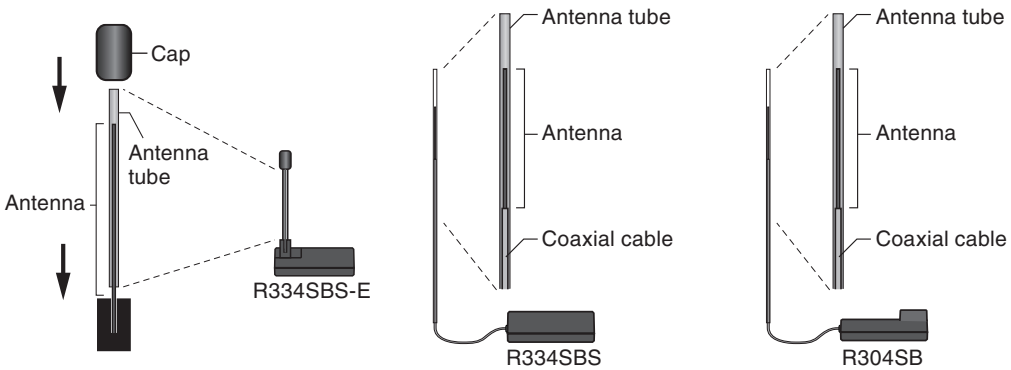
Install the receiver on the car as follows:

NOTE: The R304SB, R334SBS and R334SBS-E receiver are operating range may reduced, depending on where the receiver and the antenna are mounted.

NOTE: The R304SB, R334SBS and R334SBS-E receiver are put the antenna in the antenna tube to protect it. Do not let the tip go outside.

NOTE: The R334SBS and R334SBS-E receiver of diversity type with both external and internal antennas. Do not place wiring or other objects on the plate. The receiving range may be affected.

NOTE: An antenna is installed inside the R314SB-E receiver on the top. Do not place wiring or other objects on the plate. The receiving range may be affected.



⚠ WARNING

- Install the antenna in the higher place as shown in the figure.
- Do not cut or bundle the receiver antenna wire.
- Do not bend the coaxial cable. It causes damage.
- Do not pull the receiver antenna or coaxial cable by force.
- Keep the antenna as far away from the motor, ESC and other noise sources as you possibly can.
- Wrap the receiver with something soft, such as foam rubber, to avoid vibration. If there is a chance of getting wet, put the receiver in a waterproof bag or balloon.
- Always use R334SBS under the following conditions:

Battery :Power requirement Rated voltage 3.8 to 7.4V (dry cell battery cannot be used)
Matched to the ratings of the receiver and connected servo.

- Transmitter's receiver system > T-FHSS SR --- SR mode channel (ON): SR mode of Futaba SR compatible servo.
- Transmitter's receiver system > T-FHSS SR --- SR mode channel (OFF): Normal mode of Futaba SR compatible servo. Futaba digital servo.

- Transmitter's receiver system > T-FHSS/S-FHSS
  Transmitter's response type: Digital servo: Futaba digital servo
  Transmitter's response type: Analog servo: Futaba all servo (Normal mode of Futaba SR compatible servo.)

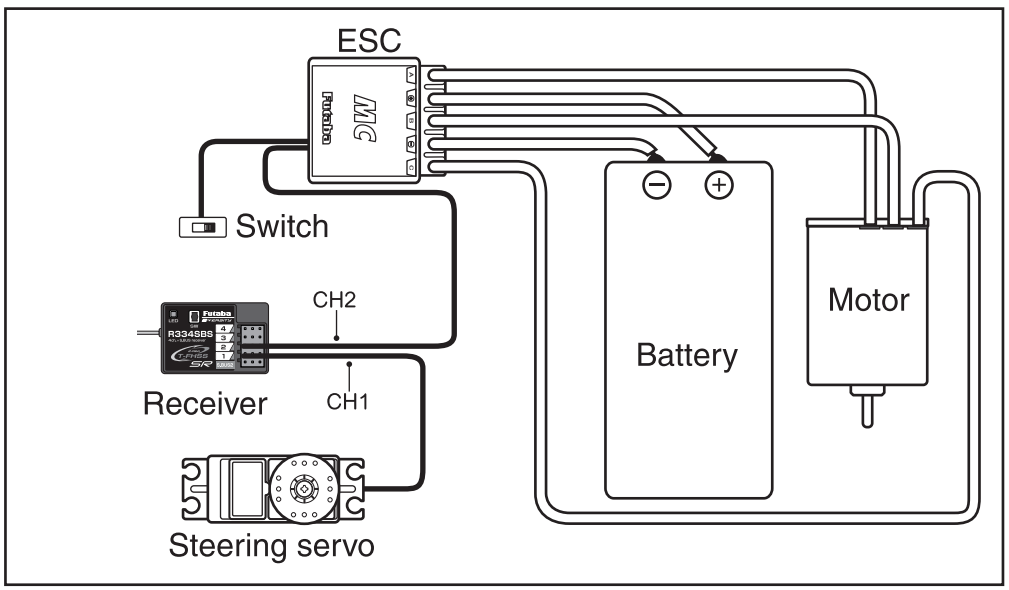
Under other conditions, the set will not operate, or the specified performance will not be displayed even if it operates. In addition, it may cause trouble with servos and other equipment. Futaba will not be responsible for damage, etc. caused by combination with the products of other companies.

Receiver and Servo Connections

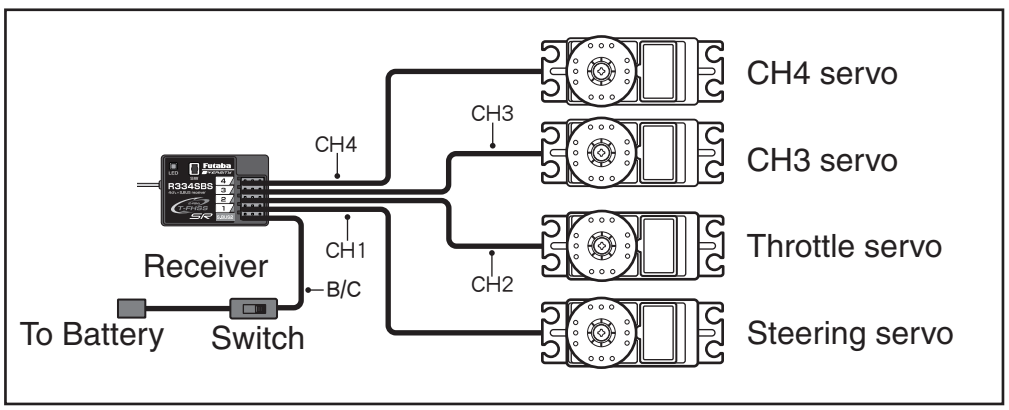
Connect the receiver and servos as shown below. Connect and install the receiver and servos in accordance with "Installation Safety Precautions" on the next page.

The figure shown below is an example. The method of connecting the motor controller to the motor and battery depends on the motor controller used. Purchase the motor controller and servos separately. The receiver also depends on the set.

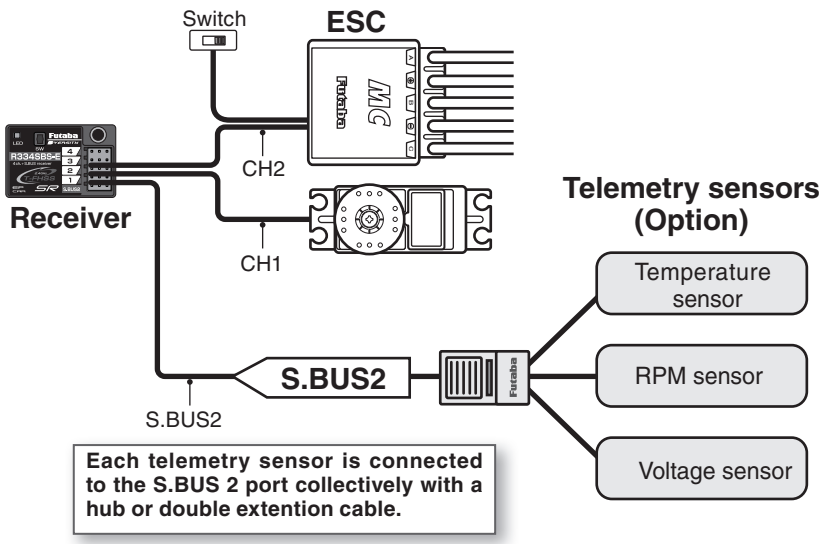
Installation When An Electronic Speed Control Is Used



Installation For Gas Powered Models



Connection example of S. BUS using a telemetry sensor



Note: In SR mode, the S.BUS 2 port cannot be used other than battery input.
The telemetry system can only be used with TFHSS.

Installation Safety Precautions

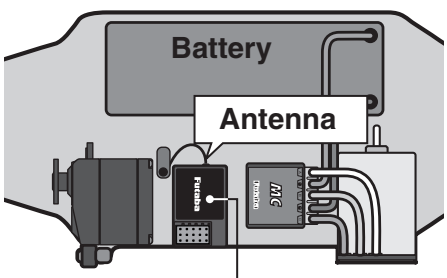
⚠Warning

Receiver (receiver antenna)

- ⃠ Do not cut or bundle the receiver antenna wire.
- ⃠ Do not bundle the receiver antenna wire together with the motor controller lead wire.
- ⃠ Keep the receiver antenna wire at least 1 cm away from motor, battery, and other wiring carrying heavy current.
- ⃠ Do not use a metal receiver antenna holder on a plate made of metal, carbon, or other conductive material.
- ⃠ Since the antenna of built-in antenna receivers is installed under this, do not place wiring or other objects on it.
- ❗ Install the receiver antenna holder as closely as possible to the receiver.

If the antenna wire is cut, bundled, or routed near a noise source, the receiving sensitivity will drop, the running (cruising) range will decrease, and you may lose control of the model.

*Noise is transmitted through metal, carbon, and other conductive material, so keep the receiver antenna wire away from such parts.



Install the receiver as far away as possible from the battery, motor controller, motor, silicon cord and other noise sources. Keep it away from the antenna wire, in particular.
The example in the figure is for R334SBS. The R334SBS-E places the antenna holder on the top of the case.

Since the antenna of built-in antenna receivers is installed under this, do not place wiring or other objects on it.

⚠Warning

Receiver Vibration-proofing / Waterproofing

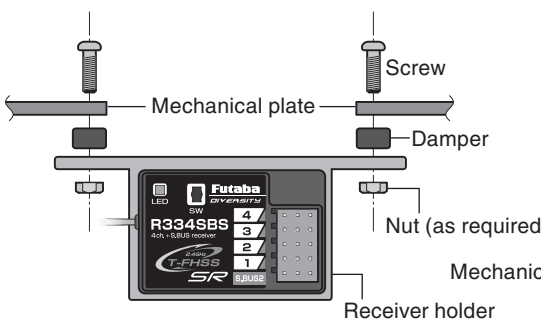
(Car)

- Vibration-proof the receiver by wrapping it in foam rubber or other vibration-absorbing material and mount it with thick double-sided tape.
- When using the receiver holder supplied with the model kit, mount the holder to the chassis through a rubber grommet.

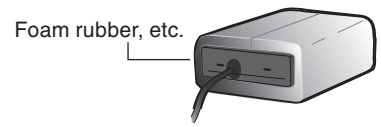
(Boat)

- Vibration-proof the receiver by wrapping it in foam rubber or other vibration-absorbing material. Also waterproof the receiver by cruising it in a plastic bag.

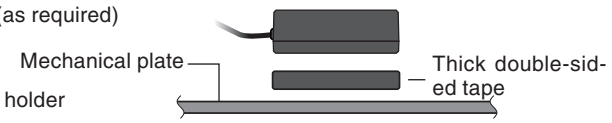
If the receiver is exposed to strong vibration and shock, or the ingression of water, it may not operate correctly and you may lose control of the model.



When using the receiver holder supplied with the kit, install the receiver through a rubber grommet.



Wrap the receiver in foam rubber or other vibration-absorbing material. Do not use hard material. Hard material does not have a vibration-proofing effect.



When mounting the receiver with double-sided tape, do not use a stiff tape. Stiff tape does not have a vibration-proofing effect.

Connector Connections

- Be sure the receiver, servo, battery and connectors are fully and firmly connected.

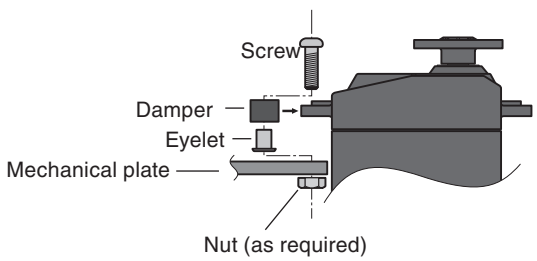
If vibration from the model causes a connector to work loose while the model is in operation, you may lose control.

Servo Installation

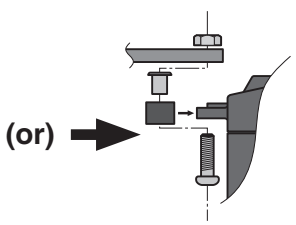
- When you install the servos, always use the rubber grommets provided in servo hardware bags. Mount the servos so they do not directly come in contact with the mount.

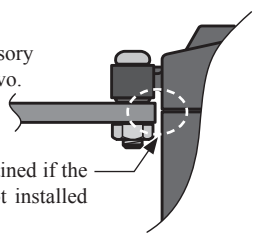
If the servo case comes in direct contact with the mount, vibration will be directly transmitted to the servo.

If this condition continues for a long time, the servo may be damaged and control will be lost.



When installing the servo, always install the accessory rubber grommet and grommet flush against the servo.





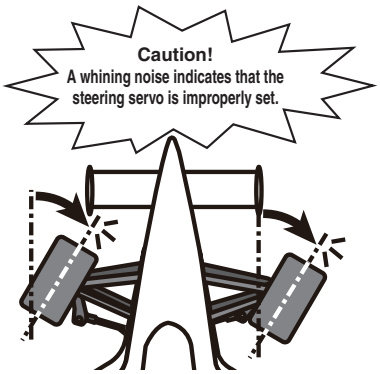
A vibration-damping effect is not obtained if the rubber grommet and grommet are not installed correctly.

⚠Warning

Servo Throw

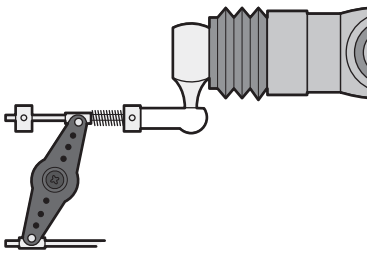
❗ Operate each servo over its full stroke and be sure the linkage does not bind or come loose.

The continuous application of unreasonable force to a servo may cause damage and excessive battery drain.



Decide the EPA value at the contact point.

Adjust the steering servo so that unreasonable force is not applied to the servo by the chassis at maximum servo travel.



Adjust the throttle servo so that unreasonable force is not applied when the engine carburetor is fully open, fully closed, and the brakes are applied fully.
If the brakes overheat while running, their ability to function properly decreases. Before running, adjust the suitable maximum servo travel so that unreasonable force is not applied even when the servo travel is increased while running.

⚠Warning

Electronic Speed Control

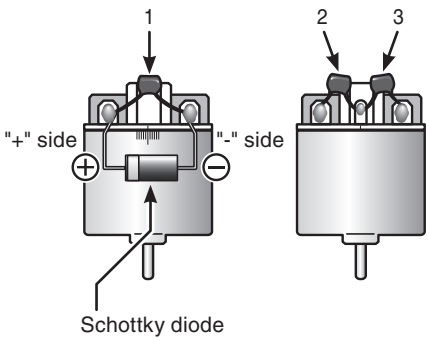
❗ Install the heat sinks where they will not come in contact with aluminum, carbon fiber or other parts that conduct electricity.

If the ESC (Electronic speed control) heat sinks touch other materials that conduct electricity a short circuit could occur. This could result in loss of control and damage to the system.

Motor Noise Suppression

❗ Always install capacitors to suppress noise when electric motors are used.

If capacitors are not properly installed you could experience erratic operation and reduced range as well as loss of control.



Motors with no suppressor capacitors, or inadequate suppression, may cause the receiver to malfunction. Always solder the capacitors supplied to your motor. The Schottky diode improves the efficiency of the speed control / motor combination and provides extra protection to the brake FETs. The white ring must always face the positive side.

Other Noise Suppression Methods

❗ Be sure there are no metal parts in your model which under vibration can come in contact with other metal parts.

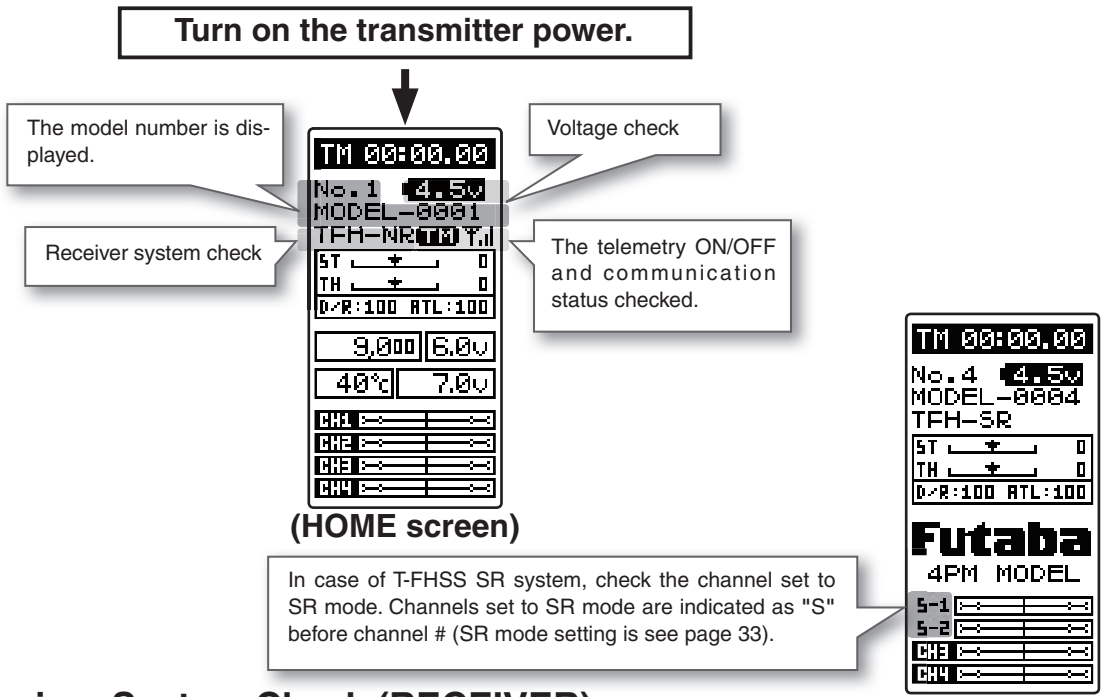
Metal to metal contacts under vibration will emit a high frequency noise that will affect the receiver's performance. You could experience erratic operation and reduced range as well as loss of control.

Preparations (Transmitter)

Before setting the Transmitter functions, check and set these items next.

(Display when power switch turned on)

When the power switch is turned on, the currently selected model number is displayed. Check if this number is the model number you want to set-up. To change the model number, use the Model Select function (page 59).



Receiver System Check (RECEIVER)

This system sets the Receiver system of the transmitter to match the receiver and servos used.

The T4PM transmitter uses the telemetry type T-FHSS ("TFH") system or T-FHSS SR ("TFH-SR") system.

It can also use the conventional S-FHSS ("SFH") system.

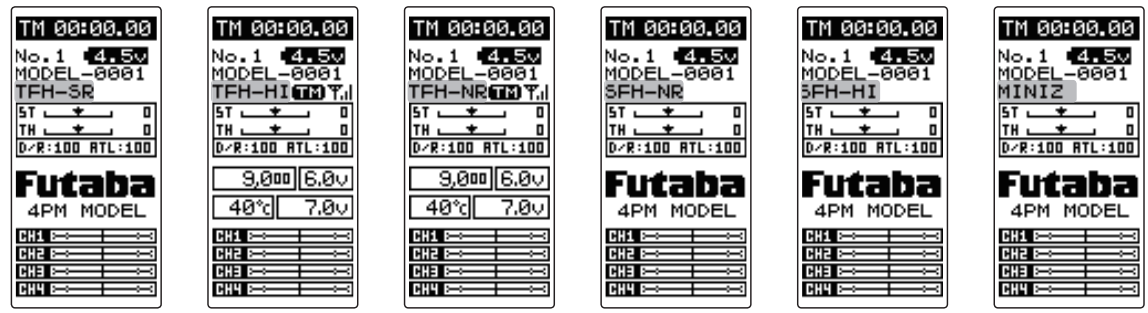
Since the R334SBS and R334SBS-E receivers supplied with the T4PM set uses the T-FHSS SR (Super response) or telemetry function T-FHSS system, T4PM receiver setup must be set to the T-FHSS high speed system ("TFH-HI"), the T-FHSS normal system ("TFH-NR") or T-FHSS SR ("TFH-SR").

Since the T- FHSS SR system cannot be used for R304SB, R304SB-E, R314SB and R314SB-E receivers, set it to the T-FHSS high speed system ("TFH-HI") or the T-FHSS normal system ("TFH-NR").

The RA-42 receiver for Futaba exclusive to Kyosho Mini-Z Evo can be used for T4PM transmitter. When using it, set it to the MINIZ system.

* Refer to page 33 for cautions on each system and servo to be used.

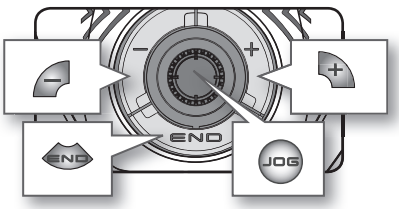
If the receiver used and the Receiver system settings are different, change the Receiver system using the "RECEIVER" function. Which Receiver system is set can be checked at the HOME screen.



T-FHSS SR system | T-FHSS system High speed | T-FHSS system Normal speed | S-FHSS system Normal speed | S-FHSS system High speed | MINIZ system

Receiver System Change & How To Link

The first operation described below sets the Receiver system. Next, the transmitter and receiver are linked and the transmitter ID number is memorized at the receiver so that signals from other transmitters will not be received. The telemetry type T-FHSS also simultaneously memorizes the ID number of the receiver at the transmitter so that data from other receivers will not be received.

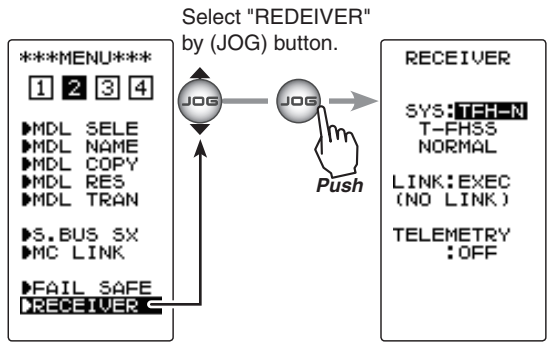


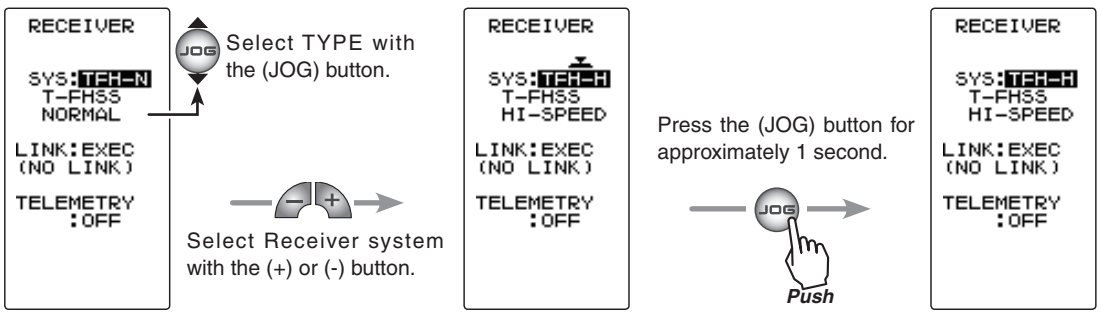
The Receiver system setting and transmitter and receiver linking methods are described here. Refer to the figure at the right for the edit buttons used.

1 Call the MENU 2 screen from the HOME screen by moving the (JOG) button up, down, left or right. Select "RECEIVER" by moving the (JOG) button up or down, and display the "RECEIVER" screen by pressing the (JOG) button.

2 Move the cursor to "SYS: ----" by the (JOG) button up or down operation, and select the Receiver system with the (+) button or (-) button.

When the (JOG) button is pressed for approximately 1 second, an electronic sound is generated and setting ends.



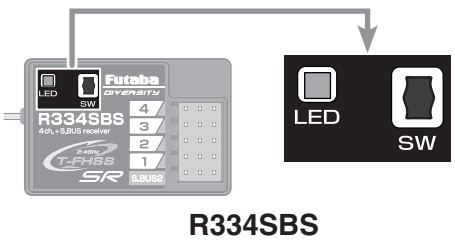


*When using an S-FHSS system ("SFH") receiver (R2104GF, R204GF-E, etc.), after reaching this point set the transmitter power switch to OFF and go to **"Receivers other than T-FHSS"** on page 31.

3 Bring the transmitter and receiver to 20 inches (half meter) of each other (do not allow the antennae to touch) and turn on the receiver power.

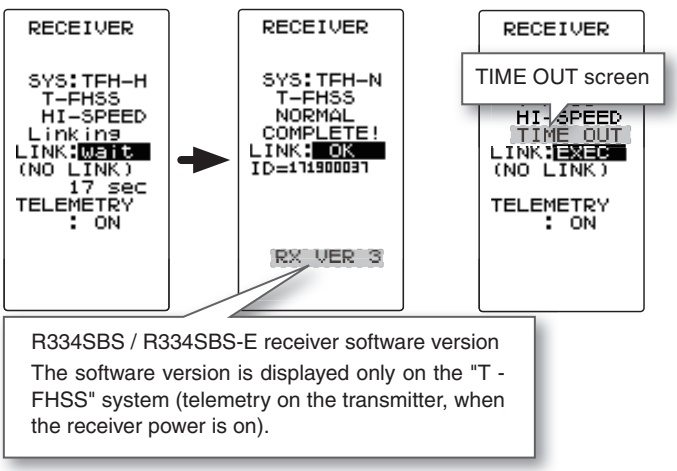
4 Press the T4PM transmitter's (JOG) button up or down to move the cursor to "LINK: EXE".

When the (JOG) button is pressed for approximately 1 second, "PUSH RX LINK SW" appears on the screen and a 20 second countdown begins. Countdown can be canceled at any time pressing the (JOG) button up / down or left / right.



R334SBS

5 During the 20 second countdown, push up the receiver side Link switch for approximately 2 seconds. The LED will begin to blink red. After the receiver LED switches from blinking red to green - red - green steady light, the T4PM generates an electronic beeping sound, and "LINK:OK" and "COMPLETE!" appear on the screen. Reading of the mutual IDs ends and the memorized receiver ID number appears on T4PM screen. If an "TIME OUT" screen appears, linking failed. Retry linking. If the transmitter and receiver are linked normally, set the power switch to the OFF position and then return it to the PWR ON position. If the receiver LED lights green, linking was successful. Now check servo operation.



*The T4PM and a telemetry type T-FHSS receiver (R334SBS, etc.) mutually memorize the combined ID linked last at each model memory.

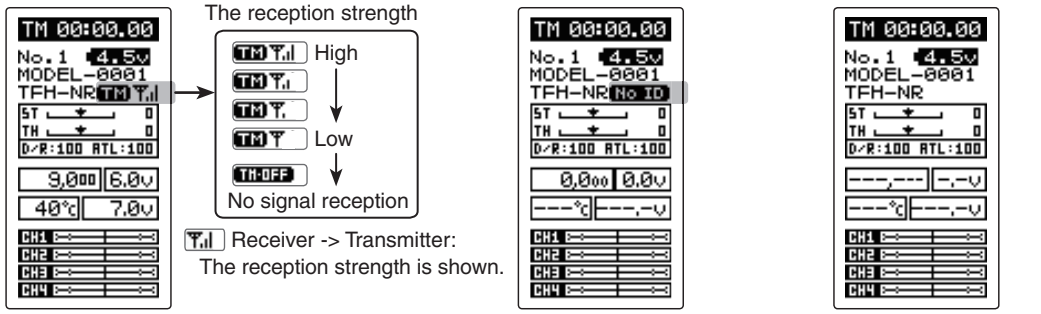
Since the T4PM can memorize only 1 receiver ID at each model memory, multiple T-FHSS receivers cannot be used with the same model memory. When changing the receiver at the same model memory, re-link the previously linked receiver.

When using multiple telemetry type T-FHSS receivers, link and combine them with each T4PM model memory.

However, multiple receivers cannot be linked to multiple model memories.

The telemetry function communications status can be checked at the HOME screen.

The telemetry ON/OFF and communication status can be checked at the HOME screen.



- Telemetry function :ON
- Receiver ID setting complete
- Data receiving sensitivity display
- TH-OFF shows that data cannot be received because it is outside the data receiving range or because of the effects of an obstruction or the receiver power is OFF after receiver ID check.

- Telemetry function :ON
- Receiver ID before setting or ID mismatch.
- When the receiver ID is set, before ID check in the receiver power OFF stat.

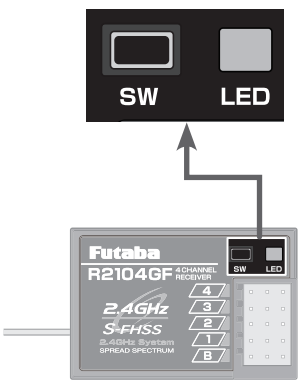
Telemetry function :OFF

Receivers Other Than T-FHSS

1 Bring the transmitter and the receiver close to each other, within 20 inches (half meter).

2 Turn on the transmitter.

3 Turn on the receiver.



4 Push the Link switch of the receiver.

When the link is complete, the LED in the receiver changes to solid green.

*Please refer to the table below for LED status vs receiver's condition.
LED status vs receiver's condition:

No signal reception	Red : On
Receiving signals	Green: On
Receiving signals, but ID is unmatched.	Green: Blink *1 (T-FHSS ,Red : On)
Unrecoverable failure (EEPROM,etc.)	LED: Red and Green turn on alternately

*1: LED could be change to red during intermittently during data processing.

Kyosho Mini-Z EVO dedicated receiver RA-42

1 Bring the transmitter and the receiver close to each other, within 20 inches (half meter). Turn on the receiver.

2 Turn on the transmitter.

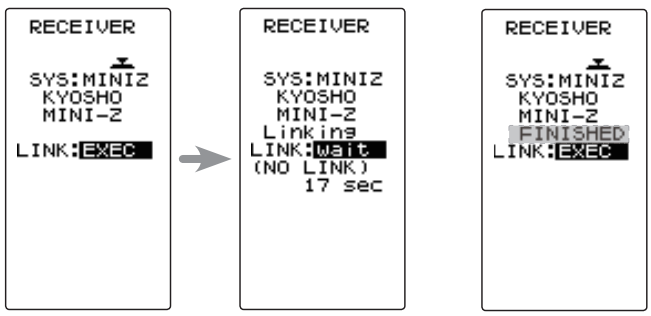
3 Turn on the Mini-Z receiver RA-42.

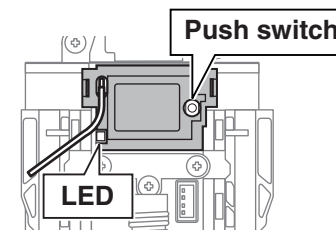
4 Press the T4PM transmitter's (JOG) button up or down to move the cursor to "LINK: EXE". When the (JOG) button is pressed for approximately 1 second, "PUSH RX LINK SW" appears on the screen and a 20 second countdown begins. Countdown can be canceled at any time pressing the (JOG) button up, down or left, right.

5 Push the receiver side push switch for about 2 seconds or more and release the Link SW.

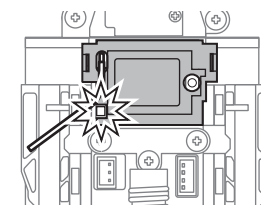
LED 2 seconds solid → Blink

Touch the [END] button on the link screen of the transmitter to cancel the link mode.





6 Completed with LED solid the receiver.



⚠Warning

- After the linking is done, please cycle receiver power and check if the receiver to be linked is really under the control of your transmitter.

If there are many Futaba 2.4GHz systems (T-FHSS SR / T-FHSS / S-FHSS / MINIZ) turned on in close proximity to your receiver might not link to your transmitter. In this case, even if the receiver's LED stays solid green, unfortunately the receiver might have established a link to one of other transmitters. This is very dangerous if you do not notice this situation. In order to avoid the problem, we strongly recommend you to double-check whether your receiver is really under control by your transmitter by giving the stick input and then checking the servo response.

- Do not perform the linking procedure with motor's main wire connected or the engine operating as it may result in serious injury.

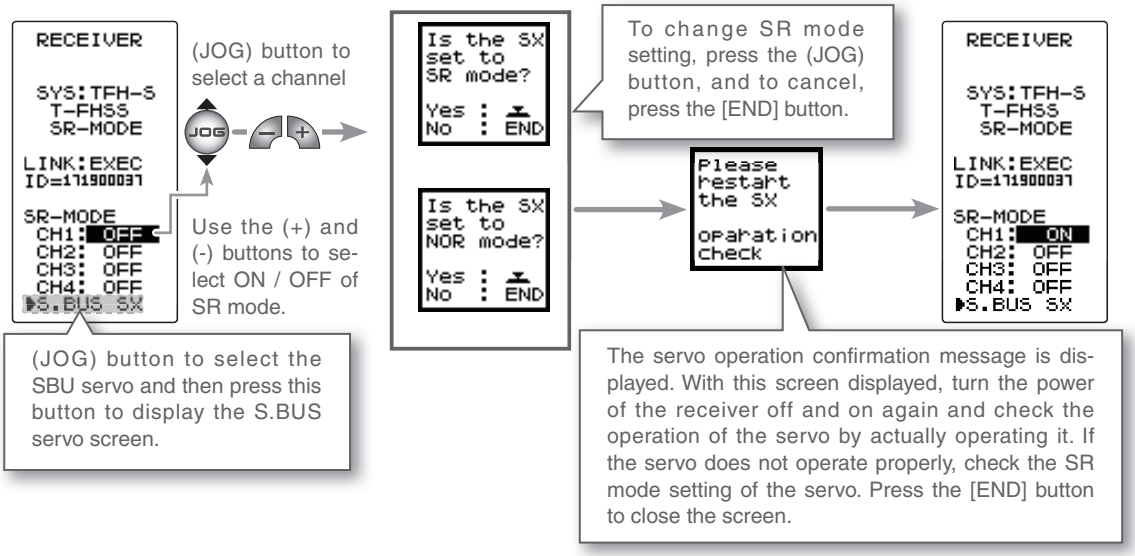
How to set the SR mode Channel

In the case of T-FHSS SR, "SR mode" which has greatly improved response compared to the conventional T-FHSS can be used. The display changes when you change it. Be sure to turn off the power of the receiver before operation check.

In SR mode, ON/ OFF can be set for each channel. When using normal servo or ESC, set the SR mode of the connected channel to (OFF).

Note: In SR mode ON, normal servo, ESC and gyro will not operate. Please set our S.BUS servo corresponding to SR mode to SR mode on S.BUS servo menu and use it. Also, in case of SR mode OFF, the servo set to SR mode cannot be used, so set the servo to normal mode by S. BUS servo menu. If using wrong combination, servo and other equipment will fail, so please be careful.

*Refer to country distributor WEB for detailed the "S. BUS servo menu" and the "SR mode setting" explanation.



Servo mode setting and corresponding servo of each system

System	Response / SR node	Usable servos
T-FHSS SR	SR mode channel: ON	-SR mode of Futaba SR compatible servo.
	SR mode channel: OFF	- Normal mode of Futaba SR compatible servo. - Futaba digital servo.
T-FHSS	HI-SPEED mode	- Normal mode of Futaba SR compatible servo. - Futaba digital servo.
	NORMAL mode	- Futaba all servo. (Normal mode of Futaba SR compatible servo.)
S-FHSS	HI-SPEED mode	- Normal mode of Futaba SR compatible servo. - Futaba digital servo.
	NORMAL mode	- Futaba all servo. (Normal mode of Futaba SR compatible servo.)

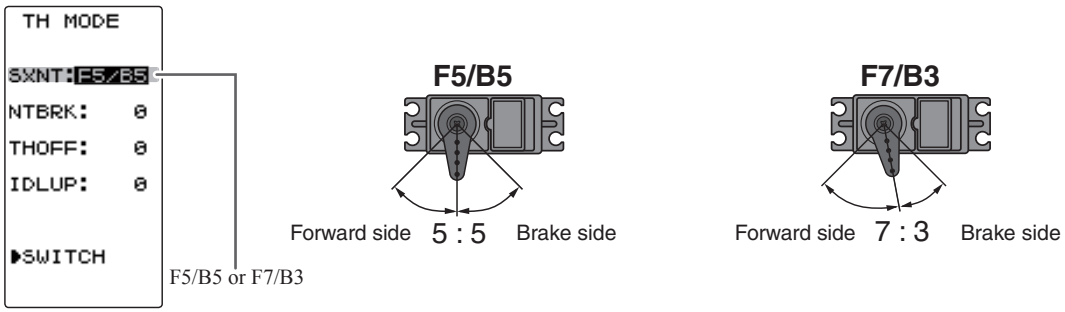
⚠ Caution

❗ Be sure to use the T4PM receiver setting and the servo to be used under predetermined conditions.

Under other conditions, the set will not operate, or the specified performance will not be displayed even if it operates. In addition, it may cause servo trouble. Futaba will not be responsible for problems caused by the use of other than Futaba genuine parts. Use the parts specified in the instruction manual and catalog.

Throttle Mode Check

The throttle servo travel can be set to 5:5 or 7:3 for throttle trigger operation as required by the throttle mode function (page 54).



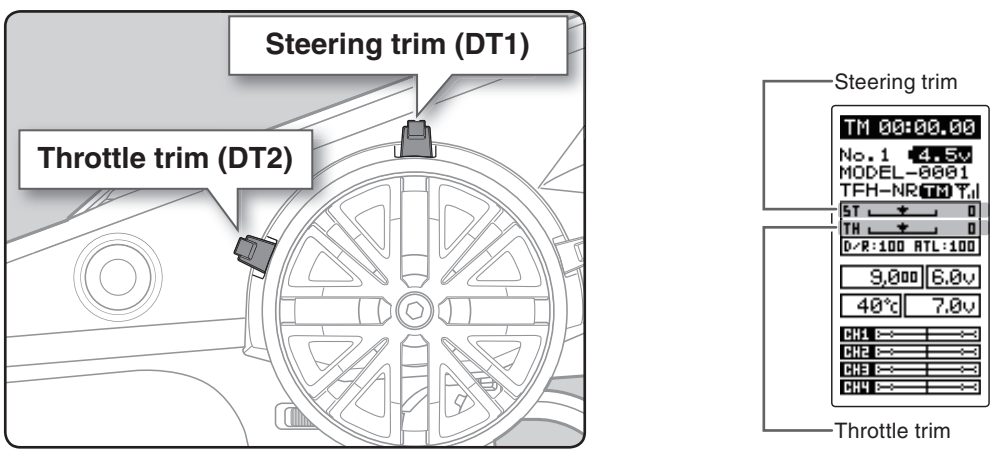
Trims Initial Set-Up

- Steering trim (DT1) check

On the initial set-up, steering trim is assigned to the DT1 trim lever upper side of the steering wheel. Operate the DT1 and make sure the marker moves on the ST graph. If default has been changed, test steering trim in its new location. After checking the trim, set the trim display to the center (N) position.

- Throttle trim (DT2) check

On the initial set-up, throttle trim is assigned to the DT2 trim lever left side of the steering wheel. Operate the DT2 and make sure the marker moves on the TH graph. If the default has been changed, test the throttle trim in its new location. After checking the trim, set the trim display to the center (N) position.

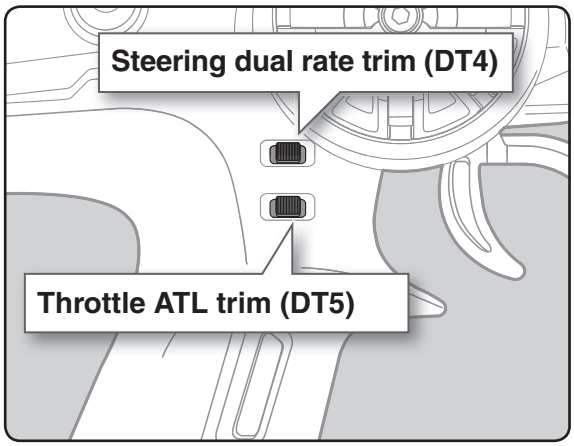


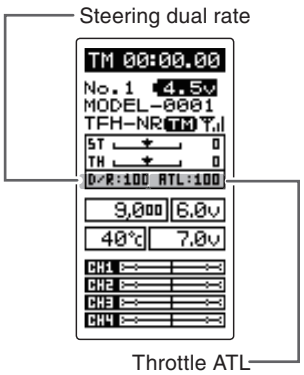
- Steering dual rate (DT4) check

At initial set-up, steering dual rate (D/R) is assigned to the DT4 trim lever, at the grip of the transmitter. Operate the DT4 and check if the D/R value displayed on the screen changes. After checking D/R, set the steering dual rate to 100%.

- Throttle ATL (DT5) check

At initial set-up, throttle ATL (ATL) is assigned to the DT5 trim lever, below the DT5. Operate the DT5 and check if the ATL value displayed on the screen changes. After checking ATL, set throttle ATL to 100%.





(Set-Up Procedure When Installed In a Car)

When installing the servos in a car, performing function set-up in the following order is recommended.

1 Perform to "Trims Initial Set-Up" of "Preparations" on the preceding page.

2 Set the servo direction of operation using the Reverse function. (p.43)

- The servo installation method and linkage direction depend on the kit. Therefore, the servo operation direction may have to be reversed relative to transmitter operation. Before installing the servo, check the operating direction and set it using the Reverse function.

3 Set the subtrim and adjust the servo neutral point. (p.44)

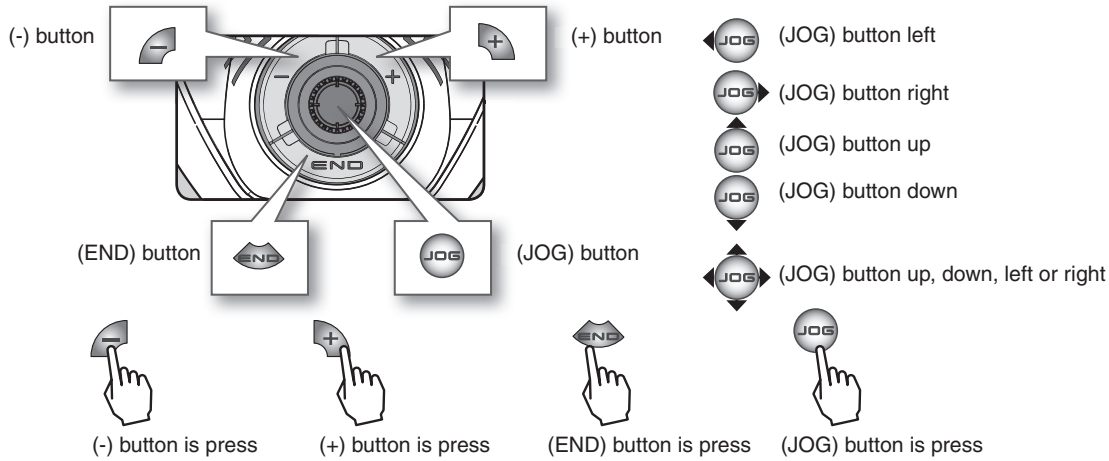
4 Set the trigger travel by adjusting the throttle trigger mechanical ATL to your liking. (p.20)

- When the stroke was adjusted, compensate the throttle by adjuster function. (p.71)

5 Set End point of each channel and adjust the servo throw (travel). (p.45)

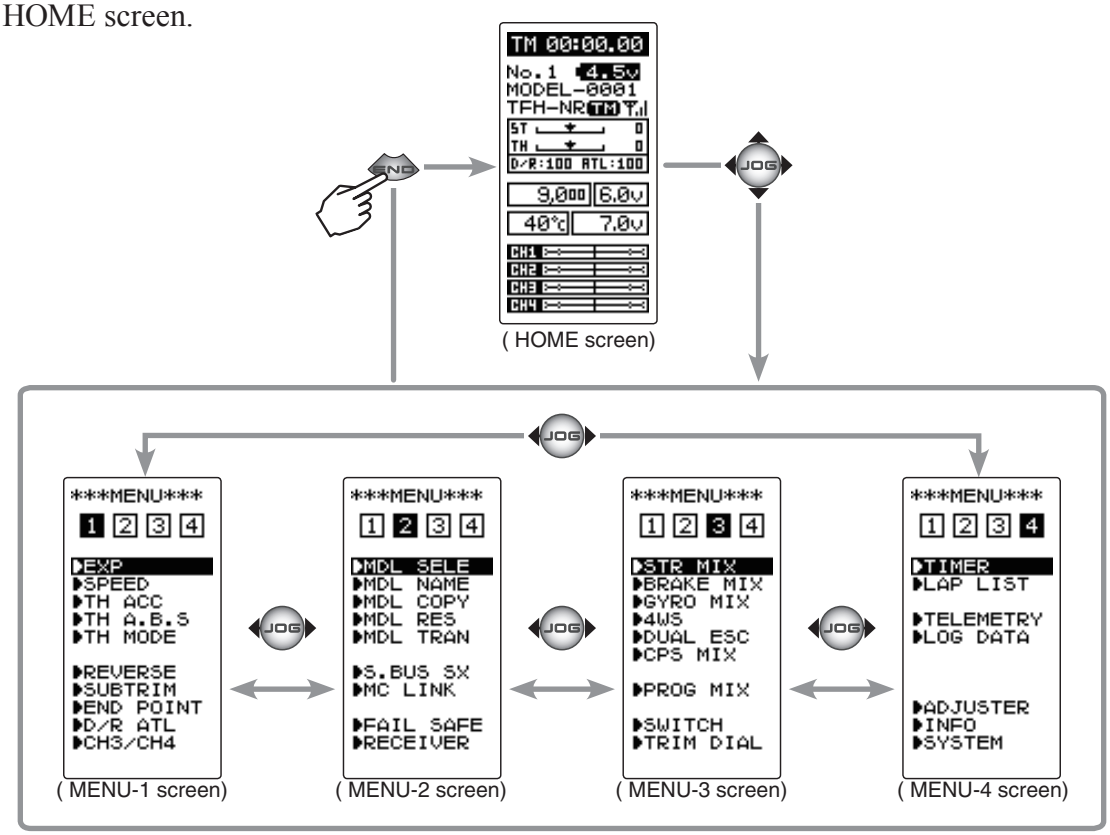
Operation Of Screen

In this instruction manual, Edit Buttons are represented by the symbols shown below. The (JOG) button can be operated in 4 directions: up, down, left, and right.



Calling The Menu Screen

Refer to the map below for the method of displaying the function setting menu screen from the HOME screen and the method of returning from the menu screen to the HOME screen.

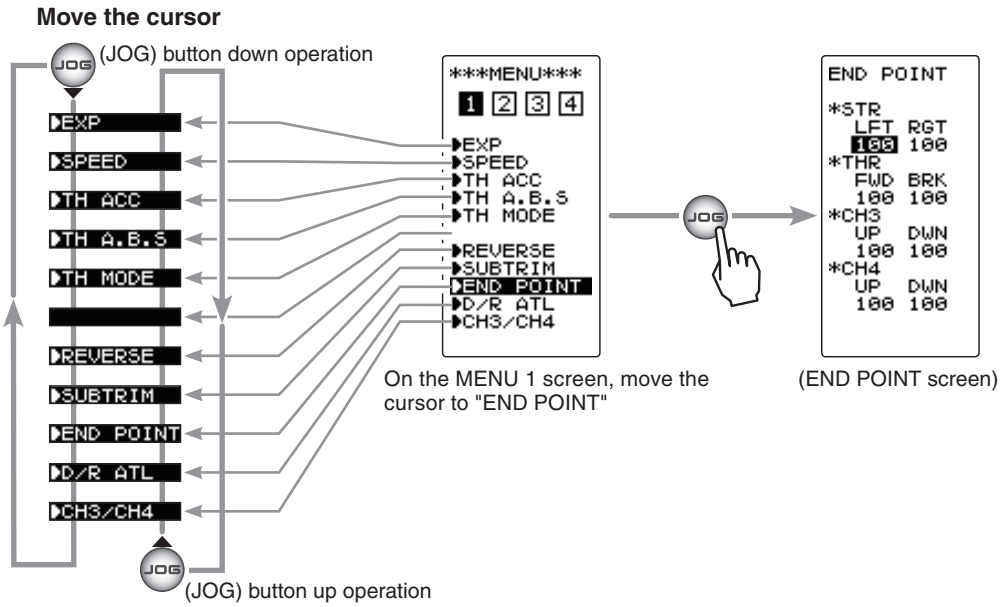


Selecting Items On The Menu Screen

The item indicated by the reverse displayed cursor on the screen is selected.

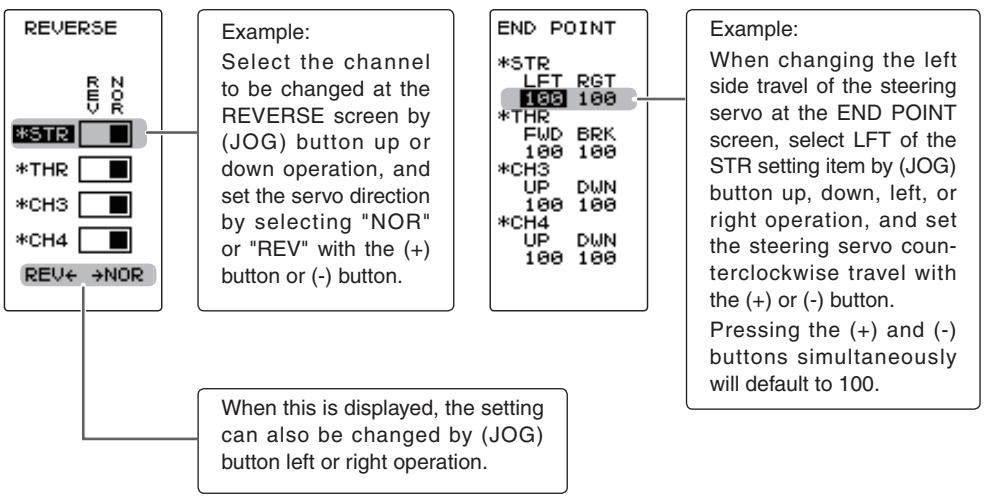
The cursor is moved by (JOG) button in up or down movements. The cursor movement figure shown below is an example of the MENU 1 screen. However, movement of the cursor is the same in all of the screens.

For instance, if the (JOG) button is pressed when the cursor is at the end point (END POINT) on the MENU 1 screen, the end point (END POINT) function setting screen appears.



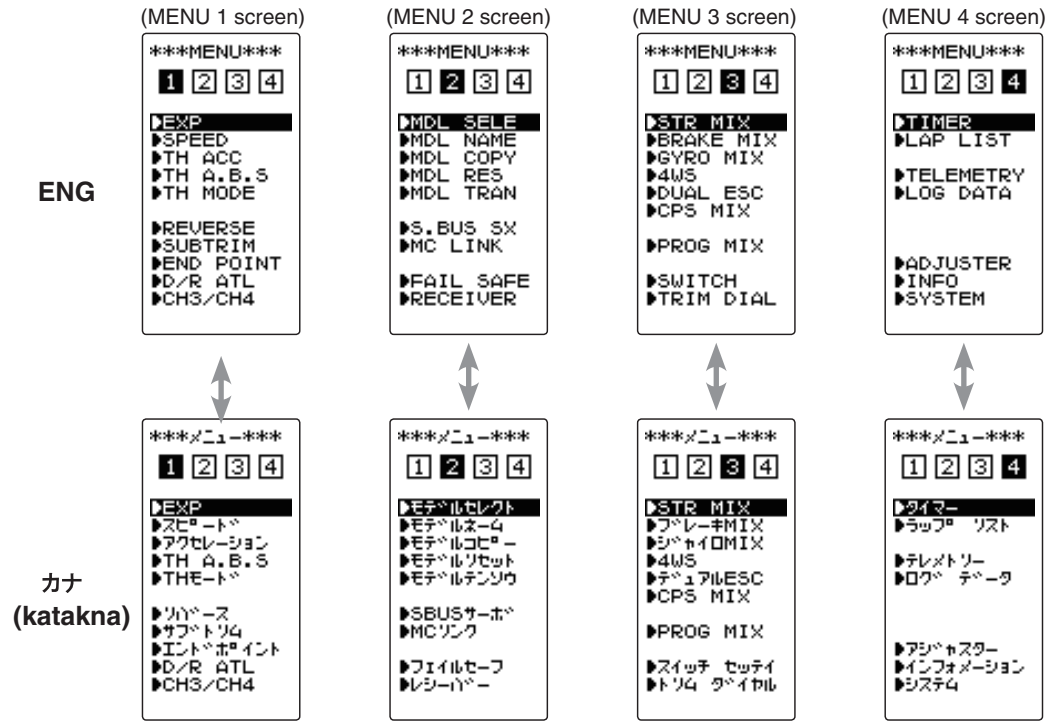
Value Of Each Function And Changing The Set Value

Values, settings, and other data on all the function setting screens are changed with the (+) and (-) buttons.

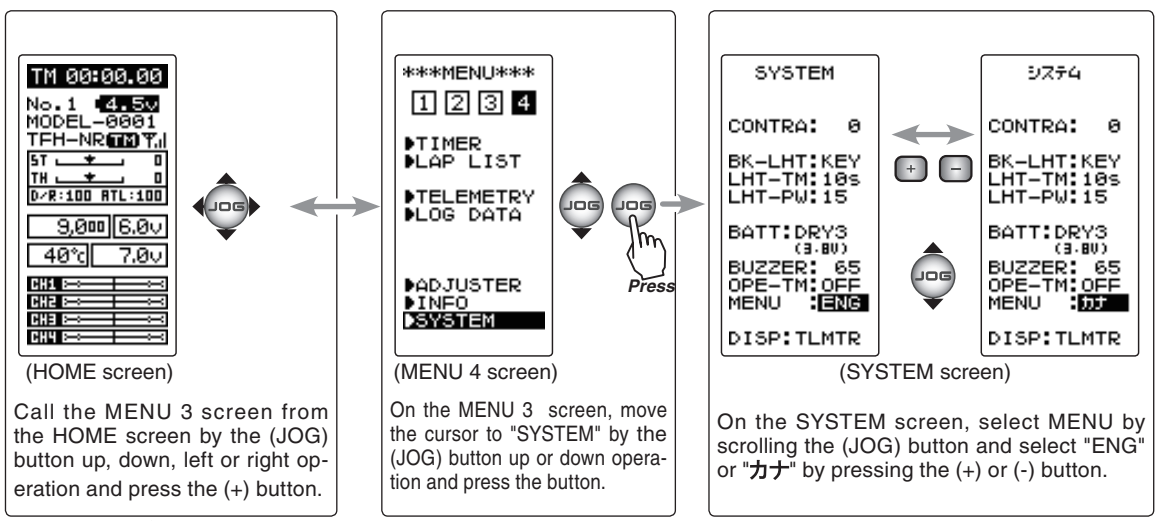


Basic Menu Japanese Katakana Character Display

On the system menu, the basic menu screen shown below can be displayed in Japanese katakana characters.



Changing the character



(HOME screen)

Call the MENU 3 screen from the HOME screen by the (JOG) button up, down, left or right operation and press the (+) button.

(MENU 4 screen)

On the MENU 3 screen, move the cursor to "SYSTEM" by the (JOG) button up or down operation and press the button.

(SYSTEM screen)

On the SYSTEM screen, select MENU by scrolling the (JOG) button and select "ENG" or "**カナ**" by pressing the (+) or (-) button.

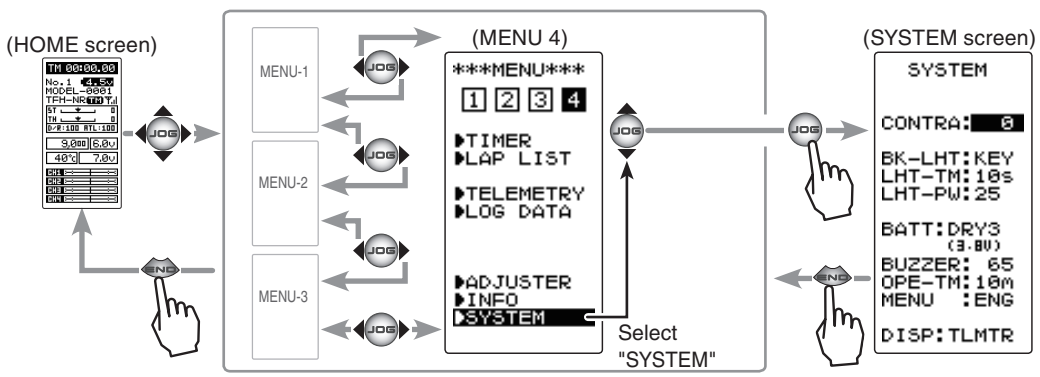
After changing the setting, return to the MENU 4 screen by pressing the (END) button, and return to the HOME screen by pressing the (END) button twice.

System Functions "SYSTEM"

The graphic liquid crystal screen display mode, buzzer sound and menu character mode, etc. can be set.

- "CONTRA"---Liquid crystal screen contrast adjustment (20 steps)
- "BK-LHT"---Liquid crystal screen backlighting display mode setup
  (OFF, ON at button operation, normally ON)
- "LHT-TM"---Setting of ON time (1~30 secs) when [ON at button operation] was selected above.
- "LHT-PW"---Liquid crystal screen backlighting brightnes adjustment (30 steps)
- "BATT"---Battery type setting (LiFe2/DRY3)
  The T4PM can use an optional rechargeable battery. However, the battery alarm setting is different from that of the dry cell battery (alkaline battery recommended). Therefore, always set the battery type to match the power source used.
  If used with the incorrect setting, the normal low battery alarm function will not work and the system may stop before a battery alarm is generated. The usage time may also become extremely short.
- "BUZZER"---Buzzer sound tone adjustment (OFF, 100 steps)
- "OPE-TM"---The power off forgotten alarm setting (OFF, 10 m)
- "MENU"---Item which displays the basic menu screen in katakana characters for Japanese use.
- "DISP"---HOME screen display mode setting (Telemetry data, Timer, Users name)

Display "SYSTEM" screen using the following method:



Setup items

CONTRA:	Contrast
BK-LHT:	Backlighting mode
LHT-TM:	Backlighting time
LHT-PW:	Backlighting brightness
BATT:	Battery type
BUZZER:	Buzzer tone
OPE-TM:	Power off forgotten alarm
MENU:	Menu screen character
DISP:	HOME screen display mode

System function setup

1 (Setting of each item)

Adjustment buttons
- Use the (+) and (-) buttons to make adjustments.
- Press the (+) and (-) buttons simultaneously (approx. 1 sec) to return to the initial value.

(Adjusting the liquid crystal contrast)

Select the setting item "CONTRA" by moving the (JOG) button up or down, and use the (+) and (-) buttons to adjust the screen contrast.

- Adjust to an easy-to-see contrast.

When finished with setting, return to the MENU screen by pressing the (END) button.

Contrast (CONTRA)
-10~0~+10
Initial value: 0

(Setting the liquid crystal backlighting mode)

Select the setting item "BK-LHT" by moving the (JOG) button up or down, and select the mode by pressing the (+) or (-) button.

"KEY": Fixed time backlighting ON after button operated.
"ALL": Backlighting always ON.
"OFF": Backlighting OFF.

When finished with setting, return to the MENU screen by pressing the (END) button.

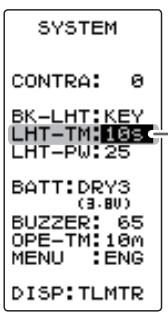
Backlight mode (BK-LHT)
KEY, ALL, OFF

(Setting liquid crystal backlighting time)

Select the setting item "LHT-TM" by moving the (JOG) button up or down, and use the (+) and (-) buttons to set the ON time.

- When "KEY" is set at the preceding item, this ON time becomes effective.

When finished with setting, return to the MENU screen by pressing the (END) button.



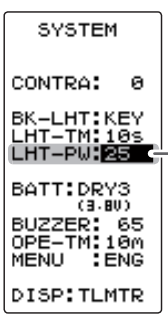
Backlighting time (LHT-TM)
1~30
Initial value: 10

(Setting liquid crystal backlighting brightness)

Select the setting item "LHT-PW" by moving the (JOG) button up or down, and use the (+) and (-) buttons to set the ON time.

-If too bright, the battery will be consumed.

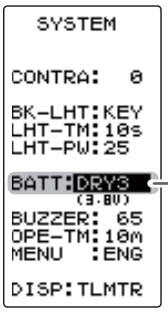
When finished with setting, return to the MENU screen by pressing the (END) button.



Backlighting brightness (LHT-PW)
1~30
Initial value: 15

(Setting the battery type)

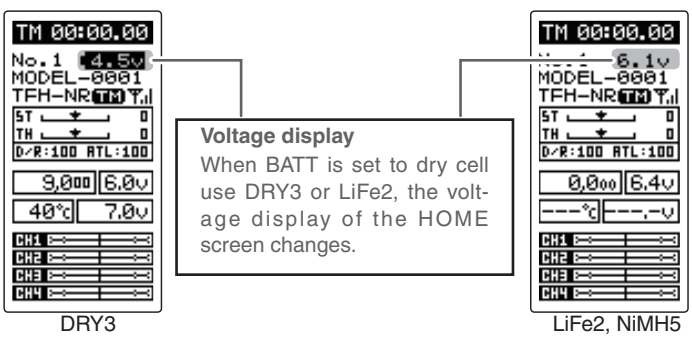
Select the setting item "BATT" by moving the (JOG) button up or down, and select the mode by pressing the (+) or (-) button. When changing the battery type, press the (JOG) button after thoroughly checking whether or not the mistake was made again. An electronic beeping sound is generated and the setting is changed.



Battery Type (BATT)
LiFe2, DRY3, CSTM

Note: If the battery type is changed to the wrong setting, the low battery alarm will be generated immediately after the change and operation will become impossible.
If the low battery alarm is generated, please return the setting to just before, or turn off the power and replace the battery with a fully charged battery or a new dry cell battery. Then, reset the battery type.
Note: If used with the incorrect setting, a normal low battery alarm will not be generated and the system may stop before the battery alarm is generated. The usage time may also become extremely short.

"LiFe2": Futaba LiFe type battery (FT2F1100B / 1700BV2 / 2100BV2).
"DRY3": Dry cell battery (alkaline battery recommended) 3 batteries.
"CSTM": Third party battery is used.
This function is selected by exception when a third party battery is used. In this case, the low battery alarm voltage is set at the user's own risk. When "CSTM" is selected, the low battery alarm voltage displayed below can be adjusted. By operating the (JOG) button, move the cursor to the voltage display, and set the voltage by using the (+) or (-) button.



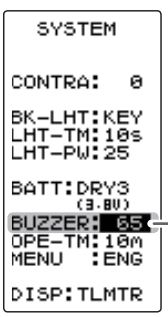
When finished with setting, return to the MENU screen by pressing the (END) button.

(Adjusting the buzzer tone)

Select the setting item "BUZZER" by moving the (JOG) button up or down, and use the (+) and (-) buttons to adjust the tone.

- Decide by referring to the tone at adjustment.

When finished with setting, return to the MENU screen by pressing the (END) button.



Buzzer tone (BUZZER)
OFF, 1~100
Initial value: 65

(Changing the power off forgotten alarm setting)

Select the setting item "OPE-TM" by moving the (JOG) button up or down, and use the (+) and (-) buttons to select the power off forgotten alarm mode.

"10m": If an operation is not performed within 10 minutes while the power is on, an audible alarm sounds.
"OFF": Power off forgotten alarm setting OFF.

When finished with setting, return to the MENU screen by pressing the (END) button.

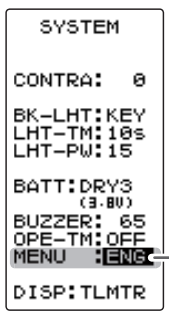
The power off forgotten alarm (OPE-TM)
10m, OFF

(Changing the menu character display)

Select the setting item "MENU" by moving the (JOG) button up or down, and set the basic menu character display with the (+) or (-) button (See page 38).

"ENG": Basic menu displayed in Alphabetic character.
"カナ": Basic menu displayed in katakana character.

When finished with setting, return to the MENU screen by pressing the (END) button.

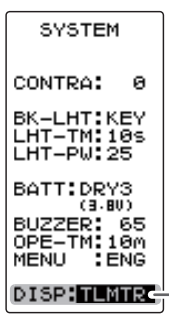


Menu character (MENU)
ENG, カナ

(Changing the HOME screen display mode)

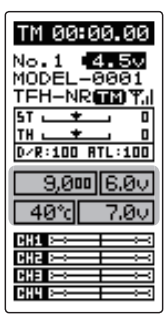
Select the setting item "DISP" by moving the (JOG) button up or down, and set the HOME screen display mode with the (+) or (-) button.

"RXVOL": Telemetry data is displayed. (RX page 1)
"CURR": Telemetry data is displayed. (RX page 2)
"MC970": The MC970CR Telemetry data is displayed.
"TIMER": Timer is displayed.
"USER": User name is displayed.
* Refer to country distributor WEB for detailed the "Telemetry function" explanation.

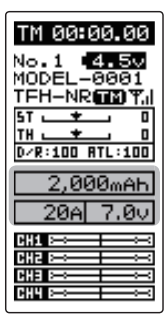


The T-FHSS system only telemetry data "RXVOL", "CURR" and "MC970" can be selected.

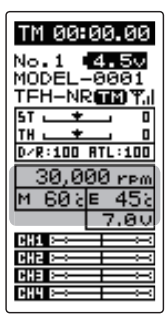
HOME screen mode (DISP)
RXVOL, CURR, MC970
TIMER, USER



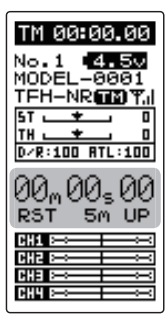
RXVOL



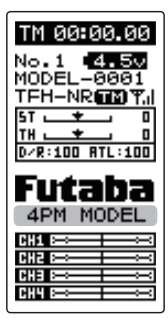
CURR



MC970



TIMER



USER

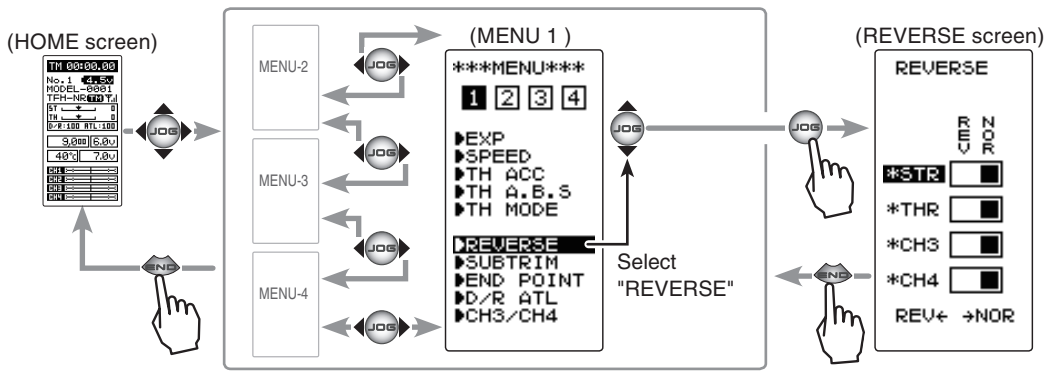
When finished with setting, return to the MENU screen by pressing the (END) button.

Servo Reverse "REVERSE" (All channel)

This function reverses the direction of operation of the servos related to transmitter steering, throttle, and channels 3/4 operation.

> However, when the position set by trim or subtrim shifts from the center, the center becomes the opposite side.

Display to "REVERSE" screen using the following method:



Servo reverse function setting

(Preparation)

- Select the channel to be set by moving the (JOG) button up or down.

Setting item

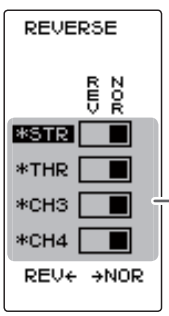
STR: Steering (1st channel)
THR: Throttle (2nd channel)
CH3: 3rd channel
CH4: 4th channe

1 (Servo reverse setting)

Use the (+) or (-) button to reverse the servo operation direction.

NOR/REV can also be set by moving the (JOG) button left or right.

(Each channel can be set similar.)



Move the cursor to "STR, THR, CH3 and CH4" with the (JOG) button.

Select button

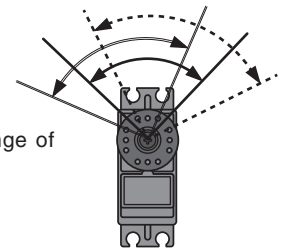
- Select with the (+) or (-) buttons.
  Or use the jog dial left or right to set the normal, reverse operations.

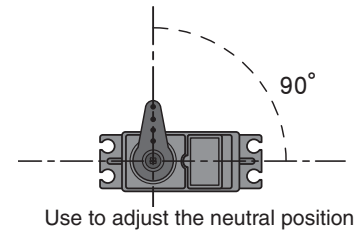
2 When finished with setting, return to the MENU screen by pressing the (END) button.

Subtrim "SUBTRIM" (All channel)

Use this function to adjust the neutral position of the steering, throttle, channel 3 and channel 4 servos.

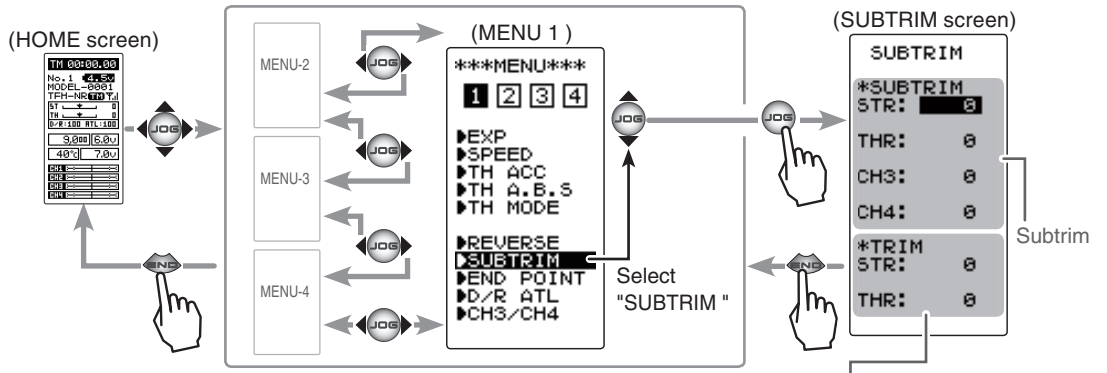
*Subtrim adjusts the entire range of the servo in the set direction.





Use to adjust the neutral position

Display to "SUBTRIM" screen using the following method:



Steering and throttle center trim

When assigning DT1, DT2, or other digital trims to another function, make adjustments at this screen.

Subtrim adjustment

(Preparation)

- Set the steering and throttle digital trims to the neutral "0" position. Set CH3 and CH4 to the center "0" position.

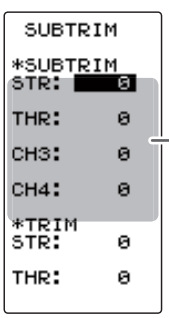
Setting item

STR: Steering (1st channel)
THR: Throttle (2nd channel)
CH3: 3rd channel
CH4: 4th channe

1 (Subtrim adjustment)

Use the (+) or (-) button to adjust the center.

(Each channel can be set similar.)



Move the cursor to "STR, THR, CH3 and CH4" with the (JOG) button.

Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

Subtrim Values

STR: L100~R100
THR: B100~F100
CH3: -100~+100
CH4: -100~+100
Initial value: 0

Trim Values

STR: L100~R100
THR: B100~F100
Initial value : 0

2 When finished with setting, return to the MENU screen by pressing the (END) button.

Function

End Point Adjuster "END POINT" (All channel)

Use this when performing left and right end point adjustments, throttle high side/brake side operation amount adjustment, or channel 3 and channel 4 servo up side/down side operation amount adjustment during linkage.

- Correct the maximum steering angle for left and right steering angles when there is a difference in the turning radius due to the characteristics of the vehicle.

Maximum steering angle

The "END POINT" function basically determines the maximum steering angle of each channel.

The functions shown below may have been adjusted or the operating range set by "END POINT" function may be exceeded. Check the linkage each time the following functions are adjusted.

- Sub trim (all channels) .....page 44
- Throttle acceleration (throttle) .....page 55

Refer to country distributor WEB for detailed the following function explanation.

Idle up (throttle) / Throttle off, Engine Cut (throttle)

Program mixing slave side (all channels)

ATL trim

ATL trim allows adjustment of the brake side operation amount during operation. Therefore, when the operating angle is adjusted with throttle END POINT, ATL trim must also be taken into account.

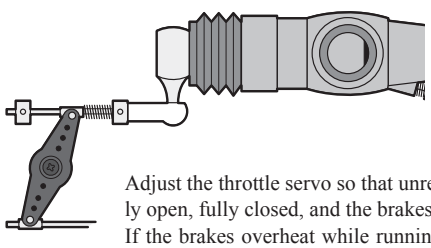
⚠ Warning

❗ Operate each servo over its full stroke and be sure the linkage does not bind or is not loose.

The continuous application of unreasonable force to a servo may cause damage and excessive battery drain.

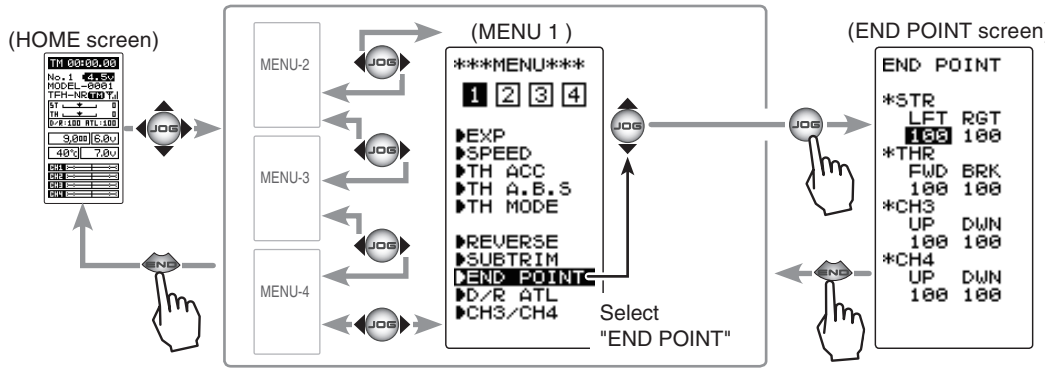
Decide the END POINT value at the contact point.

Adjust the steering servo so that unreasonable force is not applied to the servo by the chassis at maximum servo travel.



Adjust the throttle servo so that unreasonable force is not applied when the engine carburetor is fully open, fully closed, and the brakes are applied fully.
If the brakes overheat while running, their ability to function properly decreases. Before running, adjust the suitable maximum servo travel so that unreasonable force is not applied even when the servo travel is increased while running.

Display to "END POINT" screen using the following method:



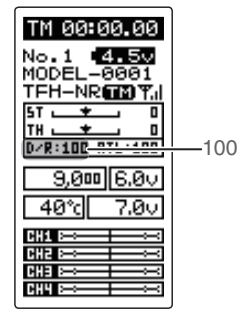
Setting item selection

(Steering and Throttle direction)

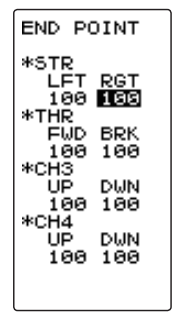
- The direction (STR LFT and STR RGT) linked with the steering wheel is switched.
- The direction (THR FWD and THR BRK) linked with the throttle trigger is switched.

Setting item (channel and direction)

STR LFT:	Steering (left side)
STR RGT:	Steering (right side)
THR FWD:	Throttle (foward side)
THR BRK:	Throttle (brake side)
CH3/CH4 UP:	3rd or 4th channel (up side)
CH3/CH4 DWN:	3rd or 4th channel (down side)



(HOME screen)



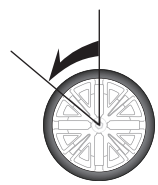
Steering (END POINT) adjustment

(Preparation)

- Before setup of the steering end point adjustment (END POINT), set the steering D/R trim (initial setup: DT4) to the maximum steering angle position 100%.
- Use the (JOG) button to select the setting item "RGT" and make the following adjustments: and make the following adjustments: Or turn the steering wheel to select LFT or RGT.

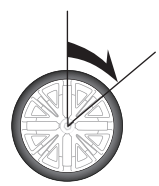
1 Steering (left side) adjustment

Turn the steering wheel fully to the left and use the (+) or (-) buttons to adjust the steering angle.



2 Steering (right side) adjustment

Turn the steering wheel fully to the right and use the (+) or (-) buttons to adjust the steering angle.



3 When finished with setting, return to the MENU screen by pressing the (END) button.

Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

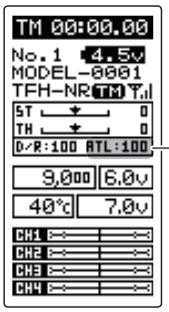
Steering END POINT

STR LFT: 0~120
STR RGT: 0~120
Initial value:100

Throttle (END POINT) adjustment

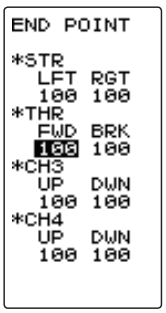
(Preparation)

- Before setting the throttle end point adjustment (END POINT), set the throttle ATL trim (initial setup: DT5) to the maximum throttle angle position 100%.
- Select the setting item "FWD" by moving up or down on the (JOG) button and make the following adjustments: Or move the throttle trigger fore or aft to select FWD or REV.



100

(HOME screen)



1 Throttle (forward side) adjustment

Pull the throttle trigger fully to the high side and use the (+) or (-) buttons to adjust the throttle angle. However, when using an electronic motor speed controller (ESC), set to 100%.

2 Throttle (brake side/reverse side) adjustment

Move the throttle trigger fully to the brake side and use the (+) or (-) buttons to adjust the throttle angle. However, when using an electronic motor speed controller (ESC), set to 100%.

3 When finished with setting, return to the MENU screen by pressing the (END) button.

Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

Throttle END POINT

THR FWD: 0~120
THR BRK: 0~120
Initial value:100

3rd & 4th channel servo (END POINT) adjustment

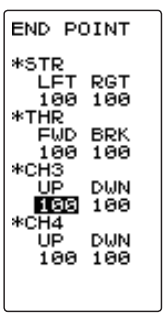
1 3rd/4th channel servo (up side) adjustment

Select the setting item "CH3 or CH4 UP" by moving the (JOG) button up or down. Set the 3rd or 4th channel dial fully to the up side (+ side) and use the (+) or (-) buttons to adjust the servo angle.

2 3rd/4th channel servo (down side) adjustment

Select the setting item "CH3 or CH4 DWN" by moving the (JOG) button up or down. Set the 3rd or 4th channel dial fully to the up side (- side) and use the (+) or (-) buttons to adjust the servo angle.

3 When finished with setting, return to the MENU screen by pressing the (END) button.



Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

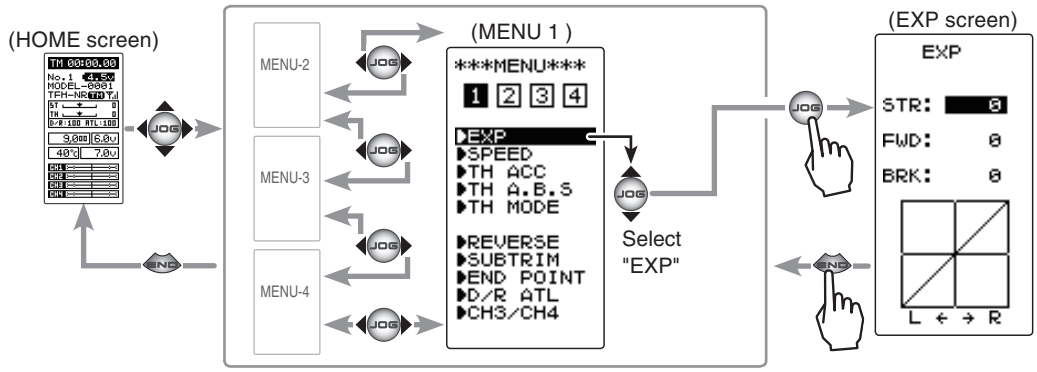
3rd & 4th channel END POINT

CH3/CH4 UP: 0~120
CH3/CH4 DWN: 0~120
Initial value : 100

End Point Adjuster "END POINT"

Exponential Adjustment "EXP" (Steering/ Throttle system)

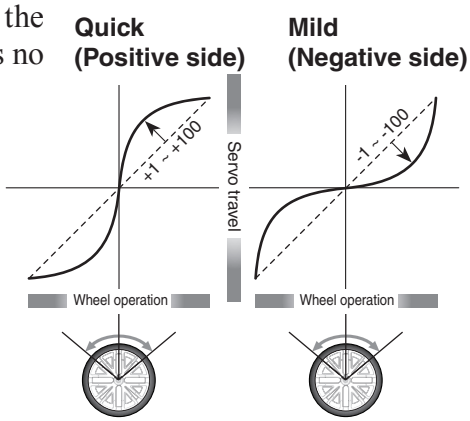
This function is used to change the sensitivity of the servo around the neutral position.
Display to "EXP" screen using the following method:



Setting item
STR: Steering
FWD: Throttle forward side
BRK: Throttle brake/ reverse side

STR (Steering EXP)

This function is used to change the sensitivity of the steering servo and around the neutral position. It has no effect on the maximum servo travel.



Racers Tip

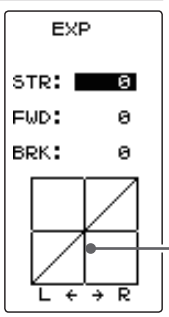
> When the setting is not determined, or the characteristics of the model are unknown, start with 0%. (When EXP is set to 0%, servo movement is linear.)

Steering EXP adjustment

(Preparation)

- On the EXP screen, select the setting item "STR" by moving the (JOG) button up or down.

1 When you want to quicker steering operation, use the (+) button to adjust the + side. When you want to make steering operation milder, use the (-) button to adjust the - side.



Vertical cursor moves in step with steering wheel operation.

Adjustment range
-100~0~+100

Adjustment buttons
- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

2 When finished with setting, return to the MENU screen by pressing the (END) button.

FWD (Throttle Forward Side EXP)/ BRK (Throttle Brake Side EXP)

This function makes the throttle forward side and brake side direction servo operation quicker or milder. It has no effect on the servo maximum operation amount.

Advice

> When the course conditions are good and the surface has good grip, set each curve to the + side (quick side). When the road surface is slippery and the drive wheels do not grip it, set each curve to the - minus (mild) side.

Throttle forward side EXP adjustment

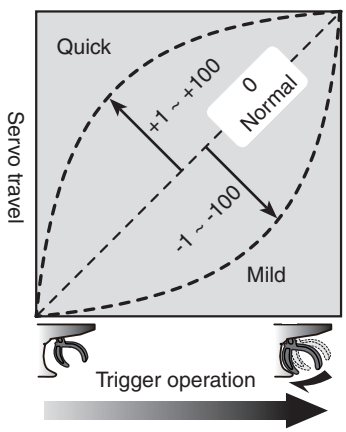
(Preparation)

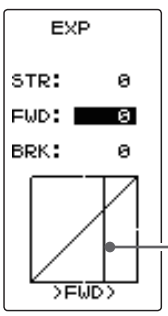
- On the EXP screen make the following adjustments:

1 Select the setting item "FWD" by moving the (JOG) button up or down. Use the (+) button to adjust for a faster throttle response or use the (-) button for a slower or milder throttle response.

Adjustment range
-100 ~ 0 ~ +100%

Adjustment buttons
- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).





Vertical cursor moves in step with throttle trigger operation.

2 When finished with setting, return to the MENU screen by pressing the (END) button.

Throttle brake side EXP adjustment

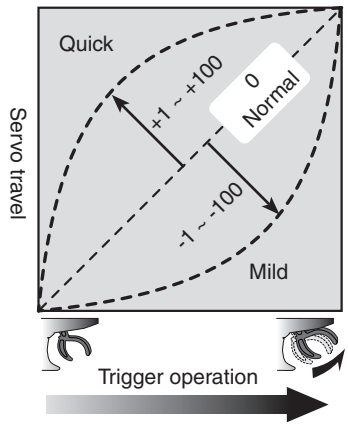
(Preparation)

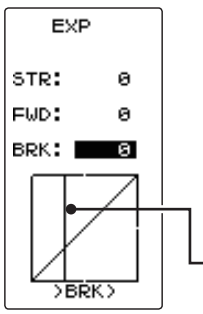
- On the EXP screen make the following adjustments:

1 Select the setting item "BRK" by moving the (JOG) button up or down. Use the (+) button to adjust for a faster brake response or use the (-) button for a slower or milder brake response.

Adjustment range
-100 ~ 0 ~ +100%

Adjustment buttons
- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).





Vertical cursor moves in step with throttle trigger operation.

2 When finished with setting, return to the MENU screen by pressing the (END) button.

Function

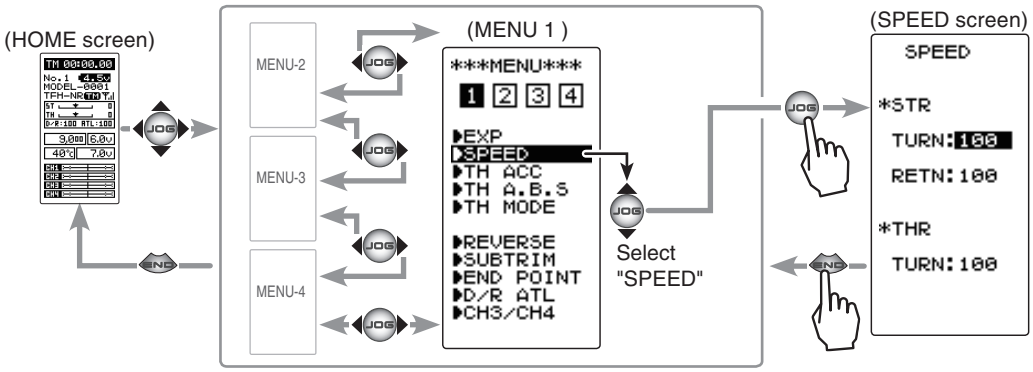
Dial / Trim Setting

The steering and throttle EXP adjustment (RATE) can be controlled with digital dial or digital trim. With the function select trim dial function (See page 67).

Servo Speed "SPEED" (Steering system)

This function limits the maximum speed of the steering servo (Delay function).

Display to "SPEED" screen using the following method:

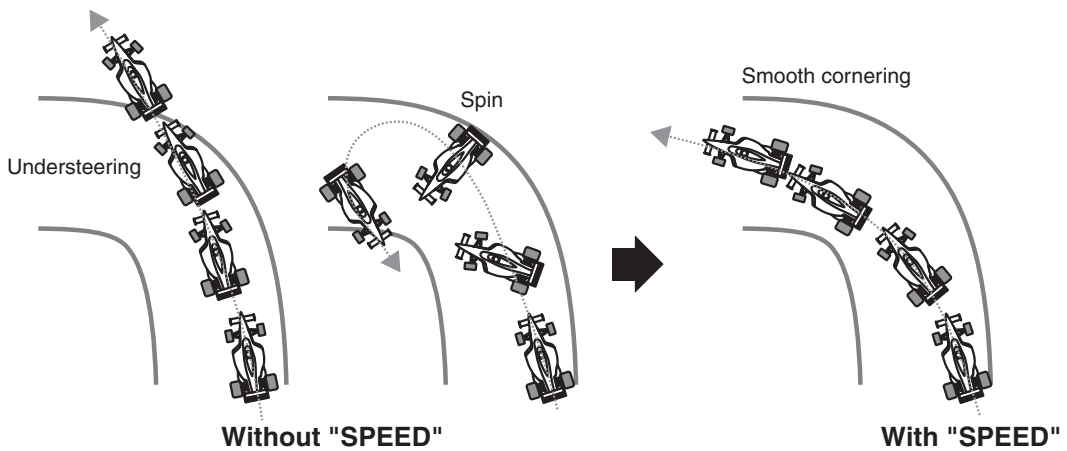


Setting item

STR TURN: Steering turn side
STR RETN: Steering return side
THR TURN: Throttle turn side

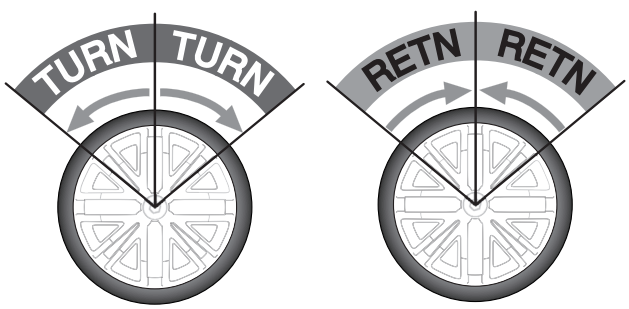
STR (Steering Speed)

Quick steering operation will cause momentary understeering, loss of speed, or spinning. This function is effective in such cases.



Operation

- The steering speed when the steering wheel is operated (TURN direction) and returned (RETN direction) can be independently set.
- If the steering wheel is turned slower than the set speed, the steering servo is not affected.



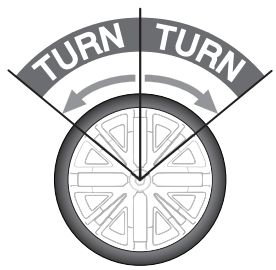
Steering Speed adjustment

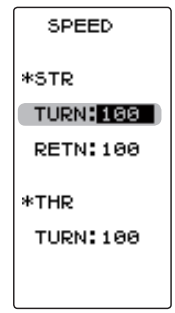
(Preparation)

- On the SPEED screen make the following adjustments:

1 "TURN" direction adjustment

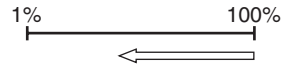
On the SPEED screen, select the setting item STR "TURN" by moving the (JOG) button up or down. Use the (+) or (-) buttons to adjust the delay amount.





Adjustment range

1~100% (each direction)
At 100%, there is no delay.



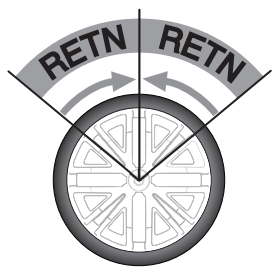
Servo operation is delayed.

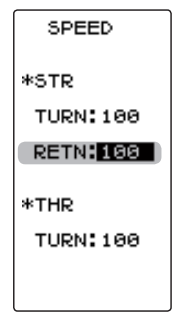
Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

2 "RETN" direction adjustment

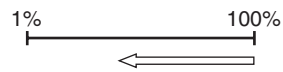
Select the setting item STR "RETN" by moving the (JOG) button up or down. Use the (+) or (-) buttons to adjust the delay amount.





Adjustment range

1~100% (each direction)
At 100%, there is no delay.



Servo operation is delayed.

Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

3 When finished with setting, return to the MENU screen by pressing the (END) button.

Setting example (Steering servo: BLS451 / BLS351) . . . (Setting criteria)

- On road TURN side: Approx. 50~80% RETURN side: Approx. 60~100%
- Off road TURN side: Approx. 70~100% RETURN side: Approx. 80~100%

Dial / Trim Setting

The steering speed adjustment "TURN" and "RETN" can be controlled with digital dial or digital trim. With the function select trim dial function (See page 67).

THR (Throttle Speed)

Sudden throttle trigger operation on a slippery road causes the wheels to spin and the vehicle cannot accelerate smoothly. Setting the throttle speed function reduces wasteful battery consumption while at the same time permitting smooth, enjoyable operation.

With "SPEED": Quick start without skidding

Without "SPEED": Slow start due to skidding

Operation

-Throttle servo (ESC) operation is delayed so that the drive wheels will not spin even if the throttle trigger is operated more than necessary.

This delay function is not performed when the throttle trigger is returned and at brake operation.

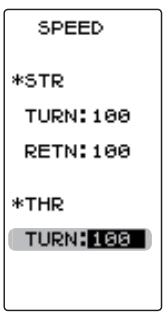
Throttle Speed adjustment

(Preparation)

- On the SPEED screen make the following adjustments:

1 (Delay adjustment)

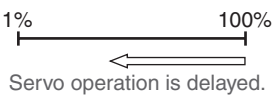
On the SPEED screen, select the setting item THR "TURN" by moving the (JOG) button up or down. Use the (+) or (-) buttons to adjust the delay amount.



Adjustment range

1~100%

At 100%, there is no delay.



Servo operation is delayed.

Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

2 When finished with setting, return to the MENU screen by pressing the (END) button.

Dial / Trim Setting

The throttle speed adjustment can be controlled with digital dial or digital trim. With the function select trim dial function (See page 67).

Servo Speed "SPEED"

Throttle Mode "TH MODE" (Throttle system)

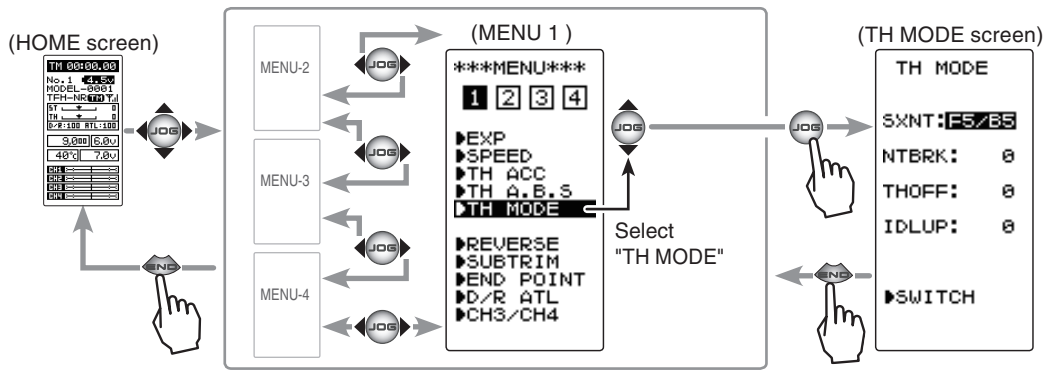
This menu has the following 4 functions:

- Servo neutral mode, which sets the throttle neutral ratio to 7:3 or 5:5.

*Refer to country distributor WEB for detailed the following function explanation.

- Idle up, which raises the idling speed when starting the engine to improve engine starting performance of a gasoline car (boat).
- Neutral brake, which applies the brakes at the neutral position of the throttle trigger.
- Throttle off (engine cut), which stops the engine of a boat, etc. by operating the throttle servo to the low side regardless of the position of the throttle trigger.

Display "TH MODE" screen using the following method:



Setup items

SXNT : Throttle servo neutral position
NTBRK : Neutral brake rate
IDLUP : Idle-Up rate
THOFF : Throttle off (engine cut) position

Throttle servo neutral position "SXNT"

-This function allows selection of the forward side and brake (reverse) side operation ratio from 7:3 or 5:5 by changing the neutral position of the throttle servo.

Selecting the throttle servo neutral position

1 (Mode selection)

Select the setting item "SXNT" by moving the (JOG) button up or down. Select "F5/B5" or "F7/B3" by (+) or (-) button.

"F5/B5" = Forward 50% : Back50%.
"F7/B3" = Forward 70% : Back30%.

Mode selection (SXNT)
F5/B5, F7/B3

Select button
- Select with the (+) or (-) buttons.

2 When finished with setting, return to the MENU screen by pressing the (END) button.

Function

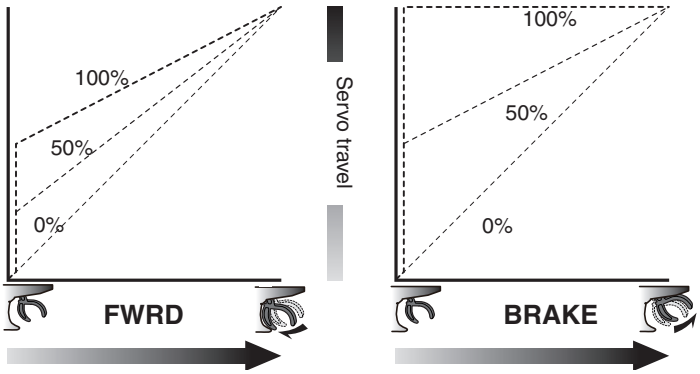
Throttle Acceleration "TH ACC" (Throttle system)

The servo will jump to the input position at its maximum possible speed. Unlike exponential, which adjusts the whole throttle movement into a curve, throttle acceleration simply "jumps" away from neutral and then leaves the remaining response linear.

Operation

- Operation near the throttle trigger neutral position becomes a sharp rise.

- The forward and brake sides can be set separately.

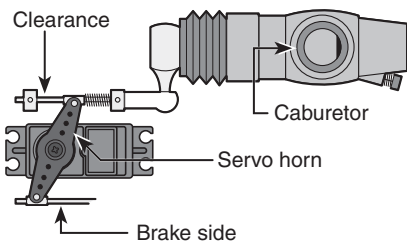


Set value

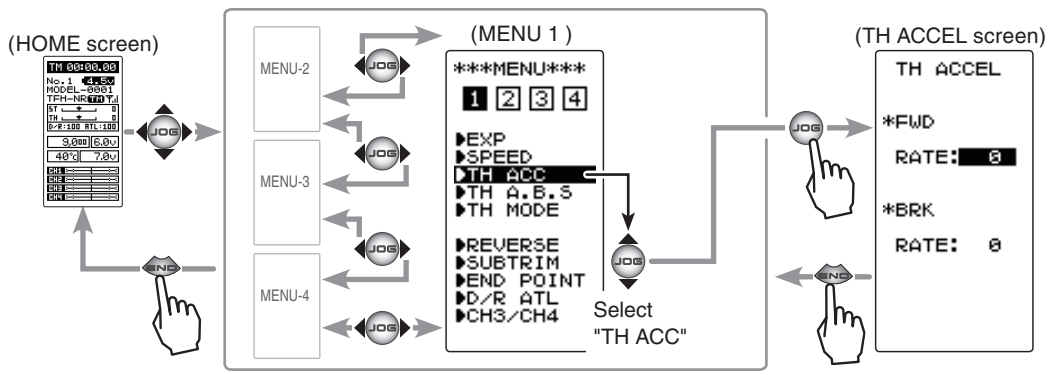
The standard value (100% point) of this setup affects the operation amount set by throttle END POINT function.

Convenient usage method

For nitro powered cars, the linkage must have a clearance because one servo controls the engine carburetor and brake. Thus, there is a noticeable time delay at both the forward and brake sides. Sharp response comparable to that of electric motor cars is obtained by reducing this clearance at the transmitter side.



Display to "TH ACC" screen using the following method:



Setup item

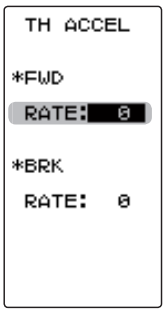
FWR RATE: Forward side acceleration
BRA RATE: Brake side acceleration

Throttle acceleration adjustment

(Preparation)

- On the TH ACCEL screen make the following adjustments:

1 (Forward acceleration amount adjustment)
Select the setting item FWD "RATE" by moving the (JOG) button up or down. Use the (+) and (-) buttons to adjust the acceleration amount.

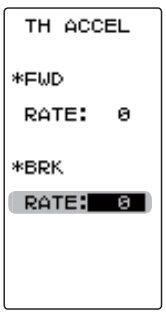


"0": No acceleration.
"100": Maximum acceleration (Approximately 1/2 of the forward side throttle angle).

Forward acceleration amount (FWD)
0~100
Initial value: 0

Adjustment buttons
- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

2 (Brake side acceleration amount adjustment)
Select the setting item BRK "RATE" by moving the (JOG) button up or down. Use the (+) and (-) buttons to adjust the acceleration amount.



"0": No acceleration.
"100": Maximum acceleration (Brake side maximum throttle angle).

Brake side acceleration amount (BRK)
0~100
Initial value: 0

Adjustment buttons
- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

3 When finished with setting, return to the MENU screen by pressing the (END) button.

Dial / Trim Setting

The throttle acceleration adjustment amount (FWD), (BRK) can be controlled with digital dial or digital trim. With the function select trim dial function (See page 67).

Steering Dual Rate/ Throttle ATL "D/R ATL"

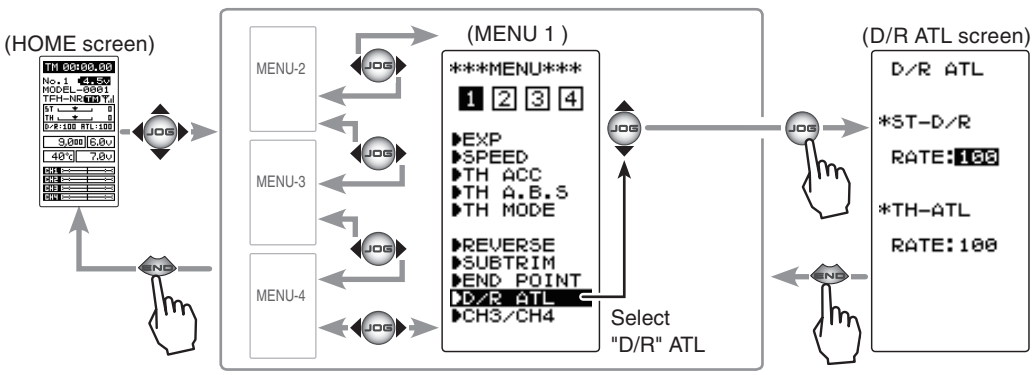
D/R (Steering dual rate)

The steering left and right servo travels are adjusted simultaneously. This setting is linked to transmitter grip trim lever DT4. When DT4 is assigned another function, dual rate can be adjusted with this screen.

ATL (Throttle ATL)

This function decreases the set value when the braking effect is strong and increases the set value when the braking effect is weak. This function is linked to transmitter grip trim lever DT5. When DT5 is assigned another function, this function can be set with this screen.

Display "D/R ATL" screen using the following method:



Dual rate adjustment

1 (Dual rate adjustment)

Select the setting item ST-D/R "RATE" by moving the (JOG) button up or down. Adjust the servo travel with the (+) and (-) buttons.

2 When finished with setting, return to the MENU screen by pressing the (END) button.

D/R rate (RATE)
0~100%
Initial value: 100

Adjustment buttons
- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

ATL function adjustment

1 (Brake amount adjustment)

Select the setting item TH-ATL "RATE" by moving the (JOG) button up or down. Adjust the servo travel with the (+) and (-) buttons.

2 When finished with setting, return to the MENU screen by pressing the (END) button.

ATL rate (RATE)
0~100%
Initial value: 100

Adjustment buttons
- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

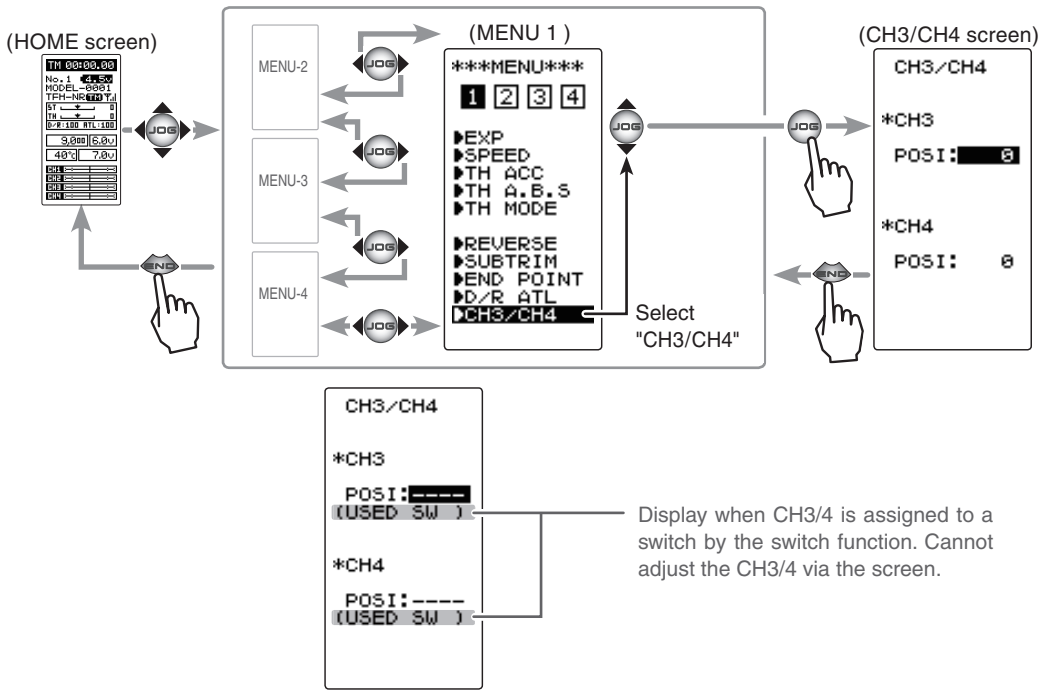
Channel 3/4 "CH3/CH4" (3/4 channel)

The channel 3/4 servo position can be set from the this screen. When CH3/4 is assigned to a trim dial or switch by the trim dial function (page 67) or the switch function (page 69), this setting is linked to that.

When CH3/4 is not assigned to a trim dial or switch, it can be set with this screen.

When CH3/4 is assigned to a switch by the switch function, you cannot adjust the CH3/4 via the screen.

Display "CH3/CH4" screen using the following method:



Rate/position adjustment on channel menu screen

1 (Function selection)

On each CH3/CH4 screen select CH3 "POSI" or CH4 "POSI" by moving the (JOG) button up or down.

2 (Position setting/rate adjustment)

Use the (+) and (-) buttons to adjust the channel 3 or channel 4 position.

3 When finished with setting, return to the MENU screen by pressing the (END) button.

Channel 3 position (POSI)
Channel 4 position (POSI)
0~100%
Initial value: 0

Adjust button
- Adjust with the (+) and (-) buttons.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).

Function