

MAGNUM

3PK *Super*



3PKS

INSTRUCTION
MANUAL

1M23N16704



Futaba®

Digital Proportional R/C System

Thank you for purchasing a Futaba 3PKS.
Before using your 3PKS, read this manual carefully and use your R/C set safely.
After reading this manual, store it in a safe place.

Application, Export, and Modification

1. This product may be used for models only. It is not intended for use in any application other than the control of models for hobby and recreational purposes. The product is subject to regulations of the Ministry of Radio/Telecommunications and is restricted under Japanese law to such purposes.

2. Exportation precautions:

(a) When this product is exported from the country of manufacture, its use is to be approved by the laws governing the country of destination which govern devices that emit radio frequencies. If this product is then reexported to other countries, it may be subject to restrictions on such export. Prior approval of the appropriate government authorities may be required. If you have purchased this product from an exporter outside your country, and not the authorized Futaba distributor in your country, please contact the seller immediately to determine if such export regulations have been met.

(b) Use of this product with other than models may be restricted by Export and Trade Control Regulations, and an application for export approval must be submitted. In the US, use of 72MHz (aircraft only), 75MHz (ground models only) and 27MHz (both) frequency bands are strictly regulated by the FCC. This equipment must not be utilized to operate equipment other than radio controlled models. Similarly, other frequencies (except 50MHz, for HAM operators) must not be used to operate models.

3. Modification, adjustment, and replacement of parts: Futaba is not responsible for unauthorized modification, adjustment, and replacement of parts on this product. Any such changes may void the warranty.

Compliance Information Statement (for U.S.A.)

This device, trade name Futaba Corporation of America, model number R303FHS, R113iP and R203HF comply with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

The responsible party of this device compliance is;

Futaba Corporation of America

2865 Wall Triana Highway, Huntsville, Alabama 35824, U.S.A.

TEL (256) 461 - 7348

Battery Recycling (for U.S.A.)



The RBRC™ SEAL on the (easily removable) nickel-cadmium battery contained in Futaba products indicates that Futaba Corporation of America is voluntarily participating in an industry program to collect and recycle these batteries at the end of their useful lives, when taken out of service within the United States. The RBRC™ program provides a convenient alternative to placing used nickel-cadmium batteries into the trash or municipal waste system, which is illegal in some areas.

You may contact your local recycling center for information on where to return the spent battery. Please call 1-800-8-BATTERY for information on Ni-Cd battery recycling in your area. Futaba Corporation of America's involvement in this program is part of its commitment to protecting our environment and conserving natural resources.

NOTE: Our instruction manuals encourage our customers to return spent batteries to a local recycling center in order to keep a healthy environment.

RBRC™ is a trademark of the Rechargeable Battery Recycling Corporation.

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- All rights are reserved by Futaba Corporation. Do not reprint any or the entire document.
 - The content of the document is susceptible to change without notice.
 - Although this document is compiled with full care, please inform us if there is anything that is unclear.
 - Please be sure that Futaba is not responsible to any consequences that customers have used the products.

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**For Your Safety
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Reference

Use this product in a safe manner. Please observe the following safety precautions at all times.

Explanation of Symbols

The parts of this manual indicated by the following symbols are extremely important and must be observed.

Symbols	Explanation
Danger	Indicates a procedure which could lead to a dangerous situation and may cause death or serious injury if ignored and not performed properly.
Warning	Indicates procedures which may lead to dangerous situations and could cause death or serious injury as well as superficial injury and physical damage.
Caution	Indicates procedures that may not cause serious injury, but could lead to physical damage.

Symbols: ; Prohibited ; Mandatory

High Response System (H.R.S) Precautions

Caution

- When using the T3PKs in the high response system (HRS) mode, always use it under the following conditions:

Receiver: R203HF, R303FHS or other high response system (HRS) compatible receiver
Servos : 6V Futaba digital servo
Battery : 6V NiCd battery
Transmitter mode : HRS mode (See p.42 for setting method.)

If the conditions are different, control is impossible.
 And **Fail Safe Unit (FSU)** is not available.

Operation Precautions

Warning

- Do not operate two or more models on the same frequency at the same time.
 Operating two or more models at same time on the same frequency will cause interference and loss of control of both models.
 AM, FM (PPM) and PCM are different methods of modulation. Nonetheless the same frequency can not be used at the same point in time, regardless of the signal format.
- Do not operate outdoors on rainy days , run through puddles of water or when visibility is limited.
 Should any type of moisture (water or snow) enter any compoent of the system, erratic opereation and loss of control may occur.
- Do not operate in the following places.
 - Near other sites where other radio control activity may occur.
 - Near people or roads.
 - On any pond when row boats are present.
 - Near high tension power lines or communication broadcasting antennas.
 Interference could cause loss of control . Improper installation of your Radio Control System in your model could result in serious injury.

Warning

- ⊘ Do not operate this R/C system when you are tired, not feeling well or under the influence of alcohol or drugs.

Your judgment is impaired and could result in a dangerous situation that may cause serious injury to yourself as well as others.

- ❗ Extend the transmitter antenna to its full length.

If the transmitter antenna is not fully extended the operating range of the radio will be reduced.

- ❗ Always perform a operating range check prior to use.

Problems with the radio control system as well as improper installation in a model could cause loss of control.

(Simple range test method)

Have a friend hold the model, or clamp it down or place it where the wheels or prop can not come in contact with any object. Walk away and check to see if the servos follow the movement of the controls on the transmitter. Should you notice any abnormal operation, Do not operate the model. Also check to be sure the model memory matches the model in use.

- ❗ Check the transmitter antenna to be sure it is not loose.

If the transmitter antenna works loose, or is disconnected while the model is running signal transmission will be lost. This will cause you to lose control of the model. Rotate the antenna softly with your fingers when checking whether it is loosely or firmly fixed, Do not screw the antenna forcibly. Otherwise its antenna-holding part can be damaged.

Caution

- ⊘ Do not touch the engine, motor, speed control or any part of the model that will generate heat while the model is operating or immediately after its use.

These parts may be very hot and can cause serious burns.

- ❗ Turning on the power switches.

Always check the throttle trigger on the transmitter to be sure it is at the neutral position.

1. Turn on the transmitter power switch.
2. Turn on the receiver or speed control power switch.

Turning off the power switches

Always be sure the engine is not running or the motor is stopped.

1. Turn off the receiver or speed control power switch.
2. Then turn off the transmitter power switch.

If the power switches are turned off in the opposite order the model may unexpectedly run out of control and cause a very dangerous situation.

- ❗ When making adjustments to the model do so with the engine not running or the motor disconnected.

You may unexpectedly lose control and create a dangerous situation.

- ❗ When operating your model always display a frequency flag on your transmitter antenna.

(Fail safe function) ---H.R.S or PCM mode only

- ❗ Before running (cruising), check the fail safe function.

Check Method;

Before starting the engine, check the fail safe function as follows:

- 1) Turn on the transmitter and receiver power switches.
- 2) Wait at least one minute, then turn off the transmitter power switch. (The transmitter automatically transfers the fail safe data to the receiver every minute.)
- 3) Check if the fail safe function moves the servos to the preset position when reception fails.

The fail safe function is a safety feature that minimizes set damage by moving the servos to a preset position when reception fails. However, if set to a dangerous position, it has the opposite effect. When the reverse function was used to change the operating direction of a servo, the fail safe function must be reset.

Setting example: Throttle idle or brake position

Nicad Battery Handling Precautions

(Only when Nicad batteries are used)

Warning

-  Always check to be sure your batteries have been charged prior to operating the model.
Should the battery go dead while the model is operating loss of control will occur and create a very dangerous situation.
-  When the model is not being used, always remove or disconnect the Nicad battery .
Should the battery be left connected this could create a dangerous situation if someone accidentally turns on the receiver power switch. Loss of control would occur.
-  To recharge the transmitter Nicad , use the special charger made for this purpose.
Overcharging could cause the Nicad battery to overheat, leak or explode. This may lead to fire, burns, loss of sight and many other type's of injuries.

Caution

-  Do not use commercial AA size Ni-cd and Ni-MH batteries.
Quick charging may cause the battery contacts to overheat and damage the battery holder.
-  Do not short circuit the Nicad battery terminals.
Causing a short circuit across the battery terminals may cause abnormal heating, fire and burns.
-  Never insert or remove the charger while your hands are wet.
You may get an electric shock.
-  Do not drop the Nicad battery or expose it to strong shocks or vibrations.
The battery may short circuit and overheat, electrolyte may leak out and cause burns or chemical damage.
-  Always keep the charger disconnected from the outlet while it is not in use.

Storage and Disposal Precautions

Warning

-  Do not leave the radio system or models within the reach of small children.
A small child may accidentally operate the system, this could cause a dangerous situation and injuries. Nicad batteries can be very dangerous when mishandled and cause chemical damage.
-  Do not throw Nicad batteries into a fire. Do not expose Nicad batteries to extreme heat. Also do not disassemble or modify a Nicad battery pack.
Overheating and breakage will cause the electrolyte to leak from the cells and cause skin burns, loss of sight as well as other injuries.
-  When the system will not be used for any length of time store the system with batteries in a discharged state. Be sure to recharge the batteries prior to the next time the system is used.
If the batteries are repeatedly recharged in a slightly discharged state the memory effect of the nicad battery may considerably reduce the capacity . A reduction in operating time will occur even when the batteries are charged for the recommended time

<Nicad Battery Electrolyte>

The electrolyte in Nicad batteries is a strong alkali. Should you get even the smallest amount of the electrolyte in your eyes, DO NOT RUB, wash immediately with water, seek medical attention at once. The electrolyte can cause blindness. If electrolyte comes in contact with your skin or clothes, wash with water immediately.

Warning

⊘ Do not store your R/C system in the following places.

- Where it is extremely hot or cold.
- Where the system will be exposed to direct sunlight.
- Where the humidity is high.
- Where vibration is prevalent.
- Where dust is prevalent.
- Where the system would be exposed to steam and condensation.

Storing your R/C system under adverse conditions could cause deformation and numerous problems with operation.

❗ If the system will not be used for a long period of time remove the batteries from the transmitter and model and store in a cool dry place.

If the batteries are left in the transmitter electrolyte may leak and damage the transmitter. This applies to the model also, remove the batteries from it also to prevent damage.

<Nicad Battery Recycling>

A used Nicad battery is valuable resource. Insulate the battery terminals and dispose the battery by taking it to a battery recycling center.

Other Precautions

Caution

⊘ Do not expose plastic parts to fuel, motor spray, waste oil or exhaust.

The fuel, motor spray, waste oil and exhaust will penetrate and damage the plastic.

❗ Always use only genuine Futaba transmitters, receivers, servos, FET amps (electronic speed controls), Nicad batteries and other optional accessories.

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.

⊘ Do not peel off, or use the transmitter with a peeled off, crystal frequency display tab seal.

It may cause a short circuit inside the set and the transmitter may not transmit.

Features

-High response system (HRS)

High response system (HRS) acclaimed with the T3PK is further advanced (response and linearity increased further).

-Five-contact jog button used at the edit buttons

The cursor can be moved up, down, left, and right and the menu screen can be smoothly selected by jog button.

-Model memory for 20 models/10 models can be added by using a CAMPac-16K

Model names can use up to 10 letters, numbers, and symbols, so that easily understood names can be set. A model memory with different fine setups can be created by using the model copy function. Ten more models can be added by using the optional CAMPac-16K .

-Two function selection modes: Menu Selection and Direct Selection

The setup screens are called from menu screens. The menu screen can be selected from among 4 levels (LEVEL1/LEVEL2/LEVEL3/BIGCAR).

Frequently used (high degree of urgency) functions can be assigned to direct selection buttons which quickly call the assigned function. (8 functions)

-Menu customizing

Function menus can be customized as desired. The menu order, display function and other functions used by individual models only can be displayed.

-Brake mixing for large cars (BRAKE)

Brake mixing of the front and rear wheels of 1/5GP and other large cars can be adjusted independently.

-Anti-skid braking system (A.B.S)

This function applies the brakes so that the tires of gasoline engine cars, etc. do not lose their grip on the road even when braking at corners.

-Throttle acceleration (ACCEL)

Gasoline engine cars have a time lag before the clutch and brakes become effective. The TH-ACCEL function reduces this time lag.

-Throttle speed (THSPD)

Sudden trigger operation on a slippery road surface will only cause the tires to spin and the model to not accelerate smoothly. By setting the throttle speed function, operation can be performed smoothly and easily. It also suppresses battery consumption.

-Start function (START)

A pre-set throttle position, less than full throttle, to be used for the initial acceleration off the line without having wheel spin. When the trigger is released, auto-start is turned off and throttle operates normally again.

-Steering speed (STSPD)

When you sense that the steering servo is too fast, etc., the servo operating speed (direction that suppresses the maximum speed) can be adjusted.

-Racing timer (TIMER)

The lap timer can record 99 lap times, total time, and average lap time. The timer can also be started automatically by trigger operation. The race time and audible alarm can be set. The 3PKS also has a navigation timer effective during practice runs. The target lap and refueling time are alarmed by an audible alarm. An up timer and down timer are also provided.

-Digital trim w/reset function

The current trim position is displayed on the LCD screen. The operating amount of 1 step can also be adjusted.

Trim operation has no affect on the maximum travel of the steering and throttle servos.

-Function select dial function (DIAL)

This function assigns functions to dials (digital trim, grip dial, knob). The step amount and operating direction can also be adjusted. Trim positioning at each model call is unnecessary because all the dials are digital.

-Function select switch function (SWTCH)

This function assigns functions to 3 switches. The operating direction can also be set.

-Edit button lock & trim/dial lock functions

Lock functions which prohibit setting and operation by transmitter edit buttons, trim, and dials is provided.

-Wheel position can be changed

The wheel position can be offset by using an accessory APA wheel position offset adapter. The wheel angle can also be adjusted.

-Left-handed support

The left and right installation direction of the wheel section can be reversed.

-Tension adjustment function

The tension of the steering wheel spring can be adjusted from the outside.

-Mechanical ATL Adjustment

Make this adjustment when you want to decrease the total travel of the brake (push) side of the throttle trigger.

-Display switch

Display switch allows function setup without transmitting.

-Vibrator built into the grip

The vibrator can be operated at racing timer lap navigation, time-up, and low battery alarm.

-7-color LED pilot lamp

Your favorite color can be selected.

Set Contents

After opening the box, first check if the contents conform to the following. The contents depend on the set as shown below.

Before Using

Transmitter	T3PKS
RF module	PK-FSM or PK-FM *Installed in transmitter.
Receiver	R303FHS(HRS/PPM) or R203HF(HRS-FM) or R113iP(PCM)
Miscellaneous	<p>Transmitter Ni-cad battery pack NT8F700B or Battery box *Installed in transmitter.</p> <p>Receiver switch</p> <p>Wheel ofset adapter(APA)</p> <p>Instruction manual</p> <p>Mini screwdriver * It is used for PK-FMS or R303FHS.</p>

- If any of the set contents are missing, or you have any questions, please contact your dealer.

Caution

- ① When using the T3PKs in the high response system (HRS) mode, always use it under the following conditions:

Receiver: R203HF, R303FHS or other high response system (HRS) compatible receiver

Servos : 6V Futaba digital servo

Battery : 6V NiCd battery

Transmitter mode : HRS mode (See p.42 for setting method.)

If the conditions are different, control is impossible.

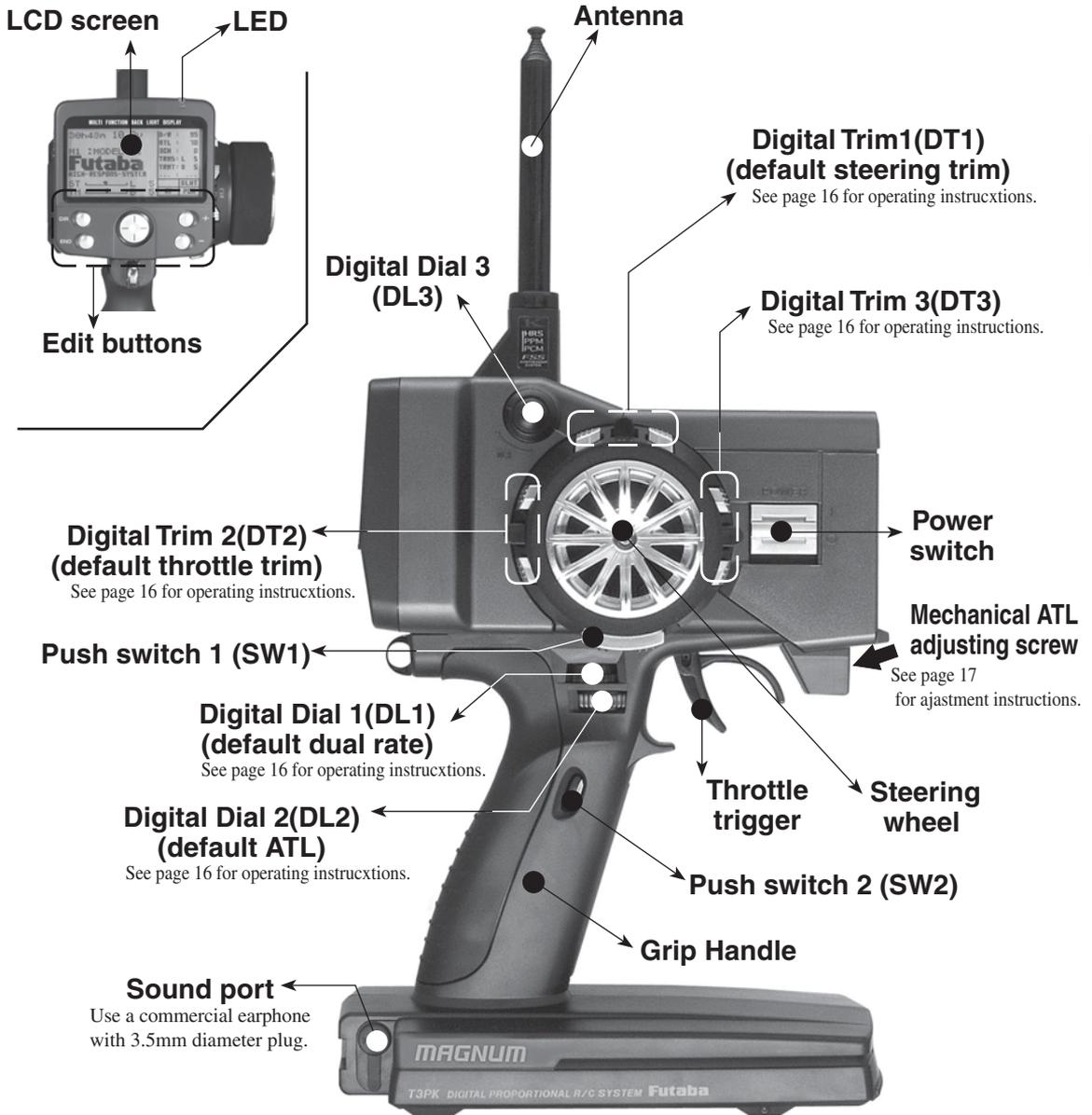
And **Fail Safe Unit (FSU)** is not available.

- ① Always use only genuine Futaba transmitters, receivers, servos, FET amps (electronic speed controls), Nicad batteries and other optional accessories.

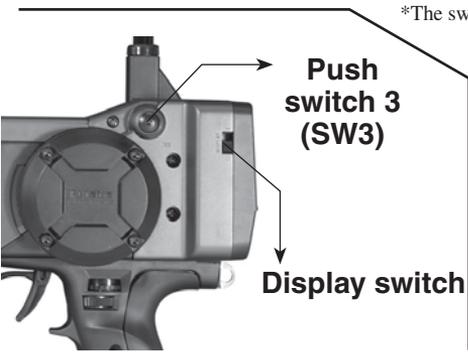
Futaba will not be responsible for problems caused by the use of other than Futaba genuine parts. Use the parts specified in the instruction manual and catalog.

Transmitter T3PKS

Nomenclature



Before Using



*The switches, dial, and trimmers in the figure are shown in the initial setting position.

Precautions when turning the power switch on and off.
 When the data was changed using the edit keys or trim levers, wait at least two seconds before turning off the power. If the power is turned off within two seconds after the data was changed, the new data will not be written to memory.

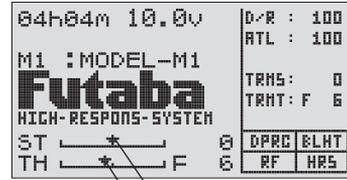
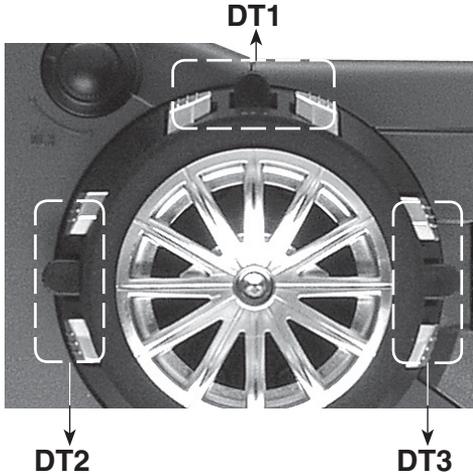
Digital Trim Operation

(Initial settings: DT1: Steering trim, DT2: Throttle trim, DT3: -----)

Digital trims can be used in 2 ways:

Operating by the lever: Push the lever to the left or right (up or down)
 Operating by push button switch: Press the push button switch in the desired direction. The current position is displayed on the LCD screen in the bottom three rows of the list. However, this operation cannot be performed when the trim/dial lock (p.22) function is set.

Before Using



Steering trim display
 Throttle trim display

- Each step is indicated by a tone.
- When the trim exceeds the maximum trim adjustment range, the beep will change and the servo will not move any farther. Return to the neutral position (center) by pressing both the push button switches simultaneously for about one second.
- Trim lever adjustments have no effect on the maximum servo travel. This prevents the linkages from binding when adjustments are made.

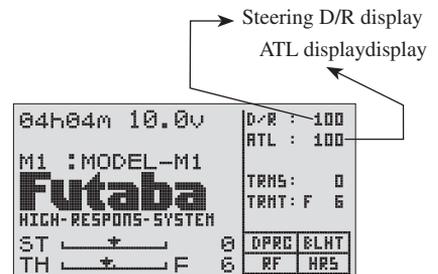
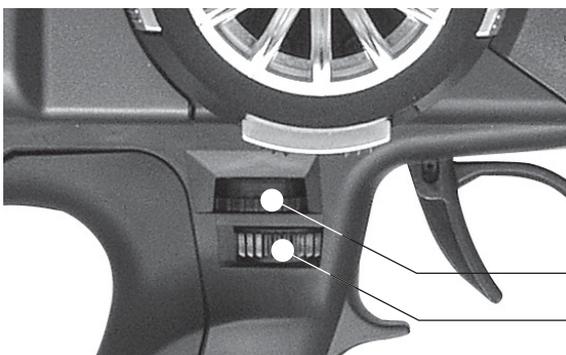
Trim Operation

With the center trim feature, trim adjustments have no effect on the maximum servo travel. This prevents the linkages from binding when adjustments are made.

Grip Dial Operation

(Initial setting: DL1; Steering D/R, DL2; ATL)

Operate the dials by turning them. The current set value is displayed on the LCD screen. However, this operation cannot be performed when the trim/dial lock (p.22) function is set.



Steering D/R display
 ATL displaydisplay

Steering D/R DL1
 ATL DL2

- Each step is indicated by a tone.
- When the trim exceeds the maximum trim adjustment range, the tone will change pitch and the lever will not move any farther.

Mechanical ATL adjustment

Make this adjustment when you want to decrease the stroke of the brake (back) side of the throttle trigger for operation feel.

Adjustment

1 Using a Phillips screwdriver adjust the trigger brake (reverse) stroke. (The screw moves the throttle trigger stopper.)

- When the screw is turned clockwise, the stroke becomes narrower. Adjust the stroke while watching the screw.



Note:

Once you have changed the mechanical stroke on the brake side, be sure to adjust the scale of the throttle channel accordingly by using the "Adjuster Function" (page102).

Due to this change, you also need to adjust in most cases the travel of the throttle servo by using "Data Setting."

Before Using

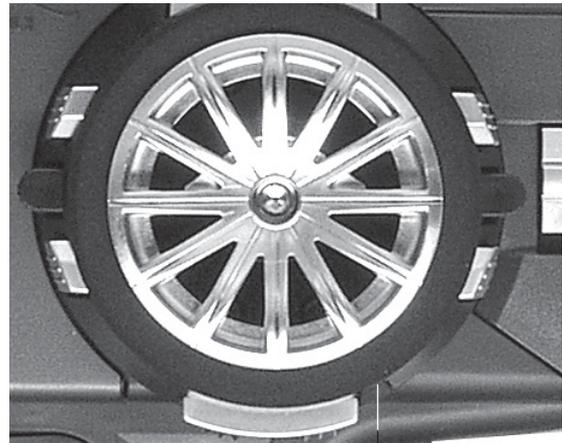
Wheel tension adjustment

Make this adjustment when you want to change the wheel spring tension.

Adjustment

1 Using a 1.5mm hex wrench adjust the wheel spring tension by turning the screw inside the adjusting hole in the arrow direction.

- The spring is set to the weakest tension at the factory.
- When the adjusting screw is turned clockwise, the spring tension increases.



Wheel tension adjusting screw

Note:

If turned too far counterclockwise, the adjusting screw may fall out. The adjustment range is up to 7 to 8 turns from the fully tightened (strongest) position. If turned further than this, the adjusting screw may fall out.

Ni-cad Battery Replacement

The Ni-cad battery is connected by a connector so that it can be removed when you will not be using the transmitter for a long time, or when replacing a dead battery with a spare battery.

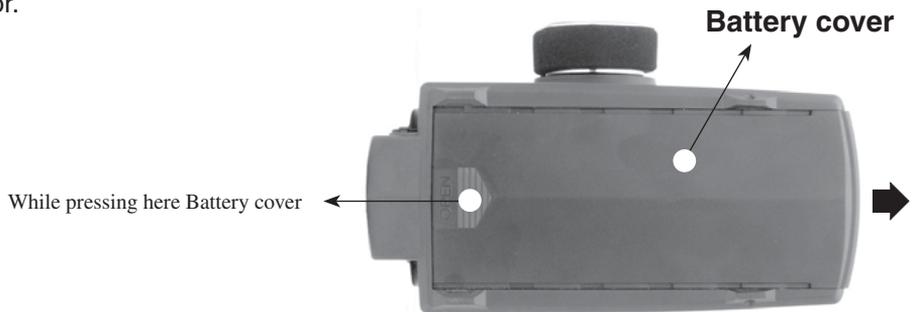
- Always use an NT8F7000B Ni-cad battery.

Removal

- 1 Slide the transmitter battery cover in the arrow direction while pressing the part shown in the figure.
- 2 Remove the Ni-cad battery and disconnect the connector.



Ni-cd battery
NT8F700B



⚠ Caution

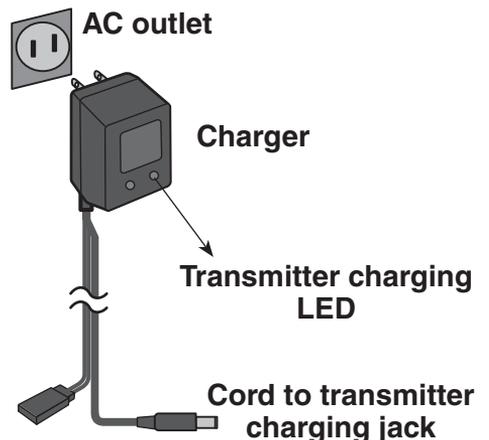
- 1 Pay full attention so that the battery cover wouldn't pinch the cable of the Ni-cad battery.

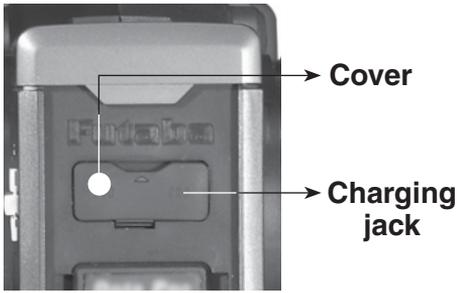
Pinching the cable by the battery cover can lead to an electrical shortage, fire and abnormal heat generation, which may cause burns and fire disaster.

Charging the Ni-cad Battery

Charging

- 1 Plug the transmitter cord of the special charger into the charging jack on the rear of the transmitter.
- 2 Plug the charger into an AC outlet.
- 3 Check that the charging LED lights.





When charging the NT8F700B Ni-cad battery with the special charger, allow about 15 hours for charging. If the transmitter has not been used for some time, cycle the battery by charging and discharging it two or three times.

Over current protection

The transmitter charging circuit is equipped with an over current protection circuits (1.5A). If the battery is charged with a quick charger for other than digital proportional R/C sets, it may not be fully charged.

⚠ Warning

- ⊘ Never plug it into an outlet other than indicated voltage.
Plugging the charger into the wrong outlet may result in an explosion, sparking, or fire.
- ⊘ Do not insert and remove the charger when you hands are wet.
It may cause an electric shock.
- ⓘ Always use the special charger or a quick charger for digital proportional R/C sets to charge a digital proportional R/C set Ni-cad battery.
Overcharging a Ni-cad battery can result in burns, fire, injuries, or loss of sight due to overheating, breakage, or electrolyte leakage.

⚠ Caution

- ⊘ Never try to recharge a dry cell battery.
The transmitter may be damaged or the battery electrolyte may leak or the battery may break.
- ⓘ When the charger is not in use, disconnect it from the AC outlet.
Do this to prevent accidents and to avoid overheating.

Grip vibrator



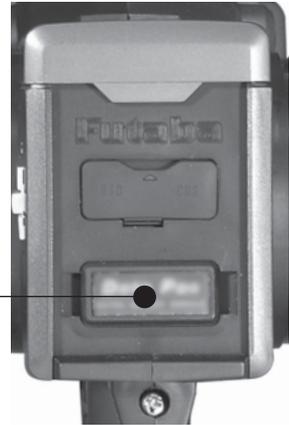
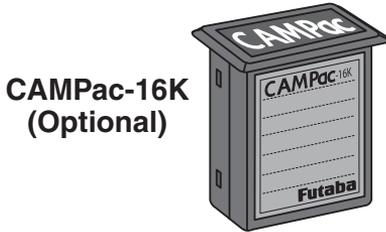
A vibrator is built into the grip of the T3PKS. The vibrator vibrates at racing timer lap navigation, time-up, and low battery alarm. (p.104)

Note:

The vibrator motor is built into this part of the grip. If too much force is applied to this part, the vibrator motor may operate. Note that the vibrator motor may be damaged depending on situation.

CAMPac-16K Memory module

The optional CAMPac-16K increases your model storage capability (to 30 models from 20) and allows you to transfer programs to another T3PKS transmitter. Note that data may not be transferred to/from any other model of transmitter (T3PK, T3VCS, etc).



Removal Precautions

Always turn off the transmitter power before installing and removing the CAMPac-16K.

When inserting and removing the CAMPac-16K

Always turn off the transmitter power before removing or inserting the CAMPac-16K.

Initialization

When using the CAMPac-16K, initialization is necessary so that the CAMPac-16K can be used with this transmitter. When "INITIALIZE?" is displayed on the screen at power ON, press the (+) button. This automatically initializes the CAMPac-16K. No further action is necessary.

```
MEMORY MODULE
INITIALIZE ?
YES > +
NO > -
```

When a CAMPac-16K used with another model has been inserted, and initialization is executed by pressing the (+) button when "INITIALIZE?" is displayed on the screen at power ON, the old data is destroyed so the CAMPac-16K can be used with the T3PKS.

Model Select Error

If the power is turned back on in the state in which a model memory in the CAMPac-16K was called and the CAMPac-16K is not installed, an audible alarm will sound and "SELECT ERROR" will be displayed on the LCD screen. When any button is pressed, model 1 will be forcibly called.

LCD screen:

```
EXTERNAL MODEL No.
<< SELECT ERROR >>
ANY KEY > M1 SELECT
```

Audible alarm:
Tone sounds (7 times)
and stops (repeated)

Data interchangeability with other models

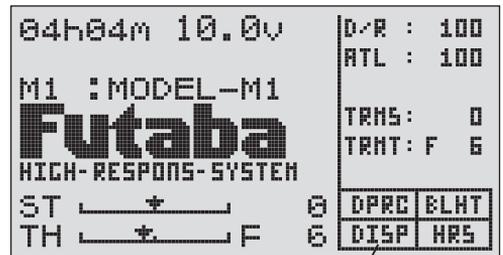
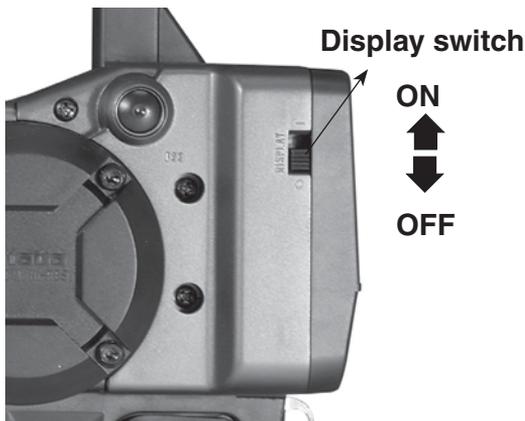
Data is not interchangeable with T3PK, T3VCS, and other transmitters other than the T3PKS.

Set data backup

The set data of each function (transmitter body and the CAMPac-16K) of the T3PKS transmitter is stored in a memory element that does not require a backup battery. Therefore, the T3PKS transmitter can be used without paying attention to the backup battery life.

Display switch

If the display switch is turned on without turning on the power switch, transmitter side data setup is possible without emitting radio waves.



"DISP" is displayd

Warning

⊗ Never turn on the power switch while this function is in use.

If the power switch is turned on, radio waves will be emitted and interfere with vehicles (boats) operating on the same band (frequency) and is very dangerous.

Power off forgotten alarm

When the steering wheel, throttle trigger, push switch, or edit button is not operated for 10 minutes during T3PKS initialization, an alarm sounds and "NOT OPERATED FOR LONG TIME" is displayed on the LCD screen.

When the steering wheel, throttle trigger, push switch, or edit button is operated, the alarm is reset. If the system is not to be used, turn off the power.

The function can be deactivated at the system menu (p.98).

NOT OPERATED
FOR A LONG TIME
<< WARNING >>

Display when power switch turned on

Power switch turned on

Beep confirmation sound is generated and the initial screen shown below appears.

The diagram shows the initial screen display with the following labels:

- Battery voltage display
- Total timer display (H:M)
- Edit button lock display
- Trim/dial lock display
- Model name (10 characters)
- Steering trim display
- Throttle trim display

The screen displays the following information:

```

04h04m 10.0V
M1 : MODEL-M1
Futaba
HIGH-RESPONS-SYSTEM
ST [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
TH [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
D/R : 100
ATL : 100
TRANS : 0
TRMT : F 6
DPAC BLHT
RF HRS
    
```

DL1 *Function names and rate assigned to dials are displayed.
DL2
DL3
DT1
DT2
DT3

Displays whether or not a memory module is inserted. When a memory module is inserted, "DPAC" is displayed.	"BLHT" is displayed when backlighting is ON.
When radio waves are being emitted, "RF" is displayed. When radio waves are not being emitted when turned on by display switch and when the DSC function is used, "DISP" is displayed.	Displays whether or not a memory module is inserted. When a memory module is inserted, "DPAC" is displayed.

User name display

When the (END) button is held down for 1 second or longer at the initial screen, the Futaba logo and user name are displayed for about 2 seconds.

Edit button lock and trim/dial lock

T3PKS setup and operation by edit button (p.15) and digital trim DT1, DT2, and DT3 and dials DL1, DL2, and DL3 can be prohibited.

Setting

1 Edit button lock; When the (+) button is pressed for about 1 second at the initial screen, a confirmation beep is generated and the edit button lock display **EDT** appears on the screen.

Trim/dial lock; When the (-) button is pressed for about 1 second at the initial screen, a confirmation beep is generated and the trim/dial lock display **TRM** appears on the screen.

Clearing

1 Edit button lock and trim/dial lock can be cleared in the initial screen state by the same method as setting described above. (The edit button lock display **EDT** or trim/dial lock display **TRM** disappears from the screen.)

Total timer

The total timer shows the accumulated time from last reset.

The total time does not change even when the model changes.

Reset method

1 In the initial screen state, hold down the (+) and (-) buttons simultaneously for 1 second.

* The total timer display counts up from 1 minute to 99hours 59 minutes.

LCD Screen Contrast

The LCD screen contrast can be adjusted. (For more information, see page98.)

Caution

Do not adjust the contrast so that the LCD is too bright or too dark.
When the display cannot be read due to a temperature change, data cannot be set.

LCD Screen Temperature Change

In the following cases, the LCD may become difficult to read due to a temperature change.

- On hot summer days and cold winter days, the LCD may be easy to read indoors, but difficult to read outdoors.
- If the contrast is too bright or too dark, temperature changes and lighting conditions may cause the screen to become difficult to read.

Contrast adjustment when no longer called

1 Turn on the transmitter.

2 If the screen is too dark, adjust the contrast by pressing the (-) button while pressing the (JOG) button. If the screen is too light, adjust the contrast by pressing the (+) button while pressing the (JOG) button.

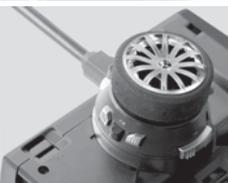
Changing wheel position and modifying for left-hand use



Changing the wheel position

The wheel position can be offset by using the accessory APA wheel position offset adapter.

(See the next page for the modification method.)



Modifying for left-hand use

The wheel section left and right installation direction can be reversed.

(See the next page for the modification method.)

Angle can be adjusted

The angle can be fine adjusted by adjusting the steering wheel unit installation. (See the modification method on the next page for the adjustment details.)

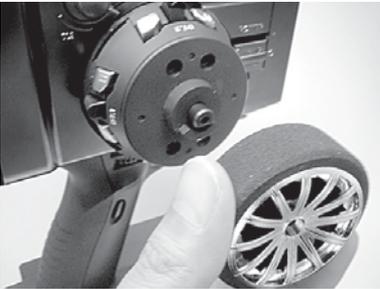
Removing the steering wheel unit

- Obtain a 2.5mm hex wrench and philips screwdriver.

- 1** Hold the wheel and remove the screw.



- 2** Pull off the wheel.

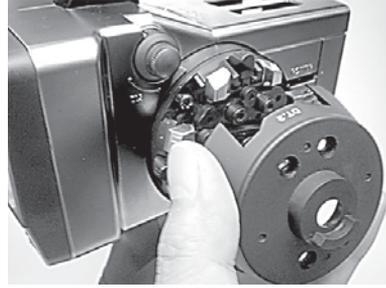


- 3** Remove the 4 steering wheel unit cover screws.



- 4** Remove the steering wheel unit.

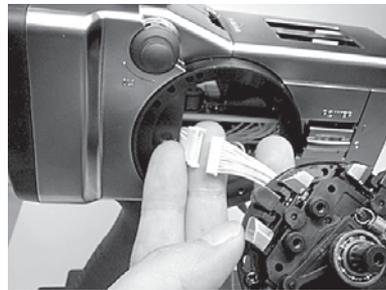
- While pushing the end of the steering wheel shaft (so that the shaft will not come off together with the cover), remove the cover.



- 5** Remove the 4 steering wheel screws.



- 6** Disconnect the connector.



- During this work, handle the unit carefully so that the shaft and other parts mounted to the internal steering wheel unit do not fall out.
- The length of the screws used at each part differs as shown in the photos below. When reassembling the steering wheel unit, always use the original screws



Steering wheel mounting screw (1)



Cover mounting screws (4)

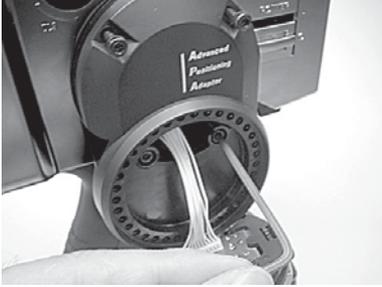


Unit mounting screws (4)

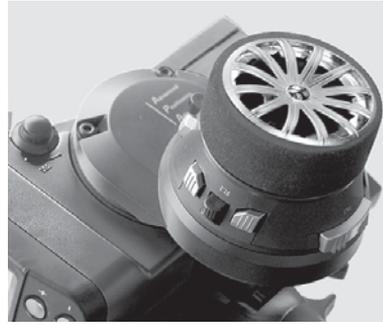
Installing the accessory APA steering wheel offset adapter

- Obtain a 2.5mm hex wrench and philips screwdriver.
- Install the steering wheel unit removed as described on the preceding page as follows:

- 1** Connect the steering wheel unit connector (be careful of the direction of the connector) through the adapter, and install the adapter using the 4 accessory hex bolts.



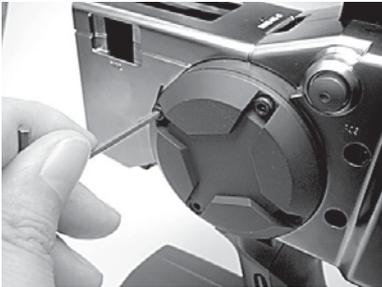
- 2** Install the steering wheel unit, steering wheel cover, and wheel to their original positions.



Modifying for left-hand use

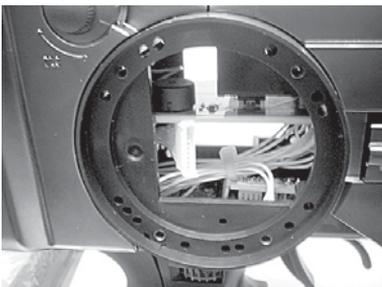
- Obtain a 2.5mm hex wrench and philips screwdriver.
- Install the steering wheel unit removed as described on the preceding page as follows:

- 1** Remove the wheel section rear cover using the hex wrench.

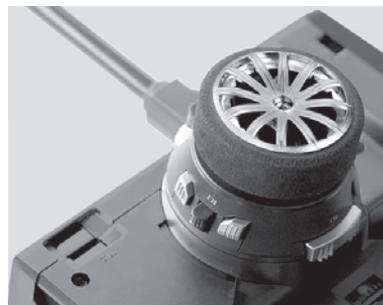


- 2** Push in the disconnected connector so that it can be connected at the opposite side.

- The photo below shows the connector at the front. Push it to the opposite side.



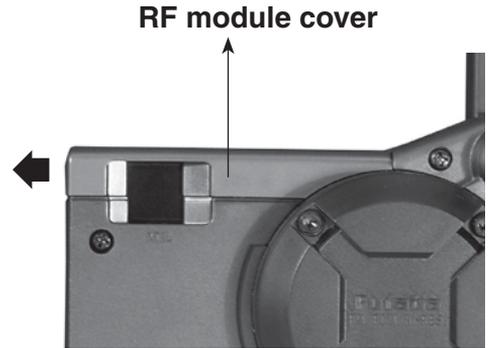
- 3** At the opposite side, connect the steering wheel unit connector and install the steering wheel unit, steering wheel cover, and wheel to their original positions.



Handling the RF Module

Removing the RF module

- 1 Remove the RF module cover by sliding it in the arrow direction.
- 2 Remove the module by pulling it upward while pushing the left and right tabs to the inside.



Inserting the RF module

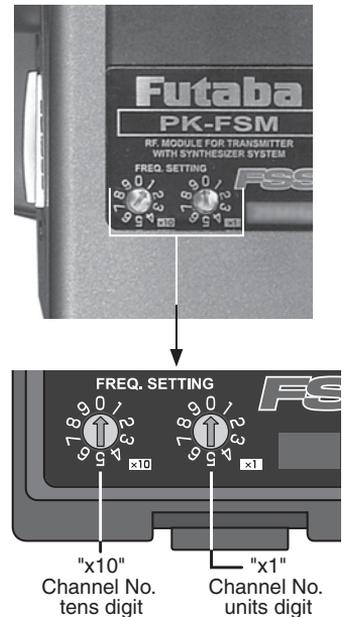
- 1 Insert the module while being careful that the transmitter side connector pins are not bent.
- 2 Push in the module until the tabs engage with a "click".
- 3 Slide on the RF module cover.

Synthesizer RF module PK-FSM

Perform the following frequency setting with the transmitter power switch in the OFF position.

Frequency band setting

- 1 Using the accessory mini screwdriver, set the digital switch (x10 side) at the left side of the module to the tens digit of the band No. you want to set.
- 2 Next, set the right side digital switch (x1 side) to the units digit of the band No. you want to set.
- 3 Confirm that the receiver band matches the band above, then set the power switches to ON in transmitter and receiver order.
- 4 Confirm that the system operates normally.



RF module temperature rise

During transmitter use, the temperature of the RF module may rise. This is normal.

Receiver

Nomenclature



R303FHS
receiver

Connectors

- 1:Steering servo(CH1)
- 2:Throttle servo(CH2)
- 3:CH3 servo(CH3)
- B/C:Power connector/DSC connector



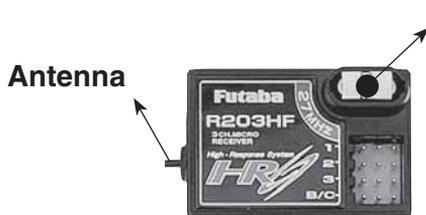
R113iP
receiver

Crystal

When changing the frequency, use the specified Futaba crystal set.

Connectors

- 1:Steering servo(CH1)
- 2:Throttle servo(CH2)
- 3:CH3 servo(CH3)
- B/C:Power connector/DSC connector



R203HF
receiver

Crystal

When changing the frequency, use the specified Futaba crystal set.

Connectors

- 1:Steering servo(CH1)
- 2:Throttle servo(CH2)
- 3:CH3 servo(CH3)
- B/C:Power connector/DSC connector

⚠ Caution

- ⊘ Do not peel off, or use the transmitter with a peeled off, crystal frequency display tab seal.

It may cause a short circuit inside the set and the transmitter may not transmit.



crystal frequency display tab seal

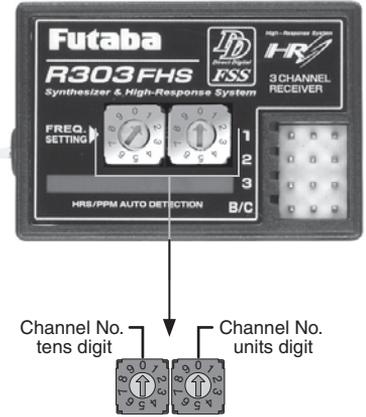
Before Using

Synthesizer receiver R303FHS

Set the frequency band with the power switch in the OFF position.

Frequency band setting

- 1 Using the accessory mini screwdriver, set the left side dial to the tens digit of the band No. you want to set.
- 2 Next, set the right side dial to the units digit of the band No. you want to set.
- 3 Confirm that the transmitter band matches the band above, then set the power switches to ON in transmitter and receiver order.



R303FHS operation note

When the power is turned on, whether the receiver is in the HRS or PPM mode is judged and the R303FHS operates in that mode until the power is turned off. When the transmitter mode was changed, operation becomes possible when the receiver power is turned on again. When the frequency band was changed, reception on the new frequency band becomes possible when the receiver power is turned on again.

⚠ Caution

- ❗ When using analog servos, always switch the T3PKS to the PPM mode.

Receiver: R113iP(PCM), R303FHS(PPM)

Transmitter mode : PPM or PCM mode (See p.42 for setting method.)

The system will not operate normally in other modes. Such operation will cause servo trouble.

- ❗ When using the T3PKs in the high response system (HRS) mode, always use it under the following conditions:

Receiver: R203HF, R303FHS or other high response system (HRS) compatible receiver

Servos : 6V Futaba digital servo

Battery : 6V NiCd battery

Transmitter mode : HRS mode (See p.42 for setting method.)

If the conditions are different, control is impossible.

And **Fail Safe Unit (FSU)** is not available.

- ❗ Always use only genuine Futaba transmitters, receivers, servos, FET amps (electronic speed controls), Nicad batteries and other optional accessories.

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.

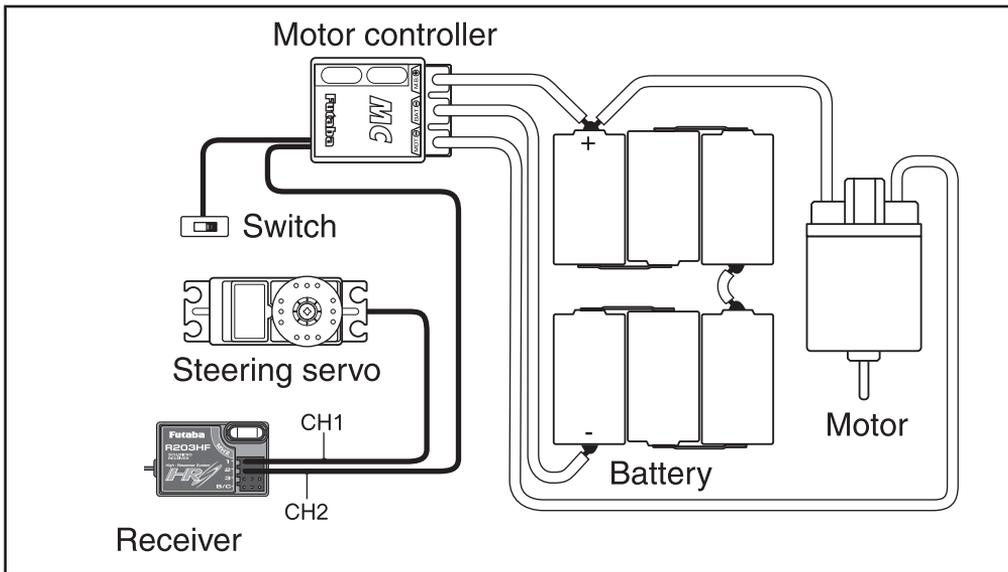
For the receiver, servos, and other connections, see page 29. For the DSC cord (option) connections, see page 112.

Receiver and Servo Connections

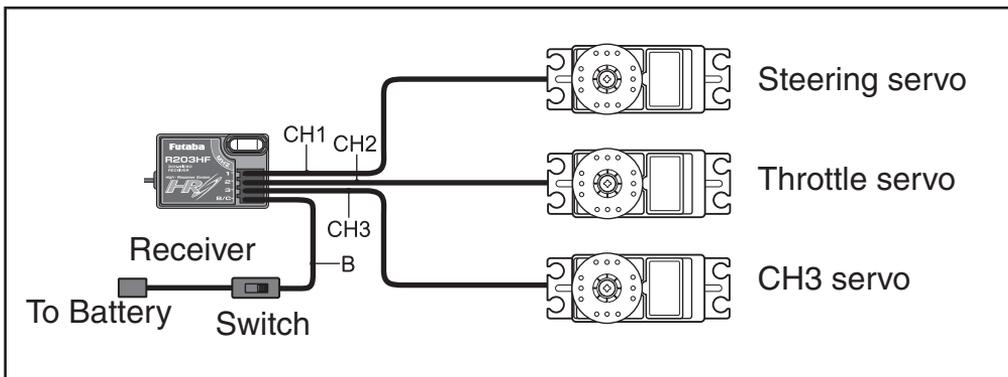
Connect the receiver and servos as shown below. Connect and install the receiver and servos in accordance with "Installation Safety Precautions" on the next page.

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 Motor controller Is Used



Installation For Gas Powered Models



Installation Safety Precautions

⚠ Warning

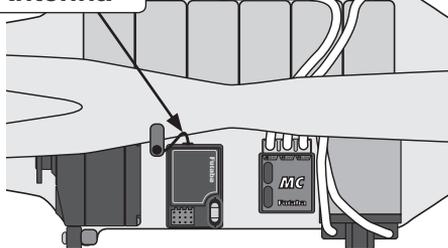
Receiver (receiver antenna)

- ⊗ 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 1cm 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.
- ❶ Install the receiver antenna holder as close 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 (sailing) range will decrease, and you may lose control of the model.

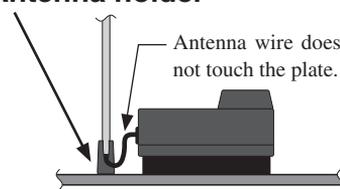
*Noise is transmitted through metal, carbon, and other conductive material, so keep the receiver antenna wire away from such parts.

Antenna



Install the receiver as far away from battery, motor controller, motor, silicon cord and other noise sources. Keep it away from the antenna wire, in particular.

Antenna holder



Install the antenna holder as close as possible to the receiver. The surplus antenna wire from the receiver to the antenna holder is affected by noise. Do not use a metal antenna holder on a plate made of metal, carbon, or other conductive material.

Receiver vibration-proofing/waterproofing

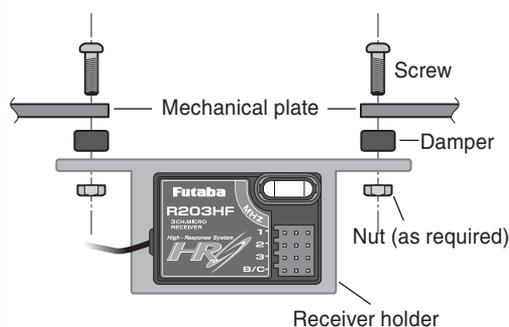
(Car)

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

(Boat)

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

If the receiver is exposed to strong vibration and shock, it will operate erroneously due to the invasion of water drops and you may lose control of the model.



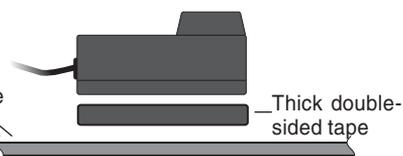
When using the receiver holder supplied with the kit, install the receiver through a rubber grommet.

Foam rubber, etc.



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

Mechanical plate



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

⚠ Warning

Connector Connections

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

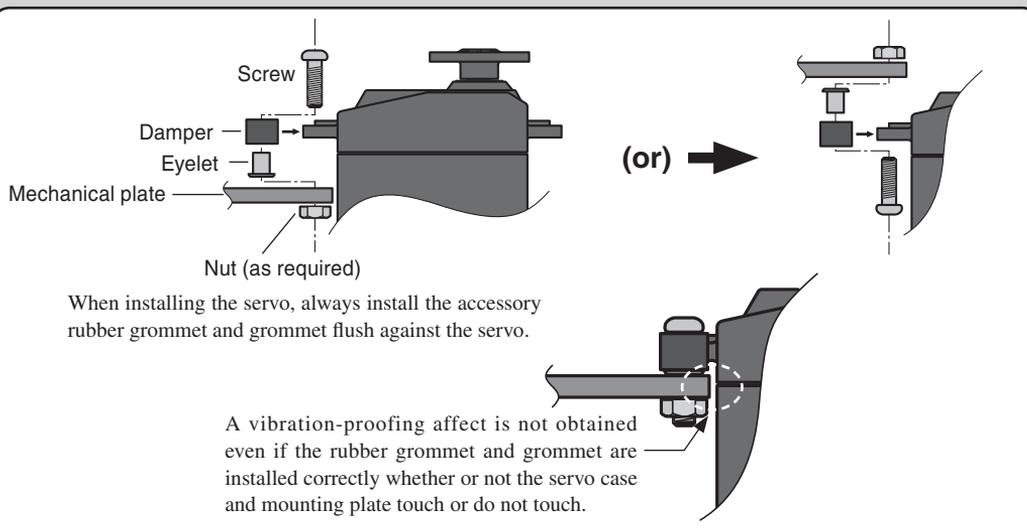
If vibration from the model cause a connector to work loose while the model is in operation, you may lose control .

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.

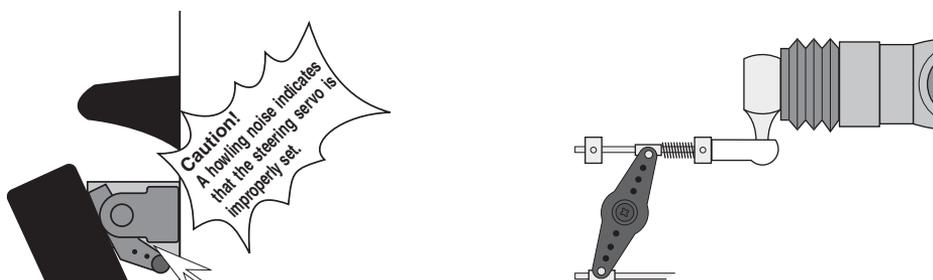
If this condition continues for a long time the servo may be damaged and control will be lost.



Servo Throw

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

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



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 full open, full close, and the brakes are applied fully.

Especially, the braking effect becomes poor by heating of the brakes while running. 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

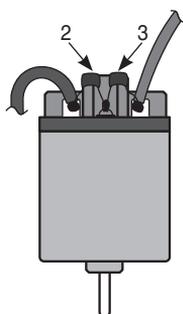
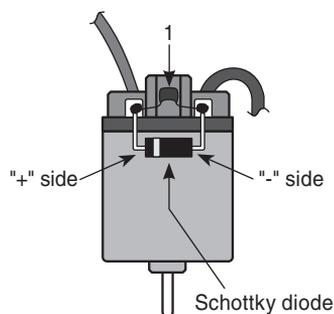
- ❗ Install the heat sinks where they will not come in contact with aluminum, carbon fiber or other parts that conduct electricity.

If the FET Amp (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 MC800C Ver.2 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.

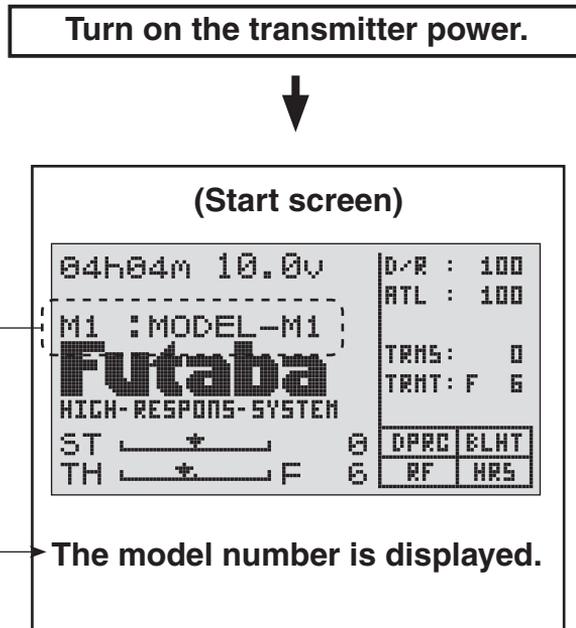
Metal to metal contacts under vibration will omit a high frequency noise that will effect the receivers performance. You could experience erratic operation and reduced range as well as loss of control.

Preparations (Transmitter)

Before setting the Transmitter functions, check and set items 1 to 4 below.

(Display when power switch turned on)

When the power switch is turned on, the currently selected model number is displayed. Check of this number is model number you want to setup. To change the model number, use the Model Select function (See page98).

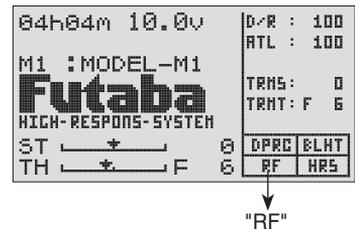


1.RF Output Check

If signals are output normally, RF output monitor "RF" will be displayed on the screen.

If "RF" is not displayed, check if the transmitter crystal and RF module are installed.

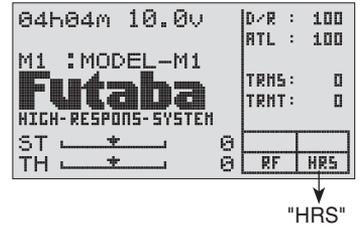
If the transmitter is abnoemal or faulty, contact your Futaba dealer.



When radio waves are not being emitted when turned on by display switch and when the DSC function is used, "DISP" is displayed.

2. Modulation Mode Check

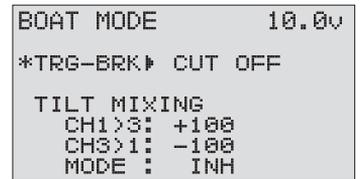
The signal format of the electromagnetic waves output by the T3PKS transmitter can be changed to match the type of receiver used. Confirm that the transmitter can be set to match the receiver used. When using an FM receiver (e.g. R133F), the signal format must be set to "PPM", when using a PCM receiver (e.g., R113iP), the signal format must be set to "PCM", and when using an HRS receiver (e.g., R203HF), the signal format must be set to "HRS". If the setting is incorrect, change the setting using the HRS/PCM/PPM select function (page 42).



With the R303FHS, when the power is turned on, whether the mode is the HRS or PPM mode is judged and the receiver is operated in that mode until the power is turned off. When the transmitter mode was changed, operation becomes possible when the receiver power is turned on again. See page 28 for the usage precautions related to the R303FHS.

3. Throttle Mode check

-When using the T3PKS transmitter with a boat, throttle brake operation can be shut down by setting the BOAT function (page 72) *TRG-BRK item to "Cut-OFF".



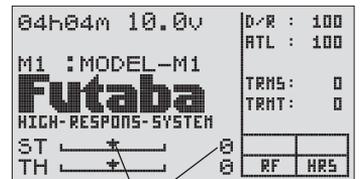
-The throttle servo travel can be set to 50:50 or 70:30 for throttle trigger operation as required by the throttle mode function (p.74).



4. Trims Initial Set-Up

- Steering trim (DT1) check

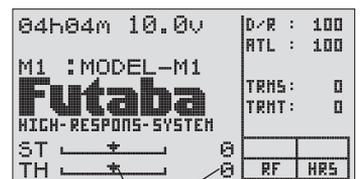
At initial set-up, steering trim is assigned to the DT1 trim lever above the steering wheel. Operate the lever and make sure the marker moves on the ST graph. If default has been changed, test steering trim in its new location. After checking the trim, set the trim display to the center (N) position.



Steering trim

- Throttle trim (DT2) check

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



Throttle trim

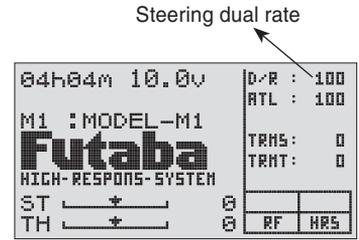


Throttle trim (DT2)

Steering trim (DT1)

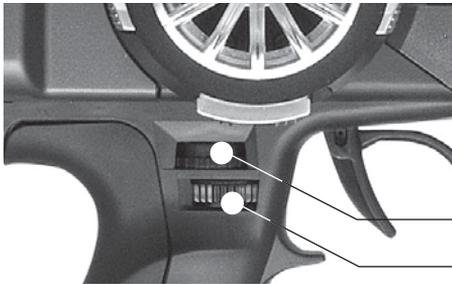
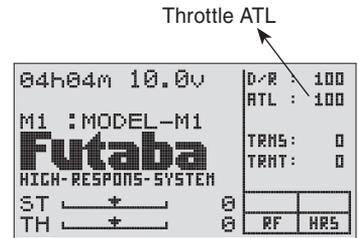
- Steering dual rate (BT1) check

At initial set-up, steering dual rate (D/R) is assigned to DL1 dial, at the grip of the transmitter. Operate the DL1 and check if the D/R value displayed on the screen changes. After checking ST.D/R, set the steering dual rate to 100%.



- Throttle ATL (BT2) check

At initial setting, throttle ATL (ATL) is assigned to DL2 dial, below DL1. Operate the DL2 and check if the ATL value displayed on the screen changes. After checking TH.ATL, set throttle ATL to 100%.



Steering dual rate dial DL1

Throttle ATL dial DL2

(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.

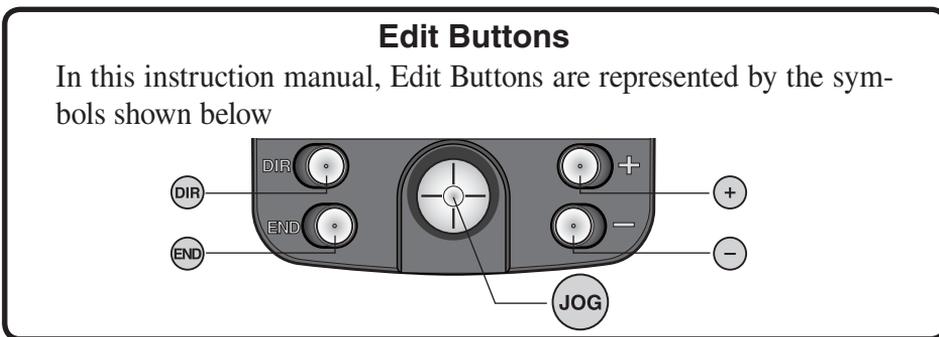
- 1** Perform step 4. Trims Initial Set-Up of Preparations on the preceding page.
- 2** Set the servo direction of operation using the Reverse function. (See page 43)
 - The servo installation method and linkage direction depends on the kit. Therefore, the servo operation direction may have to be reversed 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. (See page 44)
- 4** Set the trigger travel by adjusting the throttle trigger mechanical ATL to you liking. (See page 17)
 - When the stroke was adjusted, compensate the throttle by adjuster function (See page 102).
- 5** Set EPA of each channel and adjust the servo throw (travel). (See page 45)

Menu Selection

The function set-up screen can be easily selected from the function menu displayed on the LCD screen.

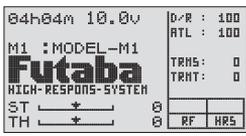
The function menu can be selected from among the following 4 types to match the level of use. To select the type, use the Menu type select function (See page 95).

- Level 1 (LEVEL1) : Basic functions only
- Level 2 (LEVEL2) : For middle class driver
- Big car(BIGCAR) : Displays the main functions for large cars (1/5).
- Level 3 (LEVEL3) : All functions can be selected. (For expert driver)

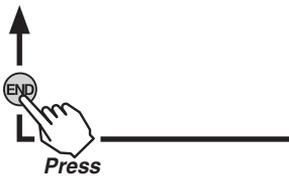


Function Menu Screen

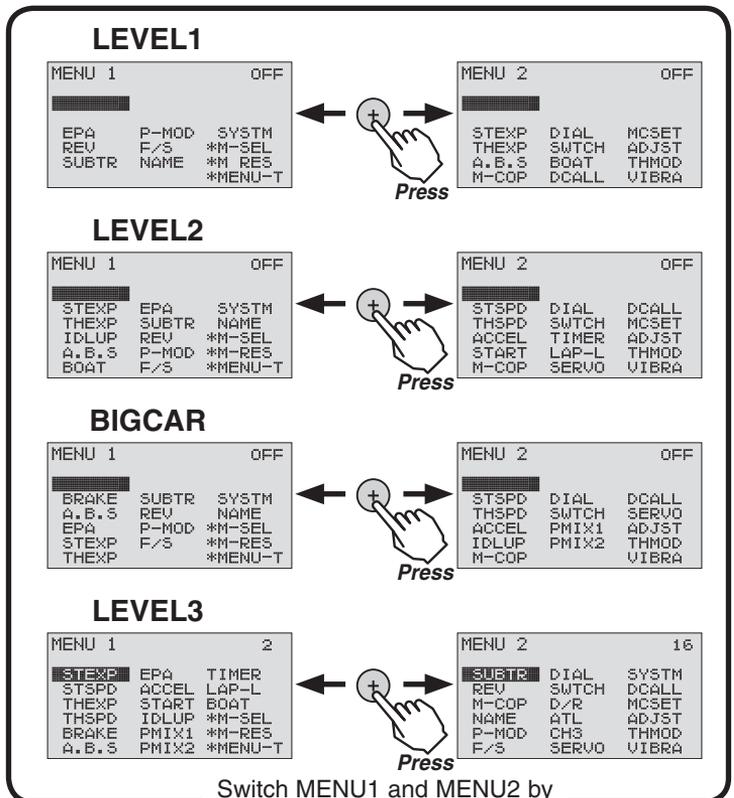
Call the menu screen by **JOG** button up, down, left, or right operation.



(Opening Screen)



Press the **END** button to return to the Start Screen



Switch MENU1 and MENU2 by pressing the **+** button.

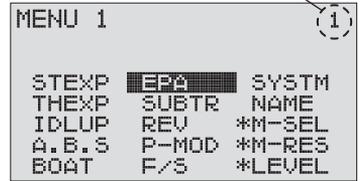
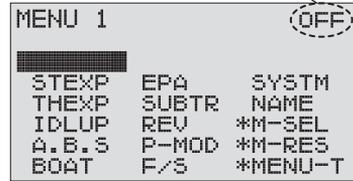
Menu Screen

The menu screen displays 18 items on 3 rows and 6 lines on one page and displays up to 36 items on 2 pages designated MENU1 and MENU2.

A menu screen matched to the purpose can also be created by using the menu customize function described on page 38. The menu No. of the function indicated by the cursor is displayed at the top right-hand corner of the screen. When a function is not assigned, OFF is displayed at the top right-hand corner of the screen.

When the cursor is in a position without a function assigned, OFF is displayed.

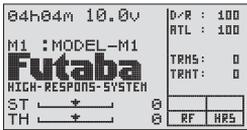
Menu No. of the function indicated by the cursor is displayed.



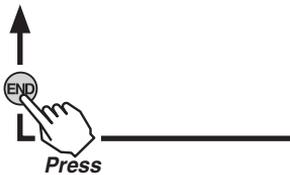
The screen above is an example of the LEVEL2 MENU1 menu.

Calling the setup screen

Call the menu screen by **JOG** button up, down, left, or right operation.



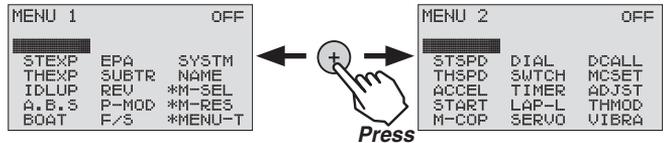
(Opening Screen)



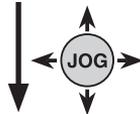
press the **END** button to return to the Start Screen

Example of menu LEVEL2

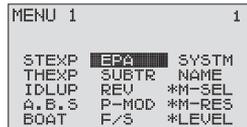
Switch MENU1 and MENU2 by pressing the **+** button.



Press

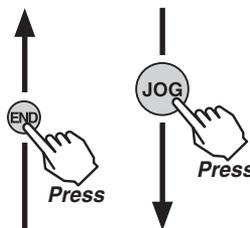


On the menu screen, select the function by moving the cursor by **JOG** button up, down, left, or right operation.



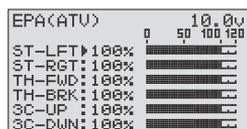
The highlighted item is the currently selected function.

press the **END** button to return to the Start Screen



Call the setup screen by pressing the **JOG** button.

The screen on the right shows an example of setting EPA function.



(Function Set-up Screen)

Custom Menu

A menu matched to the purpose (custom menu) can be created by using the menu customize function.

A different menu can be created for each model memory.

Menu assignment

- 1** Call the menu screen from the initial screen by (JOG) button up, down, left, or right operation.
- 2** Use the (+) button to Select the MENU1 or MENU2 screen too be edited.
- 3** Press the (-) button for about 1 second. A confirmation beep is generated and the menu customize screen is displayed.
- 4** Select the location where the function is to be assigned or modified by moving the cursor by (JOG) up, down, left, or right operation.
- 5** Use the (+) or (-) button to select the function to be assigned.
- 6** When assignment is complete, end by returning to the menu screen by pressing the (END) button.

One point

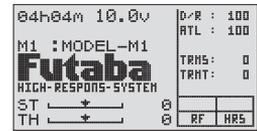
This function allows modification of the menu list and addition (except LEVEL3) or removal of functions. All the functions can also be grouped at MENU1 only depending on the purpose.

Note:

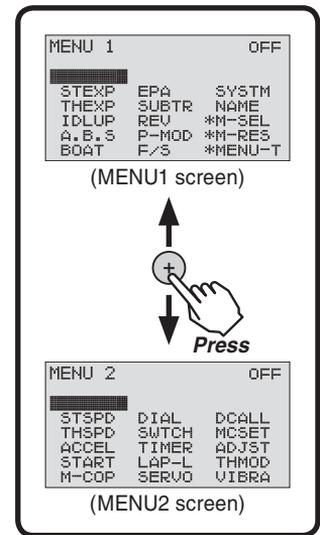
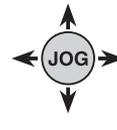
This function consists of 3 fixed functions; *M-SEL (model select), *M-RES (model reset), and * MENU-T (menu type select), and cannot be moved or deleted.

When the menu type is changed from the created customize menu to another menu type by * MENU-T, the customize menu is reset and the menu is initialized to the original menu.

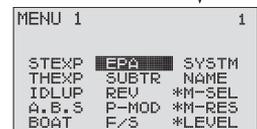
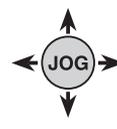
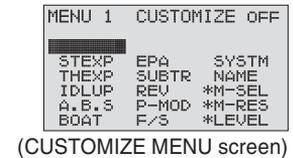
The set values of a function deleted from the menu remain valid. When an unused function is turned OFF or rate adjustment, etc. related to other functions is performed, check the set values before deleting the function.



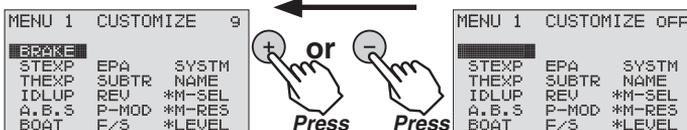
(Opening Screen)



↑ (approx. 1sec)



The highlighted item is the currently selected function.

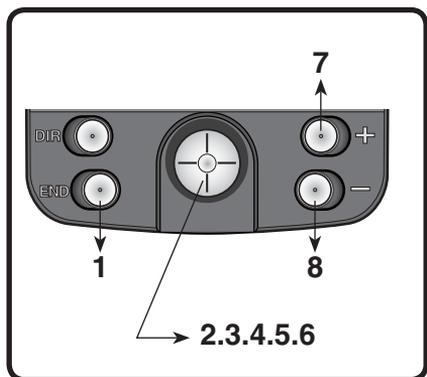
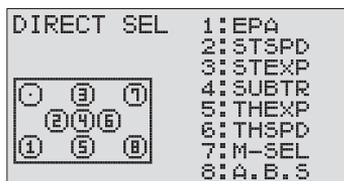


Example of setting BAKE (brake mixing) where nothing was set at LEVEL2 MENU1.

Direct Selection

The Direct Selection allows instant access to the six functions most frequently used. The function set-up screen can be directly and quickly called with the special buttons for each of the eight functions, they can be freely selected as the Direct Selection Button function.

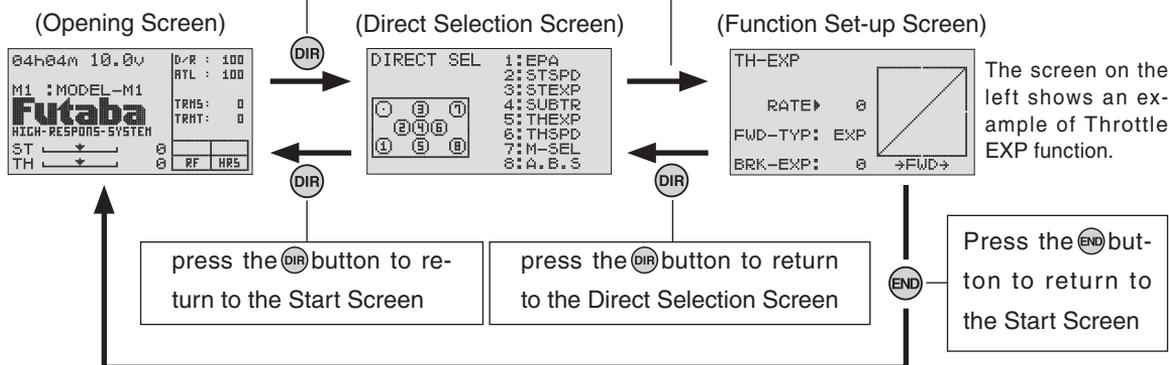
INITIAL SETTING



Direct No	Button	Function abbreviation	Function
1.	Press	EPA	Chanel End Point Adjuster
2.		STSPD	Steering Soeed
3.		STEXP	Steering EXP
4.	Press	SUBTR	Subtrim
5.		THEXP	Throttle EXP
6.		THSPD	Throttle Speed
7.	Press	M-SEL	Model Select
8.	Press	A.B.S	A.B.S

Call the direct Selection screen by pressing the button.

Upon your needs, select one of the 8 functions and then click its button to call the Function Set-up Screen.



List of functions by menu type

Function No	Function abbreviation	LEVEL1	LEVEL2 (Initial setting)	BIGCAR	LEVEL3
1	EPA	★	★	★	★
2	STEXP	★	★	★	★
3	STSPD		★	★	★
4	THEXP	★	★	★	★
5	THSPD		★	★	★
6	A.B.S	★	★	★	★
7	ACCEL		★	★	★
8	START		★		★
9	BRAKE			★	★
10	IDLUP		★	★	★
11	TIMER		★		★
12	LAP-L		★		★
13	PMIX1			★	★
14	PMIX2			★	★
15	BOAT	★	★		★
16	SUBTR	★	★	★	★
17	REV	★	★	★	★
18	F/S	★	★	★	★
19	*M-SEL	★	★	★	★
20	*M-RES	★	★	★	★
21	M-COP	★	★	★	★
22	NAME	★	★	★	★
23	DIAL	★	★	★	★
24	SWTCH	★	★	★	★
25	D/R				★
26	ATL				★
27	CH3				★
28	P-MOD	★	★	★	★
29	*MENU-T	★	★	★	★
30	SYSTEM	★	★	★	★
31	DCALL	★	★	★	★
32	SERVO		★	★	★
33	MCSET	★	★		★
34	ADJST	★	★	★	★
35	VIBRA	★	★	★	★
36	THMOD	★	★	★	★

Function list

Function No	Function abbreviation	Description of function	Page No
1	EPA	End point adjustment	P-45
2	STEXP	Steering curve adjustment	P-52
3	STSPD	Steering servo delay	P-57
4	THEXP	Throttle curve adjustment	P-53
5	THSPD	Throttle servo delay	P-59
6	A.B.S	Pumping brake	P-65
7	ACCEL	Function which adjusts the rise characteristic from the throttle neutral position	P-48
8	START	Throttle preset at start function/ engine cut off by switch	P-62
9	BRAKE	Front and rear independent brake control for 1/5GP car, etc.	P-70
10	IDLUP	Idle up at engine start	P-75
11	TIMER	Up, down, lap, or lap navigation timer	P-82
12	LAP-L	Lap timer data (lap time, average lap time) check	P-89
13	PMIX1	Programmable mixing between arbitrary channels	P-76
14	PMIX2	Programmable mixing between arbitrary channels	P-76
15	BOAT	Boat, etc. brake operation stop/outboard engine tilt mixing	P-72
16	SUBTR	Servo center position fine adjustment during linkage	P-44
17	REV	Servo operation reversing	P-43
18	F/S	HRS, PCM mode fail safe, battery fail safe	P-50
19	*M-SEL	Model memory call	P-90
20	*M-RES	Model memory reset	P-94
21	M-COP	Model memory copy	P-93
22	NAME	Model memory name set/modify, username set/modify	P-92
23	DIAL	Selection of functions operated by digital dial and digital trim	P-80
24	SWTCH	Selection of functions operated by push switches	P-79
25	D/R	Steering angle adjustment while running (dual rate and second dual rate)	P-105
26	ATL	Brake side adjustment	P-106
27	CH3	Channel 3 servo operation position set/check	P-107
28	P-MOD	Modulation (HRS/PCM/PPM) select (transmit signal mode modification)	P-42
29	*MENU-T	Function menu type selection	P-95
30	SYSTEM	Backlighting/LCD contrast/buzzer sound/LED display color/initial screen display mode/power off forgotten function adjustment or setting	P-98
31	DCALL	Function assignment to direct function select button	P-96
32	SERVO	Displays servo operation on a bar graph	P-108
33	MCSET	MC dedicated set-up of some commercial parts in HRS mode	P-100
34	ADJST	Steering wheel and throttle trigger correction	P-102
35	VIBRA	Vibrator setting	P-104
36	THMOD	Throttle servo forward and brake operation proportion setting	P-74

Modulation (HRS.PCM.PPM) Select "P-MOD"

The signal mode output from the transmitter can be changed. (PPM/PCM/HRS)

Receiver

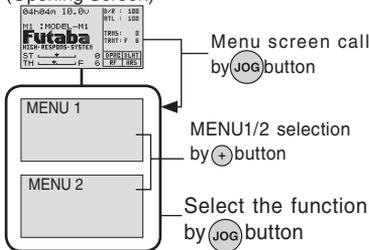
When using an FM receiver set to the PPM side, when using a PCM receiver, set to the PCM side and when using an HRS receiver, set to the HRS side.

- When the mode was changed and when a model of a different mode was selected, signals are output in the mode set at the point at which the transmitter power was turned back on.

Calling the setup screen

*Calling from menu screen

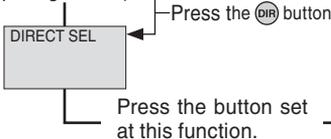
(Opening Screen)



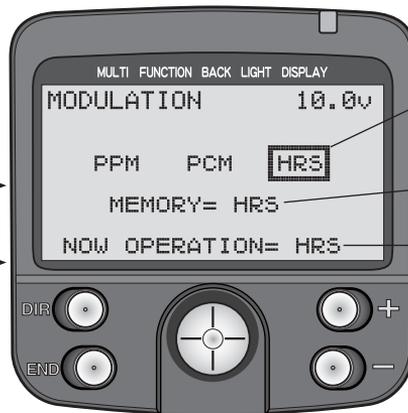
Press the JOG button

* When the direct call button is set, the setup screen is also called by the following method:

(Opening Screen)



Press the button set at this function.



At mode selection, the box cursor moves.

Mode currently set in memory.

Mode currently operating.

HRS/PCM/PPM mode selection

1 (Mode selection)

Select the mode to be set by (JOG) button left or right operation. Selected by moving the box cursor.

Mode selection

- Select by (JOG) button left or right operation.

2 (Writing to memory)

Press the (+) and (-) buttons simultaneously for 1 second.

- The "MEMORY" display is switched.

Mode

PPM, PCM, HRS

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

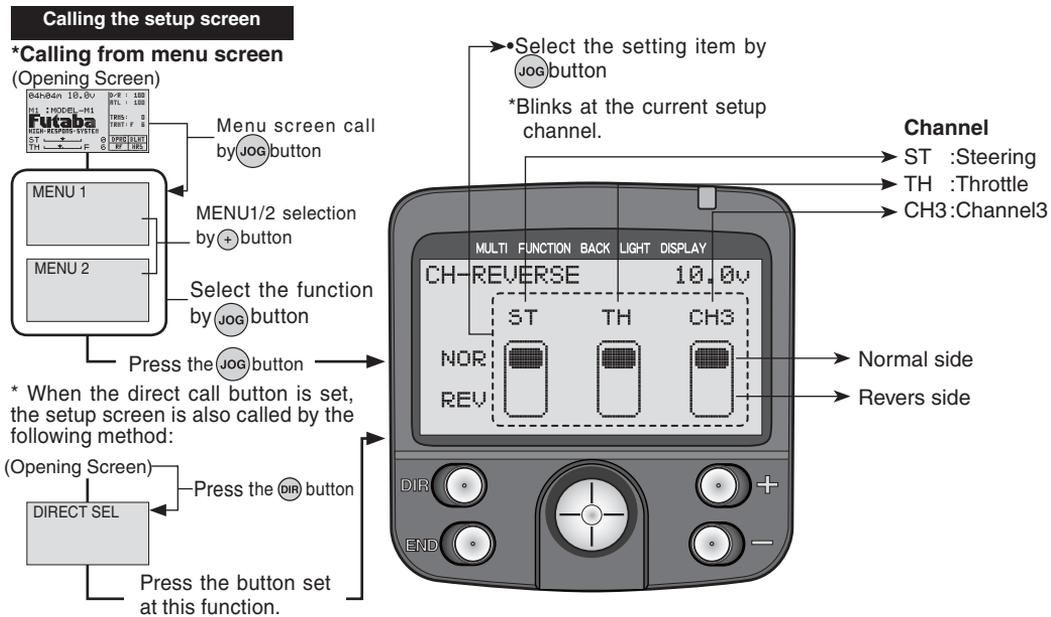
The signal is output in the new mode when the transmitter power is turned on again.

Servo Reverse "REV"

(All channel)

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

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



Servo Reverse Function Setting

(Preparation)

Select the channel to be set by (JOG) button left or right operation. ST, TH, and CH3 on the screen blink.

1 (Servo reverse setting)

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

(Each channel can be set similarly.)

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Channel selection

- Select by (JOG) button left or right operation.

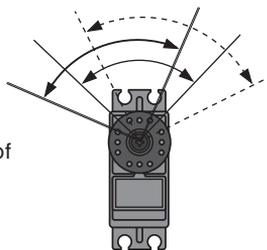
Select button

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

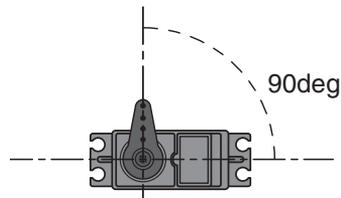
Subtrim "SUBTR"

(All channel)

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



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



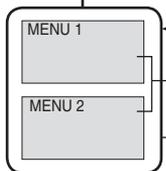
Use to adjust the neutral position

Calling the setup screen

*Calling from menu screen (Opening Screen)



Menu screen call by (JOG) button



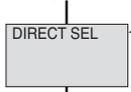
MENU1/2 selection by (+) button

Select the function by (JOG) button

Press the (JOG) button

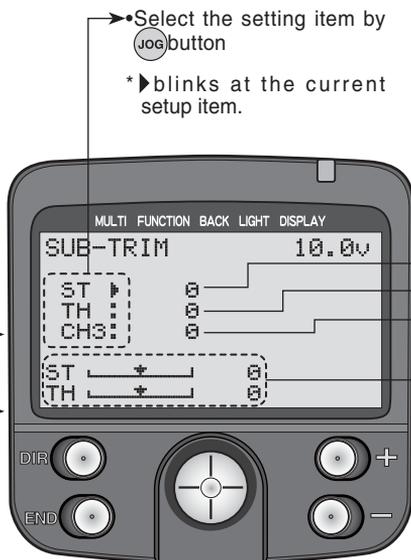
* When the direct call button is set, the setup screen is also called by the following method:

(Opening Screen)



Press the (DIR) button

Press the button set at this function.



Select the setting item by (JOG) button

* blinks at the current setup item.

Channel

ST :Steering

TH :Throttle

CH3 :Channel3

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

Brake side operation stop method

(Preparation)

- Set the steering and throttle digital trims to the neutral "0" position. Set CH3 to the center "0" position.
- Select the channel to be set by (JOG) button up or down operation.

1 (Subtrim adjustment)

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

(Each channel can be set similarly.)

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Channel selection

- Select by (JOG) button up or down operation.

Adjust button

- Adjust with the (+) and (-) buttons.
- Return to the initial value "0" by pressing the (+) and (-) buttons simultaneously for about 1 second.

Subtrim

ST :L100~R100

TH :B100~F100

CH3 :-100~+100

Initial value : 0

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

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

Maximum steering angle

The EPA function basically determines the maximum steering angle of each channel. The functions shown below may have been adjusted or the operating range set by EPA function may be exceeded. Check the linkage each time the following functions are adjusted.

- Sub trim (all channels)
- Program mixing slave side (all channels)
- Tilt mixing (steering, channel 3)
- Idle up (throttle)
- Start Function, Engine Cut (throttle)
- Throttle acceleration (throttle)

ATL trim

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

Remark

When the steering angle is insufficient even though EPA is increased to maximum (120%), the steering angle can be increased somewhat by using program mixing. (Setup example: See page 76.)

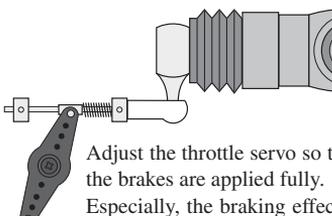
Warning

- ❗ Operate each servo over its full stroke and be sure the linkage does not bind or is 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 throttle servo so that unreasonable force is not applied when the engine carburetor is full open, full close, and the brakes are applied fully.

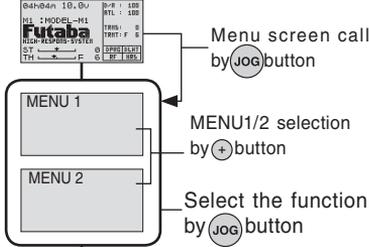
Especially, the braking effect becomes poor by heating of the brakes while running. Before running, adjust the suitable maximum servo travel so that unreasonable force is not applied even when the servo travel is increased while running.

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

Calling the setup screen

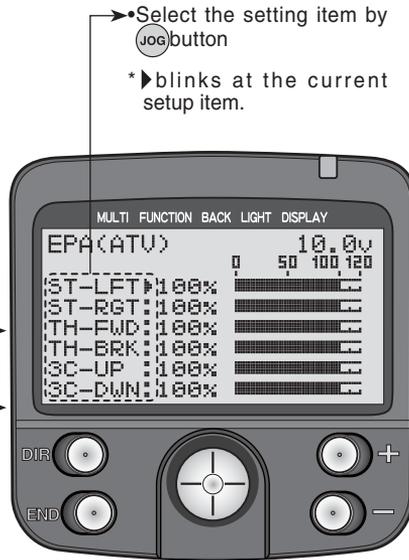
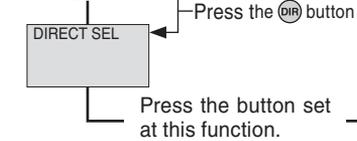
*Calling from menu screen

(Opening Screen)



* When the direct call button is set, the setup screen is also called by the following method:

(Opening Screen)



Setting item (channel and direction)

- ST-LFT :Steering (left side)
- ST-RGT :Steering (right side)
- TH-FWD :Throttle (foward side)
- TH-BRK :Throttle (brake side)
- 3C-UP :3rd channel (up side)
- 3C-DWN:3rd channel (down side)

Setting item (channel and direction) selection

- Select by (JOG) button left or right operation.
- The direction (ST-LFT and ST-RGT) linked with the steering wheel is switched.
- The direction (TH-FWD and TH-BRK) linked with the throttle trigger is switched.

Steering (EPA) adjustment

(Preparation)

- Before setup the steering wheel steering angle, set the steering D/R dial (initial setup: DL1) to the maximum steering angle position 100%.
- Select the setting item "ST-LFT" by (JOG) button up or down operation and make the following adjustments:

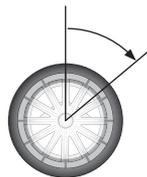
1 Steering (left side) adjustment

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

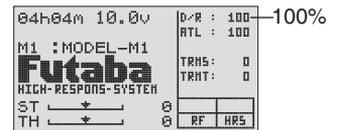


2 Steering (right side) adjustment

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



3 When adjusting the steering angle of another channel immediately after this, see the adjustment method for that channel. When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).



Adjust button

- Adjust with the (+) and (-) buttons.
- Return to the initial value "100" by pressing the (+) and (-) buttons simultaneously for about 1 second.

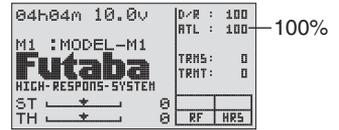
Steering EPA

- ST-LFT :0~120
- ST-RGT :0~120
- Initial value :100

Throttle (EPA) adjustment

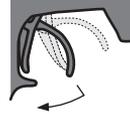
(Preparation)

- Before setting the throttle steering angle, set the throttle ATL dial (initial setup: BT2) to the maximum steering angle position 100%.
- Select the setting item "TH-FWD" by (JOG) button up or down operation and make the following adjustments:



1 Throttle (forward side) adjustment

Turn the throttle trigger fully to the high side and use the (+) or (-) buttons to adjust the throttle angle. However, when using an FET amp, set to 100%.



2 Throttle (brake side/reverse side) adjustment

Turn the throttle trigger fully to the brake side and use the (+) or (-) buttons to adjust the throttle angle. However, when using an ECS, set to 100%.



- ### 3
- When adjusting the throttle angle of another channel immediately after this, see the adjustment method for that channel. When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjust button

- Use the (+) and (-) buttons to make adjustments.
- Return to the initial value "100" by pressing the (+) and (-) buttons simultaneously for about 1 second.

Throttle EPA

TH-FWD :0~120
TH-BRK :0~120
Initial value : 100

When "CUT OFF", which prohibits trigger brake side operation in the boat mode (p.72), was set, throttle "TH-BRK" (brake side) cannot be adjusted.

3rd channel servo (EPA) adjustment

(Preparation)

- Select the setting item "3C-UP" by (JOG) button up or down operation and make the following adjustments:

1 3rd channel servo (up side) adjustment

Set the 3rd channel dial fully to the up side (+ side) and use the (+) or (-) buttons to adjust the steering angle.

2 3rd channel servo (down side) adjustment

Select the setting item "3C-DWN" by (JOG) button up or down operation and set the 3rd channel dial fully to the down side (-) and use the (+) or (-) buttons to adjust the steering angle.

- ### 3
- When adjusting the steering angle of another channel immediately after this, see the adjustment method for that channel. When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Direction selection

- Select by (JOG) button up or down operation.

Adjust button

- Adjust with the (+) and (-) buttons.
- Return to the initial value "100" by pressing the (+) and (-) buttons simultaneously for about 1 second.

Steering EPA

3C-UP :0~120
3C-DWN :0~120
Initial value :100

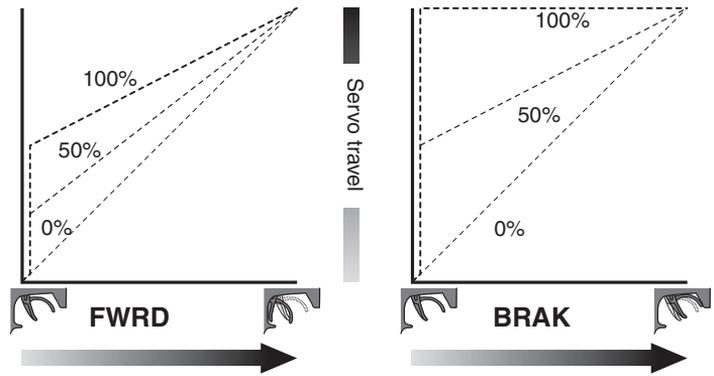
Throttle Acceleration "ACCEL"

(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.
- When the brake mixing function (p.70) is set, the CH3 brake can also be set.

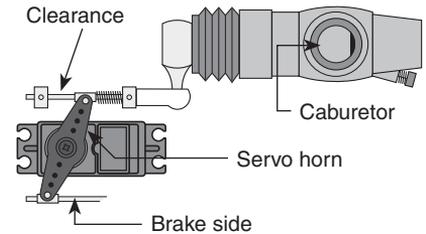


Set value

The standard value (100% point) of this setup effects the operation amount set by throttle EPA function.

Convenient usage method

For gasoline engine 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.

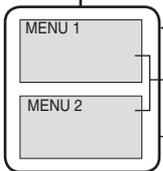


Calling the setup screen

*Calling from menu screen
(Opening Screen)



Menu screen call by JOG button

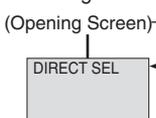


MENU1/2 selection by + button

Select the function by JOG button

Press the JOG button

* When the direct call button is set, the setup screen is also called by the following method:

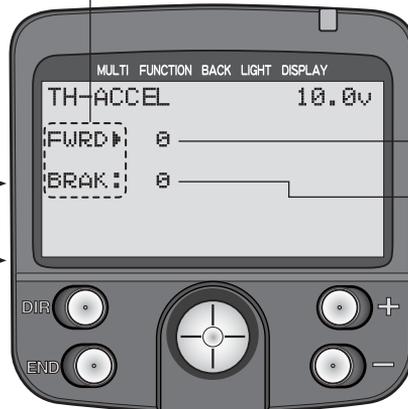


Press the DIR button

Press the button set at this function.

*Select the setting item by JOG button

* blinks at the current setup item.



Setup item

- FWRD :Forward side acceleration amount
- BRAK :Brake side acceleration amount

Setting item selection

- Select by (JOG) button up or down operation.

Function

Throttle acceleration adjustment

(Preparation)

- Select the setting item "FWRD" by (JOG) button up or down operation and make the following adjustments:

1 (Forward acceleration amount adjustment)

Use the (+) and (-) buttons to adjust the acceleration amount.

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

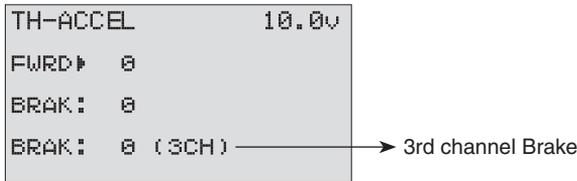
2 (Brake side acceleration amount adjustment)

Select the setting item "BRAK" by (JOG) button up or down operation and use the (+) and (-) buttons to adjust the acceleration amount.

- "0" :No acceleration
- "100" :Maximum acceleration (Brake side maximum steering angle)

3 (3rd channel brake side acceleration amount adjustment)

If the Brake Mixing is being set, the 3rd channel brake side acceleration will become adjustable.



Select the setting item "BRAK (3CH)" by (JOG) button up or down operation and adjust acceleration amount by (+) or (-) button.

- "0" :No acceleration
- "100" :Maximum acceleration (Brake side maximum steering angle)

4 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Caution

When "TRG-BRK" is set to "CUT OFF" by boat mode function (p.72), the brake side function is not activated.

Dial / Trim Setting

The throttle acceleration adjustment amount (FOWRD) , (BRAKE) and 3rd channel (BRAKE) can be controlled with digital dial DL1, DL2, DL3 or digital trim DT3 etc. with the function select dial function. (See page 80)

Adjust button

- Adjust with the (+) and (-) buttons.
- Return to the initial value "0" by pressing the (+) and (-) buttons simultaneously for about 1 second.

Forward acceleration amount (FWRD)

0~100
Initial value: 0

Brake side acceleration amount (BRAK)

0~100
Initial value: 0

3rd channel brake side acceleration amount (BRAK 3CH)

0~100
Initial value: 0

Fail Safe/Battery Fail Safe Function "F/S" (All channel)

(This function can only be used with HRS or PCM1024 system receivers.)

Fail safe function

This function moves the steering, throttle and channel 3 servos to a preset position when the receiver cannot receive the signal from the transmitter for some reason.

When the servo operation position is not set, this function operates so that the servos remains in the position they were in immediately before reception was lost. When the signal from the transmitter can be received again, this function automatically resets..

- For gasoline engine cars, it is recommended that the throttle channel be set to the direction that applies the brakes.
- When the transmitter power is turned on, the transmitter transfers the fail safe data to the receiver and continues to transfer the data every minute thereafter. Note that data for about 1 minute after the receiver power is turned on is not transferred because usually, the transmitter power is turned on first and the receiver power is turned on next.

Battery fail safe function

When the receiver battery voltage drops to a certain voltage or less, this function moves the throttle servo to the position set by fail safe function. When the voltage recovers, this function automatically resets.

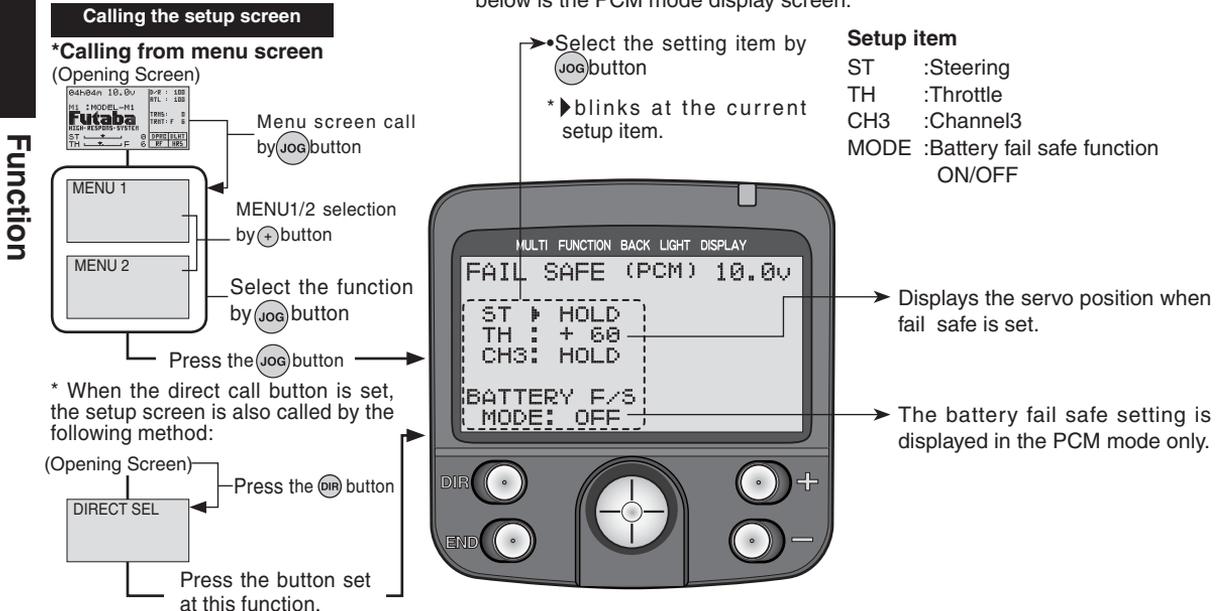
Battery fail safe function ON/OFF switching (PCM only)

Battery fail save function ON/OFF can be set at the transmitter.

For HRS system, this function cannot be turned off.

When electric motor car power, especially the receiver power, is supplied from a common power supply which is supplied from MC, we recommend that this function be turned off because the receiver voltage may drop momentarily and the battery fail safe function may be activated. (For HRS system, the fail safe function is turned off.)

The screen which is displayed depends on the mode (HRS, PCM). The screen shown below is the PCM mode display screen.



Fail safe function setup

(Preparation)

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

1 (Servo position setup)

When the fail safe function operates, the steering wheel, the throttle trigger or 3rd channel dial remains in the desired operation position. When the (+) and (-) buttons are pressed simultaneously for about 1 second, the servo position is displayed and you can confirm that the function was set.

When you want to release the setting, press the (+) or (-) button for 1 second. "HOLD" is displayed.

(Each channel can be set similarly.)

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Setup item selection

- Select by (JOG) button up or down operation.

Channel

ST :Steering
TH :Throttle
CH3 :Channel3

F/S position setup button

- The (+) and (-) buttons are pressed simultaneously for about 1 second.

HOLD setup button

- press the (+) or (-) button for 1 second.

Battery fail safe function ON/OFF (PCM only)

(Preparation)

- Select the setting item "MODE" by (JOG) button up or down operation.

1 (Battery fail safe function ON/OFF)

The function can be switched by pressing the (+) or (-) button.

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Function ON/OFF

OFF, ON
Initial value: OFF

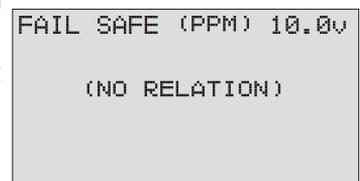


(HRS mode F/S screen)

The HRS mode F/S screen "HOLD" display shows that the fail safe setting is OFF. The position immediately before reception becomes impossible like PCM mode "HOLD" is not held. The battery fail safe setting is not displayed. When throttle fail safe is set, the battery fail safe function is also activated and cannot be turned off.

PPM mode F/S screen

The fail safe function cannot be used in the PPM mode. When the F/S screen is called, ("NO RELATION"), which shows that this function cannot be used, is displayed.



(PPM mode F/S screen)

Steering EXP "STEXP"

(Steering system)

This function is used to change the sensitivity of the steering servo 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.)

Calling the setup screen

*Calling from menu screen

(Opening Screen)



Menu screen call by JOG button

MENU1/2 selection by + button

Select the function by JOG button

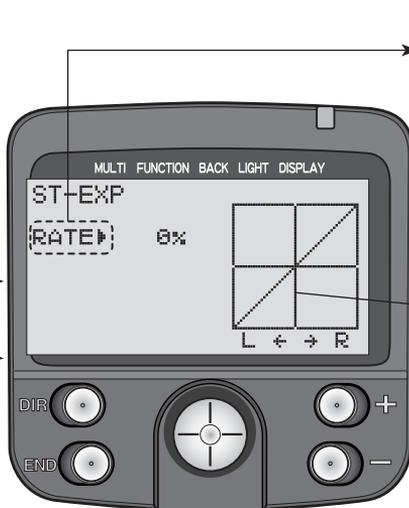
Press the JOG button

* When the direct call button is set, the setup screen is also called by the following method:

(Opening Screen)

Press the DIR button

Press the button set at this function.



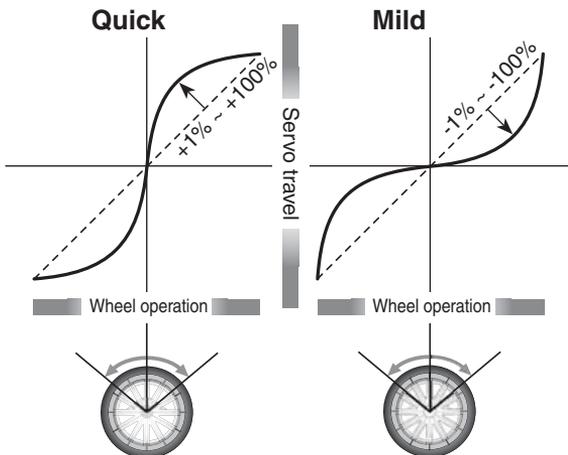
Setup item

RATE: Steering EXP rate

Vertical cursor moves in step with steering wheel operation.

Dial / Trim Setting

The steering EXP adjustment (RATE) can be controlled with with digital dial DL1, DL2, DL3 or digital trim DT3 etc. with the function select dial function. (See page 80)



Steering EXP adjustment

- 1 When you want to quicken steering operation, use the (+) button to adjust the + side. When you want to make steering operation milder, use the (-) button to adjust the - side.
- 2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjustment range

-100~0~+100%

Adjust button

Adjust with the (+) and (-) buttons.
- Return to the initial value "0" by pressing the (+) and (-) buttons simultaneously for about 1 second.

Throttle EXP "THEXP"

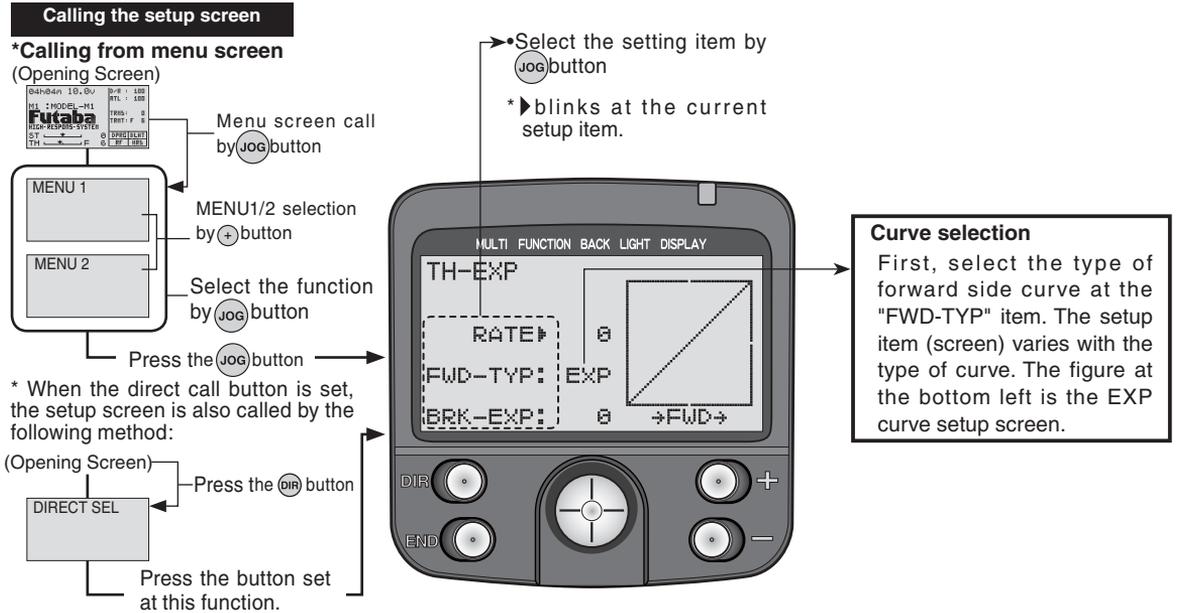
(Throttle system)

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

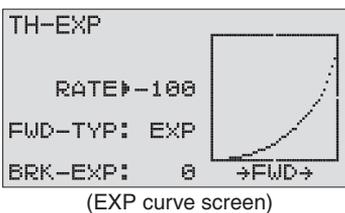
For the high side, selection from among three kinds of curves (EXP/VTR/CRV) is also possible.

Advice

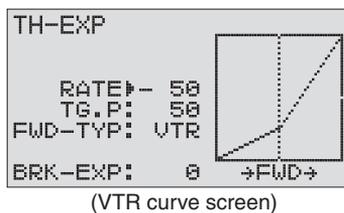
When the course conditions are good and there is no sense of torque at the power unit, set each curve to the + side (quick side). When the road surface is slippery and the drive wheels do not grip it, set each curve to the - minus (mild) side.



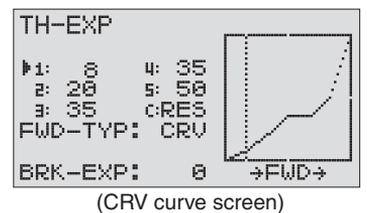
Curve selection



Curve type which operates the throttle from the neutral point to the high point on a curved curve.



Curve type which sets the switching point between the throttle neutral point and high point and operates the throttle on a linear curve.



Curve type which sets 5 points between the throttle neutral point and high point and operates the throttle.

Caution

When "TRG-BRK" is set to "CUT OFF" by boat mode function (p.72), the brake side function is not activated.

Dial / Trim Setting

The throttle EXP curve and VTR curve adjustment (Forward side RATE) and (Brake side RATE) can be controlled with digital dial DL1, DL2, DL3 or digital trim DT3 etc. with the function select dial function. (See page 80)

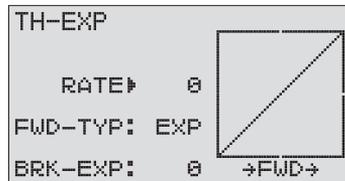
Adjustment method for EXP curve

(Preparation)

- Select "EXP" at setup item "FWD-TYP".
- Select setup item "RATE" and make the following adjustments:

Setup items

RATE :Forward side rate
 FWD-TYP :Forward side curve selection
 BRK-EXP :Brake side rate



Setup item selection

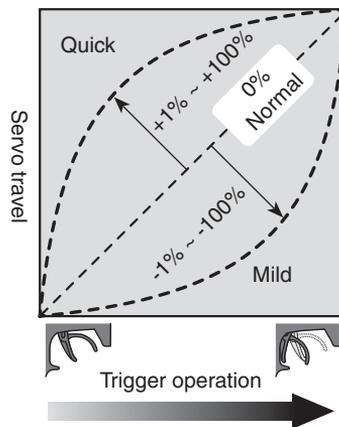
- Select by (JOG) button up or down operation.

Curve type Select button

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

1 Forward side adjustment

Use the (+) button to adjust the + side when you want to quicken the rise and use the (-) button to adjust the - side when you want to make the rise milder.



Adjustment range

RATE :-100 ~ 0 ~ +100%
 FWD-TYP :EXP, VTR, CRV
 BRK-EXP :-100 ~ 0 ~ +100%

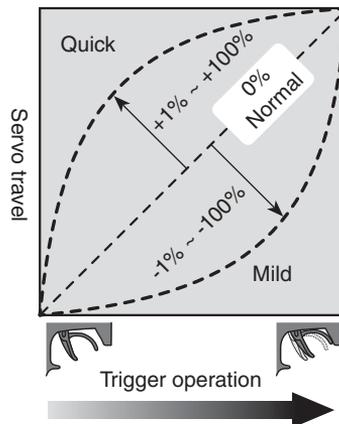
Adjust button

Adjust with the (+) and (-) buttons.

- Return to the initial value "0" by pressing the (+) and (-) buttons simultaneously for about 1 second.

2 Brake side adjustment

Select the setting item "BRAKE" by (JOG) button up or down operation, and use the (+) button to adjust the + side when you want to quicker the rise and use the (-) button to adjust the - side when you want to make the rise milder.



- ## 3
- When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjustment method for VTR curve

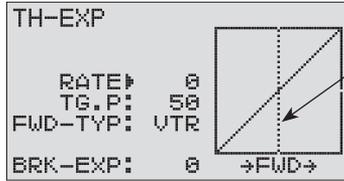
(Preparation)

- Select "VTR" at setup item "FWD-TYP".

- Select setup item "RATE" and make the following adjustments:

Setup items

RATE : Forward side rate
 TG.P : Curve switching point
 FWD-TYP : Forward side curve selection
 BRK-EXP : Brake side rate



Curve type Select button

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

Switching point

A vertical cursor line that shows the curve switching point is displayed on the setup screen graph.

Setup item selection

- Select by (JOG) button up or down operation.

1 Forward side adjustment

Use the (+) button to adjust at + side when you want to quicken the rise and use the (-) button to adjust the - side when you want to make the rise milder.

Adjustment range

RATE : -100 ~ 0 ~ +100%
 FWD-TYP : EXP, VTR, CRV
 TG.P : 20 ~ 80%
 BRK-EXP : -100 ~ 0 ~ +100%

2 Curve switching point adjustment

When you want to change the curve switching point relative to the throttle trigger, select the setting item "TG.P" by (JOG) button up or down operation, and use the (+) and (-) buttons to move to the point you want to set.

Adjust buttons

Adjust with the (+) and (-) buttons.

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

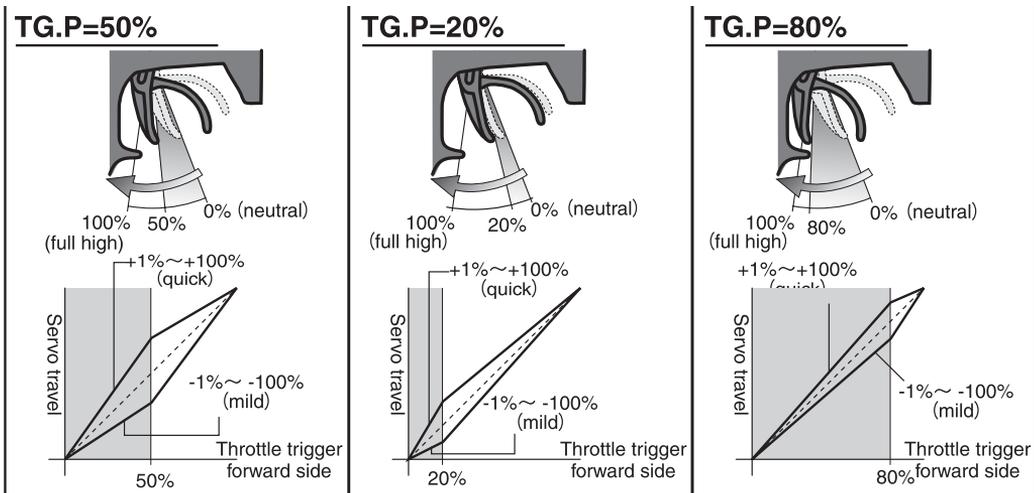
Initial value:
 RATE and BRK-EXP "0"
 TG.P "50"

3 Brake side adjustment

Select the setting item "BRAKE" by (JOG) button up or down operation. When you want to quicken the rise, use the (+) button to adjust the + side and when you want to make the rise milder, use the (-) button to adjust the - side.

For the VTR curve, only the high side can be set. The brake becomes the EXP curve.

4 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).



Throttle EXP "THEXP"

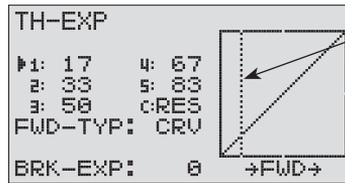
Adjustment method for VTR curve

(Preparation)

- Select "CRV" at setup item "FWD-TYP".

Setup items

1:~5 :Curve points 1~5
 C:RES :Curve reset
 FWD-TYP :Forward side curve
 selection
 BRK-EXP :Brake side rate



Curve type Select button

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

Point in current setup

A vertical cursor line that shows the point in the current setup is displayed on the setup screen graph.

Setup item selection

- Select by (JOG) button up, down, left or right operation.

Adjustment range

1:~5 :0~100%
 F-TYP :EXP, VTR, CRV
 BRAKE: -100~0~+100%

Adjust buttons

Adjust with the (+) and (-) buttons.

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

Initial value:
 Point.1:17, 2:33, 3:50, 4:67, 5:83
 BRK-EXP "0"

Returning entire curve to initial value

- Select setup item "C:RES" and return the set value of each point to the initial value by simultaneously pressing (approx. 1 sec) the (+) and (-) buttons.

1 Curve setup

- Select the setting item "1:" (1st point), by (JOG) button up, down, left, or right operation, and use the (+) and (-) buttons to set the 1st point.

Set the throttle curve by sequentially setting "2:" (2nd point) ~ "5:" (5th point).

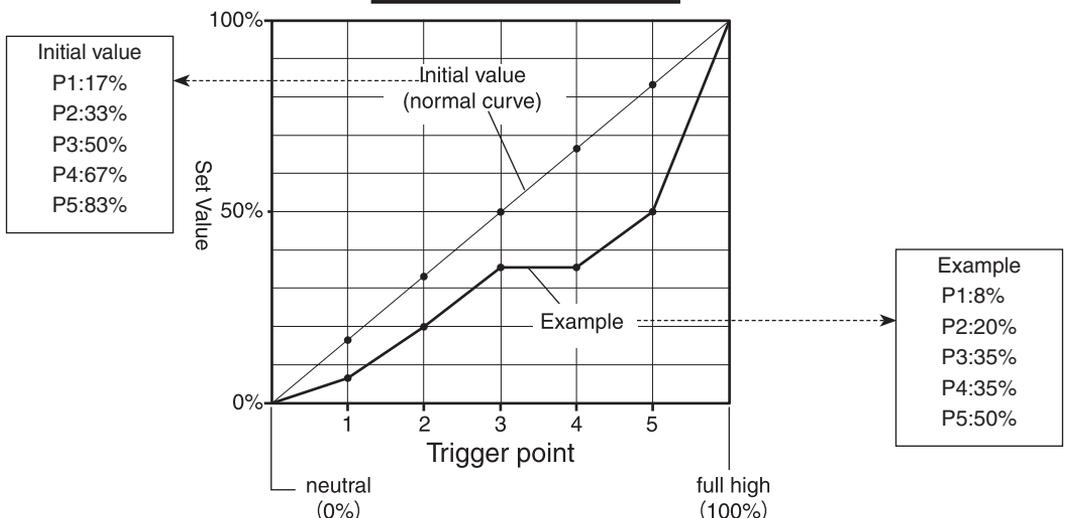
2 Brake side adjustment

Select the setting item "BRAKE" by (JOG) button up or down operation. When you want to quicken the rise, use the (+) button to adjust the + side and when you want to make the rise milder, use the (-) button to adjust the - side.

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

For the CRV curve, only the high side can be set. The brake becomes the EXP curve.

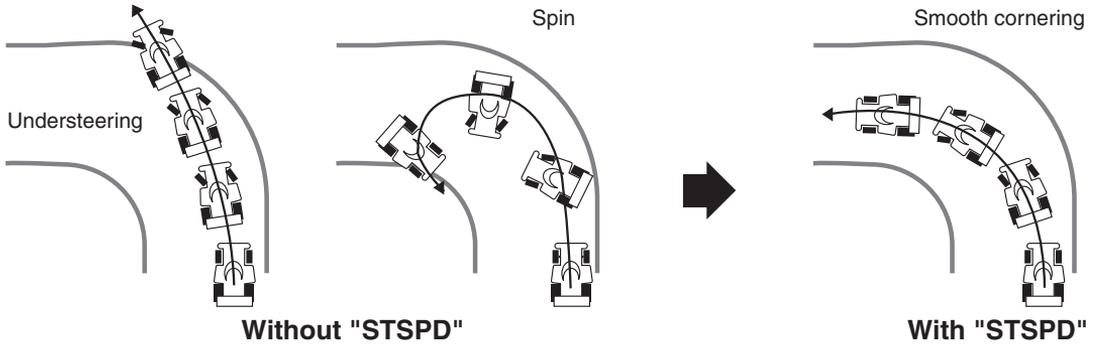
Throttle curve



Steering Speed "STSPD"

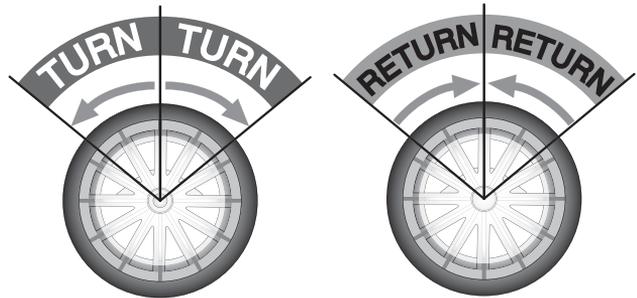
(Steering system)

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



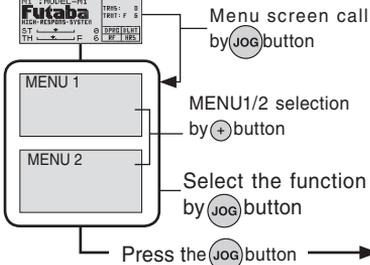
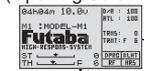
Operation

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

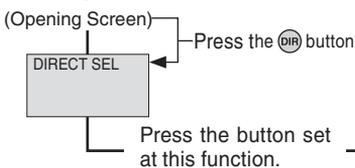


Calling the setup screen

*Calling from menu screen
(Opening Screen)



* When the direct call button is set, the setup screen is also called by the following method:



*Select the setting item by JOG button

* blinks at the current setup item.



Setup item

- TURN :TURN direction
- RETURN :RETURN direction

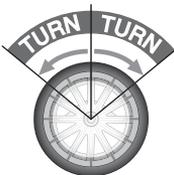
Steering Speed adjustment

(Preparation)

- Select the setting item "TURN" by (JOG) button up or down operation, and make the following adjustments:

1 "TURN" direction adjustment

Use the (+) or (-) buttons to adjust the delay amount.



2 "RETURN" direction adjustment

Select the setting item "RETURN" by (JOG) button up or down operation, and use the (+) or (-) buttons to adjust the delay amount.



- ### 3
- When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

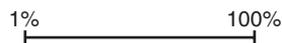
Setup item selection

- Select by (JOG) button up or down operation.

Adjustment range

1~100% (each direction)

At 100%, there is no delay.



Servo operation is delayed.

Adjust button

- Adjust with the (+) and (-) buttons.
- Return to the initial value "0" by pressing the (+) and (-) buttons simultaneously for about 1 second.

Setting example (Steering servo: S9451 / S9351) . . . (Setting criteria)

- Onroad TURN side: Approx. 50~80% RETURN side: Approx. 60~100%
- Offroad TURN side: Approx. 70~100% RETURN side: Approx. 80~100%

Dial / Trim Setting

The steering speed adjustment "TURN" and "RETURN" can be controlled with digital dial DL1, DL2, DL3 or digital trim DT3 etc. with the function select dial function. (See page 80)

Throttle Speed "THSPD"

(Throttle system)

Sudden throttle trigger operation on a slippery road only 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.



Operation

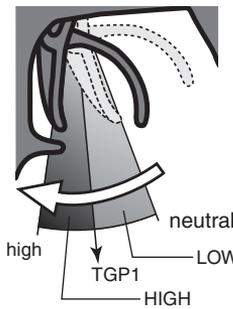
-Throttle servo (amp) operation is delayed so that the drive wheels will not spin even if the throttle trigger is operated more than necessary. This delay function is not performed when the throttle trigger is returned and at brake operation.

-1 speed, 2 speed, or 3 speed can be selected.



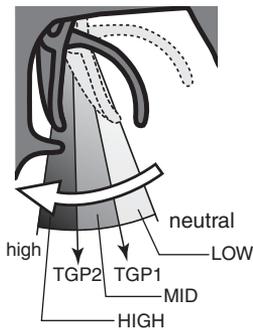
1 SPEED

A delay is set over the entire throttle range.



2 SPEED

A delay can be set in 2 ranges with TGP1 as the boundary.



3 SPEED

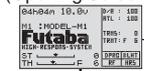
A delay can be set in 3 ranges with TGP1 and TGP2 as the boundaries.

Operation display

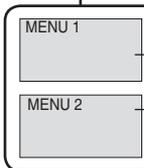
While the throttle speed function is ON, the LED blinks, (If LED color is not selected as off). **TSP** also appears on the initial screen and menu screen.

Calling the setup screen

*Calling from menu screen
(Opening Screen)



Menu screen call by **JOG** button

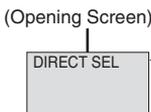


MENU1/2 selection by **+** button

Select the function by **JOG** button

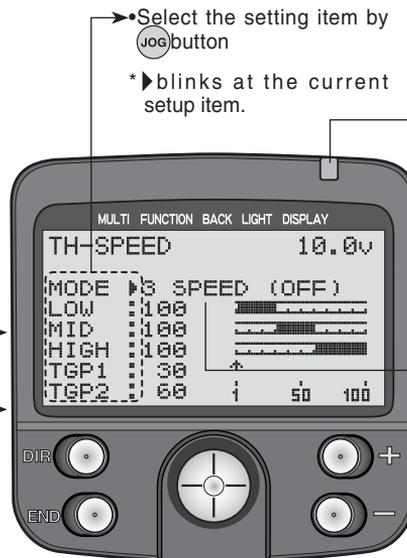
Press the **JOG** button

* When the direct call button is set, the setup screen is also called by the following method:



Press the **DIR** button

Press the button set at this function.



Select the setting item by **JOG** button

* blinks at the current setup item.

The LED blinks while the throttle speed function is on.

Mode selection

One speed, 2 speed, or 3 speed can be selected at the "MODE" item. The setting item (screen) depends on the mode. The figure at the left is the 3 speed setup screen.

Adjustment method for 1 SPEED

(Preparation)

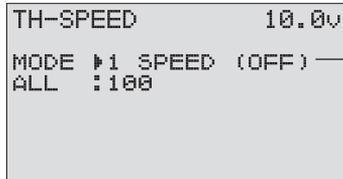
- Select the setting item "MODE" by (JOG) button up or down operation. Press the (+) or (-) button and select "1 SPEED".

Setting item

MODE :Speed type selection
ALL :Speed adjustment

Setup item selection

- Select by (JOG) button up or down operation.



Speed type Select button

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

When a value of 99 or less is set at ALL setting, the displays is switched from OFF to ON by trigger operation.

1 ("ALL" delay adjustment)

Select "ALL" by (JOG) button up or down operation.

Use the (+) or (-) button to adjust the delay of the entire throttle forward side range.

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjustment range

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

Adjust button

- Adjust with the (+) and (-) buttons.
- Return to the initial value "100" by pressing the (+) and (-) buttons simultaneously for about 1 second.

Adjustment method for 2 SPEED

(Preparation)

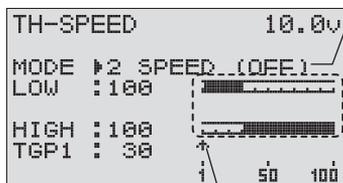
- Select the setting item "MODE" by (JOG) button up or down operation. Press the (+) or (-) button and select "2 SPEED".

Setting item

MODE :Speed type selection
LOW :Low side range speed adjustment
HIGH :High side range speed adjustment
TGP1 :Low and medium speed switching point

Setup item selection

- Select by (JOG) button up or down operation.



Speed type Select button

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

When a value of 99 or less is set at either LOW or HIGH, the display is switched from OFF to ON by trigger operation.

The LOW and HIGH ranges are linked to the TGP1 set point and displayed.

Throttle trigger position

1 ("LOW" and "HIGH" delay adjustment)

Select "LOW" or "HIGH" by (JOG) button up or down operation.

Use the (+) or (-) button to adjust the delay of the entire throttle forward side range.

2 (Speed switching point adjustment)

When you want to change the "LOW" and "HIGH" switching point, select the setting "TGP1" by (JOG) button up or down operation.

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjustment range

LOW :1~100
HIGH :1~100
At 100%, there is no delay.
TGP1 :1~100

Adjust button

- Adjust with the (+) and (-) buttons.
- Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).
Initial value
LOW, HIGH : "100"
TGP1 :30

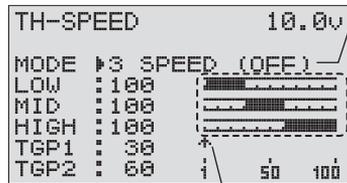
Adjustment method for 3 SPEED

(Preparation)

- Select the setting item "MODE" by (JOG) button up or down operation. Press the (+) or (-) button and select "3 SPEED".

Setting item

MODE	:Speed type selection
LOW	:Low side range speed adjustment
MID	:Medium speed range speed adjustment
HIGH	:High side range speed adjustment
TGP1	:Low and medium speed switching point
TGP2	:Medium speed and high switching point



Setup item selection

- Select by (JOG) button up or down operation.

Speed type Select button

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

When a value of 99 or less is set at either LOW or HIGH, the display is switched from OFF to ON by trigger operation.

The LOW and HIGH ranges are linked with the TGP1 set point and displayed.

Throttle trigger position

1 ("LOW", "MID", and "HIGH" delay adjustment)

Select the setting item "LOW", "MID", or "HIGH" by (JOG) button up or down operation.

Adjustment range

LOW	:1~100
HIGH	:1~100
At 100%, there is no delay.	
TGP1	:1~100

2 (Speed switching point adjustment)

When you want to change the "LOW", "MID", and "HIGH" switching point, select setting item "TGP1" or "TGP2" by (JOG) button up or down operation.

Adjust button

- Adjust with the (+) and (-) buttons.
 - Return to the initial value by pressing the (+) and (-) buttons simultaneously (approx. 1 sec).
- Initial value
 LOW, MID, HIGH : "100"
 TGP1 : 30
 TGP2 : 60

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Dial / Trim Setting

The steering speed adjustment "LOW", "MID", "HIGH" can be controlled with digital dial DL1, DL2, DL3 or digital trim DT3 etc. with the function select dial function. (See page 80)

Switch setting

Use SW1, SW2, SW3 to switch the throttle speed function ON/OFF.
 See the function select switch function (See page 79).

Start Function, Engine Cut "START"

(Throttle system)

When the throttle trigger is set to full throttle simultaneously with starting when the track is slippery, the car wheels will spin and the car will not accelerate smoothly. When the Start function is activated, merely operating the throttle trigger slowly causes the throttle servo to automatically switch from the set throttle position to a preset point so that the tires do not lose their grip and the car accelerates smoothly.

With Start function →



Tires grip the track firmly- Car accelerates

Without Start function →



Wheels spin- Car does not accelerate

Start Function Operation

- When the throttle trigger is moved to the preset position (trigger position: TG.P), the throttle servo moves to the preset position.
- When the throttle trigger is operated slowly so that the wheels will not spin, the car automatically accelerates to the set speed.
- This function is effective only for the first throttle trigger operation at starting. This function has to be activated before every start.
- When the throttle trigger is returned slightly, the Start function is automatically deactivated and the set returns to normal throttle trigger operation.

Engine Cut Function

When the switch is pressed, the throttle servo will move to the preset position without regard to the throttle trigger position. This is convenient when used to cut the engine of boats, etc. (The function select switch function. See page 79)

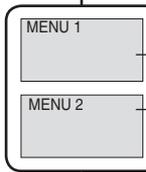
Function

Calling the setup screen

*Calling from menu screen
(Opening Screen)



Menu screen call by JOG button

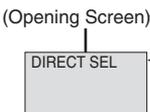


MENU1/2 selection by + button

Select the function by JOG button

Press the JOG button

* When the direct call button is set, the setup screen is also called by the following method:



Press the DIR button

Press the button set at this function.

*Select the setting item by JOG button

* blinks at the current setup item.



Function selection

First, select the function at the "MODE" item.
"AT&SW": Start function
"SW": Engine Cut function

Start function adjustment

(Preparation)

- Select the setting item "MODE" by (JOG) button up or down operation. Press the (+) or (-) button and select "AT&SW".
- Select setup item "TG.P" and make the following adjustments.

Setup items

ATS : READY setting
TG.P : Throttle position
PRST : Preset position
MODE : Function selection

```
AUTO-START      10.0v
ATS  (INH)
TG.P: (INH)
PRST:  0
MODE:  INH  (OFF)
```

Setup item selection

- Select by (JOG) button up or down operation.

Setup item selection

- Select by (JOG) button up or down operation.

Adjust button

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

1 (Throttle position setup)

Set the throttle position by pressing the (+) or (-) button.

2 (Preset position setup)

Select the setting item "PRST" by (JOG) button up or down operation, and use the (+) and (-) buttons to set the preset position of the throttle servo.

"B100" ~ "B1" : Brake side
"0" : neutral
"F1" ~ "F100" : Forward side

Trigger position (TG.P)

5 ~ 95
Initial value: 5

Preset position (PRST)

B100 ~ B1, 0, F1 ~ F100
Initial value: 0

Setting Example: (When amp used with an electric car)

Set the preset position to F75% at EPA100%.

3 ("READY" setting)

Select the setting item "ATS" by (JOG) button up or down operation, and press the (+) and (-) buttons simultaneously for about 1 second. "READY" blinks on the screen and the system enters the READY state. Throttle trigger operation starts the function.

READY setting (ATS)

OFF : off state
READY: Ready state
ACT : on state

- ## 4
- When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

-If the throttle trigger is moved to the set position while "READY" is flashing, the throttle servo will move to the set position. The throttle operation wait state is reset when the throttle trigger is returned.

-When using the Start function, always set the function by performing step 3 above each time.

Engine Cut function adjustment

(Preparation)

- Use the function select switch (page 79) to select the switch.

Setup items

PRST : Preset position
MODE : Function selection

Setup item selection

- Select by (JOG) button up or down operation.

```
AUTO-START      10.0v
ATS : (INH)
TG.P : (INH)
PRST:  0
MODE:  SW (OFF)
```

- Select the setting item "MODE" by (JOG) button up or down operation. Press the (+) or (-) button and select "SW".

1 (Preset position setup)

Select the setting item "PRST" by (JOG) button up or down operation, and use the (+) and (-) buttons to set the preset position of the throttle servo.

"B100" ~ "B1" : Brake side
"0" : neutral
"F1" ~ "F100" : Forward side

- ## 2
- When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Setup item selection

- Select by (JOG) button up or down operation.

Adjust button

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

Preset position (PRST)

B100 ~ B1, 0, F1 ~ F100
Initial value: 0

When "TRG-BRK" was set to "CUT OFF" by boat mode function

When "CUT OFF", which prohibits trigger brake side operation, was set in the boat mode (p.72), "TH-BRK" (brake side) of the EPA functions (p.45) cannot be adjusted. The preset position set here becomes the linkage standard. Connect the linkage so that the carburetor is fully closed and the engine is cut off in the preset adjustment range and set the full throttle position by EPA function "TH-FWD". Adjust the idling position by throttle trim.

Servo Throw

The throttle servo operating position (preset position) set by this setting is unrelated to the setting of other functions. Maximum to minimum servo travel can be set. However, the reverse function setting is enabled.

⚠ Caution

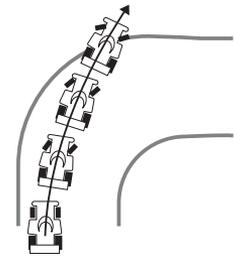
- ❗ Always operate positively before using this function.

While push switch SW1, SW2, or SW3 with preset function set is in the ON state, the servo (motor controller) is locked in the preset position and does not operate even if the throttle trigger is operated. If the servo was operated at the wrong setting, you may lose control of the car (boat).

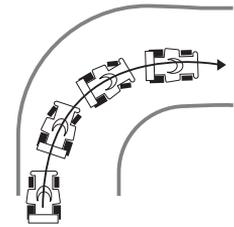
A.B.S Function "A.B.S"

(Throttle system)

When the brakes are applied while cornering with a 4 Wheel Drive or other type of vehicle, understeer may occur. The generation of understeer can be eliminated and corners can be smoothly cleared by using this function.



Without A.B.S.



With A.B.S.

Operation

- When the brakes are applied, the throttle servo will pulse intermittently. This will have the same effect as pumping the brakes in a full size car.
- The brake return amount, pulse cycle, and brake duty can be adjusted.
- The region over which the ABS is effective can be set according to the steering operation. (Mixing function)

Operation display

During ABS operation, the LED blinks, (If LED color is not selected as off).

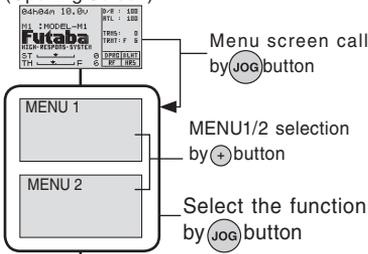
ABS display also appears on the initial screen and menu screen.

When "TRG-BRK" was set to "CUT OFF" by boat mode function

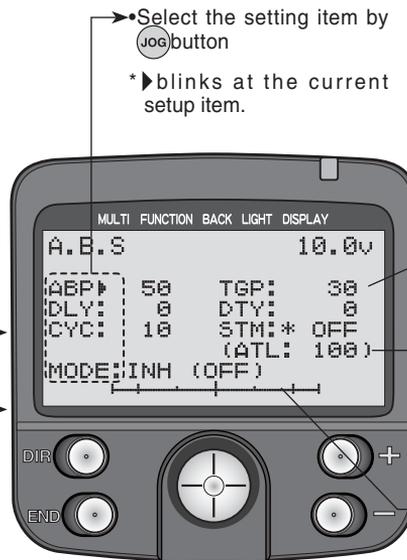
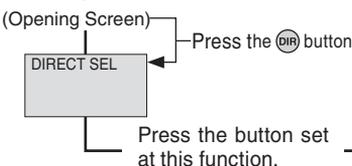
When "CUT OFF", which prohibits trigger brake side operation, was set in the boat mode (p.72), the ABS function will not actually operate even if set.

Calling the setup screen

*Calling from menu screen (Opening Screen)



* When the direct call button is set, the setup screen is also called by the following method:



Setup items

- ABP : Brake return amount
- DLY : Delay amount
- CYC : Cycle speed
- MODE : Function ON/Off
- TGP : Operation point
- DTY : Cycle duty ratio
- STM : Steering mixing

When brake operation enters the set range, "*" is displayed in front of the number.

ATL (brake) rate can be confirmed on the A.B.S function screen.

A bar graph that shows the operating position of the throttle appears. During setup, A.B.S function operation can be checked at this bar graph.

- ABP : Amount of brake return

Sets the rate at which the servo returns versus trigger operation for brake release. When set to 0%, the ABS function is not performed. When set to 50%, the servo returns 50% (1/2) of the trigger operation amount and when set to 100%, the servo returns to the neutral position.

- DLY : Delay

Sets the delay from brake operation to ABS operation. When set to 0%, the ABS function is activated without any delay. AT 50%, the ABS function is activated after a delay of approximately 0.7 second and at 100%, the ABS function is activated after a delay of approximately 1.4 seconds.

- CYC : Pulse speed

Sets the pulse speed (cycle). The smaller the set value, the faster the pulse cycle.

- MODE : Function ON/OFF

ABS function ON/OFF setting. When using the ABS function, set to "ACT(ON)".

- TGP : Trigger point

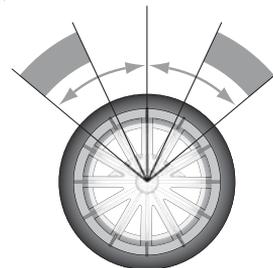
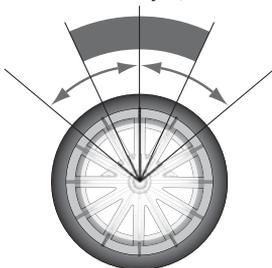
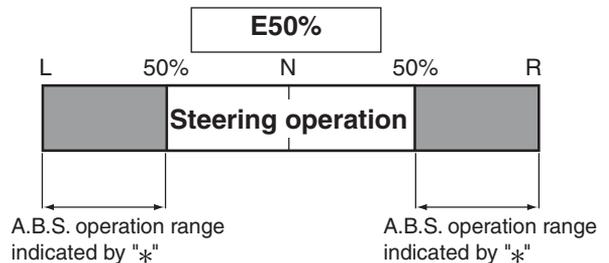
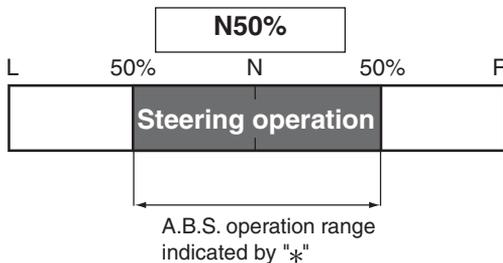
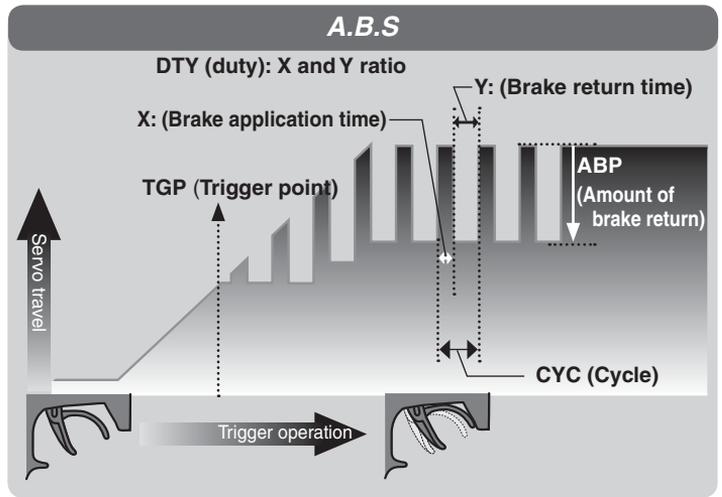
Sets the trigger point at which the ABS function begins to operate at brake operation.

- DTY : Cycle duty ratio

Sets the proportion of the time the brakes are applied and the time the brakes are released by pulse operation. The ratio can be set to +3 ~ 0 ~ -3 in 7 steps.

- STM : Steering mixing

Sets ABS operation ON/OFF according to the steering operation range.



A.B.S function adjustment

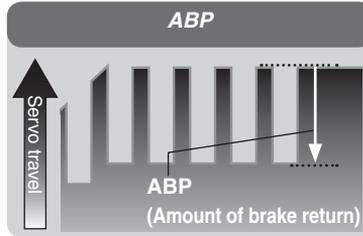
1 (Function ON/OFF)

Select the setting item "MODE" by (JOG) button up, down, left or right operation. Set the function to the active state by pressing the (+) or (-) button.

- "INH(OFF)" :Function OFF
- "ACT(ON)" :Function ON
- "ACT(OFF)" :Switch OFF when setting switches

2 (Brake return amount adjustment)

Select the setting item "ABP" by (JOG) button up, down, left or right operation. Use the (+) or (-) button to adjust the return amount.



- "0" :No return
- "50" :Return to the 50% position of the brake operation amount
- "100" :Return to the neutral position.

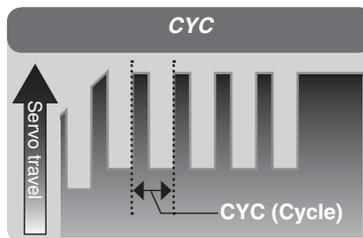
3 (Delay amount setup)

Select the setting item "DLY" by (JOG) button up, down, left or right operation. Use the (+) or (-) button to adjust the delay amount.

- "0" :A.B.S. function performed without any delay
- "50" :A.B.S. function performed after an approximate 0.7 sec delay.
- "100" :A.B.S. function performed after an approximate 1.7 secs delay.

4 (Pulse speed adjustment)

Select setting item "CYC" by (JOG) button up, down, left or right operation. Use the (+) or (-) button to adjust the pulse speed (cycle).

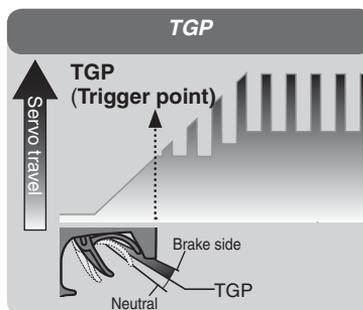


- The smaller the set value, the faster the pulse speed.

5 (Operation point setup)

Select setting item "TGP" by (JOG) button up, down, left or right operation. Use the (+) or (-) button to adjust the operation point.

- Sets the throttle trigger position at which the A.B.S. function is performed. The number is the % display with the full brake position made 100.



Setup item selection

- Select by (JOG) button up, down, left or right operation.

Adjustment buttons

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

Function ON/OFF (MODE)

INH(OFF), ACT(ON), ACT(OFF)

Brake return amount (ABP)

0 ~ 50 ~ 100
Initial value; 50

- Brake return amount (ABP) is influenced by the "EXP" rate on the brake side.

Delay amount (DLY)

0 ~ 100
Initial value; 0

Cycle speed (CYC)

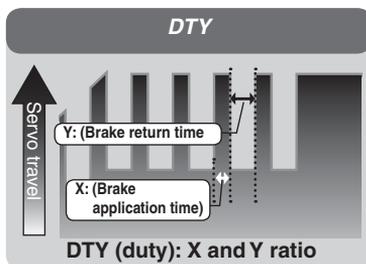
1 ~ 30
Initial value; 10

Operation point (TGP)

10 ~ 100
Initial value; 30

6 (Cycle duty ratio setup)

Select setting item "DTY" by (JOG) button up, down, left or right operation. Use the (+) or (-) button to adjust the duty ratio.



Duty ratio (DTY)

-3 ~ 0 ~ +3
Initial value; 0

"-3" :Brake application time becomes shortest. (Brakes lock with difficulty)

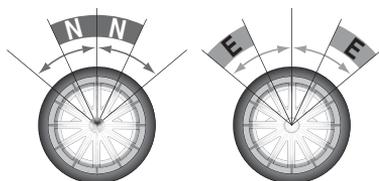
"+3" :Brake application time becomes longest (Brakes lock easily)

(Remark) For low grip, set at the - side and for high grip, set at the + side.

7 (Steering mixing setup)

Select setting item "STM" by (JOG) button up, down, left or right operation. Use the (+) or (-) button to adjust the steering mixing range.

- Sets the range within which the A.B.S. function is performed relative to steering wheel operation.



Steering operation

A.B.S	10.00
ABP: 50	TGP: 30
DLY: 0	DTY: 0
CYC: 10	STM: * OFF
	(ATL: 100)
MODE: INH	(OFF)

Steering mixing (STM)

OFF, N10 ~ N100, E10 ~ E100
Initial value; OFF

When steering mixing is set and steering operation enters the set range, "*" is displayed in front of the number. When mixing is OFF, the A.B.S function can operate over the entire steering range.

8 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Dial / Trim Setting

The brake return amount (ABP), delay amount (DLY) and cycle (CYC) can be controlled with digital dial DL1, DL2, DL3 or digital trim DT3 etc. with the function select dial function. (See page 80)

Switch setting

Use SW1, SW2, SW3 to switch the A.B.S. function ON/OFF.
See the function select switch function (See page 79).

Fail Safe Unit

When the 3PKS is used with the Futaba fail safe unit (FSU-1), it will operate as described below.

- When the FSU-1 is connected to the throttle channel, and the A.B.S. function has been activated, the FSU-1 LED will flash each time the servo operates. The reason for this is that the FSU-1 responds to sudden data changes caused by A.B.S. function pumping operation. It does not mean that the fail safe function is activated. The servo will not be affected.

Example of A.B.S. function setting when S9451 / S9351 used (There will be a slight difference depending on the state of the linkage.)

- Basic setting

ABP: Approx. 30% (If this value is too high, the braking distance will increase.)

CYC: 5~7

DTY: 0 (When grip is low: - side, when grip is high: + side)

DLY: 10~15%

TH.P: Approx. 70%

STM: OFF

- When the wheels lock, or the car spins, when the brakes are applied fully

ABP: Increase from 30%

DTY: Shift from 0 to - side (-1, -2, -3) \longrightarrow

DLY: Reduce the delay

- When the braking effect is poor and the braking distance is long when the brakes are applied fully

ABP: Decrease from 30%

DTY: Shift from 0 to + side (+1, +2, +3) \longrightarrow

DLY: Increase the delay

Brake Mixing "BRAKE"

(Throttle, 3rd channel system)

Use this mixing when the front and rear brakes must be adjusted independently such as 1/5GP cars, etc. This mixing uses the 2nd channel to control the rear brakes and the 3rd channel to control the front brakes.

Operation

- When braking, mixing is applied to 2nd channel 3rd channel.
- 3rd channel brake rate, delay amount, 3rd channel brake-EXP and 3rd channel brake-A.B.S possible.

3rd channel A.B.S.

It is possible to adjust the Brake Return Amount (ABP), Delay Amount (DLY) and Cycle period (CYC) exclusively for the front brake (the 3rd CH). In doing so, you can use the A.B.S. Function at the front side even if the A.B.S Function is off for the rear brake (2nd CH). You can use the same procedure as the 2nd CH A.B.S Function for setting the Cycle Period (CYC), Duty Ratio (DTY) and Steering Mixing (STM). Use SW1, SW2, SW3 to switch the 3rd channel A.B.S. function ON/OFF.

Dial / Trim Setting

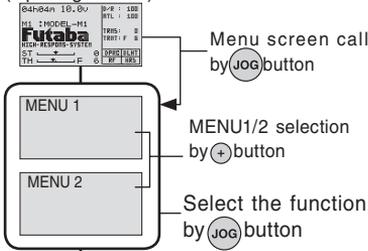
The function select dial function can control 3rd channel brake rate (BKRT), delay amount (DLY), and 3rd channel brake-A.B.S return amount (ABP) ...etc setting using button trim DL1, DL2, DL3 or digital trim DT3 etc. (See page 80)

When BIGCAR is selected on the "MENU-T" function (See page 95), brake rate (BKRT) adjustment is automatically assigned to dial DL3.

Calling the setup screen

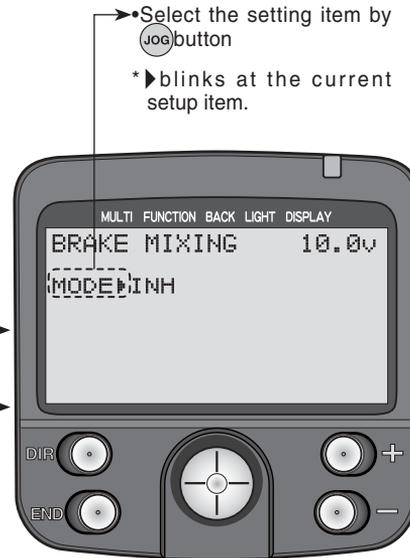
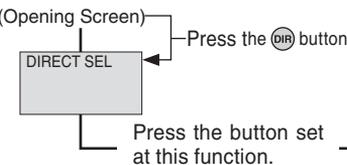
*Calling from menu screen

(Opening Screen)



Press the JOG button

* When the direct call button is set, the setup screen is also called by the following method:

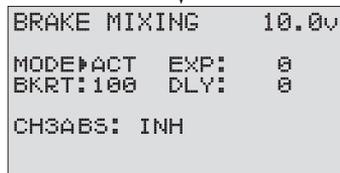


Select the setting item by JOG button

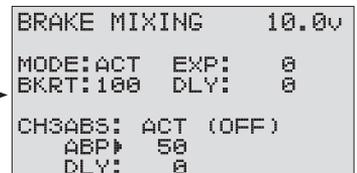
* blinks at the current setup item.

Setup items

- MODE : Function ON/OFF
- BKRT : 3rd channel brake rate
- EXP : 3rd channel brake-EXP
- DLY : Delay amount
- CH3ABS : Function ON/OFF
- ABP : CH3ABS brake return amount
- DLY : CH3ABS Delay amount



Brake mixing mode : ON



3rd channel brake-A.B.S : ON

Brake mixing adjustment

1 (Function ON/OFF)

Select the setting item "MODE" by (JOG) button up, down, left or right operation. Set the function to the active state by pressing the (+) or (-) button.

"INH(OFF)" :Function OFF

"ACT(ON)" :Function ON

2 (3rd channel brake rate)

Select setup item "RATE" by (JOG) button up, down, left or right operation, and use the (+) and (-) buttons to adjust the 3rd channel brake rate amount.

3 (3rd channel brake-EXP)

Select setup item "EXP" by (JOG) button up, down, left or right operation. When you want to quicken the rise, use the (+) button to adjust the + side and when you want to make the rise milder, use the (-) button to adjust the - side.

4 (Delay amount setup)

Select setup item "DLY" by (JOG) button up, down, left or right operation, and use the (+) and (-) button to adjust the delay amount.

"0" :No delay

"100" :Maximum delay amount

- This system sets either the "F" side or "R" side delay.

5 (3rd channel brake-A.B.S ON/OFF)

Select setup item "CH3ABS" by (JOG) button up, down, left or right operation. Set the function to the "ACT" state by pressing the (+) or (-) button.

```
BRAKE MIXING      10.00
MODE:ACT   EXP:   0
BKRT:100   DLY:   0
CH3ABS: ACT (OFF)
  ABP:  50
  DLY:   0
```

3rd channel brake-A.B.S : ON

6 (3rd channel brake-A.B.S return amount adjustment)

Select setup item "ABP" by (JOG) button up, down, left or right operation, and use the (+) and (-) buttons to adjust the return amount.

7 (3rd channel brake-A.B.S delay amount setup)

Select setup item "DLY" by (JOG) button up, down, left or right operation, and use the (+) and (-) buttons to adjust the delay amount.

8 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Setup item selection

- Select by (JOG) button up, down, left or right operation.

Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.

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

Function ON/OFF (MDE)

INH(OFF), ACT(ON), ACT(OFF)

3rd channel Brake rate (RATE)

0 ~ 100

Initial value:100

3rd channel brake EXP rate (EXP)

-100 ~ 0 ~ +100%

Initial value:0

Delay amount (DLY)

F100~F1, 0 ,R1~R100

Delay amount for forward(F) or rear(R) side can be set.

Initial value:0

Function ON/OFF (CH3ABS)

INH(OFF), ACT(ON), ACT(OFF)

Brake return amount (ABP)

0 ~ 50 ~ 100

Initial value; 50

"0" :No return

"50" :Return to the 50% position of the brake operation amount

"100":Return to the neutral position.

Delay amount (DLY)

0 ~ 100

Initial value; 0

"0" :A.B.S. function performed without any delay

"50" :A.B.S function performed after an approximate 0.7 sec delay.

"100":A.B.S. function performed after an approximate 1.7 secs delay.

Shutting off brake side operation

When brake side operation is unnecessary with a boat, etc., it can be shut off.

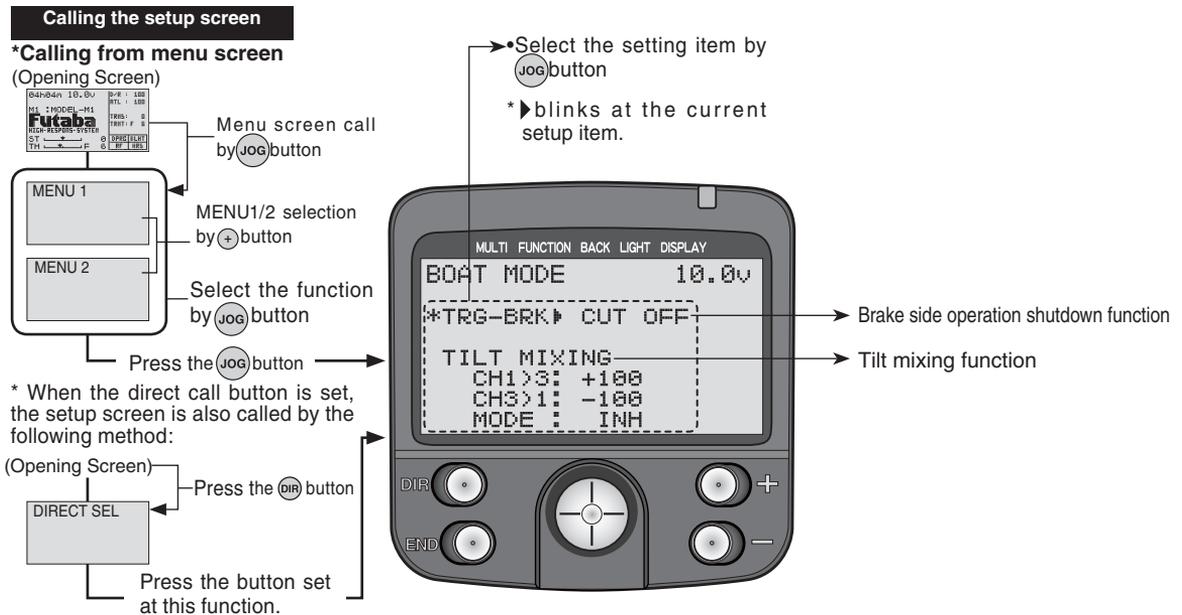
Tilt mixing

Tilt mixing uses an outboard engine and applies bidirectional mixing from rubber (steering) to channel 3 and from channel 3 to rudder so that with a boat rubber operation and tilt mixing operation can be performed by 2 servos.

Tilt mixing can be performed by rudder operation by steering wheel and 3rd channel.

Affect of set value of other functions on tilt mixing

Steering side EPA function, STEXP function, STSPD function, or D/R function setting also affects channel 3 side operation. However, the channel 3 servo is not reversed by setting the steering side reverse function.



Function

Prohibiting brake side operation

1 (Shutting down brake side operation)

Select the setting item "TRG-BRK" by (JOG) button up or down operation. Use the (+) or (-) button to select "CUT OFF".

"NORMAL" :Normal trigger operation

"CUT OFF" :Trigger brake side operation shut down

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Setup item selection

- Select by (JOG) button up or down operation.

Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.

Brake side operation (TRG-BRK)

NORMAL, CUT OFF

Tilt mixing adjustment

(Preparation)

- Use the function select dial function to select the 3rd channel operation dial. (page 80)

1 (Function ON/OFF)

Select the setting item "MODE" by (JOG) button up or down operation. Set the function to the "ON" state by pressing the (+) or (-) button.

"INH" :Function OFF
"ON" :Function ON

2 (CH1>CH3 mixing amount adjustment)

Select setup item "CH1>3" by (JOG) button up or down operation, and use the (+) and (-) buttons to adjust the mixing amount.

"+" :Operate in same direction as steering
"-" :Operate in opposite direction of steering

3 (CH1>CH1 mixing amount adjustment)

Select setup item "CH3>1" by (JOG) button up or down operation, and use the (+) and (-) buttons to adjust the mixing amount.

"+" :Operate in same direction as channel 3
"-" :Operate in opposite direction of channel 3

- ### 4
- When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjustment buttons

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

Function ON/OFF (MODE)

INH(OFF), ACT(ON), ACT(OFF)

Mixing amount (CH1>3)

-100~+100
Initial value: +100

Mixing amount (CH3>1)

-100~+100
Initial value: -100

Slave channel output (Initial value)

Steering > 3rd channel side	: +100%
3rd channel > Steering side	: -100%

Dial / Trim Setting

The mixing rate amount can be controlled with digital dial DL1, DL2, DL3 or digital trim DT3, etc. with the function select dial function. (Page80)

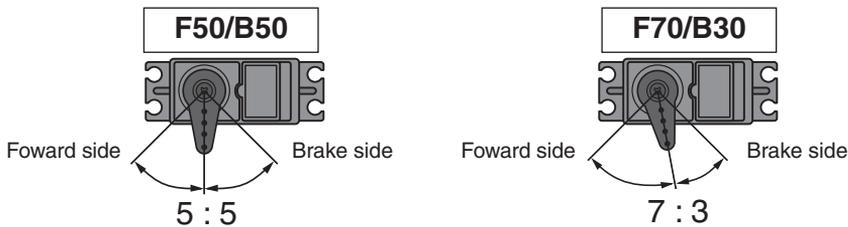
Throttle Mode "THMOD"

(Throttle system)

This function allows selection of the forward side and brake (reverse) side operation ratio from 70:30 or 50:50 by changing the neutral position of the throttle servo.

When "TRG-BRK" was set to "CUT OFF" by boat mode function

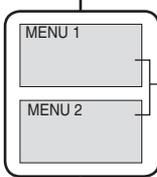
When "Cut OFF", which prohibits trigger brake side operation, was set in the boat mode (p.72), the neutral position does not change even if the throttle mode is changed because brake side operation is shut off.



Calling the setup screen

*Calling from menu screen

(Opening Screen)



Menu screen call by (JOG) button

MENU1/2 selection by (+) button

Select the function by (JOG) button

Press the (JOG) button

* When the direct call button is set, the setup screen is also called by the following method:

(Opening Screen)



Press the (DIR) button

Press the button set at this function.

Setup items

TYPE : Forward side / Brake side



Function

Selecting the throttle mode

1 (Throttle mode selection)

Select "F50/B50" or "F70/B30" by (+) or (-) button.

"F50/B50" =Forward 50% : Back50%

"F70/B30" =Forward 70% : Back30%

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.

Throttle mode (TYPE)

F50/B50, F70/B30

Idle-Up "IDLUP"

(Throttle system)

Use this function to improve the starting characteristics of the engine by raising the idling speed when starting the engine of a gas powered car.

Operation

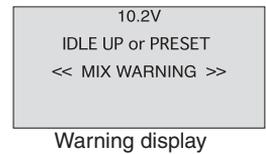
Offsets the throttle neutral position to the forward side or brake side.

Switch Setting

Select the idle-up function ON/OFF switch with the function select switch function. (See page 79)

Operation Display

While this function is ON, the LED blinks. (When LED is active) **IDL** also appears on the initial screen and menu screen. If the power switch is turned on while the idle-up switch is on, an audible alarm will be heard. Immediately set the Idle-Up switch to OFF.



Calling the setup screen

*Calling from menu screen

(Opening Screen)



Menu screen call by **JOG** button

MENU1/2 selection by **+** button

Select the function by **JOG** button

Press the **JOG** button

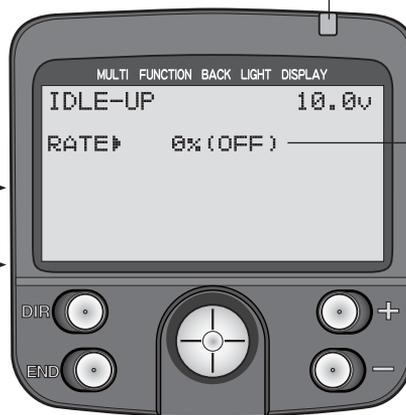
* When the direct call button is set, the setup screen is also called by the following method:

(Opening Screen)



Press the **DIR** button

Press the button set at this function.



The LED blinks while the Idle-Up function is on.

Idle-Up on/off state.

Idle-Up function adjustment

(Preparation)

- Use the function select switch function to select the switch.

1 (Idle-Up rate)

Use the (+) and (-) buttons to set the Idle-Up rate.

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjust button

- Adjust with the (+) and (-) buttons.
- Return to the initial value "0" by pressing the (+) and (-) buttons simultaneously for about 1 second.

Idle-Up rate (RATE)

D50% ~ D1%, 0%, U1% ~ U50%

Initial value: 0%
"D": Brake side
"U": Forward side

Programmable Mixes1, 2 "PMIX1, 2"

(All channel)

These functions allow you to apply mixing between the steering, throttle, and channel 3 channels.

Two programmable mixing systems can be used. The programmable mixing 1 and programmable mixing 2 set-up screens are independent.

Additional Functions

- When the steering or throttle channel is the master channel (channel that applies mixing), trim data can be added. (Trim mode)
- The mixing mode selection. (Master mixing mode)
- The master channel mixing center point (point at which the direction changes) can be offset. (Offset function)

Movement of the slave channel side

The movement of the master channel side will be added to the movement of the slave channel side.

When "TRG-BRK" was set to "CUT OFF" by boat mode function

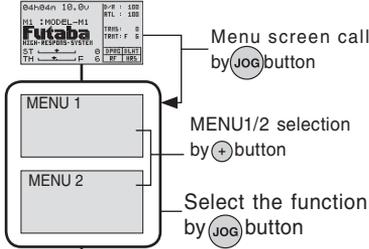
When "CUT OFF", which prohibits trigger brake side operation, was set in the boat mode (p.72), since brake side operation is shut off, when the master channel (MST) is set to throttle, only "FWRD" side mixing is activated. "BRAK" side mixing is not activated.

Function

Calling the setup screen

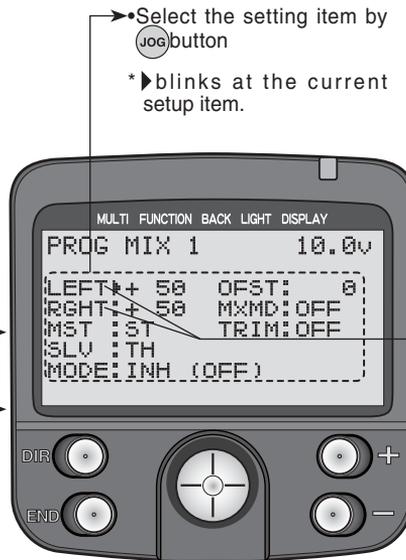
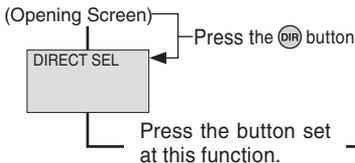
*Calling from menu screen

(Opening Screen)



Press the JOG button

* When the direct call button is set, the setup screen is also called by the following method:



Select the setting item by JOG button

* blinks at the current setup item.

Setup items

- LEFT :Mixing rate (Left side)
- RGHT :Mixing rate (Right side)
- MST :Master channel
- SLV :Slave channel
- MODE :Function ON/OFF
- OFST :Offset
- MXMD :Mix mode
- TRIM :Trim mode

These setup items are different depend on the master channel.
Upper side : LEFT/FWRD/UP
Lower side : RGHT/BRAK/DOWN

Adjust button

- Adjust with the (+) and (-) buttons.
- Return to the initial value "100" by pressing the (+) and (-) buttons simultaneously for about 1 second.

Program mixing adjustment

(Preparation)

- Use the function select switch function (page 79) to select the switch. (as desired)

1 (Mixing function ON/OFF)

Select the setting item "MODE" by (JOG) button up, down, left, or right operation. Press the (+) or (-) button and set the function to the "ACT" state.

"INH" :Function OFF
"ACT" :Function ON

2 (Master channel)

Select setup item "MST" by (JOG) button up, down, left, or right operation, and select the master channel by pressing the (+) or (-) button.

3 (Slave channel)

Select setup item "SLV" by (JOG) button up, down, left, or right operation, and select the slave channel by pressing the (+) or (-) button.

4 (Left, forward or up side mixing amount adjustment)

Select the setting item "LEFT", "FWRD", or "UP" by (JOG) button up, down, left, or right operation. Use the (+) or (-) button and adjust the right, brake, or down side mixing amount.

5 (Right, brake or down side mixing amount adjustment)

Select the setting item "RGHT", "BRAK", or "DOWN" by (JOG) button up, down, left, or right operation. Use the (+) or (-) button and adjust the right, brake, or down side mixing amount.

6 (Offset amount setup)

Select setup item "OFS" by (JOG) button up, down, left, or right operation, and use the (+) and (-) button to adjust the offset amount.

7 (Mixing mode setup)

Select setup item "MXD" by (JOG) button up, down, left, or right operation, and use the (+) or (-) button to select the mixing mode.

"OFF" :Mixing proportional to master channel operation.
"MIX" :Mixing by master channel another function considered.

8 (Trim mode setup)

Setup item selection

- Select by (JOG) button up, down, left or right operation.

Switch

PRG MIX1 : Program mixing 1
PRG MIX2 : Program mixing 2

Function ON/OFF (MODE)

INH, ACT

Channel selection (MST)

ST, TH, CH3
Initial value :PMIX1(ST)
PMIX2(TH)

Channel selection (SLV)

ST, TH, CH3
Initial value :PMIX1(TH)
PMIX2(CH3)

Mixing amount

-100~0~+100
Initial value: +50

Mixing amount

-100~0~+100
Initial value: +50

Offset amount (OFS)

-100~0~+100
Initial value: 0

Mixing mode (MXD)

OFF, MIX
Initial value: OFF

Select setup item "TRM" by (JOG) button up, down, left, or right operation, and use the (+) or (-) button to select the mixing mode.

Trim mode (TRM)
OFF, ON
Initial value: OFF

"OFF" : Trim is added.

"ON" : Trim is removed.

- 9** When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

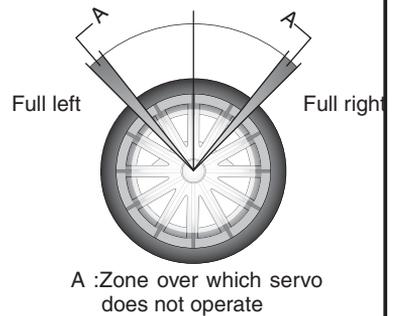
When Steering and Throttle Travel is Insufficient

When the steering servo travel is insufficient even when D/R is 100% and EPA is 120%, programmable mixing can be used to increase the travel somewhat.

(Reference data)

- PROG NIX1->ON
- MST (master channel) -> ST Mixing is applied from steering
- SLV (slave channel) ->ST Mixing is applied to steering and the travel is increased.
- RGHT -> 10% [When subtrim is centered (0%)]
- LEFT -> 10% [When subtrim is centered (0%)]
- OFST -> 0%
- MXMD -> MIX
- TRIM -> OFF

However, the operating range of the servo is exceeded even if a large value is input at RIGH and LEFT and a zone over which the servo does not operate even when the stick is moved to the left or right is created. A zone over which the servo does not operate is also generated at the moving side when the subtrim is moved to the left and right. Therefore, set the RIGH and LEFT value by checking servo operation.



When the throttle servo travel is insufficient at ATL 100% and EPA120%, the same action can be performed by making TH (throttle) both the MST and SLV when steering.

When both steering and throttle operations are performed, use both PROG MIX1 and PROG MIX2 program mixing.

Switch Setting

Select the program mixing 1,2 function ON/OFF switch with the function select switch function. (See page 79)

Dial / Trim Setting

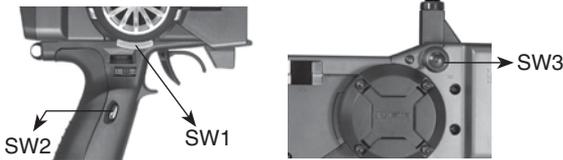
The mixing amount can be adjusted by using the function dial function (p.80).

Function Select Switch "SWTCH"

This function allows selection of the function to be performed by the switches (SW1/SW2/SW3) and setting of the direction, etc. of operation.

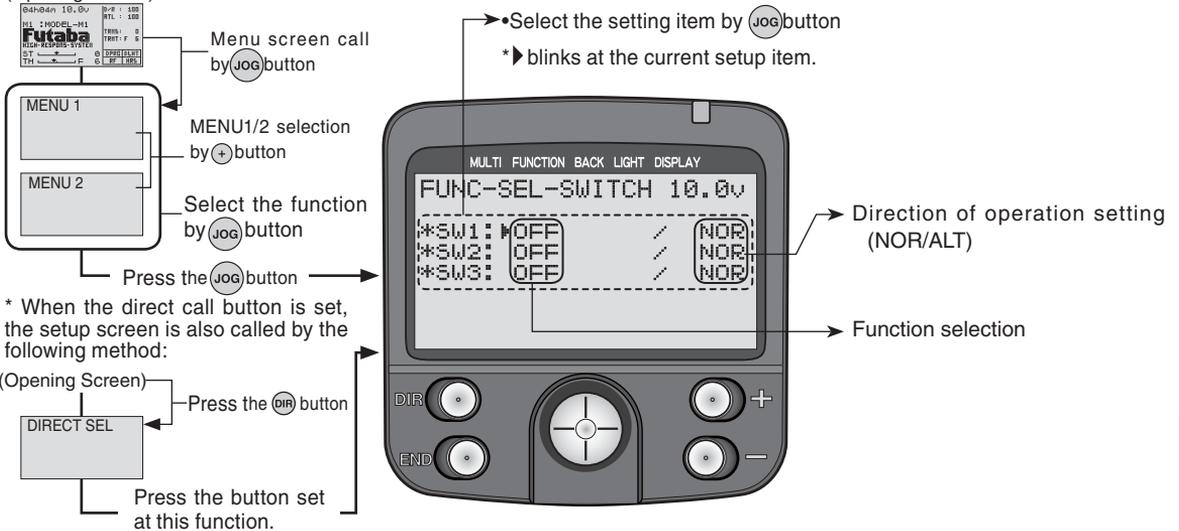
- The table to the right shows the functions that can be assigned to each push switch.
- SW1 and SW2 can be made alternate operation (ON/OFF switched each time SW pressed).(NOR/ALT)
- The direction of operation of SW3 can be reversed.(NOR/REV)

Settable functions (SW1/SW2/SW3)	
Abbreviation used on setup screen	Function name, etc
AT-START	Start function / Engine cut
TH-SPEED	Throttle speed
A.B.S.CH2	A.B.S function (2CH)
A.B.S.CH3	A.B.S function (3CH)
D/R 2ND	2nd dual rate
IDLE-UP	Idle up
PROG MIX1	Program mixing 1
PROG MIX2	Program mixing 2
CH3	channel 3
LAP STAR	Timer function start (SW3 not possible)
LAP RESET	Timer function reset (SW3 not possible)
OFF	Not used



Calling the setup screen

*Calling from menu screen (Opening Screen)



Function select switch setup

1 (Setting SW selection)

Select the item you want to set by (JOG) button up, down, left, or right operation.

2 (To select or change a function for SW)

Select one of the functions for "SW" by pressing (+) or (-) button.

(To change the operation mode)

Select the operation mode for "SW" by pressing (+) or (-) button.

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Setup item selection

- Select by (JOG) button up, down, left or right operation.

Setup buttons

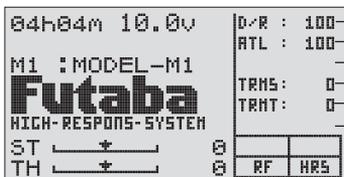
- Use the (+) and (-) buttons to make adjustments.
- Press the (+) and (-) buttons simultaneously (approx. 1 sec) to return to the initial screen.

Initial value:

SW1,SW2,SW3 : "OFF", "NOR"

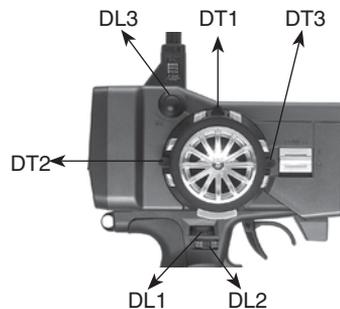
Function Select Dial "DIAL"

This function allows selection of the function performed by the digital dial (DL1/DL2/DL3) and digital trimmers (DT1/DT2/DT3), step amount adjustment, and operating direction reversal.



Initially set functions

- DL1 :Dual rate function
- DL2 :ATL function
- DL3 :(Not set)
- DT1 :Steering trim
- DT2 :Throttle trim
- DT3 :(Not set)



- The table below lists the functions that can be assigned to each dial and digital trimmer. The assigned function is also displayed on the opening screen together with the current adjustment value. They are displayed in DT1, DT2, DT3, DL1, DL2, and DL3 order, from top to bottom.
- The step amount can be adjusted. The table below shows the relationship between set value and step amount.
- The operation direction can be reversed. (NOR/REV)

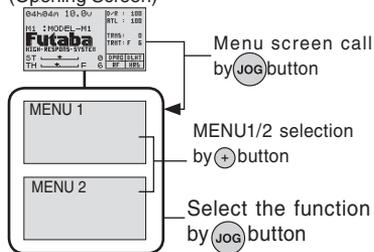
Settable functions (DL1/DL2/DL3, DT1/DT2/DT3)

Abbreviation used on setup screen	Abbreviation displayed on opening screen	Function name, etc
D/R	(D/R)	Dual rate function
ATL	(ATL)	ATL function
EXP-S	(EXPS)	Steering EXP
EXP-F	(EXPF)	Throttle EXP (Forward side)
EXP-B	(EXPB)	Throttle EXP (Brake side)
EXP-3	(EXP3)	3rd Channel brake EXP
SP-TN	(SPTn)	Steering speed (Turn side)
SP-RN	(SPRn)	Steering speed (Return side)
AB.P	(AB.P)	A.B.S. function (Return amount)
ABS.D	(ABSD)	A.B.S. function (Delay)
CYCLE	(CYCL)	A.B.S. function (cycle speed)
ACC-F	(ACCF)	Throttle acceleration (Forward side)
ACC-B	(ACCB)	Throttle acceleration (Brake side)
ACC-3	(ACC3)	3rd Channel brake acceration (BRAKE fansion-ON)
THSP1	(THS1)	Throttle speed (ALL/LOW)
THSP2	(THS2)	Throttle speed (MID)
THSP3	(THS3)	Throttle speed (HIGH)
ST-TR	(TRMS)	Steering trim
TH-TR	(TRMT)	Throttle trim
CH3	(3CH)	Channel 3
SUBT1	(SBT1)	Sub trim (CH1)
SUBT2	(SBT2)	Sub trim (CH2)
SUBT3	(SBT3)	Sub trim (CH3)
D/R2	(D/R2)	2nd dual rate function
IDLUP	(IDLE)	Idle up function
TLT13	(TL13)	Tilt mixing (1>3)
TLT31	(TL31)	Tilt mixing (3>1)
PM1-A	(PM1A)	Program mixing 1 (RGHT/BRAK/DOWN sides)
PM1-B	(PM1B)	Program mixing 1 (LEFT/FWRD/UP sides)
PM2-A	(PM2A)	Program mixing 2 (RGHT/BRAK/DOWN sides)
PM2-B	(PM2B)	Program mixing 2 (LEFT/FWRD/UP sides)
BK-RT	(BKRT)	Brake mixing (3ch brake rate)
BK-DL	(BKDL)	Brake mixing (delay)
B-ABP	(BABP)	3rd Channel A.B.S -Return amount (BRAKE fansion-ON)
B-ABD	(BABD)	3rd Channel A.B.S -Delay(BRAKE fansion-ON)
OFF		Not used

Calling the setup screen

*Calling from menu screen

(Opening Screen)



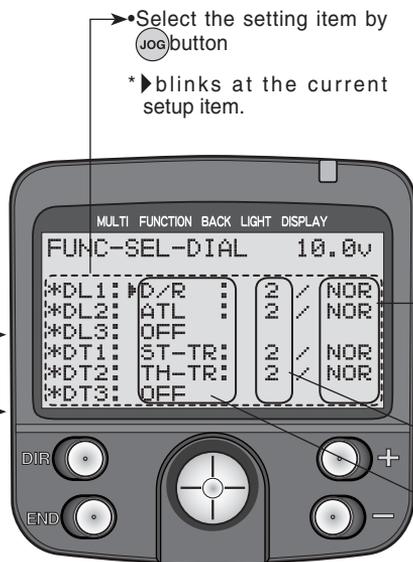
Press the JOG button

(Opening Screen)

Press the DIR button

DIRECT SEL

Press the button set at this function.



Direction of operation setting

Step amount setting

Function selection

Function select dial setup

1 (Setting Dial selection)

Select the item you want to set by (JOG) button up, down, left, or right operation.

2 (To select or change a function for Dial)

Select one of the functions for "DIAL" by pressing (+) or (-) button.

(To change the step amount)

Use the (+) or (-) button to set the step amount.

(When changing the direction of operation)

Use the (+) or (-) button to dial the direction.

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Setup item selection

- Select by (JOG) button up, down, left or right operation.

Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.

- Press the (+) and (-) buttons simultaneously (approx. 1 sec) to return to the initial screen.

Initial value:

DL1	:"D/R", "2", "NOR"
DL2	:"ATL", "2", "NOR"
DL3	:"OFF"
DT1	:"ST-TR", "2", "NOR"
DT2	:"TH-TR", "2", "NOR"
DT3	:"OFF"

Relationship between set value and step amount

- **Steering trim/throttle trim** (Setting range: 1, 2, 3, 4, 5, 6, 7, 10)

When set to the minimum "1", the trim operation width is 200 clicks. When set to the maximum "100", the trim operation width is 20 clicks.

- **Rate, etc. setup** (Setting range: 1, 2, 3, 4, 5, 6, 7, 10%)

The % value that is operated by 1 click relative to the set value of each rate can be set.

- **Channel 3** (Setting range: 1, 2, 5, 10, 20, 50, 3PS, 2PS)

When set to the minimum "1", the channel 3 total operation width is 200 clicks. When set to "50", the channel 3 total operation width is 4 clicks. The total operation width for 3PS is 2 clicks and the total operation width for 2PS is 1 click. 3PS acts like a 3-position switch and 2PS acts like a 2-position switch.

Timer Function "TIMER"

Use the timer by selecting one of the four timers UP TIMER, DOWN TIMER, LAP TIMER and LAP NAVIGATE timer.

UP TIMER function

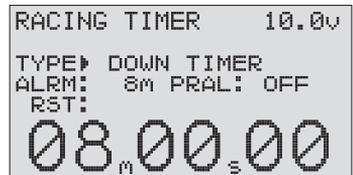
- The UP TIMER can be used to count the time between start and stop, etc.
- The timer repeatedly starts and stops each time the switch is operated and accumulates the time between each start and stop. (When the count reaches 99 minutes 59 seconds, it returns to 00 minutes 00 seconds and repeats the count.)
- The first start operation can be linked to the throttle trigger.
- An alarm sound can be set. The passage of time is announced by sounding of a buzzer (beeps) each minute after starting.
 - Alarm: Generates a beep at the set time (minutes).
 - Prealarm: Alarm advance announcement sound. Sounding starts the set time (seconds) before the alarm. (beeps)
- After starting, the timer is enabled and can be stopped by switch even when the display switches to another screen.



RACING TIMER 10.0v
TYPE▶ UP TIMER
ALRM: 8m PRAL: OFF
RST:
00 00 00

DOWN TIMER function

- The DOWN TIMER can be used to count the time between start and stop, etc. (The time remaining is displayed.)
- Start and stop are repeated at each switch operation and the time between each start and stop is counted down and displayed. The start time becomes the alarm set time. (When the count reaches 00 minute 00 second, the down timer operates like an up timer.)
- The first start operation can be linked to the throttle trigger.
- An alarm sound can be set. The passage of time is announced by sounding of a buzzer (beeps) each minute after starting.
 - Alarm: Generates a beep at the set time (minute).
 - Prealarm: Alarm advance announcement sound. Sounding starts the set time (seconds) before the alarm. (beeps)
- After starting, the timer is enabled and can be stopped by switch even when the display switches to another screen.



RACING TIMER 10.0v
TYPE▶ DOWN TIMER
ALRM: 8m PRAL: OFF
RST:
08 00 00

LAP TIMER

LAP TIMER function

- The LAP TIMER can memorize each lap time of each switch operation. (98 laps)
- The race time can be set. Switch operation after the set time by alarm has elapsed automatically stops the timer. Prealarm can also be set. The passage of time is announced by sounding of a buzzer (beeps) each minute after starting.

```
RACING TIMER 10.0v
TYPE: LAP MEMORY
ALRM: 8m PRAL: OFF
RST: LAP= 0
00 m 00 s 00
```

-Alarm: Generates a beep at the set time.

Prealarm: Starts sounding the set time (second) before the alarm. (beeps)

- The first start operation can be linked with the throttle trigger.

(LAP TIMER operation)

- When lap timer is selected, the number of laps (LAP) and the lap memory No. (No.) and current lap time (TIME) are displayed on the setup screen.

- Number of laps (LAP): Counts up each time the switch is pressed after starting. The numbers blink for 3 seconds after the switch was pressed. To prevent erroneous counting, switch operation is not accepted during this period..

- Lap memory No. (No.): Each lap time is memorized in a lap memory. The lap times are written sequentially from the number after the preceding data. After lap memory "No. 100", the lap No. returns to "No. 1".

- The lap time data memorized in the lap memory can be checked at the lap list (See p. 89) screen.

- Lap time (TIME) : During the first 3seconds, the last lap time is displayed and then the current lap time is displayed. At starting, "0" is displayed for 3 seconds.

LAP NAVIGATE timer

LAP NAVIGATE timer function

- This function sounds a buzzer at a fixed interval after the timer starts. Since only the buzzer can be restarted when the switch is pressed during timer operation, this function can be used as the training run, etc. target time. (Lap navigation alarm) The passage of time is announced by sounding of a buzzer (beeps) every minute after starting.

```
RACING TIMER 10.0v
TYPE: LAP NAVIGATE
ALRM: 8m PRAL: OFF
RST: NAUI: 3s00
00 m 00 s 00
```

- The first start operation can be linked with the throttle trigger.

- The alarm sounds (alarm/prealarm) can be set separately from the fixed interval buzzer.

- Alarm: Generates a beep at the set time (minutes).

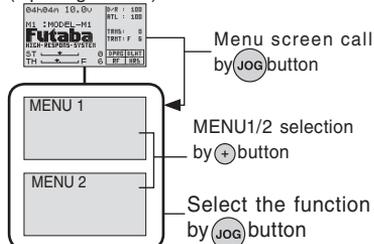
- Prealarm: Alarm advance announcement sound. Sounding starts the set time (seconds) before the alarm. (beeps)

- After starting, the timer is enabled and can be stopped by switch even when the display switches to another screen.

Calling the setup screen

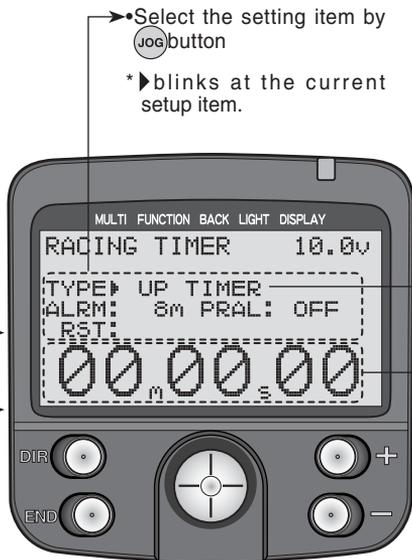
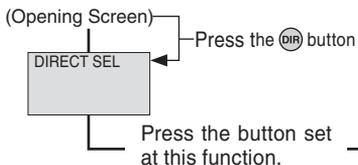
*Calling from menu screen

(Opening Screen)



Press the JOG button

* When the direct call button is set, the setup screen is also called by the following method:



Timer selection

First, select the type of timer at the "TYPE" item. The setup screen varies depending on the type of timer. This figure shows the UP TIMER setup screen.

Time display

Minute display (m)
Second display (s)
1/100 second display

Operation display

While the TIMER function is operating, **TIM** is displayed on the initial screen and menu screen.

Racing timer type selection

(Preparation)

Assign the "LAP START" switch using the function select switch (p.79). When resetting by switch, assign "LAP RESET" also.

1 (Racing timer type selection)

Select the setting item "TYPE" by (JOG) button up, down, left, or right operation. Press the (+) or (-) button and set the racing timer type.

Timer selection (TYPE)	
UP TIMER	: Up timer
DOWN TIMER	: Down timer
LAP MEMORY	: Lap timer
LAP NAVIGATE	: Navigate timer

Setup item selection

- Select by (JOG) button up, down, left or right operation.

Adjustment buttons

- Use the (+) and (-) buttons to make adjustments.

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

- Read the later descriptions for the operation method by type.

Using the up timer

(Preparation)

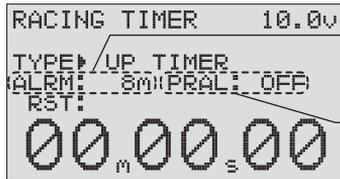
Select the setting item "TYPE" by (JOG) button up or down operation. Press the (+) or (-) button and select "UP TIMER".

1 (Alarm time setting)

Select the setting item "ALRM" by (JOG) button up, down, left, or right operation and set the alarm time with the (+) and (-) buttons.

(Pre alarm time setting)

Select the setting item "PRAL" by (JOG) button up, down, left, or right operation, and set the pre alarm time with the (+) and (-) buttons.



Adjustment buttons

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

Alarm time (ALRM)

OFF, 1 ~ 99 m
Initial value: 8 m

Prealarm time (PRAL)

OFF, 1 ~ 30 s
Initial value: OFF

2 (Timer start/stop operation)

When the switch ("LAP START") assigned by function select switch function is pressed, the timer starts. Stop the timer with the same switch ("LAP START") as start, or with the switch assigned the "LAP RE-SET" function.



Status display

RST :Reset state
RDY :Throttle trigger operation wait
RUN :Timer running
STP :Timer stopped

- Linking only start to the throttle trigger

Select the setting item "RST" by (JOG) button up, down, left, or right operation and press the (+) and (-) buttons simultaneously for about 1 second. When the set beeps and the status display switches from "RST" to blinking "RDY", the system enters the trigger operation ready state. When the trigger is operated at the forward side, the timer starts. (Status display "RUN")

Switches

LAP START :start / stop
LAP RESET :stop / reset

3 (Timer reset operation)

When the switch ("LAP RESET") assigned by function select switch function is pressed, the timer is reset. Select the status display ("RUN", "STP", or "RDY") by (JOG) button up or down operation and press the (+) and (-) buttons simultaneously for about 1 second. The set beeps and the status display changes to "RST" and the timer resets.



Status display

RST :Reset state
RDY :Throttle trigger operation wait
RUN :Timer running
STP :Timer stopped

Using the down timer

(Preparation)

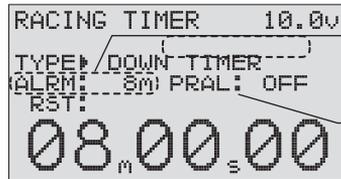
Select the setting item "TYPE" by (JOG) button up or down operation. Press the (+) or (-) button and select "DOWN TIMER".

1 (Alarm time setting)

Select the setting item "ALRM" by (JOG) button up, down, left, or right operation and set the alarm time with the (+) and (-) buttons.

(Pre alarm time setting)

Select the setting item "PRAL" by (JOG) button up, down, left, or right operation, and set the pre alarm time with the (+) and (-) buttons.



Adjustment buttons

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

Alarm time (ALRM)

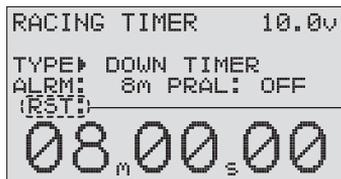
OFF, 1 ~ 99 m
Initial value: 8 m

Prealarm time (PRAL)

OFF, 1 ~ 30 s
Initial value: OFF

2 (Timer start/stop operation)

When the switch ("LAP START") assigned by function select switch function is pressed, the timer starts. Stop the timer with the same switch ("LAP START") as start, or with the switch assigned the "LAP RESET" function.



Status display

RST :Reset state
RDY :Throttle trigger operation wait
RUN :Timer running
STP :Timer stopped

- Linking only start to the throttle trigger

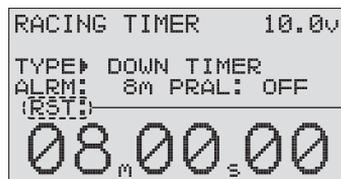
Select the setting item "RST" by (JOG) button up, down, left, or right operation and press the (+) and (-) buttons simultaneously for about 1 second. When the set beeps and the status display switches from "RST" to blinking "RDY", the system enters the trigger operation ready state. When the trigger is operated at the forward side, the timer starts. (Status display "RUN")

Switches

LAP START :start / stop
LAP RESET :stop / reset

3 (Timer reset operation)

When the switch ("LAP RESET") assigned by function select switch function is pressed, the timer is reset. Select the status display ("RUN", "STP", or "RDY") by (JOG) button up or down operation and press the (+) and (-) buttons simultaneously for about 1 second. The set beeps and the status display changes to "RST" and the timer resets.



Status display

RST :Reset state
RDY :Throttle trigger operation wait
RUN :Timer running
STP :Timer stopped

Using the Lap timer timer

(Preparation)

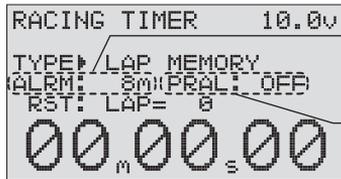
Select the setting item "TYPE" by (JOG) button up or down operation. Press the (+) or (-) button and select "LAP NEMO-
RY".

1 (Alarm time setting)

Select the setting item "ALRM" by (JOG) button up, down, left, or right operation and set the alarm time with the (+) and (-) buttons.

(Pre alarm time setting)

Select the setting item "PRAL" by (JOG) button up, down, left, or right operation, and set the pre alarm time with the (+) and (-) buttons.



Alarm time (ALRM)

OFF, 1 ~ 99 m
Initial value: 8 m

Prealarm time (PRAL)

OFF, 1 ~ 30 s
Initial value: OFF

2 (Timer start/lap count operation)

Perform the start and lap count operations with the switch ("LAP START") assigned by function select switch function.

- Linking only start to the throttle trigger

Select the setting item "RST" by (JOG) button up, down, left, or right operation and press the (+) and (-) buttons simultaneously for about 1 second. The set beeps and the timer display changes from "RST" to blinking "RDY" and the set enters the trigger operation ready state. (Status display "RUN")



Status display

RST :Reset state
RDY :Throttle trigger operation wait
RUN :Timer running
STP :Timer stopped

Switches

LAP START :start / lap count
LAP RESET :stop / reset

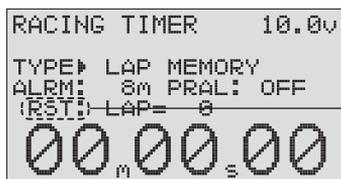
3 (Timer stop/reset operation)

When the lap count switch ("LAP START") is pressed after the time set with "ALRM" has elapsed, the timer stops and the lap time, total time, and average time are memorized.

When the switch ("LAP RE-
SET") is pressed, the timer is reset.

When a switch is not assigned, select the status display ("RUN", "STP", or "RDY") by (JOG) button up or down operation and press the (+) or (-) buttons simultaneously for about 1 second. The set beeps and the timer display changes to "RST" and the timer resets.

- When the timer was stopped with the switch assigned the "LAP RESET" function before the set "ALRM" time has elapsed, the total time and average time are not memorized.



Status display

RST :Reset state
RDY :Throttle trigger operation wait
RUN :Timer running
STP :Timer stopped

Using the navigate timer

(Preparation)

Select the setting item "TYPE" by (JOG) button up or down operation. Press the (+) or (-) button and select "NAVIGATE".

1 (Alarm time setting)

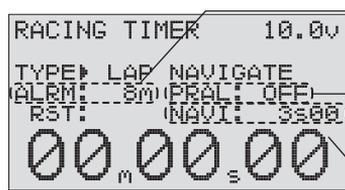
Select the setting item "ALRM" by (JOG) button up, down, left, or right operation and set the alarm time with the (+) and (-) buttons.

(Pre alarm time setting)

Select the setting item "PRAL" by (JOG) button up, down, left, or right operation and set the pre alarm time with the (+) and (-) buttons.

(Lap navigation time setting)

Select the setting item "NAVI" by (JOG) button up, down, left, or right operation and set the lap navigation alarm (target) time with the (+) and (-) buttons.



Adjustment buttons

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

Alarm time (ALRM)

OFF, 1 ~ 99 m
Initial value: 8 m

Prealarm time (PRAL)

OFF, 1 ~ 30 s
Initial value: OFF

Navi alarm time (NAVI)

OFF, 1 ~ 30 s
Initial value: 3 s

2 (Timer start/navigation restart operation)

When the switch ("LAP START") assigned by function select switch function is pressed, the timer starts.

- Linking only start to the throttle trigger

Select the setting item "RST" by (JOG) button up, down, left, or right operation and press the (+) and (-) buttons simultaneously for about 1 second. The set beeps and the status display changes from "RST" to blinking "RDY" and the set enters the trigger operation ready state. When the trigger is operated at the forward side, the timer starts. (Status display "RUN")

- When your own lap time is less than the target time and the lap counts overlap, the lap navigation alarm timing is too big. The alarm timing can be corrected by pressing the switch ("LAP START") during measurement.



Status display

RST :Reset state
RDY :Throttle trigger operation wait
RUN :Timer running
STP :Timer stopped

3 (Timer stop/reset operation)

When the switch ("LAP RESET") assigned by function select switch function is pressed, the timer stops. Reset the timer by pressing the "LAP RESET" switch.

When a switch is not assigned, select the status display ("RUN" or "RDY") by (JOG) button up or down operation and press the (+) and (-) buttons simultaneously for about 1 second. The set beeps and the timer resets. (Does not pause)



Status display

RST :Reset state
RDY :Throttle trigger operation wait
RUN :Timer running
STP :Timer stopped

Switches

LAP START :start/navi restart
LAP RESET :stop/reset

Lap List "LAP-L"

Call LAP-LIST when checking the lap memory data (each lap time) memorized by lap timer (page 87) operation.

- After the lap timer is started, the lap time is sequentially memorized at each switch operation.

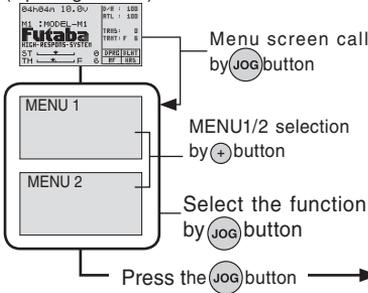
When set time of ALRM passes and the timer is stopped, the last lap is memorized and the total time is automatically written after the last lap and the average lap is automatically written after that.

-The next Lap-Timer starts at the lap memory number following the average lap (AVE).

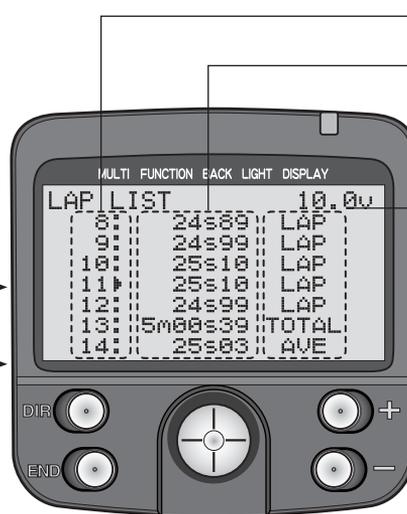
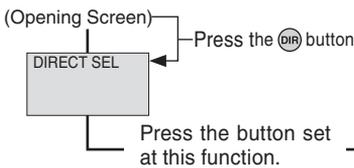
Calling the setup screen

*Calling from menu screen

(Opening Screen)



* When the direct call button is set, the setup screen is also called by the following method:



Lap memory No. display

Lap time display

In addition to the lap time, the total time and average lap time are memorized in the lap memory after the last lap time.

"LAP" represents the lap time, "TOTAL" represents the total time, and "AVE" represents the average lap.

Using the lap memory

1 (Lap memory check)

The cursor can be scrolled and each lap time checked by (JOG) button up or down operation.

2 (Lap memory reset)

Select the lap memory No. by (JOG) button up or down operation and press the (+) and (-) buttons simultaneously for about 1 second. The set beeps and the lap memory of the selected lap memory No. resets.

(Resetting all the lap memory data)

While pressing the (JOG) button, press the (+) and (-) buttons simultaneously for about 1 second. The set beeps and all the data resets.

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Model Selection "M-SEL"

Use this function to call a new model # or an existing model # to set new model data.

The T3PKS transmitter can store the model data for 20 R/C cars. The CAMPac-16K (option) can store the model data for 10 more models.

The model numbers are "M1" to "M20" at the transmitter and "E21" to "E30" at the CAMPac-16K. When the CAMPac-16K is not installed, "E21" to "E30" are not displayed.

Calling model memories of different modes (HRS, PCM, or PPM mode)

After a model memory was called, signals are output in the mode before the model memory was called until the transmitter power is turned off. Use the transmitter after turning the power off and then back on.

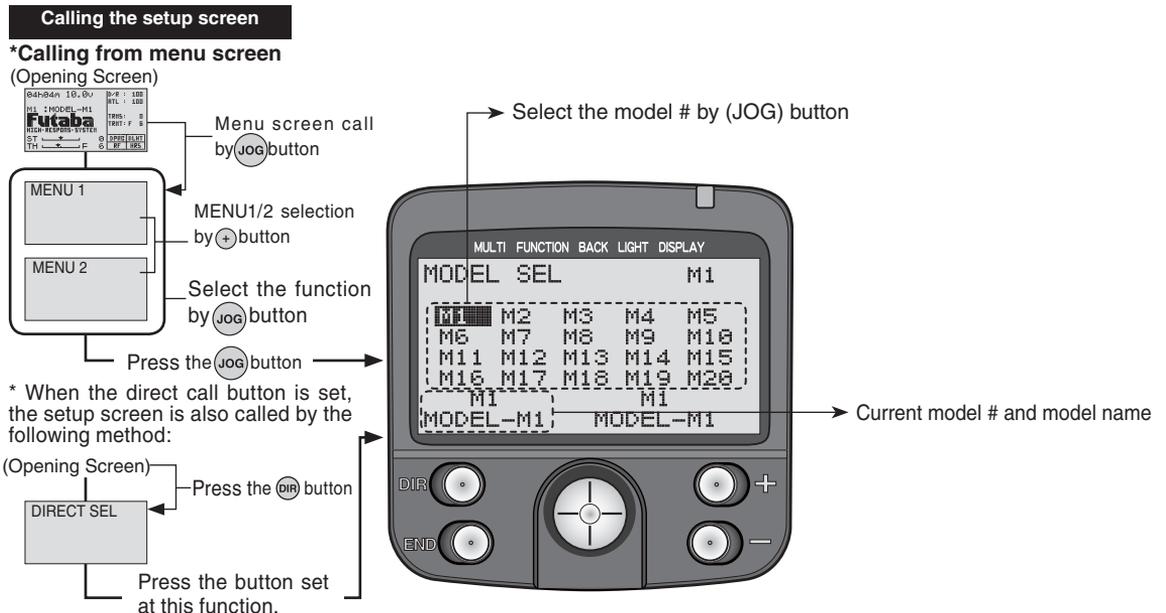
CAMPac-16K (option)

When using the CAMPac-16K, operation must be initialized so that the CAMPac-16K can be used with this transmitter. When "INITIALIZE?" appears on the screen at powering ON, press the (+) button. This automatically initializes operation. This action is unnecessary thereafter.

Inserting and removing the DataPac

Insert and remove the CAMPac-16K with the transmitter power turned off. If the power is turned off and the DataPac is removed when a CAMPac-16K model number (E21 to E30) was selected and the power is turned back on while the CAMPac-16K is removed and any button is pressed after "SELECT ERROR" is displayed, model number M1 is forcefully selected.

Function



Using the model selection function

1 (Model No. selection)

Select the model No. by (JOG) button up, down, left, or right operation. The DataPac models are displayed from the cursor position of "M1" to "M5" on the top row of the transmitter model by (JOG) button up operation or from the cursor position of "M16" to "M20" on the bottom row of the transmitter model by (JOG) button down operation.

The same operation is performed when the transmitter model is displayed from the DataPac model.

```

MODEL SEL      (DPAC) M1
M1 M2 M3 M4 M5
M6 M7 M8 M9 M10
M11 M12 M13 M14 M15
M16 M17 M18 M19 M20
M1 M2 M3
MODEL-M1 (MODEL-M3)
    
```

Displays "DPAC" when the CAMPac-16K is installed in the transmitter.

Model # and model name currently operating

Model # and model name to be modified

```

MODEL SEL      DPAC M1
E21 E22 E23 E24 E25
E26 E27 E28 E29 E30

M1 M21
MODEL-M1 MODEL-M21
    
```

(Screen displaying the DataPac models)

Model No.

M1~M20 :Model memory in the Transmitter

E21~E30 :Model memory in the CAMPac-16K

Model selection button

- Select the model by (JOG) button up, down, left, or right operation.

- The model No. and model name of the model to be modified are displayed at the bottom right-hand side of the screen.

2 (Model selection execution)

Press the (+) and (-) keys simultaneously for about 1 second. The set beeps and the model is selected.

```

MODEL SEL      DPAC M3
M1 M2 M3 M4 M5
M6 M7 M8 M9 M10
M11 M12 M13 M14 M15
M16 M17 M18 M19 M20
M3 M3
MODEL-M3 MODEL-M3
    
```

Modified model # and model name

Model selection set button

- (+) and (-) buttons pressed simultaneously for about 1 second.

- When the model # and model name at the bottom left-hand side of the screen change, model selection is complete.

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

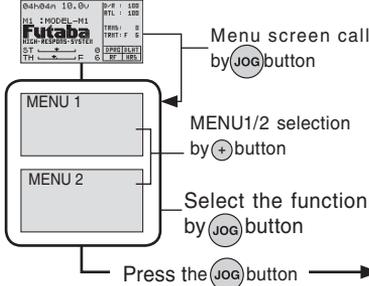
Model Name "NAME"

This function allows you to assign a ten character name to each model memory and an user name (ten character).

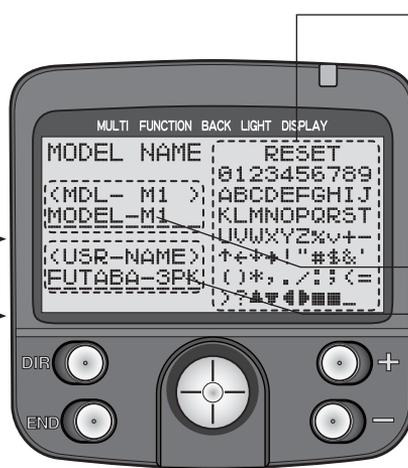
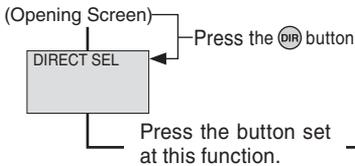
Calling the setup screen

*Calling from menu screen

(Opening Screen)



* When the direct call button is set, the setup screen is also called by the following method:



Select the character with the (JOG) button. The selected character blinks.

User name

Model name

*The character at the blinking cursor position can be changed. The model name and user name can both use up to 10 characters.

When a character is entered by pressing the (JOG) button, the model name and user name cursors move to the right.

Setting the model name and user name

1 (Moving the cursor to the character you want to change)
Move the cursor to the model name or user name character you want to set or change by pressing the (+) or (-) button. The selected character blinks.

2 (Selecting the character to be used)
Select the character to be used from the character list at the right-hand side of the screen by (JOG) button up, down, left, or right operation. The selected character blinks. After selecting the character to be used, press the (JOG) button. The character is entered and the model name or user name character row moves to the right.

When "RESET" on the top row of the character list is selected and the (JOG) button is pressed, the model name or user name is initialized to the factory setting.

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Character select/set button

- Select the character by (JOG) button up, down, left, or right operation and enter the character by pressing the (JOG) button.

Initialization
Model name :MODEL-M(No)
User name :FUTABA-3PK

Model Copy "M-COP"

This function calls the contents of one model memory to another model memory.

Single mode (SINGLE) and group mode (GROUP)

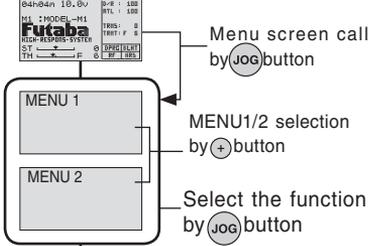
Single mode copies data to another model in model units.

Group mode makes the data of model memories M1 to M10 and M11 to M20, and DataPac model memories E21 to E30 individual groups and copies the data from group to group. For example, this function is convenient when copying the data of T3PKS transmitter model memories M1 to M10 to DataPac model memories E21 to E30 in a batch.

Calling the setup screen

*Calling from menu screen

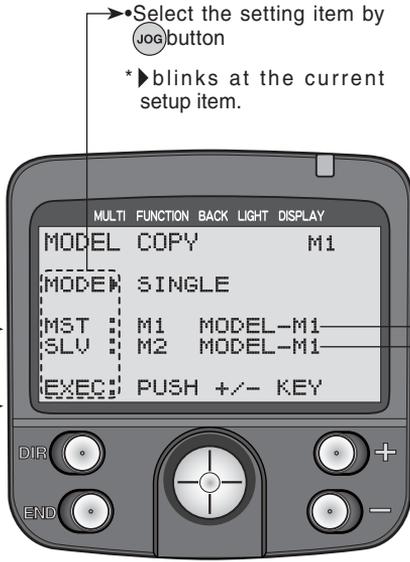
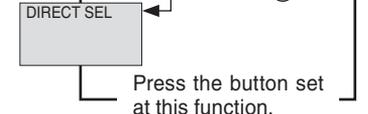
(Opening Screen)



Press the JOG button

* When the direct call button is set, the setup screen is also called by the following method:

(Opening Screen)

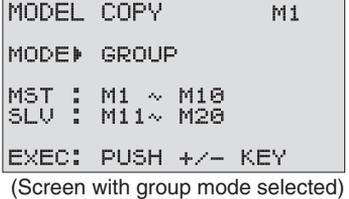


Select the setting item by JOG button

* blinks at the current setup item.

Current model # and model name

Copy destination model # and model name



Model copying

(Preparation)

Select the setting item "MODE" by (JOG) button up or down operation and select "SINGLE" or "GROUP" by pressing the (+) or (-) button.

1 (Copy source model No. selection)

Select the setting item "MST" by (JOG) button up or down operation. Press the (+) or (-) button and select the model #.

2 (Copy destination model No. selection)

Select the setting item "SLV" by (JOG) button up or down operation. Press the (+) or (-) button and select the model #.

- For the model currently in use (including group), "NOT POSSIBLE" blinks at the bottom of the screen to alert the operator that the model cannot be copied.

3 (Copy execution)

Select the setting item "EXEC" by (JOG) button up or down operation. Press the (+) and (-) buttons simultaneously for 1 second. When "COMPLETE!" blinks at the bottom of the screen, copying is complete.

4 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Setup item selection

- Select by (JOG) button up or down operation.

Model number selection

- Use the (+) and (-) buttons to make adjustments.

Model No.

M1~M20 :Model memory in the Transmitter
E21~E30 :Model memory in the CAMPac-16K

Copy execution button

- (+) and (-) buttons pressed simultaneously for about 1 second.

Model Reset "M-RES"

This function resets the contents of the currently called model memory.

The reset method can be selected from among the 3 types described below. These resets do not initialize the adjuster function (ADJST), system function (SYSTM), lap reset (LAP-L), user name (NAME), and modulation (HRS/PCM/PPM) selection function (P-MOD).

DATA RESET

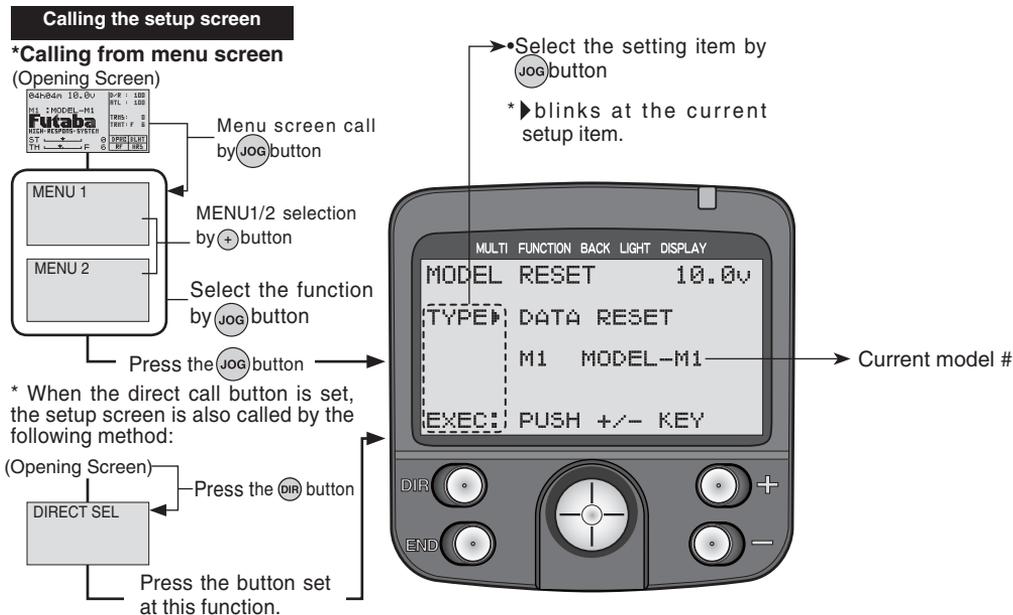
Initializes only the function setting data. The menu function and direct selection function are not initialized.

MENU RESET

Initializes the menu function and direct selection function. Other settings are not initialized.

ALL RESET

Initializes the menu function, direct selection function, and the setting data of each function.



Model Reset

Select the setting item "TYPE" by (JOG) button up or down operation and press the (+) or (-) button and select the reset type from among "DATA RESET", "MENU RESET", and "ALL RESET".

1 (Reset execution)

Select the setting item "EXEC" by (JOG) button up or down operation.

Press the (+) and (-) buttons simultaneously for 1 second.

When "COMPLETE!" blinks at the bottom of the screen, memory resetting is complete.

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Setup item selection

- Select by (JOG) button up or down operation.

Reset type selection

- Use the (+) and (-) buttons to make adjustments.

Type (TYPE)

DATA RESET
MENU RESET
ALL RESET

Reset execution button

- (+) and (-) buttons pressed simultaneously for about 1 second.

Menu Type Selection "MENU-T"

The function selection menu matched to the level of use can be selected from among the 4 types shown below. (The menu type can be set for each model.)

LEVEL1				LEVEL2				BIGCAR				LEVEL3			
MENU 1 OFF				MENU 1 OFF				MENU 1 OFF				MENU 1 2			
EPA	P-MOD	SYSTEM		STEXP	EPA	SYSTEM		BRAKE	SUBTR	SYSTEM		STEXP	EPA	TIMER	
REV	F/S	*M-SEL		THEXP	SUBTR	NAME		A.B.S	REV	NAME		STSPD	ACCEL	LAP-L	
SUBTR	NAME	*M-RES	*MENU-T	IDLUP	REV	*M-SEL		EPA	P-MOD	*M-RES		THEXP	START	BOAT	
				A.B.S	P-MOD	*M-RES		STEXP	F/S	*M-RES		THSPD	IDLUP	*M-SEL	
				BOAT	F/S	*MENU-T		THEXP		*MENU-T		BRAKE	PMIX1	*M-RES	
												A.B.S	PMIX2	*MENU-T	
MENU 2 OFF				MENU 2 OFF				MENU 2 OFF				MENU 2 16			
STEXP	DIAL	MCSET		STSPD	DIAL	DCALL		STSPD	DIAL	DCALL		SUBTR	DIAL	SYSTEM	
THEXP	SWTCH	ADJST		THSPD	SWTCH	MCSET		THSPD	SWTCH	SERVO		REV	SWTCH	DCALL	
A.B.S	BOAT	THMOD		ACCEL	TIMER	ADJST		ACCEL	PMIX1	ADJST		M-COP	D/R	MCSET	
M-COP	DCALL	VIBRA		START	LAP-L	THMOD		IDLUP	PMIX2	THMOD		NAME	ATL	ADJST	
				M-COP	SERVO	VIBRA		M-COP		VIBRA		P-MOD	CH3	THMOD	
												F/S	SERVO	VIBRA	

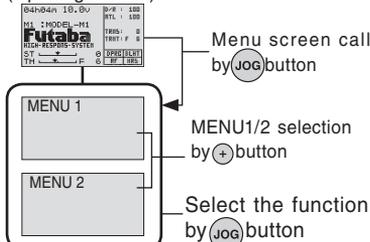
Caution when lowering the level

The set value of the functions removed from the menu when the level was lowered remains effective thereafter. Before lowering the level, turn off the unused functions, and when there is rate adjustment, etc. related to other functions, check the set values.

Calling the setup screen

*Calling from menu screen

(Opening Screen)



Press the JOG button

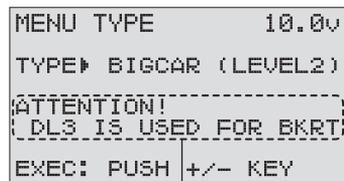
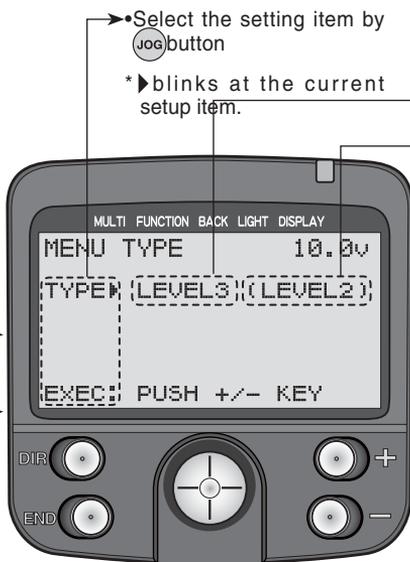
* When the direct call button is set, the setup screen is also called by the following method:

(Opening Screen)

Press the DIR button

DIRECT SEL

Press the button set at this function.



When "BIGCAR" is selected, brake mixing function (p.70 CH3 brake rate (BKRT) adjustment is automatically assigned to dial DL3. Brake mixing function ON is set with the brake mixing function. DL3 assignment remains unchanged even if the type is changed.

Type selection

1 (Menu type selection)

Select the setting item "TYPE" by (JOG) button up or down operation. Select the menu type with the (+) or (-) button.

2 (Menu type change)

Select the setting item "EXEC" by (JOG) button up or down operation. Press the (+) and (-) buttons simultaneously for 1 second. When the screen display changes, the change is complete.

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Type (TYPE)

LEVEL1, LEVEL2, BIGCAR, LEVEL3

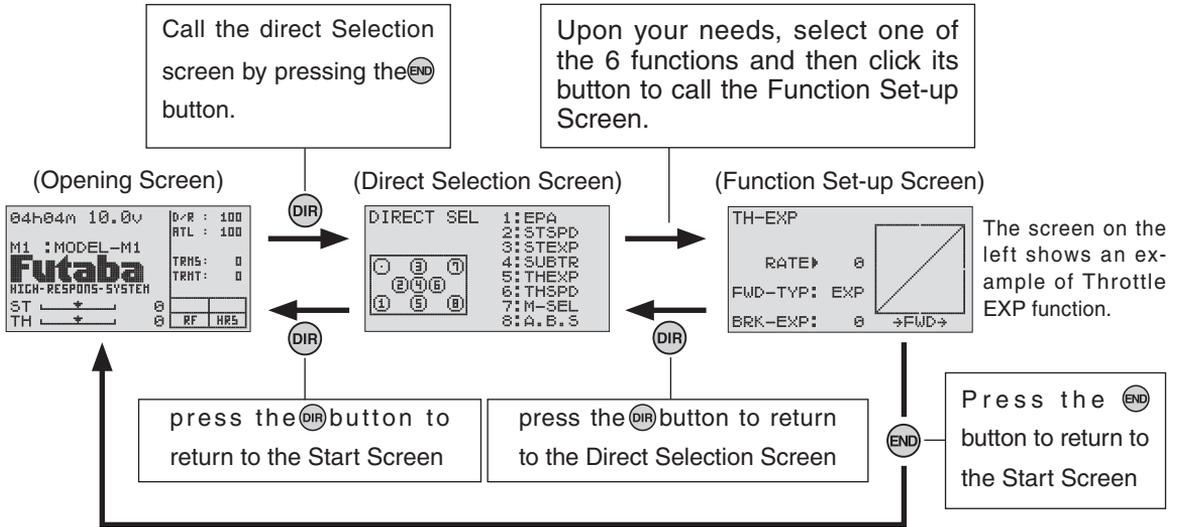
Type change button

- (+) and (-) buttons pressed simultaneously for about 1 second.

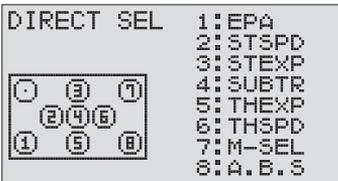
Direct Call Selection Button "DCALL"

The function setup screen can be called from the menu screen or quickly called by using this direct call method. Adjustment can be made quickly by setting frequently used functions at direct call.

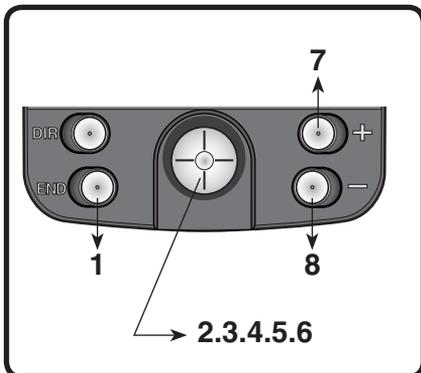
- Functions can be freely assigned to buttons 1~8 of the screen shown below.
- In the initial screen state, after the (DIR) button being pressed, the setup screen is called by simply pressing the assigned button.



INITIAL SETTING



Function

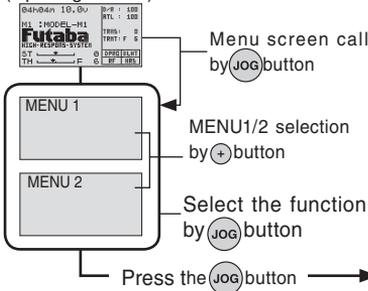


Direct No	Button	Function abbreviation	Function
1.	END Press	EPA	Chanel End Point Adjuster
2.	← JOG	STSPD	Steering Speed
3.	↑ JOG	STEXP	Steering EXP
4.	JOG Press	SUBTR	Subtrim
5.	↓ JOG	THEXP	Throttle EXP
6.	JOG →	THSPD	Throttle Speed
7.	+ Press	M-SEL	Model Select
8.	- Press	A.B.S	A.B.S

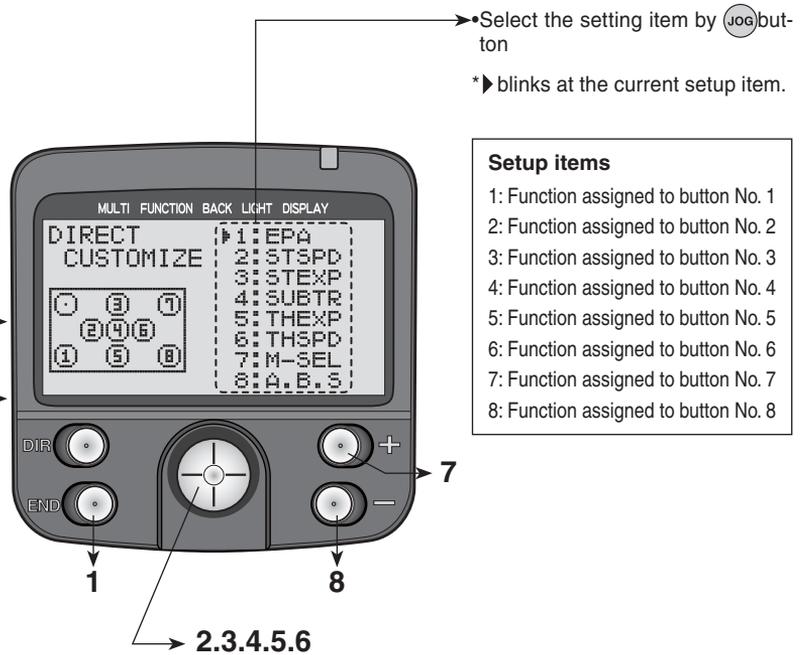
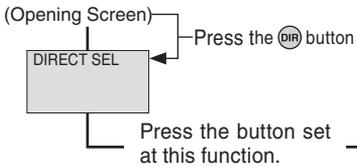
Calling the setup screen

*Calling from menu screen

(Opening Screen)



* When the direct call button is set, the setup screen is also called by the following method:



Direct selection function assignment

1 (Direct button selection)

Select the setting item (direct button No.1~8) by (JOG) button up or down operation.

2 (Assignment function selection)

Select the assignment function by pressing the (+) or (-) button.

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Direct button selection

- Select by (JOG) button up or down operation.

Function setting button

- Set with the (+) and (-) buttons.
- Press the (+) and (-) buttons simultaneously. Function assignment returns to the initial value in about 1 second.

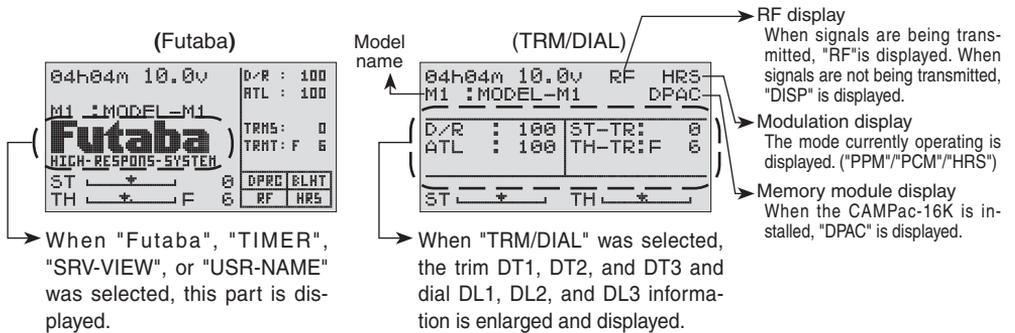
The setup screen of this function is called by pressing the (DIR) button for 3 seconds or longer from the initial screen. However, when the setup screen was called by this method, return to the initial screen by pressing the (END) button and (DIR) button one time each, in that order.

System Functions "SYSTEM"

The graphic liquid crystal screen display mode, buzzer sound, LED display mode and initial screen display mode can be set.

The system function setup items cannot be set for each model.

- Liquid crystal screen backlighting display mode setup (OFF, ON at button operation, normally ON)
- Setting of ON time (1~30 secs) when [ON at button operation] was selected above.
- Liquid crystal screen contrast adjustment (20 steps)
- Buzzer sound tone adjustment (OFF, 100 steps)
- LED display color setup (OFF, 7 colors)
- Initial screen display mode setting ("Futaba" display, timer display, servo display, Users name, trim/dial)

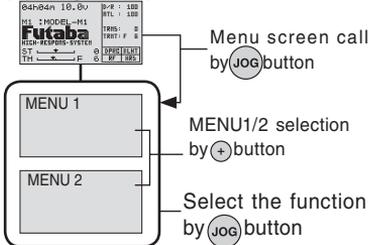


- The power off forgotten alarm setting (OFF, 10 m)

Calling the setup screen

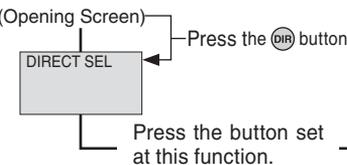
*Calling from menu screen

(Opening Screen)



Press the JOG button

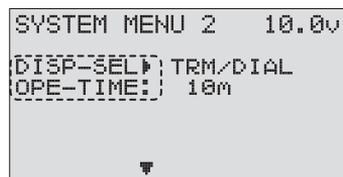
* When the direct call button is set, the setup screen is also called by the following method:



Function

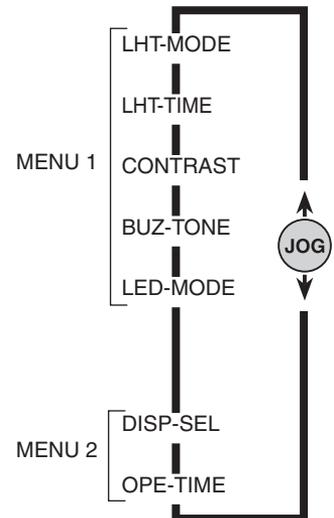
Select the setting item by JOG button

* blinks at the current setup item.



Setup items

- LHT-MODE : Backlighting mode
- LHT-TIME : Backlighting time
- CONTRAST : Contrast
- BUZ-TONE : Buzzer tone
- LED-MODE : LED color
- DISP-SEL : Initial screen mode
- OPE-TIME : Power off forgotten alarm



Setting item selection

The items move in the order shown in the figure above.

1 (Setting the liquid crystal backlighting mode)

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

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

(Setting liquid crystal backlighting time)

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

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

(Adjusting the liquid crystal contrast)

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

- Adjust to an easy-to-see contrast.

(Adjusting the buzzer tone)

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

- Decide by referring to the tone at adjustment.

(Changing the LED display color)

Select the setting item "LED-MODE" by (JOG) button up or down operation, and use the (+) and (-) buttons to select the color.

- Select your favorite color while viewing the LED color.

(Changing the initial screen display mode)

Select the setting item "DISP-SEL" by (JOG) button up or down operation, and use the (+) and (-) buttons to select the display mode.

- "Futaba" : "Futaba" logo is displayed on the initial screen.
- "TIMER" : Timer screen is displayed on the initial screen.
- "SRV-VIEW" : Servo operation graph is displayed on the initial screen.
- "USR-NAME" : User name
- "TRM/DIAL" : The trim and dial information is enlarged and displayed on the initial screen.

(Changing the power off forgotten alarm setting)

Select the setting item "OPE-TIME" by (JOG) button up or down operation, and use the (+) and (-) buttons to select the 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

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjustment buttons

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

Backlight mode (LHT-MODE)

KEY-ON, ALWAYS, OFF

Backlighting time (LHT-TIME)

1~30
Initial value: 10

Contrast (CONTRAST)

-10~0~+10
Initial value: 0

Buzzer tone (BUZ-TONE)

OFF, 1~75~100
Initial value: 75

LED color (LED-MODE)

(OFF), BLUE, RED, PURPLE, GREEN, SKY BULUE, ORANGE, PINK
After reset :ORANGE
Initialization :PURPLE

Initial screen mode (DISP-MODE)

Futaba, TIMER, SRV-VIEW, USR-NAME, TRM/DIAL

The power off forgotten alarm (OPE-TIME)

10m, OFF

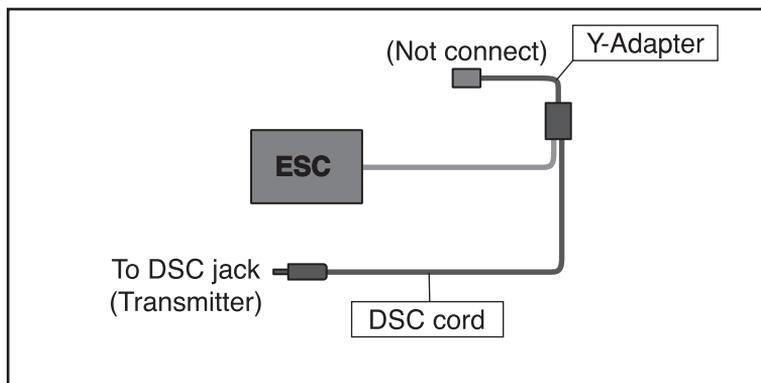
HRS ESC Setup "MCSET"

This function is used only when using an ESC like that shown below with a high response system (HRS System). This function is not used when using a Futaba ESC.

The frame rate of the transmitter output signal at setup may be counted and the setup mode forcefully ended after a fixed time has elapsed, depending on the commercially available ECS. If such an ECS is used with the high response system, the setup time will be substantially shortened and ECS setup may become difficult. When you have an FM receiver or PCM receive, only amp setup is possible in the PPM or PCM mode.

When using this function to make adjustments, the ECS must be directly connected to the transmitter. Also, the following connection cords are necessary.

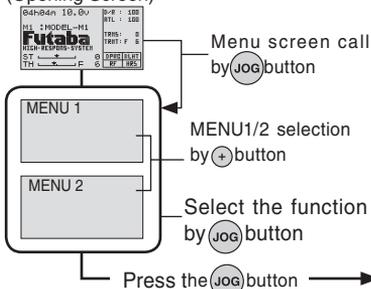
- Two-way cord (Must be bought separately.)
- DSC cord (Supplied with set.)



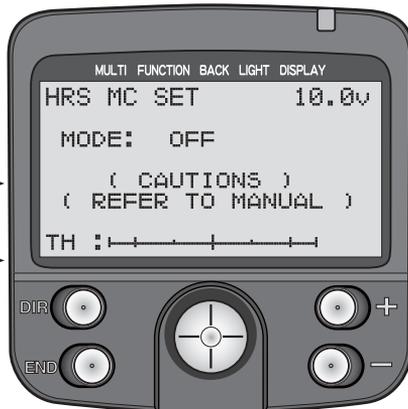
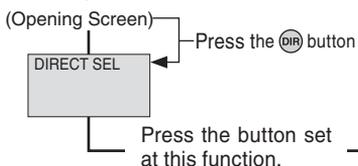
This screen does not appear except when the DSC cord is connected or set to ON by display switch.

Calling the setup screen

***Calling from menu screen**
(Opening Screen)



* When the direct call button is set, the setup screen is also called by the following method:



ESC adjustment

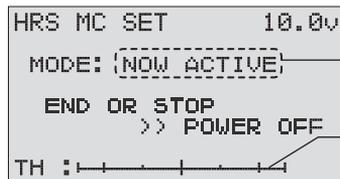
1 (Transmitter and ESC connection)

Connect the transmitter and ESC in accordance with the connection diagram on the preceding page.

2 (ESC setup)

Press the (+) and (-) buttons simultaneously for at least 1 second.

- "NOW ACTIVE" appears on the screen, and a special signal for ESC adjustment is output from the transmitter DSC terminal. In this state, the ESC can be adjusted.



At setup, "NOW ACTIVE" blinks and a signal is output in the setup mode.

A bar graph linked with throttle operation is displayed

Execute ESC setup in accordance with the instruction manual supplied with the ESC.

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

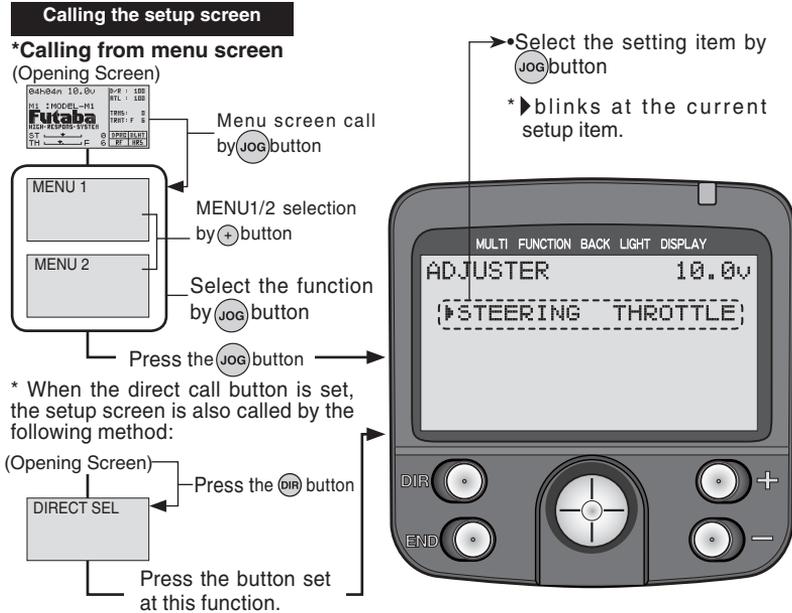
If the power switch is not turned off, this setup ESC mode cannot be reset. If returned to the initial screen in this setup mode, a blinking message like that shown below will appear.

CUTION!
NOW MOD OFF

Adjuster "ADJST"

Steering and throttle correction can be applied. Use this function when a mechanical off-set has occurred for some reason.

However, when correction was executed, it may be necessary to recheck the set values of all the setup functions.



Steering adjustment

(Preparation)

In the steering side selected state, select the adjustment screen by pressing the (JOG) button.

1 (Steering neutral adjustment)

In the neutral setup screen (figure at the right) state, lightly pull the steering wheel and then press the (JOG) button in the state in which the wheel is not being touched.

```
ADJUSTER 10.0v
STEERING
▶NEUTRAL ( 6%)
```

2 (Steering throw adjustment)

In the throw setup screen (figure at the right) state, lightly turn the wheel fully to the left and right and press the (JOG) button.

```
ADJUSTER 10.0v
STEERING
NEUTRAL ( 6%)
▶RIGHT (126%)
▶LEFT (122%)
```

3 (Correction execution)

At the check screen, and press the (+) and (-) buttons simultaneously.

```
ADJUSTER 10.0v
STEERING
NEUTRAL ( 6%)
RIGHT (126%)
LEFT (122%)
▶EXECUTE? >PUSH +/-
(CANCEL >PUSH END)
```

Internal checks are performed automatically and when each adjustment point is in a fixed range, correction is performed and "SUCCESSFUL!" (figure at the right) is displayed.

If an adjustment point is not within a fixed range, an error is displayed (figure at the right) and the correction data is not updated.

- 4 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

```

ADJUSTER          10.0v
STEERING

NEUTRAL (  5%) OK
RIGHT  (125%) OK
LEFT   (122%) OK

SUCCESSFUL!
    
```

```

ADJUSTER          10.0v
STEERING

NEUTRAL (  5%) OK
RIGHT  (125%) OK
LEFT   ( 32%) ERR

FAIL! (NOT CHANGED)
    
```

Throttle adjustment

(Preparation)

In the state in which the throttle side is selected, select the adjustment screen by pressing the (SEL) button.

- 1 (Throttle neutral adjustment)

In the neutral setup screen (figure at the right) state, lightly pull the throttle trigger and then press the (JOG) button in the state in which the trigger is not being touched.

```

ADJUSTER          10.0v
THROTTLE

▶NEUTRAL (  2%)
    
```

- 2 (Throttle throw adjustment)

In the throw setup screen (figure at the right) state, lightly operate the trigger fully to the brake side and forward side and press the (JOG) button.

```

ADJUSTER          10.0v
THROTTLE

NEUTRAL (  2%)
▶BRAKE  ( 95%)
▶FORWARD (122%)
    
```

- 3 (Correction execution)

At the check screen (figure at the right), and press the (+) and (-) buttons simultaneously. Internal checks are performed automatically, and when each adjustment point is within a fixed range, correction is performed and "SUCCESSFUL!" (figure at the right) is displayed.

If an adjustment point is not within a fixed range, an error is displayed (figure at the right) and the correction data are not updated.

```

ADJUSTER          10.0v
THROTTLE

NEUTRAL (  2%)
BRAKE   ( 95%)
FORWARD (122%)
▶EXECUTE? >PUSH +/-
          (CANCEL >PUSH END)
    
```

```

ADJUSTER          10.0v
THROTTLE

NEUTRAL (  2%) OK
BRAKE   ( 95%) OK
FORWARD (122%) OK

SUCCESSFUL!
    
```

- 4 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

```

ADJUSTER          10.0v
THROTTLE

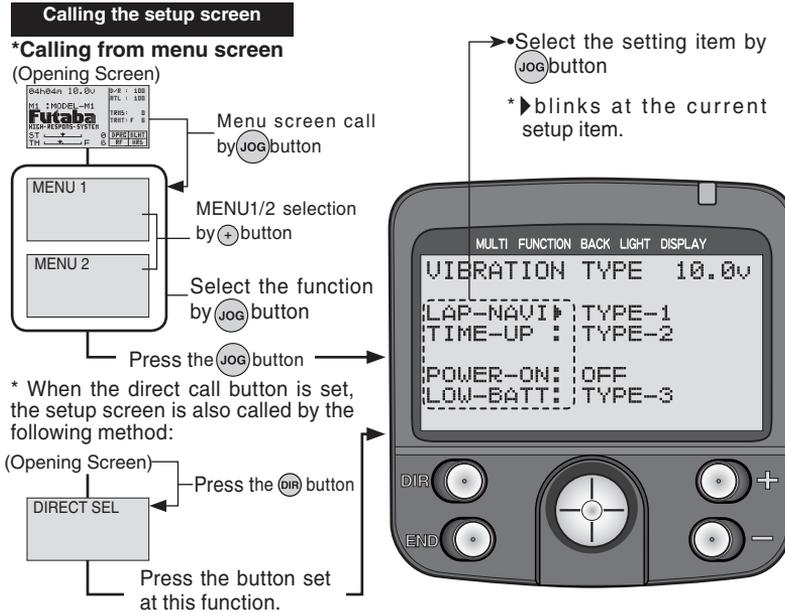
NEUTRAL (  2%) OK
BRAKE   ( 95%) OK
FORWARD ( 32%) ERR

FAIL! (NOT CHANGED)
    
```

Vibrator Function "VIBRA"

The vibrator built into the grip can be activated at lap navigation navigate alarm (p.88), each racing timer time up, powering ON, and low battery alarm.

The vibrator operation pattern can be selected from among 7 types



Setup items

LAP-NAVI :Navigation alarm
TIME-UP :Timer time up
POWER-ON :At power on
LOW-BATT :Low battery

Setup item selection

- Select by (JOG) button up or down operation.

Adjustment buttons

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

Vibrator setup

1 (Setting vibrator to navigation alarm)

Select the setting item "LAP-NAVI" by (JOG) button up or down operation and select the type by pressing the (+) or (-) button.

(Setting vibrator to timer time up)

Select the setting item "TIME-UP" by (JOG) button up or down operation and select the type by pressing the (+) or (-) button.

(Setting vibrator to at power ON)

Select the setting item "POWER-ON" by (JOG) button up or down operation and select the type by pressing the (+) or (-) button.

(Setting vibrator low battery alarm)

Select the setting item "LOW-BATT" by (JOG) button up or down operation and select the type by pressing the (+) or (-) button.

Navigation alarm (LAP-NAVI)

OFF, TYPE-1~TYPE-7
Initialization :TYPE-1

Timer time up (TIME-UP)

OFF, TYPE-1~TYPE-7
Initialization :TYPE-2

At power on (POWER-ON)

OFF, TYPE-1~TYPE-7
Initialization :OFF

Low battery (LOW-BATT)

OFF, TYPE-1~TYPE-7
Initialization :TYPE-3

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Steering Dual Rate/Second Dual Rate "D/R"(Steering system)

- Dual rate

The steering left and right servo travels are adjusted simultaneously. When you want to increase the servo travel, adjust the + side. When you want to decrease the servo travel, adjust the - side. This setting is linked to transmitter grip dial DL1. When DL1 is assigned another function, dual rate can be adjusted with this screen.

- Second dual rate

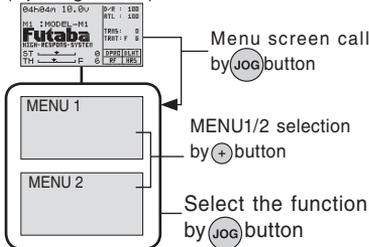
This function is convenient when facing a fence due to a crash, etc. Dual rate and second dual rate servo travel switching is performed by switch.

When using the second dual rate, the changeover switch must be selected with the function select switch function. (P.79)

Calling the setup screen

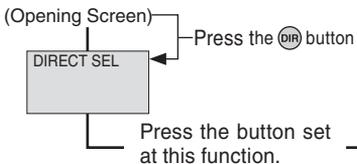
*Calling from menu screen

(Opening Screen)



Press the (JOG) button

* When the direct call button is set, the setup screen is also called by the following method:

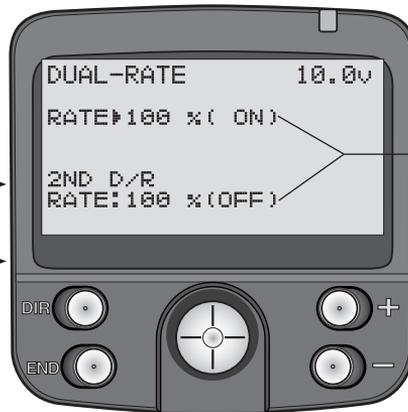


•Select the setting item by (JOG) button

*blinks at the current setup item.

Setup Item

- RATE :Rate setting (D/R)
- 2ND D/R
- RATE :Rate setting (2nd D/R)



ON/OFF display. Linked with 2nd dual rate switch.

Setup item selection

- Select by (JOG) button up or down operation.

Dual rate adjustment

When using the 2nd dual rate function, use the function select switch function (p.79) to assign the switch in advance.

1 (Dual rate adjustment)

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

This dual rate servo travel is linked to the grip dial.

2 (2nd dual rate adjustment)

Select the setting item "2ND D/R RATE" by (JOG) button up or down operation and adjust the servo travel with the (+) and (-) buttons.

When the switch is switched, the ON/OFF display at the right-hand side of the rate display changes. The "ON" display indicates the currently operating servo travel.

3 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjustment buttons

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

D/R rate (RATE)

0~100%
Initial value: 100

2ND D/R rate (2ND D/R RATE)

0~100%
Initial value: 100

Throttle ATL Function "ATL"

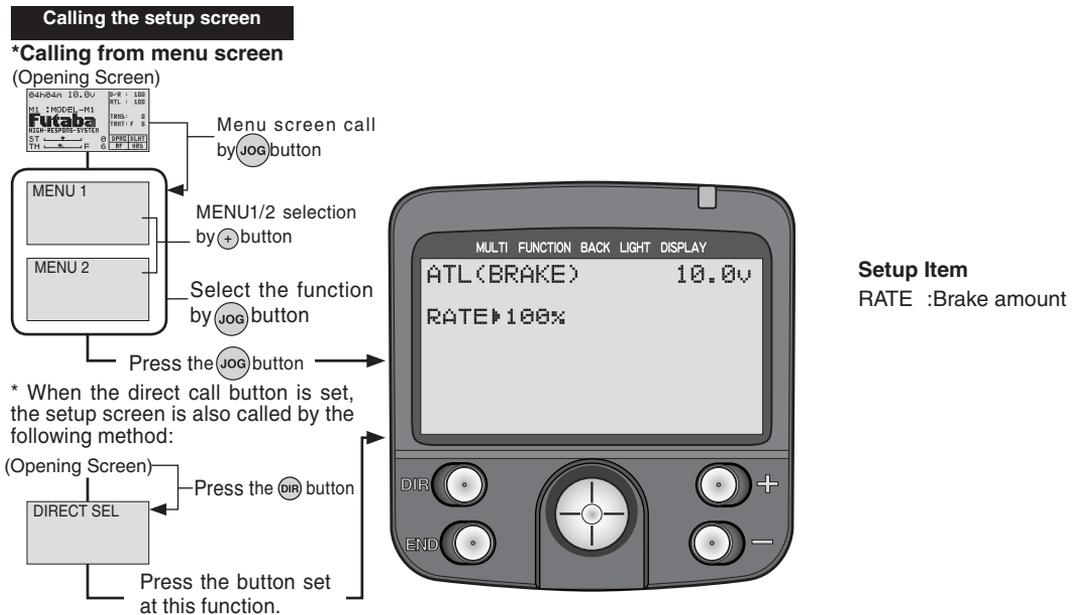
(Throttle system)

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 dial DL2. When DL2 is assigned another function, this function can be set with this screen.

Operation

The throttle brake side (when the throttle is pushed forward) brake amount can be adjusted.



Function

ATL function adjustment

1 (Brake amount adjustment)

Use the (+) and (-) buttons to adjust the brake amount.

Adjust the - side when the braking effect is strong and the + side when the braking effect is weak.

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjustment buttons

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

Brake amount (RATE)

0~100%
Initial value: 100%

Channel 3 position "CH3"

(3rd channel system)

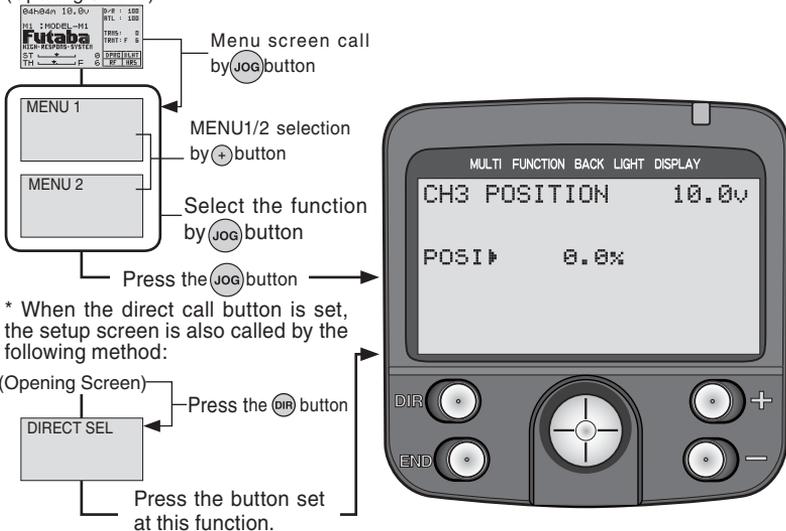
The channel 3 servo position can be set from the transmitter. When CH3 is assigned to a dial by the dial function (p.80), this setting is linked to that dial.

When CH3 is not assigned to a dial, it can be set with this screen.

Calling the setup screen

*Calling from menu screen

(Opening Screen)



Setup Item

RATE :Channel 3 position

Channel 3 adjustment

1 (Position adjustment)

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

2 When ending setting, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Adjustment buttons

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

Channel 3 position (POS1)

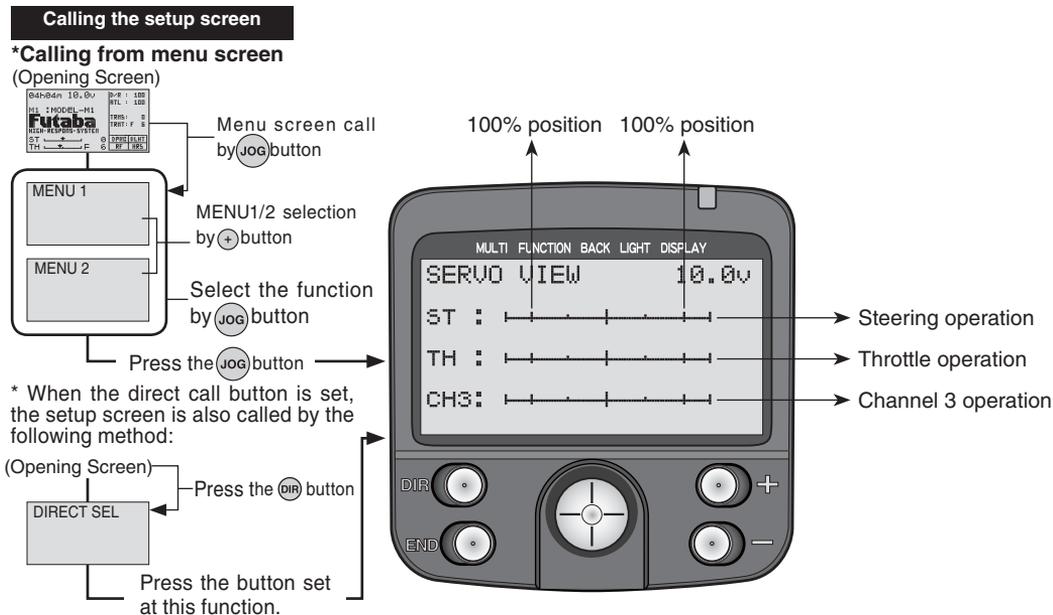
0~100%

Initial value: 100%

Servo View "SERVO"

Servo operation of each channel can be checked. Operation of the steering angle adjustment, when a mixing function was set, etc. can be easily checked. The servo view can also be displayed on the initial screen by using the system function (See page 98).

The neutral position of the throttle channel varies depending on the modes defined by the "THR-MODE". The screen shown below shows an example of "F50/B50" in the "NORMAL" mode.



Ending the "SERVO" screen

- 1 When ending servo operation checks, return to the initial screen by pressing the (END) button twice (for direct selection, press the (END) button once).

Ratings

*Specifications and ratings are subject to change without prior notice.

Transmitter T3PKS

- (Wheel system, 3 channels)
- Transmitting frequencies 27, 29, 40, 41 or 75MHz band (TZ-FM or PK-FMS RF module used)
 - Modulation FM (HRS/PCM/PPM switching possible)
 - Power requirement (Ni-cad battery)
NT8F700B Ni-cad battery (9.6V)
(Dry cell battery)
Penlight x 8 (12V)
 - Current drain 250mA or less (Vibration and back lighting :off)

Receiver R113iP

- (3 channels, PCM receiver)
- Receiving frequencies 27, 29, 40, 41 or 75MHz band
 - Intermediate frequency 455kHz
 - Power requirement 4.8V or 6V (shared with servos)
 - Current drain 18mA
 - Size 42.7x28.7x16.0mm (1.69x1.13x0.63in)
 - Weight 21g (0.74oz)

Receiver R203HF

- (3 channels, HRS receiver)
- Receiving frequencies 27, 29, 40, 41 or 75MHz band
 - Intermediate frequency 455kHz
 - Power requirement 6.0V (shared with servos)
 - Current drain 14mA
 - Size 25.6x37.7x14.3mm (1.01x1.48x0.56in)
 - Weight 17g (0.6oz)

Receiver R303FHS

- (3 channels, PPM/HRS receiver)
- Receiving frequencies 27, 29, 40, 41 or 75MHz band
 - Intermediate frequency 455kHz
 - Power requirement 6.0V (shared with servos)
 - Current drain 95mA
 - Size 27.6x39.5x14.5mm (1.09x1.56x0.57in)
 - Weight 17g (0.6oz)

Caution

- ❗ When using the T3PKs in the high response system (HRS) mode, always use it under the following conditions:

Receiver: R203HF, R303FHS or other high response system (HRS) compatible receiver
Servos : 6V Futaba digital servo
Battery : 6V NiCd battery
Transmitter mode : HRS mode (See p.42 for setting method.)

If the conditions are different, control is impossible.
And **Fail Safe Unit (FSU)** is not available.

Optional Parts

The following parts are available as 3PKS options. Purchase them to match your application. For other optional parts, refer our catalog.

Crystal Set

<Types of Crystals>

There are crystals for FM and AM, depending on the modulation mode, and crystals for single conversion and dual conversion, depending on the receiver circuitry. Use FM and single conversion crystal sets with R113iP/R203HF.

Warning

! Use only genuine Futaba crystal.

The use of other than Futaba crystal will result in decrease of range as well as loss of control.

Transmitter Ni-cad Battery

When purchasing a transmitter Ni-cad battery as a spare, etc., use the following:

Part name

NT8F700B(9.6V/700mAh)

NT8F1100B(9.6V/1100mAh)-Option

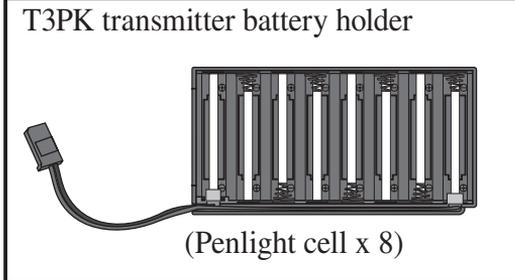


Battery Holder (Transmitter)

This battery holder is necessary when using the transmitter with a dry cell battery.

For a description of how to install the battery holder to the transmitter, see "Ni-cad Replacement" on page 18.

Part name



<Check>

Turn on the power switch and check the LCD battery voltage display. When the batteries are new, the voltage should be about 12V.

If the voltage does not rise, check for faulty contact or incorrect polarity.

<Processing the Dry Cell Batteries>

The method of processing used dry cell batteries depends on the area in which you reside. Process the batteries in accordance with the processing method for your area.

⚠ Caution

- ⊘ Do not use commercial AA size Ni-cd and Ni-MH batteries.

Quick charging may cause the battery contacts to overheat and damage the battery holder.



Use prohibited



- ① Insert the batteries in the correct polarity.

If the polarity is incorrect, the transmitter may be damaged.

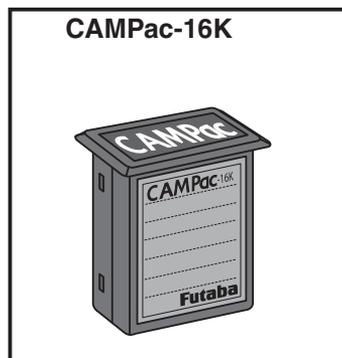
- ① When the transmitter is not in use, remove the batteries.

If the battery electrolyte leaks, wipe off the case and contacts.

CAMPac-16K

When the CAMPac-16K is used, the model data for ten model can be saved, in addition to the ten model memories provided with the transmitter. Since the CAMPac-16K can be freely carried as a separate unit, the saved data can also be used with other T3PKS transmitters. Do not use any removable memories other than CAMPac-16K.

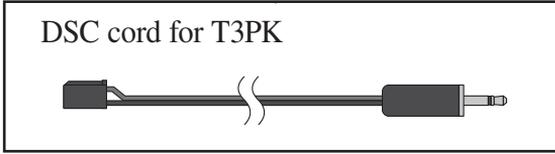
Part name



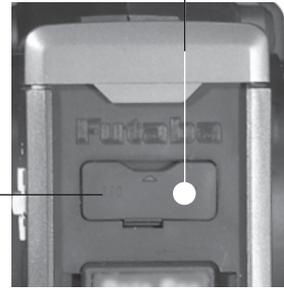
DSC cord

When the T3PK transmitter and R113iP or R203HF receiver are connected with the DSC cord, the servos can be operated without transmitting a signal. (DSC function)

Part name

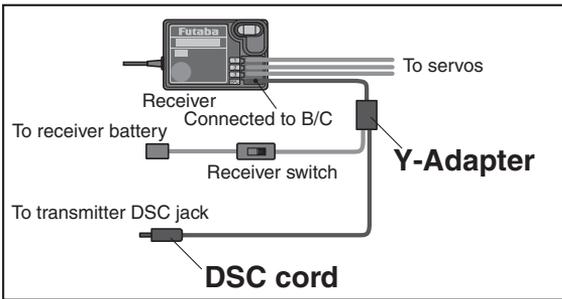


Cover

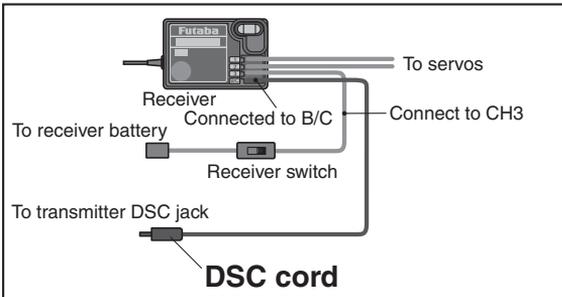


Connection

DSC port



- When used fully up to channel 3, the Y-Adapter must be purchased separately.



- When channel 3 is not used, connect the receiver switch to CH3 and connect the DSC cord to the B/C terminal.

Troubleshooting

If your system fails to operate or you experience a short range problem or erratic control. Check the table below for reasons you may be having these problems. After you followed the suggestions listed and the problem is not corrected return the system to our service department for inspection and repair.

(Item check)

Transmitter

Battery

Dead battery -> Change the batteries. Charge the Nicad

Batteries inserted incorrectly. -> Reload the batteries in accordance with the polarity markings

Faulty contact -> Check to see if the contacts are bent and not making good contact

Dirty contacts -> Clean the contacts and check for corrosion.

Antenna

Loose -> Be sure the antenna is screwed in tightly

Not fully extended -> Fully extend the antenna

Receiver

Battery

Dead battery -> Replace or recharge

Wrong polarity -> Check connections

Antenna

Near other wiring -> Move away from wiring

Was antenna cut -> Request repair

Is the antenna bundled or coiled -> Keep the antenna straight and as much in the air as possible

Crystal

Loose -> Push in firmly

Wrong brand -> Be sure the frequencies match in transmitter and receiver

Connector connections

Wring incorrect -> Insert all connectors firmly

Loose connections -> Push the connector in firmly

Linkage

Binding or loose -> Adjust the linkage in model

Is movement stiff -> Adjust linkage in model

Motor 8 (Electric powered)

Noise problems -> Install capacitors on motor

Warning Displays

Low Battery Alarm

If the transmitter battery voltage drops to 8.5V or less, an audible alarm will sound and "LOW BATTERY" will be displayed on the LCD screen.

LCD screen:

8.4V
<< LOW BATTERY >>

Audible alarm:

Continuous tone.

The vibrator:

Active (initial setting)

page 104

Warning

! When a low battery alarm is generated, cease operation immediately and retrieve the model.

If the battery goes dead while in operation, you will lose control.

Backup Error

If the data is lost for an unknown reason, an audible alarm will sound and "BACK UP ERROR" will be displayed on the LCD screen.

LCD screen:

10.2V
MEMORY
<< BACK UP ERROR >>

Audible alarm:

Tone will sound (9 times), then repeat.

Warning

! When a backup error is generated, immediately stop using the system and request repair from the Futaba Service Center.

If you continue to use the system, the transmitter may malfunction and cause loss of control

Model Select Error

If the power is turned back on in the state in which a model No. in the Data Pac was called and the Data Pac is not installed, an audible alarm will sound and "SELECT ERROR" will be displayed on the LCD screen. When any button is pressed, model No. 1 will be forcibly called.

LCD screen:

EXTERNAL MODEL No.
<< SELECT ERROR >>
ANY KEY > M1 SELECT

Audible alarm:

Tone sounds (7 times) and stops (repeated)

Data Pac Error

If data transfer with the Data Pac was not performed normally, an audible alarm will sound and "ACCESS ERROR" will be displayed on the LCD screen.

- To stop the alarm, turn off the power.
- Turn the power back on. If the alarm is not generated, there is no problem.

LCD screen:

10.2V
EXTERNAL MEMORY
<< ACCESS ERROR >>

Audible alarm:

Tone sounds (7 times) and stops (repeated)

Memory Error

If the data in the transmitter is not transferred normally when the power is turned on, an audible alarm will sound and "ACCESS ERROR" will be displayed on the LCD.

- To stop the alarm, turn off the power.
- Turn the power back on. If the alarm is not generated again, there is no problem.

LCD screen:

10.2V
MAIN MEMORY
<< ACCESS ERROR >>

Audible alarm:

Tone sounds (7 times) and stops (repeated)

Idle-Up or Preset Warning

When the power switch is turned on while the idle-up or preset (engine cut) function switch is on, an audible alarm will sound and "MIX WARNING" will be displayed on the LCD. When the idle-up function switch is turned off, the alarm will stop.

LCD screen:

10.2V
IDLE UP or PRESET
<< MIX WARNING >>

Audible alarm:

Tone sounds (7 times) and stops (repeated)

Power off forgotten warning

If the T3PKS is not operated for 10 minutes, an audible alarm is sounded and "WARNING" is displayed on the screen. The audible alarm stops when the steering wheel, throttle trigger, and any dial, switch, or edit button is operated. If you are not going to use the transmitter, turn the power off. (Setting can be reset at the system menu on page 98.)

LCD screen:

Audible

NOT OPERATED
FOR A LONG TIME
<< WARNING >>

alarm:

Tone sounds (7 times) and stops (repeated)

When requesting repair

Before requesting repair read this instruction again recheck your system. should the problems continue request as follows.

(Information needed for repair)

Describe the problem in as much detail as possible and send the letter along with the system in question.

- Symptom (Including the conditions and when the problem occurred)
- R/C System (Send transmitter, receiver and servos)
- Model (Type of model, brand name and model number or kit name)
- Detailed packing list (Make a list of all items sent in for repair)
- Your name, address and telephone number.

(Warranty)

Read the Warranty card.

- When requesting warranty service, send the card or some type of dated proof purchase.